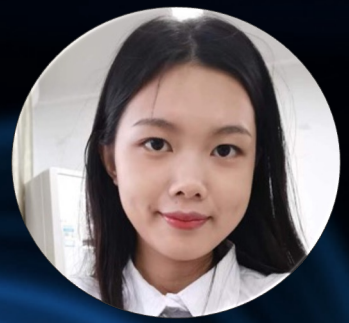
JHCTECH IoT Computer Connecting the Dots

Speakers



Reese Li
Customer Solution Manager
JHCTECH Shenzhen Office

NEW PRODUCT LAUNCH

LIVE

New Product Launch Announcement	
Time	**Agenda**
16:00 ~ 16:05	**Opening** Chi Wang, Marketing Manager, Shenzhen Office
16:05 ~ 16:20	**Introduction of New Product** Edge Controllers Based on NVIDIA Jetson Platform **BRAV-7120/7121/7134** Reese Li, Customer Solution Manager, Shenzhen Office
16:20 ~ 16:35	**Introduction of New Product** Specialized Industrial Controllers for Smart Industries **KMDA-3303/3305** Reese Li, Customer Solution Manager, Shenzhen Office
16:35~ 16:40	**Q&A**

JHCTECH 集和诚

NVIDIA Partner

BRAV-7120/7121/7134
Edge Computing MEC

Based on NVIDIA Jetson AGX Orin/Jetson Orin Nano/Orin NX Platform

Artificial Intelligence (AI)

Machine Vision

Autonomous Driving

Smart Transportation

Smart Logistics

JHCTECH

CONTENTS

Product Roadmap

BRAV-7201

BRAV-7302

BRAV-7501

BRAV-7520/7521 (wp)

BRAV-7601

BRAV-7220

BRAV-7720/7721 (wp)

Intel® Skylake-U/ Kabylake-U

Intel® Skylake-S/ Kabylake-S

Intel® Coffee Lake

Intel® Comet lake

Intel® Tiger lake

Alder lake-S/ Raptor lake-S/ Raptor lake-S Refresh

Supports various interfaces and power consumption levels of graphics cards on the market.

BRAV-7120

BRAV-7121

BRAV-7134

BRAV-7131

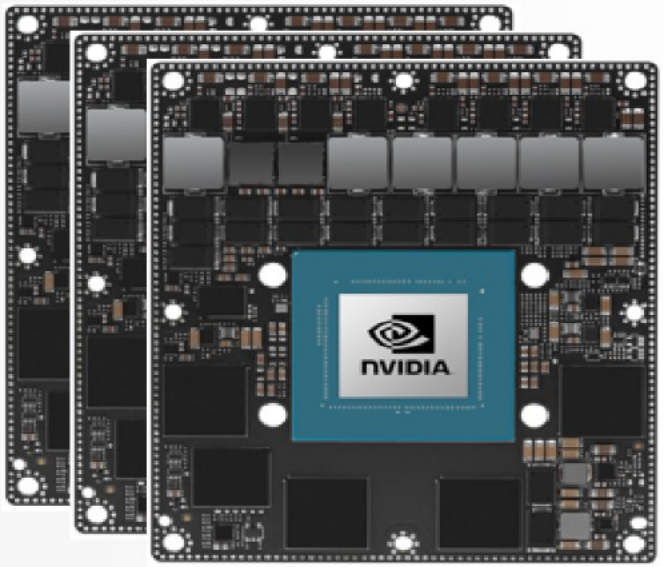
ARM Cortex®-A78AE

Jetpack5.1.2 (R35.4.1)

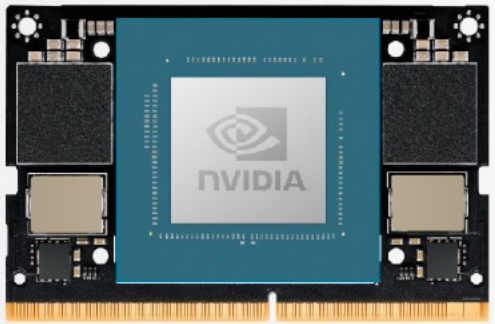
NVIDIA

NVIDIA Jetson Orin

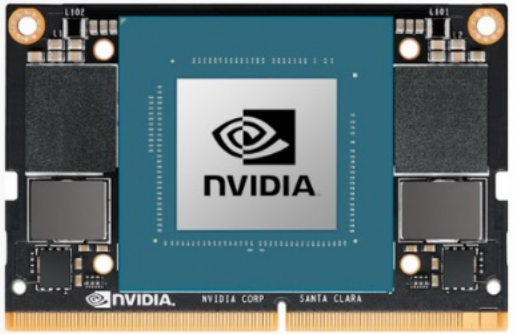
Stronger AI Performance



NVIDIA Jetson AGX Orin



NVIDIA Jetson Orin Nano



NVIDIA Jetson Orin NX

JHCTECH's Product Layout for the NVIDIA Jetson Orin Platform.

BRAV-7134

BRAV-7131

BRAV-7121

BRAV-7120

NVIDIA Jetson AGX Orin (200/275 TOPS)

NVIDIA Jetson Orin NX (70/100 TOPS)

NVIDIA Jetson Orin Nano (20/70 TOPS)

BRAV-7120/7121

Edge Computing MEC

Based on the NVIDIA Jetson Orin Nano/Orin NX platform

Artificial Intelligence (AI)

Machine Vision

Autonomous Driving

Smart Transportation

Smart Logistics

Product Features

BRAV-7120

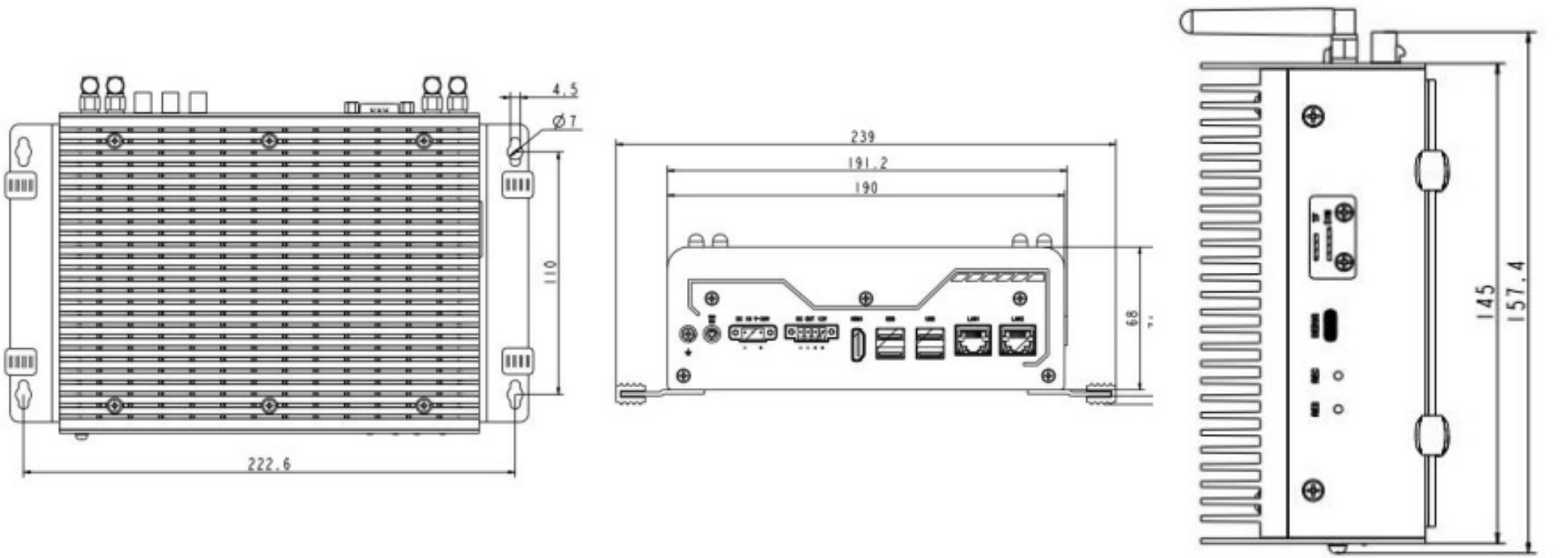
- Based on NVIDIA Jetson Orin Nano, with 20/40 TOPS computing power
- 6Cores ARM Cortex-A78AE v8.2 64-bit CPU
- Ampere GPU (512/1024 cores), equipped with 16/32 Tensor cores
- 4/8G LPDDR5, 1* M.2 2280 M-Key NVMe, 1TF
- 2* LAN, 1*HDMI
- 1080p30 encoding supported by 1-2 CPU cores
- 1x 4K60 | 2x 4K30 | 11x 1080p30 H.265 decoding
- 2*USB3.2, 2*USB2.0, 1*Type-C, 2*COM (25-pin terminals), 2*CAN, 8-bit DIO, 1*Line-out; 4*GMSL optional
- 1*M.2 3052 B-Key + SIM; 1*Mini PCIe
- DC-IN 9~36V wide voltage power supply, DC-OUT 12V.

BRAV-7121

- Based on NVIDIA Jetson Orin NX, delivering 70/100 TOPS computing power
- 6/8Cores ARM Cortex-A78AE v8.2 64-bit CPU
- Ampere GPU (1024 cores), equipped with 32 Tensor cores
- 1/2*DLA and 1*PVA
- 8/16G LPDDR5, 1M.2 2280 M-Key NVMe, 1TF
  2*LAN, 1*HDMI
- 1x4k60 | 3x4k30 | 12x1080p30 H.265 encoding
- 1x8k30 | 4x4k30 | 18x1080p30 H.265 decoding
- 2*USB 3.2, 2*USB 2.0, 1*Type-C, 2*COM, 2*CAN, 8-bit DIO, 1*Line-out, 4*GMSL (optional)
- 1*M.2 3052 B-Key + SIM; 1*MiniPCIe
- DC-IN 9~36V wide voltage input, DC-OUT 12V

BRAV-7120/7121 Dimension

单位：mm



Including mounting bracket (L*W*H)：239*157*68 mm

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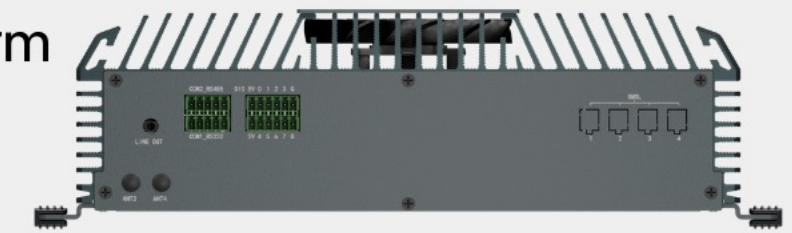
BRAV-7120/7121 Product Highlights

1. High Energy Efficiency
2. DLA and PVA share computational load (NX)
3. Multiple storage, multiple networks, multiple video support
4. GMSL optional POE optional Dual CAN channels
5. Excellent hardware and software compatibility
6. Strong encoding and decoding capability
7. Built-in antenna mounting port
8. Fanless, wide voltage design

BRAV-7134

Edge Computing MEC

Based on the NVIDIA Jetson AGX Orin Platform



Artificial Intelligence (AI)

Machine Vision

Autonomous Driving

Smart Transportation

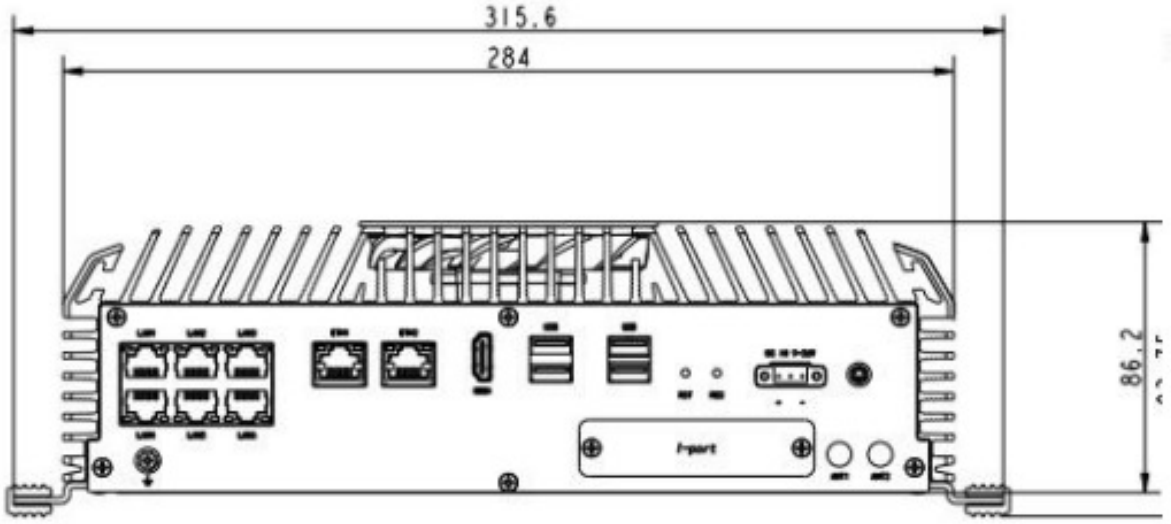
Smart Logistics

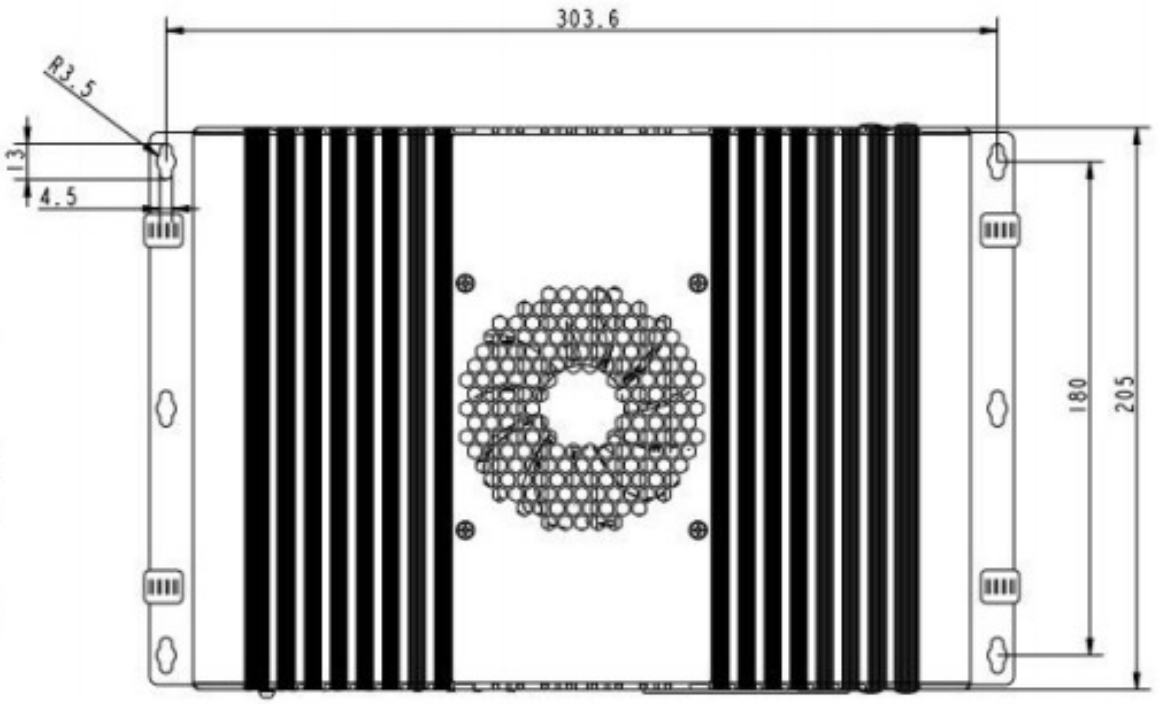
BRAV-7134
Product Highlights

- NVIDIA Jetson AGX Orin 32/64G, 200/275 TOPS
- 8/12 cores ARM Cortex-A78AE CPU
- Ampere GPU (1792/2048 cores) with 56/64 Tensor Cores; supports DLA and PVA
- Onboard 32/64G 256-bit LPDDR5 memory and 64GB eMMC
- Supports 2*M.2 M-Key NVME, 2 independent Gigabit Ethernet ports, 6 switch Gigabit Ethernet ports, and 4 optional GMSL
- Supports 1 (2) x 4K60 | 3 (4) x 4K30 | 12 (16) x 1080p30 H.265 encoding (the numbers in parentheses indicate the number of channels supported by 64G)
- Supports 1 (1) x 8K30 | 4 (6) x 4K30 | 18 (24) x 1080p30 H.265 decoding (the numbers in parentheses indicate the number of channels supported by 64G)
- 1HDMI, 1Line-out, 2USB 3.2, 2USB 2.0, 1built-in USB 2.0, 2COM, 8-bit DIO
- DC-IN 9~36V wide voltage power supply, wide temperature design (supports a maximum range of -30 to 80°C)

BRAV-7134 Dimension

单位：mm

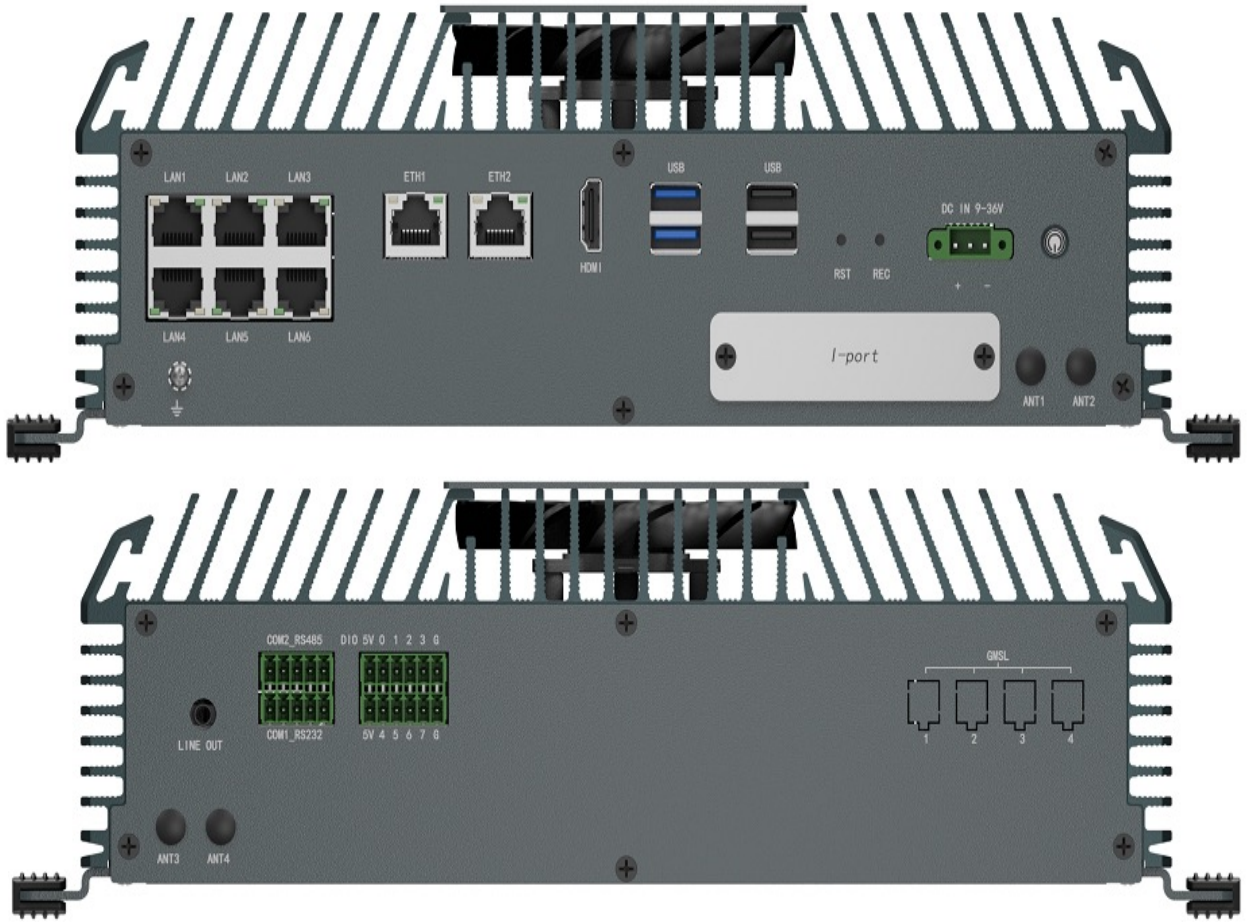




Including mounting bracket (L*W*H)：316*205*86 mm

JHCTECH

BRAV-7134
Product Highlights



1. Higher computing power and energy efficiency ratio
2. Supports two M.2 2280 slots
3. More efficient heat dissipation design
4. GMSL optional; 6*Gigabit Ethernet ports optional
5. Hardware expandability; software compatibility
6. Strong encoding and decoding capability
7. Built-in antenna mounting port
8. Wide voltage and wide temperature design (supports a maximum range of -30 to 80°C)

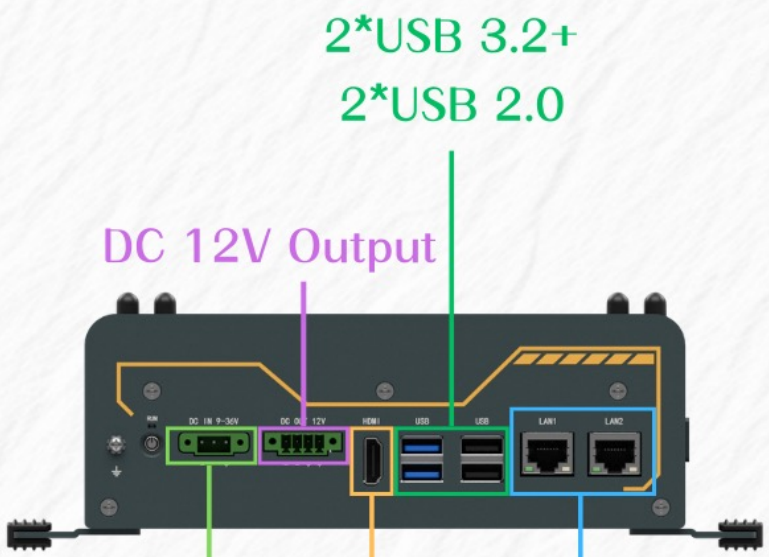
Higher computing power & energy efficiency ratio

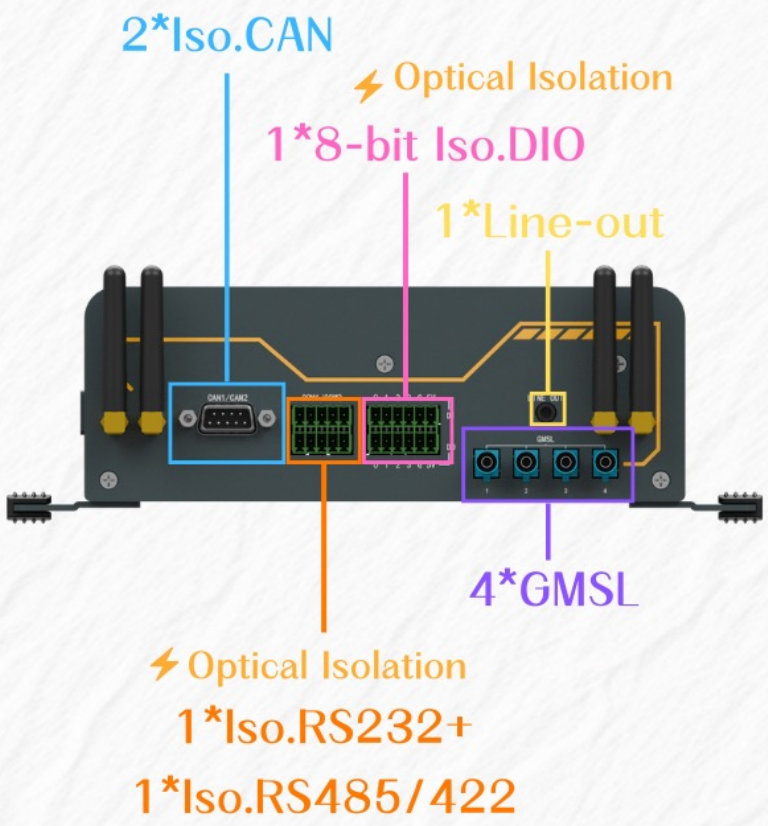
JHCTECH Product Image

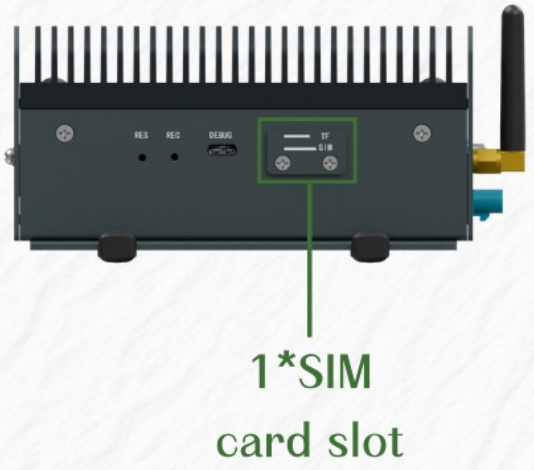
Model	BRAV-7120		BRAV-7121		BRAV-7134	
Jetson Orin	Jetson Orin Nano 4GB	Jetson Orin Nano 8GB	Jetson Orin NX 8GB	Jetson Orin NX 16GB	Jetson AGX Orin 32GB	Jetson AGX Orin 64GB
AI Computing Power	20 TOPS	40 TOPS	70 TOPS	100 TOPS	200 TOPS	275 TOPS
GPU	Equipped with 16 Tensor Cores and a 512-core NVIDIA Ampere architecture GPU	Equipped with 32 Tensor Cores and a 1024-core NVIDIA Ampere architecture GPU	Equipped with 32 Tensor Cores and a 1024-core NVIDIA Ampere architecture GPU		Equipped with 56 Tensor Cores and a 1792-core NVIDIA Ampere architecture GPU	Equipped with 64 Tensor Cores and a 2048-core NVIDIA Ampere architecture GPU
Maximum GPU Frequency	625 MHz		765 MHz	918 MHz	930 MHz	1.3 GHz

Rich IO Interfaces

BRAV-7120/7121

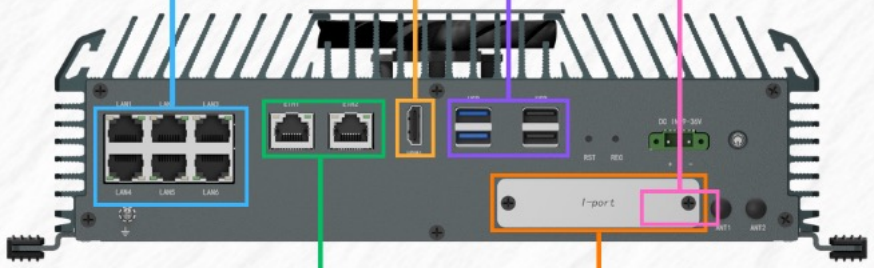






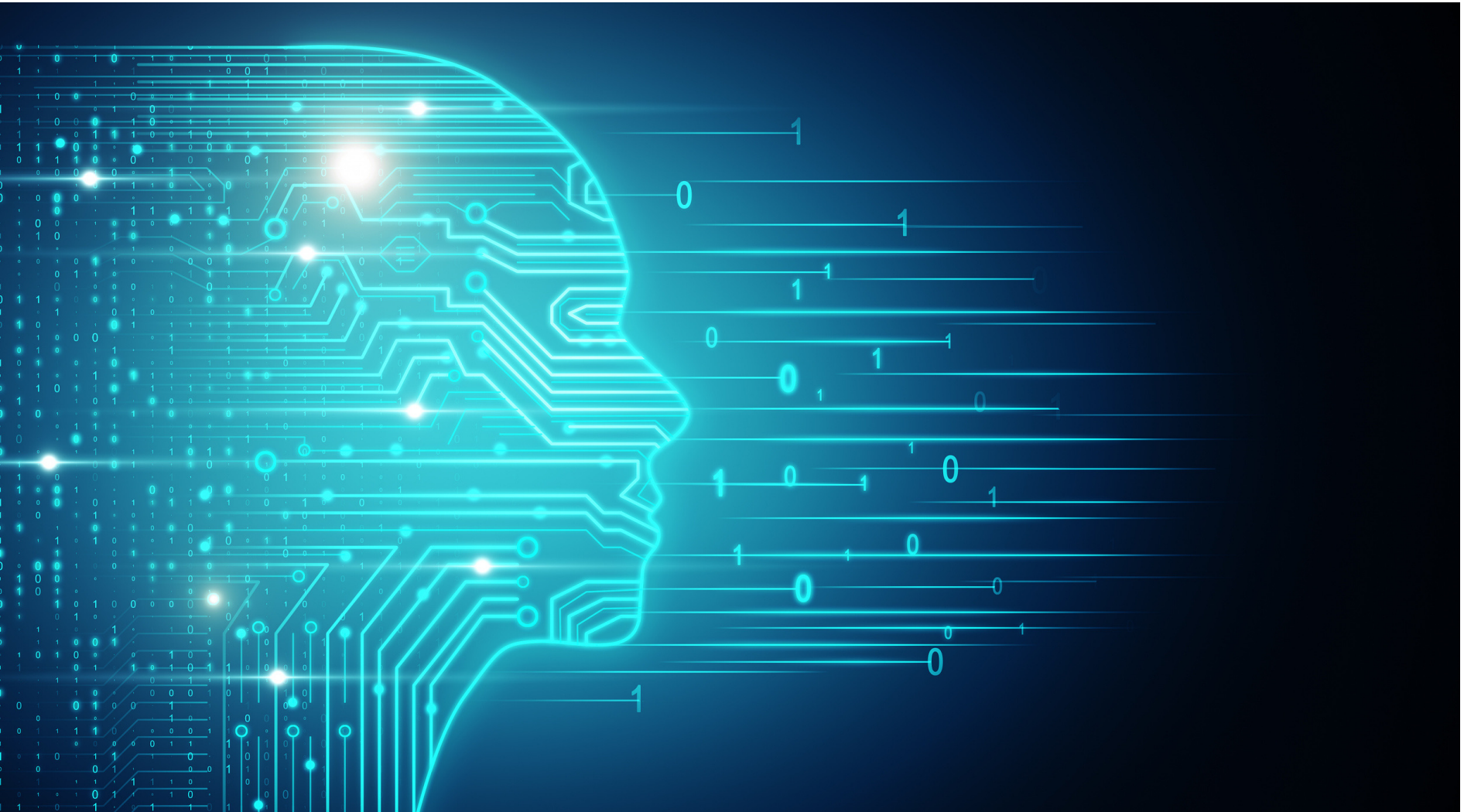
Rich IO Interfaces

BRAV-7134



High Computing Power DLA and PVA

BRAV-7121, equipped with NVIDIA Jetson Orin NX, and the BRAV-7134, equipped with NVIDIA Jetson AGX Orin, support DLA and PVA to distribute the computing load.

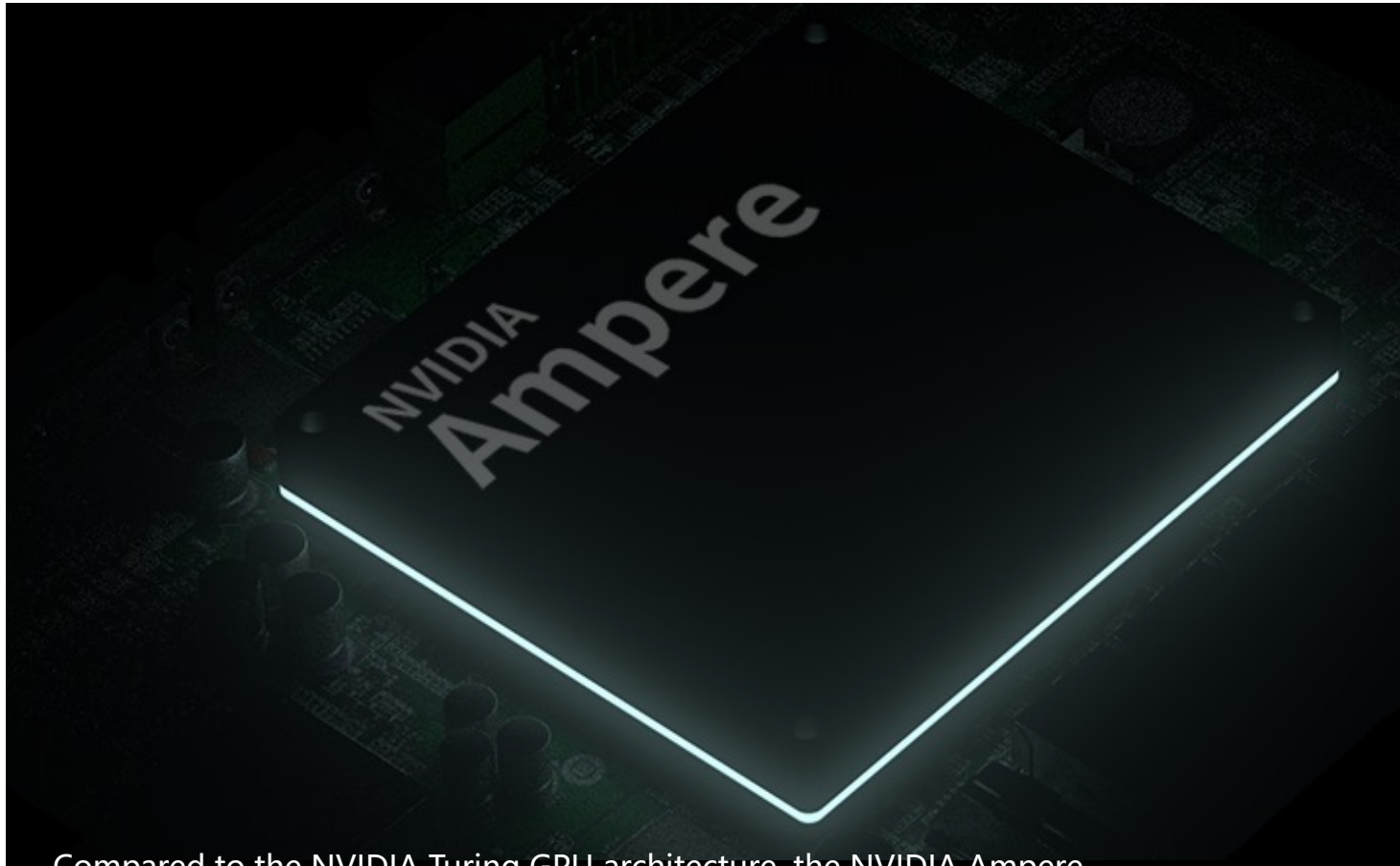


Strong Encoding & Decoding abilities

BRAV-7120 supports
1080p30 encoding supported by 1-2 CPU cores
1x4k60 | 2x4k30 | 11x1080p30 H.265 decoding

BRAV-7121 supports:
1x4k60 | 3x4k30 | 12x1080p30 H.265 encoding
1x8k30 | 4x4k30 | 18x1080p30 H.265 decoding

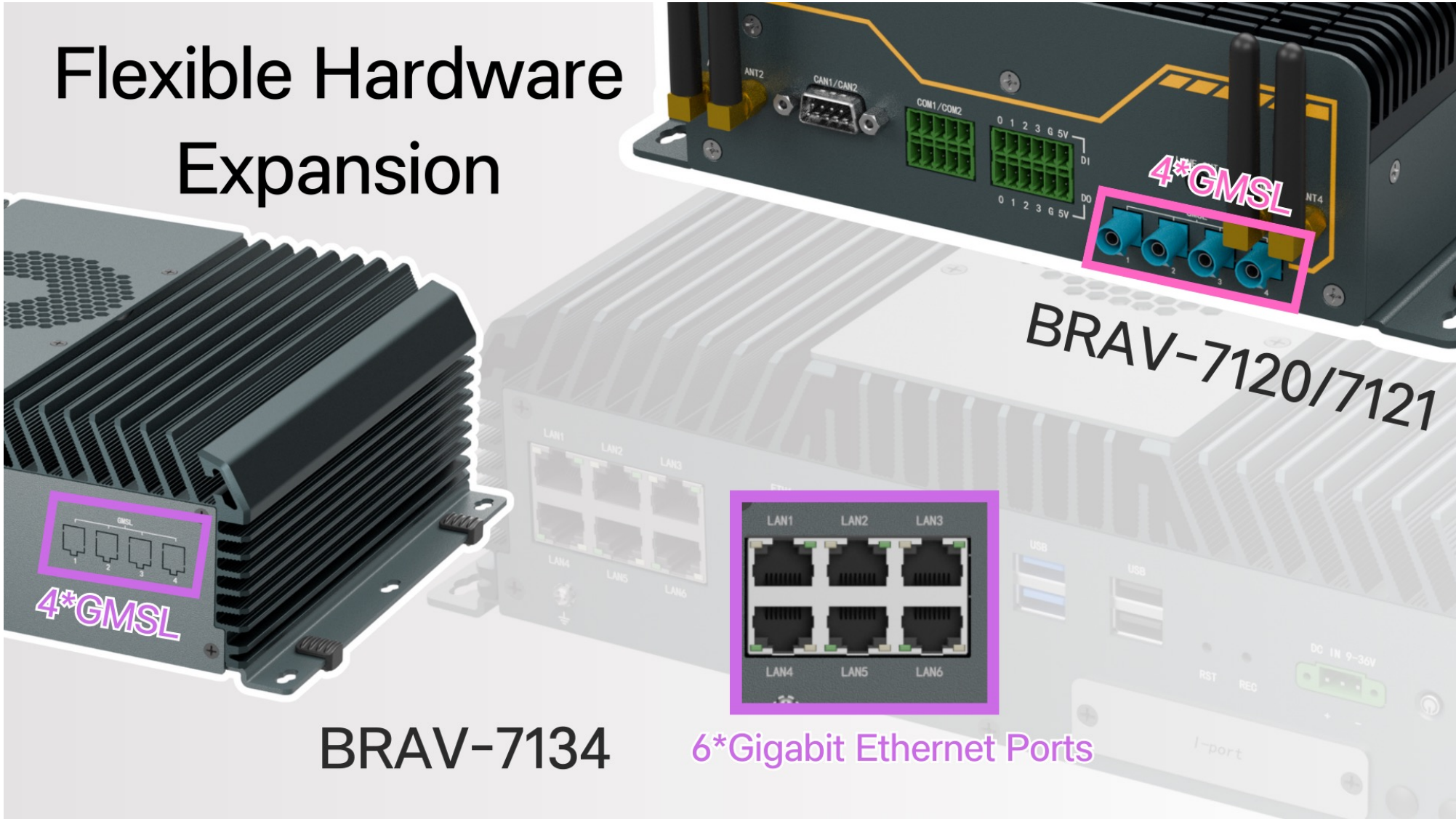
BRAV-7134 supports:
1(2)x4k60 | 3(4)x4k30 | 12(16)x1080p30 H.265 encoding (numbers in parentheses indicate support with 64G)
1(1)x8k30 | 4(6)x4k30 | 18(24)x1080p30 H.265 decoding (numbers in parentheses indicate support with 64G)



Compared to the NVIDIA Turing GPU architecture, the NVIDIA Ampere architecture offers a 1.7-times speed improvement in traditional graphics workloads and a 2-times speed improvement in ray tracing performance.

*Data source: NVIDIA official.

Hardware expandability; software compatibility



BRAV-7134

-30°C

BRAV-7134

80°C

Efficient Cooling

Wide Temperature Design

-20°C

BRAV-7120/7121

60°C

BRAV-7120/7121

Market Direction

Vehicle-to-Infrastructure Cooperation (V2I)

Event Detection

Intersection Monitoring

Situations with Requirements for
Power Consumption, High Temperature, Reliability, and Installation Space.

Low-Speed Autonomous Driving

AGV/AMR

Generative AI

eg: factory equipment maintenance guide,
defect detection,
pre-diagnosis robots.

Ordering Info

BRAV-7120/7121

Model	Module	Description
BRAV-7120-S001	Orin Nano 4GB Memory	**Standard Configuration:** 2*RJ45(POE optional),2*Iso.CAN，2*CSI(2x4lane)，1xHDMI2.0, 1*Iso.RS485/422，1*Iso.RS232 2*USB3.2+2*USB2.0+1*Debug（Type-c),1*Iso.8bit DIO，1*Line-out，1*Micro SD，4*ANT；1*Mini PCIe，1*M.2 3052 B-Key+SIM（4/5G），1*M.2 280 M-Key；DC-IN 9~36V, DC-OUT 12V **Optional**: 4*GMSL expansion cards
BRAV-7120-S002	Orin Nano 8GB Memory	
BRAV-7121-S001	Orin NX 8GB Memory	
BRAV-7121-S002	Orin NX 16GB Memory	
PA-120DC19	AC/DC Power Adapter，DC19V/6.32A,120W	
PA-220DC24	AC/DC Power Adapter，DC24V/9.17A, 220W（equipped when using DC-OUT 12V）	

Ordering Info

BRAV-7134

Model	Module	Description
BRAV-7134-S001	AGX Orin 32GB memory, 64GB eMMC	**Standard Configuration:** 1*HDMI and 1*Audio Line-out, 2*Independent Gigabit Ethernet, 2*USB3.2, 2*USB2.0, 1*Internal USB2.0, 2*COM, 8-bit DIO, 2*M.2 M-Key, DC-IN 9~36V **Optional**: ECB-309 4-channel GMSL expansion card, ECB-3010 6-port Gigabit Ethernet expansion card
BRAV-7134-S002	AGX Orin 64GB memory, 64GB eMMC	
PA-120DC19	AC/DC Power Adapter, DC19V/6.32A, 120W	

New Product Progress

Prototype Testing Time

Mid-October 2024

Small Batch Production Time

Earliest by Late November 2024

JHCTECH

Smart Industrial Dedicated Controller

Smart Warehousing

Industrial Automation Production Line

AGV/AMR

KMDA-3305

KMDA-3303

JHCTECH

KMDA-3303/3305

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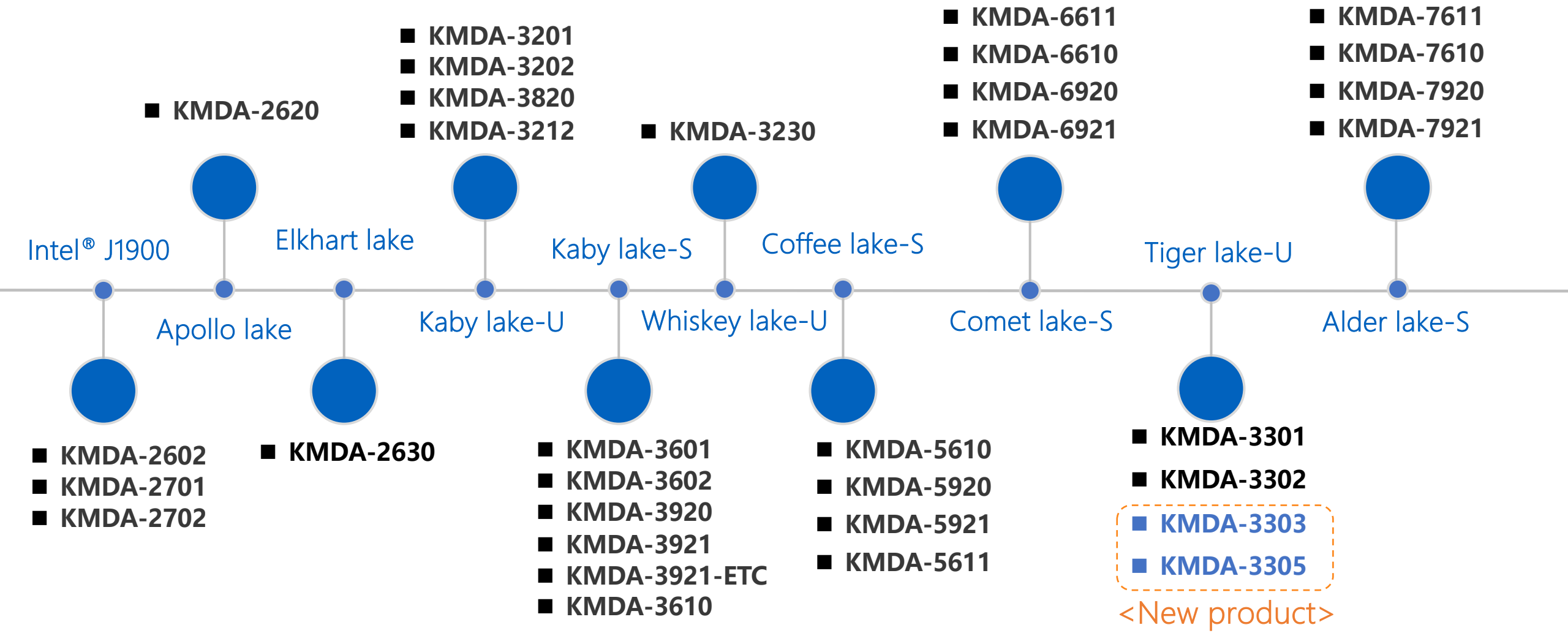
Product Roadmap

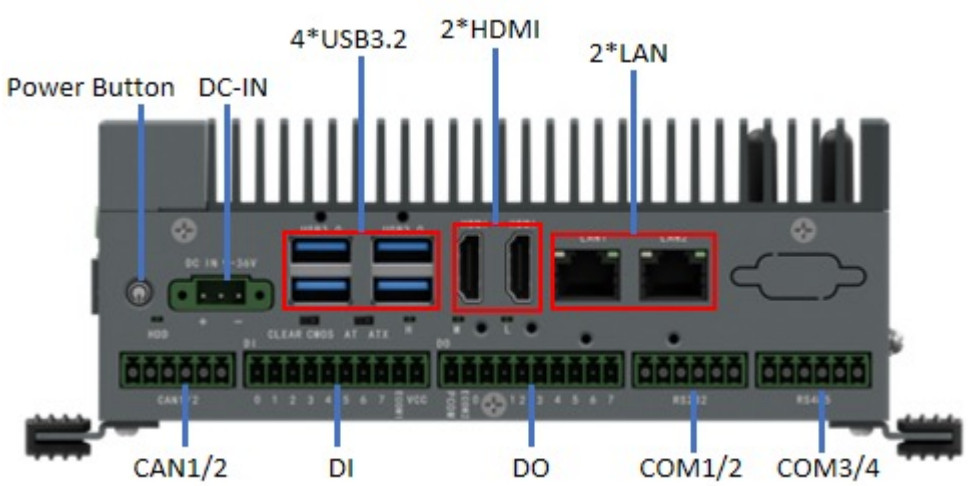


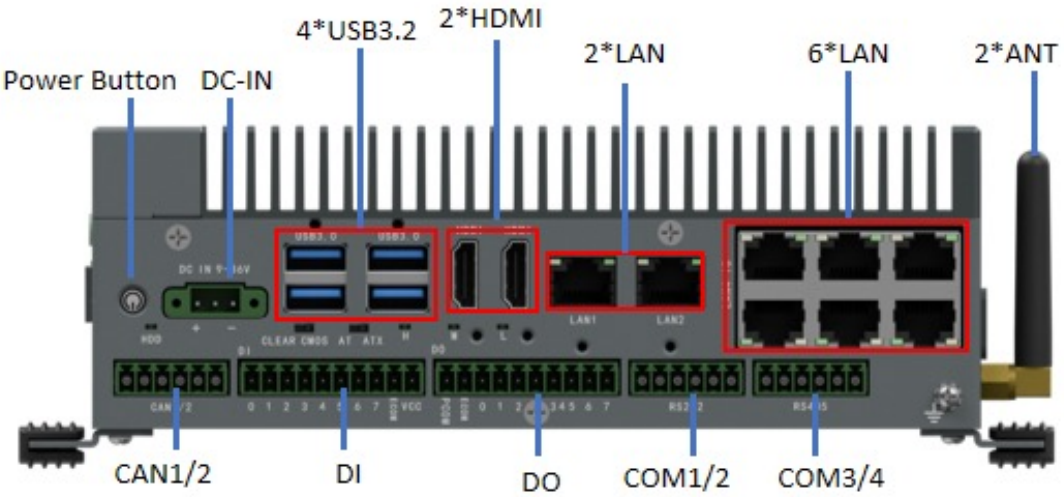
Product Features

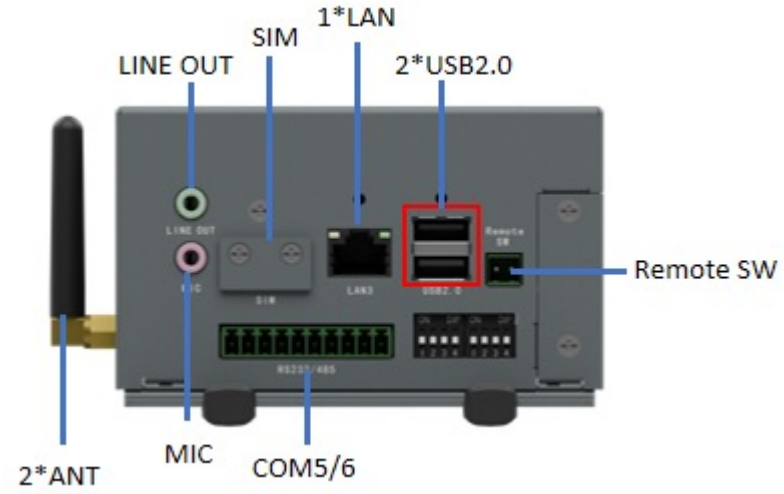
Specifications

System	KMDA-3303-S001/S002/S003	KMDA-3305-S001/S002/S003
CPU	Intel® Tiger lake U Soc CPU (core i3-1115G4/i5-1135G7/i7-1165G7)，TDP 12W/15W/28W	
RAM	1*DDR4 SO-DIMM slot, supports up to 3200MHz, max 32GB	
Display	Intel UHD Graphics or Intel Iris® Xᵉ Graphics, DirectX12.1, OpenGL 4.6, and OpenCL 3.0, HDMI max resolution 4096x2304@60Hz	
LAN	3*Intel I210AT, 10/100/1000Mbps adaptive, supports WOL (Wake on LAN) remote wake-up	3* Intel I210AT + 6* Gigabit Ethernet ports, 10/100/1000Mbps adaptive, supports WOL remote wake-up
I/O	2*HDMI; 2*CAN; Audio out + Mic; 4*USB3.2 (TypeA gen2.0) , supporting up to 10.0Gbps transfer rate，2*USB2.0 (TypeA) 6*COM（COM5/6: 2*RS232/485selectable via dip switch，COM1/2: 2*RS232，COM3/4: 2*RS485）； 1*16bit Iso. DIO (2个10Pin Phoenix terminal)；1*SIM card slot	
Storage	1*Full Size mSATA，up to SATA6.0 Gbps，auto-detection for PCIeX1 signal	
Expansion	1*Full Size Mini PCIe, with SIM card slot，PCIe X1+USB2.0 signal，supports 4G LTE、Bluetooth, and other wireless modules 1*M.2 2280 M-Key , supports NVMe storage	
Power Supply	DC 9-36V power supply, with short circuit, overvoltage, and overcurrent protection	

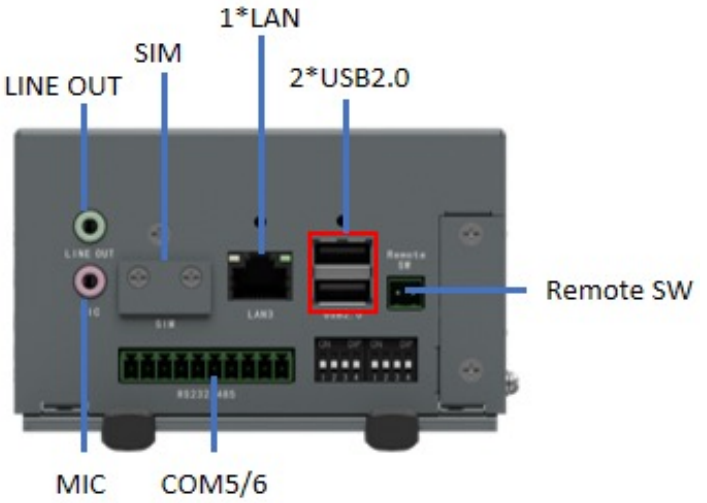
I/O Interface Overview





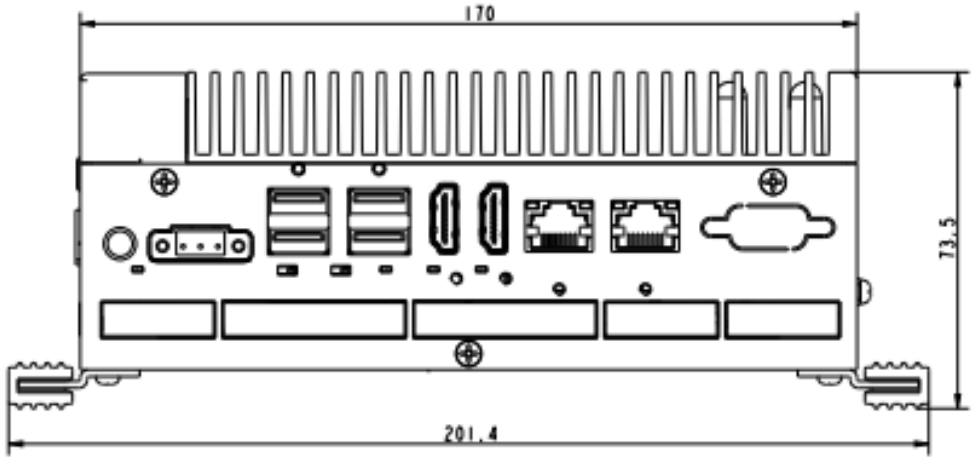


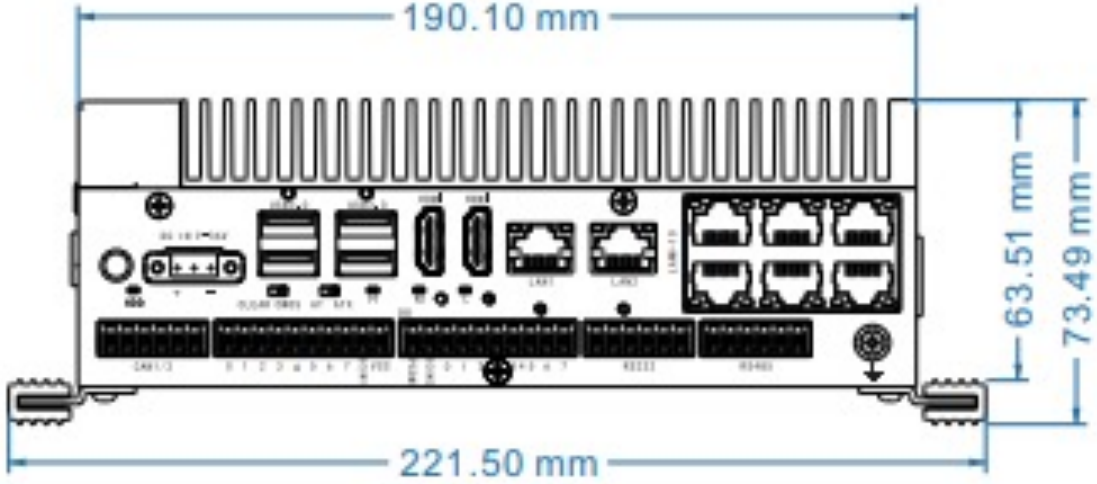
KMDA-3303

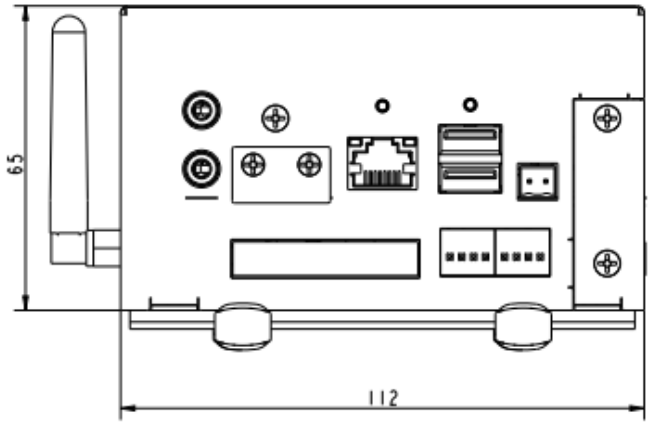


KMDA-3305

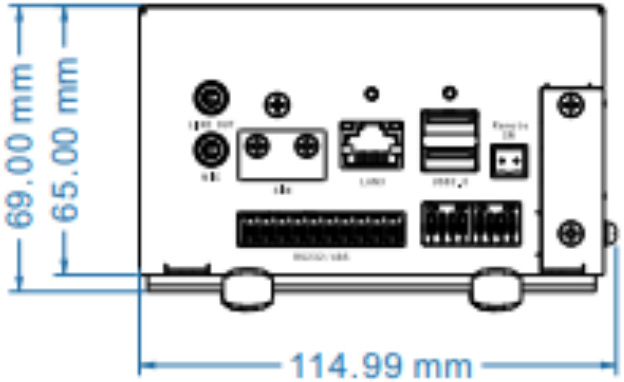
Installation Hole Dimensions Diagram







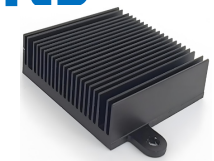
KMDA-3303



KMDA-3305

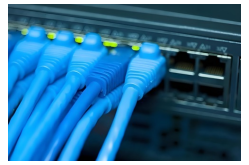
Product Highlights

Dimensions suitable for autonomous mobile transport devices and robots

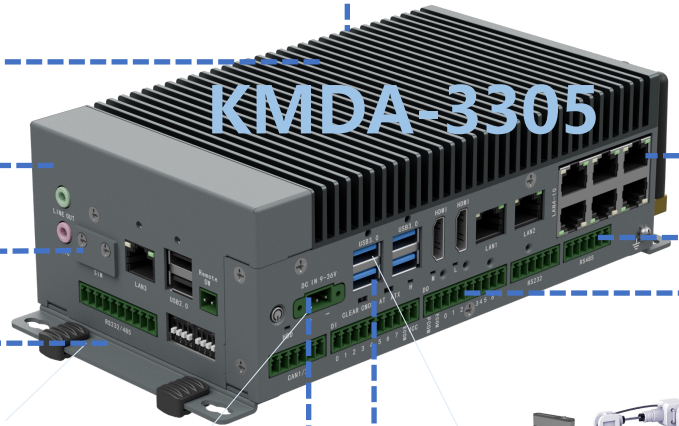


Fanless Design with excellent heat dissipation

High versatility and cost-efficiency within the same series, applicable to central control, edge control, and terminal devices

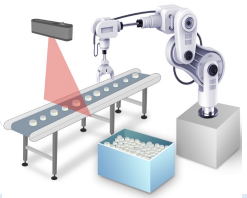


3 Gigabit Ethernet ports + 6 Gigabit Ethernet switch ports, suitable for devices with different bandwidth requirements

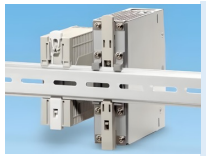


Equipped with multiple independent and optional CAN, RS485, and RS232 interfaces, fully meeting the needs of conventional industrial equipment and production lines

Supports wireless communication such as WiFi/5G/4G/GPRS



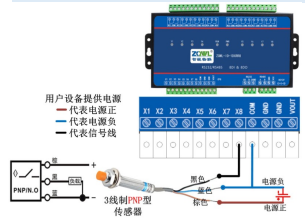
Multiple high-speed isolated DIOs, facilitating electrical deployment

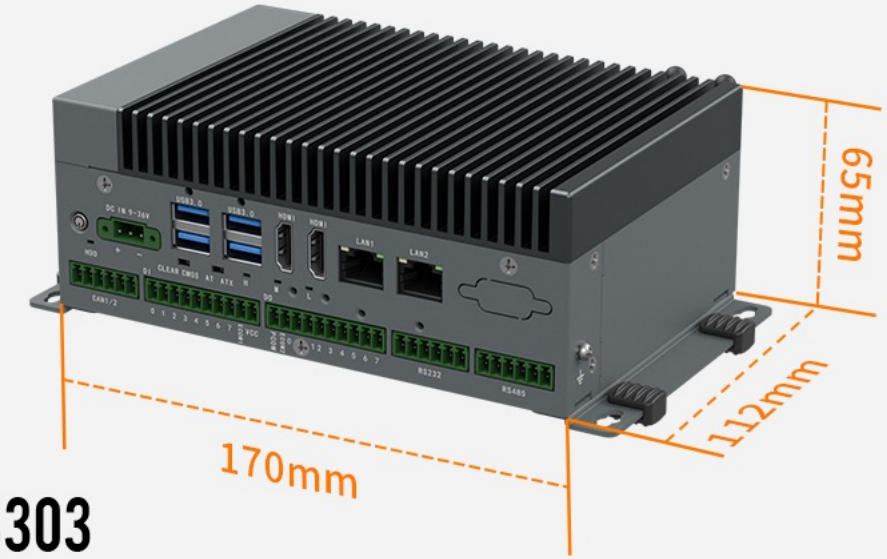


Multiple installation options: desktop or rail-mounted

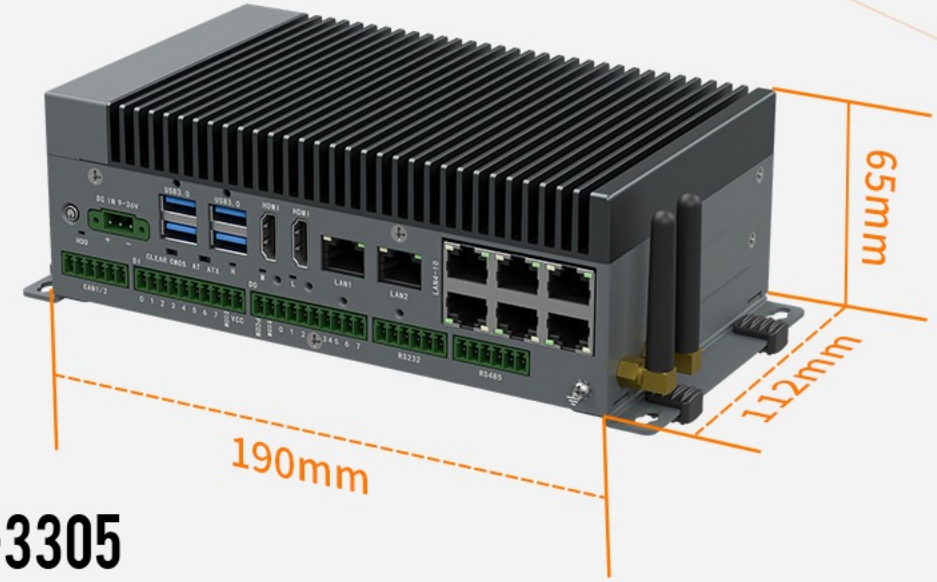
Wide voltage power supply 9~36V, with protection

4 USB3.0 or higher ports, meeting the needs of regular machine vision functions





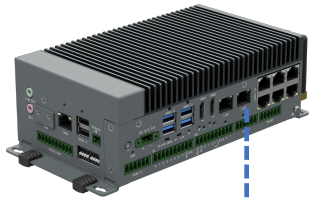
KMDA-3303



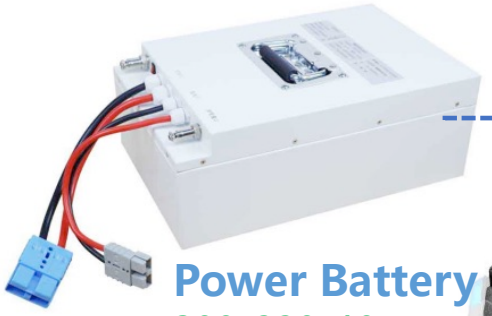
KMDA-3305

Compact Size

The structure adapts to the **dimensions and shape** suitable for mobile robots, with sizes comparable to major electrical components, supporting the structural design and layout of intelligent mobile transport devices like AGVs.



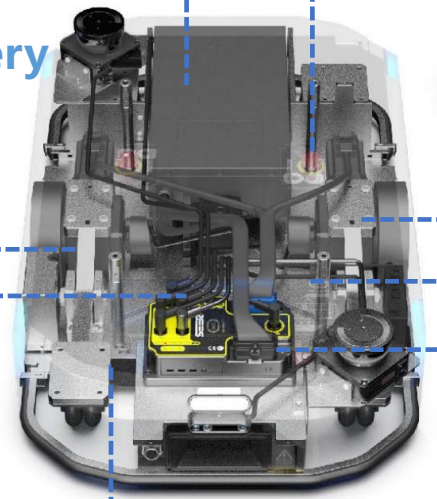
KMDA-3305
190*112*65



Power Battery
300*220*105

Switch
145*110*50

Servo Drive
175*105*31*2



AGV Body
1000*650*300

Safety PLC
125*110*100

Power Switch
175*105*35

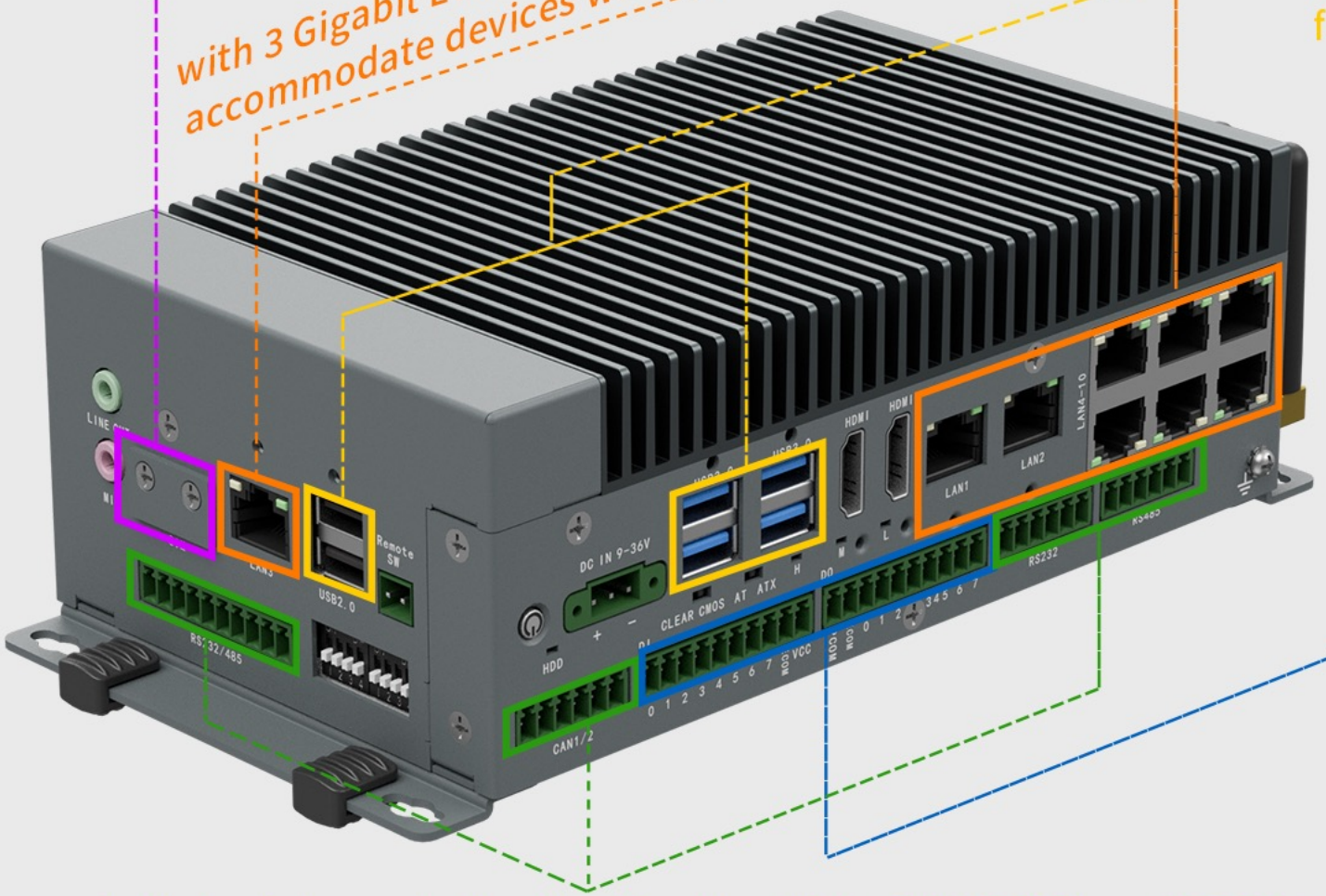
Chassis Controller
150*100 *35

Moxa
120*85*40

Supports wireless communication such as WIFI/5G/4G/GPRS

with 3 Gigabit Ethernet ports + 6 Gigabit switch ports to accommodate devices with different bandwidth requirements

Equipped with more than 4 USB 3.0 ports to meet the needs of standard machine vision functionality



Multiple high-speed isolated DIO channels for easy electrical deployment

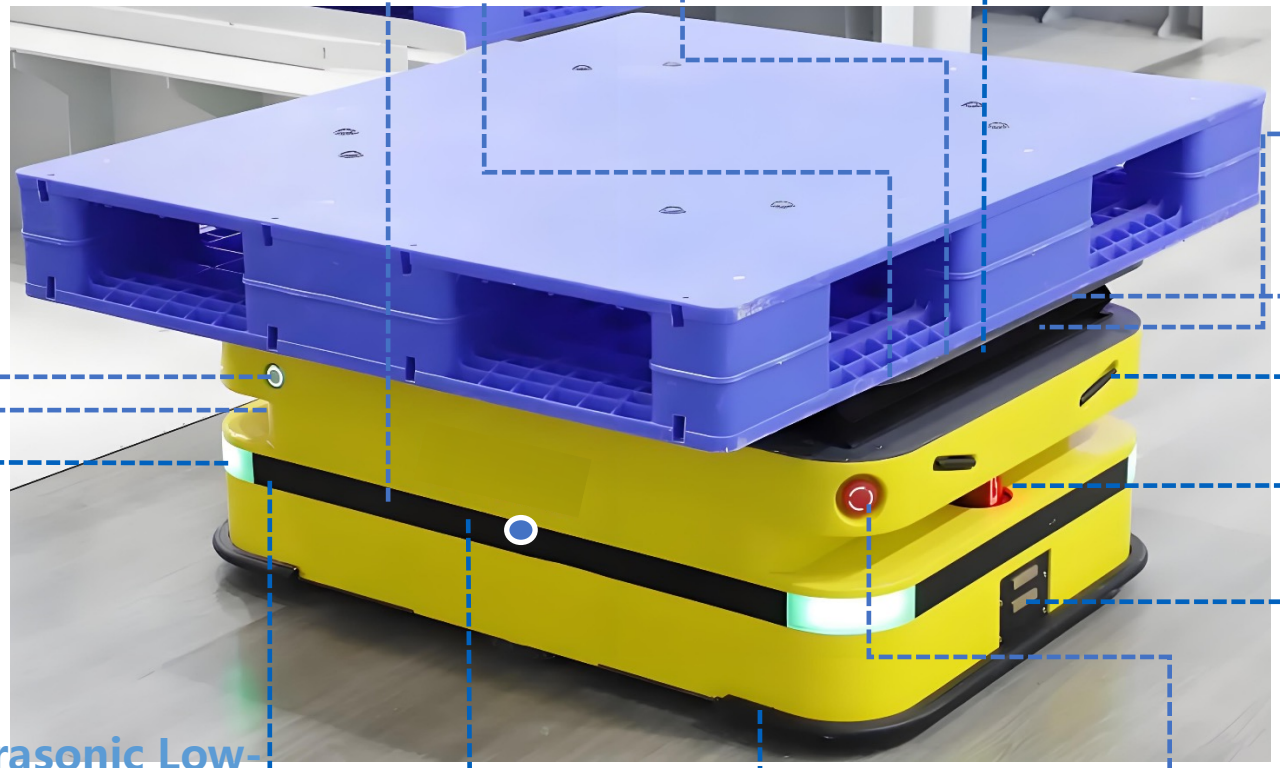
Rich I/O interfaces

Exemplified by the KMDA-3305

Includes independent and optional multiple CAN, RS485, and RS232 interfaces, fully meeting the requirements of conventional industrial equipment and production lines

Application Scenario 01: Unmanned Transport

Comprehensive Performance Functions Fully Meet Requirements



Side QR Code Scanning
Reset Camera USB 2.0
USB2.0

Upper-Level USB
USB3.0

Upper-Level Ethernet Port
Gigabit Ethernet Port

Cargo Inspection Optical Isolation I/O

Lifting Stroke Control Proximity Switch
GPIO

Function Button GPIO
GPIO

Lifting Mechanism
CAN Port

Speaker
Audio Port

Stereo Camera
USB3.0*2

LED Strip Control
RS485

LiDAR
Gigabit Ethernet*2

Automatic Charging
Isolated CAN Port

KMDA-3303/3305

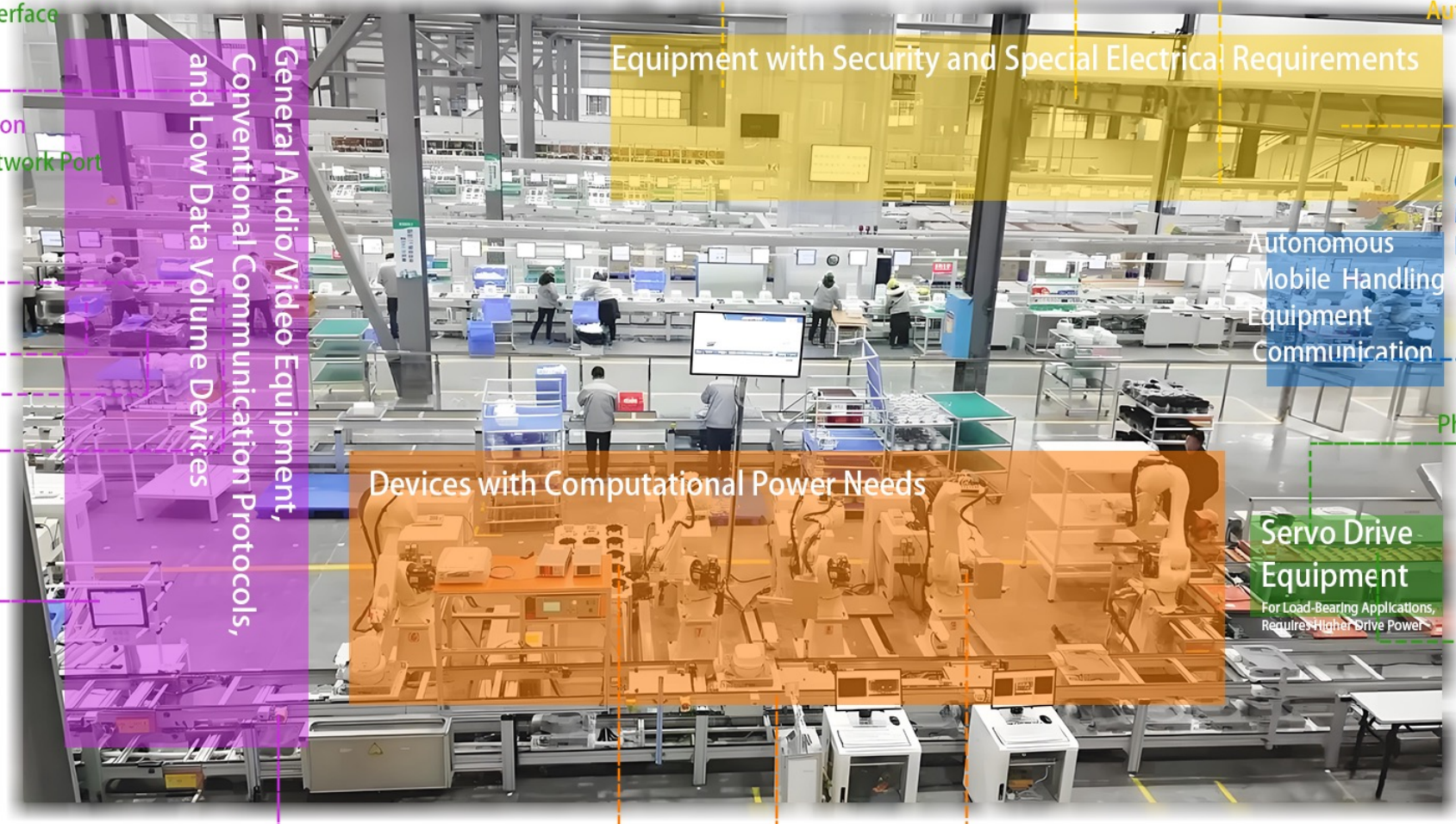
Ultrasonic Low-Profile Obstacle Avoidance
RS485

Debugging Port
Gigabit Ethernet Port

Chassis Motion Control
Isolated CAN Port

Emergency Stop Button
Isolated IO

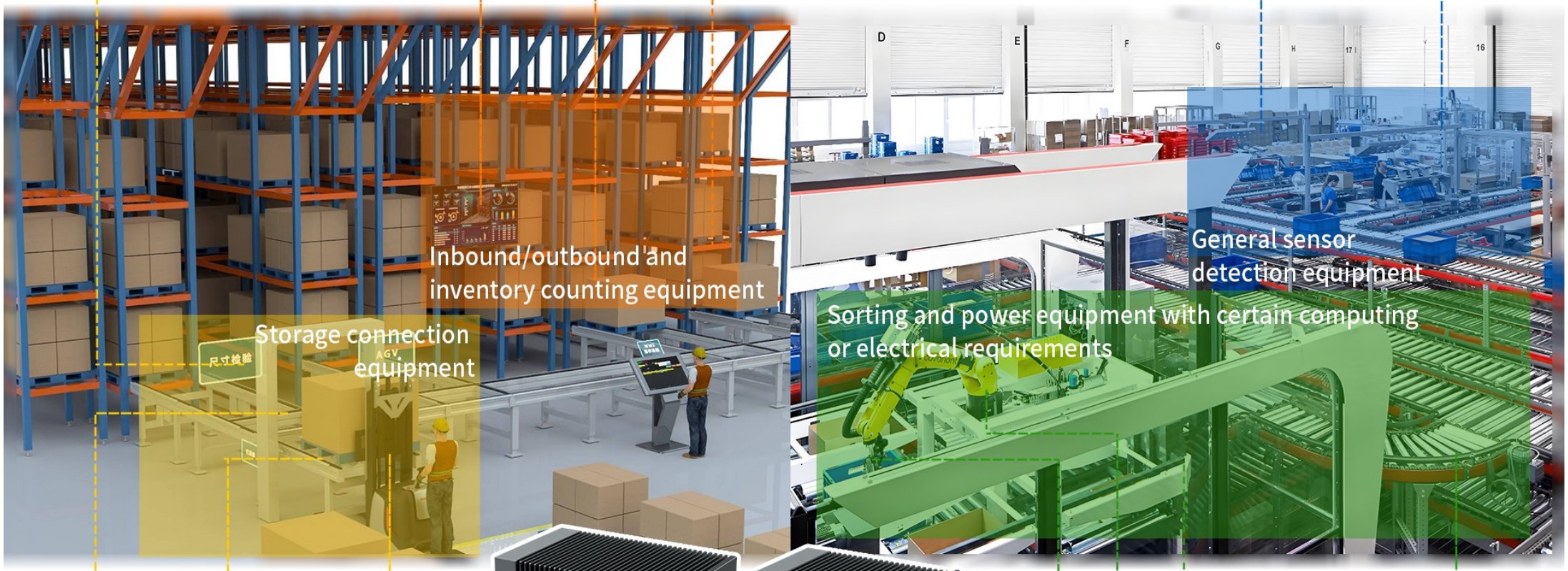
Application Scenario 02: Industrial Automation Production Line



KMDA-3303/3305

Rich Interfaces
Suitable for Industrial Automation Production Lines and Vision Inspection

Application Scenario 03: Smart Logistics and Warehousing



KMDA-3303/3305

-20°C

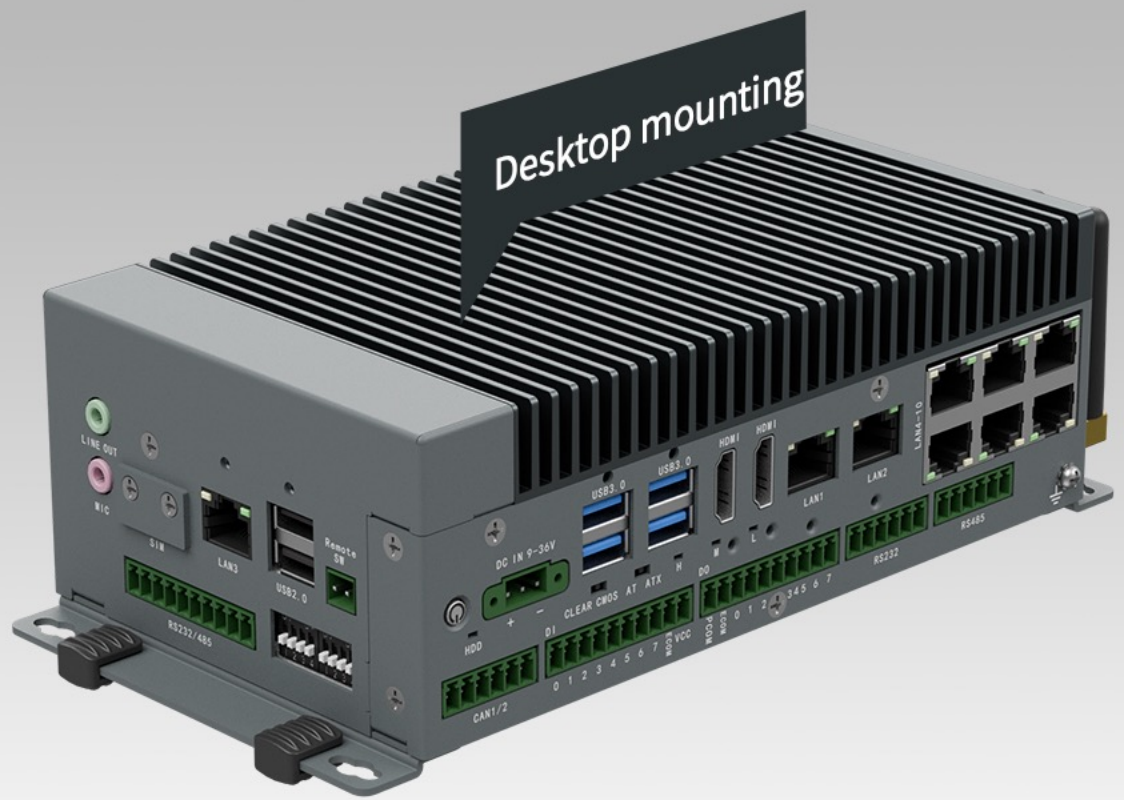
Operating Temperature

60°C

Operating Temperature

Fanless Design

Good Heat Dissipation Performance



Versatile installation

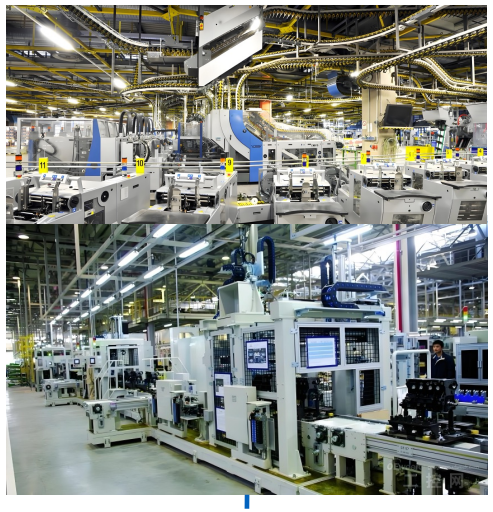
Market Direction

Unmanned Transport

- AGV/AMR
- Unmanned Forklift
- Unmanned Autonomous Vehicle
- Sweeping Robot

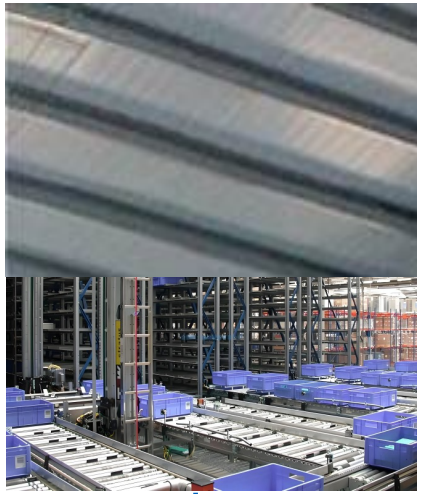
Industrial Automation Production Lines

- Roller Conveyor/Conveyor Line
- Product Defect Visual Inspection
- Sensor Data Acquisition
- Electrical Isolation I/O Transmission



Smart Logistics and Warehousing

- Automated Inventory Counting
- Logistics Visual Sorting
- Automated Inbound and Outbound Logistics
- Transport Equipment Connection

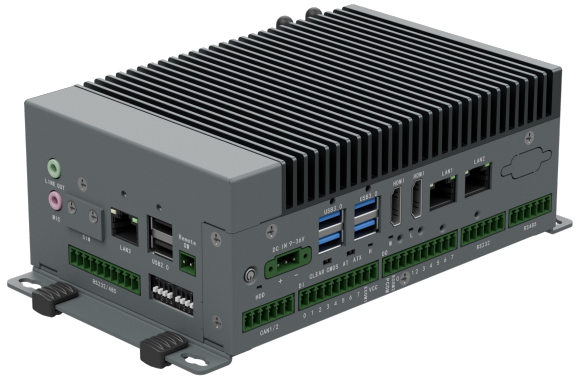


Other Related Areas

- Edge Controller
- Smart Terminal
- PLC Host Computer
- Onboard Control

KMDA-3303/3305

Ordering Info



KMDA-3303

KMDA-3303-S001	Intel® Core I3-1115G4	1*DDR4 SODIMM, 1*mSATA, 1*Mini PCIe, 1*M.2 M-key, 2*HDMI, Audio out + Mic 3*LAN, 4*USB3.2, 2*USB2.0, 6*COM, 16bit Iso. DIO, 1*I-Port, DC IN 9-36V.
KMDA-3303-S002	Intel® Core I5-1135G7	
KMDA-3303-S003	Intel® Core I7-1165G7	
PA-60DC12 Component	AC/DC Adapter, DC 12V/5A 60W + X-Type Power Cable	

KMDA-3305

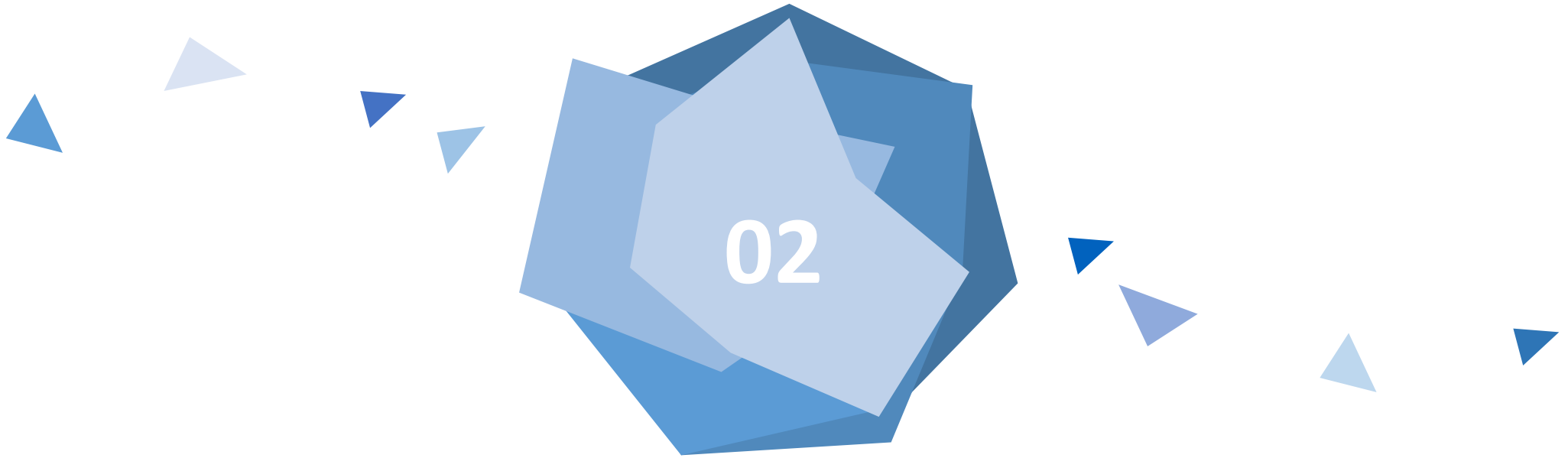
KMDA-3305-S001	Intel® Core I3-1115G4	1*DDR4 SODIMM, 1*mSATA, 1*Mini PCIe, 1*M.2 M-key, 2*HDMI, Audio out + Mic 3*LAN+6*Gigabit Switch Port, 4*USB3.2, 2*USB2.0, 6*COM, 16bit Iso. DIO, 1*I-Port, DC IN 9-36V.
KMDA-3305-S002	Intel® Core I5-1135G7	
KMDA-3305-S003	Intel® Core I7-1165G7	
PA-60DC12 Component	AC/DC Adapter, DC 12V/5A 60W + X-Type Power Cable	

New Product Progress

KMDA-3303/3305

Release Date:

Early October, 2024



Q&A

Q1: Can you explain the jetpack and OS version of the BRAV series based on the NVIDIA Jetson platform?

A1:

BRAV-7120/BRAV-7121	BRAV-7134	BRAV-7131
Jetpack5.1.2-L4T 35.4.1-Ubuntu20.04	Jetpack5.1.2-L4T 35.4.1-Ubuntu20.04	Jetpack5.1.2-L4T 35.4.1-Ubuntu20.04
Jetpack6.0-L4T 36.3-Ubuntu22.04		Jetpack5.0.2-L4T 35.1.0-Ubuntu20.04

Stay in Touch

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