

**JHCTECH**

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**JHCTECH** IoT Computer  
Connecting the Dots

# AI Edge Computing System

**AI**





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## About JHCTECH

*JHCTECH, established in 2002, is an intelligent IoT system supplier with extensive capabilities in research and development, production, sales, and service. With over two decades of experience in the industry and a strong scientific research background, JHCTECH is committed to a strategic approach of "Scenario Empowering Product Innovation". Continuously focusing on developing AI edge computing and system application platforms to usher in the intelligent era of "IoT computer connecting the dots."*

*JHCTECH offers a diverse range of products and services, including AI edge computing, edge controllers, fanless in-vehicle computers, industrial panel PCs, embedded box computers, domestically produced fanless box computers, industrial control computers, single-board computers, and customized solutions focused on industrial applications and AI value-added services, empowering digital transformation across all industries. These products have passed safety regulations and industry certifications such as 3C, CE, FCC, E-Mark, and EN50155, and are widely used in various fields such as intelligent transportation, digital factories, smart logistics, smart healthcare, energy, and environmental protection.*

### *Corporate Culture*

**Brand Strategy:** Scenario Empowering Product Innovation

**Business Philosophy:** Focus on the industry, specialize in products, and excel in services

**Strategic Slogan:** IoT Computer, Connecting the Dots

**Core Values:** Integrity, gratitude, and responsibility

**Corporate Spirit:** Customer-centric, tenacious, dedicated, learning, innovative, collaborative, inclusive, altruistic, and virtuous.

**Corporate Mission:** Committed to building a smarter earth and a more intelligent tomorrow, helping to improve everyone's progress and long-term development, and contributing to the world.

**Corporate Vision:** Rather lose everything than lose integrity. Become a model of smart IoT ecological and commercial civilization that keeps integrity, emphasizes quality, is courageous and seeks win-win outcomes.

### *Eight Corporate Values*

**1.Value:** Creating maximum value for users through technological innovation.

**2.Strive:** Upholding long-termism, striving hard, and enjoying the joy of work.

**3.Spirit:** All methodologies are measured by core values and corporate spirit.

**4.Learning:** Learning is vital as all achievements ultimately reflect one's capabilities.

**5.Team:** Empowering individual growth, activating organizational creativity, and co-building a mutually fulfilling organization.

**6.Action:** The standard of success is goal achievement; efficiency and action are the keys.

**7.Affection:** Valuing emotions and principles, opposing egalitarianism and opportunism.

**8.Win-Win:** Linking symbiosis, synergizing for increased efficiency; achieving success for others, benefiting society as a whole.



**BRAV** • Edge Computing System **A**

**CNTI** • Fanless Computer

**KGEC** • Edge Controller **B**

**KMDA** • Embedded Box Computer **C**

**ECC** • Embedded Box PC

**ALAD** • Industrial Panel PC **D**

**WPPC** • Industrial Waterproof Panel PC

**SIGM** • Fanless In-Vehicle Computer **E**

**ICS** • Intelligent control system

**SBC** • Embedded Single Board Computer **F**

**NODE** • NODE Core Module

**PADR** • IPC-PADR Series

**JHCTECH** IoT Computer  
Connecting the Dots

**BRAV**  
Edge Computing system





## APPLICATION



Internet of Vehicles and  
Autonomous Driving



AI Automation



AI Medical



AI Security

## COMPLETE LIST

### Products Listing -----A01

**BRAV-7601-S-----A21**

### Accelaration Module -----A05

**BRAV-7601-T-----A23**

**BRAV-7131-----A07**

**BRAV-7720-----A25**

**BRAV-7201-----A09**

**BRAV-7720-WP-----A27**

**BRAV-7220-----A11**

**BRAV-7721-----A29**

**BRAV-7302-----A13**

**BRAV-7721-WP-----A31**

**BRAV-7501-----A15**

**CNTI-3A51-----A33**

**BRAV-7520-----A17**

**CNTI-R351-----A35**

**BRAV-7521-----A19**

**CNTI-2K10-----A37**



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| <div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div> |                                                                                                                                                                                       |                                                                                                                                                                   |                                                                                                                                                                                       |                                                                                                                                          |                                                                                                                                                          |                                                                                                                                                                                                                     |                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                     |
| <div><div>BRAV-7131</div><div>(NVIDIA Jetson)</div></div> <div>BRAV-7201</div> <div>BRAV-7220</div> <div>BRAV-7302</div> <div>BRAV-7501</div> <div>BRAV-7520</div> <div>BRAV-7521</div> <div>BRAV-7601-S</div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                       |                                                                                                                                                                   |                                                                                                                                                                                       |                                                                                                                                          |                                                                                                                                                          |                                                                                                                                                                                                                     |                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                     |
| System                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                       |                                                                                                                                                                   |                                                                                                                                                                                       |                                                                                                                                          |                                                                                                                                                          |                                                                                                                                                                                                                     |                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                     |
| CPU                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 8*Cores Arm® Cortex®-A78AE v8.2 64 bit CPU<br>12*Cores Arm® Cortex®-A78AE v8.2 64 bit CPU                                                                                             | 6th gen Intel Skylake-U Celeron 3855U;<br>Core-U: I3-6100U; I5-6200U; I7-6500U;<br>7th gen Intel Kabylake-U Celeron 3865U;<br>Core-U: I3-7100U; I5-7200U;I7-7500U | Intel® Tigerlake U Celeron/Core I3/I5/I7 CPU,<br>ULT SoC, TDP 12W/15W/28W                                                                                                             | Intel®Skylake-S<br>Intel®Kabylake-S Celeron/Pentium/Core I3/I5/I7<br>CPU,LGA 1151 socket,<br>TDP35W/54W/65W/91W with active cooling fan  | Intel® Xeon® E or 9th/8th-Gen Core™ i7/i5/i3<br>LGA1151 processor, up to 8 cores 16 threads                                                              | Intel® Xeon® E or 9th/8th-Gen Core™ i7/i5/i3<br>LGA1151 processor, up to 8 cores 16 threads                                                                                                                         | Intel® Xeon® E or 9th/8th-Gen Core™ i7/i5/i3<br>LGA1151 processor, up to 8 cores 16 threads                                                                                                                | Intel® Comet lake 10th-Gen Celeron/Pentium/<br>Corei9/i7/i5/i3 CPU,<br>Intel® Q470 PCH                                                                                                                                                                              |
| RAM                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | S001: 32GB; S002: 64GB 256 bit LPDDR5                                                                                                                                                 | 2* DDR4 2133MHz, 32GB max.                                                                                                                                        | 2*DDR4 3200MHz, 64GB max.                                                                                                                                                             | 2* DDR4 2133/2400MHz, 32GB max.                                                                                                          | 4* DDR4 2666/2400MHz DIMM, 128GB max.                                                                                                                    | 4* DDR4 2666/2400MHz SODIMM, 128GB max.                                                                                                                                                                             | 4* DDR4 2666/2400MHz SODIMM, 128GB max.                                                                                                                                                                    | 2*DDR4 SO-DIMM,2933MHz, 64GB max.                                                                                                                                                                                                                                   |
| Graphics                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | S001:NVIDIA Ampere GPU, 1792 Cuda cores+<br>56 Tensor Cores;<br>S002:NVIDIA Ampere GPU, 2048 Cuda cores+<br>64 Tensor Cores                                                           | CPU integrated Intel 9th gen HD Graphics,<br>HEVC/H265 HW HD codec,<br>HDMI: 3940*2160@30Hz,<br>DP: 4096*2160@60Hz                                                | Intel UHD / Iris®Xe Graphics , Supports Intel<br>DeepLearning boost, DirectX12.1, OpenGL 4.6<br>and OpenCL 3.0; HDMI2.0:4096x2304@60Hz,<br>DP 1.4: 7680x4320@60Hz                     | Intel Gen. 9 HD Graphics, HEVC/H265 HW,<br>DP/HDMI/VGA (DP&HDMI 4K);<br>1* MXM3.1(NVIDIA GTX/AMD RX GPU up to 120W,<br>3*DP & 1*HDMI 4K) | Intel UHD Graphics, DirectX11.1, OpenGL 5.0 and<br>OpenCL 2.1,<br>DP: 4096*2304@60Hz, DP:4096*2304@60Hz,<br>HDMI: 3840*2160@30Hz, 3 independent displays | Intel UHD Graphics, DirectX11.1, OpenGL 5.0 and<br>OpenCL 2.1,<br>DP: 4096*2304@60Hz, DP:4096*2304@60Hz,<br>VGA: 1900*1200@60Hz, 3 independent displays                                                             | Intel UHD Graphics, DirectX11.1, OpenGL 5.0<br>and OpenCL 2.1,<br>DP: 4096*2304@60Hz, DP:4096*2304@60Hz,<br>VGA: 1900*1200@60Hz, 3 independent displays                                                    | Intel® UHD Graphics, DirectX 12, openGL 4.5,<br>2*HDMI: 4096x2304@24Hz,<br>1*VGA: 1920*1200@60Hz;<br>1*MXM3.1, GPU/AI card<190W, 2*DP, 4K display                                                                                                                   |
| I/O Interfaces                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                       |                                                                                                                                                                   |                                                                                                                                                                                       |                                                                                                                                          |                                                                                                                                                          |                                                                                                                                                                                                                     |                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                     |
| LAN                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 5*Intel I210AT, 10-1000M, NTP                                                                                                                                                         | 4* Intel I211AT/I210AT, 10-1000M,<br>1*Intel I219LM, 10-1000M,iVpro                                                                                               | 3*Intel I226V, 10M-2.5G , iAMT 13.0/iVpro                                                                                                                                             | 2* / 6* Intel I210AT, 10-1000M;<br>1*Intel I219LM,10-1000M,iVpro                                                                         | 2* Intel I211AT/I210AT, 10-1000M;<br>1* Intel I219LM, 10-1000M, iVpro                                                                                    | 2* Intel I211AT/I210AT, 10-1000M;<br>1* Intel I219LM, 10-1000M, iVpro                                                                                                                                               | 2* Intel I211AT/I210AT, 10-1000M;<br>1* Intel I219LM, 10-1000M, iVpro                                                                                                                                      | 3*Intel I226V,3*2.5G-LAN, iAMT 13.0/iVpro;<br>4* Intel I226V with POE+, 10-1000M(S002)                                                                                                                                                                              |
| USB                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2*USB3.2 Gen2(10Gbps); 2*USB2.0                                                                                                                                                       | 4* USB3.0 + 2* USB2.0                                                                                                                                             | 2* USB3.2 + 2* USB2.0                                                                                                                                                                 | 4*/6* USB3.0 + 2* USB2.0                                                                                                                 | 4*USB3.1 + 6* USB2.0                                                                                                                                     | 6* USB3.1 + 2* USB2.0                                                                                                                                                                                               | 6* USB3.1 + 2* USB2.0                                                                                                                                                                                      | 4* USB3.2(10G)+2*USB2.0+2*USB3.0(optional);<br>2* USB3.2(5G,S002)                                                                                                                                                                                                   |
| Display                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 1* HDMI                                                                                                                                                                               | 1* DP + 1* HDMI                                                                                                                                                   | 1* DP + 1* HDMI                                                                                                                                                                       | 1* DP & HDMI; GPU:3* DP +1* HDMI                                                                                                         | 2* DP + 1* HDMI                                                                                                                                          | 2* DP + 1* VGA                                                                                                                                                                                                      | 2* DP + 1* VGA                                                                                                                                                                                             | 2* HDMI + 1* VGA; GPU 2*DP                                                                                                                                                                                                                                          |
| Audio                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 1*Line out, Realtek ALC5640                                                                                                                                                           | 1* Line out + 1* MIC                                                                                                                                              | /                                                                                                                                                                                     | 1* Line out + 1* MIC                                                                                                                     | 1* Line out + 1* MIC                                                                                                                                     | 1* Line out + 1* MIC                                                                                                                                                                                                | 1* Line out + 1* MIC                                                                                                                                                                                       | 1* Line out + 1* MIC,optional audio                                                                                                                                                                                                                                 |
| Serial Port                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 2*RS232/422 ; 2*RS232                                                                                                                                                                 | 2*RS232/422/485 + 4*RS232                                                                                                                                         | 2*RS232/422/485                                                                                                                                                                       | 2*RS232/422/485 + 2*RS232                                                                                                                | 2*RS232/422/485                                                                                                                                          | 2*RS232/422/485 + 2*RS232                                                                                                                                                                                           | 2*RS232/422/485 + 2*RS232                                                                                                                                                                                  | 2*RS232/422/485 + 2*RS232                                                                                                                                                                                                                                           |
| DIO                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 8bit DIO, TTL, 2.5KV optical isolation<br>input/output                                                                                                                                | 8-bit TTL programmable input/output;<br>8-bit 2.5KV input opto-isolator(H:5-24V, L:0-1.5V), input/output<br>8-bit 2.5KV output opto-isolator(100mA)               | 8bit DIO, TTL, 2.5KV optical isolation                                                                                                                                                | 16-bit TTL programmable input/output;                                                                                                    | 8-bit TTL programmable input/output;                                                                                                                     | 16-bit Iso DIO,<br>8-bit 2.5KV input opto-isolator(H:5-24V, L:0-1.5V),<br>8-bit 2.5KV output opto-isolator (200mA)                                                                                                  | 16-bit Iso DIO,<br>8-bit 2.5KV input opto-isolator(H:5-24V, L:0-1.5V),<br>8-bit 2.5KV output opto-isolator(200mA)                                                                                          | 8 bit TTL, programmable input/output<br>8+16 bit TTL, programmable input/output(S002)                                                                                                                                                                               |
| Storage                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                       |                                                                                                                                                                   |                                                                                                                                                                                       |                                                                                                                                          |                                                                                                                                                          |                                                                                                                                                                                                                     |                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                     |
| Storage                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 64GB eMMC, optional 1*2.5" SATA3;<br>1*M.2 2280 M-Key(PCIeX4),NVMe;<br>1*Micro SD                                                                                                     | 1*2.5" SATA3+ 1*mSATA                                                                                                                                             | 1*2.5"SATA3+ 1*mSATA ;<br>2*M.2 M-Key 2280(PCIeX2), NVMe                                                                                                                              | 2*2.5"SATA3 + 1*mSATA                                                                                                                    | 2*3.5"SATA3+1*M.2(S001);<br>4*2.5"SATA3+1*M.2(S002)                                                                                                      | 2*2.5"SATA3;<br>1*M.2 NVMe                                                                                                                                                                                          | 4*2.5"SATA3 ;<br>1*M.2, NVMe                                                                                                                                                                               | 2*2.5"SATA3 HDD(RAID0,1), 15mm;<br>1*M.2 2280 M-Key(PCIeX4), NVMe;<br>1*mSATA(optional)                                                                                                                                                                             |
| Expansion                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                       |                                                                                                                                                                   |                                                                                                                                                                                       |                                                                                                                                          |                                                                                                                                                          |                                                                                                                                                                                                                     |                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                     |
| Expansion Port                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 1*Mini PCIe(PCIeX2+USB+SIM), 4G LTE/LAN/CAN;<br>1*M.2 3052 B-Key(PCIeX2+USB+SIM), 4G LTE/5G;<br>1*M.2 2280 M-Key(PCIeX4), NVMe/AI module<br>1*M.2 2230 E-Key(PCIeX1+USB), WiFi6/BT5.0 | 1*Mini PCIe with SIM slot                                                                                                                                         | 1*M.2 B-Key 3042(PCIe X1/USB+SIM),4G LTE<br>1*M.2 B-Key 3052(PCIe X1/USB+SIM),4G LTE/5G<br>1*M.2 M-Key 2280(PCIe4.0X2), NVMe/AI module<br>1*M.2 M-Key 2280(PCIe3.0X2), NVMe/AI module | 1*Mini PCIe with SIM slot; 1*M.2 with SIM slot,<br>1* full size mSATA; 1*half size Mini PCIe,<br>1*JHC-Express-02 EIO Express bus        | 1*Mini PCIe(PCIeX1/USB+SIM);<br>2*PCIe3.0X16(1*PCIe X16 or 2*PCIe X8)<br>up to NVIDIA 3080Ti FE;<br>2*PCIe3.0X8(X4)                                      | 1*Mini PCIe(PCIeX1/USB+SIM,BIOS to mSATA);<br>1*M.2 E-Key(+SIM),WiFi6/BT5.0;<br>1*M.2 B-Key(+SIM),5G NR;<br>1*M.2 M-Key(PCIe3.0X4),NVMe;<br>1*PCIe3.0X16(X16),GPU<350W<300mm<br>1*PCIe3.0X16(x4), AI card<75W<300mm | 1*Mini PCIe(PCIeX1/USB+SIM,BIOS to mSATA);<br>1*M.2 E-Key(+SIM),WiFi6/BT5.0;<br>1*M.2 B-Key(+SIM),5G NR;<br>1*M.2 M-Key(PCIe3.0X4),NVMe;<br>2*PCIe3.0X16(X8),GPU<350W<300mm<br>2*PCIe3.0X16(x4), 2*AI card | 1*Mini-Pcie(USB2.0+SIM),mSATA/4G LTE;<br>1*M.2 2230 E-key(PCIeX1/USB+CNVio), WiFi6/BT5.0;<br>1*M.2 3052 B-key(PCIeX1/USB+SIM), 5G/4G LTE;<br>1*M.2 2280 M-Key(PCIeX4), NVMe/PCIe;<br>1*MXM3.1(PCIeX16),up to 190W;<br>JHCTECH-02 E/IO, 2*PCIeX4, 2*USB3.2, 2*USB2.0 |
| Power Supply                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                       |                                                                                                                                                                   |                                                                                                                                                                                       |                                                                                                                                          |                                                                                                                                                          |                                                                                                                                                                                                                     |                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                     |
| Pwr Consump<br>TDP                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | DC9-36V; DC out 12V 3A(Max);<br>50.4W (Jetson AGX Orin 32GB)                                                                                                                          | DC9-30V;<br>24W (I3-6100 CPU 4G DDR4)                                                                                                                             | DC9-36V;<br>38.4W (I5-1135G7 CPU/16G DDR4/256G SSD)                                                                                                                                   | DC6-48V;<br>144W (35W CPU+78W GPU)                                                                                                       | 24-pin ATX/8-pin ATX 12V, 600W power supply                                                                                                              | DC 12V 5-pin Term;<br>Consumption: 12V/27A<br>(I7-8700 CPU 32GB DDR4 single 2080TI GPU)                                                                                                                             | DC 12V 5-pin Term.<br>Consumption: 12V/47A<br>(I7-8700 CPU 32GB DDR4 dual 2080TI GPU)                                                                                                                      | DC 9-36V 3-pin, with short circuit protection, over<br>voltage& over current protection                                                                                                                                                                             |
| Mechanical                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                       |                                                                                                                                                                   |                                                                                                                                                                                       |                                                                                                                                          |                                                                                                                                                          |                                                                                                                                                                                                                     |                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                     |
| Structure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Fan cooling design, SGCC chassis                                                                                                                                                      | Aluminum Case, SGCC chassis                                                                                                                                       | Aluminum Case,SGCC chassis                                                                                                                                                            | Aluminum Case, SGCC chassis                                                                                                              | Aluminum-magnesium alloy, SGCC chasis                                                                                                                    | Aluminum-magnesium alloy, SGCC chasis                                                                                                                                                                               | Aluminum-magnesium alloy, SGCC chasis                                                                                                                                                                      | Temperature controlled fan, SGCC                                                                                                                                                                                                                                    |
| Dimension (W*H*D)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 256.4*168*86.5mm                                                                                                                                                                      | 225*144.3*87.5mm                                                                                                                                                  | 326.4*183*96.6mm                                                                                                                                                                      | 255*222*84.1mm                                                                                                                           | 150*309*375mm                                                                                                                                            | 230*350*160mm                                                                                                                                                                                                       | 230*350*210mm                                                                                                                                                                                              | 284*222*82mm                                                                                                                                                                                                                                                        |
| Net Weight                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 3.25KG                                                                                                                                                                                | 2.2kg                                                                                                                                                             | 4.67KG                                                                                                                                                                                | 4.62kg                                                                                                                                   | 8.14kg                                                                                                                                                   | 7.5kg                                                                                                                                                                                                               | 8.3kg                                                                                                                                                                                                      | 6.70kg                                                                                                                                                                                                                                                              |
| Environmental                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                       |                                                                                                                                                                   |                                                                                                                                                                                       |                                                                                                                                          |                                                                                                                                                          |                                                                                                                                                                                                                     |                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                     |
| Operating Temp                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | -20°C~60°C,with air flow                                                                                                                                                              | -25°C~60°C,Fanless, SSD, with air flow,<br>-10°C~50°C,Fanless, HDD, with air flow                                                                                 | -20°C~70°C,with air flow(CPU,non VPU);<br>-20°C~60°C,with air flow(CPU+2*VPU)                                                                                                         | -25°C~50°C – 65W CPU+78W GPU<br>-25°C ~40°C – 91W CPU+120W GPU                                                                           | -25~50°C, SSD, with air flow                                                                                                                             | -25~60°C, SSD, with air flow                                                                                                                                                                                        | -25~60°C, SSD, with air flow                                                                                                                                                                               | -20~60°C, SSD, airflow                                                                                                                                                                                                                                              |
| Storage Temp                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | - 40°C~85°C                                                                                                                                                                           | - 40°C~85°C                                                                                                                                                       | - 40°C~85°C                                                                                                                                                                           | - 40°C~85°C                                                                                                                              | - 40°C~85°C                                                                                                                                              | - 40°C~85°C                                                                                                                                                                                                         | - 40°C~85°C                                                                                                                                                                                                | - 40°C~85°C                                                                                                                                                                                                                                                         |
| Storage Humidity                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 10~90%@40°C, Non-condensing                                                                                                                                                           | 10~90%@40°C, No-condensation                                                                                                                                      | 10~95%@40°C, No-condensation                                                                                                                                                          | 10~90%@40°C, No-condensation                                                                                                             | 10~90%@40°C, No-condensation                                                                                                                             | 10~90%@40°C, No-condensation                                                                                                                                                                                        | 10~90%@40°C, No-condensation                                                                                                                                                                               | 10~90%@40°C, No condensation                                                                                                                                                                                                                                        |
| Vibration                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 5 grms/5~500Hz/random/during operation(SSD);<br>1 grms/5~500Hz/during operation(HDD)                                                                                                  | 5 grms/5~500Hz/random/during operation(SSD);<br>1 grms/5~500Hz/during operation(HDD)                                                                              | 5grms/5~500Hz/random/during operation(SSD);<br>1grms/5~500Hz/random/during operation(HDD)                                                                                             | 5grms/5~500Hz/random/during operation(SSD);<br>1grms/5~500Hz/random/during operation(HDD)                                                | 5grms/5~500Hz/random/during operation(SSD);<br>1grms/5~500Hz/random/during operation(HDD)                                                                | 5grms/5~500Hz/random/during operation(SSD);<br>1grms/5~500Hz/random/during operation(HDD)                                                                                                                           | 5grms/5~500Hz/random/during operation(SSD);<br>1grms/5~500Hz/random/during operation(HDD)                                                                                                                  | 5grms/5~500Hz/random/during operation(SSD);<br>1grms/5~500Hz/random/during operation(HDD)                                                                                                                                                                           |
| Shock                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 50g peak acceleration(duration;11ms)(SSD);<br>20g peak acceleration(duration;11ms)(HDD)                                                                                               | 50g peak acceleration(duration;11ms)(SSD);<br>20g peak acceleration(duration;11ms)(HDD)                                                                           | 50g peak acceleration(duration;11ms)(SSD);<br>20g peak acceleration(duration;11ms)(HDD)                                                                                               | 50g peak acceleration(duration;11ms)(SSD);<br>20g peak acceleration(duration;11ms)(HDD)                                                  | 50g peak acceleration(duration;11ms)(SSD);<br>20g peak acceleration(duration;11ms)(HDD)                                                                  | 50g peak acceleration(duration;11ms)(SSD);<br>20g peak acceleration(duration;11ms)(HDD)                                                                                                                             | 50g peak acceleration(duration;11ms)(SSD);<br>20g peak acceleration(duration;11ms)(HDD)                                                                                                                    | 50g peak acceleration(11ms duration)(SSD);<br>20g peak acceleration(11ms duration)(HDD)                                                                                                                                                                             |
| Certification/<br>EMC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | CE/FCC Class A                                                                                                                                                                        | CE/FCC Class A                                                                                                                                                    | CE/FCC Class A                                                                                                                                                                        | CE/FCC Class A                                                                                                                           | CE/FCC Class A                                                                                                                                           | CE/FCC Class A                                                                                                                                                                                                      | CE/FCC Class A                                                                                                                                                                                             | CE/FCC Class A                                                                                                                                                                                                                                                      |
| OS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Linux Ubuntu 18.04/20.04 with JetPack                                                                                                                                                 | Linux Fedora Ubuntu                                                                                                                                               | Windows 10 64 bit, Windows 11 64 bit,<br>SUSE, Linux, Wind River                                                                                                                      | Windows 7, Windows 10, Linux Fedora Ubuntu                                                                                               | Windows10/Windows Server 2016 (Intel® Xeon® E)<br>Ubuntu/SuSe/Redhat Enterprise 1,2 (Kernel 4.14)<br>(CFL-R)<br>Wind River VxWorks 7 (CFL-R)             | Windows10/Windows Server 2016 (Intel® Xeon® E)<br>Ubuntu/SuSe/Redhat Enterprise 1,2 (Kernel 4.14)<br>(CFL-R)<br>Wind River VxWorks 7 (CFL-R)                                                                        | Windows10/Windows Server 2016 (Intel® Xeon® E)<br>Ubuntu/SuSe/Redhat Enterprise 1,2 (Kernel 4.14)<br>(CFL-R)<br>Wind River VxWorks 7 (CFL-R)                                                               | Windows 10 IoT Enterprise (64-bit), Windows Server<br>2019, Ubuntu, SUSE, Redhat Enterprise, Wind River<br>Linux, Yocto Project (64-bit), Wind River VxWorks 7                                                                                                      |



|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                         |                                                                                                                                                                                                                         |                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                               |                                                                                                                                                                                           |                                                                                                                                             |                                                                                          |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|
| <div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div> |                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                         |                                                                                                                                                                                                                         |                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                               |                                                                                                                                                                                           |                                                                                                                                             |                                                                                          |
| System                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                         |                                                                                                                                                                                                                         |                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                               |                                                                                                                                                                                           |                                                                                                                                             |                                                                                          |
| CPU                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Intel® Comet lake 10th-Gen Celeron/Pentium/Corei9/i7/i5/i3 CPU, Intel® Q470 PCH                                                                                                                                                                      | Intel® Alder lake-S 12th-Gen Core™ i9/i7/i5/i3/Pentium/Celeron LGA1700 CPU, Intel® Q670 PCH                                                                                                                             | Intel® Alder lake-S 12th-Gen Core™ i9/i7/i5/i3/Pentium/Celeron LGA1700 CPU, Intel® Q670 PCH                                                                                                                             | Intel® Alder lake-S 12th-Gen Core™ i9/i7/i5/i3/Pentium/Celeron LGA1700 CPU, Intel® Q670 PCH                                                                                                                                                   | Intel® Alder lake-S 12th-Gen Core™ i9/i7/i5/i3/Pentium/Celeron LGA1700 CPU, Intel® Q670 PCH                                                                                                                                                   | Loongson3A5000, 4 Cores, 2.3GHz-2.5GHz, LS7A1000 PCH                                                                                                                                      | Rockchip RK3588, 4 Cortex-A76 and 4 Cortex-A55, 2.4GHz                                                                                      | Loonson 2K1000LA, 800MHz-1.0GHz                                                          |
| RAM                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2*DDR4 SO-DIMM, 2933MHz, 64GB max.                                                                                                                                                                                                                   | 2*262-Pin SODIMM, DDR5 4800MHz, 64GB max.                                                                                                                                                                               | 2*262-Pin SODIMM, DDR5 4800MHz, 64GB max.                                                                                                                                                                               | 2*262-Pin SODIMM, DDR5 4800MHz, 64GB max.                                                                                                                                                                                                     | 2*262-Pin SODIMM, DDR5 4800MHz, 64GB max.                                                                                                                                                                                                     | 2*288 Pin DIMM, DDR4 3200MHz, 64GB max.                                                                                                                                                   | Onboard memory, 4GB LPDDR4                                                                                                                  | Onboard memory,DDR3, 1GB/2GB                                                             |
| Graphics                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Intel® UHD Graphics, support DirectX 12, OpenGL 4.5, 2*HDMI 1.4: 4096 x 2304@24Hz 1*VGA: 1920x1200@60Hz                                                                                                                                              | Intel® UHD Graphics, Supports DirectX 12, OpenGL 4.5, OpenCL 3.0, DP:7680*4320@60Hz, HDMI:4096*2160@60Hz, VGA:1920*1200@60Hz, 3 independent displays                                                                    | Intel® UHD Graphics, Supports DirectX 12, OpenGL 4.5, OpenCL 3.0, DP:7680*4320@60Hz, HDMI:4096*2160@60Hz, VGA:1920*1200@60Hz, 3 independent displays                                                                    | Intel® UHD Graphics, Supports DirectX 12, OpenGL 4.5, OpenCL 3.0, DP:7680*4320@60Hz, HDMI:4096*2160@60Hz, VGA:1920*1200@60Hz, 3 independent displays                                                                                          | Intel® UHD Graphics, Supports DirectX 12, OpenGL 4.5, OpenCL 3.0, DP:7680*4320@60Hz, HDMI:4096*2160@60Hz, VGA:1920*1200@60Hz, 3 independent displays                                                                                          | Nuclear display                                                                                                                                                                           | Mali-G610 GPU, OpenGL ES3.2/OpenCL2.2/ Vulkan1.1, 2D&3D acceleration hardware; HDMI:1920*1080@60Hz <b>NPU</b> :6 TOPS, INT4/INT8/INT16/FP16 | /                                                                                        |
| I/O Interfaces                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                         |                                                                                                                                                                                                                         |                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                               |                                                                                                                                                                                           |                                                                                                                                             |                                                                                          |
| LAN                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 3*Intel I226V,3*2.5G-LAN,iAMT 13.0/iVpro; 4* Intel I226V with POE+, 10-1000M(T002)                                                                                                                                                                   | 2* Intel I226V, 10-1000M; 1* Intel I219LM,10-1000M, iAMT 12.0                                                                                                                                                           | 2* Intel I226V, 10-1000M; 1* Intel I219LM,10-1000M, iAMT 12.0                                                                                                                                                           | 2* Intel I226V, 10-1000M; 1* Intel I219LM,10-1000M, iAMT 12.0                                                                                                                                                                                 | 2* Intel I226V, 10-1000M; 1* Intel I219LM,10-1000M, iAMT 12.0                                                                                                                                                                                 | 2*88E1512, 10-1000M                                                                                                                                                                       | 2*RTL8211F, 10-1000M; 2*RTL8111H,10-1000M                                                                                                   | 2*LAN, 10M-1000M                                                                         |
| USB                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 4* USB3.2(10G) + 2*USB2.0; 2* USB3.2(5G,T002)                                                                                                                                                                                                        | 4* USB3.2(10G)+2*USB3.0(5G)                                                                                                                                                                                             | 4* USB3.2(10G)+2*USB3.0(5G)                                                                                                                                                                                             | 4* USB3.2(10G)+2*USB3.0(5G)                                                                                                                                                                                                                   | 4* USB3.2(10G)+2*USB3.0(5G)                                                                                                                                                                                                                   | 4* USB3.0 + 2* USB2.0                                                                                                                                                                     | 2* USB3.0+2*USB2.0                                                                                                                          | 2*USB2.0                                                                                 |
| Display                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | HD graphics 2* HDMI + 1* VGA                                                                                                                                                                                                                         | 1* DP+1*HDMI+1* VGA                                                                                                                                                                                                     | 1* DP+1*HDMI+1* VGA                                                                                                                                                                                                     | 1* DP+1*HDMI+1* VGA                                                                                                                                                                                                                           | 1* DP+1*HDMI+1* VGA                                                                                                                                                                                                                           | 1* HDMI + 1*VGA                                                                                                                                                                           | 1*HDMI                                                                                                                                      | /                                                                                        |
| Audio                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 1* Line out + 1* MIC,Realtek ALC662VD                                                                                                                                                                                                                | /                                                                                                                                                                                                                       | /                                                                                                                                                                                                                       | /                                                                                                                                                                                                                                             | /                                                                                                                                                                                                                                             | 1*Line out+1*MIC, Realtek ALC269Q-VC                                                                                                                                                      |                                                                                                                                             |                                                                                          |
| Serial Port                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 2*RS232/422/485 + 2*RS232                                                                                                                                                                                                                            | 2*RS232/422/485                                                                                                                                                                                                         | 2*RS232/422/485                                                                                                                                                                                                         | 2*RS232/422/485                                                                                                                                                                                                                               | 2*RS232/422/485                                                                                                                                                                                                                               | 12*RS232/422/485(3*DB44)                                                                                                                                                                  | 1*RS232+1*RS485; 2*CAN (CAN Open2.0,DB9)                                                                                                    | 2*RS232+2*RS485+2*CAN (2*7pin)                                                           |
| DIO                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | T001: 8 bit TTL, programmable input/output; T002: 8 bit TTL,programmable input/output, 8 bit PNP/NPN 2.5KV input/output                                                                                                                              | Optional 16bit DIO, TTL , programmable input/output                                                                                                                                                                     | Optional 16bit DIO, TTL , programmable input/output                                                                                                                                                                     | Optional 16bit DIO, TTL, programmable input/output                                                                                                                                                                                            | Optional 16bit DIO, TTL signal, programmable input/output                                                                                                                                                                                     | 24bit isolated DIO(12bit DI, 12bit DO)                                                                                                                                                    | 1*8 bit DIO(DB9)                                                                                                                            | 1*8 bit GPIO(DB9)                                                                        |
| Storage                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                         |                                                                                                                                                                                                                         |                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                               |                                                                                                                                                                                           |                                                                                                                                             |                                                                                          |
| Storage                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 2*2.5"SATA3 HDD(support RAID0,1), max support dual 15mm HDD, 1*M.2 2280 M-Key(PCIeX4 signal), support NVME, 1*mSATA(optional)                                                                                                                        | 2*2.5"SATA3 HDD(RAID0/1), 15mmthickness, 1*M.2 2280 M-Key(PCIe4.0X4), NVMe, 1*mSATA(optional)                                                                                                                           | 2*2.5"SATA3 HDD(RAID0/1), 15mmthickness, 1*M.2 2280 M-Key(PCIe4.0X4), NVMe, 1*mSATA(optional)                                                                                                                           | 2*2.5"SATA3 HDD(RAID0/1), 15mmthickness, 1*M.2 2280 M-Key(PCIe4.0X4), NVMe, 1*mSATA(optional)                                                                                                                                                 | 2*2.5"SATA3 HDD(RAID0/1), 15mm, 1*M.2 2280 M-Key(PCIe4.0X4), NVMe, 1*mSATA(optional)                                                                                                                                                          | 2*2.5"SATA3; 1*M.2 M-Key 2280(PCIe2.0X4), NVMe                                                                                                                                            | Onboard 32G eMMC, 1*M.2 2242 M-key, NVMe                                                                                                    | 1*SATA2.0 M.2 2242 B-KEY, standard with 32GB SSD                                         |
| Expansion                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                         |                                                                                                                                                                                                                         |                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                               |                                                                                                                                                                                           |                                                                                                                                             |                                                                                          |
| Expansion Port                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 1*Mini-PCIe(USB2.0+SIM), mSATA/4G LTE; 1*M.2 2230 E-key(PCIeX1/USB+CNVio),WiFi6/BT5.0; 1*M.2 3052 B-key(PCIeX1/USB+SIM), 5G/4G LTE; 1*M.2 2280 M-Key(PCIeX4), NVME/PCIe; 1*MXM3.1, MLU220-MXM AI card; JHCTECH-02 E/IO: 2*PCIeX4, 2*USB3.2, 2*USB2.0 | 1*Mini PCIe(PCIeX1/USB+SIM),4G LTE/PCIe; 1*Mini PCIe(PCIeX1/SATA),mSATA; 1*M.2 3052 B-Key(PCIeX1/USB+SIM),5G NR; 1*M.2 2280 M-Key(PCIe4.0X4), NVMe; 1*PCIe5.0X16(X16),GPU<450W<300mm 1*PCIe4.0X16(X4),AI card<75W<300mm | 1*Mini PCIe(PCIeX1/USB+SIM),4G LTE/PCIe; 1*Mini PCIe(PCIeX1/SATA),mSATA; 1*M.2 3052 B-Key(PCIeX1/USB+SIM),5G NR; 1*M.2 2280 M-Key(PCIe4.0X4), NVMe; 1*PCIe5.0X16(X16),GPU<450W<300mm 1*PCIe4.0X16(X4),AI card<75W<300mm | 1*Mini PCIe(PCIeX1/USB+SIM),4G LTE/PCIe; 1*Mini PCIe(PCIeX1/SATA),mSATA; 1*M.2 3052 B-Key(PCIeX1/USB+SIM),5G NR; 1*M.2 2280 M-Key(PCIe4.0X4), NVMe; <b>2*PCIe5.0X16(X8)</b> ,GPU<450W<300mm; <b>2*PCIeX16(4.0X4+3.0X4)</b> ,AI card<75W<300mm | 1*Mini PCIe(PCIeX1/USB+SIM),4G LTE/PCIe; 1*Mini PCIe(PCIeX1/SATA),mSATA; 1*M.2 3052 B-Key(PCIeX1/USB+SIM),5G NR; 1*M.2 2280 M-Key(PCIe4.0X4), NVMe; <b>2*PCIe5.0X16(X8)</b> ,GPU<450W<300mm; <b>2*PCIeX16(4.0X4+3.0X4)</b> ,AI card<75W<300mm | 1*Mini PCIe(PCIeX1/USB+SIM),4G LTE/PCIe; 1*Mini PCIe(PCIeX1/SATA),mSATA; 1*M.2 3052 B-Key(PCIeX1/USB+SIM),5G NR; 1*M.2 2280 M-Key(PCIe4.0X4), NVMe; 1*M.2 2230 E-Key(PCIeX1/USB2.0), WIFI | 1*Full size Mini PCIe(+SIM), 4G LTE; (Opt.) onboard Wifi6/BT5.0                                                                             | 1*SATA2.0 M.2 2242 B-KEY; 1*M.2 NGFF 2230 E-KEY (PCIe2.0X1+USB2.0), 4G/WIFI/BT           |
| Power Supply                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                         |                                                                                                                                                                                                                         |                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                               |                                                                                                                                                                                           |                                                                                                                                             |                                                                                          |
| Pwr Consump Input Voltage                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | DC 9-36V 3-pin, with short circuit protection, over voltage& over current protection                                                                                                                                                                 | DC 12V, 1000W max. ; TDP:TBD                                                                                                                                                                                            | DC 9-55V, 600W max. ; TDP:TBD                                                                                                                                                                                           | DC 12V 5-pin 1000W max. ; TDP:TBD                                                                                                                                                                                                             | DC 9-55V , 1000W max. ; TDP:TBD                                                                                                                                                                                                               | DC 12-36V; TDP: TBD                                                                                                                                                                       | DC 9-36V ; TDP:TBD                                                                                                                          | DC 5V/3A ; TDP:TBD                                                                       |
| Mechanical                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                         |                                                                                                                                                                                                                         |                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                               |                                                                                                                                                                                           |                                                                                                                                             |                                                                                          |
| Structure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Aluminum chassis, SGCC                                                                                                                                                                                                                               | SGCC frame, Aluminum-magnesium alloy chassis, temperature control by PWM fan                                                                                                                                            | SGCC frame, Aluminum-magnesium alloy chassis, temperature control by PWM fan                                                                                                                                            | SGCC frame, Aluminum-magnesium alloy chassis, temperature control by PWM fan                                                                                                                                                                  | SGCC frame, Aluminum-magnesium alloy chassis, temperature control by PWM fan                                                                                                                                                                  | Aluminum chassis, SGCC                                                                                                                                                                    | Aluminum-magnesium alloy, SGCC frame                                                                                                        | SGCC frame                                                                               |
| Dimension (W*H*D)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 284*222*80.5mm                                                                                                                                                                                                                                       | 195*374.7*254.8mm                                                                                                                                                                                                       | 262*374.7*178mm                                                                                                                                                                                                         | 245*376.8*254.8mm                                                                                                                                                                                                                             | 230*350*210mm                                                                                                                                                                                                                                 | 312*220.2*78mm                                                                                                                                                                            | 169*100*44.2mm                                                                                                                              | 153*154*46mm                                                                             |
| Net Weight                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 6.40kg                                                                                                                                                                                                                                               | TBD                                                                                                                                                                                                                     | TBD                                                                                                                                                                                                                     | TBD                                                                                                                                                                                                                                           | TBD                                                                                                                                                                                                                                           | TBD                                                                                                                                                                                       | TBD                                                                                                                                         | 0.82KG                                                                                   |
| Environmental                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                         |                                                                                                                                                                                                                         |                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                               |                                                                                                                                                                                           |                                                                                                                                             |                                                                                          |
| Operating Temp                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | -20~-60°C, SSD, airflow                                                                                                                                                                                                                              | -20~-60°C, SSD, with air flow                                                                                                                                                                                           | -20~-60°C, SSD, with air flow                                                                                                                                                                                           | -20~-60°C, SSD, with air flow                                                                                                                                                                                                                 | -20~-60°C, SSD, with air flow                                                                                                                                                                                                                 | -20°C~-60°C,SSD ,with air flow;                                                                                                                                                           | -20~-60°C, SSD, air flow                                                                                                                    | -20~-60°C, SSD, air flow                                                                 |
| Storage Temp                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | - 40°C~85°C                                                                                                                                                                                                                                          | - 40°C~85°C                                                                                                                                                                                                             | - 40°C~85°C                                                                                                                                                                                                             | - 40°C~85°C                                                                                                                                                                                                                                   | - 40°C~85°C                                                                                                                                                                                                                                   | - 40°C~85°C                                                                                                                                                                               | - 40°C~85°C                                                                                                                                 | - 40°C~85°C                                                                              |
| Storage Humidity                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 10~90%@40°C, No condensation                                                                                                                                                                                                                         | 10~95%@40°C, No-condensation                                                                                                                                                                                            | 10~95%@40°C, No-condensation                                                                                                                                                                                            | 10~95%@40°C, No-condensation                                                                                                                                                                                                                  | 10~95%@40°C, No-condensation                                                                                                                                                                                                                  | 10~95%@40°C, No-condensation                                                                                                                                                              | 10~95%@40°C, Non-condensing                                                                                                                 | 10~95%@40°C, Non-condensing                                                              |
| Vibration                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 5grms/5~500Hz/random/during operation(SSD); 1grms/5~500Hz/random/during operation(HDD)                                                                                                                                                               | 5grms/5~500Hz/random/during operation(SSD); 1grms/5~500Hz/random/during operation(HDD)                                                                                                                                  | 5grms/5~500Hz/random/during operation(SSD); 1grms/5~500Hz/random/during operation(HDD)                                                                                                                                  | 5grms/5~500Hz/random/during operation(SSD); 1grms/5~500Hz/random/during operation(HDD)                                                                                                                                                        | 5grms/5~500Hz/random/during operation(SSD); 1grms/5~500Hz/random/during operation(HDD)                                                                                                                                                        | 5 grms/5~500Hz/random/during operation(SSD); 1 grms/5~500Hz/random/during operation(HDD)                                                                                                  | 5 grms/5~500Hz/random/during operation(SSD); 1 grms/5~500Hz/random/during operation(HDD)                                                    | 5 grms/5~500Hz/random/during operation(SSD); 1 grms/5~500Hz/random/during operation(HDD) |
| Shock                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 50g peak acceleration(11ms duration)(SSD); 20g peak acceleration(11ms duration)(HDD)                                                                                                                                                                 | 50g peak acceleration(11ms duration)(SSD); 20g peak acceleration(11ms duration)(HDD)                                                                                                                                    | 50g peak acceleration(11ms duration)(SSD); 20g peak acceleration(11ms duration)(HDD)                                                                                                                                    | 50g peak acceleration(11ms duration)(SSD); 20g peak acceleration(11ms duration)(HDD)                                                                                                                                                          | 50g peak acceleration(11ms duration)(SSD); 20g peak acceleration(11ms duration)(HDD)                                                                                                                                                          | 50g peak acceleration(11ms duration)(SSD); 20g peak acceleration(11ms duration)(HDD)                                                                                                      | 50g peak acceleration(11ms duration)(SSD); 20g peak acceleration(11ms duration)(HDD)                                                        | 50g peak acceleration(11ms duration)(SSD); 20g peak acceleration(11ms duration)(HDD)     |
| Certification/ EMC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | CE/FCC Class A                                                                                                                                                                                                                                       | CE/FCC Class A                                                                                                                                                                                                          | CE/FCC Class A                                                                                                                                                                                                          | CE/FCC Class A                                                                                                                                                                                                                                | CE/FCC Class A                                                                                                                                                                                                                                | CE/FCC Class A                                                                                                                                                                            | CE/FCC Class A                                                                                                                              | CE/FCC Class A                                                                           |
| OS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Windows 10 IoT Enterprise (64-bit), Windows Server 2019, Ubuntu, SuSE, Redhat Enterprise, Wind River Linux, Yocto Project (64-bit), Wind River VxWorks 7                                                                                             | Windows 11, Windows 10 IoT Enterprise 2021 LTSC, Ubuntu, SuSe, Red Hat Enterprise, Wind River Linux, Wind River VxWorks 7                                                                                               | Windows 11, Windows 10 IoT Enterprise 2021 LTSC, Ubuntu, SuSe, Red Hat Enterprise, Wind River Linux, Wind River VxWorks 7                                                                                               | Windows 11, Windows 10 IoT Enterprise 2021 LTSC, Ubuntu, SuSe, Red Hat Enterprise, Wind River Linux, Wind River VxWorks 7                                                                                                                     | Windows 11, Windows 10 IoT Enterprise 2021 LTSC, Ubuntu, SuSe, Red Hat Enterprise, Wind River Linux, Wind River VxWorks 7                                                                                                                     | UOS /KylinOS/LOONGNIX/openEuler                                                                                                                                                           | Android. Linux                                                                                                                              | Buildroot/OpenHarmony/Loongnix/SylixOS                                                   |



Optional AI card/GPU

MLU220-MXM



|                  |                             |
|------------------|-----------------------------|
| Port Type        | MXM 3.1 (PCIe3.0 X2)        |
| RAM              | 8GB, LPDDR4x 64bit, 3200Mhz |
| AI Comp Pwr      | 16TOP(INT8)                 |
| Pwr Cosumption   | 16.5W                       |
| Surface temp     | -20~70 °C                   |
| Heat dissipation | Passive cooling             |
| Dimension        | 70*82mm (non cooler)        |

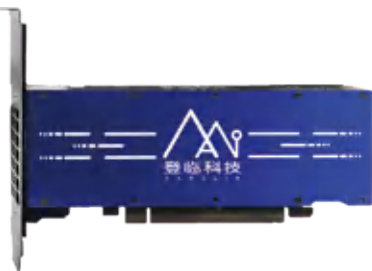
MLU220-M.2



|                  |                                                   |
|------------------|---------------------------------------------------|
| Port Type        | M.2 2280, B+M key (PCIe3.0 X2)                    |
| RAM              | LPDDR4x 64bit, 4GB                                |
| AI Comp Pwr      | 8TOPS(INT8)                                       |
| Pwr Cosumption   | 8.25W                                             |
| Surface temp     | -20~80 °C                                         |
| Heat dissipation | Passive cooling                                   |
| Dimension        | 80*22mm*[7.3mm(non cooler)/21.3mm (with cooler) ] |

Optional AI card/GPU

Goldwasser-L128



|                  |                                         |
|------------------|-----------------------------------------|
| Port Type        | PCIe3.0X16                              |
| RAM              | 32/64GB                                 |
| AI Comp Pwr      | 128TOPS(INT8)                           |
| Pwr Cosumption   | 40W                                     |
| Surface temp     | 0~50 °C                                 |
| Shape            | Half height and half length,single slot |
| Heat dissipation | Passive cooling                         |
| Dimension        | 167.65*68.9mm                           |

Goldwasser-L256



|                  |                                          |
|------------------|------------------------------------------|
| Port Type        | PCIe3.0X16                               |
| RAM              | 32/64GB                                  |
| AI Comp Pwr      | 256TOPS(INT8)                            |
| Pwr Cosumption   | 70W                                      |
| Surface temp     | 0~50 °C                                  |
| Shape            | Half height and half length, single slot |
| Heat dissipation | Passive cooling                          |
| Dimension        | 167.65*68.9mm                            |

MLU370-S4



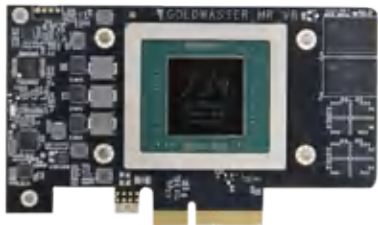
|                  |                                         |
|------------------|-----------------------------------------|
| Port Type        | PCIe4.0X16                              |
| RAM              | 24GB                                    |
| AI Comp Pwr      | 192TOPS(Dense, INT8)                    |
| Pwr Cosumption   | 75W                                     |
| Surface temp     | 0~50 °C                                 |
| Shape            | Half height and half length,single slot |
| Heat dissipation | Passive cooling                         |
| Dimension        | 68.9*167.5mm                            |

MLU370-X4



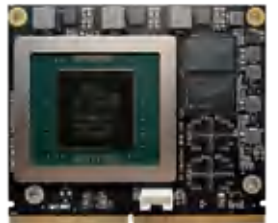
|                  |                                          |
|------------------|------------------------------------------|
| Port Type        | PCIe4.0X16                               |
| RAM              | 24GB                                     |
| AI Comp Pwr      | 256TOPS(Dense, INT8)                     |
| Pwr Cosumption   | 150W                                     |
| Surface temp     | 0~45 °C                                  |
| Shape            | Full height and full length, single slot |
| Heat dissipation | Passive cooling                          |
| Dimension        | 111.5*266.7mm                            |

Goldwasser-UL32/64



|                  |                         |                         |
|------------------|-------------------------|-------------------------|
| Port Type        | PCIe2.0X4               | PCIe3.0X4               |
| RAM              | 2/4GB                   | 4/8GB                   |
| AI Comp Pwr      | 32TOPS(INT8)            | 64TOPS(INT8)            |
| Pwr Cosumption   | 28W                     | 35W                     |
| Surface temp     | -20~60 °C               | -20~60 °C               |
| Shape            | Half height,single slot | Half height,single slot |
| Heat dissipation | Passive cooling         | Passive cooling         |
| Dimension        | 114.2*68.9mm            | 114.2*68.9mm            |

Goldwasser-UL32/64-MXM



|                  |                        |                        |
|------------------|------------------------|------------------------|
| Port Type        | PCIe2.0X4              | PCIe3.0X4              |
| RAM              | 4/8GB                  | 8/16GB                 |
| AI Comp Pwr      | 32TOPS(INT8)           | 64TOPS(INT8)           |
| Pwr Cosumption   | 10W                    | 15W                    |
| Surface temp     | -20~55 °C              | -20~55 °C              |
| Shape            | MXM,TYPE-A             | MXM,TYPE-A             |
| Heat dissipation | Active/Passive cooling | Active/Passive cooling |
| Dimension        | 82*70mm                | 82*70mm                |

CFI-3060-MXM



|                  |                                               |
|------------------|-----------------------------------------------|
| Port Type        | MXM 3.1 (PCIe4.0)                             |
| RAM              | 12GB, GDDR6,192bit, 15Gbps                    |
| AI Comp Pwr      | 210GFLOPS(FP64)/13TFLOPS(FP32)/12TFLOPS(FP16) |
| CUDA             | 3584                                          |
| Surface temp     | -20~55 °C                                     |
| Pwr Cosumption   | 140W                                          |
| Heat dissipation | Passive cooling                               |
| Dimension        | 105*82mm                                      |

CFI-1660S-MXM



|                  |                                              |
|------------------|----------------------------------------------|
| Port Type        | MXM 3.1 (PCIe3.0)                            |
| RAM              | 6GB, GDDR6,192bit, 14Gbps                    |
| AI Comp Pwr      | 157GFLOPS(FP64)/5TFLOPS(FP32)/10TFLOPS(FP16) |
| CUDA             | 1048                                         |
| Surface temp     | -20~55 °C                                    |
| Pwr Cosumption   | 95W                                          |
| Heat dissipation | Passive cooling                              |
| Dimension        | 105*82mm                                     |

MR V50



|                  |                                             |
|------------------|---------------------------------------------|
| Port Type        | PCIe4.0X16                                  |
| RAM              | 16GB HBM2E                                  |
| AI Comp Pwr      | 256TOPS(INT8),64TFLOPS(FP32),16TFLOPS(FP16) |
| Pwr Cosumption   | 75W                                         |
| Surface temp     | 0~50 °C                                     |
| Shape            | PCIe, Half height and half length           |
| Heat dissipation | Passive cooling                             |
| Dimension        | 68.9*167.5mm                                |

MR V100



|                  |                                             |
|------------------|---------------------------------------------|
| Port Type        | PCIe4.0X16                                  |
| RAM              | 32GB HBM2E                                  |
| AI Comp Pwr      | 384TOPS(INT8),96TFLOPS(FP32),24TFLOPS(FP16) |
| Pwr Cosumption   | 150W                                        |
| Surface temp     | 0~45 °C                                     |
| Shape            | PCIe,Full height and full length            |
| Heat dissipation | Passive cooling                             |
| Dimension        | 111.5*266.7mm                               |



# BRAV-7131

NVIDIA Jetson AGX Orin 32/64GB, 5\*LAN, 2\*USB3.2, 2\*USB2.0, 4\*COM, 2\*CAN, 1\*16-bit DIO, 1\*HDMI, Time SYNC, DC 9~36V

## Key Specification

- NVIDIA Jetson AGX Orin 32/64G, 200/275TOPS
- 8/12\*Cores ARM Cortex-A78AE CPU, 2.2GHz
- NVIDIA Ampere GPU with Tensor Cores
- Onboard 32/64G 256bit LPDDR5 Ram and 64GB eMMC, 1\*M.2 M-Key NVME and optional 1\*2.5"SATA bay
- 1\*HDMI, 1\*Audio Line-out, 5\*LAN, 2\*USB3.2, 2\*USB2.0,
- 4\*COM, 2\*CAN, 16-bit DIO,1\*SYNC IO
- 1\*F-Mini PCIe and 1\*M.2 B-Key support 4G LTE or 5G NR, 1\*M.2 E-Key support Wifi&BT wireless routes
- DC9~36V wide power input, with OVP, OCP and SCP
- Aluminum-magnesium alloy chassis, Fan cooling design



## Product Overview

BRAV-7131 is equipped with NVIDIA Jetson AGX Orin 32/64GB module, 8/12 cores ARM CPU and high performance GPU, up to 200/275TOPS AI performance, onboard 32/64G memory and 64G storage, multichannel IO and clock synchronization, DC 9-36V wide voltage power supply. It can be used as MEC(Multi-Access Edge Computing) for intelligent transportation, machine vision, intelligent logistics and other industries.

## Product Parameters

### System

|                   |                                                                                                                                                                                                                                                                                                                                                                                                       |
|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Processor         | 8*Cores Arm® Cortex®-A78AE v8.2 64 bit CPU, 2.2 GHz(S001)<br>12*Cores Arm® Cortex®-A78AE v8.2 64 bit CPU, 2.2 GHz(S002)                                                                                                                                                                                                                                                                               |
| RAM               | Onboard 32GB(S001)/64GB(S002) 256 bit LPDDR5, 204.8 GB/S max.                                                                                                                                                                                                                                                                                                                                         |
| Graphics          | 1792*Cores NVIDIA Ampere GPU 930MHz, 56*Tensor Cores(S001)<br>2048*Cores NVIDIA Ampere GPU 1.3GHz, 64*Tensor Cores(S002)<br>Video code (H.265)H.264, AV1:<br>1*4K60,3*4K30,6*1080p60,12*1080p30 (S001);<br>2*4K60,4* 4K30,8*1080p60,16*1080p30 (S002);<br>Video code (H.265)H.264, VP9, AV:<br>1*8K30,2*4K60,4*4K30,9*1080p60,18*1080p30(S001);<br>1*8K30,3*4K60,7*4K30,11*1080p60,22*1080p30(S002) ; |
| DL/VS Accelerator | 2*NVDLA v2,PVA v2.0,AI performance up to 200(S001)/275(S002) TOPS(INT8)                                                                                                                                                                                                                                                                                                                               |
| LAN               | 5*Intel I210AT, 10-1000M, NTP;                                                                                                                                                                                                                                                                                                                                                                        |
| USB               | 2*USB3.2(10G), 2*USB2.0                                                                                                                                                                                                                                                                                                                                                                               |
| Display           | 1*HDMI(4096*2304@60Hz)                                                                                                                                                                                                                                                                                                                                                                                |
| COM/others        | 2*RS232/422/485(DB9); 2*RS232; 2*CAN;<br>1*SYNC IO(GPS/BDS clock timing);optional 1*MIPI CSI 60pin                                                                                                                                                                                                                                                                                                    |
| DIO               | 16bit DIO, TTL, 2.5KV isolated input/output                                                                                                                                                                                                                                                                                                                                                           |
| Storage           | Onboard 64GB eMMC 5.1; optional1*2.5" SATA3.0;<br>2*M.2 2280 M-Key(PCIeX4),NVMe; 1*Micro SD                                                                                                                                                                                                                                                                                                           |
| LED               | 1*PowerLED, 1*HDD LED, 1*CPUTemp LED                                                                                                                                                                                                                                                                                                                                                                  |
| Control Switch    | 1*Power SW, 1*RST, 1*AT/ATX, 1*REV                                                                                                                                                                                                                                                                                                                                                                    |
| OS                | Linux Ubuntu 18.04 and 20.04 with JetPack                                                                                                                                                                                                                                                                                                                                                             |

|                   |                                                                                                                                                                                                 |
|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Expansion         | 1*Mini PCIe(PCIe X1/USB2.0+SIM), 4G LTE/CAN;<br>1*M.2 3052 B-Key(PCIe X1/USB2.0+SIM), 4G LTE/5G NR;<br>1*M.2 2280 M-Key(PCIeX4), NVMe/AI Cards;<br>1*M.2 2230 E-Key(PCIeX1/USB2.0), WIFI6/BT5.0 |
| Power requirement | DC IN 9~36V,with short circuit, over voltage and over current protection;<br>50.4W (Jetson AGX Orin 32GB)                                                                                       |

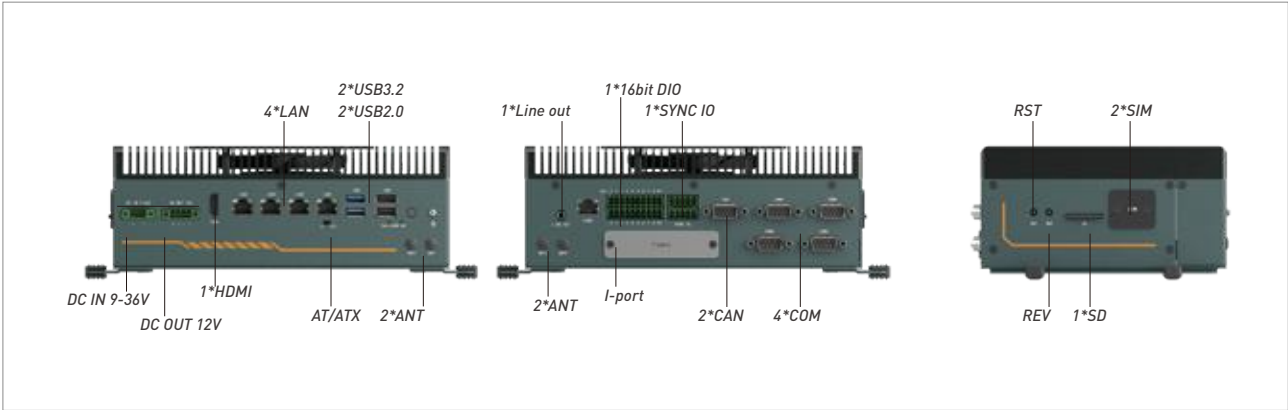
### Mechanical

|            |                                                           |
|------------|-----------------------------------------------------------|
| Structure  | Aluminum-magnesium alloy chassis, fan cooling, SGCC frame |
| Color      | Granite gray + Graphite black                             |
| Mounting   | Desktop mounting with anti-vibration rubber pads          |
| Dimension  | 256.4*168*86.5mm(W*H*D)                                   |
| Net weight | 3.25KG                                                    |

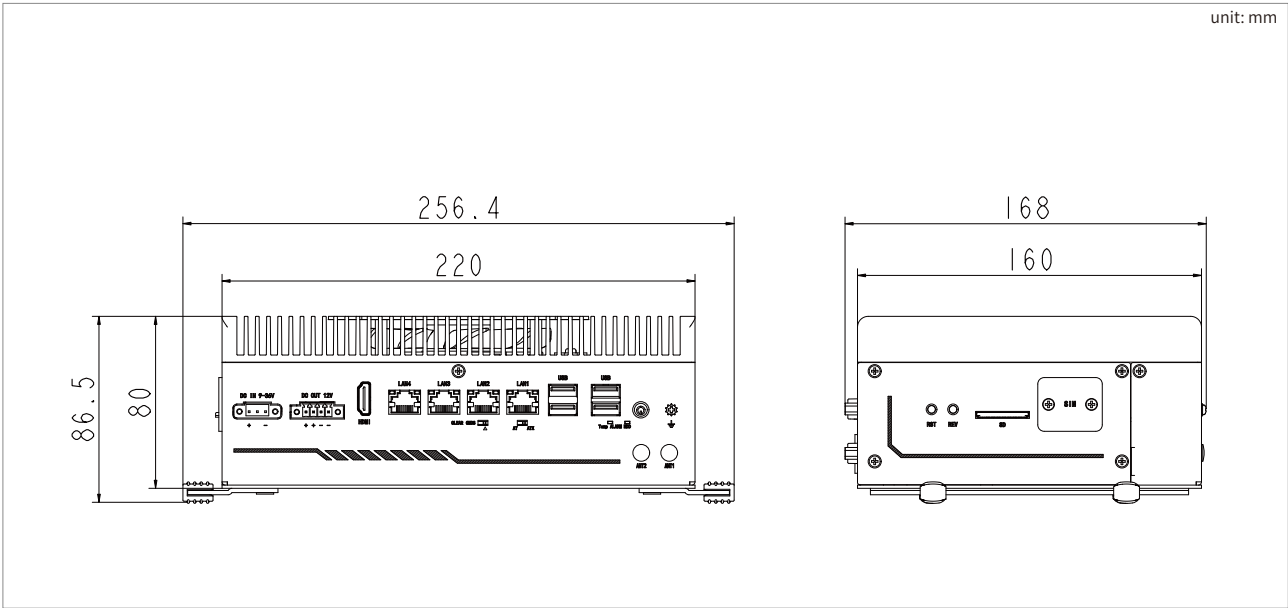
### Environmental

|                    |                                                                                             |
|--------------------|---------------------------------------------------------------------------------------------|
| Operating Temp     | -20°C~60°C, with air flow                                                                   |
| StorageTemp        | -40°C~85°C                                                                                  |
| Storage Humidity   | 10~90%@40°C, No-condensation                                                                |
| Vibration          | 5 grms/5~500Hz/random/during operation(SSD);<br>1 grms/5~500Hz/random/during operation(HDD) |
| Shock              | 50g peak acceleration(11ms duration)(SSD);<br>20g peak acceleration(11ms duration)(HDD)     |
| Certification/ EMC | CE/FCC Class A                                                                              |

## I/O View



## Dimensions



## Ordering Information

| Model          | Core                            | Specifications                                                                                                                                                                                                                                             |
|----------------|---------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| BRAV-7131/S001 | Jetson AGX Orin 32GB, 64GB eMMC | 1*HDMI, 5*RJ45, 2*USB3.2, 2*USB2.0, 2*Iso. RS232/422, 2*RS232, 2*Iso. CAN, 1*16-bit Iso. DIO, 1*SYNC IO, 1*Line out, 1*Mini PCIE w/SIM, 1*M.2 B-Key w/SIM,1*M.2 E-key, 1*M.2 M-Key, 1*Micro SD, 1*I-port, Optional 1*2.5"SATA Bay, DC-IN 9~36V, DC-OUT 12V |
| BRAV-7131/S002 | Jetson AGX Orin 64GB, 64GB eMMC |                                                                                                                                                                                                                                                            |
| PA-120DC19     |                                 | AC/DCpower adapter, DC19V@6.32A 120W                                                                                                                                                                                                                       |
| PA-220DC24     |                                 | AC/DCpower adapter, DC24V@9.17A 220W(When DC-OUT 12V is used.)                                                                                                                                                                                             |



# BRAV-7201

Intel Skylake-U/Kabylake-U CPU, 5\*LAN, 6\*USB, 6\*COM, support dual 4K display, 8+16-bit Iso DIO,iVpro tech, DC 9~30V, CPU LED Temp Display.

## Key Specification

- Aluminium case, fanless box air cooling design
- Intel Skylake-U/Kabylake-U CPU
- 2\*DDR4 2133MHz SODIMM RAM, max 32GB
- 1\*HDMI and 1\*DP, support dual 4K display port
- 5\*Gig LAN, 4\*USB3.0, 3\*USB2.0(1 internal)
- 6\*COM, 16-bit Iso DIO, Audio out & Mic
- 1\*Mini PCIe(PCle+USB)full size
- 1\*mSATA, 1\*2.5" SATA Shock Absorber drive bay
- Support iVpro and optional support TPM 2.0 encryption
- DC 9~30Vwide range power supply input, overcurrent, overvoltage, short circuit and reverse connection protection



## Product Overview

BRAV-7201 is a new industrial computer design that comes with aluminum profile case and fanless box. Equipped with Intel Skylake-U / Kabylake-U processor, BRAV-7201 supports iVpro technology and optional support on TPM2.0 hardware encryption technology, with high reliability of 9-30V wide range voltage power supply, which are widely used in the artificial intelligence, machine vision and robotics industries.

## Product Parameters

### System

|                     |                                                                                                                                                                                                                                                                                        |
|---------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CPU                 | 6th gen Intel Skylake-U Celeron 3855U; Core-U: I3-6100U ; I5-6200U; I7-6500U 7th gen Intel Kabylake-U Celeron 3865U; Core-U: I3-7100U ; I5-7200U; I7-7500U                                                                                                                             |
| RAM                 | 2*260-Pin SODIMM, dual DDR4 2133MHz, max 32GB                                                                                                                                                                                                                                          |
| Expansion           | 1* full size Mini PCIe with PCIe X1+USB signal SIM slot;                                                                                                                                                                                                                               |
| Graphics            | CPU integrated Intel Gen. 9th HD Graphics, HEVC/H265 HW HD codec, HDMI max res. 3940*2160@30Hz, DP max res. 4096*2160@60Hz                                                                                                                                                             |
| Audio               | Optional support Realtek ALC662VD HD audio, support 5.1 soundtrack                                                                                                                                                                                                                     |
| LAN                 | 2*Intel I210AT, 2*Intel I211AT(optional I210AT)Gig. Ethernet, 10/100/1000Mbps self-adaptive; 1*Intel I219LM support vPro tech                                                                                                                                                          |
| Storage             | 1*2.5" shock absorber drive bay, SATA3 6.0Gbps HDD/SDD; 1*mSATA full size, support AHCI mode                                                                                                                                                                                           |
| DIO                 | 8-bit TTL programmable input/output, 8-bit 2.5KV input opto-isolater (H:5-24V, L:0-1.5V), 8-bit 2.5KV output opto-isolater(100mA)                                                                                                                                                      |
| I/O port            | 1*HDMI and 1*DP, 5*RJ45 Gig-LAN , 4*USB3.0 ,2*USB2.0 ,1*USB2.0 internal, 2*5Pin Phoenix terminal (8-bit DIO), 1*10pin Phoenix terminal (8-bit Iso DIO), 1*10pin Phoenix terminal (8-bit Iso DO), 2*RS232/422/485 DB9 male connector, 4*RS232 DB9 male connector, 1*Audio-out and 1*MIC |
| LED                 | 1*Power LED indicator, 1*HDD LED indicator, 3*CPU TEMP grade LED indicator (Red as warning, Yellow as high temp, Green as norm temp)                                                                                                                                                   |
| Control Switch      | 1*Power button, 1*2pin terminal switch signal, 1*AT/ATX switch                                                                                                                                                                                                                         |
| Pwr Supply          | DC IN 9~30V, 3pin terminal, with reverse connection, short circuit, over voltage and over current protection<br>Cosumption: 24W (I3-6100U CPU 4G DDR4)                                                                                                                                 |
| OS                  | Linux Fedora Ubuntu                                                                                                                                                                                                                                                                    |
| Watchdog Timer(WDT) | Programmable timeout interruption period or system reset from , 1 to 255 secs                                                                                                                                                                                                          |

### Cambricon AI module (optional)

|                               |                                                                                                                                                       |
|-------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| Model                         | MLU220-M.2                                                                                                                                            |
| RAM                           | 4GB, LPDDR4x 64bit, 3200Mhz                                                                                                                           |
| AI computing                  | 8TOPS (INT8)<br>Support H.264 , HEVC (H.265) , VP8, VP9<br>Coding performance:support 16X 1080P @30fps<br>Decoding peformance: support 8X 1080P@30fps |
| Codec capability              |                                                                                                                                                       |
| Picture decoding              | JPEG, max res. 8192 x 8192, Decoding performance:820 fps@FHD, Coding performance:800 fps@FHD                                                          |
| Port                          | M.2 2280, B+M key (PCIe3.0 X2)                                                                                                                        |
| Pwr supply & heat dissipation | 8.25W / Passive cooling                                                                                                                               |

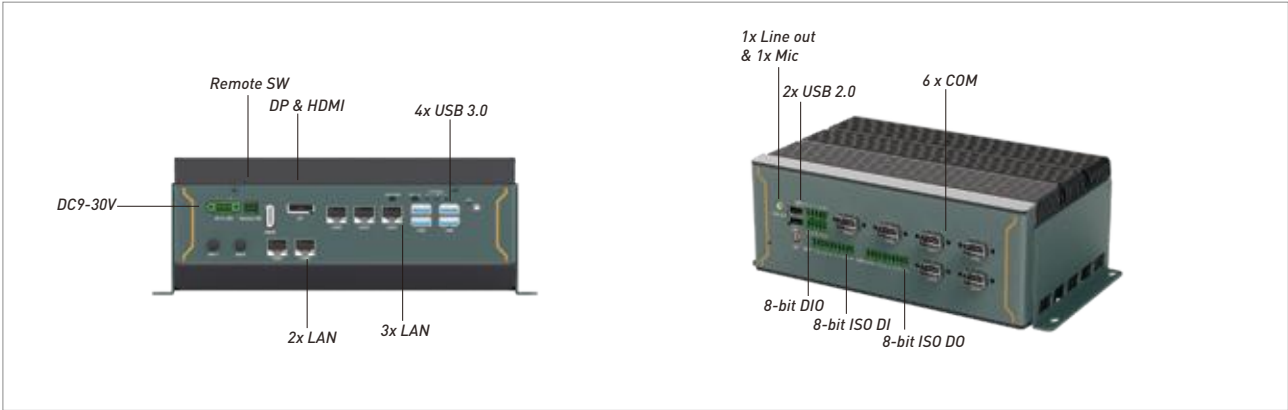
### Mechanical

|              |                                                               |
|--------------|---------------------------------------------------------------|
| Structure    | Aluminum, heat dissipation case, SGCC coated on panel surface |
| Color        | Graphite black + granite gray                                 |
| Installation | Desktop Installation                                          |
| Dimension    | (W*H*D):225*144.3*87.5mm                                      |
| Net weight   | 2.2kg                                                         |

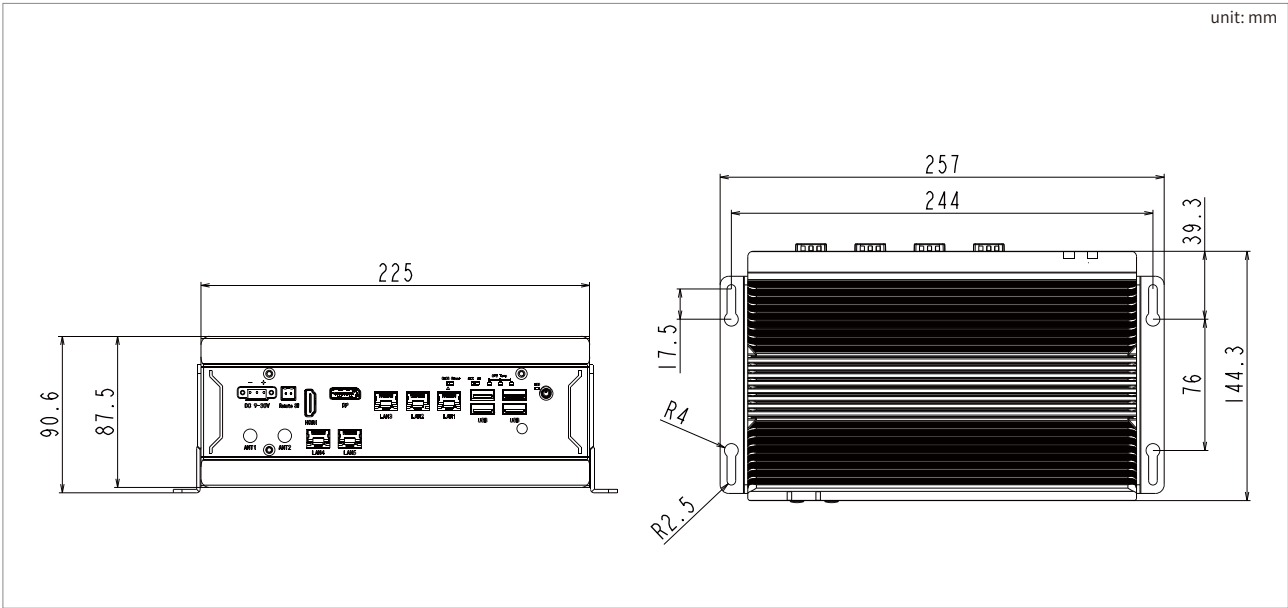
### Environmental

|                    |                                                                                                                    |
|--------------------|--------------------------------------------------------------------------------------------------------------------|
| Operating Temp     | -25°C~60°C – fanless, with wide temp SSD, with air flow<br>-10°C~50°C – fanless, with norm temp HDD, with air flow |
| Storage Temp       | - 40°C~85°C                                                                                                        |
| Storage Humidity   | 10~90%@40°C, No-condensation                                                                                       |
| Vibration          | 5 grms/5~500Hz/random/during operation(SSD);<br>1 grms/5~500Hz/random/during operation(HDD)                        |
| Shock              | 50g peak acceleration(duration;11ms)(SSD);<br>20g peak acceleration(duration; 11ms)(HDD)                           |
| Certification /EMC | CE/FCC Class A                                                                                                     |

## I/O View



## Dimensions



## Ordering Information

| Model          | Processor                                                                          | RAM                 | Display          | I/O Port                                   | DIO                                | Audio                 | Expansion    | Storage                         | Power Supply |
|----------------|------------------------------------------------------------------------------------|---------------------|------------------|--------------------------------------------|------------------------------------|-----------------------|--------------|---------------------------------|--------------|
| BRAV-7201/S001 | Intel I3-6100U/I3-7100U                                                            | 2x DDR4<br>MAX 32GB | 1x HDMI<br>1x DP | 5x LAN<br>4x USB3.0<br>3x USB2.0<br>6x COM | 8-bit TTL signal<br>16-bit Iso DIO | 1x LINE OUT<br>1x MIC | 1x Mini PCIe | 1x mSATA<br>1x "2.5" driver bay | DC 9~30V     |
| BRAV-7201/S002 | Intel I5-6200U/I5-7200U                                                            |                     |                  |                                            |                                    |                       |              |                                 |              |
| BRAV-7201/S003 | Intel I7-6500U/I7-7500U                                                            |                     |                  |                                            |                                    |                       |              |                                 |              |
| BRAV-7201/S004 | Intel 3855U/3865U                                                                  |                     |                  |                                            |                                    |                       |              |                                 |              |
| MLU220-M.2     | Cambricon AI Accelarator module, M.2 2280 M+B key(PCIeX2), LPDDR4 4GB, 8TOPS(INT8) |                     |                  |                                            |                                    |                       |              |                                 |              |
| PA-60DC12      | AC/DC power adaptor, DC12V@5A 60W                                                  |                     |                  |                                            |                                    |                       |              |                                 |              |



# BRAV-7220

Intel® Tiger lake UP3 CPU, 3\*LAN, 5\*USB, 2\*COM, 1\*DIO, HDMI+DP, 2\*M.2 support 4G LTE/5G NR, 2\*M.2 support AI module

## Key Specification

- Intel® Tiger lake U Soc CPU
- Aluminum-magnesium alloy, fanless passive heat dissipation design
- Intel® I225V chip, 3\*2.5G LAN
- 1\*DP+1\*HDMI for 8K+4K dual display, 1\*MIPI CSI (Opt.)
- 2\*M.2 B-Key support 4G LTE or 5G NR wireless routes
- 2\*M.2 M-key is PCIe X2 signal, supports nvme or edge AI module
- 1\*mSATA and 1\*easy pluggable 2.5" SATA dual storage disks
- 2\*COM, 2\*USB3.2 + 3\*USB2.0, 1\*DIO
- DC9~36V wide power input, with short circuit, over voltage and over current protection
- DC 12V/2A radar power supply output



## Product Overview

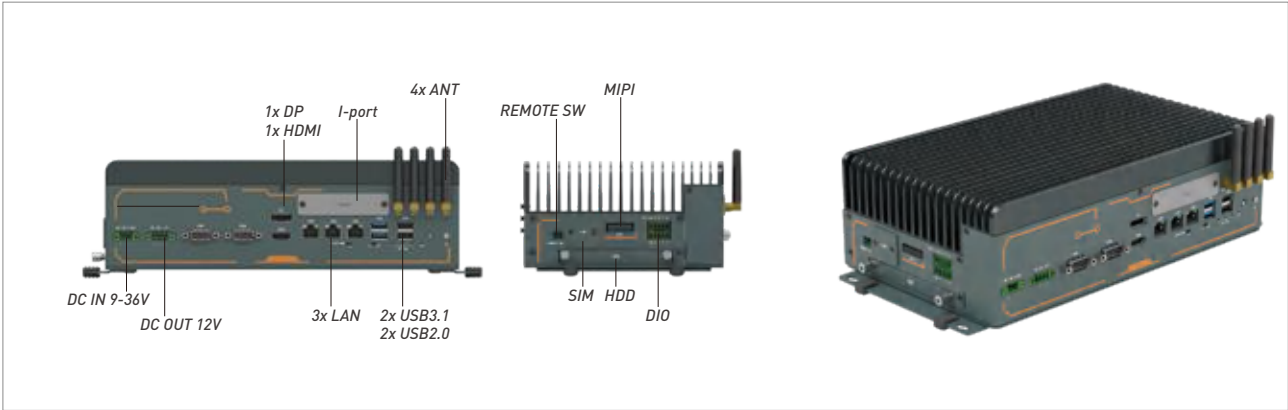
BRAV-7220 is an AI MEC computing system with a high energy efficiency ratio, powered by the Intel® Tiger Lake UP3 ULT SoC series CPU. It features a 2.5G network port and 5G NR wireless network, supports dual M.2 edge AI calculation modules, and has fanless heat dissipation and DC 9-36V wide power input. It can enable multilateral access and can be used as MEC edge computing for intelligent transportation and machine vision detection.

## Product Parameters

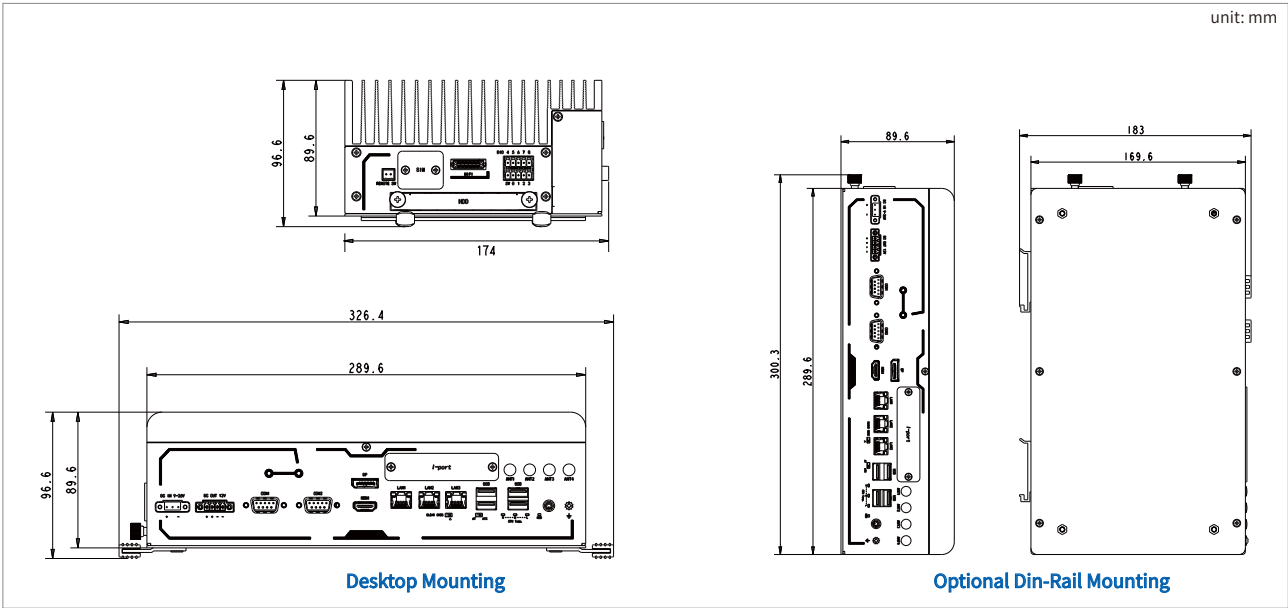
### System

|                |                                                                                                                                                  |                    |                                                                                                                           |
|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|---------------------------------------------------------------------------------------------------------------------------|
| Processor      | Intel® Tigerlake U Celeron/Core I3/I5/I7 CPU, ULT SoC, TDP 12W/15W/28W                                                                           | Expansion          | 1*M.2 3042 B-Key(PCle X1/USB2.0)+SIM, 4G LTE;<br>1*M.2 3052 B-Key(PCle X1/USB2.0)+SIM, 4G LTE or 5G NR;                   |
| RAM            | 2*DDR4 SO-DIMM, 3200MHz, 64GB max.                                                                                                               |                    | 1*M.2 2280 M-Key(PCle4.0X2), support NVMe/AI module;                                                                      |
| Graphics       | Intel UHD or Iris® X*Graphics , Supports Intel DL boost, DirectX12.1, OpenGL 4.6 and OpenCL 3.0, HDMI 2.0: 4096x2304@60Hz, DP 1.4:7680x4320@60Hz |                    | 1*M.2 2280 M-Key(PCle3.0X2), support NVMe/AI module                                                                       |
| LAN            | 3*Intel I226V, 10M-2.5G, support iAMT 13.0, I5/I7 CPU support iVpro                                                                              | Power Requirement  | DC IN 9~36V, with short circuit, over voltage and over current protection;<br>TDP:38.4W (I5-1135G7 CPU/16G DDR4/256G SSD) |
| USB            | 2*USB3.2, 2*USB2.0, 1*USB2.0(built-in)                                                                                                           | Mechanical         |                                                                                                                           |
| Display        | 1*HDMI+1*DP                                                                                                                                      | Structure          | Aluminum-magnesium alloy, SGCC frame                                                                                      |
| COM/others     | 2*RS232/422/485(DB9); optional1*MIPI CSI 60pin high-speed port (Opt.);                                                                           | Color              | Granite gray + Graphite black                                                                                             |
| DIO            | 8bit DIO, TTL, 2.5KV isolated input/output                                                                                                       | Mounting           | Desktop Mounting with shock-absorbing and anti-skid foot pad, optional Din-Rail installation                              |
| Storage        | 1*2.5"SATA3, easy plug design,6Gbps; 1*mSATA(SATA3) 2*M.2 2280 M-Key(PCleX2),support NVMe                                                        | Dimension          | 326.4*174*96.6mm(W*H*D)                                                                                                   |
| LED            | 1*PowerLED, 1*HDD LED, 3*CPUTemp LED (Red is warning , Yellow is high, Green is normal)                                                          | Net weight         | 4.67KG                                                                                                                    |
| Control Switch | 1*Power SW, 1*Remote SW, 1*AT/ATX                                                                                                                | Environmental      |                                                                                                                           |
| Watchdog Timer | Watchdog timeout programmable via software 1 to 255 second                                                                                       | Operating Temp     | -20°C~70°C, with air flow(CPU, non. VPU)<br>-20°C~60°C, with air flow(CPU+2*VPU)                                          |
| OS             | Windows 10 64 bit, Windows 11 64 bit, SUSE, Linux, Wind River                                                                                    | StorageTemp        | - 40°C~85°C                                                                                                               |
|                |                                                                                                                                                  | Storage Humidity   | 10~95%@40°C, No-condensation                                                                                              |
|                |                                                                                                                                                  | Vibration          | 5 grms/5~500Hz/random/during operation(SSD);<br>1 grms/5~500Hz/random/during operation(HDD)                               |
|                |                                                                                                                                                  | Shock              | 50g peak acceleration(11ms duration)(SSD);<br>20g peak acceleration(11ms duration)(HDD)                                   |
|                |                                                                                                                                                  | Certification/ EMC | CE/FCC Class A                                                                                                            |

## I/O View



## Dimensions



## Ordering Information

| Model          | Processor             | Specifications                                                                                                                                                                     |
|----------------|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| BRAV-7220/S001 | Intel® Core I3-1115G4 | 3*2.5G LAN, 2*USB3.2, 3*USB2.0, 2*COM,1*8bit Isolated DIO, 1*HDMI, 1*DP, optional1*MIPI CSI, 2*M.2 M-Key, 2*M.2 B-Key (+2*SIM) , 1*mSATA, 1*2.5" SATA bay, DC-IN 9~36V, DC-OUT 12V |
| BRAV-7220/S002 | Intel® Core I5-1135G7 |                                                                                                                                                                                    |
| BRAV-7220/S003 | Intel® Core I7-1165G7 |                                                                                                                                                                                    |
| BRAV-7220/S004 | Intel® Celeron 6305E  |                                                                                                                                                                                    |
| MLU220-M.2     |                       | Cambrian edge AI module, M.2 2280 M+B key(PCleX2), LPDDR4 4GB, 8TOPS(INT8)                                                                                                         |
| PA-120DC19     |                       | AC/DCpower adapter, DC19V@6.32A 120W                                                                                                                                               |
| PA-60DC12      |                       | AC/DCpower adapter, DC12V@5A 60W                                                                                                                                                   |

# BRAV-7302

Intel® Skylake-S/Kabylake-S Core I3/I5/I7 CPU, 3/7\*LAN, 4/6\*USB3.0, MXM3.1 GPU, 6\*4K display, iVpro support, DC 6~48V wide power input.

## Key Specification

- CPU and GPU cooling fan, independent air duct design.
- Intel® Kabylake-S/Skylake-S Core I3/I5/I7 CPU
- 2\*DDR4 2400/2133MHz SODIMM RAM, max 32GB
- MXM3.1 NVIDIA/AMD GPU module
- Intel 1\*DP+1\*HDMI+1\*VGA, GPU 3\*DP+1\*HDMI
- 3/7\*LAN, 4/6\*USB3.0, 3\*USB2.0, 4\*COM,16\*DIO, Audio
- 2\*Mini PCIe(PCle+USB),1\*M.2 2242 B-Key
- 1\*mSATA, 1/2\*2.5" SATA3 drive bay, support RAID0,
- Support Intel iVpro and optional support TPM2.0 secure encryption
- DC 6~48V wide power input, short-circuit, overvoltage, overcurrent and undervoltage protection



## Product Overview

BRAV-7302 is a high-performance GPU box computer with dual independent air duct heat dissipation design for CPU and GPU. It is equipped with Intel®Skylake-S/Kabylake-S full series range power processors, CPU+GPU dual processors, high performance, multiple network ports, multiple displays and multiple IO functions, suitable for applications in video security, machine vision, intelligent AI and other industries.

## Product Parameters

### System

|           |                                                                                                                                                                                                                                                                                        |
|-----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CPU       | Intel®Skylake-S / Intel®Kabylake-S Celeron/Pentium/Core I3/I5/I7 CPU, LGA 1151 socket, TDP35W/54W/65W/91W with active cooling fan                                                                                                                                                      |
| RAM       | 2*260-Pin SODIMM, dual port DDR4 2400/2133MHz, max 32GB                                                                                                                                                                                                                                |
| Expansion | 1*full size Mini PCIeX1+USB with SIM slot, 1*M.2 B-key with SATA3+USB with SIM slot, 1*full size mSATA (SATA3+USB), 1* half size Mini PCIe with PCIeX1 and USB, 1* JHC-Express-02 EIO Express bus (PCIe,USB,LPC,SMBus,PS2)                                                             |
| Graphics  | Intel Gen. 9 HD Graphics, HEVC/H265 HW HD codec, Integrated graphics card DP/HDMI/VGA dual 4K, 1x MXM3.1 support NVIDIA Gforce GTX/AMD RX Series 120W pwr consumption GPU, 3* DP & 1* HDMI 4K                                                                                          |
| Audio     | Optional Support Realtek ALC662VD, Audio out and MIC                                                                                                                                                                                                                                   |
| LAN       | 2/6*Intel I210AT PCIe Gig. Ethernet, 10/100/1000Mbps self-adaptive, 1*Intel I219LM support vPro tech                                                                                                                                                                                   |
| Storage   | 2*2.5"HDD SATA3 shock absorber drive bay, support RAID0,1; 1*mSATA full size; 1*M.2 B-key                                                                                                                                                                                              |
| DIO       | 16-bit TTL programmable input/output;                                                                                                                                                                                                                                                  |
| I/O Port  | 3/7*RJ45 Gig-LAN<br>4/6*USB3.0; 2*USB2.0 ,1*USB2.0 internal<br>16-bit DIO 2*10-pin terminal;<br>2*RS232/422/485 DB9 male connector, 2*RS232 DB9 male connector<br>1*Audio-out and 1*MIC 3.5 audio port<br>Discrete GPU 3*DP+1*HDMI;<br>CPU Integrated graphic card 1*HDMI +1*DP+1*VGA; |
| LED       | 1*Power LED indicator, 1*HDD LED indicator, 3*CPU TEMP grade LED indicator (Red as warning, Yellow as high temp, Green as norm temp)                                                                                                                                                   |

|                   |                                                                                |
|-------------------|--------------------------------------------------------------------------------|
| Control Switch    | 1*power button, 1*reset switch;1*2pin socket terminal signal, 1*AT/ATX switch  |
| Power Requirement | DC 6~48V input, 5-pin socket(front panel), Consumption: 144W (35W CPU+78W GPU) |
| OS                | Windows 7, Windows 10, Linux Fedora Ubuntu                                     |
| Watchdog Timer    | Programmable timeout interruption period or system reset from 1 to 255 secs    |

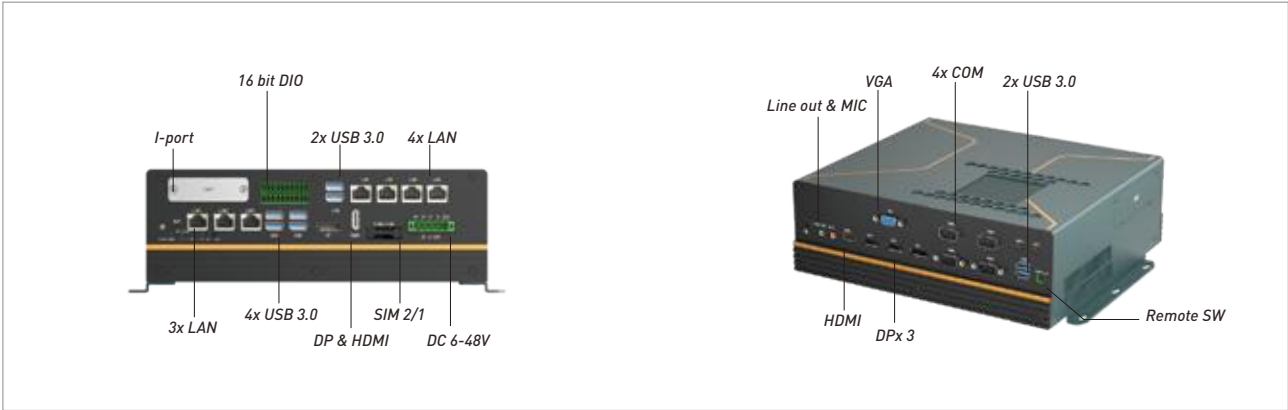
### Mechanical

|                     |                                                                            |
|---------------------|----------------------------------------------------------------------------|
| Structure           | Aluminum profile panel, SGCC chasis, Aluminum plate, on upper & rear panel |
| Color               | Black + Granite Grey                                                       |
| Installation Method | Desktop Installation                                                       |
| Dimension           | (W*H*D):255*222*84.1mm                                                     |
| Net weight          | 4.62kg                                                                     |

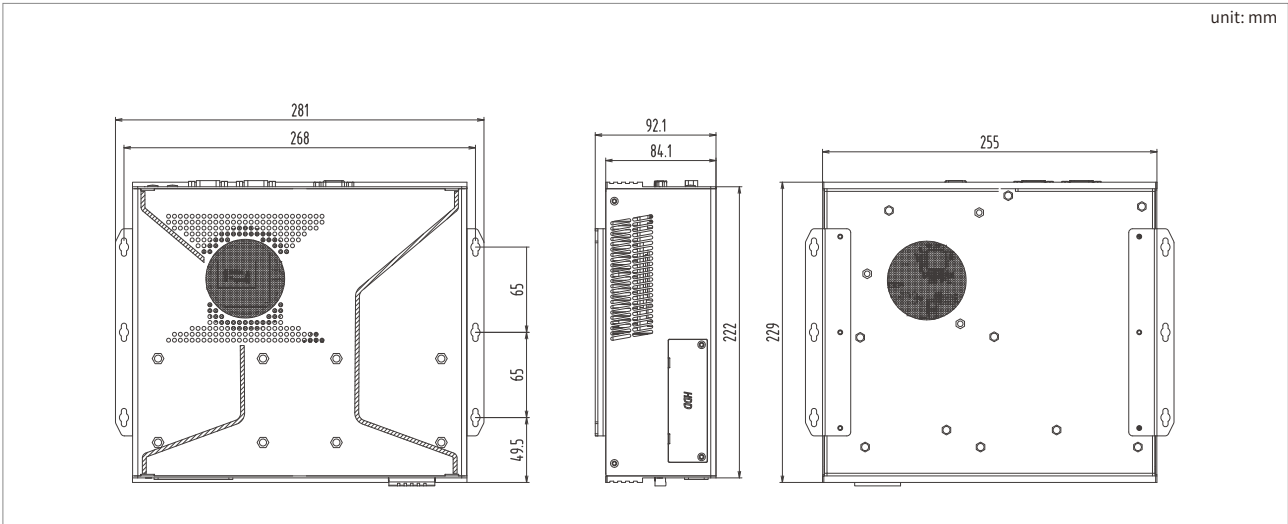
### Environmental

|                    |                                                                                             |
|--------------------|---------------------------------------------------------------------------------------------|
| Operating temp     | -25°C~50°C – 65W CPU+78W GPU<br>-25°C ~40°C – 91W CPU+120W GPU                              |
| Storage temp       | - 40°C~85°C                                                                                 |
| Storage humidity   | 10~90%@40°C, No-condensation                                                                |
| Vibration          | 5 grms/5~500Hz/random/during operation(SSD);<br>1 grms/5~500Hz/random/during operation(HDD) |
| Shock              | 50g peak acceleration(duration;11ms)(SSD);<br>20g peak acceleration(duration;11ms)(HDD)     |
| Certification /EMC | CE/FCC Class A                                                                              |

## I/O View



## Dimensions View



## Ordering Information

| Model             | Processor                                                                       | RAM                 | Discrete graphics card      | Integrated graphics card   | I/O Port                                | DIO                      | Audio                     | Expansion                    | Storage                      | Power Supply |
|-------------------|---------------------------------------------------------------------------------|---------------------|-----------------------------|----------------------------|-----------------------------------------|--------------------------|---------------------------|------------------------------|------------------------------|--------------|
| BRAV-7302/S001    | Intel® Skylake-S/Kabylake-S LGA1151 CPU                                         | 2x DDR4<br>MAX 32GB | MXM 3.1<br>3x DP<br>1x HDMI | 1x HDMI<br>1x DP<br>1x VGA | 3x LAN/4x COM<br>4x USB3.0<br>3x USB2.0 | 16-bit TTL<br>signal DIO | 1x LINE OUT<br><br>1x MIC | 2x Mini PCIe<br>1x M.2 B-Key | 1x mSATA<br>2x"2.5"drive bay | DC 6~48V     |
| BRAV-7302/S002    | Intel® Skylake-S/Kabylake-S LGA1151 CPU                                         |                     |                             |                            | 7x LAN/4x COM<br>6x USB3.0<br>3x USB2.0 |                          |                           | 1x Mini PCIe<br>1x M.2 B-Key | 1x mSATA<br>1x"2.5"drive bay |              |
| NVIDIA GT 1030-2G | MXM3.1 Type A, NVIDIA GT 1030,GDDR5 2GB,64bit,384 CUDA Cores, with cooler       |                     |                             |                            |                                         |                          |                           |                              |                              |              |
| NVIDIA GTX 1050   | MXM3.1 Type A, NVIDIA GTX 1050,GDDR5 2GB,128bit, 768 CUDA Cores, with cooler    |                     |                             |                            |                                         |                          |                           |                              |                              |              |
| NVIDIA GTX 1050TI | MXM3.1 Type A, NVIDIA GTX 1050TI, GDDR5 4GB,128bit, 768 CUDA Cores, with cooler |                     |                             |                            |                                         |                          |                           |                              |                              |              |
| NVIDIA GTX 1060M  | MXM3.1 Type B, NVIDIA GTX 1060M, GDDR5 6GB,192bit,1280 CUDA Cores, with cooler  |                     |                             |                            |                                         |                          |                           |                              |                              |              |
| NVIDIA GTX 1070M  | MXM3.1 Type B, NVIDIA GTX 1070M, GDDR5 8GB,256bit,2048 CUDA Cores, with cooler  |                     |                             |                            |                                         |                          |                           |                              |                              |              |
| NVIDIA GTX 1650   | MXM3.1 Type A, NVIDIA GTX 1650, GDDR5 4GB,128bit, 896 CUDA Cores, with cooler   |                     |                             |                            |                                         |                          |                           |                              |                              |              |
| NVIDIA GTX 1660S  | MXM3.1 Type B, NVIDIA GTX 1660S, GDDR6 6GB,192bit,1408 CUDA Cores, with cooler  |                     |                             |                            |                                         |                          |                           |                              |                              |              |
| MLU220-MXM        | MXM3.1 Type A, Cambricon MLU-220, LPDDR4 8GB, 64bit,16TOPS(INT8), with cooler   |                     |                             |                            |                                         |                          |                           |                              |                              |              |
| PA-120DC19        | AC/DC power adapter, DC19V/6.32A,120W                                           |                     |                             |                            |                                         |                          |                           |                              |                              |              |
| PA-220DC24        | AC/DC power adapter, DC24V@9.17A ,220W                                          |                     |                             |                            |                                         |                          |                           |                              |                              |              |
| PA-300DC24        | AC/DC power adapter, DC24V@12.5A ,300W                                          |                     |                             |                            |                                         |                          |                           |                              |                              |              |
| NDR-480DC24       | AC/DC power adapter, DC24V@20A ,90-264ACV/127-370DCV input, DC 24V output, 480W |                     |                             |                            |                                         |                          |                           |                              |                              |              |



# BRAV-7501

Intel® Coffee Lake LGA1151 CPU, 3\*LAN, 4\*USB3.1, 1\*HDMI, 2\*DP, 3\*4K Displays, 4\*PCIe slots, 2/4\*SATA3, ATX 600W Power Supply.

## Key Specification

- Intel® Xeon®/ 8th/9th Gen Core™ i7/i5/i3 processor
- Intel® Q370/C246 Chipset
- 4\*DDR4 2400/2666MHz DIMM RAM, max 128GB
- support 2\*DP, 1\*HDMI, 3 independent displays
- 3\*LAN, 4\*USB3.1, 7\*USB2.0, 2\*COM, 8-bit DIO
- 1\*PCIeX16 or 2\*PCIeX8+2\*PCIeX4 expansions
- 1\*Mini PCIe, with SIM slot, support 4G/WIFI/GPS/GSM/BT
- 2/4\*SATA3, 1\*M.2 2280 M-Key, support NVMe
- Optional support TPM2.0 secure encryption, AMT12.0, Intel® iVpro tech
- ATX 600W Power supply



## Product Overview

BRAV-7501 is a high-performance Embedded Box Computer with expansions. It is equipped with Intel® Coffee Lake series processor, C246/Q370 chipset, workstation level performance. It is a complete equipment with rich expansion flexibility and industrial standard product design suitable for industrial automation, AI edge computing system, small intelligent workstations, multimedia service systems, visual control and so on

## Product Parameters

### System

|                |                                                                                                                                                                                              |
|----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CPU            | Intel® C246/Intel® Q370 Chipset, Intel Xeon E-2124G/E-2176G, Core i3/i5/i7 CPU;Pentoum G4930 / G5400                                                                                         |
| RAM            | 4*288-Pin DIMM, dual port DDR4 2666/2400MHz, max 128GB                                                                                                                                       |
| Expansion      | 1*full size Mini PCIeX1+USB with SIM slot,<br>2*PCIe X16 slot (1*PCIe X16 or 2*PCIe X8) support up tp NVIDIA 2080Ti series reference graphic card<br>2*PCIe X8 slot (Gen 3, 2*PCIeX4 signal) |
| Graphics       | Intel UHD Graphics, Supports DirectX11.1, OpenGL 5.0 and OpenCL 2.1<br>DP max res. 4096*2304@60Hz, HDMI max res. 3840*2160@30Hz, support 3 independent display                               |
| Audio          | Optional Support Realtek ALC662VD audio, Audio out and MIC, support 5.1 audio track                                                                                                          |
| LAN            | 2*Intel I210AT PCIe GbE, 10/100/1000Mbps self-addaptive;1*Intel I219LM PCIe GbE, support iVpro tech                                                                                          |
| Storage        | 2*3.5" SATA3 (S001) / 4*2.5" SATA3 swappable hard disk bay, support Raid 0/1/5/10 (S002)<br>1*M.2 2280 M-key (PCIe X4), support NVMe storage                                                 |
| DIO            | 8-bit DIO, TTL signal, programmable input and output                                                                                                                                         |
| I/O Port       | 3*RJ45 Gig-LAN; 2*DP+1*HDMI<br>4*USB3.1; 6*USB2.0; 1*USB2.0 (internal);<br>1*8-bit DIO (DB9), 2*RS232/422/485 (DB9);<br>1*Audio-out and 1*MIC (3.5audio port);                               |
| LED            | 1*Power indicator, 4* HDD status indicator                                                                                                                                                   |
| Control Switch | 1*Power SW                                                                                                                                                                                   |

|                   |                                                                                                                                                                                      |
|-------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Power Requirement | 24-pin ATX/8-pin ATX 12V, 600W power                                                                                                                                                 |
| OS                | Windows 10 Enterprise & IOT Enterprise (64 bit)(CFL-R)<br>Windows Server 2016 (Intel® Xeon® E) Ubuntu, SuSe, Redhat Enterprise 1,2 (Kernel 4.14) (CFL-R) Wind River VxWorks 7(CFL-R) |
| Watchdog Timer    | Programmable timeout interruption period or system reset from 1 to 255 secs                                                                                                          |

### Mechanical

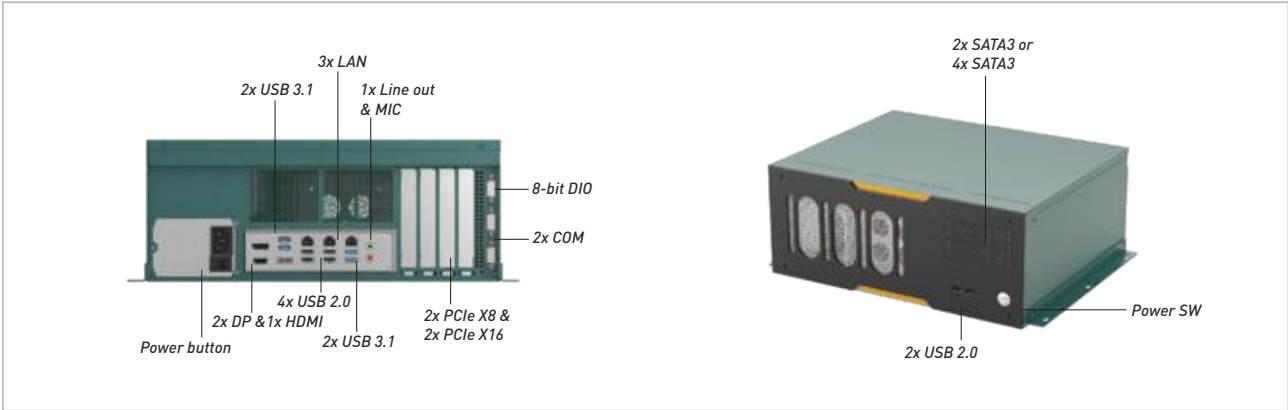
|                     |                                                |
|---------------------|------------------------------------------------|
| Structure           | Aluminum-magnesium alloy, SGCC coated box      |
| Color               | Black + Granite Grey                           |
| Installation Method | Desktop installation / wall mount installation |
| Dimension           | (W*H*D):150*309*375mm                          |
| Net weight          | 8.14kg                                         |

### Environmental

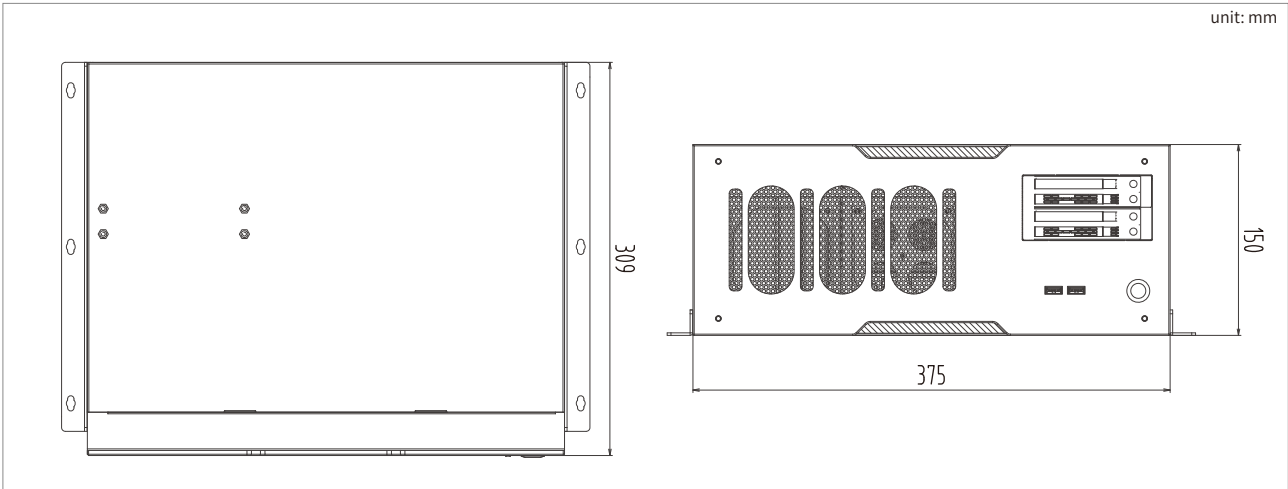
|                  |                                                                                             |
|------------------|---------------------------------------------------------------------------------------------|
| Operating Temp   | -25°C~50°C , SSD , with air flow                                                            |
| Storage Temp     | - 40°C~85°C                                                                                 |
| Storage Humidity | 10~90%@40°C, No-condensation                                                                |
| Vibration        | 5 grms/5~500Hz/random/during operation(SSD);<br>1 grms/5~500Hz/random/during operation(HDD) |
| Shock            | 50g peak acceleration(duration;11ms)(SSD);<br>20g peak acceleration(duration;11ms)(HDD)     |

|                    |                |
|--------------------|----------------|
| Certification /EMC | CE/FCC Class A |
|--------------------|----------------|

## I/O View



## Dimensions



## Ordering Information

| Model                      | Processor                                                                                                                            | RAM                  | Display          | I/O Port                                | DIO       | Audio                 | Expansion                                    | Storage                     | Power Supply      |
|----------------------------|--------------------------------------------------------------------------------------------------------------------------------------|----------------------|------------------|-----------------------------------------|-----------|-----------------------|----------------------------------------------|-----------------------------|-------------------|
| BRAV-7501/S001             | Intel® Coffeelake LGA1151 CPU Q370 PCH                                                                                               | 4x DDR4<br>MAX 128GB | 1x HDMI<br>2x DP | 3x LAN/2x COM<br>4x USB3.1<br>7x USB2.0 | 8-bit DIO | 1x LINE OUT<br>1x MIC | 1x Mini PCIe<br>1x PCIeX16<br>(or 2x PCIeX8) | 2x "3.5"SATA<br>1x M.2 2280 | ATX 600W<br>Power |
| BRAV-7501/S002             | Intel® Coffeelake LGA1151 CPU C246 PCH                                                                                               |                      | 2x PCIeX4        | 4x "2.5"SATA<br>1x M.2 2280             |           |                       |                                              |                             |                   |
| Recommendedn Graphics card | Support up to NVIDIA 2080Ti reference graphics card series (for non reference graphics card, card length need to be less than 245mm) |                      |                  |                                         |           |                       |                                              |                             |                   |

## CPU Support

| Series  | Intel® Xeon® |       | Intel® Core™ |       |          |       | Intel® Pentium® |      | Intel® Celeron® |      |
|---------|--------------|-------|--------------|-------|----------|-------|-----------------|------|-----------------|------|
| 9th Gen | E-2278G      | 8C16T | I7-9700      | 8C8T  | I7-9700T | 8C8T  | G5500           | 2C4T | G4950           | 2C2T |
|         | E-2224G      | 8C16T | I5-9500      | 6C6T  | I5-9500T | 6C6T  |                 |      |                 |      |
|         |              |       | I3-9100      | 4C4T  | I3-9100T | 4C4T  |                 |      |                 |      |
| 8th Gen | E-2176G      | 6C12T | I7-8700      | 6C12T | I7-8700T | 6C12T | G5400           | 2C4T | G4930           | 2C2T |
|         | E-2124G      | 4C4T  | I5-8500      | 6C6T  | I5-8500T | 6C6T  |                 |      |                 |      |

# BRAV-7520

Intel® Coffee Lake-R LGA1151 CPU, 3\*LAN,6\*USB3.1,1\*VGA,2\*DP,2\*4K Displays,2\*PCIe slots,2\* swappable SATA3, max support 350W GPU.

## Key Specification

- Intel® Xeon® E or 9th/8th-Gen Core™ i7/i5/i3 processor
- Intel® Q370/C246 Chipset
- Large RAM volume 4\*DDR4 up to 128G ECC/non-ECC
- UHD Dual 4K, 3 independent displays 2\*DP, 1\*VGA
- 3\*Gig-LAN(support iATM) , optional multi channel 10 Gig-SFP
- Multi PCIe standard slots, support multiple high-speed extension modules
- Super storage capacity, 2\*SATA3.0, 1\*M.2 2280 M-Key, support NVMe
- Optional Support TPM2.0 secure encryption,support iAMT12.0, Intel® iVpro tech
- Fanless CPU, AI/GPU modules with efficient air cooling heat dissipation design
- Powerful deep learning ability, support 350W GPU /75W PGPU/AI accelerator card



## Product Overview

BRAV-7520 is a workstation-level edge computing system, equipped with Intel® Coffee Lake-R series processors, C246/Q370 chipset, powerful system performance, complete features, and rich expansion flexibility, industrial control grade product design, a best fit for industrial automation, AI edge computing, small smart workstations, multimedia service systems, high-precision machine vision and other industries.

## Product Parameters

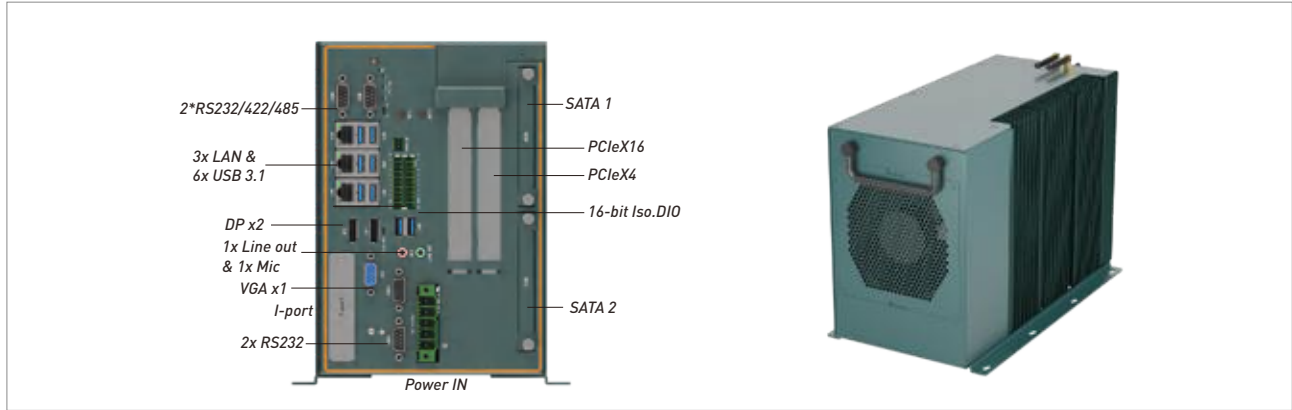
### System

|                |                                                                                                                                                                                                                                                                         |                     |                                                                                                                                                                                      |
|----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CPU            | Intel® Xeon® E or 9th/8th-Gen Core™ i7/i5/i3 LGA1151 processor, chipset Intel® Q370(7520-S001)/ Intel® C246(7520-S002) max 8C16T                                                                                                                                        | Power Requirement   | DC 12V 5-pin Term.<br>Consumption: 324W (I7-8700 CPU 32GB DDR4 single 2080TI)                                                                                                        |
| RAM            | 4*260-Pin SODIMM, dual channel DDR4 2666/2400MHz, max support 128GB                                                                                                                                                                                                     | OS                  | Windows 10 Enterprise & IOT Enterprise (64 bit)(CFL-R)<br>Windows Server 2016 (Intel® Xeon® E) Ubuntu, SuSe, Redhat Enterprise 1,2(Kernel 4.14) (CFL-R) Wind River VxWorks 7 (CFL-R) |
| Expansion      | 1*Mini PCIe with SIM slot; 1*M.2 E-Key support WiFi6/BT5.0<br>1*M.2 B-Key , with SIM slot support 5G; 1*M.2 M-Key(PCIe3.0X4);<br>1*PCIeX16,max support 350W graphics card (length<300mm)<br>1*PCIe X4 (in X16 slot), max support 75W AI accelerator card (length<300mm) | Watchdog Timer      | Programmable timeout interruption or system reset from 1 to 255 secs                                                                                                                 |
| Graphics       | Intel UHD Graphics, Supports DirectX11.1, OpenGL 5.0 / 2.1 or PCIe X16, DP max res. 4096*2304@60Hz, VGA max res.1900*1200@60Hz, support 3 independent displays                                                                                                          | Mechanical          |                                                                                                                                                                                      |
| Audio          | optional support Realtek ALC662VD audio, Audio out& MIC, support 5.1 audio track                                                                                                                                                                                        | Structure           | Aluminum heat dissipation case, SGCC box                                                                                                                                             |
| LAN            | 2*Intel I210AT PCIe GbE, 10/100/1000Mbps self adaptive; 1*Intel I219LM PCIe GbE, support iVpro tech                                                                                                                                                                     | Color               | Black + Granite Grey                                                                                                                                                                 |
| Storage        | 2*2.5" SATA3 swappable hard disk bay, support RAID0/1<br>1*M.2 2280 M-key(PCIe X4), support NVMe storage                                                                                                                                                                | Installation Method | Desktop Installation                                                                                                                                                                 |
| DIO            | 16-bit Iso DIO,8-bit 2.5KV input (H:5-24V, L:0-1.5V), 8-bit 2.5KV output(200mA)                                                                                                                                                                                         | Dimension           | (W*H*D):230*350*160mm                                                                                                                                                                |
| I/O Port       | 3*RJ45 Gig-LAN; 6*USB3.1; 2*USB2.0<br>16-bit Iso DIO, 2*RS232/422/485 , 2*RS232<br>1*Audio-out & 1*MIC; 1*VGA+2*DP                                                                                                                                                      | Net weight          | 7.5kg                                                                                                                                                                                |
| LED            | 1*Power indicator , 1* HDD status indicator                                                                                                                                                                                                                             |                     |                                                                                                                                                                                      |
| Control Switch | 1*Power SW, 1*AT/ATX SW, 1*Clear CMOS SW                                                                                                                                                                                                                                |                     |                                                                                                                                                                                      |

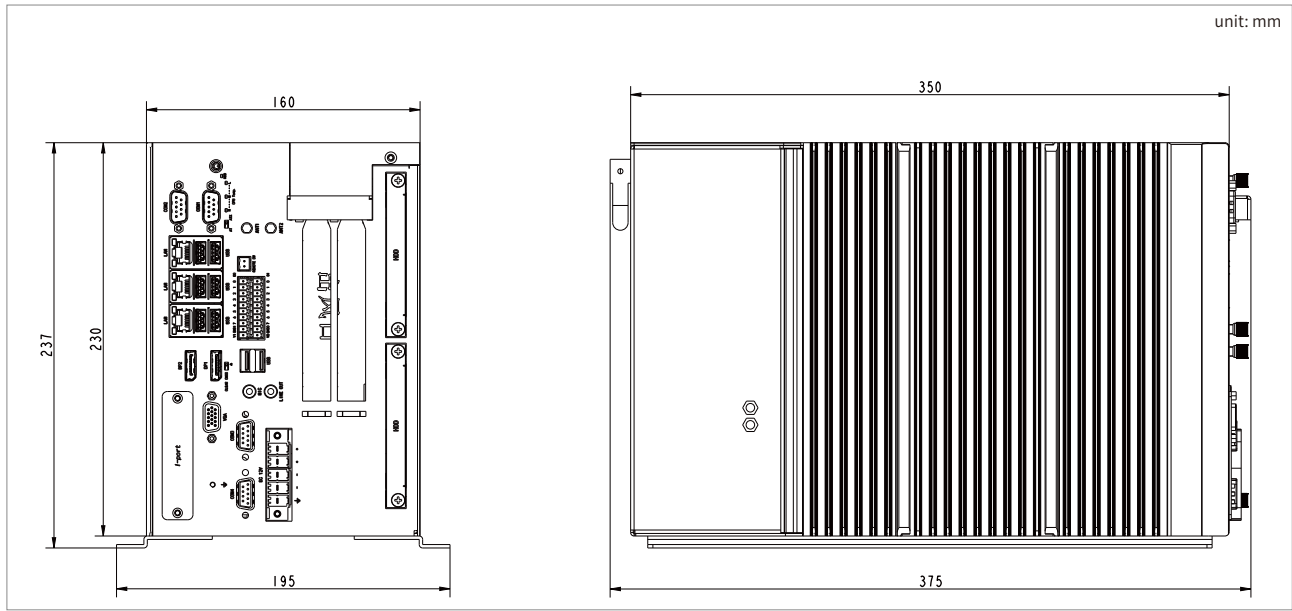
### Environmental

|                    |                                                                                             |
|--------------------|---------------------------------------------------------------------------------------------|
| Operating temp     | -25°C~60°C , with air flow                                                                  |
| Storage temp       | - 40°C~85°C                                                                                 |
| Storage humidity   | 10~90%@40°C, No-condensation                                                                |
| Vibration          | 5 grms/5~500Hz/random/during operation(SSD);<br>1 grms/5~500Hz/random/during operation(HDD) |
| Shock              | 50g peak acceleration(duration;11ms)(SSD);<br>20g peak acceleration(duration;11ms)(HDD)     |
| Certification /EMC | CE/FCC Class A                                                                              |

## I/O View



## Dimension



## Ordering Information

| Model                                     | Processor                                                                                  | RAM       | Display | I/O Port                                | DIO            | Audio                 | Expansion                                                             | Storage                           | Power Supply |
|-------------------------------------------|--------------------------------------------------------------------------------------------|-----------|---------|-----------------------------------------|----------------|-----------------------|-----------------------------------------------------------------------|-----------------------------------|--------------|
| BRAV-7520/S001                            | Intel® Coffeelake-R LGA1151 CPU Q370 PCH                                                   | 4x DDR4   | 1x VGA  | 3x LAN/4x COM<br>6x USB3.1<br>2x USB2.0 | 16-bit Iso DIO | 1x LINE OUT<br>1x MIC | 1x Mini PCIe<br>1x M.2 E-Key<br>1x M.2 B-Key<br>1x PCIeX16; 1x PCIeX4 | 2x "2.5"SATA<br>1x M.2 2280 M-Key | DC12V        |
| BRAV-7520/S002                            | Intel® Coffeelake-R LGA1151 CPU C246 PCH                                                   | MAX 128GB | 2x DP   |                                         |                |                       |                                                                       |                                   |              |
| Recomd graphics card /AI accelerator card | max support 350W GPU or 75W AI accelerator card (card length < 300mm)                      |           |         |                                         |                |                       |                                                                       |                                   |              |
| UHP-500DC12                               | AC/DC power switch, DC12V@41.7A ,90-264V AC input, DC 12V output, fanless, wide temp, 500W |           |         |                                         |                |                       |                                                                       |                                   |              |
| SE-600DC12                                | AC/DC power switch, DC12V@50A ,180-264V AC input, DC 12V output, 600W                      |           |         |                                         |                |                       |                                                                       |                                   |              |

## CPU Support

| Series  | Intel® Xeon® |       | Intel® Core™ |       |          |       | Intel® Pentium® |      | Intel® Celeron® |      |
|---------|--------------|-------|--------------|-------|----------|-------|-----------------|------|-----------------|------|
| 9th Gen | E-2278G      | 8C16T | I7-9700      | 8C8T  | I7-9700T | 8C8T  | G5500           | 2C4T | G4950           | 2C2T |
|         | E-2224G      | 8C16T | I5-9500      | 6C6T  | I5-9500T | 6C6T  |                 |      |                 |      |
|         |              |       | I3-9100      | 4C4T  | I3-9100T | 4C4T  |                 |      |                 |      |
| 8th Gen | E-2176G      | 6C12T | I7-8700      | 6C12T | I7-8700T | 6C12T | G5400           | 2C4T | G4930           | 2C2T |
|         | E-2124G      | 4C4T  | I5-8500      | 6C6T  | I5-8500T | 6C6T  |                 |      |                 |      |
|         |              |       | I3-8100      | 4C4T  | I3-8100T | 4C4T  |                 |      |                 |      |



# BRAV-7521

Intel® Coffee Lake-R LGA1151 CPU, 3\*LAN, 6\*USB3.1, 1\*VGA, 2\*DP, 2\*4K Displays, 4\*PCIe slots, 4\*SATA3, max support 2\*350W GPU.

### Key Specification

- Intel® Xeon® E or 9th/8th-Gen Core™ i7/i5/i3 processor
- Intel® Q370/C246 Chipset
- Large memory volume 4\*DDR4 up to 128G ECC/non-ECC
- UHD dual 4K, 3 independent displays, 2\*DP, 1\*VGA
- 3\*Gig-LAN(support iATM) , optional multi channel 10 Gig-SFP
- multi PCIe Standard slot, supports multiple high - speed extension modules
- Super storage capacity 4\*SATA3.0, 1\*M.2 2280 M-Key, support NVMe
- Optional support TPM2.0 secure encryption,support iAMT12.0, Intel® iVpro tech
- Fanless CPU, AI/GPU modules efficient air cooling heat dissipation design
- Powerful deep learning ability, support 350W GPU /75W PGPU/AI accelerator card



### Product Overview

BRAV-7521 is a workstation-level edge computing system, equipped with Intel® Coffee Lake-R series processors and C246/Q370 chipset. It has a very powerful system performance with complete features including rich expansion flexibility, is an industrial grade product design which is the best fit for industrial automation, AI edge computing, small smart workstations, multimedia service systems, high-precision machine vision and other industries.

### Product Parameters

#### System

|                |                                                                                                                                                                                                                                                                                      |                   |                                                                                                                                                                                 |
|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Processor      | Intel® Xeon® E or 9th/8th-Gen Core™ i7/i5/i3 LGA1151 processor, Chipset: Intel® Q370(7521-S001) /Intel® C246(7521-S002) max 8C16T                                                                                                                                                    | Power Requirement | DC 12V 5-pin Term. Consumption: 564W (I7-8700 CPU 32GB DDR4, dual 2080TI)                                                                                                       |
| RAM            | 4*260-Pin SODIMM, dual port DDR4 2666/2400MHz,max support 128GB                                                                                                                                                                                                                      | OS                | Windows 10 Enterprise & IOT Enterprise (64 bit)(CFL-R) Windows Server 2016 (Intel® Xeon® E) Ubuntu、SuSe、Redhat Enterprise 1,2(Kernel 4.14) (CFL-R) Wind River VxWorks 7 (CFL-R) |
| Expansion      | 1*Mini PCIe with SIM slot; 1*M.2 E-Key support WiFi6/BT5.0 1*M.2 B-Key , with SIM slot, support 5G; 1*M.2 M-Key(PCIe3.0X4); 2*PCIeX8(in X16 slot)max support 2*350W graphics card(length <300mm) 2*PCIe X4 (in X16 slot), max support 2*75W AI accelerator card (card length <300mm) | Watchdog timer    | Programmable timeout interruption or system reset from 1 to 255 secs                                                                                                            |
| Graphics       | Intel UHD Graphics, Supports DirectX11.1, OpenGL 5.0 / 2.1 or PCIe X16, DP: 4096*2304@60Hz, VGA: 1900*1200@60Hz, support 3 independent displays                                                                                                                                      |                   |                                                                                                                                                                                 |
| Audio          | optional support Realtek ALC662VD audio, Audio out & MIC, support5.1audio                                                                                                                                                                                                            |                   |                                                                                                                                                                                 |
| LAN            | 2*Intel I210AT PCIe GbE, 10/100/1000Mbps self-adaptive; 1*Intel I219LM PCIe GbE, support iVpro tech                                                                                                                                                                                  |                   |                                                                                                                                                                                 |
| Storage        | 4*2.5" SATA3 swappable hard disk bay, support RAID0/1/5/10 1*M.2 2280 M-key(PCIe X4), support NVMe storage                                                                                                                                                                           |                   |                                                                                                                                                                                 |
| DIO            | 16-bit Iso DIO,8位2.5KV input (H:5-24V, L:0-1.5V), 8-bit 2.5KV output(200mA)                                                                                                                                                                                                          |                   |                                                                                                                                                                                 |
| I/O Port       | 3*RJ45 Gig-LAN; 6*USB3.1; 2*USB2.0; 2*DP+1*VGA 16-bit Iso DIO; 2*RS232/422/485; 2*RS232; 1*Audio-out & 1*MIC                                                                                                                                                                         |                   |                                                                                                                                                                                 |
| LED            | 1*Power indicator, 5*HDD status indicator                                                                                                                                                                                                                                            |                   |                                                                                                                                                                                 |
| Control Switch | 1*Power SW, 1*AT/ATX SW, 1*Clear CMOS SW                                                                                                                                                                                                                                             |                   |                                                                                                                                                                                 |

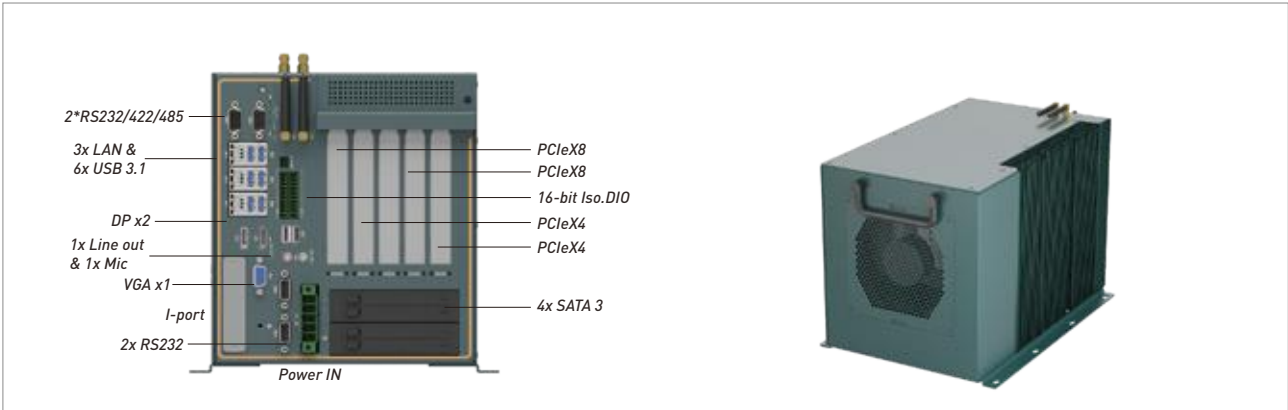
#### Mechanical

|                     |                                    |
|---------------------|------------------------------------|
| Structure           | Aluminum-magnesium alloy, SGCC box |
| Color               | Black + Granite Grey               |
| Installation Method | Desktop Installation               |
| Dimension           | (W*H*D):230*350*210mm              |
| Net weight          | 8.3kg                              |

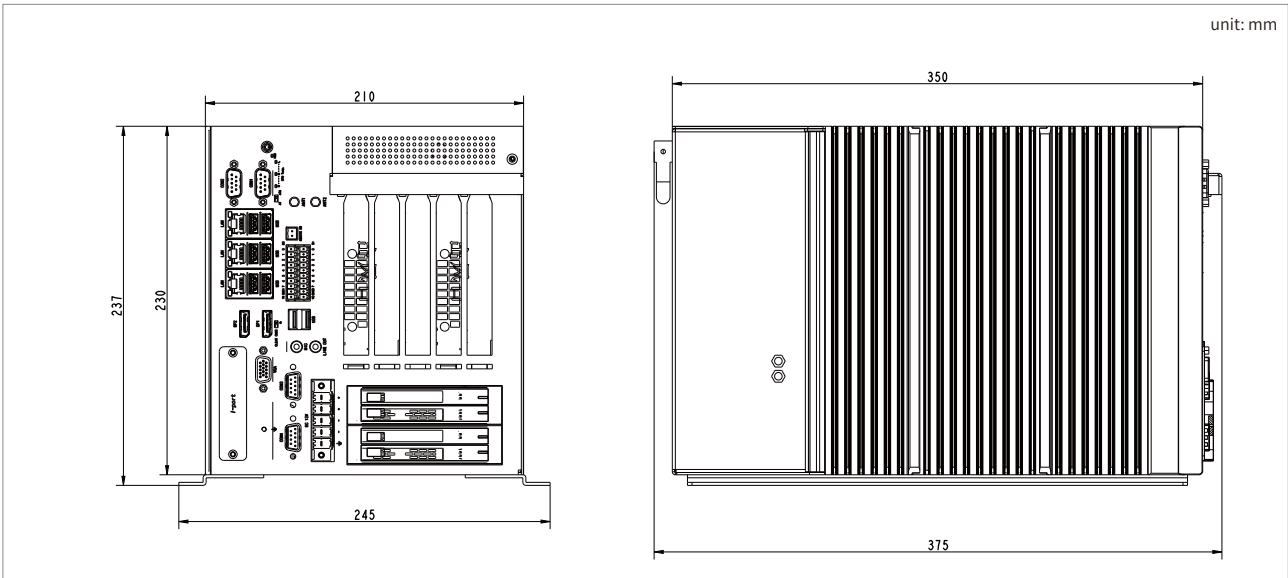
#### Environmental

|                    |                                                                                           |
|--------------------|-------------------------------------------------------------------------------------------|
| Operating temp     | -25°C~60°C , with air flow                                                                |
| Storage temp       | -40°C~85°C                                                                                |
| Storage Humidity   | 10~90%@40°C, No-condensation                                                              |
| Vibration          | 5 grms/5~500Hz/random/during operation(SSD); 1 grms/5~500Hz//random/during operation(HDD) |
| Shock              | 50g peak acceleration(duration;11ms)(SSD); 20g peak acceleration(duration;11ms)(HDD)      |
| Certification /EMC | CE/FCC Class A                                                                            |

### I/O view



### Dimensions



### Ordering Information

| Model                                         | Processor                                                                                          | RAM       | Display | I/O Port               | DIO            | Audio       | Expansion                                            | Storage           | Power Supply |
|-----------------------------------------------|----------------------------------------------------------------------------------------------------|-----------|---------|------------------------|----------------|-------------|------------------------------------------------------|-------------------|--------------|
| BRAV-7521/S001                                | Intel® Coffeelake-R LGA1151 CPU Q370 PCH                                                           | 4x DDR4   | 1x VGA  | 3x LAN/4x COM          | 16-bit Iso DIO | 1x LINE OUT | 1x Mini PCIe                                         | 4x "2.5" SATA     | DC12V        |
| BRAV-7521/S002                                | Intel® Coffeelake-R LGA1151 CPU C246 PCH                                                           | MAX 128GB | 2x DP   | 6x USB3.1<br>2x USB2.0 |                | 1x MIC      | 1x M.2 E-Key<br>1x M.2 B-Key<br>2x PCIeX8; 2x PCIeX4 | 1x M.2 2280 M Key |              |
| Suggested graphics card / AI accelerator card | max support 2*350W GPU 2*75W AI accelerator card (graphics card/AI accelerator card length <300mm) |           |         |                        |                |             |                                                      |                   |              |
| SE-1000DC12                                   | AC/DC power switch , DC12V@83.3A ,180-264V AC input, DC 12V output, 1000W                          |           |         |                        |                |             |                                                      |                   |              |

### CPU Support

| Series  | Intel® Xeon® |       | Intel® Core™ |       |          |       | Intel® Pentium® |      | Intel® Celeron® |      |
|---------|--------------|-------|--------------|-------|----------|-------|-----------------|------|-----------------|------|
| 9th Gen | E-2278G      | 8C16T | I7-9700      | 8C8T  | I7-9700T | 8C8T  | G5500           | 2C4T | G4950           | 2C2T |
|         | E-2224G      | 8C16T | I5-9500      | 6C6T  | I5-9500T | 6C6T  |                 |      |                 |      |
|         |              |       | I3-9100      | 4C4T  | I3-9100T | 4C4T  |                 |      |                 |      |
| 8th Gen | E-2176G      | 6C12T | I7-8700      | 6C12T | I7-8700T | 6C12T | G5400           | 2C4T | G4930           | 2C2T |
|         | E-2124G      | 4C4T  | I5-8500      | 6C6T  | I5-8500T | 6C6T  |                 |      |                 |      |

# BRAV-7601-S

Intel® Comet lake 10th-Gen Celeron/Pentium/Core™ i9/i7/i5/i3 CPU, 7\*LAN, 8\*USB, 2\*COM, 3\*M.2, 8+16 bit DIO

### Key Specification

- Intel® Comet lake 10th-Gen Celeron/Pentium/Core™ i9/i7/i5/i3 CPU
- Aluminum chassis, two temperature controlled fan
- 3\*2.5G-LAN+4\*Gig-LAN with POE function
- VGA+2\*HDMI, 3 independent display, 2\*DP GPU display
- 3\*M.2 support Gig+WiFi6, 4G LTE, 5G NR module
- 1\*MXM3.1 (PCIeX16 signal) , support MXM GPU modules and AI accelerators with power consumption lower than 190W
- DC9~36V wide power input



### Product Overview

BRAV-7601-S is a high-performance Edge AI computing system, powered by Intel® Comet lake 10th-Gen CPU。CPU+GPU, multiple LAN & display, rich IO function, DC9-36V wide voltage power supply. It is suitable for C-V2X, special vehicle, smart security, high-precision machine vision, medical imaging and other fields。

### Product Parameters

#### System

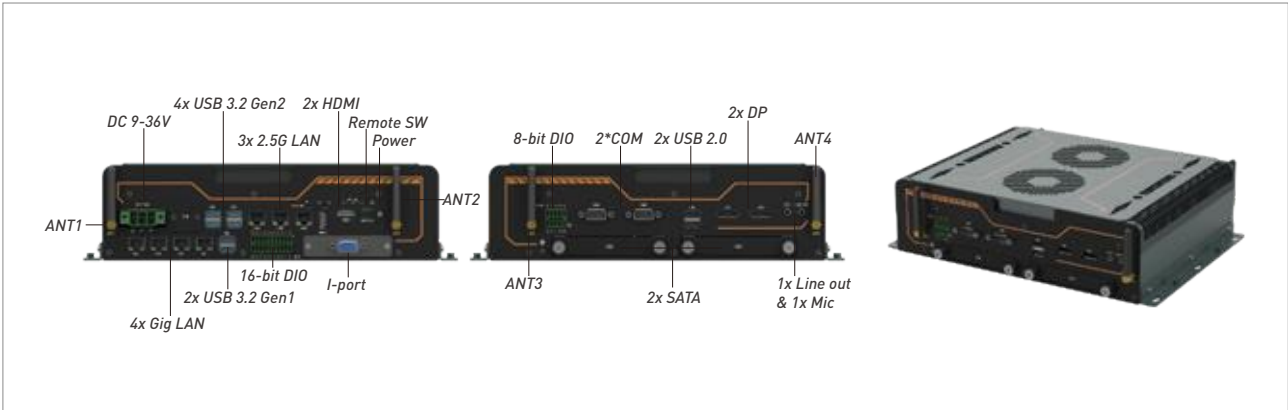
|                |                                                                                                                                                                                                                                                            |
|----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CPU            | Intel® Comet lake 10th-Gen Celeron/Pentium/Core™ i9/i7/i5/i3 CPU；<br>Intel® Q470 PCH                                                                                                                                                                       |
| RAM            | 2*DDR4 SO-DIMM slot, support 2933MHz, up to 64GB<br>1*Mini-PCIe, PCIeX1/SATA3 , USB2.0+SIM, support mSATA or 4G LTE；<br>1*M.2 Type 2230 E-key, PCIeX1, USB2.0 & CNVio, support WiFi6 & BT5.0；<br>1*M.2 Type 3052 B-key, PCIeX1, USB2.0+SIM, support 5G/4G； |
| Expansion      | 1*M.2 Type 2280 M-Key(PCIex4 signal), support NVME, or PCIe；<br>1*MXM3.1, PCIeX16, up to 190W power supply, support MXM GPU modules & AI accelerator with power consumption lower than 190W；<br>JHCTECH-02 E/IO : 2*PCIeX4, 2*USB3.2, 2*USB2.0, 160pin     |
| Display        | Intel® UHD Graphics, support DirectX 12, openGL 4.5,<br>2*HDMI 1.4, :4096 x 2304@24Hz；<br>1*VGA: 1920*1200@60Hz ；<br>1*MXM3.1, up to 190W, support GPU/AI accelerator, 2*DP, 4K display                                                                    |
| Audio          | 1*Line out+1*MIC(optional), support 5.1 channel                                                                                                                                                                                                            |
| LAN            | 2*Intel I225V+1*I225 LM, 3*2.5G-LAN, support iAMT 13.0, (Core I5/I7 CPU support Intel vPro)<br>4*Intel I210AT, with POE , 10/100/1000Mbps, PCIe 3.0 X1 bandwidth                                                                                           |
| Storage        | 2*2.5"HDD SATA3(RAID0,1), max support dual 15mm HDD, 6.0Gbps；<br>1*M.2 Type 2280 M-Key(PCIex4 signal), support NVMe；<br>1*mSATA(optional)                                                                                                                  |
| DIO            | 8bit TTL signal, programmable input & output；<br>8+16 bit TTL signal, programmable input & output (S002)                                                                                                                                                   |
| I/O Port       | 3*2.5G-LAN, 4*POE(S002) ,<br>4*USB3.2 Gen2(10Gbps), 2*USB3.2 Gen1(S002) , 2*USB2.0,<br>1*USB2.0 DB pin header, 1*USB2.0 typeA (built-in), 2*SIM slot<br>2*RS232/422/485, (DB9), 2*RS232(built-in)                                                          |
| LED            | 1*HDD LED, 3*CPU Temp LED(Red: warning, Yellow: high temp, Green:normal)                                                                                                                                                                                   |
| Control switch | 1* Power, 1*2-pin SW, 1*F-panel, 1*AT-ATX, 1*Clear CMOS                                                                                                                                                                                                    |

|                   |                                                                                                                                                                                                                                                                                            |
|-------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Power Requirement | DC 9-36V 3-pin, wide power input, with short circuit protection, over voltage& over current protection, max output power: 350W<br>Windows 10 IoT Enterprise (64-bit), Windows Server 2019, Ubuntu, SUSE, Redhat Enterprise, Wind River Linux, Yocto Project (64-bit), Wind River VxWorks 7 |
| OS                |                                                                                                                                                                                                                                                                                            |
| Watchdog Timer    | Watchdog timeout programmable via software 1 to 255 second                                                                                                                                                                                                                                 |
| Mechanical        |                                                                                                                                                                                                                                                                                            |
| Structure         | Temperature controlled fan, SGCC                                                                                                                                                                                                                                                           |
| Color             | Black+Granite gray                                                                                                                                                                                                                                                                         |
| Mounting          | Desktop mounting                                                                                                                                                                                                                                                                           |
| Dimension         | (L*W*H):284*222*82mm                                                                                                                                                                                                                                                                       |
| Net weight        | 6.70kg                                                                                                                                                                                                                                                                                     |

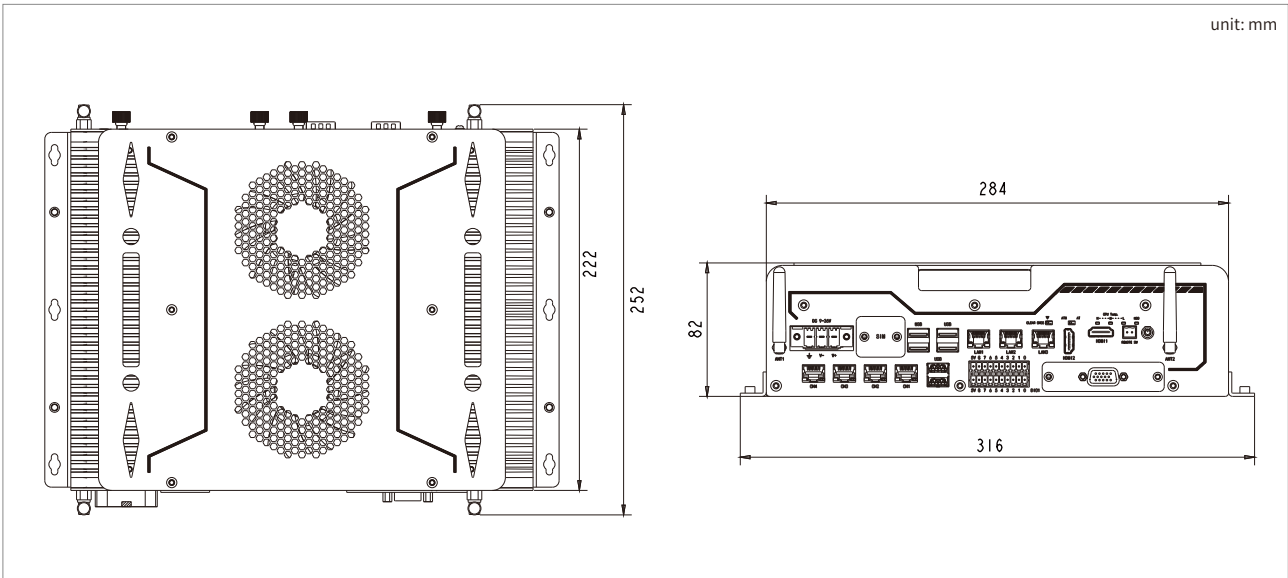
#### Environmental

|                  |                                                                                              |
|------------------|----------------------------------------------------------------------------------------------|
| Operating temp   | -20°C~60°C , airflow                                                                         |
| Storage temp     | - 40°C~85°C                                                                                  |
| Storage humidity | 10~90%@40°C, No-condensation                                                                 |
| Vibration        | 5 grms/5~500Hz/random/during operation(SSD);<br>1 grms/5~500Hz//random/during operation(HDD) |
| Shock            | 50g peak acceleration(duration;11ms)(SSD);<br>20g peak acceleration(duration;11ms)(HDD)      |
| Certificates/EMC | CE/FCC Class A                                                                               |

### I/O view



### Dimensions



### Ordering Information

| Model          |                                                               | Specifications                                   |                                                                                                                                                                                                                                                 |
|----------------|---------------------------------------------------------------|--------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| BRAV-7601/S001 | Temperature controlled fan, AI edge computing system          | 3*2.5G LAN,8bit DIO                              | Intel Q470 PCH, +Intel CML LGA1200 CPU, 1*MXM 3.1, 4*USB3.2 Gen2, 2*USB2.0, 2*COM, 1*Mini PCIe, 1*M.2 E-Key, 1*M.2 B-Key, 2*HDMI, 1*VGA, 2*DP, 1*MIC和1*Audio-out(optional), 1*mSATA(optional), 1*M.2 M-Key, 2*2.5" SATA bay, 1*I-Port, DC 9~36V |
| BRAV-7601/S002 |                                                               | 3*2.5G LAN, 4* POE<br>8+16bit DIO, 2*USB3.2 Gen1 |                                                                                                                                                                                                                                                 |
| MXM3.1 GPU     | MLU220-MXM, NVIDIA GTX 16 Series/RTX 30 Series mobile MXM GPU |                                                  |                                                                                                                                                                                                                                                 |
| PA-220DC24     | AC/DC power adapter, DC24V@9.17A ,220W                        |                                                  |                                                                                                                                                                                                                                                 |
| PA-300DC24     | AC/DC power adapter, DC24V@12.5A ,300W                        |                                                  |                                                                                                                                                                                                                                                 |



# BRAV-7601-T

Intel® Comet lake 10th-Gen Celeron/Pentium/Core™ i9/i7/i5/i3 CPU, 7\*LAN, 8\*USB, 2\*COM, 3\*M.2, 8+16 bit DIO

## Key Specification

- Intel® Comet lake 10th-Gen Celeron/Pentium/Core™ i9/i7/i5/i3 CPU
- Aluminum chassis, fanless,
- 3\*2.5G-LAN+4\*Gig-LAN with POE function
- VGA+2\*HDMI, 3 independent display
- 3\*M.2 support Gig+WiFi6, 4G LTE, 5G NR
- 1\*MXM3.1, support MLU220-MXM AI accelerator
- DC9~36V wide power input, with short circuit, over voltage and over current protection



## Product Overview

BRAV-7601-T is a high performance fan-less AI Edge computing system, powered by Intel® Comet lake CPU. It supports Cambricon MLU220 acceleration module, multi-network port, multi-display, rich I/O function, DC9-36V wide power input, which makes it very suitable for C-V2X, Special vehicle mounted, high-precision machine vision, medical imaging and other applications.

## Product Parameters

### System

|                |                                                                                                                                                                                                                                                                                                                                                           |
|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CPU            | Intel® Comet lake 10th-Gen Celeron/Pentium/Core™ i9/i7/i5/i3 CPU ; Intel® Q470 PCH                                                                                                                                                                                                                                                                        |
| RAM            | 2*DDR4 SO-DIMM slot, support 2933MHz, up to 64GB                                                                                                                                                                                                                                                                                                          |
| Expansion      | 1*Mini-PCIe,PCIeX1/SATA3, USB2.0+SIM, support mSATA or 4G LTE ; 1*M.2 Type 2230 E-key,PCIeX1, USB2.0 & CNVio, support WiFi6/BT5.0 ; 1*M.2 Type 3052 B-key, PCIeX1, USB2.0+SIM, support 5G/4G ; 1*M.2 Type 2280 M-Key(PCIex4 signal), support NVMe, or PCIe ; 1*MXM3.1, PCIeX16,support MLU220-MXM ; JHCTECH-02 E/IO: 2*PCIeX4, 2*USB3.2, 2*USB2.0, 160pin |
| Display        | Intel® UHD Graphics, support DirectX 12, OpenGL 4.5, 2*HDMI 1.4, ; 4096 x 2304@24Hz, 1*VGA: 1920*1200@60Hz                                                                                                                                                                                                                                                |
| Audio          | 1*Line out+1*MIC(Optional), support 5.1 channel                                                                                                                                                                                                                                                                                                           |
| LAN            | 2*Intel I25V+1*I225 LM, 3*2.5G-LAN, suppoet iAMT 13.0, Core I5/I7 CPU support Intel vPro 4*Intel I210AT, with POE , 10/100/1000Mbps,PCIe 3.0 X1 bandwidth 2*2.5"HDD SATA3(support RAID0,1), max support 15mm HDD, 6.0Gbps; 1*M.2 Type 2280 M-Key(PCIex4 signal), support NVMe; optional 1*mSATA                                                           |
| Storage        | 8bit TTLsignal, programmable input and output; 8+16 bit TTL signal, programmable input and output(T002)                                                                                                                                                                                                                                                   |
| DIO            | 3*2.5G-LAN; 4*POE(T002) , 4*USB3.2 Gen2(10Gbps), 2*USB3.2 Gen1(T002) , 2*USB2.0, 2*SIM slot 2*RS232/422/485, (DB9), 2*RS232(built-in)                                                                                                                                                                                                                     |
| I/O Port       |                                                                                                                                                                                                                                                                                                                                                           |
| LED            | 1*HDD LED, 3*CPU Temp LED (Red: warning, Yellow: high temp, Green: normal)                                                                                                                                                                                                                                                                                |
| Control switch | 1* Power, 1*2-pin SW, 1*F-panel, 1*AT-ATX, 1*Clear CMOS                                                                                                                                                                                                                                                                                                   |

|                   |                                                                                                                                                          |
|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|
| Power Requirement | DC 9-36V 3-pin,wide power input, with short circuit protection, over voltage & over current protection, max output power: 350W                           |
| OS                | Windows 10 IoT Enterprise (64-bit), Windows Server 2019, Ubuntu, SUSE, Redhat Enterprise, Wind River Linux, Yocto Project (64-bit), Wind River VxWorks 7 |
| Watchdog Timer    | Watchdog timeout programmable via software 1 to 255 second                                                                                               |

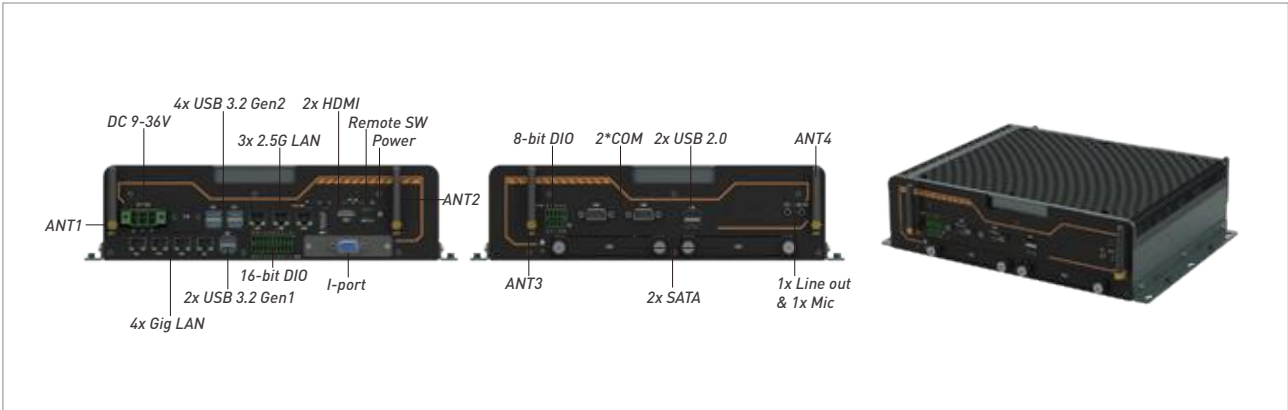
### Mechanicalcal

|                    |                        |
|--------------------|------------------------|
| Structure          | Aluminum chassis, SGCC |
| Color              | Black+Granite gray     |
| Mounting           | Desktop mounting       |
| Dimension (L*W*H): | 284*222*80.5mm         |
| Net weight         | 6.40kg                 |

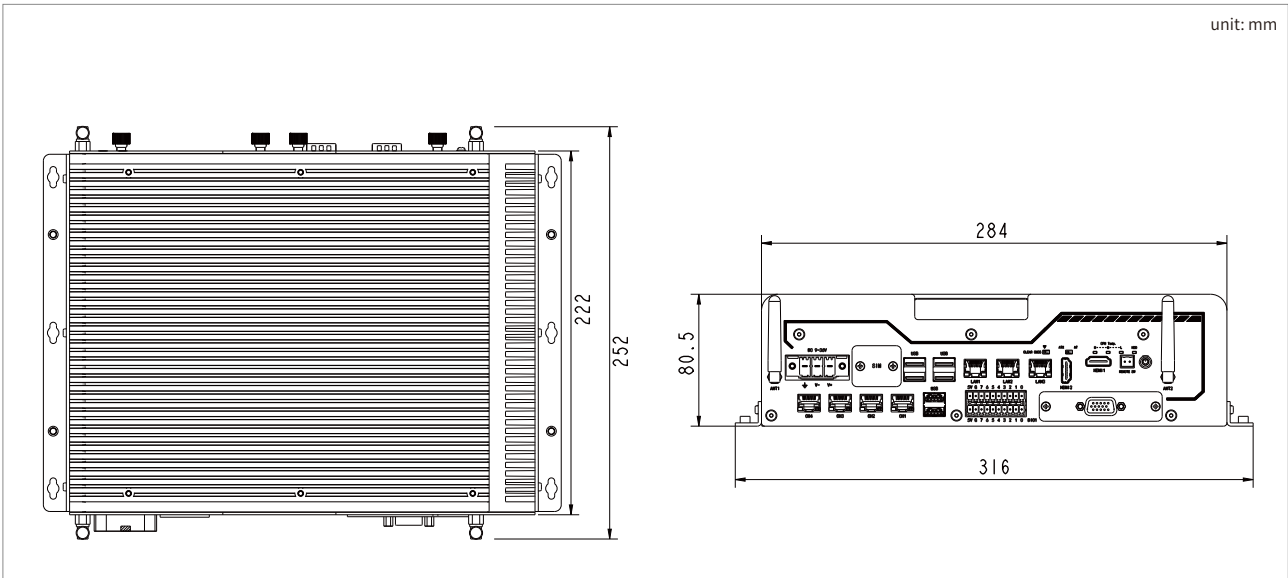
### Environmental

|                   |                                                                                           |
|-------------------|-------------------------------------------------------------------------------------------|
| Operating Temp    | -20°C~60°C , airflow                                                                      |
| Storage Temp      | - 40°C~85°C                                                                               |
| Storage Humidity  | 10~90%@40°C, No condensation                                                              |
| Vibration         | 5 grms/5~500Hz/random/during operation(SSD); 1 grms/5~500Hz//random/during operation(HDD) |
| Shock             | 50g peak acceleration(duration;11ms)(SSD); 20g peak acceleration(duration;11ms)(HDD)      |
| Certificates/ EMC | CE/FCC Class A                                                                            |

## I/O view



## Dimensions



## Ordering Information

| Model          |                                        | Specifications                                   |                                                                                                                                                                                                                                             |
|----------------|----------------------------------------|--------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| BRAV-7601/T001 | Fanless<br>AI Edge Computing System    | 3*2.5G LAN,8bit DIO                              | Intel Q470 PCH, +Intel CML LGA1200 CPU, 1*MXM 3.1, 4*USB3.2 Gen2, 2*USB2.0, 2*COM, 1*Mini PCIe, 1*M.2 E-Key, 1*M.2 B-Key, 2*HDMI, 1*VGA, 1*MIC & 1*Audio-out(optional), 1*mSATA(optional) ,1*M.2 M-Key, 2*2.5” SATA bay, 1*I-Port, DC 9~36V |
| BRAV-7601/T002 |                                        | 3*2.5G LAN, 4* POE<br>8+16bit DIO, 2*USB3.2 Gen1 |                                                                                                                                                                                                                                             |
| MXM3.1 GPU     | Cambricon MLU220-MXM                   |                                                  |                                                                                                                                                                                                                                             |
| PA-120DC19     | AC/DC power adapter, DC19V/6.32A,120W  |                                                  |                                                                                                                                                                                                                                             |
| PA-220DC24     | AC/DC power adapter, DC24V@9.17A ,220W |                                                  |                                                                                                                                                                                                                                             |

# BRAV-7720-S001

Intel® Alder lake-S LGA1700 CPU, 3\*LAN, 6\*USB3.2, 8K DP+4K HDMI , PCIe5.0 X16+PCIe4.0 X4, 2\*2.5” SATA bay , DC IN 12V 1000W

## Key Specification

- Intel® 12th Gen Alder lake-S LGA1700 CPU
- Intel® Q670 Chipset
- 2\*DDR5 4800MHz SODIMM, up to 64GB
- 1\*DP+1\*HDMI and 1\*VGA, UHD 8K+4K three independent displays
- 2\*Intel® I226V Gigabit LAN, 1\*Intel® I219LM Gigabit LAN, support iAMT12.0
- 1\*PCIe X16 (X16 signal)+1\*PCIe X16 (X4 signal), dual PCIe expansions
- 2\*2.5” SATA3.0 Bays, 1\*M.2 2280 PCIeX4 NVMe
- Support TPM2.0 and iVpro technology
- Fanless cooling for CPU , AI/GPU card with efficient fan cooling design
- Support 450W GPU or dual 75W/150W AI acceleration cards
- 1000W DC IN 12V, and wide temperature fanless AC-DC power adapter with PFC



## Product Overview

BRAV-7720-S001 is a workstation-grade edge computing system, powered by the Intel® Alder Lake-S series CPU, Q670 chipset, dual-channel DDR5 memory, and dual PCIe expansions. It offers flexible optional computing power, multiple IO interfaces, a high PFC power supply, a high-efficiency cooling solution, and an industrial-grade reliability design. It is well-suited for V2X MEC, highway event detection, unmanned experimental vehicles, high-precision machine vision, and other fields and applications

## Product Parameters

### System

|                   |                                                                                                                                                                                         |
|-------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Processor         | Intel® Alder lake-S 12th-Gen Core™ i9/i7/i5/i3/Pentium/Celeron LGA1700 CPU, Intel® Q670 PCH                                                                                             |
| RAM               | 2*262-Pin SODIMM, DDR5 4800MHz, 64GB max.                                                                                                                                               |
| Graphics          | Intel® UHD Graphics, Supports DirectX 12, OpenGL 4.5, OpenCL 3.0; DP:7680*4320@60Hz, HDMI:4096*2160@60Hz, VGA:1920*1200@60Hz, support 3 independent displays                            |
| LAN               | 2* Intel I226V, 10-1000M;<br>1* Intel I219LM,10-1000M, iAMT 12.0                                                                                                                        |
| USB               | 4* USB3.2(10G)+2*USB3.0(5G)                                                                                                                                                             |
| Display           | 1* DP+1*HDMI+1* VGA                                                                                                                                                                     |
| Audio             | /                                                                                                                                                                                       |
| COM/others        | 2*RS232/422/485                                                                                                                                                                         |
| DIO               | optional16 bit DIO, TTL, programmable input/output                                                                                                                                      |
| Storage           | 2*2.5"SATA3 HDD(RAID0/1), 15mmthickness;<br>1*M.2 2280 M-Key(PCIe4.0X4), NVMe; 1*mSATA(optional)                                                                                        |
| LED               | 1*PowerLED, 1*HDD LED                                                                                                                                                                   |
| Control Switch    | 1*Power SW, 1*AT/ATX SW, 1*Clear CMOS SW                                                                                                                                                |
| Power Requirement | DC IN 12V, 1000W max. ;<br>TDP:TBD                                                                                                                                                      |
| Watchdog Timer    | Watchdog timeout programmable via software 1 to 255 second                                                                                                                              |
| OS                | Windows 10 Enterprise & IOT Enterprise (64 bit)(CFL-R)<br>Windows Server 2016 (Intel® Xeon® E) Ubuntu. SuSe、<br>Redhat Enterprise 1,2(Kernel 4.14) (CFL-R) Wind River VxWorks 7 (CFL-R) |

### Expansion

1\*Mini PCIe(PCIeX1/USB+SIM),4G LTE/PCIe;  
1\*Mini PCIe(PCIeX1/SATA),mSATA;  
1\*M.2 3052 B-Key(PCIeX1/USB+SIM),5G NR;  
1\*M.2 2280 M-Key(PCIe4.0X4), NVMe;  
1\*PCIe5.0X16(X16),GPU<450W<300mm  
1\*PCIe4.0X16(X4),AI card<75W<300mm

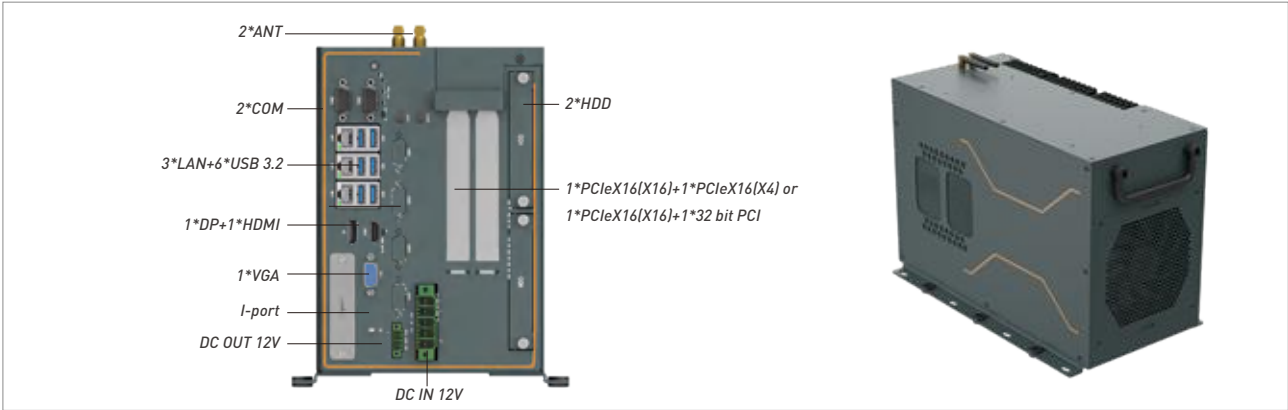
### Mechanical

|            |                                                                              |
|------------|------------------------------------------------------------------------------|
| Structure  | SGCC frame, Aluminum-magnesium alloy chassis, temperature control by PWM fan |
| Color      | Granite gray + Black                                                         |
| Mounting   | Desktop mounting with anti-vibration rubber pads                             |
| Dimension  | 195*374.7*254.8mm(W*H*D)                                                     |
| Net weight | TBD                                                                          |

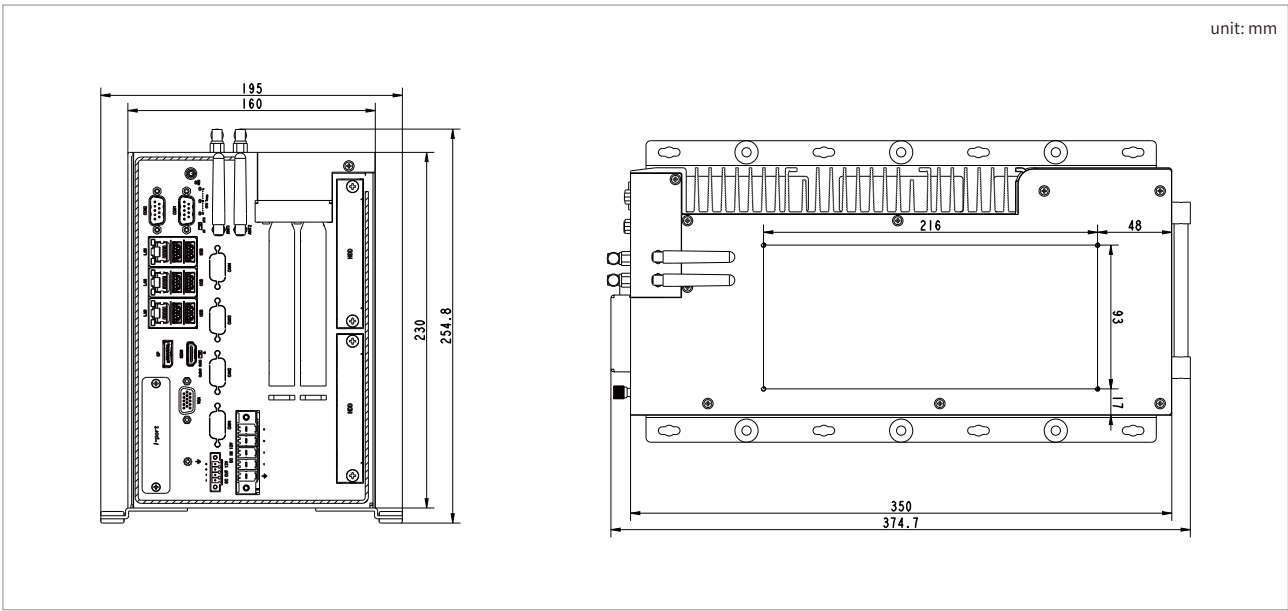
### Environmental

|                    |                                                                                             |
|--------------------|---------------------------------------------------------------------------------------------|
| Operating Temp     | -25°C~60°C , with air flow                                                                  |
| StorageTemp        | - 40°C~85°C                                                                                 |
| Storage Humidity   | 10~95%@40°C, No-condensation                                                                |
| Vibration          | 5 grms/5~500Hz/random/during operation(SSD);<br>1 grms/5~500Hz/random/during operation(HDD) |
| Shock              | 50g peak acceleration(11ms duration)(SSD);<br>20g peak acceleration(11ms duration)(HDD)     |
| Certification/ EMC | CE/FCC Class A                                                                              |

## I/O View



## Dimensions



## Ordering Information

| Model                   | Processor                                          | Specifications                                                                                                                                                                | Expansion                                                                                                         |
|-------------------------|----------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|
| BRAV-7720/S001          | Intel® Alder lake-S 12th-Gen LGA1700 CPU, Q670 PCH | 2*DDR5 SODIMM, 3*LAN, 6*USB3.2, 2*USB2.0(built-in) , 2*COM, 1*VGA, 1*DP,1*HD-MI, 16bit DIO(built-in), 1*I-Port, 2*2.5”SATA bay, 2*Mini PCIe, 1*M.2 B-Key, 1*M.2 M-Key, DC 12V | <b>Default: ECX-255</b><br>1*PCIeX16(X16)+1*PCIeX16(X4)<br><b>Optional: ECX-271</b><br>1*PCIeX16(X16)+1*32bit PCI |
| Recommend GPU/AI Module |                                                    | Support a maximum 1*450W GPU or 2*75W/150W AI module (GPU/AI module<300mm)                                                                                                    |                                                                                                                   |
| UHP-500DC12             |                                                    | AC/DC power adapter, DC12V@41.7A, 90-264V AC IN, DC OUT 12V , wide temperature fanless, 500W                                                                                  |                                                                                                                   |



# BRAV-7720-WP

Intel® Alder lake-S LGA1700 CPU, 3\*LAN, 6\*USB3.2, 8K DP+4K HDMI , PCIe5.0 X16+PCIe4.0 X4, 2\*2.5" SATA bay , DC IN 9-55V 600W

## Key Specification

- Intel® 12th Gen Alder lake-S LGA1700 CPU
- Intel® Q670 Chipset
- 2\*DDR5 4800MHz SODIMM, up to 64GB
- 1\*DP+1\*HDMI and 1\*VGA, UHD 8K+4K three independent displays
- 2\*Intel® I226V Gigabit LAN, 1\*Intel® I219LM Gigabit LAN, support iAMT12.0
- 1\*PCIe X16 (X16 signal)+1\*PCIe X16 (X4 signal), dual PCIe expansions
- 2\*2.5" SATA3.0 Bays, 1\*M.2 2280 PCIeX4 NVMe
- Support TPM2.0 and iVpro technology
- Fanless cooling for CPU , AI/GPU card with efficient fan cooling design
- Support 450W GPU or dual 75W/150W AI acceleration cards
- 600W DC IN 9-55V, and wide temperature fanless AC-DC power adapter with PFC



## Product Overview

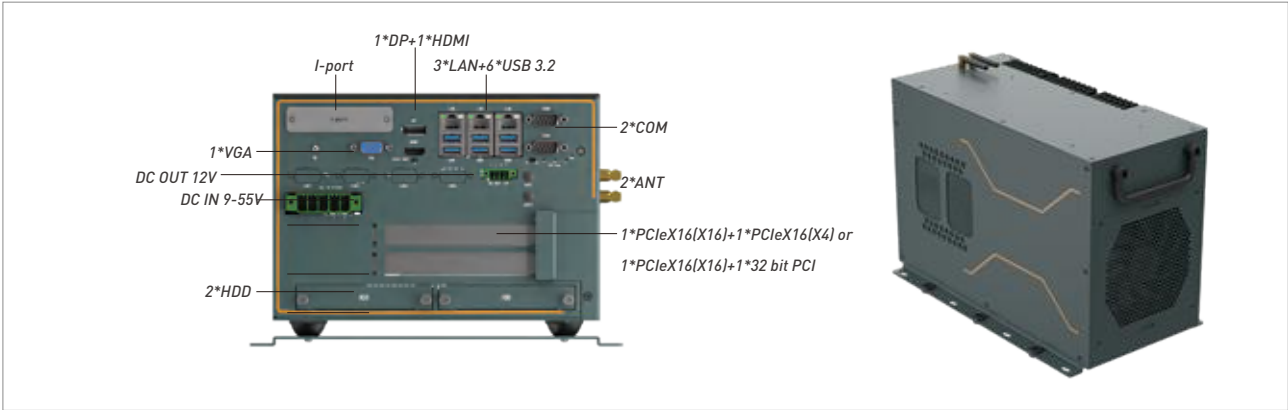
BRAV-7720-WP是一款工作站等级边缘计算System, 搭载Intel® Alder Lake-S系列Processor, Q670芯片组, 双通道DDR5RAM, 双PCIeExpansion。算力弹性化optional. 完整IO功能配置、高PFC供电效能、高效率散热方案和工业等级可靠性设计, 非常适用于车联网MEC, 高速路事件检测、无人驾驶实验车载和高精度机器视觉等行业和应用

## Product Parameters

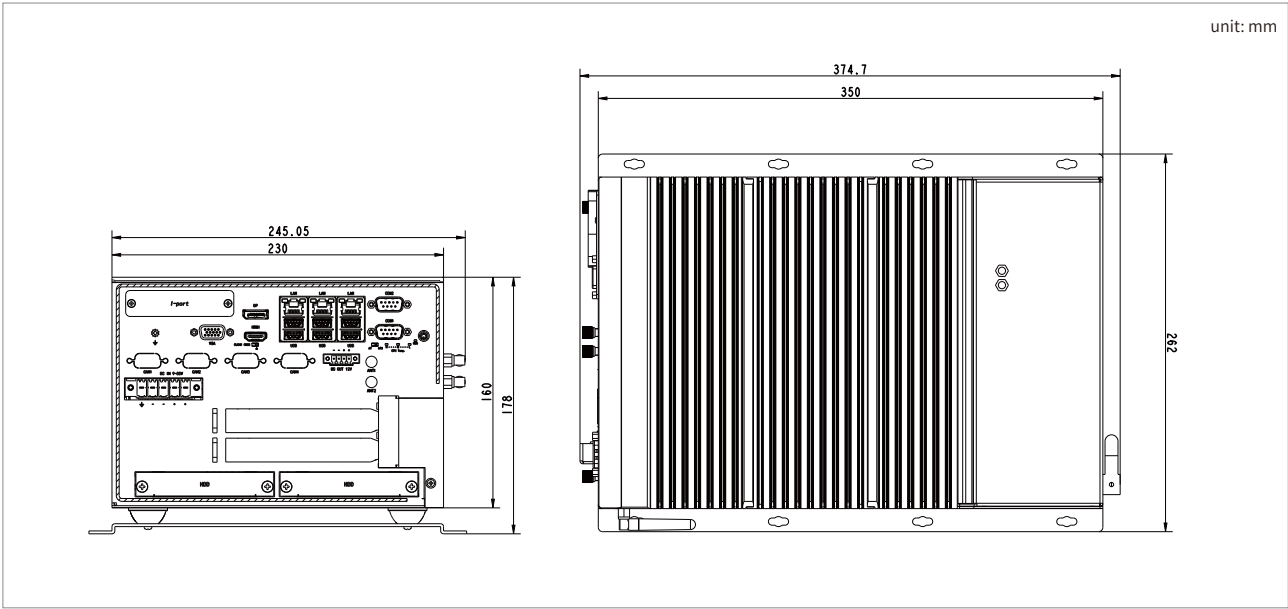
### System

|                   |                                                                                                                                                              |                    |                                                                                                                                                                                                                                        |
|-------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Processor         | Intel® Alder lake-S 12th-Gen Core™ i9/i7/i5/i3/Pentium/Celeron LGA1700 CPU, Intel® Q670 PCH                                                                  | Expansion          | 1*Mini PCIe(PCIeX1/USB+SIM),4G LTE/PCIe;<br>1*Mini PCIe(PCIeX1/SATA),mSATA;<br>1*M.2 3052 B-Key(PCIeX1/USB+SIM),5G NR;<br>1*M.2 2280 M-Key(PCIe4.0X4), NVMe;<br>1*PCIe5.0X16(X16),GPU<450W<300mm<br>1*PCIe4.0X16(X4),AI card<75W<300mm |
| RAM               | 2*262-Pin SODIMM, DDR5 4800MHz, 64GB max.                                                                                                                    |                    |                                                                                                                                                                                                                                        |
| Graphics          | Intel® UHD Graphics, Supports DirectX 12, OpenGL 4.5, OpenCL 3.0; DP:7680*4320@60Hz, HDMI:4096*2160@60Hz, VGA:1920*1200@60Hz, support 3 independent displays |                    |                                                                                                                                                                                                                                        |
| LAN               | 2* Intel I226V, 10-1000M;<br>1* Intel I219LM,10-1000M, iAMT 12.0                                                                                             |                    |                                                                                                                                                                                                                                        |
| USB               | 4* USB3.2(10G)+2*USB3.0(5G)                                                                                                                                  |                    |                                                                                                                                                                                                                                        |
| Display           | 1* DP+1*HDMI+1* VGA                                                                                                                                          |                    |                                                                                                                                                                                                                                        |
| Audio             | /                                                                                                                                                            |                    |                                                                                                                                                                                                                                        |
| COM/others        | 2*RS232/422/485                                                                                                                                              |                    |                                                                                                                                                                                                                                        |
| DIO               | optional16 bit DIO, TTL, programmable input/output                                                                                                           |                    |                                                                                                                                                                                                                                        |
| Storage           | 2*2.5"SATA3 HDD(RAID0/1), 15mmthickness;<br>1*M.2 2280 M-Key(PCIe4.0X4), NVMe; 1*mSATA(optional)                                                             |                    |                                                                                                                                                                                                                                        |
| LED               | 1*PowerLED, 1*HDD LED                                                                                                                                        |                    |                                                                                                                                                                                                                                        |
| Control Switch    | 1*Power SW, 1*AT/ATX SW, 1*Clear CMOS SW                                                                                                                     |                    |                                                                                                                                                                                                                                        |
| Power Requirement | DC IN 9-55V, 600W max. ;<br>TDP:TBD                                                                                                                          |                    |                                                                                                                                                                                                                                        |
| Watchdog Timer    | Watchdog timeout programmable via software 1 to 255 second                                                                                                   |                    |                                                                                                                                                                                                                                        |
| OS                | Windows 11 , Windows 10 IoT Enterprise 2021 LTSC, Ubuntu, SuSe, Red Hat Enterprise, Wind River Linux, Wind River VxWorks 7                                   |                    |                                                                                                                                                                                                                                        |
|                   |                                                                                                                                                              | Mechanical         |                                                                                                                                                                                                                                        |
|                   |                                                                                                                                                              | Structure          | SGCC frame, Aluminum-magnesium alloy chassis, temperature control by PWM fan                                                                                                                                                           |
|                   |                                                                                                                                                              | Color              | Granite gray + Black                                                                                                                                                                                                                   |
|                   |                                                                                                                                                              | Mounting           | Desktop mounting with anti-vibration rubber pads                                                                                                                                                                                       |
|                   |                                                                                                                                                              | Dimension          | 262*374.7*178 mm(W*H*D)                                                                                                                                                                                                                |
|                   |                                                                                                                                                              | Net weight         | TBD                                                                                                                                                                                                                                    |
|                   |                                                                                                                                                              | Environmental      |                                                                                                                                                                                                                                        |
|                   |                                                                                                                                                              | Operating Temp     | -20°C~60°C , with air flow                                                                                                                                                                                                             |
|                   |                                                                                                                                                              | StorageTemp        | - 40°C~85°C                                                                                                                                                                                                                            |
|                   |                                                                                                                                                              | Storage Humidity   | 10~95%@40°C, No-condensation                                                                                                                                                                                                           |
|                   |                                                                                                                                                              | Vibration          | 5 grms/5~500Hz/random/during operation(SSD);<br>1 grms/5~500Hz/random/during operation(HDD)                                                                                                                                            |
|                   |                                                                                                                                                              | Shock              | 50g peak acceleration(11ms duration)(SSD);<br>20g peak acceleration(11ms duration)(HDD)                                                                                                                                                |
|                   |                                                                                                                                                              | Certification/ EMC | CE/FCC Class A                                                                                                                                                                                                                         |

## I/O View



## Dimensions



## Ordering Information

| Model                   | Processor                                          | Specifications                                                                                                                                                                  | Expansion                                                                                                         |
|-------------------------|----------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|
| BRAV-7720-WP-S001       | Intel® Alder lake-S 12th-Gen LGA1700 CPU, Q670 PCH | 2*DDR5 SODIMM, 3*LAN, 6*USB3.2, 2*USB2.0(built-in) , 2*COM, 1*VGA, 1*DP,1*HD-MI, 16bit DIO(built-in), 1*I-Port, 2*2.5"SATA bay, 2*Mini PCIe, 1*M.2 B-Key, 1*M.2 M-Key, DC 9-55V | <b>Default: ECX-255</b><br>1*PCIeX16(X16)+1*PCIeX16(X4)<br><b>Optional: ECX-271</b><br>1*PCIeX16(X16)+1*32bit PCI |
| Recommend GPU/AI Module |                                                    | Support a maximum 1*450W GPU or 2*75W/150W AI module (GPU/AI module<300mm)                                                                                                      |                                                                                                                   |
| UHP-500DC12             |                                                    | AC/DC power adapter, DC12V@41.7A, 90-264V AC IN, DC OUT 12V , wide temperature fanless, 500W                                                                                    |                                                                                                                   |

# BRAV-7721-S001

Intel® Alder lake-S LGA1700 CPU, 3\*LAN, 6\*USB3.2, 8K DP+4K HDMI , 2\*PCIe5.0 X8+2\*PCIe4.0 X4, 2\*2.5" SATA bay , DC IN 12V 1000W

## Key Specification

- Intel® 12th Gen Alder lake-S LGA1700 CPU
- Intel® Q670 Chipset
- 2\*DDR5 4800MHz SODIMM, up to 64GB
- 1\*DP+1\*HDMI and 1\*VGA, UHD 8K+4K three independent displays
- 2\*Intel® I226V , 1\*Intel® I219LM, support iAMT12.0
- 2\*PCIe X16 (X8)+2\*PCIe X16 (X4), four PCIe expansions
- 2\*2.5" SATA3.0 Bays, 1\*M.2 2280 PCIeX4 NVMe
- Support TPM2.0 and iVpro technology
- Fanless cooling for CPU , AI/GPU card with efficient fan cooling design
- Support dual 450W GPU + dual 75W/150W AI acceleration cards
- 1000W DC IN 12V, and wide temperature fanless AC-DC power adapter with PFC



## Product Overview

BRAV-7721-S001 is a workstation-grade edge computing system, powered by the Intel® Alder Lake-S series CPU, Q670 chipset, dual-channel DDR5 memory, and four PCIe expansions. It offers flexible optional computing power, multiple IO interfaces, a high PFC power supply, a high-efficiency cooling solution, and an industrial-grade reliability design. It is well-suited for V2X MEC, highway event detection, unmanned experimental vehicles, high-precision machine vision, and other fields and applications.

## Product Parameters

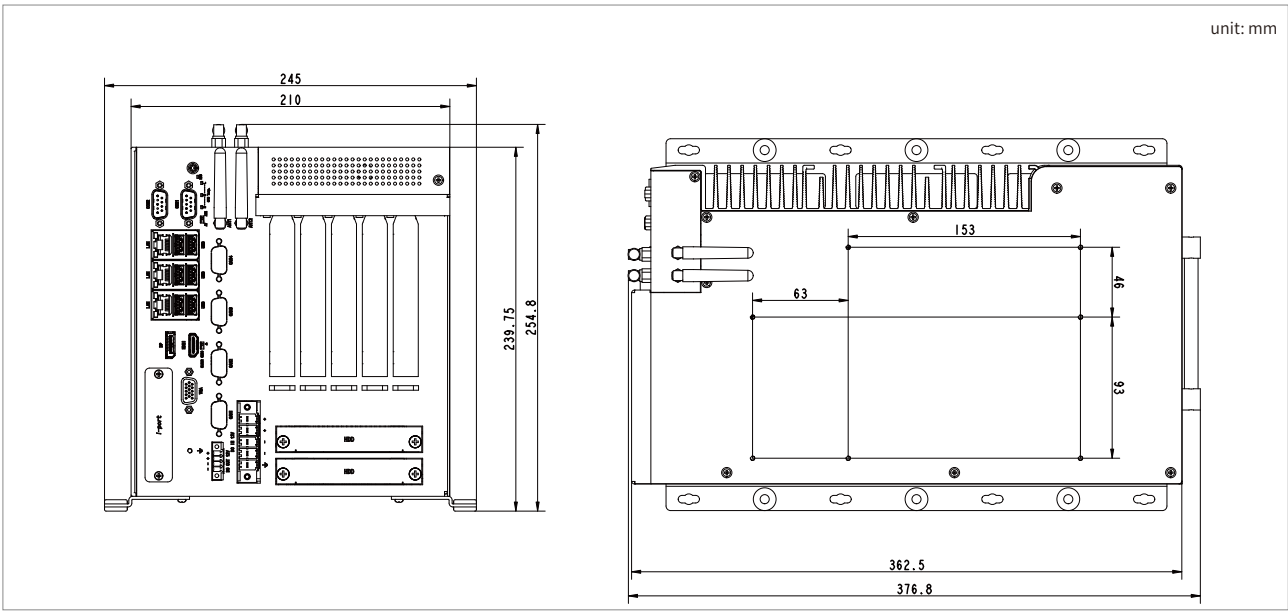
### System

|                   |                                                                                                                                                              |                    |                                                                                                                                                                                                                                                   |
|-------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Processor         | Intel® Alder lake-S 12th-Gen Core™ i9/i7/i5/i3/Pentium/Celeron LGA1700 CPU, Intel® Q670 PCH                                                                  | Expansion          | 1*Mini PCIe(PCleX1/USB+SIM),4G LTE/PCle;<br>1*Mini PCIe(PCleX1/SATA),mSATA;<br>1*M.2 3052 B-Key(PCleX1/USB+SIM),5G NR;<br>1*M.2 2280 M-Key(PCle4.0X4), NVMe;<br>2*PCIe5.0X16(X8),GPU<450W<300mm<br>2*PCIeX16(4.0X4+3.0X4),AI card<75W(150W)<300mm |
| RAM               | 2*262-Pin SODIMM, DDR5 4800MHz, 64GB max.                                                                                                                    |                    |                                                                                                                                                                                                                                                   |
| Graphics          | Intel® UHD Graphics, Supports DirectX 12, OpenGL 4.5, OpenCL 3.0; DP:7680*4320@60Hz, HDMI:4096*2160@60Hz, VGA:1920*1200@60Hz, support 3 independent displays |                    |                                                                                                                                                                                                                                                   |
| LAN               | 2* Intel I226V, 10-1000M;<br>1* Intel I219LM,10-1000M, iAMT 12.0                                                                                             |                    |                                                                                                                                                                                                                                                   |
| USB               | 4* USB3.2(10G)+2*USB3.0(5G)                                                                                                                                  |                    |                                                                                                                                                                                                                                                   |
| Display           | 1* DP+1*HDMI+1* VGA                                                                                                                                          |                    |                                                                                                                                                                                                                                                   |
| Audio             | /                                                                                                                                                            |                    |                                                                                                                                                                                                                                                   |
| COM/others        | 2*RS232/422/485                                                                                                                                              |                    |                                                                                                                                                                                                                                                   |
| DIO               | optional16 bit DIO, TTL, programmable input/output                                                                                                           |                    |                                                                                                                                                                                                                                                   |
| Storage           | 2*2.5"SATA3 HDD(RAID0/1), 15mmthickness;<br>1*M.2 2280 M-Key(PCle4.0X4), NVMe; 1*mSATA(optional)                                                             |                    |                                                                                                                                                                                                                                                   |
| LED               | 1*PowerLED, 1*HDD LED                                                                                                                                        |                    |                                                                                                                                                                                                                                                   |
| Control Switch    | 1*Power SW, 1*AT/ATX SW, 1*Clear CMOS SW                                                                                                                     |                    |                                                                                                                                                                                                                                                   |
| Power Requirement | DC IN 12V, 1000W max. ;<br>TDP:TBD                                                                                                                           |                    |                                                                                                                                                                                                                                                   |
| Watchdog Timer    | Watchdog timeout programmable via software 1 to 255 second                                                                                                   |                    |                                                                                                                                                                                                                                                   |
| OS                | Windows 11, Windows 10 IoT Enterprise 2021 LTSC, Ubuntu, SuSe, Red Hat Enterprise, Wind River Linux, Wind River VxWorks 7                                    |                    |                                                                                                                                                                                                                                                   |
|                   |                                                                                                                                                              | Mechanical         |                                                                                                                                                                                                                                                   |
|                   |                                                                                                                                                              | Structure          | SGCC frame, Aluminum-magnesium alloy chassis, temperature control by PWM fan                                                                                                                                                                      |
|                   |                                                                                                                                                              | Color              | Granite gray + Black                                                                                                                                                                                                                              |
|                   |                                                                                                                                                              | Mounting           | Desktop mounting with anti-vibration rubber pads                                                                                                                                                                                                  |
|                   |                                                                                                                                                              | Dimension          | 245*376.8*254.8mm(W*H*D)                                                                                                                                                                                                                          |
|                   |                                                                                                                                                              | Net weight         | TBD                                                                                                                                                                                                                                               |
|                   |                                                                                                                                                              | Environmental      |                                                                                                                                                                                                                                                   |
|                   |                                                                                                                                                              | Operating Temp     | -20°C~60°C , with air flow                                                                                                                                                                                                                        |
|                   |                                                                                                                                                              | StorageTemp        | - 40°C~85°C                                                                                                                                                                                                                                       |
|                   |                                                                                                                                                              | Storage Humidity   | 10~95%@40°C, No-condensation                                                                                                                                                                                                                      |
|                   |                                                                                                                                                              | Vibration          | 5 grms/5~500Hz/random/during operation(SSD);<br>1 grms/5~500Hz/random/during operation(HDD)                                                                                                                                                       |
|                   |                                                                                                                                                              | Shock              | 50g peak acceleration(11ms duration)(SSD);<br>20g peak acceleration(11ms duration)(HDD)                                                                                                                                                           |
|                   |                                                                                                                                                              | Certification/ EMC | CE/FCC Class A                                                                                                                                                                                                                                    |

## I/O View



## Dimensions



## Ordering Information

| Model                   | Processor                                          | Specifications                                                                                                                                                                | Expansion                                                                                                                         |
|-------------------------|----------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|
| BRAV-7721-S001          | Intel® Alder lake-S 12th-Gen LGA1700 CPU, Q670 PCH | 2*DDR5 SODIMM, 3*LAN, 6*USB3.2, 2*USB2.0(built-in) , 2*COM, 1*VGA, 1*DP,1*HD-MI, 16bit DIO(built-in), 1*I-Port, 2*2.5"SATA bay, 2*Mini PCIe, 1*M.2 B-Key, 1*M.2 M-Key, DC 12V | <b>Default: ECX-254</b><br>2*PCIeX16(X8)+2*PCIeX16(X4)<br><b>Optional: ECX-275</b><br>1*PCIeX16(X16)+1*PCIeX16(X4)<br>2*32bit PCI |
| Recommend GPU/AI Module |                                                    | Support a maximum 2*450W GPU+2*75W/150W AI module (GPU/AI module<300mm)                                                                                                       |                                                                                                                                   |
| UHP-500DC12             |                                                    | AC/DC power adapter, DC12V@41.7A, 90-264V AC IN, DC OUT 12V , wide temperature fanless, 500W                                                                                  |                                                                                                                                   |
| LMF1000-20B12           |                                                    | AC/DC power adapter, DC12V@80A, 90-264V AC IN or 120-370V DC IN, DC OUT 12V, 1000W, low-noise fan                                                                             |                                                                                                                                   |



# BRAV-7721-WP

Intel® Alder lake-S LGA1700 CPU, 3\*LAN, 6\*USB3.2, 8K DP+4K HDMI , 2\*PCIe5.0 X8+2\*PCIe4.0 X4, 2\*2.5" SATA bay , DC IN 9-55V 1000W

## Key Specification

- Intel® 12th Gen Alder lake-S LGA1700 CPU
- Intel® Q670 Chipset
- 2\*DDR5 4800MHz SODIMM, up to 64GB
- 1\*DP+1\*HDMI and 1\*VGA, UHD 8K+4K three independent displays
- 2\*Intel® I226V Gigabit LAN, 1\*Intel® I219LM Gigabit LAN, support iAMT12.0
- 2\*PCIe X16 (X8 signal)+2\*PCIe X16 (X4 signal), four PCIe expansions
- 2\*2.5" SATA3.0 Bays, 1\*M.2 2280 PCIeX4 NVMe
- Support TPM2.0 and iVpro technology
- Fanless cooling for CPU , AI/GPU card with efficient fan cooling design
- Support dual 450W GPU + dual 75W/150W AI acceleration cards
- 1000W DC IN 9-55V, and wide temperature fanless AC-DC power adapter with PFC



## Product Overview

BRAV-7721-WP is a workstation-grade edge computing system, powered by the Intel® Alder Lake-S series CPU, Q670 chipset, dual-channel DDR5 memory, and four PCIe expansions. It provides flexible computing power options, multiple IO interfaces, a high PFC power supply, a high-efficiency cooling solution, and an industrial-grade reliability design. It is highly suitable for applications in V2X MEC, highway event detection, unmanned experimental vehicles, high-precision machine vision, and other fields.

## Product Parameters

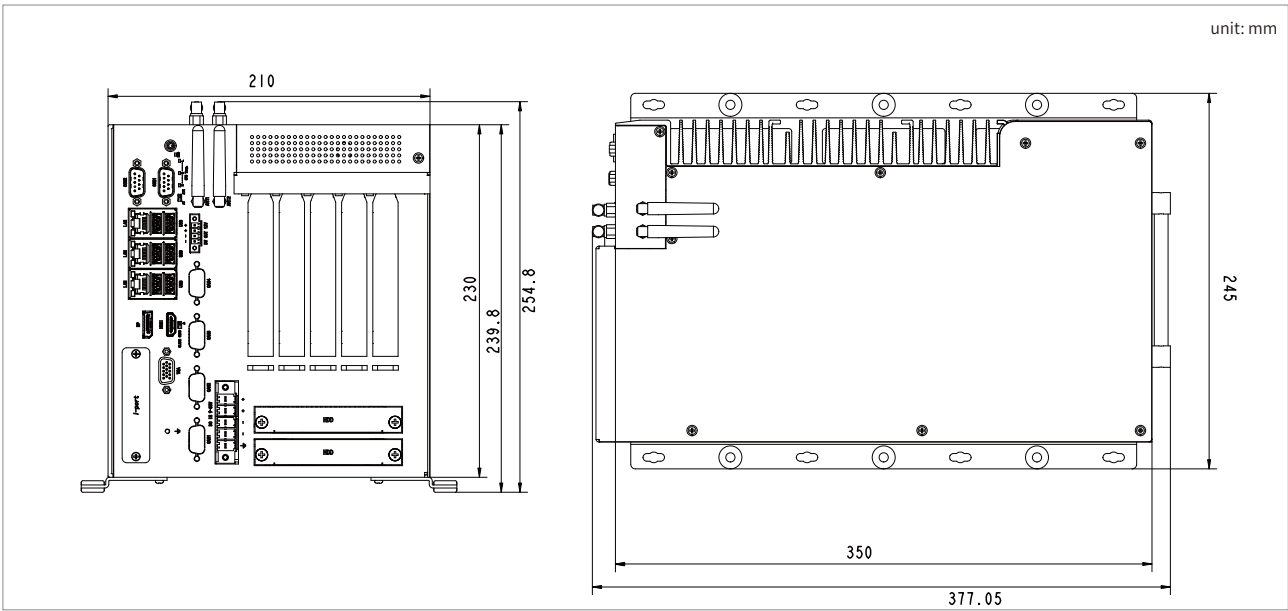
### System

|                   |                                                                                                                                                              |                   |                                                                                                                                                                                                                                                   |
|-------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Processor         | Intel® Alder lake-S 12th-Gen Core™ i9/i7/i5/i3/Pentium/Celeron LGA1700 CPU, Intel® Q670 PCH                                                                  | Expansion         | 1*Mini PCIe(PCleX1/USB+SIM),4G LTE/PCle;<br>1*Mini PCIe(PCleX1/SATA),mSATA;<br>1*M.2 3052 B-Key(PCleX1/USB+SIM),5G NR;<br>1*M.2 2280 M-Key(PCle4.0X4), NVMe;<br>2*PCIe5.0X16(X8),GPU<450W<300mm<br>2*PCIeX16(4.0X4+3.0X4),AI card<75W(150W)<300mm |
| RAM               | 2*262-Pin SODIMM, DDR5 4800MHz, 64GB max.                                                                                                                    |                   |                                                                                                                                                                                                                                                   |
| Graphics          | Intel® UHD Graphics, Supports DirectX 12, OpenGL 4.5, OpenCL 3.0; DP:7680*4320@60Hz, HDMI:4096*2160@60Hz, VGA:1920*1200@60Hz, support 3 independent displays |                   |                                                                                                                                                                                                                                                   |
| LAN               | 2* Intel I226V, 10-1000M;<br>1* Intel I219LM,10-1000M, iAMT 12.0                                                                                             |                   |                                                                                                                                                                                                                                                   |
| USB               | 4* USB3.2(10G)+2*USB3.0(5G)                                                                                                                                  |                   |                                                                                                                                                                                                                                                   |
| Display           | 1* DP+1*HDMI+1* VGA                                                                                                                                          |                   |                                                                                                                                                                                                                                                   |
| Audio             | /                                                                                                                                                            |                   |                                                                                                                                                                                                                                                   |
| COM/others        | 2*RS232/422/485                                                                                                                                              |                   |                                                                                                                                                                                                                                                   |
| DIO               | optional16 bit DIO, TTL, programmable input/output                                                                                                           |                   |                                                                                                                                                                                                                                                   |
| Storage           | 2*2.5"SATA3 HDD(RAID0/1), 15mmthickness;<br>1*M.2 2280 M-Key(PCle4.0X4), NVMe; 1*mSATA(optional)                                                             |                   |                                                                                                                                                                                                                                                   |
| LED               | 1*PowerLED, 1*HDD LED                                                                                                                                        |                   |                                                                                                                                                                                                                                                   |
| Control Switch    | 1*Power SW, 1*AT/ATX SW, 1*Clear CMOS SW                                                                                                                     |                   |                                                                                                                                                                                                                                                   |
| Power Requirement | DC IN 9-55V, 1000W max. ;<br>TDP:TBD                                                                                                                         |                   |                                                                                                                                                                                                                                                   |
| Watchdog Timer    | Watchdog timeout programmable via software 1 to 255 second                                                                                                   |                   |                                                                                                                                                                                                                                                   |
| OS                | Windows 11, Windows 10 IoT Enterprise 2021 LTSC, Ubuntu, SuSe, Red Hat Enterprise, Wind River Linux, Wind River VxWorks 7                                    |                   |                                                                                                                                                                                                                                                   |
|                   |                                                                                                                                                              | Mechanical        |                                                                                                                                                                                                                                                   |
|                   |                                                                                                                                                              | Structure         | SGCC frame, Aluminum-magnesium alloy chassis, temperature control by PWM fan                                                                                                                                                                      |
|                   |                                                                                                                                                              | Color             | Granite gray + Black                                                                                                                                                                                                                              |
|                   |                                                                                                                                                              | Mounting          | Desktop mounting with anti-vibration rubber pads                                                                                                                                                                                                  |
|                   |                                                                                                                                                              | Dimension         | 245*376.8*254.8mm(W*H*D)                                                                                                                                                                                                                          |
|                   |                                                                                                                                                              | Net weight        | TBD                                                                                                                                                                                                                                               |
|                   |                                                                                                                                                              | Environmental     |                                                                                                                                                                                                                                                   |
|                   |                                                                                                                                                              | Operating Temp    | -20°C~60°C , with air flow                                                                                                                                                                                                                        |
|                   |                                                                                                                                                              | StorageTemp       | -40°C~85°C                                                                                                                                                                                                                                        |
|                   |                                                                                                                                                              | StorageHumidity   | 10~95%@40°C, No-condensation                                                                                                                                                                                                                      |
|                   |                                                                                                                                                              | Vibration         | 5 grms/5~500Hz/random/during operation(SSD);<br>1 grms/5~500Hz/random/during operation(HDD)                                                                                                                                                       |
|                   |                                                                                                                                                              | Shock             | 50g peak acceleration(11ms duration)(SSD);<br>20g peak acceleration(11ms duration)(HDD)                                                                                                                                                           |
|                   |                                                                                                                                                              | Certification/EMC | CE/FCC Class A                                                                                                                                                                                                                                    |

## I/O View



## Dimensions



## Ordering Information

| Model                   | Processor                                          | Specifications                                                                                                                                                                  | Expansion                                                                                                                         |
|-------------------------|----------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|
| BRAV-7721-WP            | Intel® Alder lake-S 12th-Gen LGA1700 CPU, Q670 PCH | 2*DDR5 SODIMM, 3*LAN, 6*USB3.2, 2*USB2.0(built-in) , 2*COM, 1*VGA, 1*DP,1*HD-MI, 16bit DIO(built-in), 1*I-Port, 2*2.5"SATA bay, 2*Mini PCIe, 1*M.2 B-Key, 1*M.2 M-Key, DC 9-55V | <b>Default: ECX-254</b><br>2*PCIeX16(X8)+2*PCIeX16(X4)<br><b>Optional: ECX-275</b><br>1*PCIeX16(X16)+1*PCIeX16(X4)<br>2*32bit PCI |
| Recommend GPU/AI Module |                                                    | Support a maximum 2*450W GPU+2*75W/150W AI module (GPU/AI module<300mm)                                                                                                         |                                                                                                                                   |
| UHP-500DC12             |                                                    | AC/DC power adapter, DC12V@41.7A, 90-264V AC IN, DC OUT 12V , wide temperature fanless, 500W                                                                                    |                                                                                                                                   |
| LMF1000-20B12           |                                                    | AC/DC power adapter, DC12V@80A, 90-264V AC IN or 120-370V DC IN, DC OUT 12V, 1000W, low-noise fan                                                                               |                                                                                                                                   |

# CNTI-3A51

Loongson 3A5000 CPU, 2\*LAN, 4\*USB3.0, 2\*USB2.0, 1\*VGA, 1\*HDMI, 12\*RS232/422/485, 24 bit DIO, 1\*M.2 M-KEY, 1\*M.2 E-KEY, DC 12-36V

## Key Specification

- Loongson3A5000 CPU, 4 Cores, 2.3-2.5GHz Primary Frequency
- LS7A1000 Chipset
- 2\*DDR4 3200MHz DIMM memory, up to 64GB
- 1\*VGA+1\*HDMI
- 2\*LAN, 4\*USB3.0, 2\*USB2.0, 12\*COM(RS232/422/485), 1\*24bit Iso. DIO
- 1\*M.2 2230 E-Key, optional support WiFi / Bluetooth
- 1\*2.5"SATA bay, 1\*M.2 2280 M-Key, support NVMe storage
- DC 9~36V wide power input, with overcurrent, overvoltage, short
- circuit and reverse connection protection



## Product Overview

CNTI-3A51 is a domestically-made fanless box computer, equipped with the Loongson 3A5000 processor, LS7A1000 chipset, 2\*DDR4 3200MHz dual-channel memory, up to 32GB. It supports dual display with VGA + HDMI, 2\*LAN, 4\*USB3.0, 2\*USB2.0, 12\*multi-mode isolated COM ports (RS232/422/485), 1\*124bit isolated DIO, 2\*2.5" SATA3.0, 1\*M.2 2280 M-KEY supporting NVMe storage, 1\*M.2 2230 E-KEY WIFI interface, and DC 9-36V wide voltage power supply. It is suitable for applications in industries such as highway toll collection, rail transit ticketing, and power automation.

## Product Parameters

### System

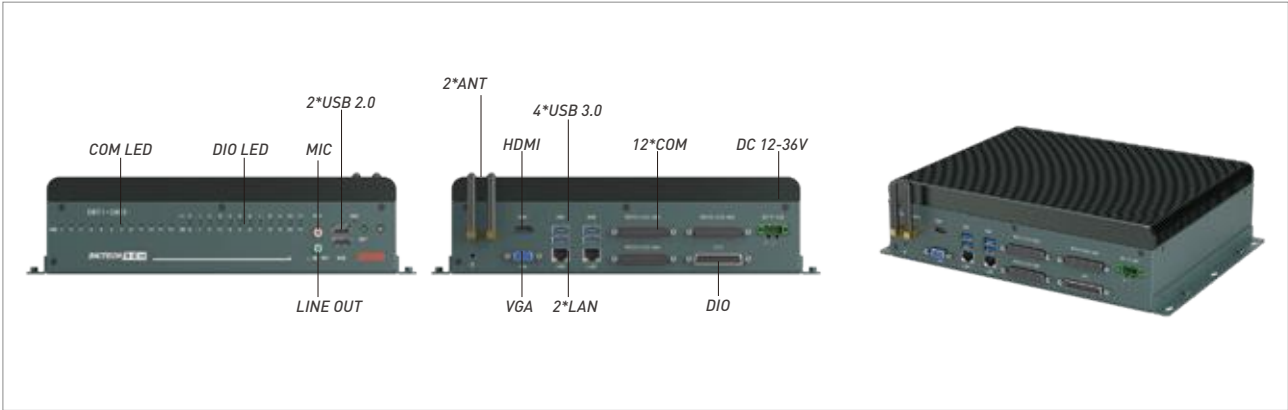
|                |                                                                           |
|----------------|---------------------------------------------------------------------------|
| Processor      | Loongson3A5000, 4 cores, 2.3GHz-2.5GHz, LS7A1000PCH                       |
| RAM            | 2*288 Pin DIMM, DDR4 3200MHz, 64GB max.                                   |
| Graphics       | nuclear display                                                           |
| LAN            | 2*88E1512, 10-1000M                                                       |
| USB            | 4*USB3.0, 2*USB2.0                                                        |
| Display        | 1*HDMI+1*VGA                                                              |
| Audio          | 1*Line out+1*MIC, Realtek ALC269Q-VC                                      |
| COM/others     | 12*RS232/422/485(3*DB44)                                                  |
| DIO            | 24 bit isolated DIO(12bit DI, 12bit DO,DB25)                              |
| Storage        | 2*2.5" SATA3.0;<br>1*M.2 2280 M-key(PCIe2.0X4),NVMe                       |
| LED            | 1*PW LED, 1*HDD LED, DIO LED, COM LED                                     |
| Control Switch | 1*Power SW, 1*RST                                                         |
| OS             | UOS/KylinOS/LOONGNIX/openEuler                                            |
| Expansion      | 1*M.2 2280 M-key(PCIe2.0X4), NVMe;<br>1*M.2 2230 E-key(PCIeX1/USB), WIFI; |

|                   |                                        |
|-------------------|----------------------------------------|
| Power Requirement | DC 12~36V;<br>TDP: TBD                 |
| Mechanical        |                                        |
| Structure         | Aluminum-magnesium alloy, SGCC chassis |
| Color             | Granite Gray + Graphite Black          |
| Mounting          | Desktop mounting                       |
| Dimension         | 312*220.2*78mm(W*H*D)                  |
| Net weight        | TBD                                    |

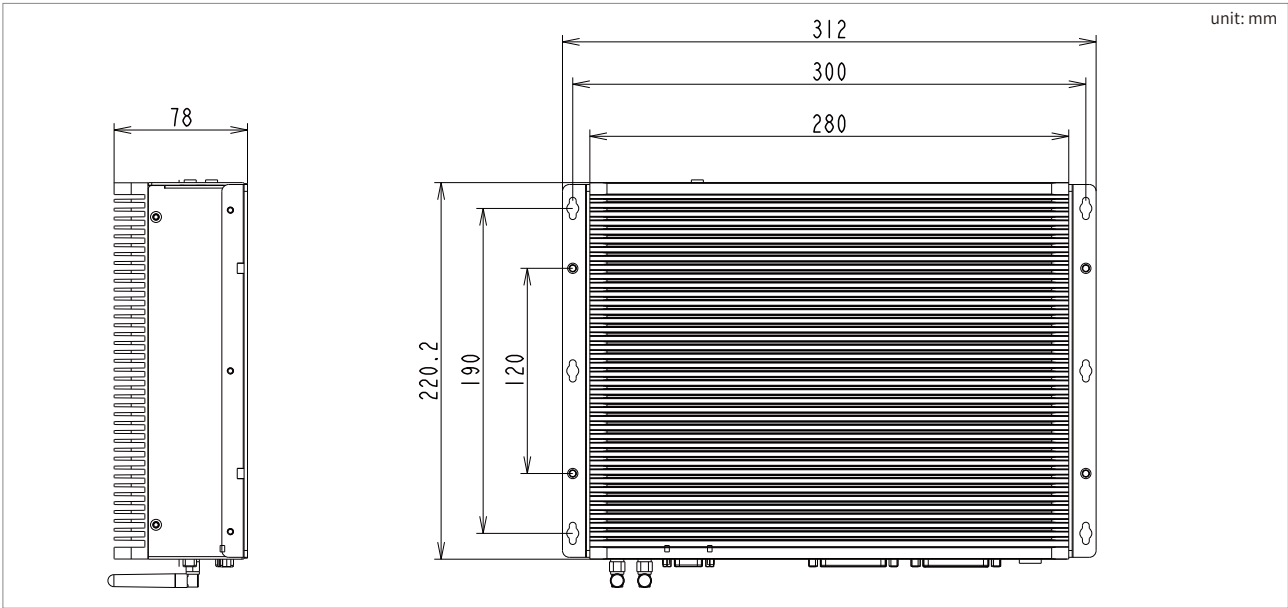
### Environmental

|                    |                                                                                             |
|--------------------|---------------------------------------------------------------------------------------------|
| Operating Temp     | -20°C~-60°C , SSD, with air flow                                                            |
| Storage temp.      | - 40°C~85°C                                                                                 |
| StorageHumidity    | 10~95%@40°C, No-condensation                                                                |
| Vibration          | 5 grms/5~500Hz/random/during operation(SSD);<br>1 grms/5~500Hz/random/during operation(HDD) |
| Shock              | 50g peak acceleration(11ms duration)(SSD);<br>20g peak acceleration(11ms duration)(HDD)     |
| Certification/ EMC | CE/FCC Class A                                                                              |

## I/O View



## Dimensions



## Ordering Information

| Model          | Processor                         | Specifications                                                                                                                                                             |
|----------------|-----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CNTI-3A51-S001 | Loongson 3A5000 CPU, LS7A1000 PCH | 2*DDR4, 2*LAN, 4*USB3.0, 2*USB2.0, 12*RS232/422/485, 24 bit isolatedDIO, 1*VGA, 1*HMDI, Audio OUT + Mic, 2*2.5"SATA3.0, 1*M.2 2280 M-Key, 1*M.2 2230 E-KEY WIFI, DC 12-36V |
| PA-120DC19     |                                   | AC/DC power adapter, DC19V@6.32A,120W                                                                                                                                      |



# CNTI-R351

Rockchip RK3588 CPU, 4GB Ram, 32GB eMMC, 4\*LAN, 2\*USB3.0, 2\*USB2.0, 1\*HDMI, 2\*COM, 1\*DIO, 2\*CAN, 1\*Audio out, 1\*Mini PCIe, 1\*M.2 M-Key, opt. WIFI6+BT5.0, DC 9-36V

## Key Specification

- Aluminum magnesium alloy profile shell with fanless heat dissipation
- Rockchip RK3588 CPU, 4 Cortex-A76 and 4 Cortex-A55, 2.4GHz
- Onboard 4GB memory
- 1\*HDMI
- 4\*LAN, 2\*USB3.0, 2\*USB2.0, 2\*COM, 1\*8bit DIO, 2\*Iso. CAN2.0,
- 1\*Audio out
- 1\*Full size Mini PCIe, with SIM card slot, supports 4G LTE
- Opt. onboard Gigabit WiFi6/Bluetooth 5.0
- Onboard 32GB eMMC + 1\*M.2 2242 M-Key dual storage
- DC 9~36V wide power input, with overcurrent, overvoltage and reverse connection protection



## Product Overview

CNTI-R351 is a fanless box computer, powered by Rockchip RK3588 processor, on-board 4GB memory, and on-board 32GB eMMC storage. HDMI display, 4\*LAN, 2\*USB3.0, 2\*USB2.0, 2\*COM (1\*RS485, 1\*RS232), 1\*8bit DIO, 2\*Iso. CAN2.0, 1\*M.2 2242 M-Key, 1\*full size Mini PCIe, with SIM card slot, supports 4G LTE, opt. onboard WIFI6+ BT5.0. DC 9-36V wide power input, is suitable for industrial applications such as logistics visual inspection, AGV, AMR and intelligent connected vehicle MEC.

## Product Parameters

### System

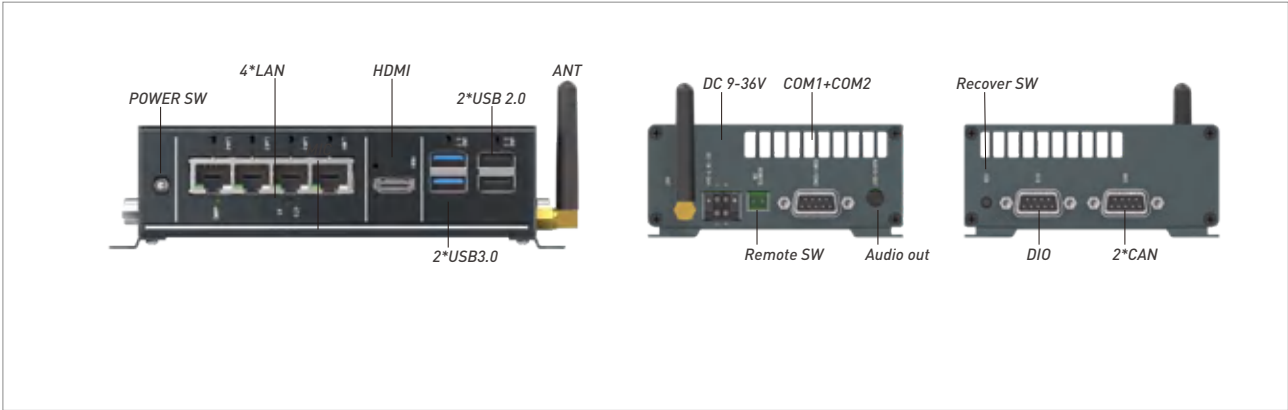
|            |                                                                                                                                                  |
|------------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| Processor  | Rockchip RK3588, 4 Cortex-A76 and 4 Cortex-A55, 2.4GHz                                                                                           |
| RAM        | Onboard memory, 4GB LPDDR4                                                                                                                       |
| Graphics   | Mali-G610 GPU, 支持OpenGL ES3.2/OpenCL2.2/Vulkan1.1, 2D and 3D acceleration hardware;<br>HDMI:1920*1080@60Hz<br>NPU: 6.0TOPS, INT4/INT8/INT16/FP16 |
| LAN        | 2*RTL8211F, 10-1000M; 2*RTL8111H,10-1000M                                                                                                        |
| USB        | 2* USB3.0+2*USB2.0                                                                                                                               |
| Display    | 1*HDMI                                                                                                                                           |
| Audio      | Audio out , Realtek ALC5640                                                                                                                      |
| COM/others | 1*RS232+1*RS485; 2*2.5KV optical iso. CAN (CAN Open2.0,DB9)                                                                                      |
| DIO        | 1*8 bit DIO(DB9)                                                                                                                                 |
| Storage    | Onboard 32G eMMC, 1*M.2 2242 M-key, NVMe                                                                                                         |
| LED        | 1*Power LED(on power button), 1*HDD LED                                                                                                          |
| Control    | 1*Power Button, 1*Remote SW, 1*Recover SW                                                                                                        |
| OS         | Android, Linux                                                                                                                                   |
| Expansion  | 1*Full size Mini PCIe(+SIM), 4G LTE/PCIe moudle; Opt. onboard Wifi6/BT5.0                                                                        |

|             |                                                   |
|-------------|---------------------------------------------------|
| Power & TDP | DC 9~36V; TBD                                     |
| Mechanical  | Aluminum-magnesium alloy, SGCC frame              |
| Structure   | Granite gray + Graphite black                     |
| Color       | Desktop mounting, optional DIN-rail/Wall mounting |
| Mounting    | 169*100*44.2mm                                    |
| Dimension   | TBD                                               |
| Net weight  |                                                   |

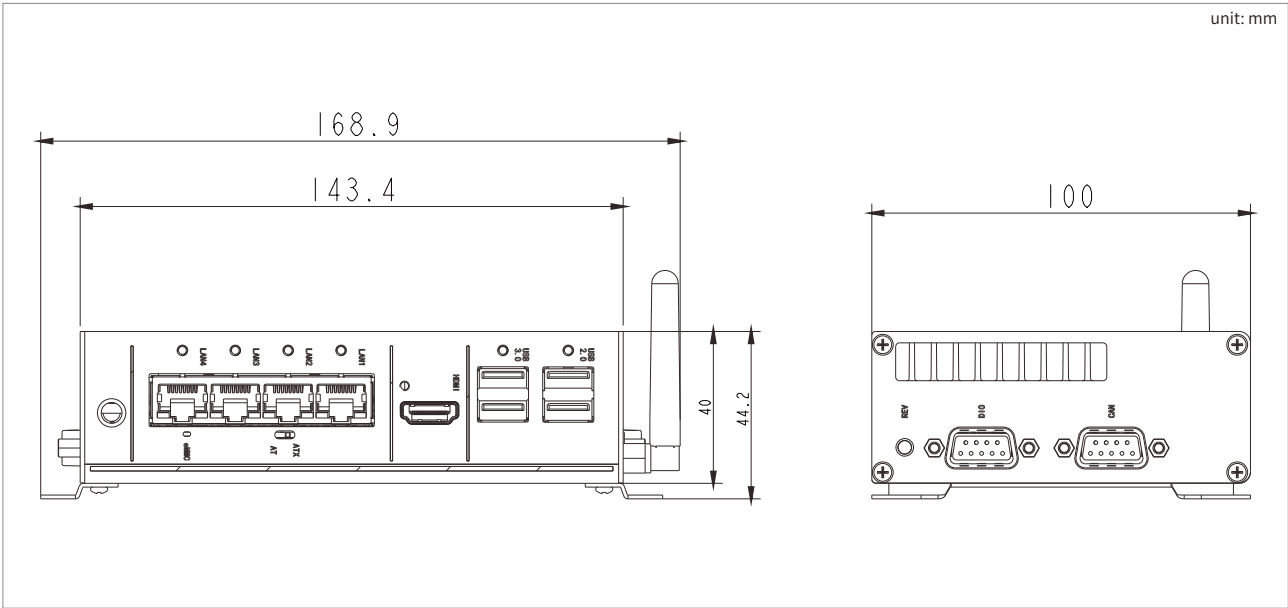
### Environmental

|                    |                                                                                          |
|--------------------|------------------------------------------------------------------------------------------|
| Operating Temp     | -20°C~60°C , SSD, with air flow                                                          |
| Storage temp.      | - 40°C~85°C                                                                              |
| StorageHumidity    | 10~95%@40°C, No-condensation                                                             |
| Vibration          | 5 grms/5~500Hz/random/during operation(SSD); 1 grms/5~500Hz/random/during operation(HDD) |
| Shock              | 50g peak acceleration(11ms duration)(SSD); 20g peak acceleration(11ms duration)(HDD)     |
| Certification/ EMC | CE/FCC Class A                                                                           |

## I/O View



## Dimensions



## Ordering Information

| Model             | Processor           | Specifications                                                                                                                                                                                                  |
|-------------------|---------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CNTI-R351-S001-4G | Rockchip RK3588 CPU | Rockchip RK3588 CPU, 4GB memory, 32GB eMMC, 4*LAN, 2*USB3.1, 2*USB2.0, 2 *COM (1*RS485, 1*RS232), 1*8bit DIO, 2*iso. CAN, 1*HMDI, Audio out, 1*Mini PCIe, 1*M.2 2242 M-Key, opt. on-board WIFI6+BT5.0, DC 9-36V |
| PA-60DC12         |                     | AC/DC adapter, DC12V/5A 60W                                                                                                                                                                                     |

# CNTI-2K10

Loongson 2K1000LA CPU, 2\*LAN, 2\*CAN2.0, 2\*USB2.0, 4\*COM, 8\*GPIO, 1\*M.2 2242 B-KEY, 1\*M.2 E-KEY, DC 5V/3A

## Key Specification

- Loonson 2K1000LA dual-core processor, 800MHz-1.0GHz
- On-board DDR3 particles, 1GB standard, maximum support 2GB
- 1\*SATA2.0 M.2 2242 B-KEY, standard with 32G SSD
- 1\*M.2 2230 E-KEY, optional support 4G/WiFi/ Bluetooth
- 2\*LAN, 2\*USB2.0, 4\*COM(2\*RS232+2\*RS485), 2\*CAN2.0, 8\*GPIO
- Supports automatic startup or manual startup of the system
- DC 5V/3A power supply



## Product Overview

CNTI-2K10 is a domestic fan-less box computer, equipped with Loongson 2K1000LA processor, on-board DDR3 particles, standard memory capacity of 1GB, maximum support 2GB. 2\*LAN, 2\*CAN2.0, 2\*USB2.0, 4\*COM, 1\*SATA2.0 M.2 2242 interface, 1\*M.2 NGFF E-KEY (PCIe2.0X1+USB2.0 signal). DC 5V/3A power supply, suitable for highway tolling, industrial control, Internet of Things data acquisition and other application scenarios.

## Product Parameters

### System

|             |                                                                                  |
|-------------|----------------------------------------------------------------------------------|
| CPU         | Loonson 2K1000LA, 800MHz-1.0GHz                                                  |
| RAM         | Onboard memory, 1GB DDR3 (2GB max.)                                              |
| Expansion   | 1*SATA2.0 M.2 2242 B-KEY;<br>1*M.2 NGFF 2230 E-KEY(PCIe2.0X1+USB2.0), 4G/WIFI/BT |
| LAN         | 10M-1000M                                                                        |
| USB         | 2*USB2.0                                                                         |
| Display     | /                                                                                |
| Audio       | /                                                                                |
| COM/others  | 2*RS232+2*RS485; 2*CAN; 1*Micro USB                                              |
| DIO         | 8*GPIO (DB9)                                                                     |
| Storage     | 1*SATA2.0 M.2 2242 B-KEY,<br>standard with32GB SSD                               |
| LED         | 1*Power LED, 1*HDD LED                                                           |
| Control     | 1*Power Button, 1*RST Button                                                     |
| OS          | Buildroot/OpenHarmony/Loongnix/SylixOS                                           |
| Power & TDP | DC 5V/3A;<br>TBD                                                                 |

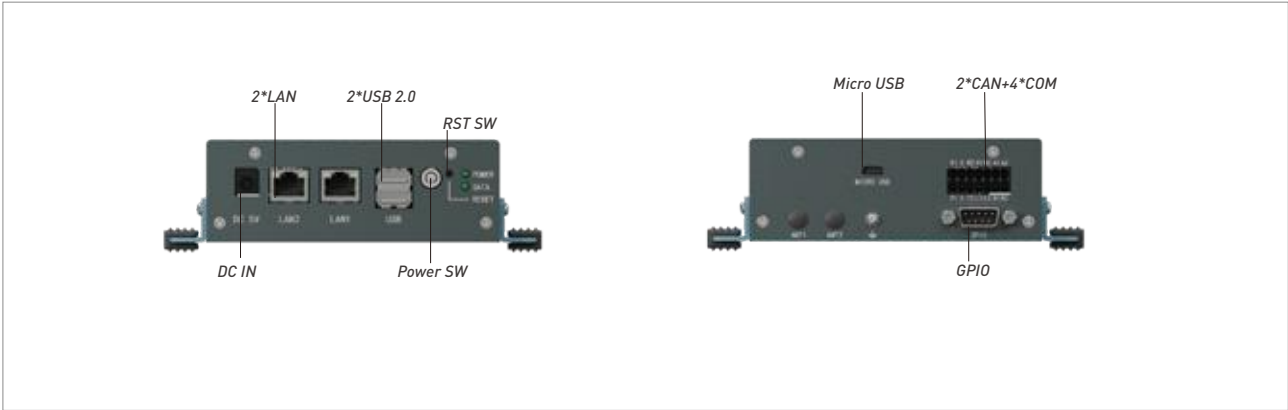
### Mechanical

|            |                            |
|------------|----------------------------|
| Structure  | SGCC frame                 |
| Color      | Granite gray + Pastel blue |
| Mounting   | Desktop mounting           |
| Dimension  | 153*154*46mm               |
| Net weight | 0.82KG                     |

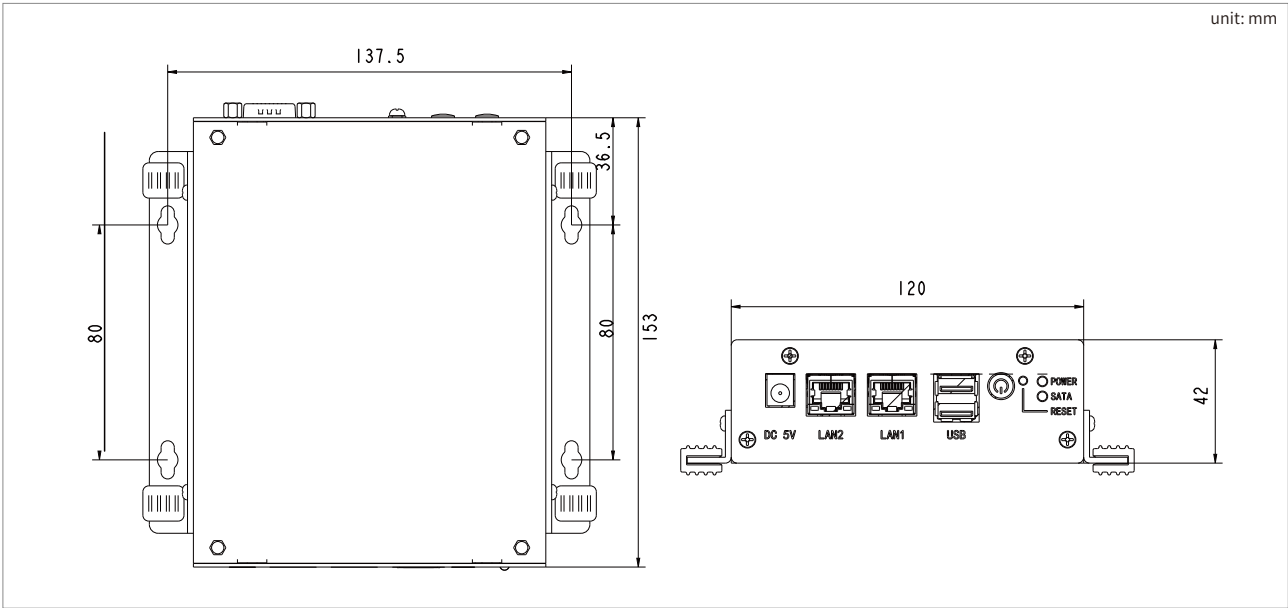
### Environmental

|                    |                                                                                             |
|--------------------|---------------------------------------------------------------------------------------------|
| Operating Temp     | -10°C~60°C , SSD, with air flow                                                             |
| Storage temp.      | - 40°C~85°C                                                                                 |
| StorageHumidity    | 10~95%@40°C, No-condensation                                                                |
| Vibration          | 5 grms/5~500Hz/random/during operation(SSD);<br>1 grms/5~500Hz/random/during operation(HDD) |
| Shock              | 50g peak acceleration(11ms duration)(SSD);<br>20g peak acceleration(11ms duration)(HDD)     |
| Certification/ EMC | CE/FCC Class A                                                                              |

## I/O View



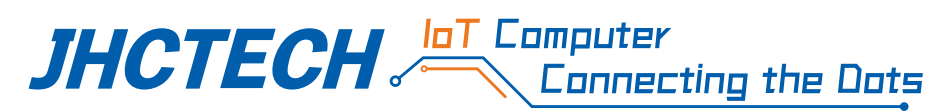
## Dimensions



## Ordering Information

| Model     | Processor             | Specifications                                                                                         |
|-----------|-----------------------|--------------------------------------------------------------------------------------------------------|
| CNTI-2K10 | Loongson 2K1000LA CPU | Onboard DDR3 memory, 2*LAN, 2*CAN2.0, 2*USB2.0, 4*COM, 8*GPIO, 1*M.2 2242 B-KEY, 1*M.2 E-KEY, DC 5V/3A |





**KGEC**  
Edge controller





APPLICATION  
▶▶▶  
Industrial Robotics

Product Listing **B01**

KAGO-6200 **B03**

KAGO-6300 **B05**

KAGO-6301 **B07**

KAGO-6310 **B09**

KAGO-6500 **B11**



CNC Machinery



Machine Vision







KGEC-6200



KGEC-6300



KGEC-6301



KGEC-6310



KGEC-6500

System

|          |                                                                  |                                                                                                                     |                                                                                                                     |                                                                                             |                                                                                                                       |
|----------|------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|
| CPU      | Intel® Elkhart lake Soc CPU, Celeron J6412; Celeron N6210        | 6th/7th Gen Intel® Skylake-S/Kabylake-S Pentium/Core I3/I5/I7 CPU LGA 1151 socket,max support 65W                   | 6th/7th Gen Intel® Skylake-S/Kabylake-S Pentium/Core I3/I5/I7 CPU LGA 1151 socket,max support 65W                   | 8th gen Intel Whiskeylake U:Celeron 4305U; Core U: I3-8145U; I5-8265U; I7-8565U             | Intel 10th Gen. Cometlake-S Core i9/i7/i5/i3/Celeron CPU,LGA 1200 Socket                                              |
| RAM      | 1* DDR4 SODIMM 3200MHz, 32GB max.                                | 1* DDR4 2400/2133MHz, 16GB max.                                                                                     | 1* DDR4 2400/2133MHz, 16GB max.                                                                                     | 2* DDR4 2400MHz , 32GB max.                                                                 | 2*DDR4 SO-DIMM 2933MHz , 64GB max.                                                                                    |
| Graphics | Intel Gen10 UHD Graphics, H.265/HEVC,HW; HDMI2.0: 4096*2304@60Hz | IntelGen.9 HD Graphics,HEVC/H265 HW DP: 4096*2304@60Hz, DVI-I(DVI-D+VGA) DVI-D: 1920*1200@60Hz, VGA: 2560*1600@60Hz | IntelGen.9 HD Graphics,HEVC/H265 HW DP: 4096*2304@60Hz; DVI-I(DVI-D+VGA) DVI-D: 1920*1200@60Hz, VGA: 2560*1600@60Hz | Intel Gen. 9 UHD Graphics,HEVC/ H265 HW HD codec HDMI: 4096*2304@60Hz DVI-D: 2560x1600,60Hz | Intel® UHD Graphics,Supports DirectX 12, OpenGL 4.5&OpenCL 2.1 HDMI: 4096*2160@30Hz, DVI-I(DVI-D+VGA): 1920x1200,60Hz |

I/O Interface

|             |                          |                                   |                                                               |                                                              |                                                                   |
|-------------|--------------------------|-----------------------------------|---------------------------------------------------------------|--------------------------------------------------------------|-------------------------------------------------------------------|
| LAN         | 2*Intel I226V, 10-1000M  | 2*Intel I210AT,10-1000M           | 2*Intel I210AT, 10-1000M; 4*Intel I210AT(+POE),802.3af(15.4W) | 3*Intel I210AT,10-1000M; 1*Intel®I219LM , iAMT12.0 and iVpro | 1*Intel I226V, 10M-2.5G,support WOL; 1*Intel®I219LM , support WOL |
| USB         | 2* USB3.1, 2*USB2.0      | 4* USB3.0                         | 4* USB3.0                                                     | 2*USB3.1 + 2* USB2.0                                         | 4*USB3.2 + 3* USB2.0(Build-in)                                    |
| Display     | 1* HDMI                  | 1* DP + 1* DVI-I                  | 1* DP + 1*DVI-I                                               | 1* DVI-D + 1* HDMI                                           | 1* DVI-I + 1*HDMI                                                 |
| Audio       | /                        | /                                 | /                                                             | 1* Line out + 1* MIC                                         | /                                                                 |
| Serial Port | 1*RS232/422/485; 1*RS232 | 2*RS232/422/485 with isolated TVS | 2*RS232/422/485 with isolated TVS                             | 2*RS232/422/485                                              | 2*RS232/422/485                                                   |
| DIO         | 6 bit DIO(MI/O)          |                                   | 16-bit Isolator DIO(Phoenix terminal)                         | 8-bit DIO(Phoenix terminal)                                  | /                                                                 |

Storage

|         |                        |                          |                                                 |                              |                               |
|---------|------------------------|--------------------------|-------------------------------------------------|------------------------------|-------------------------------|
| Storage | 1*mSATA Full Size,AHCI | 1*mSATA full height card | 1*2.5" SATA3.0 HDD/SSD 1*mSATA full height card | 1*2.5"SATA3.0, 1*mSATA ,AHCI | 1*2.5" SATA3.0, 1*mSATA ,AHCI |
|---------|------------------------|--------------------------|-------------------------------------------------|------------------------------|-------------------------------|

Expansion

|           |                                        |                                                                                                            |                                                                                 |                                                                               |                                                                                  |
|-----------|----------------------------------------|------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------------------------------------------------------|
| Expansion | 1*Mini PCIe(PCleX1/USB+SIM),4G/Wifi/BT | 1*Mini PCIe(PCleX1/USB+SIM),4G/Wifi/BT; Optional 1*PCle3.0 X4(X1) + 1*32bit-PCI; Optional 1*PCle3.0 X4(X1) | 1*Mini PCIe(PCleX1/USB+SIM),4G/Wifi/BT; Optional 1*PCle3.0 X4(X1) + 2*32bit-PCI | 1*M.2 E-key(PCle X1/USB2.0),Wifi/BT; 1*Mini PCIe(PCle X1/USB+SIM),4G/Wifi/ BT | 1*Mini PCIe(PCle X1/USB2.0+SIM),4G/Wifi/BT; Optional 1*PCle3.0 X4(X4), 4*PoE+LAN |
|-----------|----------------------------------------|------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------------------------------------------------------|

Power Supply

|            |                                                                          |                                                                                   |                                                                                 |                                               |                                                         |
|------------|--------------------------------------------------------------------------|-----------------------------------------------------------------------------------|---------------------------------------------------------------------------------|-----------------------------------------------|---------------------------------------------------------|
| Power& TDP | DC 12V;Optional DC 9~36V(OFX-075) 15.6W(Celeron J6412,32G DDR4,128G SSD) | DC 12~24V input, 2*2-pin; S001(43.7W I7-7700 4GB)/ (49.4W I7-7700 4GB,+Expansion) | DC 12~24V , 2*2-pin; S001(49.2W I7-6700T 4GB) / (52.8W I7-6700T 4GB,+Expansion) | DC 12~24V, 2*2-pin; 31.68W (CPU I3-8145U 4GB) | DC 12~24V, 2*2-pin; 64.8W(I5-10500E,32GB DDR4,128G HDD) |
|------------|--------------------------------------------------------------------------|-----------------------------------------------------------------------------------|---------------------------------------------------------------------------------|-----------------------------------------------|---------------------------------------------------------|

Mechanical

|                   |                              |                                                  |                                                |                              |                                           |
|-------------------|------------------------------|--------------------------------------------------|------------------------------------------------|------------------------------|-------------------------------------------|
| Structure         | Aluminum chassis, SGCC frame | Aluminum chassis, SGCC frame                     | Aluminum chassis, SGCC frame                   | Aluminum chassis, SGCC frame | Aluminum chassis, SGCC frame              |
| Dimension (W*H*D) | 130*100*40mm                 | S001(202*151*57.8mm/ 202*151*109.8mm,+Expansion) | S001(202*151*80.8mm/ 202*151*151mm,+Expansion) | 202*151*81mm                 | 202*154*57.8mm/202*154*89.5mm(+Expansion) |
| Weight            | 750g                         | S001: 2.52KG/3.52KG(+Expansion)                  | S001: 3KG/4.4KG(+Expansion)                    | 2.59KG                       | 1.85KG/2.20KG(+Expansion)                 |

Environmental

|                   |                                                                                          |                                                                                                |                                                                                                |                                                                                                |                                                                                                |
|-------------------|------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|
| Operating temp    | - 20°C~60°C , SSD                                                                        | - 20°C~60°C , SSD                                                                              | - 20°C~60°C , SSD                                                                              | - 20°C~60°C , SSD                                                                              | - 20°C~60°C , SSD                                                                              |
| Storage temp      | - 40°C~85°C                                                                              | - 40°C~85°C                                                                                    | - 40°C~85°C                                                                                    | - 40°C~85°C                                                                                    | - 40°C~85°C                                                                                    |
| Storage Humidity  | 10~95%@40°C, non-condensing                                                              | 10~95%@40°C, non-condensing                                                                    | 10~95%@40°C, non-condensing                                                                    | 10~95%@40°C, non-condensing                                                                    | 10~90%@40°C, non-condensing                                                                    |
| Vibration         | 5 grms/5~500Hz/random/during operation(SSD); 1 grms/5~500Hz/random/during operation(HDD) | 5 grms/5~500Hz/random/during operation(SSD); 1 grms/5~500Hz/random/during operation(HDD)       | 5grms/5~500Hz/random/during operation(SSD); 1grms/5~500Hz/random/during operation(HDD)         | 5grms/5~500Hz/random/during operation(SSD); 1grms/5~500Hz/random/during operation(HDD)         | 5grms/5~500Hz/random/during operation(SSD); 1grms/5~500Hz/random/during operation(HDD)         |
| Shock             | 50g peak acceleration(duration;11ms)(SSD); 20g peak acceleration(duration;11ms)(HDD)     | 50g peak acceleration(duration;11ms)(with SSD); 20g peak acceleration(duration;11ms)(with HDD) | 50g peak acceleration(duration;11ms)(with SSD); 20g peak acceleration(duration;11ms)(with HDD) | 50g peak acceleration(duration;11ms)(with SSD); 20g peak acceleration(duration;11ms)(with HDD) | 50g peak acceleration(duration;11ms)(with SSD); 20g peak acceleration(duration;11ms)(with HDD) |
| Certification/EMC | CE/FCC Class A                                                                           | CE/FCC Class A                                                                                 | CE/FCC Class A                                                                                 | CE/FCC Class A                                                                                 | CE/FCC Class A                                                                                 |

OS

|  |                                                                                                                 |                                                                                                                                                                                   |                                                                                                                                                                               |                                                                                                                    |                                                                                                                     |
|--|-----------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|
|  | RTOS: Intime, EC-Win, RTX-2014/2016, Ubuntu Preempt-RT,Win11/Win10,SUSE, Ubuntu, Wind River, Red Hat Enterprise | RTOS: Intime, EC-Win, RTX-2014/2016 and Ubuntu Preempt-RT,Windows 7, Windows 10, Linux Fedora Ubuntu(Note: 7th gen Intel® Kabylake-S processor does not support Windows 7 32-bit) | RTOS: Intime, EC-Win,RTX-2014/2016,Ubuntu Preempt-RT,Windows 7, Windows 10, Linux Fedora Ubuntu (Note: 7th gen Intel® Kabylake-S processor does not support Windows 7 32-bit) | RTOS: Intime, EC-Win, RTX-2014/2016 and Ubuntu Preempt-RT Windows 10, SUSE, Ubuntu, Wind River, Red Hat Enterprise | RTOS: Intime, EC-Win, RTX-2014/2016, Ubuntu Preempt-RT&Xenomai Windows 10, SUSE, Ubuntu, VXWork, Red Hat Enterprise |
|--|-----------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|

# KGEC-6200

Intel Elkhart lake CPU, 1\*HDMI, 2\*LAN, 2\*USB3.1, 2\*USB2.0, 2\*COM, 1\*Mini PCIe, 1\*mSATA, Mini size, DC 9~36V

## Key Specification

- Intel® Elkhart lake SoC CPU
- 1\*DDR4 3200 SODIMM, Up to 32GB
- 1\*HDMI display, 4K UHD
- 2\*USB3.1, 2\*USB2.0, 2\*COM, 1\*MI/O
- 1\*Mini PCIe Full Size(PCIeX1+USB2.0)w/ SIM
- 1\*mSATA Full Size 6.0Gbps for storage
- Multi mounting, wall mounting , optional DIN-rail Rail /Desktop mounting
- Mini size and Lightweight, fanless cooling design
- DC 12V power input, optional 9~36V wide power input, support OVP,OCP and SCP



## I/O View



## Product Overview

KGEC-6200 is a brand new edge controller, powered by Elkhart lake SoC series Processor, 1\*DDR4 3200 SODIMM, maximum 32GB, Multi IO interfaces, two power supply designs. The mini size is suitable for installation in limited space. It is very suitable for AGV and AMR, machine vision, industrial control and other fields.

## Product Parameters

|               |                                                                                                                                                                                                         |
|---------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>System</b> |                                                                                                                                                                                                         |
| CPU           | Intel® Elkhart lake Soc CPU, Celeron J6412; Celeron N6210                                                                                                                                               |
| RAM           | 1*260-Pin SODIMM, DDR4 3200MHz, 32GB max.                                                                                                                                                               |
| Graphics      | Intel Gen10 UHD Graphics, HW Encode: H.265/HEVC, H.264/MPEG-4 AVC, MPEG-2, JPEG/MJPEG ,VP8; HW Decode: H.265/HEVC, H.264/MPEG-4 AVC, MPEG-2, VC-1/WMV9, JPEG/MJPEG, VP8, VP9<br>HDMI2.0: 4096*2304@60Hz |
| LAN           | 2*Intel I226V, 10-1000M                                                                                                                                                                                 |
| USB           | 2*USB 3.1; 2*USB2.0                                                                                                                                                                                     |
| Display       | 1*HDMI                                                                                                                                                                                                  |
| COM/others    | 1*RS232/422/485; 1*RS232; 1*MI/O(6 bit DIO,Optional 2*CAN2.0)                                                                                                                                           |
| Storage       | 1*mSATA Full Size, AHCI                                                                                                                                                                                 |
| LED           | 1*Power LED, 1*HDD LED,3*CPUTemp LED<br>(Red is warning, Yellow is high, Green is normal)                                                                                                               |
| Switch        | 1*Power SW, 1*AT/ATX, 1*Clear CMOS                                                                                                                                                                      |
| WDT           | programmable via software 1 to 255 second                                                                                                                                                               |
| OS            | RTOS: INtime, EC-Win, RTX-2014/2016&Ubuntu Preempt-RT<br>Win11/Win10, SUSE, Ubuntu, Wind River, Red Hat Enterprise                                                                                      |

|           |                                                                              |
|-----------|------------------------------------------------------------------------------|
| Expansion | 1*Mini PCIe(PCIeX1/USB+SIM),4G/Wifi/BT                                       |
| Power&TDP | DC 12V; Optional DC 9~36V(OFX-075)<br>15.6W(Celeron J6412,32G DDR4,128G SSD) |

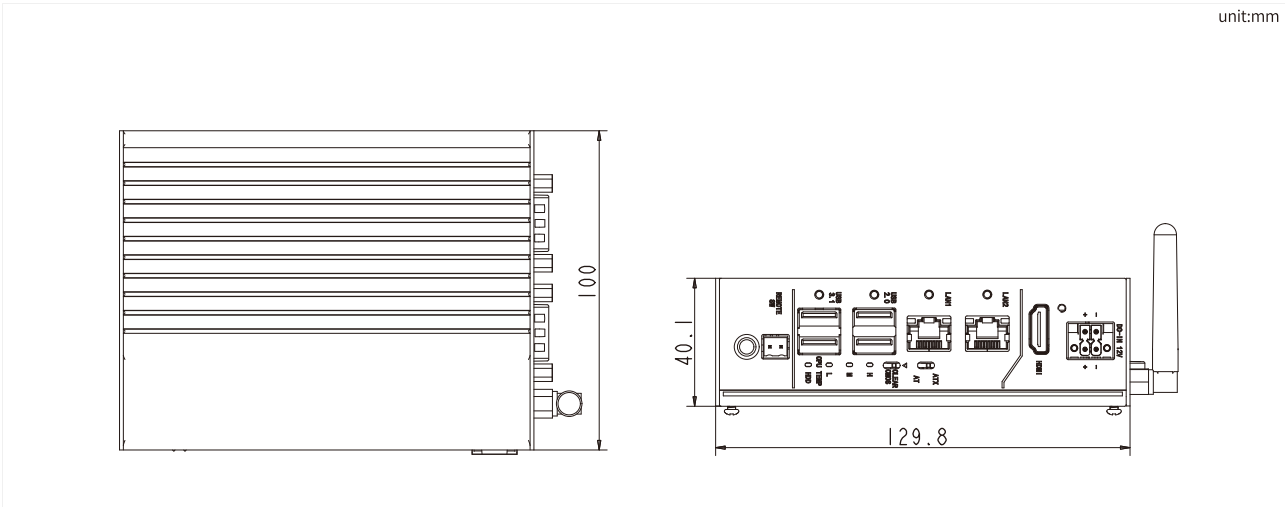
### Mechanical

|                   |                                                        |
|-------------------|--------------------------------------------------------|
| Structure         | Aluminum chassis, SGCC frame                           |
| Color             | Silk grey+Graphite black                               |
| Installation      | Wall mounting/ DIN-rail Rail mounting/Desktop mounting |
| Dimension (W*H*D) | 130*100*40mm                                           |
| Weight            | 750g                                                   |

### Environment

|                  |                                                                                       |
|------------------|---------------------------------------------------------------------------------------|
| Operating Temp   | -20°C~60°C, wide operating temp. SSD                                                  |
| Storage Temp     | -40°C~85°C                                                                            |
| Storage Humidity | 10~95%@40°C, No-condensation                                                          |
| Vibration        | 5 grms/5~500Hz/random/operation(SSD);<br>1 grms/5~500Hz/random/operation(HDD)         |
| Shock            | 50g peak acceleration(duration 11ms,SSD);<br>20g peak acceleration(duration 11ms,HDD) |
| Certificate/EMC  | CE/FCC Class A                                                                        |

## Dimensions



## Ordering Information

| KAGO-6200/S001               | Celeron J6412 | 1*DDR4, 1*HDMI, 2*LAN, 2*USB3.1, 2*USB2.0, 1*RS232/422/485,1*RS232, 1*Mini PCIe Full Size, 1*mSATA Full Size, , 1*MI/O (Default: 1*6-bit DIO), DC 12V, with wall mounting kit   |
|------------------------------|---------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| KAGO-6200/S002               | Celeron N6210 |                                                                                                                                                                                 |
| KAGO-6200/S001/WP            | Celeron J6412 | 1*DDR4, 1*HDMI, 2*LAN, 2*USB3.1, 2*USB2.0, 1*RS232/422/485,1*RS232, 1*Mini PCIe Full Size, 1*mSATA Full Size, , 1*MI/O (Default: 1*6-bit DIO), DC 9-36V, with wall mounting kit |
| KAGO-6200/S002/WP            | Celeron N6210 |                                                                                                                                                                                 |
| Din-Rail mounting (optional) |               | Stainless steel bracket for 6200 main box +1 Din-Rail fastener                                                                                                                  |
| Desktop mounting(optional)   |               | 1 Pair of SGCC1.0 horizontal mounting kit                                                                                                                                       |
| PA-60DC12                    |               | AC/DC adapter, DC12V/5A 60W                                                                                                                                                     |



# KGEC-6300

Intel® Skylake-S/Kabylake-S CPU, 2\*LAN, 4\*USB3.0, DP, DVI-I, 2\*COM, modular expansion components,Real-time Operating System RTOS, and Time Sensitive Networking TSN.

## Key Specification

- Intel® Skylake-S/Kabylake-S CPU with max 65W
- CPU equipped with active and passive heat dissipation,smart temperature control fan,silent and dustproof
- H110 chipset,CPU(optional dual & quad core)
- 1\*DP, 1\*DVI-I,dual display interface,prolong display without attenuation
- 2\*I210AT internet chipset and optional support for time sensitive networking (TSN)
- 1\*PCIe X4 slot/1\*32bit-PCI slot,support multiple expansions
- BIOS optimization and support real-time operating system (RTOS)
- Support third-party software platform (optional)
- DC12~24V wide voltage power supply,with reverse polarity protection, overcurrent and overvoltage protection
- Suitable for wall-mounting and Din-rail mounting



Expansion module

## Product Overview

KGCE-6300 is a brand-new edge controller with expansion module where the host can be dismantled easily. The CPU is equipped with active and passive heat dissipation design and smart temperature control fan. It is suitable for both wall-mounting and Din-rail mounting, and the extension quantity is flexible. For different application scenario, we offer different expansion modules for selection, which makes it extremely suitable for machine vision, CNC machine tools, construction machinery and other fields.

## Product Parameters

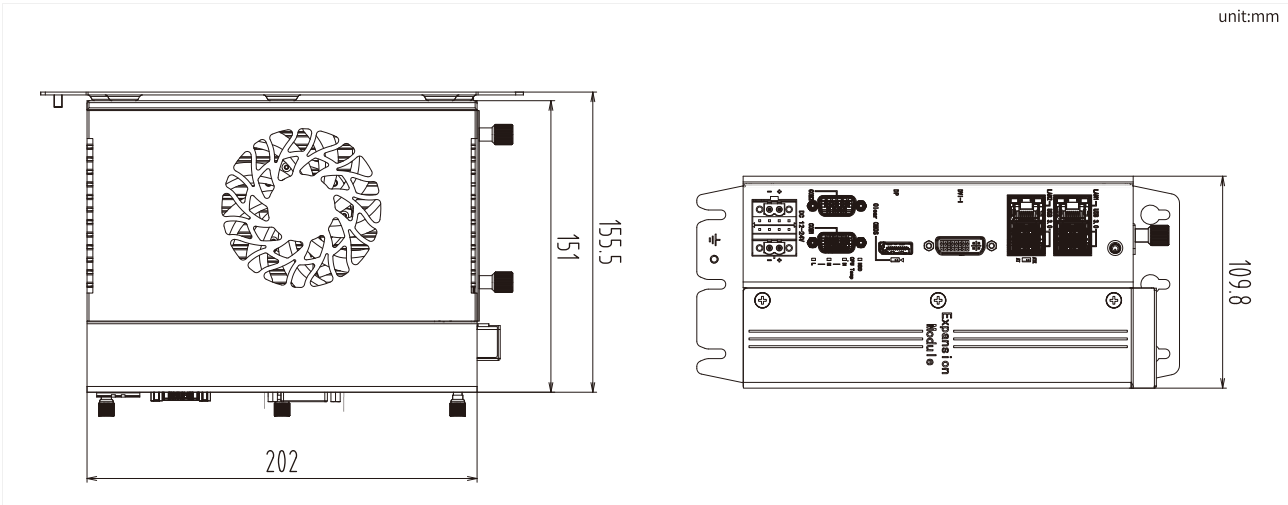
### System

|                  |                                                                                                                                                                                          |                       |                                                                                                       |
|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|-------------------------------------------------------------------------------------------------------|
| CPU              | 6th gen Intel® Skylake-S/<br>7th gen Intel® Kabylake-S Pentium/Core I3/I5/I7 CPU<br>Intel® H110 chipset, LGA 1151 slot, max support 65W                                                  | Watchdog timer(WDT)   | programmable via software 1 to 255 second                                                             |
| RAM              | 1*260-Pin SODIMM, DDR4 2400/2133MHz, max 16GB                                                                                                                                            |                       |                                                                                                       |
| Expansion        | 1*Mini PCIe(PcieX1/USB+SIM),4G/Wifi/BT;<br>Optional 1*PCie3.0 X4(X1) + 1*32bit-PCI;<br>Optional 1*PCie3.0 X4(X1)                                                                         |                       |                                                                                                       |
| Graphics         | Intel Gen. 9 HD Graphics,HEVC/H265 HW HD codec<br>DP max resolution 4096*2304@60Hz; DVI-I(DVI-D+VGA) DVI-D max resolution 1920*1200@60Hz, VGA max resolution 2560*1600@60Hz              |                       |                                                                                                       |
| LAN              | 2*Intel I210AT, 10-1000M                                                                                                                                                                 |                       |                                                                                                       |
| Storage          | 1*mSATA full size card (SATA & USB2.0)                                                                                                                                                   |                       |                                                                                                       |
| I/O Port         | 2*Gig-LAN(RJ45)<br>4*USB3.0(Type A)<br>2*RS232/422/485 with isolated TVS (DB9)<br>1*DP+1*DVI-I                                                                                           |                       |                                                                                                       |
| LED              | 1*power LED, 1*HDD LED, 3*CPU temperature indicator(Red as warning, Yellow as high temperature, Green as green temperature)                                                              |                       |                                                                                                       |
| Switch           | 1*power button, 1*AT/ATX switch, 1*Clear CMOS switch                                                                                                                                     |                       |                                                                                                       |
| Power& TDP       | DC 12~24V input, 2*2-pin terminal block connector,<br>Consumption: S001(43.7W I7-7700 4GB),<br>with expansion module (49.4W I7-7700 4GB)                                                 |                       |                                                                                                       |
| Operating System | RTOS: INtime, EC-Win, RTX-2014/2016 and Ubuntu Preempt-RT<br>Windows 7, Windows 10, Linux Fedora Ubuntu<br>(Note: 7th gen Intel® Kabylake-S processor does not support Windows 7 32-bit) |                       |                                                                                                       |
|                  |                                                                                                                                                                                          | Mechanical            |                                                                                                       |
|                  |                                                                                                                                                                                          | Structure             | Aluminum chassis with heat dissipation, SGCC frame                                                    |
|                  |                                                                                                                                                                                          | Color                 | Dark gray                                                                                             |
|                  |                                                                                                                                                                                          | Installation method   | Wall-mounting,Din-Rail mounting                                                                       |
|                  |                                                                                                                                                                                          | Dimension (W*H*D)     | S001(202*151*57.8mm), with expansion module(202*151*109.8mm)                                          |
|                  |                                                                                                                                                                                          | Net weight            | S001: 2.52KG; with expansion module :3.52KG                                                           |
|                  |                                                                                                                                                                                          | Environmental         |                                                                                                       |
|                  |                                                                                                                                                                                          | Operating temperature | -20°C~60°C, wide operating temp. SSD                                                                  |
|                  |                                                                                                                                                                                          | Storage temperature   | - 40°C~85°C                                                                                           |
|                  |                                                                                                                                                                                          | Storage humidity      | 10~90%@40°C, non-condensing                                                                           |
|                  |                                                                                                                                                                                          | Vibration             | 5 grms/5~500Hz/random/during operation(with SSD);<br>1 grms/5~500Hz/random/during operation(with HDD) |
|                  |                                                                                                                                                                                          | Shock                 | 50g peak acceleration(duration;11ms)(with SSD);<br>20g peak acceleration(duration;11ms)(with HDD)     |
|                  |                                                                                                                                                                                          | Certification /EMC    | CE/FCC Class A                                                                                        |

## I/O View



## Dimensions



## Ordering Information

| Model                   | Processor                                             | RAM              | Display           | I/O Port                      | Expansion    | Storage  | Power Supply |
|-------------------------|-------------------------------------------------------|------------------|-------------------|-------------------------------|--------------|----------|--------------|
| KGEC-6300/S001          | Intel® Skylake-S/Kabylake-S LGA1151 CPU               | 1x DDR4 MAX 16GB | 1x DVI-I<br>1x DP | 2x LAN<br>4x USB3.0<br>2x COM | 1x Mini PCIe | 1x mSATA | DC 12~24V    |
| 1 Slot Expansion module | 1*PCleX4 Slot(X1signal)or 1*PCI single expansion slot |                  |                   |                               |              |          |              |
| 2 Slot Expansion module | 1*PCleX4 Slot(X1signal)+1*PCI dual expansion slot     |                  |                   |                               |              |          |              |
| PA-120DC19              | AC/DC adapter,direct current of 19V/6.32A 120W        |                  |                   |                               |              |          |              |

## CPU Support

| Model   |              |      |          |      |                 |      |        |
|---------|--------------|------|----------|------|-----------------|------|--------|
| Series  | Intel® Core™ |      |          |      | Intel® Pentium® |      |        |
| 7th Gen | I7-7700      | 4C8T | I7-7700T | 4C8T | G4600           | 2C2T | G4600T |
|         | I5-7500      | 4C4T | I5-7500T | 4C4T |                 |      |        |
|         | I3-7100      | 2C4T | I3-7100T | 2C4T |                 |      |        |
| 6th Gen | I7-6700      | 4C8T | I7-6700T | 4C8T | G4400           | 2C2T | G4400T |
|         | I5-6500      | 4C4T | I5-6500T | 4C4T |                 |      |        |
|         | I3-6100      | 2C4T | I3-6100T | 2C4T |                 |      |        |

# KGEC-6301

Intel® Skylake-S/Kabylake-S CPU,2\*LAN,4\*POE, 4\*USB3.0,DP, DVI-I, 2\*COM, 16-bit Iso DIO, Modular expansion components,Real-time Operating System RTOS,and Time Sensitive Networking TSN.

## Key Specification

- Intel®Kabylake-S/Skylake-S CPU,max 65W
- CPU equipped with active and passive heat dissipation,smart temperature control fan,silent and dustproof
- H110 chipset,CPU(optional dual & quad core)
- 1\*DP, 1\*DVI-I,dual display interface,prolong display without attenuation
- 2\*I210AT internet chipset and optional support for time sensitive networking (TSN)
- 1\*PCIe X4 slot, 2\*32bit-PCI slot,support multiple expansion modules
- 4 \* I210 AT chipset POE camera interface and 16 optical isolation DIO
- BIOS optimization and support real-time operating system (RTOS)
- Support third-party software platform (optional)
- DC12~24V wide voltage power supply,with reverse polarity protection, overcurrent and overvoltage protection
- Suitable for wall-mounting and Din-rail mounting



Expansion module

## Product Overview

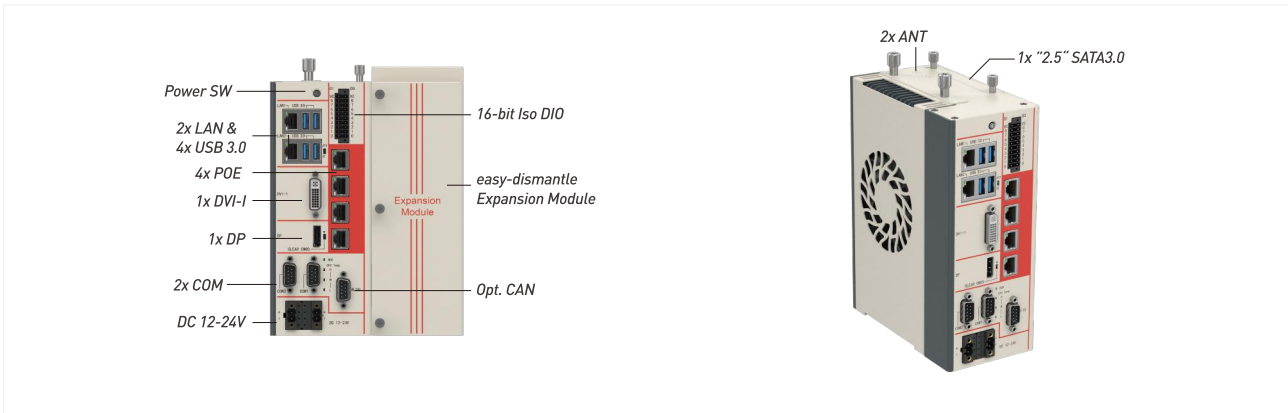
KGEC-6301 is a brand new edge controller with 2\*LAN and 4\*POE. It adopts Intel I210AT internet chipset, which support EtherCAT time sensitive networking (TSN) and can connect to network cameras. The CPU is built with active and passive heat dissipation design and supports wall-mounting and Din-rail mounting. It is also equipped with smart temperature control fan, the expansion module can be easily dismantled from the host, and the expansion quantity is flexible. For different application scnario, we offer different expansion modules for selection, which makes it extremely suitable for machine vision, CNC machine tools, construction machinery and other fields.

## Product Parameters

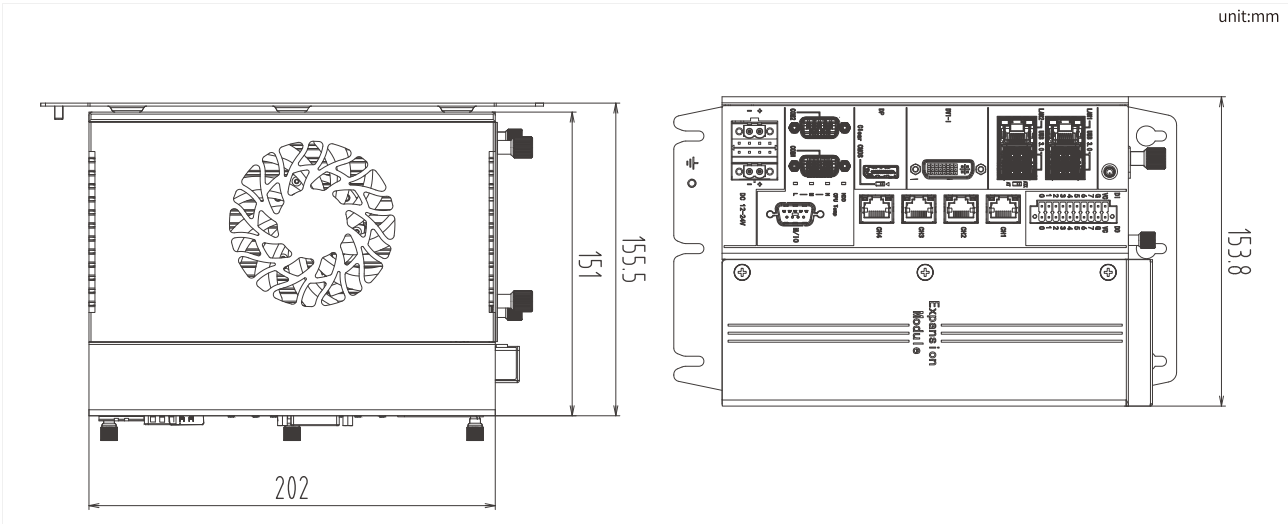
### System

|                   |                                                                                                                                                                     |                       |                                                                                                                                                                                          |
|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CPU               | 6th gen Intel® Skylake-S/7th gen Intel® Kabylake-S Pentium/Core I3/I5/I7 CPU LGA 1151 slot,max support 65W                                                          | Operating System      | RTOS: INTIME, EC-Win, RTX-2014/2016 and Ubuntu Preempt-RT<br>Windows 7, Windows 10, Linux Fedora Ubuntu<br>(Note: 7th gen Intel® Kabylake-S processor does not support Windows 7 32-bit) |
| RAM               | 1*260-Pin SODIMM, DDR4 2400/2133MHz, max16GB                                                                                                                        | Watchdog timer        | programmable via software 1 to 255 second                                                                                                                                                |
| Expansion         | 1*Mini PCIe(PCIeX1/USB+SIM),4G/Wifi/BT;<br>Optional 1*PCIe3.0 X4(X1) + 2*32bit-PCI                                                                                  | Mechanical            |                                                                                                                                                                                          |
| Graphics          | Intel Gen. 9 HD Graphics,HEVC/H265 HW HD codec<br>DP: 4096*2304@60Hz ;<br>DVI-I(DVI-D+VGA),DVI-D: 1920*1200@60Hz,<br>VGA: 2560*1600@60Hz                            | Structure             | Aluminum chassis, SGCC frame                                                                                                                                                             |
| LAN               | 2*Intel I210AT, 10-1000M;<br>4*Intel I210AT(+POE),802.3af(15.4W)                                                                                                    | Color                 | Dark Grey                                                                                                                                                                                |
| Storage           | 1*2.5" SATA3.0 HDD/SSD<br>1*mSATA full size card (SATA & USB2.0)                                                                                                    | Installation Method   | Wall-mounting,Din-Rail mounting                                                                                                                                                          |
| DIO               | 16-bit Iso DIO,8-bit 2.5KV opto-isolator input (H:5-24V, L:0-1.5V),<br>8-bit 2.5KV opto-isolator output(200mA)                                                      | Dimension (W*H*D)     | S001(202*151*80.8mm), with expansion module (202*151*151mm)                                                                                                                              |
| I/O Port          | 2*Gig-LAN(RJ45),4*POE (RJ45), 1*DP+1*DVI-I<br>4*USB3.0; 1*MIO with CAN, Uart signal,<br>16-bit Iso DIO(Phoenix terminal),<br>2*RS232/422/485 with isolated TVS(DB9) | Net weight            | S001: 3KG; with expansion module: 4.4KG                                                                                                                                                  |
| LED               | 1*power LED, 1*HDD LED, 3*CPU temperature indicator(Red as warning,<br>Yellow as high temperature, Green as normal temperature)                                     | Environmental         |                                                                                                                                                                                          |
| Switches          | 1*power button, 1*AT/AT switch, 1*Clear CMOS switch                                                                                                                 | Operating temperature | -20℃~60℃ with wide temperature SSD                                                                                                                                                       |
| Power Requirement | DC 12~24V input, 2*2-pin terminal block connector, power consumption:<br>S001(49.2W I7-6700T 4GB) ,with expansion module (52.8W I7-6700T 4GB)                       | Storage temperature   | - 40℃~85℃                                                                                                                                                                                |
|                   |                                                                                                                                                                     | Storage humidity      | 10~95%@40℃, Non-condensing                                                                                                                                                               |
|                   |                                                                                                                                                                     | Vibration             | 5 grms/5~500Hz/random/during operation(with SSD);<br>1 grms/5~500Hz/random/during operation(with HDD)                                                                                    |
|                   |                                                                                                                                                                     | Shock                 | 50g peak acceleration(duration;11ms)(with SSD);<br>20g peak acceleration(duration;11ms)(with HDD)                                                                                        |
|                   |                                                                                                                                                                     | Certification /EMC    | CE/FCC Class A                                                                                                                                                                           |

## I/O View



## Dimensions



## Ordering Information

| Model                   | Processor                                        | RAM              | Display           | I/O Port                                              | Expansion    | Storage  | Power Supply |
|-------------------------|--------------------------------------------------|------------------|-------------------|-------------------------------------------------------|--------------|----------|--------------|
| KGEC-6301/S001          | Intel® Skylake-S/Kabylake-S LGA1151 CPU          | 1x DDR4 MAX 16GB | 1x DVI-I<br>1x DP | 2x LAN/4x POE<br>4x USB3.0<br>2x COM<br>16bit Iso DIO | 1x Mini PCIe | 1x mSATA | DC 12~24V    |
| 3 slot expansion module | 1*PCIeX4 Slot(X1 signal)+2*PCI ,3 expansion slot |                  |                   |                                                       |              |          |              |
| PA-120DC19              | AC/DC adapter,direct current of 19V/6.32A 120W   |                  |                   |                                                       |              |          |              |
| PA-220DC24              | AC/DC adapter,direct current of 24V/9.17A 220W   |                  |                   |                                                       |              |          |              |

## CPU Support

| Model   |              |      |          |      |          |      |                 |      |             |
|---------|--------------|------|----------|------|----------|------|-----------------|------|-------------|
| Series  | Intel® Core™ |      |          |      |          |      | Intel® Pentium® |      |             |
| 7th Gen | I3-7100      | 2C4T | I5-7500  | 4C4T | I7-7700  | 4C8T | G4600           | 2C2T | G4600T 2C2T |
|         | I3-7100T     | 2C4T | I5-7500T | 4C4T | I7-7700T | 4C8T |                 |      |             |
| 6th Gen | I3-6100      | 2C4T | I5-6500  | 4C4T | I7-6700  | 4C8T | G4400           | 2C2T | G4400T 2C2T |
|         | I3-6100T     | 2C4T | I5-6500T | 4C4T | I7-6700T | 4C8T |                 |      |             |



# KGEC-6310

Intel® Whiskey lake-U CPU, 4\*LAN, 2\*USB3.1, 3\*USB2.0, HDMI, DVI-D, 2\*COM, 8-bit DIO,Real-time Operating System RTOS,and Time Sensitive Networking TSN.

## Key Specification

- Intel® Whiskey lake-U CPU
- Aluminum chassis and fanless heat dissipation design
- 1\*HDMI, 1\*DVI-D,Dual display interface, prolong display without attenuation
- 3\*I210AT Internet chipset, optional support for time sensitive networking (TSN)
- 1\*I219LM,support iAMT12.0
- BIOS optimization and support real-time operating system (RTOS)
- 1\*Mini PCIe with SIM slot,1\*M.2,2230 E-Key
- Support third-party software platform (optional)
- DC12~24V wide voltage power supply,with reverse polarity protection, overcurrent and overvoltage protection
- Suitable for wall-mounting and Din-rail mounting



## Product Overview

KGEC-6310 is a brand new edge controller with 4\*LAN ports. Three of the four LAN ports use Intel I210AT internet chipset, which support EtherCAT Protocol and able to connect to network cameras. It is suitable for both wall-mounting and Din-Rail mounting. BIOS optimize and support real-time system (RTOS), Ubuntu preemt-RT and optional support to INTime. With compact aluminum chassis and fanless heat dissipation design, KGEC-6310 is extremely powerful and suitable for machine vision, CNC machine tools, construction machinery and other fields.

## Product Parameters

### System

|           |                                                                                                                                                                             |
|-----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CPU       | 8th gen Intel Whiskeylake U:Celeron 4305U;<br>Core U: I3-8145U; I5-8265U; I7-8565U                                                                                          |
| RAM       | dual channel DDR4 SO-DIMM , max support 2400MHz, max32GB                                                                                                                    |
| Expansion | 1*M.2 E-key(PCle X1/USB2.0),Wifi/BT;<br>1*Mini PCIe(PCle X1/USB+SIM),4G/Wifi/ BT                                                                                            |
| Graphics  | Intel Gen. 9 UHD Graphics,HEVC/H265 HW HD codec<br>HDMI max resolution 4096*2304@60Hz<br>DVI-D max resolution 2560x1600,60Hz                                                |
| Audio     | Optional support Realtek ALC662 audio, 1*Line out & Mic High fidelity<br>audio support 5.1audio channel                                                                     |
| LAN       | 3*Intel I210AT PCle Gig. Ethernet, 10/100/1000Mbps;1*Intel®I219LM ,<br>support iAMT12.0 and iVpro tech                                                                      |
| Storage   | 1*2.5" SATA3.0 HDD/SSD, 1*mSATA full-size card,support AHCI                                                                                                                 |
| I/O Port  | 4*Gig-LAN(RJ45); 2*USB3.1(Type A), 2*USB2.0(Type A)<br>2*RS232/422/485 (DB9)<br>1*8-bit DIO (1*10Pin Phoenix terminal)<br>1*HDMI+1*DVI-D<br>1*Line out&Mic 3.5mm phone jack |
| I-port    | 1*I-port support 1*USB2.0, 1*DVI-D, Mini-PCle, M.2 and other expansions                                                                                                     |
| LED       | 1*power LED, 1*HDD LED, 3*CPU temperature indicator(Red as warning,<br>Yellow as high temperature, Green as green temperature)                                              |
| Switch    | 1*power button, 1*AT/ATX switch, 1*Clear CMOS switch                                                                                                                        |

|                   |                                                                                                                       |
|-------------------|-----------------------------------------------------------------------------------------------------------------------|
| Power Requirement | DC 12~24V input, 2*2-pin terminal block connector,<br>Consumption:12V/2.64A (CPU I3-8145U 4GB)                        |
| Operating System  | RTOS: INtime, EC-Win, RTX-2014/2016 and Ubuntu Preempt-RT<br>Windows 10, SUSE, Ubuntu, Wind River, Red Hat Enterprise |
| Watchdog timer    | Programmable timeout interruption period or system<br>reset from 1 to 255 secs                                        |

### Mechanical

|                     |                                 |
|---------------------|---------------------------------|
| Structure           | Aluminum chassis, SGCC frame    |
| Color               | Dark grey                       |
| Installation Method | Wall-mounting,Din-Rail mounting |

|                   |              |
|-------------------|--------------|
| Dimension (W*H*D) | 202*151*81mm |
| Net Weight        | 2.59KG       |

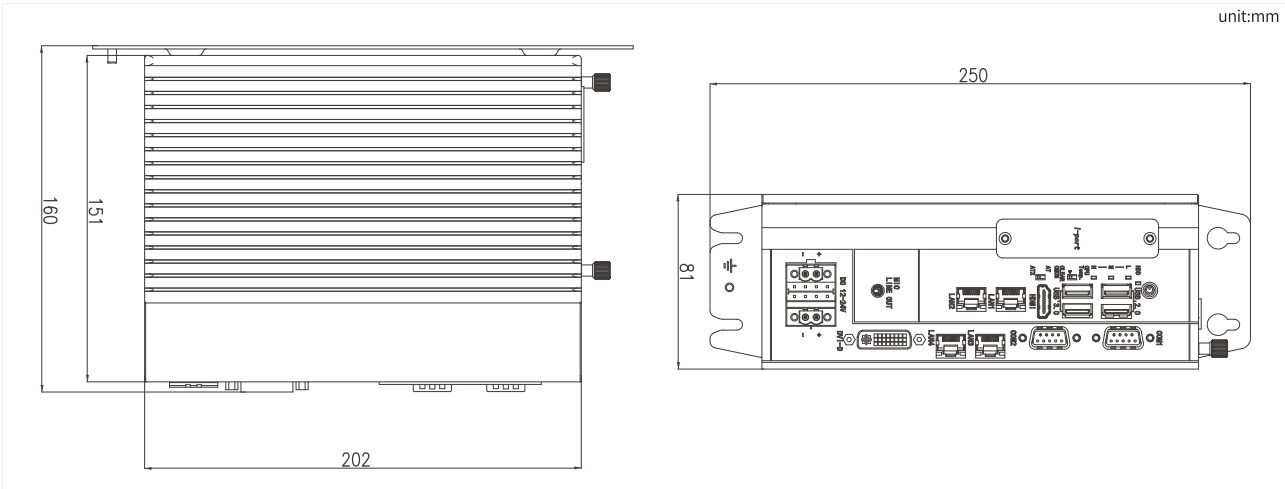
### Environmental

|                    |                                                                                                       |
|--------------------|-------------------------------------------------------------------------------------------------------|
| Operating temp     | -20°C~60°C wide operating temp. SSD                                                                   |
| Storage temp       | - 40°C~85°C                                                                                           |
| Storage humidity   | 10~95%@40°C, Non-condensing                                                                           |
| Vibration          | 5 grms/5~500Hz/random/during operation(with SSD);<br>1 grms/5~500Hz/random/during operation(with HDD) |
| Shock              | 50g peak acceleration(duration;11ms)(with SSD);<br>20g peak acceleration(duration;11ms)(with HDD)     |
| Certification /EMC | CE/FCC Class A                                                                                        |

## I/O View



## Dimensions



## Ordering Information

| Model          | Processor                                   | RAM                 | Display             | I/O Port                                                  | Audio                 | Expansion             | Storage                      | Power Supply |
|----------------|---------------------------------------------|---------------------|---------------------|-----------------------------------------------------------|-----------------------|-----------------------|------------------------------|--------------|
| KGEC-6310/S001 | Intel® Core I3-8145U                        | 2x DDR4<br>MAX 32GB | 1x DVI-D<br>1x HDMI | 4x LAN<br>2x USB 3.1<br>2x USB 2.0<br>8-bit DIO<br>2x COM | 1x Line out<br>1x MIC | 1x Mini PCIe<br>1x M2 | 1x mSATA<br>1x "2.5" SATA3.0 | DC 12~24V    |
| KGEC-6310/S002 | Intel® Core I5-8265U                        |                     |                     |                                                           |                       |                       |                              |              |
| KGEC-6310/S003 | Intel® Core I7-8565U                        |                     |                     |                                                           |                       |                       |                              |              |
| KGEC-6310/S004 | Intel® Celeron 4305U                        |                     |                     |                                                           |                       |                       |                              |              |
| PA-60DC12      | AC/DC adapter, direct current of 12V/5A 60W |                     |                     |                                                           |                       |                       |                              |              |

# KGEC-6500

Intel® Comet lake-S CPU+H420E PCH, 2\*DDR4, dual displays, 2\*LAN, 4\*USB3.2, 3\*USB2.0, 2\*COM, 1\* PCIeX4 expansion slot, DC 12~24V

## Key Specification

- Intel® Comet Lake-S CPU, up to 10 cores 65W
- Dual-channel DDR4 2933MHz SODIMM, up to 64GB
- Intel® H420E chipset, long life cycle
- 1\*HDMI and 1\*DVI-I dual displays, display signal extension without attenuation
- Intel® I226V supports multiple real-time industrial Ethernet protocols
- 1 \* PCIeX4 slot (X4) can be flexibly removed from the modular design, supporting the expansion of POE network cards and motion control cards
- DC 12~24V wide voltage supply, with reverse connection, overcurrent, overvoltage protection
- Wall mounting and DIN-rail Rail mounting



## Product Overview

KGEC-6500 is a high-performance industrial edge controller equipped with Intel Comet Lake-S CPU series processor, with dual channel memory, dual storage. I226V network supports EtherCAT and other real-time industrial Ethernet protocols, active and passive cooling design, compact size, flexible modular expansion components, a variety of installation methods, and it is suitable for CNC machinery and industrial robots and other fields.

## Product Parameters

### System

|            |                                                                                                                                           |           |                                                                                            |
|------------|-------------------------------------------------------------------------------------------------------------------------------------------|-----------|--------------------------------------------------------------------------------------------|
| CPU        | Intel 10th Gen. Cometlake-S Core i9/i7/i5/i3/Celeron CPU, LGA 1200 Socket, 65W; Intel H420E chip                                          | Expansion | 1*Mini PCIe(PCle X1/USB2.0+SIM), 4G LTE/Wifi+BT; 1*PCle3.0 X4(X4), 4*IEEE-802.3at(PoE+)LAN |
| RAM        | Dual-channel 2 *260pin DDR4 SODIMM,2933MHz, 64GB max.                                                                                     | Power&TDP | DC 12~24V, 2*2-pin; 64.8W (I5-10500E, 32GB DDR4, 128G HDD)                                 |
| Graphics   | Intel® UHD Graphics, DirectX 12, OpenGL 4.5 & OpenCL 2.1, HDMI:4096*2160@30Hz(4K), DVI-I (DVI-D+VGA): 1920x1200@60Hz, VGA: 1920x1200@60Hz |           |                                                                                            |
| LAN        | 1*Intel I226V, 10M-2.5G,WOL; 1*Intel®I219LM, WOL                                                                                          |           |                                                                                            |
| USB        | 2*USB3.1, 2*USB2.0(Build-in)                                                                                                              |           |                                                                                            |
| Display    | 1*HDMI+1*DVI-I                                                                                                                            |           |                                                                                            |
| COM/others | 2*RS232/422/485(DB9), 1*RS232(Build-in)                                                                                                   |           |                                                                                            |
| Storage    | 1*2.5" SATA3.0 HDD/SSD, 1*mSATA Full Size, AHCI                                                                                           |           |                                                                                            |
| LED        | 1*Power LED, 1*HDD LED, 3*CPUTemp LED (Red is warning, Yellow is high, Green is normal)                                                   |           |                                                                                            |
| Switch     | 1*Power SW, 1*AT/ATX, 1*Clear CMOS, COM1/COM2                                                                                             |           |                                                                                            |
| WDT        | programmable via software 1 to 255 second                                                                                                 |           |                                                                                            |
| OS         | RTOS: INtime, EC-Win, RTX-2014/2016, Ubuntu Preempt-RT& Xenomai, Windows 10, SUSE, Ubuntu, VXWork, Red Hat Enterprise                     |           |                                                                                            |

### Mechanical

|                   |                                                             |
|-------------------|-------------------------------------------------------------|
| Structure         | Aluminum chassis, SGCC frame                                |
| Color             | Silk grey+Graphite black                                    |
| Installation      | Wall mounting and DIN-rail Rail mounting(without expansion) |
| Dimension (W*H*D) | 202*154*57.8mm; 202*154*89.5mm(+expansion)                  |
| Weight            | 1.85KG; 2.20KG(+expansion)                                  |

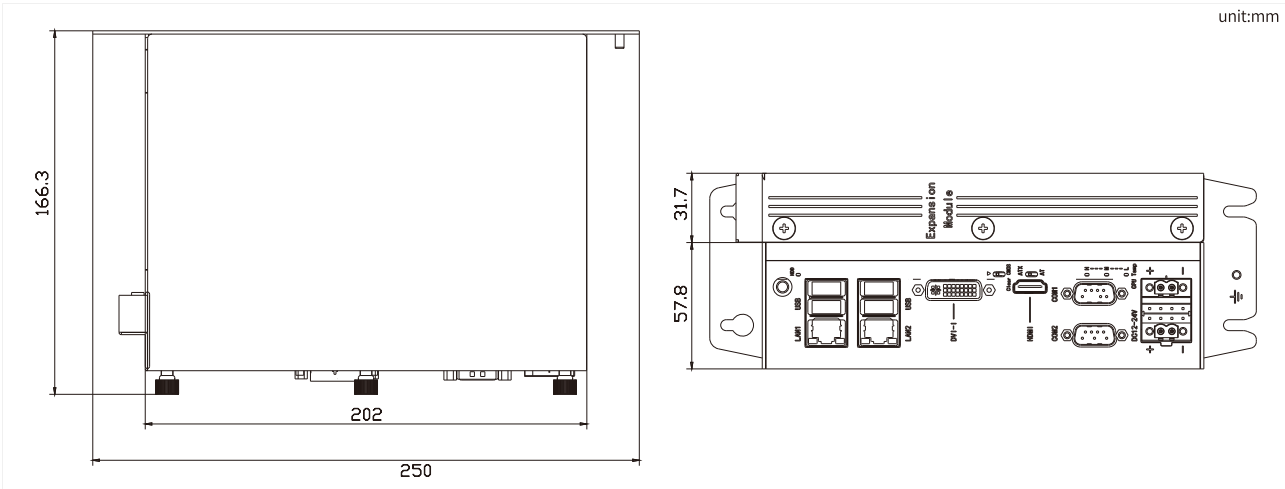
### Environment

|                  |                                                                                    |
|------------------|------------------------------------------------------------------------------------|
| Operating Temp   | -20°C~60°C ,wide operating temp. SSD                                               |
| Storage Temp     | -40°C~85°C                                                                         |
| Storage Humidity | 10~90%@40°C, No-condensation                                                       |
| Vibration        | 5 grms/5~500Hz/random/operation(SSD); 1 grms/5~500Hz/random/operation(HDD)         |
| Shock            | 50g peak acceleration(duration 11ms,SSD); 20g peak acceleration(duration 11ms,HDD) |
| Certificate      | CE/FCC Class A                                                                     |

## I/O View



## Dimensions



## Ordering Information

| Model                       | Processor                                |                                                                                                                                                  |
|-----------------------------|------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| KAGO-6500/S001              | Intel® 10th Gen Comet lake-S LGA1200 CPU | 2*DDR4, 1*DVI-I, 1*HDMI, 2*LAN, 4*USB3.2, 3*USB2.0, 2*RS232/422/485,1*RS232, 1*Mini PCIe Full Size, 1*mSATA Full Size, 1*2.5"SATA bay, DC 12~24V |
| 1 slot expansion            |                                          | ECX-273: 1*PCle3.0X4(X4)                                                                                                                         |
| PA-120DC19                  |                                          | AC/DC adapter, DC12V/5A 60W                                                                                                                      |
| PA-220DC24                  |                                          | AC/DC adapter, DC12V/5A 60W                                                                                                                      |
| 6500-S001 Din-Rail mounting |                                          | Stainless steel bracket for 6500 main box +2 Din-Rail fastener                                                                                   |



**JHCTECH** IoT Computer  
Connecting the Dots

**JHCTECH** IoT Computer  
Connecting the Dots

**KMDA**  
Embedded Box Computer





APPLICATION

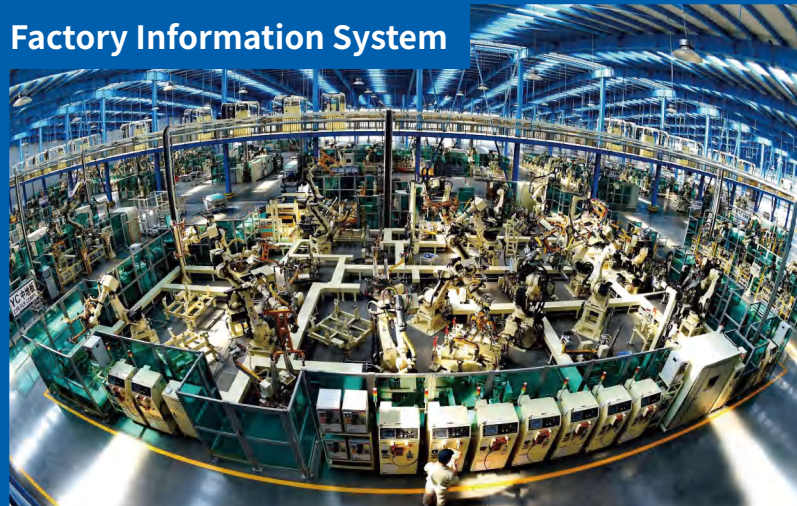


Industrial Automation Equipment

COMPLETE LIST

|                 |     |           |      |           |      |
|-----------------|-----|-----------|------|-----------|------|
| Product Listing | C01 | KMDA-3820 | C23  | KMDA-7920 | C53  |
| KMDA-2602       | *C1 | KMDA-3610 | C25  | KMDA-7921 | C55  |
| KMDA-2620       | C5  | KMDA-3920 | *C27 | KMDA-2630 | *C57 |
| KMDA-2701       | C7  | KMDA-3921 | C31  | KMDA-3301 | C61  |
| KMDA-2702       | C9  | KMDA-5610 | *C33 | KMDA-3302 | C63  |
| KMDA-3201       | C11 | KMDA-5920 | *C37 | KMDA-5611 | *C65 |
| KMDA-3202       | C13 | KMDA-5921 | *C41 | KMDA-6611 | *C69 |
| KMDA-3212       | C15 | KMDA-6610 | C45  | KMDA-7611 | *C73 |
| KMDA-3230       | C17 | KMDA-6920 | C47  | SCC-3116  | C77  |
| KMDA-3601       | C19 | KMDA-6921 | C49  | ECC-U5000 | C79  |
| KMDA-3602       | C21 | KMDA-7610 | C51  |           |      |

Factory Information System



Highway toll



Security Monitoring

地网雪亮工程之智慧社区综治大数据平台



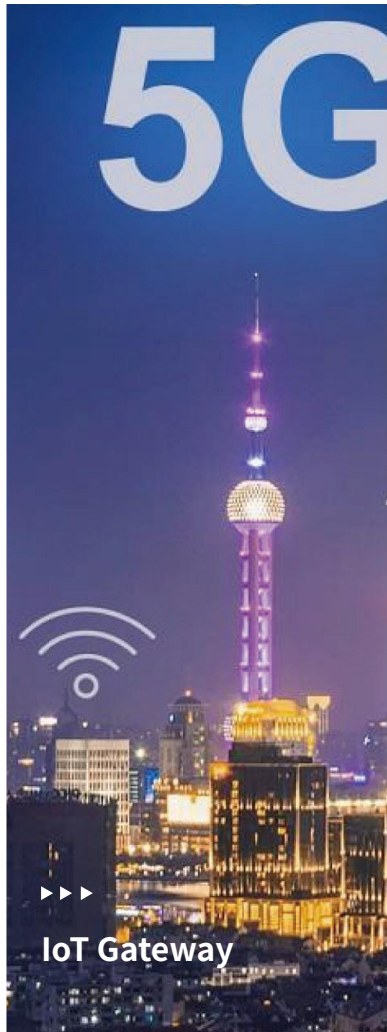
Environmental monitoring



APPLICATION



Medical Equipment



5G



IoT Gateway



Product Listing

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                       |                                                                                                                                                                      |                                                                                                                             |                                                                                                                                                      |                                                                                                                                                     |                                                                                                                                |                                                                                                                                |                                                                                                               |           |           |           |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|-----------|-----------|-----------|
| <div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div> |                                                                                                                                                                       |                                                                                                                                                                      |                                                                                                                             |                                                                                                                                                      |                                                                                                                                                     |                                                                                                                                |                                                                                                                                |                                                                                                               |           |           |           |
| KMDA-2602                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                       | KMDA-2602/T002                                                                                                                                                       |                                                                                                                             | KMDA-2620                                                                                                                                            |                                                                                                                                                     | KMDA-2701                                                                                                                      |                                                                                                                                | KMDA-2702                                                                                                     | KMDA-3201 | KMDA-3202 | KMDA-3212 |
| Processor                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                       |                                                                                                                                                                      |                                                                                                                             |                                                                                                                                                      |                                                                                                                                                     |                                                                                                                                |                                                                                                                                |                                                                                                               |           |           |           |
| CPU                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Intel Baytrail-D Celeron J1900 ,Frequency 2.0~2.42GHz, 4C4T, 2M cache, 22nm, TDP 10W                                                                                  | Intel Baytrail-D Celeron J1900 ,Frequency 2.0~2.42GHz, 4C4T, 2M cache, 22nm, TDP 10W                                                                                 | Intel® Apollolake Atom E3940 CPU                                                                                            | Intel Baytrail-D Celeron J1900 ,Frequency 2.0~2.42GHz, 4C4T, 2M cache, 22nm, TDP 10W                                                                 | Intel Baytrail-D Celeron J1900 , Frequency 2.0~2.42GHz, 4C4T, 2M cache, 22nm, TDP 10W                                                               | Intel Skylake-U/Kabylake-U CPU Celeron/Core i3/i5/i7                                                                           | Intel Skylake-U/Kabylake-U CPU Celeron/Core i3/i5/i7                                                                           | Intel Skylake-U/Kabylake-U CPU Celeron/Core i3/i5/i7                                                          |           |           |           |
| RAM                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 1*DDR3L,1333MHz,SODIMM, 8GB max.                                                                                                                                      | 1*DDR3L,1333MHz,SODIMM, 8GB max.                                                                                                                                     | 1*DDR3L, 1866MHz, SODIMM, 8GB max.                                                                                          | 1*DDR3L, 1333MHz, SODIMM, 8GB max.                                                                                                                   | 1*DDR3L, 1333MHz, SODIMM, 8GB max.                                                                                                                  | 2*260-Pin SODIMM, DDR4,2133MHz, 32GB max.                                                                                      | 2*260-Pin SODIMM, DDR4,2133MHz, 32GB max.                                                                                      | 1*DDR4,SODIMM,2133MHz, 16GB max.                                                                              |           |           |           |
| Graphics                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Intel HD Graphics, Support synchronous or asynchronous dual display, VGA:1920*1200@60Hz, HDMI:1920*1080@60Hz, support OpenGL 3.2, DirectX 11, OpenCL 1.2, MPGE2/H.264 | Intel HD Graphics, Support synchronous or asynchronous dual display VGA:1920*1200@60Hz, HDMI:1920*1080@60Hz, support OpenGL 3.2, DirectX 11, OpenCL 1.2, MPGE2/H.264 | Gen. 9th Intel HD Graphics, DP:4096*2160@60Hz, HDMI:3840*2160@30Hz,support OpenGL 4.3, DirectX 11, OpenCL 2.0, MPGE2, H.265 | Intel HD Graphics, Support dual independent display, VGA:1920*1200@60Hz, HDMI:1920*1080@60Hz,support OpenGL 3.2, DirectX 11, OpenCL 1.2, MPGE2/H.264 | Intel HD Graphics, Support dual independent display VGA:1920*1200@60Hz, HDMI:1920*1080@60Hz,support OpenGL 3.2, DirectX 11, OpenCL 1.2, MPGE2/H.264 | Intel Gen. 9th HD Graphics, HEVC/H265 HW HD codec, HDMI: 3840*2160@30Hz, DP: 4096*2304@60Hz                                    | Intel Gen. 9th HD Graphics, HEVC/H265 HW HD codec, HDMI: 3940*2160@30Hz, DP: 4096*2160@60Hz                                    | Intel Gen. 9th HDGraphics, HEVC/H265 HW HD codec, HDMI: 4096*2304@24Hz, DP: 4096*2304@60Hz,VGA:1920*1200@60Hz |           |           |           |
| I/O Port                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                       |                                                                                                                                                                      |                                                                                                                             |                                                                                                                                                      |                                                                                                                                                     |                                                                                                                                |                                                                                                                                |                                                                                                               |           |           |           |
| LAN                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 4*Intel I211AT PCIe, 10-1000M                                                                                                                                         | 2*Intel I211AT PCIe, 10-1000M                                                                                                                                        | 4/2*Intel I211AT PCIe, 10-1000M                                                                                             | 4*Intel I211AT PCIe, 10-1000M                                                                                                                        | 3*Intel I211AT PCIe, 10-1000M                                                                                                                       | 2*Intel I211AT PCIe, 10-1000M 1*Intel I219 LM support Intel Vpro                                                               | 2*Intel I211AT PCIe, 10-1000M, 1*Intel I219 LM support Intel Vpro, 4*Intel I211AT PCIe Full bandwidth POE                      | 2*Intel I211AT PCIe, 10-1000M, 1*Intel I219 LM support Intel Vpro,                                            |           |           |           |
| USB                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 1* USB3.0, 5*USB2.0 , 1*USB2.0 (Build-in)                                                                                                                             | 1* USB3.0, 3*USB2.0                                                                                                                                                  | 2* USB3.0, 4/2*USB2.0 , 1*USB2.0 (Build-in)                                                                                 | 1* USB3.0, 5*USB2.0 , 1*USB2.0 (Build-in)                                                                                                            | 1* USB3.0, 5*USB2.0 , 1*USB2.0 (Build-in)                                                                                                           | 4* USB3.0, 2*USB2.0 , 1*USB2.0 (Build-in)                                                                                      | 4* USB3.0, 4*USB2.0 , 1*USB2.0 (Build-in)                                                                                      | 4* USB3.0, 2*USB2.0 , 1*USB2.0 (Build-in)                                                                     |           |           |           |
| Display                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 1*HDMI+ 1*VGA                                                                                                                                                         | 1*HDMI+ 1*VGA                                                                                                                                                        | 1*DP+1*HDMI                                                                                                                 | 1*VGA+1*HDMI                                                                                                                                         | 1*VGA+1*HDMI                                                                                                                                        | 1*DP+1*HDMI                                                                                                                    | 1*DP+1*HDMI                                                                                                                    | 1*DP+1*HDMI+1*VGA                                                                                             |           |           |           |
| Audio                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 1*Line out,Realtek ALC662VD                                                                                                                                           | 1*Line out,Realtek ALC662VD                                                                                                                                          | 1*Line out,Realtek ALC662VD                                                                                                 | 1*Line out+1*Mic, Realtek ALC662VD                                                                                                                   | 1*Line out+1*Mic, Realtek ALC662VD                                                                                                                  | 1*Line out , Realtek ALC662VD                                                                                                  | 1*Line out+1*Mic,Realtek ALC662VD                                                                                              | 1*Line out+1*Mic, Realtek ALC662VD                                                                            |           |           |           |
| COM/ Others                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 2*RS232/422/485, 2*RS232, 2*RS232/485, 1*2 pin terminal, Remote switch, USB mouse/keyboard                                                                            | 2*RS232/422/485, 1*2 pin terminal, Remote switch, USB mouse/keyboard                                                                                                 | 4/2*RS232/422/485, 2*RS232, 1*2 pin terminal, Remote switch, USB mouse/keyboard                                             | 4*RS232/422/485, 2*RS232, 1*2 pin terminal, Remote switch, USB mouse/keyboard                                                                        | 8*RS232/422/485, 2*RS232, 1*2 pin terminal, Remote switch, USB mouse/keyboard                                                                       | 2*RS232/422/485, 4*RS232, 1*2 pin terminal, Remote switch, USB mouse/keyboard                                                  | 2*RS232/422/485, 4*RS232, 1*PS/2(mouse/keyboard)                                                                               | 2*RS232/422/485, 2*RS232, 1*PS/2(mouse/keyboard)                                                              |           |           |           |
| DIO                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 8-bit TTL, Programmed input-output                                                                                                                                    | 8-bit TTL, Programmed input-output                                                                                                                                   | 8-bit TTL, Programmed input-output                                                                                          | 24-bit TTL, Programmed input-output                                                                                                                  | 16-bit TTL, Programmed input-output                                                                                                                 | 8-bit TTL, Programmed input-output                                                                                             | 8- bit TTL, Programmable input and output 8-bit Iso. DI(High:5-24V,Low:0-1.5V) and 8-bit Iso. DO(100mA)                        | 8-bit TTL, Programmed input-output                                                                            |           |           |           |
| Storage                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                       |                                                                                                                                                                      |                                                                                                                             |                                                                                                                                                      |                                                                                                                                                     |                                                                                                                                |                                                                                                                                |                                                                                                               |           |           |           |
| Storage                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 1*2.5" HDD SATA2 Bay, 3.0 Gbps, 1*mSATA Full-height card, support AHCI                                                                                                | 1*2.5" HDD SATA2 Bay, 3.0 Gbps, 1*mSATA Full-height card, support AHCI                                                                                               | 1*2.5" HDD SATA3 Bay, 6.0 Gbps, 1*mSATA Full-height card, support AHCI                                                      | 1*3.5" HDD SATA2 Bay, 3.0 Gbps, 1*mSATA Full-height card, support AHCI                                                                               | 1*2.5" HDD SATA2 Bay, 3.0 Gbps, 1*mSATA Full-height card, support AHCI                                                                              | 1/2*2.5" HDD SATA3 Bay, 6.0 Gbps, 1*mSATA Full-height card, support AHCI                                                       | 1*2.5" SATA3 Bay, 6.0 Gbps, SSD/HDD, 1*mSATA Full-height card, support AHCI                                                    | 1*2.5" SATA3 Bay, 6.0 Gbps, SSD/HDD, 1*mSATA Full-height card, support AHCI                                   |           |           |           |
| Expansion                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                       |                                                                                                                                                                      |                                                                                                                             |                                                                                                                                                      |                                                                                                                                                     |                                                                                                                                |                                                                                                                                |                                                                                                               |           |           |           |
| Expansion Port                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 1*Mini PCIe, with SIM slot, support 4G/Wifi/BT, 1*I-port(LPT/USB2.0/Mini PCIe)                                                                                        | 1*Mini PCIe, with SIM slot, support 4G/Wifi/BT,                                                                                                                      | 1*M.2 B-key, with SIM slot, support 4G/Wifi/BT, 1*I-port (LPT/USB2.0/Mini PCIe)                                             | 1*Mini PCIe, with SIM slot, support 4G/Wifi/BT                                                                                                       | 1*Mini PCIe, with SIM slot, support 4G/Wifi/BT                                                                                                      | 1*Mini PCIe, with SIM slot, 1*M.2 B-key with PCIe+USB signal &SIM slot,support dual 4G/Wifi/BT, 1*I-port(LPT/USB2.0/Mini PCIe) | 1*Mini PCIe, with SIM slot, 1*M.2 B-key with PCIe+USB signal &SIM slot,support dual 4G/Wifi/BT, 1*I-port(LPT/USB2.0/Mini PCIe) | 1*Mini PCIe, with SIM slot, support 4G/Wifi/BT,                                                               |           |           |           |
| Power Supply                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                       |                                                                                                                                                                      |                                                                                                                             |                                                                                                                                                      |                                                                                                                                                     |                                                                                                                                |                                                                                                                                |                                                                                                               |           |           |           |
| Input voltage                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | DC IN 9~36V, D-Jack with M8 interface, short circuit protection, OVP&OCP                                                                                              | DC IN 9~36V, D-Jack with M8 interface, short circuit protection, OVP&OCP                                                                                             | DC IN 9~36V, D-Jack with M8 interface, short circuit protection, OVP&OCP                                                    | DC IN 9~36V, D-Jack with M8 interface, short circuit protection, OVP&OCP                                                                             | DC IN 9~36V, D-Jack with M8 interface, short circuit protection, OVP&OCP                                                                            | DC IN 9~30V, 3pin terminal, With reverse polarity protection, short circuit protection, OVP&OCP                                | DC IN 9~30V, 3pin terminal, With reverse polarity protection, short circuit protection, OVP&OCP                                | DC IN 12~24V, 3pin terminal(front panel),                                                                     |           |           |           |
| TDP                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 14.4W(2.5" HDD)                                                                                                                                                       | 14.4W(2.5" HDD)                                                                                                                                                      | 20.04W(E3940 CPU,4G DDR3L)                                                                                                  | 19.2W(3.5" HDD)                                                                                                                                      | 15.6W(2.5" HDD)                                                                                                                                     | 27.72W(I5-7200U 8GB)                                                                                                           | 27.72W(I5-7200U 8GB)                                                                                                           | 58.56W(I5-7200U 16GB DDR4)                                                                                    |           |           |           |
| Mechanical                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                       |                                                                                                                                                                      |                                                                                                                             |                                                                                                                                                      |                                                                                                                                                     |                                                                                                                                |                                                                                                                                |                                                                                                               |           |           |           |
| Structure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Top/Bottom Aluminum Chassis, SGCC frame                                                                                                                               | Top/Bottom Aluminum Chassis, SGCC frame                                                                                                                              | Top/Bottom Aluminum Chassis, SGCC frame                                                                                     | U-shaped Aluminum Chassis, SGCC frame                                                                                                                | U-shaped Aluminum Chassis, SGCC frame                                                                                                               | Aluminum Chassis, SGCC frame                                                                                                   | Aluminum Chassis, SGCC frame                                                                                                   | Aluminum Chassis, SGCC frame                                                                                  |           |           |           |
| Color                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Silver gray                                                                                                                                                           | Silver gray                                                                                                                                                          | Silver gray                                                                                                                 | Silver gray                                                                                                                                          | Silver gray                                                                                                                                         | Silver gray                                                                                                                    | Silver gray                                                                                                                    | Silver gray                                                                                                   |           |           |           |
| Installation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | desktop mounting & VESA 100*100mm                                                                                                                                     | desktop mounting &VESA 100*100mm                                                                                                                                     | desktop mounting &VESA 100*100mm                                                                                            | desktop mounting                                                                                                                                     | desktop mounting                                                                                                                                    | desktop mounting                                                                                                               | desktop mounting                                                                                                               | desktop mounting                                                                                              |           |           |           |
| Dimension                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 155*111.8*65mm                                                                                                                                                        | 155*111.6*49mm                                                                                                                                                       | 155*111.8*65mm                                                                                                              | 210*144*82.7mm                                                                                                                                       | 210*144*82.7mm                                                                                                                                      | 210*144.3*75.5mm                                                                                                               | 210*144.3*75.5mm                                                                                                               | 200*200*85.3mm                                                                                                |           |           |           |
| Net Weight                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 1.30KG                                                                                                                                                                | 1.05KG                                                                                                                                                               | 1.30KG                                                                                                                      | 2.60KG                                                                                                                                               | 2.60KG                                                                                                                                              | 2.20KG                                                                                                                         | 2.20KG                                                                                                                         | 3.3KG                                                                                                         |           |           |           |
| Environmental                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                       |                                                                                                                                                                      |                                                                                                                             |                                                                                                                                                      |                                                                                                                                                     |                                                                                                                                |                                                                                                                                |                                                                                                               |           |           |           |
| Operating Temp                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | -20℃~65℃,SSD,with air flow -10℃~55℃,HDD,with air flow                                                                                                                 | -20℃~65℃,SSD,with air flow -10℃~55℃,HDD,with air flow                                                                                                                | -20℃~70℃,SSD,with air flow -10℃~55℃,HDD,with air flow                                                                       | -20℃~70℃,SSD,with air flow -10℃~55℃,HDD,with air flow                                                                                                | -20℃~70℃,SSD,with air flow -10℃~55℃,HDD,with air flow                                                                                               | -20℃~70℃,SSD,with air flow -10℃~50℃,HDD,with air flow                                                                          | -20℃~70℃,SSD,with air flow -10℃~50℃,HDD,with air flow                                                                          | -20℃~70℃,SSD,with air flow -10℃~50℃,HDD,with air flow                                                         |           |           |           |
| Storage Temp                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | -40℃~85℃                                                                                                                                                              | -40℃~85℃                                                                                                                                                             | -40℃~85℃                                                                                                                    | -40℃~85℃                                                                                                                                             | -40℃~85℃                                                                                                                                            | -40℃~85℃                                                                                                                       | -40℃~85℃                                                                                                                       | -40℃~85℃                                                                                                      |           |           |           |
| Storage Humidity                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 10~90%@40℃, No- condensation                                                                                                                                          | 10~90%@40℃, No- condensation                                                                                                                                         | 10~90%@40℃, No- condensation                                                                                                | 10~90%@40℃, No- condensation                                                                                                                         | 10~90%@40℃, No- condensation                                                                                                                        | 10~90%@40℃, No- condensation                                                                                                   | 10~90%@40℃, No- condensation                                                                                                   | 10~90%@40℃, No- condensation                                                                                  |           |           |           |
| Vibration                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 5 grms/5~500Hz/random/operation (SSD) 1 grms/5~500Hz/random/operation (HDD)                                                                                           | 5 grms/5~500Hz/random/operation (SSD) 1 grms/5~500Hz/random/operation (HDD)                                                                                          | 5 grms/5~500Hz/random/operation (SSD) 1 grms/5~500Hz/random/operation (HDD)                                                 | 5 grms/5~500Hz/random/operation (SSD) 1 grms/5~500Hz/random/operation (HDD)                                                                          | 5 grms/5~500Hz/random/operation (SSD) 1 grms/5~500Hz/random/operation (HDD)                                                                         | 5 grms/5~500Hz/random/operation (SSD) 1 grms/5~500Hz/random/operation (HDD)                                                    | 5 grms/5~500Hz/random/operation (SSD) 1 grms/5~500Hz/random/operation (HDD)                                                    | 5 grms/5~500Hz/random/operation (SSD) 1 grms/5~500Hz/random/operation (HDD)                                   |           |           |           |
| Shock                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 50g peak acceleration(duration 11ms,SSD) 20g peak acceleration(duration 11ms,HDD)                                                                                     | 50g peak acceleration(duration 11ms,SSD) 20g peak acceleration(duration 11ms,HDD)                                                                                    | 50g peak acceleration(duration 11ms,SSD) 20g peak acceleration(duration 11ms,HDD)                                           | 50g peak acceleration(duration 11ms,SSD) 20g peak acceleration(duration 11ms,HDD)                                                                    | 50g peak acceleration(duration 11ms,SSD) 20g peak acceleration(duration 11ms,HDD)                                                                   | 50g peak acceleration(duration 11ms,SSD) 20g peak acceleration(duration 11ms,HDD)                                              | 50g peak acceleration(duration 11ms,SSD) 20g peak acceleration(duration 11ms,HDD)                                              | 50g peak acceleration(duration 11ms,SSD) 20g peak acceleration(duration 11ms,HDD)                             |           |           |           |
| Certificate/ EMC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | CE/FCC Class A                                                                                                                                                        | CE/FCC Class A                                                                                                                                                       | CE/FCC Class A                                                                                                              | CE/FCC Class A                                                                                                                                       | CE/FCC Class A                                                                                                                                      | CE/FCC Class A                                                                                                                 | CE/FCC Class A                                                                                                                 | CE/FCC Class A                                                                                                |           |           |           |
| OS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Windows 7, Windows 8.1, Windows 10, Linux Fedora,Ubuntu                                                                                                               | Windows 7, Windows 8.1, Windows 10, Linux Fedora,Ubuntu                                                                                                              | Windows 7, Windows 8.1, Windows 10, Linux Fedora,Ubuntu                                                                     | Windows 7, Windows 8.1, Windows 10, Linux Fedora,Ubuntu                                                                                              | Windows 7, Windows 8.1, Windows 10, Linux Fedora,Ubuntu                                                                                             | Windows 7, Windows 10, Linux Fedora,Ubuntu                                                                                     | Windows 7, Windows 10, Linux Fedora,Ubuntu                                                                                     | Windows 7, Windows 10, Linux Fedora,Ubuntu                                                                    |           |           |           |
| Watchdog timer                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Programmable via software 1 to 255 second                                                                                                                             | Programmable via software 1 to 255 second                                                                                                                            | Programmable via software 1 to 255 second                                                                                   | Programmable via software 1 to 255 second                                                                                                            | Programmable via software 1 to 255 second                                                                                                           | Programmable via software 1 to 255 second                                                                                      | Programmable via software 1 to 255 second                                                                                      | Programmable via software 1 to 255 second                                                                     |           |           |           |

Product Listing

|                                                                                   |                                                                                                                                    |                                                                                   |  |                                                                                                                                             |  |                                                                                     |                                                                                                                                                                |                                                                                     |  |                                                                                                                                                            |  |                                                                                     |                                                                                                                                                      |                                                                                     |  |                                                                                                                                                      |  |  |                                                                                                                                                       |  |  |                                                                                      |  |  |
|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|--|---------------------------------------------------------------------------------------------------------------------------------------------|--|-------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--|------------------------------------------------------------------------------------------------------------------------------------------------------------|--|-------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--|------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|-------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--------------------------------------------------------------------------------------|--|--|
|  |                                                                                                                                    |  |  |                                                            |  |  |                                                                                                                                                                |  |  |                                                                         |  |  |                                                                                                                                                      |  |  |                                                                                                                                                      |  |  |                                                                                                                                                       |  |  |                                                                                      |  |  |
| KMDA-3230                                                                         |                                                                                                                                    | KMDA-3601                                                                         |  | KMDA-3602                                                                                                                                   |  | KMDA-3820                                                                           |                                                                                                                                                                | KMDA-3610                                                                           |  | KMDA-3920                                                                                                                                                  |  | KMDA-3920ETC                                                                        |                                                                                                                                                      | KMDA-3921                                                                           |  |                                                                                                                                                      |  |  |                                                                                                                                                       |  |  |                                                                                      |  |  |
| Processor                                                                         |                                                                                                                                    |                                                                                   |  |                                                                                                                                             |  |                                                                                     |                                                                                                                                                                |                                                                                     |  |                                                                                                                                                            |  |                                                                                     |                                                                                                                                                      |                                                                                     |  |                                                                                                                                                      |  |  |                                                                                                                                                       |  |  |                                                                                      |  |  |
| CPU                                                                               | Intel® Whiskey lake U Celeron/Core i3/i5/i7                                                                                        |                                                                                   |  | Intel Skylake-S/Kabylake-S Celeron/ Pentium/Core i3/i5/i7, Q170 Chipset                                                                     |  |                                                                                     | Intel Skylake-S/Kabylake-S Celeron/ Pentium/Core i3/i5/i7, Q170 Chipset                                                                                        |                                                                                     |  | Intel Skylake-S/Kabylake-S Celeron/ Pentium/Core i3/i5/i7, H110 Chipset                                                                                    |  |                                                                                     | Intel Skylake-S/Kabylake-S Celeron/ Pentium/Core i3/i5/i7 H110 Chipset,optional Q170 Chipset                                                         |                                                                                     |  | Intel Skylake-S/Kabylake-S Celeron/ Pentium/Core i3/i5/i7 H110 Chipset,optional Q170 Chipset                                                         |  |  |                                                                                                                                                       |  |  |                                                                                      |  |  |
| RAM                                                                               | 2*DDR4 SODIMM,2400MHz, 32GB max.                                                                                                   |                                                                                   |  | 2*260-Pin SODIMM, DDR4,2133MHz, 32GB max.                                                                                                   |  |                                                                                     | 2*260-Pin ,DDR4,2133/2400MHz, 32GB max.                                                                                                                        |                                                                                     |  | 2*260-Pin ,DDR4,2133/2400MHz, 32GB max.                                                                                                                    |  |                                                                                     | 2*260-Pin ,DDR4,2133/2400MHz, 32GB max.                                                                                                              |                                                                                     |  | 2*260-Pin ,DDR4,2133/2400MHz, 32GB max.                                                                                                              |  |  |                                                                                                                                                       |  |  |                                                                                      |  |  |
| Graphics                                                                          | Intel® Gen. 9 UHD Graphics,Support dual independent display<br>HDMI:4096*2304@24Hz<br>DP:4096*2304@60Hz                            |                                                                                   |  | Intel Gen. 9 HD Graphics, HEVC/H265 HW HD codec,support 3 independent display<br>DP:4096*2304@60Hz,VGA:2650*1600@60Hz, HDMI:3840*2160@30Hz, |  |                                                                                     | Intel® Gen. 9 HD Graphics, HEVC/H265 HW HD codec, DP/HDMI support dual 4K HD display 1*MXM3.1 GPU module, support max. 120W GPU, 3*DP & 1*HDMI four 4K display |                                                                                     |  | Intel Gen. 9th HD Graphics, HEVC/H265 HW HD codec, HDMI:3840*2160@30Hz, DP:4096*2304@60Hz,VGA:1920*1200@60Hz, support 2 independent display+1 copy display |  |                                                                                     | Intel Gen. 9 HD Graphics,HEVC/H265 HW HD codec, HDMI:3840*2160@30Hz, DP:4096*2304@60Hz,VGA:1920*1200@60Hz, support 3 independent display(Intel Q170) |                                                                                     |  | Intel Gen. 9 HD Graphics,HEVC/H265 HW HD codec, HDMI:3840*2160@30Hz, DP:4096*2304@60Hz,VGA:1920*1200@60Hz, support 3 independent display(Intel Q170) |  |  | Intel Gen. 9 HD Graphics,HEVC/H265 HW HD codec, HDMI:3840*2160@30Hz, DP:4096*2304@60Hz,VGA:1920*1200@60Hz, support 3 independent display (Intel Q170) |  |  |                                                                                      |  |  |
| I/O Port                                                                          |                                                                                                                                    |                                                                                   |  |                                                                                                                                             |  |                                                                                     |                                                                                                                                                                |                                                                                     |  |                                                                                                                                                            |  |                                                                                     |                                                                                                                                                      |                                                                                     |  |                                                                                                                                                      |  |  |                                                                                                                                                       |  |  |                                                                                      |  |  |
| LAN                                                                               | 4*Intel I210AT PCIe, 10-1000M, 1*Intel®I219LM                                                                                      |                                                                                   |  | 2*Intel I210AT PCIe,10-1000M, 1*Intel I219 LM support Intel Vpro, 4*Intel I210AT Full bandwidth POE, optional 8/11*Gig LAN                  |  |                                                                                     | 2*Intel I211AT PCIe ,10-1000M, 1*Intel I219 LM support Intel Vpro, optional 4*LAN                                                                              |                                                                                     |  | 1*Intel I211AT PCIe ,10-1000M, 1*Intel I219 LM,support Intel Vpro,                                                                                         |  |                                                                                     | 1*Intel I211AT PCIe ,10-1000M, 1*Intel I219 LM support Intel Vpro(Intel Q170),                                                                       |                                                                                     |  | 1*Intel I211AT PCIe ,10-1000M, 1*Intel I219 LM support Intel Vpro(Intel Q170),                                                                       |  |  | 1*Intel I211AT PCIe ,10-1000M, 1*Intel I219 LM. support Intel Vpro(Intel Q170),                                                                       |  |  |                                                                                      |  |  |
| USB                                                                               | 4* USB3.1, 2*USB2.0                                                                                                                |                                                                                   |  | 6* USB3.0, 2*USB2.0 , 1*USB2.0 (Build-in)                                                                                                   |  |                                                                                     | 6* USB3.0, 2*USB2.0 , 1*USB2.0 (Build-in)                                                                                                                      |                                                                                     |  | 4* USB3.0, 2*USB2.0 , 1*USB2.0 (Build-in)                                                                                                                  |  |                                                                                     | 4* USB3.0, 2*USB2.0 , 1*USB2.0 (Build-in)                                                                                                            |                                                                                     |  | 4* USB3.0, 1*USB2.0 (Build-in)                                                                                                                       |  |  | 4* USB3.0, 2*USB 2.0, 1*USB2.0 (Build-in)                                                                                                             |  |  |                                                                                      |  |  |
| Display                                                                           | 1*DP+1*HDMI                                                                                                                        |                                                                                   |  | 1*DP+1*HDMI+1*VGA                                                                                                                           |  |                                                                                     | 1*DP+1*HDMI+1*VGA                                                                                                                                              |                                                                                     |  | 1*DP+1*HDMI+1*VGA                                                                                                                                          |  |                                                                                     | 1*DP+1*HDMI+1*VGA                                                                                                                                    |                                                                                     |  | 1*DP+1*HDMI+1*VGA                                                                                                                                    |  |  | 1*DP+1*HDMI+1*VGA                                                                                                                                     |  |  |                                                                                      |  |  |
| Audio                                                                             | 1*Line out+1*Mic, Realtek ALC662VD                                                                                                 |                                                                                   |  | 1*Line out+1*Mic,Realtek ALC662VD                                                                                                           |  |                                                                                     | 1*Line out+1*Mic,Realtek ALC662VD                                                                                                                              |                                                                                     |  | 1*Line out+1*Mic,Realtek ALC662VD                                                                                                                          |  |                                                                                     | 1*Line out+1*Mic, Realtek ALC662VD                                                                                                                   |                                                                                     |  | 1*Line out+1*Mic, Realtek ALC662VD                                                                                                                   |  |  | 1*Line out+1*Mic, Realtek ALC662VD                                                                                                                    |  |  |                                                                                      |  |  |
| COM/ Others                                                                       | 2*RS485, 3*RS232,                                                                                                                  |                                                                                   |  | 2*RS232/422/485, 2*RS232,                                                                                                                   |  |                                                                                     | 2*RS232/422/485                                                                                                                                                |                                                                                     |  | 2*RS232/422/485, 2*RS232, 1*PS/2(mouse/keyboard)                                                                                                           |  |                                                                                     | 2*RS232/422/485, 2*RS232, 1*PS/2(mouse/keyboard)                                                                                                     |                                                                                     |  | 2*RS232/422/485, 8*RS232, 1*PS/2(mouse/keyboard)                                                                                                     |  |  | 2*RS232/422/485 , 2*RS232, 1*PS/2(mouse/keyboard)                                                                                                     |  |  |                                                                                      |  |  |
| DIO                                                                               | 8-bit iso DIO(4-bit 2.5KV optical Iso. DO,4-bit 2.5KV optical Iso. DI)                                                             |                                                                                   |  | 16/24-bit optical Iso. DIO optional 16-bit TTL Programmable input and output                                                                |  |                                                                                     | 16/24-bit optical Iso. DIO optional 16-bit TTL Programmable input and output                                                                                   |                                                                                     |  | 8-bit TTL, Programmable DIO 16-bit TTL, Programmable DIO                                                                                                   |  |                                                                                     | 8-bit TTL, Programmable DIO                                                                                                                          |                                                                                     |  | 16-bit Programmable DIO (2*10Pin) 16-bit Programmable DIO(DB25),TTL                                                                                  |  |  | 8-bit DIO(2*5Pin) 16-bit DIO(build-in),TTL, programmable input & output                                                                               |  |  |                                                                                      |  |  |
| Storage                                                                           |                                                                                                                                    |                                                                                   |  |                                                                                                                                             |  |                                                                                     |                                                                                                                                                                |                                                                                     |  |                                                                                                                                                            |  |                                                                                     |                                                                                                                                                      |                                                                                     |  |                                                                                                                                                      |  |  |                                                                                                                                                       |  |  |                                                                                      |  |  |
| Storage                                                                           | 1*2.5" SATA port, 1*mSATA Full-height card, support AHCI                                                                           |                                                                                   |  | 2*2.5" SATA,HDD/SSD, 1*mSATA Full-height card, 1*M.2 B-key with SIM slot                                                                    |  |                                                                                     | 1*2.5" SATA3,HDD/SSD, 1*mSATA Full-height card, 1*M.2 B-key with SIM slot                                                                                      |                                                                                     |  | 1*2.5" SATA3,HDD/SSD, 1*mSATA Full-height card, support AHCI                                                                                               |  |                                                                                     | 2*2.5" SATA3,HDD, 1*mSATA Full-height card,1*M.2 2242 B-key                                                                                          |                                                                                     |  | 2*2.5" SATA3 HDD,support RAID0,1(Intel Q170), 1*mSATA,1*M.2 2242 B-key                                                                               |  |  | 2*2.5" SATA3,HDD,support RAID0,1(Intel Q170), 1*mSATA,1*M.2 2242 B-key                                                                                |  |  |                                                                                      |  |  |
| Expansion                                                                         |                                                                                                                                    |                                                                                   |  |                                                                                                                                             |  |                                                                                     |                                                                                                                                                                |                                                                                     |  |                                                                                                                                                            |  |                                                                                     |                                                                                                                                                      |                                                                                     |  |                                                                                                                                                      |  |  |                                                                                                                                                       |  |  |                                                                                      |  |  |
| Expansion Port                                                                    | 1*Mini PCIe, with SIM slot, support 3G/4G/Wifi/ BT/ GPRS,1*M.2 E-key 2230 Wifi/BT module expansion, 1*I-Port(LPT/USB2.0/Mini PCIe) |                                                                                   |  | 1*Mini PCIe, with SIM slot, 1*half length Mini PCIe,support dual 4G LTE/Wifi/BT, 1*I-Port(LPT/USB2.0/Mini PCIe)                             |  |                                                                                     | 1*Mini PCIe, with SIM slot,, 1*half length Mini PCIe,support dual 4G LTE/Wifi/BT & GPS/BDS 1*I-port(LPT/USB2.0/Mini PCIe)                                      |                                                                                     |  | 1*Mini PCIe, with SIM slot, support 4G/Wifi/BT,1* PCIe X4(X4 signal), 1*PCI X4(X1signal),or 2*PCI 1*I-port(LPT/USB2.0/Mini PCIe...etc)                     |  |                                                                                     | 1*Mini PCIe, with SIM slot, support 4G/Wifi/BT                                                                                                       |                                                                                     |  | 1*Mini PCIe, with SIM slot, support 4G LTE/Wifi/BT, 1*PCIe X16, 1*PCIe X4, or 2*PCI, 1*I-port(LPT/USB2.0/Mini PCIe)                                  |  |  | 1*Mini PCIe, with SIM slot, support 4G LTE/Wifi/BT, 1*PCIe X16,or 1*PCI                                                                               |  |  |                                                                                      |  |  |
| Power Supply                                                                      |                                                                                                                                    |                                                                                   |  |                                                                                                                                             |  |                                                                                     |                                                                                                                                                                |                                                                                     |  |                                                                                                                                                            |  |                                                                                     |                                                                                                                                                      |                                                                                     |  |                                                                                                                                                      |  |  |                                                                                                                                                       |  |  |                                                                                      |  |  |
| Input voltage                                                                     | DC IN 9~36V, 3pin terminal,                                                                                                        |                                                                                   |  | DC 6~48V input,                                                                                                                             |  |                                                                                     | DC 6~48V input,                                                                                                                                                |                                                                                     |  | DC 12~24V input,                                                                                                                                           |  |                                                                                     | DC 12~24V input,                                                                                                                                     |                                                                                     |  | DC 12~24V input,                                                                                                                                     |  |  | DC 12~24V input,                                                                                                                                      |  |  |                                                                                      |  |  |
| TDP                                                                               | 30W (I5-8265U , 8GB DDR4, 128GB SSD)                                                                                               |                                                                                   |  | 38W(I5-7500T , 4GB RAM, 128G SSD)                                                                                                           |  |                                                                                     | 115.92W (I5-7500T +GTX 1060M GPU)                                                                                                                              |                                                                                     |  | 58.56W (I5-7200U 16GB DDR4)                                                                                                                                |  |                                                                                     | 68.4W (I7-6700T CPU 16GB DDR4)                                                                                                                       |                                                                                     |  | 68.78W (I7-6700T , 4GB DDR4, 1TB HDD)                                                                                                                |  |  | 68.78W (I7-6700T , 4GB DDR4, 1TB HDD)                                                                                                                 |  |  |                                                                                      |  |  |
| Mechanical                                                                        |                                                                                                                                    |                                                                                   |  |                                                                                                                                             |  |                                                                                     |                                                                                                                                                                |                                                                                     |  |                                                                                                                                                            |  |                                                                                     |                                                                                                                                                      |                                                                                     |  |                                                                                                                                                      |  |  |                                                                                                                                                       |  |  |                                                                                      |  |  |
| Structure                                                                         | Aluminum Chassis, SGCC frame                                                                                                       |                                                                                   |  | Aluminum Chassis, SGCC cover                                                                                                                |  |                                                                                     | Aluminum Chassis, SGCC frame and cover                                                                                                                         |                                                                                     |  | Aluminum rectangular cooling plates, SGCC paint main cabinet                                                                                               |  |                                                                                     | Aluminum rectangular cooling plates, SGCC paint main cabinet                                                                                         |                                                                                     |  | Aluminum rectangular cooling plates, SGCC paint main cabinet                                                                                         |  |  | Aluminum rectangular cooling plates, SGCC paint main cabinet                                                                                          |  |  | Aluminum Chassis, SGCC frame                                                         |  |  |
| Color                                                                             | Silver gray                                                                                                                        |                                                                                   |  | Silver gray                                                                                                                                 |  |                                                                                     | Silver gray                                                                                                                                                    |                                                                                     |  | Silver gray                                                                                                                                                |  |                                                                                     | Silver gray                                                                                                                                          |                                                                                     |  | Silver gray                                                                                                                                          |  |  | Silver gray                                                                                                                                           |  |  | Silver gray                                                                          |  |  |
| Installation                                                                      | desktop mounting                                                                                                                   |                                                                                   |  | desktop mounting                                                                                                                            |  |                                                                                     | desktop mounting,Anti-vibration plane                                                                                                                          |                                                                                     |  | desktop mounting                                                                                                                                           |  |                                                                                     | desktop mounting                                                                                                                                     |                                                                                     |  | desktop mounting,wall-mount                                                                                                                          |  |  | desktop mounting,wall-mount                                                                                                                           |  |  | desktop mounting,wall-mount                                                          |  |  |
| Dimension                                                                         | 210*147*78mm                                                                                                                       |                                                                                   |  | 284*222*84.7mm                                                                                                                              |  |                                                                                     | 284*222*81mm                                                                                                                                                   |                                                                                     |  | 200*200*128.3mm                                                                                                                                            |  |                                                                                     | 221*251*88mm                                                                                                                                         |                                                                                     |  | 220*250*131mm                                                                                                                                        |  |  | 220*250**131.5mm                                                                                                                                      |  |  | 220*250**172mm                                                                       |  |  |
| Net Weight                                                                        | 2.29KG                                                                                                                             |                                                                                   |  | 4.65KG                                                                                                                                      |  |                                                                                     | 5.60KG(non GPU)                                                                                                                                                |                                                                                     |  | 3.65KG                                                                                                                                                     |  |                                                                                     | 4.84KG                                                                                                                                               |                                                                                     |  | 5.27KG                                                                                                                                               |  |  | 5.27KG                                                                                                                                                |  |  | 5.58KG                                                                               |  |  |
| Environmental                                                                     |                                                                                                                                    |                                                                                   |  |                                                                                                                                             |  |                                                                                     |                                                                                                                                                                |                                                                                     |  |                                                                                                                                                            |  |                                                                                     |                                                                                                                                                      |                                                                                     |  |                                                                                                                                                      |  |  |                                                                                                                                                       |  |  |                                                                                      |  |  |
| Operating Temp                                                                    | -20℃~70℃,SSD,with air flow<br>-10℃~50℃,HDD,with air flow                                                                           |                                                                                   |  | -20℃~65℃,SSD,with air flow<br>-10℃~55℃,HDD,with air flow                                                                                    |  |                                                                                     | -20℃~65℃,SSD,with air flow<br>-10℃~50℃,HDD,with air flow                                                                                                       |                                                                                     |  | -20℃~70℃,SSD,with air flow<br>-10℃~50℃,HDD,with air flow                                                                                                   |  |                                                                                     | -20℃~65℃,SSD,with air flow<br>-10℃~55℃,HDD,with air flow                                                                                             |                                                                                     |  | -20℃~65℃,SSD,with air flow<br>-10℃~55℃,HDD,with air flow                                                                                             |  |  | -20℃~65℃,SSD,with air flow<br>-10℃~55℃,HDD,with air flow                                                                                              |  |  | -20℃~65℃,SSD,with air flow<br>-10℃~55℃,HDD,with air flow                             |  |  |
| Storage Temp                                                                      | -40℃~85℃                                                                                                                           |                                                                                   |  | -40℃~85℃                                                                                                                                    |  |                                                                                     | -40℃~85℃                                                                                                                                                       |                                                                                     |  | -40℃~85℃                                                                                                                                                   |  |                                                                                     | -40℃~85℃                                                                                                                                             |                                                                                     |  | -40℃~85℃                                                                                                                                             |  |  | -40℃~85℃                                                                                                                                              |  |  | -40℃~85℃                                                                             |  |  |
| Storage Humidity                                                                  | 10~90%@40℃, No- condensation                                                                                                       |                                                                                   |  | 10~90%@40℃, No- condensation                                                                                                                |  |                                                                                     | 10~90%@40℃, No- condensation                                                                                                                                   |                                                                                     |  | 10~90%@40℃, No- condensation                                                                                                                               |  |                                                                                     | 10~90%@40℃, No- condensation                                                                                                                         |                                                                                     |  | 10~90%@40℃, No- condensation                                                                                                                         |  |  | 10~90%@40℃, No- condensation                                                                                                                          |  |  | 10~90%@40℃, No- condensation                                                         |  |  |
| Vibration                                                                         | 5 grms/5~500Hz/random/operation (SSD)<br>1 grms/5~500Hz/random/operation (HDD)                                                     |                                                                                   |  | 5 grms/5~500Hz/random/operation (SSD)<br>1 grms/5~500Hz/random/operation (HDD)                                                              |  |                                                                                     | 5.5 grms/5~500Hz/random/operation (SSD)<br>1.5 grms/5~500Hz/random/operation (HDD)                                                                             |                                                                                     |  | 5 grms/5~500Hz/random/operation (SSD)<br>1 grms/5~500Hz/random/operation (HDD)                                                                             |  |                                                                                     | 5 grms/5~500Hz/random/operation (SSD)<br>1 grms/5~500Hz/random/operation (HDD)                                                                       |                                                                                     |  | 5 grms/5~500Hz/random/operation (SSD)<br>1 grms/5~500Hz/random/operation (HDD)                                                                       |  |  | 5 grms/5~500Hz/random/operation (SSD)<br>1 grms/5~500Hz/random/operation (HDD)                                                                        |  |  | 5 grms/5~500Hz/random/operation (SSD)<br>1 grms/5~500Hz/random/operation (HDD)       |  |  |
| Shock                                                                             | 50g peak acceleration(duration 11ms,SSD)<br>20g peak acceleration(duration 11ms,HDD)                                               |                                                                                   |  | 50g peak acceleration(duration 11ms,SSD)<br>20g peak acceleration(duration 11ms,HDD)                                                        |  |                                                                                     | 50g peak acceleration(duration 11ms,SSD)<br>20g peak acceleration(duration 11ms,HDD)                                                                           |                                                                                     |  | 50g peak acceleration(duration 11ms,SSD)<br>20g peak acceleration(duration 11ms,HDD)                                                                       |  |                                                                                     | 50g peak acceleration(duration 11ms,SSD)<br>20g peak acceleration(duration 11ms,HDD)                                                                 |                                                                                     |  | 50g peak acceleration(duration 11ms,SSD)<br>20g peak acceleration(duration 11ms,HDD)                                                                 |  |  | 50g peak acceleration(duration 11ms,SSD)<br>20g peak acceleration(duration 11ms,HDD)                                                                  |  |  | 50g peak acceleration(duration 11ms,SSD)<br>20g peak acceleration(duration 11ms,HDD) |  |  |
| Certificate /EMC                                                                  | CE/FCC Class A                                                                                                                     |                                                                                   |  | CE/FCC Class A                                                                                                                              |  |                                                                                     | CE/FCC Class A,E-Mark                                                                                                                                          |                                                                                     |  | CE/FCC Class A                                                                                                                                             |  |                                                                                     | CE/FCC Class A                                                                                                                                       |                                                                                     |  | CE/FCC Class A                                                                                                                                       |  |  | CE/FCC Class A                                                                                                                                        |  |  | CE/FCC Class A                                                                       |  |  |
| OS                                                                                | Windows 10, SUSE, Ubuntu, Wind River, Red Hat Enterprise                                                                           |                                                                                   |  | Windows 7, Windows 10, Linux Fedora,Ubuntu                                                                                                  |  |                                                                                     | Windows 7, Windows 10, Linux Fedora,Ubuntu                                                                                                                     |                                                                                     |  | Windows 7, Windows 10, Linux Fedora,Ubuntu                                                                                                                 |  |                                                                                     | Windows 7, Windows 10, Linux Fedora,Ubuntu                                                                                                           |                                                                                     |  | Windows 7, Windows 10, Linux Fedora,Ubuntu                                                                                                           |  |  | Windows 7, Windows 10, Linux Fedora,Ubuntu                                                                                                            |  |  | Windows 7, Windows 10, Linux Fedora,Ubuntu                                           |  |  |
| Watchdog timer                                                                    | Programmable via software 1 to 255 second                                                                                          |                                                                                   |  | Programmable via software 1 to 255 second                                                                                                   |  |                                                                                     | Programmable via software 1 to 255 second                                                                                                                      |                                                                                     |  | Programmable via software 1 to 255 second                                                                                                                  |  |                                                                                     | Programmable via software 1 to 255 second                                                                                                            |                                                                                     |  | Programmable via software 1 to 255 second                                                                                                            |  |  | Programmable via software 1 to 255 second                                                                                                             |  |  | Programmable via software 1 to 255 second                                            |  |  |



Product Listing

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |  |                                                                                                                                                                                    |  |                |  |                                                                                                                                                      |  |                |  |                                                                                                                                                                                     |  |           |  |                                                                                                                                                                                    |  |  |  |                                                                                                                                                      |  |  |  |                                                                                                                                                                                                |  |  |  |                                                                                                                                                                 |  |  |  |                                                                                                                                                                 |  |  |  |                                  |  |  |  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|----------------|--|------------------------------------------------------------------------------------------------------------------------------------------------------|--|----------------|--|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|-----------|--|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|----------------------------------|--|--|--|
| <div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div> |  |                                                                                                                                                                                    |  |                |  |                                                                                                                                                      |  |                |  |                                                                                                                                                                                     |  |           |  |                                                                                                                                                                                    |  |  |  |                                                                                                                                                      |  |  |  |                                                                                                                                                                                                |  |  |  |                                                                                                                                                                 |  |  |  |                                                                                                                                                                 |  |  |  |                                  |  |  |  |
| KMDA-5610/S001                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |  | KMDA-5610/S002                                                                                                                                                                     |  | KMDA-5920/S001 |  | KMDA-5920/S002                                                                                                                                       |  | KMDA-5921/S001 |  | KMDA-5921/S002                                                                                                                                                                      |  | KMDA-6610 |  | KMDA-6920                                                                                                                                                                          |  |  |  |                                                                                                                                                      |  |  |  |                                                                                                                                                                                                |  |  |  |                                                                                                                                                                 |  |  |  |                                                                                                                                                                 |  |  |  |                                  |  |  |  |
| Processor                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |  |                                                                                                                                                                                    |  |                |  |                                                                                                                                                      |  |                |  |                                                                                                                                                                                     |  |           |  |                                                                                                                                                                                    |  |  |  |                                                                                                                                                      |  |  |  |                                                                                                                                                                                                |  |  |  |                                                                                                                                                                 |  |  |  |                                                                                                                                                                 |  |  |  |                                  |  |  |  |
| CPU                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  | Intel® Coffee lake 9th/8th-Gen Core™ i7/i5/i3/Pentium/Celeron LGA1151 processor H310 chipset                                                                                       |  |                |  | Intel® Coffee lake 9th/8th-Gen Core™ i9/i7/i5/i3/Pentium/Celeron LGA1151 CPU Q370 chipset                                                            |  |                |  | Intel® Coffee lake 9th/8th-Gen Core™ i7/i5/i3/Pentium/Celeron LGA1151 processor H310 chipset                                                                                        |  |           |  | Intel® Coffee lake 9th/8th-Gen Core™ i7/i5/i3/Pentium/Celeron LGA1151 processor Q370 chipset                                                                                       |  |  |  | Intel® Coffee lake 9th/8th-Gen Core™ i7/i5/i3/Pentium/Celeron LGA1151 processor Q370 chipset                                                         |  |  |  | Intel® Comet lake 10th Gen Core™ i9/i7/i5/i3/Pentium/Celeron LGA1200 CPU H420E Chipset                                                                                                         |  |  |  | Intel® Comet lake 10th Gen Core™ i9/i7/i5/i3/Pentium/Celeron LGA1200 CPU H420E Chipset                                                                          |  |  |  |                                                                                                                                                                 |  |  |  |                                  |  |  |  |
| RAM                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  | 2*260-Pin ,DDR4,2400/2666MHz, 64GB max.                                                                                                                                            |  |                |  | 4*260-Pin ,DDR4,2400/2666MHz, 128GB max.                                                                                                             |  |                |  | 2*260-Pin ,DDR4,2400/2666MHz, 64GB max.                                                                                                                                             |  |           |  | 4*260-Pin ,DDR4,2400/2666MHz, 128GB max.                                                                                                                                           |  |  |  | 2*260-Pin ,DDR4,2933MHz, 64GB Max.                                                                                                                   |  |  |  | 2*260-Pin ,DDR4,2933MHz, 64GB Max.                                                                                                                                                             |  |  |  |                                                                                                                                                                 |  |  |  |                                                                                                                                                                 |  |  |  |                                  |  |  |  |
| Graphics                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  | Intel UHD Graphics, Supports DirectX11.1, OpenGL 5.0 and OpenCL 2.1 or PCIe X16, DP:4096*2304@60Hz,VGA:1900*1200@60Hz, HDMI:3840*2160@30Hz(2 independent displays, 1 Copy Display) |  |                |  | Intel UHD Graphics, Supports DirectX11.1, OpenGL 5.0 and OpenCL 2.1, DP:4096*2304@60Hz,VGA:1920*1200@60Hz, DP:4096*2304@60Hz (3 independent display) |  |                |  | Intel UHD Graphics, Supports DirectX11.1, OpenGL 5.0 and OpenCL 2.1 or PCIe X16, DP:4096*2304@60Hz, VGA:1900*1200@60Hz, HDMI:4096*2160@30Hz(2 independent displays, 1 Copy Display) |  |           |  | Intel UHD Graphics, Supports DirectX11.1, OpenGL 5.0 and OpenCL 2.1 or PCIe X16, DP:4096*2304@60Hz,VGA:1900*1200@60Hz, HDMI:4096*2160@30Hz(2 independent displays, 1 Copy Display) |  |  |  | Intel UHD Graphics, Supports DirectX11.1, OpenGL 5.0 and OpenCL 2.1 or PCIe X16, DP:4096*2304@60Hz, VGA1900*1200@60Hz, support 3 independent display |  |  |  | Intel UHD Graphics, Supports DirectX11.1, OpenGL 5.0 and OpenCL 2.1 or PCIe X16, DP:4096*2304@60Hz, VGA1900*1200@60Hz, HDMI:4096*2160@30Hz(2 independent displays, 1 Copy Display)             |  |  |  | Intel UHD Graphics, Supports DirectX12, OpenGL 4.5; DP:4096*2304@60Hz, VGA:1900*1200@60Hz, HDMI:4096*2160@30Hz (2 independent display)                          |  |  |  | Intel UHD Graphics, Supports DirectX12, OpenGL 4.5; DP:4096*2304@60Hz, VGA:1900*1200@60Hz, HDMI:4096*2160@30Hz (2 independent display)                          |  |  |  |                                  |  |  |  |
| I/O Port                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |                                                                                                                                                                                    |  |                |  |                                                                                                                                                      |  |                |  |                                                                                                                                                                                     |  |           |  |                                                                                                                                                                                    |  |  |  |                                                                                                                                                      |  |  |  |                                                                                                                                                                                                |  |  |  |                                                                                                                                                                 |  |  |  |                                                                                                                                                                 |  |  |  |                                  |  |  |  |
| LAN                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  | 1*Intel I210AT PCIe ,10-1000M, 1*Intel I219 LM,                                                                                                                                    |  |                |  | 2*Intel I211AT/I210AT, 10-1000M, WOL; 1*Intel I219 LM, 10-1000M, iAMT13.0,vPro;                                                                      |  |                |  | 1*Intel I210AT PCIe ,10-1000M, 1*Intel I219 LM,                                                                                                                                     |  |           |  | 2*Intel I210AT PCIe ,10-1000M, 1*Intel I219 LM, support Intel Vpro                                                                                                                 |  |  |  | 1*Intel I210AT PCIe ,10-1000M, 1*Intel I219 LM                                                                                                       |  |  |  | 2*Intel I210AT PCIe ,10-1000M, 1*Intel I219 LM support Intel Vpro                                                                                                                              |  |  |  | 1*Intel I226V, PCIe X1, 10M-2.5G, WOL; 1*Intel I219 LM, 10-1000M, WOL                                                                                           |  |  |  | 1*Intel I226V, PCIe X1, 10M-2.5G, WOL; 1*Intel I219 LM, 10-1000M, WOL                                                                                           |  |  |  |                                  |  |  |  |
| USB                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  | 4* USB3.1, 2*USB2.0, 1*USB2.0(Build-in)                                                                                                                                            |  |                |  | 6* USB3.1, 2*USB2.0, 2*USB2.0(Build-in)                                                                                                              |  |                |  | 4* USB3.1, 2*USB2.0, 1*USB2.0(Build-in)                                                                                                                                             |  |           |  | 6* USB3.1, 2*USB2.0, 2*USB2.0(Build-in)                                                                                                                                            |  |  |  | 4* USB3.1, 2*USB2.0, 1*USB2.0(Build-in)                                                                                                              |  |  |  | 6* USB3.1, 2*USB2.0, 2*USB2.0(Build-in)                                                                                                                                                        |  |  |  | 4* USB3.2 Gen1, 2*USB2.0, 2*USB2.0(Build-in)                                                                                                                    |  |  |  | 4* USB3.2 Gen1, 2*USB2.0, 2*USB2.0(Build-in)                                                                                                                    |  |  |  |                                  |  |  |  |
| Display                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  | 1*DP+1*HDMI+1*VGA                                                                                                                                                                  |  |                |  | 2*DP+1*VGA                                                                                                                                           |  |                |  | 1*DP+1*HDMI+1*VGA                                                                                                                                                                   |  |           |  | 2*DP+1*VGA                                                                                                                                                                         |  |  |  | 1*DP+1*HDMI+1*VGA                                                                                                                                    |  |  |  | 2*DP+1*VGA                                                                                                                                                                                     |  |  |  | 1*DP+1*HDMI+1*VGA                                                                                                                                               |  |  |  | 1*DP+1*HDMI+1*VGA                                                                                                                                               |  |  |  |                                  |  |  |  |
| Audio                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |  | 1*Line out+1*Mic, Realtek ALC662VD                                                                                                                                                 |  |                |  | 1*Line out+1*Mic,Realtek ALC662                                                                                                                      |  |                |  | 1*Line out+1*Mic, Realtek ALC662VD                                                                                                                                                  |  |           |  | 1*Line out+1*Mic, Realtek ALC662VD                                                                                                                                                 |  |  |  | 1*Line out+1*Mic, Realtek ALC662VD                                                                                                                   |  |  |  | 1*Line out+1*Mic, Realtek ALC662VD                                                                                                                                                             |  |  |  | 1*Line out+1*Mic, Realtek ALC 897                                                                                                                               |  |  |  | 1*Line out+1*Mic, Realtek ALC 897                                                                                                                               |  |  |  |                                  |  |  |  |
| COM/ Others                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |  | 2*RS232/422/485, 2*RS232,                                                                                                                                                          |  |                |  | 2*RS232/422/485, 2*RS232;                                                                                                                            |  |                |  | 2*RS232/422/485, 2*RS232,                                                                                                                                                           |  |           |  | 2*RS232/422/485, 2*RS232,                                                                                                                                                          |  |  |  | 2*RS232/422/485, 2*RS232,                                                                                                                            |  |  |  | 2*RS232/422/485, 2*RS232, 1*LPT, 1*PS/2                                                                                                                                                        |  |  |  | 2*RS232/422/485, 2*RS232; 1*LPT, 1*PS/2                                                                                                                         |  |  |  | 2*RS232/422/485, 2*RS232; 1*LPT, 1*PS/2                                                                                                                         |  |  |  |                                  |  |  |  |
| DIO                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  | 16-bit iso DIO: 8-bit Iso. DI(High:5-24V,Low:0-1.5V) and 8-bit Iso. DO(200mA)                                                                                                      |  |                |  | 16 bit iso. DIO(2*10pin); 16 bit DIO(2*10pin)                                                                                                        |  |                |  | 16-bit iso DIO: 8-bit Iso. DI(High:5-24V,Low:0-1.5V) and 8-bit Iso. DO(200mA)                                                                                                       |  |           |  | 16-bit iso DIO: 8-bit Iso. DI(High:5-24V,Low:0-1.5V) and 8-bit Iso. DO(200mA)                                                                                                      |  |  |  | 16-bit iso DIO: 8-bit Iso. DI(High:5-24V,Low:0-1.5V) and 8-bit Iso. DO(200mA)                                                                        |  |  |  | 8-bit DIO,TTL 16-bit DIO(2*10 pin)                                                                                                                                                             |  |  |  | 8-bit DIO,TTL 16-bit DIO(2*10 pin)                                                                                                                              |  |  |  |                                                                                                                                                                 |  |  |  |                                  |  |  |  |
| Storage                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  | 2*2.5" SATA3,HDD, 1*mSATA,with SIMslot,support 4G                                                                                                                                  |  |                |  | 2*2.5" SATA3,RAID0,1; 1*Mini PCIe(SATA3.0/USB2.0), mSATA                                                                                             |  |                |  | 2*2.5" SATA3,HDD, 1*mSATA,with SIM slot,support 4G                                                                                                                                  |  |           |  | 2*2.5" SATA3,support RAID0,1, 1*M.2 M-Key,PClex4 Gen3.0, support NVME storage                                                                                                      |  |  |  | 2*2.5" SATA3,HDD, 1*full length Msata with SIM slot,support 4G                                                                                       |  |  |  | 2*2.5" SATA3, support RAID0,1, 1*M.2 M-Key,PClex4 Gen3.0, support NVME storage                                                                                                                 |  |  |  | 2*2.5" SATA3, 6Gbps; 1*mSATA(SATA3.0/USB2.0)                                                                                                                    |  |  |  | 2*2.5" SATA3, 6Gbps; 1*mSATA(SATA3.0/USB2.0)                                                                                                                    |  |  |  |                                  |  |  |  |
| Expansion                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |  |                                                                                                                                                                                    |  |                |  |                                                                                                                                                      |  |                |  |                                                                                                                                                                                     |  |           |  |                                                                                                                                                                                    |  |  |  |                                                                                                                                                      |  |  |  |                                                                                                                                                                                                |  |  |  |                                                                                                                                                                 |  |  |  |                                                                                                                                                                 |  |  |  |                                  |  |  |  |
| Expansion Port                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |  | 1*M.2 E-Key 2230, Support Gigabit WFI module, 1*I-port(LPT/USB2.0/16-bit DIO/Mini PCIe)                                                                                            |  |                |  | 1*M.2 E-Key 2230(PCIeX1&USB2.0); 1*Mini PCIe(SATA3.0/USB2.0+SIM)                                                                                     |  |                |  | 1*M.2 E-Key 2230, Support Gigabit WFI module, 1*PCIe X16, 1*PCIe X4, 1*Mini PCIe,with SIM slot. support4G/WIFI/BT 1*I-port(LPT/USB2.0/16-bit DIO/Mini PCIe)                         |  |           |  | 1*M.2 B-Key,with SIM slot. support5G, 1*M.2 E-Key, 1*PCIe X16,1*PCIe X4, 1*Mini PCIe,with SIM slot. support4G/WIFI/BT 1*I-port(LPT/USB2.0/16-bit DIO/Mini PCIe)                    |  |  |  | 1*M.2 E-Key 2230, Support Gigabit WFI module/BTS.0 1*PCIe X16, 1*PCIe X4 , 2*32-bit PCI 1*I-port(LPT/USB2.0/16-bitDIO/Mini PCIe)                     |  |  |  | 1*M.2 B-Key,with SIM slot. support 5G, 1*M.2 E-Key, 1*Mini PCIe,with SIM slot. support4G/WIFI/BT, 1*I-port(LPT/USB2.0/16-bit DIO/Mini PCIe), 2*PCIe X8,2*PCIe X4 or 1*PCIe X16,1*PCIe X4,2*PCI |  |  |  | 1*Mini PCIe(PCIeX1/USB2.0+SIM), 4G LTE/PCIe;                                                                                                                    |  |  |  | 1*PCIe3.0 X16(X16)+1*PCIe3.0 X16(X4) ; or 1*PCIe3.0 X16(X16)+ 1*32-bit PCI; 1*Mini PCIe(PCIeX1/USB2.0+SIM), 4G LTE/PCIe;                                        |  |  |  |                                  |  |  |  |
| Power Supply                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  |                                                                                                                                                                                    |  |                |  |                                                                                                                                                      |  |                |  |                                                                                                                                                                                     |  |           |  |                                                                                                                                                                                    |  |  |  |                                                                                                                                                      |  |  |  |                                                                                                                                                                                                |  |  |  |                                                                                                                                                                 |  |  |  |                                                                                                                                                                 |  |  |  |                                  |  |  |  |
| Input voltage                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  | DC IN 9-36V ,with protection of short circuit, over voltage, over current;                                                                                                         |  |                |  | DC IN 9-36V , with protection of short circuit, over voltage, over current                                                                           |  |                |  | DC IN 9-36V ,with protection of short circuit, over voltage, over current                                                                                                           |  |           |  | DC IN 9-36V ,with protection of short circuit, over voltage, over current                                                                                                          |  |  |  | DC IN 9-36V ,with protection of short circuit, over voltage, over current                                                                            |  |  |  | DC IN 9-36V ,with protection of short circuit, over voltage, over current                                                                                                                      |  |  |  | DC IN 9-36V ,with protection of short circuit, over voltage, over current                                                                                       |  |  |  | DC IN 9-36V ,with protection of short circuit, over voltage, over current                                                                                       |  |  |  |                                  |  |  |  |
| TDP                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  | 96W(i7-8700 ,32G DDR4,128G SSD)                                                                                                                                                    |  |                |  | 功耗: 60.5W (i7-8700T , 32G DDR4, 128G SSD)                                                                                                            |  |                |  | 96W(i7-8700 ,32G DDR4,128G SSD)                                                                                                                                                     |  |           |  | 48.5W(i7-8700T,16G DDR4,128G SSD)                                                                                                                                                  |  |  |  | 48.5W(i7-9700,16G DDR4,128G SSD)                                                                                                                     |  |  |  | 48.5W(i7-9700,16G DDR4,128G SSD)                                                                                                                                                               |  |  |  | 48.5W(i7-9700,16G DDR4,128G SSD)                                                                                                                                |  |  |  | 48.5W(i7-9700,16G DDR4,128G SSD)                                                                                                                                |  |  |  | 48.5W(i7-9700,16G DDR4,128G SSD) |  |  |  |
| Mechanical                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |                                                                                                                                                                                    |  |                |  |                                                                                                                                                      |  |                |  |                                                                                                                                                                                     |  |           |  |                                                                                                                                                                                    |  |  |  |                                                                                                                                                      |  |  |  |                                                                                                                                                                                                |  |  |  |                                                                                                                                                                 |  |  |  |                                                                                                                                                                 |  |  |  |                                  |  |  |  |
| Structure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |  | Aluminum Chassis, SGCC frame                                                                                                                                                       |  |                |  | Aluminum Chassis, SGCC frame                                                                                                                         |  |                |  | Aluminum Chassis, SGCC frame                                                                                                                                                        |  |           |  | Aluminum Chassis, SGCC frame                                                                                                                                                       |  |  |  | Aluminum Chassis, SGCC frame                                                                                                                         |  |  |  | Aluminum Chassis, SGCC frame                                                                                                                                                                   |  |  |  | Aluminum Chassis, SGCC frame                                                                                                                                    |  |  |  | Aluminum Chassis, SGCC frame                                                                                                                                    |  |  |  | Aluminum Chassis, SGCC frame     |  |  |  |
| Color                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |  | Silver white + Aquamarine                                                                                                                                                          |  |                |  | Silver white + Aquamarine                                                                                                                            |  |                |  | Silver white + Aquamarine                                                                                                                                                           |  |           |  | Silver white + Aquamarine                                                                                                                                                          |  |  |  | Silver white + Aquamarine                                                                                                                            |  |  |  | Silver white + Aquamarine                                                                                                                                                                      |  |  |  | Silver white + Aquamarine                                                                                                                                       |  |  |  | Silver white + Aquamarine                                                                                                                                       |  |  |  | Silver white + Aquamarine        |  |  |  |
| Installation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  | desktop mounting                                                                                                                                                                   |  |                |  | desktop mounting                                                                                                                                     |  |                |  | desktop mounting                                                                                                                                                                    |  |           |  | desktop mounting                                                                                                                                                                   |  |  |  | desktop mounting                                                                                                                                     |  |  |  | desktop mounting                                                                                                                                                                               |  |  |  | desktop mounting                                                                                                                                                |  |  |  | desktop mounting                                                                                                                                                |  |  |  | desktop mounting                 |  |  |  |
| Dimension                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |  | 230*267.3*92mm                                                                                                                                                                     |  |                |  | 230*267.3*92mm                                                                                                                                       |  |                |  | 230*273*143mm                                                                                                                                                                       |  |           |  | 230*273*143mm                                                                                                                                                                      |  |  |  | 230*273*204mm                                                                                                                                        |  |  |  | 230*273*204mm                                                                                                                                                                                  |  |  |  | 230*273*204mm                                                                                                                                                   |  |  |  | 230*267.3*92mm                                                                                                                                                  |  |  |  | 230*273*143mm                    |  |  |  |
| Net Weight                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  | 5.1KG                                                                                                                                                                              |  |                |  | 5.1KG                                                                                                                                                |  |                |  | 5.9KG                                                                                                                                                                               |  |           |  | 5.9KG                                                                                                                                                                              |  |  |  | 7.25KG                                                                                                                                               |  |  |  | 7.25KG                                                                                                                                                                                         |  |  |  | 7.25KG                                                                                                                                                          |  |  |  | 5.12KG                                                                                                                                                          |  |  |  | 5.9KG                            |  |  |  |
| Environmental                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  |                                                                                                                                                                                    |  |                |  |                                                                                                                                                      |  |                |  |                                                                                                                                                                                     |  |           |  |                                                                                                                                                                                    |  |  |  |                                                                                                                                                      |  |  |  |                                                                                                                                                                                                |  |  |  |                                                                                                                                                                 |  |  |  |                                                                                                                                                                 |  |  |  |                                  |  |  |  |
| Operating Temp                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |  | -20℃~-60℃,SSD,with air flow -10℃~-55℃,HDD,with air flow                                                                                                                            |  |                |  | -20℃~-60℃,SSD, with air flow; -10℃~-55℃,HDD, with air flow;                                                                                          |  |                |  | -20℃~-60℃,SSD,with air flow -10℃~-55℃,HDD,with air flow                                                                                                                             |  |           |  | -20℃~-60℃,SSD,with air flow -10℃~-55℃,HDD,with air flow                                                                                                                            |  |  |  | -20℃~-60℃,SSD,with air flow -10℃~-55℃,HDD,with air flow                                                                                              |  |  |  | -20℃~-60℃,SSD,with air flow -10℃~-55℃,HDD,with air flow                                                                                                                                        |  |  |  | -20℃~-60℃,SSD,with air flow -10℃~-55℃,HDD,with air flow                                                                                                         |  |  |  | -20℃~-60℃,SSD,with air flow -10℃~-55℃,HDD,with air flow                                                                                                         |  |  |  |                                  |  |  |  |
| Storage Temp                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  | -40℃~85℃                                                                                                                                                                           |  |                |  | -40℃~85℃                                                                                                                                             |  |                |  | -40℃~85℃                                                                                                                                                                            |  |           |  | -40℃~85℃                                                                                                                                                                           |  |  |  | -40℃~85℃                                                                                                                                             |  |  |  | -40℃~85℃                                                                                                                                                                                       |  |  |  | -40℃~85℃                                                                                                                                                        |  |  |  | -40℃~85℃                                                                                                                                                        |  |  |  |                                  |  |  |  |
| Storage Humidity                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  | 10~90%@40℃, No- condensation                                                                                                                                                       |  |                |  | 10~95%@40℃, No-condensation                                                                                                                          |  |                |  | 10~90%@40℃, No- condensation                                                                                                                                                        |  |           |  | 10~90%@40℃, No- condensation                                                                                                                                                       |  |  |  | 10~90%@40℃, No- condensation                                                                                                                         |  |  |  | 10~90%@40℃, No- condensation                                                                                                                                                                   |  |  |  | 10~90%@40℃, No- condensation                                                                                                                                    |  |  |  | 10~90%@40℃, No- condensation                                                                                                                                    |  |  |  |                                  |  |  |  |
| Vibration                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |  | 5 grms/5~500Hz/random/operation (SSD) 1 grms/5~500Hz/random/operation (HDD)                                                                                                        |  |                |  | 5 grms/5~500Hz/random/operation(SSD); 1 grms/5~500Hz/random/operation(HDD)                                                                           |  |                |  | 5 grms/5~500Hz/random/operation (SSD) 1 grms/5~500Hz/random/operation (HDD)                                                                                                         |  |           |  | 5 grms/5~500Hz/random/operation (SSD) 1 grms/5~500Hz/random/operation (HDD)                                                                                                        |  |  |  | 5 grms/5~500Hz/random/operation (SSD) 1 grms/5~500Hz/random/operation (HDD)                                                                          |  |  |  | 5 grms/5~500Hz/random/operation (SSD) 1 grms/5~500Hz/random/operation (HDD)                                                                                                                    |  |  |  | 5 grms/5~500Hz/random/operation (SSD) 1 grms/5~500Hz/random/operation (HDD)                                                                                     |  |  |  | 5 grms/5~500Hz/random/operation (SSD) 1 grms/5~500Hz/random/operation (HDD)                                                                                     |  |  |  |                                  |  |  |  |
| Shock                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |  | 50g peak acceleration(duration 11ms,SSD) 20g peak acceleration(duration 11ms,HDD)                                                                                                  |  |                |  | 50g peak acceleration(duration 11ms,SSD); 20g peak acceleration(duration 11ms,HDD)                                                                   |  |                |  | 50g peak acceleration(duration 11ms,SSD) 20g peak acceleration(duration 11ms,HDD)                                                                                                   |  |           |  | 50g peak acceleration(duration 11ms,SSD) 20g peak acceleration(duration 11ms,HDD)                                                                                                  |  |  |  | 50g peak acceleration(duration 11ms,SSD) 20g peak acceleration(duration 11ms,HDD)                                                                    |  |  |  | 50g peak acceleration(duration 11ms,SSD) 20g peak acceleration(duration 11ms,HDD)                                                                                                              |  |  |  | 50g peak acceleration(duration 11ms,SSD) 20g peak acceleration(duration 11ms,HDD)                                                                               |  |  |  | 50g peak acceleration(duration 11ms,SSD) 20g peak acceleration(duration 11ms,HDD)                                                                               |  |  |  |                                  |  |  |  |
| Certificate /EMC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  | CE/FCC Class A                                                                                                                                                                     |  |                |  | CE/FCC Class A                                                                                                                                       |  |                |  | CE/FCC Class A                                                                                                                                                                      |  |           |  | CE/FCC Class A                                                                                                                                                                     |  |  |  | CE/FCC Class A                                                                                                                                       |  |  |  | CE/FCC Class A                                                                                                                                                                                 |  |  |  | CE/FCC Class A                                                                                                                                                  |  |  |  | CE/FCC Class A                                                                                                                                                  |  |  |  |                                  |  |  |  |
| OS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  | Windows 10 Enterprise & IOT Enterprise(64-bit) Ubuntu, SuSe, Redhat Enterprise 1,2 (Kernel 4.14) Wind River VxWorks 7                                                              |  |                |  | Windows 10 Enterprise & IOT Enterprise (64 bit ) Ubuntu, SuSe, Redhat Enterprise 1,2 (Kernel 4.14) Wind River VxWorks 7                              |  |                |  | Windows 10 Enterprise & IOT Enterprise (64-bit) Ubuntu, SuSe, Redhat Enterprise 1,2 (Kernel 4.14) Wind River VxWorks 7                                                              |  |           |  | Windows 10 Enterprise & IOT Enterprise (64-bit) Ubuntu, SuSe, Redhat Enterprise 1,2 (Kernel 4.14) Wind River VxWorks 7                                                             |  |  |  | Windows 10 Enterprise & IOT Enterprise (64-bit) Ubuntu, SuSe, Redhat Enterprise 1,2 (Kernel 4.14) Wind River VxWorks 7                               |  |  |  | Windows 10 Enterprise & IOT Enterprise (64-bit) Ubuntu, SuSe, Redhat Enterprise 1,2 (Kernel 4.14) Wind River VxWorks 7                                                                         |  |  |  | Win11, Windows 10 IoT Enterprise (64-bit), Windows Server 2019, Ubuntu, SUSE, Redhat Enterprise, Wind River Linux, Yocto Project (64-bit), Wind River VxWorks 7 |  |  |  | Win11, Windows 10 IoT Enterprise (64-bit), Windows Server 2019, Ubuntu, SUSE, Redhat Enterprise, Wind River Linux, Yocto Project (64-bit), Wind River VxWorks 7 |  |  |  |                                  |  |  |  |
| Watchdog timer                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |  | Programmable via software 1 to 255 second                                                                                                                                          |  |                |  | Programmable via software 1 to 255 second                                                                                                            |  |                |  | Programmable via software 1 to 255 second                                                                                                                                           |  |           |  | Programmable via software 1 to 255 second                                                                                                                                          |  |  |  | Programmable via software 1 to 255 second                                                                                                            |  |  |  | Programmable via software 1 to 255 second                                                                                                                                                      |  |  |  | Programmable via software 1 to 255 second                                                                                                                       |  |  |  | Programmable via software 1 to 255 second                                                                                                                       |  |  |  |                                  |  |  |  |

Product Listing

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                 |                                                                                                                                            |                                                                                                                                            |                                                                                                                                            |                                                                                    |                                                                                                                                                       |                                                                                                                                                                                                |                                                                                                                                        |
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| <div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div> |                                                                                                                                                                 |                                                                                                                                            |                                                                                                                                            |                                                                                                                                            |                                                                                    |                                                                                                                                                       |                                                                                                                                                                                                |                                                                                                                                        |
| KMDA-6921                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                 | KMDA-7610                                                                                                                                  | KMDA-7920                                                                                                                                  | KMDA-7921                                                                                                                                  | KMDA-2630-S                                                                        | KMDA-2630-T                                                                                                                                           | KMDA-3301                                                                                                                                                                                      | KMDA-3302                                                                                                                              |
| Processor                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                 |                                                                                                                                            |                                                                                                                                            |                                                                                                                                            |                                                                                    |                                                                                                                                                       |                                                                                                                                                                                                |                                                                                                                                        |
| CPU                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Intel® Comet lake 10th Gen Core™ i9/i7/i5/i3/Pentium/Celeron LGA1200 CPU H420E Chipset                                                                          | Intel® Alder lake-S 12th Gen Core™ i9/i7/i5/i3/Pentium/Celeron LGA1700 CPU, Intel® H610 PCH                                                | Intel® Alder lake-S 12th Gen Core™ i9/i7/i5/i3/Pentium/Celeron LGA1700 CPU, Intel® H610 PCH                                                | Intel® Alder lake-S 12th Gen Core™ i9/i7/i5/i3/Pentium/Celeron LGA1700 CPU, Intel® H610 PCH                                                | Intel® Elkhart lake SoC CPU: Celeron J6412/Celeron N6210                           | Intel® Elkhart lake SoC CPU: Celeron J6412/Celeron N6210                                                                                              | Intel® Tigerlake U Celeron/Core i3/i5/i7 CPU                                                                                                                                                   | Intel® Tiger lake U Soc CPU (core i3-1115G4/i5-1135G7/i7-1165G7, Celeron 6305E),                                                       |
| RAM                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2*260-Pin ,DDR4,2933MHz, 64GB Max.                                                                                                                              | 2*262-Pin, DDR5,4800MHz, 64GB max.                                                                                                         | 2*262-Pin, DDR5,4800MHz, 64GB max.                                                                                                         | 2*262-Pin, DDR5,4800MHz, 64GB max.                                                                                                         | 1*DDR4 SO-DIMM , 3200MHz, 32GB max.                                                | 1*DDR4 SO-DIMM , 3200MHz, 32GB max.                                                                                                                   | 2*DDR4 SO-DIMM, 3200MHz, 64GB max.                                                                                                                                                             | 1*DDR4 SO-DIMM, 3200MHz, 32GB max.                                                                                                     |
| Graphics                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Intel UHD Graphics, Supports DirectX12, OpenGL 4.5; DP:4096*2304@60Hz, VGA:1900*1200@60Hz, HDMI: 4096*2160@30Hz (2 independent display)                         | Intel® UHD Graphics, Supports DirectX 12, OpenGL 4.5, OpenCL 3.0 DP:8K@60Hz,HDMI:4096*2160@60Hz, VGA:1920*1200@60Hz, 3 independent display | Intel® UHD Graphics, Supports DirectX 12, OpenGL 4.5, OpenCL 3.0 DP:8K@60Hz,HDMI:4096*2160@60Hz, VGA:1920*1200@60Hz, 3 independent display | Intel® UHD Graphics, Supports DirectX 12, OpenGL 4.5, OpenCL 3.0 DP:8K@60Hz,HDMI:4096*2160@60Hz, VGA:1920*1200@60Hz, 3 independent display | Intel Gen11 UHD Graphics, HDMI2.0: 4096*2304@60Hz VGA: 1920*1200@60Hz              | Intel Gen11 UHD Graphics, HDMI2.0: 4096*2304@60Hz VGA: 1920*1200@60Hz                                                                                 | Intel UHD Graphics or iRIS® Xe Graphics , Supports Intel DL technology, DirectX12.1, OpenGL 4.6 and OpenCL 2.0 HDMI 2.0 : 4096x2304@60Hz, DP 1.4 : 7680x4320@60Hz                              | Intel UHD Graphics / Iris® Xe Graphics , DirectX12.1, OpenGL 4.6 and OpenCL 3.0 HDMI 2.0 : 4096x2304@60Hz                              |
| I/O Port                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                 |                                                                                                                                            |                                                                                                                                            |                                                                                                                                            |                                                                                    |                                                                                                                                                       |                                                                                                                                                                                                |                                                                                                                                        |
| LAN                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 1*Intel I226V, PCIe X1, 10M-2.5G, WOL; 1*Intel I219 LM, 10M-1000M, WOL                                                                                          | 1*Intel I226V, 10-1000M, WOL; 1*Intel I219 LM, 10-1000M, WOL                                                                               | 1*Intel I226V, 10-1000M, WOL; 1*Intel I219 LM, 10-1000M, WOL                                                                               | 1*Intel I226V, 10-1000M, WOL; 1*Intel I219 LM, 10-1000M, WOL                                                                               | 2*Intel I226V, 10M-2.5G, WOL; 2*Realtek 8111H, 10-1000M                            | 2*Intel I226V, 10M-2.5G, WOL;                                                                                                                         | 3*Intel I225V, 10M-2.5G, iAMT 13.0                                                                                                                                                             | 2*Intel I210AT, 10M-1000M, WOL                                                                                                         |
| USB                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 4* USB3.2 Gen1, 2*USB2.0, 2*USB2.0(Build-in)2* USB3.2(10G),2*USB3.2(5G),2*USB2.0                                                                                | 2* USB3.2(10G),2*USB3.2(5G),2*USB2.0                                                                                                       | 2* USB3.2(10G),2*USB3.2(5G),2*USB2.0                                                                                                       | 2* USB3.2(10G),2*USB3.2(5G),2*USB2.0                                                                                                       | 2*USB3.2 Gen2, 6*USB2.0, 1*USB2.0(Build-in)                                        | 2*USB3.2 Gen2, 2*USB2.0, 1*USB2.0(Build-in)                                                                                                           | 2* USB3.2 Gen2, 2*USB2.0, 2*USB2.0(internal)                                                                                                                                                   | 2* USB3.2 Gen2, 2*USB2.0                                                                                                               |
| Display                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 1*DP+1*HDMI+1*VGA                                                                                                                                               | 1*DP+1*HDMI+1*VGA                                                                                                                          | 1*DP+1*HDMI+1*VGA                                                                                                                          | 1*DP+1*HDMI+1*VGA                                                                                                                          | 1*HDMI+1*VGA                                                                       | 1*HDMI+1*VGA                                                                                                                                          | 1*DP+1*HDMI                                                                                                                                                                                    | 1*HDMI                                                                                                                                 |
| Audio                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 1*Line out+1*Mic, Realtek ALC 897                                                                                                                               | 1*Line out+1*Mic, Realtek ALC 897                                                                                                          | 1*Line out+1*Mic, Realtek ALC 897                                                                                                          | 1*Line out+1*Mic, Realtek ALC 897                                                                                                          | Audio out+1*Line in+1*Mic,Realtek ALC897                                           | 1*Line out,Realtek ALC897                                                                                                                             | 1*Line out+1*Mic,Realtek ALC662VD                                                                                                                                                              | /                                                                                                                                      |
| COM/ Others                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 2*RS232/422/485, 2*RS232; 1*LPT, 1*PS/2                                                                                                                         | 2*RS232/422/485, 2*RS232; 1*SM Bus                                                                                                         | 2*RS232/422/485, 2*RS232; 1*SM Bus                                                                                                         | 2*RS232/422/485, 2*RS232; 1*SM Bus                                                                                                         | 2*RS232/422/485, 2*RS232                                                           | 2*RS232/422/485, 2*RS232                                                                                                                              | 2*RS232/422/485; 1*MIO                                                                                                                                                                         | 1*RS232/422/485; 1*RS232                                                                                                               |
| DIO                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 8-bit DIO,TTL 16-bit DIO(2*10 pin)                                                                                                                              | 16 bit iso. DIO,8bit DI(,PNP/NPN),8bit DO 16 bit iso. DIO(2*10pin)                                                                         | 16 bit iso. DIO,8bit DI(PNP/NPN),8bit DO 16 bit iso. DIO(2*10pin)                                                                          | 16 bit iso. DIO,8bit DI(PNP/NPN),8bit DO 16 bit iso. DIO(2*10pin)                                                                          | 8 bit DIO(DB9)                                                                     | 8 bit DIO(DB9)                                                                                                                                        | 8-bit DIO(2*5pin)                                                                                                                                                                              | 8bit DIO(2*5pin)                                                                                                                       |
| Storage                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                 |                                                                                                                                            |                                                                                                                                            |                                                                                                                                            |                                                                                    |                                                                                                                                                       |                                                                                                                                                                                                |                                                                                                                                        |
| Storage                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 2*2.5" SATA3, 6Gbps; 1*mSATA(SATA3.0 & USB2.0)                                                                                                                  | 2*2.5" SATA3, 15mm; 1*mSATA(SATA3)                                                                                                         | 2*2.5" SATA3, 15mm; 1*mSATA(SATA3)                                                                                                         | 2*2.5" SATA3, 15mm; 1*mSATA(SATA3)                                                                                                         | 1*2.5" SATA3; 1*mSATA, AHCI                                                        | 1*2.5"SATA3; 1*mSATA, AHCI                                                                                                                            | 1*2.5"SATA3, 6Gbps; 1*mSATA, support AHCI; 1*M.2 22080 M-Key NVME(PCIe4.0 X2)                                                                                                                  | 2*mSATA;                                                                                                                               |
| Expansion                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                 |                                                                                                                                            |                                                                                                                                            |                                                                                                                                            |                                                                                    |                                                                                                                                                       |                                                                                                                                                                                                |                                                                                                                                        |
| Expansion Port                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 1*PCIe3.0 X16(X16)+ 1*PCIe3.0 X4(X2), 2*32-bit PCI; 1*Mini PCIe(PCIeX1/USB2.0+SIM), 4G LTE/PCIe;                                                                | 1*Mini PCIe(PCIeX1/USB+SIM), 4G LTE/PCIe;                                                                                                  | 1*PCIe5.0X16(X16)+1*PCIe3.0X16(X4); or 1*PCIe5.0X16(X16)+1*32bit PCI; 1*Mini PCIe(PCIeX1/USB+SIM),4G LTE                                   | 1*PCIe5.0X16(X16)+1*PCIe3.0X4(X2)+ 2*32bit PCI; 1*Mini PCIe(PCIeX1/USB+SIM),4G LTE                                                         | 1*M.2 B-key 3052(PCIe X1/USB2.0+SIM), 5G NR/4G LTE; 1*Full size Mini PCIe(PCIe X1) | 1*M.2 B-key 3052(PCIe X1/USB2.0+SIM), 5G NR/4G LTE; 1*JHCTECH Express-01 80pin:2*PCIeX1, 4*USB2.0, Front-Audio; 1*PS/2, Front-Panel, 1*Sm bus, 1*eSPI | 1*Mini PCIe(PCIe X1+USB2.0), support Wifi/BT; 1*M.2 3052 B-Key(PCIe X1+USB2.0), with SIM slot, support 4G LTE/5G NR; 1*M.2 22080 M-Key , (PCIe4.0 X2), support high speed signal function card | 1*Mini PCIe(PCIe X1/USB2.0), CAN2.0; 1*M.2 3042/3052 B-Key (PCIeX1/USB2.0+SIM),4G LTE/5G NR; 1*M.2 2230 E-Key (PCIeX1+USB2.0), Wifi/BT |
| Power Supply                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                 |                                                                                                                                            |                                                                                                                                            |                                                                                                                                            |                                                                                    |                                                                                                                                                       |                                                                                                                                                                                                |                                                                                                                                        |
| Input voltage                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | DC IN 9-36V ,with protection of short circuit, over voltage, over current                                                                                       | DC IN 9-36V 3-pin, with protection of short circuit, over voltage, over current;                                                           | DC IN 9-36V 3-pin, with protection of short circuit, over voltage, over current;                                                           | DC IN 9-36V 3-pin, with protection of short circuit, over voltage, over current;                                                           | DC 12V or DC 9-36V, short circuit protection, OVP&OCP                              | DC 12V or DC 9-36V, short circuit protection, OVP&OCP                                                                                                 | DC 9-36V, 1*3-pin,with short circuit, over voltage & over current protection                                                                                                                   | DC IN 9-36V,OVP&OCP;                                                                                                                   |
| TDP                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 60W(i7-10700K /4G DDR4/256G SSD)                                                                                                                                | TDP: TBD                                                                                                                                   | TDP: TBD                                                                                                                                   | TDP: TBD                                                                                                                                   |                                                                                    |                                                                                                                                                       |                                                                                                                                                                                                | TBP                                                                                                                                    |
| Mechanical                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                 |                                                                                                                                            |                                                                                                                                            |                                                                                                                                            |                                                                                    |                                                                                                                                                       |                                                                                                                                                                                                |                                                                                                                                        |
| Structure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Aluminum Chassis, SGCC frame                                                                                                                                    | Aluminum Chassis, SGCC frame                                                                                                               | Aluminum Chassis, SGCC frame                                                                                                               | Aluminum Chassis, SGCC frame                                                                                                               | Aluminum Chassis, SGCC frame                                                       | Aluminum Chassis, SGCC frame                                                                                                                          | Aluminum chassis, SGCC                                                                                                                                                                         | SGCC frame                                                                                                                             |
| Color                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Silver white + Aquamarine                                                                                                                                       | Silver white+Aquamarine                                                                                                                    | Silver white+Aquamarine                                                                                                                    | Silver white+Aquamarine                                                                                                                    | Silver white+Aquamarine                                                            | Silver white+Aquamarine                                                                                                                               | Blue+white                                                                                                                                                                                     | Silver gray                                                                                                                            |
| Installation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | desktop mounting                                                                                                                                                | desktop mounting                                                                                                                           | desktop mounting                                                                                                                           | desktop mounting                                                                                                                           | desktop mounting                                                                   | desktop mounting                                                                                                                                      | desktop mounting/optional Din-Rail mounting                                                                                                                                                    | desktop mounting; (Opt.)-Din-Rail                                                                                                      |
| Dimension                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 230*273*204mm                                                                                                                                                   | 256.68*267.3*99mm                                                                                                                          | 256.68*312.7*149.9mm                                                                                                                       | 256.68*312.7*210.9mm                                                                                                                       | 162*111.8*65mm                                                                     | 162*111.8*65mm                                                                                                                                        | 250*154*61.9mm                                                                                                                                                                                 | 172*116*54mm                                                                                                                           |
| Net Weight                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 6.84KG                                                                                                                                                          | TBD                                                                                                                                        | TBD                                                                                                                                        | TBD                                                                                                                                        | 1.32KG                                                                             | 1.30KG                                                                                                                                                | 2.55KG                                                                                                                                                                                         | 0.89KG                                                                                                                                 |
| Environmental                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                 |                                                                                                                                            |                                                                                                                                            |                                                                                                                                            |                                                                                    |                                                                                                                                                       |                                                                                                                                                                                                |                                                                                                                                        |
| Operating Temp                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | -20℃~-60℃,SSD,with air flow -10℃~-55℃,HDD,with air flow                                                                                                         | -20℃~-60℃,SSD, with air flow; -10℃~-55℃,HDD, with air flow;                                                                                | -20℃~-60℃,SSD, with air flow; -10℃~-55℃,HDD, with air flow;                                                                                | -20℃~-60℃,SSD, with air flow; -10℃~-55℃,HDD, with air flow;                                                                                | -20℃~-60℃, SSD, with air flow                                                      | -20℃~-60℃, SSD, with air flow                                                                                                                         | -20℃~-65℃, SSD, with air flow                                                                                                                                                                  | -20℃~-60℃, SSD, with air flow                                                                                                          |
| Storage Temp                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | -40℃~85℃                                                                                                                                                        | -40℃~85℃                                                                                                                                   | -40℃~85℃                                                                                                                                   | -40℃~85℃                                                                                                                                   | -40℃~85℃                                                                           | -40℃~85℃                                                                                                                                              | -40℃~85℃                                                                                                                                                                                       | -40℃~85℃                                                                                                                               |
| Storage Humidity                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 10~90%@40℃, No- condensation                                                                                                                                    | 10~95%@40℃, No-condensation                                                                                                                | 10~95%@40℃, No-condensation                                                                                                                | 10~95%@40℃, No-condensation                                                                                                                | 10~95%@40℃, No-condensation                                                        | 10~95%@40℃, No-condensation                                                                                                                           | 10~90%@40℃, non-condensing                                                                                                                                                                     | 10~90%@40℃, No- condensation                                                                                                           |
| Vibration                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 5 grms/5~500Hz/random/operation (SSD) 1 grms/5~500Hz/random/operation (HDD)                                                                                     | 5 grms/5~500Hz/random/operation(SSD); 1 grms/5~500Hz/random/operation(HDD)                                                                 | 5 grms/5~500Hz/random/operation(SSD); 1 grms/5~500Hz/random/operation(HDD)                                                                 | 5 grms/5~500Hz/random/operation(SSD); 1 grms/5~500Hz/random/operation(HDD)                                                                 | 5 grms/5~500Hz/random/operation(SSD); 1 grms/5~500Hz/random/operation(HDD)         | 5 grms/5~500Hz/random/operation(SSD); 1 grms/5~500Hz/random/operation(HDD)                                                                            | 5 grms/5~500Hz/random/operation (SSD) 1 grms/5~500Hz/random/operation (HDD)                                                                                                                    | 5 grms/5~500Hz/random/operation (SSD) 1 grms/5~500Hz/random/operation (HDD)                                                            |
| Shock                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 50g peak acceleration(duration 11ms,SSD) 20g peak acceleration(duration 11ms,HDD)                                                                               | 50g peak acceleration(duration 11ms,SSD); 20g peak acceleration(duration 11ms,HDD)                                                         | 50g peak acceleration(duration 11ms,SSD); 20g peak acceleration(duration 11ms,HDD)                                                         | 50g peak acceleration(duration 11ms,SSD); 20g peak acceleration(duration 11ms,HDD)                                                         | 50g peak acceleration(duration 11ms,SSD); 20g peak acceleration(duration 11ms,HDD) | 50g peak acceleration(duration 11ms,SSD); 20g peak acceleration(duration 11ms,HDD)                                                                    | 50g peak acceleration(duration 11ms,SSD) 20g peak acceleration(duration 11ms,HDD)                                                                                                              | 50g peak acceleration(duration 11ms,SSD) 20g peak acceleration(duration 11ms,HDD)                                                      |
| Certificate /EMC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | CE/FCC Class A                                                                                                                                                  | CE/FCC Class A                                                                                                                             | CE/FCC Class A                                                                                                                             | CE/FCC Class A                                                                                                                             | CE/FCC Class A                                                                     | CE/FCC Class A                                                                                                                                        | CE/FCC Class A                                                                                                                                                                                 | CE/FCC Class A                                                                                                                         |
| OS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Win11, Windows 10 IoT Enterprise (64-bit), Windows Server 2019, Ubuntu, SUSE, Redhat Enterprise, Wind River Linux, Yocto Project (64-bit), Wind River VxWorks 7 | Windows 11, Windows 10 IoT Enterprise 2021 LTSC, Ubuntu, SuSe, Red Hat Enterprise, Wind River Linux, Wind River VxWorks 7                  | Windows 11, Windows 10 IoT Enterprise 2021 LTSC, Ubuntu, SuSe, Red Hat Enterprise, Wind River Linux, Wind River VxWorks 7                  | Windows 11, Windows 10 IoT Enterprise 2021 LTSC, Ubuntu, SuSe, Red Hat Enterprise, Wind River Linux, Wind River VxWorks 7                  | Windows 10 64 bit, SUSE, Ubuntu, Wind River, Linux                                 | Windows 10 64 bit, SUSE, Ubuntu, Wind River, Linux                                                                                                    | Windows 10 64 bit, SUSE, Ubuntu, Wind River, Linux                                                                                                                                             | Windows 11/10*IoT enterprise, Android, SUSE, Ubuntu, Wind River, RedHat*Enterprise, Wind River VxWorks*7, Yocto                        |
| Watchdog timer                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | programmable via software 1 to 255 second                                                                                                                       | programmable via software 1 to 255 second                                                                                                  | programmable via software 1 to 255 second                                                                                                  | programmable via software 1 to 255 second                                                                                                  | programmable via software 1 to 255 second                                          | programmable via software 1 to 255 second                                                                                                             | programmable via software 1 to 255 second                                                                                                                                                      | programmable via software 1 to 255 second                                                                                              |



Product Listing

|                                                                                                     |                                                                                                                                  |                |  |                                                                                                                                  |  |                |                                                                                                                      |             |  |                                                                                                                      |  |          |                                                                                                                  |                                                                                                                  |                                                                                                                                        |                                                                                                                     |
|-----------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|----------------|--|----------------------------------------------------------------------------------------------------------------------------------|--|----------------|----------------------------------------------------------------------------------------------------------------------|-------------|--|----------------------------------------------------------------------------------------------------------------------|--|----------|------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|
| <div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div> |                                                                                                                                  |                |  |                                                                                                                                  |  |                |                                                                                                                      |             |  |                                                                                                                      |  |          |                                                                                                                  |                                                                                                                  |                                                                                                                                        |                                                                                                                     |
| KMDA-5611-S001                                                                                      |                                                                                                                                  | KMDA-5611-S002 |  | KMDA-6611-S001                                                                                                                   |  | KMDA-6611-S002 |                                                                                                                      | KMDA-7611-S |  | KMDA-7611-T                                                                                                          |  | SCC-3116 | ECC-U5000                                                                                                        |                                                                                                                  |                                                                                                                                        |                                                                                                                     |
| Processor                                                                                           |                                                                                                                                  |                |  |                                                                                                                                  |  |                |                                                                                                                      |             |  |                                                                                                                      |  |          |                                                                                                                  |                                                                                                                  |                                                                                                                                        |                                                                                                                     |
| CPU                                                                                                 | Intel® Coffee lake 9th/8th-Gen Core™ i9/i7/i5/i3/Pentium/Celeron LGA1151 CPU, up to 65W,Intel® H310 PCH                          |                |  | Intel® Coffee lake 9th/8th-Gen Core™ i9/i7/i5/i3/Pentium/Celeron LGA1151 CPU, up to 65W,Intel® H310 PCH                          |  |                | Intel® Comet lake 10th Gen Core™ i9/i7/i5/i3/Pentium/Celeron LGA1200 CPU, up to 65W,Intel® H420E PCH                 |             |  | Intel® Comet lake 10th Gen Core™ i9/i7/i5/i3/Pentium/Celeron LGA1200 CPU, up to 65W,Intel® H420E PCH                 |  |          | Intel® Alder lake-S/Raptor Lake-S 12/13th Gen Core™ i9/i7/i5/i3/Pentium/Celeron LGA1700 CPU; H610 PCH            | Intel® Alder lake-S/Raptor Lake-S 12/13th Gen Core™ i9/i7/i5/i3/Pentium/Celeron LGA1700 CPU; H610 PCH            | Intel® Baytrail-D Celeron J1900 , frequency 2.0~2.42GHz, quad-core with 4 threads, 2M cache, 22nm, TDP 10W                             | Intel® Elkhart lake SoC CPU: Celeron J6412 2.0-2.6GHz                                                               |
| RAM                                                                                                 | 2*DDR4 SODIMM, 2666MHz, 64GB max.                                                                                                |                |  | 2*DDR4 SODIMM, 2666MHz, 64GB max.                                                                                                |  |                | 2*DDR4 SODIMM, 2933MHz, 64GB max.                                                                                    |             |  | 2*DDR4 SODIMM, 2933MHz, 64GB max.                                                                                    |  |          | 2*DDR5 SODIMM, 4800MHz, 64GB max.                                                                                | 2*DDR5 SODIMM, 4800MHz, 64GB max.                                                                                | 1*DDR3L, 1333MHz SODIMM, 8GB max.                                                                                                      | 1*DDR4, 3200MHz SODIMM, 32GB max.                                                                                   |
| Graphics                                                                                            | Intel® UHD Graphics, Supports DirectX 11.1, OpenGL 5.0, OpenCL 2.1; HDMI : 4096x2160@24Hz, VGA: 1920*1200@60Hz                   |                |  | Intel® UHD Graphics, Supports DirectX 11.1, OpenGL 5.0, OpenCL 2.1; HDMI : 4096x2160@24Hz, VGA: 1920*1200@60Hz                   |  |                | Intel® UHD Graphics, Supports DirectX 12, OpenGL 4.5; HDMI : 4096x2160@30Hz, VGA: 1920*1200@60Hz                     |             |  | Intel® UHD Graphics, Supports DirectX 12, OpenGL 4.5; HDMI : 4096x2160@30Hz, VGA: 1920*1200@60Hz                     |  |          | Intel® UHD Graphics, Supports DirectX 12, OpenGL 4.5, OpenCL 3.0; HDMI : 4096x2160@60Hz,                         | Intel® UHD Graphics, Supports DirectX 12, OpenGL 4.5, OpenCL 3.0; HDMI : 4096x2160@60Hz,                         | Intel HD Graphics,OpenGL 3.2, DirectX 11, OpenCL 1.2, MPGE2/H.264, Dual independent display, VGA : 1920*1200@60Hz, HDMI:1920*1080@60Hz | Intel UHD Graphics / Iris® Xe Graphics, Intel DL boost, DirectX12.1, OpenGL 4.6 and OpenCL 3.0; HDMI:4096*2304@60Hz |
| I/O Port                                                                                            |                                                                                                                                  |                |  |                                                                                                                                  |  |                |                                                                                                                      |             |  |                                                                                                                      |  |          |                                                                                                                  |                                                                                                                  |                                                                                                                                        |                                                                                                                     |
| LAN                                                                                                 | 1*Intel I210AT+1*I219LM, 10M-1000M, WOL; 4*Intel I210AT POE+, 10M-1000M, WOL                                                     |                |  | 1*Intel I210AT+1*I219LM, 10M-1000M, WOL; 4*Intel I210AT POE+, 10M-1000M, WOL                                                     |  |                | 1*Intel I210AT+1*I219LM, 10M-1000M, WOL;                                                                             |             |  | 3*Intel I210AT, 10M-1000M, WOL; 1*Intel I219LM, 10M-1000M, WOL                                                       |  |          | 1*Intel I210AT, 10M-1000M, WOL; 1*Intel I219LM, 10M-1000M, WOL                                                   | 3*Intel I210AT, 10-1000M                                                                                         | 3*RTL811H-VB, 10-1000M                                                                                                                 |                                                                                                                     |
| USB                                                                                                 | 2* USB3.1+ 2*USB2.0                                                                                                              |                |  | 2* USB3.1+ 2*USB2.0+8*USB3.0                                                                                                     |  |                | 2* USB3.2+ 2*USB2.0                                                                                                  |             |  | 2* USB3.1+ 2*USB2.0+8*USB3.0                                                                                         |  |          | 2* USB3.2 Gen2, 2* USB3.2 Gen1                                                                                   | 2* USB3.2 Gen2, 2* USB3.2 Gen1                                                                                   | 1* USB3.0; 6*USB2.0                                                                                                                    | 2* USB3.1; 2*USB2.0                                                                                                 |
| Display                                                                                             | 1*HDMI+1*VGA                                                                                                                     |                |  | 1*HDMI+1*VGA                                                                                                                     |  |                | 1*HDMI+1*VGA                                                                                                         |             |  | 1*HDMI+1*VGA                                                                                                         |  |          | 1*HDMI                                                                                                           | 1*HDMI                                                                                                           | 1*HDMI+1*VGA                                                                                                                           | 1*HDMI                                                                                                              |
| Audio                                                                                               | /                                                                                                                                |                |  | /                                                                                                                                |  |                | /                                                                                                                    |             |  | /                                                                                                                    |  |          | 1*Line out+1*Mic,Realtek ALC897                                                                                  | /                                                                                                                | 1*Line out+1*Mic,Realtek ALC662VD                                                                                                      | /                                                                                                                   |
| COM/ Others                                                                                         | 1*RS232/485; 1*RS232                                                                                                             |                |  | 1*RS232/485; 1*RS232                                                                                                             |  |                | 1*RS232/485; 1*RS232                                                                                                 |             |  | 1*RS232/485; 1*RS232                                                                                                 |  |          | 2*RS232/422/485; 4*RS232                                                                                         | 2*RS232/422/485                                                                                                  | 4*RS232/422/485, 1*RS232; 1*PS/2                                                                                                       | 2*RS232/485, 6*RS485; 2*CAN                                                                                         |
| DIO                                                                                                 | 32 bit iso. DIO(2*18pin)                                                                                                         |                |  | 32 bit iso. DIO(2*18pin)                                                                                                         |  |                | 32 bit iso. DIO(2*18pin)                                                                                             |             |  | 32 bit iso. DIO(2*18pin)                                                                                             |  |          | 8 bit iso. DIO(2*5pin)                                                                                           | 8 bit iso. DIO(2*5pin)                                                                                           | 8bit DIO (DB9) ,TTL                                                                                                                    | 8*DI+6*DO                                                                                                           |
| Storage                                                                                             |                                                                                                                                  |                |  |                                                                                                                                  |  |                |                                                                                                                      |             |  |                                                                                                                      |  |          |                                                                                                                  |                                                                                                                  |                                                                                                                                        |                                                                                                                     |
| Storage                                                                                             | 1*2.5"SATA3.0, 6Gbps; 1*mSATA, 6Gbps                                                                                             |                |  | 1*2.5"SATA3.0, 6Gbps; 1*mSATA, 6Gbps                                                                                             |  |                | 1*2.5"SATA3.0, 6Gbps; 1*mSATA, 6Gbps                                                                                 |             |  | 1*2.5"SATA3.0, 6Gbps; 1*mSATA, 6Gbps                                                                                 |  |          | 1*2.5"SATA3.0, 6Gbps; 1*mSATA, 6Gbps                                                                             | 1*mSATA, 6Gbps                                                                                                   | 1*2.5" SATA2,HDD/SSD; 1*mSATA, AHCI                                                                                                    | 1*mSATA, 6Gbps                                                                                                      |
| Expansion                                                                                           |                                                                                                                                  |                |  |                                                                                                                                  |  |                |                                                                                                                      |             |  |                                                                                                                      |  |          |                                                                                                                  |                                                                                                                  |                                                                                                                                        |                                                                                                                     |
| Expansion Port                                                                                      | 1*Mini PCIe(+SIM), 4G/WIFI/PCIe;                                                                                                 |                |  | 1*Mini PCIe(+SIM), 4G/WIFI/PCIe;                                                                                                 |  |                | 1*Mini PCIe(+SIM), 4G/WIFI/PCIe;                                                                                     |             |  | 1*Mini PCIe(+SIM), 4G/WIFI/PCIe;                                                                                     |  |          | 2*Mini PCIe(PCIe X1/USB2.0), PCIe module; 1*M.2 3052/3042 B-Key (PCIe X1/USB2.0+SIM),5G NR;                      | 2*Mini PCIe(PCIe X1/USB2.0), PCIe module; 1*M.2 3052/3042 B-Key (PCIe X1/USB2.0+SIM),5G NR;                      | 1*Mini PCIe(+SIM),4G LTE/Wifi/BT;                                                                                                      | 1*Mini PCIe(+SIM),4G LTE/Wifi/BT; 1*Mini PCIe(PCIeX1+USB2.0)                                                        |
| Power Supply                                                                                        |                                                                                                                                  |                |  |                                                                                                                                  |  |                |                                                                                                                      |             |  |                                                                                                                      |  |          |                                                                                                                  |                                                                                                                  |                                                                                                                                        |                                                                                                                     |
| Input voltage                                                                                       | DC 9-36V, with SCP,OVP,OCp;                                                                                                      |                |  | DC 9-36V, with SCP,OVP,OCp;                                                                                                      |  |                | DC 9-36V, with SCP,OVP,OCp;                                                                                          |             |  | DC 9-36V, with SCP,OVP,OCp;                                                                                          |  |          | DC 9-36V, with SCP,OVP,OCp;                                                                                      | DC 9-36V, with SCP,OVP,OCp;                                                                                      | DC IN 9-36V,OVP&OCp;                                                                                                                   | DC IN 12V/9-36V,OVP&OCp;                                                                                            |
| TDP                                                                                                 | TBD                                                                                                                              |                |  | TBD                                                                                                                              |  |                | TBD                                                                                                                  |             |  | TBD                                                                                                                  |  |          | TBD:105.84W (Intel I3-12100/128GB SSD/32GB RAM)                                                                  | TBD:105.84W (Intel I3-12100/128GB SSD/32GB RAM)                                                                  | 14.4W(2.5" HDD)                                                                                                                        | 18.35W(Celeron J6412/2.00GHz, 8G DDR4, 128G mSATA)                                                                  |
| Mechanical                                                                                          |                                                                                                                                  |                |  |                                                                                                                                  |  |                |                                                                                                                      |             |  |                                                                                                                      |  |          |                                                                                                                  |                                                                                                                  |                                                                                                                                        |                                                                                                                     |
| Structure                                                                                           | Aluminum-magnesium alloy, SGCC frame                                                                                             |                |  | Aluminum-magnesium alloy, SGCC frame                                                                                             |  |                | Aluminum-magnesium alloy, SGCC frame                                                                                 |             |  | Aluminum-magnesium alloy, SGCC frame                                                                                 |  |          | Aluminum Chassis, SGCC frame                                                                                     | Aluminum Chassis, SGCC frame                                                                                     | Aluminum Chassis, SGCC frame                                                                                                           | Aluminum Chassis, SGCC frame                                                                                        |
| Color                                                                                               | Silver gray                                                                                                                      |                |  | Silver gray                                                                                                                      |  |                | Silver gray                                                                                                          |             |  | Silver gray                                                                                                          |  |          | Silver gray                                                                                                      | Silver gray                                                                                                      | Silver gray                                                                                                                            | Silver gray                                                                                                         |
| Installation                                                                                        | Wall/Desktop/Din-Rail mounting                                                                                                   |                |  | Wall/Desktop/Din-Rail mounting                                                                                                   |  |                | Wall/Desktop/Din-Rail mounting                                                                                       |             |  | Wall/Desktop/Din-Rail mounting                                                                                       |  |          | desktop/Wall/Din-Rail mounting                                                                                   | desktop/Wall/Din-Rail mounting                                                                                   | desktop mounting                                                                                                                       | desktop mounting                                                                                                    |
| Dimension                                                                                           | 225*154*75.6mm                                                                                                                   |                |  | 225*154*75.6mm                                                                                                                   |  |                | 225*154*75.6mm                                                                                                       |             |  | 225*154*75.6mm                                                                                                       |  |          | 238*169*75.6mm                                                                                                   | 238*169*61.8mm                                                                                                   | 268*160*57.6mm                                                                                                                         | 222*140*45mm                                                                                                        |
| Net Weight                                                                                          | TBD                                                                                                                              |                |  | TBD                                                                                                                              |  |                | TBD                                                                                                                  |             |  | TBD                                                                                                                  |  |          | 2.55KG                                                                                                           | 2.32KG                                                                                                           | 2.15KG                                                                                                                                 | 1.32KG                                                                                                              |
| Environmental                                                                                       |                                                                                                                                  |                |  |                                                                                                                                  |  |                |                                                                                                                      |             |  |                                                                                                                      |  |          |                                                                                                                  |                                                                                                                  |                                                                                                                                        |                                                                                                                     |
| Operating Temp                                                                                      | -20°C~60°C,SSD, with air flow; -10°C~55°C,HDD, with air flow;                                                                    |                |  | -20°C~60°C,SSD, with air flow; -10°C~55°C,HDD, with air flow;                                                                    |  |                | -20°C~60°C,SSD, with air flow; -10°C~55°C,HDD, with air flow;                                                        |             |  | -20°C~60°C,SSD, with air flow; -10°C~55°C,HDD, with air flow;                                                        |  |          | -20°C~60°C,SSD, with air flow; -10°C~55°C,HDD, with air flow;                                                    | -20°C~60°C,SSD, with air flow; -10°C~55°C,HDD, with air flow;                                                    | -20°C~65°C,SSD,with air flow -10°C~55°C,HDD,with air flow -40°C~85°C                                                                   | -20°C~60°C,SSD, with air flow -40°C~85°C                                                                            |
| Storage Temp                                                                                        | -40°C~85°C                                                                                                                       |                |  | -40°C~85°C                                                                                                                       |  |                | -40°C~85°C                                                                                                           |             |  | -40°C~85°C                                                                                                           |  |          | -40°C~85°C                                                                                                       | -40°C~85°C                                                                                                       | -40°C~85°C                                                                                                                             | -40°C~85°C                                                                                                          |
| Storage Humidity                                                                                    | 10~95%@40°C, No-condensation                                                                                                     |                |  | 10~95%@40°C, No-condensation                                                                                                     |  |                | 10~95%@40°C, No-condensation                                                                                         |             |  | 10~95%@40°C, No-condensation                                                                                         |  |          | 10~95%@40°C, No-condensation                                                                                     | 10~95%@40°C, No-condensation                                                                                     | 10~90%@40°C, No- condensation                                                                                                          | 10~90%@40°C, No- condensation                                                                                       |
| Vibration                                                                                           | 5 grms/5~500Hz/random/operation(SSD); 1 grms/5~500Hz/random/operation(HDD)                                                       |                |  | 5 grms/5~500Hz/random/operation(SSD); 1 grms/5~500Hz/random/operation(HDD)                                                       |  |                | 5 grms/5~500Hz/random/operation(SSD); 1 grms/5~500Hz/random/operation(HDD)                                           |             |  | 5 grms/5~500Hz/random/operation(SSD); 1 grms/5~500Hz/random/operation(HDD)                                           |  |          | 5 grms/5~500Hz/random/operation(SSD); 1 grms/5~500Hz/random/operation(HDD)                                       | 5 grms/5~500Hz/random/operation(SSD); 1 grms/5~500Hz/random/operation(HDD)                                       | 5 grms/5~500Hz/random/operation (SSD) 1 grms/5~500Hz/random/operation (HDD)                                                            | 5 grms/5~500Hz/random/operation (SSD) 1 grms/5~500Hz/random/operation (HDD)                                         |
| Shock                                                                                               | 50g peak acceleration(duration 11ms,SSD); 20gpeak acceleration(duration 11ms,HDD)                                                |                |  | 50g peak acceleration(duration 11ms,SSD); 20gpeak acceleration(duration 11ms,HDD)                                                |  |                | 50g peak acceleration(duration 11ms,SSD); 20gpeak acceleration(duration 11ms,HDD)                                    |             |  | 50g peak acceleration(duration 11ms,SSD); 20gpeak acceleration(duration 11ms,HDD)                                    |  |          | 50g peak acceleration(duration 11ms,SSD); 20gpeak acceleration(duration 11ms,HDD)                                | 50g peak acceleration(duration 11ms,SSD); 20gpeak acceleration(duration 11ms,HDD)                                | 50g peak acceleration(duration 11ms,SSD) 20g peak acceleration(duration 11ms,HDD)                                                      | 50g peak acceleration(duration 11ms,SSD) 20g peak acceleration(duration 11ms,HDD)                                   |
| Certificate /EMC                                                                                    | CE/FCC Class A                                                                                                                   |                |  | CE/FCC Class A                                                                                                                   |  |                | CE/FCC Class A                                                                                                       |             |  | CE/FCC Class A                                                                                                       |  |          | CE/FCC Class A                                                                                                   | CE/FCC Class A                                                                                                   | CE/FCC Class A                                                                                                                         | CE/FCC Class A                                                                                                      |
| OS                                                                                                  | Windows 10 Enterprise(/IOT,64bit) (CFL-R) Ubuntu. SuSe. Redhat Enterprise 1,2 (Kernel 4.14) (CFL-R) Wind River VxWorks 7 (CFL-R) |                |  | Windows 10 Enterprise(/IOT,64bit) (CFL-R) Ubuntu. SuSe. Redhat Enterprise 1,2 (Kernel 4.14) (CFL-R) Wind River VxWorks 7 (CFL-R) |  |                | Windows Server 2019, Ubuntu, SUSE, Redhat Enterprise, Wind River Linux, Yocto Project (64-bit), Wind River VxWorks 7 |             |  | Windows Server 2019, Ubuntu, SUSE, Redhat Enterprise, Wind River Linux, Yocto Project (64-bit), Wind River VxWorks 7 |  |          | Windows 11/10 IoT Enterprise 2021 LTSC, Ubuntu, SuSe, Red Hat Enterprise, Wind River Linux, Wind River VxWorks 7 | Windows 11/10 IoT Enterprise 2021 LTSC, Ubuntu, SuSe, Red Hat Enterprise, Wind River Linux, Wind River VxWorks 7 | Windows 7, Windows 8.1, Windows 10, Linux Fedora Ubuntu                                                                                | Windows 10,Linux                                                                                                    |
| Watchdog timer                                                                                      | programmable via software 1 to 255 second                                                                                        |                |  | programmable via software 1 to 255 second                                                                                        |  |                | programmable via software 1 to 255 second                                                                            |             |  | programmable via software 1 to 255 second                                                                            |  |          | programmable via software 1 to 255 second                                                                        | programmable via software 1 to 255 second                                                                        | programmable via software 1 to 255 second                                                                                              | programmable via software 1 to 255 second                                                                           |

# KMDA-2602

Intel Celeron J1900 CPU, 4\*LAN, 7\*USB, 6\*COM, Dual display,DC-IN 9~36V,LED Temperature control display

## Key Specification

- Compact Aluminum Chassis, fanless heat dissipation design
- Intel Baytrail Celeron J1900 2.0-2.42G CPU
- 1\*DDR3L 1333MHz SODIMM RAM, 8GB max.
- 4\*Intel I211-AT PCIe Gig LAN
- 1\*HDMI & 1\*VGADual display, Audio Line out
- 1\*USB3.0, 6\*USB2.0,6\*COM, 8-bit DIO
- 1\*Mini PCIe(PCle+USB)
- 1\*2.5" SATA2 bay,1\*Mini PCIe(SATA+USB)
- DC 9~36V wide voltage power supply



## Product Overview

KMDA-2602 is a compact box PC, equipped with low-power processor, HDMI and VGA dual display,2\*Mini PCIe internal expansion,1\*2.5" SATA storage.DC 9~36V wide voltage power supply, Real-time operating temperature LED simulation display, It is economical and applicable with high reliability, which is suitable for equipment automation and IoT signal acquisition, etc.

## Product Parameters

### Processor

|          |                                                                                                                                                              |
|----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CPU      | Intel Baytrail-D Celeron J1900 , frequency 2.0~2.42GHz, 4C4T, 2M cache, 22nm, TDP 10W                                                                        |
| RAM      | 1*DDR3L,1333MHz,SODIMM, 8GB max.                                                                                                                             |
| Graphics | Intel HD Graphics, Support dual independent display<br>VGA: 1920*1200@60Hz,<br>HDMI: 1920*1080@60Hz, support OpenGL 3.2, DirectX 11, OpenCL 1.2, MPGE2/H.264 |

### I/O Port

|             |                                                                                                                           |
|-------------|---------------------------------------------------------------------------------------------------------------------------|
| LAN         | 4*Intel I211AT PCIe Gigabit Ethernet, 10-1000M                                                                            |
| USB         | 1* USB3.0, 5*USB2.0 , 1*USB2.0 (Build-in)                                                                                 |
| Display     | 1*HDMI+ 1*VGA                                                                                                             |
| Audio       | 1*Line out,Realtek ALC662VD                                                                                               |
| COM/ Others | 2*RS232/422/485, 2*RS232(rear panel), 2*RS232/485(front panel),1*2pin terminal, remote switch signal, USB(mouse/keyboard) |
| DIO         | 8-bit TTL, programmable input & output                                                                                    |

### Storage

|         |                                                                        |
|---------|------------------------------------------------------------------------|
| Storage | 1*2.5" HDD SATA2 bay, 3.0 Gbps, 1*mSATA Full-height card, support AHCI |
|---------|------------------------------------------------------------------------|

### Others

|                 |                                                                                                                                                         |
|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|
| Indicator light | 1*power indicator, 1*hard disk indicator, 3*CPU temperature indicator (Red is high temperature, Yellow is normal temperature, Green is low temperature) |
| Control switch  | 1*power switch (front panel), 1*2pin terminal switch signal (rear panel), 1*AT/ATX selector switch (front panel)                                        |
| Watchdog timer  | Programmable timeout interrupt or system reset, 1 to 255 seconds                                                                                        |

### Expansion

|                |                                                                                                                                                         |
|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|
| Expansion Port | 1*Mini PCIe, with SIM slot, support 4G LTE. Wifi/BT, 1*Mini PCIe with USB+SATA3 signal, I-Port 1*USB2.0 or Mini PCIe interface(i.e. CAN Bus & Gig. LAN) |
|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|

### Power Supply

|               |                                                                                                     |
|---------------|-----------------------------------------------------------------------------------------------------|
| Input voltage | DC IN 9~36V, D-Jack with M8 interface, with protection of short circuit, over voltage, over current |
| TDP           | 14.4W(2.5" HDD)                                                                                     |

### Mechanical

|                   |                                         |
|-------------------|-----------------------------------------|
| Sturcture         | Top/Bottom Aluminum Chassis, SGCC frame |
| Color             | Silver gray                             |
| Installation      | desktop mouning & VESA 100*100mm        |
| Dimension (W*H*D) | 155*111.8*65mm                          |
| Net Weight        | 1.30KG                                  |

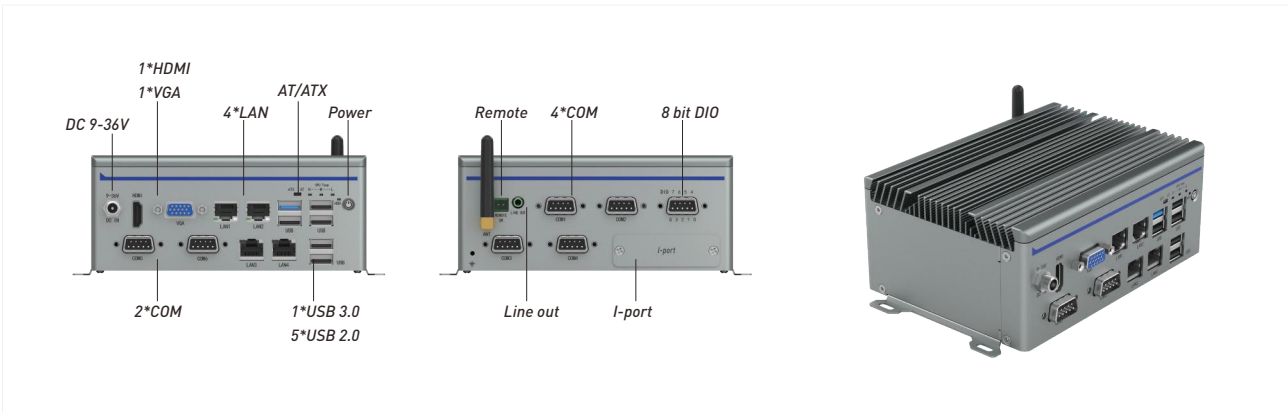
### Environmental

|                  |                                                                                                 |
|------------------|-------------------------------------------------------------------------------------------------|
| Operating Temp   | -20°C~65°C – fanless design, wide-temperature SSD<br>-10°C~55°C – fanless design, HDD           |
| Storage Temp     | -40°C~85°C                                                                                      |
| Storage Humidity | 10~90%@40°C, No- condensation                                                                   |
| Vibration        | 5 grms/5~500Hz/random/during operation (SSD)<br>1 grms/5~500Hz/random/during operation (HDD)    |
| Shock            | 50g peak acceleration(duration 11ms) with SSD,<br>20g peak acceleration(duration 11ms) with HDD |
| Certificate/EMC  | CE/FCC Class A                                                                                  |

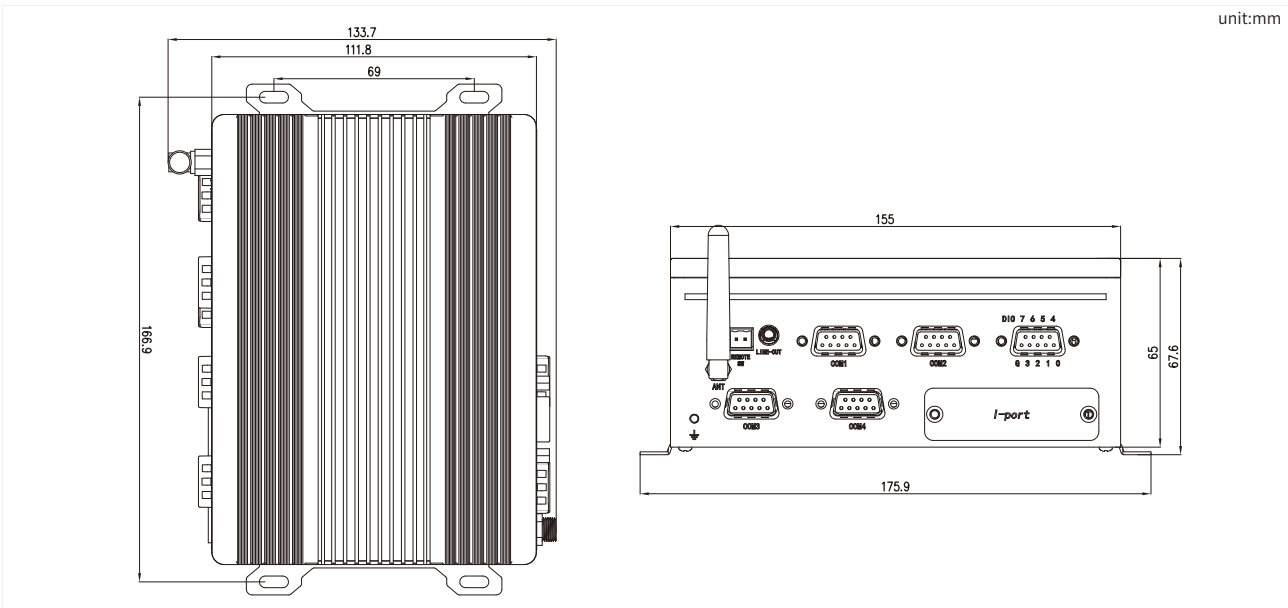
### OS

|                  |                                                         |
|------------------|---------------------------------------------------------|
| Operating System | Windows 7, Windows 8.1, Windows 10, Linux Fedora,Ubuntu |
|------------------|---------------------------------------------------------|

## I/O View



## Dimensions



## Ordering Information

| Model          | Processor        | Specifications                                                                                                                                               |
|----------------|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|
| KMDA-2602/S002 | Intel® J1900 CPU | 4*LAN, 1*USB3.0, 6*USB2.0,6*COM, 8-bit DIO, 1*HDMI, 1*VGA, 1*Line out, 2*Mini PCIe(One of them shares slots with mSATA), 1*I-port, 1*2.5" SATA bay, DC 9~36V |
| KMDA-2602/T001 | Intel® J1900 CPU | 2*LAN, 1*USB3.0, 4*USB2.0,4*COM, 8-bit DIO, 1*HDMI, 1*VGA, 1*Line out, 2*Mini PCIe(One of them shares slots with mSATA), 1*I-port, 1*2.5" SATA bay, DC 9~36V |
| PA-60DC12      |                  | AC/DC adaptor, DC12V/5A 60W                                                                                                                                  |



# KMDA-2602/T002

Intel® Celeron J1900 CPU, 2\*LAN, 4\*USB, 8-bit DIO, 2\*COM, Dual independent display,support Din Rail mounting

## Key Specification

- Compact Aluminum Chassis, fanless heat dissipation design
- Intel® Baytrail Celeron J1900 2.0-2.42G CPU
- 1\*DDR3L 1333MHz SODIMM RAM, 8GB max.
- 2\*Intel I211-AT PCIe Gig LAN
- 1\*HDMI & 1\*VGA Dual display, Audio Line out
- 1\*USB3.0, 3\*USB2.0,2\*COM, 8-bit DIO
- 1\*Mini PCIe(PCle+USB)
- 1\*2.5" SATA2 bay,1\*Mini PCIe(SATA+USB)
- DC 9~36V wide voltage power supply
- Compact and thin structure design, support rail installation, flexible and convenient



## Product Overview

KMDA-2602-T002 is a compact box PC with thin and light design, which can support Din Rail mounting, flexible and convenient. 2\*Mini PCIe internal expansion, 2.5" SATA storage. DC9-36V wide voltage power supply, real-time working temperature LED simulation display, economical and high reliability, suitable for equipment automation and IoT data acquisition.

## Product Parameters

### Processor

|          |                                                                                                                                                             |
|----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CPU      | Intel Baytrail-D Celeron J1900 , frequency 2.0~2.42GHz, 4C4T, 2M cache, 22nm, TDP 10W                                                                       |
| RAM      | 1*DDR3L,1333MHz,SODIMM, 8GB max.                                                                                                                            |
| Graphics | Intel HD Graphics, Support dual independent display<br>VGA: 1920*1200@60Hz,<br>HDMI: 1920*1080@60Hz, support OpenGL 3.2, DirectX 11, OpenC 1.2, MPGE2/H.264 |

### I/O Port

|             |                                                                                    |
|-------------|------------------------------------------------------------------------------------|
| LAN         | 2*Intel I211AT PCIe Gigabit Ethernet, 10-1000M                                     |
| USB         | 1* USB3.0, 3*USB2.0                                                                |
| Display     | 1*HDMI+1*VGA                                                                       |
| Audio       | 1*Line out,Realtek ALC662VD,1*3W Speaker pin                                       |
| COM/ Others | 2*RS232/422/485(rear panel),<br>1*2 pin terminal, Remote switch,USB mouse/keyboard |
| DIO         | 8-bit TTL, programmable input & output                                             |

### Storage

|         |                                                                        |
|---------|------------------------------------------------------------------------|
| Storage | 1*2.5" HDD SATA2 bay, 3.0 Gbps, 1*mSATA Full-height card, support AHCI |
|---------|------------------------------------------------------------------------|

### Others

|                |                                                                                                                                                         |
|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|
| Indicator      | 1*power indicator, 1*hard disk indicator, 3*CPU temperature indicator (Red is high temperature, Yellow is normal temperature, Green is low temperature) |
| Control switch | 1*power switch (front panel), 1*2pin terminal switch signal (rear panel),<br>1*AT/ATX selector switch (front panel)                                     |
| Watchdog timer | Programmable timeout interrupt or system reset, 1 to 255 seconds                                                                                        |

### Expansion

|                |                                                                                         |
|----------------|-----------------------------------------------------------------------------------------|
| Expansion Port | 1*Mini PCIe, with SIM slot, support4G LTE、Wifi/BT,<br>1*Mini PCIe with USB+SATA3 signal |
|----------------|-----------------------------------------------------------------------------------------|

### Power Supply

|               |                                                                                  |
|---------------|----------------------------------------------------------------------------------|
| Input voltage | DC IN 9~36V, D-Jack. D-Jack with M8 interface, short circuit protection, OVP&OCP |
| TDP           | 14.4W(2.5" HDD)                                                                  |

### Mechanical

|                   |                                               |
|-------------------|-----------------------------------------------|
| Sturcture         | Top/Bottom Aluminum Chassis, SGCC frame       |
| Color             | Silver gray                                   |
| Installation      | desktop mouning ,Din-rail mounting (optional) |
| Dimension (W*H*D) | 155*111.6*49mm                                |
| Net Weight        | 1.05KG                                        |

### Environmental

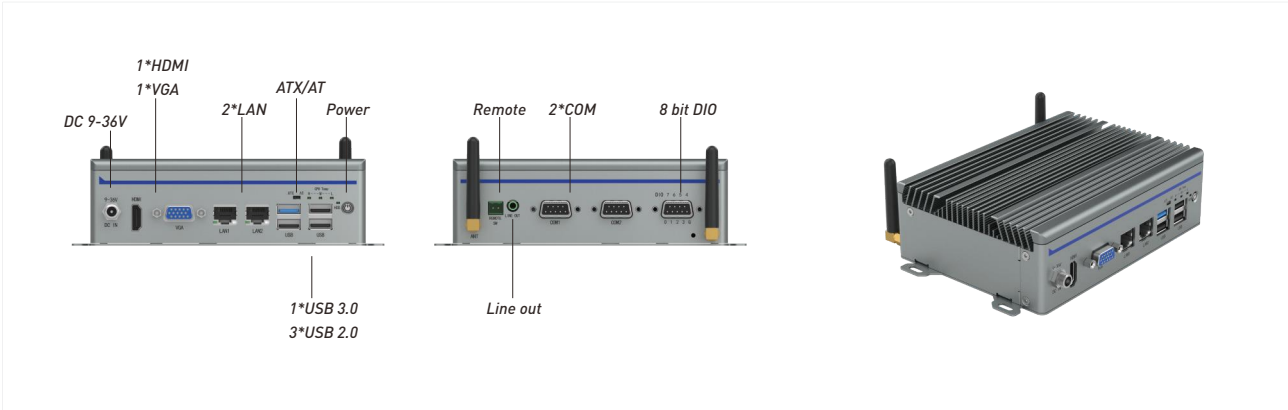
|                  |                                                                                                 |
|------------------|-------------------------------------------------------------------------------------------------|
| Operating Temp.  | -20°C~65°C – fanless design, wide-temperature SSD<br>-10°C~55°C – fanless design, HDD           |
| Storage Temp.    | -40°C~85°C                                                                                      |
| Storage Humidity | 10~90%@40°C, No- condensation                                                                   |
| Vibration        | 5 grms/5~500Hz/random/during operation (SSD)<br>1 grms/5~500Hz/random/during operation (HDD)    |
| Shock            | 50g peak acceleration(duration 11ms) with SSD,<br>20g peak acceleration(duration 11ms) with HDD |

Certificate/EMC CE/FCC Class A

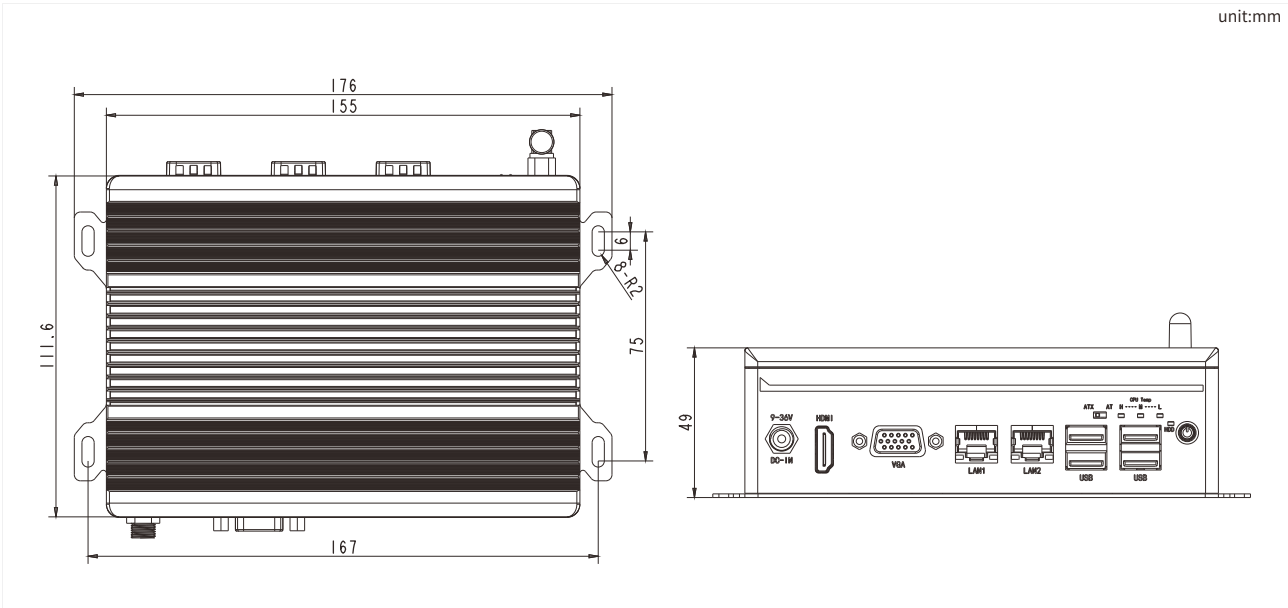
### OS

|                  |                                                            |
|------------------|------------------------------------------------------------|
| Operating system | Windows 7, Windows 8.1, Windows 10,<br>Linux Fedora,Ubuntu |
|------------------|------------------------------------------------------------|

## I/O View



## Dimensions



## Ordering Information

| Model                    | Processor        | Specifications                                                                                              |
|--------------------------|------------------|-------------------------------------------------------------------------------------------------------------|
| KMDA-2602/T002           | Intel® J1900 CPU | 2*LAN, 1*USB3.0, 3*USB2.0,2*COM, 8-bit DIO,1*HDMI,1*VGA, 1*Line out, 2*Mini PCIe, 1*2.5" SATA bay, DC 9~36V |
| PA-120DC19               |                  | AC/DC adaptor,DC 12V/5A 60W                                                                                 |
| Din-rail mounting module |                  | KMDA-2602-T002 Din-rail mounting module                                                                     |

# KMDA-2620

Intel® Apollolake E3940 CPU, 4\*LAN, 7\*USB, 8-bit DIO, 6\*COM,4K Dual independent display,LED Temperature control display,DC-IN 9-36V

## Key Specification

- Compact Aluminum Chassis, fanless heat dissipation design
- Intel® Apollolake Atom E3940 CPU
- 1\*DDR3L 1866MHz SODIMM RAM, 8GB max.
- 4\*Intel I211-AT PCIe Gig LAN
- 1\*HDMI & 1\*VGA 4K Dual display, Audio Line out
- 2\*USB3.0, 5\*USB2.0,6\*COM, 8 bit DIO
- 1\*M.2 2242 B-key
- 1\*2.5" SATA3 bay, 1\*mSATA
- Aluminum cover for HDD heat dissipation, increasing hard disk operating temperature (3-5°C)
- DC 9~36V wide voltage power supply



## Product Overview

KMDA-2620 is a compact box PC equipped with Intel® Apollolake Atom E3940 CPU, HDMI and DP dual 4K displays, 8-bit DIO, 1 M.2 2242 B-key, 1 mSATA and 1 2.5-inch SATA Disk storage. DC9-36V wide voltage power supply, real-time working temperature LED simulation display, economical and high reliability, suitable for equipment automation and IoT data acquisition...etc

## Product Parameters

### Processor

|                |                                                                                                                                   |
|----------------|-----------------------------------------------------------------------------------------------------------------------------------|
| CPU            | Intel® Apollolake Atom E3940 CPU                                                                                                  |
| RAM            | 1*DDR3L, 1866MHz, SODIMM, 8GB max.                                                                                                |
| Graphics       | Gen. 9th Intel HD Graphics,<br>DP:4096*2160@60Hz,<br>HDMI:3840*2160@30Hz,support OpenGL 4.3, DirectX 11, OpenCL 2.0, MPGE2, H.265 |
| LAN            | 4/2*Intel I211AT PCIe Gigabit Ethernet,<br>10-1000M                                                                               |
| USB            | 2* USB3.0, 4/2*USB2.0 , 1*USB2.0 (Build-in)                                                                                       |
| Display        | 1*DP+1*HDMI                                                                                                                       |
| Audio          | 1*Line out,Realtek ALC662VD                                                                                                       |
| COM/<br>Others | 4/2*RS232/422/485, 2*RS232,<br>1*2 pin terminal, Remote switch,USB mouse/keyboard                                                 |
| DIO            | 8-bit TTL, programmable input & output                                                                                            |

### Storage

|         |                                                                     |
|---------|---------------------------------------------------------------------|
| Storage | 1*2.5"HDD SATA3 bay,6.0 Gbps, 1*mSATA Full-height card,support AHCI |
|---------|---------------------------------------------------------------------|

### Others

|                |                                                                                                                                                      |
|----------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| Indicator      | 1*power indicator, 1*HDD indicator, 3*CPU temperature indicator<br>(Red is high temperature, Yellow is normal temperature, Green is low temperature) |
| Control switch | 1*power switch (front panel), 1*2pin terminal switch signal(rear panel),<br>1*AT/ATX selector switch (front panel)                                   |
| Watchdog timer | Programmable timeout interrupt or system reset, 1 to 255 seconds                                                                                     |

### Expansion

|                |                                                                              |
|----------------|------------------------------------------------------------------------------|
| Expansion Port | 1*M.2 B-key with PCIe+USB signal & SIM slot,<br>support dual 4G/Wifi/BT,     |
| Power Supply   | I-Port 1*USB2.0 or Mini PCIe interface(i.e. CAN Bus & Gig. LAN)              |
| Input voltage  | DC IN 9~36V, with protection of<br>short circuit, over voltage, over current |
| TDP            | 20.04W(E3940 CPU,4G DDR3L)                                                   |

### Mechanical

|                  |                                         |
|------------------|-----------------------------------------|
| Sturcture        | Top/Bottom Aluminum Chassis, SGCC frame |
| Color            | Silver gray                             |
| Installation     | desktop mouning & VESA 100*100mm        |
| Dimension(W*H*D) | 155*111.8*65mm                          |
| Net Weight       | 1.30KG                                  |

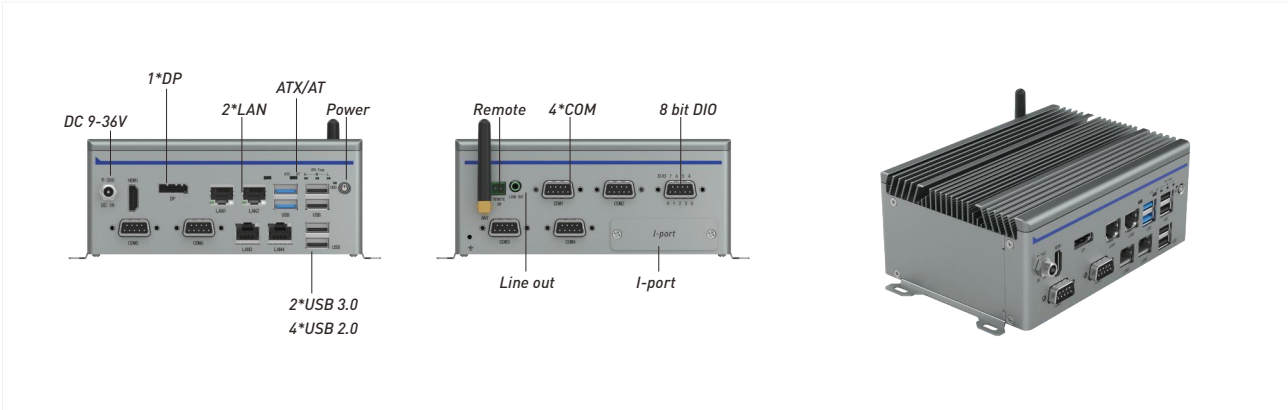
### Environmental

|                  |                                                                                                 |
|------------------|-------------------------------------------------------------------------------------------------|
| Operating Temp   | -20°C~70°C – fanless design, wide-temperature SSD<br>-10°C~55°C – fanless design, HDD           |
| Storage Temp     | -40°C~85°C                                                                                      |
| Storage Humidity | 10~90%@40°C, No- condensation                                                                   |
| Vibration        | 5 grms/5~500Hz/random/during operation (SSD)<br>1 grms/5~500Hz/random/during operation (HDD)    |
| Shock            | 50g peak acceleration(duration 11ms) with SSD,<br>20g peak acceleration(duration 11ms) with HDD |
| Certificate/EMC  | CE/FCC Class A                                                                                  |

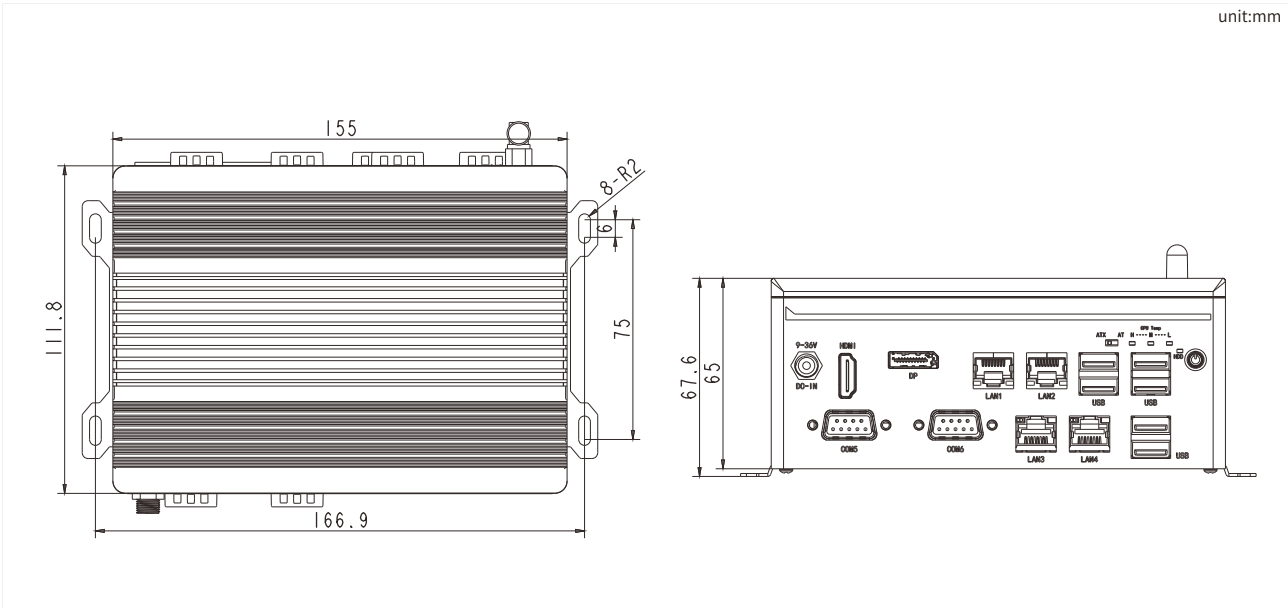
### OS

|                  |                                                            |
|------------------|------------------------------------------------------------|
| Operating system | Windows 7, Windows 8.1, Windows 10,<br>Linux Fedora,Ubuntu |
|------------------|------------------------------------------------------------|

## I/O View



## Dimensions



## Ordering Information

| Model          | Processor                        | Specifications                                                                                                             |
|----------------|----------------------------------|----------------------------------------------------------------------------------------------------------------------------|
| KMDA-2620/S001 | Intel® Apollolake Atom E3940 CPU | 4*LAN, 2*USB3.0, 5*USB2.0, 6*COM, 8-bit DIO, 1*HDMI, 1*DP, 1*Line out, 1*M.2, 1*mSATA, 1*I-port, 1*2.5" SATA bay, DC 9~36V |
| KMDA-2620/T002 | Intel® Apollolake Atom E3940 CPU | 2*LAN, 2*USB3.0, 3*USB2.0, 4*COM, 8-bit DIO, 1*HDMI, 1*DP, Line out, 1*M.2, 1*mSATA, 1*Port, 1*2.5" SATA bay, DC 9~36V     |
| PA-120DC19     |                                  | AC/DC adaptor,DC 12V/5A 60W                                                                                                |



# KMDA-2701

Intel Baytrail-D Celeron J1900 CPU, 4\*LAN, 7\*USB, 6\*COM, Dual display, DC-IN 9~36V, Audio Line out & Mic, 24-bit DIO

## Key Specification

- Aluminum Chassis, fanless heat dissipation design
- Intel Baytrail-D Celeron J1900 2.0-2.42G CPU
- 1\*DDR3L 1333MHz SODIMM RAM, 8GB max.
- 4\*Intel I211-AT PCIe Gig LAN
- 1\*HDMI & 1\*VGA Dual display, Audio Line out
- 1\*USB3.0, 6\*USB2.0,6\*COM, 24-bit DIO
- 1\*Mini PCIe(PCle+USB),1\*Mini PCIe(SATA+USB)
- 1\*3.5" SATA2 bay, 1\*mSATA
- DC 9~36V wide voltage power supply



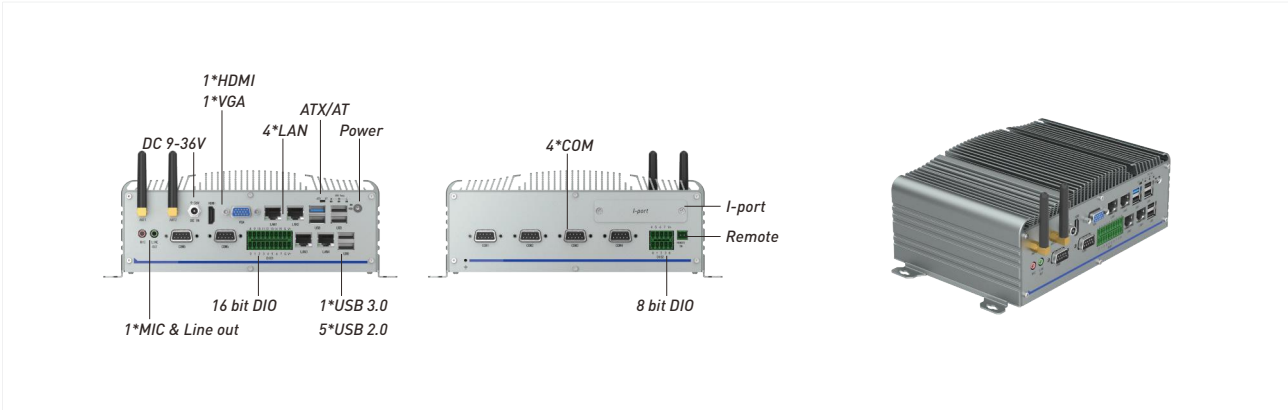
## Product Overview

KMDA-2701 is a general-purpose box PC, equipped with Intel Baytrail-D Celeron J1900 2.0-2.42GHz quad-core processor, HDMI and VGA dual display, 24-bit DIO, DC9-36V wide-voltage power supply, real-time operating temperature LED simulation Display, economical and high reliability, suitable for intelligent security and equipment automation.

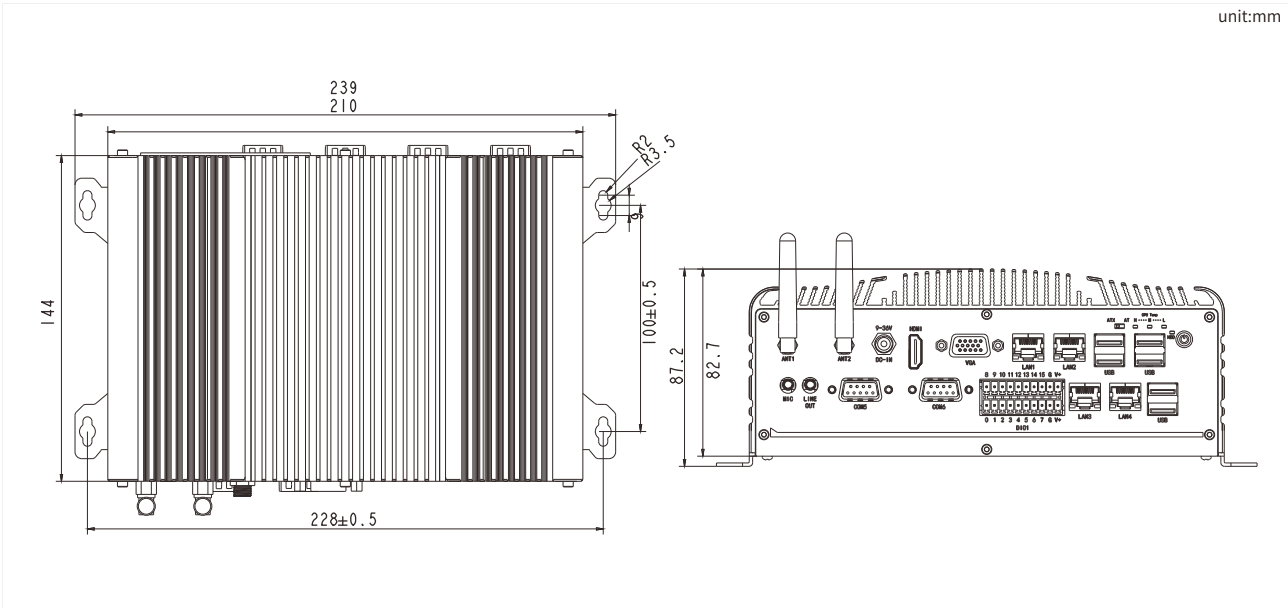
## Product Parameters

| Processor       |                                                                                                                                                           | Expansion        |                                                                                                                            |
|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|----------------------------------------------------------------------------------------------------------------------------|
| CPU             | Intel Baytrail-D Celeron J1900 , frequency 2.0~2.42GHz, 4C4T, 2M cache, 22nm, TDP 10W                                                                     | Expansion Port   | 1*Mini PCIe, with SIM slot , support 4G LTE、Wifi/BT, I-Port 1*USB2.0 or other Mini PCIe interface(i.e. CAN Bus & Gig. LAN) |
| RAM             | 1*DDR3L, 1333MHz, SODIMM, 8GB max.                                                                                                                        | Power Supply     |                                                                                                                            |
| Graphics        | Intel HD Graphics, Support dual independent display<br>VGA:1920*1200@60Hz,<br>HDMI:1920*1080@60Hz,support OpenGL 3.2, DirectX 11, OpenCL 1.2, MPGE2/H.264 | Input voltage    | DC IN 9~36V, D-Jack with M8 interface, short circuit protection, over voltage & over current protection                    |
| LAN             | 4*Intel I211AT PCIe Gigabit Ethernet,10-1000M                                                                                                             | TDP              | 19.2W(3.5" HDD)                                                                                                            |
| USB             | 1* USB3.0, 5*USB2.0 , 1*USB2.0 (Build-in)                                                                                                                 | Mechanical       |                                                                                                                            |
| Display         | 1*VGA+1*HDMI                                                                                                                                              | Sturcture        | U-shaped Aluminum Chassis, SGCC frame                                                                                      |
| Audio           | 1*Line out+1*Mic, Realtek ALC662VD,build-in 3W Speaker pin                                                                                                | Color            | Silver gray                                                                                                                |
| COM/ Others     | 4*RS232/422/485, 2*RS232, 1*2 pin terminal, Remote switch,USB mouse/keyboard                                                                              | Installation     | desktop mouning                                                                                                            |
| DIO             | 16-bit TTL, programmable input & output<br>8-bit TTL, programmable input & output                                                                         | Dimension(W*H*D) | 210*144*82.7mm                                                                                                             |
| Storage         |                                                                                                                                                           | Net Weight       | 2.60KG                                                                                                                     |
| Storage         | 1*3.5" HDD SATA2 bay, 3.0 Gbps, 1*mSATA Full-height card, support AHCI                                                                                    | Environmental    |                                                                                                                            |
| Others          |                                                                                                                                                           | Operating Temp   | -20°C~70°C – fanless design, wide-temperature SSD<br>-10°C~55°C – fanless design, HDD                                      |
| Indicator light | 1*power indicator, 1*hard disk indicator, 3*CPU temperature indicator (Red is high temperature, Yellow is normal temperature, Green is low temperature)   | Storage Temp     | -40°C~85°C                                                                                                                 |
| Control switch  | 1*power switch (front panel), 1*2pin terminal switch signal(rear panel), 1*AT/ATX selector switch (front panel)                                           | Storage Humidity | 10~90%@40°C, No- condensation                                                                                              |
| Watchdog timer  | Programmable timeout interrupt or system reset, 1 to 255 seconds                                                                                          | Vibration        | 5 grms/5~500Hz/random/during operation (SSD)<br>1 grms/5~500Hz/random/during operation (HDD)                               |
|                 |                                                                                                                                                           | Shock            | 50g peak acceleration(duration 11ms) with SSD,<br>20g peak acceleration(duration 11ms) with HDD                            |
|                 |                                                                                                                                                           | Certificate/EMC  | CE/FCC Class A                                                                                                             |
| OS              |                                                                                                                                                           | Operating system | Windows 7, Windows 8.1, Windows 10, Linux Fedora,Ubuntu                                                                    |

## I/O View



## Dimensions



## Ordering Information

| Model          | Processor        | Specifications                                                                                                                                                    |
|----------------|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| KMDA-2701/S002 | Intel® J1900 CPU | 4*LAN, 1*USB3.0, 6*USB2.0,6*COM, 24-bit DIO, 1*HDMI, 1*VGA, 1*Line out, 1*Mic, 1*Mini PCIe(shares slots with mSATA), 1*mSATA, 1*I-port, 1*3.5" SATA bay, DC 9~36V |
| KMDA-2701/T001 | Intel® J1900 CPU | 2*LAN, 1*USB3.0, 4*USB2.0, 4*COM, 8-bit DIO, 1*HDMI, 1*VGA, Line out 2*Mini PCIe(shares slots with mSATA), 1*mSATA, 1*I-port, 1*3.5" SATA bay, DC 9~36V           |
| PA-60DC12      |                  | AC/DC adaptor,DC 12V/5A 60W                                                                                                                                       |

# KMDA-2702

Intel Baytrail-D Celeron J1900 CPU, 3\*LAN, 7\*USB, 10\*COM, Dual display, DC-IN 9~36V, Audio Line out & Mic, 16-bit DIO

## Key Specification

- Aluminum Chassis, fanless heat dissipation design
- Intel Baytrail-D Celeron J1900 2.0-2.42G CPU
- 1\*DDR3L 1333MHz SODIMM RAM, 8GB max.
- 3\*Intel I211-AT PCIe Gig LAN
- 1\*HDMI & 1\*VGA Dual display, Audio Line out
- 1\*USB3.0, 6\*USB2.0, 10\*COM, 1\*PS2,16-bit DIO
- 1\*Mini PCIe(PCle+USB), 1\*Mini PCIe(SATA+USB)
- 1\*2.5" SATA2 bay, 1\*mSATA
- DC 9~36V wide voltage power supply



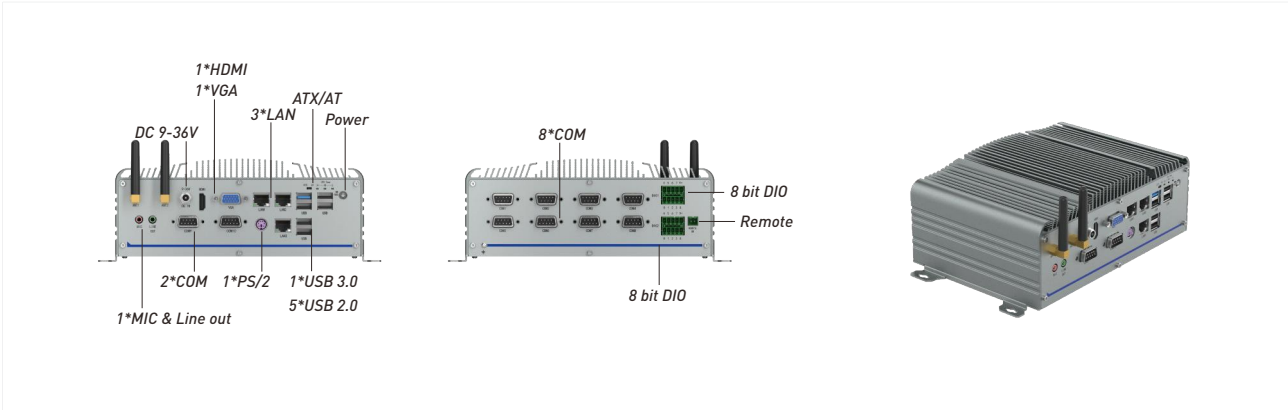
## Product Overview

KMDA-2702 is a general-purpose box PC, equipped with Intel Baytrail-D Celeron J1900 2.0-2.42GHz quad-core processor, DC9-36V wide voltage power supply, real-time working temperature LED simulation display, economical, high reliability, suitable for environment Monitoring and new energy industry, etc.

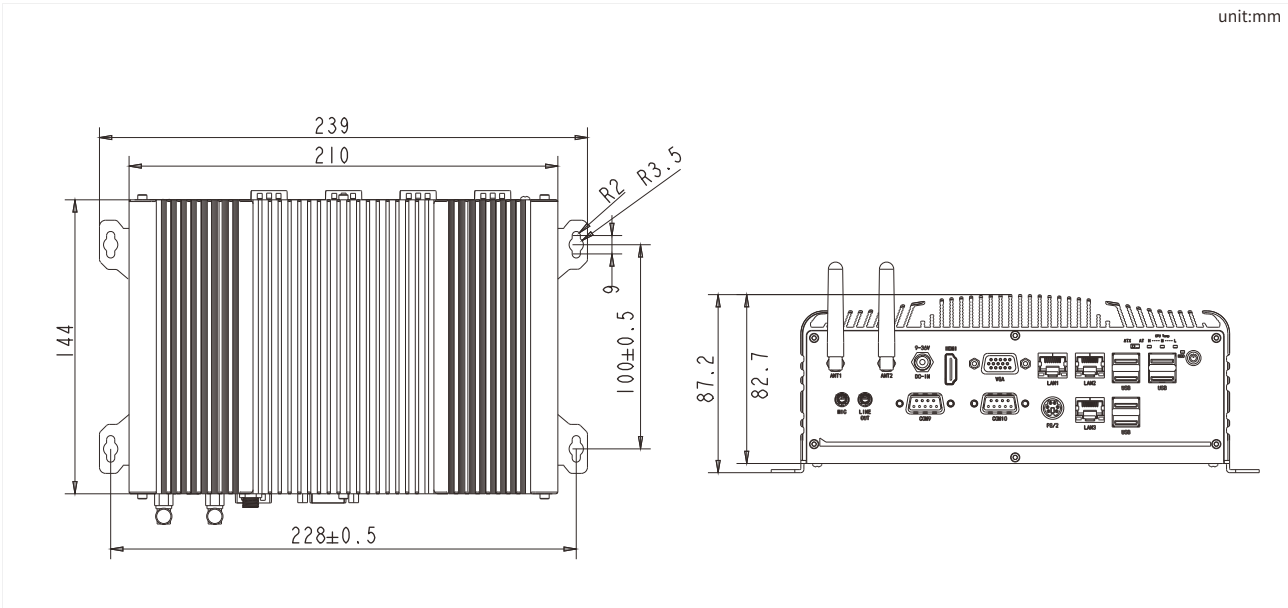
## Product Parameters

| Processor        |                                                                                                                                                            | Expansion        |                                                                                                                 |
|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|-----------------------------------------------------------------------------------------------------------------|
| CPU              | Intel Baytrail-D Celeron J1900 , frequency 2.0~2.42GHz, 4C4T, 2M cache, 22nm, TDP 10W                                                                      | Expansion Port   | 1*Mini PCIe, with SIM slot support 4G LTE、Wifi/BT                                                               |
| RAM              | 1*DDR3L, 1333MHz, SODIMM, 8GB max.                                                                                                                         | Power Supply     |                                                                                                                 |
| Graphics         | Intel HD Graphics, Support dual independent display<br>VGA:1920*1200@60Hz,<br>HDMI:1920*1080@60Hz, support OpenGL 3.2, DirectX 11, OpenCL 1.2, MPGE2/H.264 | Input voltage    | DC IN 9~36V, D-Jack. D-Jack with M8 interface, short circuit protection, over voltage & over current protection |
| LAN              | 3*Intel I211AT PCIe Gig. Ethernet, 10-1000M                                                                                                                | TDP              | 15.6W(2.5" HDD)                                                                                                 |
| USB              | 1* USB3.0, 5*USB2.0 , 1*USB2.0 (Build-in)                                                                                                                  | Mechanic         |                                                                                                                 |
| Display          | 1*VGA+1*HDMI                                                                                                                                               | Sturcture        | U-shaped Aluminum Chassis, SGCC frame                                                                           |
| Audio            | 1*Line out+1*Mic,Realtek ALC662VD,build-in 3W Speaker pin                                                                                                  | Color            | Silver gray                                                                                                     |
| COM/ Others      | 8*RS232/422/485, 2*RS232, 1*2 pin terminal, Remote Switch,PS2 mouse/keyboard                                                                               | Installation     | desktop mouning                                                                                                 |
| DIO              | 16-bit TTL, programmable input & output (2*5Pin Phoenix terminal*2)                                                                                        | Dimension(W*H*D) | 210*144*82.7mm                                                                                                  |
| Storage          |                                                                                                                                                            | Net Weight       | 2.60KG                                                                                                          |
| Storage          | 1*2.5" HDD SATA2 bay, 3.0 Gbps, 1*mSATA Full-height card, support AHCI                                                                                     | Environmental    |                                                                                                                 |
| Others           |                                                                                                                                                            | Operating Temp   | -20°C~70°C – fanless design, wide-temperature SSD<br>-10°C~55°C – fanless design, HDD                           |
| Indicator light  | 1*power indicator, 1*hard disk indicator, 3*CPU temperature indicator (Red is high temperature, Yellow is normal temperature, Green is low temperature)    | Storage Temp     | -40°C~85°C                                                                                                      |
| Control switch   | 1*power switch (front panel), 1*2pin terminal switch signal (rear panel), 1*AT/ATX selector switch (front panel)                                           | Storage Humidity | 10~90%@40°C, No- condensation                                                                                   |
| Watchdog timer   | Programmable timeout interrupt or system reset, 1 to 255 seconds                                                                                           | Vibration        | 5 grms/5~500Hz/random/during operation (SSD)<br>1 grms/5~500Hz/random/during operation (HDD)                    |
|                  |                                                                                                                                                            | Shock            | 50g peak acceleration(duration 11ms) with SSD,<br>20g peak acceleration(duration 11ms) with HDD                 |
|                  |                                                                                                                                                            | Certificate/EMC  | CE/FCC Class A                                                                                                  |
| OS               |                                                                                                                                                            |                  |                                                                                                                 |
| Operating system |                                                                                                                                                            | Operating system | Windows 7, Windows 8.1, Windows 10, Linux Fedora,Ubuntu                                                         |

## I/O View



## Dimensions



## Ordering Information

| Model          | Processor        | Specifications                                                                                                                                              |
|----------------|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|
| KMDA-2702/S001 | Intel® J1900 CPU | 3*LAN, 1*USB3.0, 6*USB2.0, 10*COM, 16-bit DIO, 1*HDMI, 1*VGA, 1*Line out,1*Mic, 2*Mini PCIe(one of them shares slots with mSATA), 1*2.5" SATA bay, DC 9~36V |
| PA-60DC12      |                  | AC/DC adaptor ,DC12V/5A 60W                                                                                                                                 |



# KMDA-3201

Intel Skylake-U/Kabylake-U CPU,3\*LAN, 7\*USB, 6\*COM, 4K Dual independent display, 8-bit DIO, Intel Vpro, TPM2.0, DC 9~30V

## Key Specification

- Aluminum Chassis, fanless heat dissipation design
- Intel Skylake-U/Kabylake-U CPU
- 2\*DDR4 2133MHz SODIMM RAM, 32GB max.
- 1\*HDMI & 1\*DPdisplay, support 4K Dual display
- 3\*Gig LAN, 4\*USB3.0, 3\*USB2.0(one build-in)
- 6\*COM, 8-bit DIO, Line out
- 1\*Mini PCIe(PCle+USB) full-height card, 1\*M.2 2242 B-key
- 1\*mSATA, 1/2\*2.5" SATA bay
- Support Intel vPro technology and optional TPM 2.0 security encryption
- DC 9~36V wide voltage power supply,  
With reverse polarity protection, short circuit protection, over voltage & over current protection



## Product Overview

KMDA-3201 is a new industrial design Box Computer with aluminum chassis and fanless design. It is equipped with Intel Skylake-U/Kabylake-U processor. It supports Intel vPro technology and optional TPM2.0 hardware encryption technology, high reliability, DC9-30V wide-voltage power supply, widely used in artificial intelligence, machine vision and intelligent transportation industries.

## Product Parameters

### Processor

|             |                                                                                             |
|-------------|---------------------------------------------------------------------------------------------|
| CPU         | Intel Skylake-U/Kabylake-U CPU Celeron/ Core i3/i5/i7 U                                     |
| RAM         | 2*260-Pin SODIMM, DDR4,2133MHz, 32GB max.                                                   |
| Graphics    | Intel Gen. 9th HD Graphics, HEVC/H265 HW HD codec, HDMI: 3840*2160@30Hz, DP: 4096*2304@60Hz |
| LAN         | 2*Intel I211AT PCIe Gig. Ethernet, 10-1000M, 1*Intel I219 LM support Intel Vpro             |
| USB         | 4* USB3.0, 2*USB2.0 , 1*USB2.0 (Build-in)                                                   |
| Display     | 1*DP+1*HDMI                                                                                 |
| Audio       | 1*Line out , Realtek ALC662VD                                                               |
| COM/ Others | 2*RS232/422/485, 4*RS232, 1*2 pin terminal, remote switch,USB mouse/keyboard                |
| DIO         | 8-bit TTL, programmable input & output (2*5Pin Phoenix terminal)                            |

### Storage

|         |                                                                        |
|---------|------------------------------------------------------------------------|
| Storage | 1*2.5" HDD SATA3 bay, 6.0 Gbps, 1*mSATA Full-height card, support AHCI |
|---------|------------------------------------------------------------------------|

### Others

|                 |                                                                                                                                                         |
|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|
| Indicator light | 1*power indicator, 1*hard disk indicator, 3*CPU temperature indicator (Red is high temperature, Yellow is normal temperature, Green is low temperature) |
| Control switch  | 1*power switch (front panel), 1*2pin terminal switch signal(rear panel), 1*AT/ATX selector switch (front panel)                                         |
| Watchdog timer  | Programmable timeout interrupt or system reset, 1 to 255 seconds                                                                                        |

### Expansion

|                |                                                                                                                                                         |
|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|
| Expansion Port | 1*Mini PCIe with SIM slot , 1*M.2 B-key with PCIe+USB signal & SIM slot,support dual 4G/Wifi/BT, I-port: optional 2*USB2.0, LVDS or Mini PCIe interface |
|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|

### Power Supply

|               |                                                                                                                                |
|---------------|--------------------------------------------------------------------------------------------------------------------------------|
| Input voltage | DC IN 9~30V, 3pin terminal, With reverse polarity protection, short circuit protection, over voltage & over current protection |
| TDP           | 27.72W (I5-7200U 8GB)                                                                                                          |

### Mechanical

|                  |                              |
|------------------|------------------------------|
| Sturcture        | Aluminum Chassis, SGCC frame |
| Color            | Silver gray                  |
| Installation     | desktop mousing              |
| Dimension(W*H*D) | 210*144.3*75.5mm             |
| Net Weight       | 2.20KG                       |

### Environmental

|                  |                                                                                              |
|------------------|----------------------------------------------------------------------------------------------|
| Operating Temp   | -20°C~70°C – fanless design, wide-temperature SSD<br>-10°C~50°C – fanless design, HDD        |
| Storage Temp     | -40°C~85°C                                                                                   |
| Storage Humidity | 10~90%@40°C, No- condensation                                                                |
| Vibration        | 5 grms/5~500Hz/random/during operation (SSD)<br>1 grms/5~500Hz/random/during operation (HDD) |

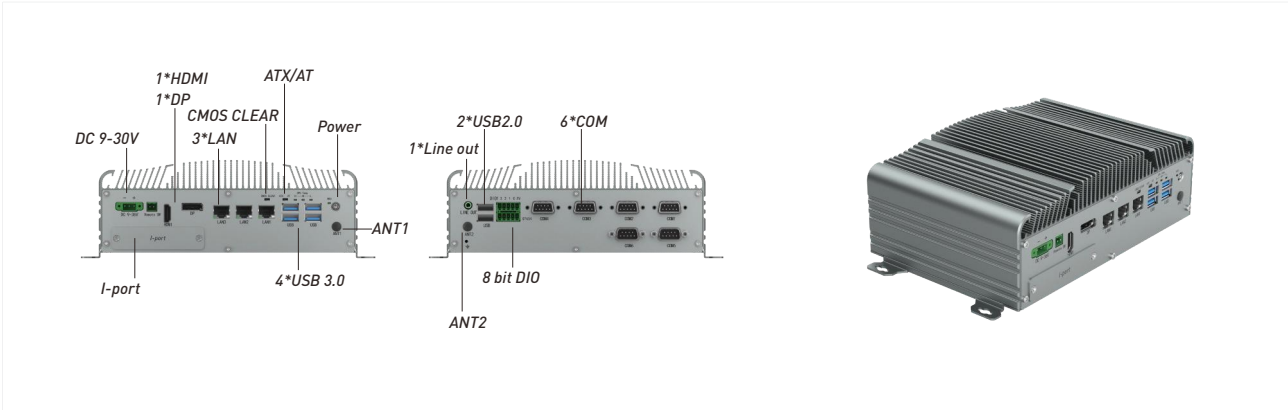
|       |                                                                                              |
|-------|----------------------------------------------------------------------------------------------|
| Shock | 50g peak acceleration(duration 11ms) with SSD, 20g peak acceleration(duration 11ms) with HDD |
|-------|----------------------------------------------------------------------------------------------|

|                 |                |
|-----------------|----------------|
| Certificate/EMC | CE/FCC Class A |
|-----------------|----------------|

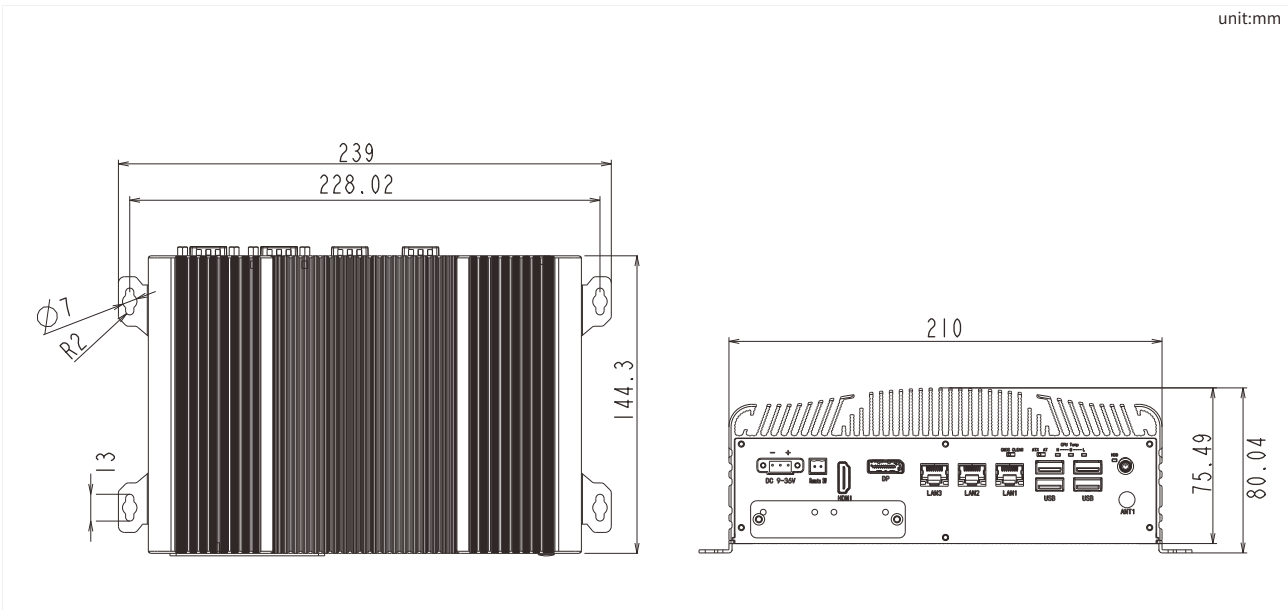
### OS

|                  |                                            |
|------------------|--------------------------------------------|
| Operating system | Windows 7, Windows 10, Linux Fedora,Ubuntu |
|------------------|--------------------------------------------|

## I/O View



## Dimensions



## Ordering Information

| Model          | Processor                     | Specifications                                                                                                                            |
|----------------|-------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|
| KMDA-3201/S001 | Intel Core I3-6100U/I3-7100U  | 3*LAN, 4*USB3.0, 3*USB2.0, 6*COM, 8-bit DIO, 1 *Mini PCIe, 1*M.2, 1*HDMI, 1*DP , 1*Line out, 1*I-port, 1*2.5" SATA bay, 1*mSATA, DC 9~30V |
| KMDA-3201/S002 | Intel Core I5-6200U/I5-7200U  |                                                                                                                                           |
| KMDA-3201/S003 | Intel Core I7-6500U/I7-7500U  |                                                                                                                                           |
| KMDA-3201/S004 | Intel Celeron 3855U/3865U CPU |                                                                                                                                           |
| PA-60DC12      |                               | AC/DC adaptor,DC12V@5A 60W                                                                                                                |
| PA-120DC19     |                               | AC/DC adaptor,DC19V/6.32A,120W                                                                                                            |

# KMDA-3202

Intel Skylake-U/Kabylake-U CPU, 3\*LAN, 4\*POE, 9\*USB, 6\*COM, Dual 4K display, 8-bit DIO+16-bit iso DIO,Intel Vpro, TPM2.0, DC 9~30V

## Key Specification

- Aluminum Chassis, fanless heat dissipation design
- Intel Skylake-U/Kabylake-U CPU
- 2\*DDR4 2133MHz SODIMM RAM, 32GB max.
- 1\*HDMI & 1\*DP display, support 4K Dual display
- 3\*Gig LAN, 4\*POE, 4\*USB3.0, 5\*USB2.0 (one build-in)
- 6\*COM, 1\*PS2, 16bit iso DIO, 8-bit DIO, Line out & Mic
- 1\*Mini PCIe(PCle+USB) full-height card, 1\*M.2 2242 B-key
- 1\*mSATA, 1/2\*2.5" SATA bay
- Support Intel vPro technology and optional TPM 2.0 security encryption
- DC 9~36V wide voltage power supply, With reverse polarity protection, short circuit protection, over voltage & over current protection



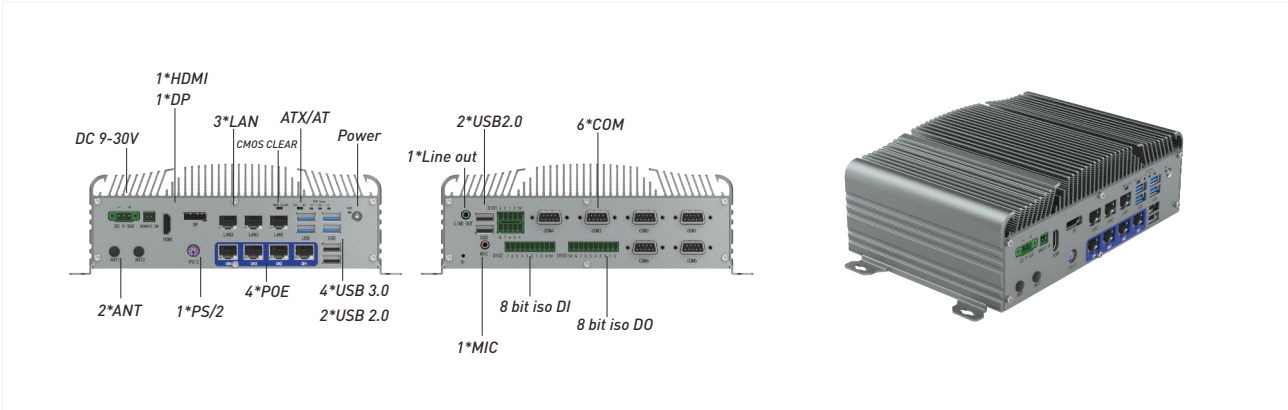
## Product Overview

KMDA-3202 is a new industrial design Box Computer with aluminum chassis and fanless design. Using Intel Skylake-U/Kabylake-U processors, dual-channel DDR4 2133MHz SODIMM, up to 32GB, it is widely used in industries such as artificial intelligence, machine vision and robotics.

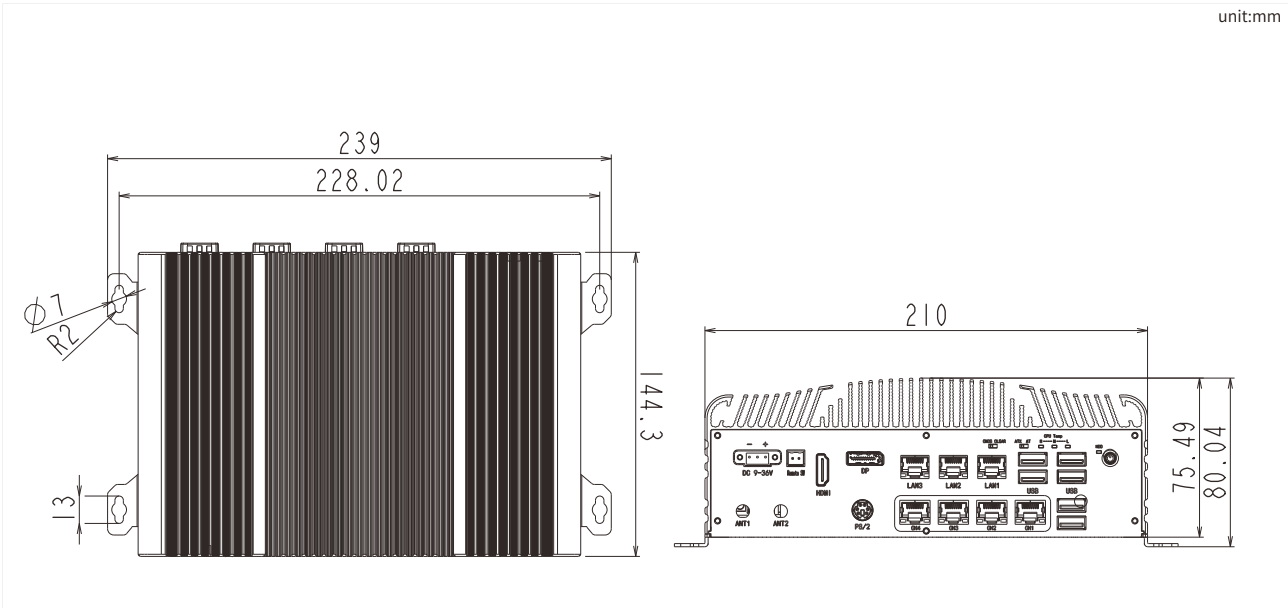
## Product Parameters

| Processor       |                                                                                                                                                         | Expansion                                                                                                                                           |
|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|
| CPU             | Intel Skylake-U/Kabylake-U CPU Celeron/ Core i3/i5/i7 U                                                                                                 | Expansion Port                                                                                                                                      |
| RAM             | 2*260-Pin SODIMM, DDR4,2133MHz, 32GB max.                                                                                                               | 1*Mini PCIe with SIM slot ,<br>1*M.2 B-key with PCle+USB signal and SIM slot,<br>support dual 4G/Wifi/BT                                            |
| Graphics        | Intel Gen. 9th HD Graphics, HEVC/H265 HW HD codec, HDMI: 3940*2160@30Hz, DP: 4096*2160@60Hz                                                             | Power Supply                                                                                                                                        |
| LAN             | 2*Intel I211AT PCIe Gig. Ethernet,10-1000M, 1*Intel I219 LM support Intel Vpro, 4*Intel I211AT PCIe Full bandwidth POE                                  | Input voltage                                                                                                                                       |
| USB             | 4* USB3.0, 4*USB2.0 , 1*USB2.0 (Build-in)                                                                                                               | TDP                                                                                                                                                 |
| Display         | 1*DP+1*HDMI                                                                                                                                             | DC IN 9~30V, 3pin terminal, With reverse polarity protection, short circuit protection, over voltage & over current protection 27.72W(I5-7200U 8GB) |
| Audio           | 1*Line out+1*Mic,Realtek ALC662VD                                                                                                                       | Mechanical                                                                                                                                          |
| COM/ Others     | 2*RS232/422/485, 4*RS232, 1*2pin terminal, Remote switch interface,1*PS/2(mouse/keyboard)                                                               | Sturcture                                                                                                                                           |
| DIO             | 8-bit TTL, programmable input & output(2*5Pin Phoenix terminal)                                                                                         | Aluminum Chassis, SGCC frame                                                                                                                        |
|                 | 8-bit Iso. DI(1*10Pin Phoenix terminal), 8-bit Iso. DO (100mA) (1*10Pin Phoenix terminal)                                                               | Color                                                                                                                                               |
| Storage         |                                                                                                                                                         | Silver gray                                                                                                                                         |
| Storage         | 1*2.5" SATA3 bay, 6.0 Gbps HDD/SSD, 1*mSATA Full-height card, support AHCI                                                                              | Installation                                                                                                                                        |
| Others          |                                                                                                                                                         | desktop mouning                                                                                                                                     |
| Indicator light | 1*power indicator, 1*hard disk indicator, 3*CPU temperature indicator (Red is high temperature, Yellow is normal temperature, Green is low temperature) | Dimension(W*H*D)                                                                                                                                    |
| Control switch  | 1*power switch (front panel), 1*2pin terminal switch signal(rear panel), 1*AT/ATX selector switch (front panel)                                         | 210*144.3*75.5mm                                                                                                                                    |
| Watchdog timer  | Programmable timeout interrupt or system reset, 1 to 255 seconds                                                                                        | Net Weight                                                                                                                                          |
|                 |                                                                                                                                                         | 2.20KG                                                                                                                                              |
|                 |                                                                                                                                                         | Environmental                                                                                                                                       |
|                 |                                                                                                                                                         | Operating Temp                                                                                                                                      |
|                 |                                                                                                                                                         | -20°C~70°C – fanless design, wide-temperature SSD<br>-10°C~50°C – fanless design, HDD                                                               |
|                 |                                                                                                                                                         | Storage Temp                                                                                                                                        |
|                 |                                                                                                                                                         | -40°C~85°C                                                                                                                                          |
|                 |                                                                                                                                                         | Storage Humidity                                                                                                                                    |
|                 |                                                                                                                                                         | 10~90%@40°C, No- condensation                                                                                                                       |
|                 |                                                                                                                                                         | Vibration                                                                                                                                           |
|                 |                                                                                                                                                         | 5 grms/5~500Hz/random/during operation (SSD)<br>1 grms/5~500Hz/random/during operation (HDD)                                                        |
|                 |                                                                                                                                                         | Shock                                                                                                                                               |
|                 |                                                                                                                                                         | 50g peak acceleration(duration 11ms) with SSD,<br>20g peak acceleration(duration 11ms) with HDD                                                     |
|                 |                                                                                                                                                         | Certificate/EMC                                                                                                                                     |
|                 |                                                                                                                                                         | CE/FCC Class A                                                                                                                                      |
|                 |                                                                                                                                                         | OS                                                                                                                                                  |
|                 |                                                                                                                                                         | Operating system                                                                                                                                    |
|                 |                                                                                                                                                         | Windows 7, Windows 10,<br>Linux Fedora,Ubuntu                                                                                                       |

## I/O View



## Dimensions



## Ordering Information

| Model          | Processor                 | Specifications                                                                                                                                                        |
|----------------|---------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| KMDA-3202/S001 | Intel I3-6100U/I3-7100U   | 3*LAN, 4*POE, 4*USB3.0, 5*USB2.0, 6*COM, 16-bit iso. DIO, 8-bit DIO, 1 *Mini PCIe, 1*M.2, 1*PS/2, 1*HDMI, 1*DP , 1*Line out,1*Mic, 1*2.5" SATA bay, 1*mSATA, DC 9~30V |
| KMDA-3202/S002 | Intel I5-6200U/I5-7200U   |                                                                                                                                                                       |
| KMDA-3202/S003 | Intel I7-6500U/I7-7500U   |                                                                                                                                                                       |
| KMDA-3202/S004 | Intel Celeron 3855U/3865U |                                                                                                                                                                       |
| PA-60DC12      |                           | AC/DC adaptor, DC12V/5A 60W--for KMDA-3202-T00X                                                                                                                       |
| PA-120DC19     |                           | AC/DC adaptor,DC19V/6.32A 120W--forKMDA-3202-S00X                                                                                                                     |



# KMDA-3212

Intel® Skylake-U/Kabylake-U CPU, 2/3\*LAN, 7\*USB, 4\*COM, Dual 4K display, 8-bit DIO,Intel Vpro, TPM2.0, DC IN 12~24V

## Key Specification

- Aluminum Chassis, fanless heat dissipation design
- Intel Skylake-U/Kabylake-U CPU
- 1\*DDR4 2133MHz SODIMM RAM, Max. 16GB
- 1\*HDMI & 1\*DP display, support 4K Dual display, 1\*VGA
- 2/3\*Gig LAN, 4\*USB3.0, 3\*USB2.0 (one build-in)
- 4\*COM, 8-bit DIO, 1\*Line out, 1\*Mic
- 1\*MiniPCIe(PCIe+USB)
- 1\*mSATA, 1\*2.5" SATA bay
- Support Intel vPro technology and optional TPM 2.0 security encryption
- DC 12~24V wide voltage power supply



## Product Overview

KMDA-3212 is a new industrial design Box Computer of JHCTECH with aluminum chassis and fanless design. Equipped with Intel® Skylake-U/Kabylake-U CPU, 1\*mSATA, dual storage, optional support for TPM2.0 and support for iVpro technology. DC12~24V, It is suitable for ITS, medical imaging, intelligent transportation fields.

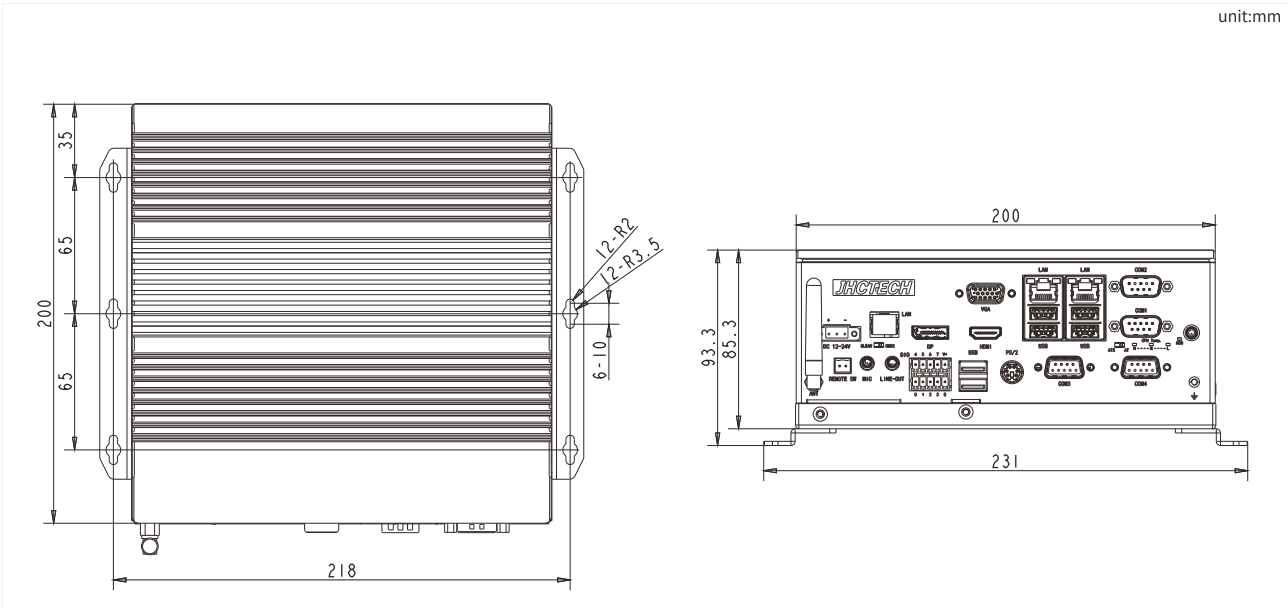
## Product Parameters

| Processor       |                                                                                                                                                         | Expansion        |                                                                                              |
|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|----------------------------------------------------------------------------------------------|
| CPU             | Intel Skylake-U/Kabylake-U CPU Celeron/ Core i3/i5/i7 U                                                                                                 | Expansion Port   | 1*Mini PCIe, with SIM slot, support 4G LTE、Wifi/BT                                           |
| RAM             | 1*260-Pin SODIMM, DDR4,2133MHz, Max. 16GB                                                                                                               | Power Supply     |                                                                                              |
| Graphics        | Intel Gen. 9th HDGraphics, HEVC/H265 HW HD codec, HDMI:4096*2304@24Hz, DP:4096*2304@60Hz,VGA: 1920*1200@60Hz                                            | Input voltage    | DC IN 12~24V, 3pin terminal(front panel),                                                    |
|                 |                                                                                                                                                         | TDP              | 58.56W(I5-7200U 16GB DDR4)                                                                   |
|                 |                                                                                                                                                         | Mechanical       |                                                                                              |
| LAN             | 2*Intel I211AT PCIe Gig. Ethernet,10-1000M; 1*Intel I219 LM support Intel Vpro,                                                                         | Sturcture        | Aluminum Chassis, SGCC frame                                                                 |
| USB             | 4* USB3.0, 2*USB2.0 , 1*USB2.0 (Build-in)                                                                                                               | Color            | Silver gray                                                                                  |
| Display         | 1*DP+1*HDMI+1*VGA                                                                                                                                       | Installation     | desktop mousing                                                                              |
| Audio           | 1*Line out+1*Mic, Realtek ALC662VD                                                                                                                      | Dimension(W*H*D) | 200*200*85.3mm                                                                               |
| COM/ Others     | 2*RS232/422/485, 2*RS232, 1*PS/2(mouse/keyboard)                                                                                                        | Net Weight       | 3.3KG                                                                                        |
| DIO             | 8-bit TTL, programmable input & output(2*5Pin Phoenix terminal)                                                                                         | Environmental    |                                                                                              |
| Storage         |                                                                                                                                                         | Operating Temp   | -20°C~70°C – fanless design, wide-temperature SSD<br>-10°C~50°C – fanless design, HDD        |
| Storage         | 1*2.5" SATA3 bay, 6.0 Gbps HDD/SSD, 1*mSATA , support AHCI                                                                                              | Storage Temp     | -40°C~85°C                                                                                   |
| Others          |                                                                                                                                                         | Storage Humidity | 10~90%@40°C, No- condensation                                                                |
|                 |                                                                                                                                                         | Vibration        | 5 grms/5~500Hz/random/during operation (SSD)<br>1 grms/5~500Hz/random/during operation (HDD) |
| Indicator light | 1*power indicator, 1*hard disk indicator, 3*CPU temperature indicator (Red is high temperature, Yellow is normal temperature, Green is low temperature) | Shock            | 50g peak acceleration(duration 11ms) with SSD, 20g peak acceleration(duration 11ms) with HDD |
| Control switch  |                                                                                                                                                         | Certificate/EMC  | CE/FCC Class A                                                                               |
| Watchdog timer  | Programmable timeout interrupt or system reset, 1 to 255 seconds                                                                                        | OS               |                                                                                              |
|                 |                                                                                                                                                         | Operating system | Windows 7, Windows 10, Linux Fedora,Ubuntu                                                   |

## I/O View



## Dimensions



## Ordering Information

| Model          | Processor                 | Specifications                                                                                                                               |
|----------------|---------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|
| KMDA-3212/S001 | Intel I3-6100U/I3-7100U   | 3*LAN, 4*USB3.0, 3*USB2.0, 4*COM, 8-bit DIO, 1*Mini PCIe,1*HDMI, 1*DP, 1*VGA, 1*PS/2, 1*Line out, 1*Mic, 1*2.5" SATA bay, 1*mSATA, DC 12~24V |
| KMDA-3212/S002 | Intel I5-6200U/I5-7200U   |                                                                                                                                              |
| KMDA-3212/S003 | Intel I7-6500U/I7-7500U   |                                                                                                                                              |
| KMDA-3212/S004 | Intel Celeron 3855U/3865U |                                                                                                                                              |
| PA-60DC12      |                           | AC/DC adaptor,DC12V/5A 60W                                                                                                                   |
| PA-120DC19     |                           | AC/DC adaptor,DC19V/6.32A 120W                                                                                                               |

# KMDA-3230

Intel® Whiskey lake U CPU, 2-CH DDR4, 1\*HDMI, 1\*DP, 5\*G-LAN, 5\*COM, 4\*USB3.1 , 2\*USB2.0, DC 9~36V

## Key Specification

- Aluminum Chassis, fanless heat dissipation design
- 8th-Gen Intel® Whiskey lake U series CPU
- 2-Ch DDR4 2400MHz SODIMM, 32GB max.
- 1\*HDMI & 1\*DP display, support 4K Dual display
- 1\*Line out&Mic,4\*USB3.1,2\*USB2.0
- 5\* GbE LAN,5\*COM ,8-bit iso DIO
- 1\*mSATA,1\*2.5" SATA bay
- 1\*M.2,2230 E-Key, 1\*Mini-PCle,1\*SIM slot
- DC 9~36V wide voltage power supply



## Product Overview

KMDA-3230 is a fanless embedded box PC, equipped with the 8th generation Intel® Whiskey lake U series processor. DC9~36V wide voltage power supply, Aluminum chassis for hard disk heat dissipation. It is small, powerful and exquisite, suitable for applications such as industrial IoT and machine vision.

## Product Parameters

### Processor

|                |                                                                                                           |
|----------------|-----------------------------------------------------------------------------------------------------------|
| CPU            | Intel® Whiskey lake U<br>Celeron/Core i3/i5/i7                                                            |
| RAM            | 2*DDR4 SODIMM,2400MHz, 32GB max.                                                                          |
| Graphics       | Intel® Gen. 9 UHD Graphics,Support dual independent display<br>HDMI: 4096*2304@24Hz<br>DP: 4096*2304@60Hz |
| LAN            | 4*Intel® I210AT PCIe, Gig. Ethernet, 10-1000M;<br>1*Intel®I219LM                                          |
| USB            | 4* USB3.1, 2*USB2.0                                                                                       |
| Display        | 1*DP+1*HDMI                                                                                               |
| Audio          | 1*Line out+1*Mic, Realtek ALC662VD                                                                        |
| COM/<br>Others | 2*RS485, 3*RS232,                                                                                         |
| DIO            | 8-bit Iso. DIO(4-bit 2.5KV optical Iso. DO,4-bit 2.5KV optical Iso. DI)                                   |

### Storage

|         |                                                             |
|---------|-------------------------------------------------------------|
| Storage | 1*2.5" SATA port,<br>1*mSATA Full-height card, support AHCI |
|---------|-------------------------------------------------------------|

### Others

|                 |                                                                                                                                                            |
|-----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Indicator light | 1*power indicator, 1*hard disk indicator, 3*CPU temperature indicator<br>(Red is high temperature, Yellow is normal temperature, Green is low temperature) |
| Control switch  | 1*Power switch, 1*AT/ATX mode selection switch,<br>1*Clear CMOS data switch                                                                                |
| Watchdog timer  | Programmable timeout interrupt or system reset, 1 to 255 seconds                                                                                           |

### Expansion

|                |                                                                                                                                                          |
|----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|
| Expansion Port | 1*Mini PCIe, with SIM slot, support 3G/4G/Wifi/ BT/ GPRS,<br>1*M.2 E-key 2230 Wifi/BT module expansion,<br>1*I-port(LPT/USB2.0/16-bit DIO/Mini PCIe,etc) |
|----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|

### Power Supply

|               |                                      |
|---------------|--------------------------------------|
| Input voltage | DC IN 9~36V, 3pin terminal,          |
| TDP           | 30W (I5-8265U , 8GB DDR4, 128GB SSD) |

### Mechanical

|                  |                              |
|------------------|------------------------------|
| Sturcture        | Aluminum Chassis, SGCC frame |
| Color            | Silver gray                  |
| Installation     | desktop mouning              |
| Dimension(W*H*D) | 210*147*78mm                 |
| Net Weight       | 2.29KG                       |

### Environmental

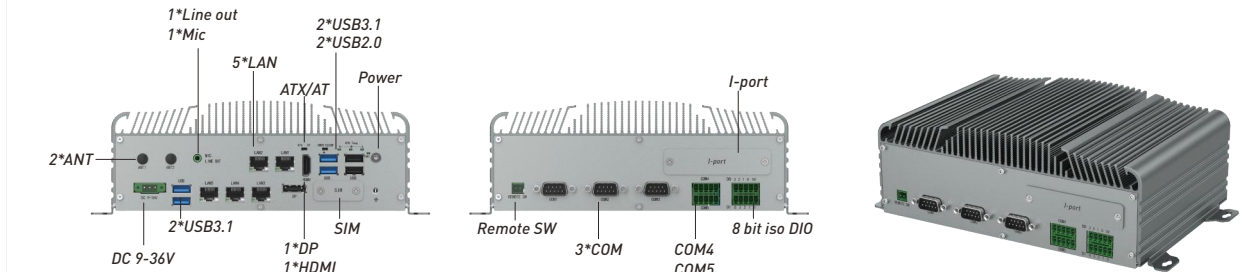
|                  |                                                                                                 |
|------------------|-------------------------------------------------------------------------------------------------|
| Operating Temp   | -20°C~70°C – fanless design, wide-temperature SSD<br>-10°C~50°C – fanless design, HDD           |
| Storage Temp     | -40°C~85°C                                                                                      |
| Storage Humidity | 10~90%@40°C, No- condensation                                                                   |
| Vibration        | 5 grms/5~500Hz/random/during operation (SSD)<br>1 grms/5~500Hz/random/during operation (HDD)    |
| Shock            | 50g peak acceleration(duration 11ms) with SSD,<br>20g peak acceleration(duration 11ms) with HDD |

Certificate/EMC CE/FCC Class A

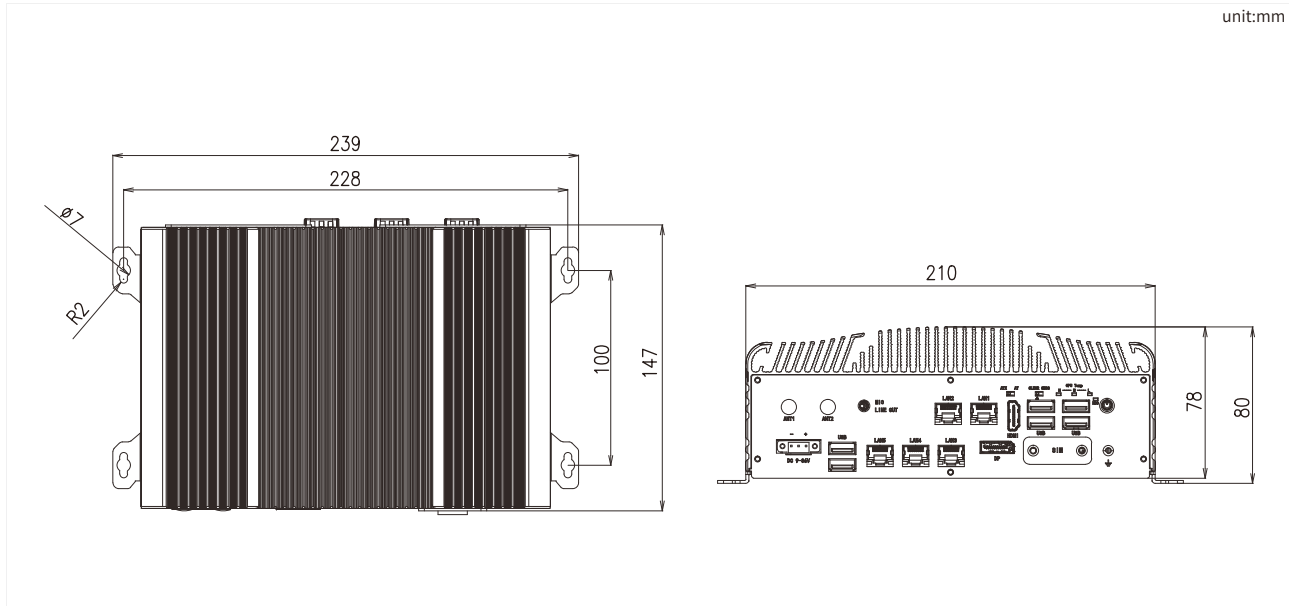
### OS

|                  |                                                             |
|------------------|-------------------------------------------------------------|
| Operating system | Windows 10, SUSE, Ubuntu, Wind River,<br>Red Hat Enterprise |
|------------------|-------------------------------------------------------------|

## I/O View



## Dimensions



## Ordering Information

| Model          | Processor           | Specifications                                                                                                                                |
|----------------|---------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|
| KMDA-3230/S001 | Intel I3-8145U      | 2*DDR4 SO-DIMM,1*HDMI,1*DP,1*Line out,1*Mic, 5*LAN,4*USB3.1,2*USB2.0,5*COM,8-bit DIO,1*M.2,1*Mini PCIe,1*SIM slot, 1*mSATA,1*2.5"SATA,DC9~36V |
| KMDA-3230/S002 | Intel I5-8265U      |                                                                                                                                               |
| KMDA-3230/S003 | Intel I7-8565U      |                                                                                                                                               |
| KMDA-3230/S004 | Intel Celeron 4305U |                                                                                                                                               |
| PA-60DC12      |                     | AC/DC adaptor, DC 12V/5A 60W                                                                                                                  |



# KMDA-3601

Intel Skylake-S/Kabylake-S CPU, 3\*LAN, 4\*POE, 6\*USB3.0, Dual 4K display,16-bit iso DIO, iVpro, Wide voltage DC 6~48V

## Key Specification

- Aluminum Chassis, fanless heat dissipation design
- Intel Skylake-S/Kabylake-S CPU
- 2\*DDR4 2133/2400MHz SODIMM RAM, Max. 32GB
- 1\*DP, 1\*HDMI & 1\*VGA three display, DP and HDMI 4K support
- 3\*GbE LAN, 4\*POE/8/11\*LAN, 6\*USB3.0, 3\*USB2.0
- 4\*COM, 16 or 24-bit iso DIO, 1\*Line out,1\*Mic
- 2\*Mini PCIe(PCle+USB),1\*M.2 2242 B-Key
- 1\*mSATA, 2\*2.5" SATA3 bay, support RAID 0,1 support Intel vPro & optional support TPM2.0 security encryption
- DC 6~48V Wide-voltage power supply, short-circuit, over-voltage, over-current and under-voltage protection



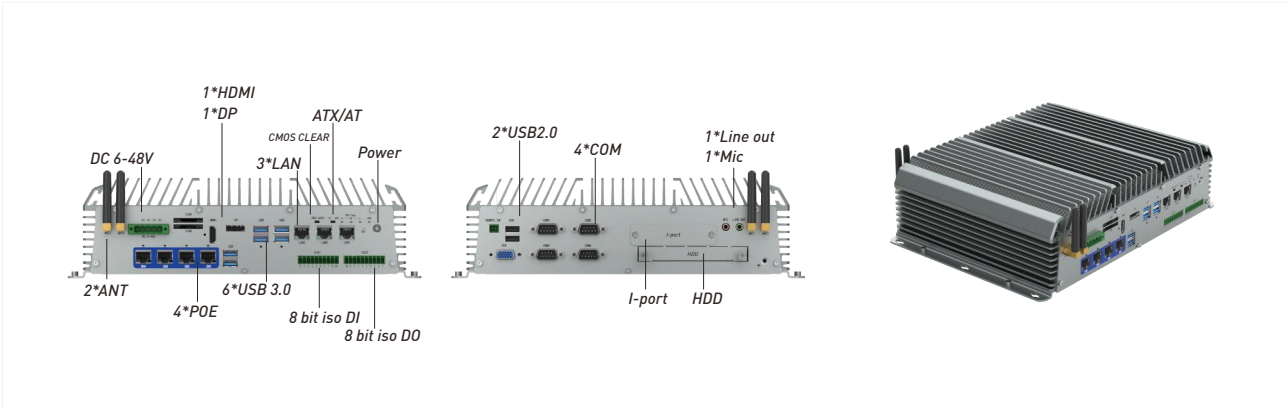
## Product Overview

KMDA-3601 is a high-performance box PC with aluminum chassis and fanless design. Equipped with the latest Intel® Skylake-S/Kabylake-S processor, supporting 4G and Wifi/BT wireless communication, DC 6-48V wide-voltage power supply, suitable for applications such as intelligent transportation, video security and machine vision,etc.

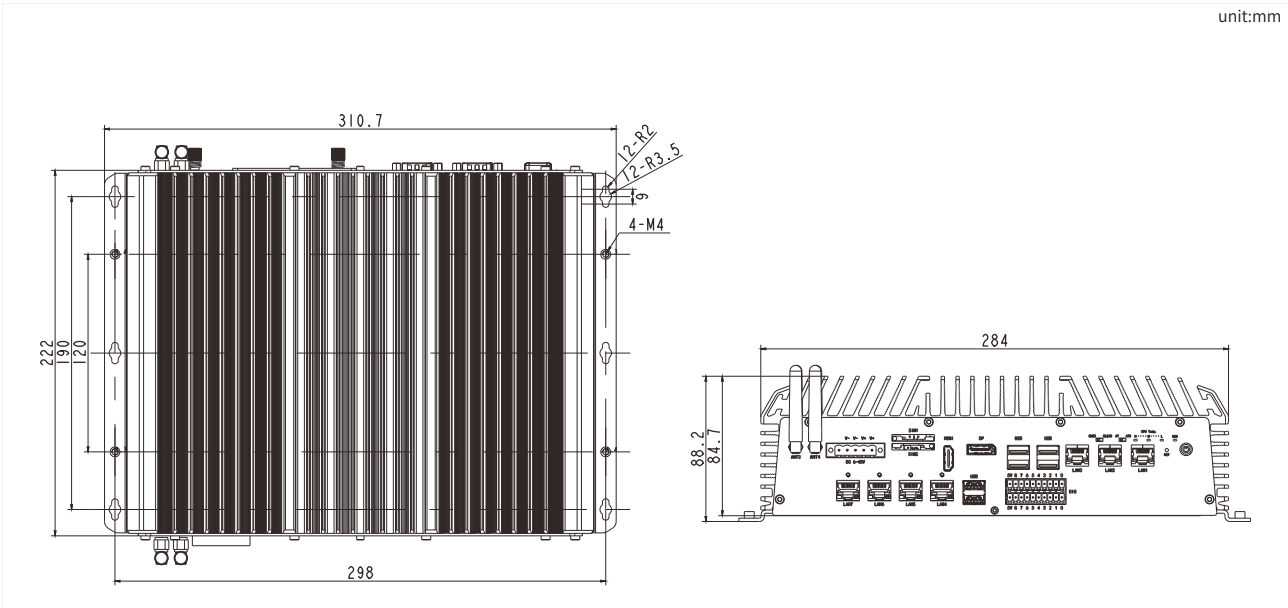
## Product Parameters

|                     |                                                                                                                                               |                     |                                                                                                             |
|---------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|---------------------|-------------------------------------------------------------------------------------------------------------|
| <b>Processor</b>    |                                                                                                                                               | <b>Expansion</b>    |                                                                                                             |
| CPU                 | Intel Skylake-S/Kabylake-S Celeron/Pentium/Core i3/i5/i7, Q170 chipset                                                                        | Expansion Port      | 1*Mini PCIe, with SIM slot, 1*half-length Mini PCIe, 1*M.2 B-key, with SIM slot,support dual 4G LTE/Wifi/BT |
| RAM                 | 2*260-Pin SODIMM, DDR4,2133MHz, Max. 32GB                                                                                                     |                     | 1*I-Port: optional 1*LPT, 1*USB2.0, 16-bit DIO, or Mini PCIe/M.2 Function card interface, i.e. serial port  |
| Graphics            | Intel Gen. 9 HD Graphics, HEVC/H265 HW HD codec, support 3 independent displays<br>DP:4096*2304@60Hz,VGA:2650*1600@60Hz, HDMI:3840*2160@30Hz, | <b>Power Supply</b> |                                                                                                             |
| LAN                 | 2*Intel I210AT PCIe ,10/100/1000Mbps ;<br>1*Intel I219 LM, support iVpro,<br>4*Intel I210AT PCIe, Full bandwidth POE,optional 8/11*LAN        | Input voltage       | DC 6~48V input,                                                                                             |
| USB                 | 6* USB3.0, 2*USB2.0 , 1*USB2.0 (build-in)                                                                                                     | Power consumption   | 38W(i5-7500T , 4GB RAM, 128G SSD)                                                                           |
| Display             | 1*DP+1*HDMI+1*VGA                                                                                                                             | <b>Mechanical</b>   |                                                                                                             |
| Audio               | 1*Line out+1*Mic, optional audio                                                                                                              | Structure           | Aluminum Chassis, SGCC frame                                                                                |
| Serial port /Others | 2*RS232/422/485, 2*RS232, 8/12-bit 2.5KV Iso. DI(1*10Pin Phoenix terminal), 8/12-bit 2.5KV Iso. DO (1*10Pin Phoenix terminal)                 | Color               | Silver gray                                                                                                 |
| DIO                 | Optional 16-bit TTL programming input and output/ 24-bit iso DIO                                                                              | Installation        | Desktop mounting                                                                                            |
| <b>Storage</b>      |                                                                                                                                               | Dimension(W*H*D)    | 284*222*84.7mm                                                                                              |
| Storage             | 2*2.5" SATA,HDD/SSD,1*mSATA full-height card,1*M.2 2242 B-key                                                                                 | Net Weight          | 4.65KG                                                                                                      |
| <b>Others</b>       |                                                                                                                                               | <b>Environment</b>  |                                                                                                             |
| Indicator light     | 1*power indicator, 1*hard disk indicator, 3*CPU temperature indicator (Red is alarm, Yellow is high temperature, Green is normal temperature) | Operating Temp      | -20°C~65°C – Fanless design, wide-temperature SSD, -10°C~55°C – Fanless design, normal temperature HDD      |
| Control switch      | 1*Power switch, 1*Reset switch; 1*2pin terminal switch signal, 1*AT/ATX selector switch, 1*CMOS/Clear selector switch                         | Storage Temp        | -40°C~85°C                                                                                                  |
| Watchdog timer      | Watchdog timeout programmable via software 1 to 255 second                                                                                    | Storage Humidity    | 10~90%@40°C, No condensation                                                                                |
|                     |                                                                                                                                               | Vibration           | 5 grms/5~500Hz/random/during operation (SSD)<br>1 grms/5~500Hz/random/during operation (HDD)                |
|                     |                                                                                                                                               | Shock               | 50g peak acceleration(duration 11ms) with SSD, 20g peak acceleration(duration 11ms) with HDD                |
|                     |                                                                                                                                               | Certificate/EMC     | CE/FCC Class B                                                                                              |
| <b>OS</b>           |                                                                                                                                               |                     |                                                                                                             |
| OS                  |                                                                                                                                               | OS                  | Windows 7, Windows 10, Linux Fedora,Ubuntu                                                                  |

## I/O View



## Dimensions



## Ordering Information

| Model          | Processor                               | Specifications                                                                                                                                                  |
|----------------|-----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| KMDA-3601/S001 | Intel® Q170 chip+ SKL/KAL-S LGA1151 CPU | 3*LAN, 4*POE, 6*USB3.0, 3*USB2.0, 4*COM,16-bit Iso.DIO, 1*M.2, 2*Mini PCIe, 1*HDMI, 1*DP, 1*VGA, 1*Line out, 1*Mic, 1*I-port, 2*2.5" SATA bay 1*mSATA, DC 6~48V |
| KMDA-3601/S002 | Intel® Q170 chip+ SKL/KAL-S LGA1151 CPU | 7*LAN, 6*USB3.0, 3*USB2.0, 4*COM, 16-bit DIO,1*M.2, 2*Mini PCIe, 1*HDMI, 1*DP, 1*VGA, 1*Line out, 1*Mic, 1*I-port, 2*2.5" SATA bay, 1*mSATA, DC 6~48V           |
| KMDA-3601/S003 | Intel® Q170 chip+ SKL/KAL-S LGA1151 CPU | 11*LAN, 4*USB3.0, 3*USB2.0, 4*COM, 24-bit Iso. DIO,1*M.2, 2*Mini PCIe, 1*HDMI, 1*DP, 1*VGA, 1*Line out, 1*Mic, 1*I-port, 2*2.5" SATA bay, 1*mSATA, DC 6~48V     |
| PA-120DC19     |                                         | AC/DC power adapter,DC19V/6.32A,120W                                                                                                                            |
| PA-220DC24     |                                         | AC/DC Power Adapter,DC24V@9.17A ,220W                                                                                                                           |

# KMDA-3602

Intel Skylake-S/Kabylake-S CPU,3\*LAN,4\*POE,6\*USB3.0,MXM3.1GPU,6\*4K display, 16-bit iso DIO,ITPS vehicle power

## Key Specification

- \* Aluminum Chassis, CPU with fanless heat dissipation design
- \* Intel Skylake-S/Kabylake-S CPU
- \* 2\*DDR4 2133/2400MHz SODIMM RAM, Max. 32GB
- \* MXM3.1 NVIDIA/AMDGPU module
- \* Integrated 1\*DP+1\*HDMI+1\*VGA, Independent Graphics 3\*DP+1\*HDMI
- \* 3\*Gig LAN, 4\*POE, 6\*USB3.0,3\*USB2.0
- \* 2\*COM, 16-bit iso DIO, 1\*Line out,1\*Mic,2\*Mini PCIe
- \* 1\*M.2 2242B-Key
- \* 1\*2.5" SATA3 bay, 1\*mSATA, Anti-vibration design
- \* DC 6~48V wide voltage power supply, ITPS vehicle management function



## Product Overview

KMDA-3602 is a high-performance vehicle computer with the latest combination of active and passive heat dissipation design. It is equipped with Intel®Skylake-S/Kabylake-S processor, DC 6-48V wide voltage power supply, ITPS time-delay switch function. CPU+GPU dual processor, high performance, multiple network ports, multiple displays, multiple wireless communications and shock absorption design. It is suitable for mobile law enforcement vehicles and special vehicles.

## Product Parameters

### Processor

|                     |                                                                                                                                                                                                                                              |
|---------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CPU                 | Intel Skylake-S/Kabylake-S Celeron/Pentium/Core i3/i5/i7 Q170 chipset                                                                                                                                                                        |
| RAM                 | 2*260-Pin ,DDR4,2133/2400MHz, Max. 32GB                                                                                                                                                                                                      |
| Graphics            | Intel® Gen. 9 HD Graphics, HEVC/H265 HW HD codec<br>Integrated DP/HDMI, Support dual 4K ultra-high-definition display,<br>Independent Graphics 3*DP+1*HDMI four 4K display<br>1*MXM 3.1 GPU Module, support up to 120W power consumption GPU |
| LAN                 | 2*Intel I210AT PCIe ,10/100/1000Mbps ;<br>1*Intel I219 LM, support iVpro,<br>4*Intel I210AT PCIe ,Full bandwidth POE,4*LAN (optional)                                                                                                        |
| USB                 | 6* USB3.0, 2*USB2.0 , 1*USB2.0 (build-in)                                                                                                                                                                                                    |
| Display             | Integrated 1*DP+1*HDMI+1*VGA ; Discrete 3*DP+1*HDMI                                                                                                                                                                                          |
| Audio               | 1*Line out+1*Mic, optional audio                                                                                                                                                                                                             |
| Serial port /Others | 2*RS232/422/485<br>8/12-bit 2.5KV Optically isolated input (1*10Pin Phoenix terminal)                                                                                                                                                        |
| DIO                 | 8/12-bit 2.5KV Optically isolated output (1*10PinPhoenix terminal)<br>Optional 16-bit TTL programming input and output /24-bit iso DIO                                                                                                       |

### Storage

|         |                                                                |
|---------|----------------------------------------------------------------|
| Storage | 1*2.5" SATA3,HDD/SSD,1*mSATA full-height card,1*M.2 2242 B-key |
|---------|----------------------------------------------------------------|

### Others

|                 |                                                                                                                                                  |
|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| Indicator light | 1*power indicator, 1*hard disk indicator, 3*CPU temperature indicator<br>(Red is alarm, Yellow is high temperature, Green is normal temperature) |
| Control switch  | 1*Power switch, 1*Reset switch; 1*2pin terminal switch signal,<br>1*AT/ATX selector switch, 1*CMOS/Clear selector switch                         |
| Watchdog timer  | Watchdog timeout programmable via software 1 to 255 second                                                                                       |

### Expansion

|                |                                                                                                                                                                                                                            |
|----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Expansion Port | 1*Mini PCIe, with SIM slot, 1*half-length Mini PCIe,<br>1*M.2 B-key,with SIM slot,,support dual 4G LTE/Wifi/BT and GPS/BDS navigation,<br>I-Port:optional 1*LPT、16-bit DIO, or 2*Mini PCIe/M.2 Function card, i.e. CAN BUS |
|----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

### Power Supply

|                   |                                  |
|-------------------|----------------------------------|
| Input voltage     | DC 6~48V input,                  |
| Power consumption | 115.92W(I5-7500T +GTX 1060M GPU) |

### Mechanical

|                  |                                           |
|------------------|-------------------------------------------|
| Structure        | Aluminum Chassis, SGCC frame              |
| Color            | Silver gray                               |
| Installation     | Desktop mounting,Anti-vibration plane     |
| Dimension(W*H*D) | 284*222*81mm                              |
| Net Weight       | 5.60KG (with Anti-vibration plane,no GPU) |

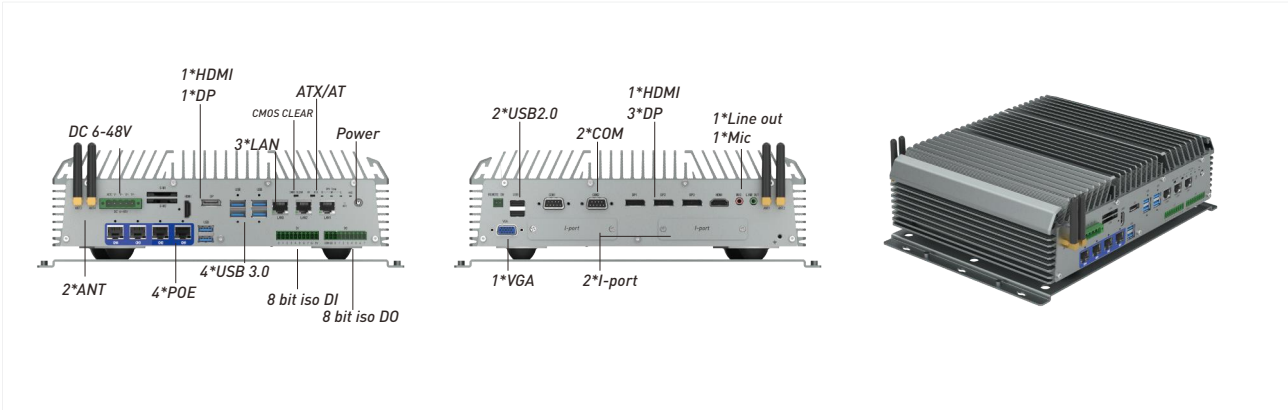
### Environment

|                  |                                                                                                  |
|------------------|--------------------------------------------------------------------------------------------------|
| Operating Temp   | -20℃~65℃ – 35WCPU,Fanless design,no GPU,<br>-10℃~50℃ – 35WCPU,with Fan, 80WGPU;                  |
| Storage Temp     | -40℃~85℃                                                                                         |
| Storage Humidity | 10~90%@40℃, No condensation                                                                      |
| Vibration        | 5.5 grms/5~500Hz/random/during operation (SSD)<br>1.5 grms/5~500Hz/random/during operation (HDD) |
| Shock            | 55g peak acceleration(duration 11ms) with SSD;<br>25g peak acceleration(duration 11ms) with HDD  |
| Certificate/EMC  | CE/FCC Class B,E-Mark                                                                            |

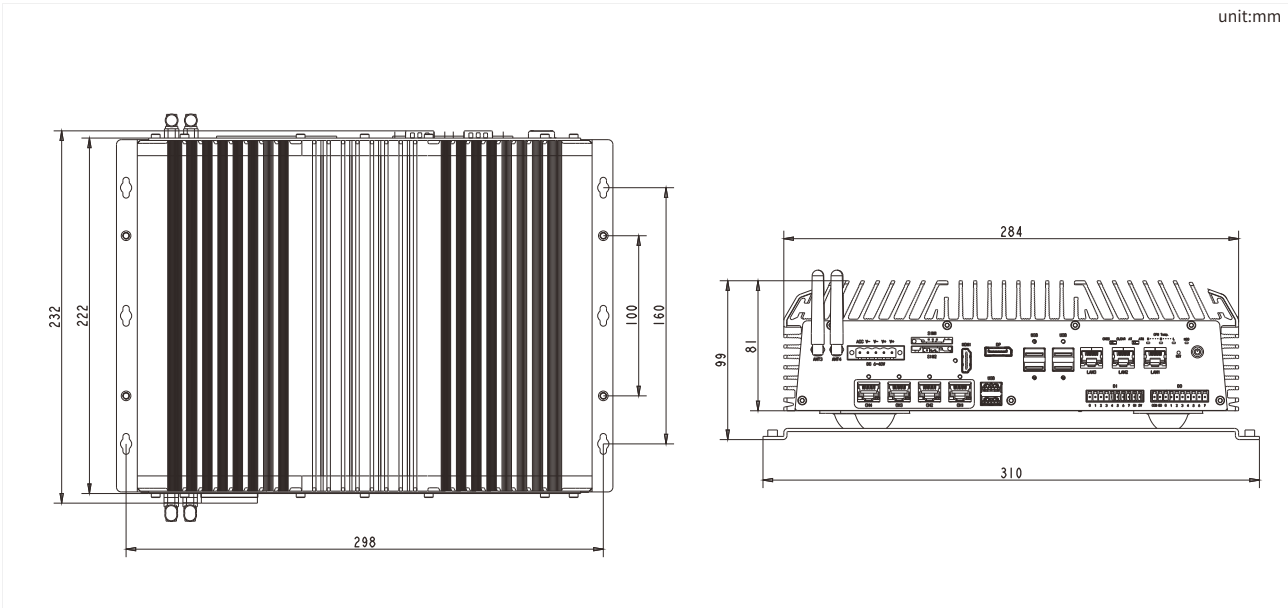
### OS

|    |                                               |
|----|-----------------------------------------------|
| OS | Windows 7, Windows 10,<br>Linux Fedora,Ubuntu |
|----|-----------------------------------------------|

## I/O View



## Dimensions



## Ordering Information

| Model                | Processor                                   | Specifications                                                                                                                                                                        |
|----------------------|---------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| KMDA-3602/S001       | Intel® Q170 chip set+ SKL/KAL-S LGA1151 CPU | MXM3.1 GPU slot , 3*LAN, 4*POE, 6*USB3.0, 3*USB2.0, 2*COM, 16-bit sio DIO, 1*M.2, 2*Mini PCIe,2*HDMI,4*DP,1*VGA, 1*Line out,1*Mic, 2*I-port, 1*2.5" SATA3 bay,1*mSATA, ITPS, DC 6~48V |
| KMDA-3602/T001       |                                             | 7*LAN, 6*USB3.0, 3*USB2.0, 2*COM,16-bit DIO, 1*M.2, 2*Mini PCIe, 1*HDMI, 1*DP, 1*VGA, 1*Line out, 1*Mic, 2*I-port, 1*2.5" SATA3 bay,1*mSATA, ITPS DC 6~48V                            |
| NVIDIA GT 1030-2G    |                                             | MXM3.1 Type A, NVIDIA GT 1030,GDDR5 2GB,64bit,384 CUDA Cores, with radiator                                                                                                           |
| NVIDIA GTX 1050-2G   |                                             | MXM3.1 Type A, NVIDIA GTX 1050,GDDR5 2GB,128bit,768 CUDA Cores, with radiator                                                                                                         |
| NVIDIA GTX 1050TI-4G |                                             | MXM3.1 Type A, NVIDIA GTX 1050TI,GDDR5 4GB,128bit,768 CUDA Cores, with radiator                                                                                                       |
| NVIDIA GTX 1060M-6G  |                                             | MXM3.1 Type B, NVIDIA GTX 1060M,GDDR5 6GB,192bit,1280 CUDA Cores, with radiator                                                                                                       |
| NVIDIA GTX 1070M-8G  |                                             | MXM3.1 Type B, NVIDIA GTX 1070M,GDDR5 8GB,256bit,2048 CUDA Cores, with radiator                                                                                                       |
| VIDIA GTX 1650-4G    |                                             | MXM3.1 Type A, NVIDIA GTX 1650,GDDR5 4GB,128bit, 896 CUDA Cores, with radiator                                                                                                        |
| NVIDIA GTX 1660S-6G  |                                             | MXM3.1 Type B, NVIDIA GTX 1660S,GDDR6 6GB,192bit,1408 CUDA Cores, with radiator                                                                                                       |
| MLU220-MXM           |                                             | MXM3.1 Type A, Cambricon MLU-220, LPDDR4 8GB,64bit,16TOPS(INT8), with radiator                                                                                                        |
| PA-120DC19           |                                             | AC/DC power adapter,DC19V/6.32A,120W                                                                                                                                                  |
| PA-220DC24           |                                             | AC/DC power adapter,DC24V@9.17A ,220W                                                                                                                                                 |



# KMDA-3820

Intel® Skylake-U/Kabylake-U CPU, 2/3\*LAN, 7\*USB, 4\*COM, Dual 4K display, 8/24-bit DIO, iVpro, 2\*PCIe/PCI slot, DC IN 12~24V

## Key Specification

- Aluminum Chassis, fanless heat dissipation design
- Intel Skylake-U/Kabylake-U CPU
- 1\*DDR4 2133MHz SODIMM RAM, Max. 16GB
- 1\*HDMI and 1\*DP dual 4K display, 1\*VGA
- 2/3\*Gig LAN, 4\*USB3.0, 3\*USB2.0 (one is built-in)
- 4\*COM, 8-bit DIO, 1\*Line out,1\*Mic
- 2\*PCIeX4/PCI slot, 1\*Mini PCIe(PCIe+USB)
- 1\*mSATA, 1\*2.5" SATA bay, Anti-vibration design
- Support Intel vPro technology and optional TPM 2.0 security encryption
- DC 12~24V wide voltage power supply
- Half-open L-shaped folding cover, convenient for disassembly and assembly of functional modules and hard drives



## Product Overview

KMDA-3820 is a new industrial design box PC, with aluminum chassis and fanless design, equipped with Intel® Skylake-U/Kabylake-U processor, optional support TPM2.0 and support iVpro technology, DC 12~24V. L-shaped folding Cover design makes function modules installation easily, very suitable for AI, ITS, Machine Vision and other fields.

## Product Parameters

### Processor

|            |                                                                                                                    |
|------------|--------------------------------------------------------------------------------------------------------------------|
| CPU        | Intel Skylake-U /Kabylake-U /<br>Celeron/Core i3/i5/i7                                                             |
| RAM        | 1*260-Pin ,DDR4,2133MHz, Max. 16GB                                                                                 |
| Graphics   | Intel Gen. 9th HD Graphics, HEVC/H265 HW HD codec,<br>HDMI:4096*2304@24Hz,<br>DP:4096*2304@60Hz,VGA:1920*1200@60Hz |
| LAN        | 2*Intel I211AT PCIe ,10/100/1000Mbps ;<br>1*Intel I219 LM, support iVpro,                                          |
| USB        | 4* USB3.0, 2*USB2.0 , 1*USB2.0 (build-in)                                                                          |
| Display    | 1*DP+1*HDMI+1*VGA                                                                                                  |
| Audio      | 1*Line out+1*Mic, Realtek ALC662VD                                                                                 |
| COM/Others | 2*RS232/422/485, 2*RS232, 1*PS/2 (Mouse and keyboard)                                                              |
| DIO        | 8-bit DIO, TTL Programmable input-output (2*5Pin)<br>Optional 16-bit DIO, TTL, Programmable input and output       |

### Storage

|         |                                                                 |
|---------|-----------------------------------------------------------------|
| Storage | 1*2.5" SATA3,HDD/SSD,1*mSATA full-height card,Support AHCI mode |
|---------|-----------------------------------------------------------------|

### Others

|          |                                                                                                                             |
|----------|-----------------------------------------------------------------------------------------------------------------------------|
| LED      | 1*power LED, 1*hard disk LED, 3*CPU temperature LED (Red is alarm, Yellow is high temperature, Green is normal temperature) |
| Switch   | 1*Power switch (front panel), 1*2 pin terminal switch signal (front panel), 1*AT/ATX selector switch (front panel)          |
| WDT      | Watchdog timeout programmable via software 1 to 255 second                                                                  |
| TCPM/TPM | support TPM2.0 (optional)                                                                                                   |

### Expansion

|           |                                                                                                            |
|-----------|------------------------------------------------------------------------------------------------------------|
| Expansion | 1*Mini PCIe, with SIM slot, support 4G LTE/Wifi/BT,<br>1* PCIe X4 (X4) +1*PCIe X4 (X1) ;<br>or 2*32bit PCI |
|-----------|------------------------------------------------------------------------------------------------------------|

### Power Supply

|        |                             |
|--------|-----------------------------|
| Power& | DC 12~24V input,            |
| TDP    | 58.56W (I5-7200U 16GB DDR4) |

### Mechanical

|                  |                              |
|------------------|------------------------------|
| Structure        | Aluminum Chassis, SGCC frame |
| Color            | Silver gray                  |
| Installation     | Desktop mounting             |
| Dimension(W*H*D) | 200*200*128.3mm              |
| Weight           | 3.65KG                       |

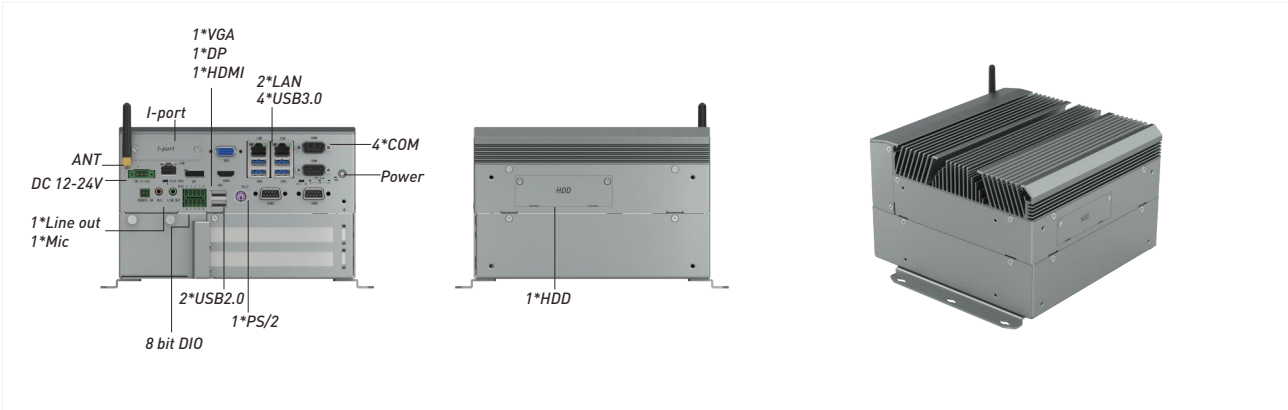
### Environment

|                  |                                                                                                                                     |
|------------------|-------------------------------------------------------------------------------------------------------------------------------------|
| Operating Temp   | -20℃~70℃ – Fanless design, with air flow, wide-temperature SSD;<br>-10℃~50℃ – Fanless design, with air flow, normal temperature HDD |
| Storage Temp     | -40℃~85℃                                                                                                                            |
| Storage Humidity | 10~90%@40℃, No condensation                                                                                                         |
| Vibration        | 5 grms/5~500Hz/random/during operation (SSD)<br>1 grms/5~500Hz/random/during operation (HDD)                                        |
| Shock            | 50g peak acceleration(duration 11ms) with SSD;<br>20g peak acceleration(duration 11ms) with HDD                                     |
| Certificate/EMC  | CE/FCC Class A                                                                                                                      |

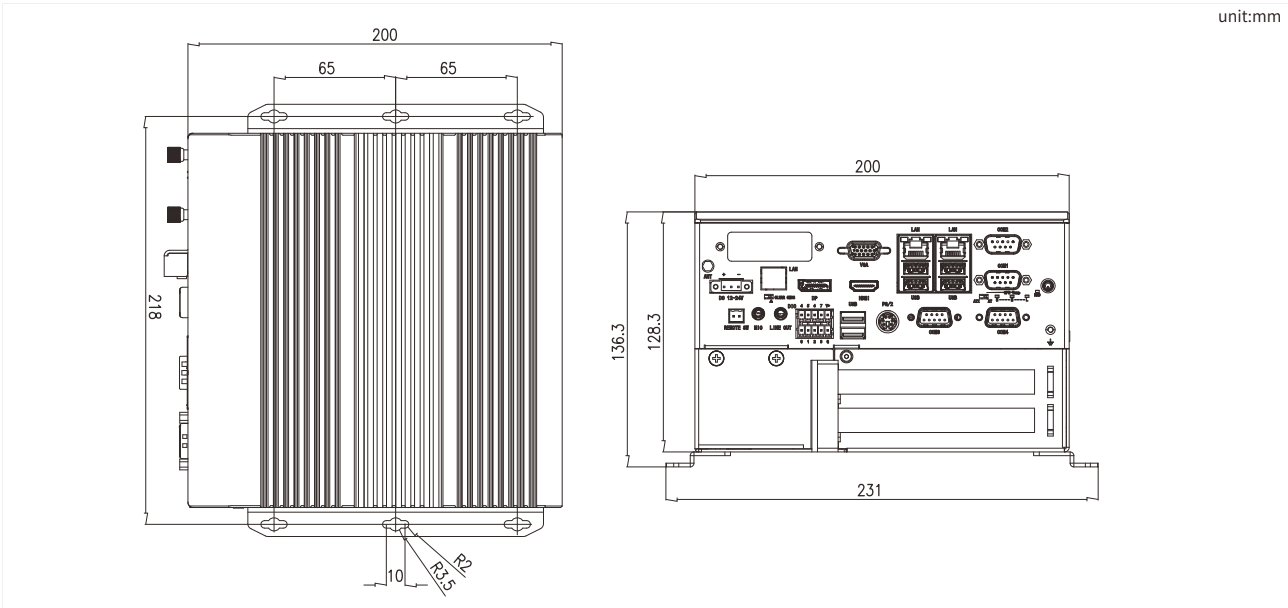
### OS

|    |                                               |
|----|-----------------------------------------------|
| OS | Windows 7, Windows 10,<br>Linux Fedora,Ubuntu |
|----|-----------------------------------------------|

## I/O View



## Dimensions



## Ordering Information

| Model          | Processor                 | Specifications                                                                                                                                       | Expansion                                                                                          |
|----------------|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|
| KMDA-3820/S001 | Intel I3-6100U/I3-7100U   | 1*DDR4 SODIMM, 3*G-LAN, 4*USB3.0, 3*USB2.0, 4*COM, 8bit.DIO, 1*Mini PCIe, 1*HDMI, 1*DP, 1*VGA, Audio out和Mic, 1*2.5"SATA, 1*mSATA, I-Port, DC 12-24V | <b>Standard:ECX-238</b><br>1*PCIeX4(X4)+1*PCIeX4(X1)<br><br><b>Optional:ECI-239</b><br>2*32bit PCI |
| KMDA-3820/S002 | Intel I5-6200U/I5-7200U   |                                                                                                                                                      |                                                                                                    |
| KMDA-3820/S003 | Intel I7-6500U/I7-7500U   |                                                                                                                                                      |                                                                                                    |
| KMDA-3820/S004 | Intel Celeron 3855U/3865U |                                                                                                                                                      |                                                                                                    |
| PA-60DC12      |                           | AC/DC adapter, DC 12V/5A 60W                                                                                                                         |                                                                                                    |

# KMDA-3610

Intel® Skylake-S/Kabylake-S CPU, 2\*LAN, 4\*USB3.0, HDMI, DP, VGA, 3 Displays, 2\*SATA3, DC 12~24V wide voltage power supply

## Key Specification

- Aluminum Chassis, fanless heat dissipation design
- Intel Skylake-S/Kabylake-S CPU
- 2\*DDR4 2400/2133MHz SODIMM RAM, Max. 32GB
- 1\*DP, 1\*HDMI & 1\*VGA three display
- 2\*LAN, 4\*USB3.0, 3\*USB2.0, 4\*COM, (8+16)- bit DIO
- 1\*Mini PCIe(PCle+USB),1\*M.2 2242 B-Key
- 1\*mSATA, 2\*2.5" SATA3
- Optional support TPM2.0 security encryption
- DC 12~24V wide voltage power supply



## Product Overview

KMDA-3610 is a fanless high-performance box PC, equipped with Intel® Skylake-S/Kabylake-S series processors, and supports 4G and Wifi/BT wireless functions. DC 12~24V wide voltage power supply, high performance, rich IO function interface. It is suitable for applications in automation, machine vision and intelligent transportation industries.

## Product Parameters

### Processor

|                     |                                                                                                                                                              |
|---------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CPU                 | Intel Skylake-S/Kabylake-S Celeron/Pentium/Core i3/i5/i7, H110 chipset                                                                                       |
| RAM                 | 2*260-Pin ,DDR4,2133/2400MHz, Max. 32GB                                                                                                                      |
| Graphics            | Intel Gen. 9 HD Graphics,HEVC/H265 HW HD codec, HDMI:3840*2160@30Hz, DP: 4096*2304@60Hz, VGA:1920*1200@60Hz, Support 2 independent display, 1 mirror display |
| LAN                 | 1*Intel I211AT PCIe ,10/100/1000Mbps; 1*Intel I219 LM,                                                                                                       |
| USB                 | 4* USB3.0, 2*USB2.0 , 1*USB2.0 (build-in)                                                                                                                    |
| Display             | 1*DP+1*HDMI+1*VGA                                                                                                                                            |
| Audio               | 1*Line out+1*Mic,Realtek ALC662VD                                                                                                                            |
| Serial port /Others | 2*RS232/422/485, 2*RS232,1*PS/2 (Mouse and keyboard)                                                                                                         |
| DIO                 | 8-bit DIO, TTL Programmable input and output (2*5Pin)<br>16-bit DIO, TTL Programmable input and output (DB25)                                                |

### Storage

|         |                                                            |
|---------|------------------------------------------------------------|
| Storage | 2*2.5" SATA3,HDD,1*mSATA full-height card,1*M.2 2242 B-key |
|---------|------------------------------------------------------------|

### Others

|                |                                                                                                                             |
|----------------|-----------------------------------------------------------------------------------------------------------------------------|
| LED light      | 1*power LED, 1*hard disk LED, 3*CPU temperature LED (Red is alarm, Yellow is high temperature, Green is normal temperature) |
| Control switch | 1*Power switch, 1*Reset switch; 1*2pin terminal switch signal, 1*AT/ATX selector switch, 1*CMOS/Clear selector switch       |
| Watchdog timer | Watchdog timeout programmable via software 1 to 255 second                                                                  |
| TCPM/TPM       | support TPM2.0 (optional)                                                                                                   |

### Expansion

|                |                                                      |
|----------------|------------------------------------------------------|
| Expansion Port | 1*Mini PCIe, with SIM slot, support m4G LTE/Wifi/BT, |
|----------------|------------------------------------------------------|

### Power Supply

|                   |                               |
|-------------------|-------------------------------|
| Input voltage     | DC 12~24V input,              |
| Power consumption | 68.4W(I7-6700T CPU 16GB DDR4) |

### Mechanical

|                  |                        |
|------------------|------------------------|
| Structure        | Aluminum Chassis, SGCC |
| Color            | Silver gray            |
| Installation     | Desktop mounting       |
| Dimension(W*H*D) | 221*251*88mm           |
| Weight           | 4.84KG                 |

### Environment

|                  |                                                                                                         |
|------------------|---------------------------------------------------------------------------------------------------------|
| Operating Temp   | -20°C~65°C – with air flow, wide-temperature SSD,<br>-10°C~55°C – with air flow, normal temperature HDD |
| Storage Temp     | -40°C~85°C                                                                                              |
| Storage Humidity | 10~90%@40°C, No condensation                                                                            |
| Vibration        | 5 grms/5~500Hz/random/during operation (SSD)<br>1 grms/5~500Hz/random/during operation (HDD)            |
| Shock            | 50g peak acceleration(duration 11ms) with SSD;<br>20g peak acceleration(duration 11ms) with HDD         |
| Certificate/EMC  | CE/FCC Class A                                                                                          |

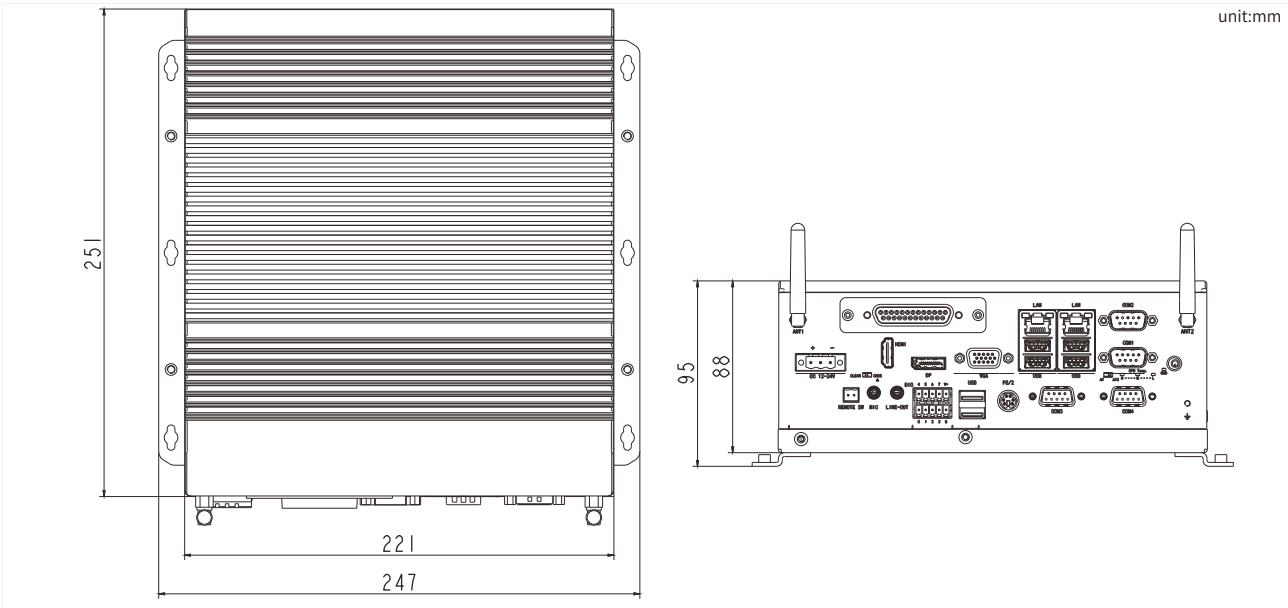
### OS

|    |                                               |
|----|-----------------------------------------------|
| OS | Windows 7, Windows 10,<br>Linux Fedora,Ubuntu |
|----|-----------------------------------------------|

## I/O View



## Dimensions



## Ordering Information

| Model          | Processor                               | Specifications                                                                                                                                                             |
|----------------|-----------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| KMDA-3610/S001 | Intel® Skylake-S/Kabylake-S LGA1151 CPU | H110 Chipset, 2*DDR4, 2*LAN, 4*USB3.0,3*USB2.0, 4*COM, 1*Mini PCIe, 1*HDMI, 1*DP, 1*VGA, 1*Line out,1*Mic, 8+16-bit DIO, 1*PS/2, 2*2.5" SATA bay, 1*M.2,1*mSATA, DC 12~24V |
| PA-120DC19     |                                         | AC/DC adapter, DC 19V/6.32A 120W                                                                                                                                           |
| AC-140         |                                         | 8-channel optical isolation input\8-channel high-power relay board                                                                                                         |



# KMDA-3920

Intel® Skylake-S/Kabylake-S CPU, 2\*LAN, 4\*USB3.0, PCIe X16+PCIe X4/2\*PCI expansion,DC 12~24V wide voltage power supply

## Key Specification

- Aluminum Chassis, SGCC frame
- Intel Skylake-S/Kabylake-S CPU
- 2\*DDR4 2400/2133MHz SODIMM RAM, 32GB max.
- 1\*DP, 1\*HDMI & 1\*VGA, Optional three independent displays(Intel Q170)
- 2\*LAN, 4\*USB3.0, 3\*USB2.0, 4\*COM, 8-bit DIO
- Support PCIe X16+PCIeX4 or 2\*PCI expansion
- 1\*Mini PCIe(PCIe+USB),1\*M.2 2242 B-Key
- 1\*mSATA, 2\*2.5" SATA3, support RAID0,1(Intel Q170)
- Optional TPM2.0 security encryption, support Intel vPro technology(Intel Q170)
- DC 12~24V wide voltage power supply



## Product Overview

KMDA-3920 is a high-performance box computer with expansion, equipped with Intel® Skylake-S/Kabylake-S series processors, H110/Q170 chipset, 2\*DDR4 2133/2400MHz dual-channel memory supports up to 32GB. The easy-to-detach L-shaped folding cover facilitates the installation of functional modules. It is very suitable for applications in video security, machine vision and intelligent AI industries.

## Product Parameters

### Processor

|            |                                                                                                                                                          |
|------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|
| CPU        | Intel Skylake-S/Kabylake-S Celeron/Pentium/Core i3/i5/i7 H110 chipset, optional Q170 chipset                                                             |
| RAM        | 2*260-Pin ,DDR4,2133/2400MHz, Max. 32GB                                                                                                                  |
| Graphics   | Intel Gen. 9 HD Graphics,HEVC/H265 HW HD codec, Support 3 independent displays(Intel Q170) , HDMI:3840*2160@30Hz, DP:4096*2304@60Hz,VGA: 1920*1200@60Hz, |
| LAN        | 1*Intel I211AT PCIe ,10/100/1000Mbps ; 1*Intel I219 LM, support iVpro (Intel Q170) ,                                                                     |
| USB        | 4* USB3.0, 2*USB2.0 , 1*USB2.0 (build-in)                                                                                                                |
| Display    | 1*DP+1*HDMI+1*VGA                                                                                                                                        |
| Audio      | 1*Line out+1*Mic, Realtek ALC662VD                                                                                                                       |
| COM/Others | 2*RS232/422/485, 2*RS232, 1*PS/2 (Mouse and keyboard)                                                                                                    |
| DIO        | 8-bit DIO, TTL Programmable input and output (1*10pin)                                                                                                   |

### Storage

|         |                                                                                         |
|---------|-----------------------------------------------------------------------------------------|
| Storage | 2*2.5" SATA3,HDD,support RAID0,1(Intel Q170), 1*mSATA full-height card,1*M.2 2242 B-key |
|---------|-----------------------------------------------------------------------------------------|

### Others

|           |                                                                                                                       |
|-----------|-----------------------------------------------------------------------------------------------------------------------|
| LED       | 1*power LED, 1*HDD LED, 3*CPU temperature LED (Red is alarm, Yellow is high temperature, Green is normal temperature) |
| Switch    | 1*Power SW, 1*Reset SW; 1*2pin terminal SW, 1*AT/ATX SW, 1*Clear CMOS                                                 |
| WDT       | Watchdog timeout programmable via software 1 to 255 second                                                            |
| TCPPM/TPM | support TPM2.0 (optional)                                                                                             |

### Expansion

|           |                                                                                        |
|-----------|----------------------------------------------------------------------------------------|
| Expansion | 1*Mini PCIe,with SIM slot, support 4G LTE/Wifi/BT, 1*PCIe X16+1*PCIe X4,or 2*32bit PCI |
|-----------|----------------------------------------------------------------------------------------|

### Power Supply

|        |                                                    |
|--------|----------------------------------------------------|
| Power& | DC 12~24V input,                                   |
| TDP    | 68.78W (I7-6700T , 4GB DDR4, 1TB HDD,Install card) |

### Mechanical

|                  |                                 |
|------------------|---------------------------------|
| Structure        | Aluminum Chassis, SGCC frame    |
| Color            | Silver gray                     |
| Installation     | Desktop mounting, wall mounting |
| Dimension(W*H*D) | 220*250*131mm                   |
| Weight           | 5.27KG                          |

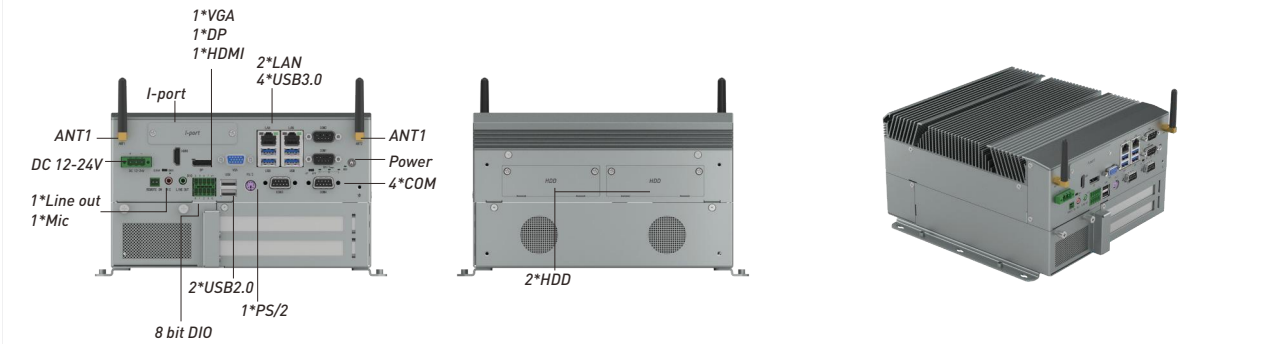
### Environment

|                  |                                                                                                 |
|------------------|-------------------------------------------------------------------------------------------------|
| Operating Temp   | -20°C~65°C SSD, with air flow, -10°C~55°C HDD, with air flow;                                   |
| Storage Temp     | -40°C~85°C                                                                                      |
| Storage Humidity | 10~90%@40°C, No condensation                                                                    |
| Vibration        | 5 grms/5~500Hz/random/during operation (SSD)<br>1 grms/5~500Hz/random/during operation (HDD)    |
| Shock            | 50g peak acceleration(duration 11ms) with SSD;<br>20g peak acceleration(duration 11ms) with HDD |
| Certificate/EMC  | CE/FCC Class A                                                                                  |

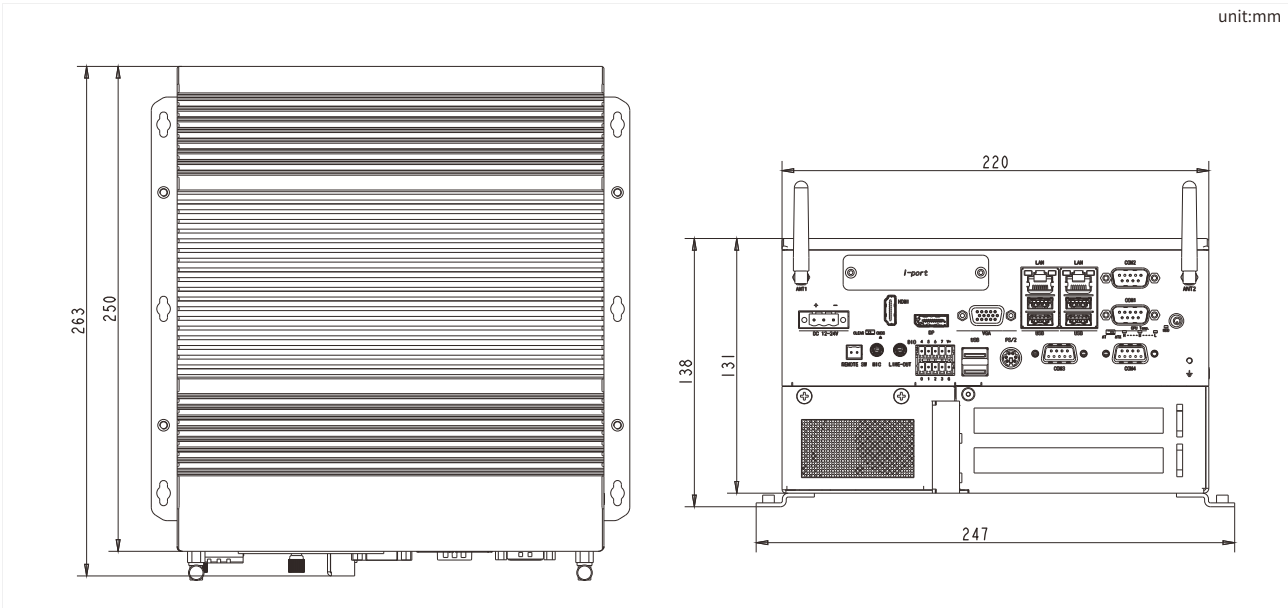
### OS

|    |                                            |
|----|--------------------------------------------|
| OS | Windows 7, Windows 10, Linux Fedora,Ubuntu |
|----|--------------------------------------------|

## I/O View



## Dimensions



## Ordering Information

| Model          | Processor                                             | Specifications                                                                                                                                            | Expansion                                              |
|----------------|-------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------|
| KMDA-3920/S001 | Intel® Skylake-S/Kabylake-S LGA1151 CPU,H110 Chipset  | 2*DDR4, 2*LAN, 4*USB3.0,3*USB2.0, 4*COM, 1*Mini PCIe, 1*HDMI, 1*DP, 1*VGA, 1*Line out,1*Mic, 8-bit DIO, 1*PS/2, 2*2.5"SATA bay, 1*M.2, 1*mSATA, DC 12~24V | <b>Standard:ECX-241</b><br>1*PCIeX16(X16)+1*PCIeX4(X4) |
| KMDA-3920/S002 | Intel® Skylake-S/Kabylake-S LGA1151 CPU, Q170 Chipset |                                                                                                                                                           | <b>Optional:ECI-245</b><br>2*32bit PCI                 |
| PA-120DC19     |                                                       | AC/DC adapter, DC19V/6.32A 120W                                                                                                                           |                                                        |
| PA-220DC24     |                                                       | AC/DC adapter, DC24V/9.17A 220W                                                                                                                           |                                                        |
| AC-140         |                                                       | 8-channel optical isolation input\8-channel high-power relay board                                                                                        |                                                        |

# KMDA-3920ETC

Intel® Skylake-S/Kabylake-S CPU, 2\*LAN, 4\*USB3.0, HDMI, DP, VGA, 10\*COM, 16+16-bit DIO, 1\*PCIeX16/1\*PCI expansion,DC 12~24V

## Key Specification

- Aluminum Chassis, fanless heat dissipation design
- Intel Skylake-S/Kabylake-S CPU
- 2\*DDR4 2400/2133MHz SODIMM RAM, 32GB max.
- 1\*DP, 1\*HDMI & 1\*VGA, Optional three independent displays(Intel Q170)
- 2\*LAN, 4\*USB3.0, 10\*COM, 16+16-bit DIO
- Support 1\*PCIe X16 or 1\*PCI expansion slot
- 1\*Mini PCIe(PCIe+USB),1\*M.2 2242 B-Key
- 1\*mSATA, 2\*2.5" SATA3, support RAID0,1(Intel Q170)
- Optional TPM2.0 security encryption, support Intel vPro technology (Intel Q170)
- DC 12~24V wide voltage power supply



## Product Overview

KMDA-3920-ETC is a fanless box computer with expansion, equipped with Intel® Skylake-S/Kabylake-S processor, H110/Q170 chipset, 2\*DDR4 2133/2400MHz, dual channel memory, support Max. 32GB. It is very suitable for video security, machine vision and highway Electronic Toll Collection(ETC) industry applications.

## Product Parameters

### Processor

|            |                                                                                                                                                          |
|------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|
| CPU        | Intel Skylake-S/Kabylake-S Celeron/Pentium/Core i3/i5/i7, H110 chipset,optional Q170 chipset                                                             |
| RAM        | 2*260-Pin ,DDR4,2133/2400MHz, Max. 32GB                                                                                                                  |
| Graphics   | Intel Gen. 9 HD Graphics,HEVC/H265 HW HD codec, HDMI:3840*2160@30Hz, Support 3 independent displays(Intel Q170), DP: 4096*2304@60Hz,VGA: 1920*1200@60Hz, |
| LAN        | 1*Intel I211AT/I210AT , 10-1000M;<br>1*Intel I219 LM, support iVpro (Intel Q170) ,                                                                       |
| USB        | 4* USB3.0, 1*USB2.0 (build-in)                                                                                                                           |
| Display    | 1*DP+1*HDMI+1*VGA                                                                                                                                        |
| Audio      | 1*Line out+1*Mic, Realtek ALC662VD                                                                                                                       |
| COM/Others | 2*RS232/422/485, 8*RS232, 1*PS/2 (Mouse and keyboard)                                                                                                    |
| DIO        | 16-bit DIO, TTL Programmable input and output (2*10Pin)<br>16-bit DIO, TTL Programmable input and output (DB25)                                          |

### Storage

|         |                                                                                            |
|---------|--------------------------------------------------------------------------------------------|
| Storage | 2*2.5" SATA3,HDD,support RAID0,1(Intel Q170),<br>1*mSATA full-height card,1*M.2 2242 B-key |
|---------|--------------------------------------------------------------------------------------------|

### Others

|          |                                                                                                                             |
|----------|-----------------------------------------------------------------------------------------------------------------------------|
| LED      | 1*power LED, 1*hard disk LED, 3*CPU temperature LED (Red is alarm, Yellow is high temperature, Green is normal temperature) |
| Switch   | 1*Power switch, 1*Reset switch; 1*2pin terminal switch signal, 1*AT/ATX selector switch, 1*CMOS/Clear selector switch       |
| WDT      | Watchdog timeout programmable via software 1 to 255 second                                                                  |
| TCPM/TPM | support TPM2.0 (optional)                                                                                                   |

### Expansion

|           |                                                                                                           |
|-----------|-----------------------------------------------------------------------------------------------------------|
| Expansion | 1*PCIe3.0X16(X16)+1*PCIe3.0X4(X4)<br>or 2*32bit PCI<br>1*Mini PCIe, withSIM slot, support 4G LTE/Wifi/BT, |
|-----------|-----------------------------------------------------------------------------------------------------------|

### Power Supply

|            |                                                                        |
|------------|------------------------------------------------------------------------|
| Power& TDP | DC 12~24V input,<br>68.78W (I7-6700T , 4GB DDR4, 1TB HDD,Install card) |
|------------|------------------------------------------------------------------------|

### Mechanical

|                  |                                 |
|------------------|---------------------------------|
| Structure        | Aluminum Chassis, SGCC frame    |
| Color            | Silver gray                     |
| Installation     | Desktop mounting, wall mounting |
| Dimension(W*H*D) | 220*250**131.5mm                |
| Weight           | 5.27KG                          |

### Environment

|                  |                                                                                                 |
|------------------|-------------------------------------------------------------------------------------------------|
| Operating Temp   | -20°C~65°C SSD, with air flow,<br>-10°C~55°C HDD, with air flow;                                |
| Storage Temp     | -40°C~85°C                                                                                      |
| Storage Humidity | 10~90%@40°C, No condensation                                                                    |
| Vibration        | 5 grms/5~500Hz/random/during operation (SSD)<br>1 grms/5~500Hz/random/during operation (HDD)    |
| Shock            | 50g peak acceleration(duration 11ms) with SSD;<br>20g peak acceleration(duration 11ms) with HDD |
| Certificate/EMC  | CE/FCC Class A                                                                                  |

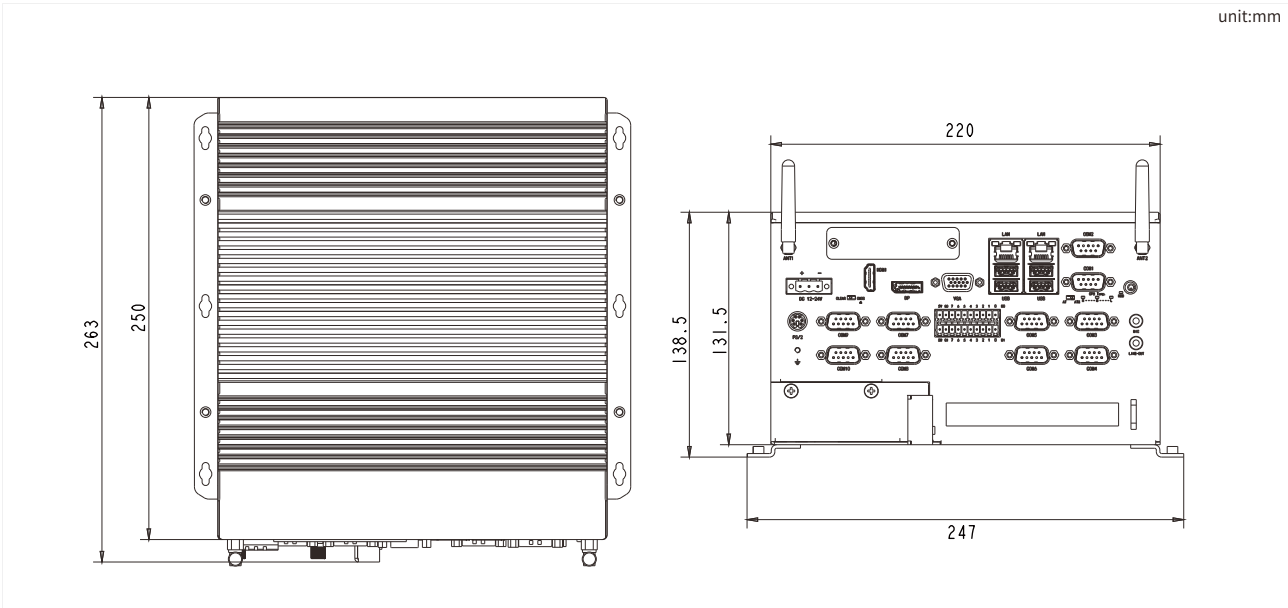
### OS

|    |                                               |
|----|-----------------------------------------------|
| OS | Windows 7, Windows 10,<br>Linux Fedora,Ubuntu |
|----|-----------------------------------------------|

## I/O View



## Dimensions



## Ordering Information

| Model                  | Processor                                                | Specifications                                                                                                                                         | Expansion                                                                                             |
|------------------------|----------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|
| KMDA-3920-ETC/<br>S001 | Intel® Skylake-S/Kabylake-S<br>LGA1151 CPU, H110 Chipset | 2*DDR4 SODIMM, 2*G-LAN, 10*COM, 4* USB3.0, 1*USB2.0, 16bit DIO, 1*PS2, DP/HDMI/VGA, 1*Mini PCIe, Audio out/Mic, 2*2.5" SATA, 1*M.2, 1*mSATA, DC 12-24V | <b>Standard :ECX-241</b><br>1*PCIeX16(X16)+1*PCIeX4(X4)<br><br><b>Optional:ECI-245</b><br>2*32bit PCI |
| PA-120DC19             |                                                          | AC/DC power adapter,DC19V/6.32A,120W                                                                                                                   |                                                                                                       |
| PA-220DC24             |                                                          | AC/DC power adapter,DC24V/9.17A ,220W                                                                                                                  |                                                                                                       |
| PA-300DC24             |                                                          | AC/DC power adapter,DC24V/12.5A ,300W                                                                                                                  |                                                                                                       |
| AC-140                 |                                                          | 8-channel isolated input and 8-channel power relay output terminal board,DC 12V,source signal: 16-bit TTL GPIO                                         |                                                                                                       |



# KMDA-3921

Intel® Skylake-S/Kabylake-S CPU, 2\*LAN, 4\*USB3.0, HDMI, DP, VGA, 3 Displays, PCIe X16+PCIe X1+2\*PCI expansion,DC 12~24V power in

## Key Specification

- Aluminum Chassis, SGCC box
- Intel Skylake-S/Kabylake-S CPU
- 2\*DDR4 2400/2133MHz SODIMM, 32GB max.
- 1\*DP, 1\*HDMI & 1\*VGA, Optional three independent displays(Intel Q170)
- 2\*LAN, 4\*USB3.0, 3\*USB2.0, 4\*COM, 8-bit DIO
- 1\*PCIe X16+1\*PCIeX1+2\*PCI expansion
- 1\*Mini PCIe(PCIe+USB),1\*M.2 2242 B-Key
- 1\*mSATA, 2\*2.5" SATA3, support RAID0,1(Intel Q170)
- Optional TPM2.0 security encryption, support Intel vPro technology (Intel Q170)
- DC 12~24V wide voltage power supply



## Product Overview

KMDA-3921 is a embedded high-performance box computer with expansion, equipped with Intel® Skylake-S/Kabylake-S processor, H110/Q170 chipset, 2\*DDR4 2133/2400MHz, dual channel memory, support Max. 32GB. The easy-to-detach L-shaped folding cover is convenient for the installation of functional modules. It is very suitable for applications in video security, machine vision and intelligent AI industries.

## Product Parameters

### Processor

|             |                                                                                                                                                         |
|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|
| CPU         | Intel Skylake-S/Kabylake-S Celeron/Pentium/Core i3/i5/i7, H110 chipset,optional Q170 chipset                                                            |
| RAM         | 2*260-Pin ,DDR4,2133/2400MHz,Max. 32GB                                                                                                                  |
| Graphics    | Intel Gen. 9 HD Graphics,HEVC/H265 HW HD codec, support 3 independent displays (Intel Q170), HDMI:3840*2160@30Hz, DP:4096*2304@60Hz,VGA:1920*1200@60Hz, |
| LAN         | 1*Intel I211AT PCIe ,10/100/1000Mbps ; 1*Intel I219 LM, support iVpro (Intel Q170) ,                                                                    |
| USB         | 4* USB3.0, 2*USB 2.0, 1*USB2.0 (build-in)                                                                                                               |
| Display     | 1*DP+1*HDMI+1*VGA                                                                                                                                       |
| Audio       | 1*Line out+1*Mic, Realtek ALC662VD                                                                                                                      |
| COM/ Others | 2*RS232/422/485, 2*RS232, 1*PS/2 (Mouse and keyboard)                                                                                                   |
| DIO         | 8-bit DIO (10PinPhoenix terminal)<br>16-bit DIO (build-in), TTL Programmable input and output                                                           |

### Storage

|         |                                                                                         |
|---------|-----------------------------------------------------------------------------------------|
| Storage | 2*2.5" SATA3,HDD,support RAID0,1(Intel Q170), 1*mSATA full-height card,1*M.2 2242 B-key |
|---------|-----------------------------------------------------------------------------------------|

### Others

|                |                                                                          |
|----------------|--------------------------------------------------------------------------|
| LED            | 1*Power LED, 1*HDD LED, 3*CPU temperature LED                            |
| Control switch | 1*Power SW, 1*Reset SW; 1*2pin terminal SW, 1*AT/ATX SW, 1*CMOS/Clear SW |
| WDT            | Watchdog timeout programmable via software 1 to 255 second               |
| TCPM/TPM       | support TPM2.0 (optional)                                                |

### OS

|    |                                            |
|----|--------------------------------------------|
| OS | Windows 7, Windows 10, Linux Fedora,Ubuntu |
|----|--------------------------------------------|

### Expansion

|           |                                                                                                                                                                                                   |
|-----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Expansion | 1*PCIe3.0X16(X16)+1*PCIe3.0 X4(X1) +2*32bit PCI, GPU/AI Card<150W<225mm<br>or 2*PCIe3.0 X16(X8)+1*PCIe3.0 X8(X4)<br>1*Mini PCIe(+SIM),4G LTE/Wifi/BT, I-port: 1*LPT/USB2.0/16-bit DIO/1*Mini PCIe |
|-----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

### Power Supply

|             |                                                        |
|-------------|--------------------------------------------------------|
| Power & TDP | DC 12~24V input, 68.78W (I7-6700T , 4GB DDR4, 1TB HDD) |
|-------------|--------------------------------------------------------|

### Mechanical

|                  |                                 |
|------------------|---------------------------------|
| Structure        | Aluminum Chassis, SGCC frame    |
| Color            | Silver gray                     |
| Installation     | Desktop mounting, wall mounting |
| Dimension(W*H*D) | 220*250**172mm                  |
| Weight           | 5.58KG                          |

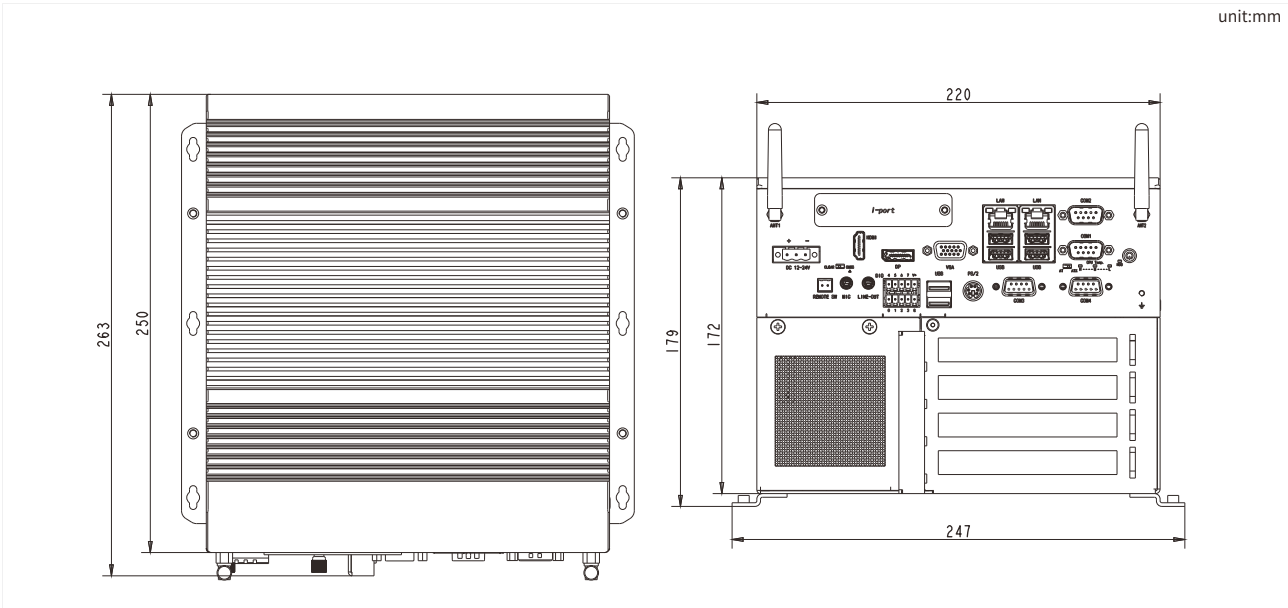
### Environment

|                  |                                                                                              |
|------------------|----------------------------------------------------------------------------------------------|
| Operating Temp   | -20°C~65°C SSD, with air flow, -10°C~55°C HDD, with air flow;                                |
| Storage Temp     | -40°C~85°C                                                                                   |
| Storage Humidity | 10~90%@40°C, No condensation                                                                 |
| Vibration        | 5 grms/5~500Hz/random/during operation (SSD)<br>1 grms/5~500Hz/random/during operation (HDD) |
| Shock            | 50g peak acceleration(duration 11ms) with SSD; 20g peak acceleration(duration 11ms) with HDD |
| Certificate/EMC  | CE/FCC Class A                                                                               |

## I/O View



## Dimensions



## Ordering Information

| Model          | Processor                                             | Specifications                                                                                                                                                     | Expansion                                                                                                                     |
|----------------|-------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|
| KMDA-3921/S001 | Intel® Skylake-S/Kabylake-S LGA1151 CPU,H110 Chipset  | 2*DDR4, 2*LAN, 4*USB3.0,3*USB2.0, 4*COM, 1*Mini PCIe, 1*HDMI,1*DP,1*VGA, 1*Line out,1*Mic, 8-bit DIO,1*PS/2, 1*I-port, 2*2.5" SATA3 bay, 1*M.2, 1*mSATA, DC 12~24V | <b>Standard:ECX-242</b><br>1*PCIeX16(X16)+1*PCIeX4(X1)+ 2*32 bit PCI                                                          |
| KMDA-3921/S002 | Intel® Skylake-S/Kabylake-S LGA1151 CPU, Q170 Chipset |                                                                                                                                                                    | <b>Standard:ECX-242</b><br>1*PCIeX16(X16)+1*PCIeX4(X1)+ 2*32 bit PCI<br><b>Optional:ECI-249</b><br>2*PCIeX16(X8)+1*PCIeX8(X4) |
| PA-120DC19     |                                                       | AC/DC adapter, DC 19V/6.32A 120W                                                                                                                                   |                                                                                                                               |
| PA-220DC24     |                                                       | AC/DC adapter, DC 24V/9.17A 220W                                                                                                                                   |                                                                                                                               |
| PA-300DC24     |                                                       | AC/DC adapter, DC 24V/12.5A 300W                                                                                                                                   |                                                                                                                               |
| AC-140         |                                                       | 8-channel optical isolation input\8-channel high-power relay board                                                                                                 |                                                                                                                               |

# KMDA-5610/S001

Intel® 9th/8th-Gen Coffee Lake LGA1151 CPU, 2\*LAN, 4\*USB3.1, 1\*VGA, 1\*DP, 1\*HDMI,2\*4K Displays, 1\*Msata, 2\*SATA3.0,DC 9-36V

## Key Specification

- Intel® 9th/8th-Gen Coffee Lake LGA1151 CPU
- Intel® H310 chipset
- 2\*DDR4 2400/2666MHz SODIMM RAM, 64GB max.
- 1\*DP, 1\*HDMI,1\*VGA, 2+1 display
- 2\*LAN, 4\*USB3.1, 2\*USB2.0, 4\*COM, 16-bit Iso.DIO
- 1\*M.2 E-key 2230, Support 10/100/1000Mbps WIFI module
- 2\*SATA3.0,1\*mSATA with SIM card slot
- Wide voltage power supply 9-36V, with short circuit, overvoltage and overcurrent protection



## Product Overview

KMDA-5610 is a fanless high-performance box PC, equipped with Intel® 8th/9th generation Coffee lake series processors, H310 chipset, 2\*DDR4 2400/2666MHz, and Max. support upto 64GB. Industrial grade product design. It is very suitable for industrial automation, AI edge computing, small smart workstations, multimedia service systems, high-precision machine vision and other applications.

## Product Parameters

### Processor

|                |                                                                                                                                                                                                 |
|----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CPU            | Intel® Coffee lake 9th/8th-Gen Corei7/i5/i3/Pentium/Celeron LGA1151 processor, H310 chipset                                                                                                     |
| RAM            | 2*260-Pin ,DDR4,2400/2666MHz, Max. 64GB                                                                                                                                                         |
| Graphics       | Intel UHD Graphics, Supports DirectX11.1, OpenGL 5.0 and OpenCL 2.1 or PCIe X16,DP:4096*2304@60Hz, VGA:1900*1200@60Hz, HDMI:4096*2160@24Hz<br>(Support 2 independent display, 1 mirror display) |
| LAN            | 1*Intel I210AT PCIe ,10/100/1000Mbps ;<br>1*Intel I219 LM                                                                                                                                       |
| USB            | 4* USB3.1, 2*USB2.0 , 1*USB2.0 (build-in)                                                                                                                                                       |
| Display        | 1*DP+1*HDMI+1*VGA                                                                                                                                                                               |
| Audio          | 1*Line out+1*Mic, Optional Realtek ALC662VD                                                                                                                                                     |
| COM/<br>Others | 2*RS232/422/485, 2*RS232                                                                                                                                                                        |
| DIO            | 16-bit iso DIO                                                                                                                                                                                  |
|                | 8-bit 2.5KV Iso. DI(High:5-24V,Low:0-1.5V) and                                                                                                                                                  |
|                | 8-bit 2.5KV Iso. DO (200mA)                                                                                                                                                                     |

### Storage

|         |                                                                |
|---------|----------------------------------------------------------------|
| Storage | 2*2.5" SATA3,HDD,1*full length mSATA, with SIM slot,support 4G |
|---------|----------------------------------------------------------------|

### Others

|                |                                                            |
|----------------|------------------------------------------------------------|
| LED light      | 1*power LED, 1*hard disk LED, 3*CPU temperature LED        |
| Control switch | 1*Power SW,1*Remote switch,1*AT/ATX SW, 1*Clear CMOS SW    |
| WDT            | watchdog timeout programmable via software 1 to 255 second |
| TCPM/TPM       | support TPM2.0 (optional)                                  |

### Expansion

|           |                                                                                                               |
|-----------|---------------------------------------------------------------------------------------------------------------|
| Expansion | 1*M.2 E-Key 2230, Support 10/100/1000Mbps WFI module<br>l-port:optional USB2.0/ 16-bitDIO/serial ports/others |
|-----------|---------------------------------------------------------------------------------------------------------------|

### Power Supply

|             |                                                                                              |
|-------------|----------------------------------------------------------------------------------------------|
| Power & TDP | DC IN 9-36V,3-pin Term. 7.62mm,With short circuit, OVP & OCP, 96W(i7-8700,32G DDR4,128G SSD) |
|-------------|----------------------------------------------------------------------------------------------|

### Mechanical

|                  |                                   |
|------------------|-----------------------------------|
| Structure        | Aluminum Chassis, SGCC frame      |
| Color            | Pigeon blue + White aluminum grey |
| Installation     | Desktop mounting                  |
| Dimension(W*H*D) | 230*267.3*92mm                    |
| Weight           | 5.1KG                             |

### Environment

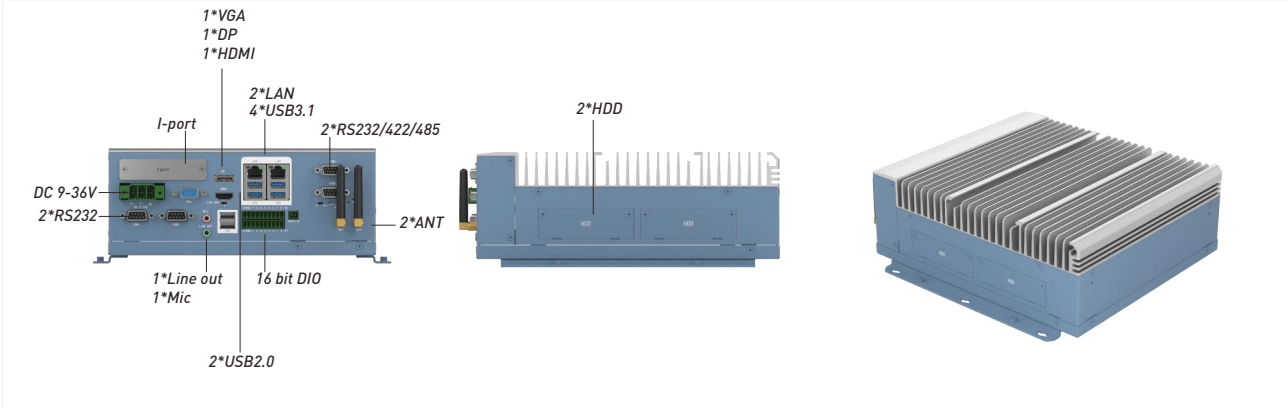
|                  |                                                                                                 |
|------------------|-------------------------------------------------------------------------------------------------|
| Operating Temp   | -20°C~60°C SSD, with air flow,<br>-10°C~55°C HDD, with air flow;                                |
| Storage Temp     | -40°C~85°C                                                                                      |
| Storage Humidity | 10~90%@40°C, No condensation                                                                    |
| Vibration        | 5 grms/5~500Hz/random/during operation (SSD)<br>1 grms/5~500Hz/random/during operation (HDD)    |
| Shock            | 50g peak acceleration(duration 11ms) with SSD;<br>20g peak acceleration(duration 11ms) with HDD |

|                 |                |
|-----------------|----------------|
| Certificate/EMC | CE/FCC Class A |
|-----------------|----------------|

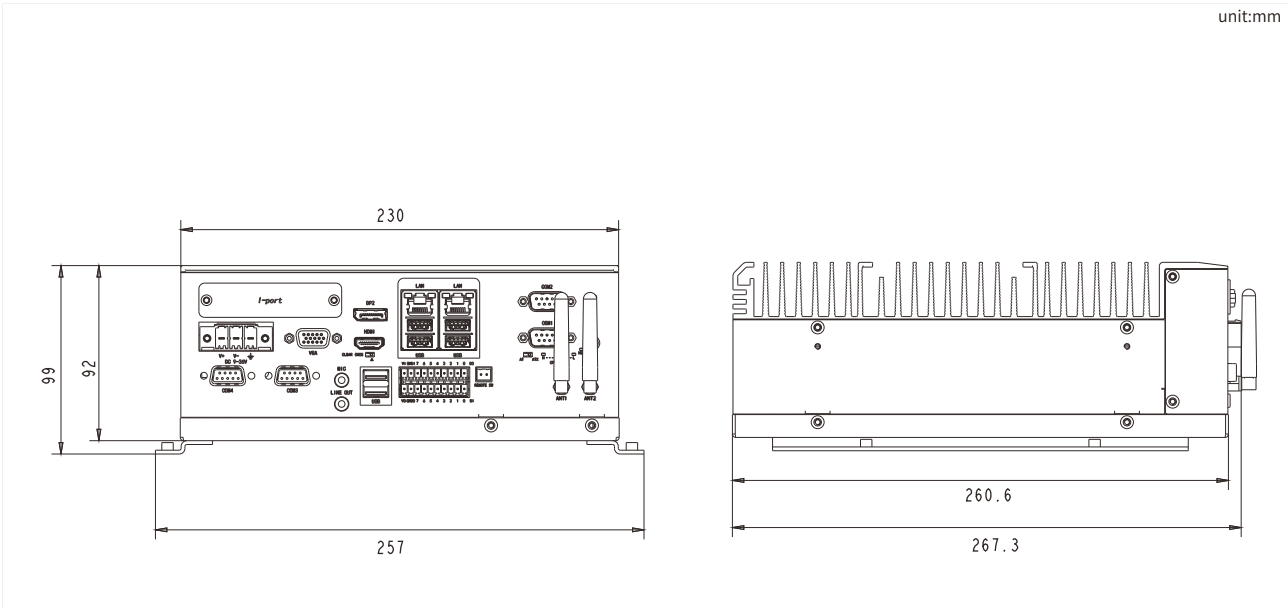
### OS

|    |                                                                                                              |
|----|--------------------------------------------------------------------------------------------------------------|
| OS | Windows 10 Enterprise & IOT Enterprise,Ubuntu,SuSe,Redhat Enterprise 1,2 (Kernel 4.14) ,Wind River VxWorks 7 |
|----|--------------------------------------------------------------------------------------------------------------|

## I/O View



## Dimensions



## Ordering Information

| Model          | Processor                                       | Specifications                                                                                                                                       |
|----------------|-------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| KMDA-5610/S001 | Intel® 9th/8th Coffeelake LGA1151 CPU, H310 PCH | 2*DDR4, 2*LAN, 4*USB3.1, 2*USB2.0, 4*COM, M.2 E-Key, 1*VGA, 1*DP,1*HDMI, 1*Line out,1*Mic, 16-bit iso DIO, 2*2.5" SATA, 1*Mini PCIe(mSATA), DC 9-36V |
| PA-120DC19     |                                                 | AC/DC power adapter,DC19V/6.32A,120W                                                                                                                 |
| AC-140         |                                                 | 8bit iso input, 8bit power relay output terminal board, DC 12V, the source signal is a 16bit TTL signal GPIO                                         |



# KMDA-5610/S002

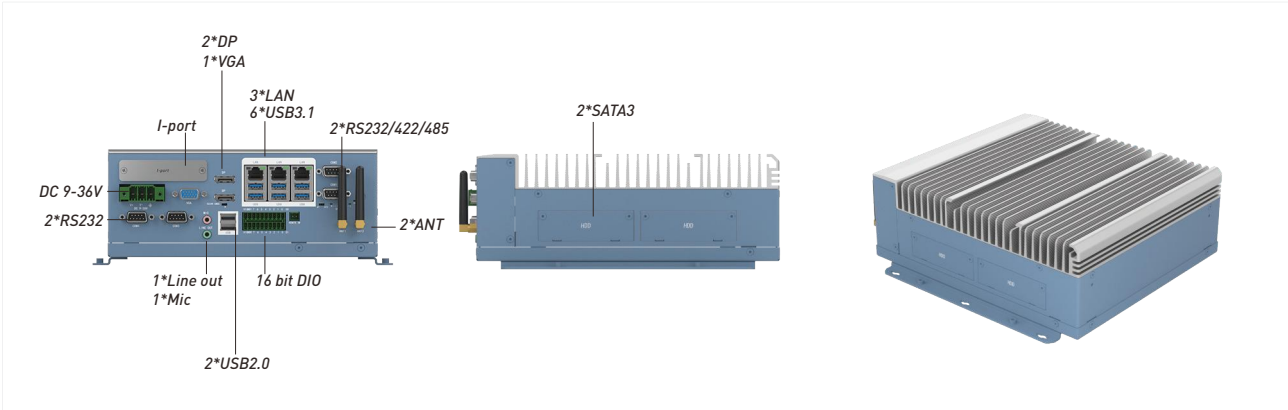
Intel® 9th/8th-Gen Coffee Lake LGA1151 CPU, 3\*LAN, 4\*COM, 6\*USB3.1, 1\*VGA, 2\*DP, 3\*M.2, 1\*mSATA, 2\*SATA3.0, DC 9-36V

## Key Specification

- Intel® 8th /9th Gen Coffee lake LGA1151 CPU
- Intel® Q370 high-performance chipset
- 4\*DDR4 2400/2666MHz SODIMM, up to 128GB
- Supports 2\*DP dual 4K and 1\*VGA, 3 independent displays
- 3\*LAN, 6\*USB3.1, 2\*USB2.0, 4\*COM, 16bit Iso. DIO
- 1\*Mini PCIe with SIM slot, support 4G and WIFI/BT
- 1\*M.2 B-Key 3052 with SIM slot, support 5G module
- 1\*M.2 E-key 2230, supports Gigabit WiFi/BT modules
- 2\*SATA3.0 SATA bay, supports RAID0, 1 and hot swap design
- 1\*mSATA and 1\*M.2 M-Key, supports NVMe high speed storage
- Wide power input 9-36V, with short circuit, over voltage and over current protection



## I/O View



## Product Overview

KMDA-5610 is a fanless and high-performance box computer with Q370 chipset, powered by Intel® 8th /9th Gen Coffee lake CPU has complete IO function, high-speed storage and RAID storage, wide voltage DC power supply and moderate size. It is suitable for industrial automation, highway tolling, security monitoring, environmental detection, and other industries and fields.

## Product Parameters

### System

|            |                                                                                                                                                               |
|------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CPU        | Intel® Coffee lake 9th/8th-Gen Core™ i9/i7/i5/i3/Pentium/Celeron LGA1151 CPU, Intel® Q370 PCH                                                                 |
| RAM        | 4*260-Pin SODIMM, DDR4 2666/2400MHz, 128GB max.                                                                                                               |
| Graphics   | Intel UHD Graphics, Supports DirectX11.1, OpenGL 5.0 and OpenCL 2.1 ,<br>DP:4096*2304@60Hz, VGA: 1920*1200@60Hz,<br>DP:4096*2304@60Hz (3 independent display) |
| LAN        | 2*Intel I211AT/I210AT, 10-1000M ;<br>1*Intel I219 LM, 10-1000M, iAMT 13.0, iVpro(i5/i7/i9)                                                                    |
| USB        | 6* USB3.1(5Gbps), 2*USB2.0 , 2*USB2.0 (Build-in)                                                                                                              |
| Display    | 2*DP+1*VGA                                                                                                                                                    |
| Audio      | 1*Line out+1*Mic,Optional Realtek ALC662                                                                                                                      |
| COM/Others | 2*RS232/422/485, 2*RS232;<br>16 bit Iso. DIO:                                                                                                                 |
| DIO        | 8 bit 2.5KV Iso. DI(H:5-24V, L:0-1.5V),<br>8 bit 2.5KV Iso. DO(200mA)                                                                                         |

### Storage

|         |                                                             |
|---------|-------------------------------------------------------------|
| Storage | 2*2.5" SATA3; 1*M.2 2280 M-key(X4), NVMe; 1*mSATA(Optional) |
|---------|-------------------------------------------------------------|

### Others

|          |                                                       |
|----------|-------------------------------------------------------|
| LED      | 1*PowerLED, 1*HDD LED, 3*CPUoperationLED              |
| Switch   | 1*Power SW, 1*Remote SW, 1*AT/ATX SW, 1*Clear CMOS SW |
| WDT      | programmable via software 1 to 255 second             |
| TCPM/TPM | Optional TPM2.0                                       |

### Expansion

|           |                                                                                                                                                                                                                                                          |
|-----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Expansion | 1*Mini PCIe(SATA3.0/USB2.0+SIM),mSATA/4G LTE;<br>1*M.2 2230 E-Key(PCIeX1/USB2.0+CNVio), WIFI6/BT5.0;<br>1*M.2 3052 B-Key(PCIeX1/USB2.0+SIM), 5G NR/4G LTE;<br>1*M.2 2280 M-Key(PCIeX4),NVMe/PCIe module;<br>I-port: OptionalUSB2.0/ 16 bitDIO/COM/Others |
|-----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

### Power

|            |                                                                                                            |
|------------|------------------------------------------------------------------------------------------------------------|
| Power& TDP | DC IN 9-36V , 3-pin Term. 7.62mm,With short circuit, OVP & OCP<br>TDP:60.5W (i7-8700T, 32G DDR4, 128G SSD) |
|------------|------------------------------------------------------------------------------------------------------------|

### Mechanical

|                   |                                   |
|-------------------|-----------------------------------|
| Structure         | Aluminum Chassis, SGCC frame      |
| Color             | Pigeon blue + White aluminum grey |
| Installation      | desktop mounting                  |
| Dimension (W*D*H) | 230*267.3*92mm                    |
| Weight            | 5.02KG                            |

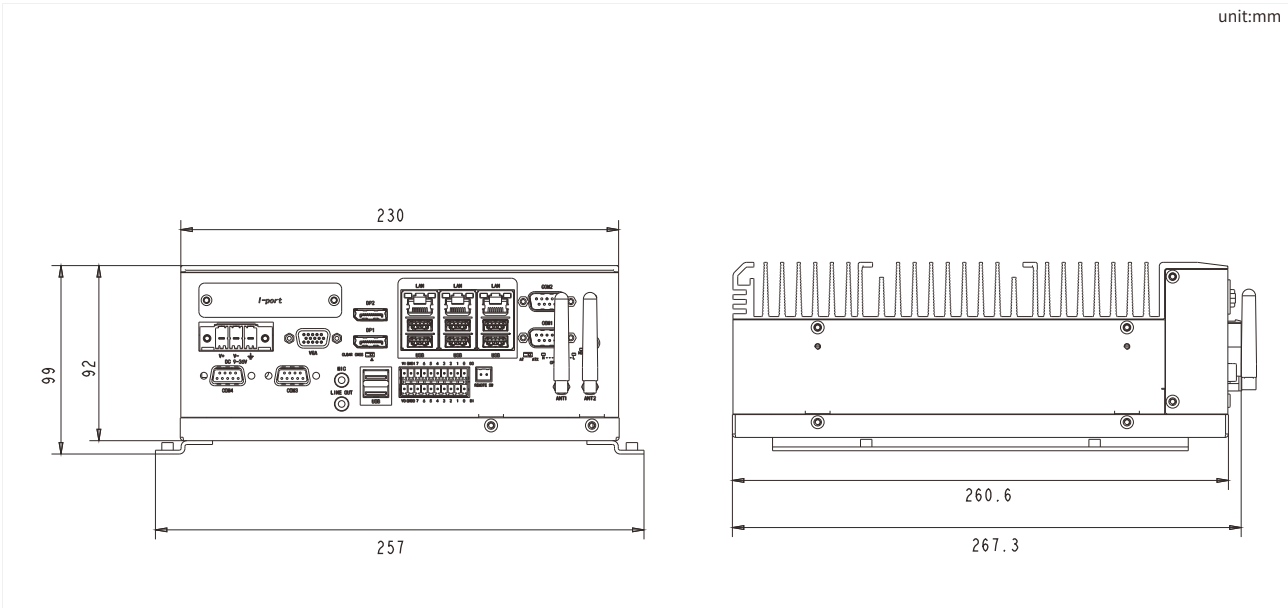
### Environment

|                  |                                                                                       |
|------------------|---------------------------------------------------------------------------------------|
| Operating Temp   | -20°C~60°C, SSD, with air flow;<br>-10°C~55°C , HDD, with air flow;                   |
| Storage Temp     | -40°C~85°C                                                                            |
| Storage Humidity | 10~95%@40°C, No-condensation                                                          |
| Vibration        | 5 grms/5~500Hz/random/operation(SSD);<br>1 grms/5~500Hz/random/operation(HDD)         |
| Shock            | 50g peak acceleration(duration 11ms,SSD);<br>20g peak acceleration(duration 11ms,HDD) |
| Certificate/EMC  | CE/FCC Class A                                                                        |

### OS

|    |                                                                                                                                                |
|----|------------------------------------------------------------------------------------------------------------------------------------------------|
| OS | Windows 10 Enterprise & IOT Enterprise (64 bit) (CFL-R) Ubuntu, SuSe, Redhat Enterprise 1,2 (Kernel 4.14) (CFL-R) Wind River VxWorks 7 (CFL-R) |
|----|------------------------------------------------------------------------------------------------------------------------------------------------|

## Dimensions



## Ordering Information

| Model          | Processor                                       | Specifications                                                                                                                                                                                              |
|----------------|-------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| KMDA-5610/S002 | Intel® 9th/8th Coffeelake LGA1151 CPU, Q370 PCH | 4*DDR4 SODIMM, 3*LAN, 6*USB3.1, 2*USB2.0, 4*COM, M.2 E-Key, 1*VGA, 2*DP, Audio Line out & Mic, 16bit Iso.DIO, 1*M.2 E-Key, 1*M.2 B-Key, 1*M.2 M-Key, 2*2.5"SATA bay, 1*Mini PCIe(mSATA), 1*I-port, DC 9-36V |
| PA-120DC19     |                                                 | AC/DC power adapter, DC 19V/6.32A,120W                                                                                                                                                                      |
| AC-140         |                                                 | 8bit iso input, 8bit power relay output terminal board, DC 12V, the source signal is a 16bit TTL signal GPIO                                                                                                |

# KMDA-5920/S001

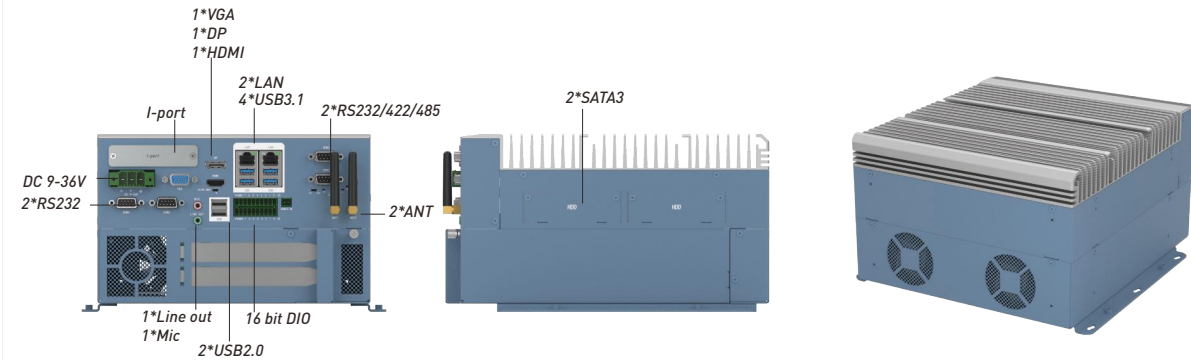
Intel® 9th/8th-Gen Coffee Lake LGA1151 series CPU ,2\*LAN, 4\*USB3.1, 2\*SATA3.0, 1\*PCIe X16, 1\*PCIeX4, DC 9-36V

## Key Specification

- Intel® 8th /9th Gen Coffee lake LGA1151 CPU
- Intel® H310 PCH
- 2\*DDR4 2400/2666MHz SODIMM, up to 64GB
- 1\*DP, 1\*HDMI, 1\*VGA, tri-display
- 2\*LAN, 4\*USB3.1, 2\*USB2.0, 16bit Iso. DIO
- 2\*RS232/422/485 and 2\*RS232
- 1\*PCIeX16 and 1\*PCIeX16 (X4 signal) dual expansion
- 1\*M.2 E-key 2230, supports Gigabit WIFI module
- 2\*2.5-inch SATA bay and 1\*mSATA
- Wide power input DC 9-36V, with short circuit, over voltage and over current protection



## I/O View



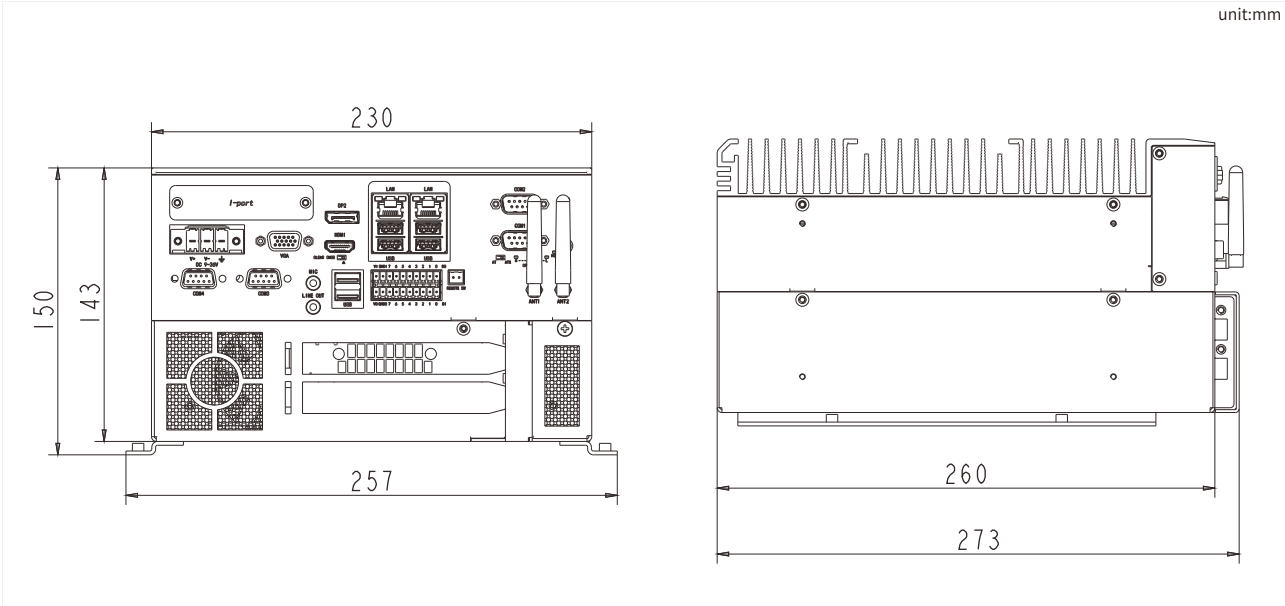
## Product Overview

KMDA-5920 is a fanless high-performance box computer with H310 chipset, powered by Intel® 8th /9th Gen Coffee lake CPU has complete IO function, dual PCIe extensions, wide voltage DC power supply and moderate size. It is suitable for industrial automation, highway tolling, AI edge computing, security monitoring and environmental detection and other industries and fields.

## Product Parameters

|                  |                                                                                                                                                                                                 |                     |                                                                                                                                                                                                                                                   |                                                                                                      |
|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|
| <b>Processor</b> |                                                                                                                                                                                                 | <b>Expansion</b>    |                                                                                                                                                                                                                                                   |                                                                                                      |
| CPU              | Intel® Coffee lake 9th/8th-Gen Corei7/i5/i3/Pentium/Celeron LGA1151 processor, H310 chipset                                                                                                     | Expansion           | 1*PCIe3.0 X16(X16),GPU/AI Card<150W<210mm + 1*PCIe2.0X16(X4), AI Card<75W<230mm; or 1*PCIe3.0 X16(X16)+1*32bit PCI ; 1*M.2 E-Key 2230(PCIeX1/USB2.0), WIFI/BT; 1*Mini PCIe(SATA3.0/USB2.0T+SIM),mSATA/4G LTE; I-port:USB2.0/ 16bit DIO/COM/others |                                                                                                      |
| RAM              | 2*260-Pin ,DDR4,2400/2666MHz, Max. 64GB                                                                                                                                                         |                     |                                                                                                                                                                                                                                                   |                                                                                                      |
| Graphics         | Intel UHD Graphics, Supports DirectX11.1, OpenGL 5.0 and OpenCL 2.1 or PCIe X16,DP:4096*2304@60Hz, VGA:1900*1200@60Hz, HDMI:4096*2160@24Hz<br>(Support 2 independent display, 1 mirror display) |                     |                                                                                                                                                                                                                                                   |                                                                                                      |
| LAN              | 1*Intel I210AT PCIe ,10/100/1000Mbps ; 1*Intel I219 LM                                                                                                                                          |                     |                                                                                                                                                                                                                                                   |                                                                                                      |
| USB              | 4* USB3.1, 2*USB2.0,1*USB2.0 (build-in)                                                                                                                                                         |                     |                                                                                                                                                                                                                                                   |                                                                                                      |
| Display          | 1*DP+1*HDMI+1*VGA                                                                                                                                                                               | <b>Power Supply</b> | Power& TDP                                                                                                                                                                                                                                        | DC IN 9-36V 3-pin Term. 7.62mm,With short circuit, OVP & OCP 60.48W (I7-8700T CPU/16G DDR4/128G SSD) |
| Audio            | 1*Line out+1*Mic,Realtek ALC662VD                                                                                                                                                               |                     |                                                                                                                                                                                                                                                   |                                                                                                      |
| COM/Others       | 2*RS232/422/485, 2*RS232, 16-bit iso DIO                                                                                                                                                        |                     |                                                                                                                                                                                                                                                   |                                                                                                      |
| DIO              | 8-bit 2.5KV Iso. DI(High:5-24V,Low:0-1.5V) and 8-bit 2.5KV Iso. DO (200mA)                                                                                                                      |                     |                                                                                                                                                                                                                                                   |                                                                                                      |
| <b>Storage</b>   |                                                                                                                                                                                                 |                     |                                                                                                                                                                                                                                                   |                                                                                                      |
| Storage          | 2*2.5" SATA3,HDD,1*mSATA, with SIM slot,support 4G                                                                                                                                              | <b>Mechanical</b>   |                                                                                                                                                                                                                                                   |                                                                                                      |
| <b>Others</b>    |                                                                                                                                                                                                 | Structure           | Aluminum Chassis, SGCC frame                                                                                                                                                                                                                      |                                                                                                      |
| LED              | 1*power LED, 1*hard disk LED, 3*CPU temperature LED                                                                                                                                             | Color               | Pigeon blue + White aluminum grey                                                                                                                                                                                                                 |                                                                                                      |
| Switch           | 1*Power SW,1*Remote switch,1*AT/ATX SW, 1*Clear CMOS SW                                                                                                                                         | Installation        | Desktop mounting                                                                                                                                                                                                                                  |                                                                                                      |
| WDT              | Watchdog timeout programmable via software 1 to 255 second                                                                                                                                      | Dimension(W*H*D)    | 230*273*143mm                                                                                                                                                                                                                                     |                                                                                                      |
| <b>OS</b>        |                                                                                                                                                                                                 | Weight              | 5.9KG                                                                                                                                                                                                                                             |                                                                                                      |
| OS               | Windows 10 Enterprise & IOT Enterprise, Ubuntu,SuSe,Redhat Enterprise 1,2 (Kernel 4.14) Wind River VxWorks 7                                                                                    | <b>Environment</b>  |                                                                                                                                                                                                                                                   |                                                                                                      |
|                  |                                                                                                                                                                                                 | Operating Temp      | -20°C~60°C SSD, with air flow, -10°C~55°C HDD, with air flow                                                                                                                                                                                      |                                                                                                      |
|                  |                                                                                                                                                                                                 | Storage Temp        | -40°C~85°C                                                                                                                                                                                                                                        |                                                                                                      |
|                  |                                                                                                                                                                                                 | Storage Humidity    | 10~90%@40°C, No condensation                                                                                                                                                                                                                      |                                                                                                      |
|                  |                                                                                                                                                                                                 | Vibration           | 5 grms/5~500Hz/random/during operation (SSD) 1 grms/5~500Hz/random/during operation (HDD)                                                                                                                                                         |                                                                                                      |
|                  |                                                                                                                                                                                                 | Shock               | 50g peak acceleration(duration 11ms) with SSD; 20g peak acceleration(duration 11ms) with HDD                                                                                                                                                      |                                                                                                      |
|                  |                                                                                                                                                                                                 | Certificate/EMC     | CE/FCC Class A                                                                                                                                                                                                                                    |                                                                                                      |

## Dimensions



## Ordering Information

| Model          | Processor                                   | Specifications                                                                                                                                                               | Expansion                                                                                                            |
|----------------|---------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|
| KMDA-5920/S001 | Intel® 9th/8th Coffeelake LGA1151 CPU, H310 | 2*DDR4 SODIMM, 2*LAN, 4*USB3.1, 2*USB2.0, 4*COM, M.2 E-Key, 1*VGA, 1*DP,1*HDMI, Audio Line out & Mic, 16bit Iso.DIO, 2*2.5" SATA bay, 1*Mini PCIe(mSATA), 1*I-port, DC 9-36V | <b>Standard:ECX-255</b><br>1*PCIeX16(X16)+1*PCIeX16(X4)<br><br><b>Optional:ECX-271</b><br>1*PCIeX16(X16)+1*32bit PCI |
| PA-120DC19     |                                             | AC/DC power adapter, DC19V/6.32A 120W                                                                                                                                        |                                                                                                                      |
| PA-220DC24     |                                             | AC/DC power adapter,DC 24V/9.17A 220W                                                                                                                                        |                                                                                                                      |
| PA-300DC24     |                                             | AC/DC power adapter,DC24V/12.5A ,300W                                                                                                                                        |                                                                                                                      |
| AC-140         |                                             | 8bit iso input, 8bit power relay output terminal board, DC 12V, the source signal is a 16bit TTL signal GPIO                                                                 |                                                                                                                      |



# KMDA-5920/S002

Intel® 8th/9th Coffee Lake LGA1151 CPU, 3\*LAN, 4\*USB3.1,1\*VGA, 2\*DP, 4\*COM, 16bit Iso.DIO, 2\*PCIe,1\*Mini PCIe,3\*M.2, 2\*SATA3.0, DC 9-36V

## Key Specification

- Intel® 8th/9th Gen Coffeelake LGA1151 CPU
- Intel® Q370 high-performance chipset
- 4\*DDR4 2400/2666MHz SODIMM, up to 128GB
- Supports 2\*DP dual 4K and 1\*VGA, 3 independent displays
- 3\*LAN, 6\*USB3.1, 2\*USB2.0, 4\*COM, 16bit Iso. DIO
- 1\*Mini PCIe with SIM slot, support 4G and WIFI/BT
- 1\*M.2 B-Key 3052 with SIM slot, support 5G module
- 1\*M.2 E-key 2230, supports Gigabit WiFi/BT modules
- 1\*PCIeX16 and 1\*PCIeX16 (X4 signal) dual expansion
- 2\*SATA3.0 SATA bay, supports RAID0, 1 and hot swap design
- Optional 1\*mSATA and 1\*M.2 M-Key supports NVMe high-speed storage
- Wide power input DC 9-36V, with short circuit, over voltage and over current protection



## Product Overview

KMDA-5920 is a fanless and high-performance box computer with Q370 chipset, powered by Intel® 8th /9th Gen Coffee lake CPU has complete IO function, dual PCIe extensions, wide voltage DC power supply and moderate size. It is suitable for industrial automation, highway tolling, AI edge computing, security monitoring and environmental detection and other industries and fields.

## Product Parameters

### Processor

|            |                                                                                                                                                     |
|------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|
| CPU        | Intel® Coffee lake 9th/8th-Gen Corei7/i5/i3/Pentium/Celeron LGA1151 processor, Q370 chipset                                                         |
| RAM        | 4*260-Pin ,DDR4,2400/2666MHz, Max. 128GB                                                                                                            |
| Graphics   | Intel UHD Graphics, Supports DirectX11.1, OpenGL 5.0 and OpenCL 2.1 or PCIe X16,DP:4096*2304@60Hz, VGA1900*1200@60Hz,support 3 independent displays |
| LAN        | 2*Intel I210AT PCIe ,10/100/1000Mbps ; 1*Intel I219 LM,support iVpro                                                                                |
| USB        | 6* USB3.1, 2* USB2.0,2*USB2.0 (build-in)                                                                                                            |
| Display    | 2*DP+1*VGA                                                                                                                                          |
| Audio      | 1*Line out+1*Mic, Realtek ALC662VD                                                                                                                  |
| COM/Others | 2*RS232/422/485, 2*RS232, 16-bit iso DIO                                                                                                            |
| DIO        | 8-bit 2.5KV Iso. DI(High:5-24V,Low:0-1.5V) and 8-bit 2.5KV Iso. DO (200mA)                                                                          |

### Storage

|         |                                                                               |
|---------|-------------------------------------------------------------------------------|
| Storage | 2*2.5" SATA3, supportRAID0,1, 1*M.2 M-Key,PCIex4 Gen3.0, support NVME storage |
|---------|-------------------------------------------------------------------------------|

### Others

|        |                                                            |
|--------|------------------------------------------------------------|
| LED    | 1*power LED, 1*hard disk LED, 3*CPU temperature LED        |
| Switch | 1*Power SW,1*Remote switch,1*AT/ATX SW, 1*Clear CMOS SW    |
| WDT    | Watchdog timeout programmable via software 1 to 255 second |

### OS

|    |                                                                                                              |
|----|--------------------------------------------------------------------------------------------------------------|
| OS | Windows 10 Enterprise & IOT Enterprise, Ubuntu,SuSe,Redhat Enterprise 1,2 (Kernel 4.14),Wind River VxWorks 7 |
|----|--------------------------------------------------------------------------------------------------------------|

### Expansion

|           |                                                                                                                                                                                                                                                                                                                                                               |
|-----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Expansion | 1*PCIe3.0 X16(X16), GPU/AI card<150W<210mm + 1*PCIe3.0X16(X4), AI Card<75W<230mm; or 1*PCIe3.0 X16(X16)+1*32bit PCI; 1*M.2 E-Key 2230(PCIeX1/USB2.0+CNVio), WIFI6/BT5.0; 1*M.2 B-key 3052(PCIeX1/USB2.0+SIM),5G NR/4G LTE; 1*M.2 M-Key 2280(PCIex4), NVME/PCIe module; 1*Mini PCIe(SATA3.0/PCIeX1+SIM),mSATA/4G LTE; I-port: 16bit DIO/2*USB2.0/M.2/Mini PCIe |
|-----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

### Power Supply

|        |                                                                                                                                                 |
|--------|-------------------------------------------------------------------------------------------------------------------------------------------------|
| Power& | DC IN 9-36V 3-pin Term. 7.62mm,with short circuit protection, over voltage and over current protection, 60.48W (I7-8700T CPU/16G DDR4/128G SSD) |
| TDP    |                                                                                                                                                 |

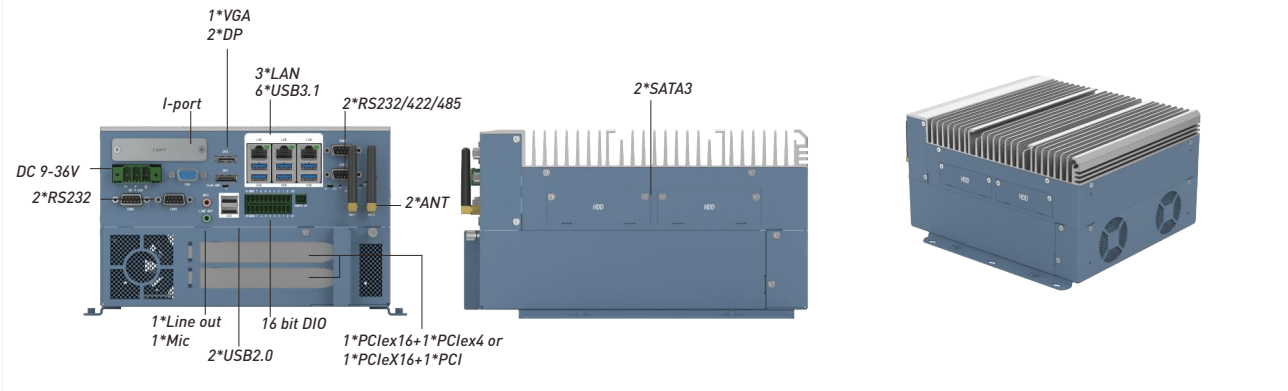
### Mechanical

|                  |                                   |
|------------------|-----------------------------------|
| Structure        | Aluminum Chassis, SGCC frame      |
| Color            | Pigeon blue + White aluminum grey |
| Installation     | Desktop mounting                  |
| Dimension(W*H*D) | 230*273*143mm                     |
| Weight           | 5.9KG                             |

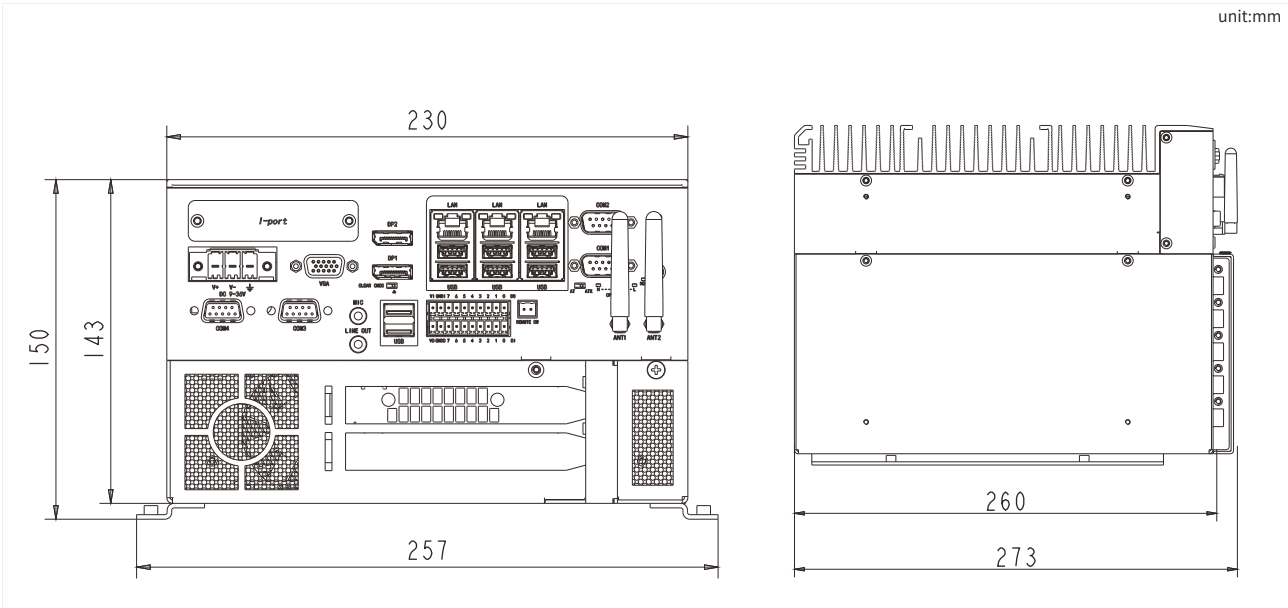
### Environment

|                  |                                                                                              |
|------------------|----------------------------------------------------------------------------------------------|
| Operating Temp   | -20°C~60°C SSD, with air flow, -10°C~55°C HDD, with air flow;                                |
| Storage Temp     | -40°C~85°C                                                                                   |
| Storage Humidity | 10~90%@40°C, No condensation                                                                 |
| Vibration        | 5 grms/5~500Hz/random/during operation (SSD) 1 grms/5~500Hz/random/during operation (HDD)    |
| Shock            | 50g peak acceleration(duration 11ms) with SSD; 20g peak acceleration(duration 11ms) with HDD |
| Certificate/EMC  | CE/FCC Class A                                                                               |

## I/O View



## Dimensions



## Ordering Information

| Model          | Processor                                   | Specifications                                                                                                                                                                        | Expansion                                                                                                        |
|----------------|---------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| KMDA-5920/S002 | Intel® 9th/8th Coffeelake LGA1151 CPU, Q370 | 4*DDR4,3*LAN, 6*USB3.1, 2*USB2.0, 4*COM, 1*Mini PCIe(mSATA), 1*M.2 E-Key, 1*M.2 B-Key, 1*VGA, 2*DP, 1*Line out,1*Mic, 16-bit Iso. DIO,2*2.5" SATA, 1*M.2 2280 M-Key, I-Port, DC 9-36V | <b>Standard:ECX-255</b><br>1*PCIeX16(X16)+1*PCIeX16(X4)<br><b>Optional:ECX-271</b><br>1*PCIeX16(X16)+1*32bit PCI |
| PA-120DC19     |                                             | AC/DC power adapter, DC19V/6.32A 120W                                                                                                                                                 |                                                                                                                  |
| PA-220DC24     |                                             | AC/DC power adapter,DC 24V/9.17A 220W                                                                                                                                                 |                                                                                                                  |
| PA-300DC24     |                                             | AC/DC power adapter,DC24V/12.5A ,300W                                                                                                                                                 |                                                                                                                  |
| AC-140         |                                             | 8-channel isolated input and 8-channel power relay output terminal board,DC 12V,source signal: 16-bit TTL GPIO                                                                        |                                                                                                                  |

# KMDA-5921/S001

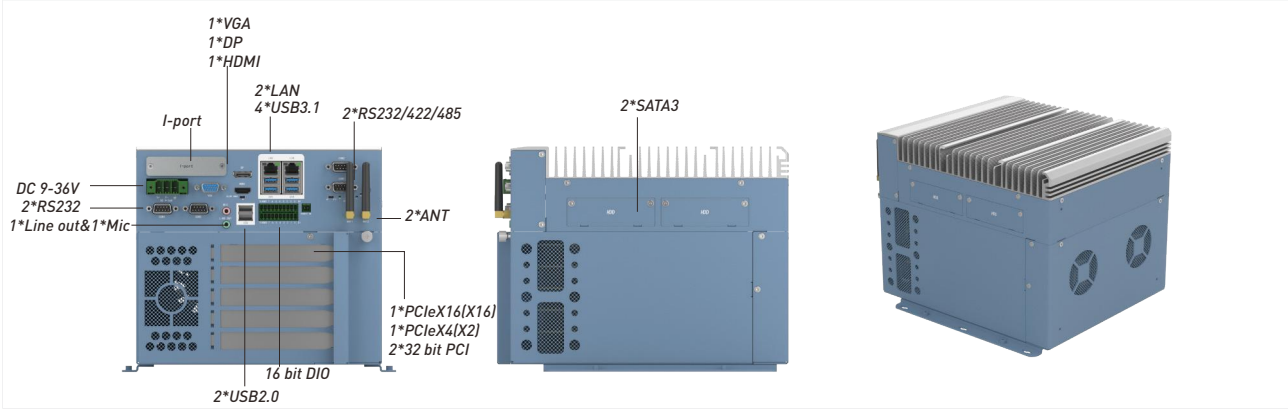
Intel® 8th/9th Gen Coffee Lake LGA1151 CPU, 2\*LAN, 4\*USB3.1, 1\*VGA, 1\*DP, 1\*HDMI, 4\*COM, 16bit Iso.DIO, 2\*PCIe+2\*PCI,DC 9-36V

### Key Specification

- Intel® 8th/9th Gen Coffee lake LGA1151 CPU
- Intel® H310 PCH
- 2\*DDR4 2400/2666MHz SODIMM, up to 64GB
- 1\*DP, 1\*HDMI, 1\*VGA, tri-display
- 2\*LAN, 4\*USB3.1, 2\*USB2.0, 16bit Iso.DIO
- 2\*RS232/422/485 and 2\*RS232
- 1\*PCIeX16+1\*PCIeX4 (X2 signal)+2\*PCI Quad expansion
- 1\*M.2 E-key 2230, supports Gigabit WIFI module
- 2\*2.5-inch SATA bay and 1\*mSATA
- Wide power input DC 9-36V, with short circuit, over voltage and over current protection



### I/O View



### Product Overview

KMDA-5921 is a fanless high-performance box computer with H310 chipset, powered by Intel® 8th /9th Gen Coffee lake CPU has complete IO function, dual PCIe plus dual PCI quad expansions, wide voltage DC power supply and moderate size. It is suitable for industrial automation, highway tolling, AI edge computing, security monitoring and environmental detection and other industries and fields.

### Product Parameters

#### Processor

|                     |                                                                                                                                                                                               |
|---------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CPU                 | Intel® Coffee lake 9th/8th-Gen Corei7/i5/i3/Pentium/Celeron LGA1151 processor, H310 chipset                                                                                                   |
| RAM                 | 2*260-Pin ,DDR4,2400/2666MHz, Max. 64GB                                                                                                                                                       |
| Graphics            | Intel UHD Graphics, Supports DirectX11.1, OpenGL 5.0 and OpenCL 2.1 or PCIe X16,DP: 4096*2304@60Hz, VGA:1900*1200@60Hz,HDMI: 4096*2160@24Hz (Support 2 independent display, 1 mirror display) |
| LAN                 | 1*Intel I211AT,10-1000M ; 1*Intel I219 LM,WOL                                                                                                                                                 |
| USB                 | 4* USB3.1, 2*USB2.0                                                                                                                                                                           |
| Display             | 1*DP+1*HDMI+1*VGA                                                                                                                                                                             |
| Audio               | 1*Line out+1*Mic, Optional Realtek ALC662VD                                                                                                                                                   |
| Serial port /Others | 2*RS232/422/485, 2*RS232, 16-bit iso DIO                                                                                                                                                      |
| DIO                 | 8-bit 2.5KV Iso. DI(High:5-24V,Low:0-1.5V) and 8-bit 2.5KV Iso. DO (200mA)                                                                                                                    |

#### Storage

|         |                                                  |
|---------|--------------------------------------------------|
| Storage | 2*2.5" SATA3,HDD; 1*MiniPCIe(SATA3/USB2.0),mSATA |
|---------|--------------------------------------------------|

#### Others

|          |                                                            |
|----------|------------------------------------------------------------|
| LED      | 1*power LED, 1*HDD LED, 3*CPU temperature LED              |
| Switch   | 1*Power SW,1*Remote SW,1*AT/ATX SW, 1*Clear CMOS SW        |
| WDT      | Watchdog timeout programmable via software 1 to 255 second |
| TCPM/TPM | support TPM2.0 (optional)                                  |

#### OS

|    |                                                                                                               |
|----|---------------------------------------------------------------------------------------------------------------|
| OS | Windows 10 Enterprise & IOT Enterprise, Ubuntu,SuSe,Redhat Enterprise 1.2 (Kernel 4.14), Wind River VxWorks 7 |
|----|---------------------------------------------------------------------------------------------------------------|

#### Expansion

|           |                                                                                                                                                         |
|-----------|---------------------------------------------------------------------------------------------------------------------------------------------------------|
| Expansion | 1*PCIe3.0 X16(X16)+1*PCIe2.0 X4 (X2)+ 2*32-bit PCI; 1*M.2 E-Key 2230, WIFI/BT5.0; 1*Mini PCIe(SATA3.0/USB2.0+SIM); I-port: USB2.0/ 16bit DIO/COM/others |
|-----------|---------------------------------------------------------------------------------------------------------------------------------------------------------|

#### Power Supply

|            |                                                                                                                                           |
|------------|-------------------------------------------------------------------------------------------------------------------------------------------|
| Power& TDP | DC IN 9-36V 3-pin Term. 7.62mm,with short circuit protection, over voltage and over current protection, 60.5W(I7-8700T,32G DDR4,128G SSD) |
|------------|-------------------------------------------------------------------------------------------------------------------------------------------|

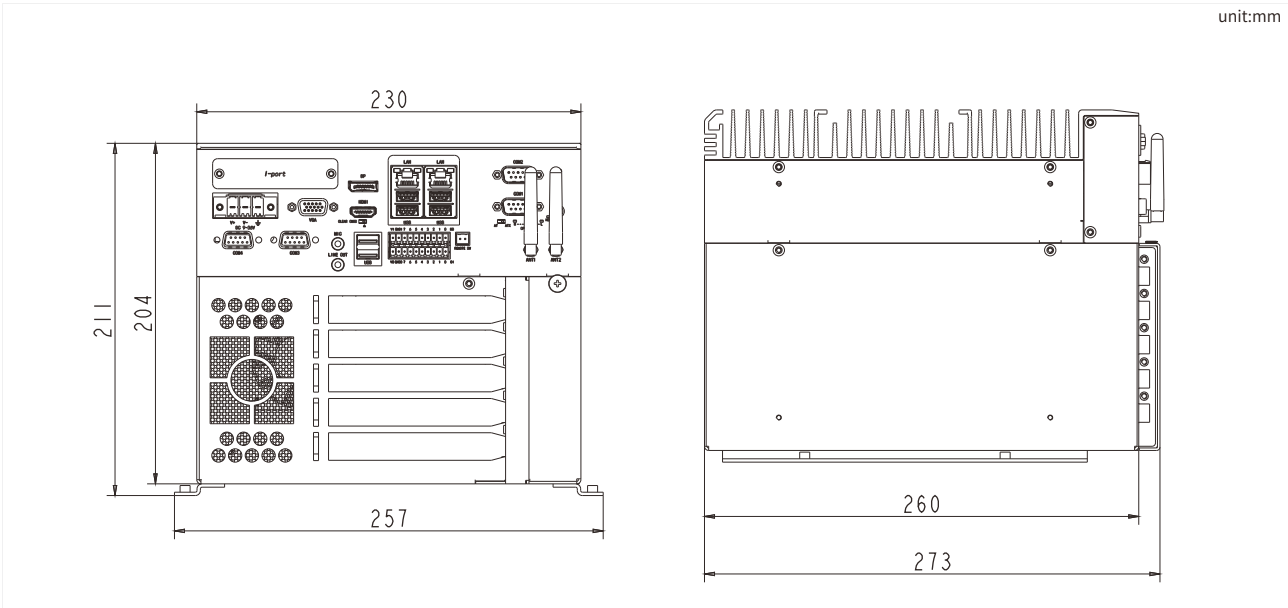
#### Mechanical

|                  |                                   |
|------------------|-----------------------------------|
| Structure        | Aluminum Chassis, SGCC frame      |
| Color            | Pigeon blue + White aluminum grey |
| Installation     | Desktop mounting                  |
| Dimension(W*H*D) | 230*273*204mm                     |
| Weight           | 7.25KG                            |

#### Environment

|                  |                                                                                              |
|------------------|----------------------------------------------------------------------------------------------|
| Operating Temp   | -20°C~60°C SSD, with air flow, -10°C~55°C HDD, with air flow;                                |
| Storage Temp     | -40°C~85°C                                                                                   |
| Storage Humidity | 10~90%@40°C, No condensation                                                                 |
| Vibration        | 5 grms/5~500Hz/random/during operation (SSD) 1 grms/5~500Hz/random/during operation (HDD)    |
| Shock            | 50g peak acceleration(duration 11ms) with SSD; 20g peak acceleration(duration 11ms) with HDD |
| Certificate/EMC  | CE/FCC Class A                                                                               |

### Dimensions



### Ordering Information

| Model          | Processor                                       | Specifications                                                                                                                                    | Expansion                                                             |
|----------------|-------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------|
| KMDA-5921/S001 | Intel® 9th/8th Coffeelake LGA1151 CPU, H310 PCH | 2*DDR4 SODIMM,2*LAN, 4*USB3.1, 2*USB2.0,4*COM, 1*Mini PCIe, M.2 E-Key, 1*VGA, 1*DP,1*HDMI, 1*Line out,1*Mic, 16-bit iso DIO,2*2.5" SATA, DC 9-36V | <b>Standard: ECX-266</b><br>1*PCIeX16 (X16)+1*PCIeX4 (X2)+2*32bit PCI |
| PA-120DC19     |                                                 | AC/DC adapter, DC19V/6.32A 120W                                                                                                                   |                                                                       |
| PA-220DC24     |                                                 | AC/DC adapter, DC 24V/9.17A 220W                                                                                                                  |                                                                       |
| PA-300DC24     |                                                 | AC/DC power adapter,DC24V@12.5A ,300W                                                                                                             |                                                                       |
| AC-140         |                                                 | 8bit isolating input and 8bit power relay output terminal board, DC 12V, signal is 16bit TTL GPIO                                                 |                                                                       |



# KMDA-5921/S002

Intel®9th/8th-Gen Coffee Lake LGA1151 CPU, 3\*LAN, 6\*USB3.1, 2\*easy-swappable SATA3, 4\*PCIe slots, DC 9-36V

## Key Specification

- Intel® 8th/9th Gen Coffee lake LGA1151 CPU
- Intel® Q370 high-performance chipset
- 4\*DDR4 2400/2666MHz SODIMM, up to 128GB
- Supports 2\*DP dual 4K and 1\*VGA, 3 independent displays
- 3\*LAN, 6\*USB3.1, 2\*USB2.0, 4\*COM, 16bit Iso. DIO
- 1\*Mini PCIe with SIM slot, support 4G and WIFI/BT
- 1\*M.2 B-Key 3052 with SIM slot, support 5G module
- 1\*M.2 E-key 2230, supports Gigabit WiFi/BT modules
- 2\*PCIeX16 (X8 signal)+2\*PCIeX16 (X4 signal) Quad expansion
- 2\*SATA3.0 SATA bay, supports RAID0, 1 and hot swap design
- Optional 1\*mSATA and 1\*M.2 M-Key supports NVMe high-speed storage
- Wide power input DC 9-36V, with short circuit, over voltage and over current protection



## Product Overview

KMDA-5921 is a fanless and high-performance box computer with Q370 chipset, powered by Intel® 8th /9th Gen Coffee lake CPU has complete IO function, quad PCIe extensions, wide voltage DC power supply and moderate size. It is suitable for industrial automation, highway tolling, AI edge computing, security monitoring and environmental detection and other industries and fields.

## Product Parameters

### Processor

|            |                                                                                                           |
|------------|-----------------------------------------------------------------------------------------------------------|
| CPU        | Intel® Coffee lake 9th/8th-Gen Corei7/i5/i3/Pentium/Celeron LGA1151 processor, Q370 chipset               |
| RAM        | 4*260-Pin ,DDR4,2400/2666MHz, Max. 128GB                                                                  |
| Graphics   | Intel UHD Graphics, Supports DirectX11.1, OpenGL 5.0 and OpenCL<br>DP:4096*2304@60Hz, VGA:1900*1200@60Hz, |
| LAN        | 2*Intel I211AT/210AT or<br>1*Intel I211AT/I210AT+1*I219LM,10-1000M,iAMT13.0,iVpro;                        |
| USB        | 6* USB3.1, 2*USB2.0                                                                                       |
| Display    | 2*DP+1*VGA                                                                                                |
| Audio      | 1*Line out+1*Mic, Realtek ALC662VD                                                                        |
| COM/Others | 2*RS232/422/485, 2*RS232                                                                                  |

### Storage

|         |                                                        |
|---------|--------------------------------------------------------|
| Storage | 2*2.5" SATA3, RAID0,1,<br>1*M.2 M-Key(PCIe3.0x4), NVME |
|---------|--------------------------------------------------------|

### Others

|          |                                                            |
|----------|------------------------------------------------------------|
| LED      | 1*power LED, 1*H LED, 3*CPU temperature LED                |
| Switch   | 1*Power SW,1*Remote switch,1*AT/ATX SW, 1*Clear CMOS SW    |
| WDT      | Watchdog timeout programmable via software 1 to 255 second |
| TCPM/TPM | Optional TPM2.0                                            |

### OS

|    |                                                                                                               |
|----|---------------------------------------------------------------------------------------------------------------|
| OS | Windows 10 Enterprise & IOT Enterprise, Ubuntu,SuSe,Redhat Enterprise 1,2 (Kernel 4.14), Wind River VxWorks 7 |
|----|---------------------------------------------------------------------------------------------------------------|

### Expansion

|           |                                                                                                                                                                                                                                                                                                                                                                                               |
|-----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Expansion | 2*PCIe3.0X16(X8), GPU/AI Card<150W<210mm+<br>2*PCIe3.0X16(X4), AI Card<75W<230mm;<br>or 1*PCIe3.0 X16(X16)+1*PCIe3.0X16(X4)+2*32bit PCI;<br>1*M.2 E-Key 2230(PCIeX1/USB2.0+CNVio),WIFI6/BT5.0;<br>1*M.2 B-key 3052(PCIeX1/USB2.0+SIM),5G NR/4G LTE;<br>1*M.2 M-Key 2280(PCIex4), NVME/PCIe module;<br>1*Mini PCIe(SATA3.0/PCIeX1+SIM), mSATA/4G LTE;<br>I-port: USB2.0/ 16 bit DIO/COM/others |
|-----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

### Power Supply

|        |                                                                                      |
|--------|--------------------------------------------------------------------------------------|
| Power& | DC IN 9-36V ,with short circuit protection, over voltage and over current protection |
| TDP    | 60.5W(I7-8700T,32G DDR4,128G SSD)                                                    |

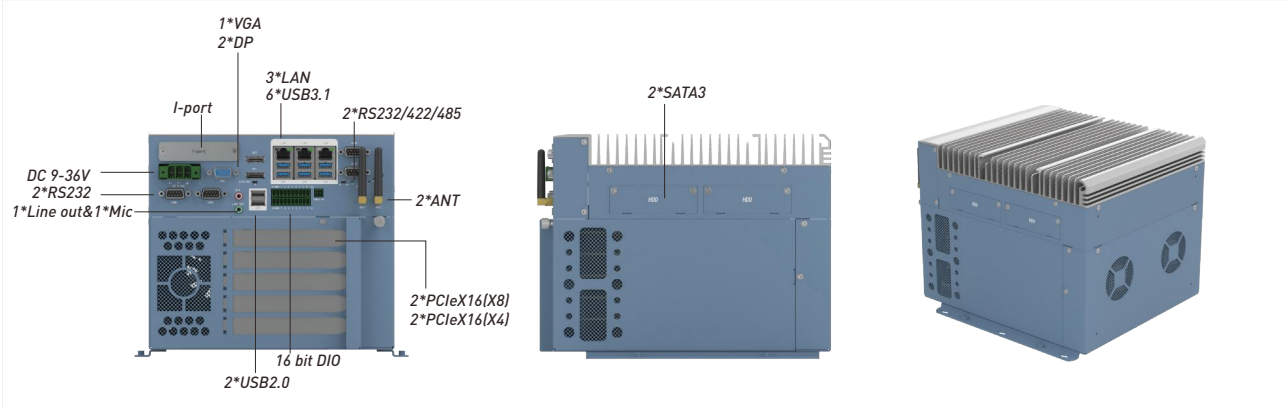
### Mechanical

|                  |                                   |
|------------------|-----------------------------------|
| Structure        | Aluminum Chassis, SGCC frame      |
| Color            | Pigeon blue + White aluminum grey |
| Installation     | Desktop mounting                  |
| Dimension(W*H*D) | 230*273*204mm                     |
| Weight           | 7.25KG                            |

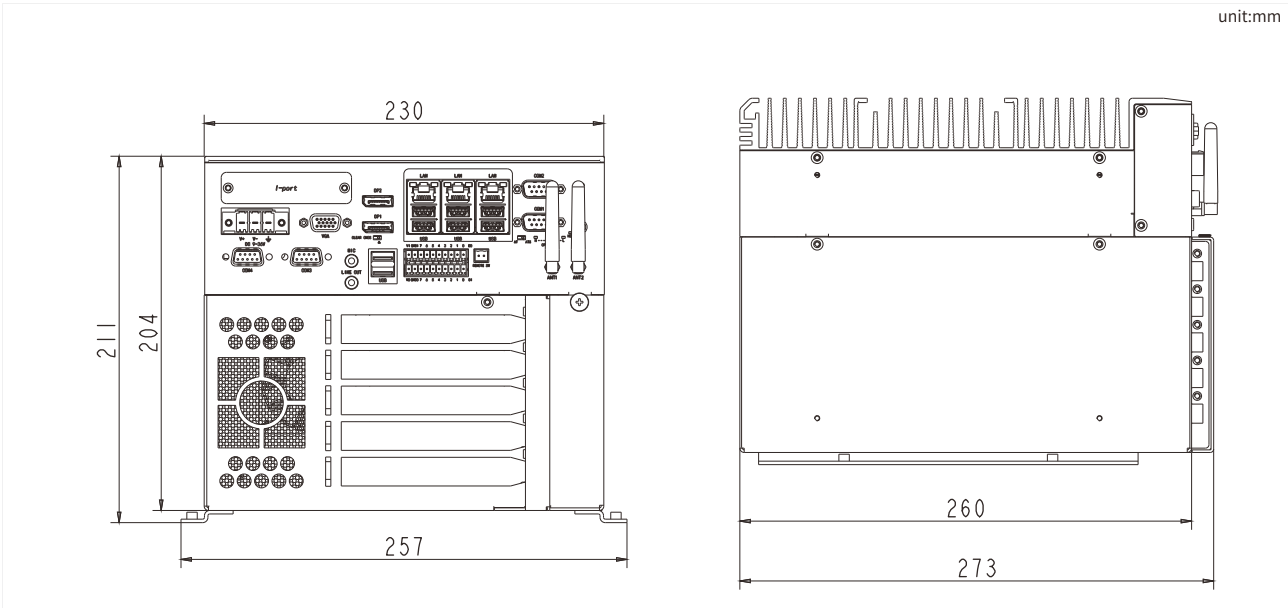
### Environment

|                  |                                                                                                 |
|------------------|-------------------------------------------------------------------------------------------------|
| Operating Temp   | -20°C~-60°C SSD, with air flow,<br>-10°C~-55°C HDD, with air flow;                              |
| Storage Temp     | -40°C~85°C                                                                                      |
| Storage Humidity | 10~90%@40°C, No condensation                                                                    |
| Vibration        | 5 grms/5~500Hz/random/during operation (SSD)<br>1 grms/5~500Hz/random/during operation (HDD)    |
| Shock            | 50g peak acceleration(duration 11ms) with SSD;<br>20g peak acceleration(duration 11ms) with HDD |
| Certificate/EMC  | CE/FCC Class A                                                                                  |

## I/O View



## Dimensions



## Ordering Information

| Model          | Processor                                       | Specifications                                                                                                                                                                                   | Expansion                                                                                                                      |
|----------------|-------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|
| KMDA-5921/S002 | Coffee lake-R 9th/8th-Gen LGA1151 CPU, Q370 PCH | 4*DDR4 SODIMM, 3*LAN, 6*USB3.1, 2*USB2.0, 4*COM, 1*VGA, 2*DP, Audio Line out & Mic, 16bit Iso.DIO, 1*M.2 E-Key, 1*M.2 B-Key, 1*M.2 M-Key, 2*2.5"SATA bay, 1*Mini PCIe(mSATA), 1*I-port, DC 9-36V | <b>Standard:ECX-254</b><br>2*PCIeX16(X8)+2*PCIeX16(X4)<br><b>Optional:ECX-275</b><br>1*PCIeX16(X16)+1*PCIeX16(X4)+ 2*32bit PCI |
| PA-120DC19     |                                                 | AC/DC power adapter, DC19V/6.32A 120W                                                                                                                                                            |                                                                                                                                |
| PA-220DC24     |                                                 | AC/DC power adapter, DC24V/9.17A 220W                                                                                                                                                            |                                                                                                                                |
| PA-300DC24     |                                                 | AC/DC power adapter,DC24V/12.5A ,300W                                                                                                                                                            |                                                                                                                                |
| AC-140         |                                                 | 8-channel isolated input and 8-channel power relay output terminal board,DC 12V,source signal: 16-bit TTL GPIO                                                                                   |                                                                                                                                |

# KMDA-6610

Intel® 10th Comet Lake LGA1200 CPU, 2\*LAN, 4\*USB3.2, 1\*VGA, 1\*DP, 1\*HDMI, 4\*COM, 8bit DIO, 1\*mSATA, 1\*Mini PCIe, 2\*SATA3.0, DC 9-36V

### Key Specification

- Intel® 10th Gen Comet lake LGA1200 CPU
- Intel® H420E Chipset
- 2\*DDR4 2933MHz SODIMM, up to 64GB
- 1\*DP, 1\*HDMI and 1\*VGA three display ports, supporting two independent displays
- 2\*LAN, 4\*USB3.2, 2\*USB2.0, 8bit DIO, 1\*MIC+1\*LINE OUT, 1\*PS/2
- 2\*RS232/422/485 and 2\*RS232
- 1\*Mini-PCIe full size with SIM card slot, supporting 4G LTE module
- 2\*2.5-inch SATA bay and 1\*mSATA
- Wide power input 9-36V, with short circuit, over voltage and over current protection



### Product Overview

KMDA-6610 is a fanless high-performance box computer with H420E chipset, powered by Intel® 10th Gen Comet lake CPU has complete IO function, wide voltage DC power supply and moderate size. It is suitable for industrial automation, highway tolling, security monitoring and environmental detection and other industries and fields.

### Product Parameters

#### System

|            |                                                                                                                                         |
|------------|-----------------------------------------------------------------------------------------------------------------------------------------|
| CPU        | Intel® Comet lake 10th Gen Core™ i9/i7/i5/i3/Pentium/Celeron LGA1200 CPU, Intel® H420E PCH                                              |
| RAM        | 2*260-Pin, DDR4,2933MHz, 64GB max.                                                                                                      |
| Graphics   | Intel® UHD Graphics, Supports DirectX 12, OpenGL 4.5, DP:4096*2304@60Hz, HDMI:4096*2160@30Hz, VGA:1920*1200@60Hz, 2 independent display |
| LAN        | 1*Intel I226V, 2.5G(PCIeX1),10M-2.5G,WOL; 1*Intel I219 LM(PCIeX1), 10-1000M, WOL                                                        |
| USB        | 4* USB3.2 Gen1, 2*USB2.0 , 2*USB2.0 (Build-in)                                                                                          |
| Display    | 1*DP+1*HDMI+1*VGA                                                                                                                       |
| Audio      | 1*Line out+1*MIC,Realtek ALC897                                                                                                         |
| COM/Others | 2*RS232/422/485, 2*RS232;                                                                                                               |
| DIO        | 8 bit non Iso. DIO (2*5pin); 16 bit non Iso. DIO(2*10pin)                                                                               |

#### Storage

|         |                                         |
|---------|-----------------------------------------|
| Storage | 2*2.5" SATA3.0; 1*mSATA(SATA3.0+USB2.0) |
|---------|-----------------------------------------|

#### Others

|           |                                                       |
|-----------|-------------------------------------------------------|
| LED       | 1*PowerLED, 1*HDD LED, 3*CPUoperationLED              |
| Switch    | 1*Power SW, 1*Remote SW, 1*AT/ATX SW, 1*Clear CMOS SW |
| WDT       | programmable via software 1 to 255 second             |
| TCPPM/TPM | Optional TPM                                          |

#### Expansion

|           |                                                                                           |
|-----------|-------------------------------------------------------------------------------------------|
| Expansion | 1*Mini-PCIe(PCIeX1/USB2.0+SIM),4G LTE/PCIe module; I-port: 16bit DIO/USB2.0/LPT/Mini PCIe |
|-----------|-------------------------------------------------------------------------------------------|

#### Power

|           |                                                                                              |
|-----------|----------------------------------------------------------------------------------------------|
| Power&TDP | DC IN 9-36V , short circuit protection, OVP&OCP<br>TDP:59.52W(i5-10500 CPU/4G DDR4/256G SSD) |
|-----------|----------------------------------------------------------------------------------------------|

#### Mechanical

|                   |                                   |
|-------------------|-----------------------------------|
| Structure         | Aluminum Chassis, SGCC frame      |
| Color             | Pigeon blue + White aluminum grey |
| Installation      | desktop mounting                  |
| Dimension (W*H*D) | 230*267.3*92mm                    |
| Weight            | 5.12KG                            |

#### Environment

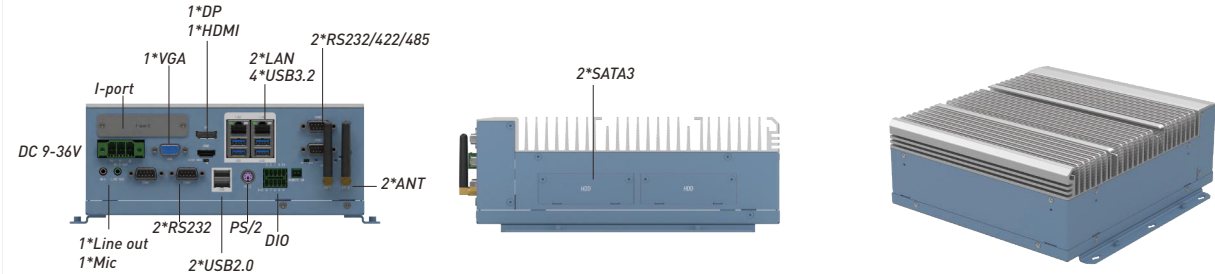
|                  |                                                                                       |
|------------------|---------------------------------------------------------------------------------------|
| Operating Temp   | -20°C~60°C SSD, with air flow;<br>-10°C~55°C HDD, with air flow;                      |
| Storage Temp     | -40°C~85°C                                                                            |
| Storage Humidity | 10~95%@40°C, No-condensation                                                          |
| Vibration        | 5 grms/5~500Hz/random/operation(SSD);<br>1 grms/5~500Hz/random/operation(HDD)         |
| Shock            | 50g peak acceleration(duration 11ms,SSD);<br>20g peak acceleration(duration 11ms,HDD) |

Certificate/EMC CE/FCC Class A

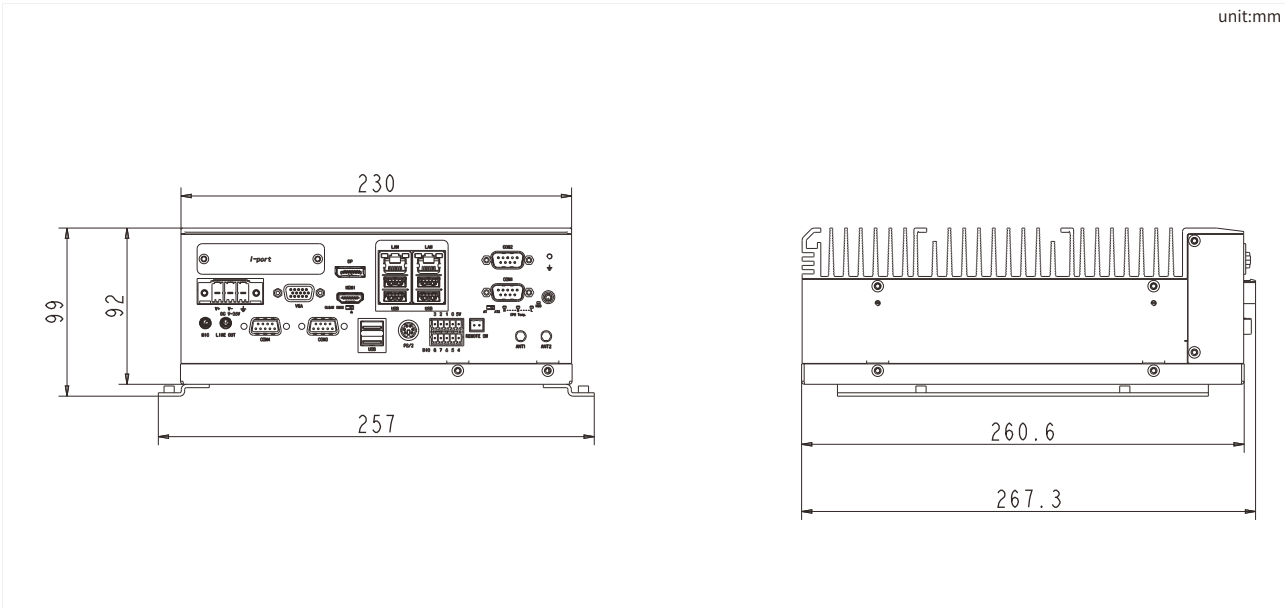
#### OS

|    |                                                                                                                                                                     |
|----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| OS | Windows11, Windows 10 IoT Enterprise (64-bit), Windows Server 2019, Ubuntu, SUSE, Redhat Enterprise, Wind River Linux, Yocto Project (64-bit), Wind River VxWorks 7 |
|----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|

### I/O View



### Dimensions



### Ordering Information

| Model          | Processor                                    | Specifications                                                                                                                                                        |
|----------------|----------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| KMDA-6610/S001 | Intel® 10th Cometlake LGA1200 CPU, H420E PCH | 2*DDR4 SODIMM, 2*LAN, 4*USB3.2, 2*USB2.0, 1*PS/2, 4*COM, 1*VGA, 1*DP,1*HDMI, Audio Line out & Mic, 8bit DIO, 1*I-Port, 2*2.5"SATA bay, 1*mSATA, 1*Mini PCIe, DC 9-36V |
| PA-120DC19     |                                              | AC/DC power adapter, DC 19V/6.32A,120W                                                                                                                                |



# KMDA-6920

Intel® 10th Comet Lake LGA1200 CPU, 2\*LAN, 4\*USB3.2, 1\*VGA, 1\*DP, 1\*HDMI, 4\*COM, 8bit DIO, 1\*mSATA, 1\*Mini PCIe, 2\*PCIe, 2\*SATA3.0, DC 9-36V

### Key Specification

- Intel® 10th Gen Comet lake LGA1200 CPU
- Intel® H420E PCH
- 2\*DDR4 2933MHz SODIMM, up to 64GB
- 1\*DP, 1\*HDMI and 1\*VGA three display ports, supporting two independent displays
- 2\*LAN, 4\*USB3.2, 2\*USB2.0, 8bit DIO, 1\*MIC+1\*LINE OUT, 1\*PS/2
- 2\*RS232/422/485 and 2\*RS232
- 1\*Mini-PCIe full size with SIM card slot, supporting 4G LTE module
- 1\*PCIeX16 and 1\*PCIeX16 (X4 signal) dual expansion
- 2\*2.5-inch SATA bay and 1\*mSATA
- Wide power input DC 9-36V, with short circuit, over voltage and over current protection



### Product Overview

KMDA-6920 is a fanless high-performance box computer with H420E chipset, powered by Intel® 10th Gen Comet lake CPU has complete IO function, dual PCIe extensions, wide voltage DC power supply and moderate size. It is suitable for industrial automation, highway tolling, AI edge computing, security monitoring and environmental detection and other industries and fields.

### Product Parameters

#### System

|          |                                                                                                                                         |
|----------|-----------------------------------------------------------------------------------------------------------------------------------------|
| CPU      | Intel® Comet lake 10th Gen Core™ i9/i7/i5/i3/Pentium/Celeron LGA1200 CPU, Intel® H420E PCH                                              |
| RAM      | 2*260-Pin, DDR4,2933MHz, 64GB max.                                                                                                      |
| Graphics | Intel® UHD Graphics, Supports DirectX 12, OpenGL 4.5, DP:4096*2304@60Hz, HDMI:4096*2160@30Hz, VGA:1920*1200@60Hz, 2 independent display |

|            |                                                                                     |
|------------|-------------------------------------------------------------------------------------|
| LAN        | 1*Intel I226V, 2.5G(PcieX1),10M-2.5G,WOL;<br>1*Intel I219 LM(PcieX1), 10-1000M, WOL |
| USB        | 4* USB3.2 Gen1, 2*USB2.0 , 2*USB2.0 (Build-in)                                      |
| Display    | 1*DP+1*HDMI+1*VGA                                                                   |
| Audio      | 1*Line out+1*MIC,Realtek ALC897                                                     |
| COM/Others | 2*RS232/422/485, 2*RS232;                                                           |
| DIO        | 8bit non-isolated DIO, TTL , programmable<br>16 bit non-isolated DIO(2*10 pin)      |

#### Storage

|         |                                         |
|---------|-----------------------------------------|
| Storage | 2*2.5" SATA3.0; 1*mSATA(SATA3.0+USB2.0) |
|---------|-----------------------------------------|

#### Others

|          |                                                       |
|----------|-------------------------------------------------------|
| LED      | 1*PowerLED, 1*HDD LED, 3*CPUoperationLED              |
| Switch   | 1*Power SW, 1*Remote SW, 1*AT/ATX SW, 1*Clear CMOS SW |
| WDT      | programmable via software 1 to 255 second             |
| TCPM/TPM | Optional TPM                                          |

#### Expansion

|           |                                                                                                                                                                                                                          |
|-----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Expansion | 1*PCIe3.0 X16(X16),GPU/AI Card<150W<210mm+<br>1*PCIe3.0X16(X4) ,AI Card<75W<230mm;<br>or 1*PCIe3.0 X16(X16)+1*32bit PCI;<br>1*Mini-PCIe(PcieX1/USB2.0+SIM),4G LTE/PCIe module;<br>I-port: 16bit DIO/USB2.0/LPT/Mini PCIe |
|-----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

#### Power

|            |                                                                                                 |
|------------|-------------------------------------------------------------------------------------------------|
| Power& TDP | DC IN 9-36V, short circuit protection, OVP&OCP<br>TDP : 57.12W(i7-10700TE CPU/4G DDR4/256G SSD) |
|------------|-------------------------------------------------------------------------------------------------|

#### Mechanical

|                   |                                   |
|-------------------|-----------------------------------|
| Structure         | Aluminum Chassis, SGCC frame      |
| Color             | Pigeon blue + White aluminum grey |
| Installation      | desktop mounting                  |
| Dimension (W*H*D) | 230*273*143mm                     |
| Weight            | 5.899KG                           |

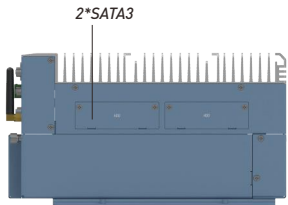
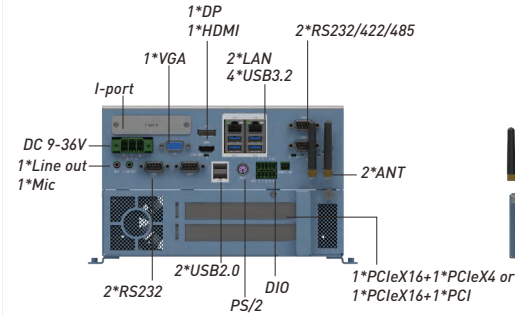
#### Environment

|                  |                                                                                       |
|------------------|---------------------------------------------------------------------------------------|
| Operating Temp   | -20℃~60℃ SSD, with air flow;<br>-10℃~55℃ HDD, with air flow;                          |
| Storage Temp     | -40℃~85℃                                                                              |
| Storage Humidity | 10~95%@40℃, No-condensation                                                           |
| Vibration        | 5 grms/5~500Hz/random/operation(SSD);<br>1 grms/5~500Hz/random/operation(HDD)         |
| Shock            | 50g peak acceleration(duration 11ms,SSD);<br>20g peak acceleration(duration 11ms,HDD) |
| Certificate/EMC  | CE/FCC Class A                                                                        |

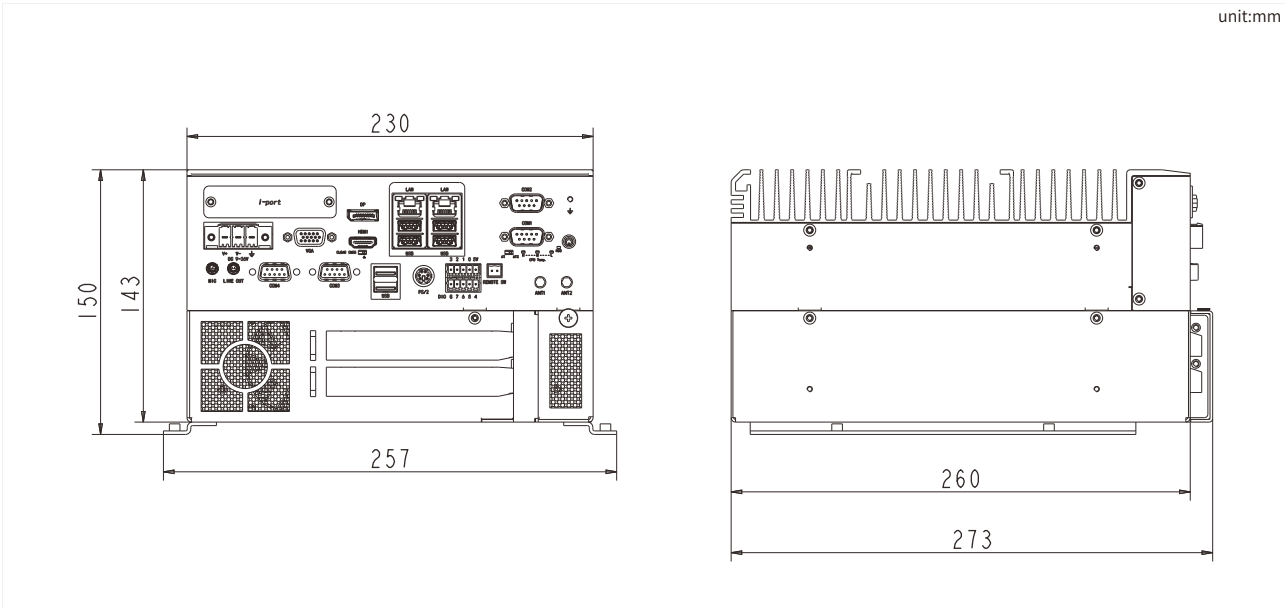
#### OS

|    |                                                                                                                                                                     |
|----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| OS | Windows11, Windows 10 IoT Enterprise (64-bit), Windows Server 2019, Ubuntu, SUSE, Redhat Enterprise, Wind River Linux, Yocto Project (64-bit), Wind River VxWorks 7 |
|----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|

### I/O View



### Dimensions



### Ordering Information

| Model          | Processor                                    | Specifications                                                                                                                                                          | Expansion                                                                                                        |
|----------------|----------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| KMDA-6920/S001 | Intel® 10th Cometlake LGA1200 CPU, H420E PCH | 2*DDR4 SODIMM, 2*LAN, 4*USB3.2, 2*USB2.0, 1*PS/2, 4*COM, 1*VGA, 1*DP, 1*HDMI, Audio Line out & Mic, 8bit DIO, 1*I-Port, 2*2.5" SATA bay, 1*mSATA, 1*Mini PCIe, DC 9-36V | <b>Standard:ECX-255</b><br>1*PCIeX16(X16)+1*PCIeX16(X4)<br><b>Optional:ECX-271</b><br>1*PCIeX16(X16)+1*32bit PCI |
| PA-120DC19     |                                              | AC/DC power adapter, DC 19V/6.32A,120W                                                                                                                                  |                                                                                                                  |
| PA-220DC24     |                                              | AC/DC power adapter, DC 24V/9.17A, 220W                                                                                                                                 |                                                                                                                  |
| PA-300DC24     |                                              | AC/DC power adapter, DC 24V/12.5A, 300W                                                                                                                                 |                                                                                                                  |

# KMDA-6921

Intel® 10th Comet Lake LGA1200 CPU, 2\*LAN, 4\*USB3.2, 1\*VGA, 1\*DP, 1\*HDMI, 4\*COM, 8bit DIO, 1\*mSATA, 1\*Mini PCIe, 2\*PCIe+2\*PCI, 2\*SATA, DC 9-36V

## Key Specification

- Intel® 10th Gen Comet lake LGA1200 CPU
- Intel® H420E PCH
- 2\*DDR4 2933MHz SODIMM, up to 64GB
- 1\*DP, 1\*HDMI and 1\*VGA three display ports, supporting two independent displays
- 2\*LAN, 4\*USB3.2, 2\*USB2.0, 8bit DIO, 1\*MIC+1\*LINE OUT, 1\*PS/2
- 2\*RS232/422/485 and 2\*RS232
- 1\*Mini-PCIe full size with SIM card slot, supporting 4G LTE module
- 1\*PCIeX16+1\*PCIeX4 (X2 signal)+2\*PCI Quad expansion
- 2\*2.5-inch SATA bay and 1\*mSATA
- Wide power input DC 9-36V, with short circuit, over voltage and over current protection



## Product Overview

KMDA-6921 is a fanless high-performance box computer with H420E chipset, powered by Intel® 10th Gen Comet lake CPU has complete IO function, dual PCIe plus dual PCI quad expansions, wide voltage DC power supply and moderate size. It is suitable for industrial automation, highway tolling, AI edge computing, security monitoring and environmental detection and other industries and fields.

## Product Parameters

### System

|            |                                                                                                                                         |
|------------|-----------------------------------------------------------------------------------------------------------------------------------------|
| CPU        | Intel® Comet lake 10th Gen Core™ i9/i7/i5/i3/Pentium/Celeron LGA1200 CPU, Intel® H420E PCH                                              |
| RAM        | 2*260-Pin, DDR4,2933MHz, 64GB max.                                                                                                      |
| Graphics   | Intel® UHD Graphics, Supports DirectX 12, OpenGL 4.5, DP:4096*2304@60Hz, HDMI:4096*2160@30Hz, VGA:1920*1200@60Hz, 2 independent display |
| LAN        | 1*Intel I226V, 10M-2.5G,WOL; 1*Intel I219 LM, 10-1000M, WOL                                                                             |
| USB        | 4* USB3.2 Gen1, 2*USB2.0 , 2*USB2.0 (Build-in)                                                                                          |
| Display    | 1*DP+1*HDMI+1*VGA                                                                                                                       |
| Audio      | 1*Line out+1*MIC,Realtek ALC897                                                                                                         |
| COM/Others | 2*RS232/422/485, 2*RS232;                                                                                                               |
| DIO        | 8 bitnon Iso.DIO (2*5pin); 16 bitnon Iso.DIO(2*10)                                                                                      |

### Storage

|         |                                         |
|---------|-----------------------------------------|
| Storage | 2*2.5" SATA3.0; 1*mSATA(SATA3.0+USB2.0) |
|---------|-----------------------------------------|

### Others

|           |                                                       |
|-----------|-------------------------------------------------------|
| LED       | 1*PowerLED, 1*HDD LED, 3*CPUoperationLED              |
| Switch    | 1*Power SW, 1*Remote SW, 1*AT/ATX SW, 1*Clear CMOS SW |
| WDT       | programmable via software 1 to 255 second             |
| TCPPM/TPM | Optional TPM                                          |

### Expansion

|           |                                                                                                                                                                                          |
|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Expansion | 1*PCIe3.0 X16(X16),GPU/AI Card<150W<210mm + 1*PCIe3.0X4(X2),Function card<230mm + 2*32bit PCI; 1*Mini-PCIe(PCIeX1/USB2.0+SIM),4G LTE/PCIe module, I-port: 16bit DIO/USB2.0/LPT/Mini PCIe |
|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

### Power

|            |                                                                                            |
|------------|--------------------------------------------------------------------------------------------|
| Power& TDP | DC IN 9-36V, short circuit protection, OVP&OCP<br>TDP: 60W(i7-10700K CPU/4G DDR4/256G SSD) |
|------------|--------------------------------------------------------------------------------------------|

### Mechanical

|                  |                                   |
|------------------|-----------------------------------|
| Structure        | Aluminum Chassis, SGCC frame      |
| Color            | Pigeon blue + White aluminum grey |
| Installation     | desktop mounting                  |
| Dimension(W*H*D) | 230*273*204mm                     |
| Weight           | 6.837KG                           |

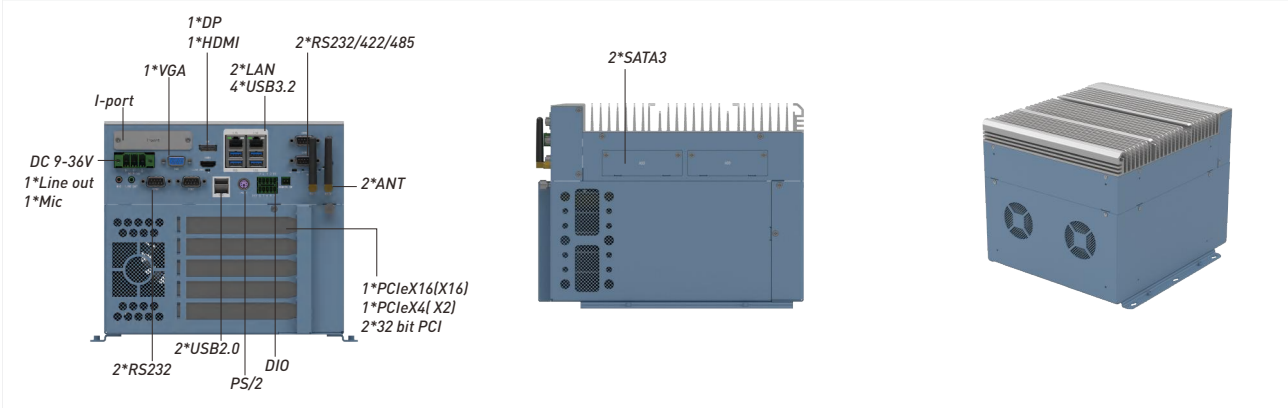
### Environment

|                  |                                                                                       |
|------------------|---------------------------------------------------------------------------------------|
| Operating Temp   | -20°C~60°C SSD, with air flow;<br>-10°C~55°C HDD, with air flow;                      |
| Storage Temp     | -40°C~85°C                                                                            |
| Storage Humidity | 10~95%@40°C, No-condensation                                                          |
| Vibration        | 5 grms/5~500Hz/random/operation(SSD);<br>1 grms/5~500Hz/random/operation(HDD)         |
| Shock            | 50g peak acceleration(duration 11ms,SSD);<br>20g peak acceleration(duration 11ms,HDD) |
| Certificate/EMC  | CE/FCC Class A                                                                        |

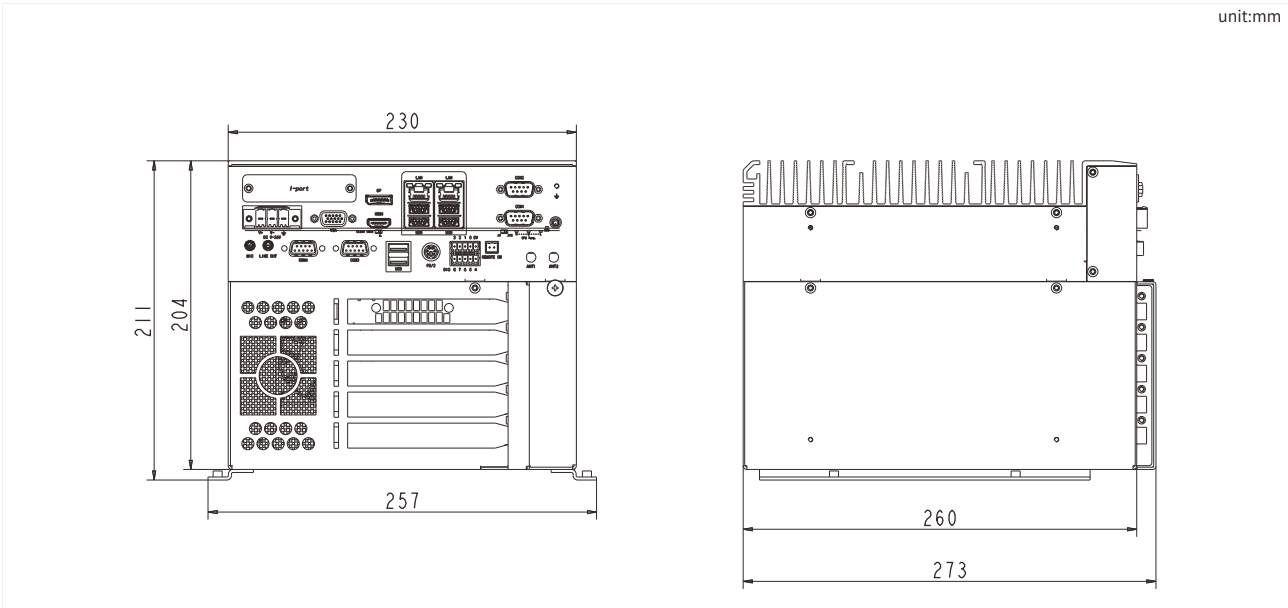
### OS

|    |                                                                                                                                                                     |
|----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| OS | Windows11, Windows 10 IoT Enterprise (64-bit), Windows Server 2019, Ubuntu, SUSE, Redhat Enterprise, Wind River Linux, Yocto Project (64-bit), Wind River VxWorks 7 |
|----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## I/O View



## Dimensions



## Ordering Information

| Model          | Processor                                    | Specifications                                                                                                                                                          | Expansion                                                               |
|----------------|----------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------|
| KMDA-6921/S001 | Intel® 10th Cometlake LGA1200 CPU, H420E PCH | 2*DDR4 SODIMM, 2*LAN, 4*USB3.2, 2*USB2.0, 1*PS/2, 4*COM, 1*Mini PCIe, 1*mSATA, 1*VGA, 1*DP, 1*HDMI, Audio Line out & Mic, 8bit DIO, 1*I-Port, 2*2.5" SATA bay, DC 9-36V | <b>Standard: ECX-266</b><br>1*PCIeX16 (X16) +1*PCIeX4 (X2) +2*32bit PCI |
| PA-120DC19     |                                              | AC/DC power adapter, DC 19V/6.32A,120W                                                                                                                                  |                                                                         |
| PA-220DC24     |                                              | AC/DC power adapter, DC 24V/9.17A, 220W                                                                                                                                 |                                                                         |
| PA-300DC24     |                                              | AC/DC power adapter, DC 24V/12.5A, 300W                                                                                                                                 |                                                                         |



# KMDA-7610

Intel® Alder Lake-S 12th Gen LGA1700 CPU, 2\*LAN, 4\*USB3.2, 1\*VGA, 1\*DP, 1\*HDMI, 4\*COM, 16bit DIO, 1\*Mini PCIe, 2\*SATA3.0, DC 9-36V

### Key Specification

- Intel® 12th Gen Alder lake-S LGA1700 CPU
- Intel® H610 Chipset
- 2\*DDR5 4800MHz SODIMM, up to 64GB
- 1\*DP, 1\*HDMI and 1\*VGA, 3 independent displays
- 2\*LAN, 4\*USB3.2, 2\*USB2.0, 16bit Iso. DIO
- Audio 1\*MIC+1\*LINE OUT
- 2\*RS232/422/485 and 2\*RS232 COM
- 1\*Mini-PCIe full size with SIM card slot, support 4G LTE modem
- 2\*2.5"Easy-plug SATA3.0 bay and 1\*mSATA
- DC IN 9-36V, wide power input, with OVP,OCP and SCP



### Product Overview

KMDA-7610 is a fanless high-performance box computer with H610 chipset, powered by Intel® 12th Gen Alder lake-S CPU, multi IO interfaces and moderate size. It is suitable for industrial automation, highway tolling, security monitoring and environmental detection and other industries and fields.

### Product Parameters

#### System

|            |                                                                                                                                                        |
|------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|
| CPU        | Intel® Alder lake-S 12th Gen Core™ i9/i7/i5/i3/Pentium/Celeron LGA1700 CPU, Intel® H610 PCH                                                            |
| RAM        | 2*262-Pin SODIMM, DDR5 4800MHz, 64GB max.                                                                                                              |
| Graphics   | Intel® UHD Graphics, Supports DirectX 12, OpenGL 4.5, OpenCL 3.0;<br>DP:7680*4320@60Hz, HDMI:4096*2160@60Hz, VGA:1920*1200@60Hz, 3 independent display |
| LAN        | 1*Intel I226V, 10-1000M,WOL;<br>1*Intel I219 LM, 10-1000M, WOL                                                                                         |
| USB        | 2* USB3.2(10G), 2*USB3.2(5G), 2*USB2.0                                                                                                                 |
| Display    | 1*DP+1*HDMI+1*VGA                                                                                                                                      |
| Audio      | 1*Line out+1*MIC,Realtek ALC897                                                                                                                        |
| COM/Others | 2*RS232/422/485, 2*RS232;<br>16bit Iso.DIO(8bit DI-2.5KV-PNP/NPN;8bit DO-2.5KV-200mA);                                                                 |
| DIO        | 16bit non Iso.DIO(2*10pin)                                                                                                                             |

#### Storage

|         |                                  |
|---------|----------------------------------|
| Storage | 2*2.5" SATA3.0; 1*mSATA(SATA3.0) |
|---------|----------------------------------|

#### Others

|          |                                                 |
|----------|-------------------------------------------------|
| LED      | 1*PowerLED, 1*HDD LED, 3*CPU Temp LED           |
| Switch   | 1*Power SW, Remote SW,1*AT/ATX SW, 1*Clear CMOS |
| WDT      | programmable via software 1 to 255 second       |
| TCPM/TPM | Optional TPM2.0                                 |

#### Expansion

|           |                                                                                              |
|-----------|----------------------------------------------------------------------------------------------|
| Expansion | 1*Mini-PCIe(PCIeX1/USB2.0+SIM),4G LTE/PCIe module;<br>I-port: 16bit DIO, USB2.0 or Mini PCIe |
|-----------|----------------------------------------------------------------------------------------------|

#### Power

|           |                                                            |
|-----------|------------------------------------------------------------|
| Power&TDP | DC IN 9-36V , short circuit protection, OVP&OCP<br>TDP:TBD |
|-----------|------------------------------------------------------------|

#### Mechanical

|                   |                                   |
|-------------------|-----------------------------------|
| Structure         | Aluminum Chassis, SGCC frame      |
| Color             | Pigeon blue + White aluminum grey |
| Installation      | desktop mounting                  |
| Dimension (W*H*D) | 256.68*267.3*99mm                 |
| Weight            | TBD                               |

#### Environment

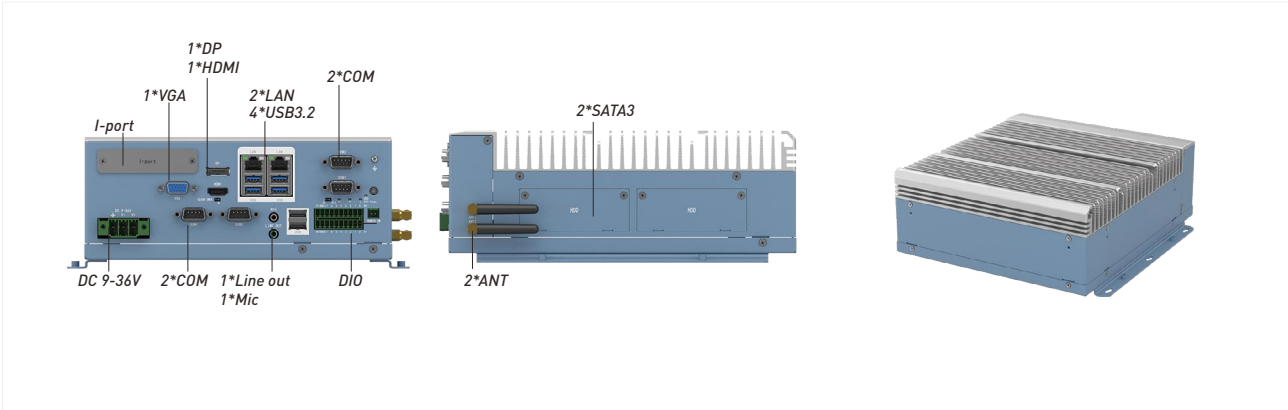
|                  |                                                                                       |
|------------------|---------------------------------------------------------------------------------------|
| Operating Temp   | -20°C~60°C SSD, with air flow;<br>-10°C~55°C HDD, with air flow;                      |
| Storage Temp     | -40°C~85°C                                                                            |
| Storage Humidity | 10~95%@40°C, No-condensation                                                          |
| Vibration        | 5 grms/5~500Hz/random/operation(SSD);<br>1 grms/5~500Hz/random/operation(HDD)         |
| Shock            | 50g peak acceleration(duration 11ms,SSD);<br>20g peak acceleration(duration 11ms,HDD) |

Certificate/EMC CE/FCC Class A

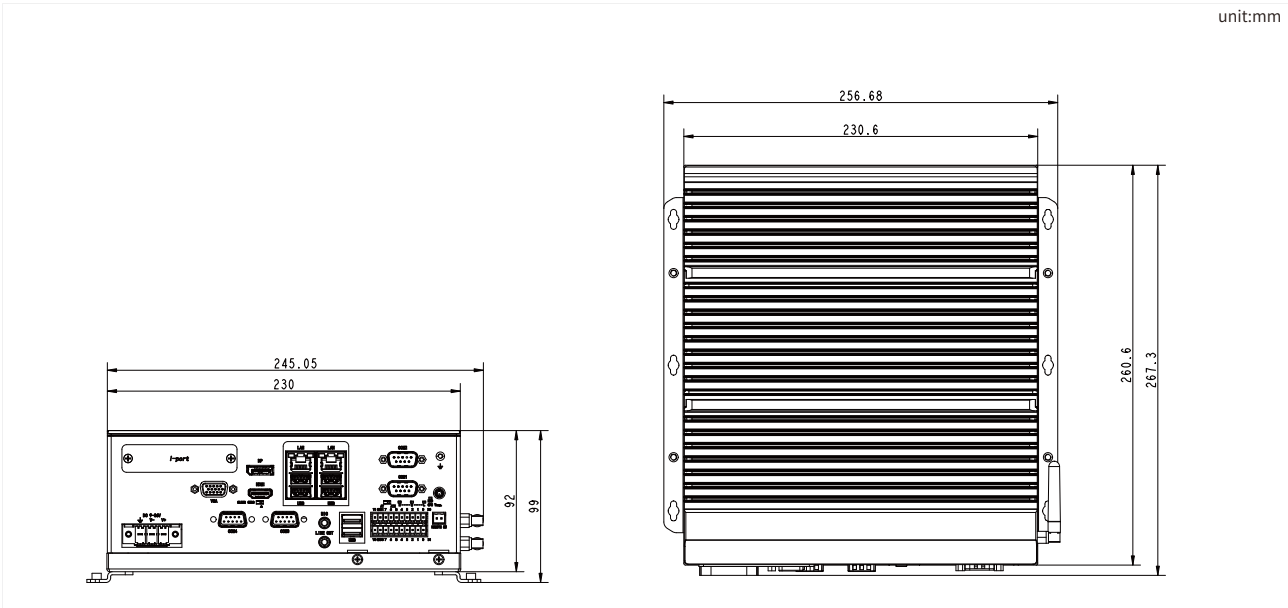
#### OS

|    |                                                                                                                  |
|----|------------------------------------------------------------------------------------------------------------------|
| OS | Win11, Win 10 IoT Enterprise 2021 LTSC, Ubuntu, SuSe, Red Hat Enterprise, Wind River Linux, Wind River VxWorks 7 |
|----|------------------------------------------------------------------------------------------------------------------|

### I/O View



### Dimensions



### Ordering Information

| Model          | Processor                                                                                   | Specifications                                                                                                                                               |
|----------------|---------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|
| KMDA-7610/S001 | Intel® Alder lake-S 12th Gen Core™ i9/i7/i5/i3/Pentium/Celeron LGA1700 CPU, Intel® H610 PCH | 2*DDR5 SODIMM, 2*LAN, 4*USB3.2, 2*USB2.0, 4*COM, 1*VGA, 1*DP,1*HDMI, Line out & Mic, 16bit Iso.DIO, 1*I-Port, 2*2.5"SATA bay, 1*mSATA, 1*Mini PCIe, DC 9-36V |

# KMDA-7920

Intel® Alder Lake-S 12th Gen LGA1700 CPU, 2\*LAN, 4\*USB3.2, 1\*VGA, 1\*DP, 1\*HDMI, 4\*COM, 16bit DIO, 2\*PCIe, 2\*SATA3.0, DC 9-36V

## Key Specification

- Intel® 12th Gen Alder lake-S LGA1700 CPU
- Intel® H610 PCH
- 2\*DDR5 4800MHz SODIMM, up to 64GB
- 1\*DP, 1\*HDMI and 1\*VGA, 3 independent displays
- 2\*LAN, 4\*USB3.2, 2\*USB2.0, 16bit Iso. DIO
- Audio 1\*MIC+1\*LINE OUT
- 2\*RS232/422/485 and 2\*RS232 COM
- 1\*Mini-PCIe full size with SIM card slot, support 4G LTE modem
- 1\*PCIeX16+1\*PCIeX16 (X4 signal) dual expansions
- 2\*2.5"Easy-plug SATA3.0 bay and 1\*mSATA
- DC IN 9-36V, wide power input, with OVP,OCP and SCP



## Product Overview

KMDA-7920 is a fanless high-performance box computer with H610 chipset, powered by Intel® 12th Gen Alder lake-S CPU, multi IO interfaces, dual PCIe extensions and moderate size. It is suitable for industrial automation, highway tolling, AI edge computing, security monitoring and environmental detection and other industries and fields.

## Product Parameters

### System

|            |                                                                                                                                                        |
|------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|
| CPU        | Intel® Alder lake-S 12th Gen Core™ i9/i7/i5/i3/Pentium/Celeron LGA1700 CPU, Intel® H610 PCH                                                            |
| RAM        | 2*262-Pin SODIMM, DDR5 4800MHz, 64GB max.                                                                                                              |
| Graphics   | Intel® UHD Graphics, Supports DirectX 12, OpenGL 4.5, OpenCL 3.0;<br>DP:7680*4320@60Hz, HDMI:4096*2160@60Hz, VGA:1920*1200@60Hz, 3 Independent Display |
| LAN        | 1*Intel I226V, 10-1000M,WOL;<br>1*Intel I219 LM, 10-1000M, WOL                                                                                         |
| USB        | 2* USB3.2(10G), 2*USB3.2(5G), 2*USB2.0                                                                                                                 |
| Display    | 1*DP+1*HDMI+1*VGA                                                                                                                                      |
| Audio      | 1*Line out+1*MIC, Realtek ALC897                                                                                                                       |
| COM/Others | 2*RS232/422/485, 2*RS232;<br>16bit Iso.DIO(8bit DI-2.5KV-PNP/NPN;8bit DO-2.5KV-200mA);                                                                 |
| DIO        | 16bit non Iso.DIO(2*10pin)                                                                                                                             |

### Storage

|         |                                  |
|---------|----------------------------------|
| Storage | 2*2.5" SATA3.0; 1*mSATA(SATA3.0) |
|---------|----------------------------------|

### Others

|          |                                                 |
|----------|-------------------------------------------------|
| LED      | 1*PowerLED, 1*HDD LED, 3*CPU TempLED            |
| Switch   | 1*Power SW, Remote SW,1*AT/ATX SW, 1*Clear CMOS |
| WDT      | programmable via software 1 to 255 second       |
| TCPM/TPM | Optional TPM2.0                                 |

### Expansion

|           |                                                                                                                                                                     |
|-----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Expansion | 1*PCIe5.0X16(X16)+1*PCIe3.0X16(X4), GPU<150W<250mm/<br>AI Card<75W<280mm;<br>or 1*PCIe5.0X16(X16)+1*32bit PCI<br>1*Mini-PCIe(PCIeX1/USB2.0+SIM),4G LTE/PCIe module; |
|-----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|

### Power

|            |                                                            |
|------------|------------------------------------------------------------|
| Power& TDP | DC IN 9-36V , short circuit protection, OVP&OCP<br>TDP:TBD |
|------------|------------------------------------------------------------|

### Mechanical

|                   |                                   |
|-------------------|-----------------------------------|
| Structure         | Aluminum Chassis, SGCC frame      |
| Color             | Pigeon blue + White aluminum grey |
| Installation      | desktop mounting                  |
| Dimension (W*H*D) | 256.68*312.7*149.9mm              |
| Weight            | TBD                               |

### Environment

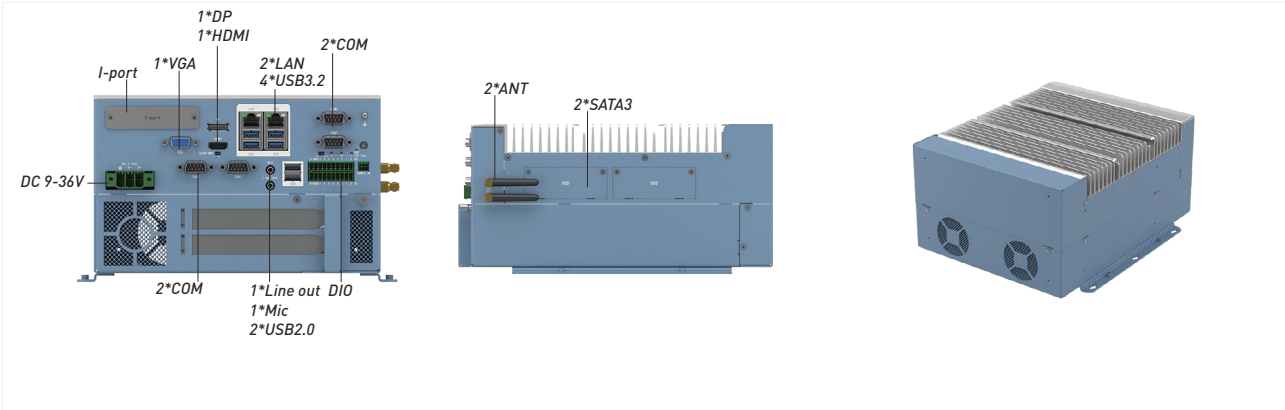
|                  |                                                                                       |
|------------------|---------------------------------------------------------------------------------------|
| Operating Temp   | -20°C~60°C SSD, with air flow;<br>-10°C~55°C HDD, with air flow;                      |
| Storage Temp     | -40°C~85°C                                                                            |
| Storage Humidity | 10~95%@40°C, No-condensation                                                          |
| Vibration        | 5 grms/5~500Hz/random/operation(SSD);<br>1 grms/5~500Hz/random/operation(HDD)         |
| Shock            | 50g peak acceleration(duration 11ms,SSD);<br>20g peak acceleration(duration 11ms,HDD) |

Certificate/EMC CE/FCC Class A

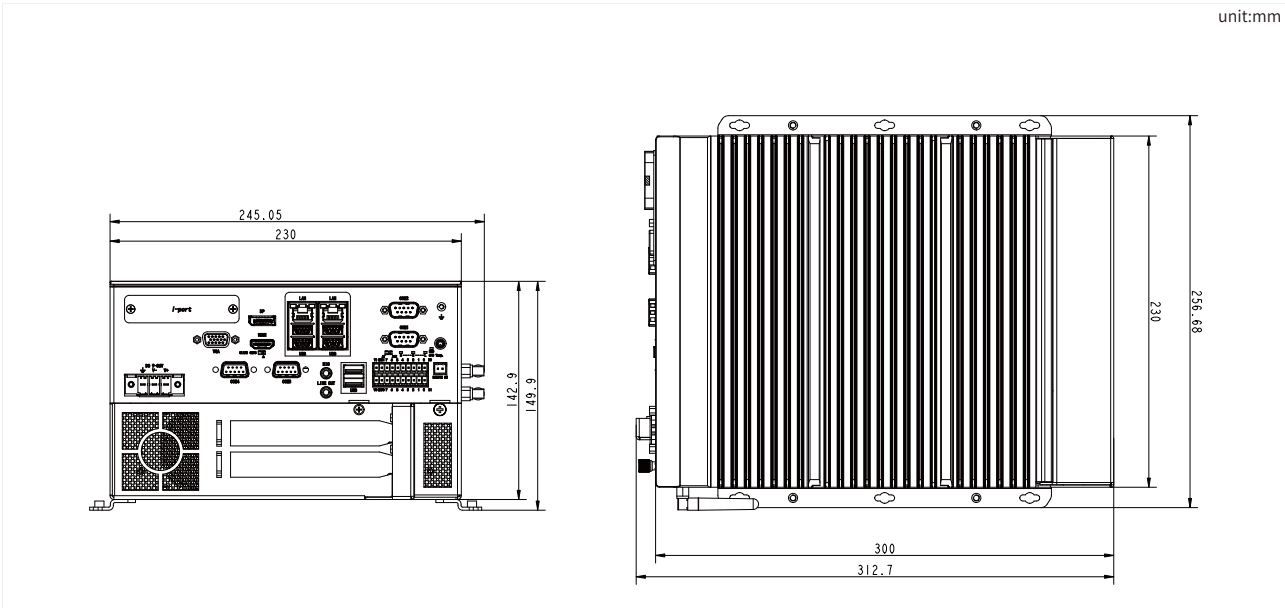
### OS

|    |                                                                                                                    |
|----|--------------------------------------------------------------------------------------------------------------------|
| OS | Win11, Win10 IoT Enterprise 2021 LTSC, Ubuntu, SuSe,<br>Red Hat Enterprise, Wind River Linux, Wind River VxWorks 7 |
|----|--------------------------------------------------------------------------------------------------------------------|

## I/O View



## Dimensions



## Ordering Information

| Model          | Processor                                                                                   | Specifications                                                                                                                                               | Expansion                                                                                                          |
|----------------|---------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|
| KMDA-7920/S001 | Intel® Alder lake-S 12th Gen Core™ i9/i7/i5/i3/Pentium/Celeron LGA1700 CPU, Intel® H610 PCH | 2*DDR5 SODIMM, 2*LAN, 4*USB3.2, 2*USB2.0, 4*COM, 1*VGA, 1*DP,1*HDMI, Line out & Mic, 16bit Iso.DIO, 1*I-Port, 2*2.5"SATA bay, 1*mSATA, 1*Mini PCIe, DC 9-36V | <b>Standard: ECX-255</b><br>1*PCIeX16(X16)+1*PCIeX16(X4)<br><b>Optional: ECX-271</b><br>1*PCIeX16(X16)+1*32bit PCI |



# KMDA-7921

Intel® Alder Lake-S 12th Gen LGA1700 CPU, 2\*LAN, 4\*USB3.2, 1\*VGA, 1\*DP, 1\*HDMI, 4\*COM, 16bit DIO, 2\*PCIe+2\*PCI, 2\*SATA3.0, DC 9-36V

## Key Specification

- Intel® 12th Gen Alder lake-S LGA1700 CPU
- Intel® H610 PCH
- 2\*DDR5 4800MHz SODIMM, up to 64GB
- 1\*DP,1\*HDMI and 1\*VGA,3 independent displays
- 2\*LAN, 4\*USB3.2, 2\*USB2.0, 16bit Iso. DIO
- Audio 1\*MIC+1\*LINE OUT
- 2\*RS232/422/485 and 2\*RS232 COM
- 1\*Mini-PCIe full size with SIM card slot, support 4G LTE modem
- 1\*PCIeX16+1\*PCIeX4 (X2 signal)+2\*PCI Quad expansions
- 2\*2.5"Easy-plug SATA3.0 bay and 1\*mSATA
- DC IN 9-36V, wide power input, with OVP,OCP and SCP



## Product Overview

KMDA-7921 is a fanless high-performance box computer with H610 chipset, powered by Intel® 12th Gen Alder lake-S CPU, multi IO interfaces, dual PCIe dual PCI quad expansions and moderate size. It is suitable for industrial automation, highway tolling, AI edge computing, security monitoring and environmental detection and other industries and fields.

## Product Parameters

### System

|            |                                                                                                                                                        |
|------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|
| CPU        | Intel® Alder lake-S 12th Gen Core™ i9/i7/i5/i3/Pentium/Celeron LGA1700 CPU, Intel® H610 PCH                                                            |
| RAM        | 2*262-Pin SODIMM, DDR5 4800MHz, 64GB max.                                                                                                              |
| Graphics   | Intel® UHD Graphics, Supports DirectX 12, OpenGL 4.5, OpenCL 3.0;<br>DP:7680*4320@60Hz, HDMI:4096*2160@60Hz, VGA:1920*1200@60Hz, 3 independent display |
| LAN        | 1*Intel I226V, 10-1000M,WOL;<br>1*Intel I219 LM, 10-1000M, WOL                                                                                         |
| USB        | 2* USB3.2(10G), 2*USB3.2(5G), 2*USB2.0                                                                                                                 |
| Display    | 1*DP+1*HDMI+1*VGA                                                                                                                                      |
| Audio      | 1*Line out+1*MIC,Realtek ALC897                                                                                                                        |
| COM/Others | 2*RS232/422/485, 2*RS232                                                                                                                               |
| DIO        | 16bit Iso.DIO(8bit DI-2.5KV-PNP/NPN;8bit DO-2.5KV-200mA);<br>16bit non Iso.DIO(2*10pin)                                                                |

### Storage

|         |                                  |
|---------|----------------------------------|
| Storage | 2*2.5" SATA3.0; 1*mSATA(SATA3.0) |
|---------|----------------------------------|

### Others

|          |                                                 |
|----------|-------------------------------------------------|
| LED      | 1*PowerLED, 1*HDD LED, 3*CPU Temp LED           |
| Switch   | 1*Power SW, Remote SW,1*AT/ATX SW, 1*Clear CMOS |
| WDT      | programmable via software 1 to 255 second       |
| TCPM/TPM | Optional TPM2.0                                 |

### Expansion

|           |                                                                                                                                           |
|-----------|-------------------------------------------------------------------------------------------------------------------------------------------|
| Expansion | 1*PCIe5.0X16(X16)+1*PCIe3.0X4(X2)+2*32bit PCI,<br>GPU<150W<250mm/Al Card<75W<280mm;<br>1*Mini-PCIe(PCIeX1/USB2.0+SIM),4G LTE/PCIe module; |
|-----------|-------------------------------------------------------------------------------------------------------------------------------------------|

### Power

|            |                                                            |
|------------|------------------------------------------------------------|
| Power& TDP | DC IN 9-36V , short circuit protection, OVP&OCP<br>TDP:TBD |
|------------|------------------------------------------------------------|

### Mechanical

|                   |                                   |
|-------------------|-----------------------------------|
| Structure         | Aluminum Chassis, SGCC frame      |
| Color             | Pigeon blue + White aluminum grey |
| Installation      | desktop mounting                  |
| Dimension (W*H*D) | 256.68*312.7*210.9mm              |
| Weight            | TBD                               |

### Environment

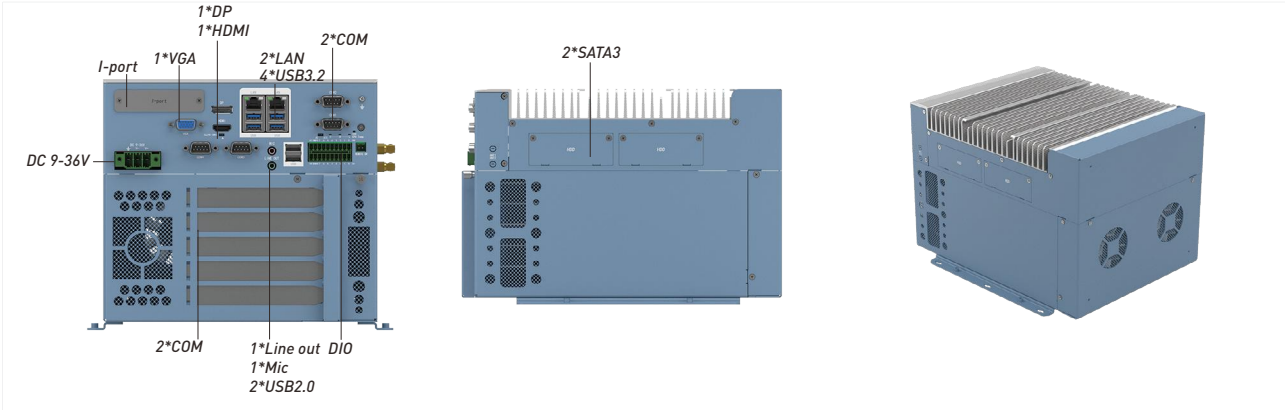
|                  |                                                                                       |
|------------------|---------------------------------------------------------------------------------------|
| Operating Temp   | -20°C~60°C SSD, with air flow;<br>-10°C~55°C HDD, with air flow;                      |
| Storage Temp     | -40°C~85°C                                                                            |
| Storage Humidity | 10~95%@40°C, No-condensation                                                          |
| Vibration        | 5 grms/5~500Hz/random/operation(SSD);<br>1 grms/5~500Hz/random/operation(HDD)         |
| Shock            | 50g peak acceleration(duration 11ms,SSD);<br>20g peak acceleration(duration 11ms,HDD) |

|                 |                |
|-----------------|----------------|
| Certificate/EMC | CE/FCC Class A |
|-----------------|----------------|

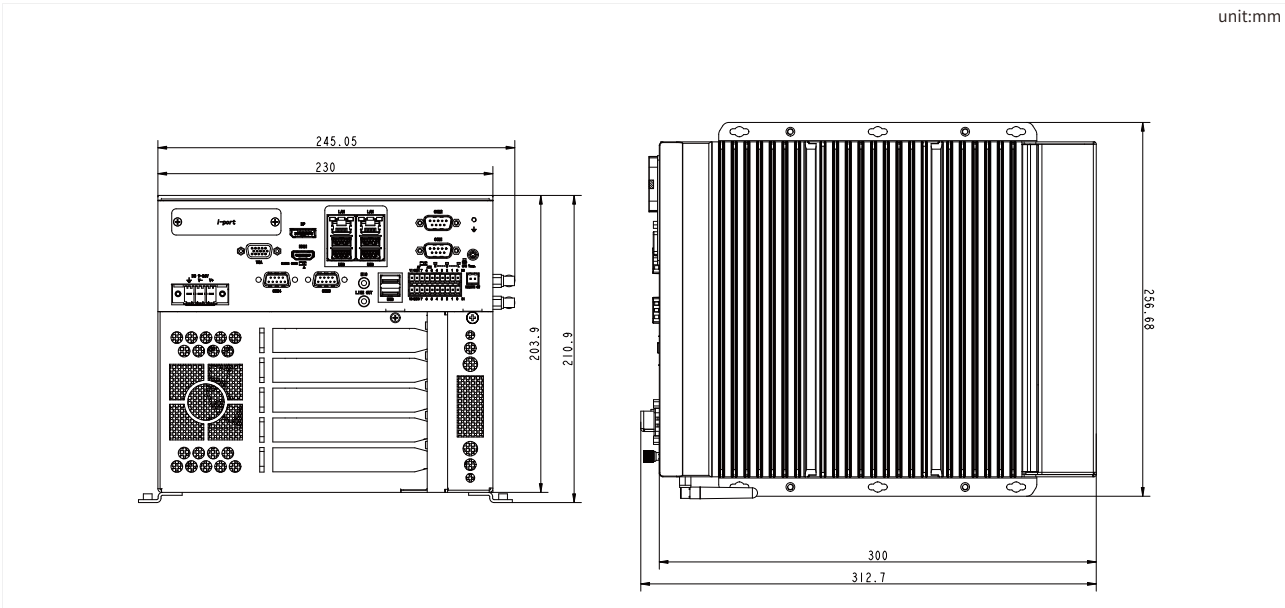
### OS

|    |                                                                                                                              |
|----|------------------------------------------------------------------------------------------------------------------------------|
| OS | Windows 11, Windows 10 IoT Enterprise 2021 LTSC,<br>Ubuntu, SuSe, Red Hat Enterprise, Wind River Linux, Wind River VxWorks 7 |
|----|------------------------------------------------------------------------------------------------------------------------------|

## I/O View



## Dimensions



## Ordering Information

| Model          | Processor                                                                                   | Specifications                                                                                                                                               | Expansion                                                           |
|----------------|---------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------|
| KMDA-7921/S001 | Intel® Alder lake-S 12th Gen Core™ i9/i7/i5/i3/Pentium/Celeron LGA1700 CPU, Intel® H610 PCH | 2*DDR5 SODIMM, 2*LAN, 4*USB3.2, 2*USB2.0, 4*COM, 1*VGA, 1*DP,1*HDMI, Line out & Mic, 16bit Iso.DIO, 1*I-Port, 2*2.5"SATA bay, 1*mSATA, 1*Mini PCIe, DC 9-36V | <b>Standard: ECX-266</b><br>1*PCIeX16(X16)+1*PCIeX4(X2)+2*32bit PCI |

# KMDA-2630-S

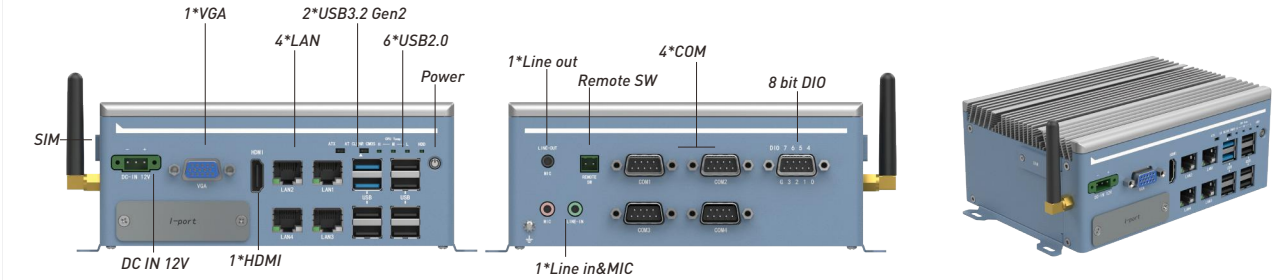
Intel® Elkhart lake CPU, VGA+HDMI, 4\*LAN, 2\*USB3.1, 4\*COM, 8-bit DIO, Audio out + Line in + Mic, mSATA + 2.5”SATA bay

### Key Specification

- Compact aluminum frame, Fanless cooling design
- Intel® Elkhart lake Celeron Soc CPU
- 1\*DDR4 3200MHz SODIMM, up to 32GB
- Intel® UHD Graphics, 1\*HDMI+1\*VGA
- 2\*Intel® I226V, up to 2.5Gbps, 2\*Realtek 8111H Gig. Ethernet
- 2\*USB3.1 Gen2, 6\*USB2.0, Audio out + Line in + Mic
- 2\*RS232, 2\*RS232/422/485, 8-bit DIO
- 1\*mSATA, 1\*2.5”SATA bay
- DC 12V or DC 9-36V power in



### I/O View



### Product Overview

KMDA-2630 is a ULT fan-less and compact size box computer, powered by Intel Elkhart lake SoC Celeron 4 cores or dual-core CPU, supporting 2.5G network and dual USB3.1 gen2 10G High-speed ports. It has a multy IO interface, with fanless aluminum frame, which is cabinet and delicate, and also support wide power input, so it is suitable for machine vision, AGV/ARM, self service terminal and other fields.

### Product Parameters

#### System

|            |                                                                                                                                                                                                                                |
|------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CPU        | Intel® Elkhart lake SoC CPU: Celeron J6412 2.0-2.6GHz;<br>Celeron N6210 1.2-2.6GHz                                                                                                                                             |
| RAM        | 1*DDR4 SO-DIMM , 3200MHz, 32GB max.                                                                                                                                                                                            |
| Graphics   | Intel Gen10 UHD Graphics, HW Encode: H.265/HEVC, H.264/MPEG-4 AVC, MPEG-2, JPEG/MJPEG ,VP8; HW Decode: H.265/HEVC, H.264/MPEG-4 AVC, MPEG-2, VC-1/WMV9, JPEG/MJPEG, VP8, VP9<br>HDMI2.0: 4096*2304@60Hz<br>VGA: 1920*1200@60Hz |
| LAN        | 2*Intel I226V, 10M-2.5G, WOL;<br>2*Realtek 8111H, 10-1000M                                                                                                                                                                     |
| USB        | 2* USB3.2 Gen2, 2*USB2.0 , 4*USB2.0(5V System, 1A)                                                                                                                                                                             |
| Display    | 1*HDMI+1*VGA                                                                                                                                                                                                                   |
| Audio      | 1*Line out,Realtek ALC897                                                                                                                                                                                                      |
| COM/Others | 2*RS232/422/485, 2*RS232;                                                                                                                                                                                                      |
| DIO        | 8 bitDIO(DB9)                                                                                                                                                                                                                  |

#### Storage

|         |                                      |
|---------|--------------------------------------|
| Storage | 1*2.5" SATA3,6Gbps;<br>1*mSATA, AHCI |
|---------|--------------------------------------|

#### Others

|        |                                                      |
|--------|------------------------------------------------------|
| LED    | 1*PowerLED, 1*HDD LED, 3*CPU Temp LED                |
| Switch | 1*PowerSW, 1*Remote SW, 1*AT/ATX模式选择SW, 1*Clear CMOS |
| WDT    | programmable via software 1 to 255 second            |

#### Expansion

|           |                                                                                       |
|-----------|---------------------------------------------------------------------------------------|
| Expansion | 1*M.2 B-key 3052(PCIe X1/USB2.0+SIM), 5G NR/4G LTE;<br>1*Full size Mini PCIe(PCIe X1) |
|-----------|---------------------------------------------------------------------------------------|

#### Power

|            |                                                                                                 |
|------------|-------------------------------------------------------------------------------------------------|
| Power& TDP | DC 12V or DC 9-36V, short circuit protection, OVP&OCP<br>TDP: 26.4W (J6412 CPU/4G DDR4/64G SSD) |
|------------|-------------------------------------------------------------------------------------------------|

#### Mechanical

|                   |                                   |
|-------------------|-----------------------------------|
| Structure         | Aluminum Chassis, SGCC frame      |
| Color             | Pigeon blue + White aluminum grey |
| Installation      | desktop mounting                  |
| Dimension (W*D*H) | 162*111.8*65 mm                   |
| Weight            | 1.32KG                            |

#### Environment

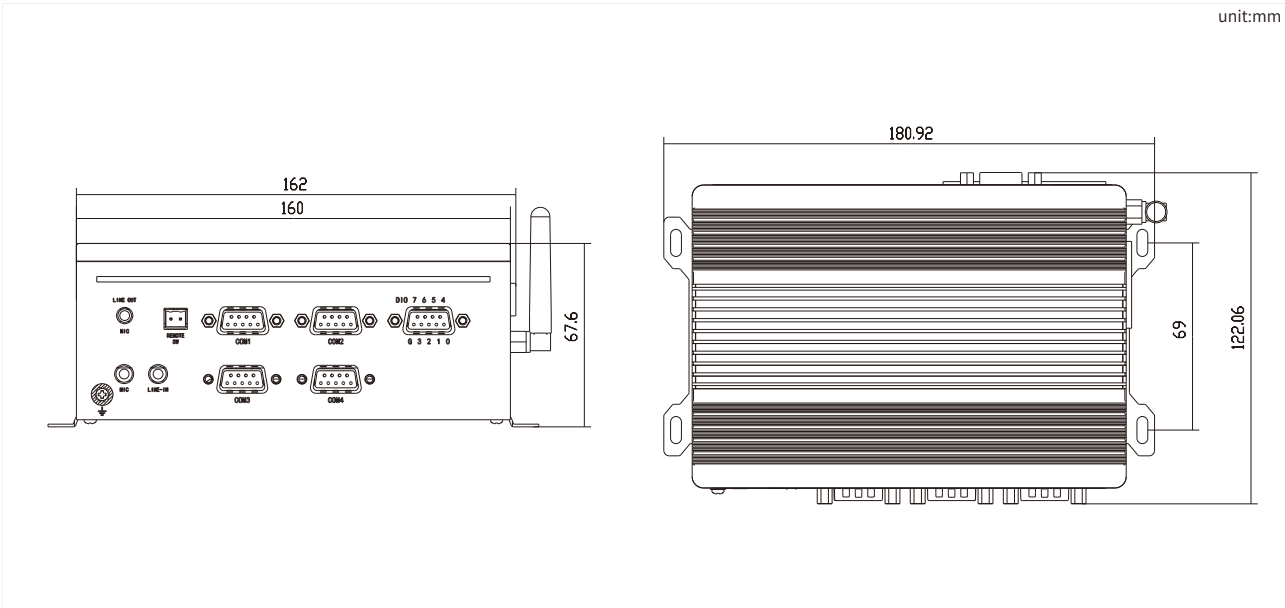
|                  |                                                                                       |
|------------------|---------------------------------------------------------------------------------------|
| Operating Temp   | -20°C~60°C, SSD, with air flow                                                        |
| Storage Temp     | -40°C~85°C                                                                            |
| Storage Humidity | 10~95%@40°C, No-condensation                                                          |
| Vibration        | 5 grms/5~500Hz/random/operation(SSD);<br>1 grms/5~500Hz/random/operation(HDD)         |
| Shock            | 50g peak acceleration(duration 11ms,SSD);<br>20g peak acceleration(duration 11ms,HDD) |

|                 |                |
|-----------------|----------------|
| Certificate/EMC | CE/FCC Class A |
|-----------------|----------------|

#### OS

|    |                                                    |
|----|----------------------------------------------------|
| OS | Windows 10 64 bit, SUSE, Ubuntu, Wind River, Linux |
|----|----------------------------------------------------|

### Dimensions



### Ordering Information

| Model             | Processor            | Specifications                                                                                                                                                                     |
|-------------------|----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| KMDA-2630/S001    | Intel® Celeron J6412 | 1*DDR4 SODIMM, 4*LAN, 2*USB3.1, 6*USB2.0, 4*COM, 8-bit DIO, 1*M.2, 1*Mini PCIe, 1*VGA, 1*HDMI, 1*Line out + 1*Line in + 1*Mic, 1*mSATA, 1*2.5”SATA bay, I-port, DC-IN 12V          |
| KMDA-2630/S002    | Intel® Celeron N6210 |                                                                                                                                                                                    |
| KMDA-2630/S001/WP | Intel® Celeron J6412 | 1*DDR4 SODIMM, 4*LAN, 2*USB3.1, 6*USB2.0, 4*COM, 8-bit DIO, 1*M.2, 1*Mini PCIe, 1*VGA, 1*HDMI, 1*Line out + 1*Line in + 1*Mic, 1*mSATA, 1*2.5”SATA bay, I-port, <b>DC-IN 9~36V</b> |
| KMDA-2630/S002/WP | Intel® Celeron N6210 |                                                                                                                                                                                    |
| PA-60DC12         |                      | AC/DC power adapter, DC 12V/5A, 60W                                                                                                                                                |



# KMDA-2630-T

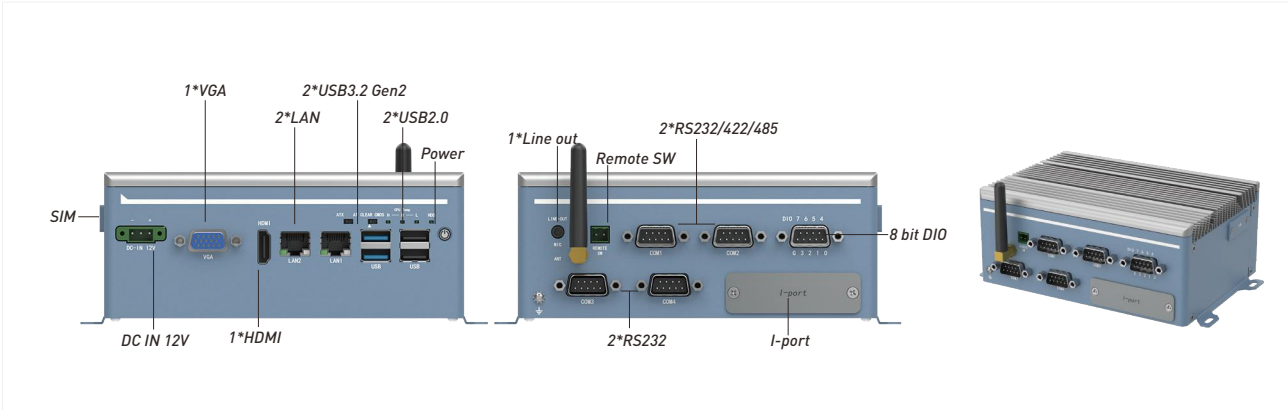
Intel® Elkhart lake CPU, VGA+HDMI, 2\*2.5G-LAN, 2\*USB3.1, 4\*COM, 8-bit DIO, Audio out, mSATA+2.5”SATA bay

## Key Specification

- Compact aluminum frame, Fanless cooling design
- Intel® Elkhart lake Celeron Soc CPU
- 1\*DDR4 3200MHz SODIMM, up to 32GB
- Intel® UHD Graphics, 1\*HDMI+1\*VGA
- 2\*Intel® I226V, up to 2.5Gbps
- 2\*USB3.1 Gen2, 2\*USB2.0, Audio out
- 2\*RS232, 2\*RS232/422/485, 8-bit DIO
- 1\*mSATA, 1\*2.5”SATA bay
- DC 12V or DC 9-36V power in



## I/O View



## Product Overview

KMDA-2630 is a ULT fan-less and compact size box computer, powered by Intel Elkhart lake SoC Celeron 4 cores or dual-core CPU, supporting 2.5G network and dual USB3.1 gen2 10G High-speed ports. It has a multy IO interface, with fanless aluminum frame, which is cabinet and delicate, and also support wide power input, so it is suitable for machine vision, AGV/ARM, self service terminal and other fields.

## Product Parameters

### System

|            |                                                                                                                                                                                                                                |
|------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CPU        | Intel® Elkhart lake SoC CPU: Celeron J6412 2.0-2.6GHz;<br>Celeron N6210 1.2-2.6GHz                                                                                                                                             |
| RAM        | 1*DDR4 SO-DIMM , 3200MHz, 32GB max.                                                                                                                                                                                            |
| Graphics   | Intel Gen10 UHD Graphics, HW Encode: H.265/HEVC, H.264/MPEG-4 AVC, MPEG-2, JPEG/MJPEG ,VP8; HW Decode: H.265/HEVC, H.264/MPEG-4 AVC, MPEG-2, VC-1/WMV9, JPEG/MJPEG, VP8, VP9<br>HDMI2.0: 4096*2304@60Hz<br>VGA: 1920*1200@60Hz |
| LAN        | 2*Intel I226V, 10M-2.5G, WOL                                                                                                                                                                                                   |
| USB        | 2* USB3.2 Gen2, 2*USB2.0                                                                                                                                                                                                       |
| Display    | 1*HDMI+1*VGA                                                                                                                                                                                                                   |
| Audio      | 1*Line out, Realtek ALC897                                                                                                                                                                                                     |
| COM/Others | 2*RS232/422/485, 2*RS232;                                                                                                                                                                                                      |
| DIO        | 8 bitDIO(DB9)                                                                                                                                                                                                                  |

### Storage

|         |                                      |
|---------|--------------------------------------|
| Storage | 1*2.5" SATA3,6Gbps;<br>1*mSATA, AHCI |
|---------|--------------------------------------|

### Others

|        |                                                   |
|--------|---------------------------------------------------|
| LED    | 1*Power LED, 1*HDD LED, 3*CPU Temp LED            |
| Switch | 1*PowerSW, 1*Remote SW, 1*AT/ATX SW, 1*Clear CMOS |
| WDT    | programmable via software 1 to 255 second         |

### OS

|    |                                                    |
|----|----------------------------------------------------|
| OS | Windows 10 64 bit, SUSE, Ubuntu, Wind River, Linux |
|----|----------------------------------------------------|

### Expansion

|           |                                                                                                                            |
|-----------|----------------------------------------------------------------------------------------------------------------------------|
| Expansion | 1*M.2 B-key 3052(PCIe X1/USB2.0+SIM), 5G RN/4G LTE;<br>1*JHCTECH Express-01 80pin: 2*PCIeX1, 4*USB2.0,<br>1*Sm bus, 1*eSPI |
|-----------|----------------------------------------------------------------------------------------------------------------------------|

### Power

|           |                                                                                              |
|-----------|----------------------------------------------------------------------------------------------|
| Power&TDP | DC 12V or DC 9-36V, short circuit protection, OVP&OCP<br>18.12W (J6412 CPU/4G DDR4/256G SSD) |
|-----------|----------------------------------------------------------------------------------------------|

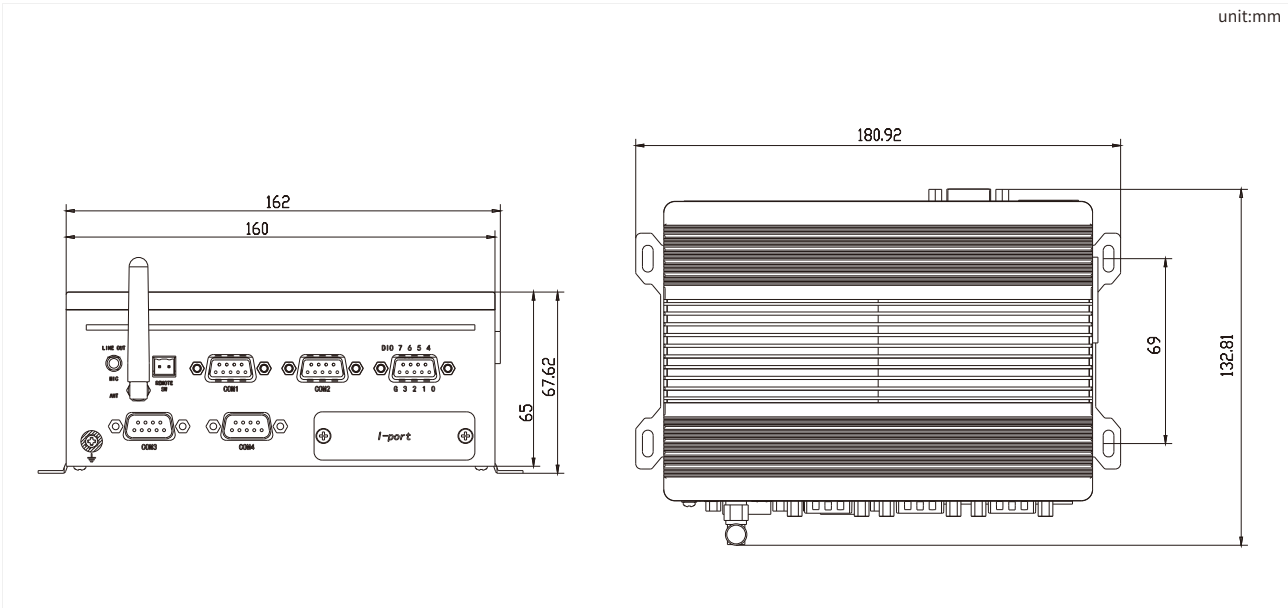
### Mechanical

|                   |                                   |
|-------------------|-----------------------------------|
| Structure         | Aluminum Chassis, SGCC frame      |
| Color             | Pigeon blue + White aluminum grey |
| Installation      | desktop mounting                  |
| Dimension (W*D*H) | 162*111.8*65 mm                   |
| Weight            | 1.30KG                            |

### Environment

|                  |                                                                                       |
|------------------|---------------------------------------------------------------------------------------|
| Operating Temp   | -20°C~60°C, SSD, with air flow                                                        |
| Storage Temp     | -40°C~85°C                                                                            |
| Storage Humidity | 10~95%@40°C, No-condensation                                                          |
| Vibration        | 5 grms/5~500Hz/random/operation(SSD);<br>1 grms/5~500Hz/random/operation(HDD)         |
| Shock            | 50g peak acceleration(duration 11ms,SSD);<br>20g peak acceleration(duration 11ms,HDD) |
| Certificate/EMC  | CE/FCC Class A                                                                        |

## Dimensions



## Ordering Information

| Model             | Processor            | Specifications                                                                                                                             |
|-------------------|----------------------|--------------------------------------------------------------------------------------------------------------------------------------------|
| KMDA-2630/T001    | Intel® Celeron J6412 | 1*DDR4 SODIMM, 2*LAN, 2*USB3.1, 2*USB2.0, 4*COM, 8-bit DIO, 1*M.2, 1*VGA, 1*HDMI, 1*Line out, 1*mSATA, 1*2.5"SATA bay, I-port, DC-IN 12V   |
| KMDA-2630/T002    | Intel® Celeron N6210 |                                                                                                                                            |
| KMDA-2630/T001/WP | Intel® Celeron J6412 | 1*DDR4 SODIMM, 2*LAN, 2*USB3.1, 2*USB2.0, 4*COM, 8-bit DIO, 1*M.2, 1*VGA, 1*HDMI, 1*Line out, 1*mSATA, 1*2.5"SATA bay, I-port, DC-IN 9-36V |
| KMDA-2630/T002/WP | Intel® Celeron N6210 |                                                                                                                                            |
| PA-60DC12         |                      | AC/DC power adapter, DC 12V/5A, 60W                                                                                                        |

# KMDA-3301

Intel® Tiger lake U Soc CPU, DP+HDMI, 3\*LAN, 2\*COM, 6\*USB, 1\*Mini PCIe, 1\*mSATA, 2\*M.2, support 5G NR, DC 9-36V wide power input

## Key Specification

- Intel® Tiger lake U Soc CPU
- Aluminum chassis, fanless design
- 3\*I226V LAN, support iAMT13.0
- 1\*DP+1\*HDMI, 8K+4K dual display output
- 1\*Mini PCIe support Wifi/BT, 1\*M.2 B-Key with SIM slot, support 5G NR
- 1\*M.2 M-Key , 1\*mSATA, 1\*SATA3.0
- DC 9~36V, with short circuit, over voltage & over current protection
- Support desktop mounting and Din-Rail mounting



## Product Overview

KMDA-3301 is a new fanless box PC, powered by Intel® Tiger lake U Soc CPU series, support Intel Boost Deep Learning technology. With shock absorption design, it is suitable for C-V2X MEC computing, AGV, machine vision and other applications.

## Product Parameters

### Processor

|                      |                                                                                                                                                                               |
|----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CPU                  | Intel® Tigerlake U Celeron/Core I3/I5/I7 CPU                                                                                                                                  |
| Storage              | 2* DDR4 SO-DIMM slot, support 3200MHz, max up to 64GB                                                                                                                         |
| Graphics             | Intel UHD Graphics or iRIS® Xe Graphics , Supports Intel Boost Deep Learning technology, DirectX12.1, OpenGL 4.6/OpenCL 2.0, HDMI 2.0: 4096x2304@60Hz, DP 1.4: 7680x4320@60Hz |
| LAN                  | 3*Intel I226V, 10M/ 100M/1000M/2.5G, support iAMT 13.0                                                                                                                        |
| USB                  | 2*USB3.2 Gen 2(10Gbps), 2*USB2.0, 1*USB2.0 (TypeA), 1*USB2.0 (internal pinheader)                                                                                             |
| Display              | 1*HDMI+1*DP                                                                                                                                                                   |
| Audio                | 1*Line out+1*Mic, Realtek ALC897                                                                                                                                              |
| Serial Ports/ Others | 2*RS232/422/485(DB9), 1*MIO(opt support built-in expansion module)                                                                                                            |
| DIO                  | 1*8-bit DIO (2*5Pin)                                                                                                                                                          |

### Storage

|         |                                                                                      |
|---------|--------------------------------------------------------------------------------------|
| Storage | 1*2.5" SATA bay; 1* full size mSATA, support AHCI; 1*M.2 2280 M-Key NVME(PCIe4.0 X2) |
|---------|--------------------------------------------------------------------------------------|

### Others

|        |                                                            |
|--------|------------------------------------------------------------|
| LED    | 1*Power LED, 1*HDD LED, 3*CPU Temp LED                     |
| Switch | 1*Power SW, 1*AT/ATX SW, 1*Clear CMOS SW                   |
| WDT    | Watchdog timeout programmable via software 1 to 255 second |

### Expansion

|           |                                                                |
|-----------|----------------------------------------------------------------|
| Expansion | 1*Mini PCIe(PCIe X1+USB2.0), support Wifi/BT module            |
|           | 1*M.2 3052 B-Key, (PCIe X1+USB2.0+SIM), 5G NR/4G LTE           |
|           | 1*M.2 2280 M-Key(PCIe4.0 X2), support high speed function card |

### Power supply

|       |                                                     |
|-------|-----------------------------------------------------|
| Power | DC IN 9~36V, with short circuit protection, OVP&OCP |
|-------|-----------------------------------------------------|

### Mechanical

|                   |                                              |
|-------------------|----------------------------------------------|
| Structure         | Aluminum chassis, SGCC                       |
| Color             | Blue+white                                   |
| Mounting          | Desktop mounting, optional Din-Rail mounting |
| Dimension (L*W*H) | 250*154*61.9mm                               |
| Weight            | 2.55KG                                       |

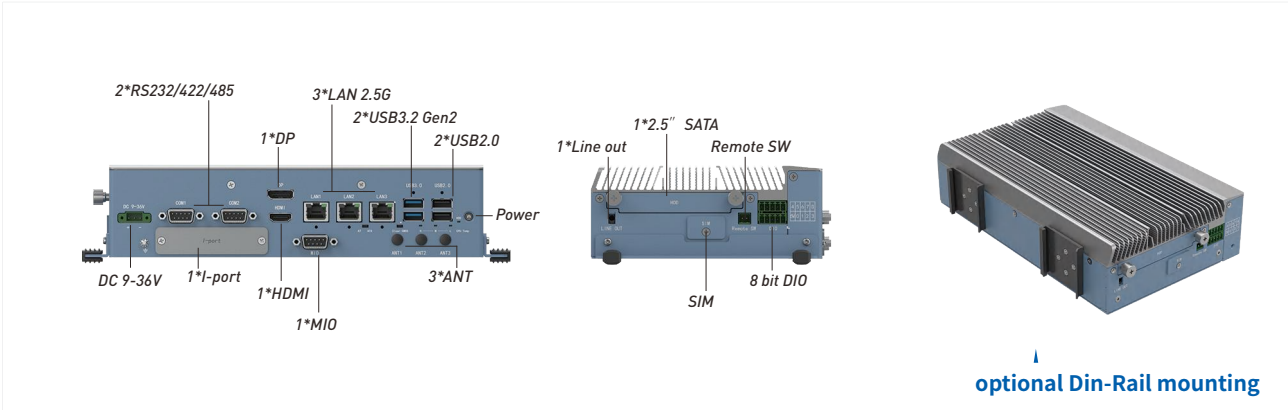
### Environment

|                  |                                                                                          |
|------------------|------------------------------------------------------------------------------------------|
| Operating Temp   | -20°C~65°C, wide temp SSD, airflow;                                                      |
| Storage Temp     | -40°C~85°C                                                                               |
| Storage Humidity | 10~90%@40°C, non-condensing                                                              |
| Vibration        | 5 grms/5~500Hz/random/during operation(SSD); 1 grms/5~500Hz/random/during operation(HDD) |
| Shock            | 50g peak acceleration(11ms duration)(SSD); 20g peak acceleration(11ms duration)(HDD)     |

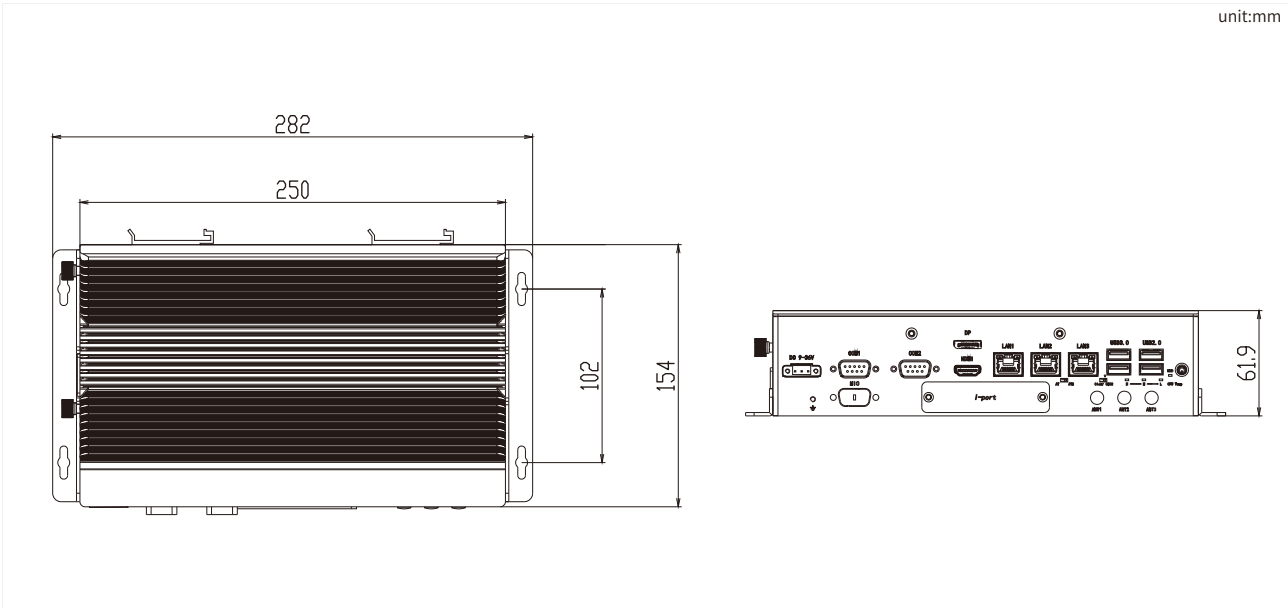
|                   |                |
|-------------------|----------------|
| Certificates/ EMC | CE/FCC Class A |
|-------------------|----------------|

|    |                                                    |
|----|----------------------------------------------------|
| OS | Windows 10 64 bit, SUSE, Ubuntu, Wind River, Linux |
|----|----------------------------------------------------|

## I/O View



## Dimensions



## Ordering Information

| Model          | Processor                          | Specifications                                                                                                                                                                                         |
|----------------|------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| KMDA-3301-S001 | Intel® Core I3-1115G4              | 2*DDR4 SODIMM, 3*2.5G-LAN, 2*USB3.2, 4*USB2.0, 2*COM, 8-bit DIO,1*DP, 1*HDMI, Realtek ALC662VD out & Mic, 1*Mini PCIe, 1*M.2 B-key, 1*M.2 M-Key, 1*MIO, 1*I-Port, 1*mSATA, 1*2.5"SATA bay, DC-IN 9-36V |
| KMDA-3301-S002 | Intel® Core I5-1135G7              |                                                                                                                                                                                                        |
| KMDA-3301-S003 | Intel® Core I7-1165G7              |                                                                                                                                                                                                        |
| KMDA-3301-S004 | Intel® Celeron 6305E               |                                                                                                                                                                                                        |
| PA-60DC12      | AC/DC power adapter, DC 12V/5A 60W |                                                                                                                                                                                                        |



# KMDA-3302

Intel® Tiger lake U Soc CPU, HDMI, 2\*LAN, 2\*COM, 8bit DIO, 4\*USB ,1\*Mini PCIe, 1\*mSATA, 1\*M.2 B-Key, 1\*M.2 E-Key, DC 9-36V

## Key Specification

- Intel® Tiger lake U Soc CPU
- SGCC box design, 4-wire speed control fan for heat dissipation
- 1\*DDR4 3200MHz SODIMM, up to 32GB
- 1\*HDMI 4K display output
- 2\*I210AT Gigabit Ethernet port, 2\*USB3.2, 2\*USB2.0
- 8bit DIO, 1\*RS232/422/485, 1\*RS232
- 1\*M.2 2230 E-Key, WiFi/BT
- 1\*M.2 B-Key, with SIM card slot,5G NR
- 1\*Mini PCIe,CAN, optional switch to mSATA
- 1 \* Full Size mSATA for storage
- DC 9~36V, with OVP,OCP, SCP



## Product Overview

KMDA-3302 is a high-performance, small volume, and compact embedded box computer, designed with an SGCC box structure and equipped with a 4-wire speed control fan for heat dissipation. Powered by Intel® Tiger lake U Soc series CPU, with rich IO functions, slim body, anti-vibration design, suitable for mobile portable terminals, advertising machines, logistics visual inspection, AGV, AMR and other application scenarios.

## Product Parameters

### System

|             |                                                                                                     |
|-------------|-----------------------------------------------------------------------------------------------------|
| CPU         | Intel® Tiger lake U Soc CPU (core i3-1115G4/i5-1135G7/i7-1165G7, Celeron 6305E), TDP 12W/15W/28W    |
| RAM         | 1*DDR4 SO-DIMM, 3200MHz, 32GB max.                                                                  |
| Graphics    | Intel UHD Graphics/ Iris® Xe Graphics, DirectX12.1, OpenGL 4.6 and OpenCL 3.0, HDMI: 4096x2304@60Hz |
| LAN         | 2*Intel I210AT, 10M-1000M, WOL                                                                      |
| USB         | 2*USB3.2 Gen 2; 2*USB2.0                                                                            |
| Display     | 1*HDMI                                                                                              |
| Audio       | /                                                                                                   |
| COM/ Others | 2*COM(RS232/422/485+RS232); 1*MIO(Opt.CAN/moudle); 1*SIM                                            |
| DIO         | 1*8-bit DIO (2*5Pin)                                                                                |

### Storage

|         |                    |
|---------|--------------------|
| Storage | 2*mSATA , SATA6.0; |
|---------|--------------------|

### Others

|        |                                                                                                                                          |
|--------|------------------------------------------------------------------------------------------------------------------------------------------|
| LED    | 1*Power LED, 3*CPU Temp. LED                                                                                                             |
| Switch | 1*Power SW, 1*Remote SW, 1*AT/ATX SW, 1*Clear CMOS SW                                                                                    |
| WDT    | programmable via software 1 to 255 second                                                                                                |
| OS     | Windows 11*IoT enterprise, Windows 10*IoT enterprise, Android, SUSE, Ubuntu, Wind River, Red Hat*Enterprise, Wind River VxWorks*7, Yocto |

### Expansion

|           |                                                                                                                                              |
|-----------|----------------------------------------------------------------------------------------------------------------------------------------------|
| Expansion | 1*Mini PCIe(Pcie X1+USB2.0), CAN2.0/mSATA; 1*M.2 3042/3052 B-Key(PcieX1/USB2.0+SIM), 5G NR/4G LTE; 1*M.2 2230 E-Key(PcieX1+USB2.0), WIFI/BT; |
|-----------|----------------------------------------------------------------------------------------------------------------------------------------------|

### Power Supply

|            |                                                                                             |
|------------|---------------------------------------------------------------------------------------------|
| Power& TDP | DC IN 9~36V, 3pin, with OVP,OCP,SCP; 37.2W (Intel Core i7-1165G7 CPU, 4G DDR4 Ram, 64G SSD) |
|------------|---------------------------------------------------------------------------------------------|

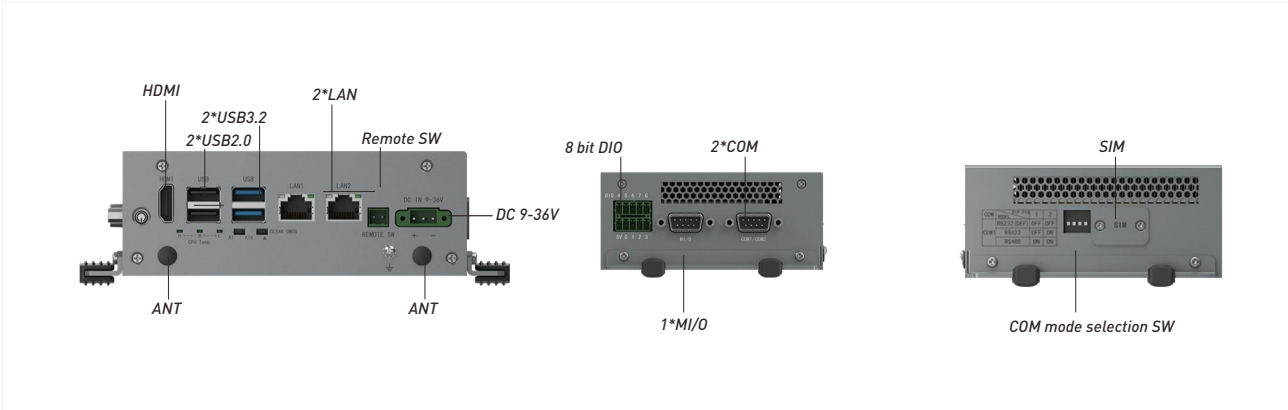
### Mechanical

|                  |                                                                    |
|------------------|--------------------------------------------------------------------|
| Structure        | SGCC chassis                                                       |
| Color            | Silver Gray                                                        |
| Installation     | Desk mounting with anti-vibration non-slip foot pads, opt Din-Rail |
| Dimension(w*h*d) | 172*116*54mm                                                       |
| Weight           | 0.89KG                                                             |

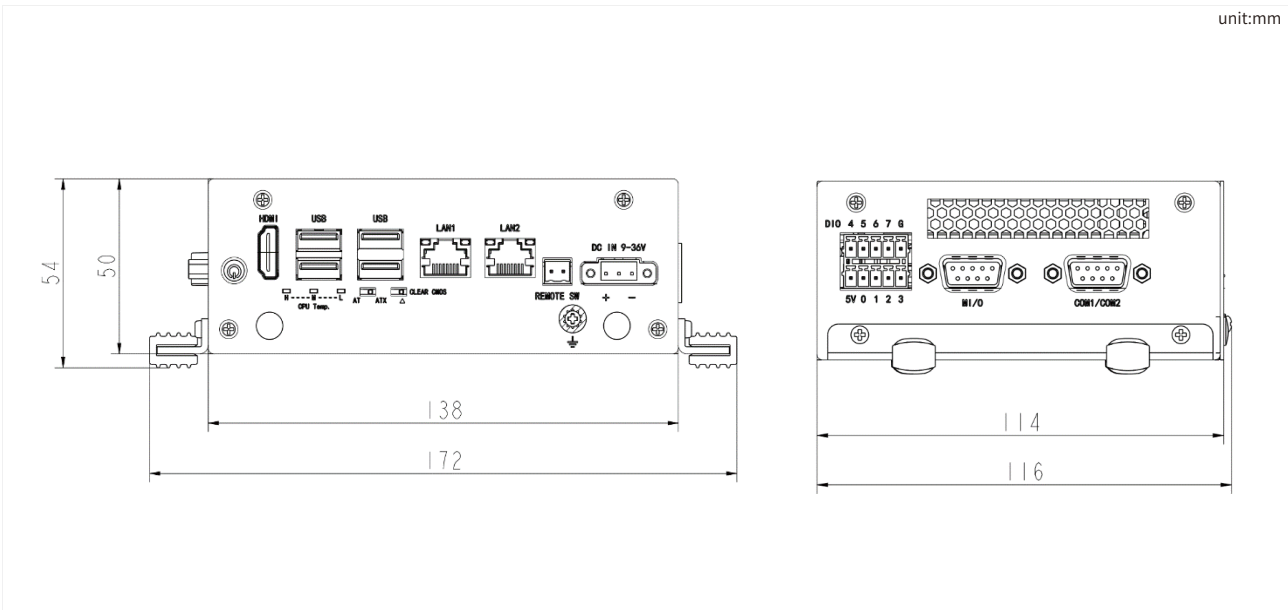
### Environment

|                  |                                                                                                 |
|------------------|-------------------------------------------------------------------------------------------------|
| Operating Temp   | -20°C~60°C, SSD, airflow;                                                                       |
| Storage Temp     | -40°C~85°C                                                                                      |
| Storage Humidity | 10~95%@40°C, Non-condensing                                                                     |
| Vibration        | 5 grms/5~500Hz/random/during operation (SSD)<br>1 grms/5~500Hz/random/during operation (HDD)    |
| Shock            | 50g peak acceleration(duration 11ms) with SSD;<br>20g peak acceleration(duration 11ms) with HDD |
| Certificate/EMC  | CE/FCC Class A                                                                                  |

## I/O View



## Dimensions



## Ordering Information

| Model          | Processor             | Specifications                                                                                                                        |
|----------------|-----------------------|---------------------------------------------------------------------------------------------------------------------------------------|
| KMDA-3302-S001 | Intel® Core I3-1115G4 | 1*DDR4 SODIMM, 2*LAN, 2*USB3.2, 2*USB2.0, 2*COM, 8bit DIO, 1*HDMI, 1*Mini PCIe, 1*M.2 B-key, 1*M.2 E-Key, 1*MIO, 1*mSATA, DC-IN 9-36V |
| KMDA-3302-S002 | Intel® Core I5-1135G7 |                                                                                                                                       |
| KMDA-3302-S003 | Intel® Core I7-1165G7 |                                                                                                                                       |
| KMDA-3302-S004 | Intel® Celeron 6305E  |                                                                                                                                       |
| PA-60DC12      |                       | AC/DC power adapter, DC 12V/5A 60W + X Standard Power Cable                                                                           |

# KMDA-5611-S001

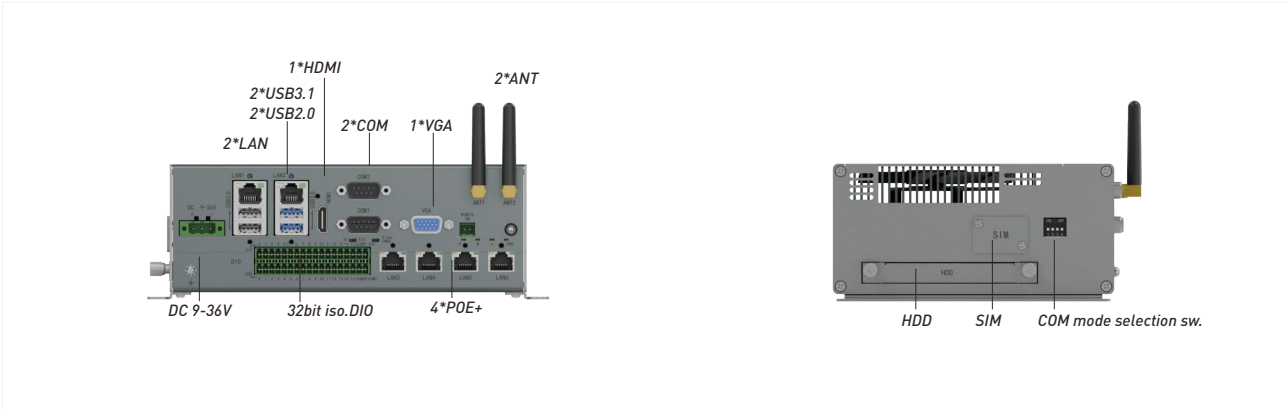
Intel® 8/9th Gen Coffee Lake LGA1151 CPU, 2\*LAN, 4\*POE+, 2\*USB3.1, 3\*USB2.0, 1\*HDMI, 1\*VGA, 2\*COM, 32bit Iso. DIO, 1\*mSATA, 1\*Mini PCIe, 1\*SATA3.0, DC 9-36V

## Key Specification

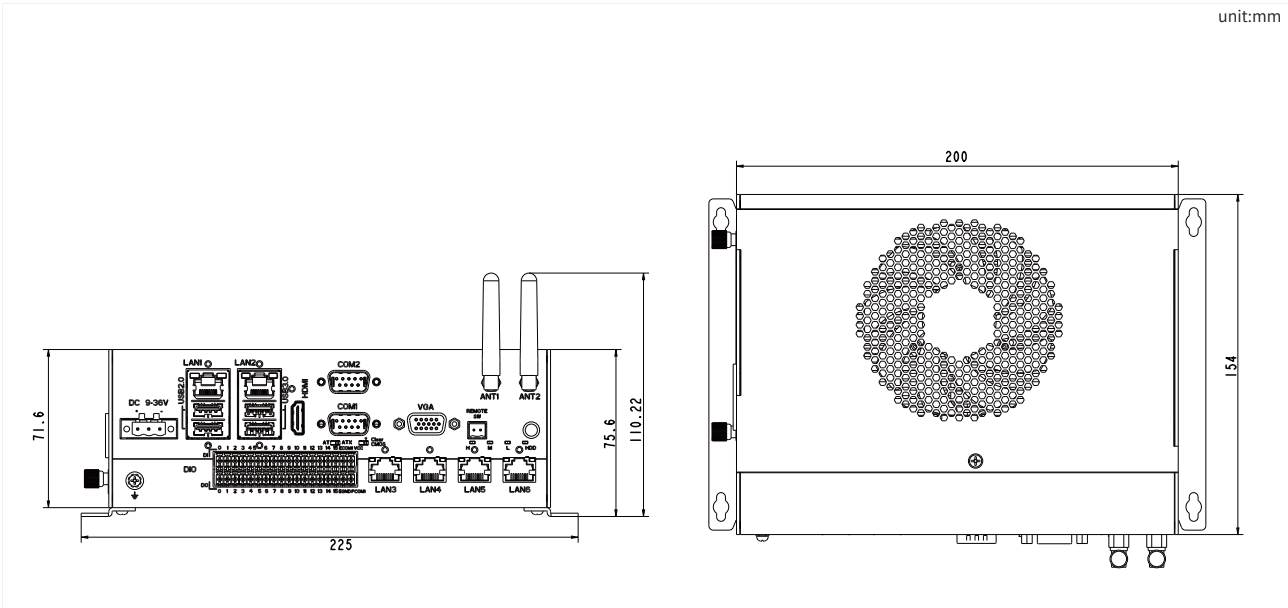
- Intel® 8/9th Gen Coffee Lake LGA1151 CPU
- Intel® H310 Chipset
- 2\*DDR4 2400/2666MHz SODIMM, up to 64GB
- 1\*HDMI + 1\*VGA
- 2\*LAN, 4\*POE+, 2\*USB3.1, 3\*USB2.0, 32bit Iso. DIO
- 1\*RS232/485 and 1\*RS232 COM
- 1\*Mini-PCIe full size, with SIM card slot, 4G/WIFI/PCIe module
- 1\*2.5" Easy-plug SATA3.0 bay and 1\*mSATA
- DC IN 9-36V, with OVP, OCP and SCP



## I/O View



## Dimensions



## Ordering Information

| Model          | Processor                                          | Specifications                                                                                                                                           |
|----------------|----------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|
| KMDA-5611/S001 | Intel® 8/9th Gen Coffee Lake LGA1151 CPU, H310 PCH | 2*DDR4 SODIMM, 2*LAN, 4*POE+, 2*USB3.1, 3*USB2.0, 2*COM, 1*HDMI, 1*VGA, 32bit Iso. DIO, 1*2.5" SATA bay, 1*mSATA, 1*Mini PCIe, 1*SIM card slot, DC 9-36V |
| PA-120DC19     |                                                    | AC/DC power adapter, DC 19V/6.32A, 120W                                                                                                                  |

## Product Overview

KMDA-5611-S001 is a high-performance box computer with H310 chipset, powered by Intel® 8/9th Gen Coffee Lake CPU, multi IO interfaces and moderate size. It is suitable for machine vision and industrial control and other industries and fields.

## Product Parameters

### System

|            |                                                                                                           |
|------------|-----------------------------------------------------------------------------------------------------------|
| CPU        | Intel® Coffee lake 9th/8th-Gen Core™ i9/i7/i5/i3/Pentium/Celeron LGA1151 CPU, up to 65W, Intel® H310 PCH  |
| RAM        | 2*260-Pin SODIMM, DDR4 2666/2400MHz, 64GB max.                                                            |
| Graphics   | Intel® UHD Graphics, Supports DirectX11.1, OpenGL5.0, OpenCL 2.1; HDMI:4096*2160@24Hz, VGA:1920*1200@60Hz |
| LAN        | 4*Intel I210AT POE+, 10-1000M, WOL; 1*Intel I210AT+1*Intel I219 LM, 10-1000M, WOL                         |
| USB        | 2* USB3.2(5G), 2*USB2.0, 1*USB2.0(built-in)                                                               |
| Display    | 1*HDMI+1*VGA                                                                                              |
| Audio      | /                                                                                                         |
| COM/Others | 1*RS232/485, 1*RS232;                                                                                     |
| DIO        | 32 bit iso. DIO(16bit DI-2.5KV-PNP/NPN; 16bit DO-2.5KV);                                                  |

### Storage

|         |                                              |
|---------|----------------------------------------------|
| Storage | 1*2.5" SATA3.0,6Gbps; 1*mSATA(SATA3.0),6Gbps |
|---------|----------------------------------------------|

### Others

|        |                                                  |
|--------|--------------------------------------------------|
| LED    | 1*Power LED, 1*HDD LED, 3*CPU Temp. LED          |
| Switch | 1*Power SW, Remote SW, 1*AT/ATX SW, 1*Clear CMOS |
| WDT    | programmable via software 1 to 255 second        |
| TPM    | (Opt.)TPM2.0                                     |

### OS

|    |                                                                                                                                                  |
|----|--------------------------------------------------------------------------------------------------------------------------------------------------|
| OS | Windows 10 Enterprise & IOT Enterprise (64 位) (CFL-R)<br>Ubuntu、SuSe、Redhat Enterprise 1,2 (Kernel 4.14) (CFL-R)<br>Wind River VxWorks 7 (CFL-R) |
|----|--------------------------------------------------------------------------------------------------------------------------------------------------|

### Expansion

|           |                                       |
|-----------|---------------------------------------|
| Expansion | 1*Mini-PCIe(+SIM),4G/WIFI/PCIe module |
|-----------|---------------------------------------|

### Power

|            |                                                 |
|------------|-------------------------------------------------|
| Power& TDP | DC IN 9-36V 3-pin Term. 5.0mm, OVP&OCP&SCP; TBD |
|------------|-------------------------------------------------|

### Mechanical

|              |                                             |
|--------------|---------------------------------------------|
| Structure    | Aluminum-magnesium alloy, SGCC frame        |
| Color        | Silver Gray                                 |
| Installation | Desktop Mounting/Wall(opt.), DIN-Rail(opt.) |
| Dimension    | 225*154*75.6mm                              |
| Weight       | TBD                                         |

### Environment

|                  |                                                                                         |
|------------------|-----------------------------------------------------------------------------------------|
| Operating Temp   | -20°C~60°C – SSD, air flow;<br>-10°C~55°C – HDD, air flow;                              |
| Storage Temp     | -40°C~85°C                                                                              |
| Storage Humidity | 10~95%@40°C, Non-condensing                                                             |
| Vibration        | 5grms/5~500Hz/random/in working(SSD);<br>1grms/5~500Hz/random/in working(HDD)           |
| Shock            | 50g peak acceleration(11ms duration)(SSD);<br>20g peak acceleration(11ms duration)(HDD) |
| Certificate/EMC  | CE/FCC Class A                                                                          |



# KMDA-5611-S002

Intel® 8/9th Gen Coffee Lake LGA1151 CPU, 2\*LAN, 2\*USB3.1, 8\*USB3.0, 3\*USB2.0, 1\*HDMI, 1\*VGA, 2\*COM, 32bit Iso. DIO, 1\*mSATA, 1\*Mini PCIe, 1\*SATA3.0, DC 9-36V

## Key Specification

- Intel® 8/9th Gen Coffee Lake LGA1151 CPU
- Intel® H310 Chipset
- 2\*DDR4 2400/2666MHz SODIMM, up to 64GB
- 1\*HDMI + 1\*VGA
- 2\*LAN, 2\*USB3.1, 8\*USB3.0, 3\*USB2.0, 32bit Iso. DIO
- 1\*RS232/485 and 1\*RS232 COM
- 1\*Mini-PCIe full size, with SIM card slot, 4G/WIFI/PCIe module
- 1\*2.5"Easy-plug SATA3.0 bay and 1\*mSATA
- DC IN 9-36V, with OVP, OCP and SCP



## Product Overview

KMDA-5611-S002 is a high-performance box computer with H310 chipset, powered by Intel® 8/9th Gen Coffee Lake CPU, multi IO interfaces and moderate size. It is suitable for machine vision and industrial control and other industries and fields.

## Product Parameters

### System

|            |                                                                                                              |
|------------|--------------------------------------------------------------------------------------------------------------|
| CPU        | Intel® Coffee lake 9th/8th-Gen Core™ i9/i7/i5/i3/Pentium/Celeron LGA1151 CPU, up to 65W, Intel® H310 PCH     |
| RAM        | 2*260-Pin SODIMM, DDR4 2666/2400MHz, 64GB max.                                                               |
| Graphics   | Intel® UHD Graphics, Supports DirectX11.1, OpenGL5.0, OpenCL 2.1;<br>HDMI:4096*2160@24Hz, VGA:1920*1200@60Hz |
| LAN        | 1*Intel I210AT, 10-1000M,WOL;<br>1*Intel I219 LM, 10-1000M, WOL                                              |
| USB        | 8* USB3.0, 2*USB3.1(5G), 2*USB2.0, 1*USB2.0(built-in)                                                        |
| Display    | 1*HDMI+1*VGA                                                                                                 |
| Audio      | /                                                                                                            |
| COM/Others | 1*RS232/485, 1*RS232;                                                                                        |
| DIO        | 32 bit iso. DIO(16bit DI-2.5KV-PNP/NPN;16bit DO-2.5KV);                                                      |

### Storage

|         |                                              |
|---------|----------------------------------------------|
| Storage | 1*2.5" SATA3.0,6Gbps; 1*mSATA(SATA3.0),6Gbps |
|---------|----------------------------------------------|

### Others

|        |                                                 |
|--------|-------------------------------------------------|
| LED    | 1*Power LED, 1*HDD LED, 3*CPU Temp. LED         |
| Switch | 1*Power SW, Remote SW,1*AT/ATX SW, 1*Clear CMOS |
| WDT    | programmable via software 1 to 255 second       |
| TPM    | (Opt.)TPM2.0                                    |

### OS

|    |                                                                                                                                                  |
|----|--------------------------------------------------------------------------------------------------------------------------------------------------|
| OS | Windows 10 Enterprise & IOT Enterprise (64 位) (CFL-R)<br>Ubuntu、SuSe、Redhat Enterprise 1,2 (Kernel 4.14) (CFL-R)<br>Wind River VxWorks 7 (CFL-R) |
|----|--------------------------------------------------------------------------------------------------------------------------------------------------|

### Expansion

|           |                                       |
|-----------|---------------------------------------|
| Expansion | 1*Mini-PCIe(+SIM),4G/WIFI/PCIe module |
|-----------|---------------------------------------|

### Power

|           |                                                    |
|-----------|----------------------------------------------------|
| Power&TDP | DC IN 9-36V 3-pin Term. 5.0mm, OVP&OCP&SCP;<br>TBD |
|-----------|----------------------------------------------------|

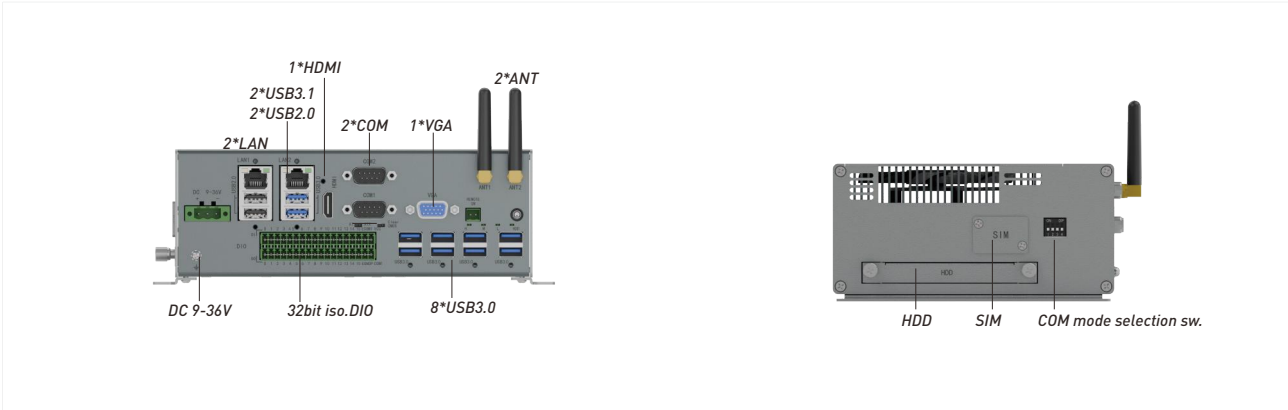
### Mechanical

|              |                                             |
|--------------|---------------------------------------------|
| Structure    | Aluminum-magnesium alloy, SGCC frame        |
| Color        | Silver Gray                                 |
| Installation | Desktop Mounting/Wall(opt.), DIN-Rail(opt.) |
| Dimension    | 225*154*75.6mm                              |
| Weight       | TBD                                         |

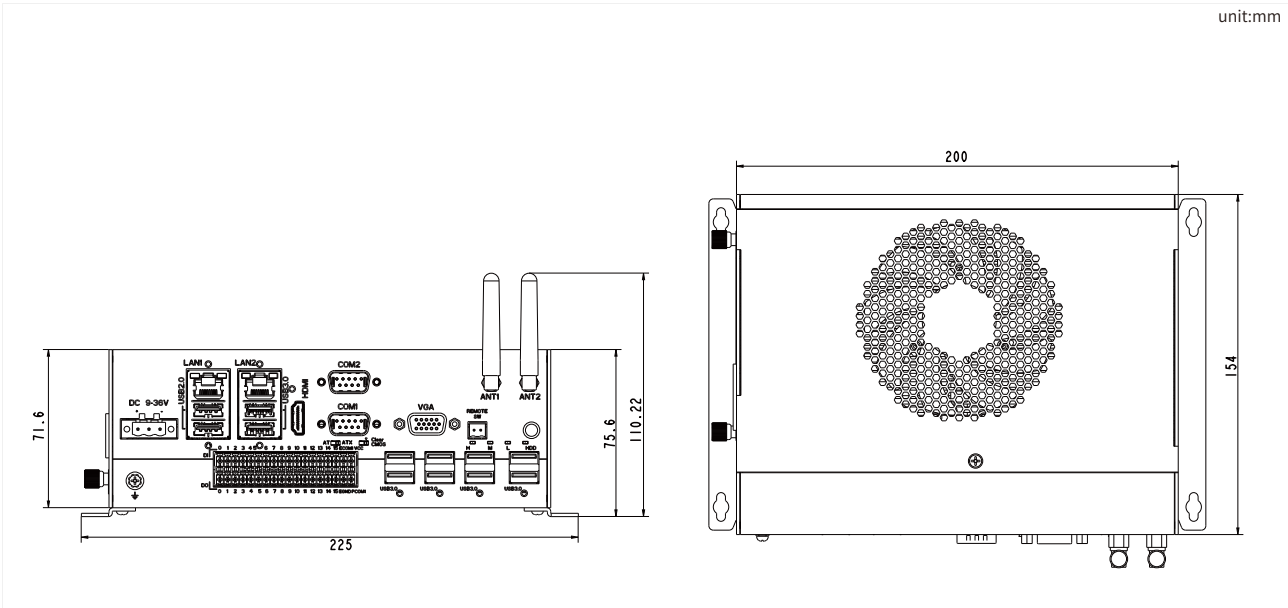
### Environment

|                  |                                                                                         |
|------------------|-----------------------------------------------------------------------------------------|
| Operating Temp   | -20°C~60°C – SSD, air flow;<br>-10°C~55°C – HDD, air flow;                              |
| Storage Temp     | -40°C~85°C                                                                              |
| Storage Humidity | 10~95%@40°C, Non-condensing                                                             |
| Vibration        | 5grms/5~500Hz/random/in working(SSD);<br>1grms/5~500Hz/random/in working(HDD)           |
| Shock            | 50g peak acceleration(11ms duration)(SSD);<br>20g peak acceleration(11ms duration)(HDD) |
| Certificate/EMC  | CE/FCC Class A                                                                          |

## I/O View



## Dimensions



## Ordering Information

| Model          | Processor                                          | Specifications                                                                                                                                            |
|----------------|----------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|
| KMDA-5611/S002 | Intel® 8/9th Gen Coffee Lake LGA1151 CPU, H310 PCH | 2*DDR4 SODIMM, 2*LAN, 2*USB3.1, 8*USB3.0, 3*USB2.0, 2*COM, 1*HDMI, 1*VGA, 32bit Iso. DIO, 1*2.5"SATA bay, 1*mSATA, 1*Mini PCIe, 1*SIM card slot, DC 9-36V |
| PA-120DC19     |                                                    | AC/DC power adapter, DC 19V/6.32A,120W                                                                                                                    |

# KMDA-6611-S001

Intel® 10th Gen Comet Lake LGA1200 CPU, 2\*LAN, 4\*POE+, 2\*USB3.2, 3\*USB2.0, 1\*HDMI, 1\*VGA, 2\*COM, 32bit Iso. DIO, 1\*mSATA, 1\*Mini PCIe, 1\*SATA3.0, DC 9-36V

## Key Specification

- Intel® 10th Gen Comet Lake LGA1200 CPU
- Intel® H420E Chipset
- 2\*DDR4 2933MHz SODIMM, up to 64GB
- 1\*HDMI + 1\*VGA
- 2\*LAN, 4\*POE+, 2\*USB3.2, 3\*USB2.0, 32bit Iso. DIO
- 1\*RS232/485 and 1\*RS232 COM
- 1\*Mini-PCIe full size, with SIM card slot, 4G/WIFI/PCIe module
- 1\*2.5" Easy-plug SATA3.0 bay and 1\*mSATA
- DC IN 9-36V, with OVP, OCP and SCP



## Product Overview

KMDA-6611-S001 is a high-performance box computer with H420E chipset, powered by Intel® 10th Gen Comet Lake CPU, multi IO interfaces and moderate size. It is suitable for machine vision and industrial control and other industries and fields.

## Product Parameters

### System

|            |                                                                                                       |
|------------|-------------------------------------------------------------------------------------------------------|
| CPU        | Intel® Comet lake 10th Gen Core™ i9/i7/i5/i3/Pentium/Celeron LGA1200 CPU, up to 65W, Intel® H420E PCH |
| RAM        | 2*260-Pin SODIMM, DDR4 2933MHz, 64GB max.                                                             |
| Graphics   | Intel® UHD Graphics, Supports DirectX12, OpenGL4.5; HDMI:4096*2160@30Hz, VGA:1920*1200@60Hz           |
| LAN        | 4*Intel I210AT POE+, 10-1000M, WOL; 1*Intel I210AT+1*Intel I219 LM, 10-1000M, WOL                     |
| USB        | 2* USB3.2(5G), 2*USB2.0, 1*USB2.0(built-in)                                                           |
| Display    | 1*HDMI+1*VGA                                                                                          |
| Audio      | /                                                                                                     |
| COM/Others | 1*RS232/485, 1*RS232;                                                                                 |
| DIO        | 32 bit iso. DIO(16bit DI-2.5KV-PNP/NPN;16bit DO-2.5KV);                                               |

### Storage

|         |                                              |
|---------|----------------------------------------------|
| Storage | 1*2.5" SATA3.0,6Gbps; 1*mSATA(SATA3.0),6Gbps |
|---------|----------------------------------------------|

### Others

|        |                                                  |
|--------|--------------------------------------------------|
| LED    | 1*Power LED, 1*HDD LED, 3*CPU Temp. LED          |
| Switch | 1*Power SW, Remote SW, 1*AT/ATX SW, 1*Clear CMOS |
| WDT    | programmable via software 1 to 255 second        |
| TPM    | (Opt.)TPM2.0                                     |

### OS

|    |                                                                                                                                                                     |
|----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| OS | Windows11, Windows 10 IoT Enterprise (64-bit), Windows Server 2019, Ubuntu, SUSE, Redhat Enterprise, Wind River Linux, Yocto Project (64-bit), Wind River VxWorks 7 |
|----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|

### Expansion

|           |                                                 |
|-----------|-------------------------------------------------|
| Expansion | 1*Mini-PCIe(+SIM),4G/WIFI/PCIe module           |
| Power&TDP | DC IN 9-36V 3-pin Term. 5.0mm, OVP&OCP&SCP; TBD |

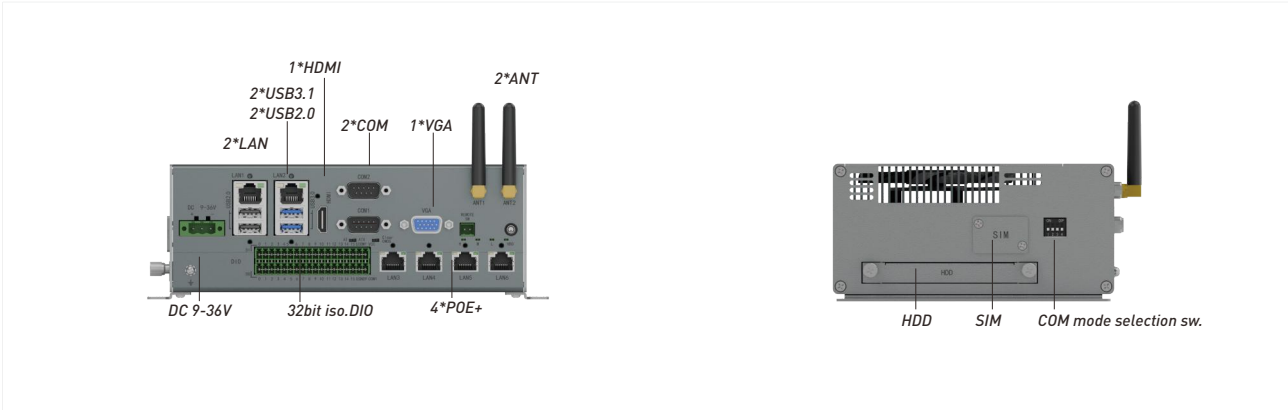
### Mechanical

|              |                                             |
|--------------|---------------------------------------------|
| Structure    | Aluminum-magnesium alloy, SGCC frame        |
| Color        | Silver Gray                                 |
| Installation | Desktop Mounting/Wall(opt.), DIN-Rail(opt.) |
| Dimension    | 225*154*75.6mm                              |
| Weight       | TBD                                         |

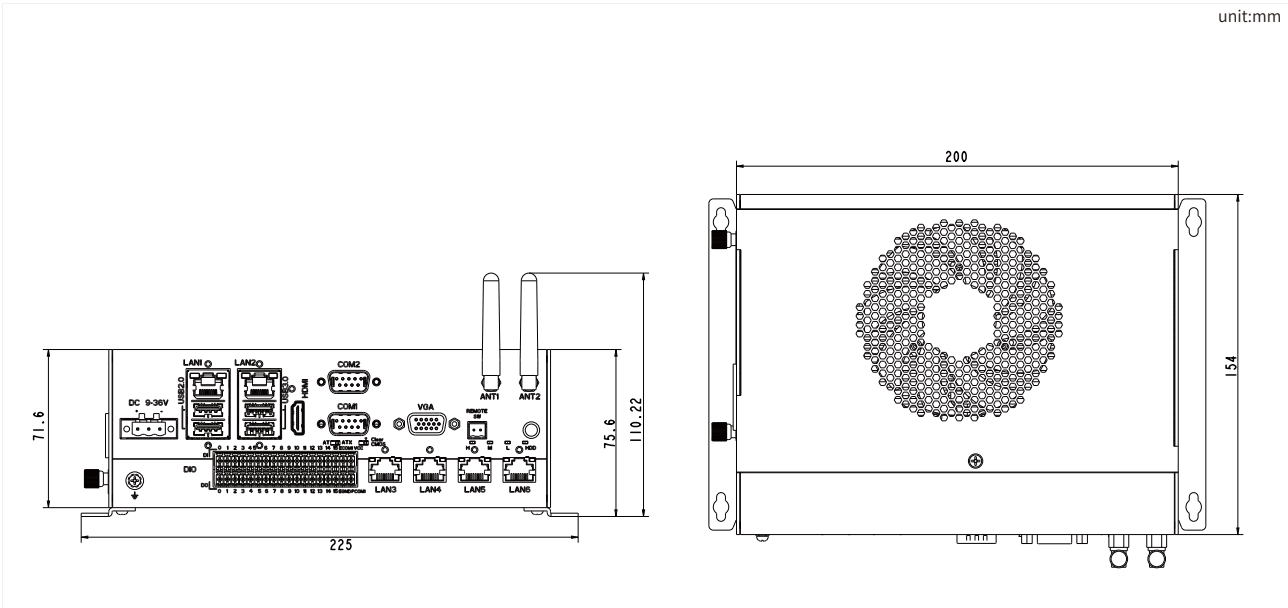
### Environment

|                  |                                                                                         |
|------------------|-----------------------------------------------------------------------------------------|
| Operating Temp   | -20°C~60°C – SSD, air flow;<br>-10°C~55°C – HDD, air flow;                              |
| Storage Temp     | -40°C~85°C                                                                              |
| Storage Humidity | 10~95%@40°C, Non-condensing                                                             |
| Vibration        | 5grms/5~500Hz/random/in working(SSD);<br>1grms/5~500Hz/random/in working(HDD)           |
| Shock            | 50g peak acceleration(11ms duration)(SSD);<br>20g peak acceleration(11ms duration)(HDD) |
| Certificate/EMC  | CE/FCC Class A                                                                          |

## I/O View



## Dimensions



## Ordering Information

| Model          | Processor                                         | Specifications                                                                                                                                          |
|----------------|---------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|
| KMDA-6611/S001 | Intel® 10th Gen Comet Lake LGA1200 CPU, H420E PCH | 2*DDR4 SODIMM, 2*LAN, 4*POE+, 2*USB3.2, 3*USB2.0, 2*COM, 1*HDMI, 1*VGA, 32bit Iso. DIO, 1*2.5"SATA bay, 1*mSATA, 1*Mini PCIe, 1*SIM card slot, DC 9-36V |
| PA-120DC19     |                                                   | AC/DC power adapter, DC 19V/6.32A,120W                                                                                                                  |



# KMDA-6611-S002

Intel® 10th Gen Comet Lake LGA1200 CPU, 2\*LAN, 2\*USB3.1, 8\*USB3.0, 3\*USB2.0, 1\*HDMI, 1\*VGA, 2\*COM, 32bit Iso. DIO, 1\*mSATA, 1\*Mini PCIe, 1\*SATA3.0, DC 9-36V

## Key Specification

- Intel® 10th Gen Comet Lake LGA1200 CPU
- Intel® H420E Chipset
- 2\*DDR4 2933MHz SODIMM, up to 64GB
- 1\*HDMI + 1\*VGA
- 2\*LAN, 2\*USB3.1, 8\*USB3.0, 3\*USB2.0, 32bit Iso. DIO
- 1\*RS232/485 and 1\*RS232 COM
- 1\*Mini-PCIe full size, with SIM card slot, 4G/WIFI/PCIe module
- 1\*2.5" Easy-plug SATA3.0 bay and 1\*mSATA
- DC IN 9-36V, with OVP, OCP and SCP



## Product Overview

KMDA-6611-S002 is a high-performance box computer with H420E chipset, powered by Intel® 10th Gen Comet Lake CPU, multi IO interfaces and moderate size. It is suitable for machine vision and industrial control and other industries and fields.

## Product Parameters

### System

|            |                                                                                                       |
|------------|-------------------------------------------------------------------------------------------------------|
| CPU        | Intel® Comet lake 10th Gen Core™ i9/i7/i5/i3/Pentium/Celeron LGA1200 CPU, up to 65W, Intel® H420E PCH |
| RAM        | 2*260-Pin SODIMM, DDR4 2933MHz, 64GB max.                                                             |
| Graphics   | Intel® UHD Graphics, Supports DirectX12, OpenGL4.5; HDMI:4096*2160@30Hz, VGA:1920*1200@60Hz           |
| LAN        | 1*Intel I210AT, 10-1000M, WOL;<br>1*Intel I219 LM, 10-1000M, WOL                                      |
| USB        | 8* USB3.0, 2*USB3.1(5G), 2*USB2.0, 1*USB2.0(built-in)                                                 |
| Display    | 1*HDMI+1*VGA                                                                                          |
| Audio      | /                                                                                                     |
| COM/Others | 1*RS232/485, 1*RS232;                                                                                 |
| DIO        | 32 bit iso. DIO(16bit DI-2.5KV-PNP/NPN;16bit DO-2.5KV);                                               |

### Storage

|         |                                              |
|---------|----------------------------------------------|
| Storage | 1*2.5" SATA3.0,6Gbps; 1*mSATA(SATA3.0),6Gbps |
|---------|----------------------------------------------|

### Others

|        |                                                  |
|--------|--------------------------------------------------|
| LED    | 1*Power LED, 1*HDD LED, 3*CPU Temp. LED          |
| Switch | 1*Power SW, Remote SW, 1*AT/ATX SW, 1*Clear CMOS |
| WDT    | programmable via software 1 to 255 second        |
| TPM    | (Opt.)TPM2.0                                     |

### OS

|    |                                                                                                                                                                     |
|----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| OS | Windows11, Windows 10 IoT Enterprise (64-bit), Windows Server 2019, Ubuntu, SUSE, Redhat Enterprise, Wind River Linux, Yocto Project (64-bit), Wind River VxWorks 7 |
|----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|

### Expansion

|           |                                                 |
|-----------|-------------------------------------------------|
| Expansion | 1*Mini-PCIe(+SIM),4G/WIFI/PCIe module           |
| Power&TDP | DC IN 9-36V 3-pin Term. 5.0mm, OVP&OCP&SCP; TBD |

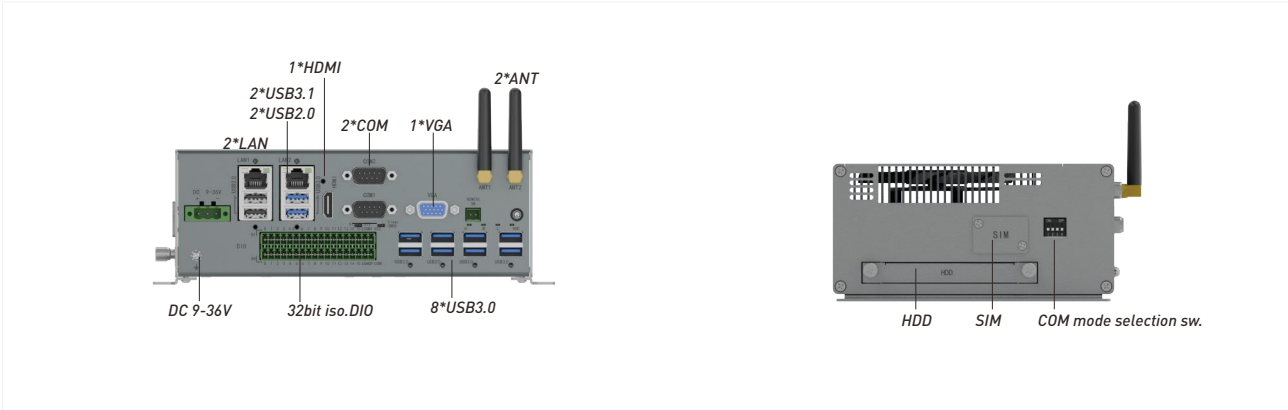
### Mechanical

|              |                                             |
|--------------|---------------------------------------------|
| Structure    | Aluminum-magnesium alloy, SGCC frame        |
| Color        | Silver Gray                                 |
| Installation | Desktop Mounting/Wall(opt.), DIN-Rail(opt.) |
| Dimension    | 225*154*75.6mm                              |
| Weight       | TBD                                         |

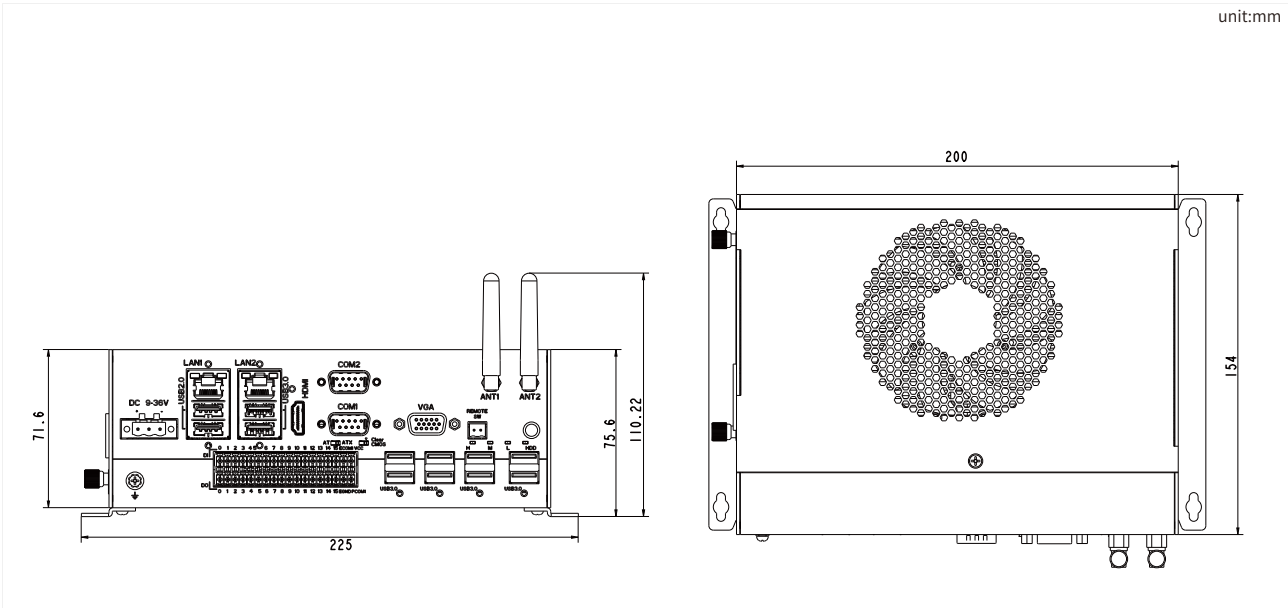
### Environment

|                  |                                                                                         |
|------------------|-----------------------------------------------------------------------------------------|
| Operating Temp   | -20°C~60°C – SSD, air flow;<br>-10°C~55°C – HDD, air flow;                              |
| Storage Temp     | -40°C~85°C                                                                              |
| Storage Humidity | 10~95%@40°C, Non-condensing                                                             |
| Vibration        | 5grms/5~500Hz/random/in working(SSD);<br>1grms/5~500Hz/random/in working(HDD)           |
| Shock            | 50g peak acceleration(11ms duration)(SSD);<br>20g peak acceleration(11ms duration)(HDD) |
| Certificate/EMC  | CE/FCC Class A                                                                          |

## I/O View



## Dimensions



## Ordering Information

| Model          | Processor                                         | Specifications                                                                                                                                            |
|----------------|---------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|
| KMDA-6611/S002 | Intel® 10th Gen Comet Lake LGA1200 CPU, H420E PCH | 2*DDR4 SODIMM, 2*LAN, 2*USB3.1, 8*USB3.0, 3*USB2.0, 2*COM, 1*HDMI, 1*VGA, 32bit Iso. DIO, 1*2.5"SATA bay, 1*mSATA, 1*Mini PCIe, 1*SIM card slot, DC 9-36V |
| PA-120DC19     |                                                   | AC/DC power adapter, DC 19V/6.32A,120W                                                                                                                    |

# KMDA-7611-S

Intel® 12/13 Gen Alder Lake-S/Raptor Lake-S LGA1700 CPU, 4\*LAN, 4\*USB3.2, 1\*HDMI, 6\*COM, 8bit DIO, 1\*mSATA, 2\*Mini PCIe, 1\*M.2 B-Key, 1\*SATA3.0, DC 9-36V.

## Key Specification

- Intel® 12/13th Gen Alder lake-S/Raptor Lake-S LGA1700 CPU
- Intel® H610 Chipset
- 2\*DDR5 4800MHz SODIMM, up to 64GB
- 1\*HDMI
- 4\*LAN, 4\*USB3.2, 1\*USB2.0, 8bit Iso. DIO
- 1\*MIC+1\*LINE OUT
- 2\*RS232/422/485 and 4\*RS232 COM
- 2\*Mini-PCIe full size, function module that supports PCIe signals
- 1\*M.2 3052/3042 B-Key with a SIM card slot, supports 5G NR module
- 1\*2.5"Easy-plug SATA3.0 bay and 1\*mSATA
- DC IN 9-36V, with OVP,OCP and SCP



## Product Overview

KMDA-7611-S001 is a high-performance box computer with H610 chipset, powered by Intel® 12/13th Gen Alder lake-S/Raptor Lake-S CPU, multi IO interfaces and moderate size. It is suitable for unmanned forklifts, machine vision, and industrial control and other industries and fields.

## Product Parameters

### System

|            |                                                                                                              |
|------------|--------------------------------------------------------------------------------------------------------------|
| CPU        | Intel® Alder lake-S/Raptor Lake-S 12/13th Gen Core™ i9/i7/i5/i3/Pentium/Celeron LGA1700 CPU, Intel® H610 PCH |
| RAM        | 2*262-Pin SODIMM, DDR5 4800MHz, 64GB max.                                                                    |
| Graphics   | Intel® UHD Graphics, Supports DirectX 12, OpenGL 4.5, OpenCL 3.0;<br>HDMI:4096*2160@60Hz                     |
| LAN        | 3*Intel I210AT, 10-1000M,WOL;<br>1*Intel I219 LM, 10-1000M, WOL                                              |
| USB        | 2* USB3.2(10G), 2*USB3.2(5G), 1*USB2.0(built-in)                                                             |
| Display    | HDMI                                                                                                         |
| Audio      | Realtek ALC897, 1*Line out+1*MIC                                                                             |
| COM/Others | 2*RS232/422/485, 4*RS232;                                                                                    |
| DIO        | 8bit isolatedDIO(4bit DI-2.5KV-PNP/NPN;4bit DO-2.5KV);                                                       |
| Storage    | 1*2.5" SATA3.0; 1*mSATA(SATA3.0)                                                                             |

### Others

|        |                                                 |
|--------|-------------------------------------------------|
| LED    | 1*Power LED, 1*HDD LED, 3*CPU Temp. LED         |
| Switch | 1*Power SW, Remote SW,1*AT/ATX SW, 1*Clear CMOS |
| WDT    | programmable via software 1 to 255 second       |
| TPM    | (Opt.)TPM2.0                                    |

### OS

|    |                                                                                                                           |
|----|---------------------------------------------------------------------------------------------------------------------------|
| OS | Windows 11, Windows 10 IoT Enterprise 2021 LTSC, Ubuntu, SuSe, Red Hat Enterprise, Wind River Linux, Wind River VxWorks 7 |
|----|---------------------------------------------------------------------------------------------------------------------------|

### Expansion

|           |                                                                                       |
|-----------|---------------------------------------------------------------------------------------|
| Expansion | 2*Mini-PCIe(PCIeX1/USB2.0),PCIe module;<br>1*M.2 3052/3042 B-Key(PCIeX1/USB2.0),5G NR |
|-----------|---------------------------------------------------------------------------------------|

### Power

|            |                                                                                               |
|------------|-----------------------------------------------------------------------------------------------|
| Power& TDP | DC IN 9-36V 3-pin Term. 5.0mm, OVP&OCP&SCP<br>TDP:105.84W (Intel I3-12100/128GB SSD/32GB RAM) |
|------------|-----------------------------------------------------------------------------------------------|

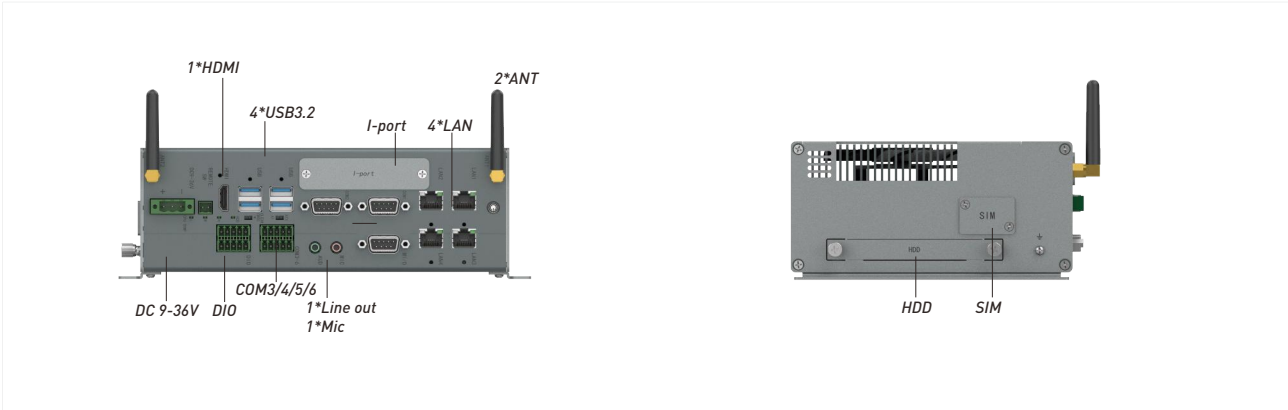
### Mechanical

|              |                                             |
|--------------|---------------------------------------------|
| Structure    | Aluminum-magnesium alloy, SGCC frame        |
| Color        | Silver Gray                                 |
| Installation | Desktop Mounting/Wall(opt.), DIN-Rail(opt.) |
| Dimension    | 238*169*75.6mm                              |
| Weight       | 2.55KG                                      |

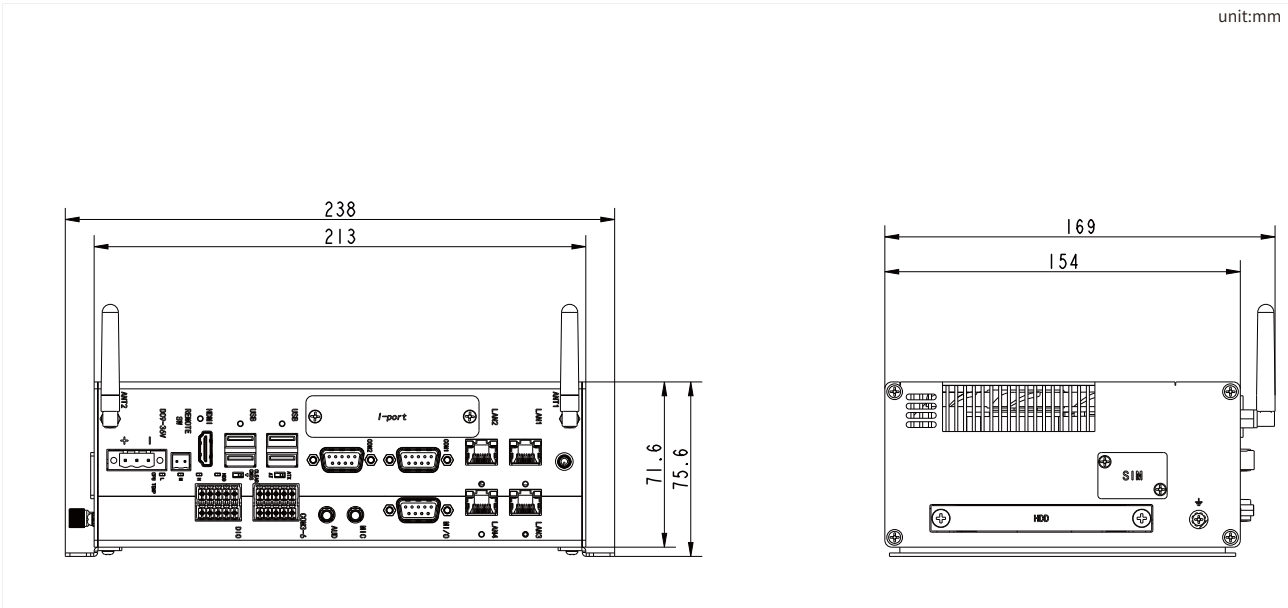
### Environment

|                  |                                                                                         |
|------------------|-----------------------------------------------------------------------------------------|
| Operating Temp   | -20°C~60°C – SSD, air flow;<br>-10°C~55°C – HDD, air flow;                              |
| Storage Temp     | -40°C~85°C                                                                              |
| Storage Humidity | 10~95%@40°C, Non-condensing                                                             |
| Vibration        | 5grms/5~500Hz/random/in working(SSD);<br>1grms/5~500Hz/random/in working(HDD)           |
| Shock            | 50g peak acceleration(11ms duration)(SSD);<br>20g peak acceleration(11ms duration)(HDD) |
| Certificate/EMC  | CE/FCC Class A                                                                          |

## I/O View



## Dimensions



## Ordering Information

| Model          | Processor                                                       | Specifications                                                                                                                                                                |
|----------------|-----------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| KMDA-7611/S001 | Intel®12/13 Gen Alderlake-S/Raptor Lake-S LGA1700 CPU, H610 PCH | 2*DDR5 SODIMM, 4*LAN, 4*USB3.2, 1*USB2.0, 6*COM,1*HDMI, Line out & Mic, 8bit Iso.DIO, 1*I-Port, 1*M I/O, 1*mSATA, 1*2.5" SATA bay, 2*Mini PCIe, 1*M.2 B-Key, 1*SIM, DC 9-36V. |
| PA-120DC19     |                                                                 | AC/DC power adapter, DC 19V/6.32A,120W                                                                                                                                        |



# KMDA-7611-T

Intel® 12/13th Gen Alder Lake-S/Raptor Lake-S LGA1700 CPU, 2\*LAN, 4\*USB3.2, 1\*HDMI, 2\*COM, 1\*mSATA, 2\*Mini PCIe, 1\*M.2 B-Key, DC 9-36V

### Key Specification

- Intel® 12/13th Gen Alder lake-S/Raptor Lake-S LGA1700 CPU
- Intel® H610 Chipset
- 2\*DDR5 4800MHz SODIMM, up to 64GB
- 1\*HDMI
- 2\*LAN, 4\*USB3.2, 1\*USB2.0, 8bit Iso. DIO
- 2\*RS232/422/485 COM
- 2\*Mini-PCIe full size, function module that supports PCIe signals
- 1\*M.2 3052/3042 B-Key with a SIM card slot, supports 5G NR module
- 1\*mSATA
- DC IN 9-36V, with OVP,OCP and SCP



### Product Overview

KMDA-7611-T001 is a high-performance box computer with H610 chipset, powered by Intel® 12/13th Gen Alder lake-S/Raptor Lake-S CPU, multi IO interfaces and moderate size. It is suitable for unmanned forklifts, machine vision, and industrial control and other industries and fields.

### Product Parameters

#### System

|            |                                                                                                              |
|------------|--------------------------------------------------------------------------------------------------------------|
| CPU        | Intel® Alder lake-S/Raptor Lake-S 12/13th Gen Core™ i9/i7/i5/i3/Pentium/Celeron LGA1700 CPU, Intel® H610 PCH |
| RAM        | 2*262-Pin SODIMM, DDR5 4800MHz, 64GB max.                                                                    |
| Graphics   | Intel® UHD Graphics, Supports DirectX 12, OpenGL 4.5, OpenCL 3.0;<br>HDMI:4096*2160@60Hz                     |
| LAN        | 1*Intel I210AT, 10-1000M,WOL;<br>1*Intel I219 LM, 10-1000M, WOL                                              |
| USB        | 2* USB3.2(10G), 2*USB3.2(5G), 1*USB2.0(built-in)                                                             |
| Display    | HDMI                                                                                                         |
| Audio      | /                                                                                                            |
| COM/Others | 2*RS232/422/485                                                                                              |
| DIO        | 8bit iso. DIO(4bit DI:2.5KV-PNP/NPN;4bit DO:2.5KV);                                                          |

#### Storage

|         |                  |
|---------|------------------|
| Storage | 1*mSATA(SATA3.0) |
|---------|------------------|

#### Others

|        |                                                 |
|--------|-------------------------------------------------|
| LED    | 1*Power LED, 1*HDD LED, 3*CPU Temp. LED         |
| Switch | 1*Power SW, Remote SW,1*AT/ATX SW, 1*Clear CMOS |
| WDT    | programmable via software 1 to 255 second       |
| TPM    | (Opt.)TPM2.0                                    |

#### OS

|    |                                                                                                                           |
|----|---------------------------------------------------------------------------------------------------------------------------|
| OS | Windows 11, Windows 10 IoT Enterprise 2021 LTSC, Ubuntu, SuSe, Red Hat Enterprise, Wind River Linux, Wind River VxWorks 7 |
|----|---------------------------------------------------------------------------------------------------------------------------|

#### Expansion

|           |                                                                                           |
|-----------|-------------------------------------------------------------------------------------------|
| Expansion | 2*Mini-PCIe(PCIeX1/USB2.0),PCIe module;<br>1*M.2 3052/3042 B-Key(PCIeX1/USB2.0+SIM),5G NR |
|-----------|-------------------------------------------------------------------------------------------|

#### Power

|           |                                                                                               |
|-----------|-----------------------------------------------------------------------------------------------|
| Power&TDP | DC IN 9-36V 3-pin Term. 5.0mm, OVP&OCP&SCP<br>TDP:105.84W (Intel I3-12100/128GB SSD/32GB RAM) |
|-----------|-----------------------------------------------------------------------------------------------|

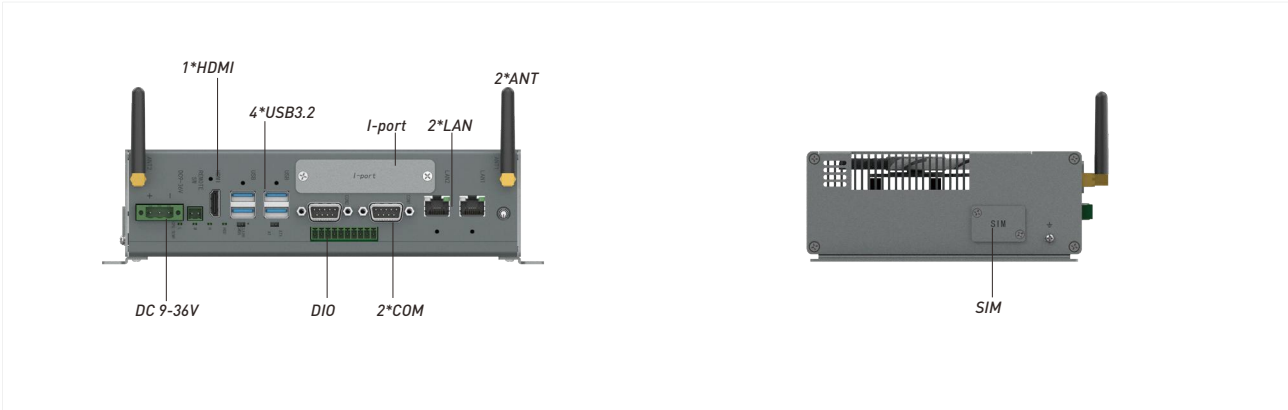
#### Mechanical

|              |                                             |
|--------------|---------------------------------------------|
| Structure    | Aluminum-magnesium alloy, SGCC frame        |
| Color        | Silver Gray                                 |
| Installation | Desktop Mounting/Wall(opt.), DIN-Rail(opt.) |
| Dimension    | 238*169*61.8mm                              |
| Weight       | 2.32KG                                      |

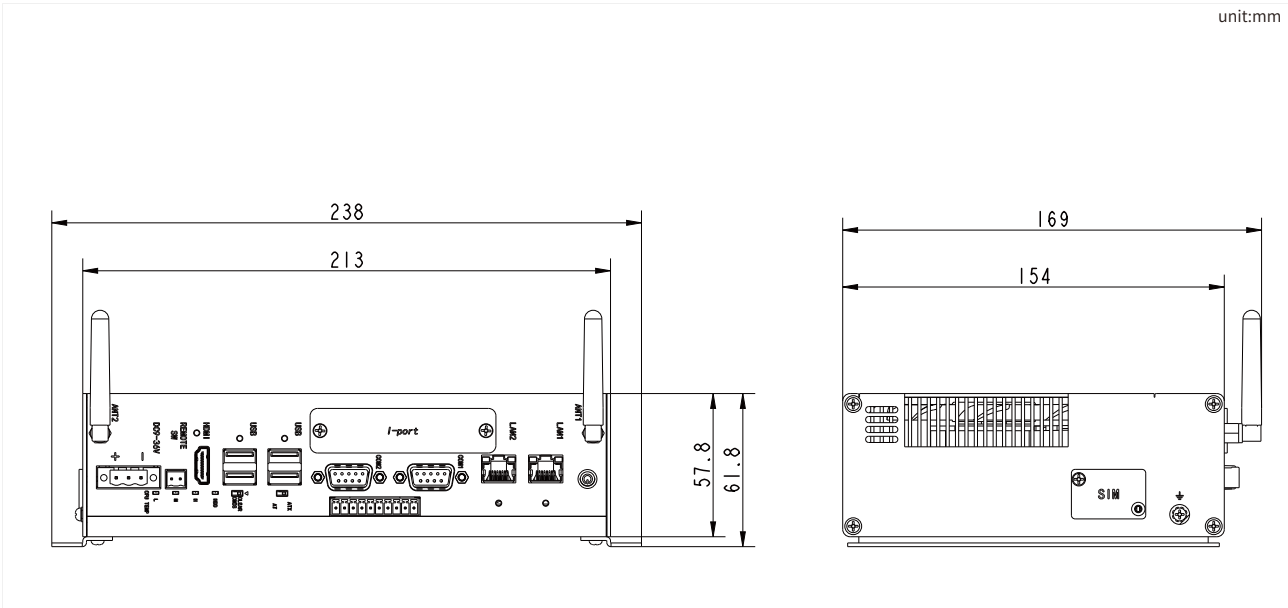
#### Environment

|                  |                                           |
|------------------|-------------------------------------------|
| Operating Temp   | -20°C~-60°C – SSD, air flow               |
| Storage Temp     | -40°C~85°C                                |
| Storage Humidity | 10~95%@40°C, Non-condensing               |
| Vibration        | 5grms/5~500Hz/random/in working(SSD)      |
| Shock            | 50g peak acceleration(11ms duration)(SSD) |
| Certificate/EMC  | CE/FCC Class A                            |

### I/O View



### Dimensions



### Ordering Information

| Model          | Processor                                                       | Specifications                                                                                                                                 |
|----------------|-----------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|
| KMDA-7611/T001 | Intel®12/13 Gen Alderlake-S/Raptor Lake-S LGA1700 CPU, H610 PCH | 2*DDR5 SODIMM, 2*LAN, 4*USB3.2, 1*USB2.0, 2*COM, 1*HDMI, 8bit Iso. DIO, 1*I-Port, 1*mSATA, 2*Mini PCIe, 1*M.2 B-Key, 1*SIM card slot, DC 9-36V |
| PA-120DC19     |                                                                 | AC/DC power adapter, DC 19V/6.32A,120W                                                                                                         |

# SCC-3116

Intel® Baytrail Celeron J1900 CPU, 2/3\*LAN, 7\*USB, 6\*COM, 1\*HDMI+1\*VGA dual display, optional 8-bit DIO, DC IN 9~36V

## Key Specification

- Aluminum Chassis, fanless heat dissipation design
- Intel® Baytrail Celeron J1900 2.0-2.42G CPU
- 1\*DDR3L 1333MHz SODIMM RAM, 8GB max.
- 1\*HDMI &1\*VGA, dual display
- 2/3\*Gig LAN, 1\*USB3.0, 6\*USB2.0(one build-in)
- 6\*COM, optional 8-bit DIO, 1\*Line out,1\*Mic
- 1\*Mini-PCIe(PCIeX1+USB signal), 1\*PS/2
- 1\*mSATA, 1\*2.5’ SATA bay, anti-vibration design, DC 9~36V wide voltage power supply



## Product Overview

SCC-3116 is a multi-IO design industrial box PC with aluminum chassis and fanless design. Equipped with Intel Baytrail Celeron J1900 CPU, DDR3L 1333Mhz SODIMM, Max. support upto 8GB. It is economical and high reliability, suitable for equipment automation, IoT signal acquisition and other applications.

## Product Parameters

### System

|             |                                                                                                                                                         |
|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|
| CPU         | Intel® Baytrail-D Celeron J1900 ,<br>Main frequency 2.0~2.42GHz, quad-core, four-thread, 2M cache, 22nm, TDP 10W                                        |
| RAM         | 1*DDR3L, 1333MHz SODIMM, Max. 8GB                                                                                                                       |
| Graphics    | Intel HD Graphics, VGA : 1920*1200@60Hz, HDMI:1920*1080@60Hz, support 2 independent displays<br>support OpenGL 3.2, DirectX 11, OpenCL 1.2, MPGE2/H.264 |
| LAN         | 3*Intel I211AT PCIe Gig. Ethernet, 10/100/1000Mbps                                                                                                      |
| USB         | 1* USB3.0, 6*USB2.0 , 1*USB2.0 (build-in)                                                                                                               |
| Display     | 1*HDMI+1*VGA                                                                                                                                            |
| Audio       | 1*Line out+1*Mic,Realtek ALC662VD                                                                                                                       |
| COM/ Others | 4*RS232/422/485, 2*RS232, 1*PS/2 (Mouse and keyboard)                                                                                                   |
| DIO         | 8-bit DIO, programmable input and output (DB9)                                                                                                          |

### Storage

|         |                                                                 |
|---------|-----------------------------------------------------------------|
| Storage | 1*2.5" SATA2,HDD/SSD;1*mSATA full-height card,Support AHCI mode |
|---------|-----------------------------------------------------------------|

### Others

|        |                                                     |
|--------|-----------------------------------------------------|
| LED    | 1*power LED, 1*HDD LED, 3*CPU temperature LED       |
| Switch | 1*Power SW,1*Remote SW,1*AT/ATX SW, 1*Clear CMOS SW |
| WDT    | programmable via software 1 to 255 second           |

### OS

|    |                                                         |
|----|---------------------------------------------------------|
| OS | Windows 7, Windows 8.1, Windows 10, Linux Fedora Ubuntu |
|----|---------------------------------------------------------|

### Expansion

|           |                                                      |
|-----------|------------------------------------------------------|
| Expansion | 1*Mini PCIe, with SIM slot , support 4G LTE/Wifi/BT, |
|-----------|------------------------------------------------------|

### Power Supply

|        |                                                                                                |
|--------|------------------------------------------------------------------------------------------------|
| Power& | DC IN 9-36V D-Jack/M8,with short circuit protection, over voltage and over current protection, |
| TDP    | 14.4W(2.5" HDD)                                                                                |

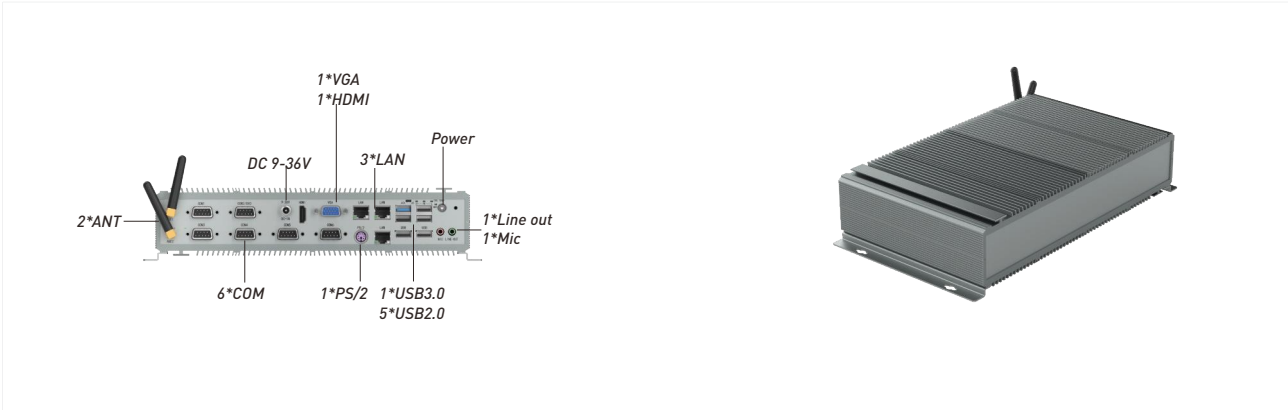
### Mechanical

|                  |                              |
|------------------|------------------------------|
| Structure        | Aluminum Chassis, SGCC frame |
| Color            | Silver gray                  |
| Installation     | Desktop mounting             |
| Dimension(W*H*D) | 268*160*57.6mm               |
| Weight           | 2.15KG                       |

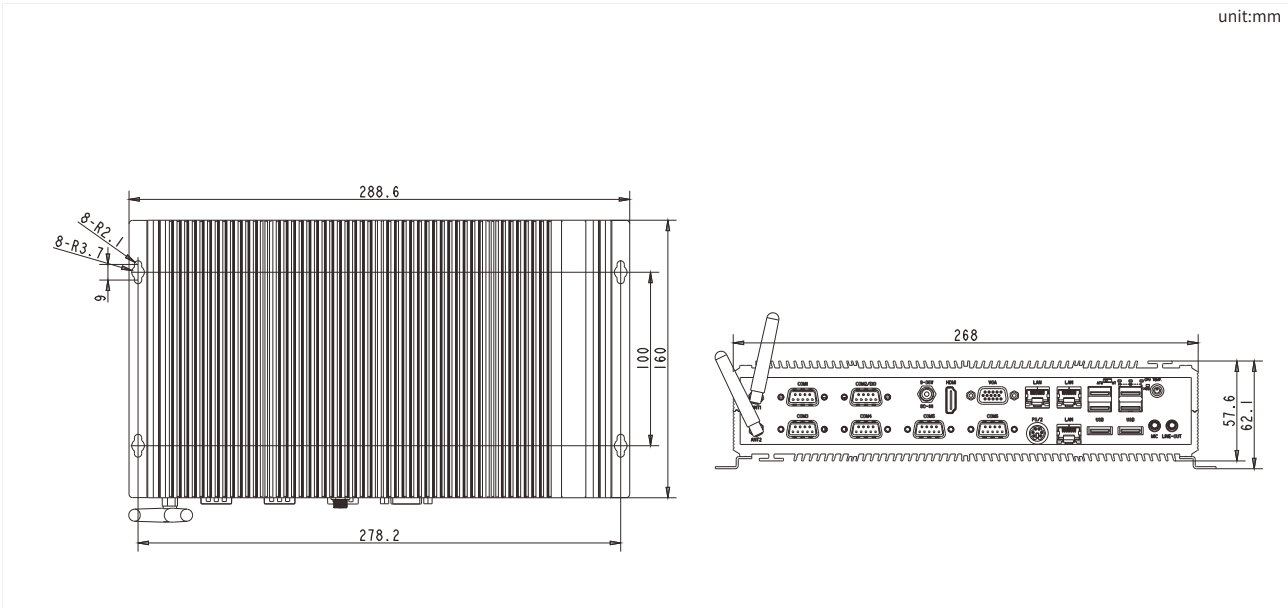
### Environment

|                  |                                                                                                 |
|------------------|-------------------------------------------------------------------------------------------------|
| Operating Temp   | -20°C~65°C SSD, with air flow,<br>-10°C~55°C HDD, with air flow;                                |
| Storage Temp     | -40°C~85°C                                                                                      |
| Storage Humidity | 10~90%@40°C, No condensation                                                                    |
| Vibration        | 5 grms/5~500Hz/random/during operation (SSD)<br>1 grms/5~500Hz/random/during operation (HDD)    |
| Shock            | 50g peak acceleration(duration 11ms) with SSD;<br>20g peak acceleration(duration 11ms) with HDD |
| Certificate/EMC  | CE/FCC Class A                                                                                  |

## I/O View



## Dimensions



## Ordering Information

| Model         | Processor        | Specifications                                                                                                                                  |
|---------------|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|
| SCC-3116/T002 | Intel® J1900 CPU | 3*LAN, 1*USB3.0, 6*USB2.0, 6*COM, optional 8-bit DIO, 1*Mini PCIe, 1*HDMI,1*VGA, 1*PS/2, 1*Line out, 1*Mic , 1*2.5"SATA2 bay, 1*mSATA, DC 9~36V |
| PA-60DC12     |                  | AC/DC adapter, DC19V/6.32A 120W                                                                                                                 |



# ECC-U5000

Intel® Elkhart lake Soc CPU, 1\*HDMI, 8\*COM, 3\*LAN, 2\*USB3.1+2\*USB2.0, 8\*DI+6\*DO, 2\*CAN, 2\*MiniPCle, 1\*mSATA, DC12V/9~36V(Opt.)

## Key Specification

- Intel® Elkhart lake Soc CPU
- Intel® CPU SoC MCP, Fanless cooling design
- 1\*DDR4 3200MHz SODIMM, Up to 32GB
- 1\*HDMI, 1\*mSATA
- 2\*MiniPCle(1\*MiniPCle supports 4G, and the other with PCIeX1 and USB2.0 signals)
- 8\*COM(2\*RS232/485+6\*RS485)Tape isolation, 3\*LAN,
- 2\*USB3.2+2\*USB2.0
- 8\*DI+6\*DO indicates isolation,2\*CAN indicates isolation
- DC 12V or 9 -36V(optional) power input



## Product Overview

ECC-U5000,equipped with Intel® Elkhart lake U series processor, with a comprehensive I/O interface, built-in 2\*Mini PCle expansion module, DC12V or 9~36V (optional) wide voltage DC power supply optional, the product adopts SGCC box design, exquisite and compact size. The main application scenarios are energy storage system integration and manufacturing.

## Product Parameters

### System

|            |                                                                                                                              |
|------------|------------------------------------------------------------------------------------------------------------------------------|
| CPU        | Intel® Elkhart lake SoC CPU: Celeron J6412 2.0~2.6GHz                                                                        |
| RAM        | 1*DDR4 3200 MHz SODIMM, 32GB max.                                                                                            |
| Graphics   | Intel UHD Graphics / Iris® Xe Graphics, Supports Intel DL boost, DirectX12.1, OpenGL 4.6 and OpenCL 3.0, HDMI:4096*2304@60Hz |
| LAN        | 3*RTL811H-VB, 10-1000M                                                                                                       |
| USB        | 2* USB3.1; 2*USB2.0                                                                                                          |
| Display    | 1*HDMI                                                                                                                       |
| Audio      | /                                                                                                                            |
| COM/Others | 2*RS232/485, 6*RS485; 2*CAN                                                                                                  |
| DIO        | 8*DI+6*DO                                                                                                                    |

### Storage

|         |                         |
|---------|-------------------------|
| Storage | 1*mSATA,SATA3.0 ,6 Gbps |
|---------|-------------------------|

### Others

|        |                                           |
|--------|-------------------------------------------|
| LED    | 1*HDD LED                                 |
| Switch | 1*Power SW, 1*AT/ATX SW, 1*Clear CMOS SW  |
| WDT    | programmable via software 1 to 255 second |

### OS

|    |                   |
|----|-------------------|
| OS | Windows 10, Linux |
|----|-------------------|

### Expansion

|           |                                                                                |
|-----------|--------------------------------------------------------------------------------|
| Expansion | 1*Mini PCle,(PCIeX1/USB2.0+SIM),4G LTE/Wifi/BT;<br>1*Mini PCle,(PCIeX1/USB2.0) |
|-----------|--------------------------------------------------------------------------------|

### Power Supply

|        |                                                         |
|--------|---------------------------------------------------------|
| Power& | DC-IN: 12V/9~36V (Opt.), OVP, OCP;                      |
| TDP    | 18.35W(CPU Celeron J6412 @2.00GHz, 8G DDR4, 128G mSATA) |

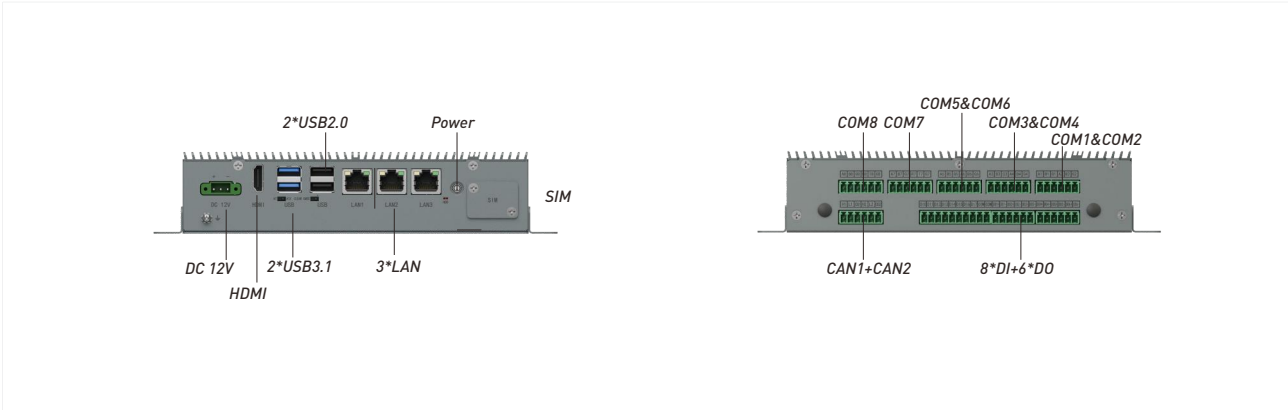
### Mechanical

|                  |                                                        |
|------------------|--------------------------------------------------------|
| Structure        | Aluminum rectangular profile cooling housing, SGCC box |
| Color            | Silver Gray                                            |
| Installation     | Horizontal desktop installation                        |
| Dimension(W*H*D) | 222*140*45mm                                           |
| Weight           | 1.32KG                                                 |

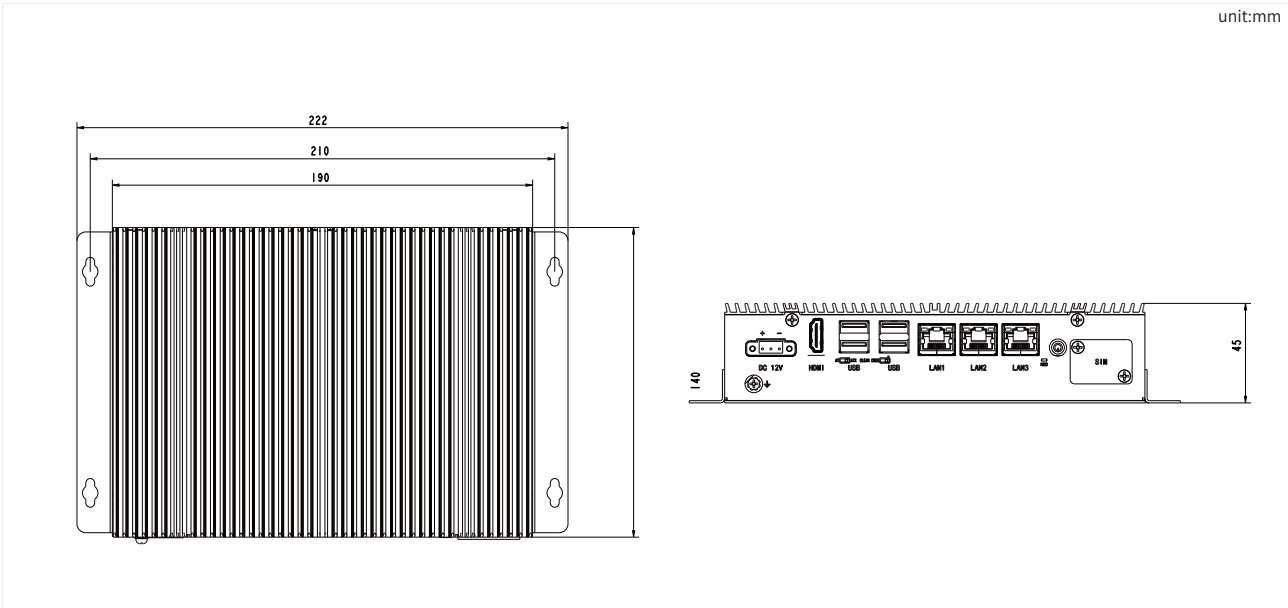
### Environment

|                  |                                                                                                 |
|------------------|-------------------------------------------------------------------------------------------------|
| Operating Temp   | -20°C~60°C                                                                                      |
| Storage Temp     | -40°C~85°C                                                                                      |
| Storage Humidity | 10~95%@40°C, non-condensing                                                                     |
| Vibration        | 5 grms/5~500Hz/random/during operation (SSD)<br>1 grms/5~500Hz/random/during operation (HDD)    |
| Shock            | 50g peak acceleration(duration 11ms) with SSD;<br>20g peak acceleration(duration 11ms) with HDD |
| Certificate/EMC  | CE/FCC Class A                                                                                  |

## I/O View



## Dimensions



## Ordering Information

| Model             | DC IN          | Specifications                                                                                                                                                                                                                  |
|-------------------|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ECC-U5000/S001    | 12V            | Intel® Celeron J6412,8*COM, 2*USB3.1+2*USB2.0, 3*LAN, 1*HDMI, 1*mSATA, 2*Mini PCle with PCIeX1 and USB2.0 signals (1*MiniPCle supports 4G, with SIM card slot, Another 1*MiniPCle expansion port is reserved), 8*DI+6*DO, 2*CAN |
| ECC-U5000/S001-WP | 9~36V (OFX-75) |                                                                                                                                                                                                                                 |
| PA-60DC12         |                | AC/DC power adapter, DC12V@5A ,60W                                                                                                                                                                                              |

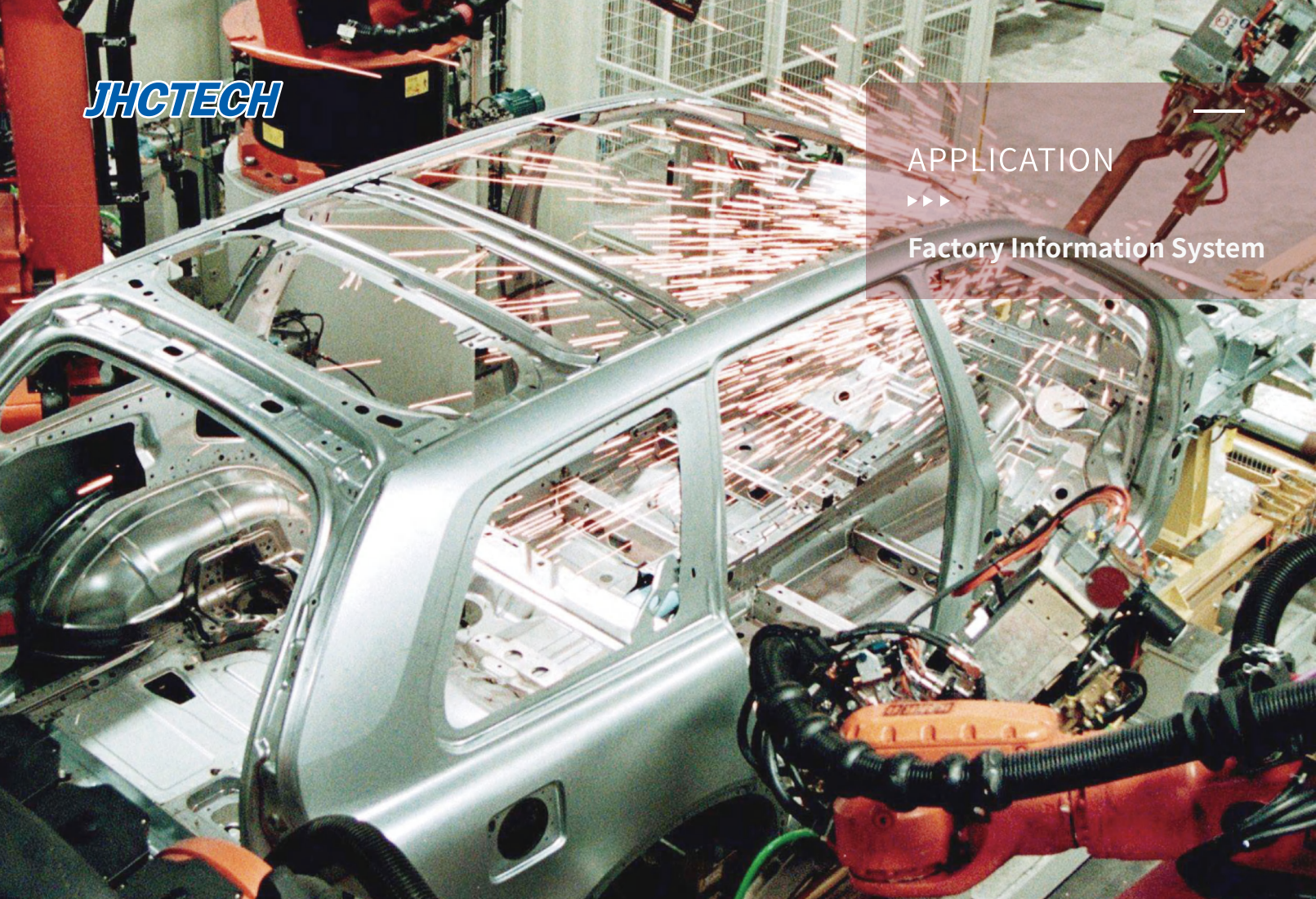


**JHCTECH** IoT Computer  
Connecting the Dots

**JHCTECH** IoT Computer  
Connecting the Dots

**ALAD**  
Industrial Panel PC





JHCTECH

APPLICATION



Factory Information System

New product and differences for ALAD tablets

| Model       | CPU          | Model     | CPU                        | Model       | CPU          |
|-------------|--------------|-----------|----------------------------|-------------|--------------|
| A1010T/T(P) | Elkhart lake | K1020T    | Sky lake-U/<br>Kaby lake-U | K1050T/T(P) | Tiger lake-U |
| A1210T/T(P) |              | K1220T    |                            | K1250T/T(P) |              |
| A1510T(P)   |              | K1520T    |                            | K1550T(P)   |              |
| A1710T/T(P) |              | K1720T    |                            | K1750T/T(P) |              |
| A1810T(P)   |              | K1820T(P) |                            | K1850T(P)   |              |
| A1910T/T(P) |              | K1920T    |                            | K1950T/T(P) |              |
| A2110T(P)   |              | K2120T(P) |                            | K2150T(P)   |              |
| A2310T(P)   |              | K2320T(P) |                            | K2350T(P)   |              |

COMPLETE LIST

Industrial  
Panel PC List

D-01

ALAD-K1050T(P)

D-05

ALAD-K1250T(P)

D-07

ALAD-K1550T(P)

D-09

ALAD-K1551T(P)

D-11

ALAD-K1750T(P)

D-13

ALAD-K1850T(P)

D-15

ALAD-K1950T(P)

D-17

ALAD-K2150T(P)

D-19

ALAD-K2350T(P)

D-21

WPPC-H1580T

D-23

WPPC-H1780T

D-25

Display List

D-27

ALAD-101T

D-29

ALAD-151T

D-31

ALAD-171T

D-33

ALAD-181T(P)

D-35

ALAD-191T

D-37

ALAD-211T(P)

D-39



Low-voltage power distribution monitoring



APPLICATION



Industrial Automation  
Equipment



|                                                                                                                |                                                                                                                  |                                                                                                                  |                                                                                                                  |                                                                                                                  |                                                                                                                  |                                                                                                                  |                                                                                                                  |                                                                                                                  |                                                                                                                  |
|----------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| <div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div> |                                                                                                                  |                                                                                                                  |                                                                                                                  |                                                                                                                  |                                                                                                                  |                                                                                                                  |                                                                                                                  |                                                                                                                  |                                                                                                                  |
| System                                                                                                         | ALAD-K1050T(P)                                                                                                   | ALAD-K1250T(P)                                                                                                   | ALAD-K1550T(P)                                                                                                   | ALAD-K1551T(P)                                                                                                   | ALAD-K1750T(P)                                                                                                   | ALAD-K1850T(P)                                                                                                   | ALAD-K1950T(P)                                                                                                   | ALAD-K2150T(P)                                                                                                   | ALAD-K2350T(P)                                                                                                   |
| CPU                                                                                                            | Intel® Tigerlake U Celeron/Core i3/i5/i7 CPU, ULT SoC, TDP 12W/15W                                               | Intel® Tigerlake U Celeron/Core i3/i5/i7 CPU, ULT SoC, TDP 12W/15W                                               | Intel® Tigerlake U Celeron/Core i3/i5/i7 CPU, ULT SoC, TDP 12W/15W                                               | Intel® Tigerlake U Celeron/Core i3/i5/i7 CPU, ULT SoC, TDP 12W/15W                                               | Intel® Tigerlake U Celeron/Core i3/i5/i7 CPU, ULT SoC, TDP 12W/15W                                               | Intel® Tigerlake U Celeron/Core i3/i5/i7 CPU, ULT SoC, TDP 12W/15W                                               | Intel® Tigerlake U Celeron/Core i3/i5/i7 CPU, ULT SoC, TDP 12W/15W                                               | Intel® Tigerlake U Celeron/Core i3/i5/i7 CPU, ULT SoC, TDP 12W/15W                                               | Intel® Tigerlake U Celeron/Core i3/i5/i7 CPU, ULT SoC, TDP 12W/15W                                               |
| RAM                                                                                                            | 1*DDR4, 3200Mhz SODIMM, 32GB max.                                                                                | 1*DDR4, 3200Mhz SODIMM, 32GB max.                                                                                | 1*DDR4, 3200Mhz SODIMM, 32GB max.                                                                                | 1*DDR4, 3200Mhz SODIMM, 32GB max.                                                                                | 1*DDR4, 3200Mhz SODIMM, 32GB max.                                                                                | 1*DDR4, 3200Mhz SODIMM, 32GB max.                                                                                | 1*DDR4, 3200Mhz SODIMM, 32GB max.                                                                                | 1*DDR4, 3200Mhz SODIMM, 32GB max.                                                                                | 1*DDR4, 3200Mhz SODIMM, 32GB max.                                                                                |
| Graphics                                                                                                       | Intel®UHD/ Intel® Iris® Xe Graphics: Intel DL boost, DirectX12.1, OpenGL 4.6 and OpenCL 3.0; HDMI:4096*2304@60Hz | Intel®UHD/ Intel® Iris® Xe Graphics: Intel DL boost, DirectX12.1, OpenGL 4.6 and OpenCL 3.0; HDMI:4096*2304@60Hz | Intel®UHD/ Intel® Iris® Xe Graphics: Intel DL boost, DirectX12.1, OpenGL 4.6 and OpenCL 3.0; HDMI:4096*2304@60Hz | Intel®UHD/ Intel® Iris® Xe Graphics: Intel DL boost, DirectX12.1, OpenGL 4.6 and OpenCL 3.0; HDMI:4096*2304@60Hz | Intel®UHD/ Intel® Iris® Xe Graphics: Intel DL boost, DirectX12.1, OpenGL 4.6 and OpenCL 3.0; HDMI:4096*2304@60Hz | Intel®UHD/ Intel® Iris® Xe Graphics: Intel DL boost, DirectX12.1, OpenGL 4.6 and OpenCL 3.0; HDMI:4096*2304@60Hz | Intel®UHD/ Intel® Iris® Xe Graphics: Intel DL boost, DirectX12.1, OpenGL 4.6 and OpenCL 3.0; HDMI:4096*2304@60Hz | Intel®UHD/ Intel® Iris® Xe Graphics: Intel DL boost, DirectX12.1, OpenGL 4.6 and OpenCL 3.0; HDMI:4096*2304@60Hz | Intel®UHD/ Intel® Iris® Xe Graphics: Intel DL boost, DirectX12.1, OpenGL 4.6 and OpenCL 3.0; HDMI:4096*2304@60Hz |
| I/O Interfaces                                                                                                 |                                                                                                                  |                                                                                                                  |                                                                                                                  |                                                                                                                  |                                                                                                                  |                                                                                                                  |                                                                                                                  |                                                                                                                  |                                                                                                                  |
| LAN                                                                                                            | 2*Intel i210AT, 10M-1000M, WOL                                                                                   | 2*Intel i226V, 10M-1000M, WOL                                                                                    | 2*Intel i226V, 10M-1000M, WOL                                                                                    | 2*Intel i226V, 10M-1000M, WOL                                                                                    | 2*Intel i226V, 10M-1000M, WOL                                                                                    | 2*Intel i226V, 10M-1000M, WOL                                                                                    | 2*Intel i226V, 10M-1000M, WOL                                                                                    | 2*Intel i226V, 10M-1000M, WOL                                                                                    | 2*Intel i226V, 10M-1000M, WOL                                                                                    |
| USB                                                                                                            | 4*USB3.2                                                                                                         | 4*USB3.2+1*USB2.0                                                                                                | 4*USB3.2                                                                                                         | 4*USB3.2+1*USB2.0                                                                                                | 4*USB3.2+1*USB2.0                                                                                                | 4*USB3.2                                                                                                         | 4*USB3.2+1*USB2.0                                                                                                | 4*USB3.2                                                                                                         | 4*USB3.2                                                                                                         |
| Display                                                                                                        | 1*HDMI                                                                                                           | 1*HDMI                                                                                                           | 1*HDMI                                                                                                           | 1*HDMI                                                                                                           | 1*HDMI                                                                                                           | 1*HDMI                                                                                                           | 1*HDMI                                                                                                           | 1*HDMI                                                                                                           | 1*HDMI                                                                                                           |
| Audio                                                                                                          | 1*Line out, Realtek ALC897                                                                                       | 1*Line out, Realtek ALC897                                                                                       | 1*Line out, Realtek ALC897                                                                                       | 1*Line out, Realtek ALC897                                                                                       | 1*Line out, Realtek ALC897                                                                                       | 1*Line out, Realtek ALC897                                                                                       | 1*Line out, Realtek ALC897                                                                                       | 1*Line out, Realtek ALC897                                                                                       | 1*Line out, Realtek ALC897                                                                                       |
| Serial port                                                                                                    | 2*RS232/422/485                                                                                                  | 2*RS232/422/485+2*RS232                                                                                          | 2*RS232/422/485                                                                                                  | 2*RS232/422/485+2*RS232                                                                                          | 2*RS232/422/485+2*RS232                                                                                          | 2*RS232/422/485+2*RS232                                                                                          | 2*RS232/422/485+2*RS232                                                                                          | 2*RS232/422/485+2*RS232                                                                                          | 2*RS232/422/485+2*RS232                                                                                          |
| LCD Display                                                                                                    |                                                                                                                  |                                                                                                                  |                                                                                                                  |                                                                                                                  |                                                                                                                  |                                                                                                                  |                                                                                                                  |                                                                                                                  |                                                                                                                  |
| Dimensions                                                                                                     | 10.1" TFT LCD                                                                                                    | 12.1" TFT LCD                                                                                                    | 15.6" TFT LCD                                                                                                    | 15.0" TFT LCD                                                                                                    | 17.0" TFT LCD                                                                                                    | 18.5" TFT LCD                                                                                                    | 19.0" TFT LCD                                                                                                    | 21.5" TFT LCD                                                                                                    | 23.8" TFT LCD                                                                                                    |
| Resolution                                                                                                     | 1280*800                                                                                                         | 1280*800                                                                                                         | 1920*1080                                                                                                        | 1024*768                                                                                                         | 1280*1024                                                                                                        | 1366*768                                                                                                         | 1280*1024                                                                                                        | 1920*1080                                                                                                        | 1920*1080                                                                                                        |
| Max. colors                                                                                                    | 16.2M                                                                                                            | 16.2M                                                                                                            | 16.2M                                                                                                            | 16.2M                                                                                                            | 16.7M                                                                                                            | 16.7M                                                                                                            | 16.7M                                                                                                            | 16.7M                                                                                                            | 16.7M                                                                                                            |
| Luminance                                                                                                      | 350                                                                                                              | 500                                                                                                              | 350                                                                                                              | 350                                                                                                              | 350                                                                                                              | 300                                                                                                              | 470                                                                                                              | 300                                                                                                              | 350                                                                                                              |
| Viewing Angle                                                                                                  | 85°(L), 85°(R), 85°(U),85°(D)                                                                                    | 80°(L), 80°(R), 70°(U),70°(D)                                                                                    | 85°(L), 85°(R), 85°(U),85°(D)                                                                                    | 80°(L), 80°(R), 80°(U),80°(D)                                                                                    | 80°(L), 80°(R), 80°(U),80°(D)                                                                                    | 85°(L), 85°(R), 85°(U),85°(D)                                                                                    | 85°(L), 85°(R), 85°(U),85°(D)                                                                                    | 89°(L), 89°(R), 89°(U),89°(D)                                                                                    | 89°(L), 89°(R), 89°(U),89°(D)                                                                                    |
| Touch screen                                                                                                   |                                                                                                                  |                                                                                                                  |                                                                                                                  |                                                                                                                  |                                                                                                                  |                                                                                                                  |                                                                                                                  |                                                                                                                  |                                                                                                                  |
| Touch type                                                                                                     | 5-wire resistive touch screen/ projected capacitive touch screen                                                 | 5-wire resistive touch screen/ projected capacitive touch screen                                                 | 5-wire resistive touch screen/ projected capacitive touch screen                                                 | 5-wire resistive touch screen/ projected capacitive touch screen                                                 | projected capacitive touch screen                                                                                | 5-wire resistive touch screen/ projected capacitive touch screen                                                 | projected capacitive touch screen                                                                                | projected capacitive touch screen                                                                                | projected capacitive touch screen                                                                                |
| Transmittance                                                                                                  | 83%/≥85%                                                                                                         | 83%/90%                                                                                                          | 83%/90%                                                                                                          | 83%/90%                                                                                                          | 90%                                                                                                              | 83/90%                                                                                                           | 90%                                                                                                              | 90%                                                                                                              | 90%                                                                                                              |
| Controller                                                                                                     | USB                                                                                                              | USB                                                                                                              | USB                                                                                                              | USB                                                                                                              | USB                                                                                                              | USB                                                                                                              | USB                                                                                                              | USB                                                                                                              | USB                                                                                                              |
| Storage                                                                                                        | 1*2.5" SATA3.0 HDD/SSD, 1*mSATA                                                                                  | 1*2.5" SATA3.0 HDD/SSD, 1*mSATA                                                                                  | 1*2.5" SATA3.0 HDD/SSD, 1*mSATA                                                                                  | 1*2.5" SATA3.0 HDD/SSD, 1*mSATA                                                                                  | 1*2.5" SATA3.0 HDD/SSD, 1*mSATA                                                                                  | 1*2.5" SATA3.0 HDD/SSD, 1*mSATA                                                                                  | 1*2.5" SATA3.0 HDD/SSD, 1*mSATA                                                                                  | 1*2.5" SATA3.0 HDD/SSD, 1*mSATA                                                                                  | 1*2.5" SATA3.0 HDD/SSD, 1*mSATA                                                                                  |
| Expansion                                                                                                      | 1*Mini PCIe(PCle&USB),PCle module; 1*M.2 3042/3052(+SIM), 4G LTE/5G NR                                           | 1*Mini PCIe(PCle&USB),PCle module; 1*M.2 3042/3052(+SIM), 4G LTE/5G NR                                           | 1*Mini PCIe(PCle&USB),PCle module; 1*M.2 3042/3052(+SIM), 4G LTE/5G NR Opt.1*PCleX4 (X4) /1*32bit PCI            | 1*Mini PCIe(PCle&USB),PCle module; 1*M.2 3042/3052(+SIM), 4G LTE/5G NR Opt.1*PCleX4 (X4) /1*32bit PCI            | 1*Mini PCIe(PCle&USB),PCle module 1*M.2 3042/3052(+SIM), 4G /5G NR                                               | 1*Mini PCIe(PCle&USB),PCle module 1*M.2 3042/3052(+SIM), 4G/5G NR                                                | 1*Mini PCIe(PCle&USB),PCle module 1*M.2 3042/3052(+SIM), 4G /5G NR Opt.1*PCleX4 (X4) /1*32bit PCI                | 1*Mini PCIe(PCle&USB),PCle module 1*M.2 3042/3052(+SIM), 4G /5G NR Opt.1*PCleX4 (X4) /1*32bit PCI                | 1*Mini PCIe(PCle&USB),PCle module 1*M.2 3042/3052(+SIM), 4G /5G NR Opt.1*PCleX4 (X4) /1*32bit PCI                |
| Power Supply                                                                                                   |                                                                                                                  |                                                                                                                  |                                                                                                                  |                                                                                                                  |                                                                                                                  |                                                                                                                  |                                                                                                                  |                                                                                                                  |                                                                                                                  |
| Input voltage & TDP                                                                                            | DC IN 9~36V; 34.5W (CPU i7-1165G7, 8G DDR4, 128G SSD)                                                            | DC IN 9~36V; 11.5W (CPU i7-1165G7, 8G DDR4, 128G SSD)                                                            | DC IN 9~36V; 11.5W (CPU i7-1165G7, 8G DDR4, 128G SSD)                                                            | DC IN 9~36V; 11.5W (CPU i7-1165G7, 8G DDR4, 128G SSD)                                                            | DC IN 9~36V; 11.5W (i7-1165G7, 8G DDR4, 128G SSD)                                                                | DC IN 9~36V; 11.5W (i7-1165G7, 8G DDR4, 128G SSD)                                                                | DC IN 9~36V; 11.5W (i7-1165G7, 8G DDR4, 128G SSD)                                                                | DC IN 9~36V; 11.5W (i7-1165G7, 8G DDR4, 128G SSD)                                                                | DC IN 9~36V; 11.5W (i7-1165G7, 8G DDR4, 128G SSD)                                                                |
| Mechanical                                                                                                     |                                                                                                                  |                                                                                                                  |                                                                                                                  |                                                                                                                  |                                                                                                                  |                                                                                                                  |                                                                                                                  |                                                                                                                  |                                                                                                                  |
| Sturcture                                                                                                      | Aluminum die-casting front bezel , fin-shaped radiator shell                                                     | Aluminum die-casting front bezel , fin-shaped radiator shell                                                     | Aluminum die-casting front bezel , fin-shaped radiator shell                                                     | Aluminum die-casting front bezel , fin-shaped radiator shell                                                     | Aluminum die-casting front bezel , fin-shaped radiator shell                                                     | Aluminum die-casting front bezel , fin-shaped radiator shell                                                     | Aluminum die-casting front bezel , fin-shaped radiator shell                                                     | Aluminum die-casting front bezel , fin-shaped radiator shell                                                     | Aluminum die-casting front bezel , fin-shaped radiator shell                                                     |
| Dimension (W*H*D)                                                                                              | 275*193*51mm<br>Panel mounting opening size(W*H): 270*188mm                                                      | 315*259*51mm<br>Panel mounting opening size(W*H): 303*247mm                                                      | 416*265*59mm<br>Panel mounting opening size(W*H): 403*251mm                                                      | 380*315*56mm<br>Panel mounting opening size(W*H): 368*303mm                                                      | 415.5*360.5*59mm<br>Panel mounting opening size(W*H): 407*352mm                                                  | 482*305*59mm<br>Panel mounting opening size(W*H): 474*396mm                                                      | 453.5*388.5*64mm<br>Panel mounting opening size(W*H): 445*380mm                                                  | 546.9*344.7*64mm<br>Panel mounting opening size(W*H): 538*335mm                                                  | 594*375*64mm<br>Panel mounting opening size(W*H): 583*364mm                                                      |
| Mounting                                                                                                       | Panel/VESA 100*100/75*75mm                                                                                       | Panel/VESA 100*100/75*75mm                                                                                       | Panel/VESA 100*100/75*75mm                                                                                       | Panel/Rack/VESA 100*100/75*75mm                                                                                  | Panel/Rack/VESA 100*100/75*75mm                                                                                  | Panel/VESA 100*100/75*75mm                                                                                       | Panel/Rack/VESA 100*100/75*75mm                                                                                  | Panel/VESA 100*100/75*75mm                                                                                       | Panel/VESA 100*100/75*75mm                                                                                       |
| Net Weight                                                                                                     | 1.85KG                                                                                                           | 2.8KG                                                                                                            | 3.7KG                                                                                                            | 4.3KG                                                                                                            | 6.1KG                                                                                                            | 6.63KG                                                                                                           | 6.9KG                                                                                                            | 8.15KG                                                                                                           | 7.74KG                                                                                                           |
| Environmental                                                                                                  |                                                                                                                  |                                                                                                                  |                                                                                                                  |                                                                                                                  |                                                                                                                  |                                                                                                                  |                                                                                                                  |                                                                                                                  |                                                                                                                  |
| Operating Temp.                                                                                                | 0~ 50°C, HDD( -10 ~ 55°C, SSD),airflow                                                                           | 0~ 50°C, HDD( -10 ~ 55°C, SSD),airflow                                                                           | 0~ 50°C, HDD( -10 ~ 55°C, SSD),airflow                                                                           | 0~ 50°C, HDD( -10 ~ 55°C, SSD),airflow                                                                           | 0~ 50°C, HDD( -10~55°C, SSD),airflow                                                                             | 0~ 50°C, HDD( -10~55°C, SSD),airflow                                                                             | 0~ 50°C, HDD( -10~55°C, SSD), airflow                                                                            | 0~ 50°C, HDD( -10~55°C, SSD), airflow                                                                            | 0~ 50°C, HDD( -10~55°C, SSD), airflow                                                                            |
| Storage Temp.                                                                                                  | -20°C~60°C                                                                                                       | -20°C~60°C                                                                                                       | -20°C~60°C                                                                                                       | -20°C~60°C                                                                                                       | -20°C~60°C                                                                                                       | -20°C~60°C                                                                                                       | -20°C~60°C                                                                                                       | -20°C~60°C                                                                                                       | -20°C~60°C                                                                                                       |
| Storage Humidity                                                                                               | 10~95%@40°C, non-condensing                                                                                      | 10~95%@40°C, non-condensing                                                                                      | 10~95%@40°C, non-condensing                                                                                      | 10~95%@40°C, non-condensing                                                                                      | 10~95%@40°C, non-condensing                                                                                      | 10~95%@40°C, non-condensing                                                                                      | 10~95%@40°C, non-condensing                                                                                      | 10~95%@40°C, non-condensing                                                                                      | 10~95%@40°C, non-condensing                                                                                      |
| Vibration                                                                                                      | 1g 5~500Hz,with HDD                                                                                              | 1g 5~500Hz,with HDD                                                                                              | 1g 5~500Hz,with HDD                                                                                              | 1g 5~500Hz,with HDD                                                                                              | 1g 5~500Hz,with HDD                                                                                              | 1g 5~500Hz,with HDD                                                                                              | 1g 5~500Hz,with HDD                                                                                              | 1g 5~500Hz,with HDD                                                                                              | 1g 5~500Hz,with HDD                                                                                              |
| Shock                                                                                                          | 10g peak acceleration (duration 11ms) with HDD                                                                   | 10g peak acceleration (duration 11ms) with HDD                                                                   | 10g peak acceleration (duration 11ms) with HDD                                                                   | 10g peak acceleration (duration 11ms) with HDD                                                                   | 10g peak acceleration (duration 11ms) with HDD                                                                   | 10g peak acceleration (duration 11ms) with HDD                                                                   | 10g peak acceleration (duration 11ms) with HDD                                                                   | 10g peak acceleration (duration 11ms) with HDD                                                                   | 10g peak acceleration (duration 11ms) with HDD                                                                   |
| EMC                                                                                                            | CE,FCC Class A                                                                                                   | CE,FCC Class A                                                                                                   | CE,FCC Class A                                                                                                   | CE,FCC Class A                                                                                                   | CE,FCC Class A                                                                                                   | CE,FCC Class A                                                                                                   | CE,FCC Class A                                                                                                   | CE,FCC Class A                                                                                                   | CE,FCC Class A                                                                                                   |
| OS                                                                                                             | Windows 11/10*IoT enterprise, Android, SUSE, Ubuntu, Wind River, Red Hat*Enterprise, Wind River VxWorks*7, Yocto | Windows 11/10*IoT enterprise, Android, SUSE, Ubuntu, Wind River, Red Hat*Enterprise, Wind River VxWorks*7, Yocto | Windows 11/10*IoT enterprise, Android, SUSE, Ubuntu, Wind River, Red Hat*Enterprise, Wind River VxWorks*7, Yocto | Windows 11/10*IoT enterprise, Android, SUSE, Ubuntu, Wind River, Red Hat*Enterprise, Wind River VxWorks*7, Yocto | Windows 11/10*IoT enterprise, Android, SUSE, Ubuntu, Wind River, Red Hat*Enterprise, Wind River VxWorks*7, Yocto | Windows 11/10*IoT enterprise, Android, SUSE, Ubuntu, Wind River, Red Hat*Enterprise, Wind River VxWorks*7, Yocto | Windows 11/10*IoT enterprise, Android, SUSE, Ubuntu, Wind River, Red Hat*Enterprise, Wind River VxWorks*7, Yocto | Windows 11/10*IoT enterprise, Android, SUSE, Ubuntu, Wind River, Red Hat*Enterprise, Wind River VxWorks*7, Yocto | Windows 11/10*IoT enterprise, Android, SUSE, Ubuntu, Wind River, Red Hat*Enterprise, Wind River VxWorks*7, Yocto |



|                                                                                                                                                                                                     |                                                                                                                                                   |                                                                                                                                                   |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| <div><div></div><div></div></div> |                                                                                                                                                   |                                                                                                                                                   |
|                                                                                                                                                                                                     | <b>WPPC-H1580T</b>                                                                                                                                | <b>WPPC-H1780T</b>                                                                                                                                |
| System                                                                                                                                                                                              |                                                                                                                                                   |                                                                                                                                                   |
| CPU                                                                                                                                                                                                 | Intel® Baytrail Celeron J1900<br>2.0-2.42G CPU                                                                                                    | Intel® Baytrail Celeron J1900<br>2.0-2.42G CPU                                                                                                    |
| RAM                                                                                                                                                                                                 | 1*DDR3L,1333Mhz SODIMM,Max.8GB                                                                                                                    | 1*DDR3L,1333Mhz SODIMM, Max.8GB                                                                                                                   |
| Graphics                                                                                                                                                                                            | Gen.7 Intel® HD Graphics<br>LCD+HDMI+VGA display,OpenGL 3.2,<br>DirectX 11, OpenCL 1.2, MPGE2/H.264<br>VGA:1920*1200@60Hz;<br>HDMI:1920*1080@60Hz | Gen.7 Intel® HD Graphics<br>LCD+HDMI+VGA display,OpenGL 3.2,<br>DirectX 11, OpenCL 1.2, MPGE2/H.264<br>VGA:1920*1200@60Hz;<br>HDMI:1920*1080@60Hz |
| I/O Interfaces                                                                                                                                                                                      |                                                                                                                                                   |                                                                                                                                                   |
| LAN                                                                                                                                                                                                 | 2*Intel I211AT, Gigabit                                                                                                                           | 2*Intel I211AT, Gigabit                                                                                                                           |
| USB                                                                                                                                                                                                 | 1*USB3.0, 3*USB2.0                                                                                                                                | 1*USB3.0, 3*USB2.0                                                                                                                                |
| Display                                                                                                                                                                                             | 1*HDMI+1*VGA                                                                                                                                      | 1*HDMI+1*VGA                                                                                                                                      |
| Audio                                                                                                                                                                                               | Optional audio                                                                                                                                    | Optional audio                                                                                                                                    |
| Serial port                                                                                                                                                                                         | 2*RS232/422/485                                                                                                                                   | 2*RS232/422/485                                                                                                                                   |
| LCD Display                                                                                                                                                                                         |                                                                                                                                                   |                                                                                                                                                   |
| Dimensions                                                                                                                                                                                          | 15" TFT LED                                                                                                                                       | 17" TFT LED                                                                                                                                       |
| Resolution                                                                                                                                                                                          | 1024*768                                                                                                                                          | 1280*1024                                                                                                                                         |
| Max. colors                                                                                                                                                                                         | 16.2M                                                                                                                                             | 16.2M                                                                                                                                             |
| Luminance <sup>(cd/m²)</sup>                                                                                                                                                                        | 350                                                                                                                                               | 600                                                                                                                                               |
| Viewing Angle                                                                                                                                                                                       | 80°(left), 80°(right), 80°(up), 80°(down)                                                                                                         | 80°(left), 80°(right), 70°(up), 80°(down)                                                                                                         |
| Touch screen                                                                                                                                                                                        |                                                                                                                                                   |                                                                                                                                                   |
| Touch type                                                                                                                                                                                          | 5-wire resistive touch screen/<br>projected capacitive touch screen                                                                               | 5-wire resistive touch screen/<br>projected capacitive touch screen                                                                               |
| Light Transmission                                                                                                                                                                                  | 83/90%                                                                                                                                            | 83/90%                                                                                                                                            |
| Controller                                                                                                                                                                                          | USB                                                                                                                                               | USB                                                                                                                                               |
| Storage                                                                                                                                                                                             |                                                                                                                                                   |                                                                                                                                                   |
| Storage                                                                                                                                                                                             | 1*2.5" SATA swappable,<br>1*mSATA, support AHCI                                                                                                   | 1*2.5" SATA swappable,<br>1*mSATA Full-height card, support AHCI                                                                                  |
| Expansion                                                                                                                                                                                           |                                                                                                                                                   |                                                                                                                                                   |
| Expansion Port                                                                                                                                                                                      | 1*Mini PCIe, with SIM slot                                                                                                                        | 1*Mini PCIe, with SIM slot                                                                                                                        |
| Power Supply                                                                                                                                                                                        |                                                                                                                                                   |                                                                                                                                                   |
| Input voltage & Power consumption                                                                                                                                                                   | DC IN 9~36V, D-Jack w/M8,<br>Power consumption: 19.5W                                                                                             | DC IN 9~36V, D-Jack w/M8,<br>Power consumption: 30W                                                                                               |
| Mechanical                                                                                                                                                                                          |                                                                                                                                                   |                                                                                                                                                   |
| Sturcture                                                                                                                                                                                           | SUS304 stainless steel/5052<br>Aluminum alloy/SECC                                                                                                | SUS304 stainless steel/5052<br>Aluminum alloy/SECC                                                                                                |
| Dimension<br>(W*H*D)                                                                                                                                                                                | 405.22*328.22*52.1mm                                                                                                                              | 429.51*364.51*52.1mm                                                                                                                              |
| Installation                                                                                                                                                                                        | Desktop mounting<br>VESA(100mm*100mm)                                                                                                             | Desktop mounting<br>VESA(100mm*100mm)                                                                                                             |
| Net Weight                                                                                                                                                                                          | 5.8KG                                                                                                                                             | 5.57KG                                                                                                                                            |
| Environmental                                                                                                                                                                                       |                                                                                                                                                   |                                                                                                                                                   |
| Operating Temperature                                                                                                                                                                               | 0~ 60°C                                                                                                                                           | 0~ 60°C                                                                                                                                           |
| Storage Temperature                                                                                                                                                                                 | -40°C~85°C                                                                                                                                        | -40°C~85°C                                                                                                                                        |
| Storage Humidity                                                                                                                                                                                    | 10~90%@40°C, No- condensation                                                                                                                     | 10~90%@40°C, No- condensation                                                                                                                     |
| Vibration                                                                                                                                                                                           | 1g 5~500Hz                                                                                                                                        | 1g 5~500Hz                                                                                                                                        |
| Shock                                                                                                                                                                                               | 10g peak acceleration<br>(duration 11ms) with HDD                                                                                                 | 10g peak acceleration<br>(duration 11ms) with HDD                                                                                                 |
| EMC                                                                                                                                                                                                 | CE,FCC Class A                                                                                                                                    | CE,FCC Class A                                                                                                                                    |
| OS                                                                                                                                                                                                  | Windows 7,Windows 8.1,<br>Windows 10,Linux Fedora Ubuntu                                                                                          | Windows 7,Windows 8.1,<br>Windows 10,Linux Fedora Ubuntu                                                                                          |

# ALAD-K1050T(P)

10.1" TFT LCD Capacitive/Resistive Touch, Intel® Tigerlake CPU, 2\*COM, 2\*LAN, 4\*USB3.2, 1\* Line out, 1\*2.5" SATA, 1\*mSATA, DC 9~36V

## Key Specification

- Aluminum die-casting chassis
- 10.1" TFT LCD, Multi-point capacitive/5 wire resistive touch
- Intel® Tigerlake CPU, fanless design
- 1\*DDR4 3200 SODIMM, up to 32GB
- 1\*Mini PCIe, 1\*M.2 B-Key Type 3042/3052
- 2\*COM, 2\*LAN, 4\*USB3.2, 1\*8-bit DIO (Optional with COM1/2)
- 2.5" SATA Bay, 1\*mSATA, 1\*Line out, 2\*2W Speaker
- DC 9~36V power input
- Standard VESA mount and panel mounting



## Product Overview

The ALAD-K1050T/T(P) is a tablet powered by Intel®Tiger lake U series processors. It adopts 10.1 "1280\*800 resolution LCD and fully fits surface projection multi-point capacitive/5 wire resistive touch screen. The product has a comprehensive I/O interface, supporting 1\*2.5 "SATA disk and 1\*mSATA dual storage; Built-in 1\*Mini PCIe and 1\*M.2 3042/3052 expansions, wide voltage DC power supply from 9 to 36V, aluminum die-cast body without fan heat dissipation, various installation modes, suitable for intelligent MES system and device management HMI.

## Product Parameters

### System

|          |                                                                                                                           |
|----------|---------------------------------------------------------------------------------------------------------------------------|
| CPU      | Intel® Tigerlake U Celeron/Core I3/I5/I7 CPU, ULT SoC, TDP 12W/15W                                                        |
| RAM      | 1*DDR4, 3200Mhz SODIMM, 32GB max.                                                                                         |
| Graphics | Intel®UHD/ Intel® Iris® Xe Graphics:<br>Intel DL boost, DirectX12.1,<br>OpenGL 4.6 and OpenCL 3.0;<br>HDMI:4096*2304@60Hz |

### I/O Port

|             |                                         |
|-------------|-----------------------------------------|
| LAN         | 2*Intel I210AT, 10M-1000M, WOL          |
| USB         | 4*USB3.2                                |
| Display     | 1*HDMI                                  |
| Audio       | 1*Line out, Realtek ALC897,2*2W Speaker |
| Serial port | 2*RS232/422/485                         |

### LCD Display

|                   |                               |
|-------------------|-------------------------------|
| Dimension         | 10.1" TFT LCD                 |
| Resolution        | 1280*800@60Hz                 |
| Max. colors       | 16.2M                         |
| Luminance (cd/m²) | 350                           |
| Viewing Angle     | 85°(L), 85°(R), 85°(U),85°(D) |

### Touchscreen

|               |                                                                 |
|---------------|-----------------------------------------------------------------|
| Touch type    | 5-wire resistive touch screen/projected capacitive touch screen |
| Transmittance | 83%/≥85%                                                        |
| Controller    | USB                                                             |

### Storage

- 1\*2.5" SATA3.0 HDD/SSD,
- 1\*mSATA

### Expansion

- 1\*Mini PCIe(PCle&USB),PCle module;
- 1\*M.2 3042/3052(+SIM), 4G LTE/5G NR

### Power Supply

- Input voltage & TDP
- DC IN 9~36V;
- 34.5W (CPU i7-1165G7, 8G DDR4, 128G SSD)

### Mechanical

|                   |                                                                |
|-------------------|----------------------------------------------------------------|
| Sturcture         | Aluminum die-casting front bezel , fin-shaped radiator shell   |
| Dimension (W*H*D) | 275*193*51mm<br>Panel mounting opening size(W*H):<br>270*188mm |
| Installation      | Panel/VESA(100*100/75*75mm)                                    |
| Net Weight        | 1.85KG                                                         |

### Environmental

|                  |                                               |
|------------------|-----------------------------------------------|
| Operating Temp   | 0~ 50°C, HDD( -10 ~ 55°C, SSD),airflow        |
| Storage Temp     | -20°C~60°C                                    |
| Storage Humidity | 10~95%@40°C, non-condensing                   |
| Vibration        | 1g 5~500Hz,with HDD                           |
| Shock            | 10g peak acceleration(duration 11ms) with HDD |
| EMC              | CE,FCC Class A                                |

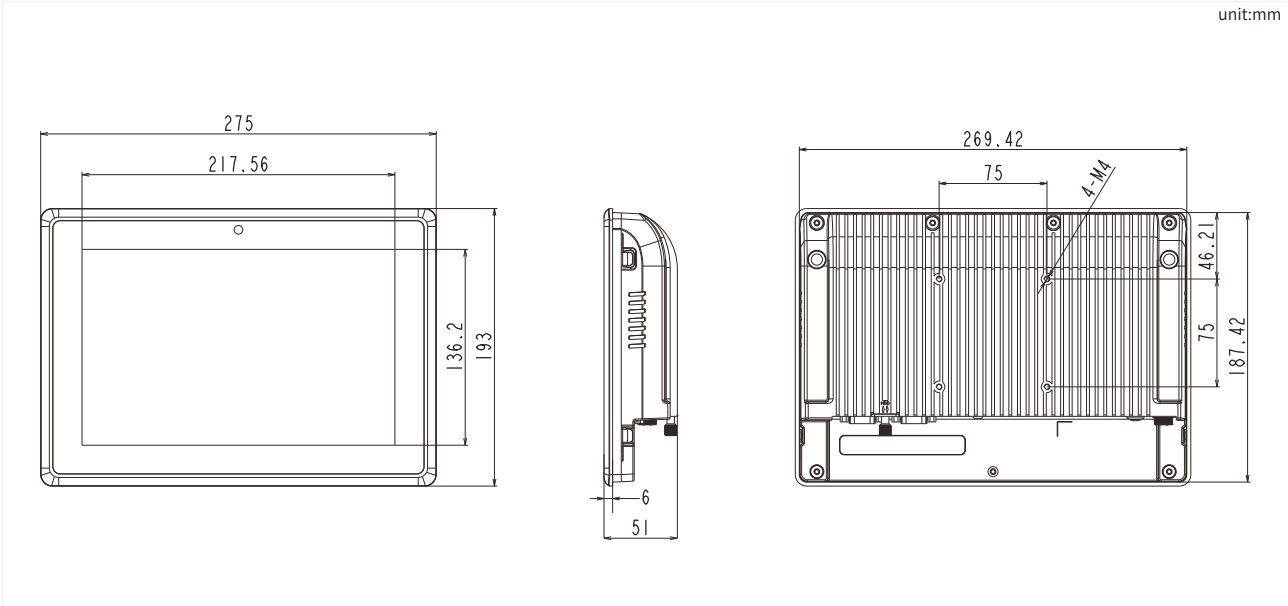
### OS

- Windows 11/10\*IoT enterprise,
- Android, SUSE, Ubuntu, Wind River,
- Red Hat\*Enterprise, Wind River
- VxWorks\*7, Yocto

## I/O View



## Dimensions



## Ordering Information

| Model            | CPU                                | Touch Screen                        |                                            | Specifications                                                                                                                                |
|------------------|------------------------------------|-------------------------------------|--------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|
| ALAD-K1050/ S001 | Intel® Core I3-1115G4              | T:<br>5-wire resistive touch screen | T(P):<br>Projected capacitive touch screen | 10.1" LCD, 2*COM, 4*USB3.2, 2*LAN, 1*HDMI, 1*Mini PCIe, 1*M.2 B-Key , 1*Line out, 1*2.5"SATA Bay, 1*mSATA, 2*2W Speaker, DC 9~36V power input |
| ALAD-K1050/ S002 | Intel® Core I5-1135G7              |                                     |                                            |                                                                                                                                               |
| ALAD-K1050/ S003 | Intel® Core I7-1165G7              |                                     |                                            |                                                                                                                                               |
| ALAD-K1050/ S004 | Intel® Celeron 6305E               |                                     |                                            |                                                                                                                                               |
| PA-60DC12        | AC/DC power adapter, DC12V/5A, 60W |                                     |                                            |                                                                                                                                               |



# ALAD-K1250T(P)

12.1" TFT LCD Capacitive/Resistive Touch, Intel® Tigerlake CPU, 4\*COM, 2\*LAN, 4\*USB3.2, 1\*USB2.0, 1\* Line out, 1\*2.5" SATA, 1\*mSATA, DC 9~36V

## Key Specification

- Aluminum die-casting chassis
- 12.1" TFT LCD, Multi-point capacitive/5 wire resistive touch
- Intel® Tigerlake CPU, fanless design
- 1\*DDR4 3200 SODIMM, up to 32GB
- 1\*Mini PCIe, 1\*M.2 B-Key Type 3042/3052
- 4\*COM, 2\*LAN, 4\*USB3.2,1\*USB2.0,1\*8-bit DIO(opt.)
- 2.5" SATA Bay, 1\*mSATA, 1\*Line out, 2\*3W Speaker
- DC 9~36V power input
- Standard VESA mount and panel mounting



## Product Overview

The ALAD-K1250T/T(P) is a tablet powered by Intel®Tiger lake U series processors. It adopts 12.1 "1024\*768 resolution TFT LCD and fully fits surface projection multi-point capacitive/5 wire resistive touch screen. The product has a comprehensive I/O interface, supporting 1\*2.5" SATA disk and 1\*mSATA dual storage; Built-in 1\*Mini PCIe and 1\*M.2 3042/3052 expansions, wide voltage DC 9-36V, aluminum die-cast body without fan heat dissipation, various installation modes, suitable for intelligent MES system and device management HMI.

## Product Parameters

### System

|          |                                                                                                                           |
|----------|---------------------------------------------------------------------------------------------------------------------------|
| CPU      | Intel® Tigerlake U Celeron/Core I3/I5/I7 CPU, ULT SoC, TDP 12W/15W                                                        |
| RAM      | 1*DDR4, 3200Mhz SODIMM, 32GB max.                                                                                         |
| Graphics | Intel®UHD/ Intel® Iris® Xe Graphics:<br>Intel DL boost, DirectX12.1,<br>OpenGL 4.6 and OpenCL 3.0;<br>HDMI:4096*2304@60Hz |

### I/O Port

|             |                                         |
|-------------|-----------------------------------------|
| LAN         | 2*Intel I226V, 10M-1000M, WOL           |
| USB         | 4*USB3.2, 1*USB2.0                      |
| Display     | 1*HDMI                                  |
| Audio       | 1*Line out, Realtek ALC897,2*3W Speaker |
| Serial port | 2*RS232/422/485+2*RS232                 |

### LCD Display

|                   |                               |
|-------------------|-------------------------------|
| Dimension         | 12.1" TFT LCD                 |
| Resolution        | 1024*768@60Hz                 |
| Max. colors       | 16.2M                         |
| Luminance (cd/m²) | 500                           |
| Viewing Angle     | 80°(L), 80°(R), 70°(U),70°(D) |

### Touchscreen

|               |                                                                 |
|---------------|-----------------------------------------------------------------|
| Touch type    | 5-wire resistive touch screen/projected capacitive touch screen |
| Transmittance | 83%/90%                                                         |
| Controller    | USB                                                             |

### Storage

|         |                                    |
|---------|------------------------------------|
| Storage | 1*2.5" SATA3.0 HDD/SSD,<br>1*mSATA |
|---------|------------------------------------|

### Expansion

|           |                                                                           |
|-----------|---------------------------------------------------------------------------|
| Expansion | 1*Mini PCIe(PCle&USB),PCle module;<br>1*M.2 3042/3052(+SIM), 4G LTE/5G NR |
|-----------|---------------------------------------------------------------------------|

### Power Supply

|                     |                                                           |
|---------------------|-----------------------------------------------------------|
| Input voltage & TDP | DC IN 9~36V;<br>11.52W (CPU i7-1165G7, 8G DDR4, 128G SSD) |
|---------------------|-----------------------------------------------------------|

### Mechanical

|                   |                                                                |
|-------------------|----------------------------------------------------------------|
| Sturcture         | Aluminum die-casting front bezel , fin-shaped radiator shell   |
| Dimension (W*H*D) | 315*259*51mm<br>Panel mounting opening size(W*H):<br>303*247mm |
| Installation      | Panel/VESA(100*100/75*75mm)                                    |
| Net Weight        | 2.8KG                                                          |

### Environmental

|                  |                                               |
|------------------|-----------------------------------------------|
| Operating Temp   | 0~ 50°C, HDD( -10 ~ 55°C, SSD),airflow        |
| Storage Temp     | -20°C~60°C                                    |
| Storage Humidity | 10~95%@40°C, non-condensing                   |
| Vibration        | 1g 5~500Hz,with HDD                           |
| Shock            | 10g peak acceleration(duration 11ms) with HDD |
| EMC              | CE,FCC Class A                                |

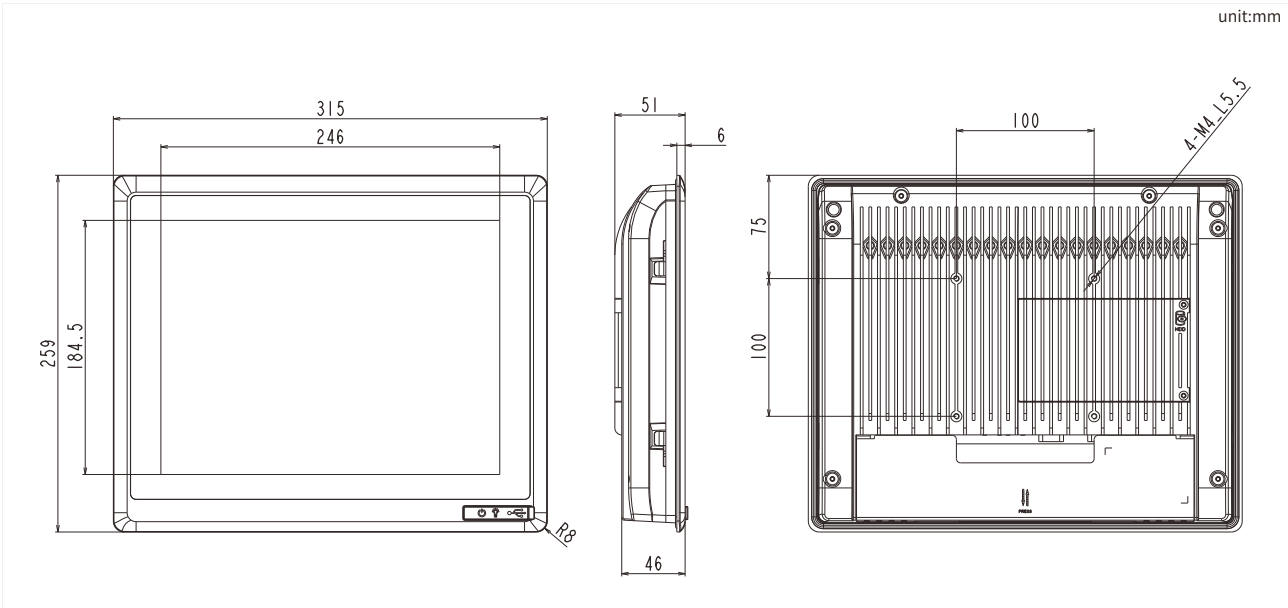
### OS

|  |                                                                                                                           |
|--|---------------------------------------------------------------------------------------------------------------------------|
|  | Windows 11/10*IoT enterprise,<br>Android, SUSE, Ubuntu, Wind River,<br>Red Hat*Enterprise, Wind River<br>VxWorks*7, Yocto |
|--|---------------------------------------------------------------------------------------------------------------------------|

## I/O View



## Dimensions



## Ordering Information

| Model            | Processor                                    | Touch Screen                        |                                            | Specifications                                                                                                                                  |
|------------------|----------------------------------------------|-------------------------------------|--------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|
| ALAD-K1250/ S001 | Intel® Core I3-1115G4                        | T:<br>5-wire resistive touch screen | T(P):<br>Projected capacitive touch screen | 12.1" TFT LCD, 4*COM, 4*USB3.2, 1*USB2.0, 2*LAN, 1*HDMI,1*Mini PCIe, 1*M.2 B-Key , 1*Line out, 1*2.5" SATA Bay, 1*mSATA, 2*3W Speaker, DC 9~36V |
| ALAD-K1250/ S002 | Intel® Core I5-1135G7                        |                                     |                                            |                                                                                                                                                 |
| ALAD-K1250/ S003 | Intel® Core I7-1165G7                        |                                     |                                            |                                                                                                                                                 |
| ALAD-K1250/ S004 | Intel® Celeron 6305E                         |                                     |                                            |                                                                                                                                                 |
| PA-60DC12        | AC/DC power adapter, DC12V/5A, 60W           |                                     |                                            |                                                                                                                                                 |
|                  | 1*COM adapter cable (one drag two, DB9 form) |                                     |                                            |                                                                                                                                                 |

# ALAD-K1550T(P)

15.6" TFT LCD Capactive Touch, Intel® Tigerlake CPU, 4\*COM, 2\*LAN, 4\*USB3.2, 1\* Line out, 1\*2.5“ SATA bay, 1\*mSATA, DC 9~36V

## Key Specification

- Aluminum die-casting chassis, Full Flat Mirror Panel
- 15.6" Full HD LCD, Multi-point capacitive touch
- Intel® Tigerlake CPU, fanless design
- 1\*DDR4 3200 SODIMM, up to 32GB
- 1\*Mini PCIe, 1\*M.2 B-Key Type 3042/3052
- 4\*COM, 2\*LAN, 4\*USB3.2, 1\*8-bit DIO (opt.)
- 2.5” SATA Bay, 1\*mSATA, 1\*Line out, 2\*3W Speaker
- Optional 1\*PCIeX4 slot (PCIEX4 signal) or 1\*PCI slot expansion
- DC 9~36V power input
- Standard VESA mount and panel mounting



## Product Overview

ALAD-K1550T(P) is a full flat mirror panel powered by an Intel®Tiger lake U series processor. It adopts 15.6 "1920\*1080 resolution full HD TFT LCD and fully fits surface projection multi-point capacitive touch screen. The product has a comprehensive I/O interface, supporting 1\*2.5 "SATA disk and 1\*mSATA dual storage; Built-in 1\*Mini PCIe and 1\*M.2 3042/3052 expansions, wide voltage DC power supply from 9 to 36V, aluminum die-cast body without fan heat dissipation, various installation modes, suitable for intelligent MES system and device management HMI.

## Product Parameters

### System

|          |                                                                                                                                                                                                                                                |
|----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CPU      | Intel® Tigerlake U Celeron/Core i3/i5/i7 CPU, ULT SoC, TDP 12W/15W; Intel® CPU SoC MCP                                                                                                                                                         |
| RAM      | 1*DDR4 3200 MHz SODIMM, 32GB max.                                                                                                                                                                                                              |
| Graphics | 15.6 "1920*1080@60Hz Full HD TFT LCD, 1*HDMI for extended display<br>Intel UHD Graphics or iRIS® Xe Graphics, Supports the Intel DL boost deep learning to strengthen technology, DirectX12.1, OpenGL 4.6 and OpenCL 3.0, HDMI: 4096*2304@60Hz |

### I/O Port

|             |                                         |
|-------------|-----------------------------------------|
| LAN         | 2*Intel i226V , 10M-1000M, WOL          |
| USB         | 4*USB3.2                                |
| Display     | 1*HDMI                                  |
| Audio       | 1*Line out,Realtek ALC897, 2*3W Speaker |
| Serial port | 2*RS232, 2*RS232/422/485 (DB9)          |

### LCD Display

|                   |                               |
|-------------------|-------------------------------|
| Dimension         | 15.6” TFT LED                 |
| Resolution        | 1920*1080                     |
| Max. colors       | 16.2M                         |
| Luminance (cd/m²) | 350                           |
| Viewing Angle     | 85°(L), 85°(R), 85°(U),85°(D) |

### Touch Screen

|                    |                            |
|--------------------|----------------------------|
| Touch type         | Projected capacitive touch |
| Light Transmission | ≥85%                       |
| Controller         | EETI Industrial grade      |

### Storage

|         |                                    |
|---------|------------------------------------|
| Storage | 1*2.5" SATA3.0 HDD/SSD;<br>1*mSATA |
|---------|------------------------------------|

### Expansion

|           |                                                                                                                                 |
|-----------|---------------------------------------------------------------------------------------------------------------------------------|
| Expansion | 1*Mini PCIe(Pcie/USB), PCIe/USB module;<br>1*M.2 B-Key 3042/3052(+SIM), 4G LTE/5G NR;<br>optional 1*32-bit PCI or 1*PCIe X4(X4) |
|-----------|---------------------------------------------------------------------------------------------------------------------------------|

### Power Supply

|               |              |
|---------------|--------------|
| Input voltage | DC IN 9~36V; |
| TDP           | TBD          |

### Mechanical

|                  |                                                              |
|------------------|--------------------------------------------------------------|
| Sturcture        | Aluminum die-casting front bezel , fin-shaped radiator shell |
| Dimension(W*H*D) | 416*264*59mm                                                 |
| Installation     | Panel mounting(Cut out: 403*251mm) , VESA(100*100/75*75mm)   |
| Weight           | 3.7KG                                                        |

### Environmental

|                  |                                               |
|------------------|-----------------------------------------------|
| Operating Temp   | 0~ 50°C, HDD( -10 ~ 55°C, SSD) with air flow  |
| Storage Temp     | -20°C~60°C                                    |
| Storage Humidity | 10~95%@40°C, No- condensation                 |
| Vibration        | 1g 5~500Hz, with HDD                          |
| Shock            | 10g peak acceleration(duration 11ms) with HDD |
| EMC              | CE,FCC Class A                                |

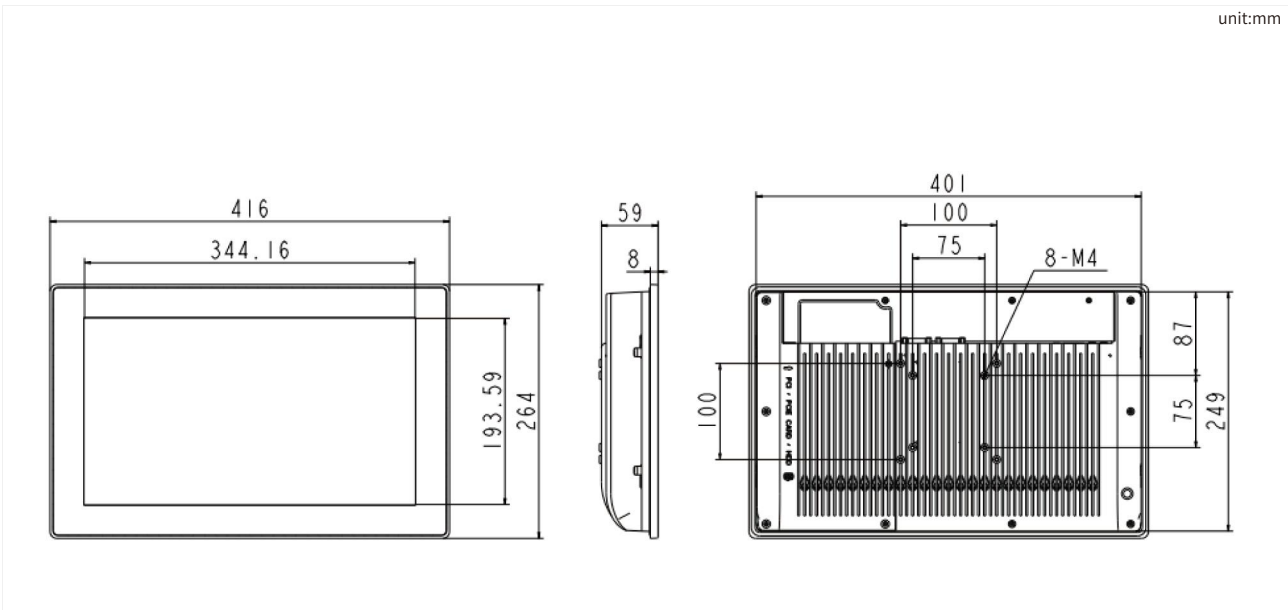
### OS

Windows 11\*IoT enterprise, Windows 10\*IoT enterprise, Android, SUSE, Ubuntu, Wind River, Red Hat\*Enterprise, Wind River VxWorks\*7,Yocto

## I/O View



## Dimensions



## Ordering Information

| Model                | CPU                                                                              | Touch Screen                        | Specifications                                                                                                                                                                        |
|----------------------|----------------------------------------------------------------------------------|-------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ALAD-K1550T(P)/ S001 | Intel® Core i3-1115G4                                                            | T(P):<br>Projected Capacitive Touch | Industrial panel computer, 15.6" TFT LCD, 4*COM, 4*USB3.2, 1*USB2.0, 2*LAN, 1*HDMI,1*Mini PCIe, 1*M.2 B-Key , 1*Line out, 1*2.5"SATA Bay, 1*mSATA, 2*3W Speaker, DC 9~36V power input |
| ALAD-K1550T(P)/ S002 | Intel® Core i5-1135G7                                                            |                                     |                                                                                                                                                                                       |
| ALAD-K1550T(P)/ S003 | Intel® Core i7-1165G7                                                            |                                     |                                                                                                                                                                                       |
| ALAD-K1550T(P)/ S004 | Intel® Celeron 6305E                                                             |                                     |                                                                                                                                                                                       |
| ECX-168              | 1*PCIeX4 slot( X4 signal) (non COM3&4 in use)                                    |                                     |                                                                                                                                                                                       |
| ECI-169              | 1*32-bit PCI slot (non COM3&4 in use)                                            |                                     |                                                                                                                                                                                       |
| PA-60DC12            | AC/DC power adapter, DC12V@5A ,60W                                               |                                     |                                                                                                                                                                                       |
| PA-120DC19           | AC/DC power adapter, DC19V@6.32A ,120W (when use POE network card for expansion) |                                     |                                                                                                                                                                                       |



# ALAD-K1551T(P)

15" TFT LCD Capactive/Resistive Touch, Intel® Tigerlake CPU, 4\*COM, 2\*LAN, 4\*USB3.2,1\*USB2.0, 1\* Line out, 1\*2.5"SATA, 1\*mSATA, DC 9~36V

## Key Specification

- Aluminum die-casting chassis
- 15" TFT LCD, Multi-point capacitive touch
- Intel® Tigerlake CPU, fanless design
- 1\*DDR4 3200 SODIMM, up to 32GB
- 1\*Mini PCIe, 1\*M.2 B-Key Type 3042/3052
- 4\*COM, 2\*LAN, 4\*USB3.2, 1\*USB2.0,1\*8-bit DIO(opt.)
- 2.5"SATA Bay, 1\*mSATA, 1\*Line out, 2\*3W Speaker
- Optional 1\*PCIeX4 slot (PCIEX4 signal) or 1\*PCI slot
- DC 9~36V power input
- Standard VESA mount and panel mounting



## Product Overview

The ALAD-K1551T/T(P) is an industrial tablet powered by Intel®Tiger lake U series processors. It adopts 15 "1024\*768 resolution TFT LCD and fully fits surface projection multi-point capacitive touch screen. The product has a comprehensive I/O interface, supporting 1\*2.5 "SATA disk and 1\*mSATA dual storage; Built-in 1\*Mini PCIe and 1\*M.2 3042/3052 expansions, wide voltage DC power supply from 9 to 36V, aluminum die-cast body without fan heat dissipation, various installation modes, suitable for intelligent MES system and device management HMI.

## Product Parameters

### System

|          |                                                                                                                           |
|----------|---------------------------------------------------------------------------------------------------------------------------|
| CPU      | Intel® Tigerlake U Celeron/Core I3/I5/I7 CPU, ULT SoC, TDP 12W/15W                                                        |
| RAM      | 1*DDR4, 3200Mhz SODIMM, 32GB max.                                                                                         |
| Graphics | Intel®UHD/ Intel® Iris® Xe Graphics:<br>Intel DL boost, DirectX12.1,<br>OpenGL 4.6 and OpenCL 3.0;<br>HDMI:4096*2304@60Hz |

### I/O Port

|             |                                         |
|-------------|-----------------------------------------|
| LAN         | 2*Intel I226V, 10M-1000M, WOL           |
| USB         | 4*USB3.2,1*USB2.0                       |
| Display     | 1*HDMI                                  |
| Audio       | 1*Line out, Realtek ALC897,2*3W Speaker |
| Serial port | 2*RS232/422/485+2*RS232                 |

### LCD Display

|                   |                               |
|-------------------|-------------------------------|
| Dimension         | 15.0" TFT LCD                 |
| Resolution        | 1024*768@60Hz                 |
| Max. colors       | 16.2M                         |
| Luminance (cd/m²) | 350                           |
| Viewing Angle     | 80°(L), 80°(R), 80°(U),80°(D) |

### Touchscreen

|               |                                                                 |
|---------------|-----------------------------------------------------------------|
| Touch type    | 5-wire resistive touch screen/projected capacitive touch screen |
| Transmittance | 83%/90%                                                         |
| Controller    | USB                                                             |

### Storage

|         |                                    |
|---------|------------------------------------|
| Storage | 1*2.5" SATA3.0 HDD/SSD,<br>1*mSATA |
|---------|------------------------------------|

### Expansion

|           |                                                                                                              |
|-----------|--------------------------------------------------------------------------------------------------------------|
| Expansion | 1*Mini PCIe(Pcie&USB),PCle module;<br>1*M.2 3042/3052(+SIM), 4G LTE/5G NR<br>(Opt.)1*PCIeX4(X4)/1*32-bit PCI |
|-----------|--------------------------------------------------------------------------------------------------------------|

### Power Supply

|                     |                                                           |
|---------------------|-----------------------------------------------------------|
| Input voltage & TDP | DC IN 9~36V;<br>11.52W (CPU i7-1165G7, 8G DDR4, 128G SSD) |
|---------------------|-----------------------------------------------------------|

### Mechanical

|                   |                                                                |
|-------------------|----------------------------------------------------------------|
| Sturcture         | Aluminum die-casting front bezel , fin-shaped radiator shell   |
| Dimension (W*H*D) | 380*315*56mm<br>Panel mounting opening size(W*H):<br>368*303mm |
| Installation      | Panel/Rack/VESA(100*100/75*75mm)                               |
| Net Weight        | 4.3KG                                                          |

### Environmental

|                  |                                               |
|------------------|-----------------------------------------------|
| Operating Temp   | 0~ 50°C, HDD( -10 ~ 55°C, SSD),airflow        |
| Storage Temp     | -20°C~60°C                                    |
| Storage Humidity | 10~95%@40°C, non-condensing                   |
| Vibration        | 1g 5~500Hz,with HDD                           |
| Shock            | 10g peak acceleration(duration 11ms) with HDD |
| EMC              | CE,FCC Class A                                |

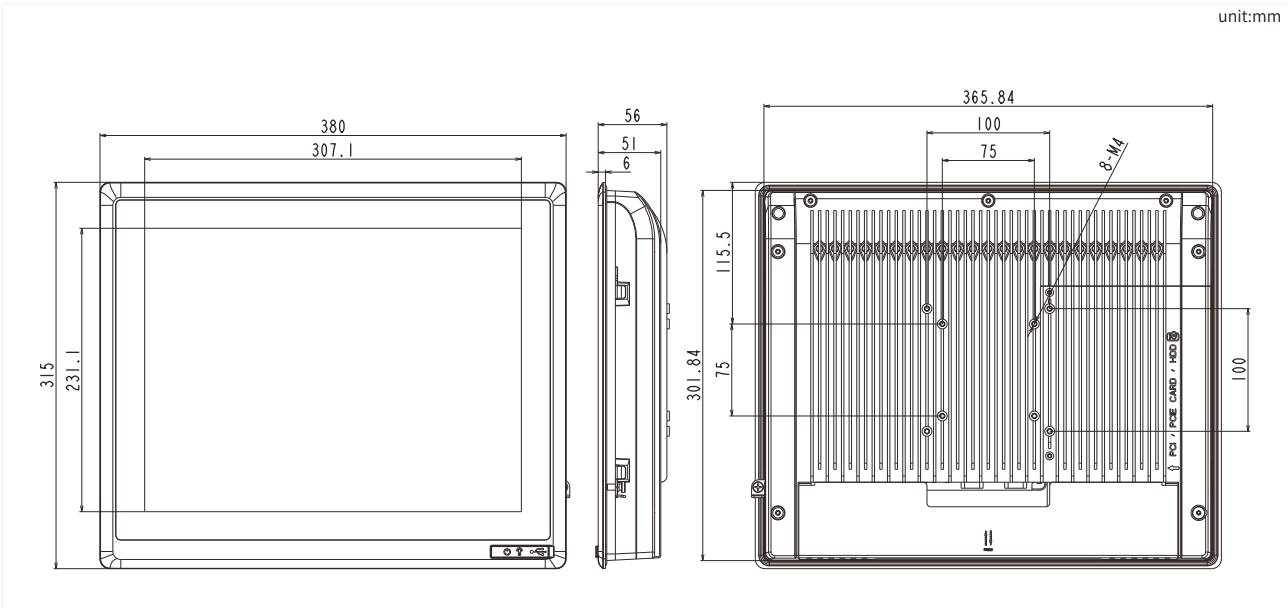
### OS

Windows 11/10\*IoT enterprise,  
Android, SUSE, Ubuntu, Wind River,  
Red Hat\*Enterprise, Wind River  
VxWorks\*7, Yocto

## I/O View



## Dimensions



## Ordering Information

| Model            | Processor                                                                        | Touch Screen                 |                                        | Specifications                                                                                                                           |
|------------------|----------------------------------------------------------------------------------|------------------------------|----------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|
| ALAD-K1551/ S001 | Intel® Core I3-1115G4                                                            | T:<br>5 wire resistive touch | T(P):<br>Projected<br>Capacitive Touch | 15" TFT LCD, 4*COM, 4*USB3.2, 1*USB2.0, 2*LAN, 1*HDMI,1*Mini PCIe, 1*M.2 B-Key , 1*Line out, 1*2.5"SATA, 1*mSATA, 2*3W Speaker, DC 9~36V |
| ALAD-K1551/ S002 | Intel® Core I5-1135G7                                                            |                              |                                        |                                                                                                                                          |
| ALAD-K1551/ S003 | Intel® Core I7-1165G7                                                            |                              |                                        |                                                                                                                                          |
| ALAD-K1551/ S004 | Intel® Celeron 6305E                                                             |                              |                                        |                                                                                                                                          |
| ECX-168          | 1*PCIeX4 slot( X4) (non COM3&4 in use)                                           |                              |                                        |                                                                                                                                          |
| ECI-169          | 1*32-bit PCI slot (non COM3&4 in use)                                            |                              |                                        |                                                                                                                                          |
| PA-60DC12        | AC/DC power adapter, DC12V@5A ,60W                                               |                              |                                        |                                                                                                                                          |
| PA-120DC19       | AC/DC power adapter, DC19V@6.32A ,120W (when use POE network card for expansion) |                              |                                        |                                                                                                                                          |

# ALAD-K1750T(P)

17.0" TFT LCD Capacitive/Resistive Touch, Intel® Tigerlake CPU, 4\*COM, 2\*LAN, 4\*USB3.2, 1\*USB2.0, 1\* Line out, 1\*2.5”SATA, 1\*mSATA, DC 9~36V

## Key Specification

- Aluminum die-casting chassis
- 17.0" TFT LCD, Multi-point capacitive/5 wire resistive touch
- Intel® Tigerlake CPU, fanless design
- 1\*DDR4 3200 SODIMM, up to 32GB
- 1\*Mini PCIe, 1\*M.2 B-Key Type 3042/3052
- 4\*COM, 2\*LAN, 4\*USB3.2,1\*USB2.0,1\*8-bit DIO(opt.)
- 2.5” SATA Bay, 1\*mSATA, 1\*Line out, 2\*3W Speaker
- DC 9~36V power input
- Standard VESA mount and panel mounting



## Product Overview

The ALAD-K1750T/P) is a tablet powered by Intel®Tiger lake U series processors. It adopts 17.0 "1280\*1024 resolution TFT LCD and fully fits surface projection multi-point capacitive/5 wire resistive touch screen. The product has a comprehensive I/O interface, supporting 1\*2.5 "SATA disk and 1\*mSATA dual storage; Built-in 1\*Mini PCIe and 1\*M.2 3042/3052 expansions, wide voltage DC power supply from 9 to 36V, aluminum die-cast body without fan heat dissipation, various installation modes, suitable for intelligent MES system and device management HMI.

## Product Parameters

### System

|          |                                                                                                                           |
|----------|---------------------------------------------------------------------------------------------------------------------------|
| CPU      | Intel® Tigerlake U Celeron/Core I3/I5/I7 CPU, ULT SoC, TDP 12W/15W                                                        |
| RAM      | 1*DDR4, 3200Mhz SODIMM, 32GB max.                                                                                         |
| Graphics | Intel®UHD/ Intel® Iris® Xe Graphics:<br>Intel DL boost, DirectX12.1,<br>OpenGL 4.6 and OpenCL 3.0;<br>HDMI:4096*2304@60Hz |

### I/O Port

|             |                                         |
|-------------|-----------------------------------------|
| LAN         | 2*Intel I226V, 10M-1000M, WOL           |
| USB         | 4*USB3.2,1*USB2.0                       |
| Display     | 1*HDMI                                  |
| Audio       | 1*Line out, Realtek ALC897,2*3W Speaker |
| Serial port | 2*RS232/422/485+2*RS232                 |

### LCD Display

|                   |                               |
|-------------------|-------------------------------|
| Dimension         | 17.0" TFT LCD                 |
| Resolution        | 1280*1024@60Hz                |
| Max. colors       | 16.2M                         |
| Luminance (cd/m²) | 350                           |
| Viewing Angle     | 80°(L), 80°(R), 80°(U),80°(D) |

### Touchscreen

|               |                                                                 |
|---------------|-----------------------------------------------------------------|
| Touch type    | 5-wire resistive touch screen/projected capacitive touch screen |
| Transmittance | 83%/90%                                                         |
| Controller    | USB                                                             |

### Storage

|         |                                    |
|---------|------------------------------------|
| Storage | 1*2.5" SATA3.0 HDD/SSD,<br>1*mSATA |
|---------|------------------------------------|

### Expansion

|           |                                                                           |
|-----------|---------------------------------------------------------------------------|
| Expansion | 1*Mini PCIe(PCle&USB),PCle module;<br>1*M.2 3042/3052(+SIM), 4G LTE/5G NR |
|-----------|---------------------------------------------------------------------------|

### Power Supply

|                     |                                                           |
|---------------------|-----------------------------------------------------------|
| Input voltage & TDP | DC IN 9~36V;<br>11.52W (CPU i7-1165G7, 8G DDR4, 128G SSD) |
|---------------------|-----------------------------------------------------------|

### Mechanical

|                   |                                                                    |
|-------------------|--------------------------------------------------------------------|
| Sturcture         | Aluminum die-casting front bezel , fin-shaped radiator shell       |
| Dimension (W*H*D) | 415.5*360.5*59mm<br>Panel mounting opening size(W*H):<br>407*352mm |
| Installation      | Panel/Rack/VESA(100*100/75*75mm)                                   |
| Net Weight        | 6.1KG                                                              |

### Environmental

|                  |                                               |
|------------------|-----------------------------------------------|
| Operating Temp   | 0~ 50°C, HDD( -10 ~ 55°C, SSD),airflow        |
| Storage Temp     | -20°C~60°C                                    |
| Storage Humidity | 10~95%@40°C, non-condensing                   |
| Vibration        | 1g 5~500Hz,with HDD                           |
| Shock            | 10g peak acceleration(duration 11ms) with HDD |
| EMC              | CE,FCC Class A                                |

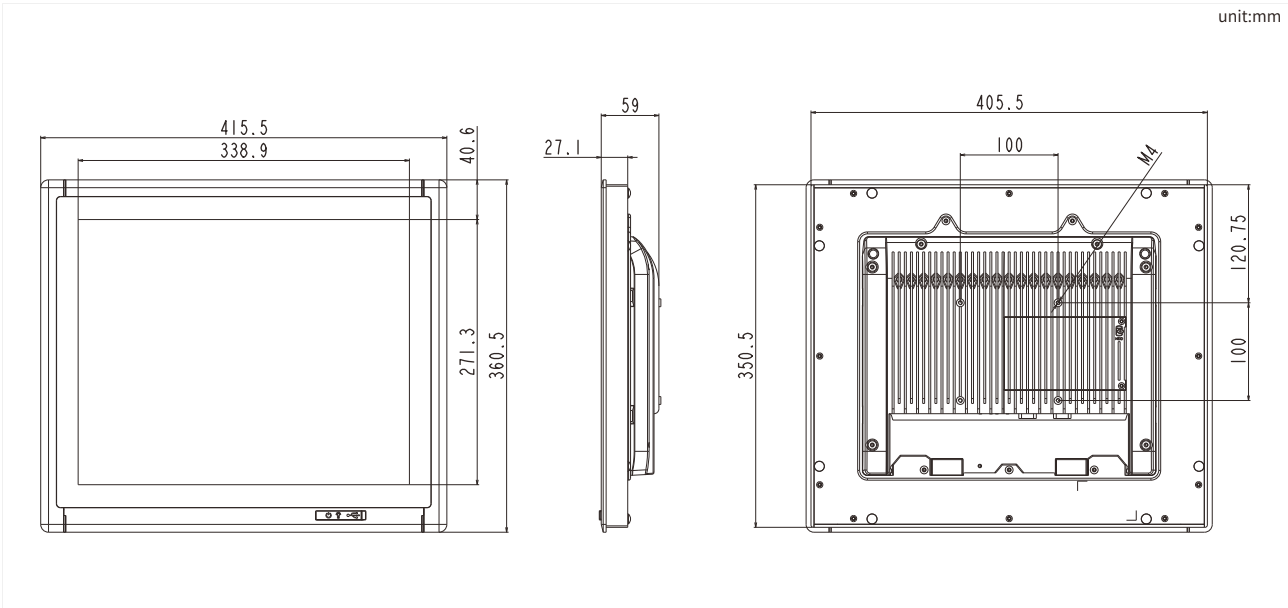
### OS

Windows 11/10\*IoT enterprise,  
Android, SUSE, Ubuntu, Wind River,  
Red Hat\*Enterprise, Wind River  
VxWorks\*7, Yocto

## I/O View



## Dimensions



## Ordering Information

| Model            | Processor                                    | Touch Screen                        |                                            | Specifications                                                                                                                              |
|------------------|----------------------------------------------|-------------------------------------|--------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|
| ALAD-K1750/ S001 | Intel® Core I3-1115G4                        | T:<br>5-wire resistive touch screen | T(P):<br>Projected capacitive touch screen | 17'' TFT LCD, 4*COM, 2*LAN, 4*USB3.2, 1*USB2.0, 1*HDMI, 1*Mini PCIe, 1*M.2 B-Key, 1*Line out, 1*2.5"SATA, 1*mSATA, 2*3W Amplifier, DC 9~36V |
| ALAD-K1750/ S002 | Intel® Core I5-1135G7                        |                                     |                                            |                                                                                                                                             |
| ALAD-K1750/ S003 | Intel® Core I7-1165G7                        |                                     |                                            |                                                                                                                                             |
| ALAD-K1750/ S004 | Intel® Celeron 6305E                         |                                     |                                            |                                                                                                                                             |
| PA-60DC12        | AC/DC power adapter, DC12V/5A, 60W           |                                     |                                            |                                                                                                                                             |
|                  | 1*COM adapter cable (one drag two, DB9 form) |                                     |                                            |                                                                                                                                             |



# ALAD-K1850T(P)

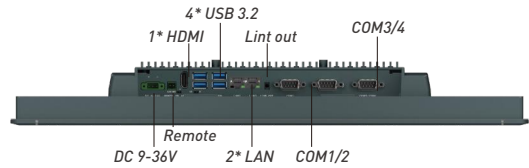
18.5" TFT LCD Capacitive Touch, Intel® Tigerlake CPU, 4\*COM, 2\*LAN, 4\*USB3.2, 1\* Line out, 1\*2.5" SATA, 1\*mSATA, DC 9~36V

## Key Specification

- Aluminum die-casting chassis
- 18.5" TFT LCD, Multi-point capacitive touch
- Intel® Tigerlake CPU, fanless design
- 1\*DDR4 3200 SODIMM, up to 32GB
- 1\*Mini PCIe, 1\*M.2 B-Key Type 3042/3052
- 4\*COM, 2\*LAN, 4\*USB3.2, 1\*8-bit DIO (opt.)
- 2.5" SATA Bay, 1\*mSATA, 1\*Line out, 2\*3W Speaker
- DC 9~36V power input
- Standard VESA mount and panel mounting



## I/O View



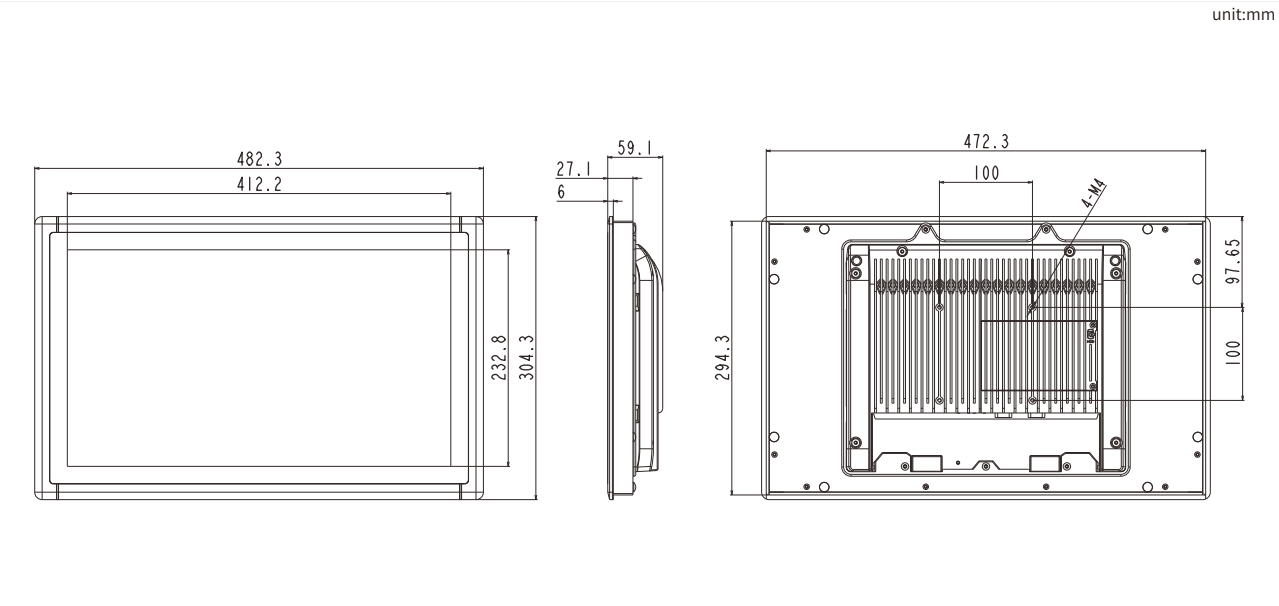
## Product Overview

The ALAD-K1850T(P) is a tablet powered by Intel®Tiger lake U-series processors. It adopts 18.5 "1366\*768 resolution TFT LCD and fully fits surface projection multi-point capacitive touch screen. The product has a comprehensive I/O interface, supporting 1\*2.5 "SATA disk and 1\*mSATA dual storage; Built-in 1\*Mini PCIe and 1\*M.2 3042/3052 expansions, wide voltage DC power supply from 9 to 36V, aluminum die-cast body without fan heat dissipation, various installation modes, suitable for intelligent MES system and device management HMI.

## Product Parameters

| System            |                                                                                                                           | Expansion                                                                                                                 |                                                                           |
|-------------------|---------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------|
| CPU               | Intel® Tigerlake U Celeron/Core I3/I5/I7 CPU, ULT SoC, TDP 12W/15W                                                        | Expansion                                                                                                                 | 1*Mini PCIe(PCle&USB),PCle module;<br>1*M.2 3042/3052(+SIM), 4G LTE/5G NR |
| RAM               | 1*DDR4, 3200Mhz SODIMM, 32GB max.                                                                                         |                                                                                                                           |                                                                           |
| Graphics          | Intel®UHD/ Intel® Iris® Xe Graphics:<br>Intel DL boost, DirectX12.1,<br>OpenGL 4.6 and OpenCL 3.0;<br>HDMI:4096*2304@60Hz |                                                                                                                           |                                                                           |
| I/O Port          |                                                                                                                           | Power Supply                                                                                                              |                                                                           |
| LAN               | 2*Intel I226V, 10M-1000M, WOL                                                                                             | Input voltage & TDP                                                                                                       | DC IN 9~36V;<br>11.52W (CPU i7-1165G7, 8G DDR4, 128G SSD)                 |
| USB               | 4*USB3.2                                                                                                                  |                                                                                                                           |                                                                           |
| Display           | 1*HDMI                                                                                                                    |                                                                                                                           |                                                                           |
| Audio             | 1*Line out, Realtek ALC897,2*3W Speaker                                                                                   |                                                                                                                           |                                                                           |
| Serial port       | 2*RS232/422/485+2*RS232                                                                                                   |                                                                                                                           |                                                                           |
| LCD Display       |                                                                                                                           | Mechanical                                                                                                                |                                                                           |
| Dimension         | 18.5" TFT LCD                                                                                                             | Sturcture                                                                                                                 | Aluminum die-casting front bezel , fin-shaped radiator shell              |
| Resolution        | 1366*768@60Hz                                                                                                             | Dimension (W*H*D)                                                                                                         | 483*305*59mm<br>Panel mounting opening size(W*H):<br>474*396mm            |
| Max. colors       | 16.2M                                                                                                                     | Installation                                                                                                              | Panel/VESA(100*100/75*75mm)                                               |
| Luminance (cd/m²) | 350                                                                                                                       | Net Weight                                                                                                                | 6.63KG                                                                    |
| Viewing Angle     | 85°(L), 85°(R), 80°(U),80°(D)                                                                                             |                                                                                                                           |                                                                           |
| Touchscreen       |                                                                                                                           | Environmental                                                                                                             |                                                                           |
| Touch type        | projected capacitive touch screen                                                                                         | Operating Temp                                                                                                            | 0~ 50°C, HDD( -10 ~ 55°C, SSD),airflow                                    |
| Transmittance     | 90%                                                                                                                       | Storage Temp                                                                                                              | -20°C~60°C                                                                |
| Controller        | USB                                                                                                                       | Storage Humidity                                                                                                          | 10~95%@40°C, non-condensing                                               |
| Storage           |                                                                                                                           | Vibration                                                                                                                 | 1g 5-500Hz,with HDD                                                       |
| Storage           | 1*2.5" SATA3.0 HDD/SSD,<br>1*mSATA                                                                                        | Shock                                                                                                                     | 10g peak acceleration(duration 11ms) with HDD                             |
|                   |                                                                                                                           | EMC                                                                                                                       | CE,FCC Class A                                                            |
|                   |                                                                                                                           | OS                                                                                                                        |                                                                           |
|                   |                                                                                                                           | Windows 11/10*IoT enterprise,<br>Android, SUSE, Ubuntu, Wind River,<br>Red Hat*Enterprise, Wind River<br>VxWorks*7, Yocto |                                                                           |

## Dimensions



## Ordering Information

| Model               | Processor                                    | Touch Screen                               | Specifications                                                                                                                     |
|---------------------|----------------------------------------------|--------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|
| ALAD-K1850T(P)/S001 | Intel® Core I3-1115G4                        | T(P):<br>Projected capacitive touch screen | 18.5" TFT LCD, 4*COM, 2*LAN, 4*USB3.2, 1*HDMI, 1*Mini PCIe, 1*M.2 B-Key, 1*Line out, 1*2.5"SATA, 1*mSATA, 2*3W Amplifier, DC 9~36V |
| ALAD-K1850T(P)/S002 | Intel® Core I5-1135G7                        |                                            |                                                                                                                                    |
| ALAD-K1850T(P)/S003 | Intel® Core I7-1165G7                        |                                            |                                                                                                                                    |
| ALAD-K1850T(P)/S004 | Intel® Celeron 6305E                         |                                            |                                                                                                                                    |
| PA-60DC12           | AC/DC power adapter, DC12V/5A, 60W           |                                            |                                                                                                                                    |
|                     | 1*COM adapter cable (one drag two, DB9 form) |                                            |                                                                                                                                    |

# ALAD-K1950T(P)

19.0" TFT LCD Capacitive/Resistive Touch, Intel® Tigerlake CPU, 4\*COM, 2\*LAN, 4\*USB3.2, 1\*USB2.0, 1\* Line out, 1\*2.5”SATA, 1\*mSATA, DC 9~36V

## Key Specification

- Aluminum die-casting chassis
- 19.0" TFT HD LCD, Multi-point capacitive/5 wire resistive touch
- Intel® Tigerlake CPU, fanless design
- 1\*DDR4 3200 SODIMM, up to 32GB
- 1\*Mini PCIe, 1\*M.2 B-Key Type 3042/3052
- 4\*COM, 2\*LAN, 4\*USB3.2, 1\*USB2.0,1\*8-bit DIO (opt.)
- 2.5" SATA Bay, 1\*mSATA, 1\*Line out, 2\*3W Speaker
- Optional 1\*PCIeX4(X4) or 1\*PCI
- DC 9~36V power input
- Standard VESA mount and panel mounting



## Product Overview

The ALAD-K1950T/T(P) is a tablet powered by Intel®Tiger lake U-series processors. It adopts 19.0 "1280\*1024 resolution TFT LCD and fully fits surface projection multi-point capacitive/5 wire resistive touch. The product has a comprehensive I/O interface, supporting 1\*2.5 "SATA disk and 1\*mSATA dual storage; Built-in 1\*Mini PCIe and 1\*M.2 3042/3052 expansions, wide voltage DC power supply from 9 to 36V, aluminum die-cast body without fan heat dissipation, various installation modes, suitable for intelligent MES system and device management HMI.

## Product Parameters

### System

|          |                                                                                                                           |
|----------|---------------------------------------------------------------------------------------------------------------------------|
| CPU      | Intel® Tigerlake U Celeron/Core I3/I5/I7 CPU, ULT SoC, TDP 12W/15W                                                        |
| RAM      | 1*DDR4, 3200Mhz SODIMM, 32GB max.                                                                                         |
| Graphics | Intel®UHD/ Intel® Iris® Xe Graphics:<br>Intel DL boost, DirectX12.1,<br>OpenGL 4.6 and OpenCL 3.0;<br>HDMI:4096*2304@60Hz |

### I/O Port

|             |                                         |
|-------------|-----------------------------------------|
| LAN         | 2*Intel I226V, 10M-1000M, WOL           |
| USB         | 4*USB3.2,1*USB2.0                       |
| Display     | 1*HDMI                                  |
| Audio       | 1*Line out, Realtek ALC897,2*3W Speaker |
| Serial port | 2*RS232/422/485+2*RS232                 |

### LCD Display

|                   |                               |
|-------------------|-------------------------------|
| Dimension         | 19.0" TFT LCD                 |
| Resolution        | 1280*1024@60Hz                |
| Max. colors       | 16.7M                         |
| Luminance (cd/m²) | 470                           |
| Viewing Angle     | 85°(L), 85°(R), 85°(U),85°(D) |

### Touchscreen

|               |                                                                 |
|---------------|-----------------------------------------------------------------|
| Touch type    | 5-wire resistive touch screen/projected capacitive touch screen |
| Transmittance | 83%/90%                                                         |
| Controller    | USB                                                             |

### Storage

|         |                                    |
|---------|------------------------------------|
| Storage | 1*2.5" SATA3.0 HDD/SSD,<br>1*mSATA |
|---------|------------------------------------|

### Expansion

|           |                                                                           |
|-----------|---------------------------------------------------------------------------|
| Expansion | 1*Mini PCIe(PCIe&USB),PCIe module;<br>1*M.2 3042/3052(+SIM), 4G LTE/5G NR |
|-----------|---------------------------------------------------------------------------|

### Power Supply

|                     |                                                           |
|---------------------|-----------------------------------------------------------|
| Input voltage & TDP | DC IN 9~36V;<br>11.52W (CPU i7-1165G7, 8G DDR4, 128G SSD) |
|---------------------|-----------------------------------------------------------|

### Mechanical

|                   |                                                                    |
|-------------------|--------------------------------------------------------------------|
| Sturcture         | Aluminum die-casting front bezel , fin-shaped radiator shell       |
| Dimension (W*H*D) | 453.5*388.5*64mm<br>Panel mounting opening size(W*H):<br>445*380mm |
| Installation      | Panel/Rack/VESA(100*100/75*75mm)                                   |
| Net Weight        | 6.9KG                                                              |

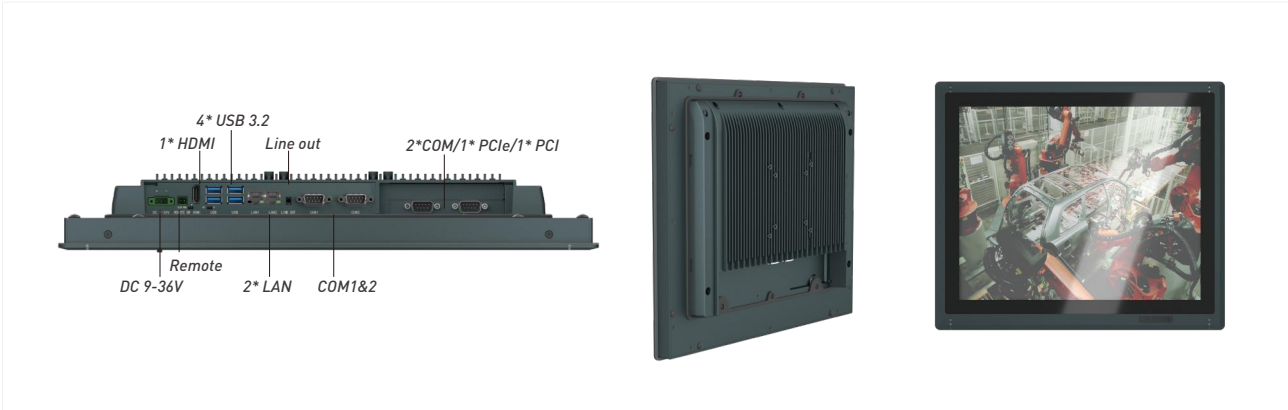
### Environmental

|                  |                                               |
|------------------|-----------------------------------------------|
| Operating Temp   | 0~ 50°C, HDD( -10 ~ 55°C, SSD),airflow        |
| Storage Temp     | -20°C~60°C                                    |
| Storage Humidity | 10~95%@40°C, non-condensing                   |
| Vibration        | 1g 5~500Hz,with HDD                           |
| Shock            | 10g peak acceleration(duration 11ms) with HDD |
| EMC              | CE,FCC Class A                                |

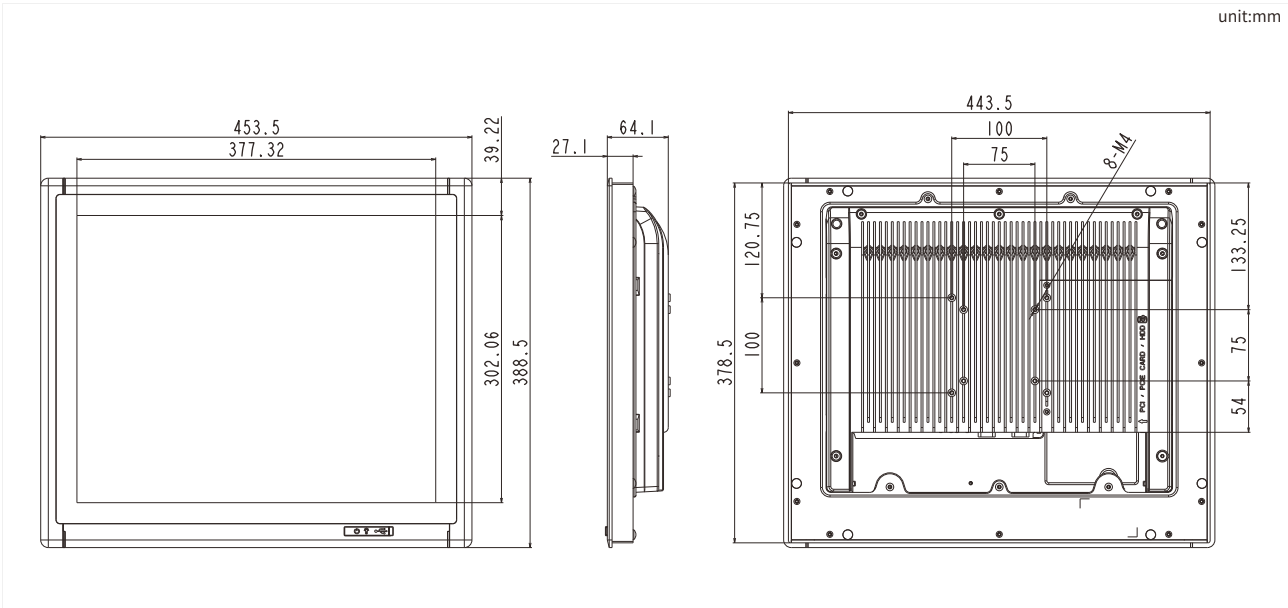
### OS

|  |                                                                                                                           |
|--|---------------------------------------------------------------------------------------------------------------------------|
|  | Windows 11/10*IoT enterprise,<br>Android, SUSE, Ubuntu, Wind River,<br>Red Hat*Enterprise, Wind River<br>VxWorks*7, Yocto |
|--|---------------------------------------------------------------------------------------------------------------------------|

## I/O View



## Dimensions



## Ordering Information

| Model           | Processor                                                                        | Touch Screen                        |                                            | Specifications                                                                                                                             |
|-----------------|----------------------------------------------------------------------------------|-------------------------------------|--------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|
| ALAD-K1950/S001 | Intel® Core I3-1115G4                                                            | T:<br>5-wire resistive touch screen | T(P):<br>Projected capacitive touch screen | 19" TFT LCD, 4*COM, 2*LAN, 4*USB3.2, 1*USB2.0, 1*HDMI, 1*Mini PCIe, 1*M.2 B-Key, 1*Line out, 1*2.5"SATA, 1*mSATA, 2*3W Amplifier, DC 9~36V |
| ALAD-K1950/S002 | Intel® Core I5-1135G7                                                            |                                     |                                            |                                                                                                                                            |
| ALAD-K1950/S003 | Intel® Core I7-1165G7                                                            |                                     |                                            |                                                                                                                                            |
| ALAD-K1950/S004 | Intel® Celeron 6305E                                                             |                                     |                                            |                                                                                                                                            |
| ECX-168         | 1*PCIeX4 slot( X4 signal) (non COM3&4 in use)                                    |                                     |                                            |                                                                                                                                            |
| ECI-169         | 1*32-bit PCI slot (non COM3&4 in use)                                            |                                     |                                            |                                                                                                                                            |
| PA-60DC12       | AC/DC power adapter, DC12V@5A ,60W                                               |                                     |                                            |                                                                                                                                            |
| PA-120DC19      | AC/DC power adapter, DC19V@6.32A ,120W (when use POE network card for expansion) |                                     |                                            |                                                                                                                                            |



# ALAD-K2150T(P)

21.5" TFT LCD Capacitive Touch, Intel® Tigerlake CPU, 4\*COM, 2\*LAN, 4\*USB3.2, 1\* Line out, 1\*2.5" SATA, 1\*mSATA, DC 9~36V

## Key Specification

- Aluminum die-casting chassis
- 21.5" TFT LCD, Multi-point capacitive touch
- Intel® Tigerlake CPU, fanless design
- 1\*DDR4 3200 SODIMM, up to 32GB
- 1\*Mini PCIe, 1\*M.2 B-Key Type 3042/3052
- 4\*COM, 2\*LAN, 4\*USB3.2, 1\*8-bit DIO (opt.)
- 2.5" SATA Bay, 1\*mSATA, 1\*Line out, 2\*3W Speaker
- Optional 1\*PCIeX4 slot (PCIEX4 signal) or 1\*PCI slot
- DC 9~36V power input
- Standard VESA mount and panel mounting



## Product Overview

ALAD-K2150T(P) is a tablet powered by Intel®Tiger lake U series processors. It adopts 21.5 "1920\*1080 resolution TFT LCD and fully fits surface projection multi-point capacitive touch screen. The product has a comprehensive I/O interface, supporting 1\*2.5 "SATA disk and 1\*mSATA dual storage; Built-in 1\*Mini PCIe and 1\*M.2 3042/3052 expansions, wide voltage DC power supply from 9 to 36V, aluminum die-cast body without fan heat dissipation, various installation modes, suitable for intelligent MES system and device management HMI.

## Product Parameters

### System

|          |                                                                                                                           |
|----------|---------------------------------------------------------------------------------------------------------------------------|
| CPU      | Intel® Tigerlake U Celeron/Core I3/I5/I7 CPU, ULT SoC, TDP 12W/15W                                                        |
| RAM      | 1*DDR4, 3200Mhz SODIMM, 32GB max.                                                                                         |
| Graphics | Intel®UHD/ Intel® Iris® Xe Graphics:<br>Intel DL boost, DirectX12.1,<br>OpenGL 4.6 and OpenCL 3.0;<br>HDMI:4096*2304@60Hz |

### I/O Port

|             |                                         |
|-------------|-----------------------------------------|
| LAN         | 2*Intel I226V, 10M-1000M, WOL           |
| USB         | 4*USB3.2                                |
| Display     | 1*HDMI                                  |
| Audio       | 1*Line out, Realtek ALC897,2*3W Speaker |
| Serial port | 2*RS232/422/485+2*RS232                 |

### LCD Display

|                   |                               |
|-------------------|-------------------------------|
| Dimension         | 21.5" TFT LCD                 |
| Resolution        | 1920*1080@60Hz                |
| Max. colors       | 16.7M                         |
| Luminance (cd/m²) | 300                           |
| Viewing Angle     | 89°(L), 89°(R), 89°(U),89°(D) |

### Touchscreen

|               |                                   |
|---------------|-----------------------------------|
| Touch type    | projected capacitive touch screen |
| Transmittance | 90%                               |
| Controller    | USB                               |

### Storage

|         |                                    |
|---------|------------------------------------|
| Storage | 1*2.5" SATA3.0 HDD/SSD,<br>1*mSATA |
|---------|------------------------------------|

### Expansion

|           |                                                                                                                            |
|-----------|----------------------------------------------------------------------------------------------------------------------------|
| Expansion | 1*Mini PCIe(Pcie&USB),Pcie/USB module;<br>1*M.2 B-Key 3042/3052(+SIM), 4G LTE/5G NR;<br>Opt. 1*PCIeX4 (X4) or 1*32 bit PCI |
|-----------|----------------------------------------------------------------------------------------------------------------------------|

### Power Supply

|                     |                                                           |
|---------------------|-----------------------------------------------------------|
| Input voltage & TDP | DC IN 9~36V;<br>11.52W (CPU i7-1165G7, 8G DDR4, 128G SSD) |
|---------------------|-----------------------------------------------------------|

### Mechanical

|                   |                                                                |
|-------------------|----------------------------------------------------------------|
| Sturcture         | Aluminum die-casting front bezel , fin-shaped radiator shell   |
| Dimension (W*H*D) | 574*345*64mm<br>Panel mounting opening size(W*H):<br>538*335mm |
| Installation      | Panel/VESA(100*100/75*75mm)                                    |
| Net Weight        | 8.15KG                                                         |

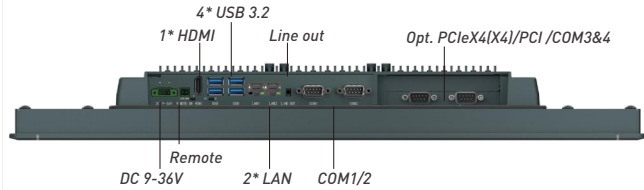
### Environmental

|                  |                                               |
|------------------|-----------------------------------------------|
| Operating Temp   | 0~ 50°C, HDD( -10 ~ 55°C, SSD),airflow        |
| Storage Temp     | -20°C~60°C                                    |
| Storage Humidity | 10~95%@40°C, non-condensing                   |
| Vibration        | 1g 5~500Hz,with HDD                           |
| Shock            | 10g peak acceleration(duration 11ms) with HDD |
| EMC              | CE,FCC Class A                                |

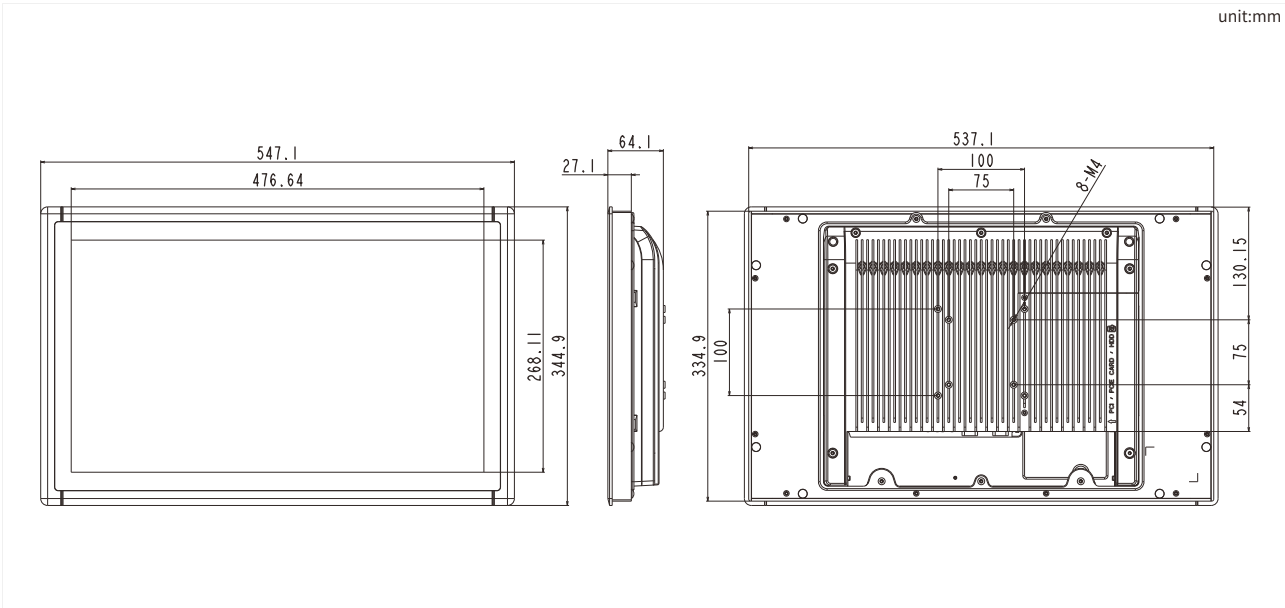
### OS

|  |                                                                                                                           |
|--|---------------------------------------------------------------------------------------------------------------------------|
|  | Windows 11/10*IoT enterprise,<br>Android, SUSE, Ubuntu, Wind River,<br>Red Hat*Enterprise, Wind River<br>VxWorks*7, Yocto |
|--|---------------------------------------------------------------------------------------------------------------------------|

## I/O View



## Dimensions



## Ordering Information

| Model               | Processor                                                                        | Touch Screen                               | Specifications                                                                                                                      |
|---------------------|----------------------------------------------------------------------------------|--------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|
| ALAD-K2150T(P)/S001 | Intel® Core I3-1115G4                                                            | T(P):<br>Projected capacitive touch screen | 21.5'' TFT LCD, 4*COM, 2*LAN, 4*USB3.2, 1*HDMI, 1*Mini PCIe, 1*M.2 B-Key, 1*Line out, 1*2.5"SATA, 1*mSATA, 2*3W Amplifier, DC 9~36V |
| ALAD-K2150T(P)/S002 | Intel® Core I5-1135G7                                                            |                                            |                                                                                                                                     |
| ALAD-K2150T(P)/S003 | Intel® Core I7-1165G7                                                            |                                            |                                                                                                                                     |
| ALAD-K2150T(P)/S004 | Intel® Celeron 6305E                                                             |                                            |                                                                                                                                     |
| ECX-168             | 1*PCIeX4 slot( X4 signal) (non COM3&4 in use)                                    |                                            |                                                                                                                                     |
| ECl-169             | 1*32-bit PCI slot (non COM3&4 in use)                                            |                                            |                                                                                                                                     |
| PA-60DC12           | AC/DC power adapter, DC12V@5A ,60W                                               |                                            |                                                                                                                                     |
| PA-120DC19          | AC/DC power adapter, DC19V@6.32A ,120W (when use POE network card for expansion) |                                            |                                                                                                                                     |

# ALAD-K2350T(P)

23.8" TFT LCD Capacitive Touch, Intel® Tigerlake CPU, 4\*COM, 2\*LAN, 4\*USB3.2, 1\* Line out, 1\*2.5" SATA bay, 1\*mSATA, DC 9~36V

## Key Specification

- Aluminum die-casting chassis, Full Flat Mirror Panel
- 23.8" Full HD LCD, Multi-point capacitive touch
- Intel® Tigerlake CPU, fanless design
- 1\*DDR4 3200 SODIMM, up to 32GB
- 1\*Mini PCIe, 1\*M.2 B-Key Type 3042/3052
- 4\*COM, 2\*LAN, 4\*USB3.2, 1\*8-bit DIO (opt.)
- 2.5" SATA Bay, 1\*mSATA, 1\*Line out, 2\*3W Speaker
- Optional 1\*PCIeX4(X4) or 1\*PCI
- DC 9~36V power input
- Standard VESA mount and panel mounting



## Product Overview

ALAD-K2350T(P) is a full flat mirror panel powered by an Intel®Tiger lake U series processor. It adopts 23.8 "1920\*1080 resolution full HD TFT LCD and fully fits surface projection multi-point capacitive touch screen. The product has a comprehensive I/O interface, supporting 1\*2.5 "SATA disk and 1\*mSATA dual storage; Built-in 1\*Mini PCIe and 1\*M.2 3042/3052 expansions, wide voltage DC power supply from 9 to 36V, aluminum die-cast body without fan heat dissipation, various installation modes, suitable for intelligent MES system and device management HMI.

## Product Parameters

### System

|          |                                                                                                                           |
|----------|---------------------------------------------------------------------------------------------------------------------------|
| CPU      | Intel® Tigerlake U Celeron/Core I3/I5/I7 CPU, ULT SoC, TDP 12W/15W                                                        |
| RAM      | 1*DDR4, 3200Mhz SODIMM, 32GB max.                                                                                         |
| Graphics | Intel®UHD/ Intel® Iris® Xe Graphics:<br>Intel DL boost, DirectX12.1,<br>OpenGL 4.6 and OpenCL 3.0;<br>HDMI:4096*2304@60Hz |

### I/O Port

|             |                                         |
|-------------|-----------------------------------------|
| LAN         | 2*Intel I226V, 10M-1000M, WOL           |
| USB         | 4*USB3.2                                |
| Display     | 1*HDMI                                  |
| Audio       | 1*Line out, Realtek ALC897,2*3W Speaker |
| Serial port | 2*RS232/422/485+2*RS232                 |

### LCD Display

|                   |                               |
|-------------------|-------------------------------|
| Dimension         | 23.8" TFT LCD                 |
| Resolution        | 1920*1080@60Hz                |
| Max. colors       | 16.2M                         |
| Luminance (cd/m²) | 350                           |
| Viewing Angle     | 89°(L), 89°(R), 89°(U),89°(D) |

### Touchscreen

|               |                                   |
|---------------|-----------------------------------|
| Touch type    | projected capacitive touch screen |
| Transmittance | ≥85%                              |
| Controller    | USB                               |

### Storage

|         |                                    |
|---------|------------------------------------|
| Storage | 1*2.5" SATA3.0 HDD/SSD,<br>1*mSATA |
|---------|------------------------------------|

### Expansion

|           |                                                                                                                            |
|-----------|----------------------------------------------------------------------------------------------------------------------------|
| Expansion | 1*Mini PCIe(PCle&USB),PCle/USB module;<br>1*M.2 B-Key 3042/3052(+SIM), 4G LTE/5G NR;<br>Opt. 1*PCIeX4 (X4) or 1*32 bit PCI |
|-----------|----------------------------------------------------------------------------------------------------------------------------|

### Power Supply

|                     |                                                           |
|---------------------|-----------------------------------------------------------|
| Input voltage & TDP | DC IN 9~36V;<br>11.52W (CPU i7-1165G7, 8G DDR4, 128G SSD) |
|---------------------|-----------------------------------------------------------|

### Mechanical

|                   |                                                                |
|-------------------|----------------------------------------------------------------|
| Sturcture         | Aluminum die-casting front bezel , fin-shaped radiator shell   |
| Dimension (W*H*D) | 594*375*64mm<br>Panel mounting opening size(W*H):<br>583*364mm |
| Installation      | Panel/VESA(100*100/75*75mm)                                    |
| Net Weight        | 7.74KG                                                         |

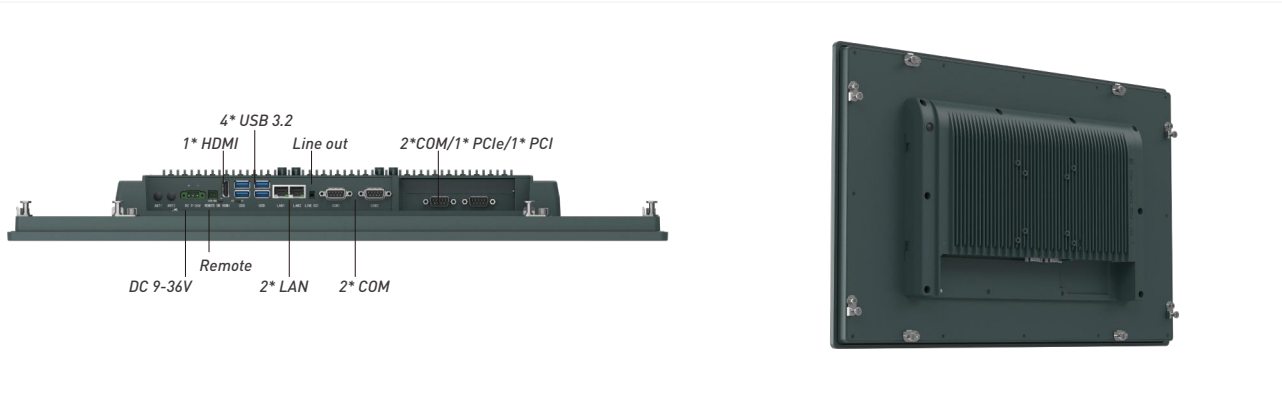
### Environmental

|                  |                                               |
|------------------|-----------------------------------------------|
| Operating Temp   | 0~ 50°C, HDD( -10 ~ 55°C, SSD),airflow        |
| Storage Temp     | -20°C~60°C                                    |
| Storage Humidity | 10~95%@40°C, non-condensing                   |
| Vibration        | 1g 5~500Hz,with HDD                           |
| Shock            | 10g peak acceleration(duration 11ms) with HDD |
| EMC              | CE,FCC Class A                                |

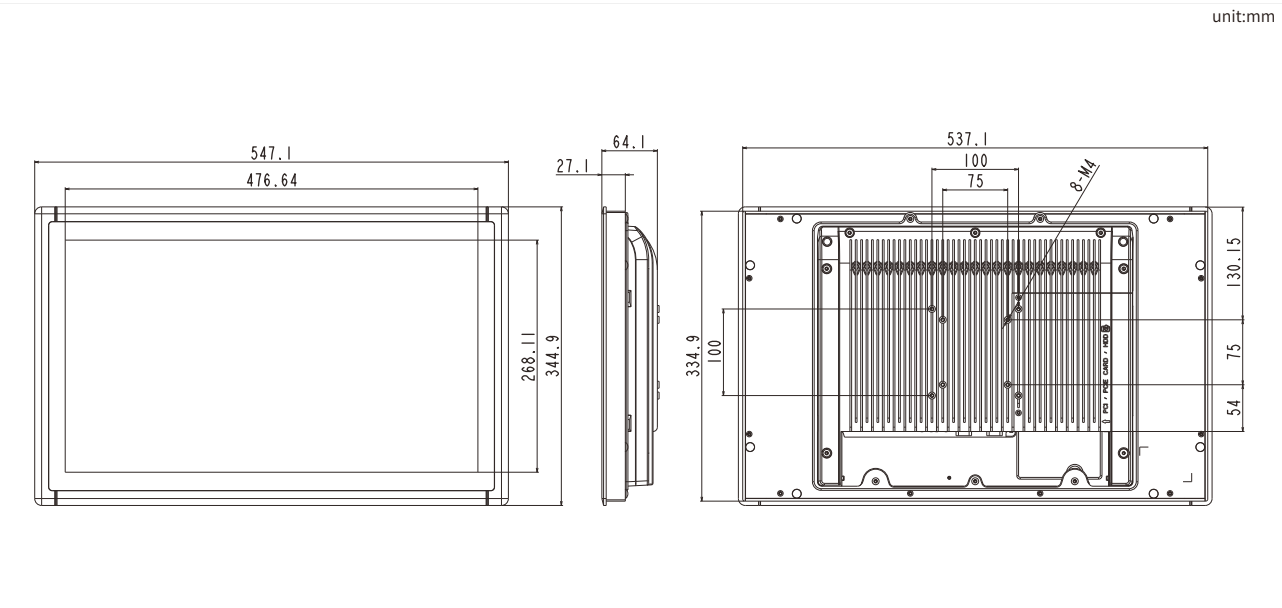
### OS

Windows 11/10\*IoT enterprise,  
Android, SUSE, Ubuntu, Wind River,  
Red Hat\*Enterprise, Wind River  
VxWorks\*7, Yocto

## I/O View



## Dimensions



## Ordering Information

| Model               | Processor                                                                        | Touch Screen                               | Specifications                                                                                                                         |
|---------------------|----------------------------------------------------------------------------------|--------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|
| ALAD-K2150T(P)/S001 | Intel® Core I3-1115G4                                                            | T(P):<br>Projected capacitive touch screen | 23.8'' TFT LCD, 4*COM, 4*USB3.2, 2*LAN, 1*HDMI, 1*Mini PCIe, 1*M.2 B-Key , 1*Line out, 1*2.5”SATA Bay, 1*mSATA, 2*3W Speaker, DC 9~36V |
| ALAD-K2150T(P)/S002 | Intel® Core I5-1135G7                                                            |                                            |                                                                                                                                        |
| ALAD-K2150T(P)/S003 | Intel® Core I7-1165G7                                                            |                                            |                                                                                                                                        |
| ALAD-K2150T(P)/S004 | Intel® Celeron 6305E                                                             |                                            |                                                                                                                                        |
| ECX-168             | 1*PCIeX4 slot( X4 signal) (non COM3&4 in use)                                    |                                            |                                                                                                                                        |
| ECI-169             | 1*32-bit PCI slot (non COM3&4 in use)                                            |                                            |                                                                                                                                        |
| PA-60DC12           | AC/DC power adapter, DC12V@5A ,60W                                               |                                            |                                                                                                                                        |
| PA-120DC19          | AC/DC power adapter, DC19V@6.32A ,120W (when use POE network card for expansion) |                                            |                                                                                                                                        |



# WPPC-H1580T

Intel® Celeron J1900 CPU, 2\*GbE LAN, 2\*COM, 1\*USB3.0,3\*USB2.0, 1\*HDMI, 1\*VGA, Stainless steel fanless design

## Key Specification

- Intel® Baytrail Celeron J1900 2.0-2.42G CPU
- 1-Ch DDR3L 1333MHZ SODIMM, Up to 8GB
- SUS304 Stainless steel case, 3.0mm 5052 Aluminum alloy back cover
- True-flat design, fanless design
- IP65/IP66 panel protection
- 15" LED TFT LCD, capacitive/Resistive touch screen
- 1\*HDMI, 1\*VGA,2\*GbE LAN,2\*COM, 1\*USB3.0, 3\*USB2.0
- 1\*Opt. ANT, support 4G LTE or WiFi/BT4.0
- 1\*Mini PCIe (PCIe+USB, w/SIM)
- 1\*Simple-swap 2.5" SATA bay , 1\*mSATA
- DC 9~36V wide power input



## Product Overview

WPPC-H1580T is a rugged and ultra-reliable fanless embedded waterproof panel PC. The front panel uses a SUS304 stainless steel shell, and the back cover uses a 3.0mm 5052 aluminum alloy design, which can not only meet the CPU heat dissipation, but also meet the VESA installation. It has the characteristics of super waterproof, sturdy and reliable, high performance, multiple IO, multiple expansion, and wide range of applications. It's suitable for wet, cold and harsh environments.

## Product Parameters

### System

|          |                                                                                                                                                 |
|----------|-------------------------------------------------------------------------------------------------------------------------------------------------|
| CPU      | Intel® Baytrail Celeron J1900<br>2.0-2.42G CPU                                                                                                  |
| RAM      | 1*DDR3L,1333Mhz SODIMM, Max.8GB                                                                                                                 |
| Graphics | Gen.7 Intel® HD Graphics,LCD+HDMI+VGA 3 displays,<br>OpenGL 3.2, DirectX 11, OpenCL 1.2, MPGE2/H.264<br>VGA:1920*1200@60Hz; HDMI 1920*1080@60Hz |

### I/O Port

|             |                         |
|-------------|-------------------------|
| LAN         | 2*Intel I211AT, Gigabit |
| USB         | 1*USB3.0, 3*USB2.0      |
| Display     | 1*HDMI+1*VGA            |
| Audio       | optional audio          |
| Serial port | 2*RS232/422/485         |

### LCD Display

|                   |                                          |
|-------------------|------------------------------------------|
| Dimension         | 15" TFT LED                              |
| Resolution        | 1024*768                                 |
| Max. colors       | 16.2M                                    |
| Luminance (cd/m²) | 350                                      |
| Viewing Angle     | 80°(left), 80°(right), 80°(up),80°(down) |

### Touchscreen

|                    |                                                                 |
|--------------------|-----------------------------------------------------------------|
| Touch type         | 5-wire resistive touch screen/projected capacitive touch screen |
| Light Transmission | 83/90%                                                          |
| Controller         | USB/USB                                                         |

### Storage

|         |                                                                   |
|---------|-------------------------------------------------------------------|
| Storage | 1*2.5" SATA(swappable),<br>1*mSATA Full-height card, support AHCI |
|---------|-------------------------------------------------------------------|

### Expansion

|                |                            |
|----------------|----------------------------|
| Expansion Port | 1*Mini PCIe, with SIM slot |
|----------------|----------------------------|

### Power Supply

|                                  |                                                       |
|----------------------------------|-------------------------------------------------------|
| Power Supply & Power consumption | DC IN 9~36V, D-Jack w/M8,<br>Power consumption: 19.5W |
|----------------------------------|-------------------------------------------------------|

### Mechanical

|                   |                                                  |
|-------------------|--------------------------------------------------|
| Sturcture         | SUS304 Stainless steel /5052 Aluminum alloy/SECC |
| Dimension (W*H*D) | 405.22*328.22*52.1mm                             |
| Installation      | Desktop mounting VESA(100*100mm)                 |
| Net Weight        | 5.8KG                                            |

### Environmental

|                  |                                               |
|------------------|-----------------------------------------------|
| Operating Temp   | 0~ 60°C                                       |
| Storage Temp     | -40°C~85°C                                    |
| Storage Humidity | 10~90%@40°C, No- condensation                 |
| Vibration        | 1g 5~500Hz                                    |
| Shock            | 10g peak acceleration(duration 11ms) with HDD |
| EMC              | CE,FCC Class A                                |

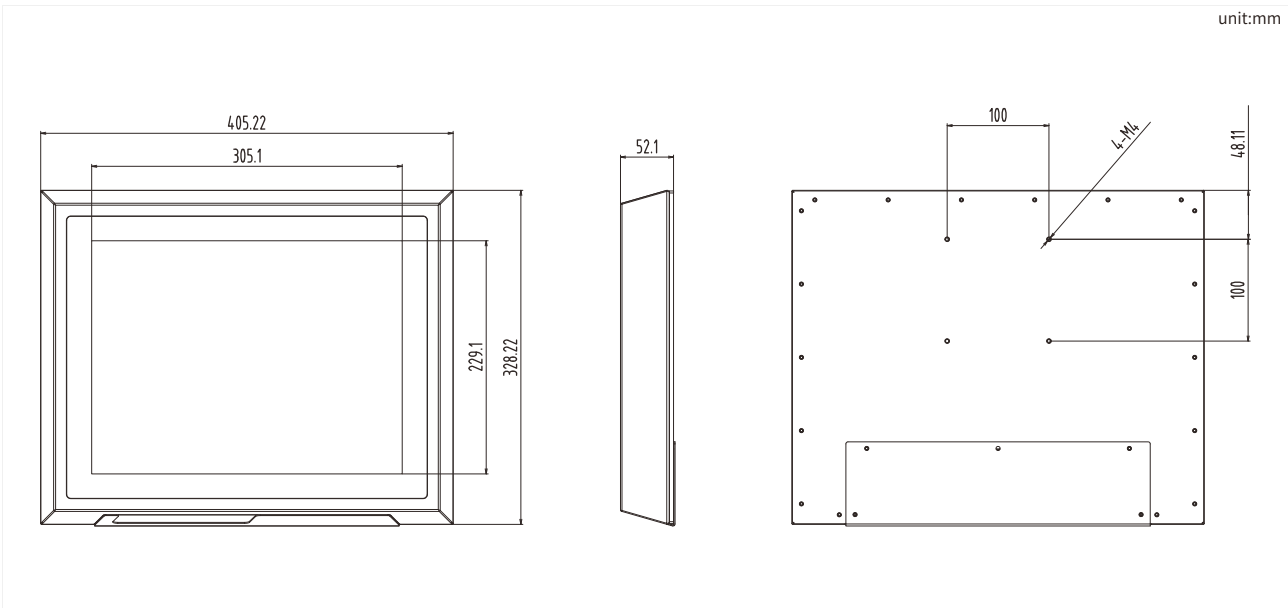
### OS

|  |                                                          |
|--|----------------------------------------------------------|
|  | Windows 7,Windows 8.1,<br>Windows 10,Linux Fedora Ubuntu |
|--|----------------------------------------------------------|

## I/O View



## Dimensions



## Ordering Information

| Model               | Processor                          | Touch Screen                      | Specifications                                                                                                                        |
|---------------------|------------------------------------|-----------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|
| WPPC-H1580T-T001    | Intel® Baytrail Celeron J1900 CPU  | 5-wire resistive touch screen     | 15" TFT LCD, 1*HDMI, 1*VGA, 2*G-LAN, 2*COM, 1*Opt. ANT, 1*USB3.0, 3*USB2.0, 1*Mini PCIe , 1*swappable 2.5"SATA bay, 1*mSATA, DC 9~36V |
| WPPC-H1580T(P)-T001 |                                    | Projected capacitive touch screen |                                                                                                                                       |
| PA-60DC12           | AC/DC power adapter, DC12V/5A, 60W |                                   |                                                                                                                                       |

# WPPC-H1780T

Intel® Celeron J1900 CPU, 2\*GbE LAN, 2\*COM, 1\*USB3.0,3\*USB2.0, 1\*HDMI, 1\*VGA, Stainless steel fanless design

## Key Specification

- Intel® Baytrail Celeron J1900 2.0-2.42G CPU
- 1-Ch DDR3L 1333MHZ SODIMM, Up to 8GB
- SUS304 Stainless steel case, 3.0mm 5052 Aluminum alloy back cover
- True-flat design, fanless design
- IP65/IP66 panel protection
- 17" LED TFT LCD, Capacitive/Resistive touch screen
- 1\*HDMI, 1\*VGA,2\*GbE LAN,2\*COM, 1\*USB3.0, 3\*USB2.0
- 1\*Opt. ANT, support 4G LTE or WiFi/BT4.0
- 1\*Mini PCIe (PCIe+USB, w/SIM)
- 1\*Simple-swap 2.5" SATA bay , 1\*mSATA
- DC 9~36V wide power input



## Product Overview

WPPC-H1780T is a rugged and ultra-reliable fanless embedded waterproof tablet PC. The front panel uses a SUS304 stainless steel shell, and the back cover uses a 3.0mm 5052 aluminum alloy design, which can not only meet the CPU heat dissipation, but also meet the VESA installation. It has the characteristics of advanced waterproof, sturdy and reliable, high performance, multiple IO, multiple expansion, and wide range of applications. It's suitable for wet, cold and harsh environments.

## Product Parameters

### System

|          |                                                                                                                                                 |
|----------|-------------------------------------------------------------------------------------------------------------------------------------------------|
| CPU      | Intel® Baytrail Celeron J1900<br>2.0-2.42G CPU                                                                                                  |
| RAM      | 1*DDR3L,1333Mhz SODIMM Max. 8GB                                                                                                                 |
| Graphics | Gen.7 Intel® HD Graphics LCD+HDMI+VGA 3 displays,<br>OpenGL 3.2, DirectX 11, OpenCL 1.2, MPGE2/H.264<br>VGA:1920*1200@60Hz; HDMI 1920*1080@60Hz |

### I/O Port

|             |                         |
|-------------|-------------------------|
| LAN         | 2*Intel I211AT, Gigabit |
| USB         | 1*USB3.0, 3*USB2.0      |
| Display     | 1*HDMI+1*VGA            |
| Audio       | optional audio          |
| Serial port | 2*RS232/422/485         |

### LCD Display

|                   |                                          |
|-------------------|------------------------------------------|
| Display           | 17" TFT LED                              |
| Resolution        | 1280*1024                                |
| Max. colors       | 16.2M                                    |
| Luminance (cd/m²) | 600                                      |
| Viewing Angle     | 80°(left), 80°(right), 70°(up),80°(down) |

### Touchscreen

|                    |                                                                 |
|--------------------|-----------------------------------------------------------------|
| Touch type         | 5-wire resistive touch screen/projected capacitive touch screen |
| Light Transmission | 83/90%                                                          |
| Controller         | USB/USB                                                         |

### Storage

|         |                                                                   |
|---------|-------------------------------------------------------------------|
| Storage | 1*2.5" SATA (swappable)<br>1*mSATA Full-height card, support AHCI |
|---------|-------------------------------------------------------------------|

### Expansion

|                |                            |
|----------------|----------------------------|
| Expansion Port | 1*Mini PCIe, with SIM slot |
|----------------|----------------------------|

### Power Supply

|                                  |                                                     |
|----------------------------------|-----------------------------------------------------|
| Power Supply & Power consumption | DC IN 9~36V, D-Jack w/M8,<br>Power consumption: 30W |
|----------------------------------|-----------------------------------------------------|

### Mechanical

|                   |                                                  |
|-------------------|--------------------------------------------------|
| Sturcture         | SUS304 Stainless steel /5052 Aluminum alloy/SECC |
| Dimension (W*H*D) | 429.51*364.51*52.1mm                             |
| Installation      | Desktop mounting VESA(100*100mm)                 |
| Net Weight        | 5.57KG                                           |

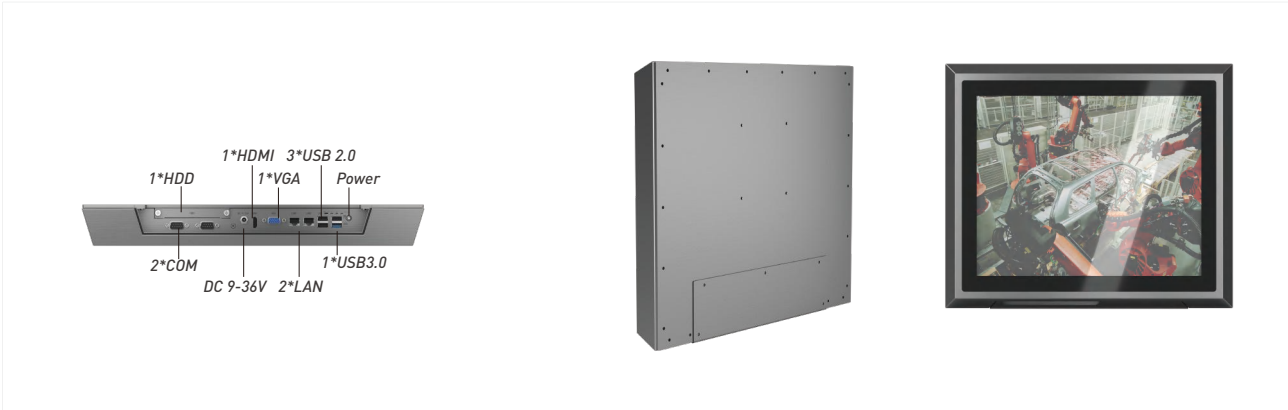
### Environmental

|                  |                                               |
|------------------|-----------------------------------------------|
| Operating Temp   | 0~ 60°C                                       |
| Storage Temp     | -40°C~85°C                                    |
| Storage Humidity | 10~90%@40°C, No- condensation                 |
| Vibration        | 1g 5~500Hz                                    |
| Shock            | 10g peak acceleration(duration 11ms) with HDD |
| EMC              | CE,FCC Class A                                |

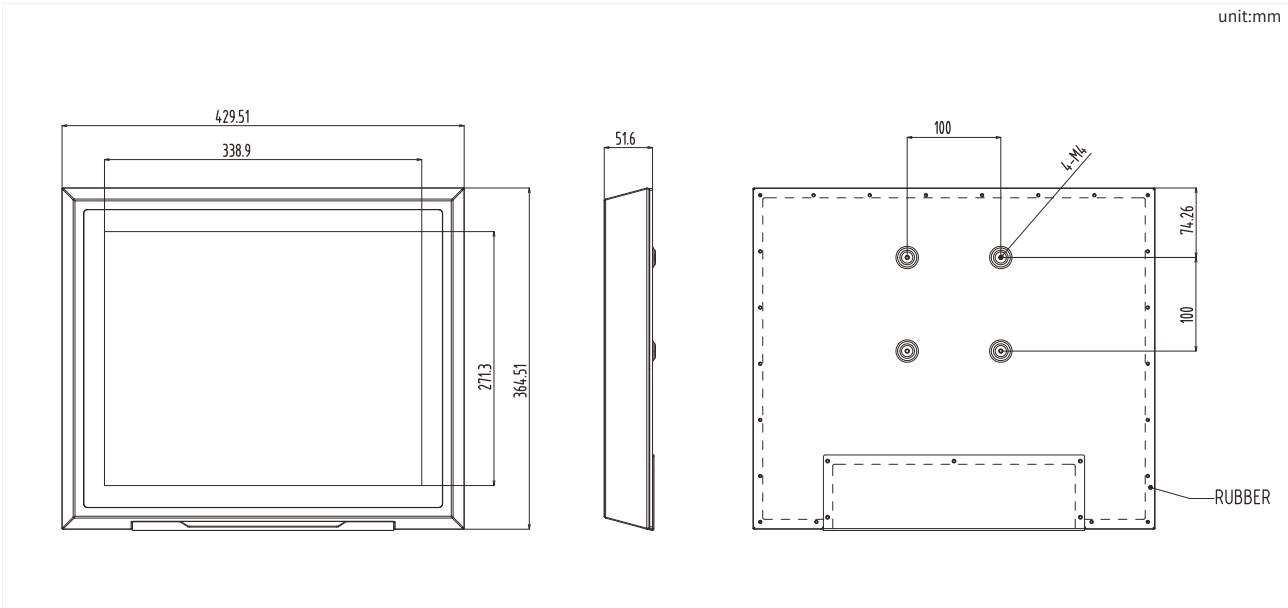
### OS

|  |                                                          |
|--|----------------------------------------------------------|
|  | Windows 7,Windows 8.1,<br>Windows 10,Linux Fedora Ubuntu |
|--|----------------------------------------------------------|

## I/O View



## Dimensions



## Ordering Information

| Model               | Processor                          | Touch Screen                      | Specifications                                                                                                                        |
|---------------------|------------------------------------|-----------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|
| WPPC-H1780T-T001    | Intel® Baytrail Celeron J1900 CPU  | 5-wire resistive touch screen     | 17" TFT LCD, 1*HDMI, 1*VGA, 2*G-LAN, 2*COM, 1*Opt. ANT, 1*USB3.0, 3*USB2.0, 1*Mini PCIe , 1*swappable 2.5"SATA bay, 1*mSATA, DC 9~36V |
| WPPC-H1780T(P)-T001 |                                    | Projected capacitive touch screen |                                                                                                                                       |
| PA-60DC12           | AC/DC power adapter, DC12V/5A, 60W |                                   |                                                                                                                                       |

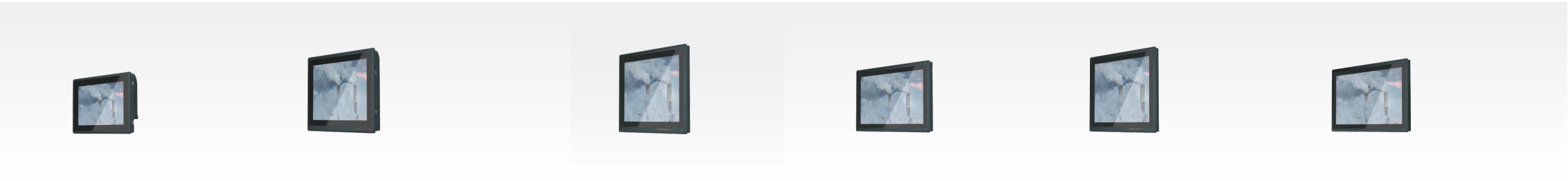




APPLICATION  
▶▶▶  
Environmental monitoring



▶▶▶  
Logistics and warehousing



ALAD-101T                      ALAD-151T                      ALAD-171T                      ALAD-181T(P)                      ALAD-191T                      ALAD-211T(P)

LCD Display

|                |                                           |                                           |                                           |                                           |                                           |                                           |
|----------------|-------------------------------------------|-------------------------------------------|-------------------------------------------|-------------------------------------------|-------------------------------------------|-------------------------------------------|
| Dimension      | 10.1" TFT LED                             | 15" TFT LED                               | 17" TFT LED                               | 18.5" TFT LED                             | 19" TFT LED                               | 21.5" TFT LED                             |
| Resolution     | 1280*800                                  | 1024*768                                  | 1280*1024                                 | 1366*768                                  | 1280*1024                                 | 1920*1080                                 |
| Max. colors    | 16.7M                                     | 16.2M                                     | 16.2M                                     | 16.7M                                     | 16.7M                                     | 16.7M                                     |
| Max. Luminance | 350                                       | 350                                       | 600                                       | 300                                       | 470                                       | 300                                       |
| Viewing Angle  | 85°(left), 85°(right), 85°(up), 85°(down) | 80°(left), 80°(right), 80°(up), 80°(down) | 80°(left), 80°(right), 70°(up), 80°(down) | 89°(left), 89°(right), 85°(up), 85°(down) | 85°(left), 85°(right), 75°(up), 85°(down) | 89°(left), 89°(right), 89°(up), 89°(down) |
| Backlight life | 15000 hours/50000 hours                   | 50000 hours                               | 70000 hours                               | 50000 hours                               | 50000 hours                               | 50000 hours                               |

Touch screen

|                    |                                                                 |                                                                 |                                                                 |                                   |                                                                 |                                   |
|--------------------|-----------------------------------------------------------------|-----------------------------------------------------------------|-----------------------------------------------------------------|-----------------------------------|-----------------------------------------------------------------|-----------------------------------|
| Touch type         | 5-wire resistive touch screen/projected capacitive touch screen | 5-wire resistive touch screen/projected capacitive touch screen | 5-wire resistive touch screen/projected capacitive touch screen | Projected capacitive touch screen | 5-wire resistive touch screen/projected capacitive touch screen | Projected capacitive touch screen |
| Light Transmission | 80%/90%                                                         | 83%/90%                                                         | 80%/90%                                                         | 90%                               | 83%/90%                                                         | 90%                               |
| Controller         | USB/USB                                                         | USB/USB,RS232                                                   | USB/USB                                                         | USB/RS232                         | USB/USB                                                         | USB/RS232                         |

I/O Port

|                   |                                                                                                                                                  |  |                                                                                                                                                  |  |  |  |
|-------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|--|--------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|
| OSD menu/language | AUTO/Power/Menu/Source/UP (LEFT)/DOWN(RIGHT)<br>Chinese, English, German, French, Russian, Italian, Spanish, Arabic and other optional languages |  | AUTO/Power/Menu/Source/UP (LEFT)/DOWN(RIGHT)<br>Chinese, English, German, French, Russian, Italian, Spanish, Arabic and other optional languages |  |  |  |
|-------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|--|--------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|

|                 |                                |                                |                                |                                |                                |                                |
|-----------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|
| Display         | 1*VGA+1*HDMI/1*DP (choose one) | 1*VGA+1*HDMI/1*DP (choose one) | 1*VGA+1*HDMI/1*DP (choose one) | 1*VGA+1*HDMI/1*DP (choose one) | 1*VGA+1*HDMI/1*DP (choose one) | 1*VGA+1*HDMI/1*DP (choose one) |
| Audio           | 1*Line in, 2*2W power speaker  | 1*Line in, 2*3W power speaker  | 1*Line in, 2*3W power speaker  | 1*Line in, 2*3W power speaker  | 1*Line in, 2*3W power speaker  | 1*Line in, 2*3W power speaker  |
| Touch interface | 1*RS232 Touch, 1*USB Touch     | 1*RS232 Touch, 1*USB Touch     | 1*RS232 Touch, 1*USB Touch     | 1*RS232 Touch, 1*USB Touch     | 1*RS232 Touch, 1*USB Touch     | 1*RS232 Touch, 1*USB Touch     |

Power

|                           |                               |                               |                               |                               |                               |                               |
|---------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|
| Power Input               | DC 10-30V                     | DC 10-30V                     | DC 10-30V                     | DC 10-30V                     | DC 10-30V                     | DC 10-30V                     |
| Power consumption         | 12V@0.65A (No Power output)   | 12V@0.65A (No Power output)   | 12V@1.6A (No Power output)    | 12V@1.6A (No Power output)    | 12V@1.6A (No Power output)    | 12V@1.6A (No Power output)    |
| Standby power consumption | Standby power consumption <1W | Standby power consumption <1W | Standby power consumption <1W | Standby power consumption <1W | Standby power consumption <1W | Standby power consumption <1W |

Mechanical

|                   |                                                             |                                                                  |                                                                  |                                                                        |                                                                    |                                                                        |
|-------------------|-------------------------------------------------------------|------------------------------------------------------------------|------------------------------------------------------------------|------------------------------------------------------------------------|--------------------------------------------------------------------|------------------------------------------------------------------------|
| Structure         | Aluminum alloy die-casting, flat panel, cooling fin case    | Aluminum alloy die-casting, flat panel, cooling fin case         | Aluminum alloy die-casting, flat panel, cooling fin case         | Aluminum alloy die-casting, flat panel, cooling fin case               | Aluminum alloy die-casting, flat panel, cooling fin case           | Aluminum alloy die-casting, flat panel, cooling fin case               |
| Dimension (W*H*D) | 275*193*51mm<br>Panel mounting opening size(W*H): 271*189mm | 380*315*56mm<br>Panel mounting opening size (W*H): 367.3*303.3mm | 415.5*360.5*59mm<br>Panel mounting opening size (W*H): 407*352mm | 482.3*304.3*59.1mm<br>Panel mounting opening size (W*H): 473.8*295.8mm | 453.5*388.5*64.1mm<br>Panel mounting opening size (W*H): 445*380mm | 546.9*344.7*64.1mm<br>Panel mounting opening size (W*H): 537.5*335.3mm |
| Net Weight        | 1.8kg                                                       | 4.3kg                                                            | TBD                                                              | 6.6kg                                                                  | TBD                                                                | 8.1kg                                                                  |
| Installation      | Panel mounting, VESA (75*75mm)                              | Panel mounting, VESA (100*100/75*75mm)                           | Panel mounting, VESA (100*100mm)                                 | Panel mounting, VESA (100*100/75*75mm)                                 | Panel mounting, VESA (100*100/75*75mm)                             | Panel mounting, VESA (100*100/75*75mm)                                 |

Environmental

|                |                                      |                                      |                                      |                                      |                                      |                                      |
|----------------|--------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|
| Operating Temp | -20~70°C, with air flow              | 0~50°C, with air flow                | 0~50°C, with air flow                | 0~50°C, with air flow                | 0~60°C, with air flow                | 0~50°C, with air flow                |
| Storage Temp   | -40~80°C                             | -20~60°C                             | -20~60°C                             | -20~60°C                             | -40~80°C                             | -20~60°C                             |
| Humidity       | 10~95%@40°C, No- condensation        | 10~95%@40°C, No- condensation        | 10~95%@40°C, No- condensation        | 10~95%@40°C, No- condensation        | 10~95%@40°C, No- condensation        | 10~95%@40°C, No- condensation        |
| Vibration      | 1g 5~500Hz                           | 1g 5~500Hz                           | 1g 5~500Hz                           | 1g 5~500Hz                           | 1g 5~500Hz                           | 1g 5~500Hz                           |
| Shock          | 10g peak acceleration(duration 11ms) | 10g peak acceleration(duration 11ms) | 10g peak acceleration(duration 11ms) | 10g peak acceleration(duration 11ms) | 10g peak acceleration(duration 11ms) | 10g peak acceleration(duration 11ms) |
| Certificate    | CE,FCC Class A                       | CE,FCC Class A                       | CE,FCC Class A                       | CE,FCC Class A                       | CE,FCC Class A                       | CE,FCC Class A                       |

# ALAD-101T

10.1" TFT LCD, Capacitive/Resistive touch screen, HDMI/DP (choose one), VGA display, OSD function keys

## Key Specification

- Aluminum alloy die-casting, naturally streamlined design
- 10.1" high resolution TFT LCD (LED Backlight)
- 5 wire heat-resistant resistive touch screen
- Optional projected capacitive touch screen,support multi-touch
- HDMI/DP(choose one) and VG signal input
- Audio input, support 2\*2W power speaker
- DC 10-30V power input
- True-flat panel, IP65 front panel



## Product Overview

ALAD-101T is an industrial touch display that supports 10.1" TFT LED LCD screen, high resolution 1280\*800, USB and serial port dual-sig-nal 5-wire resistive touch screen and optional capacitive touch screen. HDMI/DP (choose one). Variety of installation methods for application sites in different fields such as vehicle display, industrial automation, medical treatment, and new energy.

## Product Parameters

### Display Screen

|                |                                           |
|----------------|-------------------------------------------|
| Dimension      | 10.1" TFT LED                             |
| Resolution     | 1280*800                                  |
| Max. colors    | 16.7M                                     |
| Max. Luminance | 350                                       |
| Viewing Angle  | 85°(left), 85°(right), 85°(up), 85°(down) |
| Backlight life | 15000 hours/50000 hours                   |

### Touch Screen

|                    |                                                                 |
|--------------------|-----------------------------------------------------------------|
| Type               | 5-wire resistive touch screen/projected capacitive touch screen |
| Light Transmission | 80%/90%                                                         |
| Controller         | USB/USB                                                         |

### I/O Port

|                   |                                                                                                                                                     |
|-------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|
| OSD menu/language | AUTO/Power/Menu/Source/UP (LEFT)/DOWN(RIGHT)<br>Chinese, English, German, French, Russian, Italian, Spanish, Arabic<br>and other optional languages |
| Display           | 1*VGA+1*HDMI/1*DP (choos one)                                                                                                                       |
| Audio             | 1*Line in, 2*2W power speaker                                                                                                                       |
| Touch interface   | 1*RS232 Touch, 1*USB Touch                                                                                                                          |

### Power

|                           |                               |
|---------------------------|-------------------------------|
| Power input               | DC 10-30V                     |
| Power consumption         | 12V@0.65A (No Power output)   |
| Standby power consumption | Standby power consumption <1W |

### Mechanical

|                   |                                                             |
|-------------------|-------------------------------------------------------------|
| Structure         | Aluminum alloy die-casting, flat panel, cooling fin case    |
| Dimension (W*H*D) | 275*193*51mm<br>Panel mounting opening size(W*H): 271*189mm |
| Net Weight        | 1.8kg                                                       |
| Installation      | Panel mounting, VESA (75*75mm)                              |

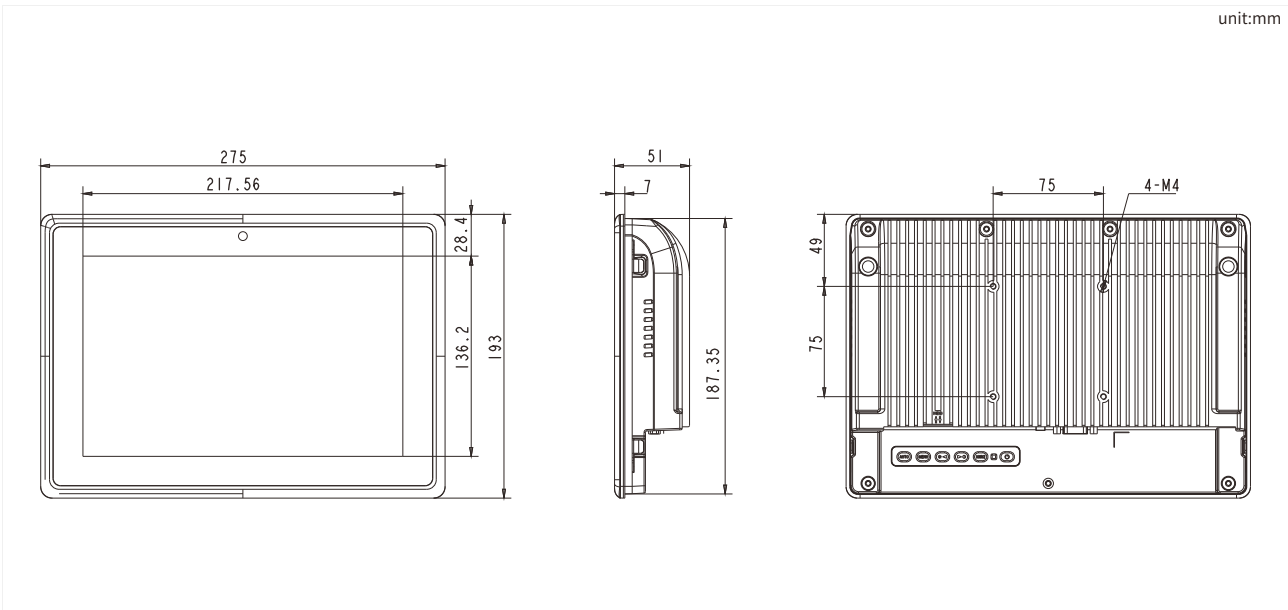
### Environmental

|                |                                               |
|----------------|-----------------------------------------------|
| Operating Temp | -20~70°C, with air flow                       |
| Storage Temp   | -40~80°C                                      |
| Humidity       | 10~95%@40°C, No- condensation                 |
| Vibration      | 1g 5~500Hz                                    |
| Shock          | 10g peak acceleration(duration 11ms) with HDD |
| Certificate    | CE,FCC Class A                                |

## I/O View



## Dimensions



## Ordering Information

| Model                 | Touch Screen                       | Specifications                                                                                                 |
|-----------------------|------------------------------------|----------------------------------------------------------------------------------------------------------------|
| ALAD-101T/S001-G      | 5-wire resistive touch screen      | 10.1" TFT LCD, 1*HDMI (default) /1*DP(optional) , 1*VGA, 1*Line in, 2*2W power speaker, DC 10-30V power supply |
| ALAD-101T (P) /S001-G | Projected capacitive touch screen  |                                                                                                                |
| PA-60DC12             | AC/DC power adapter, DC12V/5A, 60W |                                                                                                                |



# ALAD-151T

15" TFT LCD, Capacitive/Resistive touch screen, HDMI/DP (choose one), VGA display, OSD function keys

## Key Specification

- Aluminum alloy die-casting, naturally streamlined design
- 15" high resolution TFT LCD (LED Backlight)
- 5 wire heat-resistant resistive touch screen
- Optional projected capacitive touch screen, support multi-touch
- HDMI/DP (choose one) and VGA signal input
- Audio input, optional support 2.3W power speakers
- DC 10-30V power input
- Flat panel, IP65 front panel



## Product Overview

ALAD-151-G is an industrial touch display that supports 15" TFT LED LCD screen, high resolution 1280\*800, USB and serial port dual-signal 5-wire resistive touch screen and optional capacitive touch screen. HDMI/DP (choose one). It is an industrial-standard multimedia display, with multiple installations suitable for different application sites.

## Product Parameters

### Display Screen

|                |                                           |
|----------------|-------------------------------------------|
| Dimension      | 15" TFT LED                               |
| Resolution     | 1024*768                                  |
| Max. colors    | 16.2M                                     |
| Max. Luminance | 350                                       |
| Viewing angle  | 80°(left), 80°(right), 80°(up), 80°(down) |
| Backlight life | 50000 hours                               |

### Touch Screen

|                    |                                                                 |
|--------------------|-----------------------------------------------------------------|
| Type               | 5-wire resistive touch screen/projected capacitive touch screen |
| Light Transmission | 83%/90%                                                         |
| Controller         | USB/USB,RS232                                                   |

### I/O Port

|                   |                                                                                                                                                  |
|-------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| OSD menu/language | AUTO/Power/Menu/Source/UP (LEFT)/DOWN(RIGHT)<br>Chinese, English, German, French, Russian, Italian, Spanish, Arabic and other optional languages |
| Display           | 1*VGA+1*HDMI/1*DP (choose one)                                                                                                                   |
| Audio             | 1*Line in, 2*3W power speaker                                                                                                                    |
| Touch interface   | 1*RS232 Touch, 1*USB Touch                                                                                                                       |

### Power

|                           |                               |
|---------------------------|-------------------------------|
| Power input               | DC 10-30V                     |
| Power consumption         | 12V@0.65A (No power output)   |
| Standby power consumption | Standby power consumption <1W |

### Mechanical

|                  |                                                                  |
|------------------|------------------------------------------------------------------|
| Structure        | Aluminum alloy die-casting, flat panel, cooling fin case         |
| Dimension(W*H*D) | 380*315*56mm<br>Panel mounting opening size (W*H): 367.3*303.3mm |
| Net weight       | 4.3kg                                                            |
| Installation     | Panel mounting, VESA (100*100/75*75mm)                           |

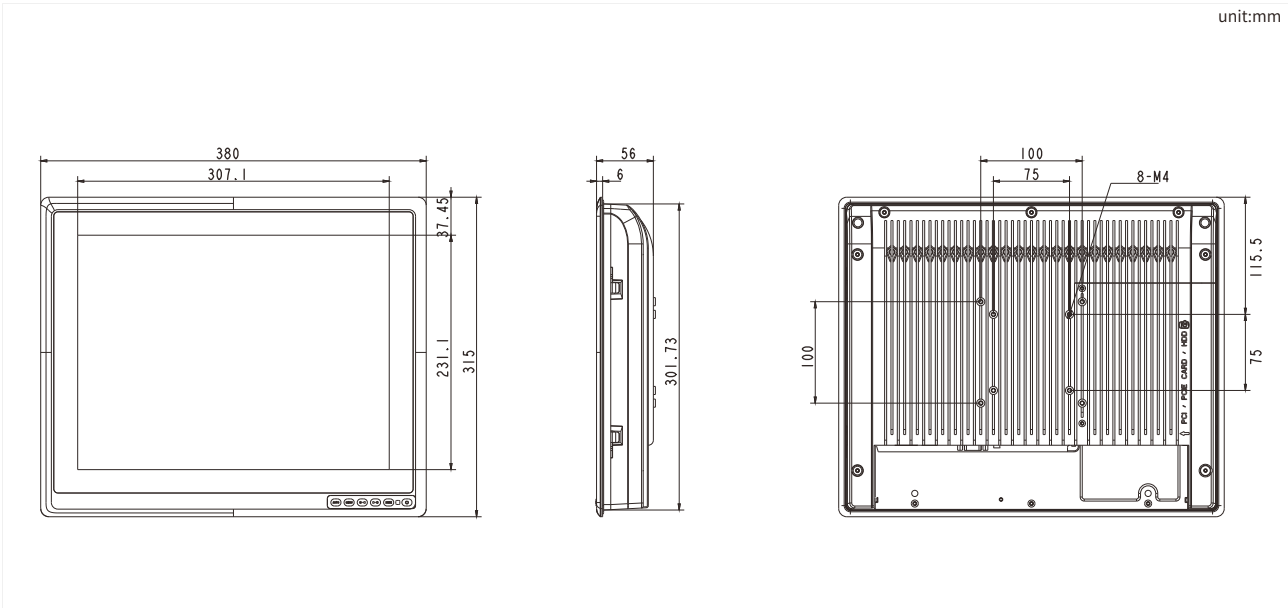
### Environmental

|                  |                                               |
|------------------|-----------------------------------------------|
| Operating Temp   | 0~50°C, with air flow                         |
| Storage Temp     | -20~60°C                                      |
| Storage Humidity | 10~95%@40°C, No- condensation                 |
| Vibration        | 1g 5~500Hz                                    |
| Shock            | 10g peak acceleration(duration 11ms) with HDD |
| Certificate      | CE,FCC Class A                                |

## I/O View



## Dimensions



## Ordering Information

| Model                 | Touch Screen                       | Specifications                                                                                               |
|-----------------------|------------------------------------|--------------------------------------------------------------------------------------------------------------|
| ALAD-151T/S001-G      | 5-wire resistive touch screen      | 15" TFT LCD, 1*HDMI (default) /1*DP(optional) , 1*VGA, 1*Line in, 2*3W power speaker, DC 10-30V power supply |
| ALAD-151T (P) /S001-G | Projected capacitive touch screen  |                                                                                                              |
| PA-60DC12             | AC/DC power adapter, DC12V/5A, 60W |                                                                                                              |

# ALAD-171T

17" TFT LCD, Capacitive/Resistive touch screen, HDMI/DP (choose one), VGA display, OSD function keys

## Key Specification

- Aluminum alloy die-casting, naturally streamlined design
- 17" high resolution TFT LCD (LED Backlight)
- 5 wire heat-resistant resistive touch screen
- Optional projected capacitive touch screen, support multi-touch
- HDMI/DP (choose one) and VGA signal input
- Audio input, optional support 2.3W power speakers
- DC 10-30V power input
- Flat panel, IP65 front panel



## Product Overview

ALAD-171T-G is an industrial touch display that supports 17" TFT LED LCD screen, high resolution 1280\*1024, USB and serial port dual-sig-nal 5-wire resistive touch screen and optional capacitive touch screen.  
HDMI/DP (choose one). It is an industrial-standard multimedia display, with multiple installations suitable for different application sites.

## Product Parameters

### Display Screen

|                |                                           |
|----------------|-------------------------------------------|
| Dimension      | 17" TFT LED                               |
| Resolution     | 1280*1024                                 |
| Max. colors    | 16.2M                                     |
| Max. Luminance | 600                                       |
| Viewing angle  | 80°(left), 80°(right), 70°(up), 80°(down) |
| Backlight life | 70000 hours                               |

### Touch Screen

|                    |                                                                 |
|--------------------|-----------------------------------------------------------------|
| Type               | 5-wire resistive touch screen/projected capacitive touch screen |
| Light Transmission | 80%/90%                                                         |
| Controller         | USB/USB                                                         |

### I/O Port

|                    |                                                                                                                                                  |
|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| OSD menu /language | AUTO/Power/Menu/Source/UP (LEFT)/DOWN(RIGHT)<br>Chinese, English, German, French, Russian, Italian, Spanish, Arabic and other optional languages |
| Display            | 1*VGA+1*HDMI/1*DP (choose one)                                                                                                                   |
| Audio              | 1*Line in, 2*3W power speaker                                                                                                                    |
| Touch interface    | 1*RS232 Touch, 1*USB Touch                                                                                                                       |

### Power

|                           |                               |
|---------------------------|-------------------------------|
| Power input               | DC 10-30V                     |
| Power consumption         | 12V@1.6A (No power output)    |
| Standby power consumption | Standby power consumption <1W |

### Mechanical

|                   |                                                                  |
|-------------------|------------------------------------------------------------------|
| Structure         | Aluminum alloy die-casting, flat panel, cooling fin case         |
| Dimension (W*H*D) | 415.5*360.5*59mm<br>Panel mounting opening size (W*H): 407*352mm |
| Net weight        | TBD                                                              |
| Installation      | Panel mounting, VESA (100*100mm)                                 |

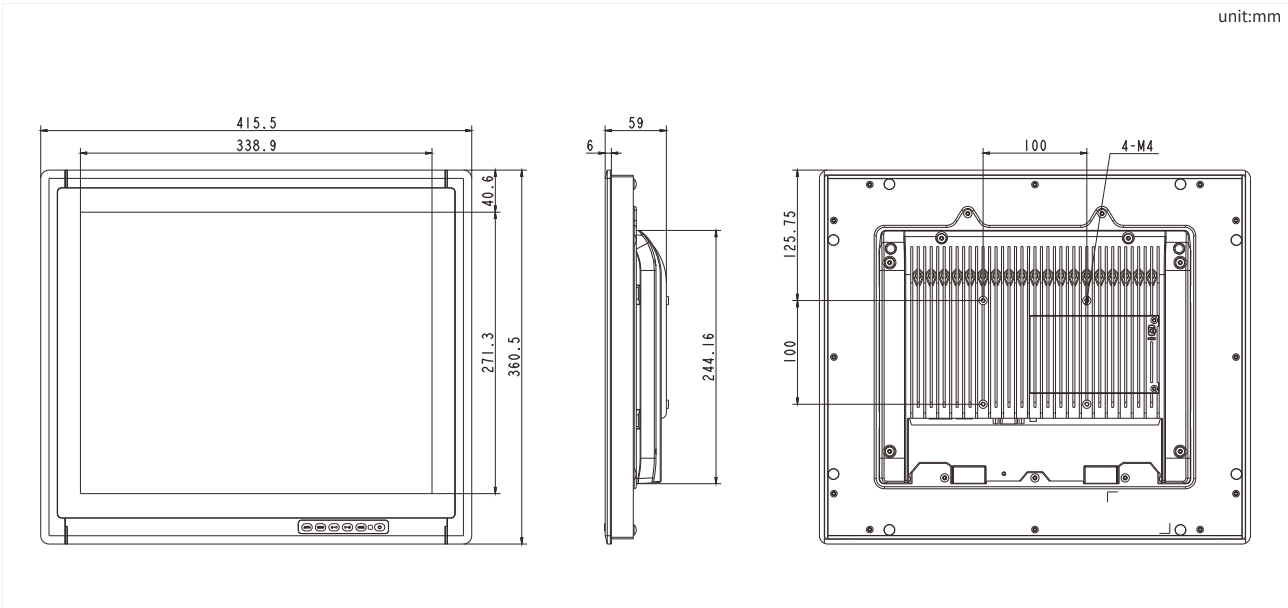
### Environmental

|                |                                               |
|----------------|-----------------------------------------------|
| Operating Temp | 0~50°C, with air flow                         |
| Storage Temp   | -20~60°C                                      |
| Humidity       | 10~95%@40°C, No- condensation                 |
| Vibration      | 1g 5~500Hz                                    |
| Shock          | 10g peak acceleration(duration 11ms) with HDD |
| Certificate    | CE,FCC Class A                                |

## I/O View



## Dimensions



## Ordering Information

| Model                 | Touch Screen                       | Specifications                                                                                               |
|-----------------------|------------------------------------|--------------------------------------------------------------------------------------------------------------|
| ALAD-171T/S001-G      | 5-wire resistive touch screen      | 17" TFT LCD, 1*HDMI (default) /1*DP(optional) , 1*VGA, 1*Line in, 2*3W power speaker, DC 10-30V power supply |
| ALAD-171T (P) /S001-G | Projected capacitive touch screen  |                                                                                                              |
| PA-60DC12             | AC/DC power adapter, DC12V/5A, 60W |                                                                                                              |



# ALAD-181T(P)

18.5" TFT LCD, Capacitive touch screen , HDMI/DP (choose one), VGA dual signals, OSD function keys

## Key Specification

- Aluminum alloy die-casting, naturally streamlined design
- 18.5" high resolution TFT LCD (LED Backlight)
- Projected capacitive touch screen, support multi-touch
- HDMI/DP (choose one) and VGA signal input
- Audio input, optional support 2.3W power speakers
- DC 10-30V power input
- IP65 certified full-flat panel protection



## Product Overview

ALAD-181T-G is an industrial touch display that supports 18.5" TFT LED LCD screen, high resolution 1366\*768, USB and serial port dual-signal capacitive touch screen. HDMI/DP (choose one). It is an industrial-standard multimedia display, with multiple installations suitable for different application sites.

## Product Parameters

### Display Screen

|                |                                           |
|----------------|-------------------------------------------|
| Dimension      | 18.5" TFT LED                             |
| Resolution     | 1366*768                                  |
| Max. colors    | 16.7M                                     |
| Max. Luminance | 300                                       |
| View angle     | 89°(left), 89°(right), 85°(up), 85°(down) |
| Backlight life | 50000 hours                               |

### Touch Screen

|                    |                                   |
|--------------------|-----------------------------------|
| Type               | Projected capacitive touch screen |
| Light Transmission | 90%                               |
| Controller         | USB/RS232                         |

### I/O Port

|                    |                                                                                                                                                  |
|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| OSD menu/ language | AUTO/Power/Menu/Source/UP (LEFT)/DOWN(RIGHT)<br>Chinese, English, German, French, Russian, Italian, Spanish, Arabic and other optional languages |
| Display            | 1*VGA+1*HDMI/1*DP (choose one)                                                                                                                   |
| Audio              | 1*Line in, 2*3 ower speaker                                                                                                                      |
| Touch interface    | 1*RS232 Touch, 1*USB Touch                                                                                                                       |

### Power

|                           |                               |
|---------------------------|-------------------------------|
| Power input               | DC 10-30V                     |
| Power consumption         | 12V@1.6A (No power output)    |
| Standby power consumption | Standby power consumption <1W |

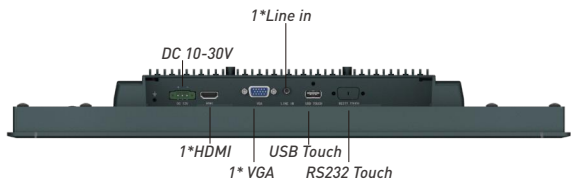
### Mechanical

|                   |                                                                        |
|-------------------|------------------------------------------------------------------------|
| Structure         | Aluminum alloy die-casting, flat panel, cooling fin case               |
| Dimension (W*H*D) | 482.3*304.3*59.1mm<br>Panel mounting opening size (W*H): 473.8*295.8mm |
| Net weight        | 6.6kg                                                                  |
| Installation      | Panel mounting, VESA (100*100/75*75mm)                                 |

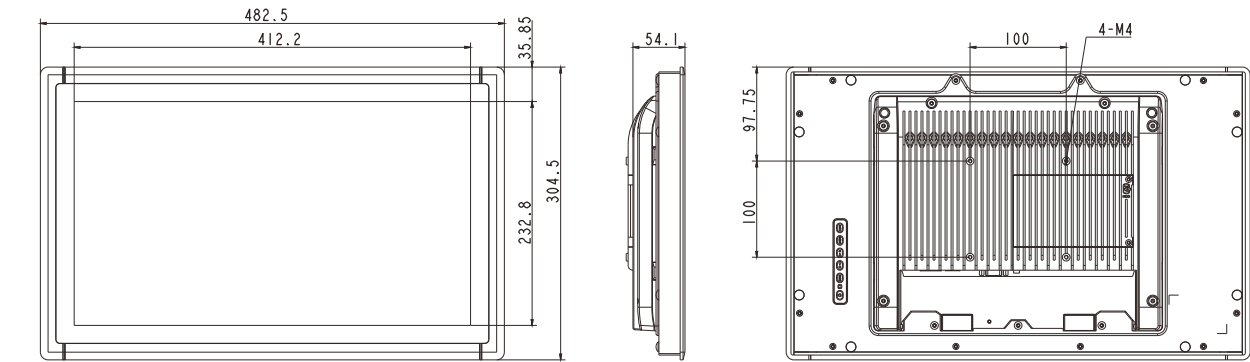
### Environmental

|                |                                               |
|----------------|-----------------------------------------------|
| Operating Temp | 0~50°C, with air flow                         |
| Storage Temp   | -20~60°C                                      |
| Humidity       | 10~95%@40°C, No- condensation                 |
| Vibration      | 1g 5~500Hz                                    |
| Shock          | 10g peak acceleration(duration 11ms) with HDD |
| Certificate    | CE,FCC Class A                                |

## I/O View



## Dimensions



## Ordering Information

| Model                 | Touch Screen                      | Specifications                                                                                                |
|-----------------------|-----------------------------------|---------------------------------------------------------------------------------------------------------------|
| ALAD-181T (P) /S001-G | Projected capacitive touch screen | 18.5" TFT LCD, 1*HDMI (default) /1*DP(optional), 1*VGA, 1*Line in, 2*3W power speaker, DC 10-30V power supply |
| PA-60DC12             | AC/DC adapter, DC12V/5A, 60W      |                                                                                                               |

# ALAD-191T

19" TFT LCD, Capacitive/Resistive touch screen, HDMI/DP (choose one), VGA dual signals, OSD function keys

## Key Specification

- Aluminum alloy die-casting, naturally streamlined design
- 19" high resolution TFT LCD (LED Backlight)
- 5 wire heat-resistant resistive touch screen
- Optional projected capacitive touch screen, support multi-touch
- HDMI/DP (choose one) and VGA signal input
- Audio input, optional support 2.3W power speakers
- DC 10-30V power input
- Flat panel, IP65 front panel



## Product Overview

ALAD-191T-G is an industrial touch display that supports 19" TFT LED LCD screen, high resolution 1280\*1024, USB and serial port dual-signal 5-wire resistive touch screen and optional capacitive touch screen. HDMI/DP (choose one). It is an industrial-standard multimedia display, with multiple installations suitable for different application sites.

## Product Parameters

### Display Screen

|                |                                           |
|----------------|-------------------------------------------|
| Dimension      | 19" TFT LED                               |
| Resolution     | 1280*1024                                 |
| Max. colors    | 16.7M                                     |
| Max. Luminance | 470                                       |
| View angle     | 85°(left), 85°(right), 75°(up), 85°(down) |
| Backlight life | 50000 hours                               |

### Touch Screen

|                    |                                                                 |
|--------------------|-----------------------------------------------------------------|
| Type               | 5-wire resistive touch screen/projected capacitive touch screen |
| Light Transmission | 83%/90%                                                         |
| Controller         | USB/USB                                                         |

### I/O Port

|                    |                                                                                                                                                  |
|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| OSD menu/ language | AUTO/Power/Menu/Source/UP (LEFT)/DOWN(RIGHT)<br>Chinese, English, German, French, Russian, Italian, Spanish, Arabic and other optional languages |
| Display            | 1*VGA+1*HDMI/1*DP (choose one)                                                                                                                   |
| Audio              | 1*Line in, 2*3W power speaker                                                                                                                    |
| Touch interface    | 1*RS232 Touch, 1*USB Touch                                                                                                                       |

### Power

|                           |                               |
|---------------------------|-------------------------------|
| Power input               | DC 10-30V                     |
| Power consumption         | 12V@1.6A (No power output)    |
| Standby power consumption | Standby power consumption <1W |

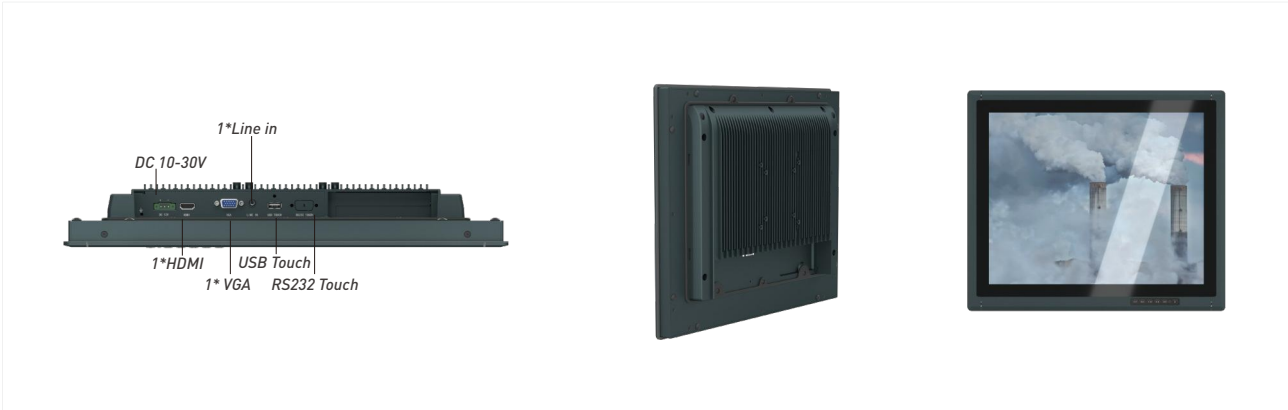
### Mechanical

|                   |                                                                    |
|-------------------|--------------------------------------------------------------------|
| Structure         | Aluminum alloy die-casting, flat panel, cooling fin case           |
| Dimension (W*H*D) | 453.5*388.5*64.1mm<br>Panel mounting opening size (W*H): 445*380mm |
| Net weight        | TBD                                                                |
| Installation      | Panel mounting, VESA (100*100/75*75mm)                             |

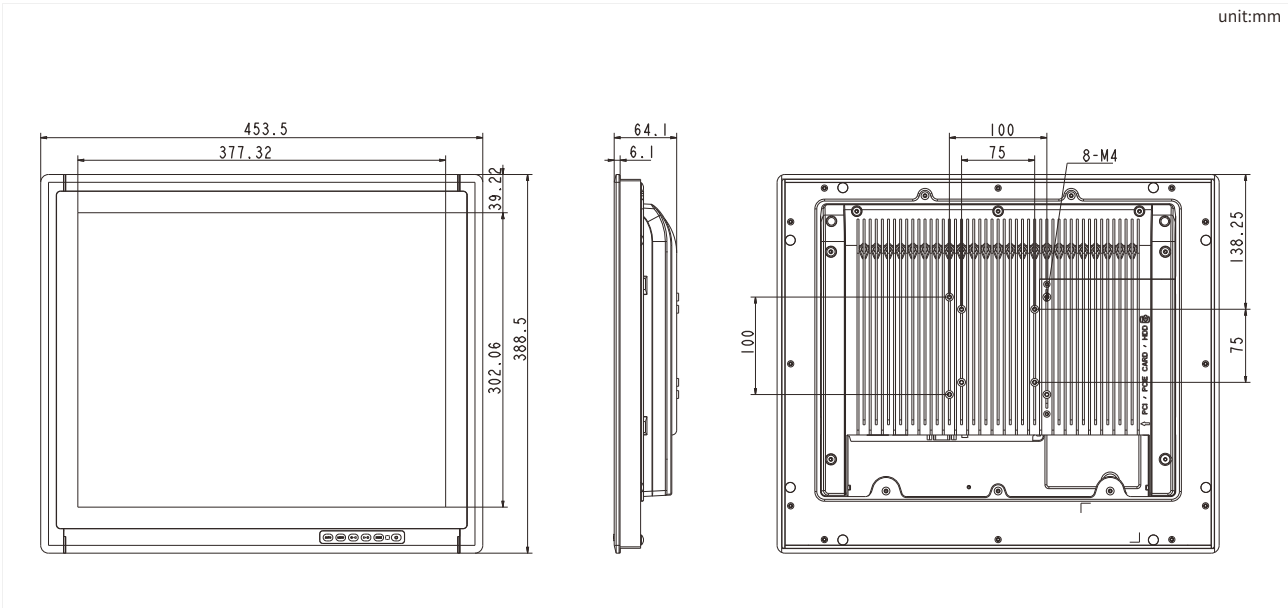
### Environmental

|                |                                               |
|----------------|-----------------------------------------------|
| Operating Temp | 0~60°C, with air flow                         |
| Storage Temp   | -40~80°C                                      |
| Humidity       | 10~95%@40°C, No- condensation                 |
| Vibration      | 1g 5~500Hz                                    |
| Shock          | 10g peak acceleration(duration 11ms) with HDD |
| Certificate    | CE,FCC Class A                                |

## I/O View



## Dimensions



## Ordering Information

| Model                 | Touch Screen                       | Specifications                                                                                               |
|-----------------------|------------------------------------|--------------------------------------------------------------------------------------------------------------|
| ALAD-191T/S001-G      | 5-wire resistive touch screen      | 19" TFT LCD, 1*HDMI (default) /1*DP(optional) , 1*VGA, 1*Line in, 2*3W power speaker, DC 10-30V power supply |
| ALAD-191T (P) /S001-G | Projected capacitive touch screen  |                                                                                                              |
| PA-60DC12             | AC/DC power adapter, DC12V/5A, 60W |                                                                                                              |

# ALAD-211T(P)

21.5" TFT LCD, Capacitive touch screen, HDMI/DP (choose one), VGA dual signals, OSD function keys

## Key Specification

- Aluminum alloy die-casting, naturally streamlined design
- 21.5" high resolution TFT LCD (LED Backlight)
- Projected capacitive touch screen, support multi-touch
- HDMI/DP (choose one) and VGA signal input
- Audio input, optional support 2.3W power speakers
- DC 10-30V power input
- Flat panel, IP65 front panel



## Product Overview

ALAD-211T-G is an industrial touch display that supports 21.5" TFT LED LCD screen, high resolution 1920\*1080,USB and serial port dual-signal capacitive touch screen. HDMI/DP (choose one). It is an industrial-standard multimedia display, with multiple installations suitable for different application sites.

## Product Parameters

### Display Screen

|                |                                           |
|----------------|-------------------------------------------|
| Dimension      | 21.5" TFT LED                             |
| Resolution     | 1920*1080                                 |
| Max. colors    | 16.7M                                     |
| Max. Luminance | 300                                       |
| View angle     | 89°(left), 89°(right), 89°(up), 89°(down) |
| Backlight life | 50000 hours                               |

### Touch Screen

|                    |                                   |
|--------------------|-----------------------------------|
| Type               | Projected capacitive touch screen |
| Light Transmission | 90%                               |
| Controller         | USB/RS232                         |

### I/O Port

|                    |                                                                                                                                                  |
|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| OSD menu/ language | AUTO/Power/Menu/Source/UP (LEFT)/DOWN(RIGHT)<br>Chinese, English, German, French, Russian, Italian, Spanish, Arabic and other optional languages |
| Display            | 1*VGA+1*HDMI/1*DP (choose one)                                                                                                                   |
| Audio              | 1*Line in, 2*3W power speaker                                                                                                                    |
| Touch interface    | 1*RS232 Touch, 1*USB Touch                                                                                                                       |

### Power

|                           |                               |
|---------------------------|-------------------------------|
| Power input               | DC 10-30V                     |
| Power consumption         | 12V@1.6A (No power output)    |
| Standby power consumption | Standby power consumption <1W |

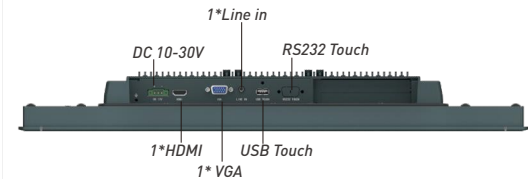
### Mechanical

|                   |                                                                        |
|-------------------|------------------------------------------------------------------------|
| Structure         | Aluminum alloy die-casting, flat panel, cooling fin case               |
| Dimension (W*H*D) | 546.9*344.7*64.1mm<br>Panel mounting opening size (W*H): 537.5*335.3mm |
| Net weight        | 8.1kg                                                                  |
| Installation      | Panel mounting, VESA (100*100/75*75mm)                                 |

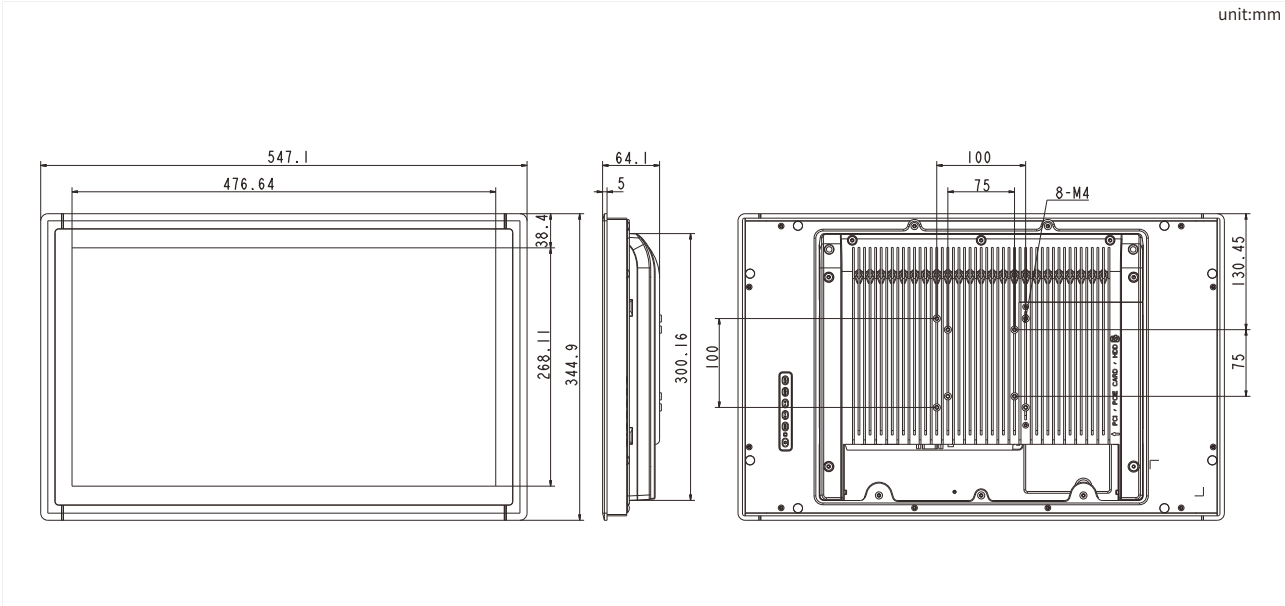
### Environmental

|                |                                      |
|----------------|--------------------------------------|
| Operating Temp | 0~50°C, with air flow                |
| Storage Temp   | -20~60°C                             |
| Humidity       | 10~95%@40°C, No- condensation        |
| Vibration      | 1g 5~500Hz                           |
| Shock          | 10g peak acceleration(duration 11ms) |
| Certificate    | CE,FCC Class A                       |

## I/O View



## Dimensions



## Ordering Information

| Model                 | Touch Screen                       | Specifications                                                                                                 |
|-----------------------|------------------------------------|----------------------------------------------------------------------------------------------------------------|
| ALAD-211T (P) /S001-G | Projected capacitive touch screen  | 21.5" TFT LCD, 1*HDMI (default) /1*DP(optional) , 1*VGA, 1*Line in, 2*3W power speaker, DC 10-30V power supply |
| PA-60DC12             | AC/DC power adapter, DC12V/5A, 60W |                                                                                                                |



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# SIGM

Embedded In-vehicle Computer-SIGM





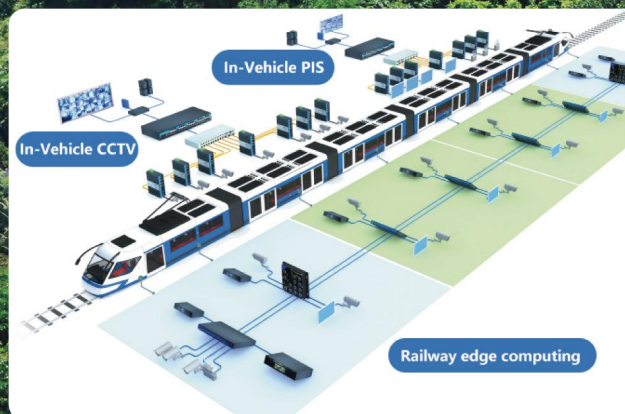


JHCTECH

APPLICATION

▶▶▶

Rail transport



COMPLETE LIST

E1-E4 Product Listing

|            |     |           |     |
|------------|-----|-----------|-----|
| SIGM-2650  | E01 | SIGM-3555 | E11 |
| SIGM-3250  | E03 | ICS-2010  | E13 |
| SIGM-3251  | E05 | ICS-2020  | E15 |
| SIGM-U1350 | E07 | ICS-4010  | E17 |
| SIGM-U3550 | E09 | ICS-4040  | E19 |

APPLICATION

▶▶▶

Rail Freight



Medical vehicle



Police vehicle





|                                                                                   |                                                                                                                                                                                  |  |                                                                                                                                                                    |  |                                                                                                                                           |                                                                                     |  |  |                                                                                     |                                                                                                                          |  |                                                                                                                                                                                                                                                                                                                               |  |                                                                                                                                                             |                                                                                     |  |  |
|-----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|-------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--|--|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|--|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|-------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--|--|
|  |                                                                                                                                                                                  |  |                                                                                   |  |                                                                                                                                           |  |  |  |  |                                                                                                                          |  |                                                                                                                                                                                                                                            |  |                                                                                                                                                             |  |  |  |
| SIGM-2650                                                                         |                                                                                                                                                                                  |  | SIGM-3250                                                                                                                                                          |  |                                                                                                                                           | SIGM-3251                                                                           |  |  | SIGM-U1350                                                                          |                                                                                                                          |  | SIGM-U3550                                                                                                                                                                                                                                                                                                                    |  |                                                                                                                                                             | SIGM-U3555                                                                          |  |  |
| System                                                                            |                                                                                                                                                                                  |  |                                                                                                                                                                    |  |                                                                                                                                           |                                                                                     |  |  | System                                                                              |                                                                                                                          |  |                                                                                                                                                                                                                                                                                                                               |  |                                                                                                                                                             |                                                                                     |  |  |
| CPU                                                                               | Intel® Apollo lake E3940 CPU, 4 Cores, 4 Threads, up to 1.8GHz, 2 MB L2, TDP 9.5W                                                                                                |  | Intel® Skylake/Kabylake-U CPU i3/i7 2 Cores , 4 Threads                                                                                                            |  | Intel® Skylake/Kabylake-U CPU i3/i7 2 Cores , 4 Threads MLU220 8TOPS(INT8),4GB Ram, TDP8.5W                                               |                                                                                     |  |  | CPU                                                                                 | Intel® Skylake/Kabylake-U Corei3/i5/i7 CPU; Optional MLU220T MXM 8G Ram 16TOPS(INT8)                                     |  | Intel Coffee lake-H Core i3/i5/i7/Xeon CPU, TDP 25W/45W                                                                                                                                                                                                                                                                       |  | Intel® Comet lake 10th-Gen Celeron/Pentium/Core™ i9/i7/i5/i3 CPU, Intel® Q470 PCH                                                                           |                                                                                     |  |  |
| RAM                                                                               | 1*DDR3L, 1866MHz, onboard 4GB+1*SODIMM, max 8GB                                                                                                                                  |  | DDR4, 2133MHz, onboard 4/8GB+1*SODIMM, max 16GB                                                                                                                    |  | DDR4, 2133MHz, onboard 4/8GB+1*LPDDR4 4GB, max 16GB                                                                                       |                                                                                     |  |  | RAM                                                                                 | Onboard 4GB +1*SODIMM, 4+16GB max.                                                                                       |  | Onboard 8GB+ 1*SODIMM, 8+32GB max.                                                                                                                                                                                                                                                                                            |  | 2*DDR4 SO-DIMM, 2933MHz, 64GB max.                                                                                                                          |                                                                                     |  |  |
| Graphics                                                                          | Intel Gen. 9 HD Graphic 500, DP: 4096*2160@60Hz, Smart Display: 1920*1200@60Hz, VGA: 1920*1200@60Hz, support 3 display                                                           |  | CPU integrated Intel Gen. 9 HD Graphics, DP: 4096*2304@60Hz, Smart Display: 1920*1200@60Hz, VGA: 1920*1200@60Hz, support 3 independent display                     |  | CPU integrated Intel Gen. 9 HD Graphics, DP: 4096*2304@60Hz, VGA: 1920*1200@60Hz, support 2 independent displays                          |                                                                                     |  |  | Graphics                                                                            | Intel® Gen. 9 HD Graphics, DP: 4096*2160@60Hz, Smart Display: 1920*1200@60Hz, VGA: 1920*1200@60Hz, 3 independent display |  | Intel UHD Graphics, Supports DirectX11.1, OpenGL 5.0 and OpenCL 2.1 ; DP:4096*2304@60Hz, HDMI:4096*2160@24Hz,                                                                                                                                                                                                                 |  | Intel® UHD Graphics, DirectX 12, openGL 4.5, 2*HDMI 1.4: 4096 x 2304@24Hz                                                                                   |                                                                                     |  |  |
| I/O                                                                               |                                                                                                                                                                                  |  |                                                                                                                                                                    |  |                                                                                                                                           |                                                                                     |  |  | I/O                                                                                 |                                                                                                                          |  |                                                                                                                                                                                                                                                                                                                               |  |                                                                                                                                                             |                                                                                     |  |  |
| LAN                                                                               | 2*Intel I210AT PCIe Gig. Ethernet, M12 connector, with POE function, support 802.3af(15.4W)                                                                                      |  | 6*Intel I210AT PCIe Gig. Ethernet, M12 connectors, 4 of which have POE function, 802.3af(15.4W)                                                                    |  | 4*Intel I210AT PCIe Gig. Ethernet, 4*M12 connector 1*Intel I210IS PCIe Gig. Ethernet, 1*SFP                                               |                                                                                     |  |  | LAN                                                                                 | 2*Intel® I210AT 10M-1000M (M12)                                                                                          |  | 1*Intel I210AT(IT)+1*Intel I219LM(2*RJ45); 2*Intel I210AT(IT)[2*M12]; 3*Intel I210AT(IT)                                                                                                                                                                                                                                      |  | 3*Intel I226V, 10M-2.5G, iAMT 13.0,vPro(Core i5/i7/i9 CPU) 8*Intel I210AT(8*M12)                                                                            |                                                                                     |  |  |
| USB                                                                               | 2* USB3.0; 1*USB2.0 ; 2*USB2.0 (M12)                                                                                                                                             |  | 2* USB3.0; 1*USB2.0 ; 2*USB2.0 (M12)                                                                                                                               |  | 3*USB3.0; 1*USB2.0; 2*USB2.0 (M12)                                                                                                        |                                                                                     |  |  | USB                                                                                 | 2* USB3.0; 1*USB2.0 ; 2*USB2.0 (M12)                                                                                     |  | 2* USB3.1; 8*USB2.0                                                                                                                                                                                                                                                                                                           |  | 4* USB3.2(10G)+2*USB3.0+2*USB2.0                                                                                                                            |                                                                                     |  |  |
| Display                                                                           | 1*DP+1*VGA+1*Smart Display                                                                                                                                                       |  | 1*DP+1*VGA+1*Smart Display                                                                                                                                         |  | 1*DP+1*VGA                                                                                                                                |                                                                                     |  |  | Display                                                                             | 1*DP+1*VGA+1*Smart Display                                                                                               |  | 1*DP+1*HDMI                                                                                                                                                                                                                                                                                                                   |  | 2*HDMI                                                                                                                                                      |                                                                                     |  |  |
| Audio                                                                             | optional support Realtek ALC662VD audio, Audio out and MIC                                                                                                                       |  | optional support Realtek ALC662VD audio, Audio outand MIC                                                                                                          |  | Optional support Realtek ALC662VD audio, Audio out and MIC                                                                                |                                                                                     |  |  | Audio                                                                               | /                                                                                                                        |  | /                                                                                                                                                                                                                                                                                                                             |  | (Opt.)Realtek ALC, 1*Line out+1*Mic                                                                                                                         |                                                                                     |  |  |
| Serial port                                                                       | 1*RS232 isolated (DB9 male connector), 1*RS485 isolated (DB9 male connector), optional 2*CAN 2.0 (DB9 male connector)                                                            |  | 1*RS232 isolated (DB9 male connector), 1*RS485 isolated (DB9 male connector), optional 2*CAN 2.0 (DB9 male connector)                                              |  | 1*RS232/RS422/RS485 DB9 (2.5KV opto-isolator), 2*RS232 DB9 (2.5KV opto-isolator), 1* RS232/485 DB9(2.5KV opto-isolator)                   |                                                                                     |  |  | Serial port                                                                         | 1*Console RS232 (RJ45)                                                                                                   |  | 1*RS232/RS485 (DB9)                                                                                                                                                                                                                                                                                                           |  | 2*RS232/422/485+2*RS485                                                                                                                                     |                                                                                     |  |  |
| DIO                                                                               | 4-ch input/4-ch output, isolated (DB9), 2.5KV opto-isolator input(H: 5-24V, L: 0-1.5V), opto-isolator output (200mA)                                                             |  | 4-ch input/4-ch output, isolated (DB9), 2.5KV opto-isolator input (H: 5-24V, L: 0-1.5V) , opto-isolator output (200mA)                                             |  | 8-bit DIO, programmable TTL signal                                                                                                        |                                                                                     |  |  | DIO                                                                                 | /                                                                                                                        |  | /                                                                                                                                                                                                                                                                                                                             |  | 8-bit DIO, TTL                                                                                                                                              |                                                                                     |  |  |
| Storage                                                                           |                                                                                                                                                                                  |  |                                                                                                                                                                    |  |                                                                                                                                           |                                                                                     |  |  | Storage                                                                             |                                                                                                                          |  |                                                                                                                                                                                                                                                                                                                               |  |                                                                                                                                                             |                                                                                     |  |  |
| Storage                                                                           | 1*2.5" HDD SATA bay; 1*mSATA full height card (SATA+USB)                                                                                                                         |  | 1*2.5" HDD SATA bay; 1*mSATA full height card (SATA+USB)                                                                                                           |  | 1*2.5" HDD SATA bay; 1*mSATA full height card(SATA+USB)                                                                                   |                                                                                     |  |  | Storage                                                                             | 1*2.5" HDD SATA bay; 1*mSATA(SATA+USB)                                                                                   |  | 4*2.5" HDD SATA bay(RAID0/1/5/10); 1*mSATA Slot7&8: 1*PCle3.0X8(CPU)+1*USB3.1+1*USB2.0+1*G-LAN; Slot6: 1*PCleX4+1*USB3.1+1*USB2.0, 1*G-LAN; Slot5: 1*PCleX4+1*USB3.1+1*USB2.0; Slot3&4: 1*PCleX1+SATA3.0+1*USB2.0; Slot1&2: 1*SATA3.0+1*USB2.0; Slot9(System): 2*PCleX8+2*PCleX4+2*PCleX1+4*USB3.1+4*SATA3.0+8*USB2.0+3*G-LAN |  | 1*2.5" HDD SATA3.0(RAID0/1); 1*M.2 2280 M-Key(PCIex4), NVMe                                                                                                 |                                                                                     |  |  |
| Expansion                                                                         |                                                                                                                                                                                  |  |                                                                                                                                                                    |  |                                                                                                                                           |                                                                                     |  |  | Expansion                                                                           |                                                                                                                          |  |                                                                                                                                                                                                                                                                                                                               |  |                                                                                                                                                             |                                                                                     |  |  |
| Expansion Port                                                                    | 2*Mini PCIe, with dual SIM slot, support dual 4G LTE/ Wifi/BT/GPS 1*Mini PCIe, optional mSATA 1*Mini PCIe with USB signal, When using 2*CAN, this slot is occupied               |  | 2*Mini PCIe, with dual SIM slot, support dual 4G LTE/ Wifi/BT/GPS 1*Mini PCIe, optional mSATA 1*Mini PCIe with USB signal, When using 2*CAN, this slot is occupied |  | 2*Mini PCIe, with dual SIM slot, support dual 4G LTE/ Wifi/BT/GPS 1*Mini PCIe with USB signal, optional mSATA 1*Mini PCIe with USB signal |                                                                                     |  |  | Expansion Port                                                                      | 2*Mini PCIe(+SIM), 4G/GSM/Wifi/BT/GPS 1*Mini PCIe(SATA+USB), mSATA 1*Mini PCIe(PCle X1/USB)                              |  |                                                                                                                                                                                                                                                                                                                               |  | 1*M.2 2230 E-key(PCleX1/USB2.0/CNVio), WiFi6/BT5.0; 1*M.2 3052 B-key(PCleX1/USB2.0+SIM), 5G NR/4G LTE; 1*M.2 Type 2280 M-Key(PCIex4), NVME/PCle Module      |                                                                                     |  |  |
| Power Supply                                                                      |                                                                                                                                                                                  |  |                                                                                                                                                                    |  |                                                                                                                                           |                                                                                     |  |  | Power Supply                                                                        |                                                                                                                          |  |                                                                                                                                                                                                                                                                                                                               |  |                                                                                                                                                             |                                                                                     |  |  |
| Input voltage & Power Consumption                                                 | DC 9~36V input, 5-pin terminal port M12 (S001) Optional Railway power module, DC 48/72/110V input, 4-pin connector M12 (S002) consumption: 20.4W (E3940 CPU, 4G DDR3L, 128G SSD) |  | Railway power module, DC 48/72/110V input, 4-pin connector M12 (S00X), DC 9~36V input, 5-pin terminal port M12 (T00X) consumption: 28W (I5-6200U, 8GB)             |  | Railway power module, DC 9~36V input, 4-pin connector (M12), consumption: 38W (I5-6500U CPU/8G DDR4)                                      |                                                                                     |  |  | Input voltage & TDP                                                                 | Railway power:DC 110V(43-160V), 4-pin M12; 28W(Non. MLU220T)/44.5W(with MLU220T)                                         |  | DC 16.6-160V(Rail-way,ultra-wide voltage,4-pin M12); TDP: TBD                                                                                                                                                                                                                                                                 |  | DC 110V(Rail-way, ±40%), OVP&OCP, 250W; TDP: 110W(I7-10700 CPU)                                                                                             |                                                                                     |  |  |
| Mechanical                                                                        |                                                                                                                                                                                  |  |                                                                                                                                                                    |  |                                                                                                                                           |                                                                                     |  |  | Mechanical                                                                          |                                                                                                                          |  |                                                                                                                                                                                                                                                                                                                               |  |                                                                                                                                                             |                                                                                     |  |  |
| Structure                                                                         | Aluminum chassis, SGCC frame                                                                                                                                                     |  | Aluminum chassis, stainless steel frame                                                                                                                            |  | Aluminum chassis, stainless steel frame                                                                                                   |                                                                                     |  |  | Structure                                                                           | Aluminum chassis, stainless steel frame                                                                                  |  | Aluminum alloy mold, conductive oxidation process                                                                                                                                                                                                                                                                             |  | Aluminum-magnesium alloy, SGCC frame                                                                                                                        |                                                                                     |  |  |
| Dimension (W*H*D)                                                                 | 250*154*72mm                                                                                                                                                                     |  | 270*154*64.5mm                                                                                                                                                     |  | 270*154*82.4mm                                                                                                                            |                                                                                     |  |  | Dimension (W*H*D)                                                                   | 430*44.5*283mm                                                                                                           |  | 482.6*248.2*133mm(w kit) ,435.8*208.5*133mm(n kit)                                                                                                                                                                                                                                                                            |  | 374*246*85mm (w kit) ;342*222*85mm (n kit)                                                                                                                  |                                                                                     |  |  |
| Net weight                                                                        | 3.10KG                                                                                                                                                                           |  | 3.2KG                                                                                                                                                              |  | 3.93KG                                                                                                                                    |                                                                                     |  |  | Net weight                                                                          | 4.69KG                                                                                                                   |  | TBD                                                                                                                                                                                                                                                                                                                           |  | 7.76KG                                                                                                                                                      |                                                                                     |  |  |
| Environmental                                                                     |                                                                                                                                                                                  |  |                                                                                                                                                                    |  |                                                                                                                                           |                                                                                     |  |  | Environmental                                                                       |                                                                                                                          |  |                                                                                                                                                                                                                                                                                                                               |  |                                                                                                                                                             |                                                                                     |  |  |
| Operating temperature                                                             | EN50155 TX: -40~70°C(Operating10min in 85°C)                                                                                                                                     |  | EN50155 TX: -40~70°C(Operating10min in 85°C)                                                                                                                       |  | EN50155 TX: -40~70°C                                                                                                                      |                                                                                     |  |  | Operating temperature                                                               | EN50155 TX: -40~70°C                                                                                                     |  | EN50155 QT3: -25~70°C(25W CPU); QT1: -25~55°C(45W)                                                                                                                                                                                                                                                                            |  | EN50155 QT1: -25~55°C(35W CPU)                                                                                                                              |                                                                                     |  |  |
| Storage temperature                                                               | -40°C~-85°C                                                                                                                                                                      |  | -40°C~-85°C                                                                                                                                                        |  | -40°C~-85°C                                                                                                                               |                                                                                     |  |  | Storage temperature                                                                 | -40°C~-85°C                                                                                                              |  | -40°C~-85°C                                                                                                                                                                                                                                                                                                                   |  | -40°C~-85°C                                                                                                                                                 |                                                                                     |  |  |
| Storage humidity                                                                  | 10~90%@40°C, non-condensing                                                                                                                                                      |  | 10~90%@40°C, non-condensing                                                                                                                                        |  | 10~90%@40°C, non-condensing                                                                                                               |                                                                                     |  |  | Storage humidity                                                                    | 10~95%@40°C, Non-condensation                                                                                            |  | 10~95%@40°C, Non-condensation                                                                                                                                                                                                                                                                                                 |  | 10~95%@40°C, Non-condensation                                                                                                                               |                                                                                     |  |  |
| Vibration                                                                         | MIL-STD-801G, EN50155                                                                                                                                                            |  | MIL-STD-801G, EN50155                                                                                                                                              |  | MIL-STD-810G, EN50155                                                                                                                     |                                                                                     |  |  | Vibration                                                                           | MIL-STD-810G, EN50155                                                                                                    |  | MIL-STD-810G, EN50155:2021                                                                                                                                                                                                                                                                                                    |  | MIL-STD-810G, EN50155:2021                                                                                                                                  |                                                                                     |  |  |
| Shock                                                                             | MIL-STD-801G, EN50155                                                                                                                                                            |  | MIL-STD-801G, EN50155                                                                                                                                              |  | MIL-STD-810G, EN50155                                                                                                                     |                                                                                     |  |  | Shock                                                                               | MIL-STD-810G, EN50155                                                                                                    |  | MIL-STD-810G, EN50155:2021                                                                                                                                                                                                                                                                                                    |  | MIL-STD-810G, EN50155:2021                                                                                                                                  |                                                                                     |  |  |
| Certification /EMC                                                                | EN50155, E-Mark, CE/FCC Class B                                                                                                                                                  |  | EN50155, E-Mark, CE/FCC Class B                                                                                                                                    |  | EN50155, CE/FCC Class B                                                                                                                   |                                                                                     |  |  | Certification /EMC                                                                  | EN50155: 2017 & E-Mark & CE & FCC Class A                                                                                |  | EN50155: 2021 & CE/FCC Class A                                                                                                                                                                                                                                                                                                |  | EN50155: 2021 & CE/FCC Class A                                                                                                                              |                                                                                     |  |  |
| OS                                                                                | Windows 10, Linux, Wind River VxWorks                                                                                                                                            |  | Windows 7, Windows 10, Linux Fedora Ubuntu (Note: 7th gen Intel® Kabylake-U processor does not support Windows 7)                                                  |  | Linux Fedora Ubuntu                                                                                                                       |                                                                                     |  |  | OS                                                                                  | Linux, Windows 7(SKL-U 32/64; KBL-U 64) , Windows 10 64bit(Windows does not support MLU220)                              |  | Windows 10/11 Enterprise & IOT Enterprise, Ubuntu, SUSE, Redhat Enterprise , VxWorks                                                                                                                                                                                                                                          |  | Windows 10/11 IoT Enterprise (64-bit), Windows Server 2019, Ubuntu, SUSE, Redhat Enterprise, Wind River Linux, Yocto Project (64-bit), Wind River VxWorks 7 |                                                                                     |  |  |



|                                                         |                                                                                                                                                                               |                                                                                                                                                                               |                                                                                                                                                                               |                                                                                                                                                                         |
|---------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <div><div></div><div></div><div></div><div></div></div> |                                                                                                                                                                               |                                                                                                                                                                               |                                                                                                                                                                               |                                                                                                                                                                         |
| <div>ICS-2010ICS-2020ICS-4010ICS-4040</div>             |                                                                                                                                                                               |                                                                                                                                                                               |                                                                                                                                                                               |                                                                                                                                                                         |
| System                                                  |                                                                                                                                                                               |                                                                                                                                                                               |                                                                                                                                                                               |                                                                                                                                                                         |
| CPU                                                     | 1/2 Intel Xeon Gen2 scalable series processors, Intel® C621 PCH                                                                                                               | 1/2 Intel Xeon Gen4 scalable series processors, Intel® C741 PCH                                                                                                               | 1/2 Intel Xeon Gen2 scalable series processors, Intel® C621 PCH                                                                                                               | 1/2 Intel Xeon Gen4 scalable series processors, Intel® C741 PCH                                                                                                         |
| RAM                                                     | 16*DDR4,2933MHz ECC LRDIMM/RDIMM LRDIMM:4T (16*256GB); RDIMM:2T (16*128GB)                                                                                                    | 16*DDR5,2933MHz ECC LRDIMM/RDIMM LRDIMM/RDIMM:4T (16*256GB)                                                                                                                   | 16*DDR4,2933MHz ECC LRDIMM/RDIMM LRDIMM:4T (16*256GB); RDIMM:2T (16*128GB)                                                                                                    | 16*DDR5,5600MHz,3DS RDIMM/RDIMM 4T max. (16*256GB)                                                                                                                      |
| Graphics                                                | VGA:1920*1200@60Hz,                                                                                                                                                           | VGA:1920*1200@60Hz,                                                                                                                                                           | VGA:1920*1200@60Hz,                                                                                                                                                           | VGA:1920*1200@60Hz,                                                                                                                                                     |
| I/O                                                     |                                                                                                                                                                               |                                                                                                                                                                               |                                                                                                                                                                               |                                                                                                                                                                         |
| LAN                                                     | 2*Intel I210AT 10M-1000M; 1*IPMI2.0, Aspeed AST2500 BMC                                                                                                                       | 2*Broadcom BCM5720 1GBase-T; 1*IPMI2.0, Aspeed AST2600 BMC                                                                                                                    | 2*Intel I210AT 10M-1000M; 1*IPMI2.0, Aspeed AST2500 BMC                                                                                                                       | 2*Intel I210AT 10M-1000M; 1*IPMI2.0, Aspeed AST2500 BMC                                                                                                                 |
| USB                                                     | 4* USB3.0+2*USB2.0                                                                                                                                                            | 6* USB3.0                                                                                                                                                                     | 4* USB3.0+ 2*USB2.0                                                                                                                                                           | 6* USB3.0                                                                                                                                                               |
| Display                                                 | 1*VGA                                                                                                                                                                         | 1*VGA                                                                                                                                                                         | 1*VGA                                                                                                                                                                         | 1*VGA                                                                                                                                                                   |
| Audio                                                   | /                                                                                                                                                                             | /                                                                                                                                                                             | /                                                                                                                                                                             | /                                                                                                                                                                       |
| Serial port                                             | 1*RS232(DB9)                                                                                                                                                                  | 1*RS232 (DB9)                                                                                                                                                                 | 1*RS232 (DB9)                                                                                                                                                                 | 1*RS232 (DB9)                                                                                                                                                           |
| DIO                                                     | /                                                                                                                                                                             | /                                                                                                                                                                             | /                                                                                                                                                                             | /                                                                                                                                                                       |
| Storage                                                 | 2*2.5" SAS/SATA3.0,RAID0,1                                                                                                                                                    | 2*2.5" SAS/SATA3.0,RAID0,1                                                                                                                                                    | 8*2.5"/3.5" SAS/SATA, RAID0/1/5/10; 2*2.5" SAS/SATA                                                                                                                           | 8*2.5"/3.5" SAS/SATA, RAID0/1/5/10; 2*2.5" SAS/SATA                                                                                                                     |
| Expansion                                               |                                                                                                                                                                               |                                                                                                                                                                               |                                                                                                                                                                               |                                                                                                                                                                         |
| Expansion Port                                          | 2*PCIe3.0X16+1*PCIe3.0X8; 1*M.2 22110/2280 M-Key (PCIe3.0X4) , 1*M.2 2280 M-Key (PCIe3.0X4)                                                                                   | 2*PCIe5.0X16+1*PCIe5.0X8; 2*M.2 22110/2280 M-Key (PCIe4.0X2) , NVMe; 3*MCIOX8(6*PCIe5.0X4 NVMe)                                                                               | 6*PCIe3.0X16+1*PCIe3.0X8(X4); 1*M.2 22110/2280 M-Key(PCIe3.0X4)                                                                                                               | 6*PCIe5.0X16+1*PCIe5.0X8; 1*M.2 22110/2280 M-Key(PCIe4.0X4); 3*MCIO(PCIe5.0X8,6*NVMe)                                                                                   |
| Power Supply                                            |                                                                                                                                                                               |                                                                                                                                                                               |                                                                                                                                                                               |                                                                                                                                                                         |
| Input voltage & TDP                                     | 550W/800W/1200W/1600W; 1+1 hot swap redundant power supply                                                                                                                    | 550W/800W/1200W/1600W; 1+1 hot swap redundant power supply                                                                                                                    | 550W/800W/1200W/1600W/2000W/2200W; 1+1 hot swap redundant power supply                                                                                                        | 550W/800W/1200W/1600W/2000W/2200W; 1+1 hot swap redundant power supply                                                                                                  |
| Mechanical                                              |                                                                                                                                                                               |                                                                                                                                                                               |                                                                                                                                                                               |                                                                                                                                                                         |
| Structure                                               | Imported SGCC hot dip galvanized steel sheet, 19-inch rack 2U standard                                                                                                        | Imported SGCC hot dip galvanized steel sheet, 19-inch rack 2U standard                                                                                                        | Imported SGCC fingerprint resistant galvanized steel, 19-inch rack 4U standard                                                                                                | Imported SGCC fingerprint resistant galvanized steel, 19-inch rack 4U standard                                                                                          |
| Dimension (W*H*D)                                       | 442*447*87mm                                                                                                                                                                  | 442*447*87mm                                                                                                                                                                  | 645*445*176.5mm                                                                                                                                                               | 645*445*176.5mm                                                                                                                                                         |
| Net weight                                              | TBD                                                                                                                                                                           | TBD                                                                                                                                                                           | 18KG                                                                                                                                                                          | 18KG                                                                                                                                                                    |
| Environmental                                           |                                                                                                                                                                               |                                                                                                                                                                               |                                                                                                                                                                               |                                                                                                                                                                         |
| Operating temp.                                         | 0~50°C                                                                                                                                                                        | 10~35°C                                                                                                                                                                       | 0~60°C                                                                                                                                                                        | 5~35°C                                                                                                                                                                  |
| Storage temp.                                           | -20°C~75°C                                                                                                                                                                    | -40°C~70°C                                                                                                                                                                    | - 20°C~75°C                                                                                                                                                                   | - 40°C~65°C                                                                                                                                                             |
| Storage humidity                                        | 5~95%@40°C, Non-condensation                                                                                                                                                  | 5~95%@40°C, Non-condensation                                                                                                                                                  | 5~95%@40°C, Non-condensation                                                                                                                                                  | 5~95%@40°C, Non-condensation                                                                                                                                            |
| Vibration                                               | TBD                                                                                                                                                                           | TBD                                                                                                                                                                           | TBD                                                                                                                                                                           | TBD                                                                                                                                                                     |
| Shock                                                   | TBD                                                                                                                                                                           | TBD                                                                                                                                                                           | TBD                                                                                                                                                                           | TBD                                                                                                                                                                     |
| Certification /EMC                                      | CCC/CE/FCC Class A                                                                                                                                                            | CCC/CE/FCC Class A                                                                                                                                                            | CCC/CE/FCC Class A                                                                                                                                                            | CCC/CE/FCC Class A                                                                                                                                                      |
| OS                                                      | Windows Server 2012/2008 R2(64-bit) , Windows SBS 2011(64-bit), Red Hat Enterprise Linux Server(32/64-bit), Suse Enterprise Linux Server(32/64-bit), Ubuntu Server(32/64-bit) | Windows Server 2012/2008 R2(64-bit) , Windows SBS 2011(64-bit), Red Hat Enterprise Linux Server(32/64-bit), Suse Enterprise Linux Server(32/64-bit), Ubuntu Server(32/64-bit) | Windows Server 2012/2008 R2(64-bit) , Windows SBS 2011(64-bit), Red Hat Enterprise Linux Server(32/64-bit), Suse Enterprise Linux Server(32/64-bit), Ubuntu Server(32/64-bit) | Microsoft Windows Server, Microsoft Hyper-V Server, Red Hat Enterprise Linux, SUSE Linux Enterprise Server, CentOS, Ubuntu, Oracle Linux, VMware ESXi, Citrix XenServer |



# SIGM-2650

Intel® Apollo Lake E3940 CPU, 2\*POE, 2\*USB3.0, 2\*COM, 8-bit isolated DIO, DC 9~36 wide voltage power supply, ITPS power management, Railway standard power input 48/72/110V

### Key Specification

- Aluminum chassis, Fanless & Rugged design
- Intel® Apollo Lake E3940 CPU
- DDR3L up to 1866MHz, On-board+SODIMM, max 8GB
- 1\*DP, 1\*VGA, 1\*Smart Display, 3 independent displays interface
- 2\*GbE LAN(with POE 802.3af), 5\*USB
- 2\* isolation COM, 8-bit Iso. DIO, optional 2\*CAN
- 4\*Mini PCIe(1 optional mSATA), support GPS/WiFi/LTE/4G
- EN50155, E-Mark certification
- Optional support TPM2.0 security encryption, DC 9~36 wide voltage power supply, ITPS power management
- Optional railway standard power input DC 48/72/110V(±40%)



### Product Overview

SIGM-2650 is a fanless rugged in-vehicle computer, equipped with Intel® Apollo Lake E3940 processor, supporting dual 4G VPN/Wifi/BT/GPS and other wireless functions. It is also equipped with ITPS vehicle power management, optional railway power input DC 48/72/110V Certified with E-mark and EN50155 , SIGM-2650 is highly suitable for road vehicle and rail vehicle industry applications.

### Product Parameters

#### System

|           |                                                                                                                                                                                                                                                                                                                                                                  |
|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CPU       | Intel® Apollo lake E3940 CPU, 4 Cores, 4 Threads, up to 1.8GHz, 2 MB L2, TDP 9.5W                                                                                                                                                                                                                                                                                |
| RAM       | 1*DDR3L, 1866MHz, 1 onboard storage 4GB+1*SODIMM, max 8GB                                                                                                                                                                                                                                                                                                        |
| Expansion | 2*Mini PCIe, with dual SIM slot, support dual 4GLTE/Wifi/BT/GPS<br>1*Mini PCIe, optional mSATA<br>1*Mini PCIe with USB signal, when 2*CAN in use, this Mini-PCIe slot will be occupied                                                                                                                                                                           |
| Graphics  | Intel Gen. 9 HD Graphic 500, DP max resolution 4096*2160@60Hz, Smart Display max resolution 1920*1200@60Hz, VGA max resolution 1920*1200@60Hz, support 3 displays                                                                                                                                                                                                |
| Audio     | optional support Realtek ALC662VD audio, Audio out and MIC                                                                                                                                                                                                                                                                                                       |
| LAN       | 2*Intel I210AT PCIe Gig. Ethernet, M12, with POE function, support 802.3af(15.4W)                                                                                                                                                                                                                                                                                |
| Storage   | 1*2.5" HDD SATA bay; 1*mSATA full height card (SATA+USB)                                                                                                                                                                                                                                                                                                         |
| I/O Port  | 2*Gig-LAN, with POE 802.3af (M12)<br>2*USB3.0 (Type A); 1*USB2.0 (Type A); 2*USB2.0 (M12)<br>4-ch input/4-ch output, isolated (DB9 male connector), 2*SIM slot<br>1*RS232 isolated (DB9 male connector), 1*RS485 isolated (DB9 male connector), optional 2*CAN 2.0(DB9 male connector)<br>1*Audio-out and 1*MIC (3.5mm audio port)<br>1*DP+1*VGA+1*Smart Display |
| LED       | 1*PowerLED; 1*HDD LED; 3*CPU Temp LED( Red is alarm, Yellow is high temp, Green is normal temp)                                                                                                                                                                                                                                                                  |
| Switches  | 1*power button, 1*remote switch(2-pin terminal), 1*AT/ATX switch, 1*Clear CMOS switch, 1*ACC/Family switch                                                                                                                                                                                                                                                       |

|                   |                                                                                                                                                                                               |
|-------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Watchdog timer    | Programmable timeout interruption period or system reset from 1 to 255 secs                                                                                                                   |
| Power requirement | DC 9~36V input , 5-pin terminal port M12 (S001)<br>Optional Railway power module, DC 48/72/110V input, 4-pin terminal port M12 (S002) ,<br>Consumption: 20.4W (E3940 CPU, 4G DDR3L, 128G SSD) |
| OS                | Windows 10, Linux, Wind River VxWorks                                                                                                                                                         |

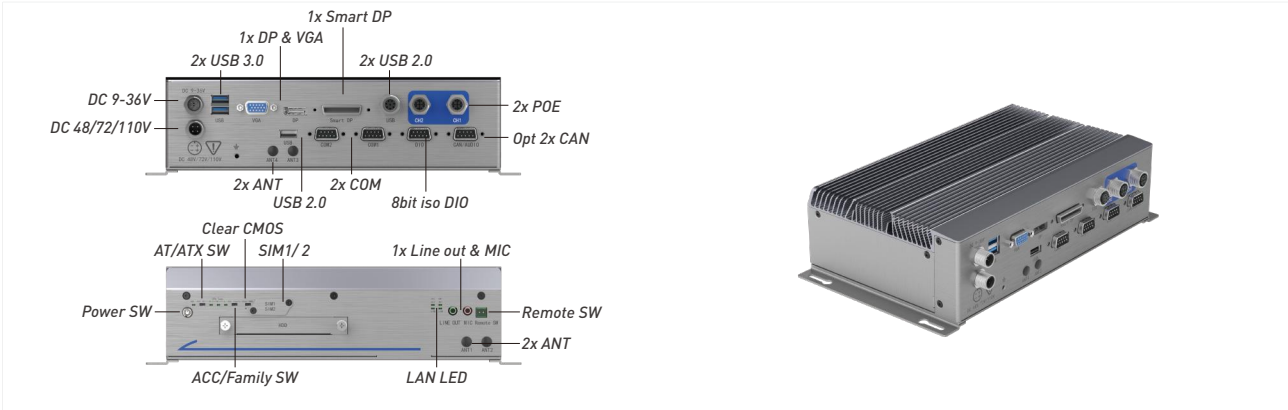
#### Mechanical

|                     |                             |
|---------------------|-----------------------------|
| Structure           | Aluminum chassis, SGCCframe |
| Color               | Silver gray                 |
| Installation Method | Desktop installation        |
| Dimension (W*H*D)   | 250*154*72mm                |
| Net weight          | 3.10KG                      |

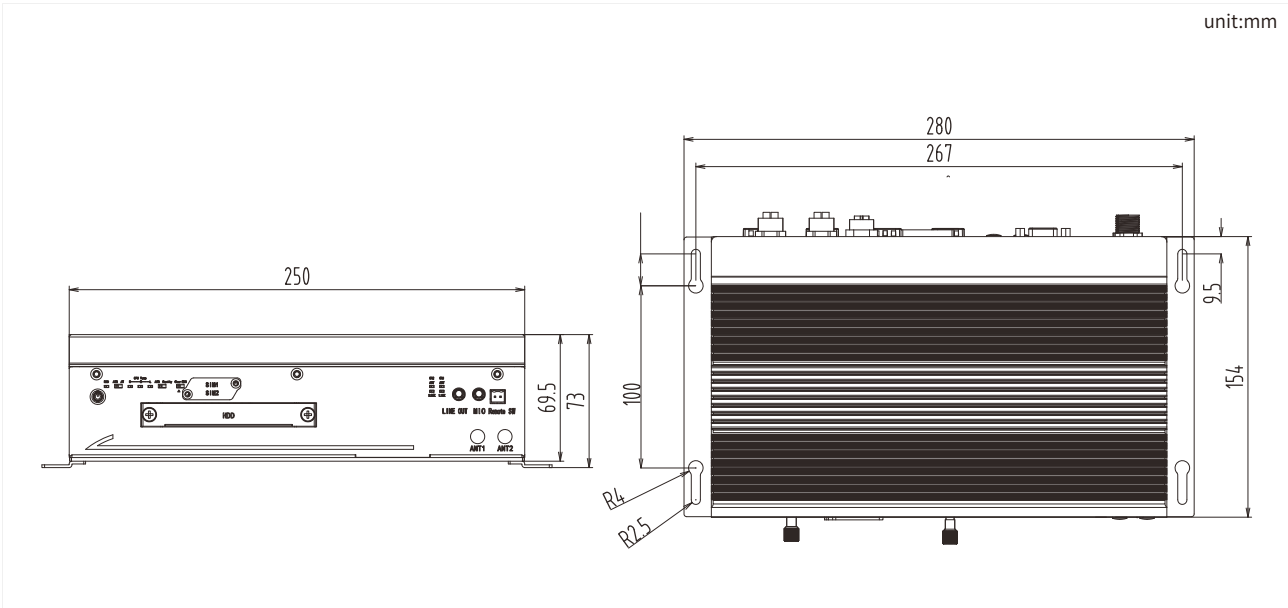
#### Environmental

|                       |                                                   |
|-----------------------|---------------------------------------------------|
| Operating temperature | EN50155 TX: -40~70°C(Operating 10minutes in 85°C) |
| Storage temperature   | -40°C~85°C                                        |
| Storage humidity      | 10~90%@40°C, Non-condensing                       |
| Vibration             | MIL-STD-801G, EN50155                             |
| Shock                 | MIL-STD-801G, EN50155                             |
| Certification /EMC    | EN50155, E-Mark, CE/FCC Class B                   |

### I/O View



### Dimensions



### Ordering Information

| Model                 | Processor                    | Specification                                                                                                                                                                              |
|-----------------------|------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SIGM-2650/S001        | Intel® Apollo Lake E3940 CPU | 4GB+1*SODIMM DDR3L, 2*POE, 2*USB3.0, 3*USB2.0, 2*COM, 3*Mini PCIe, 1*Smart Display,1*DP, 1*VGA, optional Audio out, Mic, 8-bit isolated DIO, 1*2.5" SATA drive bay 1*mSATA, DC 9~36V, ITPS |
| SIGM-2650/S002        | Intel® Apollo Lake E3940 CPU | 4GB+1*SODIMM DDR3L, 2*POE, 4*USB3.0, 3*USB2.0, 2*COM, 3*Mini PCIe, 1*Smart Display,1*DP,1*VGA, optional Audio out, Mic, 8-bit isolated DIO, 1*2.5" SATA drive bay, 1*mSATA, DC 48/72/110V  |
| M12A-5P DC Cable      |                              | DC cable with M12 A-Code Female 5 pin connector to bare wire, PVC Multicore Cable, 100cm                                                                                                   |
| M12A-4P DC Cable      |                              | DC cable with M12 A-Code Female 4pin connector to bare wire, PVC Multicore Cable, 100cm                                                                                                    |
| M12A-8P USB Cable     |                              | USB cable with M12 A-Code Male 8pin connector to 2*Type A with dual M3 ear nut-hole, PVC Multicore Cable, 50cm                                                                             |
| M12X-8P LAN/POE Cable |                              | Internet cable with M12 X-Code Male 8 pin connector to RJ45 crystal head connector, PVC Multicore Cable, 180cm                                                                             |
| PA-60DC12-M12A-5P     |                              | AC/DC power adapter with M12 A-Code Female 5 pin connector, DC12V@5A 60W (non LSZH cable, no in-vehicle certification)                                                                     |



# SIGM-3250

Intel® Skylake/Kabylake-U CPU, 2\*LAN, 4\*POE, 2\*USB3.0, DP, VGA, Smart Display, 2\* isolation COM, 8-bit isolated DIO, EN50155 certification

## Key Specification

- Aluminum chassis, Fanless & Rugged design
- Intel® Skylake/Kabylake-U CPU
- 2-Ch DDR4, On-board 4/8GB+SODIMM, max 16GB
- 1\*DP, 1\*VGA, 1\*Smart Display, 3 displays
- 2\*LAN, 4\*POE, 5\*USB, Built-in dongle interface
- 2\*isolation COM, 8-bit Iso. DIO, optional 2\*CAN
- 4\*Mini PCIe(1 optional mSATA), support GPS/WiFi/LTE/4G
- EN50155, E-Mark certification, optional support TPM2.0 security encryption,
- Railway standard power input DC 48/72/110V(±40%)
- optional DC 9~36 Wide voltage power supply, with ITPS power management



## Product Overview

SIGM-3250 is a fanless rugged in-vehicle computer, powered by Intel® Skylake/Kabylake-U processor, supports dual 4G VPN/Wifi/BT/GPS and other wireless functions, DC 9~36V wide voltage power supply, ITPS power management and optional railway power input DC48/72/110V. Certified with E-mark and EN50155 , SIGM-3250 is extremely suitable for road vehicles and intelligent rail transit system industry applications.

## Product Parameters

### System

|           |                                                                                                                                                                                                                                                                  |
|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CPU       | Intel® Skylake/Kabylake-U CPU<br>Core i3/i5/i7 series CPU                                                                                                                                                                                                        |
| RAM       | DDR4, 2133MHz, onboard 4/8GB+1*SODIMM, max 16GB                                                                                                                                                                                                                  |
| Expansion | 2*Mini PCIe, wih dual SIM slot, support dual 4GLTE/Wifi/BT/GPS<br>1*Mini PCIe, optional mSATA<br>1*Mini PCIe with USB signal, when 2*CAN is in use, this Mini-PCIe slot is occupied                                                                              |
| Graphics  | Intel Gen. 9 HD Graphic , DP: 4096*2304@60Hz,<br>Smart Display: 1920*1200@60Hz,<br>VGA: 1920*1200@60Hz, support 3 independent displays                                                                                                                           |
| Audio     | optional support Realtek ALC662VD audio, Audio out and MIC                                                                                                                                                                                                       |
| LAN       | 6*Intel I210AT PCIe Gig. Ethernet, M12, 4 with POE functions, support 802.3af(15.4W)                                                                                                                                                                             |
| Storage   | 1*2.5" HDD SATA bay; 1*mSATA full size card (SATA+USB)<br>2*Gig-LAN (M12) , 4*Gig-LAN with POE 802.3af (M12)<br>2*USB3.0 (Type A); 1*USB2.0 (Type A); 2*USB2.0 (M12)                                                                                             |
| I/O Port  | 4-ch input/4-ch output, isolated (DB9 male connector), 2*SIM slot<br>1*RS232 isolated (DB9 male connector), 1*RS485 isolated (DB9 male connector), optional 2*CAN 2.0(DB9 male connector) 1*Audio-out and 1*MIC (3.5mm audio port)<br>1*DP+1*VGA+1*Smart Display |
| LED       | 1*PowerLED; 1*HDD LED; 3*CPU Temp LED(<br>Red is alarm, Yellow is high temp, Green is normal temp)                                                                                                                                                               |
| Switches  | 1*switch, 1*remote switch(2-pin terminal), 1*AT/ATX switch, 1*Clear CMOS switch, 1*ACC/Family switch                                                                                                                                                             |

|                   |                                                                                                                                                         |
|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|
| Watchdog timer    | Programmable timeout interruption period or system reset from 1 to 255 secs                                                                             |
| Power Requirement | Railway power module 48V/72V/110V input, 4-pin connector M12(S00X), DC 9~36V input, 5-pin connector M12 (T00X)<br>Consumption: 12V/2.33A(I5-6200U, 8GB) |
| OS                | Windows 7, Windows 10, Linux Fedora Ubuntu<br>(Note: 7th gen Intel® Kabylake-U processor does not support Windows 7)                                    |

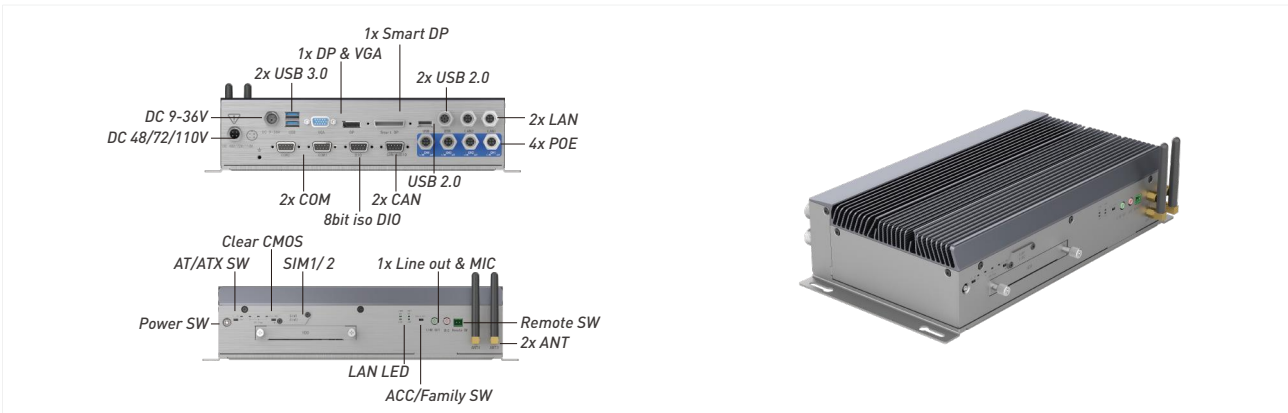
### Mechanical

|                     |                                         |
|---------------------|-----------------------------------------|
| Structure           | Aluminum chassis, stainless steel frame |
| Color               | Silver grey                             |
| Installation method | Desktop Installation                    |
| Dimension (W*H*D)   | 270*154*64.5mm                          |
| Net weight          | 3.2KG                                   |

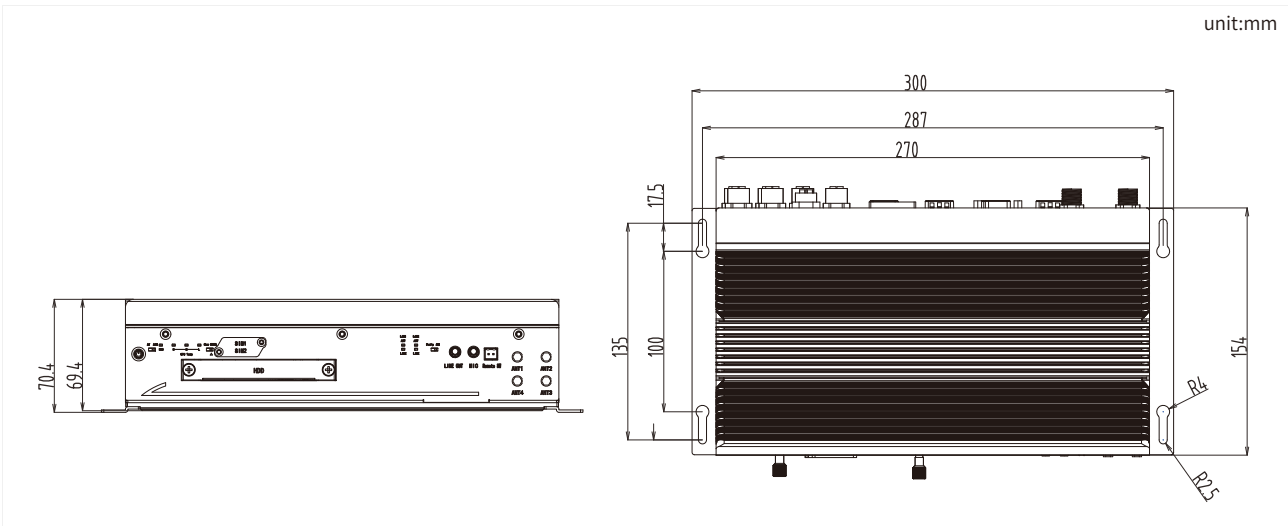
### Environmental

|                       |                                                    |
|-----------------------|----------------------------------------------------|
| Operating temperature | EN50155 TX: -40~70°C(Operating 10 minutes in 85°C) |
| Storage temperature   | -40°C~85°C                                         |
| Storage Humidity      | 10~90%@40°C, Non-condensing                        |
| Vibration             | MIL-STD-801G, EN50155                              |
| Shock                 | MIL-STD-801G, EN50155                              |
| Certification /EMC    | EN50155, E-Mark, CE/FCC Class B                    |

## I/O View



## Dimensions



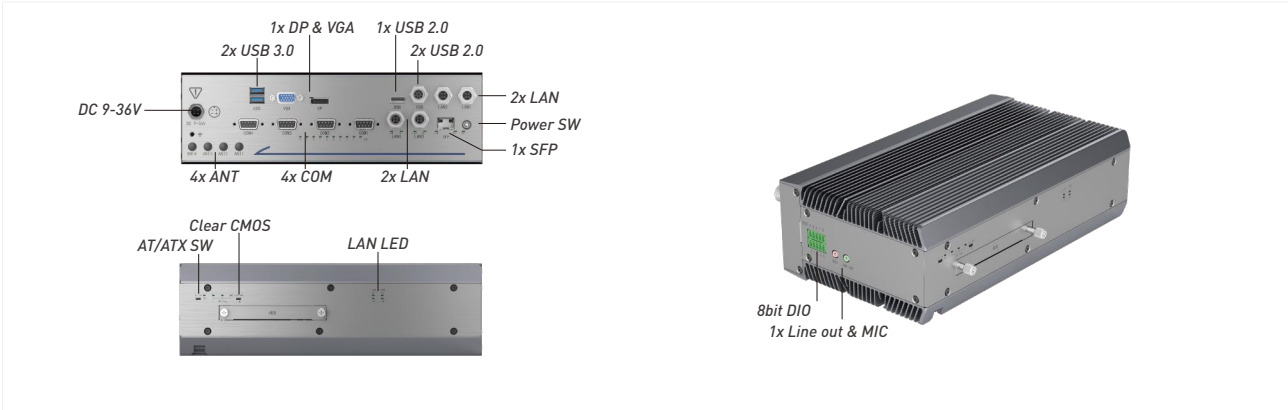
## Ordering Information

| Model                 | Processor              | Specification                                                                                                                                                                                     |
|-----------------------|------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SIGM-3250/S001        | Core I3-6100U/I3-7100U |                                                                                                                                                                                                   |
| SIGM-3250/S002        | Core I5-6200U/I5-7200U | DDR3L, 2*LAN, 4*POE, 2*USB3.0, 3*USB2.0, 2* isolation COM, 3*Mini PCIe, 1*Smart Display, 1*DP, 1*VGA, optional Audio out, Mic, 8-bit isolated DIO, 1*2.5" SATA drive bay, 1*mSATA, DC 48/72/110V  |
| SIGM-3250/S003        | Core I7-6500U/I7-7500U |                                                                                                                                                                                                   |
| SIGM-3250/T001        | Core I3-6100U/I3-7100U |                                                                                                                                                                                                   |
| SIGM-3250/T002        | Core I5-6200U/I5-7200U | DDR3L, 2*LAN, 4*POE, 2*USB3.0, 3*USB2.0, 2* isolated COM, 3*Mini PCIe, 1*Smart Display, 1*DP, 1*VGA, optional Audio out, Mic, 8-bit isolated DIO, 1*2.5" SATA drive bay, 1*mSATA, DC 9~36V w/ITPS |
| SIGM-3250/T003        | Core I7-6500U/I7-7500U |                                                                                                                                                                                                   |
| M12A-5P DC Cable      |                        | DC cable with M12 A-Code Female 5 pin connector to bare wire, PVC Multicore Cable, 100cm                                                                                                          |
| M12A-4P DC Cable      |                        | DC cable with M12 A-Code Female 4 pin connector to bare wire, PVC Multicore Cable, 100cm                                                                                                          |
| M12A-8P USB Cable     |                        | USB cable with M12 A-Code Male 8 pin connector to 2*Type A with dual M3 ear nut-hole, PVC Multicore Cable, 50cm                                                                                   |
| M12X-8P LAN/POE Cable |                        | Internet cable with M12 X-Code Male 8 pin connector to RJ45 crystal head connector, PVC Multicore Cable, 180cm                                                                                    |
| PA-60DC12-M12A-5P     |                        | AC/DC power adapter with M12 A-Code Female 5 pin connector, DC12V@5A 60W (non LSZH cable, no in-vehicle certification)                                                                            |
| PA-120DC19-M12A-5P    |                        | AC/DC power adapter with M12 A-Code Female 5 pin connector, DC19V@6.32A 120W (non LSZH cable, no in-vehicle certification)                                                                        |

# SIGM-3251

Intel® Skylake/Kabylake-U CPU, MLU220(8TOPS), LPDDR4 4GB, 4\*LAN, 1\*SFP, 5\*USB, DP, VGA, 4\* isolated COM, 8-bit programmable DIO, EN50155 certification

## I/O View



## Product Overview

SIGM-3251 is a fanless rugged in-vehicle computer, equipped with Intel® Skylake /Kabylake-U processor and onboard Cambrian MLU220 AI acceleration chip, supports dual 4G full Netcom VPN/Wifi/BT/GPS and other wireless functions.It is also equipped with railway power input DC 9~36V with wide voltage power supply,has earned the EN50155 railway standard certification, is highly suitable for road vehicles, intelligent rail transit system industry applications.

## Product Parameters

### System

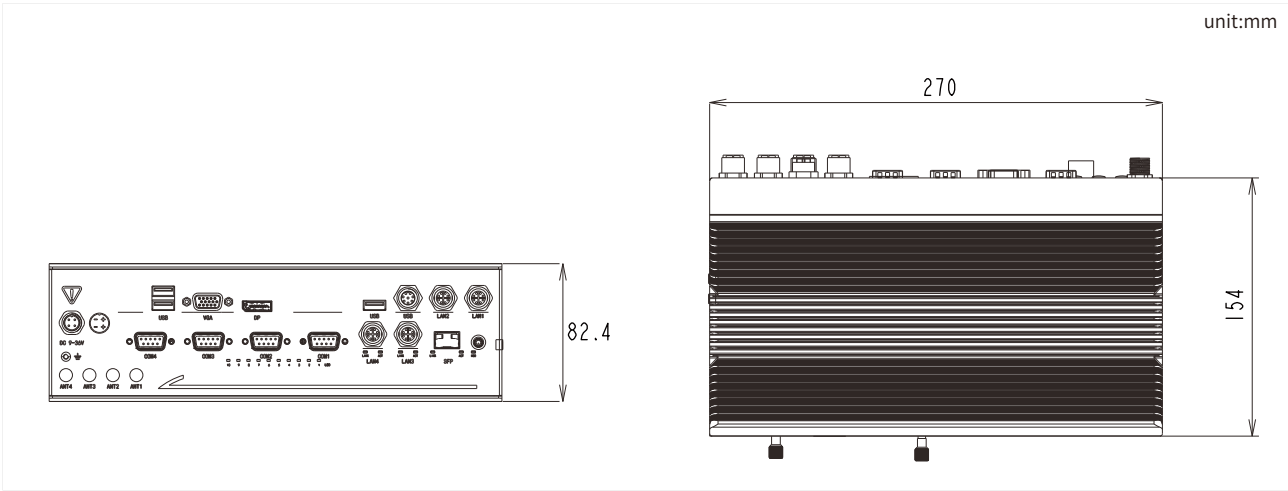
|            |                                                                                                                                                                                                                                                                                                                                                                                              |
|------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CPU        | Intel® Skylake/Kabylake-U CPU<br>Core i3/i5/i7 series CPU                                                                                                                                                                                                                                                                                                                                    |
| AI Chipset | MLU220 8TOPS(INT8),4GB RAM, TDP8.5W                                                                                                                                                                                                                                                                                                                                                          |
| RAM        | DDR4, 2133MHz, 1 onboard storage 4/8GB+1*LPDDR4 4GB, max 16GB                                                                                                                                                                                                                                                                                                                                |
| Expansion  | 2*Mini PCIe, with dual SIM slot, support dual 4GLTE/Wifi/BT/GPS<br>1*Mini PCIe, with USB signal, optional mSATA<br>1*Mini PCIe, with USB signal                                                                                                                                                                                                                                              |
| Graphics   | Intel Gen. 9 HD Graphic , DP: 4096*2304@60Hz,<br>VGA: 1920*1200@60Hz, support 2 independent displays                                                                                                                                                                                                                                                                                         |
| Audio      | optional support Realtek ALC662VD audio, Audio out and MIC                                                                                                                                                                                                                                                                                                                                   |
| LAN        | 4*Intel I210AT PCIe Gig. Ethernet, 4*M12<br>1*Intel I210IS PCIe Gig. Ethernet, 1*SFP                                                                                                                                                                                                                                                                                                         |
| Storage    | 1*2.5" HDD SATA bay; 1*mSATA full size card (SATA+USB)<br>4*Gig-LAN (4*M12), 1*SFP<br>3*USB3.0 (Type A); 1*USB2.0 (Type A); 2*USB2.0 (M12)<br>8-bit programmable DIO (2*5Pin Phoenix terminal) , 1*Audio-out and 1*MIC(3.5mm audio port)<br>1*RS232/RS422/RS485 DB9 (2.5KV opto-isolator), 2*RS232 DB9 (2.5KV opto-isolator), 1* RS232/485 DB9(2.5KV opto-isolator)<br>2*SIM slot,1*DP+1*VGA |
| I/O Port   |                                                                                                                                                                                                                                                                                                                                                                                              |
| LED        | 1*PowerLED; 1*HDD LED; 3*CPU Temp LED(<br>Red is alarm, Yellow is high temp, Green is normal temp)                                                                                                                                                                                                                                                                                           |

|                   |                                                                                                          |
|-------------------|----------------------------------------------------------------------------------------------------------|
| Switches          | 1*power button, 1*remote switch(2-pin terminal), 1*AT/ATX switch, 1*Clear CMOS swtich                    |
| Watchdog timer    | Programmable timeout interruption period or system reset from 1 to 255 secs                              |
| Power Requirement | Railway power module 9-36V input, 4-pin terminal port(M12), consumption: 12V/3.14A(I5-6500U CPU/8G DDR4) |
| OS                | Linux Fedora Ubuntu                                                                                      |

### Mechanical

|                       |                                         |
|-----------------------|-----------------------------------------|
| Structure             | Aluminum chassis, stainless steel frame |
| Color                 | Silver gray                             |
| Installation Method   | Desktop installation                    |
| Dimension (W*H*D)     | 270*154*82.4mm                          |
| Netweight             | 3.93KG                                  |
| Environmental         |                                         |
| Operating temperature | EN50155 TX: -40~70°C                    |
| Storage temperature   | -40°C~85°C                              |
| Storage humidity      | 10~90%@40°C, Non-condensing             |
| Vibration             | MIL-STD-810G, EN50155                   |
| Shock                 | MIL-STD-810G, EN50155                   |
| Certification /EMC    | EN50155, CE/FCC Class B                 |

## Dimensions



## Ordering information

| Model                 | Processor              | Specifications                                                                                                         |
|-----------------------|------------------------|------------------------------------------------------------------------------------------------------------------------|
| SIGM-3251/S001        | Core I3-6100U/I3-7100U |                                                                                                                        |
| SIGM-3251/S002        | Core I5-6200U/I5-7200U |                                                                                                                        |
| SIGM-3251/S003        | Core I7-6500U/I7-7500U |                                                                                                                        |
| Mounting kits         |                        | 19 inch 2U rack mounting kits                                                                                          |
| M12A-5P DC Cable      |                        | DC cable with M12 A-Code Female 5 pin connector to bare wire, PVC Multicore Cable, 100cm100cm                          |
| M12A-4P DC Cable      |                        | DC cable with M12 A-Code Female 4 pin connector to bare wire, PVC Multicore Cable, 100cm                               |
| M12A-8P USB Cable     |                        | USB cable with M12 A-Code Male 8 pin connector to 2*Type A with dual M3 ear nut-hole, PVC Multicore Cable, 50cm        |
| M12X-8P LAN/POE Cable |                        | Internet cable with M12 X-Code Male 8 pin connector to RJ45 crystal head connector, PVC Multicore Cable, 180cm         |
| PA-60DC12-M12A-5P     |                        | AC/DC power adapter with M12 A-Code Female 5 pin connector, DC12V@5A 60W (non LSZH cable, no in-vehicle certification) |



# SIGM-U1350

Intel® Skylake/Kabylake-U CPU, MLU-220T-MXM, 1\*DP, 1\*VGA, 5\*USB, 2\*LAN, 1\*SATA, 1\*COM, 4\*Mini PCIe, DC 110V

## Key Specification

- Intel® Skylake/Kabylake-U CPU
- 2-Ch DDR4, On-board 4G+SODIMM, 20GB max.
- 1\*DP, 1\*VGA, 1\*Smart Display, 3 display
- 2\*LAN(M12) , 5\*USB(2\*M12), built-in dongle interface
- 1\*CONSOLE RS232(RJ45)
- 1\*SATA3.0 2.5", 1\*mSATA(Optional)
- 4\*Mini PCIe(1\*mSATA), support GPS/WiFi/LTE/4G
- MLU220T-MXM, 16TOPS
- EN50155, E-Mark certification, support TPM2.0
- Railway power input DC 110V (43V~ 160V)



## Product Overview

SIGM-U1350 is a standard 1U rack mount fanless and rugged in-vehicle computer, powered by Intel® Skylake/Kabylake-U processors and equipped with the MLU220T-MXM module. It supports wireless functions such as dual 4G, global network VPN, Wifi, BT, and GPS, and features a wide voltage of DC 110V (43-110V). The product is EN50155 certified and suitable for road vehicles and intelligent rail transit systems.

## Product Parameters

### System

|                |                                                                                                                                |
|----------------|--------------------------------------------------------------------------------------------------------------------------------|
| CPU            | Intel® Skylake/Kabylake-U Corei3/i5/i7 CPU                                                                                     |
| AI Chipset     | Optional MLU220T MXM 16TOPS(INT8)                                                                                              |
| RAM            | 2-ch DDR4, 2133MHz, onboard 4GB +1*SODIMM, 4+16GB max.                                                                         |
| Graphics       | Intel® Gen. 9 HD Graphics,<br>DP:4096*2160@60Hz,<br>Smart Display:1920*1200@60Hz,<br>VGA:1920*1200@60Hz, 3 independent display |
| LAN            | 2*Intel® I210AT, 10-1000M(2*M12)                                                                                               |
| Audio          | /                                                                                                                              |
| Storage        | 1*2.5" HDD SATA bay; 1*mSATA full size(SATA/USB)                                                                               |
| I/O Port       | 2*Gig-LAN (M12 X-Coded)<br>2*USB3.0 Type A, 2*USB2.0 (M12 A-Coded), 1*USB2.0 Type A<br>1*Console RS232 (RJ45)                  |
| LED            | 1*PowerLED; 1*HDD LED; 3*CPU Temp LED(<br>Red is alarm, Yellow is high temp, Green is normal temp)                             |
| Switches       | 1*Power, 1*Remote(2-pin ), 1*AT/ATX, 1*Clear CMOS                                                                              |
| Watchdog timer | Programmable timeout interruption period or system reset from 1 to 255 secs                                                    |
| OS             | Linux, Windows 7(SKL-U 32/64; KBL-U 64),Windows 10 64bit(Windows does not support MLU220)                                      |

|            |                                                                                                        |
|------------|--------------------------------------------------------------------------------------------------------|
| Expansion  | 2*Mini PCIe(+SIM), 4G LTE/GSM/Wifi/BT/GPS<br>1*Mini PCIe(USB),mSATA<br>1*Mini PCIe(USB)                |
| Power& TDP | Railway power module: DC 110V(43-160V), 4-pin(M12);<br>12V/2.33A(Non MLU220T); 12V/3.71A(with MLU220T) |

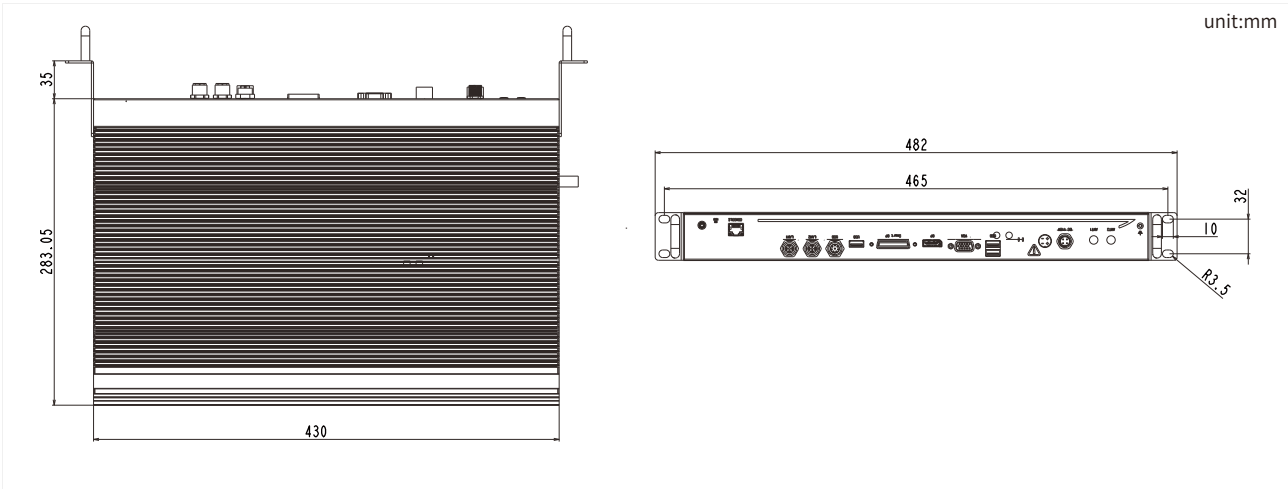
### Mechanical

|                     |                                           |
|---------------------|-------------------------------------------|
| Structure           | Aluminum chassis, stainless steel frame   |
| Color               | Silver gray                               |
| Installation Method | Rack installation                         |
| Dimension (W*H*D)   | 430*44.5*283mm                            |
| Weight              | 4.69KG                                    |
| Environmental       |                                           |
| Operating temp      | EN50155:2017 TX: -40~70°C                 |
| Storage temp        | -40°C~85°C                                |
| Storage humidity    | 10~95%@40°C, No-condensation              |
| Vibration           | MIL-STD-810G, EN50155                     |
| Shock               | MIL-STD-810G, EN50155                     |
| Certification /EMC  | EN50155: 2017 & E-Mark & CE & FCC Class A |

## I/O View



## Dimensions



## Ordering information

| Model             | Processor                                                                                                       | Specifications                                                                                                                                             |
|-------------------|-----------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SIGM-U1350/S001   | Intel® I3-6100U/I3-7100U                                                                                        | On board 4GB+1*SODIMM DDR4<br>2*LAN, 2*USB3.0, 5*USB2.0, 1*COM(RJ45),<br>3*Mini PCIe, 1*DP, 1*VGA, 1*Smart Display, 1*mSATA, 1*SATA3,<br>DC110V(43V~ 160V) |
| SIGM-U1350/S002   | Intel® I5-6200U/I5-7200U                                                                                        |                                                                                                                                                            |
| SIGM-U1350/S003   | Intel® I7-6500U/I7-7500U                                                                                        |                                                                                                                                                            |
| SIGM-U1350/S004   | Intel® 3855U/3865U                                                                                              |                                                                                                                                                            |
| MXM 3.1 GPU       | Optional Cambricon MLU220T-MXM                                                                                  |                                                                                                                                                            |
| M12A-4P DC Cable  | DC cable with M12 A-Code Female 4 pin connector to bare wire, PVC Multicore Cable, 100cm                        |                                                                                                                                                            |
| M12A-4P USB Cable | USB cable with M12 A-Code Male 8 pin connector to 2*Type A with dual M3 ear nut-hole, PVC Multicore Cable, 50cm |                                                                                                                                                            |
| M12X-8P LAN Cable | Internet cable with M12 X-Code Male 8 pin connector to RJ45 crystal head connector, PVC Multicore Cable, 180cm  |                                                                                                                                                            |

# SIGM-U3550

3U CPCI-S.0 R2.0 Enclosure, 3U CPCI-S.0 R2.0 Processor Blade ,  
Intel Coffee lake-H CPU, 9-slot CPCI-S. 0 Backplane, 1+1 redundant 300W PSU, Intelligent Cooling design

## Key Specification

- PICMG CompactPCI Serial(CPCI-S.0R2.0) standard
- 3U 84HP Enclosure with 9-slot CPCI-S.0 backplane and
- 2-slot power backplanes
- Intel®Coffee Lake-H CPU+CM246 PCH Processor Blade
- On-board 8G DDR4+1\*DDR4 SODIMM, Ram. up to 40G
- 1\*DP+1\*HDMI, 2 display, 4\*G-LAN, 2\*USB3.1
- 1\*mSATA, optional 4\*2.5"SATA3.0 Storage Blades
- 8\*3U CPCI-S.0 standard expansion slots
- 1+1 Redundant rail-way standard ultra-wide voltage
- 300W power supply DC 16.6~160V
- 3\*12025 double Ball Bearing temperature control Fans,
- 1U chassis easy-plug design
- EN-50155:2021 certification



## Product Overview

SIGM-U3550 is a 4U rack-mounted in-vehicle system conforms to the PICMG CompactPCI Serial standard. 3U Enclosure with 9-slot CPCI-S.0 backplane, 1 system slot and 8 expansion slots, 2 power supply slots. Standard with Intel Coffee Lake-H+CM246 3U CPCI-S.0 Processor blade, 2\*PCleX8, 2\*PCleX4, 2\*PCleX1, 2~4\*2.5" SATA drive bay, memory on-board, 4\*LAN, 1+1 redundant ultra-wide DC 16.6-160V 300W PSU. Aviation-grade reliability, suitable for rail-way and ship transportation, aviation, telecommunications and industrial automation. and other fields.

## Product Parameters

### System

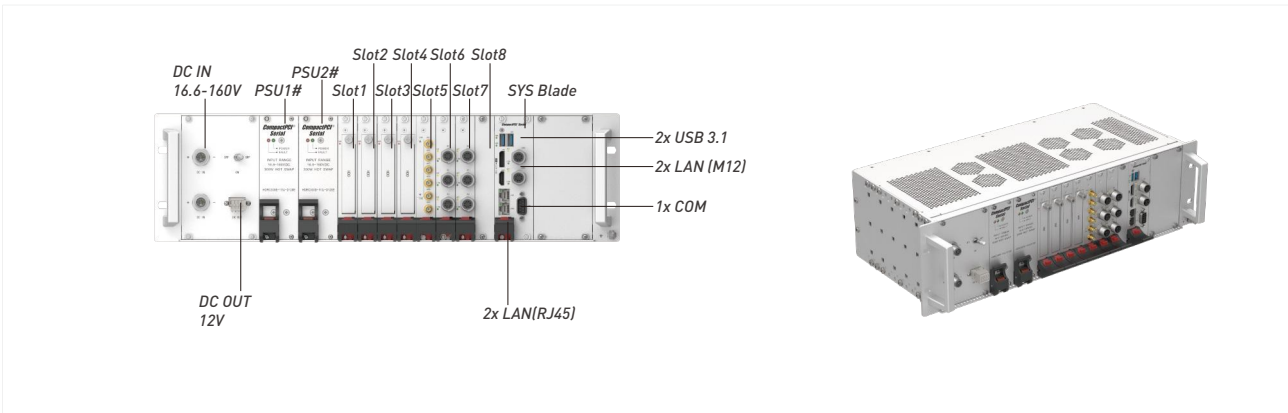
|                |                                                                                                                                                                                                                                                                                                   |
|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CPU            | Intel Coffee lake-H Core i3/i5/i7/Xeon CPU, TDP 25W or 45W                                                                                                                                                                                                                                        |
| RAM            | Dual-channel DDR4, On-board 8GB+ 1*SODIMM, 8+32GB max.                                                                                                                                                                                                                                            |
| Expansion      | Slot7&8: 1*PCle3.0X8(CPU)+1*USB3.1+1*USB2.0+1*G-LAN;<br>Slot6: 1*PCleX4+1*USB3.1+1*USB2.0, 1*G-LAN;<br>Slot5: 1*PCleX4+1*USB3.1+1*USB2.0;<br>Slot3&4: 1*PCleX1+SATA3.0+1*USB2.0;<br>Slot1&2: 1*SATA3.0+1*USB2.0;<br>Slot9(System): 2*PCleX8+2*PCleX4+2*PCleX1+4*USB3.1+4*SATA3.0+8*USB2.0+3*G-LAN |
| LAN            | 1*Intel I210AT(IT)+1*Intel I219LM(2*RJ45);<br>2*Intel I210AT(IT)[2*M12];<br>3*Intel I210AT(IT)                                                                                                                                                                                                    |
| Graphics       | Intel UHD Graphics, Supports DirectX11.1, OpenGL 5.0 and OpenCL 2.1 ;<br>DP:4096*2304@60Hz, HDMI:4096*2160@24Hz, support 2 independent displays                                                                                                                                                   |
| Storage        | 4*2.5" HDD SATA bay(RAID0/1/5/10); 1*mSATA                                                                                                                                                                                                                                                        |
| I/O Port       | 4*Gig-LAN +2*USB3.1+ 1*DP+1*HDMI+1*COM(8HP);<br>3*Gig-LAN(Slot 6/7/8,P6);<br>4*USB3.1(Slot 5/6/7/8,P1); 8*USB2.0(Slot 1/2/3/4/5/6/7/8,P1)                                                                                                                                                         |
| LED            | 1*Power LED, 1*HDD LED, 4* Network Connection LED (ACT/LINK), LED are all on the 8HP rear                                                                                                                                                                                                         |
| Switches       | AT Power form, 1*Clear CMOS SW                                                                                                                                                                                                                                                                    |
| Watchdog timer | programmable via software1 to 255 second                                                                                                                                                                                                                                                          |

|                   |                                                                                                      |
|-------------------|------------------------------------------------------------------------------------------------------|
| Power& TDP        | DC IN: 16.6-160V(rail-way standard isolated PSU ,4-pin M12); (opt. 1+1 dual redundant PSU); TDP: TBD |
| OS                | Windows 10/11 Enterprise & IOT Enterprise, Ubuntu, SUSE, Redhat Enterprise , VxWorks                 |
| Mechanical        |                                                                                                      |
| Structure         | Aluminum alloy mold, conductive oxidation process                                                    |
| Color             | Silver + Grey                                                                                        |
| Installation      | Desktop/Rack Mounting                                                                                |
| Dimension (W*H*D) | 482.6*248.2*133mm(w kits) ,435.8*208.5*133mm(n kits)                                                 |
| Weight            | TBD                                                                                                  |

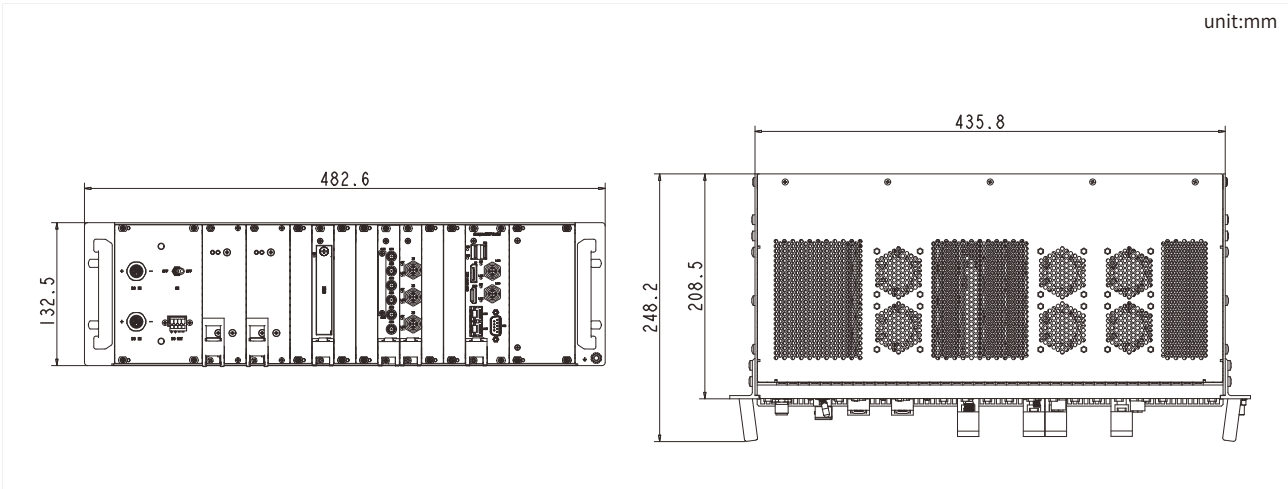
### Environmental

|                   |                                                        |
|-------------------|--------------------------------------------------------|
| Operating temp.   | EN50155 QT3: -25~70°C(25W CPU); QT1: -25~55°C(45W CPU) |
| Storage temp.     | -40°C~85°C                                             |
| Storage humidity  | 10~95%@40°C, Non-condensing                            |
| Vibration         | MIL-STD-810G, EN50155:2021                             |
| Shock             | MIL-STD-810G, EN50155:2021                             |
| Certification/EMC | EN50155: 2021 & CE/FCC Class A                         |

## I/O View



## Dimensions



## Ordering information

| Model                 | Processor                                                                                                                                      | Specifications                                                                                                                                                                                                                                                |
|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SIGM-U3550/S001       | Intel Core i3-9100HL                                                                                                                           | 3U CPCI-S.0 R2.0 Enclosure+1U Fan Chassis, Intel CM246 PCH+Coffee Lake H CPU,on-board DDR4 8GB+1*SODIMM, 1*DP+1*HDMI, 4*G-LAN, 2*USB3.1, 1*RS232/422/485, 1*mSATA, 8*3U CPCI-S.0 expansion slot,1+1 redundant power slot, default 1*300W PSU DC IN 16.6-160V. |
| SIGM-U3550/S002       | Intel Xeon E-2254ME                                                                                                                            |                                                                                                                                                                                                                                                               |
| SIGM-U3550/S003       | Intel Core i7-9850HE                                                                                                                           |                                                                                                                                                                                                                                                               |
| CPCIs-282             | 3*Intel I210AT(IT)Gig. chip, IEEE 802.3af (15.4W/48V), M12 X-Code CPCI-S.0 3U                                                                  |                                                                                                                                                                                                                                                               |
| CPCIs-283             | 2.5"SATA3.0 easy-plug design drive bay, CPCI-S.0 3U                                                                                            |                                                                                                                                                                                                                                                               |
| CPCIs-284             | 2*Full size Mini PCIe (w/SIM), 1*M.2 2230 E-Key, 1*M.2 3052 B-Key w/SIM, CPCI-S.0 3U                                                           |                                                                                                                                                                                                                                                               |
| OFX-DC300DC12V        | DC 16.6-160V input, DC 12V&5VSB output, 300W PSU, CPCI-S.0 Peripheral Blade                                                                    |                                                                                                                                                                                                                                                               |
| M12A-4P DC Cable      | cable with M12 A-Code Female 4 pin connector to bare wire, PVC Multicore Cable, 4-wires 18AWG PVC, non LSZH cable, 100cm                       |                                                                                                                                                                                                                                                               |
| M12X-8P LAN/POE Cable | Internet cable with M12 X-Code Male 8pin connector to RJ45 crystal head connector, 8-wires CAT6,LSZH cable,180cm                               |                                                                                                                                                                                                                                                               |
| PA-300DC48-M12A-4P    | AC-DC power supply, DC48V@7.32A ,85-305V AC input, DC 48V output, wide temperature fanless, 300W (non LSZH cable, no in-vehicle certification) |                                                                                                                                                                                                                                                               |



# SIGM-3555

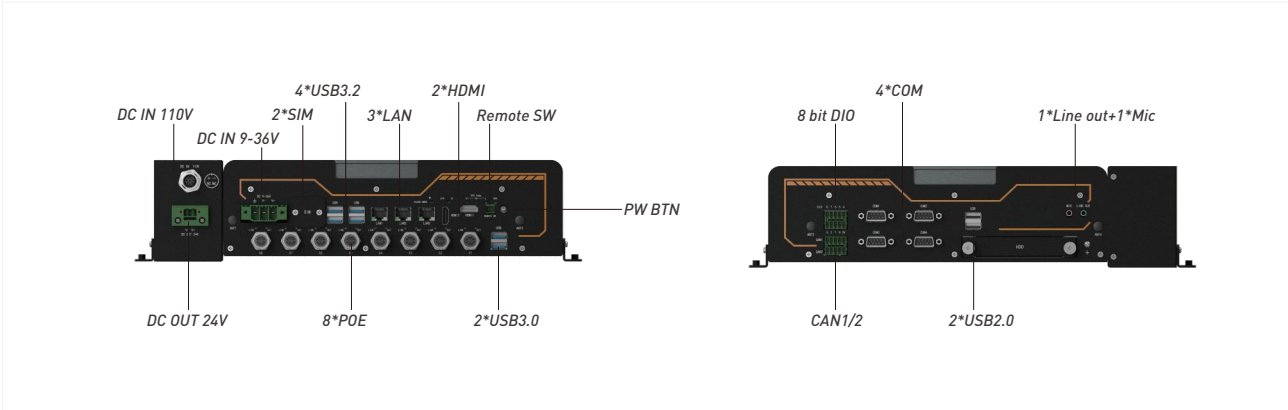
Intel® Comet lake Celeron/Pentium/Core™ i9/i7/i5/i3 CPU,11\*LAN, 8\*USB, 4\*COM, 2\*CAN, 3\*M.2, 8 bit DIO, DC110V

## Key Specification

- Intel® Comet lake 10th-Gen Celeron/Pentium/Core™ i9/i7/i5/i3 CPU
- Aluminum frame, fan-less
- 3\*2.5G-LAN+8\*Gig-LAN with POE function
- 8-bit DIO, 4\*USB3.0, 2\*USB3.0, 2\*USB2.0, 4\*COM
- 2\*CAN, supports both CAN2.0A and CAN2.0B protocols, conforms to ISO/DIS 11898-1/2/3 standards
- 2\*HDMI, 2 independent display
- 3\*M.2 supports Gigabit WiFi6, 4G LTE/5G NR
- DC 110V rail-way standard isolated power supply, with reverse connection, overcurrent, overvoltage protection



## I/O View



## Product Overview

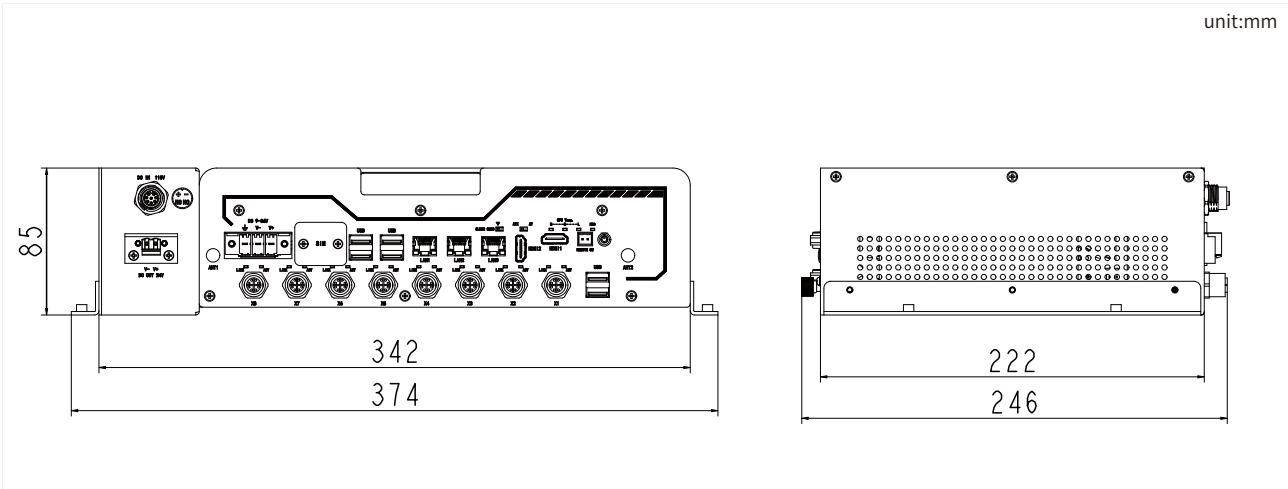
SIGM-3555 is a high-performance fanless AI edge computing system, equipped with Intel® Comet lake series processors, multi-network ports, multi-display and multi-I/O functions, 110V DC power supply, It is suitable for rail transit, vehicle-road cooperation C-V2X, special vehicle onboard, intelligent security, high-precision machine vision, medical imaging and other industries.

## Product Parameters

### System

|                |                                                                                                                                                                             |                   |                                                                                                                                                                                              |
|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CPU            | Intel® Comet lake 10th-Gen Celeron/Pentium/Core™ i9/i7/i5/i3 CPU, Intel® Q470 PCH                                                                                           | Power& TDP        | DC IN: 110V(rail-way standard isolated power supply , ±40%), maximum output power 250W; TDP: 110W(I7-10700 CPU)                                                                              |
| RAM            | 2*DDR4 SO-DIMM, 2933MHz, 64GB max.                                                                                                                                          | OS                | Windows 10 IoT Enterprise (64-bit), Windows 11 IoT Enterprise (64-bit), Windows Server 2019, Ubuntu, SUSE, Redhat Enterprise, Wind River Linux, Yocto Project (64-bit), Wind River VxWorks 7 |
| Expansion      | 1*M.2 2230 E-key(PCIeX1/USB2.0+CNVio), WiFi6/BT5.0; 1*M.2 3052 B-key, PCIeX1/USB2.0+SIM, 5G NR/4G LTE; 1*M.2 2280 M-Key(PCIex4), NVME/PCIe module                           | Mechanical        |                                                                                                                                                                                              |
| LAN            | 3*Intel I226V,10M-2.5G, iAMT 13.0, vPro(Core I5/I7/I9 CPU); 8*Intel I210AT, IEEE 802.3af (15.4W/48V);                                                                       | Structure         | Aluminum-magnesium alloy, SGCC frame                                                                                                                                                         |
| Graphics       | Intel UHD Graphics, Supports DirectX12, OpenGL 4.5; HDMI:4096*2304@24Hz, HDMI:4096*2304@24Hz                                                                                | Color             | Black                                                                                                                                                                                        |
| Storage        | 1*2.5" HDD SATA (RAID0/1); 1*M.2 2280 M-Key(PCIe4X4), NVMe                                                                                                                  | Installation      | Desktop Mounting                                                                                                                                                                             |
| I/O Port       | F:3*2.5G-LAN;8*POE LAN (M12) ;4*USB3.2(10G); 2*USB3.0; 2*SIM; B:2*USB2.0;2*RS232/422/485(DB9); 2*RS485 (DB9); 1*8-bit DIO (2*5Pin); 2*CAN(2*5Pin);1*Line out+1*Mic (3.5mm); | Dimension (W*H*D) | 374*246*85mm(w kits) , 342*222*85mm(n kits)                                                                                                                                                  |
| LED            | 1*Power LED, 1*HDD LED, 3*CPU Temp. LED                                                                                                                                     | Weight            | 7.76KG                                                                                                                                                                                       |
| Switches       | 1* Power w/LED,1*Remote SW,1*F-panel, AT-ATX, Clear Cmos                                                                                                                    | Environmental     |                                                                                                                                                                                              |
| Watchdog timer | programmable via software1 to 255 second                                                                                                                                    | Operating temp.   | EN50155 QT1: -25~55°C (TDP 35W CPU, airflow)                                                                                                                                                 |
|                |                                                                                                                                                                             | Storage temp.     | -40°C~85°C                                                                                                                                                                                   |
|                |                                                                                                                                                                             | Storage humidity  | 10~95%@40°C, , Non-condensing                                                                                                                                                                |
|                |                                                                                                                                                                             | Vibration         | 5grms/5~500Hz/random/in working (SSD); 1grms/5~500Hz/random/in working (HDD)                                                                                                                 |
|                |                                                                                                                                                                             | Shock             | 50g peak acceleration(11ms duration)(SSD); 20g peak acceleration(11ms duration)(HDD)                                                                                                         |
|                |                                                                                                                                                                             | Certification/EMC | EN50155: 2021 & CE/FCC Class A                                                                                                                                                               |

## Dimensions



## Ordering information

| Model                 | Processor                                                                                                                                | Specifications                                                                                                                                                                                                             |
|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SIGM-3555/S001        | Intel® Comet lake 10th-Gen Celeron/Pentium/Core™ i9/i7/i5/i3 CPU                                                                         | Intel Q470 PCH, Intel CML LGA1200 CPU, 4*USB3.2, 2*USB3.0, 2*USB2.0, 4*COM, 8*POE, 2*CAN 1*M.2 E-Key, 1*M.2 B-Key, 2*HDMI, 1*MIC+1*Audio-out, 1*M.2 M-Key, 1*2.5"SATA bay, DC 110V rail-way standard isolated power supply |
| M12X-8P LAN/POE Cable | LAN cable, M12 X-Code Male 8pin connector to RJ45 , 8-core CAT6, LSZH cable, 180cm                                                       |                                                                                                                                                                                                                            |
| PA-300DC48-M12A-4P    | AC-DC power supply, DC48V@7.32A,85-305V AC input, DC 48V output, wide temp. fanless, 300W ( non LSZH cable, no in-vehicle certification) |                                                                                                                                                                                                                            |

# ICS-2010

2U dual-channel server, Intel Xeon 2nd-gen scalable series processors,  
2x2.5"hot swap drive bay, 3xPCIe slots, 1 VGA, 1xCOM, 4xUSB3.0,2xLAN, 1xIPMI, support for different power redundancy power supply.

## Key Specification

- 1/2 Intel Xeon Gen2 Scalable series processors
- 16\*DDR4,2133/2400 /2666/2933 MHz ECC LRDIMM /RDIMM
- 2\*2.5" hot-swap hard drive bay
- Supports 2\*PCIe3.0X16, 1\*PCIe3.0X8
- 4\*USB3.0, 1\*VGA, 1\*COM, 2\*LAN, 1\*IPMI
- 3\*8038 hot swap high-speed fan
- In line with OTII standard
- 100-240V input, 550/800/1200/1600W 1+1 redundant power supply



## Product Overview

ICS-2010 is a dual-channel edge computing server, equipped with 1 or 2 2nd-gen Intel® Xeon extensible series processors, C621 chipsets, 16 ECC LRDIMM/RDIMM DDR4 memory slots, 2 M.2 ports, 2 Gigabit network ports, 1 management network port, 3 PCIe expansion slots. It supports a maximum of 2 full-height double-width GPU cards, which is oriented to the 5G edge server market and meets OTII standards, and is very suitable for inference servers in the edge AI field.

## Product Parameters

### System

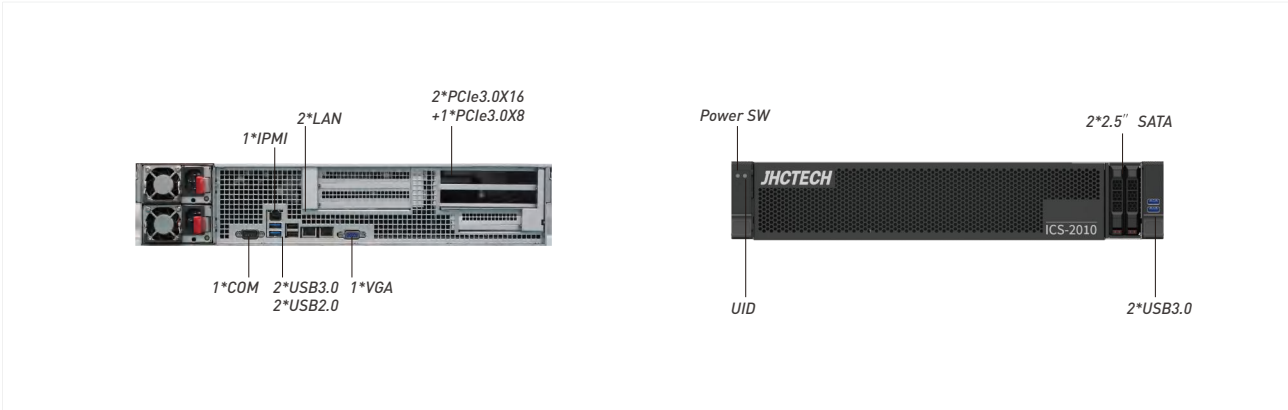
|                |                                                                                                   |
|----------------|---------------------------------------------------------------------------------------------------|
| CPU            | 1/2 Gen2 Intel® Xeon®Scalable Processors, Intel® C621 PCH                                         |
| RAM            | 16*DDR4,2933MHz ECC LRDIMM/RDIMM LRDIMM:4T (16*256GB); RDIMM:2T (16*128GB)                        |
| Expansion      | 2*PCIe3.0X16+1*PCIe3.0X8;<br>1*M.2 22110/2280 M-Key (PCIe3.0X4) ,<br>1*M.2 2280 M-Key (PCIe3.0X4) |
| LAN            | 2*Intel I210AT 10M-1000M;<br>1*IPMI2.0, Aspeed AST2500 BMC                                        |
| display        | VGA: 1920*1200@60Hz,                                                                              |
| Storage        | 2*2.5" SAS/SATA3.0,RAID0,1                                                                        |
| I/O Port       | F:2*USB3.0;<br>B:1*VGA, 1*COM, 2*USB3.0, 1*IPMI (RJ45) , 2*LAN (RJ45)                             |
| LED            | 1*Power LED, 1*ERROR LED, 1*HDD LED, 2*NIC network LED                                            |
| Switches       | 1*Power SW, 1*RST, 1*UID                                                                          |
| Watchdog timer | programmable via software1 to 255 second                                                          |

|                   |                                                                                                                                                                                        |
|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Power& TDP        | 550W, 800W, 1200W, 1600W,<br>1+1 hot swap redundant power supply                                                                                                                       |
| OS                | Windows Server 2012/2008 R2(64-bit) , Windows SBS 2011(64-bit),<br>Red Hat Enterprise Linux Server(32/64-bit),<br>Suse Enterprise Linux Server(32/64-bit),<br>Ubuntu Server(32/64-bit) |
| Mechanical        |                                                                                                                                                                                        |
| Structure         | Imported SGCC hot dip galvanized steel sheet                                                                                                                                           |
| Color             | black + silvery                                                                                                                                                                        |
| Installation      | Desktop Mounting                                                                                                                                                                       |
| Dimension (W*H*D) | 442*447*87mm                                                                                                                                                                           |
| Weight            | TBD                                                                                                                                                                                    |

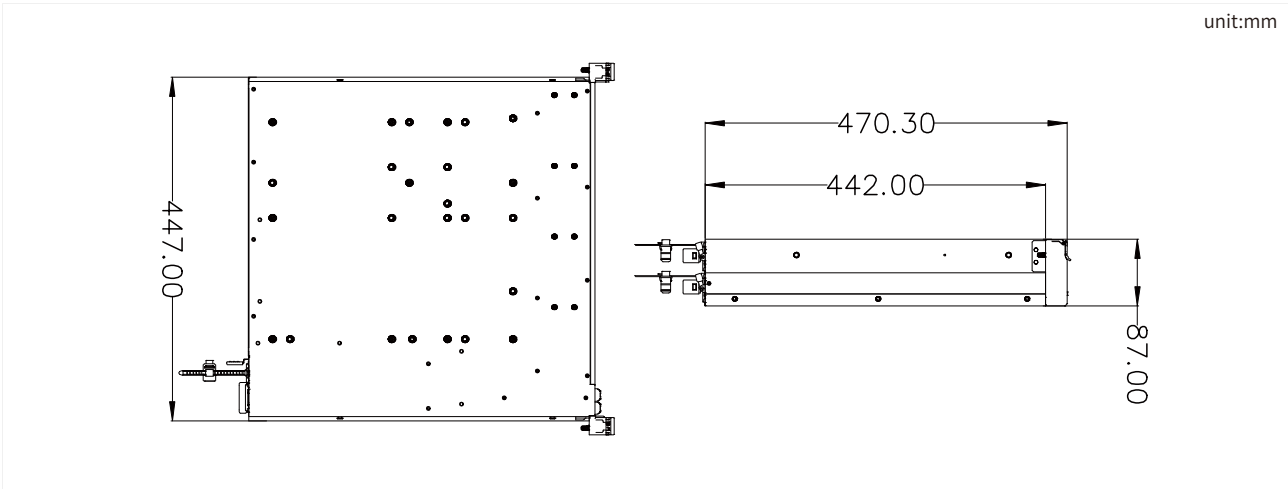
### Environmental

|                   |                            |
|-------------------|----------------------------|
| Operating temp.   | 0~50°C                     |
| Storage temp.     | -20°C~75°C                 |
| Storage humidity  | 5~95%@40°C, Non-condensing |
| Vibration         | TBD                        |
| Shock             | TBD                        |
| Certification/EMC | CCC/CE/FCC Class A         |

## I/O View



## Dimensions



## Ordering information

| Model              | Processor                                                 | Specifications                    |
|--------------------|-----------------------------------------------------------|-----------------------------------|
| ICS-2010-S001-1600 | 1/2 Gen2 Intel® Xeon®Scalable Processors, Intel® C621 PCH | 1600W, 1+1 redundant power supply |
| ICS-2010-S001-1200 |                                                           | 1200W, 1+1redundant power supply  |
| ICS-2010-S001-800  |                                                           | 800W, 1+1redundant power supply   |
| ICS-2010-S001-550  |                                                           | 550W, 1+1redundant power supply   |



# ICS-2020

2U dual-channel server, Intel Xeon 4 expandable series processors, 2\*2.5 "hot swap drive bay, three PCIe expansion slots, 1\*VGA, 1\*COM, 4\*USB3.0, 2\*LAN, 1\*IPMI, support for different power supply redundancy.

## Key Specification

- 1/2 Intel Xeon Gen4 Scalable series processors
- 16\*DDR5,5600/5200/4800/4400/4000 MT/s ECC RDIMM(3D),4TB max.
- 2\*2.5" hot-swap hard drive bay,
- Supports 2\*PCIe5.0X16, 1\*PCIe5.0X8
- 4\*USB3.0, 1\*VGA, 1\*COM, 2\*LAN, 1\*IPMI
- 3\*8038 hot swap high-speed fan
- In line with OTII standard
- 100-240V input, 550/800/1200/1600W 1+1 redundant power supply



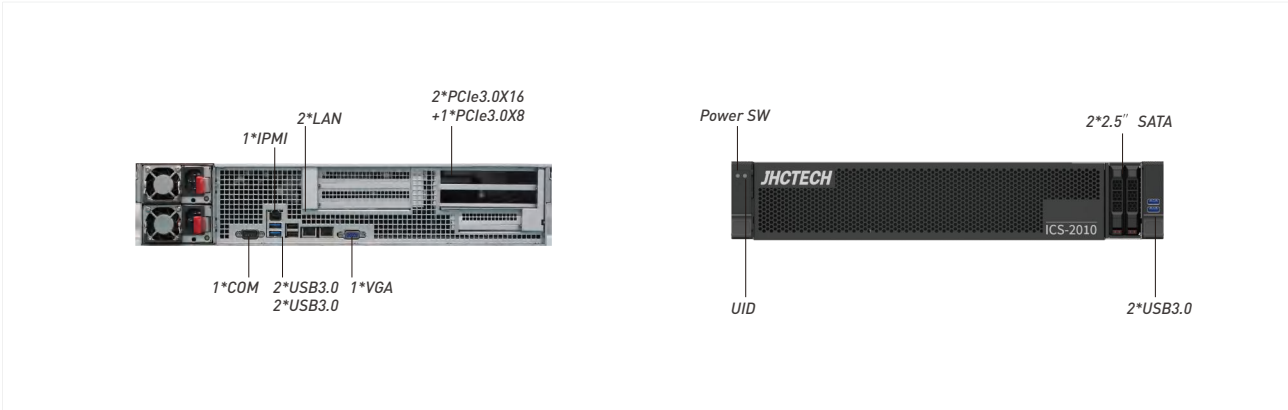
## Product Overview

ICS-2020 is a dual-channel edge computing server, equipped with 1 or 2 4th-gen Intel® Xeon extensible series processors, C741 chipsets, 16 3DS RDIMM/RDIMM DDR5 ECC memory slots, 2 M.2 ports, 2 Gigabit network ports, 1 management network port, 3 PCIe expansion slots. It supports a maximum of 2 full-height double-width GPU cards, which is oriented to the 5G edge server market and meets OTII standards, and is very suitable for inference servers in the edge AI field.

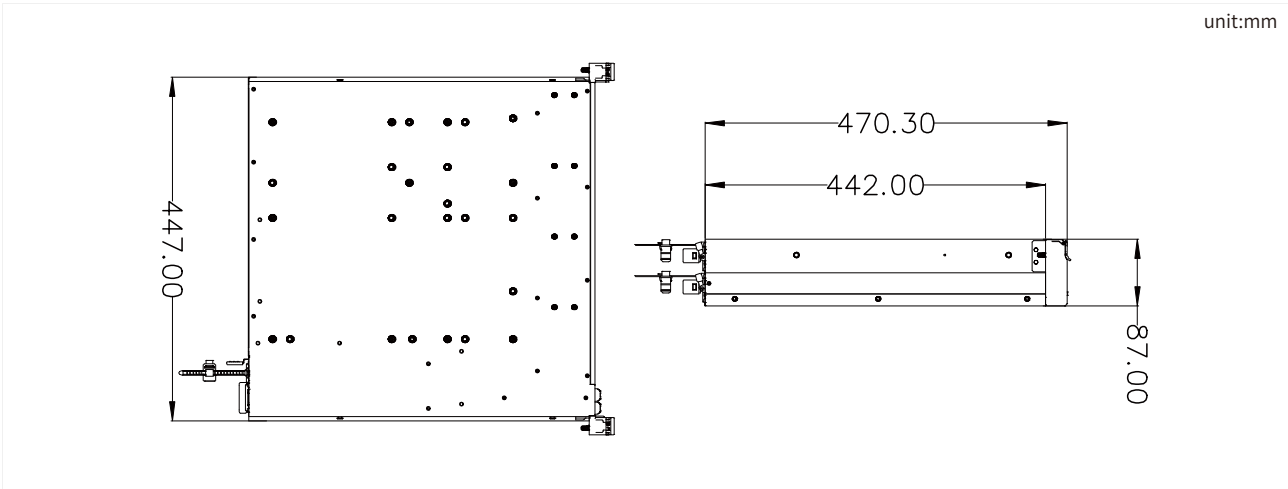
## Product Parameters

|                |                                                                                           |                                                                                                                                                                                         |
|----------------|-------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>System</b>  |                                                                                           |                                                                                                                                                                                         |
| CPU            | 1/2 Gen4 Intel® Xeon® Scalable Processors, Intel® C741 PCH                                | <b>Power&amp; TDP</b> 550W, 800W, 1200W, 1600W, 1+1 hot swap redundant power supply                                                                                                     |
| RAM            | 16*DDR5,5600MHz ECC RDIMM(3DS) 4TB max. (16*256GB)                                        | <b>OS</b> Windows Server 2012/2008 R2(64-bit) , Windows SBS 2011(64-bit), Red Hat Enterprise Linux Server(32/64-bit), Suse Enterprise Linux Server(32/64-bit), Ubuntu Server(32/64-bit) |
| Expansion      | 2*PCIe5.0X16+1*PCIe5.0X8; 1*M.2 22110/2280 M-Key (PCIe4.0X2) , 3*MCI0X8(6*PCIe5.0X4,NVMe) | <b>Mechanical</b>                                                                                                                                                                       |
| LAN            | 2*Broadcom BCM5720,1GBase-T; 1*IPMI2.0, Aspeed AST2600 BMC                                | <b>Structure</b> Imported SGCC hot dip galvanized steel sheet                                                                                                                           |
| display        | VGA: 1920*1200@60Hz,                                                                      | <b>Color</b> black + silvery                                                                                                                                                            |
| Storage        | 2*2.5" SAS/SATA3.0,RAID0,1                                                                | <b>Installation Dimension (W*H*D)</b> 442*447*87mm                                                                                                                                      |
| I/O Port       | F:2*USB3.0; B:1*VGA, 1*COM, 4*USB3.0, 1*IPMI (RJ45) , 2*LAN (RJ45)                        | <b>Weight</b> TBD                                                                                                                                                                       |
| LED            | 1*Power LED, 1*ERROR LED, 1*HDD LED, 2*NIC network LED                                    | <b>Environmental</b>                                                                                                                                                                    |
| Switches       | 1*Power SW, 1*RST, 1*UID                                                                  | <b>Operating temp.</b> 0~50°C                                                                                                                                                           |
| Watchdog timer | programmable via software1 to 255 second                                                  | <b>Storage temp.</b> -20°C~75°C                                                                                                                                                         |
|                |                                                                                           | <b>Storage humidity</b> 5~95%@40°C, Non-condensing                                                                                                                                      |
|                |                                                                                           | <b>Vibration</b> TBD                                                                                                                                                                    |
|                |                                                                                           | <b>Shock</b> TBD                                                                                                                                                                        |
|                |                                                                                           | <b>Certification/EMC</b> CCC/CE/FCC Class A                                                                                                                                             |

## I/O View



## Dimensions



## Ordering information

| Model              | Processor                                                  | Specifications                    |
|--------------------|------------------------------------------------------------|-----------------------------------|
| ICS-2020-S001-1600 | 1/2 Gen4 Intel® Xeon® Scalable Processors, Intel® Q741 PCH | 1600W, 1+1 redundant power supply |
| ICS-2020-S001-1200 |                                                            | 1200W, 1+1 redundant power supply |
| ICS-2020-S001-800  |                                                            | 800W, 1+1 redundant power supply  |
| ICS-2020-S001-550  |                                                            | 550W, 1+1 redundant power supply  |

# ICS-4010

4U dual-channel server, Intel Xeon 2 expandable series processors, 2\*2.5 "hot swap drive bay, three PCIe expansion slots, 1\*VGA, 1\*COM, 4\*USB3.0, 2\*LAN, 1\*IPMI, support for different power supply redundancy.

## Key Specification

- 1/2 Intel Xeon Gen2 scalable series processors
- 16\*DDR4, 2133/2400 /2666/2933 MHz ECC LRDIMM /RDIMM,4TB max.
- 8x2.5/3.5" hot-swap drive bay and 2x2.5"SAS/ SATA drive bay(built-in)
- 6\*PCIe3.0X16, 1\*PCIe3.0X8(X4 signal)
- 4\*USB3.0, 2\*USB2.0, 1\*VGA,1\*COM, 2\*LAN,1\*IPMI
- 4x8038 hot-swap high-speed fan+2x8038 fan module(rear)
- Supports 550/800/1200/1600/2000/2200W 1+1 redundant power supply



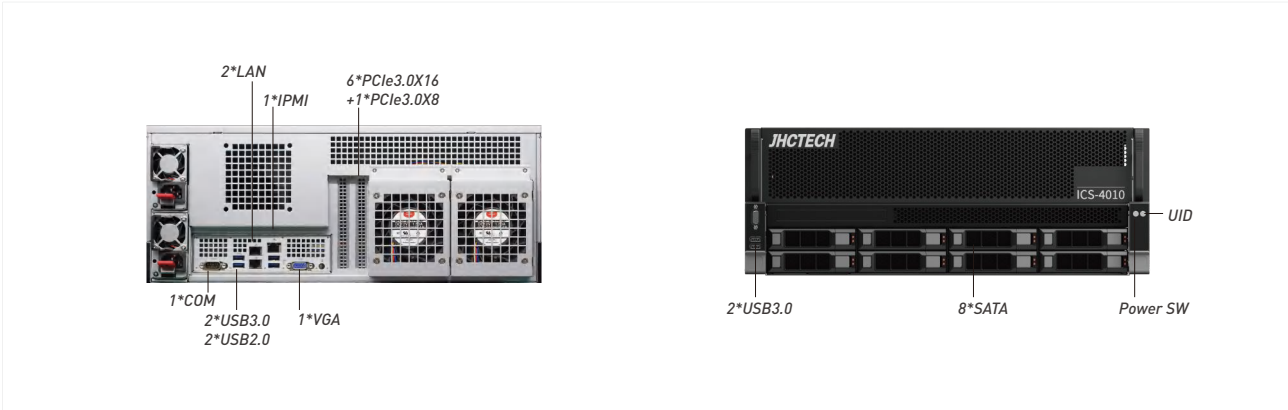
## Product Overview

ICS-4010 is a dual-channel edge computing server, equipped with 1 or 2 2nd-gen Intel® Xeon extensible series processors, C621 chipsets, 16 ECC LRDIMM/RDIMM DDR4 memory slots, 1 M.2 ports, 2 Gigabit network ports, 1 management network port, 7 PCIe expansion slots, supports a maximum of four full-height, dual-width GPU cards.It has computing and storage capabilities, suitable for artificial intelligence, virtualization, cloud computing, big data processing, distributed storage, enterprise market or telecom business applications.

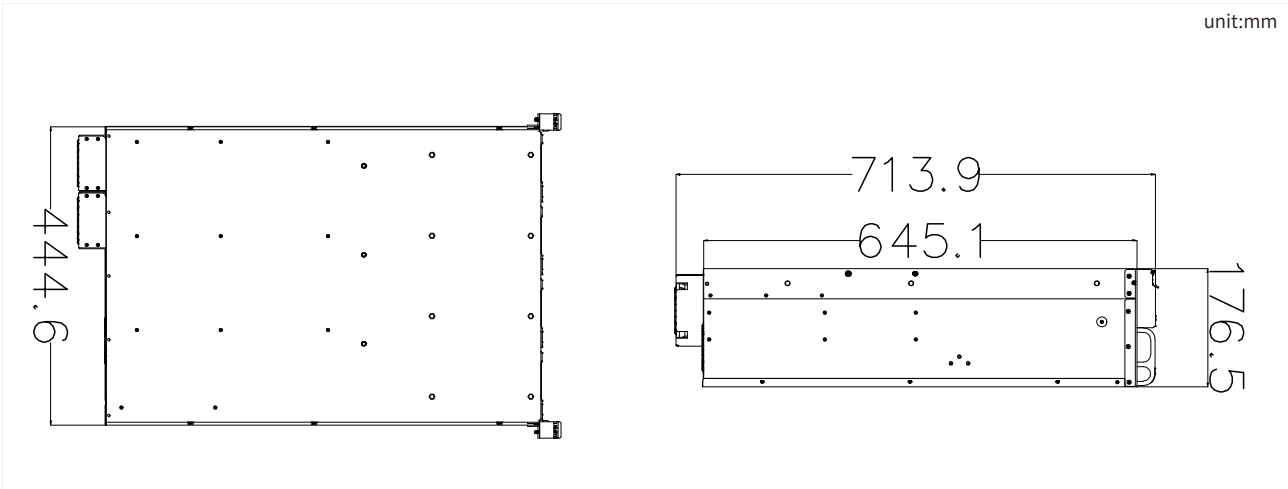
## Product Parameters

|            |     |                                                                                      |                                                                                           |                                                                                                                                                                               |
|------------|-----|--------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| System     | CPU | 1/2 Gen2 Intel® Xeon® Scalable Processors, Intel® C621 PCH                           | Power& TDP                                                                                | 550W/800W/1200W/1600W/2000W/2200W, 1+1 hot swap redundant power supply                                                                                                        |
|            | RAM | 16*DDR4,2933MHz ECC LRDIMM/RDIMM LRDIMM:4TB max.(16*256GB); RDIMM:2TB max.(16*128GB) | OS                                                                                        | Windows Server 2012/2008 R2(64-bit) , Windows SBS 2011(64-bit), Red Hat Enterprise Linux Server(32/64-bit), Suse Enterprise Linux Server(32/64-bit), Ubuntu Server(32/64-bit) |
| Mechanical |     |                                                                                      |                                                                                           |                                                                                                                                                                               |
|            |     | Expansion                                                                            | 6*PCIe3.0X16+1*PCIe3.0X8(X4); 1*M.2 22110/2280 M-Key (PCIe3.0X4)                          |                                                                                                                                                                               |
|            |     | LAN                                                                                  | 2*I210AT,10M-1000M; 1*IPMI2.0, Aspeed AST2500 BMC                                         |                                                                                                                                                                               |
|            |     | display                                                                              | VGA: 1920*1200@60Hz,                                                                      |                                                                                                                                                                               |
|            |     | Storage                                                                              | 8*2.5" SAS/SATA3.0,hot swap hard drive bay,RAID0,1, 5, 10; 2*2.5" SAS/SATA hard drive bay |                                                                                                                                                                               |
|            |     | I/O Port                                                                             | F:2*USB3.0; B:1*VGA, 1*COM, 2*USB3.0, 2*USB2.0,1*IPMI (RJ45) , 2*LAN (RJ45)               |                                                                                                                                                                               |
|            |     | LED                                                                                  | 1*Power LED, 1*ERROR LED, 1*HDD LED, 2*NIC network LED                                    |                                                                                                                                                                               |
|            |     | Switches                                                                             | 1*Power SW, 1*RST, 1*UID                                                                  |                                                                                                                                                                               |
|            |     | Watchdog timer                                                                       | programmable via software1 to 255 second                                                  |                                                                                                                                                                               |
|            |     |                                                                                      | Environmental                                                                             |                                                                                                                                                                               |
|            |     |                                                                                      | Operating temp.                                                                           | 0~50℃                                                                                                                                                                         |
|            |     |                                                                                      | Storage temp.                                                                             | -20℃~75℃                                                                                                                                                                      |
|            |     |                                                                                      | Storage humidity                                                                          | 5~95%@40℃, Non-condensing                                                                                                                                                     |
|            |     |                                                                                      | Vibration                                                                                 | TBD                                                                                                                                                                           |
|            |     |                                                                                      | Shock                                                                                     | TBD                                                                                                                                                                           |
|            |     |                                                                                      | Certification/EMC                                                                         | CCC/CE/FCC Class A                                                                                                                                                            |

## I/O View



## Dimensions



## Ordering information

| Model              | Processor                                                  | Specifications                                                                                                                                                                                                                                |                                   |
|--------------------|------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|
| ICS-4010-S001-2200 | Intel®Xeon Gen2 Scalable series processors Intel® C621 PCH | 16*DDR4 LRDIMM/RDIMM, 2*LAN, 1*IPMI, 4*USB3.0, 2*USB2.0, 1*COM, 1*VGA, 8*3.5/2.5"SAS/SATA bay, 2*2.5"SAS/SATA bay(built-in) , 6*PCIe 3.0X16, 1*PCIe3.0X8(X4 signal), 2*M.2(PCIe3.0X4), 4x8038 temperature control fan+2x8038 fan module(rear) | 2200W, 1+1 redundant power supply |
| ICS-4010-S001-2000 |                                                            |                                                                                                                                                                                                                                               | 1600W, 1+1 redundant power supply |
| ICS-4010-S001-1600 |                                                            |                                                                                                                                                                                                                                               | 1200W, 1+1 redundant power supply |
| ICS-4010-S001-1200 |                                                            |                                                                                                                                                                                                                                               | 800W, 1+1 redundant power supply  |
| ICS-4010-S001-800  |                                                            |                                                                                                                                                                                                                                               | 800W, 1+1 redundant power supply  |
| ICS-4010-S001-550  |                                                            |                                                                                                                                                                                                                                               | 550W, 1+1 redundant power supply  |



# ICS-4040

4U dual-channel server, Intel Xeon 4th-gen scalable series processors, support 8x2.5/3.5" hot-swap drive bay and 2x2.5 "SAS/SATA drive bay built-in), 7xPCIe expansion slots,1xVGA, 1xCOM, 6xUSB3.0, 2xLAN, 1xIPMI

## Key Specification

- 1/2 Intel Xeon Gen4 scalable series processors
- 16\*DDR5, 5600/5200/4800/4400/4000 MT/s,3DS RDIMM, 4TB max.
- 8x2.5/3.5" hot-swap drive bay and 2x2.5"SAS/ SATA drive bay(built-in)
- 6\*PCIe5.0X16, 1\*PCIe5.0X8
- 6\*USB3.0, 1\*VGA,1\*COM, 2\*LAN, 1\*IPMI
- 4x8038 hot-swap high-speed fan+2x8038 fan module(rear)
- Supports 550/800/1200/1600/2000/2200W 1+1 redundant power supply



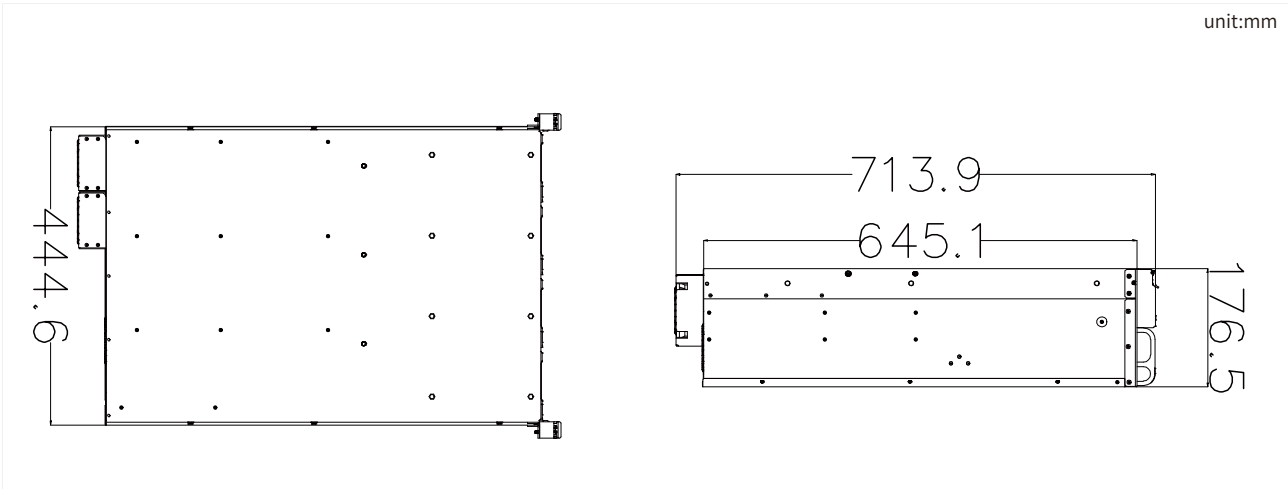
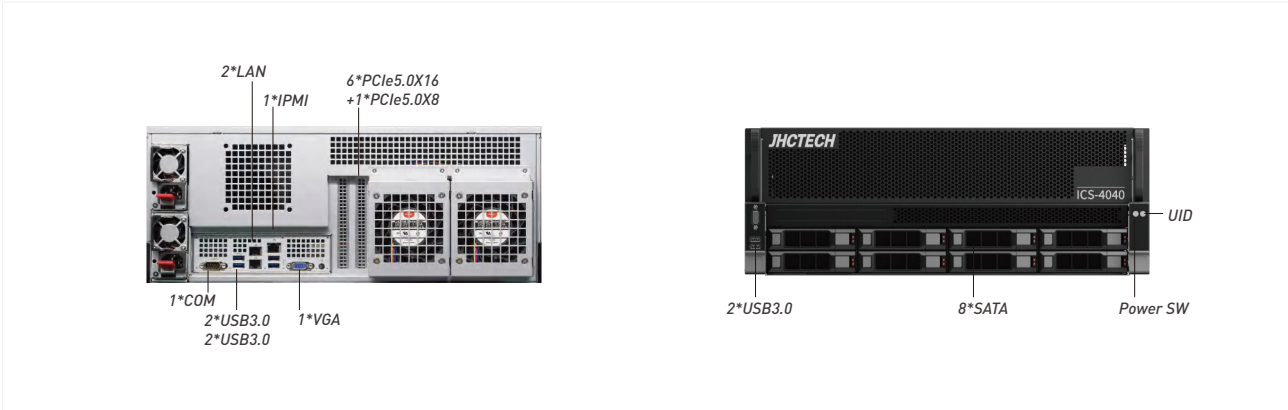
## Product Overview

ICS-4040 is a dual-channel edge computing server, equipped with 1 or 2 4th-gen Intel® Xeon extensible series processors, C741 chipsets, 16 ECC RDIMM/3DS RDIMM DDR5 memory slots, 2 M.2 ports, 2 Gigabit network ports, 1 management network port, 7 PCIe expansion slots, supports a maximum of four full-height, dual-width GPU cards.It has computing and storage capabilities, suitable for artificial intelligence, virtualization, cloud computing, big data processing, distributed storage, enterprise market or telecom business applications.

## Product Parameters

|                |                                                                                                       |  |  |                   |                                                                                                                                                                         |
|----------------|-------------------------------------------------------------------------------------------------------|--|--|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| System         | 1/2 Gen4 Intel® Xeon® Scalable Processors, Intel® C741 PCH                                            |  |  | Power& TDP        | 550W/800W/1200W/1600W/2000W/2200W, 1+1 hot swap redundant power supply                                                                                                  |
| RAM            | 16*DDR5,5600MHz, 3DS RDIMM/RDIMM 4T max.(16*256GB)                                                    |  |  | OS                | Microsoft Windows Server, Microsoft Hyper-V Server, Red Hat Enterprise Linux, SUSE Linux Enterprise Server, CentOS, Ubuntu, Oracle Linux, VMware ESXi, Citrix XenServer |
| Expansion      | 6*PCIe5.0X16+1*PCIe5.0X8(X4); 1*M.2 22110/2280 M-Key(PCIe4.0X4); 3*MCIO(PCIe5.0X8), 6*NVMe(PCIe5.0X4) |  |  |                   |                                                                                                                                                                         |
| LAN            | 2*Intel I210AT 10M-1000M; 1*IPMI2.0, Aspeed AST2600 BMC                                               |  |  | Structure         | Imported SGCC fingerprint resistant galvanized steel, 19-inch rack 4U standard                                                                                          |
| display        | VGA:1920*1200@60Hz,                                                                                   |  |  | Color             | black + silvery                                                                                                                                                         |
| Storage        | 8*2.5"/3.5" SAS/SATA, RAID0/1/5/10; 2*2.5" SAS/SATA                                                   |  |  | Installation      | Desktop Mounting                                                                                                                                                        |
|                |                                                                                                       |  |  | Dimension (W*H*D) | 645*445*176.5mm                                                                                                                                                         |
| I/O Port       | F:2*USB3.0; B:1*VGA, 1*COM, 4*USB3.0;1*IPMI (RJ45) , 2*LAN (RJ45)                                     |  |  | Weight            | 18KG                                                                                                                                                                    |
|                |                                                                                                       |  |  | Environmental     |                                                                                                                                                                         |
| LED            | 1*Power LED(on power button), 2*LAN LED, 1*HDD LED                                                    |  |  | Operating temp.   | 5~35°C                                                                                                                                                                  |
|                |                                                                                                       |  |  | Storage temp.     | -40°C~65°C                                                                                                                                                              |
| Switches       | 1*Power SW, 1*RST, 1*UID                                                                              |  |  | Storage humidity  | 5~95%@40°C, Non-condensing                                                                                                                                              |
| Watchdog timer | programmable via software1 to 255 second                                                              |  |  | Vibration         | TBD                                                                                                                                                                     |
|                |                                                                                                       |  |  | Shock             | TBD                                                                                                                                                                     |
|                |                                                                                                       |  |  | Certification/EMC | CCC/CE/FCC Class A                                                                                                                                                      |

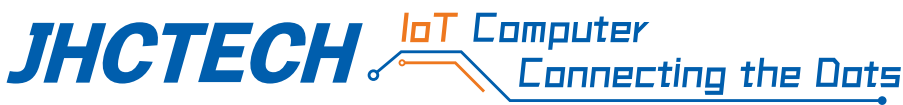
## I/O View



## Ordering information

| Model              | Processor                                                  | Specifications                                                                                                                                                                                                          |                                   |
|--------------------|------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|
| ICS-4040-S001-2200 | Intel®Xeon Gen4 Scalable series processors Intel® C741 PCH | 16*DDR5 LRDIMM/RDIMM, 2*LAN, 1*IPMI, 6*USB3.0, 1*COM, 1*VGA, 8*3.5/2.5"SAS/SATA bay, 2*2.5"SAS /SATA bay(built-in), 6*PCIe 5.0X16, 1*PCIe5.0X8, 2*M.2(PCIe4.0X4), 4x8038 temperature controlfan+2x8038 fan module(rear) | 2200W, 1+1 redundant power supply |
| ICS-4040-S001-2000 |                                                            |                                                                                                                                                                                                                         | 1600W, 1+1 redundant power supply |
| ICS-4040-S001-1600 |                                                            |                                                                                                                                                                                                                         | 1200W, 1+1 redundant power supply |
| ICS-4040-S001-1200 |                                                            |                                                                                                                                                                                                                         | 800W, 1+1 redundant power supply  |
| ICS-4040-S001-800  |                                                            |                                                                                                                                                                                                                         | 800W, 1+1 redundant power supply  |
| ICS-4040-S001-550  |                                                            |                                                                                                                                                                                                                         | 550W, 1+1 redundant power supply  |





# NODE&SBC

NODE Core Module & Single Board Computer



APPLICATION

▶▶▶

Medical electronics



Maternal and child monitor

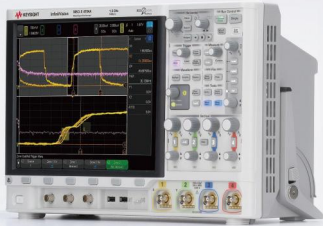


Blood analyzer



Urine Sediment Analyzer

Industrial portable analyzer



High-end oscilloscope



Battery protection tester



Robot

AGV

CNC Machine

Machine Vision

Product Listing

F1-F6

|           |     |           |     |               |     |
|-----------|-----|-----------|-----|---------------|-----|
| NODE-I912 | F01 | ECM-I913  | F15 | PADR-M102-718 | F31 |
|           |     | PITX-I915 | F17 |               |     |
| NODE-I719 | F03 | MATX-I953 | F19 | PADR-M102-910 | F33 |
| NODE-I914 | F05 | MATX-I961 | F21 | PADR-M102-913 | F35 |
| NODE-I973 | F07 | MATX-I964 | F23 | PADR-S501-953 | F37 |
| EPI-I908  | F09 | ATX-I971  | F25 | PADR-S501-961 | F39 |
| ECM-I718  | F11 | ATX-I980  | F27 | PADR-S501-964 | F41 |
| ECM-I910  | F13 | PADR-M101 | F29 | PADR-S501-971 | F43 |
|           |     |           |     | PADR-S501-980 | F45 |

COMPLETE LIST

Service Content

NODE Core Module

- 1 Carrier Board Design:Comprehensive hardware and software design solutions
1. Providing reference drawings and schematics for developing carrier boards.
2. BIOS customization support
3. Linux driver support
4. Review of Party A's schematic and layout designs
5. Hardware debugging support
6. Recommendations for product reliability, including heat dissipation and ESD protection
- 2 Provide detailed electronic principle and structural heat dissipation design references
- 3 Structural, industrial and thermal design and other comprehensive design support

Advantages of Modular Computers

- Standard Products
- 1 Modular functionality for easy maintenance
- 2 Standard applications
- Customer Design:
- 1 Simplified Customization Process
- 2 Tailored to Individual Needs
- 3 Protect Core Technologies
- 4 Rapid Response to Market Trends

- JHC Design:
- 1 Reduce R&D Costs
- 2 Improve Efficiency
- 3 Increased Product Value
- 4 Cost Reduction

|                                                         |  |  |  |  |                                                                                                                                                                       |  |  |  |
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| NODE-I912                                               |  |  |  |  | NODE-I719                                                                                                                                                             |  |  |  |
| NODE-I914                                               |  |  |  |  | NODE-I973                                                                                                                                                             |  |  |  |
| EPI-I908                                                |  |  |  |  | ECM-I718                                                                                                                                                              |  |  |  |
| ECM-I910                                                |  |  |  |  | ECM-I913                                                                                                                                                              |  |  |  |
| <div>System</div>                                       |  |  |  |  |                                                                                                                                                                       |  |  |  |
| CPU                                                     |  |  |  |  | Intel® Skylake/Kabylake-U processor<br>Celeron/Core i3/i5/i7                                                                                                          |  |  |  |
| RAM                                                     |  |  |  |  | Intel® Elkhart lake SoC CPU:<br>Celeron J6412 2.0-2.6GHz/<br>Celeron N6210 1.2-2.6GHz                                                                                 |  |  |  |
| Graphics                                                |  |  |  |  | Intel® Gen. 9 HD Graphics;HDMI & 48-Bit LVDS<br>Dual display, support Intel HD video & wireless<br>display technology;<br>HDMI:3840*2160@30Hz,<br>LVDS:1920*1200@60Hz |  |  |  |
| I/O                                                     |  |  |  |  |                                                                                                                                                                       |  |  |  |
| LAN                                                     |  |  |  |  | 2*Intel® I210AT/I211AT, 10-1000 M                                                                                                                                     |  |  |  |
| USB                                                     |  |  |  |  | 2*Realtek 8111H, 10-1000M,WOL                                                                                                                                         |  |  |  |
| Display Audio                                           |  |  |  |  | 1*HDMI+1*LVDS(pin)<br>1*Line out+1*Mic, Realtek ALC662,1*Amplifier                                                                                                    |  |  |  |
| Serial port &Others                                     |  |  |  |  | 2*RS232/422/485,2*RS232(pin);<br>2 channel power amplifier output; 1*SM Bus<br>wafer; 1*Capacitive touch screen interface,<br>1*Resistive touch screen interface      |  |  |  |
| DIO                                                     |  |  |  |  | 8-bit DIO,programmable TTL                                                                                                                                            |  |  |  |
| Storage                                                 |  |  |  |  |                                                                                                                                                                       |  |  |  |
| storage                                                 |  |  |  |  | 2*SATA3 6.0Gbps;<br>1*mSATA,support AHCI                                                                                                                              |  |  |  |
| Expansion                                               |  |  |  |  |                                                                                                                                                                       |  |  |  |
| Expansion                                               |  |  |  |  | 1*MiniPCle(PCleX1/USB+SIM),<br>4G/LTE/GSM/Wifi/BT/GPS;<br>1*80pin EIO:LPC、 SM Bus、2*PCleX1                                                                            |  |  |  |
| Power Supply                                            |  |  |  |  |                                                                                                                                                                       |  |  |  |
| Power& TDP                                              |  |  |  |  | DC 9~36V, 3-pin terminal;<br>45W(I7-7500U, 4GB, 64GB SSD, 1TB HDD)                                                                                                    |  |  |  |
| Environment                                             |  |  |  |  |                                                                                                                                                                       |  |  |  |
| Dimension (W*H)                                         |  |  |  |  | 190*115mm<br>(Height: 27.4mm, PCB: 1.6mm)                                                                                                                             |  |  |  |
| Operating temp.                                         |  |  |  |  | 0~60°C                                                                                                                                                                |  |  |  |
| Storage temp.                                           |  |  |  |  | -40°C~85°C                                                                                                                                                            |  |  |  |
| Storage Humidity                                        |  |  |  |  | 10~95%@40°C, No condensation                                                                                                                                          |  |  |  |
| Certification                                           |  |  |  |  | CE/FCC Class A                                                                                                                                                        |  |  |  |
| Watchdog timer                                          |  |  |  |  | programmable via software 1 to 255 second                                                                                                                             |  |  |  |
| OS                                                      |  |  |  |  | Windows 7, Windows 10, Linux Fedora Ubuntu<br>(Note: The seventh generation Intel®<br>Kabylake-U processor does not support<br>Windows 7)                             |  |  |  |
| OS Support                                              |  |  |  |  | Windows 10/Windows 11 64 bit, SUSE,<br>Ubuntu, Wind River, Linux                                                                                                      |  |  |  |





|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                     |               |                                                                                                            |               |                                                                                                                                                                            |               |                                                                                                                                       |               |                                                                                                                                                           |               |                                                                                                                                                |               |                                                                                                                                       |               |                                                                                                                                       |  |  |
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| <div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div> |                                                                                                     |               |                                                                                                            |               |                                                                                                                                                                            |               |                                                                                                                                       |               |                                                                                                                                                           |               |                                                                                                                                                |               |                                                                                                                                       |               |                                                                                                                                       |  |  |
| PADR-M102-718                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                     | PADR-M102-910 |                                                                                                            | PADR-M102-913 |                                                                                                                                                                            | PADR-S501-953 |                                                                                                                                       | PADR-S501-961 |                                                                                                                                                           | PADR-S501-964 |                                                                                                                                                | PADR-S501-971 |                                                                                                                                       | PADR-S501-980 |                                                                                                                                       |  |  |
| System                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                     |               |                                                                                                            |               |                                                                                                                                                                            |               |                                                                                                                                       |               |                                                                                                                                                           |               |                                                                                                                                                |               |                                                                                                                                       |               |                                                                                                                                       |  |  |
| CPU                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Intel® Elkhart lake SoC CPU:<br>Celeron J6412<br>Celeron N6210                                      |               | Intel® Whiskey lake-U CPU, Core I7-8565U,Core I5-8265U,Core I3-8145U,Celeron 4305U                         |               | Intel® Tiger lake U Soc CPU ,<br>core i3-1115G4/i5-1135G7/i7-1165G7,<br>Celeron 6305,TDP 12W/15W/28W                                                                       |               | Intel 6/7th Gen. SKL/KBL-S Core i7/i5/i3/<br>Pentium/Celeron LGA1151 CPU,<br>up to 91W, H110 Chipset                                  |               | Intel® 8/9th Gen. Coffee-S Core i9/i7/i5/i3<br>LGA1151 CPU,up to 95W,Q370 Chipset                                                                         |               | Intel® 8/9th Gen. Coffee-S Core i9/i7/i5/i3<br>LGA1151 CPU,up to 95W,H310 Chipset                                                              |               | Intel 10th Gen. Cometlake-S Core<br>i9/i7/i5/i3/Pentium/Celeron LGA1200 CPU,up<br>to 125W, H420E Chipset                              |               | Intel gen 12/13th Alderlake-S/Raptor Lake-S<br>LGA1700 CPU;<br>Q670 PCH                                                               |  |  |
| RAM                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 1*DDR4, 3200MHz, 32GB max.                                                                          |               | 2*DDR4, 2400MHz, 32GB max.                                                                                 |               | 2*DDR4, 3200MHz, 64GB max.                                                                                                                                                 |               | 2*288 pin DDR4, 2400MHz, 32GB max.                                                                                                    |               | 4*288 pin DDR4, 2666MHz, 128GB max.                                                                                                                       |               | 2*288 pin DDR4, 2666MHz, 64GB max.                                                                                                             |               | 2*288 pin DDR4, 2933MHz, 64GB max.                                                                                                    |               | 2*288 pin DDR4, 2933MHz, 64GB max.                                                                                                    |  |  |
| Graphics                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Intel® Gen. 10 UHD Graphics,<br>HDMI:4096*2304@60Hz,<br>DP:4096*2160@60Hz,2 independent Display     |               | Intel® Gen. 9 UHD Graphics,<br>HDMI:4096*2304@24Hz,<br>DP:4096*2304@60Hz,2 independent Display             |               | Intel UHD Graphics/ Xe Graphics , Supports<br>Intel DL boost,DirectX12.1,<br>OpenGL 4.6 and OpenCL 3.0,<br>HDMI:4096*2304@60Hz,<br>DP:7680*4320@60Hz,2 independent Display |               | Intel HD Graphics, DirectX12, OpenGL 4.5;<br>HDMI:4096*2304@24Hz,<br>VGA:1920*1200@60Hz,<br>DVI-D:1920*1200@60Hz                      |               | Intel® UHD Graphics,DirectX12,OpenGL 4.5;<br>HDMI:4096*2304@24Hz,<br>DP:4096*2304@60Hz,3 independent display                                              |               | Intel® UHD Graphics,DirectX12,OpenGL 4.5;<br>HDMI:4096*2304@24Hz,<br>VGA:1920*1200@60Hz,<br>DVI-D:1920*1200@60Hz                               |               | Intel® UHD Graphics,DirectX12,OpenGL4.5;<br>HDMI:4096*2160@30Hz,<br>VGA:1920*1200@60Hz                                                |               | Intel® UHD Graphics,DirectX12,OpenGL4.5;<br>HDMI:4096*2160@30Hz,<br>VGA:1920*1200@60Hz                                                |  |  |
| I/O                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                     |               |                                                                                                            |               |                                                                                                                                                                            |               |                                                                                                                                       |               |                                                                                                                                                           |               |                                                                                                                                                |               |                                                                                                                                       |               |                                                                                                                                       |  |  |
| LAN                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2*Realtek 8111H,10-1000M,WOL                                                                        |               | 1*Intel I219LM,10-1000M,WOL;<br>1*Intel I226V,10-1000M,WOL                                                 |               | 1*Intel I219LM,10-1000M,WOL,iAMT13.0;<br>1*Intel I226V,10-1000M,WOL                                                                                                        |               | 1*Intel I210AT/I211AT, 10-1000M,WOL;<br>1*Intel I219LM, 10-1000M,WOL                                                                  |               | 2*Intel I210AT/I211AT, 10-1000M,WOL;<br>1*Intel I219LM,10-1000M,WOL/AMT12.0/iVpro                                                                         |               | 1*Intel I226V, 10M-2.5G, WOL;<br>1*Intel I219LM, 10-1000M, WOL                                                                                 |               | 1*Intel I226V, 10M-2.5G, WOL;<br>1*Intel I219LM, 10-1000M, WOL                                                                        |               | 1*Intel I226V, 10M-2.5G, WOL;<br>1*Intel I219LM, 10-1000M, WOL                                                                        |  |  |
| USB                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 4*USB3.1                                                                                            |               | 4*USB3.0(5G)                                                                                               |               | 4*USB3.2                                                                                                                                                                   |               | 4*USB3.0(5Gbps), 5*USB2.0                                                                                                             |               | 4*USB3.1 Gen2(10Gbps), 7*USB2.0                                                                                                                           |               | 4*USB3.1 Gen1(5Gbps), 5*USB2.0                                                                                                                 |               | 4*USB3.2 Gen1(5Gbps), 5*USB2.0                                                                                                        |               | 4*USB3.2 Gen1(5Gbps), 5*USB2.0                                                                                                        |  |  |
| Display                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 1*DP+1*HDMI                                                                                         |               | 1*DP+1*HDMI                                                                                                |               | 1*DP+1*HDMI                                                                                                                                                                |               | 1*HDMI+1*VGA+1*DVI-D                                                                                                                  |               | 2*DP+1*HDMI                                                                                                                                               |               | 1*HDMI+1*VGA+1*DVI-D                                                                                                                           |               | 1*HDMI+1*VGA                                                                                                                          |               | 1*HDMI+1*VGA                                                                                                                          |  |  |
| Audio                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 1*Line out+1*Mic,Realtek ALC897                                                                     |               | 1*Line out+1*Mic,Realtek ALC897                                                                            |               | 1*Line out+1*Mic,Realtek ALC897                                                                                                                                            |               | 1*Line out+1*Mic,Realtek ALC662VD/ALC897                                                                                              |               | 1*Line out+1*Mic,Realtek ALC662VD                                                                                                                         |               | 1*Line out+1*Mic,Realtek ALC897                                                                                                                |               | 1*Line out+1*Mic,Realtek ALC897                                                                                                       |               | 1*Line out+1*Mic,Realtek ALC897                                                                                                       |  |  |
| Serial port & Others                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 2*RS232/422/485, 1*RS232                                                                            |               | 2*RS232/422/485, 1*RS232                                                                                   |               | 2*RS232/422/485, 1*RS232                                                                                                                                                   |               | 2*RS232/422/485, 1*RS232                                                                                                              |               | 2*RS232/422/485                                                                                                                                           |               | 2*RS232/422/485, 1*RS232                                                                                                                       |               | 2*RS232/422/485, 2*RS232                                                                                                              |               | 2*RS232/422/485, 2*RS232                                                                                                              |  |  |
| DIO                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 8bit DIO(OptionalRS232)programmable                                                                 |               | 8bit DIO(OptionalRS232)programmable                                                                        |               | 8bit DIO(OptionalRS232)programmable                                                                                                                                        |               | 8bit DIO(pin),programmable                                                                                                            |               | 8bit DIO(pin),programmable                                                                                                                                |               | 8bit DIO(pin),programmable                                                                                                                     |               | 8bit DIO(pin),programmable                                                                                                            |               | 8bit DIO(pin),programmable                                                                                                            |  |  |
| Storage                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                     |               |                                                                                                            |               |                                                                                                                                                                            |               |                                                                                                                                       |               |                                                                                                                                                           |               |                                                                                                                                                |               |                                                                                                                                       |               |                                                                                                                                       |  |  |
| storage                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 1*2.5" SATA,15mm;<br>1*mSATA                                                                        |               | 1*2.5" SATA,15mm;<br>1*mSATA(Optional)                                                                     |               | 1*2.5" SATA,15mm;<br>1*mSATA(Optional)                                                                                                                                     |               | 4xSATA3, 6.0Gbps , the box is designed with<br>4x3.5 "and 2x2.5" a set of anti-vibration hard<br>disk bay, 1 ultrathin DVD driver bay |               | 4xSATA3, 6.0Gbps , the box is designed with<br>4x3.5 "and 2x2.5" a set of anti-vibration hard<br>disk bay, 1 ultrathin DVD driver bay                     |               | 4xSATA3, 6.0Gbps , the box is designed with<br>4x3.5 "and 2x2.5" a set of anti-vibration hard<br>disk bay, 1 ultrathin DVD driver bay          |               | 4xSATA3, 6.0Gbps , the box is designed with<br>4x3.5 "and 2x2.5" a set of anti-vibration hard<br>disk bay, 1 ultrathin DVD driver bay |               | 4xSATA3, 6.0Gbps , the box is designed with<br>4x3.5 "and 2x2.5" a set of anti-vibration hard<br>disk bay, 1 ultrathin DVD driver bay |  |  |
| Expansion                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                     |               |                                                                                                            |               |                                                                                                                                                                            |               |                                                                                                                                       |               |                                                                                                                                                           |               |                                                                                                                                                |               |                                                                                                                                       |               |                                                                                                                                       |  |  |
| Expansion                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 1*M.2 2230 B-Key,Wifi5/BT5.0,<br>or 1*M.2 3052 E-Key,4G LTE/5G NR                                   |               | 1*Mini PCIe(+SIM),4G LTE/Wifi/BT/mSATA;<br>1*M.2 2230 E-Key,Wifi/BT                                        |               | 1*Mini PCIe,PCIe module/mSATA;<br>1*M.2 2230 E-Key,Wifi5/BT5.0,<br>or 1*M.2 3052 B-Key(+SIM),4G LTE/5G NR                                                                  |               | 1*PCIe3.0 X16(X16)+<br>2*PCIe2.0 X4(X1)+1*32 bit PCI;<br>1*Mini PCIe(X1)                                                              |               | 2*PCIe3.0 X16(1*X16 or 2*X8)+<br>2*PCIe3.0 X8(X4)+1*32 bit PCI;<br>1*M.2 2280 M-Key(PCIe3.0X4)<br>1*Mini PCIe(X1/USB+SIM)                                 |               | 1*PCIe3.0 X16(X8)+<br>2*PCIe2.0 X4(X1)+1*32 bit PCI;<br>1*M.2 2280/2242 M-Key(PCIe2.0 X2)                                                      |               | 1*PCIe3.0 X16(X16)+<br>3*PCIe3.0 X4(X2+1+1 or Bios X4)+<br>3*32 bit PCI                                                               |               | 1*PCIe3.0 X16(X16)+<br>3*PCIe3.0 X4(X2+1+1 or Bios X4)+<br>3*32 bit PCI                                                               |  |  |
| Power Supply                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                     |               |                                                                                                            |               |                                                                                                                                                                            |               |                                                                                                                                       |               |                                                                                                                                                           |               |                                                                                                                                                |               |                                                                                                                                       |               |                                                                                                                                       |  |  |
| Power&TDP                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | DC 12V/DC 9~36V;<br>TDP:TBD                                                                         |               | DC 12V/DC 9~36V;<br>27.9W(I7-8565U,16GB DDR,1*4T SSD)                                                      |               | DC 12V/DC 9~36V;<br>TDP:TBD                                                                                                                                                |               | AC100-240V,Standard ATXPower 300W,<br>Optional 500W/750W;<br>TDP:TBD                                                                  |               | AC100-240V,Standard ATXPower 300W,<br>Optional 500W/750W/1000W;<br>TDP:TBD                                                                                |               | AC100-240V,Standard ATXPower 300W,<br>Optional 500W/750W;<br>197.8W (I7-9900K/16G DDR4/256G SSD)                                               |               | AC100-240V,Standard ATXPower 300W,<br>Optional 500W/750W;<br>184.85W(I7-10700K/16G DDR4/256G SSD)                                     |               | AC100-240V,Standard ATXPower 300W,<br>Optional 500W/750W;<br>184.85W(I7-10700K/16G DDR4/256G SSD)                                     |  |  |
| Mechanical                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                     |               |                                                                                                            |               |                                                                                                                                                                            |               |                                                                                                                                       |               |                                                                                                                                                           |               |                                                                                                                                                |               |                                                                                                                                       |               |                                                                                                                                       |  |  |
| Structure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | SGCC                                                                                                |               | SGCC                                                                                                       |               | SGCC                                                                                                                                                                       |               | Door with lock, SGCC, metal mold molding                                                                                              |               | Door with lock, SGCC, metal mold molding                                                                                                                  |               | Door with lock, SGCC, metal mold molding                                                                                                       |               | Door with lock, SGCC, metal mold molding                                                                                              |               | Door with lock, SGCC, metal mold molding                                                                                              |  |  |
| Color                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Silk Grey+Pastel Blue                                                                               |               | Silk Grey+Pastel Blue                                                                                      |               | Silk Grey+Pastel Blue                                                                                                                                                      |               | Granite grey                                                                                                                          |               | Granite grey                                                                                                                                              |               | Granite grey                                                                                                                                   |               | Granite grey                                                                                                                          |               | Granite grey                                                                                                                          |  |  |
| Installation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | desktop mounting                                                                                    |               | desktop mounting                                                                                           |               | desktop mounting                                                                                                                                                           |               | Mounted on 19"rack, optional mounting rail set                                                                                        |               | Mounted on 19"rack, optional mounting rail set                                                                                                            |               | Mounted on 19"rack, optional mounting rail set                                                                                                 |               | Mounted on 19"rack, optional mounting rail set                                                                                        |               | Mounted on 19"rack, optional mounting rail set                                                                                        |  |  |
| Dimension (W*H*D)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 204*148*70mm                                                                                        |               | 204*148*70mm                                                                                               |               | 204*148*70mm                                                                                                                                                               |               | 430*470*173mm                                                                                                                         |               | 430*470*173mm                                                                                                                                             |               | 430*470*173mm                                                                                                                                  |               | 430*470*173mm                                                                                                                         |               | 430*470*173mm                                                                                                                         |  |  |
| Weight                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 1.55KG                                                                                              |               | 1.55KG                                                                                                     |               | 1.55KG                                                                                                                                                                     |               | 14KG                                                                                                                                  |               | 14KG                                                                                                                                                      |               | 14KG                                                                                                                                           |               | 14KG                                                                                                                                  |               | 14KG                                                                                                                                  |  |  |
| Environment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                     |               |                                                                                                            |               |                                                                                                                                                                            |               |                                                                                                                                       |               |                                                                                                                                                           |               |                                                                                                                                                |               |                                                                                                                                       |               |                                                                                                                                       |  |  |
| Operating temp.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 0°C~50°C,SSD,with air flow;                                                                         |               | 0°C~50°C ,SSD,with air flow;                                                                               |               | 0°C~50°C,SSD,with air flow;                                                                                                                                                |               | 0°C~50°C                                                                                                                              |               | 0°C~50°C                                                                                                                                                  |               | 0°C~50°C                                                                                                                                       |               | 0°C~50°C                                                                                                                              |               | 0°C~50°C                                                                                                                              |  |  |
| Storage temp.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | -40°C~85°C                                                                                          |               | -40°C~85°C                                                                                                 |               | -40°C~85°C                                                                                                                                                                 |               | -40°C~85°C                                                                                                                            |               | -40°C~85°C                                                                                                                                                |               | -40°C~85°C                                                                                                                                     |               | -40°C~85°C                                                                                                                            |               | -40°C~85°C                                                                                                                            |  |  |
| Storage humidity                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 10~95%@40°C, Non-condensation                                                                       |               | 10~95%@40°C, Non-condensation                                                                              |               | 10~95%@40°C, Non-condensation                                                                                                                                              |               | 10~95%@40°C, Non-condensation                                                                                                         |               | 10~95%@40°C, Non-condensation                                                                                                                             |               | 10~95%@40°C, Non-condensation                                                                                                                  |               | 10~95%@40°C, Non-condensation                                                                                                         |               | 10~95%@40°C, Non-condensation                                                                                                         |  |  |
| Vibration                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 5 grms/5~500Hz/random/operation(SSD);<br>1 grms/5~500Hz/random/operation(HDD)                       |               | 5 grms/5~500Hz/random/operation(SSD);<br>1 grms/5~500Hz/random/operation(HDD)                              |               | 5 grms/5~500Hz/random/operation(SSD);<br>1 grms/5~500Hz/random/operation(HDD)                                                                                              |               | 5 grms/5~500Hz/random/operation(SSD);<br>1 grms/5~500Hz/random/operation(HDD)                                                         |               | 5 grms/5~500Hz/random/operation(SSD);<br>1 grms/5~500Hz/random/operation(HDD)                                                                             |               | 5 grms/5~500Hz/random/operation(SSD);<br>1 grms/5~500Hz/random/operation(HDD)                                                                  |               | 5 grms/5~500Hz/random/operation(SSD);<br>1 grms/5~500Hz/random/operation(HDD)                                                         |               | 5 grms/5~500Hz/random/operation(SSD);<br>1 grms/5~500Hz/random/operation(HDD)                                                         |  |  |
| Shock                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 50g peak acceleration(duration 11ms,SSD);<br>20g peak acceleration(duration 11ms,HDD)               |               | 50g peak acceleration(duration 11ms,SSD);<br>20g peak acceleration(duration 11ms,HDD)                      |               | 50g peak acceleration(duration 11ms,SSD);<br>20g peak acceleration(duration 11ms,HDD)                                                                                      |               | 50g peak acceleration(duration 11ms,SSD);<br>20g peak acceleration(duration 11ms,HDD)                                                 |               | 50g peak acceleration(duration 11ms,SSD);<br>20g peak acceleration(duration 11ms,HDD)                                                                     |               | 50g peak acceleration(duration 11ms,SSD);<br>20g peak acceleration(duration 11ms,HDD)                                                          |               | 50g peak acceleration(duration 11ms,SSD);<br>20g peak acceleration(duration 11ms,HDD)                                                 |               | 50g peak acceleration(duration 11ms,SSD);<br>20g peak acceleration(duration 11ms,HDD)                                                 |  |  |
| Certification                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | CE/FCC Class A                                                                                      |               | CE/FCC Class A                                                                                             |               | CE/FCC Class A                                                                                                                                                             |               | CE/FCC Class A,3C                                                                                                                     |               | CE/FCC Class A, 3C                                                                                                                                        |               | CE/FCC Class A, 3C                                                                                                                             |               | CE/FCC Class A, 3C                                                                                                                    |               | CE/FCC Class A, 3C                                                                                                                    |  |  |
| OS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Windows 10/Windows 11 64 bit, SUSE, Ubuntu, Windows 11, Windows 10, SUSE, Ubuntu, Wind River, Linux |               | Win 11/Win 10*IoT enterprise,Android,-SUSE,Ubuntu,Wind River,Red Hat*Enterprise,Wind River VxWorks*7,Yocto |               |                                                                                                                                                                            |               | Windows 7(SKL-S:32/64 bit,KBL-S:64 bit),<br>Windows 10, Linux                                                                         |               | Windows 10 Enterprise & IOT Enterprise(64)<br>Windows Server 2016 (Intel® Xeon® E)<br>Ubuntu. SuSe. Redhat Enterprise 1,2<br>Wind River VxWorks 7 (CFL-R) |               | Windows7. Windows 10 Enterprise & IOT<br>Enterprise (64 ); Windows Server 2016<br>Ubuntu. SuSe; Redhat Enterprise 1,2<br>Wind River ;VxWorks 7 |               | Windows 10, Windows 11, Linux Ubuntu                                                                                                  |               | Windows 10, Windows 11, Linux Ubuntu                                                                                                  |  |  |
| Watchdog timer                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | programmable via software 1 to 255 second                                                           |               | programmable via software 1 to 255 second                                                                  |               | programmable via software 1 to 255 second                                                                                                                                  |               | programmable via software 1 to 255 second                                                                                             |               | programmable via software 1 to 255 second                                                                                                                 |               | programmable via software 1 to 255 second                                                                                                      |               | programmable via software 1 to 255 second                                                                                             |               | programmable via software 1 to 255 second                                                                                             |  |  |
| F5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                     |               |                                                                                                            |               |                                                                                                                                                                            |               |                                                                                                                                       |               |                                                                                                                                                           |               |                                                                                                                                                |               |                                                                                                                                       |               |                                                                                                                                       |  |  |



# NODE-I912

Intel® Tiger lake U Soc CPU, Intel IEN Type F, supports single-channel DDR4 3200 MHz, up to 64GB. DC IN 12V

## Key Specification

- Intel® Tiger lake U Soc CPU module
- Intel® Core I7/I5/I3/Celeron
- Designed according to Intel IEN Type F specification
- Dual-channel DDR4 3200Mhz, up to 64GB
- 4\*PCle×1 or 1\*PCle×4, 1\*PCle Gen3 lanes, 2\*PCle×1 Gen4 lanes
- 3\*GbE LAN, 2\*SATA, 2\*DDI, 4\*USB3.1, 8\*USB2.0, 3\*COM,
- 1\*HDA, eSPI, DIO
- DC IN 12V



## Product Overview

NODE-I912 powered by Intel® Tiger lake U Soc CPU, designed according to the INTEL industrial edge node Type F standard, supporting dual-channel DDR4 3200MHz memory, up to 64GB. NODE-I912 is a compact product with low power consumption and flexible expansion. It is suitable for medical imaging, military, rail transit and power applications.

## Product Parameters

### Formfactor

INE Type F

#### CPU

Intel® Tiger lake U SoC CPU:

i7-1165G7, 4C8T, 2.7~4.7GHz/28W;  
i5-1135G7, 4C8T, 2.4~4.2GHz/28W;  
i3-1115G4, 2C4T, 3.0~4.1GHz/28W;  
Celeron 6305E, 2C2T, 1.8GHz/15W;

#### DRAM

Dual-channel DDR4 2\*260-pin SO-DIMM, up to 3200MHz, 64GB max.

#### Graphics

Intel UHD Graphics or Iris® Xe Graphics, Supports Intel® Deep Learning Boost, DirectX12.1,OpenGL 4.6 and OpenCL 2.0; HDMI 2.0: 4096x2304@60Hz, DP 1.4: 7680x4320@60Hz, eDP: 4096x2304@60Hz

#### Connector 1

eSPI and Fusa  
PCle Gen3 4x1/1x4  
PCle Gen3 or USB3.2 2  
COM 1  
USB2.0 3  
SATA 1  
DDI 1  
GPIO Up to 15 channels  
F-Panel: Power SW/Reset/PW-LED/HDD-LED

#### Power& TDP

DC IN 12V;  
TDP-up:28W(Celeron 6305E--15W)

#### Dimension

133\*95\*16.6mm

#### Operating temp.

0~60°C(Standard); -40~85°C(Extend)

#### Storage temp.

- 40°C~85°C

#### Storage Humidity

10~95%@40°C, Non-condensing

#### EMC/Certification

CE/FCC Class A

#### Watchdog Timer

Watchdog timeout programmable via software 1 to 255 second

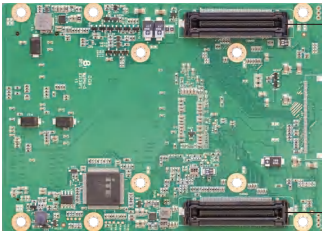
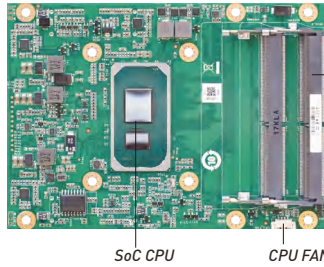
#### OS Support

Windows 10/Windows 11 64 bit, SUSE, Ubuntu, Wind River, Linux

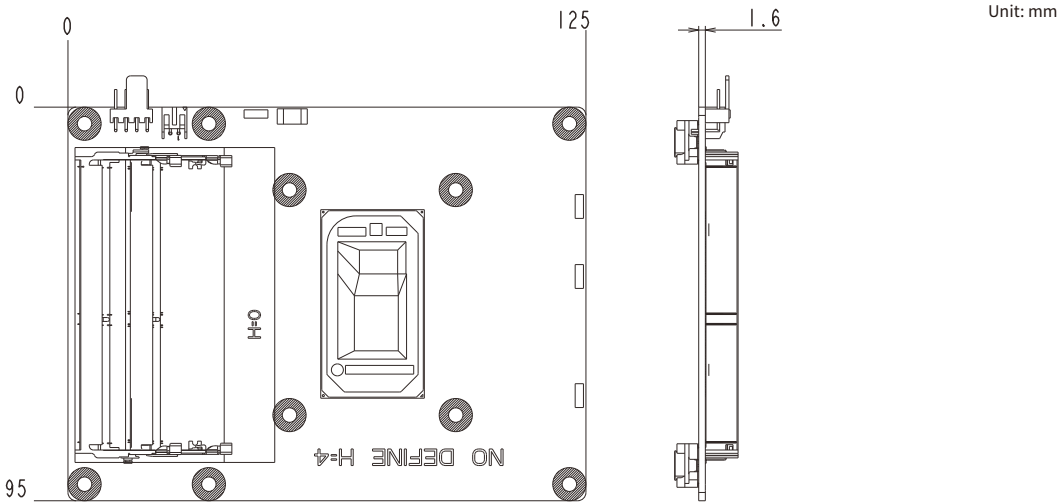
#### Connector 2

PCle Gen3 1  
PCle Gen3 or USB3.1 2  
CPU PCle Gen4 2  
HDA 1  
USB2.0 5  
SATA 1  
DDI 1  
COM 2  
GPIO Up to 30 channels

## I/O View



## Dimensions



## Ordering Information

| Module No.         | CPU                    | Introduction                                                                                                                                                                                                |
|--------------------|------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| NODE-I912/S001     | Intel® Core I3-1115G4  | Intel® Tiger lake U Soc Core I7/I5/I3/Celeron CPU, 2*DDR4 3200MHz, Connector1(1*eSPI, Fusa, 4*PCleX1, Legacy IO, 2*PCle(USB3.1), Power SW/Reset/PW-LED/HDD-LED, 1*DDI, 3*USB2.0,1*PCle(SATA) ,1*COM, GPIO), |
| NODE-I912/S001/GRE | Intel® Core I3-1115GRE |                                                                                                                                                                                                             |
| NODE-I912/S002     | Intel® Core I5-1135G7  |                                                                                                                                                                                                             |
| NODE-I912/S002/GRE | Intel® Core I5-1145GRE |                                                                                                                                                                                                             |
| NODE-I912/S003     | Intel® Core I7-1165G7  | Connector2(1*DDI, 1*PCle(SATA), 2*PCle(USB3.1), 1*PCleX1, 1*CPU PCleX2, Legacy IO, HDA, 5*USB2.0, 2*COM, GPIO), DC 12V power in                                                                             |
| NODE-I912/S003/GRE | Intel® Core I7-1185GRE |                                                                                                                                                                                                             |
| NODE-I912/S004     | Intel® Celeron 6305E   |                                                                                                                                                                                                             |

# NODE-I719

Intel Elkhart lake Soc CPU module, supports single-channel DDR4 3200 MHz, up to 32GB. DC IN 12V

## Key Specification

- Intel Elkhart lake Soc CPU module
- Single-channel DDR4 3200MHz, up to 32GB
- 2\*DDI output, 1\*eDP
- 4\*PCIeX1, 1\*PCIeX2
- 2\*SATA, 4\*USB3.1, 10\*USB2.0, 1\*HDA, 4\*UART, GPIO, 1\*eSPI
- DC IN 12V



## Product Overview

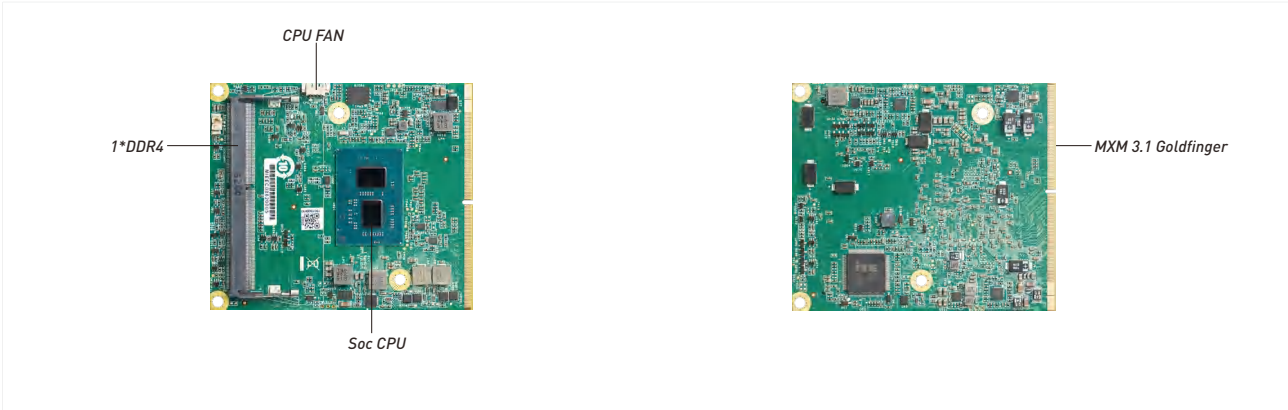
NODE-I719 powered by Intel Elkhart lake Soc CPU, supports single-channel DDR4 3200MHz memory, up to 32GB. The size of the mother-board module is thin and small, which is an economical product with low power consumption and flexible expansion, suitable for industrial automation, security, environmental protection, logistics and warehousing management applications.

## Product Parameters

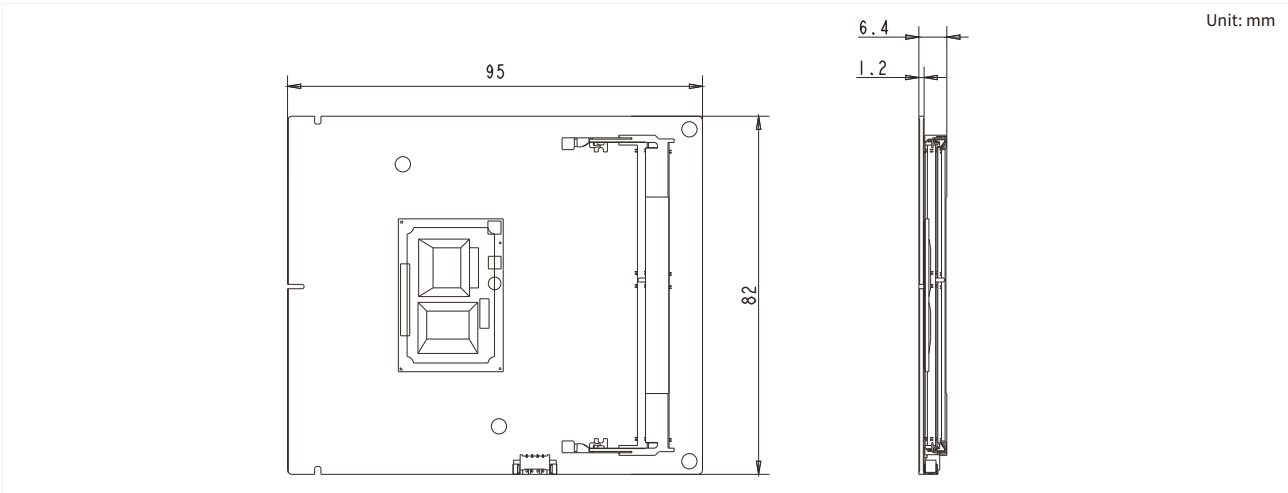
Formfactor NODE Type

|                                        |                                                                             |    |                    |                                                                                                     |  |
|----------------------------------------|-----------------------------------------------------------------------------|----|--------------------|-----------------------------------------------------------------------------------------------------|--|
| CPU                                    | Intel Elkhart lake Soc CPU:                                                 |    | Graphics           | Intel® UHD Graphics, DirectX12.1, OpenGL and OpenCL;<br>DP1.4 : 4096*2160@60Hz, eDP: 4096*2160@60Hz |  |
|                                        | Celeron J6412, 4C4T, 2.0-2.6GHz/10W<br>Celeron N6210, 2C2T, 1.2-2.6GHz/6.5W |    |                    |                                                                                                     |  |
| MXM 3.1 Goldfinger(281-Pin)            |                                                                             |    |                    |                                                                                                     |  |
|                                        |                                                                             |    |                    |                                                                                                     |  |
| DDI                                    |                                                                             | 2  | Power& TDP         | DC IN 12V;                                                                                          |  |
| eDP                                    |                                                                             | 1  |                    |                                                                                                     |  |
| USB3.1                                 |                                                                             | 4  | Dimension          | 95*82*6.4mm                                                                                         |  |
| USB2.0                                 |                                                                             | 10 |                    |                                                                                                     |  |
| PCIeX1                                 |                                                                             | 4  | Operating temp.    | 0~60°C                                                                                              |  |
| PCIeX2                                 |                                                                             | 1  | Storage temp.      | -40°C~85°C                                                                                          |  |
| SATA(PCIeX1)                           |                                                                             | 2  | Storage Humidity   | 10~95%@40°C, Non-condensing                                                                         |  |
| eSPI                                   |                                                                             | 1  | EMC/ Certification | CE/FCC Class A                                                                                      |  |
| HDA                                    |                                                                             | 1  | Watchdog Timer     | Watchdog timeout programmable via software 1 to 255 second                                          |  |
| SM BUS                                 |                                                                             | 1  |                    |                                                                                                     |  |
| Legacy IO                              |                                                                             | 1  | OS Support         | Windows 10/Windows 11 64 bit, SUSE, Ubuntu, Wind River, Linux                                       |  |
| RTC                                    |                                                                             | 1  |                    |                                                                                                     |  |
| UART                                   |                                                                             | 4  |                    |                                                                                                     |  |
| GPIO                                   |                                                                             | 3  |                    |                                                                                                     |  |
| F-Panel: Power SW/Reset/PW-LED/HDD-LED |                                                                             |    |                    |                                                                                                     |  |

## I/O View



## Dimensions



## Ordering Information

| Module No.     | CPU                  | Introduction                                                                                                                                                                                                                          |
|----------------|----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| NODE-I719/S001 | Intel® Celeron J6412 | Intel Elkhart lake Soc CPU, 1*DDR4 3200MHz, MXM 3.1 Goldfinger(4*PCIeX1, 1*PCIeX2, 4*USB3.1, 10*USB2.0, 2*SATA, 1*HDA Legacy IO, 1*eDP, 1*eSPI, 1*SPI, Power SW/Reset/PW-LED/HDD-LED, 2*DDI, 3 bit GPIO, SM BUS, RTC, 4*UART), DC 12V |
| NODE-I719/S002 | Intel® Celeron N6210 |                                                                                                                                                                                                                                       |



# NODE-I914

Intel® Tiger lake U Soc CPU module, supports single-channel DDR4 3200 MHz, up to 32GB. DC IN 12V

## Key Specification

- Intel® Tiger lake U Soc CPU module
- Single-channel DDR4 3200MHz, up to 32GB
- 2\*DDI output, 1\*eDP
- 4\*PCIeX1, 1\*PCIeX2, 1\*PCIeX4
- 2\*SATA 4\*USB3.1, 10\*USB2.0, 1\*HDA, 4\*UART, GPIO, 1\*eSPI
- DC IN 12V



## Product Overview

NODE-I914 powered by Intel® Tiger lake U Soc CPU, supporting single-channel DDR4 3200Mhz memory, up to 32GB. The size of the mother-board module is thin and small, which is an economical product with low power consumption and flexible expansion, suitable for industrial automation, security, environmental protection, logistics and warehousing management applications.

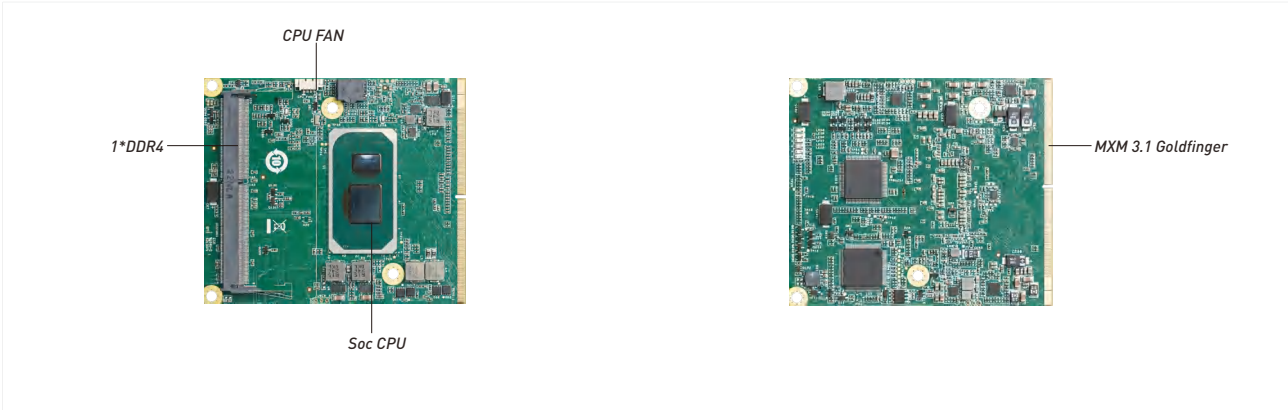
## Product Parameters

Formfactor NODE Type

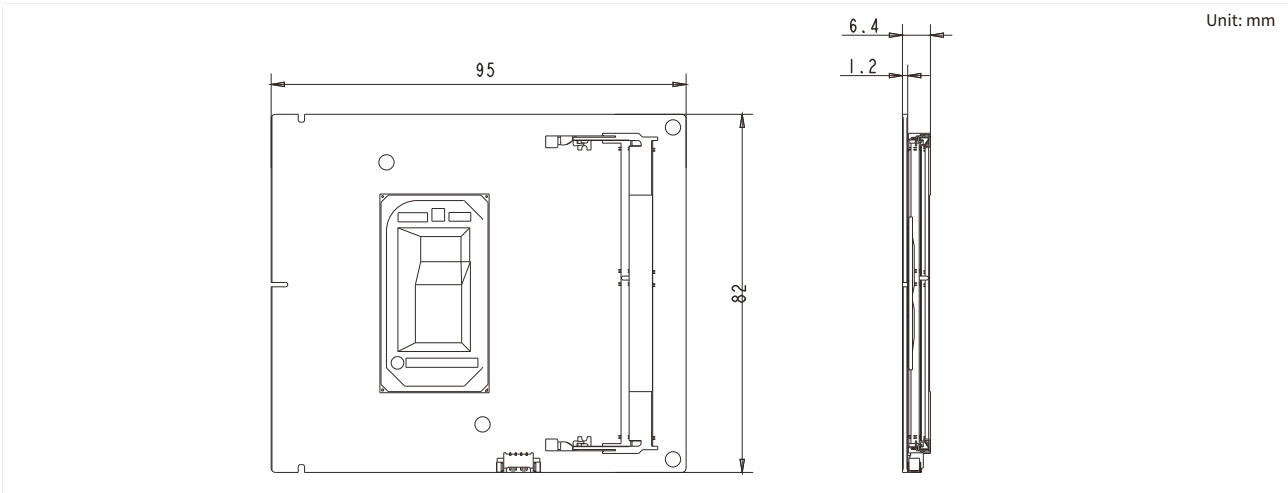
|                             |                                                                                                                                     |  |          |                                                                                                                                        |                                                                 |
|-----------------------------|-------------------------------------------------------------------------------------------------------------------------------------|--|----------|----------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------|
| CPU                         | Intel® Tiger lake U SoC CPU:                                                                                                        |  | Graphics | Intel Iris® Xe Graphics, DirectX12.1, OpenGL 4.6 and OpenCL 3.0; HDMI 2.0: 4096x2304@60Hz, DP 1.4: 7680x4320@60Hz, eDP: 4096x2304@60Hz |                                                                 |
|                             | i7-1165G7, 4C8T, 2.7~4.7GHz/28W; i5-1135G7, 4C8T, 2.4~4.2GHz/28W; i3-1115G4, 2C4T, 3.0~4.1GHz/28W; Celeron 6305E, 2C2T, 1.8GHz/15W; |  |          |                                                                                                                                        |                                                                 |
| MXM 3.1 Goldfinger(281-Pin) |                                                                                                                                     |  |          | DRAM                                                                                                                                   | Single channel DDR4 1*260-pin SO-DIMM, up to 3200MHz, 32GB max. |
|                             |                                                                                                                                     |  |          | Power& TDP                                                                                                                             | DC IN 12V;                                                      |
|                             |                                                                                                                                     |  |          | Dimension                                                                                                                              | 95*82*6.4mm                                                     |
|                             |                                                                                                                                     |  |          | Operating temp.                                                                                                                        | 0~60°C                                                          |
|                             |                                                                                                                                     |  |          | Storage temp.                                                                                                                          | -40°C~85°C                                                      |
|                             |                                                                                                                                     |  |          | Storage Humidity                                                                                                                       | 10~90%@40°C, Non-condensing                                     |
|                             |                                                                                                                                     |  |          | EMC/ Certification                                                                                                                     | CE/FCC Class A                                                  |
|                             |                                                                                                                                     |  |          | Watchdog Timer                                                                                                                         | Watchdog timeout programmable via software 1 to 255 second      |
|                             |                                                                                                                                     |  |          | OS Support                                                                                                                             | Windows 10/Windows 11 64 bit, SUSE, Ubuntu, Wind River, Linux   |
|                             |                                                                                                                                     |  |          |                                                                                                                                        |                                                                 |

|                                        |    |
|----------------------------------------|----|
| Intel® Tiger lake U SoC CPU:           |    |
| i7-1165G7, 4C8T, 2.7~4.7GHz/28W;       |    |
| i5-1135G7, 4C8T, 2.4~4.2GHz/28W;       |    |
| i3-1115G4, 2C4T, 3.0~4.1GHz/28W;       |    |
| Celeron 6305E, 2C2T, 1.8GHz/15W;       |    |
| MXM 3.1 Goldfinger(281-Pin)            |    |
|                                        |    |
| DDI                                    | 2  |
| eDP                                    | 1  |
| USB3.2                                 | 4  |
| USB2.0                                 | 10 |
| PCIeX1                                 | 4  |
| PCIeX2                                 | 1  |
| SATA(PCIeX1)                           | 2  |
| eSPI                                   | 1  |
| HDA                                    | 1  |
| SM BUS                                 | 1  |
| Legacy IO                              | 1  |
| RTC                                    | 1  |
| UART                                   | 4  |
| GPIO                                   | 3  |
| F-Panel: Power SW/Reset/PW-LED/HDD-LED |    |

## I/O View



## Dimensions



## Ordering Information

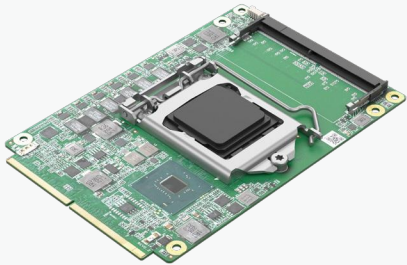
| Module No.     | CPU                   | Introduction                                                                                                                                                                                                                                             |
|----------------|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| NODE-I914/S001 | Intel® Core i3-1115G4 | Intel®Tiger lake U Soc Core i7/i5/i3/Celeron CPU, DDR4 3200MHz, 2*DDI, 1*eDP, 4*USB3.2, 10*USB2.0, 1*PCIeX2, 1*PCIeX4, RTC, 4*PCIeX1, 2*SATA, 1*eSPI, 1*HDA, 1*SPI, Legacy IO, SM BUS Power SW/Reset/PW-LED/HDD-LED, 3 bit GPIO, 4*UART, DC 12V power in |
| NODE-I914/S002 | Intel® Core i5-1135G7 |                                                                                                                                                                                                                                                          |
| NODE-I914/S003 | Intel® Core i7-1165G7 |                                                                                                                                                                                                                                                          |
| NODE-I914/S004 | Intel® Celeron 6305E  |                                                                                                                                                                                                                                                          |

# NODE-I973

Intel® Comet lake-S CPU module, supports dual-channel DDR4 2933 MHz, up to 64GB. DC IN 12V

## Key Specification

- Intel® Comet lake-S CPU module
- Dual-channel DDR4 2933MHz, up to 64GB
- Intel® H420E chipset with long life cycle
- 2\*DDI output, 1\*eDP
- 5\*PCIeX1, 1\*PCIeX2
- 2\*SATA, 6\*USB3.2, 10\*USB2.0, 1\*HDA, 3\*URAT, GPIO, 1\*LPC
- DC IN 12V



## Product Overview

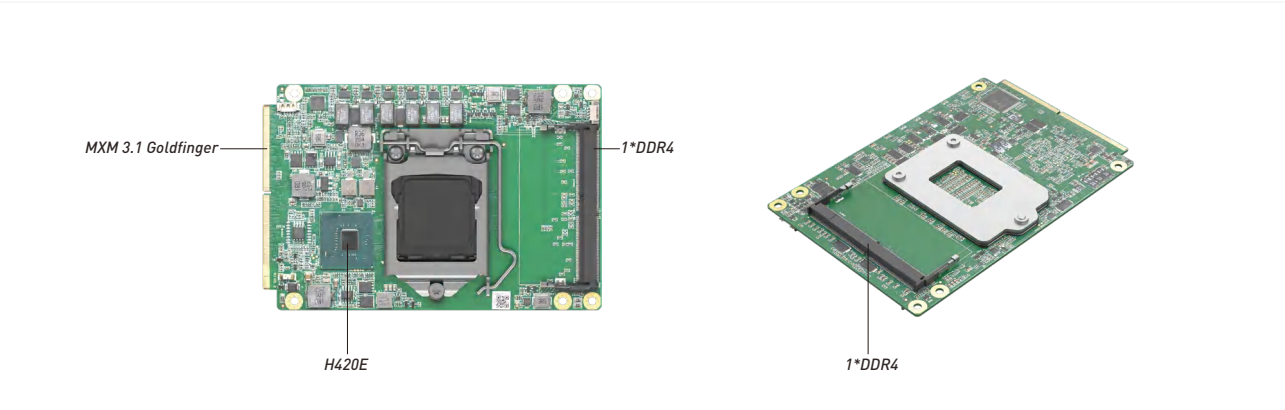
NODE-I973 powered by Intel® Comet lake-S CPU and Intel H420E chipset. supports dual-channel DDR4 2933MHz memory, up to 128GB. The size of the motherboard module is thin and small, which is an economical product with low power consumption and flexible expansion, suitable for industrial automation, security, environmental protection, logistics and warehousing management applications.

## Product Parameters

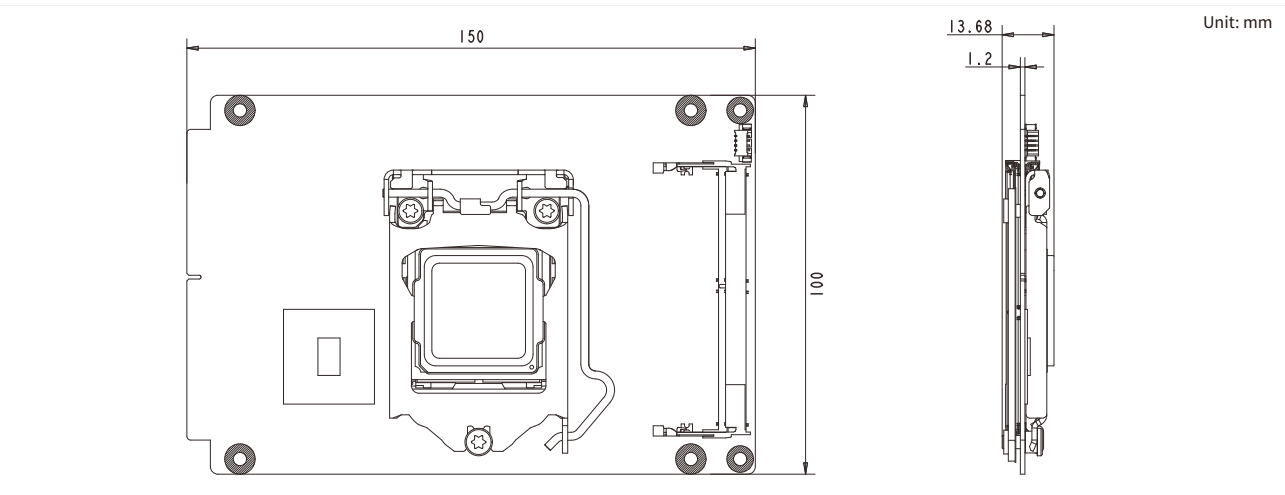
Formfactor NODE Type

|                                        |                          |  |                    |                                                                 |
|----------------------------------------|--------------------------|--|--------------------|-----------------------------------------------------------------|
| CPU                                    | Intel® Comet lake-S CPU: |  | Graphics           | Intel® UHD Graphics 630, DirectX 12, OpenGL 4.5 and OpenCL 2.1; |
|                                        | Core i9/i7/i5/i3/Celeron |  |                    | HDMI:4096*2160@30Hz, DP:4096*2304@60Hz, eDP:4096*2304@60Hz      |
| MXM 3.1 Goldfinger(281-Pin)            |                          |  | DRAM               | Dual-channel DDR4 2*260-pin SO-DIMM, up to 2933MHz, 64GB max.   |
| DDI 2                                  |                          |  | Power& TDP         | DC IN 12V;                                                      |
| eDP 1                                  |                          |  | Dimension          | 150*100*13mm                                                    |
| USB3.2 6                               |                          |  | Operating temp.    | 0~60°C                                                          |
| USB2.0 10                              |                          |  | Storage temp.      | -40°C~85°C                                                      |
| PCIeX1 5                               |                          |  | Storage Humidity   | 10~95%@40°C, Non-condensing                                     |
| PCIeX2 1                               |                          |  | EMC/ Certification | CE/FCC Class A                                                  |
| SATA(PCIeX1) 4                         |                          |  | Watchdog Timer     | Watchdog timeout programmable via software 1 to 255 second      |
| eSPI 1                                 |                          |  | OS Support         | Windows 10/Windows 11 64 bit, SUSE, Ubuntu, Wind River, Linux   |
| HDA 1                                  |                          |  |                    |                                                                 |
| SM BUS 1                               |                          |  |                    |                                                                 |
| Legacy IO 1                            |                          |  |                    |                                                                 |
| RTC 1                                  |                          |  |                    |                                                                 |
| UART 3                                 |                          |  |                    |                                                                 |
| GPIO 3                                 |                          |  |                    |                                                                 |
| F-Panel: Power SW/Reset/PW-LED/HDD-LED |                          |  |                    |                                                                 |

## I/O View



## Dimensions



## Ordering Information

| Module No.     | CPU                 | Introduction                                                                                                                                                                                                                                        |
|----------------|---------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| NODE-I973/S001 | Intel® Comet lake-S | Intel Comet lake-S LGA1200 CPU+H420E PCH, 2*DDR4 2933MHz, MXM 3.1 Goldfinger(2*DDI, 1*eDP, 6*USB3.2, 10*USB2.0, 5*PCIeX1, 1*PCIeX2, RTC, 4*SATA, 1*HDA, SM BUS, Legacy IO, 1*SPI, 3*UART, 1*LPC, Power SW/Reset/PW-LED/HDD-LED, 3 bit GPIO), DC 12V |



# EPI-I908

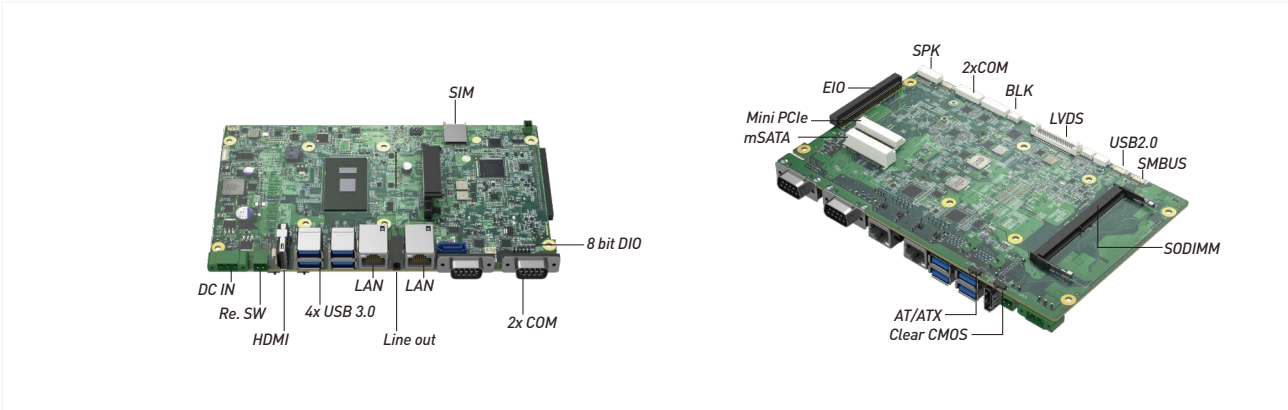
Intel® Skylake/Kabylake-U CPU, 1-CH DDR4, HDMI, LVDS, 2\*LAN, 4\*COM, 4\*USB3.0, Audio, DC 9~36V .

## Key Specification

- Intel® Skylake/Kabylake-U processor
- 1-Ch DDR4 SODIMM, 16GB max.
- 1\*HDMI, 1\*LVDS, Audio, power amplifier
- 2\*LAN, 4\*USB3.0, 2\*USB2.0
- 4\*COM, 1\*JHC high-speed bus specification expansion interface EIO
- 1\*Mini PCIe, 1\*SIM card slot, support GPS/WiFi/LTE/GSM
- 2\*SATA3.0 6Gbps, 1\*mSATA for storage
- Optional support TPM 2.0 security encryption, iVpro technology
- DC 9~36V wide voltage power supply



## I/O View



## Product Overview

EPI-I908 is OSBC series embedded single board computer, equipped with Intel® Skylake/Kabylake-U processor, supports GPS/WiFi/LTE/GSM wireless function, DC 9~36V wide voltage power supply, compact size, complete functions, suitable for various compact embedded system application requirements.

## Product Parameters

### System

|          |                                                                                                                                                                         |
|----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CPU      | Intel® Skylake/Kabylake-U processor Celeron/Core i3/i5/i7                                                                                                               |
| RAM      | 1*DDR4,2133MHz,SODIMM, 16GB max.                                                                                                                                        |
| Graphics | Intel® Gen. 9 HD Graphics;HDMI & 48-Bit LVDS Dual display, support Intel HD video technology, wireless display technology<br>HDMI:3840*2160@30Hz<br>LVDS:1920*1200@60Hz |

### I/O

|                     |                                                                                                                              |
|---------------------|------------------------------------------------------------------------------------------------------------------------------|
| LAN                 | 2*Intel® I210AT PCIe Gig. Ethernet,Gigabit                                                                                   |
| USB                 | 4* USB3.0, 1*USB2.0                                                                                                          |
| Display             | 1*HDMI+1*LVDS(48-bit pin)                                                                                                    |
| Audio               | 1*Line out+1*Mic, Optional audio,1*Amplifier<br>2*RS232/422/485, 2*RS232(pin);                                               |
| Serial port &Others | 2 channel power amplifier output; 1*SM Bus wafer;<br>1*Capacitive touch screen interface; 1*Resistive touch screen interface |
| DIO                 | 8-bit DIO,Programmable TTL                                                                                                   |

### Others

|                |                                                            |
|----------------|------------------------------------------------------------|
| Control switch | 1*2pin Remote switch;1*AT/ATX; 1*Clear CMOS                |
| Indicator      | Pin of motherboard (Power LED, HDD LED)                    |
| Watchdog timer | Watchdog timeout programmable via software 1 to 255 second |
| TPM            | Optional support TPM2.0                                    |

### Storage

|         |                                                  |
|---------|--------------------------------------------------|
| storage | 2*SATA3 port,rate: 6.0Gbps; 1*mSATA,support AHCI |
|---------|--------------------------------------------------|

### Expansion

|                |                                                                                               |
|----------------|-----------------------------------------------------------------------------------------------|
| Expansion Port | 1*MiniPCIe(PCIeX1/USB+SIM),4G/L TE/GSM/Wifi/BT/GPS;<br>1*80pin EIO with LPC, SM Bus, 2*PCIeX1 |
|----------------|-----------------------------------------------------------------------------------------------|

### Power Supply

|                   |                                        |
|-------------------|----------------------------------------|
| Input voltage     | DC 9~36V input, 3-pin terminal;        |
| Power consumption | 45W (I7-7500U, 4GB, 64GB SSD, 1TB HDD) |

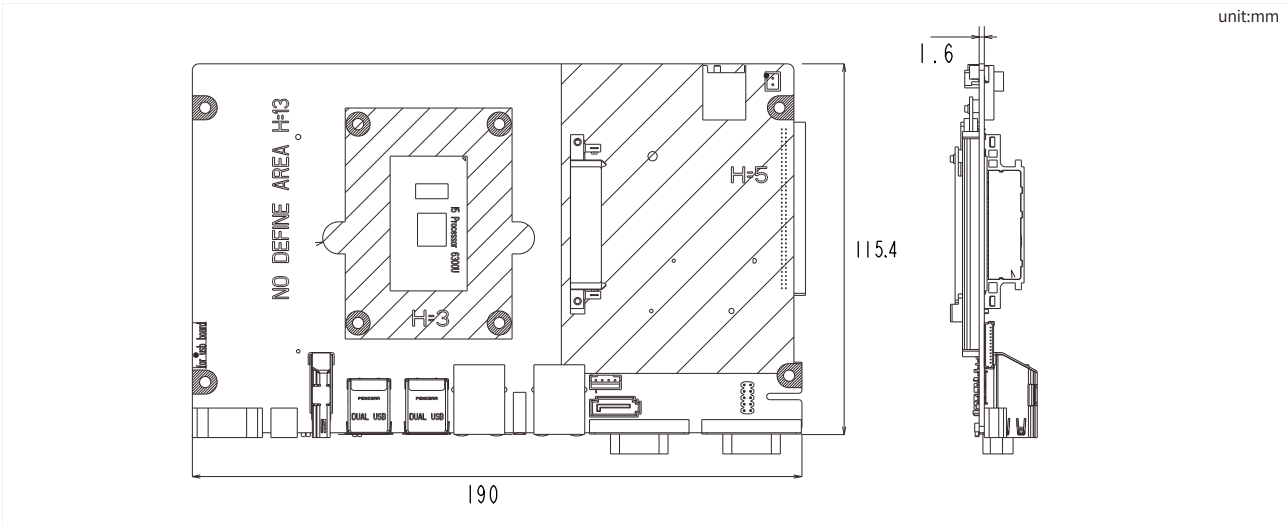
### Environment

|                   |                                                         |
|-------------------|---------------------------------------------------------|
| Dimension(W*H)    | 190*115.4mm(Overall height 27.4mm, PCB thickness 1.6mm) |
| Operating temp    | 0~60°C                                                  |
| Storage temp      | - 40°C~85°C                                             |
| Storage humidity  | 10~90%@40°C, No condensation                            |
| Certification/EMC | CE/FCC Class A                                          |

### OS

|    |                                                                                                                           |
|----|---------------------------------------------------------------------------------------------------------------------------|
| OS | Windows 7, Windows 10, Linux Fedora Ubuntu<br>(The 7th generation Intel® Kabylake-U processor does not support Windows 7) |
|----|---------------------------------------------------------------------------------------------------------------------------|

## Dimensions



## Ordering Information

| Model         | Processor                                                | Specifications                                                                                                                                                        |
|---------------|----------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| EPI-I908/S001 | Intel® I3-6100U/I3-7100U                                 | 1*SODIMM DDR4, 2*LAN,4*USB3.0, 2*USB2.0,4*COM, 1*Mini PCIe,1*EIO,1*8bit DIO(2*5 pin)<br>1*HDMI,1*LVDS, optional 1*Line out+1*Mic,1*Amplifier,1*mSATA,2*SATA3,DC 9~36V |
| EPI-I908/S002 | Intel® I5-6200U/I5-7200U                                 |                                                                                                                                                                       |
| EPI-I908/S003 | Intel® I7-6500U/I7-7500U                                 |                                                                                                                                                                       |
| EPI-I908/S004 | Intel® 3855U/3865U                                       |                                                                                                                                                                       |
| ECI-105       | 1 slot PCI backplane, providing 1 PCI expansion slot     |                                                                                                                                                                       |
| ECX-106       | 1 slot PCIe backplane, providing 1 PClex1 expansion slot |                                                                                                                                                                       |

## Optional Accessories

| Model   | Specifications                              |
|---------|---------------------------------------------|
| ECI-105 | 1 slot PCI , providing 1 PCI expansion slot |
| ECX-106 | 1 slot PCIe, providing 1 PCI expansion slot |

# ECM-I718

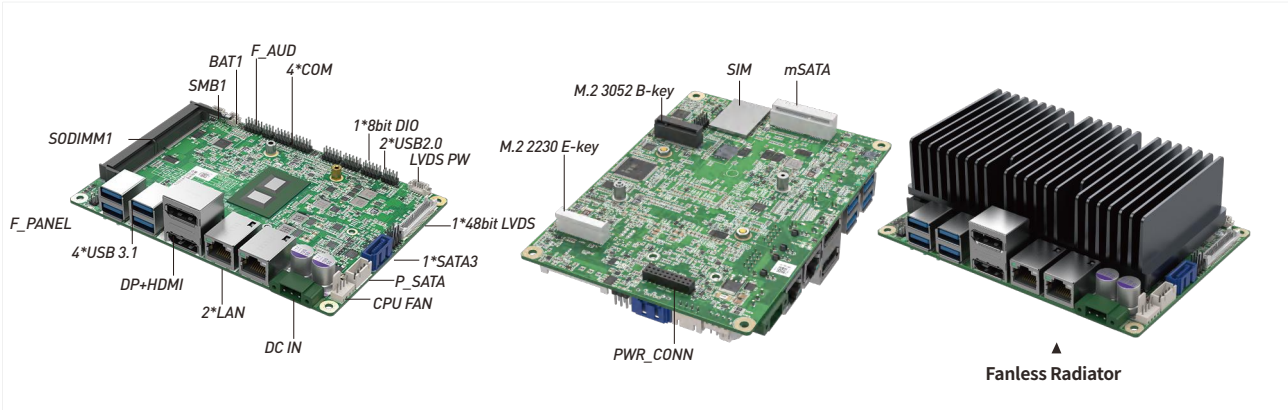
Intel® Elkhart lake Soc CPU,single channel DDR4,1\*HDMI,1\*DP,2\*LAN,4\*USB3.1,4\*COM,1\*8bit DIO, 1\*M.2 B-key/E-key,1\*mSATA, 1\*SATA3.0, DC 12V

## Key Specification

- Intel® Elkhart lake Soc CPU
- Single channel DDR4 SODIMM, support 3200MHz, up to 32GB
- 1\*HDMI, 1\*DP, 1\*48-bit LVDS, 3 independent displays
- 2\*LAN, 4\*USB3.1, 2\*USB2.0, 4\*COM, 1\*8-bit DIO
- 1\*M.2 2230 E-key supports WIFI/BT or 1\*M.2 3052 B-key with SIM card slot, supports 4G LTE/5G NR
- 1\*SATA3.0 HDD/SSD,1\*mSATA(with USB2.0 ) for storage
- Active or passive, two different thickness radiator selection
- DC IN12V,9-36V wide power input for optional (OFX-075)



## I/O View



## Product Overview

ECM-I718 is a 3.5-inch embedded mainboard equipped with Intel® Elkhart lake Soc CPU. It has complete IO functions, flexible selection of power supply, active and passive radiators, and the compact size is suitable for installation in limited space scenarios. It is very suitable for AGV and AMR, medical inspection, machine vision, industrial control, digital city and smart security and other industries and fields.

## Product Parameters

System

|          |                                                                                                                                  |
|----------|----------------------------------------------------------------------------------------------------------------------------------|
| CPU      | Intel® Elkhart lake SoC CPU: Celeron J6412 2.0-2.6GHz 4C4T/<br>Celeron N6210 1.2-2.6GHz 2C2T                                     |
| RAM      | 1*260 pin DDR4 SODIMM,3200MHz, 32GB max.                                                                                         |
| Graphics | Intel Gen10 UHD Graphics, H.265/HEVC/HW;<br>HDMI:4096*2304@60Hz, DP:7680*4320@60Hz,<br>LVDS:1920*1200@60Hz,3 independent display |

I/O

|             |                                           |
|-------------|-------------------------------------------|
| LAN         | 2*Realtek 8111H , 10-1000M,WOL            |
| USB         | 4*USB3.1(10Gbps), 2*USB2.0(pin)           |
| Display     | 1*HDMI+1*DP+1*LVDS(pin)                   |
| Audio       | 1*Line in+1*Line out+1*Mic,Realtek ALC897 |
| COM& Others | 1* RS232/422/485(pin),3*RS232(pin)        |
| DIO         | 8-bit DIO,programmable TTL                |

Storage

|         |                                   |
|---------|-----------------------------------|
| Storage | 1*SATA 3.0 HDD/SSD,6 Gbps,1*mSATA |
|---------|-----------------------------------|

Others

|        |                                                                                                    |
|--------|----------------------------------------------------------------------------------------------------|
| Switch | F_panel(PW SW, Reset SW),1*AT/ATX,1*Clear CMOS, 1* USB 5V/SB                                       |
| LED    | 1*PowerLED; 1*HDD LED; 3*CPU Temp LED(<br>Red is alarm, Yellow is high temp, Green is normal temp) |
| WDT    | programmable via software 1 to 255 second                                                          |

Expansion

|           |                                                                                                      |
|-----------|------------------------------------------------------------------------------------------------------|
| Expansion | 1*M.2 2230 E-key(USB2.0/PCIeX1),WiFi5/BT 5.0;<br>or 1*M.2 3052 B-key(USB2.0/PCIeX1+SIM),4G LTE/5G NR |
|-----------|------------------------------------------------------------------------------------------------------|

Power

|            |                                                                                              |
|------------|----------------------------------------------------------------------------------------------|
| Power& TDP | DC 12V;<br>Optional OFX-075,75W,DC 9-36V;<br>TDP:15.6W (CPU: Celeron J6412/32G DDR4/128 SSD) |
|------------|----------------------------------------------------------------------------------------------|

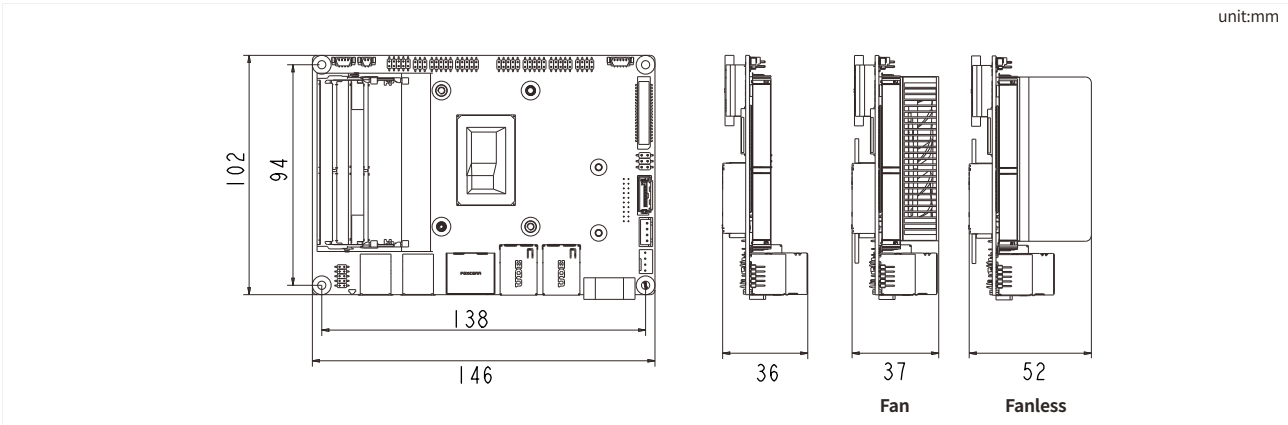
Environment

|                 |                                                                                |
|-----------------|--------------------------------------------------------------------------------|
| Dimension(W*H)  | 146*102mm(Height: radiator with fan 37mm,<br>fanless radiator 52mm, PCB:1.6mm) |
| Operating Temp  | 0~60°C                                                                         |
| Storage Temp    | -40°C~85°C                                                                     |
| Storage Temp    | 10~95%@40°C, No-condensation                                                   |
| Certificate/EMC | CE/FCC Class A                                                                 |

OS

|    |                                                               |
|----|---------------------------------------------------------------|
| OS | Windows 10/Windows 11 64 bit, SUSE, Ubuntu, Wind River, Linux |
|----|---------------------------------------------------------------|

## Dimensions



## Ordering Information

| Model            | Processor     | Specifications                                                                                                                                                                 | *Optional         |                                                                                                                                                                                                                                        |
|------------------|---------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ECM-I718/S001    | Celeron J6412 | 1*SODIMM DDR4, 2*LAN,4*USB3.1, 2*USB2.0,1*M.2 2230 E-Key,1*M.2 3052 B-Key(B or E-Key), 1* mSATA, 4*COM, 1*8-bit DIO, 1*DP,1*HDMI,1*LVDS, 1*SM BUS, 1*Audio, 1*SATA3.0,DC 12V   | Radiator with Fan | Pure copper+Aluminium alloy heat radiator,four-wire intelligent temperature control ball-bearing fan,silent ultra-thin design,fan cable 100mm,size: 137*70*24.2mm (After installation, the total thickness of the motherboard is 37mm) |
| ECM-I718/S002    | Celeron N6210 |                                                                                                                                                                                |                   |                                                                                                                                                                                                                                        |
| ECM-I718/S001-WP | Celeron J6412 | 1*SODIMM DDR4, 2*LAN,4*USB3.1, 2*USB2.0,1*M.2 2230 E-Key,1*M.2 3052 B-Key(B or E-Key), 1* mSATA, 4*COM, 1*8-bit DIO, 1*DP,1*HDMI,1*LVDS, 1*SM BUS, 1*Audio, 1*SATA3.0,DC 9~36V | Fanless Radiator  | Pure copper+Aluminium alloy heat radiator,size: 137*70*39.3mm(After installation, the total thickness of the motherboard is 52mm)                                                                                                      |
| ECM-I718/S002-WP | Celeron N6210 |                                                                                                                                                                                |                   |                                                                                                                                                                                                                                        |

## Accessories

| Standard           |                                                    |   | *Optional    |                                                               |
|--------------------|----------------------------------------------------|---|--------------|---------------------------------------------------------------|
| Serial ports cable | DB9 male,300mm                                     | 4 | DIO cable    | DB9 male,300mm                                                |
| SATA cable         | (7+15)pin SATA power supply +SATA data cable,300mm | 1 | Audio cable  | Three in a row (Line-out/Line-in/Mic) 3.5mm phone jack, 300mm |
| Screw jumper       | Two M2 screws +Two jumper caps (spare)             | 1 | USB2.0 cable | Two in a row Type A,300mm                                     |
| DC-IN pin          | 3.81 pitch 3pin phoenix plug with earhole          | 1 |              |                                                               |



# ECM-I910

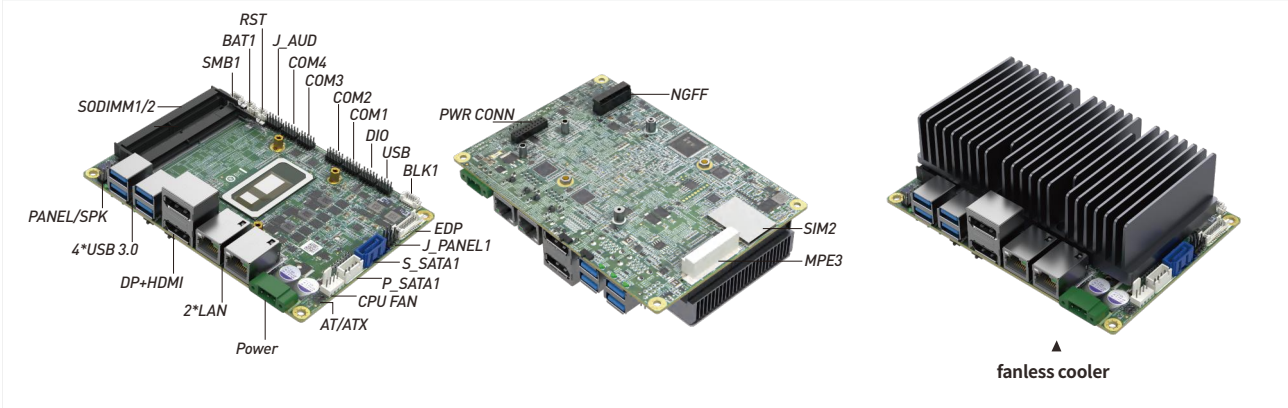
Intel® Whiskey lake U CPU,Dual channel DDR4,1\*HDMI,1\*eDP,1\*DP,2\*LAN,4\*USB3.0,4\*COM,1\*8-bit DIO,1\*M.2 E-key,1\*mini PCIe,DC 12V.

## Key Specification

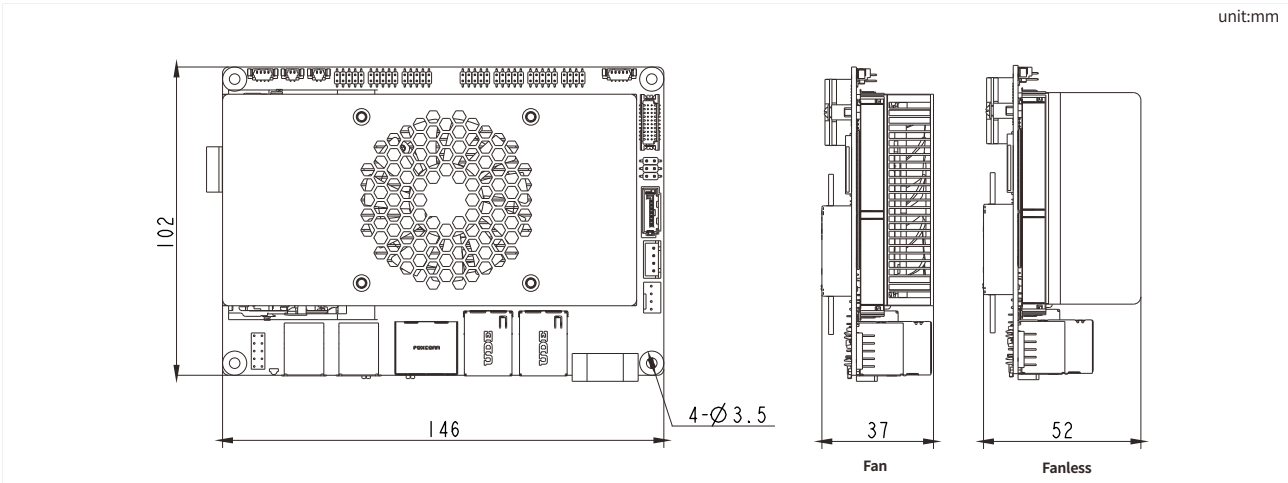
- Intel 8th Whiskey lake U Core i3/i5/i7/Celeron series processors
- Dual-channel DDR4 SODIMM, support up to 2400MHz, Max. 32GB
- 1\*HDMI, 1\*eDP, 1\*DP, 3 independent 4K display ports
- 2\*LAN, 10/100/1000Mbps,4\*USB3.0, 2\*USB2.0, 4\*COM, 1\*8-bit DIO
- 1\*M.2 2230 E-key, support WiFi 6/BT 5.0
- 1\*Full-length Mini PCIe, support 4G/WiFi/BT(can be changed to mSATA via BIOS)
- 1\*SATA3.0 HDD/SSD, 1\*mSATA for storage (optional)
- Optional support TPM2.0, DC IN12V, optional 9-36V wide voltage input
- Compact size, complete functions, suitable for various compact embedded system application requirements



## I/O View



## Dimensions



## Product Overview

ECM-I910 is a standard 3.5-inch embedded single-board computer, equipped with Intel's 8th-generation Whiskey lake U Core i3/i5/i7/Celeron series processors. It supports 4G LTE/Wifi/BT and other wireless functions. It is with compact size and complete functions , suitable for various compact embedded system application requirements.

## Product Parameters

### System

|          |                                                                                                                                                                                                             |
|----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CPU      | Intel Whiskey lake U Celeron/Core i3/i5/i7                                                                                                                                                                  |
| RAM      | 2*DDR4 SODIMM,2400MHz, 32GB max.                                                                                                                                                                            |
| Graphics | Intel® Gen. 9 UHD Graphics,Support 3*4K independent display,DirectX 12,HEVC/H265 HW HD codec, the highest dynamic frequency can reach 1.2GHz;HDMI :4096*2304@24Hz; DP :4096*2304@60Hz; eDP :4096x2304@60Hz; |

### I/O

|                     |                                                        |
|---------------------|--------------------------------------------------------|
| LAN                 | 1*Intel® I226V, 10-1000M;<br>1*Intel® I219LM, 10-1000M |
| USB                 | 4*USB3.0, 2*USB2.0(pin)                                |
| Display             | 1*HDMI(1.4)+1*DP(1.2)+1*eDP(pin)                       |
| Audio               | 1*Line out+1*Mic(pin),Optional audio                   |
| Serial port &Others | 2* RS232/422/485(pin),2*RS232(pin)                     |
| DIO                 | 8-bit DIO,Programmable TTL                             |

### Others

|                |                                                                                                                                                                    |
|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Control switch | (Power SW, Reset); 1*AT/ATX; 1*Clear CMOS                                                                                                                          |
| Indicator      | 1*power indicator light; 1*hard disk indicator light;<br>3*CPU temperature indicator light (Red is alarm, Yellow is high temperature, Green is normal temperature) |
| Watchdog timer | Watchdog timeout programmable via software 1 to 255 second                                                                                                         |
| TPM            | Optional support TPM2.0                                                                                                                                            |

### Storage

|         |                                      |
|---------|--------------------------------------|
| storage | 1*SATA 3.0 HDD/SSD,1*mSATA(optional) |
|---------|--------------------------------------|

### Expansion

|           |                                                                                  |
|-----------|----------------------------------------------------------------------------------|
| Expansion | 1*M.2 2230 E-key,support WiFi/BT 5.0;<br>1*Mini PCIe(+SIM), 4G LTE,BIOS to mSATA |
|-----------|----------------------------------------------------------------------------------|

### Power Supply

|                   |                                            |
|-------------------|--------------------------------------------|
| Input voltage     | DC 12V,<br>optional OFX-075 75W DC 9-36V ; |
| Power consumption | 19.92W (I5-8265U, 8GB DDR, 500G SSD)       |

### Environment

|                   |                                                                                 |
|-------------------|---------------------------------------------------------------------------------|
| Dimension(L*W)    | 146*102mm (Height: radiator with fan 37mm,<br>fanless radiator 52mm, PCB:1.6mm) |
| Operating temp    | 0~60°C                                                                          |
| Storage temp      | -40°C~85°C                                                                      |
| Storage humidity  | 10~95%@40°C, No condensation                                                    |
| Certification/EMC | CE/FCC Class A                                                                  |

### OS

|    |                                                                                                   |
|----|---------------------------------------------------------------------------------------------------|
| OS | Windows 10 IoT enterprise, Andriod, Ubuntu, Suse, Red Hat enterprise, Wind River Vxworks 7, Yocto |
|----|---------------------------------------------------------------------------------------------------|

## Ordering Information

|                  |                      |                                                                                                                                                                   | *Optional                                                                                                                                                                                                                                                       |
|------------------|----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ECM-I910/S001    | Intel® Core I3-8145U | 2*SODIMM DDR4, 2*LAN,4*USB3.0, 2*USB2.0,1*M.2 2230 E-Key,1* Full size mini PCIe/mSATA,4*COM, 1*8-bit DIO, 1*DP,1*HDMI,1*eDP, 1*Line out+1*Mic,1*SATA3.0, DC 12V   | Radiator with Fan<br><br>Pure copper+Aluminium alloy heat radiator,four-wire intelligent temperature control ball-bearing fan,silent ultra-thin design,fan cable 100mm,size: 137*70*24.2mm (After installation, the total thickness of the motherboard is 37mm) |
| ECM-I910/S002    | Intel® Core I5-8265U |                                                                                                                                                                   |                                                                                                                                                                                                                                                                 |
| ECM-I910/S003    | Intel® Core I7-8565U |                                                                                                                                                                   |                                                                                                                                                                                                                                                                 |
| ECM-I910/S004    | Intel® Celeron 4305U | 2*SODIMM DDR4, 2*LAN,4*USB3.0, 2*USB2.0,1*M.2 2230 E-Key,1* Full size mini PCIe/mSATA,4*COM, 1*8-bit DIO, 1*DP,1*HDMI,1*eDP, 1*Line out+1*Mic,1*SATA3.0, DC 9-36V | Fanless Radiator<br><br>Pure copper+Aluminium alloy heat radiator,size: 137*70*39.3mm(After installation, the total thickness of the motherboard is 52mm)                                                                                                       |
| ECM-I910/S001-WP | Intel® Core I3-8145U |                                                                                                                                                                   |                                                                                                                                                                                                                                                                 |
| ECM-I910/S002-WP | Intel® Core I5-8265U |                                                                                                                                                                   |                                                                                                                                                                                                                                                                 |
| ECM-I910/S003-WP | Intel® Core I7-8565U |                                                                                                                                                                   |                                                                                                                                                                                                                                                                 |
| ECM-I910/S004-WP | Intel® Celeron 4305U |                                                                                                                                                                   |                                                                                                                                                                                                                                                                 |

## Accessories

| Standard           |                                                    |   | *Optional    |                                                               |
|--------------------|----------------------------------------------------|---|--------------|---------------------------------------------------------------|
| Serial ports cable | DB9 male,300mm                                     | 4 | DIO cable    | DB9 male,300mm                                                |
| SATA cable         | (7+15)pin SATA power supply +SATA data cable,300mm | 1 | Audio cable  | Three in a row (Line-out/Line-in/Mic) 3.5mm phone jack, 300mm |
| Screw jumper       | Two M2 screws +Two jumper caps (spare)             | 1 | USB2.0 cable | Two in a row Type A,300mm                                     |
| DC-IN pin          | 3.81 pitch 3pin phoenix plug with earhole          | 1 |              |                                                               |

# ECM-I913

Intel® Tiger lake U Soc CPU, Dual Channel DDR4,1\*HDMI,1\*DP,2\*LAN,4\*USB3.2,4\*COM,1\*8bit DIO, 1\*M.2 B-key/E-key,1\*mSATA, 1\*SATA3.0, DC 12V

### Key Specification

- Intel® Tiger lake Soc CPU
- Dual channel DDR4 SODIMM, support 3200MHz, up to 64GB
- 1\*HDMI, 1\*DP, 1\*48-bit LVDS, 3 independent displays
- 2\*LAN, 4\*USB3.2, 2\*USB2.0, 4\*COM, 1\*8-bit DIO
- 1\*M.2 2230 E-key supports WIFI/BT or 1\*M.2 3052 B-key with SIM card slot, supports 4G LTE/5G NR
- 1\*full size Mini PCIe, supports PCIe modules
- 1\*SATA3.0 HDD/SSD,1\*mSATA(Optional) for storage
- Active or passive, two different thickness radiator selection
- DC IN12V,9-36V wide power input for optional (OFX-075)



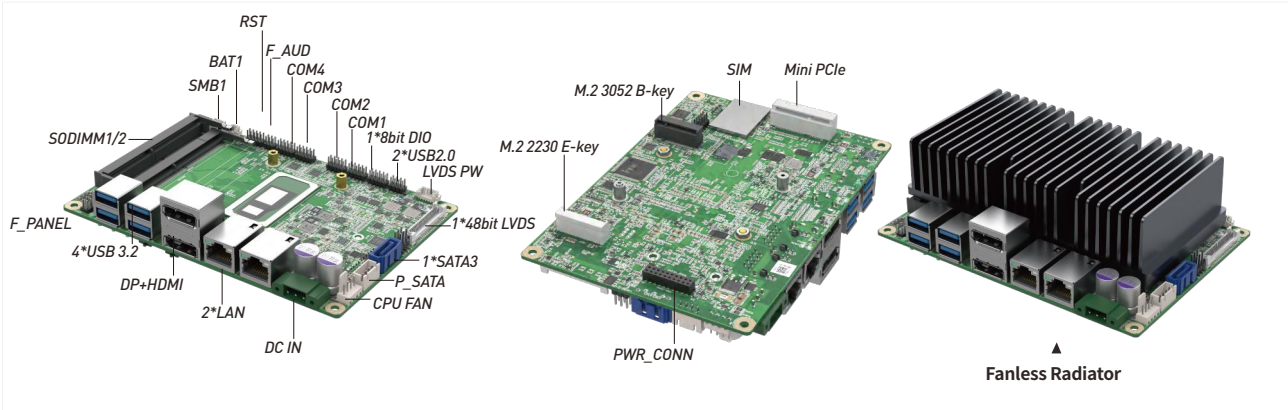
### Product Overview

ECM-I913 is a 3.5-inch embedded mainboard equipped with Intel® Tiger Lake U Soc CPU. It has complete IO functions, flexible selection of power supply, active and passive radiators, and the compact size is suitable for installation in limited space scenarios. It is very suitable for AGV and AMR, medical inspection, machine vision, industrial control, digital city and smart security and other industries and fields.

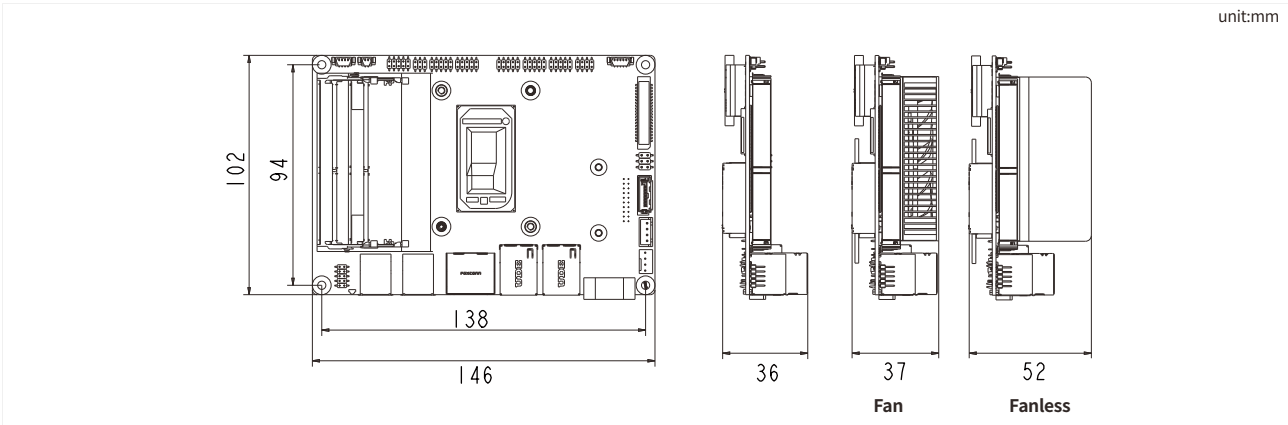
### Product Parameters

| System      |                                                                                                                                                                                                 | Expansion       |                                                                                                                                               |
|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------|
| CPU         | Intel® Tiger lake U Soc CPU (core i3-1115G4/i5-1135G7/i7-1165G7, Celeron 6305),TDP 12W/15W/28W                                                                                                  | Expansion       | 1*Mini PCIe(PCleX1),PCle module/mSATA;<br>1*M.2 2230 E-key(USB2.0/PCleX1),WiFi/BT 5.0,<br>or 1*M.2 3052 B-key(USB2.0/PCleX1+SIM),4G LTE/5G NR |
| RAM         | 2*DDR4 SODIMM,3200MHz, 64GB max.                                                                                                                                                                | Power & TDP     | DC 12V;<br>Optional OFX-075 75W,DC 9-36V;<br>45.36W (i7-1165 G7/4G DDR4/128G SSD)                                                             |
| Graphics    | Intel UHD Graphics or X® Graphics , Supports Intel DL boost,DirectX-12.1,<br>OpenGL 4.6 and OpenCL 3.0,<br>HDMI:4096*2304@60Hz, DP:7680*4320@60Hz,<br>LVDS:1920*1200@60Hz,3 independent display |                 |                                                                                                                                               |
| I/O         |                                                                                                                                                                                                 | Environment     |                                                                                                                                               |
| LAN         | 1*Intel I226V , 10M-2.5G<br>1*Intel®I219LM ,iAMT13.0                                                                                                                                            | Dimension (W*H) | 146*102mm(Height: radiator with fan 37mm,<br>fanless radiator 52mm, PCB:1.6mm)                                                                |
| USB         | 4*USB3.2 Gen2(10Gbps), 2*USB2.0(pin)                                                                                                                                                            | Operating Temp  | 0~60°C                                                                                                                                        |
| Display     | 1*HDMI+1*DP+1*LVDS(pin)                                                                                                                                                                         | Storage Temp    | -40°C~85°C                                                                                                                                    |
| Audio       | 1*Line in+1*Line out+1*Mic,Realtek ALC897                                                                                                                                                       | Storage Temp    | 10~95%@40°C, No-condensation                                                                                                                  |
| COM& Others | 2* RS232/422/485(pin),2*RS232(pin)                                                                                                                                                              | Certificate/EMC | CE/FCC Class A                                                                                                                                |
| DIO         | 8-bit DIO,programmable TTL                                                                                                                                                                      | OS              | Windows 11*IoT enterprise, Windows 10*IoT enterprise,Android,-<br>SUSE,Ubuntu,Wind River,Red Hat*Enterprise,Wind River<br>VxWorks*7,Yocto     |
| Storage     |                                                                                                                                                                                                 |                 |                                                                                                                                               |
| Storage     | 1*SATA 3.0 HDD/SSD,6 Gbps,1*mSATA(Optional)                                                                                                                                                     |                 |                                                                                                                                               |
| Others      |                                                                                                                                                                                                 |                 |                                                                                                                                               |
| Switch      | 1*F Panel(PW SW, Reset); 1*AT/ATX; 1*Clear CMOS; 1* USB 5V/SB                                                                                                                                   |                 |                                                                                                                                               |
| LED         | 1*PowerLED; 1*HDD LED; 3*CPU Temp LED(<br>Red is alarm, Yellow is high temp, Green is normal temp)                                                                                              |                 |                                                                                                                                               |
| WDT         | programmable via software 1 to 255 second                                                                                                                                                       |                 |                                                                                                                                               |

### I/O View



### Dimensions



### Ordering Information

| Model            | Processor             | Specifications                                                                                                                                                                                     | *Optional         |                                                                                                                                                                                                                                        |
|------------------|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ECM-I913/S001    | Intel® Core I3-1115G4 | 2*SODIMM DDR4, 2*LAN,4*USB3.2, 2*USB2.0,1*M.2 2230 E-Key,1*M.2 3052 B-Key(B or E-Key), 1* Full size mini PCIe/mSATA,4*COM, 1*8-bit DIO, 1*DP,1*HDMI,1*LVDS, 1*SM BUS, 1*Audio, 1*SATA3.0, DC 12V   | Radiator with Fan | Pure copper+Aluminium alloy heat radiator,four-wire intelligent temperature control ball-bearing fan,silent ultra-thin design,fan cable 100mm, size:137*70*24.2mm (After installation, the total thickness of the motherboard is 37mm) |
| ECM-I913/S002    | Intel® Core I5-1135G7 |                                                                                                                                                                                                    |                   |                                                                                                                                                                                                                                        |
| ECM-I913/S003    | Intel® Core I7-1165G7 |                                                                                                                                                                                                    |                   |                                                                                                                                                                                                                                        |
| ECM-I913/S004    | Intel® Celeron 6305U  |                                                                                                                                                                                                    |                   |                                                                                                                                                                                                                                        |
| ECM-I913/S001-WP | Intel® Core I3-1115G4 | 2*SODIMM DDR4, 2*LAN,4*USB3.2, 2*USB2.0,1*M.2 2230 E-Key,1*M.2 3052 B-Key(B or E-Key), 1* Full size mini PCIe/mSATA,4*COM, 1*8-bit DIO, 1*DP,1*HDMI,1*LVDS, 1*SM BUS, 1*Audio, 1*SATA3.0, DC 9-36V | Fanless Radiator  | Pure copper+Aluminium alloy heat radiator,size: 137*70*39.3mm(After installation, the total thickness of the motherboard is 52mm)                                                                                                      |
| ECM-I913/S002-WP | Intel® Core I5-1135G7 |                                                                                                                                                                                                    |                   |                                                                                                                                                                                                                                        |
| ECM-I913/S003-WP | Intel® Core I7-1165G7 |                                                                                                                                                                                                    |                   |                                                                                                                                                                                                                                        |
| ECM-I913/S004-WP | Intel® Celeron 6305U  |                                                                                                                                                                                                    |                   |                                                                                                                                                                                                                                        |

### Accessories

| Standard           |                                                    |   | *Optional    |                                                               |
|--------------------|----------------------------------------------------|---|--------------|---------------------------------------------------------------|
| Serial ports cable | DB9 male,300mm                                     | 4 | DIO cable    | DB9 male,300mm                                                |
| SATA cable         | (7+15)pin SATA power supply +SATA data cable,300mm | 1 | AuDIO cable  | Three in a row (Line-out/Line-in/Mic) 3.5mm phone jack, 300mm |
| Screw jumper       | Two M2 screws +Two jumper caps (spare)             | 1 | USB2.0 cable | Two in a row Type A,300mm                                     |
| DC-IN pin          | 3.81 pitch 3pin phoenix plug with earhole          | 1 |              |                                                               |



# PITX-I915

Intel® Tiger lake U Soc CPU, Onboard memory, 1\*HDMI, 1\*eDP, 2\*LAN, 2\*USB3.2, 2\*COM, 1\*M.2 E-key, 1\*mSATA, 1\*SATA3.0, DC 12V

## Key Specification

- Intel® Tiger lake Soc CPU
- LPDDR4x Onboard memory, up to 16GB
- 1\*HDMI, 1\*eDP, 2 independent displays
- 2\*LAN, 2\*USB3.2, 2\*USB2.0, 2\*COM
- 1\*M.2 2230 E-key supports WIFI/BT
- 1\*full size Mini PCIe, supports PCIe modules
- 1\*SATA3.0 HDD/SSD, 1\*mSATA(Opt.) for storage
- Active or passive, two different thickness radiator selection
- DC IN12V



## Product Overview

PITX-I915 is a 2.5-inch embedded mainboard equipped with Intel® Tiger Lake U Soc CPU. It has complete IO functions, mini size, active and passive radiators, and the compact size is suitable for installation in limited space scenarios. It is very suitable for AGV and AMR, medical inspection, machine vision, industrial control, digital city and smart security and other industries and fields.

## Product Parameters

### System

|          |                                                                                                                                                                         |
|----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CPU      | Intel® Tiger lake U Soc CPU (core i3-1115G4/i5-1135G7/i7-1165G7, Celeron 6305E), TDP 12W/15W/28W                                                                        |
| RAM      | Onboard LPDDR4X, 16GB max.                                                                                                                                              |
| Graphics | Intel UHD Graphics /Iris® X* Graphics , Supports Intel DL boost, DirectX12.1,OpenGL 4.6 and OpenCL 3.0, 2 independent displays; HDMI:4096*2304@60Hz, eDP:4096*2304@60Hz |

### I/O

|             |                                                         |
|-------------|---------------------------------------------------------|
| LAN         | 1*Intel I210AT , 10M-1000M<br>1*Intel®I219LM ,10M-1000M |
| USB         | 2*USB3.2, 2*USB2.0                                      |
| Display     | 1*HDMI+1*eDP                                            |
| Audio       | 1*Line in+1*Line out+1*Mic, Realtek ALC897              |
| COM& Others | 1* RS232/422/485, 1*RS232                               |
| DIO         | /                                                       |

### Storage

|         |                                            |
|---------|--------------------------------------------|
| Storage | 1*SATA 3.0 HDD/SSD, 6 Gbps, 1*mSATA (Opt.) |
|---------|--------------------------------------------|

### Others

|        |                                                               |
|--------|---------------------------------------------------------------|
| Switch | 1*F Panel(PW SW, Reset); 1*AT/ATX; 1*Clear CMOS; 1* USB 5V/SB |
| LED    | 1*Power LED; 1*HDD LED                                        |
| WDT    | programmable via software 1 to 255 second                     |

### Expansion

|           |                                                                                         |
|-----------|-----------------------------------------------------------------------------------------|
| Expansion | 1*Mini PCIe(PCleX1),PCle module/mSATA;<br>1*M.2 2230 E-key(USB2.0/PCleX1), WiFi5/BT 5.0 |
|-----------|-----------------------------------------------------------------------------------------|

### Power

|            |                                      |
|------------|--------------------------------------|
| Power& TDP | DC 12V;<br>39.208W (i7-1165G7 @2.8G) |
|------------|--------------------------------------|

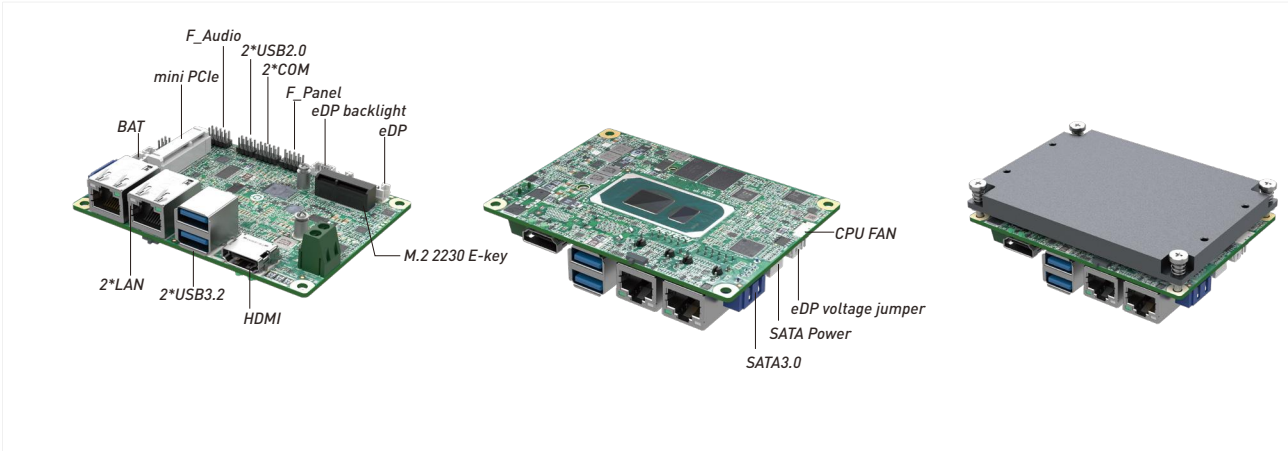
### Environment

|                 |                             |
|-----------------|-----------------------------|
| Dimension (W*H) | 100*72mm                    |
| Operating Temp  | 0~60°C                      |
| Storage Temp    | -40°C~85°C                  |
| Storage Temp    | 10~95%@40°C, Non-condensing |
| Certificate/EMC | CE/FCC Class A              |

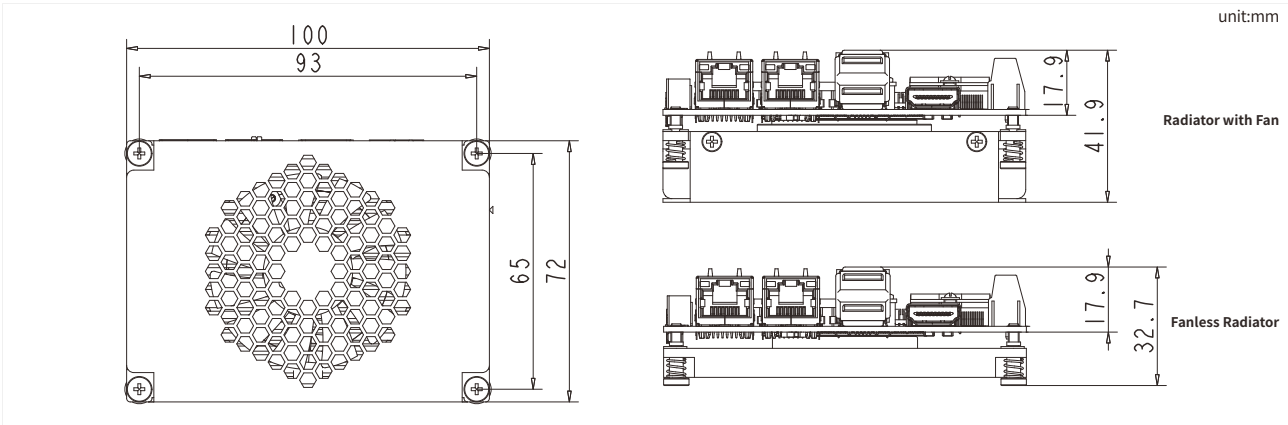
### OS

Windows 11\*IoT enterprise, Windows 10\*IoT enterprise, Android, SUSE, Ubuntu, Wind River, Red Hat\*Enterprise, Wind River VxWorks\*7, Yocto

## I/O View



## Dimensions



## Ordering Information

| Model          | Processor             | Onboard memory | Specifications                                                                                                              | *Optional         |                                                                                                                                                                                                                                             |
|----------------|-----------------------|----------------|-----------------------------------------------------------------------------------------------------------------------------|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| PITX-I915/S001 | Intel® Core I3-1115G4 | 8G LPDDR4X     | 2*LAN, 2*USB3.2, 2*USB2.0, 1*M.2 2230 E-Key, 1* Full size mini PCIe/mSATA, 2*COM, 1*HDMI, 1*eDP, 1*Audio, 1*SATA3.0, DC 12V | Radiator with Fan | Pure copper+Aluminium alloy heat radiator, four-wire intelligent temperature control ball-bearing fan, silent ultra-thin design, fan cable 85mm, size: 100*72*17.9mm (After installation, the total thickness of the motherboard is 41.9mm) |
| PITX-I915/S002 | Intel® Core I5-1135G7 | 8G LPDDR4X     |                                                                                                                             | Fanless Radiator  | Pure copper+Aluminium alloy heat radiator, size: 100*72*17.9mm (After installation, the total thickness of the motherboard is 32.7mm)                                                                                                       |
| PITX-I915/S003 | Intel® Core I7-1165G7 | 16G LPDDR4X    |                                                                                                                             |                   |                                                                                                                                                                                                                                             |
| PITX-I915/S004 | Intel® Celeron 6305E  | 4G LPDDR4X     |                                                                                                                             |                   |                                                                                                                                                                                                                                             |

## Accessories

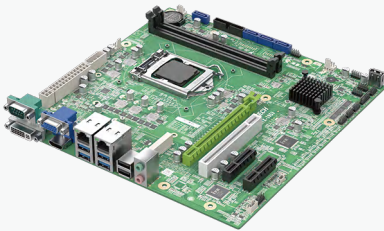
| Standard           |                                                    |   | *Optional    |                                                               |
|--------------------|----------------------------------------------------|---|--------------|---------------------------------------------------------------|
| Serial ports cable | DB9 male,300mm                                     | 4 | AuDIO cable  | Three in a row (Line-out/Line-in/Mic) 3.5mm phone jack, 300mm |
| SATA cable         | (7+15)pin SATA power supply +SATA data cable,300mm | 1 | USB2.0 cable | Two in a row Type A,300mm                                     |
| Screw jumper       | Two M2 screws +Two jumper caps (spare)             | 1 |              |                                                               |

# MATX-I953

Intel® Core™ i7/i5/i3/ Pentium/Celeron CPU, VGA/HDMI/DVI-D, Dual LAN, 4/8\*USB 3.0, 5\*USB 2.0, 6/12\*COM, 4\*PCIe/PCI, ATX power

## Key Specification

- Intel H110 PCH, supports Intel 6/7th Gen. SKL/KBL-S Core i7 / i5 / i3
- /Pentium/Celeron LGA1151 CPU
- Dual - channel 2\*DDR4 2133/2400MHz UDIMM, up to 32GB
- Intel 9th HD Graphic , VGA+HDMI/ VGA +DVI-D/ HDMI+ DVI-D,
- 1\*I219LM and 1\*I210AT/I211AT dual Gigabit network ports
- 4/8\*USB3.0, 5\*USB2.0, 6/12\*COM, 8bit DIO,1\*LPT
- 1\*PCIeX16, 1\*PCI, 2\*PCIeX4(X1), a total of four slots, 1\* full-size Mini PCIe
- 4\*SATA3.0 6.0Gbps, 1\*Line out&1\*Mic, optional amplifier
- 24pin ATX +4pin 12V ATX power



## Product Overview

MATX-I953 is an industrial motherboard powered by Intel H110 chipset supporting Intel 6/7th Gen Core i7 / i5 / i3 /Pentium/Celeron CPU, designed according to the standard Micro ATX motherboard specification. It is suitable for all 4U rack and wall-mounted rack on the market, very suitable for machine vision and data acquisition and other fields.

## Product Parameters

### System

|          |                                                                                                                              |
|----------|------------------------------------------------------------------------------------------------------------------------------|
| CPU      | Intel® 6th/7th Gen Core i7/i5/i3/<br>Pentium/Celeron LGA1151 CPU,H110 chipset,up to 91W                                      |
| RAM      | 2*DDR4 Non-ECC UDIMM, 2400MHz,max 32GB                                                                                       |
| Graphics | Intel Gen. 9 HD Graphics, HEVC/H265 HW HD Codec;<br>HDMI: 3840*2160@30Hz<br>VGA: 1920*1200@60Hz<br>DVI-D: 1920 x 1200 @ 60Hz |

### I/O

|                        |                                                                         |
|------------------------|-------------------------------------------------------------------------|
| LAN                    | 1*Intel® I210AT,10-1000M,<br>1*Intel® I219LM,10-1000M,WOL               |
| USB                    | 4*USB3.0,3*USB2.0,2*USB2.0(pin),<br>4*USB3.0(S002,2*5pin)               |
| Display                | 1*HDMI + 1*DVI-D + 1*VGA                                                |
| Audio                  | 1*Line out+1*Mic,optional audio, 1* Amplifier(optional)                 |
| Serial Port&<br>Others | 2*RS232/422/485,4*RS232,optional added 6*RS232,<br>1*PS/2 ,1*LPT, 1*LPC |
| DIO                    | 8-bit DIO,programmable TTL                                              |

### Storage

|         |                                                       |
|---------|-------------------------------------------------------|
| Storage | 4*SATA 3.0 HDD/SSD(1*SATA with power,support SATADOM) |
|---------|-------------------------------------------------------|

### Others

|                |                                                             |
|----------------|-------------------------------------------------------------|
| Control SW     | F_PANEL(USB Power jumper, AT/ATX jumper, Clear CMOS jumper) |
| indicator      | Power LED,hard disk LED                                     |
| Watchdog timer | programmable via software 1 to 255 second                   |

### Expansion

|           |                                                                              |
|-----------|------------------------------------------------------------------------------|
| Expansion | 1*PCIe3.0X16(X16)+2*PCIe2.0X4(x1 )+<br>1* 32-bit PCI ;<br>1*MiniPCIe(PCIeX1) |
|-----------|------------------------------------------------------------------------------|

### Power supply

|                              |                                                                   |
|------------------------------|-------------------------------------------------------------------|
| Power supply&<br>Consumption | 24-Pin ATX/8-Pin ATX 12V;<br>125W (I7-7700K CPU/16G DDR4/128G SSD |
|------------------------------|-------------------------------------------------------------------|

### Environment

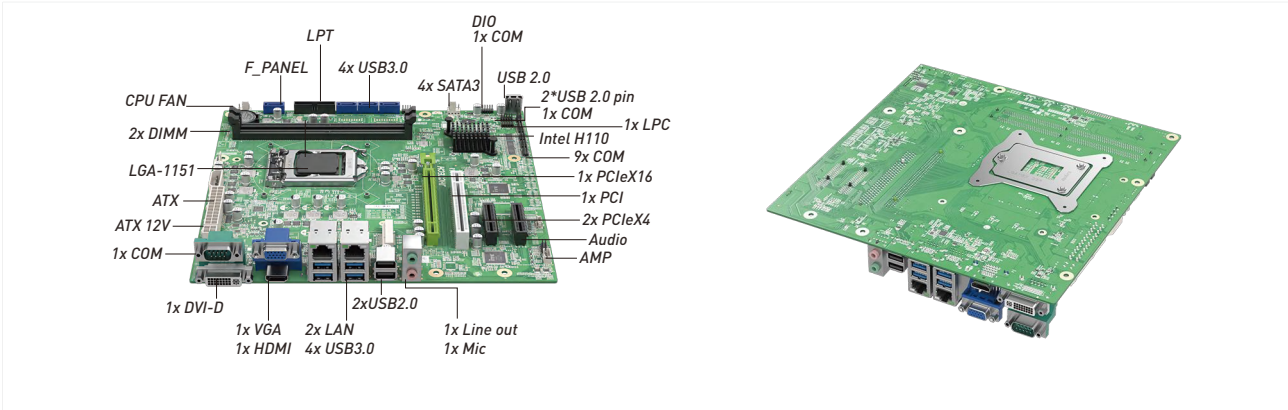
|                  |                              |
|------------------|------------------------------|
| Dimension(W*L*H) | 244*244*34.9mm; PCB:1.6mm    |
| Operating temp   | 0~60°C                       |
| Storage temp     | -40°C~85°C                   |
| Storage humidity | 10~95%@40°C, no condensation |
| Certificate/EMC  | CE/FCC Class A               |

### OS

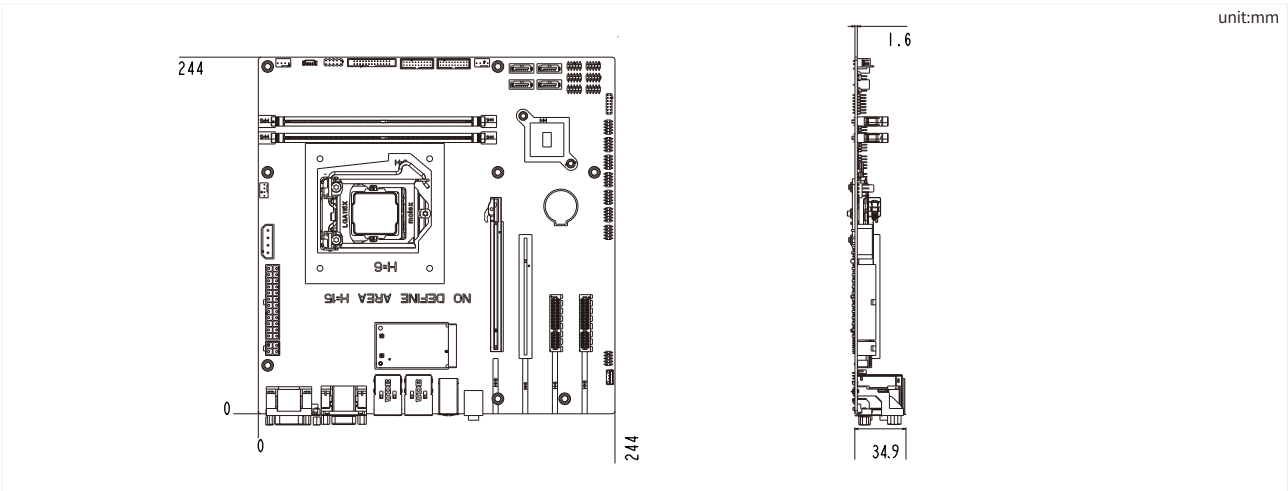
Windows 7, Windows 10, Linux Fedora Ubuntu

(Note:The 7th Intel® Kabylake CPU do not support Windows 7 32bit)

## I/O View



## Dimensions



## Ordering Information

| Model          | Processor                            | Specifications     |                                                                                                                                                                                                                 |
|----------------|--------------------------------------|--------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| MATX-I953/S001 | Intel H110+<br>SKL/KAL-S LGA1151 CPU | 4*USB3.0<br>6*COM  | 2*LAN, 5*USB2.0, 8bitGPIO,1*PCIe X16, 2*PCIe X4(x 1 signal), 1*PCI, 1*Mini PCIe, 1*HDMI, 1*VGA, 1*DVI-D, 1*Line out and 1*Mic, optional Amplifier,4*SATA3,1*LPT, 24-pin ATX/4-pin ATX provides 12V power supply |
| MATX-I953/S002 |                                      | 8*USB3.0<br>12*COM | 2*LAN, 5*USB2.0, 8bitGPIO,1*PCIe X16, 2*PCIe X4(x 1 signal), 1*PCI, 1*Mini PCIe, 1*HDMI, 1*VGA, 1*DVI-D, 1*Line out and 1*Mic, optional Amplifier,4*SATA3,1*LPT, 24-pin ATX/4-pin ATX provides 12V power supply |

## Accessories

| Standard           |                                                    | Amount | *Optional            |                                                              |
|--------------------|----------------------------------------------------|--------|----------------------|--------------------------------------------------------------|
| Serial ports cable | DB9 male, 300mm                                    | 4      | DIO cable            | DB9 male, 600mm                                              |
| SATA cable         | SATA 7pin data cable, 420mm                        | 2      | Audio cable          | Three in a row(Line-out/Line-in/Mic) 3.5mm phone jack, 300mm |
| I/O block slice    | Full IO opening, 0.5mm stainless steel             | 1      | Serial ports cable   | DB9 male, 300mm                                              |
| Screw&jumper       | 2*M2 screws, 2*M2.25 screws+2*2.0& 2.5 jumper caps | 1      | USB2.0 cable         | Two in a row Type A, 300mm                                   |
|                    |                                                    |        | USB3.0 cable         | Two in a row Type A, 300mm                                   |
|                    |                                                    |        | Parallel ports cable | DB25 female, 300mm                                           |
|                    |                                                    |        | PS/2 cable           | Two in a row 6pin S-female keyboard & mouse port, 300mm      |
|                    |                                                    |        | SATA cable           | SATA 7pin data cable, 420mm                                  |
|                    |                                                    |        | CPU radiator1        | LGA115X, TDP 35-65W wind-cooling radiator                    |
|                    |                                                    |        | CPU radiator2        | LGA115X, TDP 95W wind-cooling radiator                       |

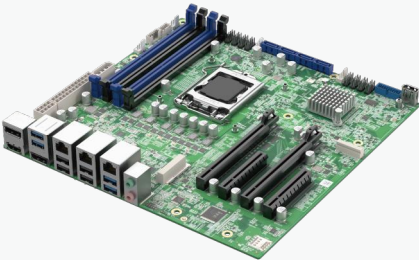


# MATX-I961

Intel® Coffee Lake-R LGA1151 CPU, M-ATX, HDMI, 2\*DP, 3\*LAN,4\*COM,6\*USB3.2, 7\*USB2.0, 4\*SATA3.0, Workstation-grade performance

### Key Specification

- Intel® Xeon® E or 9th/8th-Gen Pentium/Celeron/Core i7/i5/i3
- Intel® Q370/C246 Chipset
- 4\*DDR4 2666/2400MHz DIMM, Max. 128GB
- 2\*DP, 1\*HDMI, support 3 independent displays
- 3\*LAN, 6\*USB3.2 Gen2, 7\*USB2.0, 4\*COM
- 1\*PCIeX16 or 2\*PCIeX8+2\*PCIeX4 expansion
- 1\*Mini PCIe, with SIM card slot, support 4G/WIFI/GPS/GSM/BT
- 4\*SATA3.0, 1\*M.2 2280 M-Key (PCIe X4)
- Optional support TPM 2.0 security encryption, support AMT12.0, Intel® Vpro technology
- ATX Power (12V/5V/3.3V)



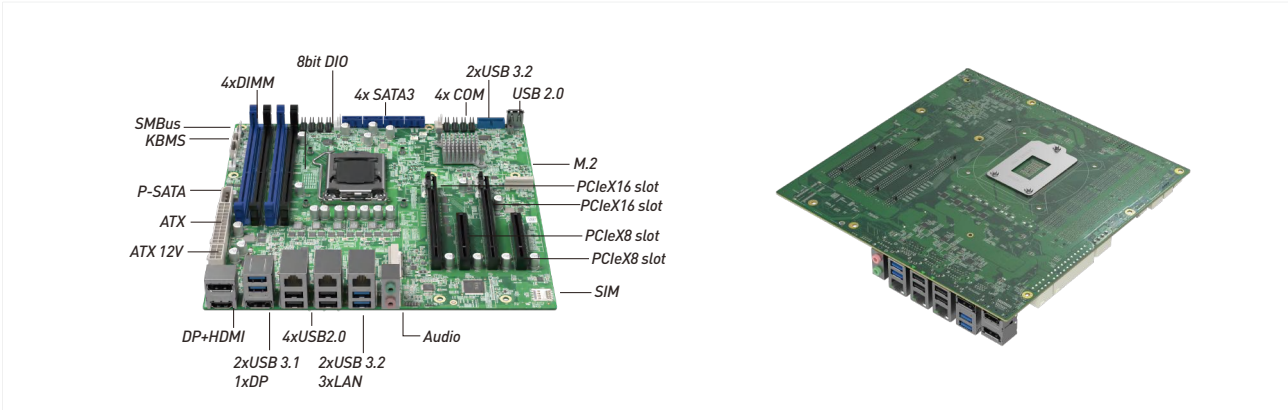
### Product Overview

MATX-I961 is ESBC series embedded single board computer, equipped with Intel® Xeon® E or 9th/8th-Gen Pentium/Celeron/Core i7/i5/i3, up to 8 cores and 16 threads processor, supports 4G/WIFI/GPS/GSM/BT and other wireless functions, ATX Power power supply, complete functions, suitable for various embedded system application requirements.

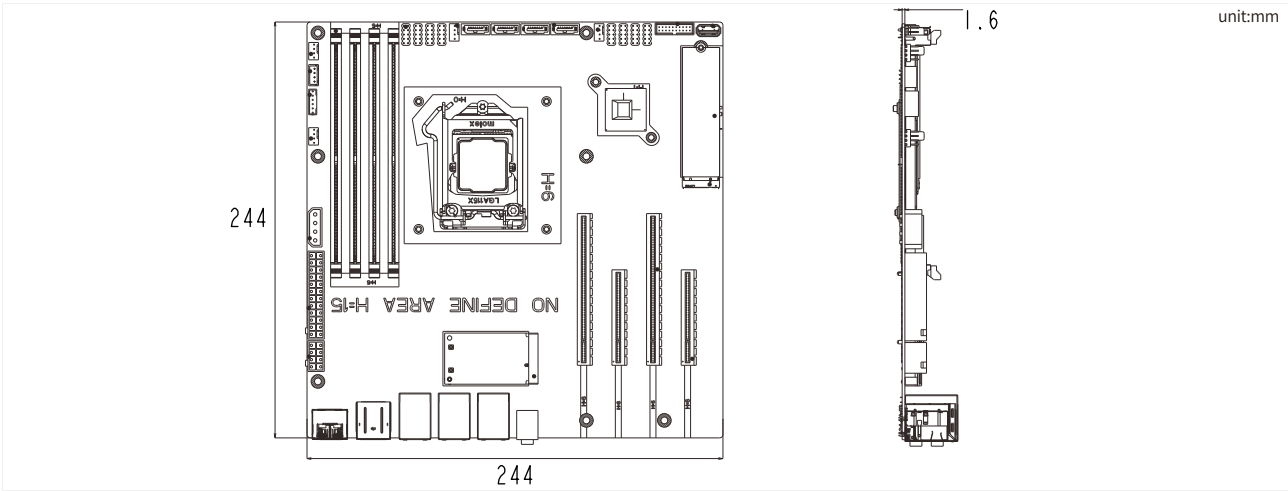
### Product Parameters

| System              |                                                                                                                                                                    | Expansion          |                                                                                                                                             |
|---------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|---------------------------------------------------------------------------------------------------------------------------------------------|
| CPU                 | Intel® Xeon® E or 9th/8th-Gen Pentium/ Celeron/Core i7/i5/i3 LGA1151 processor                                                                                     | Expansion Port     | 1*Mini PCIe with SIM slot<br>2*PCIe X16 slot (1*PCIe X16/2*PCIe X8)<br>2*PCIe X8 slot (Gen3, 2*PCIe X4 )                                    |
| RAM                 | 4*DDR4 2666/2400MHz, 128GB max.                                                                                                                                    | Power Supply       | Input voltage 24-pin ATX/8-pin ATX 12V,<br>Power consumption 374W (I7-8700, 16GB DDR, 2*4TB, GTX-1660)                                      |
| Graphics            | Intel UHD Graphics, Supports DirectX11.1, OpenGL 5.0 and OpenCL 2.1<br>DP:4096*2304@60Hz,<br>HDMI:3840*2160@30Hz,Support 3 independent displays                    |                    |                                                                                                                                             |
| I/O                 |                                                                                                                                                                    |                    |                                                                                                                                             |
| LAN                 | 2*Intel I210AT PCIe,10/100/1000 Mbps;<br>1*Intel I219LM PCIe,10/100/1000 Mbps,Support Intel vPro                                                                   | Environment        | Dimension (L*W*H) 244*244*30.8mm,PCB: 1.6mm                                                                                                 |
| USB                 | 4*USB3.2 Gen2, 4*USB2.0, 2*USB3.2 Gen2(pin),1*USB2.0(build-in)                                                                                                     | Operating temp     | 0~60°C                                                                                                                                      |
| Display             | 2*DP+1*HDMI                                                                                                                                                        | Storage temp       | - 40°C~85°C                                                                                                                                 |
| Audio               | 1*Line out+1*Mic, Optional audio                                                                                                                                   | Storage humidity   | 10~90%@40°C, No condensation                                                                                                                |
| Serial port &Others | 4*RS232(pin),1*PS/2(pin), 1*SM bus(pin)                                                                                                                            | Certification/ EMC | CE/FCC Class A                                                                                                                              |
| DIO                 | 8-bit DIO,Programmable TTL                                                                                                                                         | OS                 | Windows 10 Enterprise & IOT Enterprise<br>Windows Server 2016 (Intel® Xeon® E)<br>Ubuntu,SuSe,Redhat Enterprise 1,2<br>Wind River VxWorks 7 |
| Storage             | storage 4*SATA3, HDD/SSD support RAID 0/1/5/10<br>1*M.2 2280 M-key(PCIe X4), Support NVMe storage                                                                  |                    |                                                                                                                                             |
| Others              |                                                                                                                                                                    |                    |                                                                                                                                             |
| Control switch      | Power SW, Reset                                                                                                                                                    |                    |                                                                                                                                             |
| Indicator           | 1*power indicator light; 1*hard disk indicator light;<br>3*CPU temperature indicator light (Red is alarm, Yellow is high temperature, Green is normal temperature) |                    |                                                                                                                                             |
| Watchdog timer      | Watchdog timeout programmable via software 1 to 255 second                                                                                                         |                    |                                                                                                                                             |
| TPM                 | Optional support TPM2.0                                                                                                                                            |                    |                                                                                                                                             |

### I/O View



### Dimensions



### Ordering Information

| Model              | Processor                                                                              | Specifications                                                                                                                                                                           |
|--------------------|----------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| MATX-I961/S001     | Intel® Q370+Coffelake-R LGA1151 CPU                                                    | 3*LAN, 6*USB3.1, 7*USB2.0, 4*COM, 1*Mini PCIe, 1*M.2 2280 M-Key, 8bit DIO, 1*PCIe X16(or 2*PCIeX8), 2*PCIe X4, 1*HDMI, 2*DP, 1*Line out+1*Mic, 1*PS/2, 4*SATA3, 24-pin ATX/8-pin ATX 12V |
| MATX-I961/S002     | Intel® C246+Coffelake-R LGA1151-R CPU                                                  |                                                                                                                                                                                          |
| ECB-246+ECD-2460   | Mini PCIe dual Intel I210AT Gigabit Ethernet port module, 2*RJ45 interface, with cable |                                                                                                                                                                                          |
| ECB-260 CAN module | Mini PCIe dual isolation CAN module, 2*DB9, with cable                                 |                                                                                                                                                                                          |

### Accessaries

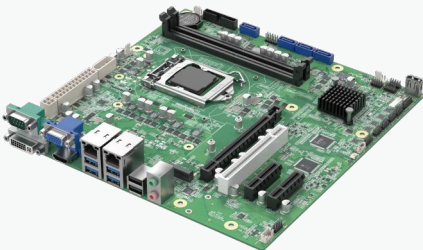
| Standard           |                                                    | Amount | *Optional            |                                                              |
|--------------------|----------------------------------------------------|--------|----------------------|--------------------------------------------------------------|
| Serial ports cable | DB9 male, 300mm                                    | 4      | DIO cable            | DB9 male, 600mm                                              |
| SATA cable         | SATA 7pin data cable, 420mm                        | 2      | Audio cable          | Three in a row(Line-out/Line-in/Mic) 3.5mm phone jack, 300mm |
| I/O block slice    | Full IO opening, 0.5mm stainless steel             | 1      | Serial ports cable   | DB9 male, 300mm                                              |
| Screw&jumper       | 2*M2 screws, 2*M2.25 screws+2*2.0& 2.5 jumper caps | 1      | USB2.0 cable         | Two in a row Type A, 300mm                                   |
|                    |                                                    |        | USB3.0 cable         | Two in a row Type A, 300mm                                   |
|                    |                                                    |        | Parallel ports cable | DB25 female, 300mm                                           |
|                    |                                                    |        | PS/2 cable           | Two in a row 6pin S-female keyboard & mouse port, 300mm      |
|                    |                                                    |        | SATA cable           | SATA 7pin data cable, 420mm                                  |
|                    |                                                    |        | CPU radiator1        | LGA115X, TDP 35-65W wind-cooling radiator                    |
|                    |                                                    |        | CPU radiator2        | LGA115X, TDP 95W wind-cooling radiator                       |

# MATX-I964

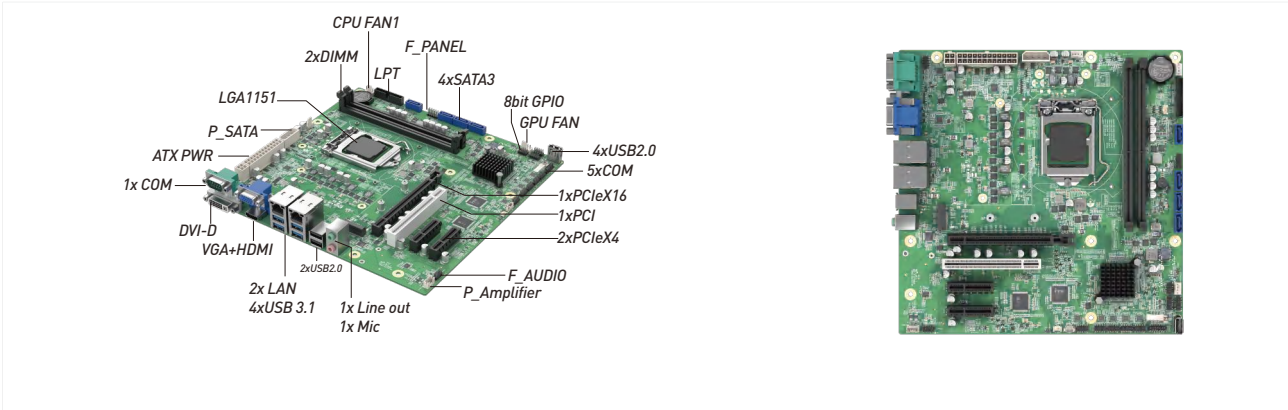
Intel 8/9th LGA1151 CPU, Dual-channel DDR4, VGA/HDMI/DVI-D,Dual LAN,4\*USB 3.1, 6\*USB 2.0, 6\*COM, 4\*PCIe/PCI, ATX power

## Key Specification

- Intel H310 PCH,supports Intel 8/9th Gen. Coffee lake-S Core i9 / i7 / i5 / i3
- /Pentium/Celeron LGA1151 CPU
- Dual - channel DDR4 2666MHz UDIMM, up to 64GB
- VGA+HDMI/ VGA +DVI-D/ HDMI +DVI-D dual independent displays
- 1\*I219LM and 1\*I226V dual Gigabit network ports
- 4\*USB3.1, 6\*USB2.0, 6\*COM, 1\*8bit GPIO,1\*LPT
- 1\*PCIe X16, 1\*PCI, 2\*PCIe X4, a total of four slots;
- 4\*SATA3.0 6.0Gbps, 1\*M.2 2242/2280 M-Key, Nvme
- Realtek ALC897 HD audio chip, support 5.1 channels, optional support amplifier
- 24pin ATX +4pin 12V ATX power



## I/O View



## Product Overview

MATX-I964 is an industrial motherboard powered by Intel H310 chipset, supporting Intel 8/9th Gen Core i9 / i7 / i5 / i3 /Pentium/Celeron CPU, designed according to the standard Micro ATX motherboard specification. It is suitable for all 4U rack and wall-mounted rack on the market, very suitable for machine vision, data acquisition and other fields.

## Product Parameters

### System

|          |                                                                                                                                                                                  |
|----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CPU      | Intel 8/9th Gen. Core i9/i7/i5/i3/Pentium/Celeron CPU, LGA 1151 Socket,可max.TDP95W, Intel H310 PCH                                                                               |
| RAM      | 2*DDR4 Non-ECC UDIMM,2666MHz, 64GB max.                                                                                                                                          |
| Graphics | Intel 9th HD Graphic, AVC/VC1/MPEG2/HEVC/VP8/JPEG.HW, Direct3D 11.2,OpenGL 5.0, OpenCL 2.1, HDMI:4096*2304@24Hz, VGA:1920*1200@60Hz, DVI-D:1920*1200@60Hz, 2 independent Display |

### I/O

|             |                                                                                               |
|-------------|-----------------------------------------------------------------------------------------------|
| LAN         | 1*Intel® I226V, 10M-2.5G, WOLRemote<br>1*Intel® I219LM, 10-1000M, WOLRemote                   |
| USB         | 4*USB3.1 Gen2(5Gbps), 2*USB2.0(5V System or 5V SB);<br>4*USB2.0(pin)                          |
| Display     | 1*HDMI+1*VGA+1*DVI-D                                                                          |
| Audio       | 1*Line out+1*Mic,Realtek ALC897,Optional 2*3W Amplifier                                       |
| COM& Others | 1*RS232/422/485(DB9), 1*RS232/422/485(pin)4*RS232(pin),<br>1*LPC, 1*PS/2(pin), 1*SM bus(pin ) |
| DIO         | 8-bit DIO,programmable TTL                                                                    |

### Storage

|         |                                                          |
|---------|----------------------------------------------------------|
| Storage | 4*SATA3;<br>1*M.2 2242/2280 M-key(PCIe X2), NVMe Storage |
|---------|----------------------------------------------------------|

### Others

|        |                                                                                                    |
|--------|----------------------------------------------------------------------------------------------------|
| Switch | F_PANEL(Power SW, Reset), Clear CMOS, AT/ATX, USB Power                                            |
| LED    | 1*PowerLED; 1*HDD LED; 3*CPU Temp LED(<br>Red is alarm, Yellow is high temp, Green is normal temp) |
| WDT    | programmable via software 1 to 255 second                                                          |

### Expansion

|           |                                                                                           |
|-----------|-------------------------------------------------------------------------------------------|
| Expansion | 1*PCIe3.0 X16(X16) + 2*PCIe2.0 X4 (X1)+1*32-bit PCI;<br>1*M.2 2242/2280 M-Key(PCIe2.0 X2) |
|-----------|-------------------------------------------------------------------------------------------|

### Power

|            |                                                                   |
|------------|-------------------------------------------------------------------|
| Power& TDP | 24-pin ATX + 4-pin 12V,<br>TDP: 224W (I9-9900K/16G DDR4/128G SSD) |
|------------|-------------------------------------------------------------------|

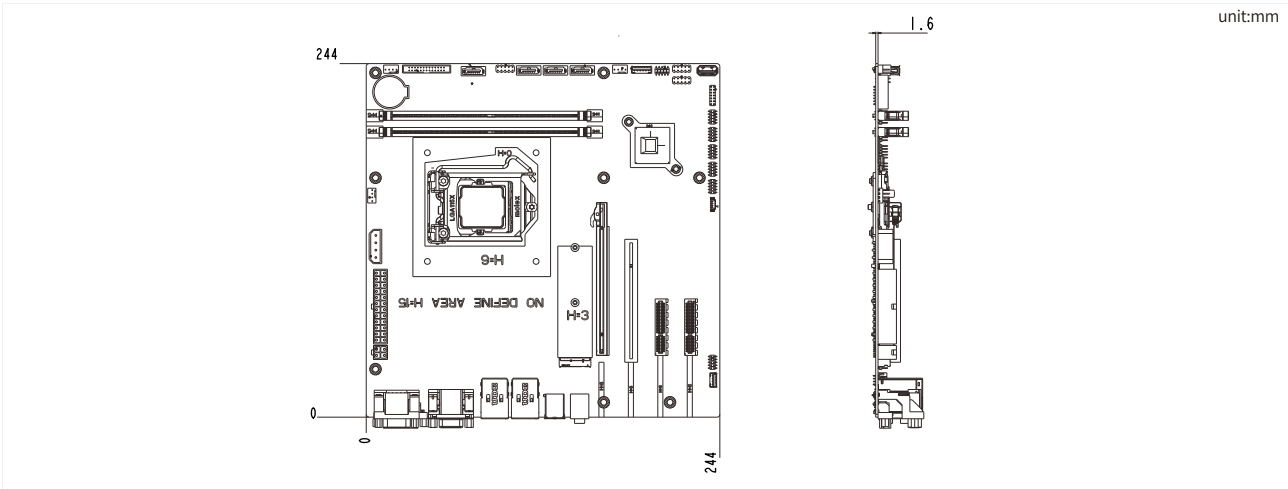
### Environment

|                 |                                      |
|-----------------|--------------------------------------|
| Dimension(W*H)  | 244*244mm(Top Side:33.2mm;PCB:1.6mm) |
| Operating Temp  | 0~60°C                               |
| Storage Temp    | - 40°C~85°C                          |
| Storage Temp    | 10~95%@40°C, No-condensation         |
| Certificate/EMC | CE/FCC Class A                       |

### OS

Windows7, Windows\* 10 Enterprise & IOT Enterprise (64 bit)(CFL-R), Windows\* Server 2016 (Intel® Xeon® E) Ubuntu\*, SuSe\*, Redhat Enterprise\* 1,2 (Kernel 4.14) (CFL-R) Wind River\* , VxWorks\* 7 (CFL-R)

## Dimensions



## Ordering Information

| Model          | Processor                             | Specifications                                                                                                                                                                                                                                     |
|----------------|---------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| MATX-I964/S001 | Intel® H310+Coffee lake-S LGA1151 CPU | 2*LAN, 4*USB3.1, 6*USB2.0, 6*COM, 1*8 bit GPIO,1*PCIe x16, 2*PCIe X4(X1 ), 1*PCI, 1*M.2 M-Key, 1*HDMI, 1*VGA, 1*DVI-D, 1*Line out and 1*Mic, optional Amplifier, 4*SATA3(1*SATA DOM), 1*LPT, 1*PS2, 24-pin ATX/4-pin ATX provides 12V power supply |

## Accessories

| Standard           |                                        |   | *Optional            |                                                               |
|--------------------|----------------------------------------|---|----------------------|---------------------------------------------------------------|
| Serial ports cable | DB9 male,300mm                         | 4 | DIO cable            | DB9 male,300mm                                                |
| SATA cable         | SATA 7pin data cable,420mm             | 2 | AuDIO cable          | Three in a row (Line-out/Line-in/Mic) 3.5mm phone jack, 300mm |
| I/O block slice    | Full IO opening, 0.5mm stainless steel | 1 | Parallel ports cable | DB25 female,300mm                                             |
| Screw jumper       | Two M2 screws +Two jumper caps (spare) | 1 | USB2.0 cable         | Two in a row Type A,300mm                                     |
|                    |                                        |   | PS/2 cable           | Two in a row 6pin S-female,300mm                              |
|                    |                                        |   | CPUradiator1         | LGA115X, TDP 35-65W wind-cooling radiator                     |
|                    |                                        |   | CPUradiator2         | LGA115X, TDP 95W wind-cooling radiator                        |
|                    |                                        |   | SATA cable           | SATA 7pin data cable,420mm                                    |

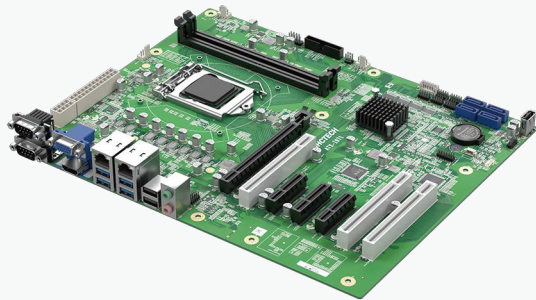


# ATX-I971

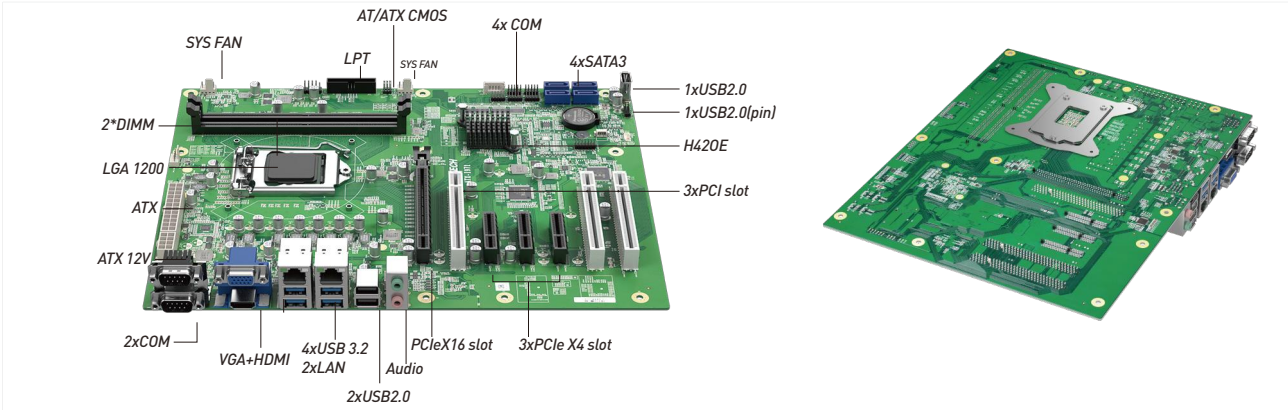
Intel® Comet lake-S CPU, H420E, 2\*LAN, 1\*VGA, 1\*HDMI, 6\*COM, 4\*USB3.2, 5\*USB2.0, 4\*SATA3.0, 8-bit DIO, ATX power

## Key Specification

- Intel® 10th Gen. Cometlake-S Core i9/i7/i5/i3/Pentium/Celeron CPU
- Intel H420E Chipset
- 2\*DDR4 2400/2666/2933MHZ SODIMM, Max 64GB
- Intel UHD Graphic,1\*HDMI+1\*VGA,dual independent display
- 1\*I226V,2.5G; 1\*I219 LM,10/100/1000 Mbps
- 6\*USB3.0, 2\*USB2.0, 6\*COM, 8-bit DIO
- 1\*PCIe X16, 3\*PCIeX4, 3\*32-bit PCI
- 4\*SATA3.0,6.0 Gbps; Audio,TPM 2.0(Opt.)
- 24pin ATX+8pin 12V ATX



## I/O View



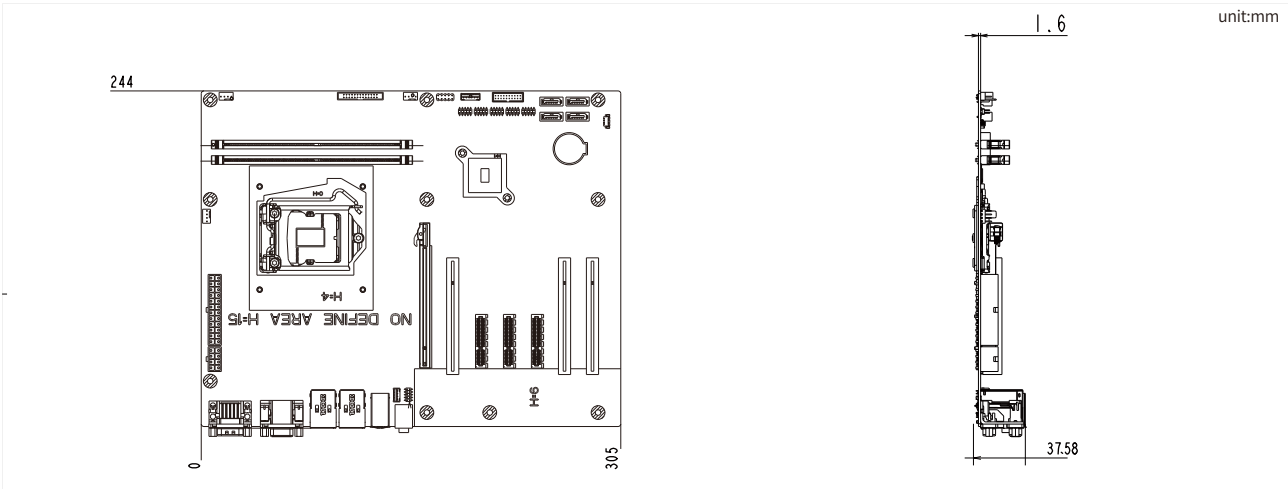
## Product Overview

ATX-I971 is powered by Intel® 10th Gen Core i9/i7/i5/i3/Pentium/Celeron processor CPU with Intel H420E chipset. It is designed according to the standard ATX hole size, and is fully adapted to all rack and wall-mounted chassis on the market, and is very suitable for machine vision, CNC machinery, data acquisition and other fields.

## Product Parameters

| System              |                                                                                                                                                                                                                                                   | Expansion          |                                                                                                                                               |
|---------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|
| CPU                 | Intel 10th Gen. Cometlake-S Core i9/i7/i5/i3/Pentium/Celeron CPU,LGA 1200 Socket,up tp 125W                                                                                                                                                       | Expansion          | 1*PCIe3.0X16(X16)+<br>3*PCIe3.0X4 (X2+X1+X1 or 1*PCIe3.0X4)+<br>3* 32-bit PCI                                                                 |
| RAM                 | 2* DDR4 288-Pin Non-ECC UDIMM,2400/2666/2933MHz, 64GB max.                                                                                                                                                                                        |                    |                                                                                                                                               |
| Graphics            | Intel UHD Graphics, Supports DirectX12, OpenGL 4.5 and OpenCL 2.1,<br>HW Decode: AVC/H.264, MPEG2, VC1/WMV9, JPEG/MJPEG, HEVC/H265, VP8, VP9<br>HW Encode: MPEG2, AVC/H264, JPEG, HEVC/H265, VP8, VP9<br>HDMI: 4096*2160@30Hz,VGA: 1920*1200@60Hz |                    |                                                                                                                                               |
| I/O                 |                                                                                                                                                                                                                                                   | Power Supply       |                                                                                                                                               |
| LAN                 | 1*Intel® I226V 10M-2.5G, WOL;<br>1*Intel® I219LM 10-1000M, WOL                                                                                                                                                                                    | Input voltage      | 24-Pin ATX/8-Pin ATX 12V, Max. out put power: 280W                                                                                            |
| USB                 | 4*USB3.2, 2*USB2.0, 3*USB2.0(Build-in)                                                                                                                                                                                                            |                    |                                                                                                                                               |
| Display             | 1*HDMI+1*VGA                                                                                                                                                                                                                                      |                    |                                                                                                                                               |
| Audio               | 1*Line out+1*Mic, Optional Audio,1*Amplifier(optional)                                                                                                                                                                                            |                    |                                                                                                                                               |
| Serial port& Others | 2* RS232/422/485, 4*RS232(pin), 1*LPT (pin), 1*PS/2(pin)                                                                                                                                                                                          |                    |                                                                                                                                               |
| DIO                 | 8-bit DIO,Programmable TTL                                                                                                                                                                                                                        |                    |                                                                                                                                               |
| Storage             |                                                                                                                                                                                                                                                   | Environment        |                                                                                                                                               |
| storage             | 4*SATA3, HDD/SSD                                                                                                                                                                                                                                  | Dimension (L*W*H)  | 305*244*37.58mm, PCB:1.6mm                                                                                                                    |
|                     |                                                                                                                                                                                                                                                   | Operating temp     | 0~60°C                                                                                                                                        |
|                     |                                                                                                                                                                                                                                                   | Storage temp       | -40°C~85°C                                                                                                                                    |
|                     |                                                                                                                                                                                                                                                   | Storage humidity   | 10~95%@40°C, No condensation                                                                                                                  |
|                     |                                                                                                                                                                                                                                                   | Certification/ EMC | CE/FCC Class A                                                                                                                                |
| Others              |                                                                                                                                                                                                                                                   | OS                 |                                                                                                                                               |
| Control switch      | Power SW, Reset                                                                                                                                                                                                                                   | OC                 | Windows 10 Enterprise & IOT Enterprise<br>Windows Server 2016 (Intel® Xeon® E)<br>Ubuntu, SuSe, Redhat Enterprise 1,2<br>Wind River VxWorks 7 |
| LED                 | 1*power LED; 1*HDD LED; 3*CPU temp LED<br>(Red is alarm, Yellow is high temperature, Green is normal temperature)                                                                                                                                 |                    |                                                                                                                                               |
| Watchdog timer      | programmable via software 1 to 255 second                                                                                                                                                                                                         |                    |                                                                                                                                               |

## Dimensions



## Ordering Information

| Model         | Processor                            | Specifications                                                                                                                                                                                  |
|---------------|--------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ATX-I971/S001 | Intel® H420E+Cometlake-S LGA1151 CPU | 2*LAN, 4*USB3.2, 5*USB2.0, 6*COM, 3*PCI, 8bit DIO, 1*LPT, 1*PCIe X16, 3*PCIe X4(X2+X1+X1 or 1*X4), 1*HDMI, 1*VGA, 1*Line out, 1*Mic, PS/2, 4*SATA3, Amplifier (Opt.) , 24-pin ATX/8-pin ATX 12V |

## Accessories

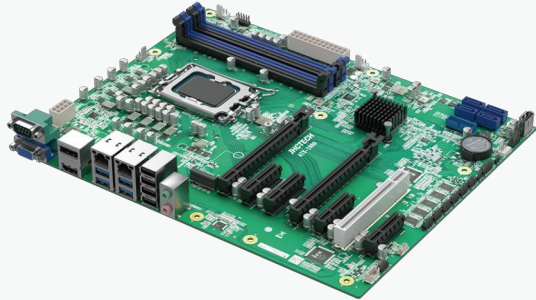
| Standard           |                                        |   | *Optional            |                                                               |
|--------------------|----------------------------------------|---|----------------------|---------------------------------------------------------------|
| Serial ports cable | DB9 male,300mm                         | 4 | DIO cable            | DB9 male,300mm                                                |
| SATA cable         | SATA 7pin data cable,420mm             | 2 | AuDIO cable          | Three in a row (Line-out/Line-in/Mic) 3.5mm phone jack, 300mm |
| I/O block slice    | Full IO opening, 0.5mm stainless steel | 1 | Parallel ports cable | DB25 female,300mm                                             |
| Screw jumper       | Two M2 screws +Two jumper caps (spare) | 1 | USB2.0 cable         | Two in a row Type A,300mm                                     |
|                    |                                        |   | PS/2 cable           | Two in a row 6pin S-female,300mm                              |
|                    |                                        |   | CPUradiator1         | LGA115X, TDP 35-65W wind-cooling radiator                     |
|                    |                                        |   | CPUradiator2         | LGA115X, TDP 95W wind-cooling radiator                        |
|                    |                                        |   | SATA cable           | SATA 7pin data cable,420mm                                    |

# ATX-I980

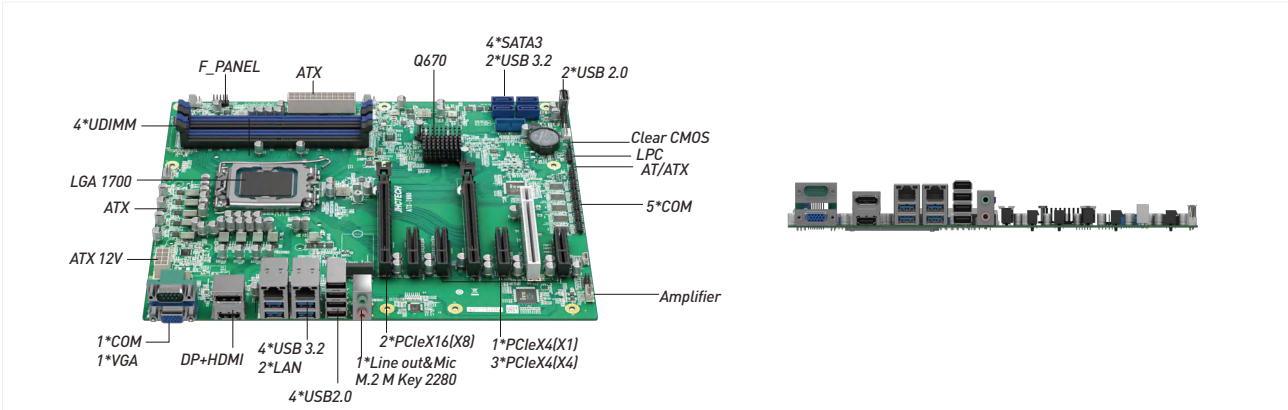
Intel® Q670 PCH+Alder lake-S CPU, 2\*LAN,1\*DP,1\*HDMI,1\*VGA,6\*COM,6\*USB3.2,7\*USB2.0,4\*SATA3.0,6\*PCIe+1\*PCI

## Key Specification

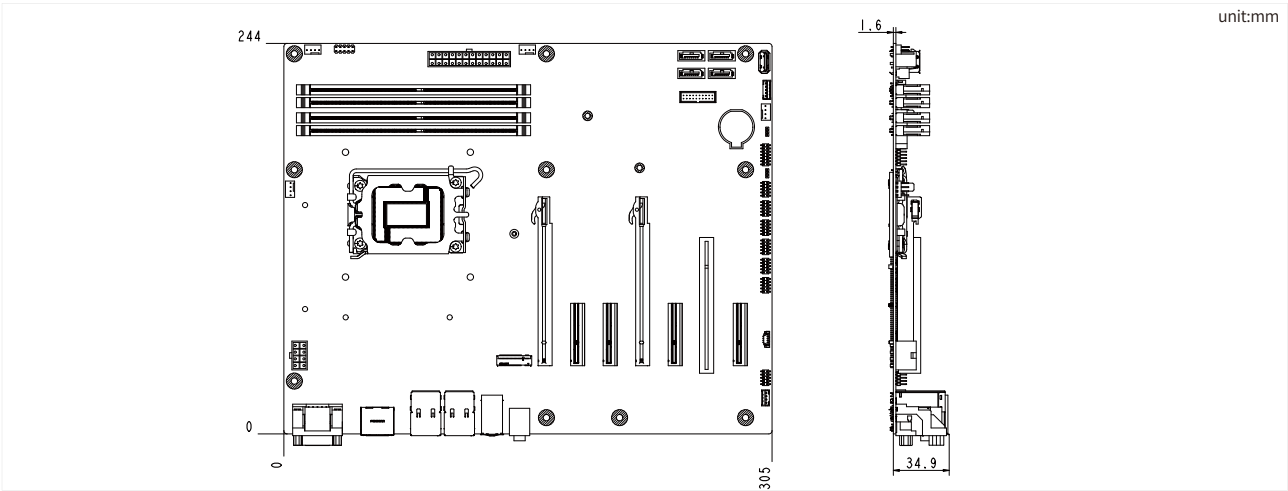
- Intel 12th/13th Gen. Alder lake-S/Raptor Lake-S Core i9/i7/i5/i3/Pentium/Celeron CPU, LGA1700 Socket
- Intel Q670, high-performance chipsets
- Dual - channel 4\*DDR4 3200MHz UDIMM, up to 128GB
- Intel UHD Graphic, 1\*DP+1\*HDMI+1\*VGA, three independent displays
- 1\*I219LM and 1\*I226V, dual Gigabit network ports
- 6\*USB3.2,7\*USB2.0,6\*COM,8bit DIO
- 2\*PCIeX16(X8),1\*PCI, 4\*PCIeX4 (3 for X4, 1 for X1 ) a total of seven slots, 1\*M.2 2280 M-key
- 4\*SATA3.0 6.0Gbps, support Raid0/1/10/5
- 24pin ATX +8pin 12V ATX power



## I/O View



## Dimensions



## Product Overview

ATX-I980 is an industrial motherboard powered by Intel Q670 chipset, supporting Intel®12th/13th Gen Core i9/i7/i5/i3/Pentium/Celeron CPU, designed according to the standard ATX motherboard specification and has seven PCIe and PCI extensions. It fits all 4U chassis and wall-mounted chassis on the market, and is suitable for machine vision, CNC machinery, digital medical and casino games and other fields.

## Product Parameters

| System      |                                                                                                                                                                                                                                                           | Others                                                                                                                                                    |                                                                                                        |
|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|
| CPU         | Intel 12th Gen. Alder lake-S Core i9/i7/i5/i3/Pentium/Celeron CPU,LGA 1700 Socket,Q670 PCH, 125W max.                                                                                                                                                     | Switch                                                                                                                                                    | Power SW, Reset,USB Power, AT/ATX, Clear CMOS                                                          |
| RAM         | 4*288-pin Non-ECC UDIMM , dual channel DDR4 3200MHz, 128GB max.                                                                                                                                                                                           | LED                                                                                                                                                       | Power LED,HDD LED                                                                                      |
| Graphics    | Intel Xe 700 UHD Graphics , DirectX 12, OpenGL 4.5, OpenCL 2.1; HW Decode: AVC/H.264, MPEG2, VC1/WMV9, JPEG/MJPEG, HEVC/H265, VP8, VP9; HW Encode: MPEG2, AVC/H264, JPEG, HEVC/H265, VP8, VP9; DP:7680*4320@60Hz, HDMI:4096*2160@60Hz, VGA:1920*1200@60Hz | WDT                                                                                                                                                       | programmable via software 1 to 255 second                                                              |
|             |                                                                                                                                                                                                                                                           | TPM                                                                                                                                                       | Optional TPM 2.0                                                                                       |
| I/O         |                                                                                                                                                                                                                                                           | Expansion                                                                                                                                                 |                                                                                                        |
| LAN         | 1*Intel® I226V, 10M-2.5G, WOLRemote<br>1*Intel® I219LM, 10-1000M,iAMT13.0, vPro                                                                                                                                                                           | Expansion                                                                                                                                                 | 2*PCIe5.0X16(X8)+2*PCIe4.0X4(X4)+2*PCIe3.0X4(X4+X1)+<br>1* 32-bit PCI;<br>1*M.2 2280 M-Key (PCIe4.0X4) |
| USB         | 4*USB3.2(10G), 4*USB2.0, 2*USB3.2(10G,pin), 3*USB2.0(pin)                                                                                                                                                                                                 |                                                                                                                                                           |                                                                                                        |
| Display     | 1*DP+1*HDMI+1*VGA                                                                                                                                                                                                                                         |                                                                                                                                                           |                                                                                                        |
| Audio       | 1*Line out+1*Mic,Realtek ALC897; 1*Amplifier(Optional)                                                                                                                                                                                                    |                                                                                                                                                           |                                                                                                        |
| COM& Others | 1* RS232/422/485(DB9),5*COM(pin)                                                                                                                                                                                                                          |                                                                                                                                                           |                                                                                                        |
| DIO         | 8-bit DIO                                                                                                                                                                                                                                                 |                                                                                                                                                           |                                                                                                        |
| Storage     |                                                                                                                                                                                                                                                           | Power                                                                                                                                                     |                                                                                                        |
| Storage     | 4*SATA3.0, RAID0/1/10/5;                                                                                                                                                                                                                                  | Power& TDP                                                                                                                                                | 24-Pin ATX + 8-Pin ATX 12V;<br>TDP: 110W (I7-12700K CPU/16G DDR4/128G SSD,non.AI Card)                 |
|             |                                                                                                                                                                                                                                                           | Environment                                                                                                                                               |                                                                                                        |
|             |                                                                                                                                                                                                                                                           | Dimension (W*L*H)                                                                                                                                         | 305*244*34.9mm; PCB:1.6mm                                                                              |
|             |                                                                                                                                                                                                                                                           | Operating Temp                                                                                                                                            | 0~60°C                                                                                                 |
|             |                                                                                                                                                                                                                                                           | Storage Temp                                                                                                                                              | -40°C~85°C                                                                                             |
|             |                                                                                                                                                                                                                                                           | Storage Temp                                                                                                                                              | 10~95%@40°C, No-condensation                                                                           |
|             |                                                                                                                                                                                                                                                           | Certificate/EMC                                                                                                                                           | CE/FCC Class A                                                                                         |
|             |                                                                                                                                                                                                                                                           | OS                                                                                                                                                        |                                                                                                        |
|             |                                                                                                                                                                                                                                                           | Windows 10/11 IoT Enterprise (64-bit), Windows Server 2019, Ubuntu, SUSE, Redhat Enterprise, Wind River Linux,Yocto Project (64-bit),Wind River VxWorks 7 |                                                                                                        |

## Ordering Information

| Model         | Processor                            | Specifications                                                                                                                                                                                    |
|---------------|--------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ATX-I980/S001 | Intel® Q670+Alder lake-S LGA1700 CPU | 2*LAN, 6*USB3.2, 7*USB2.0, 6*COM, 2*PCIe X16(X8), 4*PCIeX4(3*X4,1*X1), 1*PCI, 1*M.2 M-key, 1*HDMI, 1*DP, 1*VGA,1*Line out&1*Mic, Amplifier(Optional), 8bit DIO, 4*SATA3, 24-pin ATX+8-pin ATX 12V |

## Accessories

| Standard           |                                        |   | *Optional          |                                                               |
|--------------------|----------------------------------------|---|--------------------|---------------------------------------------------------------|
| Serial ports cable | DB9 male,300mm                         | 3 | DIO cable          | DB9 male,600mm                                                |
| SATA cable         | SATA 7pin data cable,420mm             | 2 | AuDIO cable        | Three in a row (Line-out/Line-in/Mic) 3.5mm phone jack, 300mm |
| I/O block slice    | Full IO opening, 0.5mm stainless steel | 1 | Serial ports cable | DB9 male,300mm                                                |
| Screw jumper       | Two M2 screws +Two jumper caps (spare) | 1 | USB2.0 cable       | Two in a row Type A,300mm                                     |
|                    |                                        |   | USB3.0 cable       | Two in a row Type A,300mm                                     |
|                    |                                        |   | CPUradiator1       | LGA1700, TDP 65W wind-cooling radiator                        |
|                    |                                        |   | CPUradiator2       | LGA115X, TDP 125W wind-cooling radiator                       |
|                    |                                        |   | SATA cable         | SATA 7pin data cable,420mm                                    |



# PADR-M101

Intel® Whiskey lake U CPU,2-CH DDR4,1\*HDMI,1\*DP,2\*LAN,4\*USB3.1,4\*COM,1\*M.2 E-key,1\*F-Mini PCIe,DC 12V/DC9-36V

### Key Specification

- SGCC box design, 4-line temperature-controlled fan silent heat dissipation
- Intel® Core i3/i5/i7/Celeron CPU
- 2-Ch DDR4 2400MHz SODIMM, 32GB max.
- 1\*HDMI,1\*DP,dual 4K Display
- 1\*Line out,1\*Mic,4\*USB3.1
- 2\* GbE LAN,4\*COM ,8-bit DIO(Optional)
- 1\*M.2,2230 E-Key, 1\*Mini-PCIe(+SIM),Optional mSATA
- 1\*2.5"SATA bay for storage
- DC 12V,or DC 9~36V



### Product Overview

PADR-M101 is an embedded box computer, which adopts SGCC box structure design and has a built-in 4-wire debugging fan for silent cooling. Power by Intel® Whiskey lake U architecture, adopt 8th generation Intel® Core TM i3/i5/i7/Celeron U Series CPU, dual 4K display, rich IO interface. DC 12V or wide voltage DC 9-36V, small size, beautiful appearance, easy to manufacture, suitable for mobile portable terminals, advertising machines, AGV, medical analysis equipment and other application scenarios.

### Product Parameters

#### System

|            |                                                                                                |
|------------|------------------------------------------------------------------------------------------------|
| CPU        | Intel® Core i3/i5/i7/Celeron U                                                                 |
| RAM        | 2*DDR4, 2400MHz, 32GB max.                                                                     |
| Graphics   | Intel® Gen. 9 UHD Graphics;<br>HDMI:4096*2304@24Hz,<br>DP:4096*2304@60Hz,2 independent Display |
| LAN        | 1*Intel I226V,10-1000M;<br>1*Intel I219LM, 10-1000M                                            |
| USB        | 4*USB3.1 Gen1(5Gbps)                                                                           |
| Display    | 1*DP+1*HDMI                                                                                    |
| Audio      | 1*Line out+1*Mic,Realtek ALC897                                                                |
| COM/others | 2*RS232/422/485, 2*RS232;                                                                      |
| DIO        | 1*8-bit DIO (Optional,DB9)                                                                     |

#### Storage

|         |                                |
|---------|--------------------------------|
| Storage | 1*2.5" SATA,max.15mm thick HDD |
|---------|--------------------------------|

#### Others

|        |                                                                                                    |
|--------|----------------------------------------------------------------------------------------------------|
| LED    | 1*PowerLED, 1*HDD LED, 3*CPU Temp LED(<br>Red is alarm, Yellow is high temp, Green is normal temp) |
| Switch | 1*PowerSW                                                                                          |
| WDT    | programmable via software 1 to 255 second                                                          |

#### OS

|    |                                                             |
|----|-------------------------------------------------------------|
| OS | Windows 10, SUSE, Ubuntu, Wind River,<br>Red Hat Enterprise |
|----|-------------------------------------------------------------|

#### Expansion

|           |                                                                        |
|-----------|------------------------------------------------------------------------|
| Expansion | 1*Mini PCIe(+SIM),4G LTE/Wifi/BT,BIOS to mSATA;<br>1*M.2 E-Key,Wifi/BT |
|-----------|------------------------------------------------------------------------|

#### Power

|            |                                                                |
|------------|----------------------------------------------------------------|
| Power& TDP | DC 12V, or DC 9~36V;<br>27.87W (I7-8565U, 16GB DDR , 1*4T SSD) |
|------------|----------------------------------------------------------------|

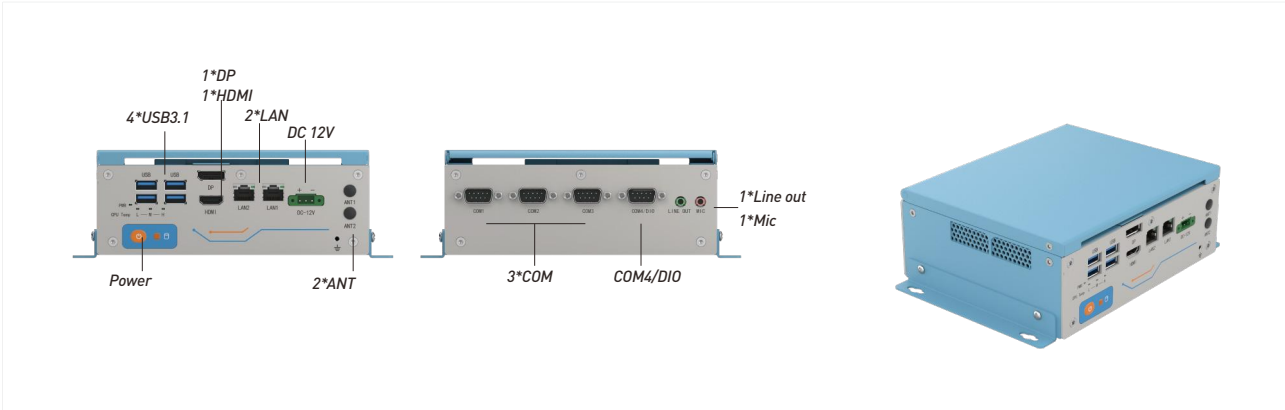
#### Mechanical

|                   |                       |
|-------------------|-----------------------|
| Structure         | SGCC                  |
| Color             | Silk Grey+Pastel Blue |
| Installation      | desktop mounting      |
| Dimension (W*H*D) | 200*140*67.5mm        |
| Weight            | 1.51KG                |

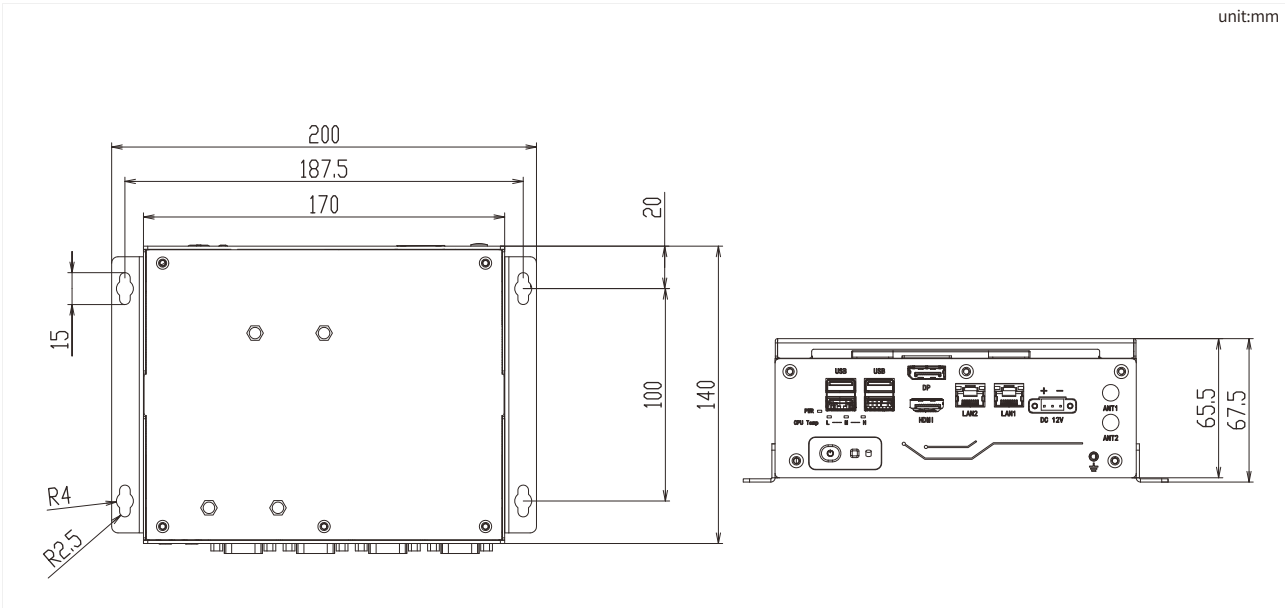
#### Environment

|                |                                                                                       |
|----------------|---------------------------------------------------------------------------------------|
| Operating Temp | 0°C~50°C – Radiator with Fan,SSD;                                                     |
| Storage Temp   | -40°C~85°C                                                                            |
| Storage Temp   | 10~95%@40°C, No-condensation                                                          |
| Vibration      | 5 grms/5~500Hz/random/operation(SSD);<br>1 grms/5~500Hz/random/operation(HDD)         |
| Shock          | 50g peak acceleration(duration 11ms,SSD);<br>20g peak acceleration(duration 11ms,HDD) |
| Certificate    | CE/FCC Class A                                                                        |

### I/O View



### Dimensions



### Ordering Information

| Model             | Processor            | Specifications                                                                                                                           |
|-------------------|----------------------|------------------------------------------------------------------------------------------------------------------------------------------|
| PADR-M101/S001    | Intel® Core I3-8145U | DDR4 2*SO-DIMM,1*HDMI,1*DP,1*Line out&1*Mic, 2*LAN,4*USB3.1,4*COM,8-bit DIO(Optional),1*M.2 E key, 1*Mini PCIe/mSATA,1*2.5"SATA,DC 12V   |
| PADR-M101/S002    | Intel® Core I5-8265U |                                                                                                                                          |
| PADR-M101/S003    | Intel® Core I7-8565U |                                                                                                                                          |
| PADR-M101/S004    | Intel® Celeron 4305U |                                                                                                                                          |
| PADR-M101/S001-WP | Intel® Core I3-8145U | DDR4 2*SO-DIMM,1*HDMI,1*DP,1*Line out&1*Mic, 2*LAN,4*USB3.1,4*COM,8-bit DIO(Optional),1*M.2 E key, 1*Mini PCIe/mSATA,1*2.5"SATA,DC 9-36V |
| PADR-M101/S002-WP | Intel® Core I5-8265U |                                                                                                                                          |
| PADR-M101/S003-WP | Intel® Core I7-8565U |                                                                                                                                          |
| PADR-M101/S004-WP | Intel® Celeron 4305U |                                                                                                                                          |
| PA-60DC12         |                      | AC/DC adapter, DC 12V/5A 60W+X standard power cable                                                                                      |

# PADR-M102-718

Intel® Elkhart lake CPU,1\*DDR4,HDMI+DP,2\*LAN,4\*USB3.1,3/4\*COM,1\*DIO, 1\*M.2 E-key / 1\*M.2 B-key,1\*mSATA,1\*SATA3.0, DC 12V/DC 9-36V

## Key Specification

- SGCC box design, 4-line temperature-controlled fan silent heat dissipation
- Intel® Elkhart lake Soc CPU
- 1\*DDR4 3200MHz SODIMM, up to 32GB
- 1\*HDMI,1\*DP,supports dual 4K display
- 1\*Line out&Mic,4\*USB3.1
- 2\* GbE LAN,3/4\*COM,8-bit DIO
- 1\*M.2 2230 E-Key /1\*M.2 3052 B-key with a SIM card slot
- 1\*2.5 "SATA bay + 1\*mSATA for storage
- DC 12V or DC 9-36V



## Product Overview

PADR-M102-718 is an embedded box computer, which adopts SGCC box structure design and has a built-in 4-wire debugging fan for silent cooling. Power by Intel ® Elkhart lake architecture, adopt Intel® Celeron series processor, dual 4K display, rich IO interface. DC 12V or wide voltage DC 9-36V, small size, beautiful appearance, easy to manufacture, suitable for mobile portable terminals, advertising machines, AGV, medical analysis equipment and other application scenarios.

## Product Parameters

### System

|            |                                                                                                    |
|------------|----------------------------------------------------------------------------------------------------|
| CPU        | Intel® Elkhart lake SoC CPU: Celeron J6412 2.0-2.6GHz 4C4T/<br>Celeron N6210 1.2-2.6GHz 2C2T       |
| RAM        | 1*260 pin DDR4, 3200MHz, 32GB max.                                                                 |
| Graphics   | Intel® Gen. 10 UHD Graphics;<br>HDMI: 4096*2304@60Hz,<br>DP: 4096*2160@60Hz, 2 independent Display |
| LAN        | 2*Realtek 8111H, 10-1000M, WOL                                                                     |
| USB        | 4*USB3.1(5Gbps)                                                                                    |
| Display    | 1*DP+1*HDMI                                                                                        |
| Audio      | 1*Line out+1*Mic, Realtek ALC897                                                                   |
| COM/others | 2*RS232/422/485, 1*RS232;                                                                          |
| DIO        | 1*8-bit DIO (Optional RS232)                                                                       |

### Storage

|         |                                           |
|---------|-------------------------------------------|
| Storage | 1*2.5" SATA, max. 15mm thick HDD; 1*mSATA |
|---------|-------------------------------------------|

### Others

|        |                                                                                                    |
|--------|----------------------------------------------------------------------------------------------------|
| LED    | 1*PowerLED, 1*HDD LED, 3*CPU Temp LED(<br>Red is alarm, Yellow is high temp, Green is normal temp) |
| Switch | 1*PowerSW                                                                                          |
| WDT    | programmable via software 1 to 255 second                                                          |

### OS

|    |                                                               |
|----|---------------------------------------------------------------|
| OS | Windows 10/Windows 11 64 bit, SUSE, Ubuntu, Wind River, Linux |
|----|---------------------------------------------------------------|

### Expansion

|           |                                                                                          |
|-----------|------------------------------------------------------------------------------------------|
| Expansion | 1*M.2 2230 E-Key(PCIeX1/USB2.0), Wifi5/BT5.0,<br>or 1*M.2 3052 B-Key(+SIM), 4G LTE/5G NR |
|-----------|------------------------------------------------------------------------------------------|

### Power

|            |                                        |
|------------|----------------------------------------|
| Power& TDP | DC 12V(3-pin) or DC 9~36V;<br>TDP: TBD |
|------------|----------------------------------------|

### Mechanical

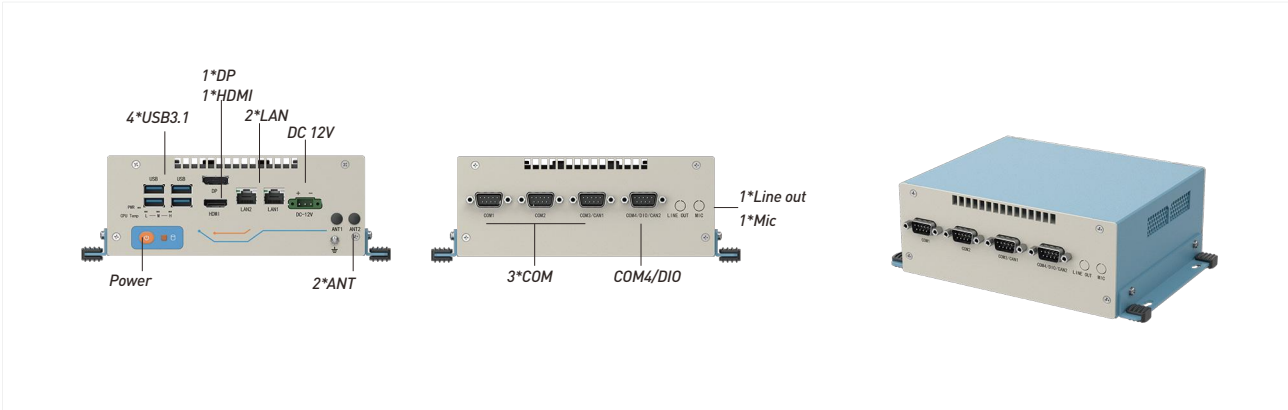
|                   |                       |
|-------------------|-----------------------|
| Structure         | SGCC                  |
| Color             | Silk Grey+Pastel Blue |
| Installation      | desktop mounting      |
| Dimension (W*H*D) | 204*148*70mm          |
| Weight            | 1.55KG                |

### Environment

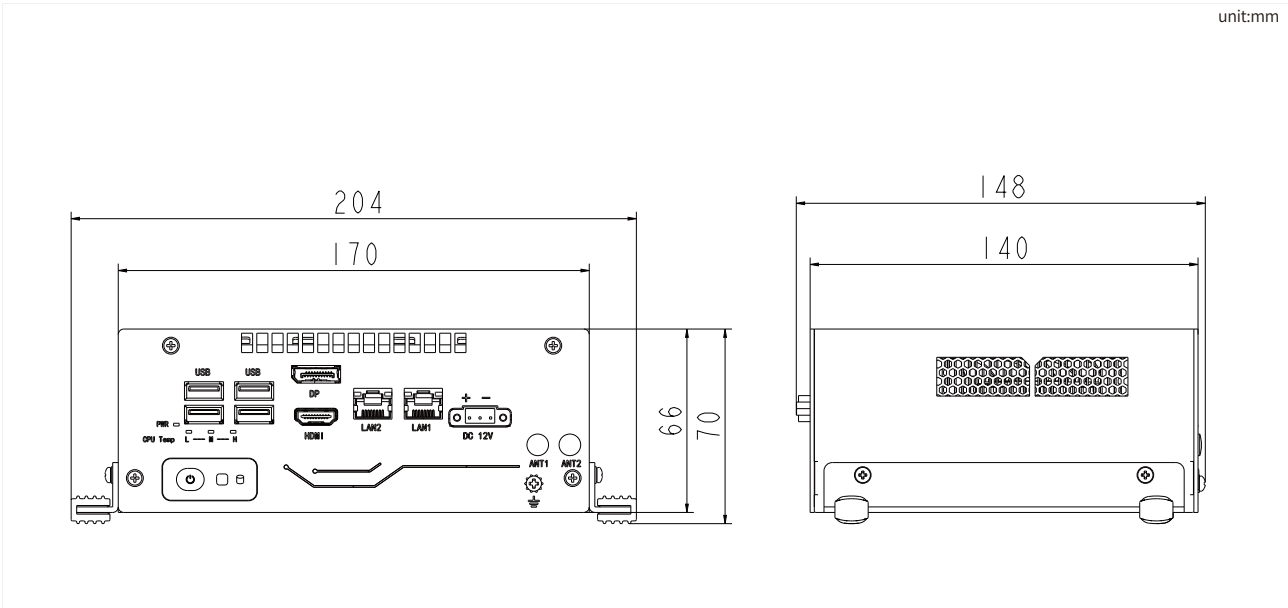
|                |                                                                                         |
|----------------|-----------------------------------------------------------------------------------------|
| Operating Temp | 0°C~50°C – Radiator with Fan, SSD;                                                      |
| Storage Temp   | -40°C~85°C                                                                              |
| Storage Temp   | 10~95%@40°C, No-condensation                                                            |
| Vibration      | 5 grms/5~500Hz/random/operation(SSD);<br>1 grms/5~500Hz/random/operation(HDD)           |
| Shock          | 50g peak acceleration(duration 11ms, SSD);<br>20g peak acceleration(duration 11ms, HDD) |

Certificate/EMC CE/FCC Class A

## I/O View



## Dimensions



## Ordering Information

| Model                 | Processor            | Specifications                                                                                                                                        |
|-----------------------|----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| PADR-M102-718/S001    | Intel® Celeron J6412 | 1*DDR4 SO-DIMM, 1*HDMI, 1*DP, 1*Line out&Mic, 2*LAN, 4*USB3.1, 3/4*COM, 8-bit DIO, 1*M.2 E-key/1*M.2 B-key(B or E-Key), 1*mSATA, 1*2.5"SATA, DC 12V   |
| PADR-M102-718/S002    | Intel® Celeron N6210 |                                                                                                                                                       |
| PADR-M102-718/S001-WP | Intel® Celeron J6412 | 1*DDR4 SO-DIMM, 1*HDMI, 1*DP, 1*Line out&Mic, 2*LAN, 4*USB3.1, 3/4*COM, 8-bit DIO, 1*M.2 E-key/1*M.2 B-key(B or E-Key), 1*mSATA, 1*2.5"SATA, DC 9-36V |
| PADR-M102-718/S002-WP | Intel® Celeron N6210 |                                                                                                                                                       |
| PA-60DC12             |                      | AC/DC adapter, DC 12V/5A 60W+X standard power cable                                                                                                   |



# PADR-M102-910

Intel® Whiskey lake U CPU,2-CH DDR4,HDMI+DP,2\*LAN,4\*USB3.0,3/4\*COM,1\*M.2 E-key,1\*Mini PCIe,DC 12V/DC 9-36V

## Key Specification

- SGCC box design, 4-line temperature-controlled fan silent heat dissipation
- Intel® Whiskey lake-U Core TM i3/i5/i7/Celeron series CPU
- 2-Ch DDR4 2400MHz SODIMM, up to 32GB
- 1\*HDMI,1\*DP,supports dual 4K display
- 1\*Line out&Mic,4\*USB3.0
- 2\* GbE LAN,3/4\*COM,8-bit DIO
- 1\*M.2 2230 E-Key, 1\*Mini-Pcie with a SIM card slot, optional mSATA
- 1\*2.5 "SATA bay for storage
- DC 12V or DC 9-36V



## Product Overview

PADR-M102-910 is an embedded box computer, which adopts SGCC box structure design and has a built-in 4-wire debugging fan for silent cooling. Power by Intel® Whiskey lake U architecture, adopt 8th generation Intel® Core TM i3/i5/i7/Celeron U Series CPU, dual 4K display, rich IO interface. DC 12V or wide voltage DC 9-36V, small size, beautiful appearance, easy to manufacture, suitable for mobile portable terminals, advertising machines, AGV, medical analysis equipment and other application scenarios.

## Product Parameters

### System

|            |                                                                                                                                          |
|------------|------------------------------------------------------------------------------------------------------------------------------------------|
| CPU        | Intel® Whiskey lake-U CPU, Core I7-8565U 1.8-4.6 GHz ,<br>Core I5-8265U 1.6-3.9 GHz; Core I3-8145U 2.1-3.9 GHz;<br>Celeron 4305U 2.2 GHz |
| RAM        | 2* DDR4, 2400MHz, 32GB max.                                                                                                              |
| Graphics   | Intel® Gen. 9 UHD Graphics;<br>HDMI: 4096*2304@24Hz,<br>DP: 4096*2304@60Hz,2 independent Display                                         |
| LAN        | 1*Intel® I219LM ,10-1000M,WOL;<br>1*Intel® I226V,10-1000M,WOL                                                                            |
| USB        | 4*USB3.0(5Gbps)                                                                                                                          |
| Display    | 1*DP+1*HDMI                                                                                                                              |
| Audio      | 1*Line out+1*Mic,Realtek ALC897                                                                                                          |
| COM/others | 2*RS232/422/485, 1*RS232;                                                                                                                |
| DIO        | 1*8-bit DIO (OptionalRS232)                                                                                                              |

### Storage

|         |                            |
|---------|----------------------------|
| Storage | 1*2.5" SATA,15mm thick HDD |
|---------|----------------------------|

### Others

|        |                                                                                                    |
|--------|----------------------------------------------------------------------------------------------------|
| LED    | 1*PowerLED, 1*HDD LED, 3*CPU Temp LED(<br>Red is alarm, Yellow is high temp, Green is normal temp) |
| Switch | 1*PowerSW                                                                                          |
| WDT    | programmable via software 1 to 255 second                                                          |

### OS

|    |                                                                         |
|----|-------------------------------------------------------------------------|
| OS | Windows 11, Windows 10, SUSE, Ubuntu, Wind River,<br>Red Hat Enterprise |
|----|-------------------------------------------------------------------------|

### Expansion

|           |                                                                                    |
|-----------|------------------------------------------------------------------------------------|
| Expansion | 1*M.2 2230 E-Key(PCIeX1/USB2.0),Wifi/BT;<br>1*Mini PCIe(+SIM),4G LTE/Wifi/BT/mSATA |
|-----------|------------------------------------------------------------------------------------|

### Power

|            |                                                                      |
|------------|----------------------------------------------------------------------|
| Power& TDP | DC 12V(3-pin) or DC 9~36V;<br>27.87W (I7-8565U, 16GB DDR4, 1*4T SSD) |
|------------|----------------------------------------------------------------------|

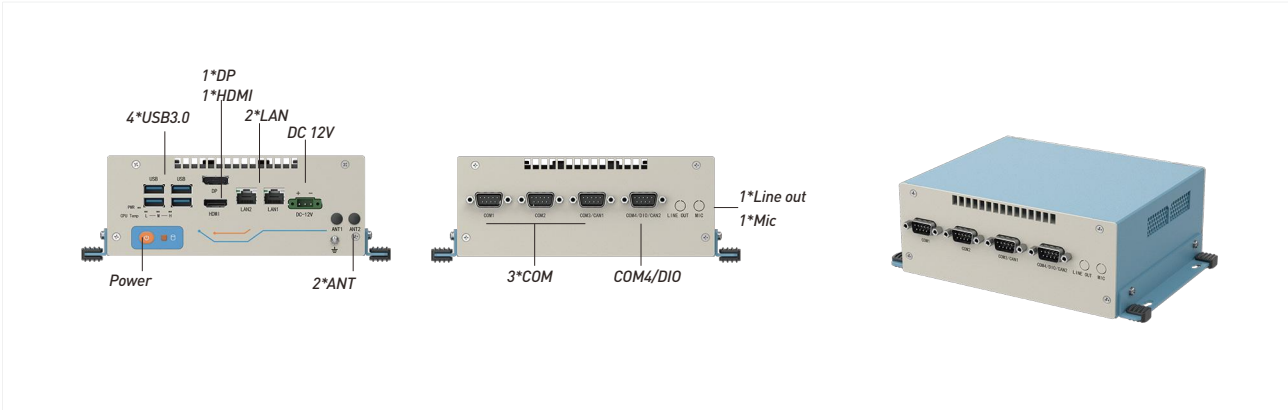
### Mechanical

|                   |                       |
|-------------------|-----------------------|
| Structure         | SGCC                  |
| Color             | Silk Grey+Pastel Blue |
| Installation      | desktop mounting      |
| Dimension (W*H*D) | 204*148*70mm          |
| Weight            | 1.55KG                |

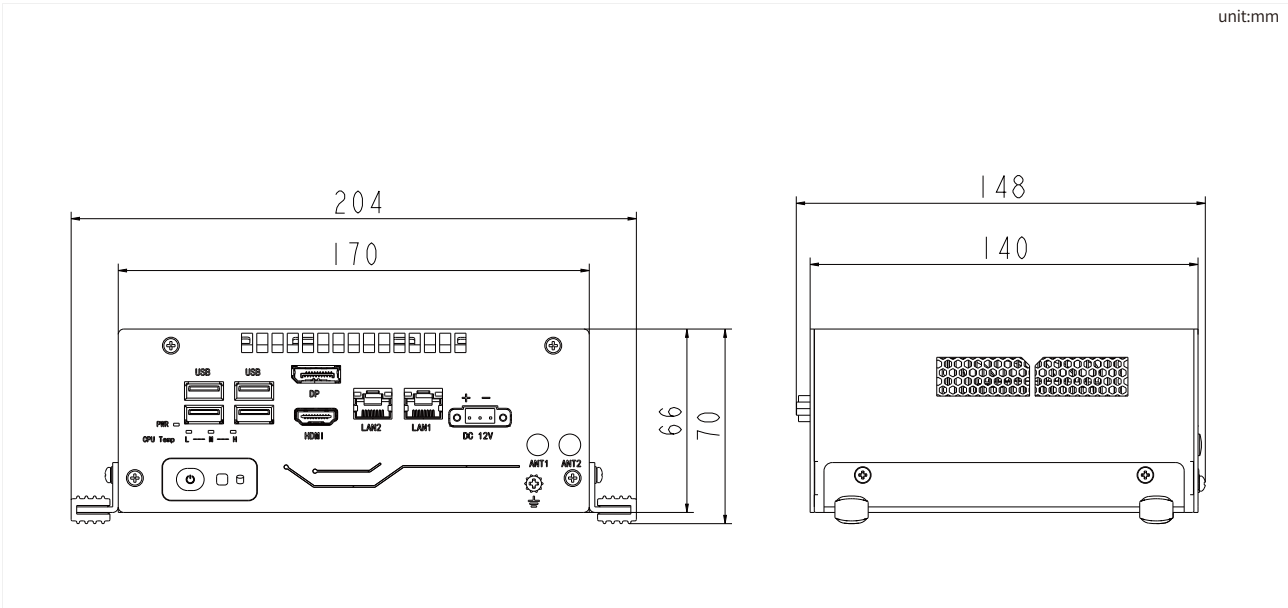
### Environment

|                 |                                                                                       |
|-----------------|---------------------------------------------------------------------------------------|
| Operating Temp  | 0°C~50°C – Radiator with Fan,SSD;                                                     |
| Storage Temp    | -40°C~85°C                                                                            |
| Storage Temp    | 10~95%@40°C, No-condensation                                                          |
| Vibration       | 5 grms/5~500Hz/random/operation(SSD);<br>1 grms/5~500Hz/random/operation(HDD)         |
| Shock           | 50g peak acceleration(duration 11ms,SSD);<br>20g peak acceleration(duration 11ms,HDD) |
| Certificate/EMC | CE/FCC Class A                                                                        |

## I/O View



## Dimensions



## Ordering Information

| Model                 | Processor            | Specifications                                                                                                           |
|-----------------------|----------------------|--------------------------------------------------------------------------------------------------------------------------|
| PADR-M102-910/S001    | Intel® Core I3-8145U | 2*SO-DIMM,1*HDMI,1*DP,1*Line out&Mic,2*LAN,4*USB3.0,3/4*COM,8-bit DIO, 1*M.2 E-key,1*Mini PCIe/mSATA,1*2.5"SATA,DC 12V   |
| PADR-M102-910/S002    | Intel® Core I5-8265U |                                                                                                                          |
| PADR-M102-910/S003    | Intel® Core I7-8565U |                                                                                                                          |
| PADR-M102-910/S004    | Intel® Celeron 4305U |                                                                                                                          |
| PADR-M102-910/S001-WP | Intel® Core I3-8145U | 2*SO-DIMM,1*HDMI,1*DP,1*Line out&Mic,2*LAN,4*USB3.0,3/4*COM,8-bit DIO, 1*M.2 E-key,1*Mini PCIe/mSATA,1*2.5"SATA,DC 9-36V |
| PADR-M102-910/S002-WP | Intel® Core I5-8265U |                                                                                                                          |
| PADR-M102-910/S003-WP | Intel® Core I7-8565U |                                                                                                                          |
| PADR-M102-910/S004-WP | Intel® Celeron 4305U |                                                                                                                          |
| PA-60DC12             |                      | AC/DC adapter, DC 12V/5A 60W+X standard power cable                                                                      |

# PADR-M102-913

Intel® Tiger lake U CPU,2-CH DDR4,HDMI+DP,2\*LAN,4\*USB3.2,3/4\*COM,1\*M.2 E-key / 1\*M.2 B-key,1\*mSATA / 1\*Mini-PCIe,DC 12V/DC 9-36V

## Key Specification

- SGCC box design, 4-line temperature-controlled fan silent heat dissipation
- Intel® Tiger lake U Core TM i3/i5/i7/Celeron series CPU
- 2\*DDR4 3200MHz SODIMM, up to 64GB
- 1\*HDMI,1\*DP,supports 4K+8K display
- 1\*Line out&Mic,4\*USB3.2
- 2\* GbE LAN,3/4\*COM,8-bit DIO
- 1\*M.2 2230 E-Key /1\*M.2 3052 B-key(+SIM), 1\*Mini-PCIe(mSATA)
- 1\*2.5 "SATA bay for storage
- DC 12V or DC 9-36V



## Product Overview

PADR-M102-913 is an embedded box computer, which adopts SGCC box structure design and has a built-in 4-wire debugging fan for silent cooling. Power by Intel® Tiger lake U architecture, adopt the 11th generation Intel® Core TM i3/i5/i7/Celeron series CPU, 4K+8K display, rich IO interface. DC 12V or wide voltage DC 9-36V, small size, beautiful appearance, easy to manufacture, suitable for mobile portable terminals, advertising machines, AGV, medical analysis equipment and other application scenarios.

## Product Parameters

|            |                                                                                                                                                                 |
|------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| System     |                                                                                                                                                                 |
| CPU        | Intel® Tiger lake U Soc CPU,<br>core i3-1115G4/i5-1135G7/i7-1165G7, Celeron 6305,<br>TDP 12W/15W/28W                                                            |
| RAM        | 2*DDR4, 3200MHz, 64GB max.                                                                                                                                      |
| Graphics   | Intel UHD Graphics/Xe Graphics , Supports Intel DL boost,DirectX-12.1,OpenGL 4.6 and OpenCL 3.0;<br>HDMI:4096*2304@60Hz,DP:7680*4320@60Hz,2 independent Display |
| LAN        | 1*Intel® I219LM,10-1000M,WOL,iAMT13.0<br>1*Intel® I226V,10-1000M,WOL                                                                                            |
| USB        | 4*USB3.2(5Gbps)                                                                                                                                                 |
| Display    | 1*DP+1*HDMI                                                                                                                                                     |
| Audio      | 1*Line out+1*Mic,Realtek ALC897                                                                                                                                 |
| COM/others | 2*RS232/422/485, 1*RS232;                                                                                                                                       |
| DIO        | 1*8-bit DIO (OptionalRS232)                                                                                                                                     |

|         |                                                    |
|---------|----------------------------------------------------|
| Storage | 1*2.5" SATA,max.15mm thick HDD ; 1*mSATA(Optional) |
|---------|----------------------------------------------------|

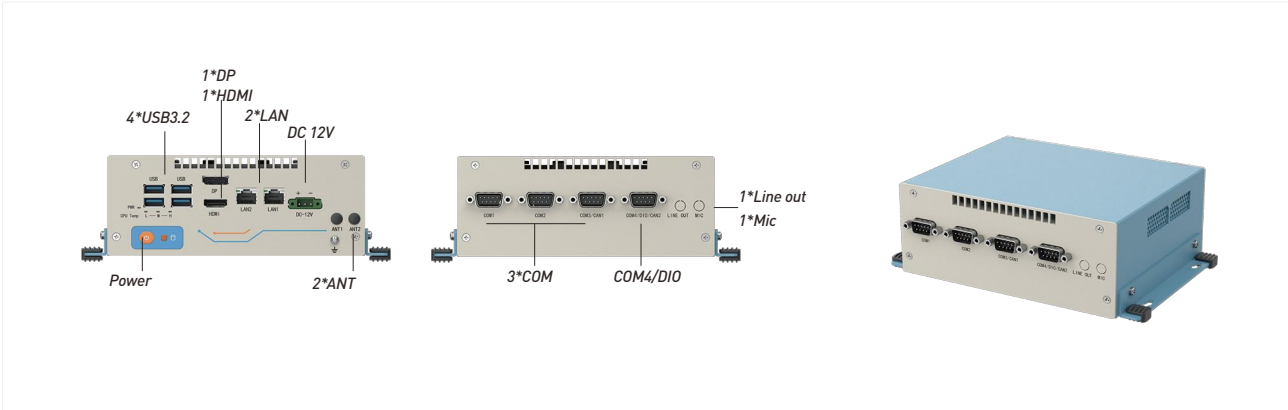
|        |                                                                                                    |
|--------|----------------------------------------------------------------------------------------------------|
| Others |                                                                                                    |
| LED    | 1*PowerLED, 1*HDD LED, 3*CPU Temp LED(<br>Red is alarm, Yellow is high temp, Green is normal temp) |
| Switch | 1*PowerSW                                                                                          |
| WDT    | programmable via software 1 to 255 second                                                          |

|    |                                                               |
|----|---------------------------------------------------------------|
| OS |                                                               |
| OS | Windows 10/Windows 11 64 bit, SUSE, Ubuntu, Wind River, Linux |

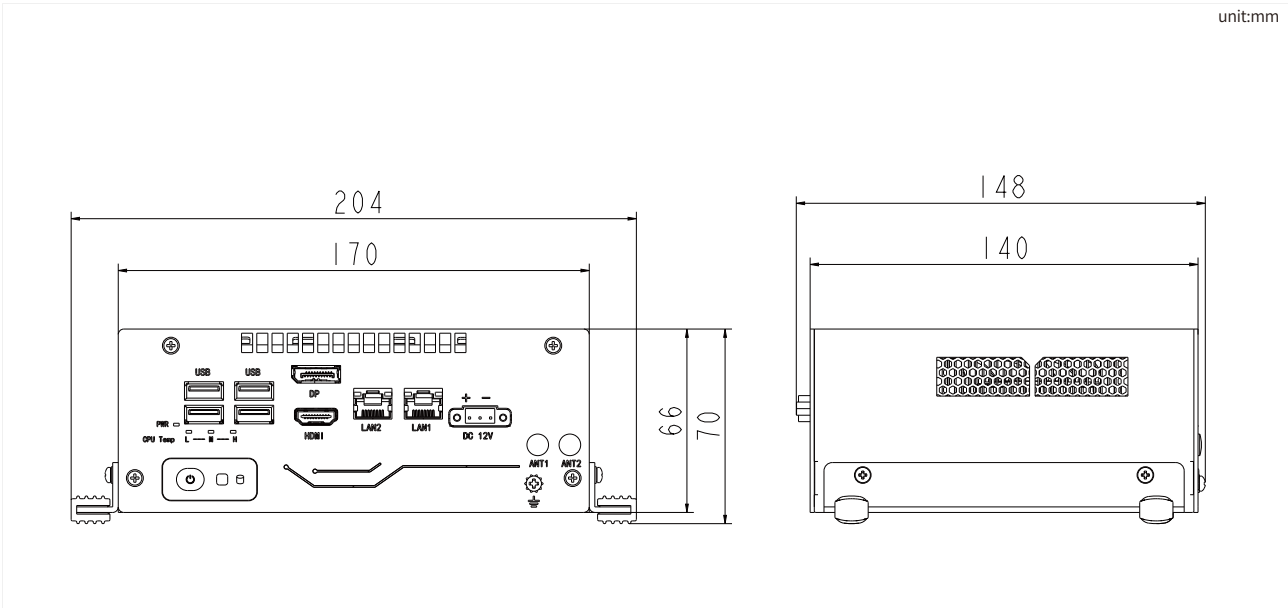
|                   |                                                                                                                                   |
|-------------------|-----------------------------------------------------------------------------------------------------------------------------------|
| Expansion         |                                                                                                                                   |
| Expansion         | 1*Mini PCIe(PCleX1),PCle module/mSATA;<br>1*M.2 2230 E-Key(PCleX1/USB2.0),Wifi5/BT5.0,<br>or 1*M.2 3052 B-Key(+SIM),4G LTE/5G NR; |
| Power             |                                                                                                                                   |
| Power&TDP         | DC 12V(3-pin) or DC 9~36V;<br>TDP: TBD                                                                                            |
| Mechanical        |                                                                                                                                   |
| Structure         | SGCC                                                                                                                              |
| Color             | Silk Grey+Pastel Blue                                                                                                             |
| Installation      | desktop mounting                                                                                                                  |
| Dimension (W*H*D) | 204*148*70mm                                                                                                                      |
| Weight            | 1.55KG                                                                                                                            |

|                 |                                                                                       |
|-----------------|---------------------------------------------------------------------------------------|
| Environment     |                                                                                       |
| Operating Temp  | 0°C~50°C – Radiator with Fan,SSD;                                                     |
| Storage Temp    | -40°C~85°C                                                                            |
| Storage Temp    | 10~95%@40°C, No-condensation                                                          |
| Vibration       | 5 grms/5~500Hz/random/operation(SSD);<br>1 grms/5~500Hz/random/operation(HDD)         |
| Shock           | 50g peak acceleration(duration 11ms,SSD);<br>20g peak acceleration(duration 11ms,HDD) |
| Certificate/EMC | CE/FCC Class A                                                                        |

## I/O View



## Dimensions



## Ordering Information

| Model                 | Processor             | Specifications                                                                                                                                        |
|-----------------------|-----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| PADR-M102-913/S001    | Intel® Core I3-1115G4 | DDR4 2*SO-DIMM,1*HDMI,1*DP,1*Line out&Mic,2*LAN,4*USB3.2,3/4*COM,8-bit DIO, 1*M.2 E-key/1*M.2 B-key(B or E-Key),1*Mini PCIe/mSATA,1*2.5"SATA,DC 12V   |
| PADR-M102-913/S002    | Intel® Core I5-1135G7 |                                                                                                                                                       |
| PADR-M102-913/S003    | Intel® Core I7-1165G7 |                                                                                                                                                       |
| PADR-M102-913/S004    | Intel® Celeron 6305   |                                                                                                                                                       |
| PADR-M102-913/S001-WP | Intel® Core I3-1115G4 | DDR4 2*SO-DIMM,1*HDMI,1*DP,1*Line out&Mic,2*LAN,4*USB3.2,3/4*COM,8-bit DIO, 1*M.2 E-key/1*M.2 B-key(B or E-Key),1*Mini PCIe/mSATA,1*2.5"SATA,DC 9-36V |
| PADR-M102-913/S002-WP | Intel® Core I5-1135G7 |                                                                                                                                                       |
| PADR-M102-913/S003-WP | Intel® Core I7-1165G7 |                                                                                                                                                       |
| PADR-M102-913/S004-WP | Intel® Celeron 6305   |                                                                                                                                                       |
| PA-60DC12             |                       | AC/DC adapter, DC 12V/5A 60W+X standard power cable                                                                                                   |



# PADR-S501-953

Intel® SKL/KBL-S CPU, 2xLAN, VGA+HDMI+DVI, 3xCOM, 4xUSB3.0,5xUSB2.0, 4xPCIe/PCI, 4xSATA Bay, 4U rackmount, ATX power

## Key Specification

- Intel gen 6/7th SKL/KBL-S LGA1151 CPU+H110 PCH
- Dual channel 2xDDR4 2133/2400MHz UDIMM, up to 32GB
- Intel 9th HD Graphic, VGA+HDMI+DVI-D 3 display
- 1xI219LM Gig. Ethernet+1xI211AT Gig. Ethernet
- 4xUSB3.0, 5xUSB2.0 (two front and one built-in), Audio out and Mic
- 2xRS232/422/485, 1xRS232, optional 1xLPT or 8 bit DIO
- 1xPCIeX16+1xPCI+2xPCIeX4, 1xFull size Mini PCIe
- 4x3.5 "SATA3.0 shock resistant and anti-vibration hard disk bay
- Standard 19"4U rackmount chassis with high efficiency air cooling design
- Standard PS2 ATX power supply, 300/500/750W



## Product Overview

PADR-S501-953 is a standard 19"4U rackmount industrial computer with an Intel H110 chipset powered by Intel® gen 6/7th SKL/KBL-S LGA1151 series CPU. Rich functional IO, 4 PCIe/PCI expansion capabilities, excellent air cooling design, power consumption ladder ATX power supply selection, suitable for machine vision, CNC machine tools and factory production line automation and other fields.

## Product Parameters

### System

|            |                                                                                                                                                            |
|------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CPU        | Intel 6/7th Gen. SKL/KBL-S Core i7/i5/i3/Pentium/Celeron LGA1151 CPU,91W, H110chipset                                                                      |
| RAM        | 2*288-pin Non-ECC UDIMM , dual channel DDR4 2400MHz, 32GB max.                                                                                             |
| Graphics   | Intel HD Graphics, Supports DirectX 12, OpenGL 4.5<br>AVC/VC1/MPEG2/HEVC/VP8/JPEG.HW<br>HDMI: 4096x2304@24Hz,VGA: 1920x1200@60Hz,<br>DVI-D: 1920*1200@60Hz |
| LAN        | 1*Intel I211AT/I210AT,10-1000M,WOLRemote<br>1*Intel I219LM,10-1000M,WOLRemote                                                                              |
| USB        | 4*USB3.0(5Gbps),5*USB2.0                                                                                                                                   |
| Display    | 1*HDMI+1*VGA+1*DVI-D                                                                                                                                       |
| Audio      | 1*Line out+1*Mic,Realtek ALC897                                                                                                                            |
| COM/others | 2*RS232/422/485, 1*RS232; Optional1*LPT                                                                                                                    |
| DIO        | 1*8-bit DIO (Optional)                                                                                                                                     |

### Storage

|         |                                                                                                                                          |
|---------|------------------------------------------------------------------------------------------------------------------------------------------|
| Storage | 4xSATA3, 6.0Gbps interface, the box is designed with 4x3.5 "and 2x2.5" a set of anti-vibration hard disk bay, 1 ultrathin DVD driver bay |
|---------|------------------------------------------------------------------------------------------------------------------------------------------|

### Others

|        |                                               |
|--------|-----------------------------------------------|
| LED    | Power LED,HDD LED                             |
| Switch | 1*Power SW, USB Power , AT/ATX , Clear CMOS , |
| WDT    | programmable via software 1 to 255 second     |

### OS

|    |                                                                |
|----|----------------------------------------------------------------|
| OS | Windows 7(SKL-S32bit &64bit ,KBL-S64bit ),<br>Windows 10,Linux |
|----|----------------------------------------------------------------|

### Expansion

|           |                                                                                    |
|-----------|------------------------------------------------------------------------------------|
| Expansion | 1*PCIe3.0 X16(X16) + 2*PCIe2.0 X4(X1) + 1*32 bit PCI;<br>1*Full size Mini PCIe(X1) |
|-----------|------------------------------------------------------------------------------------|

### Power

|            |                                                               |
|------------|---------------------------------------------------------------|
| Power& TDP | AC100-240V,Standard ATXPower300W,Optional500W or 750W;<br>TBD |
|------------|---------------------------------------------------------------|

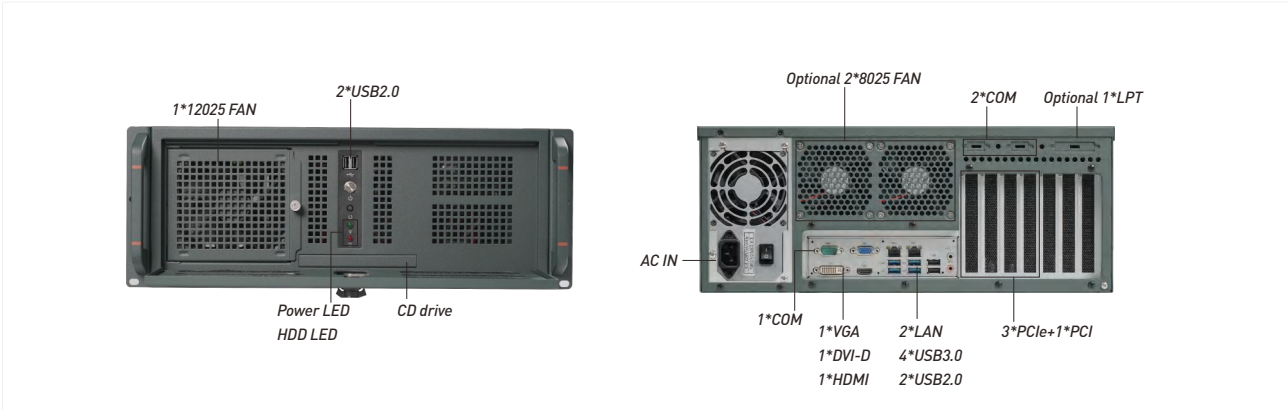
### Mechanical

|                   |                                                                        |
|-------------------|------------------------------------------------------------------------|
| Structure         | Door with lock design, SGCC steel plate, metal mold molding            |
| Cooling           | Linear airflow,12025 ball bearing fan,optional 2*8025 ball bearing fan |
| Color             | Granite grey                                                           |
| Installation      | Mounted on 19"rack, optional mounting rail set                         |
| Dimension (W*H*D) | 430*470*173mm                                                          |
| Weight            | 14 KG                                                                  |

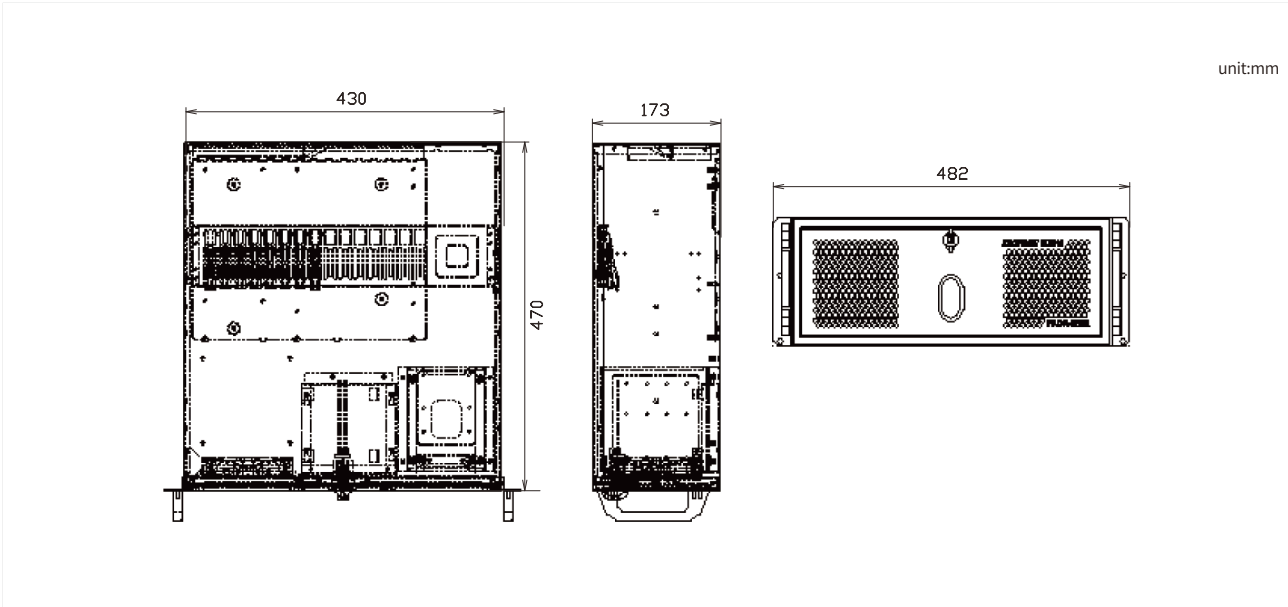
### Environment

|                 |                                                                                       |
|-----------------|---------------------------------------------------------------------------------------|
| Operating Temp  | 0°C~50°C                                                                              |
| Storage Temp    | -40°C~85°C                                                                            |
| Storage Temp    | 10~95%@40°C, No-condensation                                                          |
| Vibration       | 5 grms/5~500Hz/random/operation(SSD);<br>1 grms/5~500Hz/random/operation(HDD)         |
| Shock           | 50g peak acceleration(duration 11ms,SSD);<br>20g peak acceleration(duration 11ms,HDD) |
| Certificate/EMC | CE/FCC Class A ,3C                                                                    |

## I/O View



## Dimensions



## Ordering Information

| Model             | Processor                                        | Specifications                                                                                                                                            | Power                |
|-------------------|--------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|
| PADR-S501/953-300 | Intel® Skylake-S/Kabylake-S LGA1151 CPU,H110 PCH | 2xDDR4 UDIMM, 2xLAN, 4xUSB3.0, 5xUSB2.0, 3xCOM,1xPCIe X16, 2xPCIeX4(X1), 1x32bit PCI, 1xMini PCIe, 1xHDMI, 1xVGA, 1xDVI-D, 1xLine out & 1xMic, 4x3.5"SATA | AC 220-230V,ATX 300W |
| PADR-S501/953-500 |                                                  |                                                                                                                                                           | AC 100-240V,ATX 500W |
| PADR-S501/953-750 |                                                  |                                                                                                                                                           | AC 100-240V,ATX 750W |

## Accessories

| Standard              | Amount | Optional                                      | Optional                             |
|-----------------------|--------|-----------------------------------------------|--------------------------------------|
| Screw jumper package  | 1      | LGA115X, TDP 35-65W CPU wind-cooling radiator | A pair of guide rail mounting parts  |
| Air Filter            |        | LGA115X, TDP 95W CPU wind cooling radiator    | 8025 Dual ball bearing DC 12V fans   |
| AC power supply cabel |        | one 4pin to 2+6pin GPU power cable            | DB25 female head parallel port cabel |
|                       |        | SATA 7pin data cable,420mm                    | DB9 male needle DIO cabel            |

# PADR-S501-961

Intel® Coffee lake-R CPU, 3xLAN, 2xDP+1xHDMI, 2xCOM, 4xUSB3.1,7xUSB2.0, 4xPCIe, 4xSATA Bay, 4U rackmount, ATX power

## Key Specification

- Intel gen 8/9th Coffee lake-R LGA1151 CPU+Q370 PCH
- Dual channel 4xDDR4 2666/2400MHz DIMM, up to 128GB
- Intel UHD Graphic, 2xDP+1xHDMI three independent display
- 1xI219LM Gig. Ethernet+2xI210AT Gig. Ethernet
- 4xUSB3.1,7xUSB2.0 (two front and one built-in), Audio out and Mic
- 2xRS232/422/485, 8 bit DIO
- 1xPCIeX16 or 2xPCIeX8+2xPCIeX4
- 1xMini PCIe with a SIM card slot, 1xM.2 2280 M-Key
- 4x3.5 "SATA3.0 shock resistant and anti-vibration hard disk bay
- Standard 19” 4U rackmount chassis with high efficiency air cooling design
- Standard PS2 ATX power supply,300/500/750/1000W



## Product Overview

PADR-S501-961 is a standard 19” 4U rackmount industrial computer with an Intel Q370 chipset powered by Intel® gen 8/9th Coffee lake-R LGA1151 series CPU. Rich functional IO, 4 PCIe expansion capabilities, excellent air cooling design, power consumption ladder ATX power supply selection, suitable for machine vision, CNC machine tools and factory production line automation and other fields.

## Product Parameters

### System

|            |                                                                                                                          |
|------------|--------------------------------------------------------------------------------------------------------------------------|
| CPU        | Intel® 8/9th Gen. Coffee-S Core i9/i7/i5/i3 LGA1151 CPU, 最高95W,Q370chipset                                               |
| RAM        | 4*288-pin Non-ECC UDIMM , dual channelDDR4 2400/2666MHz, 128GB max. Intel UHD Graphics, Supports DirectX 12, OpenGL 4.5; |
| Graphics   | HDMI: 4096x2304@24Hz, DP: 4096*2304@60Hz,3 independent display                                                           |
| LAN        | 2*Intel I210AT/I211AT,10-1000M,WOLRemote 1*Intel I219LM,10-1000M,WOL/AMT12.0/iVpro                                       |
| USB        | 4*USB3.1 Gen2(10Gbps),7*USB2.0                                                                                           |
| Display    | 2*DP+1*HDMI                                                                                                              |
| Audio      | 1*Line out+1*Mic,Realtek ALC662VD                                                                                        |
| COM/others | 2*RS232/422/485; 1*PS/2                                                                                                  |
| DIO        | 1*8-bit DIO (Optional)                                                                                                   |

### Storage

|         |                                                                                                                                          |
|---------|------------------------------------------------------------------------------------------------------------------------------------------|
| Storage | 4xSATA3, 6.0Gbps interface, the box is designed with 4x3.5 "and 2x2.5" a set of anti-vibration hard disk bay, 1 ultrathin DVD driver bay |
|---------|------------------------------------------------------------------------------------------------------------------------------------------|

### Others

|        |                                               |
|--------|-----------------------------------------------|
| LED    | Power LED,HDD LED                             |
| Switch | 1*Power SW, USB Power , AT/ATX , Clear CMOS , |
| WDT    | programmable via software 1 to 255 second     |

### OS

|    |                                                                                                                                                                                             |
|----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| OS | Windows 10 Enterprise & IOT Enterprise(64 bit )(CFL-R)<br>Windows Server 2016 (Intel® Xeon® E)<br>Ubuntu, SuSe, Redhat Enterprise 1,2 (Kernel 4.14) (CFL-R)<br>Wind River VxWorks 7 (CFL-R) |
|----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

### Expansion

|           |                                                                                                                                       |
|-----------|---------------------------------------------------------------------------------------------------------------------------------------|
| Expansion | 2*PCIe3.0 X16(1*X16 or 2*X8) + 2*PCIe3.0 X8(X4) + 1*32 bit PCI;<br>1*Full size Mini PCIe(X1/USB+SIM);<br>1*M.2 2280 M-key(PCIe3.0 X4) |
|-----------|---------------------------------------------------------------------------------------------------------------------------------------|

### Power

|            |                                                                     |
|------------|---------------------------------------------------------------------|
| Power& TDP | AC100-240V,StandardATXPower300W,Optional500W/750W/1000W;<br>TDP:TBD |
|------------|---------------------------------------------------------------------|

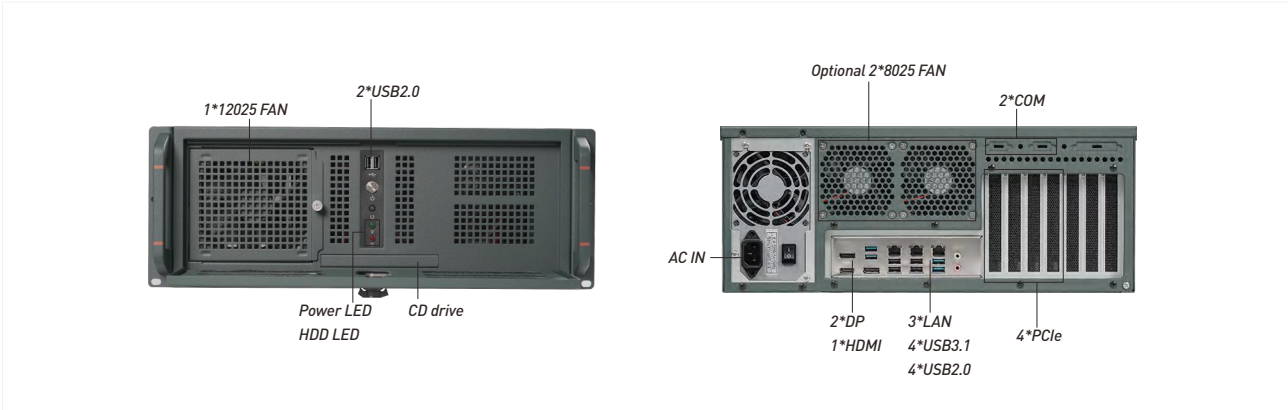
### Mechanical

|                   |                                                                   |
|-------------------|-------------------------------------------------------------------|
| Structure         | Door with lock design, SGCC steel plate, metal mold molding       |
| Cooling           | Linear airflow, front 12025 fan, optional 2*8025 ball bearing fan |
| Color             | Granite grey                                                      |
| Installation      | Mounted on 19"rack, optional mounting rail set                    |
| Dimension (W*H*D) | 430*470*173mm                                                     |
| Weight            | 14 KG                                                             |

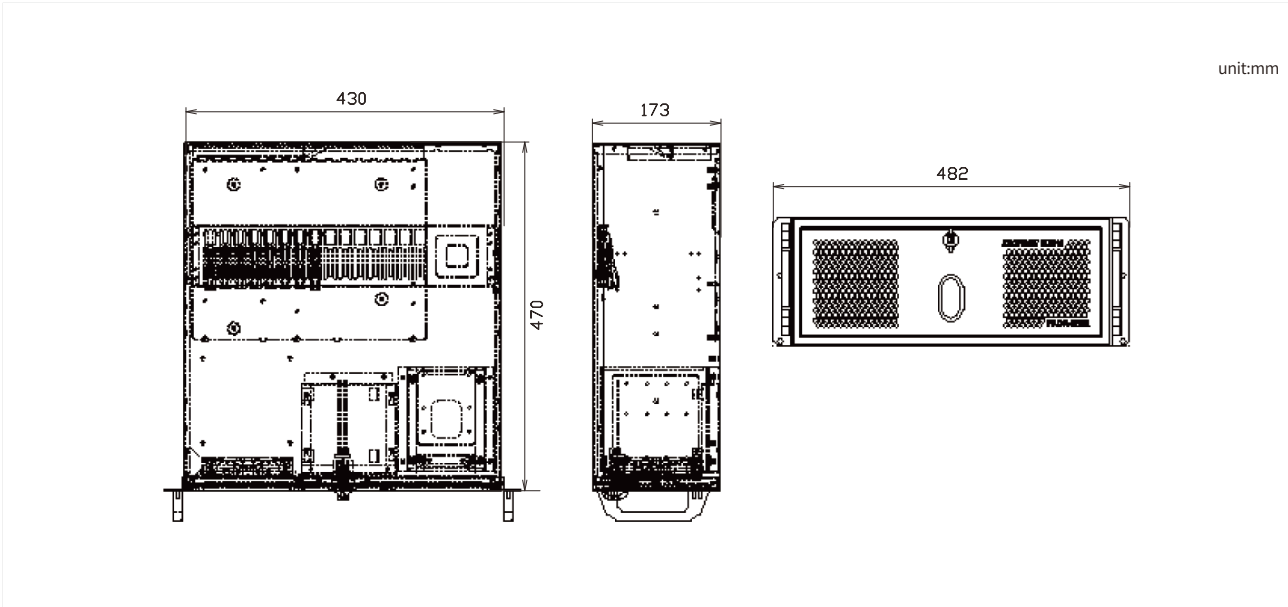
### Environment

|                 |                                                                                       |
|-----------------|---------------------------------------------------------------------------------------|
| Operating Temp  | 0°C~50°C                                                                              |
| Storage Temp    | -40°C~85°C                                                                            |
| Storage Temp    | 10~95%@40°C, No-condensation                                                          |
| Vibration       | 5 grms/5~500Hz/random/operation(SSD);<br>1 grms/5~500Hz/random/operation(HDD)         |
| Shock           | 50g peak acceleration(duration 11ms,SSD);<br>20g peak acceleration(duration 11ms,HDD) |
| Certificate/EMC | CE/FCC Class A ,3C                                                                    |

## I/O View



## Dimensions



## Ordering Information

| Model              | Processor                                 | Specifications                                                                                                                                                   | Power                 |
|--------------------|-------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|
| PADR-S501/961-300  | Intel® Coffee lake-R LGA1151 CPU,Q370 PCH | 4xDDR4 DIMM, 3xLAN, 4xUSB3.1 , 7xUSB2.0, 2xCOM, 1xMini PCIe, 1xM.2 2280 M-Key, 1xPCIe X16 (or 2xPCIeX8), 2xPCIeX4, 1xHDMI, 2xDP, 1xLine out & 1xMic, 4x3.5" SATA | AC 220-230V,ATX 300W  |
| PADR-S501/961-500  |                                           |                                                                                                                                                                  | AC 100-240V,ATX 500W  |
| PADR-S501/961-750  |                                           |                                                                                                                                                                  | AC 100-240V,ATX 750W  |
| PADR-S501/961-1000 |                                           |                                                                                                                                                                  | AC 100-240V,ATX 1000W |

## Accessaries

| Standard              | Amount | Optional                                      | Optional                            |
|-----------------------|--------|-----------------------------------------------|-------------------------------------|
| Screw jumper package  | 1      | LGA115X, TDP 35-65W CPU wind-cooling radiator | A pair of guide rail mounting parts |
| Air Filter            |        | LGA115X, TDP 95W CPU wind cooling radiator    | 8025 Dual ball bearing DC 12V fans  |
| AC power supply cabel |        | one 4pin to 2+6pin GPU power cable            | DB9 male needle DIO cabel           |
|                       |        | SATA 7pin data cable,420mm                    |                                     |



# PADR-S501-964

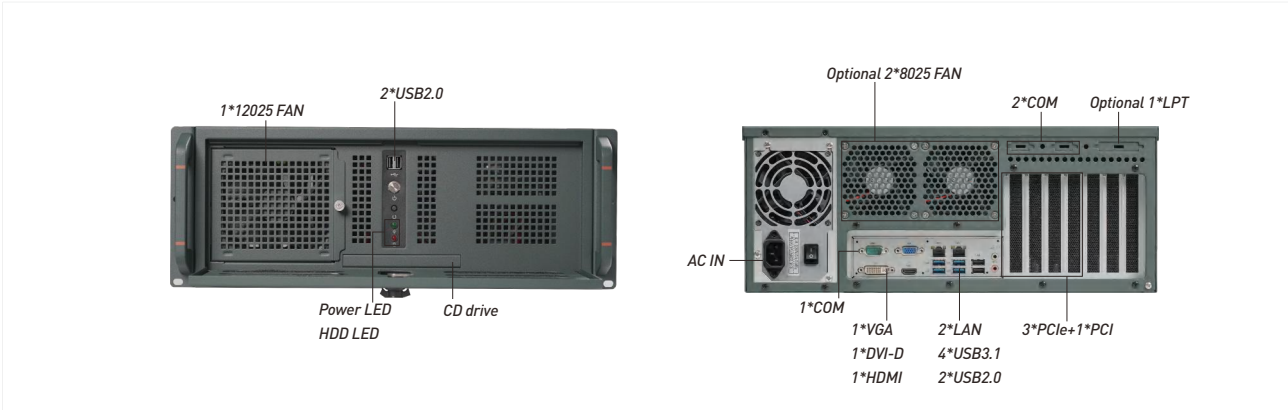
Intel® Coffee lake-S CPU, 2xLAN, VGA+HDMI+DVI, 3xCOM, 4xUSB3.1,5xUSB2.0, 4xPCIe/PCI, 4xSATA Bay, 4U rackmount, ATX power

## Key Specification

- Intel gen 8/9th Coffee lake-S LGA1151 CPU+H310 PCH
- Dual channel 2xDDR4 2666MHz UDIMM, up to 64GB
- VGA+HDMI/ VGA +DVI-D/ HDMI+ DVI-D 2 independent display
- 1xI219LM Gig. Ethernet+1xI226V Gig. Ethernet
- 4xUSB3.1, 5xUSB2.0 (two front and two built-in), Audio out and Mic
- 2xRS232/422/485, 1xRS232, optional 1xLPT or 8 bit DIO
- 1xPCIeX16+1xPCI+2xPCIeX4, 1\*M.2 2242/2280 M-Key
- 4x3.5 "SATA3.0 shock resistant and anti-vibration hard disk bay
- Standard 19" 4U rackmount chassis with high efficiency air cooling design
- Standard PS2 ATX power supply, 300/500/750W



## I/O View



## Product Overview

PADR-S501-964 is a standard 19" 4U rackmount industrial computer with an Intel H310 chipset powered by Intel® gen 8/9th Coffee lake-S LGA1151 series CPU. Rich functional IO, 4 PCIe/PCI expansion capabilities, excellent air cooling design, power consumption ladder ATX power supply selection, suitable for machine vision, CNC machine tools and factory production line automation and other fields.

## Product Parameters

### System

|            |                                                                                                                                                                                                            |
|------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CPU        | Intel 8/9th Gen. Coffee lake-S Core i9/i7/i5/i3/Pentium/Celeron LGA1151 CPU,95W, H310 chipset                                                                                                              |
| RAM        | 2*288-pin Non-ECC UDIMM , dual channel DDR4 2666MHz, 64GB max. Intel UHD Graphics, Supports DirectX 12, OpenGL 4.5, HDMI: 4096x2304@24Hz,VGA: 1920x1200@60Hz, DVI-D: 1920*1200@60Hz; 2 independent Display |
| LAN        | 1*Intel I226V,10M-2.5G,WOL; 1*Intel I219LM,10-1000M,WOL                                                                                                                                                    |
| USB        | 4*USB3.1 Gen1(5Gbps),5*USB2.0                                                                                                                                                                              |
| Display    | 1*HDMI+1*VGA+1*DVI-D                                                                                                                                                                                       |
| Audio      | 1*Line out+1*Mic,Realtek ALC897                                                                                                                                                                            |
| COM/others | 2*RS232/422/485, 1*RS232; Optional1*LPT                                                                                                                                                                    |
| DIO        | 1*8-bit DIO (Optional)                                                                                                                                                                                     |

### Storage

|         |                                                                                                                                          |
|---------|------------------------------------------------------------------------------------------------------------------------------------------|
| Storage | 4xSATA3, 6.0Gbps interface, the box is designed with 4x3.5 "and 2x2.5" a set of anti-vibration hard disk bay, 1 ultrathin DVD driver bay |
|---------|------------------------------------------------------------------------------------------------------------------------------------------|

### Others

|        |                                               |
|--------|-----------------------------------------------|
| LED    | Power LED,HDD LED                             |
| Switch | 1*Power SW, USB Power , AT/ATX , Clear CMOS , |
| WDT    | programmable via software 1 to 255 second     |

### OS

|    |                                                                                                                                                                                                 |
|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| OS | Windows7, Windows 10 Enterprise & IOT Enterprise (64 bit)(CFL-R); Windows Server 2016 (Intel® Xeon® E) ,Ubuntu,SuSe, Redhat Enterprise 1,2 (Kernel 4.14) (CFL-R) ,Wind River ,VxWorks 7 (CFL-R) |
|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

### Expansion

|           |                                                                                    |
|-----------|------------------------------------------------------------------------------------|
| Expansion | 1*PCIe3.0 X16(X16) + 2*PCIe2.0 X4(X1) + 1*32 bit PCI; 1*M.2 2280 M-key(PCIe2.0 X2) |
|-----------|------------------------------------------------------------------------------------|

### Power

|            |                                                                                               |
|------------|-----------------------------------------------------------------------------------------------|
| Power& TDP | AC100-240V,StandardATXPower300W,Optional500W/750W; TDP:197.8W(i7-9900K CPU/16G DDR4/256G SSD) |
|------------|-----------------------------------------------------------------------------------------------|

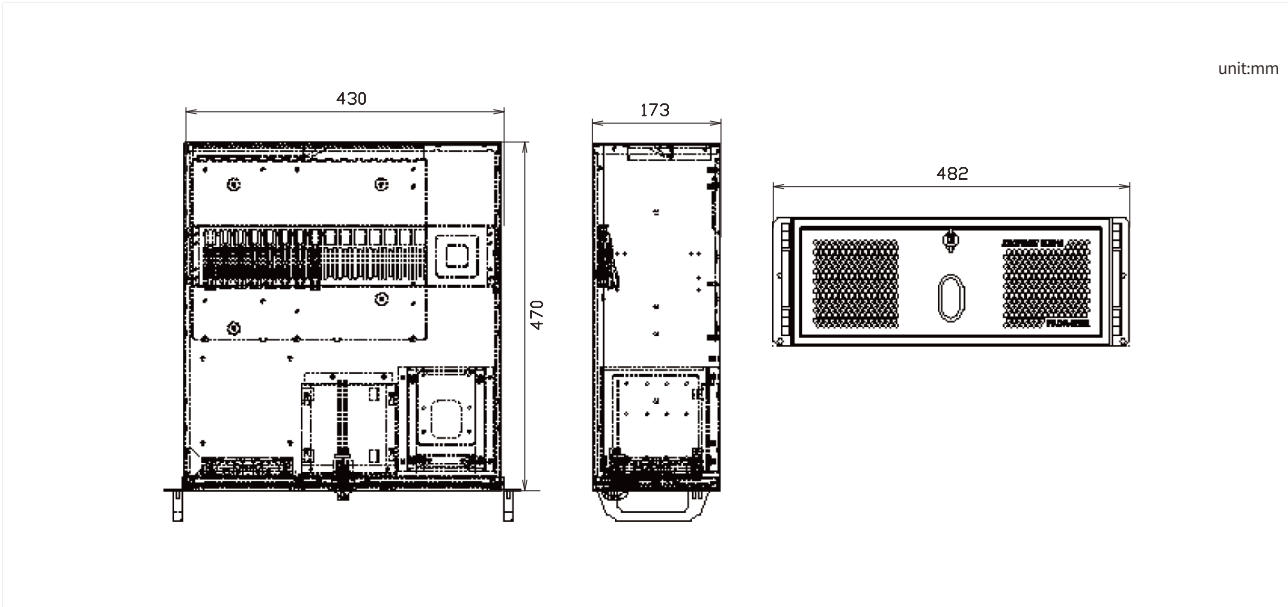
### Mechanical

|                   |                                                                   |
|-------------------|-------------------------------------------------------------------|
| Structure         | Door with lock design, SGCC steel plate, metal mold molding       |
| Cooling           | Linear airflow, front 12025 fan, optional 2*8025 ball bearing fan |
| Color             | Granite grey                                                      |
| Installation      | Mounted on 19"rack, optional mounting rail set                    |
| Dimension (W*H*D) | 430*470*173mm                                                     |
| Weight            | 14 KG                                                             |

### Environment

|                 |                                                                                    |
|-----------------|------------------------------------------------------------------------------------|
| Operating Temp  | 0°C~50°C                                                                           |
| Storage Temp    | -40°C~85°C                                                                         |
| Storage Temp    | 10~95%@40°C, No-condensation                                                       |
| Vibration       | 5 grms/5~500Hz/random/operation(SSD); 1 grms/5~500Hz/random/operation(HDD)         |
| Shock           | 50g peak acceleration(duration 11ms,SSD); 20g peak acceleration(duration 11ms,HDD) |
| Certificate/EMC | CE/FCC Class A ,3C                                                                 |

## Dimensions



## Ordering Information

| Model             | Processor                                 | Specifications                                                                                                                                              | Power                |
|-------------------|-------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|
| PADR-S501/964-300 | Intel® Coffee lake-S LGA1151 CPU,H310 PCH | 2xDDR4 UDIMM, 2xLAN, 4xUSB3.1, 5xUSB2.0, 3xCOM, 1xPCIe X16, 2xPCIeX4(X1), 1x32bit PCI, 1xM.2 M-Key, 1xHDMI, 1xVGA, 1xDVI-D, 1xLine out & 1xMic, 4x3.5" SATA | AC 220-230V,ATX 300W |
| PADR-S501/964-500 |                                           |                                                                                                                                                             | AC 100-240V,ATX 500W |
| PADR-S501/964-750 |                                           |                                                                                                                                                             | AC 100-240V,ATX 750W |

## Accessories

| Standard              | Amount | Optional                                      | Optional                             |
|-----------------------|--------|-----------------------------------------------|--------------------------------------|
| Screw jumper package  | 1      | LGA115X, TDP 35-65W CPU wind-cooling radiator | A pair of guide rail mounting parts  |
| Air Filter            |        | LGA115X, TDP 95W CPU wind cooling radiator    | 8025 Dual ball bearing DC 12V fans   |
| AC power supply cabel |        | one 4pin to 2+6pin GPU power cable            | DB25 female head parallel port cabel |
|                       |        | SATA 7pin data cable,420mm                    | DB9 male needle DIO cabel            |

# PADR-S501-971

Intel® Comet lake-S CPU, 2xLAN, VGA+HDMI, 4xCOM, 4xUSB3.2,5xUSB2.0, 7xPCIe/PCI, 4xSATA Bay, 4U rackmount, ATX power

## Key Specification

- Intel gen 10th Cometlake-S LGA1200 CPU+H420E PCH
- Dual channel 2xDDR4 2933MHz DIMM, up to 64GB
- Intel UHD Graphic, 1xVGA+1xHDMI dual independent display
- 1xI219LM Gig. Ethernet+1xI226V 2.5Gig. Ethernet
- 4xUSB3.2,5xUSB2.0 (two front and one built-in), Audio out and Mic
- 2xRS232/422/485, 2xRS232, optional 1xLPT or 8 bit DIO
- 1xPCIeX16+3xPCI+3xPCIeX4
- 4x3.5 "SATA3.0 shock resistant and anti-vibration hard disk bay
- Standard 19” 4U rackmount chassis with high efficiency air cooling design
- Standard PS2 ATX power supply, 300/500/750W



## Product Overview

PADR-S501-971 is a standard 19” 4U rackmount industrial computer with an Intel H420E chipset powered by Intel® gen 10th Comet lake-S LGA1200 series CPU. Rich functional IO, 7 PCIe/PCI expansion capabilities, excellent air cooling design, power consumption ladder ATX power supply selection, suitable for machine vision, CNC machine tools and factory production line automation and other fields.

## Product Parameters

### System

|            |                                                                                                                                    |
|------------|------------------------------------------------------------------------------------------------------------------------------------|
| CPU        | Intel 10th Gen. Cometlake-S Core i9/i7/i5/i3/Pentium/Celeron LGA1200 CPU,125W, H420E chipset                                       |
| RAM        | 2*288-pin Non-ECC UDIMM , dual channel DDR4 2933MHz, 64GB max.                                                                     |
| Graphics   | Intel UHD Graphics, Supports DirectX 12, OpenGL 4.5<br>AVC/VC1/MPEG2/HEVC/VP8/JPEG.HW<br>HDMI: 4096x2160@30Hz,VGA: 1920x1200@60Hz, |
| LAN        | 1*Intel I226V,10M-2.5G,WOL;<br>1*Intel I219LM,10-1000M,WOL                                                                         |
| USB        | 4*USB3.2 Gen1(5Gbps),5*USB2.0                                                                                                      |
| Display    | 1*HDMI+1*VGA                                                                                                                       |
| Audio      | 1*Line out+1*Mic,Realtek ALC897                                                                                                    |
| COM/others | 2*RS232/422/485, 2*RS232; Optional1*LPT                                                                                            |
| DIO        | 1*8-bit DIO (Optional)                                                                                                             |

### Storage

|         |                                                                                                                                          |
|---------|------------------------------------------------------------------------------------------------------------------------------------------|
| Storage | 4xSATA3, 6.0Gbps interface, the box is designed with 4x3.5 "and 2x2.5" a set of anti-vibration hard disk bay, 1 ultrathin DVD driver bay |
|---------|------------------------------------------------------------------------------------------------------------------------------------------|

### Others

|        |                                               |
|--------|-----------------------------------------------|
| LED    | Power LED,HDD LED                             |
| Switch | 1*Power SW, USB Power , AT/ATX , Clear CMOS , |
| WDT    | programmable via software 1 to 255 second     |

### OS

|    |                                      |
|----|--------------------------------------|
| OS | Windows 10, Windows 11, Linux Ubuntu |
|----|--------------------------------------|

### Expansion

|           |                                                                   |
|-----------|-------------------------------------------------------------------|
| Expansion | 1*PCIe3.0 X16(X16) +<br>3*PCIe3.0 X4(X2+1+1 or X4) + 3*32 bit PCI |
|-----------|-------------------------------------------------------------------|

### Power

|            |                                                                                                    |
|------------|----------------------------------------------------------------------------------------------------|
| Power& TDP | AC100-240V,StandardATXPower300W,Optional500W/750W;<br>TDP:184.85W(I7-10700K CPU/16G DDR4/256G SSD) |
|------------|----------------------------------------------------------------------------------------------------|

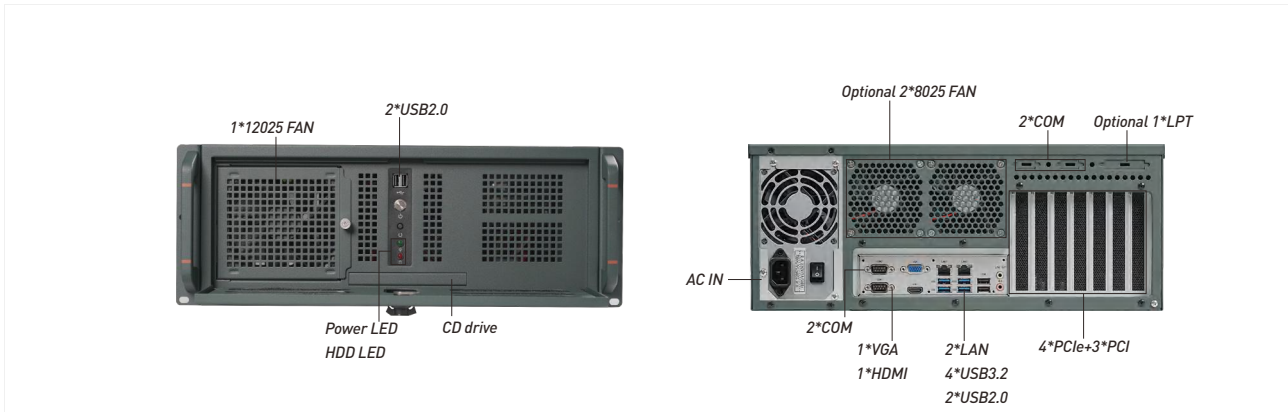
### Mechanical

|                   |                                                                   |
|-------------------|-------------------------------------------------------------------|
| Structure         | Door with lock design, SGCC steel plate, metal mold molding       |
| Cooling           | Linear airflow, front 12025 fan, optional 2*8025 ball bearing fan |
| Color             | Granite grey                                                      |
| Installation      | Mounted on 19"rack, optional mounting rail set                    |
| Dimension (W*H*D) | 430*470*173mm                                                     |
| Weight            | 14 KG                                                             |

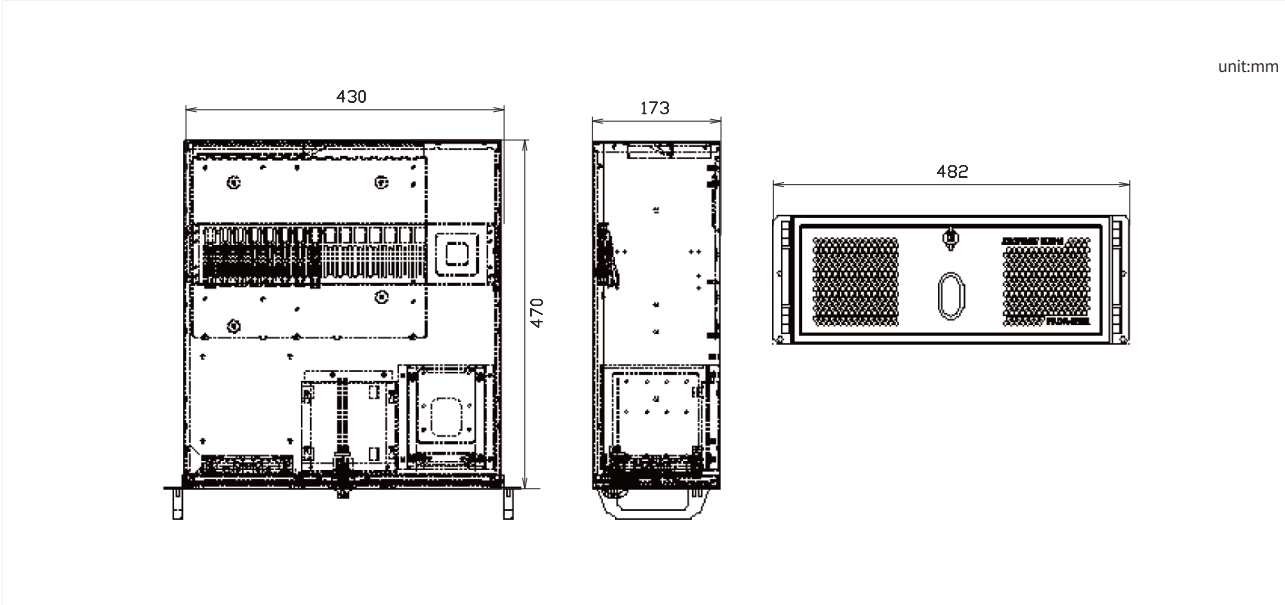
### Environment

|                 |                                                                                       |
|-----------------|---------------------------------------------------------------------------------------|
| Operating Temp  | 0°C~50°C                                                                              |
| Storage Temp    | -40°C~85°C                                                                            |
| Storage Temp    | 10~95%@40°C, No-condensation                                                          |
| Vibration       | 5 grms/5~500Hz/random/operation(SSD);<br>1 grms/5~500Hz/random/operation(HDD)         |
| Shock           | 50g peak acceleration(duration 11ms,SSD);<br>20g peak acceleration(duration 11ms,HDD) |
| Certificate/EMC | CE/FCC Class A ,3C                                                                    |

## I/O View



## Dimensions



## Ordering Information

| Model             | Processor                                | Specifications                                                                                                                               | Power                |
|-------------------|------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|----------------------|
| PADR-S501/971-300 | Intel® Cometlake-S LGA1200 CPU,H420E PCH | 2xDDR4 UDIMM, 2xLAN, 4xUSB3.2, 5xUSB2.0, 4xCOM,1xPCIe X16, 3xPCIeX4(X2+1+1 or X4),3x32bit PCI,1xHDMI, 1xVGA, 1xLine out & 1xMic, 4x3.5" SATA | AC 220-230V,ATX 300W |
| PADR-S501/971-500 |                                          |                                                                                                                                              | AC 100-240V,ATX 500W |
| PADR-S501/971-750 |                                          |                                                                                                                                              | AC 100-240V,ATX 750W |

## Accessories

| Standard              | Amount | Optional                                      | Optional                             |
|-----------------------|--------|-----------------------------------------------|--------------------------------------|
| Screw jumper package  | 1      | LGA115X, TDP 35-65W CPU wind-cooling radiator | A pair of guide rail mounting parts  |
| Air Filter            |        | LGA115X, TDP 125W CPU wind cooling radiator   | 8025 Dual ball bearing DC 12V fans   |
| AC power supply cabel |        | one 4pin to 2+6pin GPU power cable            | DB25 female head parallel port cabel |
|                       |        | SATA 7pin data cable,420mm                    | DB9 male needle DIO cabel            |



# PADR-S501-980

Intel® Alder lake-S/Raptor Lake-S CPU, 2xLAN, VGA+HDMI+DP, 3xCOM, 4xUSB3.2,7xUSB2.0, 7xPCIe/PCI, 4xSATA Bay, 4U rackmount, ATX power

## Key Specification

- Intel gen 12/13th Alderlake-S/Raptor Lake-S LGA1700 CPU+Q670 PCH
- Dual channel 4xDDR4 3200MHz UDIMM, up to 128GB
- Intel UHD Graphic, 1xVGA+1xHDMI+1xDP three independent display
- 1xI219LM Gig. Ethernet+1xI226V Gig. Ethernet
- 4xUSB3.2,7xUSB2.0 (two front and one built-in), Audio out and Mic
- 2xRS232/422/485, 1xRS232, optional 8-bit DIO
- 2xPCIeX16+1xPCI+4xPCIeX4
- 4x3.5 "SATA3.0 shock resistant and anti-vibration hard disk bay
- Standard 19" 4U rackmount chassis with high efficiency air cooling design
- Standard PS2 ATX power supply, 300/500/750/1000W



## Product Overview

PADR-S501-980 is a standard 19"4U rackmount industrial computer with an Intel Q670 chipset powered by Intel® gen 12/13th Alder lake-S/Raptor Lake-S LGA1700 series CPU. Rich functional IO, 7 PCIe/PCI expansion capabilities, excellent air cooling design, power consumption ladder ATX power supply selection, suitable for machine vision, CNC machine tools and factory production line automation and other fields.

## Product Parameters

### System

|            |                                                                                                                                    |
|------------|------------------------------------------------------------------------------------------------------------------------------------|
| CPU        | Intel gen 12/13th Alderlake-S/Raptor Lake-S LGA1700 CPU; Q670 PCH                                                                  |
| RAM        | 2*288-pin Non-ECC UDIMM , dual channel DDR4 2933MHz, 64GB max.                                                                     |
| Graphics   | Intel UHD Graphics, Supports DirectX 12, OpenGL 4.5<br>AVC/VC1/MPEG2/HEVC/VP8/JPEG.HW<br>HDMI: 4096x2160@30Hz;VGA: 1920x1200@60Hz, |
| LAN        | 1*Intel I226V,10M-2.5G,WOL;<br>1*Intel I219LM,10-1000M,WOL                                                                         |
| USB        | 4*USB3.2 Gen1(5Gbps),5*USB2.0                                                                                                      |
| Display    | 1*HDMI+1*VGA                                                                                                                       |
| Audio      | 1*Line out+1*Mic,Realtek ALC897                                                                                                    |
| COM/others | 2*RS232/422/485, 2*RS232; Optional 1*LPT                                                                                           |
| DIO        | 1*8-bit DIO (Optional)                                                                                                             |

### Storage

|         |                                                                                                                                          |
|---------|------------------------------------------------------------------------------------------------------------------------------------------|
| Storage | 4xSATA3, 6.0Gbps interface, the box is designed with 4x3.5 "and 2x2.5" a set of anti-vibration hard disk bay, 1 ultrathin DVD driver bay |
|---------|------------------------------------------------------------------------------------------------------------------------------------------|

### Others

|        |                                               |
|--------|-----------------------------------------------|
| LED    | Power LED,HDD LED                             |
| Switch | 1*Power SW, USB Power , AT/ATX , Clear CMOS , |
| WDT    | programmable via software 1 to 255 second     |

### OS

|    |                                      |
|----|--------------------------------------|
| OS | Windows 10, Windows 11, Linux Ubuntu |
|----|--------------------------------------|

### Expansion

|           |                                                                   |
|-----------|-------------------------------------------------------------------|
| Expansion | 1*PCIe3.0 X16(X16) +<br>3*PCIe3.0 X4(X2+1+1 or X4) + 3*32 bit PCI |
|-----------|-------------------------------------------------------------------|

### Power

|            |                                                                                                    |
|------------|----------------------------------------------------------------------------------------------------|
| Power& TDP | AC100-240V,StandardATXPower300W,Optional500W/750W;<br>TDP:184.85W(I7-10700K CPU/16G DDR4/256G SSD) |
|------------|----------------------------------------------------------------------------------------------------|

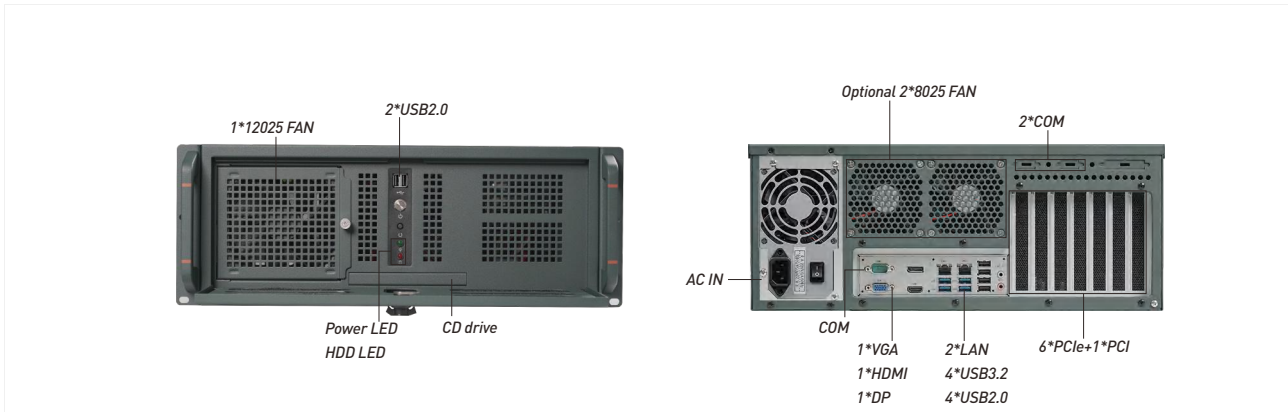
### Mechanical

|                   |                                                                   |
|-------------------|-------------------------------------------------------------------|
| Structure         | Door with lock design, SGCC steel plate, metal mold molding       |
| Cooling           | Linear airflow, front 12025 FAN ,optional 2*8025 ball bearing fan |
| Color             | Granite grey                                                      |
| Installation      | Mounted on 19"rack, optional mounting rail set                    |
| Dimension (W*H*D) | 430*470*173mm                                                     |
| Weight            | 14 KG                                                             |

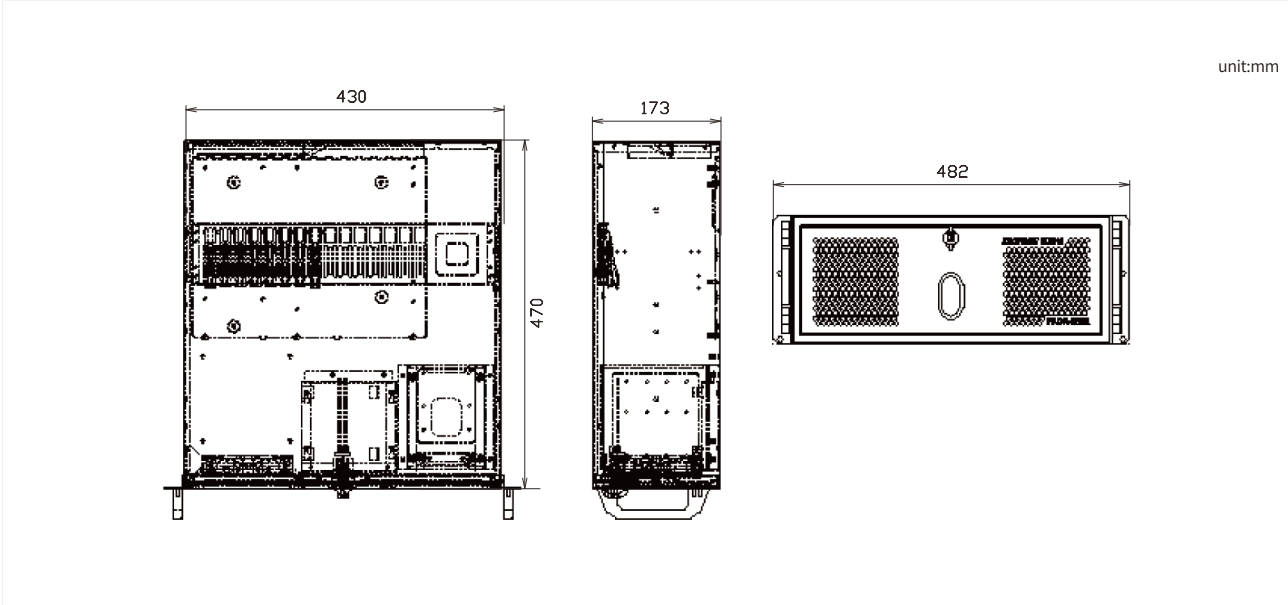
### Environment

|                 |                                                                                       |
|-----------------|---------------------------------------------------------------------------------------|
| Operating Temp  | 0°C~50°C                                                                              |
| Storage Temp    | -40°C~85°C                                                                            |
| Storage Temp    | 10~95%@40°C, No-condensation                                                          |
| Vibration       | 5 grms/5~500Hz/random/operation(SSD);<br>1 grms/5~500Hz/random/operation(HDD)         |
| Shock           | 50g peak acceleration(duration 11ms,SSD);<br>20g peak acceleration(duration 11ms,HDD) |
| Certificate/EMC | CE/FCC Class A ,3C                                                                    |

## I/O View



## Dimensions



## Ordering Information

| Model               | Processor                                                  | Specifications                                                                                                                                                                                               | Power                 |
|---------------------|------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|
| PADR-S501/980-300WP | Intel® Q670 PCH+Alder lake-S/<br>Raptor Lake-S LGA1700 CPU | 4xDDR4 UDIMM, 2xLAN, 4xUSB3.2, 7xUSB2.0(one built-in), 3xCOM, 2xPCIe X16 (X8 )), 4xPCIeX4 (three are X4 s, one is X1 s), 1x32bit PCI, 1xM.2 M-Key, 1xHDMI, 1xVGA, 1xDP, 1xLine out and 1xMic, 4x3.5"SATA bay | AC 220-230V,ATX 300W  |
| PADR-S501/980-500   |                                                            |                                                                                                                                                                                                              | AC 100-240V,ATX 500W  |
| PADR-S501/980-750   |                                                            |                                                                                                                                                                                                              | AC 100-240V,ATX 750W  |
| PADR-S501/980-1000  |                                                            |                                                                                                                                                                                                              | AC 100-240V,ATX 1000W |

## Accessaries

| Standard              | Amount | Optional                                    | Optional                            |
|-----------------------|--------|---------------------------------------------|-------------------------------------|
| Screw jumper package  | 1      | LGA1700, TDP 65W CPU wind-cooling radiator  | A pair of guide rail mounting parts |
| Air Filter            |        | LGA1700, TDP 95W CPU wind cooling radiator  | 8025 Dual ball bearing DC 12V fans  |
| AC power supply cabel |        | LGA1700, TDP 125W CPU wind cooling radiator | two 4pin to 2+6pin GPU power cable  |
|                       |        | SATA 7pin data cable,420mm                  | DB9 male needle DIO cabel           |