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JHCTECH

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JHCTECH IoT Computer Connecting the Dots

AI Edge Computing System

JHCTECH

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

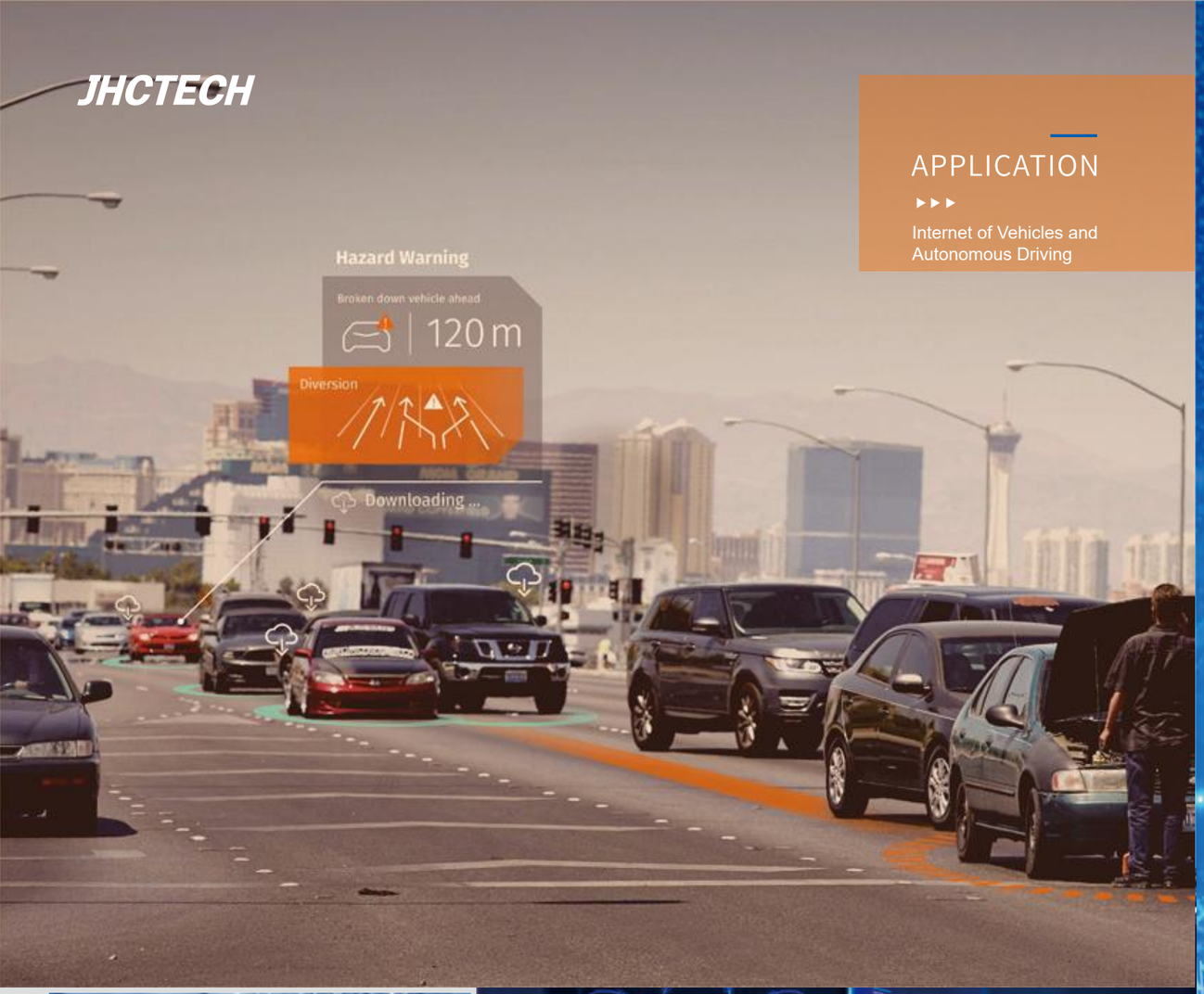
BRAV

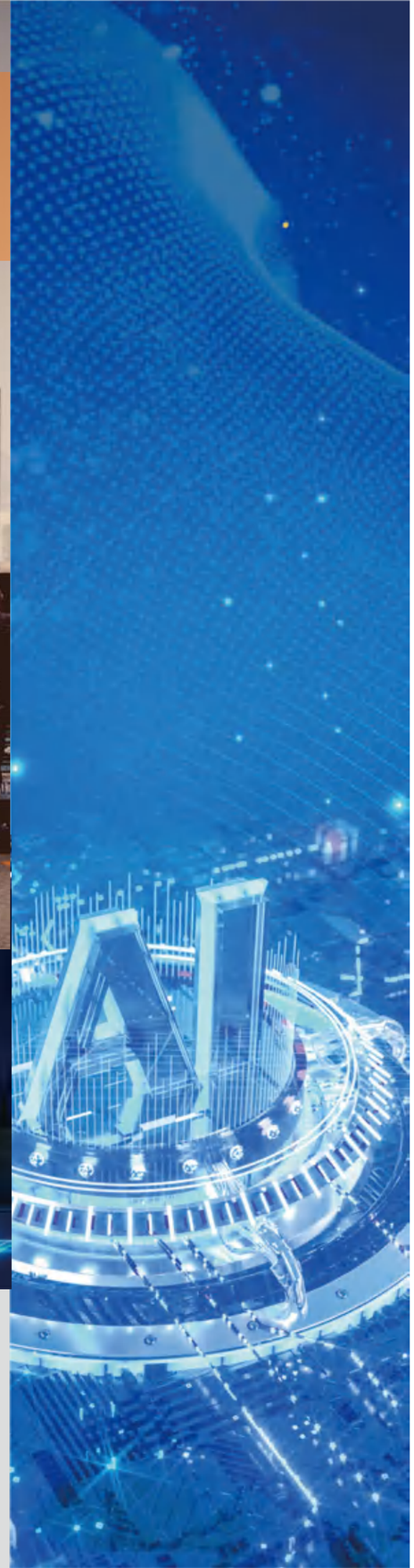
Edge Computing system

JHCTECH

APPLICATION

Internet of Vehicles and Autonomous Driving





COMPLETE LIST








	BRAV-7131 (NVIDIA Jetson)	BRAV-7201	BRAV-7220	BRAV-7302	BRAV-7501	BRAV-7520	BRAV-7521	BRAV-7601-S
System								
CPU	8*Cores Arm® Cortex®-A78AE v8.2 64 bit CPU 12*Cores Arm® Cortex®-A78AE v8.2 64 bit 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	Intel® Tigerlake U Celeron/Core I3/I5/I7 CPU, ULT SoC, TDP 12W/15W/28W	Intel®Skylake-S Intel®Kabylake-S Celeron/Pentium/Core I3/I5/I7 CPU,LGA 1151 socket, TDP35W/54W/65W/91W with active cooling fan	Intel® Xeon® E or 9th/8th-Gen Core™ i7/i5/i3 LGA1151 processor, up to 8 cores 16 threads	Intel® Xeon® E or 9th/8th-Gen Core™ i7/i5/i3 LGA1151 processor, up to 8 cores 16 threads	Intel® Xeon® E or 9th/8th-Gen Core™ i7/i5/i3 LGA1151 processor, up to 8 cores 16 threads	Intel® Comet lake 10th-Gen Celeron/Pentium/ Corei9/i7/i5/i3 CPU, 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+ 56 Tensor Cores; S002:NVIDIA Ampere GPU, 2048 Cuda cores+ 64 Tensor Cores	CPU integrated Intel 9th gen HD Graphics, HEVC/H265 HW HD codec, HDMI: 3940*2160@30Hz, DP: 4096*2160@60Hz	Intel UHD / Iris®Xe Graphics , Supports Intel DeepLearning boost, DirectX12.1, OpenGL 4.6 and OpenCL 3.0; HDMI2.0:4096x2304@60Hz, DP 1.4: 7680x4320@60Hz	Intel Gen. 9 HD Graphics, HEVC/H265 HW, DP/HDMI/VGA (DP&HDMI 4K); 1* MXM3.1(NVIDIA GTX/AMD RX GPU up to 120W, 3*DP & 1*HDMI 4K)	Intel UHD Graphics, DirectX11.1, OpenGL 5.0 and OpenCL 2.1, DP: 4096*2304@60Hz, DP:4096*2304@60Hz, HDMI: 3840*2160@30Hz, 3 independent displays	Intel UHD Graphics, DirectX11.1, OpenGL 5.0 and OpenCL 2.1, DP: 4096*2304@60Hz, DP:4096*2304@60Hz, VGA: 1900*1200@60Hz, 3 independent displays	Intel UHD Graphics, DirectX11.1, OpenGL 5.0 and OpenCL 2.1, DP: 4096*2304@60Hz, DP:4096*2304@60Hz, VGA: 1900*1200@60Hz, 3 independent displays	Intel® UHD Graphics, DirectX 12, openGL 4.5, 2*HDMI: 4096x2304@24Hz, 1*VGA: 1920*1200@60Hz; 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, 1*Intel I219LM, 10-1000M,iVpro	3*Intel I226V, 10M-2.5G , iAMT 13.0/iVpro	2* / 6* Intel I210AT, 10-1000M; 1*Intel I219LM,10-1000M,iVpro	2* Intel I211AT/I210AT, 10-1000M; 1* Intel I219LM, 10-1000M, iVpro	2* Intel I211AT/I210AT, 10-1000M; 1* Intel I219LM, 10-1000M, iVpro	2* Intel I211AT/I210AT, 10-1000M; 1* Intel I219LM, 10-1000M, iVpro	3*Intel I226V,3*2.5G-LAN, iAMT 13.0/iVpro; 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); 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 input/output	8-bit TTL programmable input/output; 8-bit 2.5KV input opto-isolator(H:5-24V, L:0-1.5V), 8-bit 2.5KV output opto-isolator(100mA)	8bit DIO, TTL, 2.5KV optical isolation input/output	16-bit TTL programmable input/output;	8-bit TTL programmable input/output;	16-bit Iso DIO, 8-bit 2.5KV input opto-isolator(H:5-24V, L:0-1.5V), 8-bit 2.5KV output opto-isolator (200mA)	16-bit Iso DIO, 8-bit 2.5KV input opto-isolator(H:5-24V, L:0-1.5V), 8-bit 2.5KV output opto-isolator(200mA)	8 bit TTL, programmable input/output 8+16 bit TTL, programmable input/output(S002)
Storage								
Storage	64GB eMMC, optional 1*2.5" SATA3; 1*M.2 2280 M-Key(PCIeX4),NVMe; 1*Micro SD	1*2.5" SATA3+ 1*mSATA	1*2.5"SATA3+ 1*mSATA ; 2*M.2 M-Key 2280(PCIeX2), NVMe	2*2.5"SATA3 + 1*mSATA	2*3.5"SATA3+1*M.2(S001); 4*2.5"SATA3+1*M.2(S002)	2*2.5"SATA3; 1*M.2 NVMe	4*2.5"SATA3 ; 1*M.2, NVMe	2*2.5"SATA3 HDD(RAID0,1), 15mm; 1*M.2 2280 M-Key(PCIeX4), NVME; 1*mSATA(optional)
Expansion								
Expansion Port	1*Mini PCIe(PCIeX2+USB+SIM), 4G LTE/LAN/CAN; 1*M.2 3052 B-Key(PCIeX2+USB+SIM), 4G LTE/5G; 1*M.2 2280 M-Key(PCIeX4), NVMe/AI module 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 1*M.2 B-Key 3052(PCIe X1/USB+SIM),4G LTE/5G 1*M.2 M-Key 2280(PCIe4.0X2), NVMe/AI module 1*M.2 M-Key 2280(PCIe3.0X2), NVMe/AI module	1*Mini PCIe with SIM slot; 1*M.2 with SIM slot, 1* full size mSATA; 1*half size Mini PCIe, 1*JHC-Express-02 EIO Express bus	1*Mini PCIe(PCIeX1/USB+SIM); 2*PCIe3.0X16(1*PCIe X16 or 2*PCIe X8) up to NVIDIA 3080Ti FE; 2*PCIe3.0X8(X4)	1*Mini PCIe(PCIeX1/USB+SIM,BIOS to mSATA); 1*M.2 E-Key(+SIM),WiFi6/BT5.0; 1*M.2 B-Key(+SIM),5G NR; 1*M.2 M-Key(PCIe3.0X4),NVMe; 1*PCIe3.0X16(X16),GPU<350W<300mm 1*PCIe3.0X16(x4), AI card<75W<300mm	1*Mini PCIe(PCIeX1/USB+SIM,BIOS to mSATA); 1*M.2 E-Key(+SIM),WiFi6/BT5.0; 1*M.2 B-Key(+SIM),5G NR; 1*M.2 M-Key(PCIe3.0X4),NVMe; 2*PCIe3.0X16(X8),GPU<350W<300mm 2*PCIe3.0X16(x4), 2*AI card	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(PCIeX16),up to 190W; JHCTECH-02 E/IO, 2*PCIeX4, 2*USB3.2, 2*USB2.0
Power Supply								
Pwr Consump TDP	DC9-36V; DC out 12V 3A(Max); 50.4W (Jetson AGX Orin 32GB)	DC9-30V; 24W (I3-6100 CPU 4G DDR4)	DC9-36V; 38.4W (I5-1135G7 CPU/16G DDR4/256G SSD)	DC6-48V; 144W (35W CPU+78W GPU)	24-pin ATX/8-pin ATX 12V, 600W power supply	DC 12V 5-pin Term; Consumption: 12V/27A (I7-8700 CPU 32GB DDR4 single 2080TI GPU)	DC 12V 5-pin Term. Consumption: 12V/47A (I7-8700 CPU 32GB DDR4 dual 2080TI GPU)	DC 9-36V 3-pin, with short circuit protection, over 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, -10°C～50°C,Fanless, HDD, with air flow	-20°C～70°C,with air flow(CPU,non VPU); -20°C～60°C,with air flow(CPU+2*VPU)	-25°C～50°C – 65W CPU+78W GPU -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); 1 grms/5~500Hz/during operation(HDD)	5 grms/5~500Hz/random/during operation(SSD) 1 grms/5~500Hz/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)	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)(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(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	Linux Ubuntu 18.04/20.04 with JetPack	Linux Fedora Ubuntu	Windows 10 64 bit, Windows 11 64 bit, SUSE, Linux, Wind River	Windows 7, Windows 10, Linux Fedora Ubuntu	Windows10/Windows Server 2016 (Intel® Xeon® E) Ubuntu/SuSe/Redhat Enterprise 1,2 (Kernel 4.14) (CFL-R) Wind River VxWorks 7 (CFL-R)	Windows10/Windows Server 2016 (Intel® Xeon® E) Ubuntu/SuSe/Redhat Enterprise 1,2 (Kernel 4.14) (CFL-R) Wind River VxWorks 7 (CFL-R)	Windows10/Windows Server 2016 (Intel® Xeon® E) Ubuntu/SuSe/Redhat Enterprise 1,2 (Kernel 4.14) (CFL-R) Wind River VxWorks 7 (CFL-R)	Windows 10 IoT Enterprise (64-bit), Windows Server 2019, Ubuntu, SUSE, Redhat Enterprise, Wind River Linux, Yocto Project (64-bit), Wind River VxWorks 7

Products Listing








	BRAV-7601-T	BRAV-7720-S001	BRAV-7720-WP	BRAV-7721-S001	BRAV-7721-WP	CNTI-3A51 (Loongson 3A5000)	CNTI-R351 (Rockchip RK3588)	CNTI-2K10
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 **NPU:**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; **2*PCIe5.0X16(X8)**,GPU<450W<300mm; **2*PCIeX16(4.0X4+3.0X4)**,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; **2*PCIe5.0X16(X8)**,GPU<450W<300mm; **2*PCIeX16(4.0X4+3.0X4)**,AI card<75W<300mm	1*M.2 2280 M-Key(PCIe2.0X4), 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)]

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

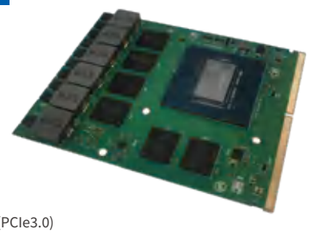
MLU370-X4

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

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

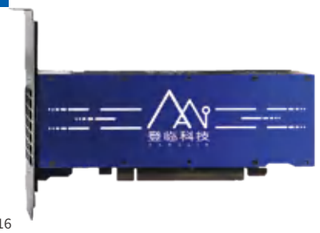
CFI-1660S-MXM



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

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

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

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) 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) 2048*Cores NVIDIA Ampere GPU 1.3GHz, 64*Tensor Cores(S002) Video code (H.265)H.264, AV1: 1*4K60,3*4K30,6*1080p60,12*1080p30 (S001); 2*4K60,4* 4K30,8*1080p60,16*1080p30 (S002); Video code (H.265)H.264, VP9, AV: 1*8K30,2*4K60,4*4K30,9*1080p60,18*1080p30(S001); 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; 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; 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; 1*M.2 3052 B-Key(PCIe X1/USB2.0+SIM)，4G LTE/5G NR; 1*M.2 2280 M-Key(PCIeX4), NVMe/AI Cards; 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; 50.4W (Jetson AGX Orin 32GB)

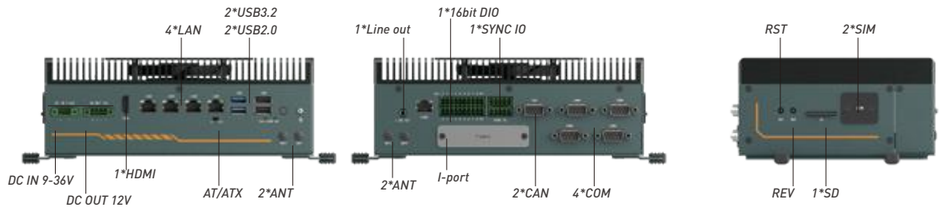
Mechanical

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

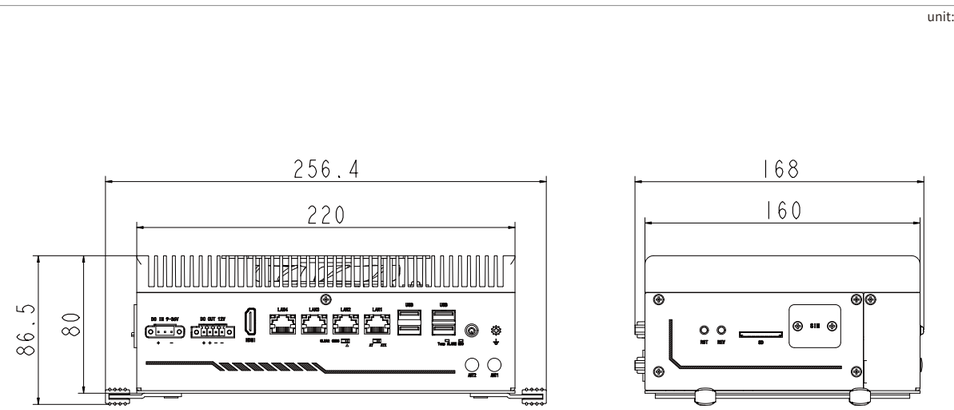
Operating Temp	-20°C~60°C, with air flow
StorageTemp	- 40°C~85°C
Storage Humidity	10~90%@40°C, No-condensation
Vibration	5 grms/5~500Hz/random/during operation(SSD); 1 grms/5~500Hz/random/during operation(HDD)
Shock	50g peak acceleration(11ms duration)(SSD); 20g peak acceleration(11ms duration)(HDD)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

I/O View



Dimensions

unit: mm



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(PCIe+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 absober 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 Cosumption: 24W (I3-6100U CPU 4G DDR4)
OS	Linux Fedora Ubuntu
Watchdog Timer(WDT)	Progammable timeout interuption 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)
Codec capability	Support H.264 , HEVC (H.265) , VP8, VP9 Coding performance：support 16X 1080P @30fps Decoding peformance: support 8X 1080P@30fps
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

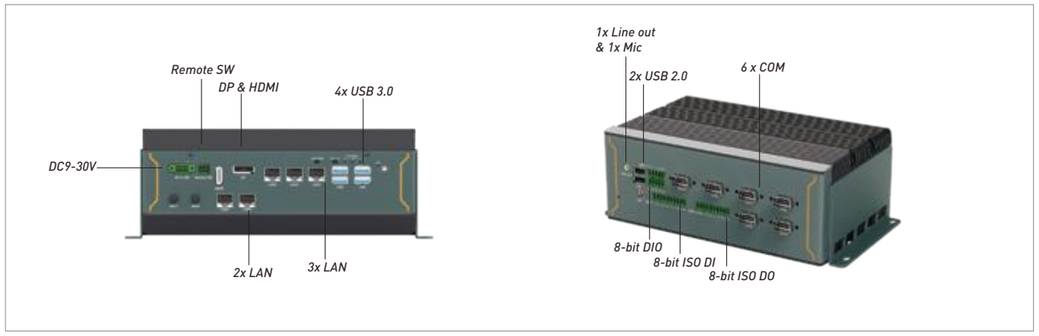
Mechanical

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

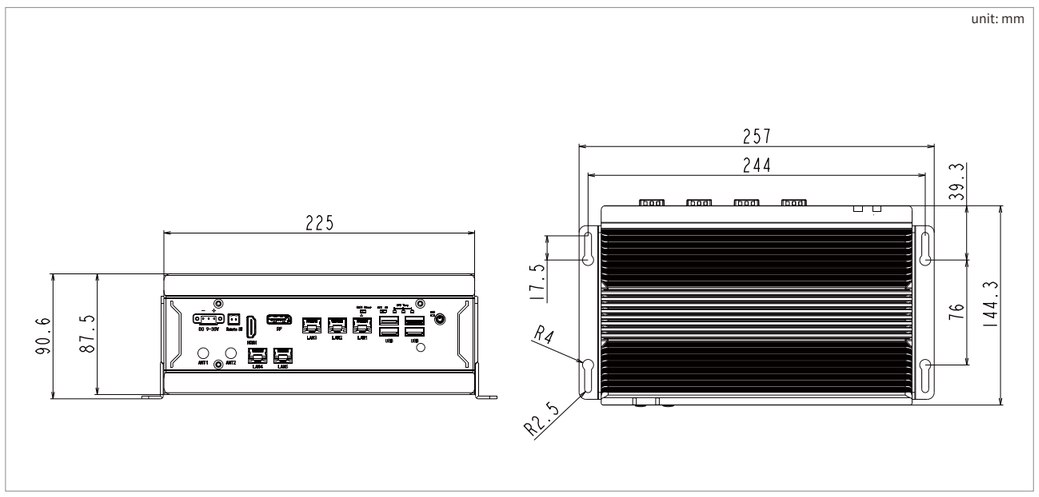
Environmental

Operating Temp	-25°C～60°C – fanless，with wide temp SSD, with air flow -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); 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-7201/S001	Intel I3-6100U/I3-7100U	2x DDR4 MAX 32GB	1x HDMI 1x DP	5x LAN 4x USB3.0 3x USB2.0 6x COM	8-bit TTL signal 16-bit Iso DIO	1x LINE OUT 1x MIC	1x Mini PCIe	1x mSATA 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
RAM	2*DDR4 SO-DIMM, 3200MHz, 64GB max.
Graphics	Intel UHD or Iris® Xe Graphics , Supports Intel DL boost, DirectX12.1, OpenGL 4.6 and OpenCL 3.0, HDMI 2.0: 4096x2304@60Hz, DP 1.4:7680x4320@60Hz
LAN	3*Intel I226V, 10M-2.5G, support iAMT 13.0, I5/I7 CPU support iVpro
USB	2*USB3.2, 2*USB2.0, 1*USB2.0(built-in)
Display	1*HDMI+1*DP
COM/others	2*RS232/422/485(DB9); optional1*MIPI CSI 60pin high-speed port (Opt.);
DIO	8bit DIO, TTL, 2.5KV isolated input/output
Storage	1*2.5"SATA3, easy plug design,6Gbps;1*mSATA(SATA3) 2*M.2 2280 M-Key(PCIeX2),support NVMe
LED	1*PowerLED, 1*HDD LED, 3*CPUTemp LED (Red is warning , Yellow is high, Green is normal)
Control Switch	1*Power SW, 1*Remote SW, 1*AT/ATX
Watchdog Timer	Watchdog timeout programmable via software 1 to 255 second
OS	Windows 10 64 bit, Windows 11 64 bit, SUSE, Linux, Wind River
Expansion	1*M.2 3042 B-Key(PCIe X1/USB2.0)+SIM, 4G LTE; 1*M.2 3052 B-Key(PCIe X1/USB2.0)+SIM, 4G LTE or 5G NR; 1*M.2 2280 M-Key(PCIe4.0X2), support NVMe/AI module; 1*M.2 2280 M-Key(PCIe3.0X2), support NVMe/AI module
Power Requirement	DC IN 9~36V, with short circuit, over voltage and over current protection; TDP:38.4W (I5-1135G7 CPU/16G DDR4/256G SSD)

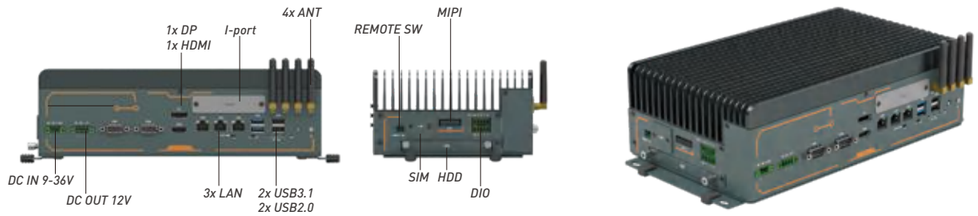
Mechanical

Structure	Aluminum-magnesium alloy, SGCC frame
Color	Granite gray + Graphite black
Mounting	Desktop Mounting with shock-absorbing and anti-skid foot pad, optional Din-Rail installation
Dimension	326.4*174*96.6mm(W*H*D)
Net weight	4.67KG

Environmental

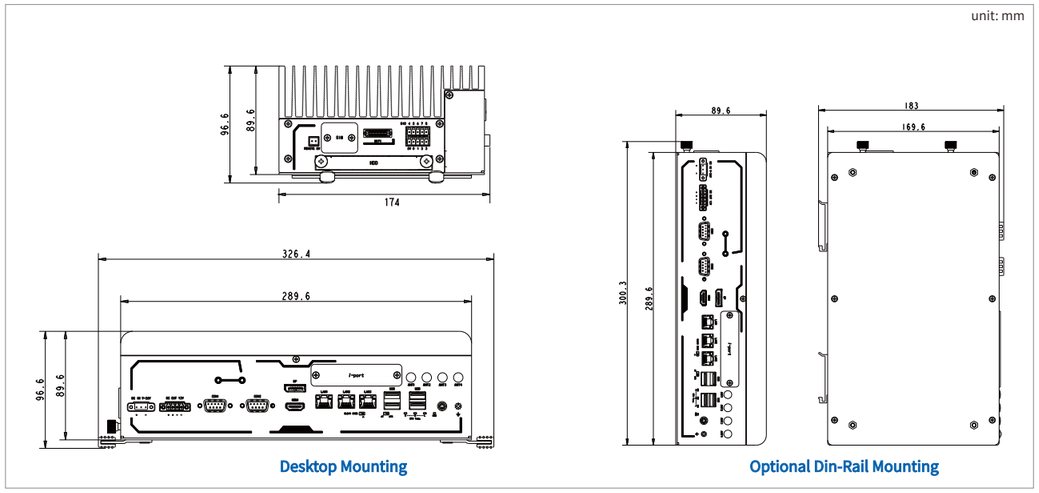
Operating Temp	-20°C~70°C, with air flow(CPU, non. VPU) -20°C~60°C, with air flow(CPU+2*VPU)
StorageTemp	- 40°C~85°C
Storage Humidity	10~95%@40°C, No-condensation
Vibration	5 grms/5~500Hz/random/during operation(SSD); 1 grms/5~500Hz/random/during operation(HDD)
Shock	50g peak acceleration(11ms duration)(SSD); 20g peak acceleration(11ms duration)(HDD)
Certification/ EMC	CE/FCC Class A

I/O View



Dimensions

unit: mm



Desktop Mounting

Optional Din-Rail Mounting

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(PCIeX2), 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(PCIe+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 eqquiped 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 absober 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 4/6*USB3.0; 2*USB2.0 ,1*USB2.0 internal 16-bit DIO 2*10-pin terminal; 2*RS232/422/485 DB9 male connector, 2*RS232 DB9 male connector 1*Audio-out and 1*MIC 3.5 audio port Discrete GPU 3*DP+1*HDMI; 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 interuption period or system reset from 1 to 255 secs

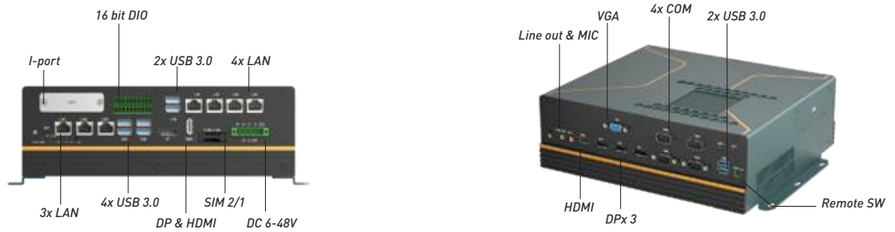
Mechanical

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

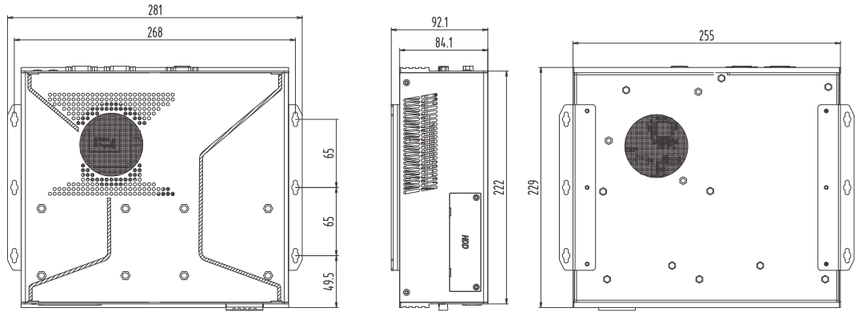
Operating temp	-25°C～50°C – 65W CPU+78W GPU -25°C ~40°C – 91W CPU+120W GPU
Storage temp	- 40°C~85°C
Storage humidity	10~90%@40°C, No-condensation
Vibration	5 grms/5~500Hz/random/during operation(SSD); 1 grms/5~500Hz/random/during operation(HDD)
Shock	50g peak acceleration(duration;11ms)(SSD); 20g peak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

I/O View



Dimensions View

unit: mm



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 MAX 32GB	MXM 3.1 3x DP 1x HDMI	1x HDMI 1x DP 1x VGA	3x LAN/4x COM 4x USB3.0 3x USB2.0	16-bit TTL signal DIO	1x LINE OUT 1x MIC	2x Mini PCIe 1x M.2 B-Key	1x mSATA 2x"2.5"drive bay	DC 6~48V
BRAV-7302/S002	Intel® Skylake-S/Kabylake-S LGA1151 CPU				7x LAN/4x COM 6x USB3.0 3x USB2.0			1x Mini PCIe 1x M.2 B-Key	1x mSATA 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, 2*PCIe X16 slot (1*PCIe X16 or 2*PCIe X8) support up tp NVIDIA 2080Tiseries reference graphic card 2*PCIe X8 slot (Gen 3，2*PCIeX4 signal)
Graphics	Intel UHD Graphics, Supports DirectX11.1, OpenGL 5.0 and OpenCL 2.1 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) 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 4*USB3.1; 6*USB2.0; 1*USB2.0 (internal); 1*8-bit DIO (DB9)，2*RS232/422/485 (DB9)； 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) 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 interuption period or system reset from 1 to 255 secs

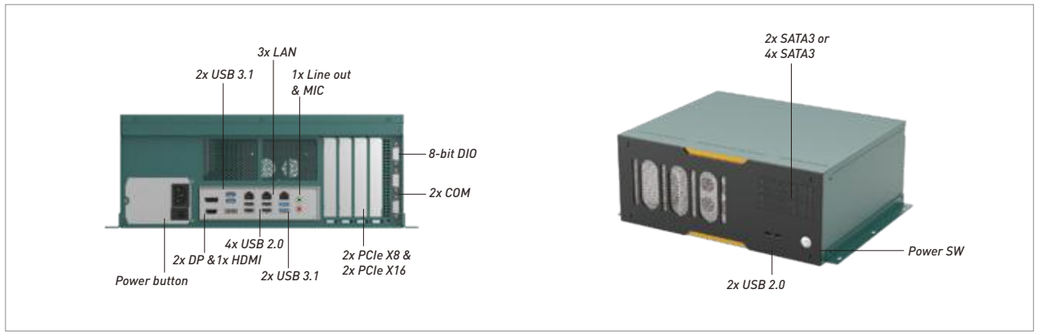
Mechanical

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

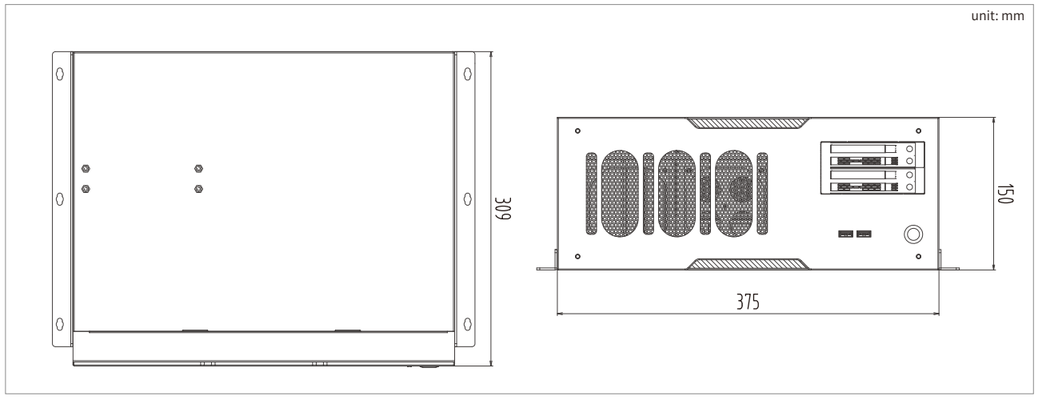
Environmental

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); 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-7501/S001	Intel® Coffeelake LGA1151 CPU Q370 PCH	4x DDR4 MAX 128GB	1x HDMI 2x DP	3x LAN/2x COM 4x USB3.1 7x USB2.0	8-bit DIO	1x LINE OUT 1x MIC	1x Mini PCIe 1x PCIeX16 (or 2x PCIeX8) 2x PCIeX4	2x "3.5"SATA 1x M.2 2280	ATX 600W Power
BRAV-7501/S002	Intel® Coffeelake LGA1151 CPU C246 PCH							4x "2.5"SATA 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
RAM	4*260-Pin SODIMM, dual channel DDR4 2666/2400MHz, max support 128GB
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)； 1*PCIeX16,max support 350W graphics card (length<300mm) 1*PCIe X4 (in X16 slot), max support 75W AI accelerator card (length<300mm)
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
Audio	optional support Realtek ALC662VD audio, Audio out& MIC, support 5.1 audio track
LAN	2*Intel I210AT PCIe GbE, 10/100/1000Mbps self adaptive； 1*Intel I219LM PCIe GbE, support iVpro tech
Storage	2*2.5”SATA3 swappable hard disk bay, support RAID0/1 1*M.2 2280 M-key(PCIe X4), support NVMe storage
DIO	16-bit Iso DIO,8-bit 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 16-bit Iso DIO, 2*RS232/422/485 , 2*RS232 1*Audio-out & 1*MIC; 1*VGA+2*DP
LED	1*Power indicator , 1* HDD status indicator
Control Switch	1*Power SW，1*AT/ATX SW, 1*Clear CMOS SW
Power Requirement	DC 12V 5-pin Term. Consumption: 324W（I7-8700 CPU 32GB DDR4 single 2080TI）
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)
Watchdog Timer	Programmable timeout interuption or system reset from 1 to 255 secs

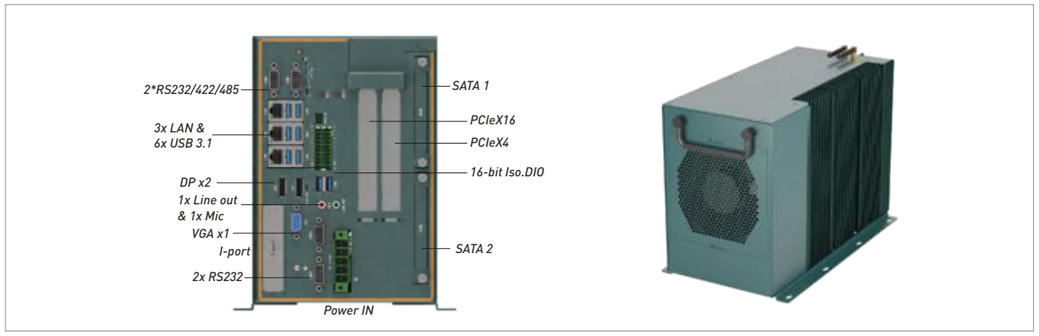
Mechanical

Structure	Aluminum heat dissipation case, SGCC box
Color	Black + Granite Grey
Installation Method	Desktop Installation
Dimension	(W*H*D)：230*350*160mm
Net weight	7.5kg

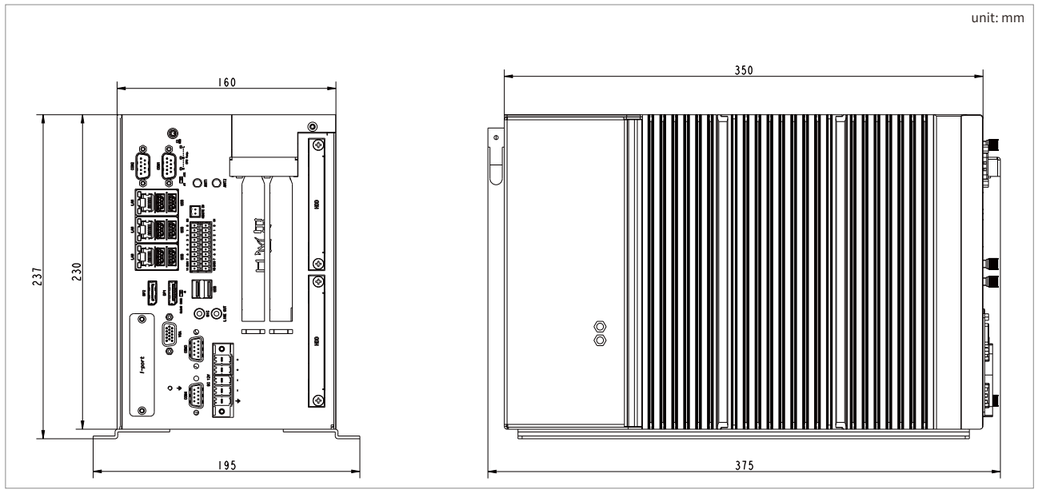
Environmental

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



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 MAX 128GB	1x VGA 2x DP	3x LAN/4x COM 6x USB3.1 2x USB2.0	16-bit Iso DIO	1x LINE OUT 1x MIC	1x Mini PCIe 1x M.2 E-Key 1x M.2 B-Key 1x PCIeX16; 1x PCIeX4	2x "2.5"SATA 1x M.2 2280 M-Key	DC12V
BRAV-7520/S002	Intel® Coffeelake-R LGA1151 CPU C246 PCH								
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
RAM	4*260-Pin SODIMM, dual port DDR4 2666/2400MHz,max support 128GB
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)
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
Power Requirement	DC 12V 5-pin Term. Consumption: 564W（I7-8700 CPU 32GB DDR4, dual 2080TI）
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)
Watchdog timer	Programmable timeout interuption or system reset from 1 to 255 secs

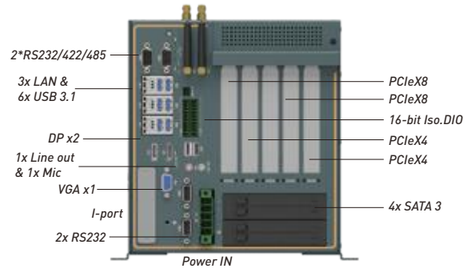
Mechanicalical

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

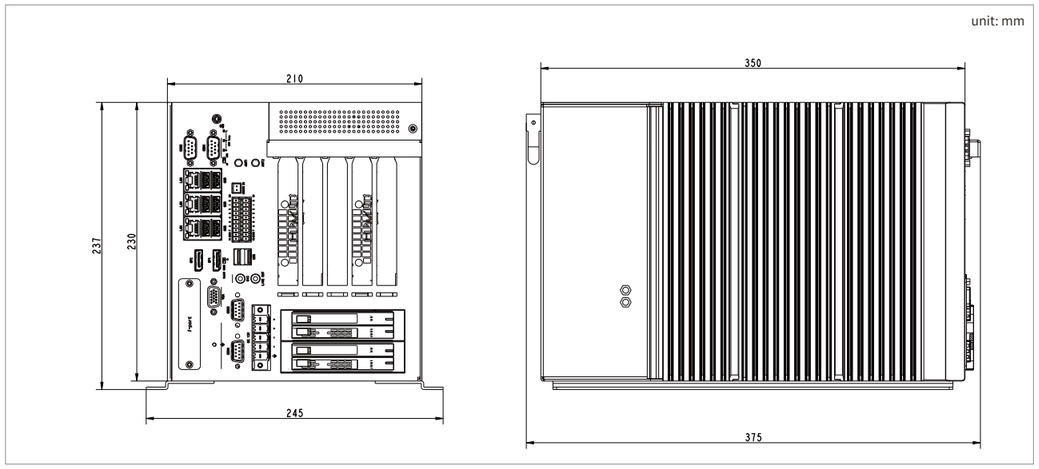
Operating temp	-25°C~60°C , with air flow
Storage temp	- 40°C~85°C
Storage Humidity	10~90%@40°C, No-condensation
Vibration	5 grms/5~500Hz/random/during operation(SSD); 1 grms/5~500Hz//random/during operation(HDD)
Shock	50g peak acceleration(duration;11ms)(SSD); 20g peak acceleration(duration;11ms)(HDD)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

I/O view



Dimensions

unit: mm



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 MAX 128GB	1x VGA 2x DP	3x LAN/4x COM 6x USB3.1 2x USB2.0	16-bit Iso DIO	1x LINE OUT 1x MIC	1x Mini PCIe 1x M.2 E-Key 1x M.2 B-Key 2x PCIeX8; 2x PCIeX4	4x "2.5"SATA 1x M.2 2280 M Key	DC12V
BRAV-7521/S002	Intel® Coffeelake-R LGA1151 CPU C246 PCH								
Suggested graphics card / AI accelarator card	max support 2*350W GPU 2*75W AI accelarator card (graphics card/AI accelarator 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；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,up to 190W power supply，support MXM GPU modules & AI accelerator with power consumption lower than 190W； 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； 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) 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； 1*M.2 Type 2280 M-Key(PCIex4 signal)，support NVMe； 1*mSATA(optional)
DIO	8bit TTL signal, programmable input & output; 8+16 bit TTL signal, programmable input & output (S002)
I/O Port	3*2.5G-LAN，4*POE(S002)， 4*USB3.2 Gen2(10Gbps)，2*USB3.2 Gen1(S002)，2*USB2.0, 1*USB2.0 DB pin header，1*USB2.0 typeA (built-in)，2*SIM slot 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
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

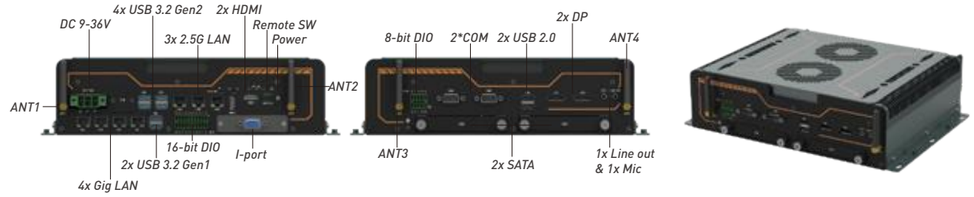
Mechanicalical

Structure	Temperature controlled fan，SGCC
Color	Black+Granite gray
Mounting	Desktop mounting
Dimension	(L*W*H)：284*222*82mm
Net weight	6.70kg

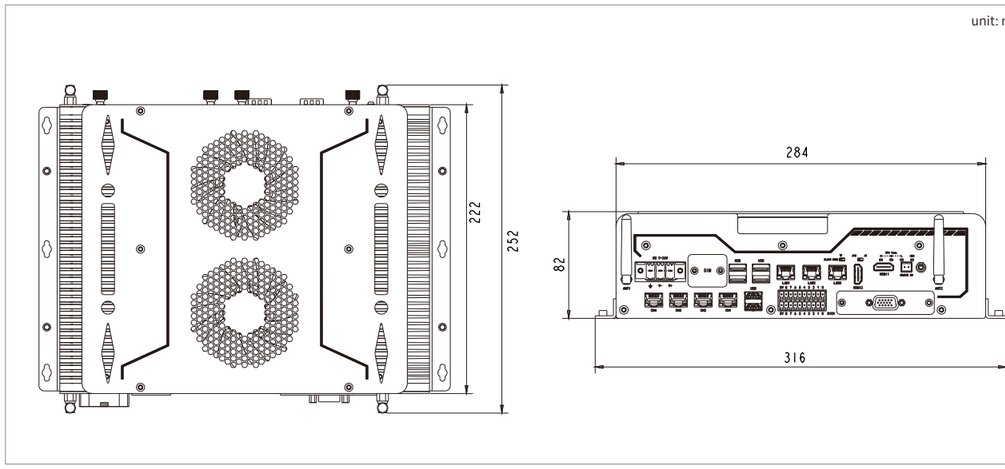
Environmental

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); 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/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 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
Storage	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
DIO	8bit TTLsignal, programmable input and output; 8+16 bit TTL signal, programmable input and output(T002)
I/O Port	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)
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

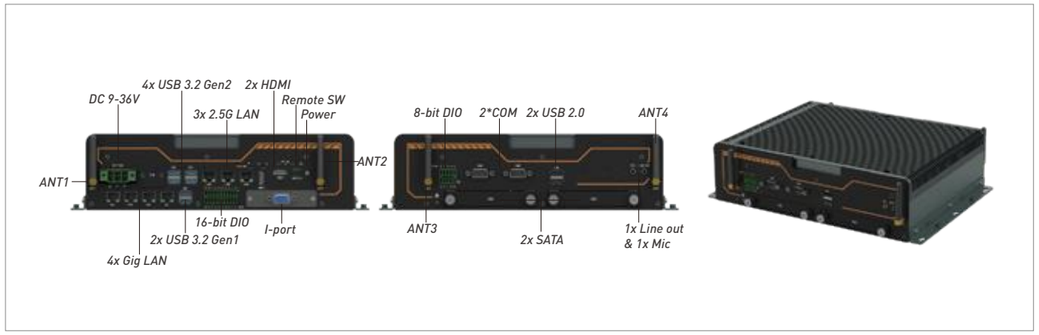
Mechanicalical

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

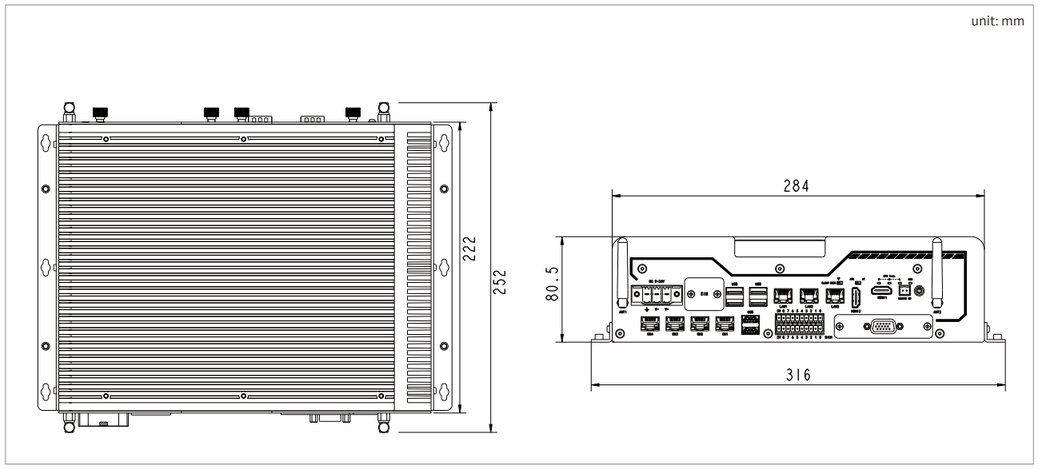
Environmental

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 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 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; 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; 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. ; TDP:TBD
Watchdog Timer	Watchdog timeout programmable via software 1 to 255 second
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(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

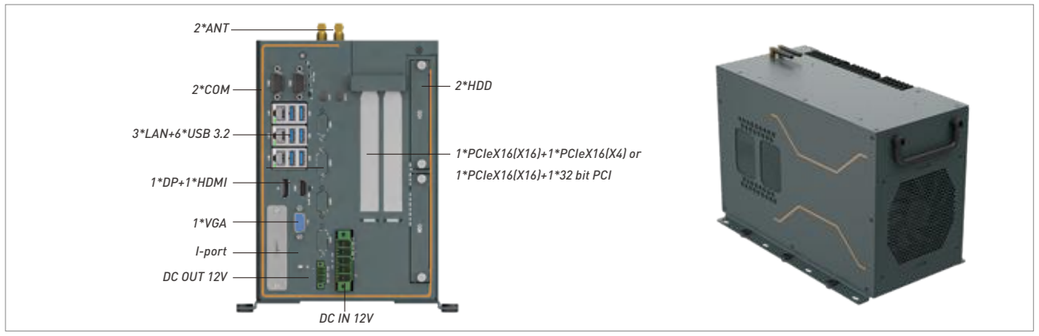
Mechanical

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

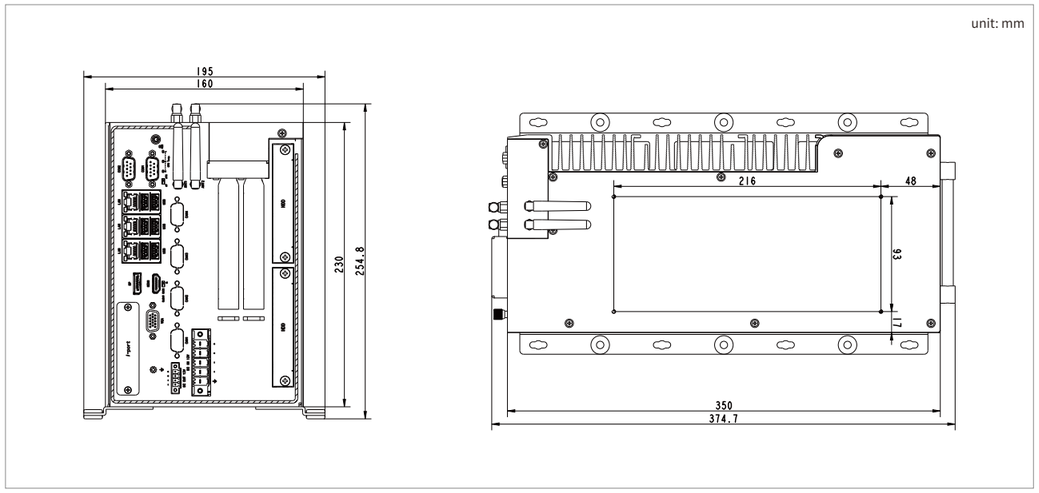
Environmental

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); 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	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*HDMI, 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	**Default:ECX-255** 1*PCIeX16(X16)+1*PCIeX16(X4) **Optional:ECX-271** 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
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; 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; 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. ; 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
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

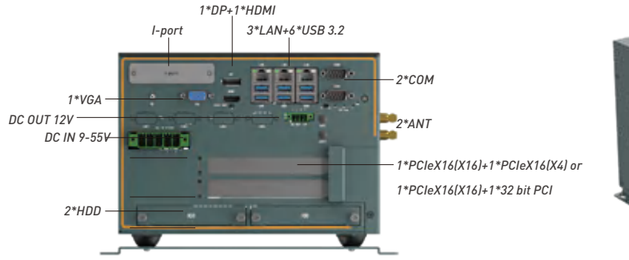
Mechanical

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	262*374.7*178 mm(W*H*D)
Net weight	TBD

Environmental

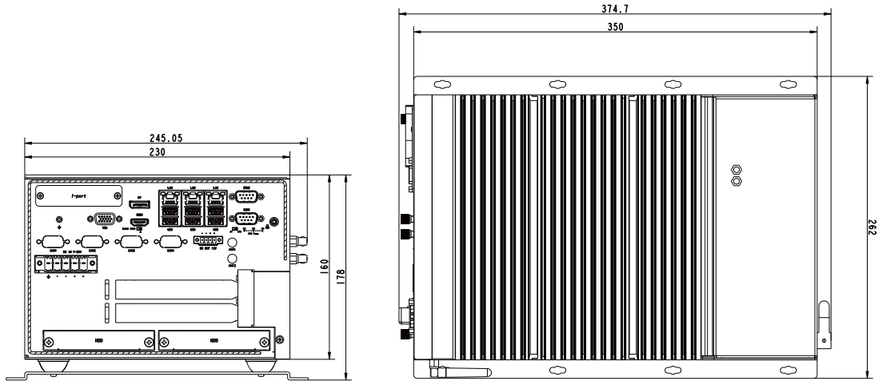
Operating Temp	-20°C~60°C , with air flow
StorageTemp	- 40°C~85°C
Storage Humidity	10~95%@40°C, No-condensation
Vibration	5 grms/5~500Hz/random/during operation(SSD); 1 grms/5~500Hz/random/during operation(HDD)
Shock	50g peak acceleration(11ms duration)(SSD); 20g peak acceleration(11ms duration)(HDD)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

I/O View



Dimensions

unit: mm



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*HDMI, 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	**Default：ECX-255** 1*PCIeX16(X16)+1*PCIeX16(X4) **Optional：ECX-271** 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
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； 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; 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. ; 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
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; 2*PCIe5.0X16(X8),GPU<450W<300mm 2*PCIeX16(4.0X4+3.0X4),AI card<75W(150W)<300mm

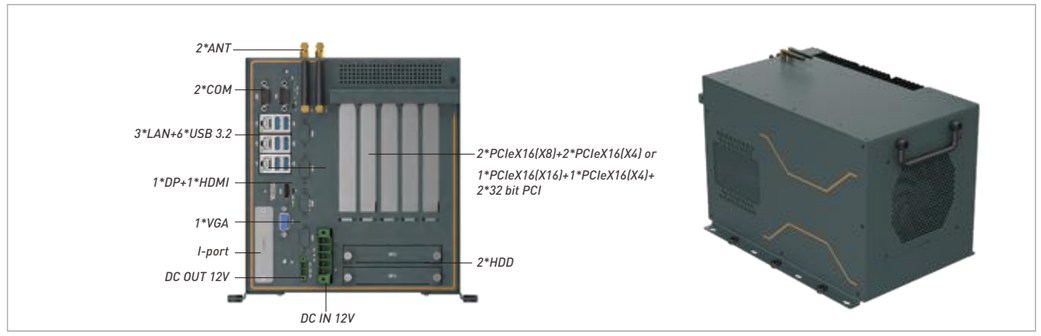
Mechanical

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	245*376.8*254.8mm(W*H*D)
Net weight	TBD

Environmental

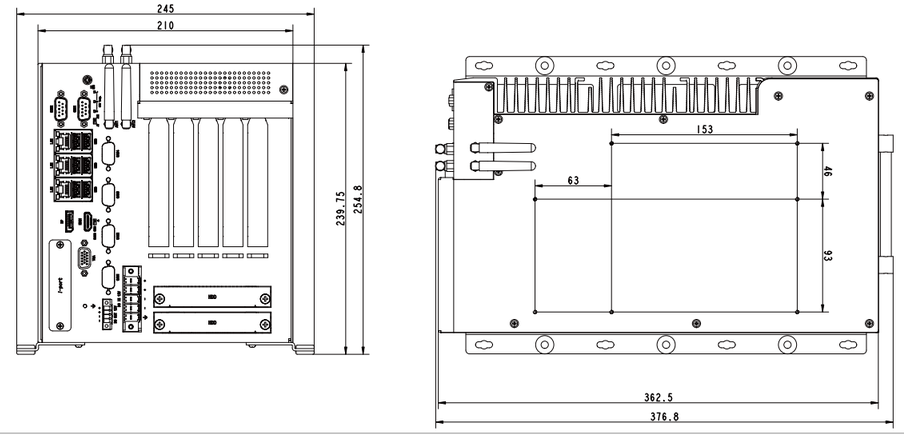
Operating Temp	-20°C～60°C , with air flow
StorageTemp	- 40°C~85°C
Storage Humidity	10~95%@40°C, No-condensation
Vibration	5 grms/5~500Hz/random/during operation(SSD); 1 grms/5~500Hz/random/during operation(HDD)
Shock	50g peak acceleration(11ms duration)(SSD); 20g peak acceleration(11ms duration)(HDD)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

I/O View



Dimensions

unit: mm



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*HDMI, 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	**Default：ECX-254** 2*PCIeX16(X8)+2*PCIeX16(X4) **Optional：ECX-275** 1*PCIeX16(X16)+1*PCIeX16(X4) 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
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; 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; 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, 1000W max. ; 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
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; 2*PCIe5.0X16(X8),GPU<450W<300mm 2*PCIeX16(4.0X4+3.0X4),AI card<75W(150W)<300mm

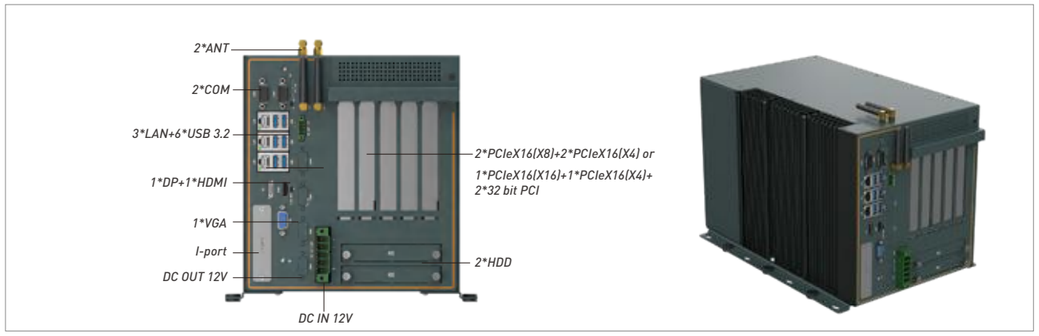
Mechanical

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	245*376.8*254.8mm(W*H*D)
Net weight	TBD

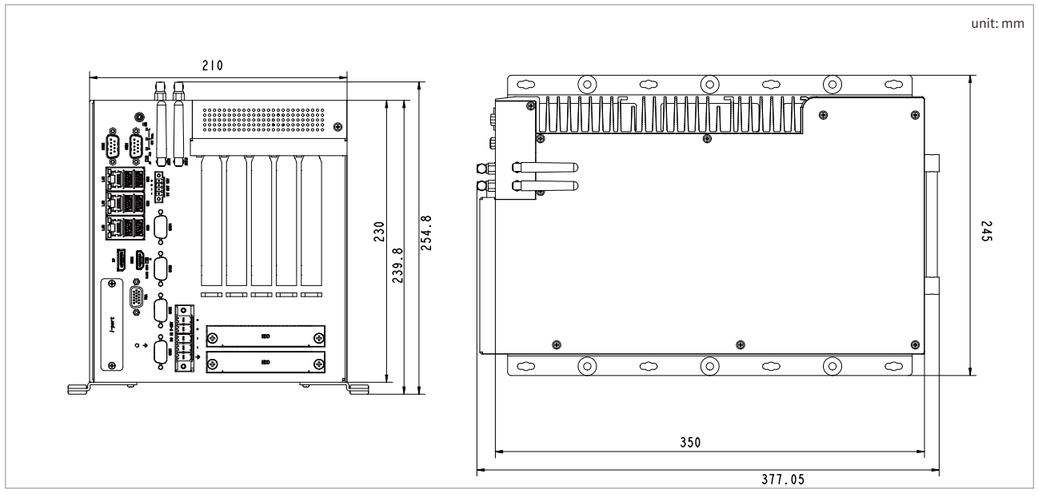
Environmental

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); 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	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*HDMI, 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	**Default:ECX-254** 2*PCIeX16(X8)+2*PCIeX16(X4) **Optional:ECX-275** 1*PCIeX16(X16)+1*PCIeX16(X4) 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; 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; 1*M.2 2230 E-key(PCIeX1/USB), WIFI;
Power Requirement	DC 12~36V; TDP: TBD

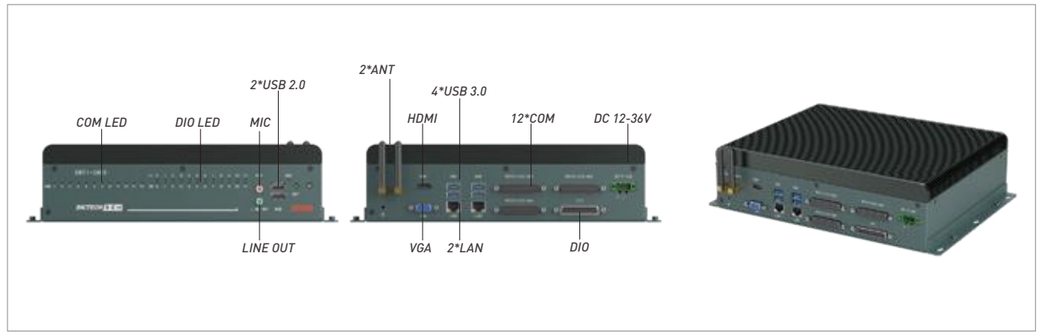
Mechanical

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

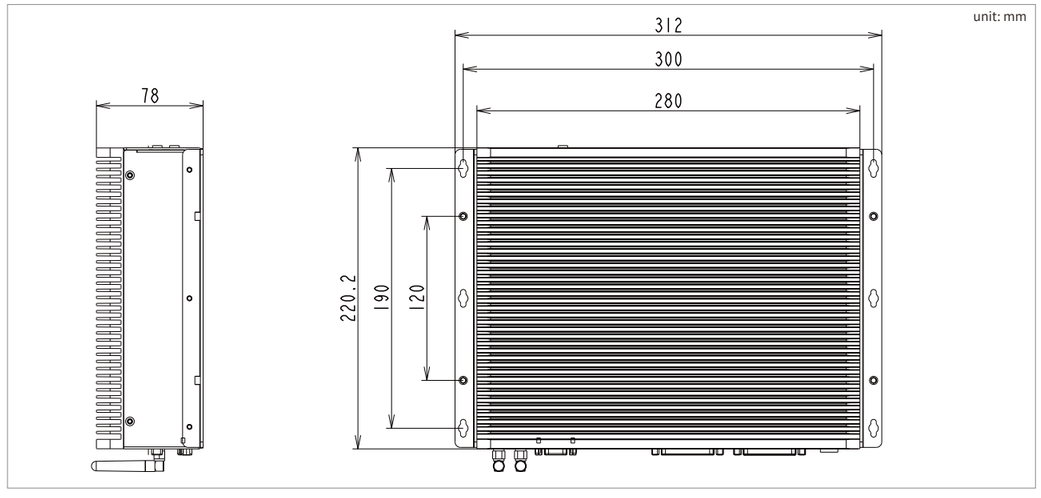
Environmental

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); 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-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； HDMI:1920*1080@60Hz **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

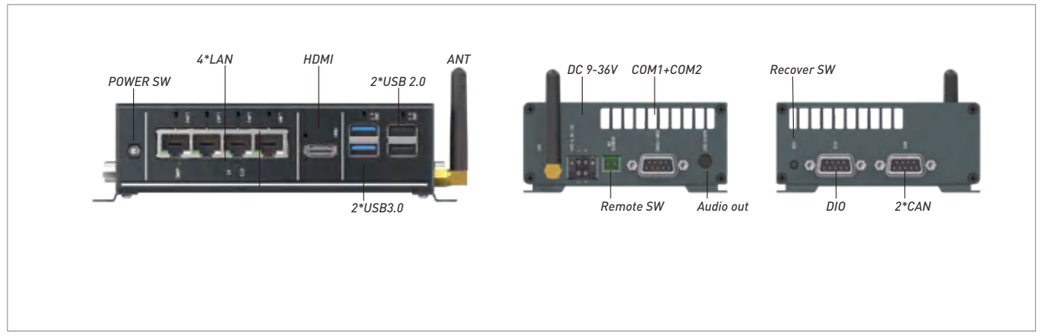
Mechanical

	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	

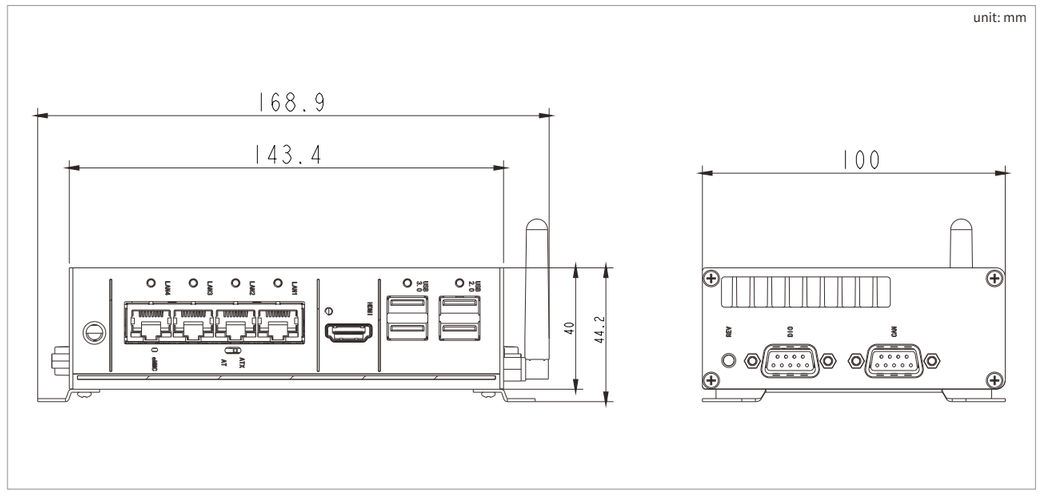
Environmental

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; 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, 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; TBD

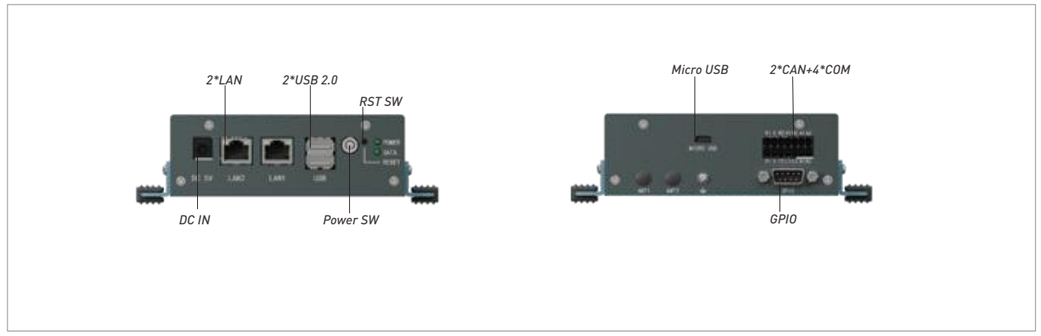
Mechanical

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

Environmental

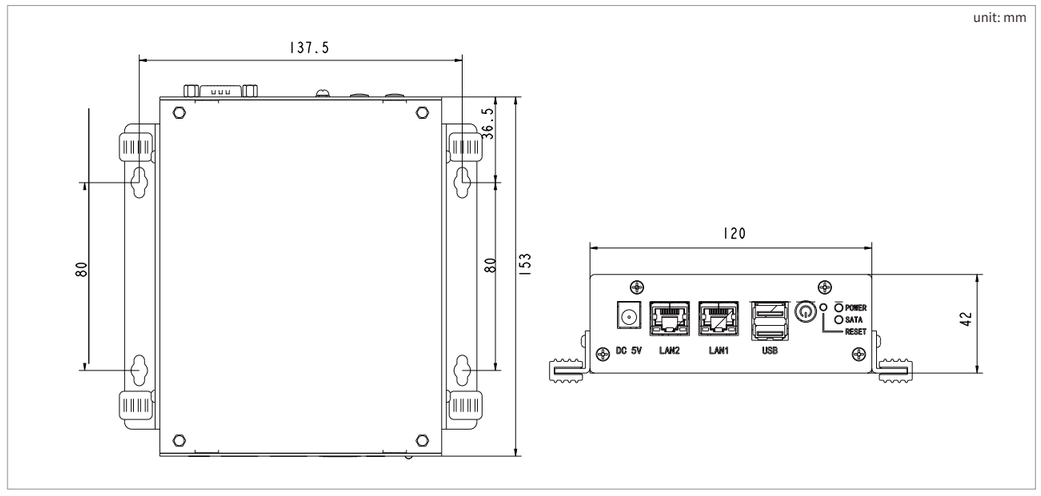
Operating Temp	-10°C～60°C , SSD, with air flow
Storage temp.	- 40°C~85°C
StorageHumidity	10~95%@40°C, No-condensation
Vibration	5 grms/5~500Hz/random/during operation(SSD); 1 grms/5~500Hz/random/during operation(HDD)
Shock	50g peak acceleration(11ms duration)(SSD); 20g peak acceleration(11ms duration)(HDD)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

I/O View



Dimensions

unit: mm



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