



Speakers



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NEW PRODUCT LAUNCH



PART 0 1

《Intel Computing Platform Accelerating the Development of China's Smart Transportation》

Junyu He, Smart City BD Director, INTEL

Intel Computing Platform Accelerating the Development of China's Smart Transportation

intel

Growth in population, cities and transport needs is driving a boom in transport infrastructure

Total Chinese government investment in transportation infrastructure















40 Units ETC/MTC



487,900 KM Urban Street



170,000 crossroads



59 Cities 338 Lines



6239 Metro Station



78,400 Trains



159,000 Miles

如果没有指明·列出的数据默认摘自 IDC 2020 年的内部报告。总投资的大约 0.7% 用于 IT 升支。

^{1.2023}年中国统计年鉴,中国国家统计局。

Intel's vision and strategy for digital transportation infrastructure

Leveraging video analytics and AI technologies to accelerate the transformation of digital transportation

and urban infrastructure

Status

Non-standardization

Obsolete and

inefficient

High investment motivation

rovide chips, hardware and software services for high-density video analysis and artificial intelligenc sensor fusion and load integration related scenarios











Empowering Ecosystem Partners

Driving and promoting collaboration with the ecosystem in industry reference design, software co-development and optimization



Strive to cover the design and supply of digital infrastructure needs in various regions around the world, and achieve multi-channel win-win









Trends

Interconnection

Standardization

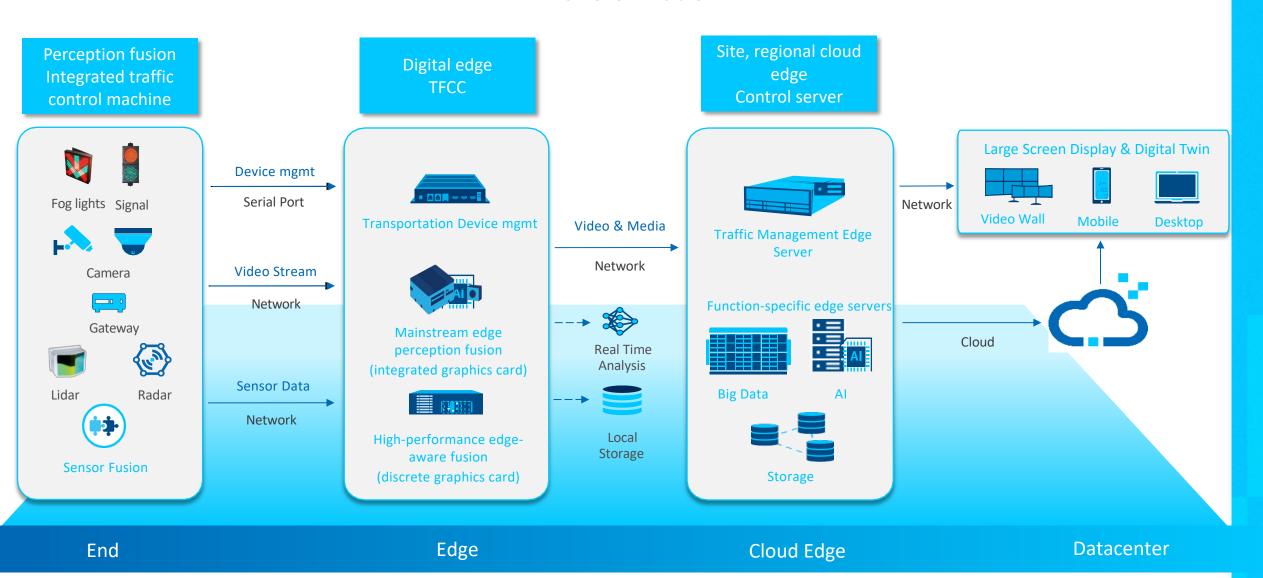
Cloud-edge collaboration

Software services

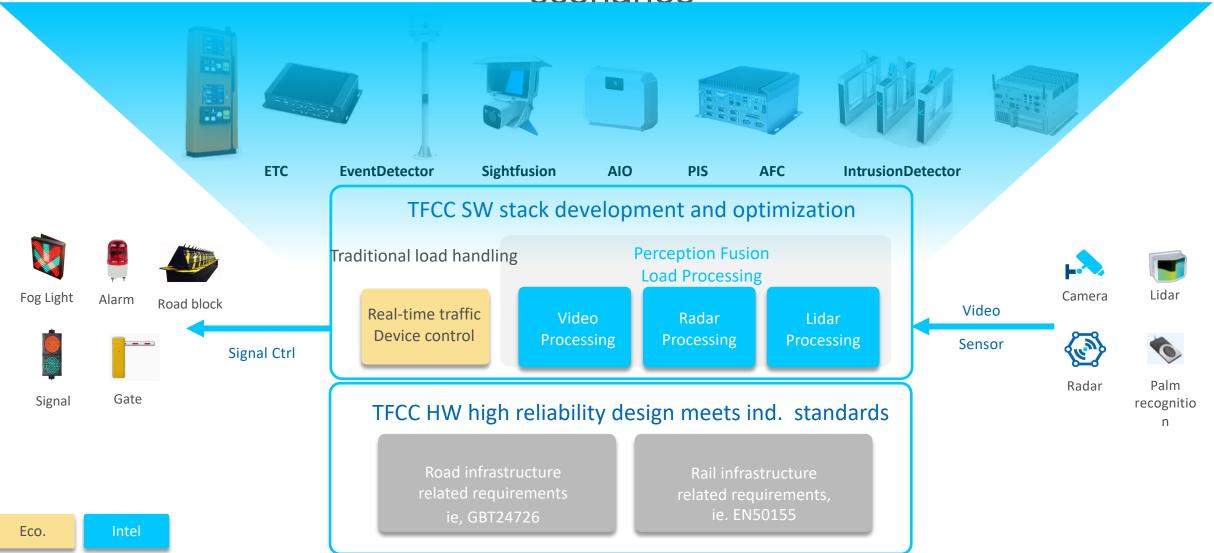




Intel TFCC (Transportation Fusion Control Computer) Enables End-to-End Digital Transportation Transformation



Intel creates a modular TFCC portfolio to meet digital transportation scenarios



TFCC with JHC

KMDA-5611/ 6611-S001

Intel® Coffee lake 9th/8th-Gen Core™ i9/i7/i5/i3/Pentium/Celeron





KMDA-5611/ 6611-S002

Intel® Comet lake 10th Gen Core™ i9/i7/i5/i3/Pentium





ICS-2020

ICS-4040

Supports 1/2 Intel Xeon Scalable Processor (4th Generation)

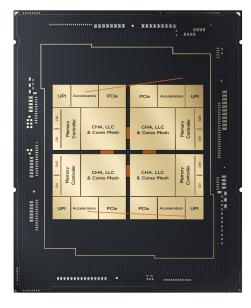








Intel® Xeon™ the latest accelerators









oneDNN (Intel oneAPI)



OpenVINO



Intel® Advanced Vector Extensions (Intel® AVX) for vRAN

- FlexRAN
- Data Plane dev Kit (DPDK)*



Intel® In-memory Analytics
Accelerator (Intel® IAA)

Intel Query Processing Library



Intel® QuickAssist Technology (Intel® QAT)

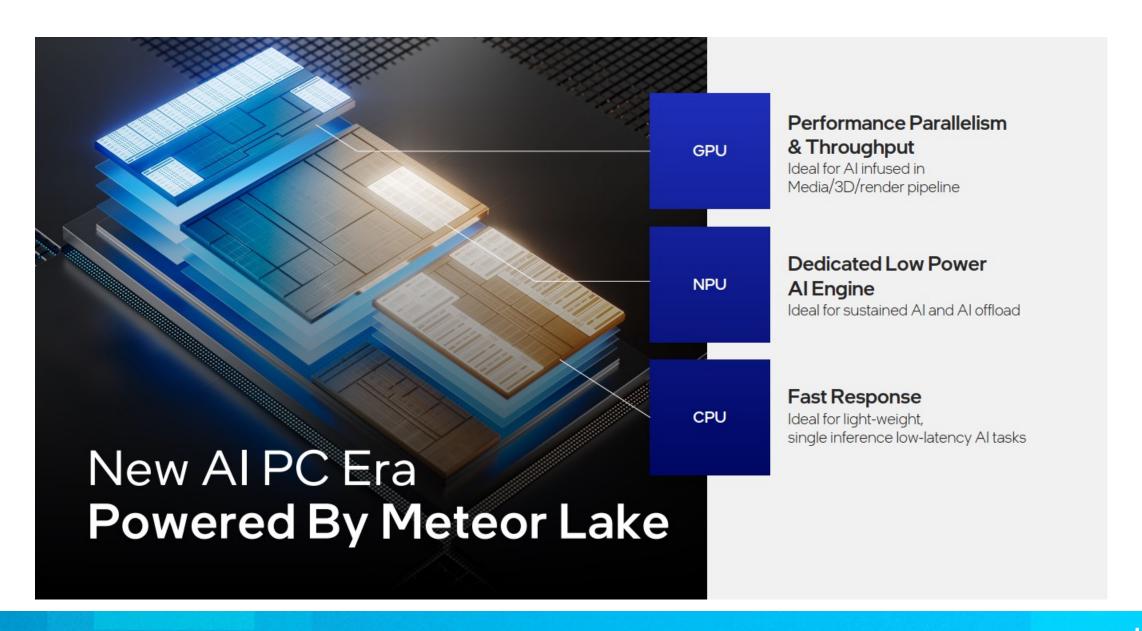
- QATzip* (Intel lib)
- OpenSSL**
- Boring SSL



Intel® Dynamic Load Balancer (Intel® DLB)

- VPP IPsec
- Data Plane Dev Kit (DPDK)*

Intel® Core™ Ultra Processor for Al



Intel®ARC ®dGPU E Series

Powerful AI, media and rendering capabilities

- Long life cycle supply guarantee
- Embedded use case support*

intel ARC

7xxE

High performance for heavy AI workloads and complex tasks intel ARC

5xxE

Immersive visuals with enhanced AI inferencing capabilities

intel.
ARC

3xxE

Fits low power and small form factor requirements



Digital Express Way ETC 2.0 Market Opportunities







2025

Digital Transportation "14th Five-Year Plan" guides the implementation of ETC 2.0 infrastructure upgrades



The ETC 2.0 basic upgrade aims to build an integrated and flexible platform by digitally transforming the existing toll infrastructure, adding switchable toll booth narrow islands to more toll lanes.





Holographic Road/Internet of Vehicles Market Outlook and Opportunities

0

2021



2026



2035

2024-2026 Notice of five ministries and commissions on launching pilot projects for the application of "vehicle-road-cloud integration" for intelligent connected vehicles

2035 New Energy Vehicle Industry Development Plan



'24-'26 "Vehicle-roadcloud integration trial run"

- Establish a cross-city vehicle interconnection platform
- Carry out vehicle-road-cloud integrated commercial operation pilots in more than 10 cities, realizing multiple scenarios, including smart public transportation and smart city logistics





End

Road test radar and vision integrated dev intel CORE





Traffic control solution for holographic roads

In the digital transportation architecture, sensor fusion workloads can be deployed on different types of edge devices.



Digital Subway Market Opporutnities



2021



2025



2035

The 14th Five-Year Plan focuses on promoting intelligent operation and management of urban



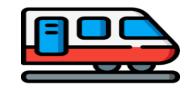
Infra.

- The 2025-2035 Smart City Rail Transit Development Outline focuses on improving passenger experience, traffic efficiency, sustainability, smart operations, subway cloud, etc.
- The high reliability of the X86 solution meets the needs of 24/7 operation
- X86 is an ideal platform to support workloads in smart operation solutions





Station



Trains











Inspection









Signaling

Integrated Monitoring

Traffic control machine solution for digital rail transit stations

In the digital rail transit equipment architecture, palm vein recognition based on deep learning can achieve reliable, fast and contactless edge devices

Palm Recognition



Non-contact biometric testing

Utilizing deep learning algorithms, passengers are authenticated through detected biometric information (such as palms, fingers, etc.), achieving a contactless experience while ensuring high-speed passage.

Technical requirments

- Total throughput time is less than 500 ms
- Recognition time is less than 100ms
- False rejection rate (FRR) is less than 0.01%
- False acceptance rate (FAR) is less than 0.00001%

/毫秒 Processing Speed



OpenVINO

Use Optimize AI models and migrate them to the integrated GPU on the Elkhart Lake SoC to meet recognition speed requirements without the need for additional accelerators.



1. 来自合作伙伴的测试数据。英特尔并不控制或审计第三方数据。请您审查该内容,咨询其他来源,并确认提及数据是否准确。

Backup

PART 02

«Traffic Control Servers based on Intel's 4th and 5th Generation Xeon Scalable Processors

Gary Shu, Customer Solution Manager, JHC Shenzhen Office

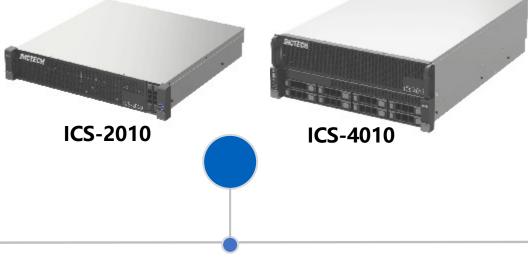


JHCTECH

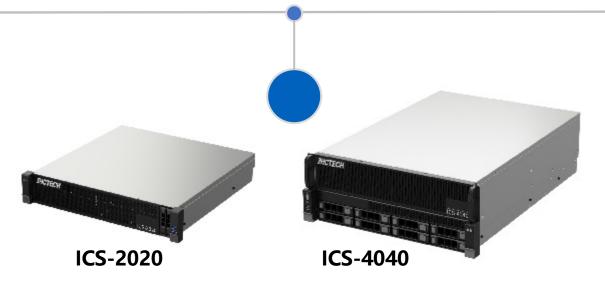
01	ICS Roadmap
02	Product Features and Design Highlights
03	Ordering Info
04	Market Directions
05	New Product Progress

CONTENTS

01 Traffic Control Server ROADMAP



Intel Sapphire Rapids, Scalable CPU



Intel Cascade Lake CPU

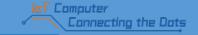


ICS-2020 Product Features





- Supports 1/2 Intel Xeon Scalable Processor (4th Generation)
- 16DDR5 memory slots, up to 5600MHz, 3DS RDIMM/RDIMM ECC memory
- Front: 2 hot-swappable 2.5-inch drive bays, optional: 2 rear hot-swappable 2.5-inch drive bays
- Supports 2PCle 5.0 X16, 1PCle 5.0 X8
- 6XUSB 3.0, 1XVGA, 1COM, 2XGigabit Ethernet ports,
 1XIPMI management port
- 4X 8038 hot-swappable high-speed fans
- Compliant with OTII standards
- Input voltage: 100-240V, 550W/800W/1200W
- 1600W 1+1 redundant power supply



ICS-4040 Product Features





- Supports 1/2 Intel Xeon Scalable Processor (4th Generation)
- 16DDR5 memory slots, 1DPC, up to 5600MHz
- Supports RDIMM, 3DS RDIMM, maximum support of 4TB memory
- 8X2.5/3.5" SAS/SATA drive bays + 9.5mm optical drive (optional 24-bay chassis, no optical drive), supports software RAID 0/1/5/10
- Supports 6XPCle 5.0 X16 and 1XPCle 5.0 X8
- 6XUSB 3.0, 1XVGA, 1XCOM, 2XGigabit Ethernet ports, 1IPMI management port
- 4X8038 hot-swappable high-speed fans + rear 2*8038 fan modules Supports
 550W/800W/1200W/1600W/2000W/2200W hotswappable redundant power supplies

ICS-2020 & ICS-4040 Dimensions





19-inch 2U rack-mountable adaptable to 600mm cabinet depth with a depth of 450mm.



1xVGA



1xIPMI









19-inch 4U rack-mountable adaptable to 800mm cabinet depth with a depth of 650mm.





2xLAN

6xUSB 3.0







New features or functions

4th Gen Intel® Xeon® Scalable Processors

PCI Express Gen5(PCle 5.0)

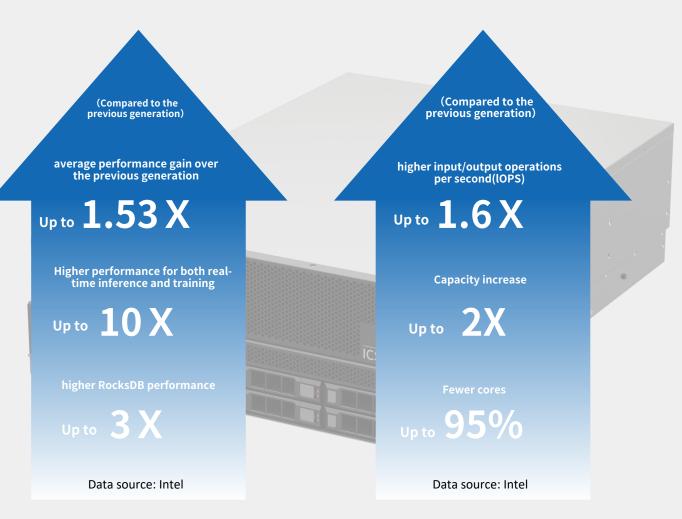
Unlock new I/O speeds with opportunities to enable the highest possible throughput between the CPU and connected devices. 4th Gen Intel Xeon Scalable processors have up to 80 lanes of PCIe 5.0—ideal for fast networking, high-bandwidth accelerators, and high-performance storage devices. PCIe 5.0 doubles the I/O bandwidth from PCIe 4.0,11 maintains backward compatibility, and provides foundational slots for CXL.

DDR5TECH

Improve compute performance by overcoming data bottlenecks with higher memory bandwidth. DDR5 offers up to 1.5x bandwidth improvement over DDR4,12 enabling opportunities to improve performance, capacity, power efficiency, and cost. 4th Gen Intel Xeon Scalable processors offer up to 4,800 MT/s (1 DPC) or 4,400 MT/s (2 DPC) with DDR5.

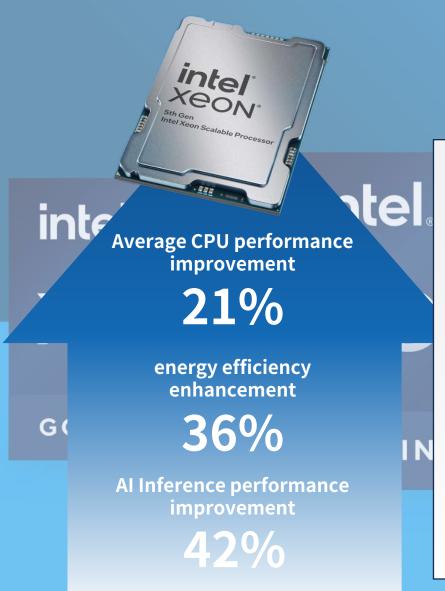
CXL

Reduce compute latency in the data center and help lower total cost of ownership (TCO) with CXL 1.1 for next-generation workloads. CXL is an alternate protocol that runs across the standard PCIe physical layer and can support both standard PCIe devices and CXL devices on the same link. CXL provides a critical capability to create a unified, coherent memory space between CPUs and accelerators, and it will revolutionize how data center server architectures will be built for years to come.





Computing power, networking, storage, and encryption

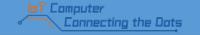


Data source: Intel

5th Gen Intel® Xeon® Scalable Processors

- Supports faster DDR5-5600 speeds, with a maximum single-channel capacity of 4TB, and up to 80 PCle 5.0 lanes, supporting Intel UPI 2.0 bandwidth of 20 GT/s.
- Further improves turbo frequency, achieving up to **1.42 times** the performance of 4th generation Xeon in certain AI inference workloads, and the only general-purpose CPU with MLPerf training and inference benchmark performance tests.
- Designed specifically for AI, each core is equipped with AI acceleration capabilities, ready to handle demanding AI workloads, and supports running large language models (LLMs) with 20 billion parameters.



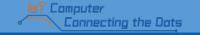


ICS-2020 Design Highlights



- **1** Dual socket support for 4th/5th-gen Intel Xeon Scalable processors
- 2 16 DDR5 ECC high-frequency memory slots, with a maximum capacity of 4TB
- Supports 2 full-height, full-length GPUs for superior computational performance
- 2 Gigabit Ethernet ports + 1 IPMI port, optional 2 X 10G optical ports
- **5** Supports 1+1 redundant power supplies of different wattages
- 4 hot-swappable temperature-controlled 8038 fans with linear airflow design
- Compliant with OTII-E modular design standards for edge servers

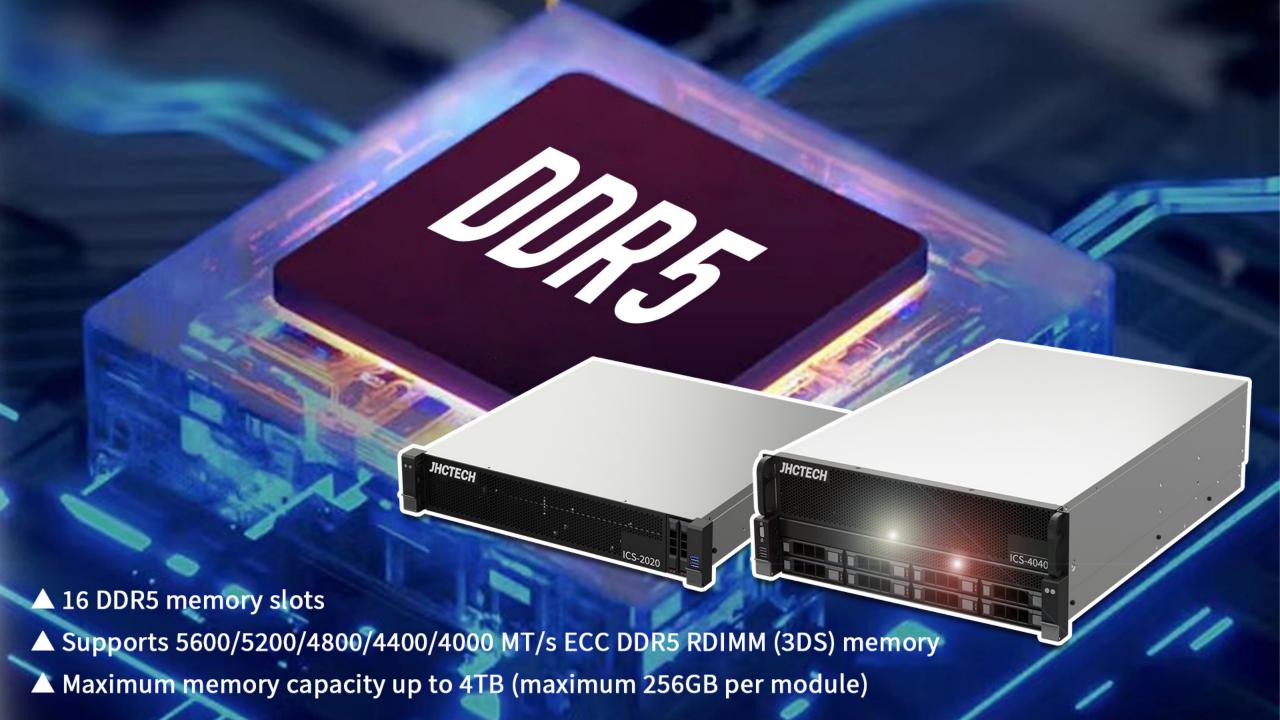




ICS-4040 Design Highlights



- Dual socket support for fourth/fifthgeneration Intel Xeon Scalable processors
- 2 16 DDR5 ECC high-frequency memory slots, with a maximum capacity of 4TB
- Supports 4 full-height, full-length GPUs or Al inference card expansions
- 2 Gigabit Ethernet ports + 1 IPMI port, optional 6 X10G optical ports
- M.2 NVMe + 8~24 2.5/3.5-inch drive bays for storage
- Supports IPMI2.0, Redfish, SNMP, and other management protocols
- 7 4 high-speed 8038 fans + 2 tail fan modules, with a straight-through efficient heat dissipation airflow duct
- 8 Al computing power combined with high-capacity storage in an integrated server





2*PCle5.0 X16, 1*PCle 5.0X8,

Supports 2 full-height, full-length, double-width GPU cards, and 1 half-height, half-length, single-width PCIe expansion card;



ICS-2020

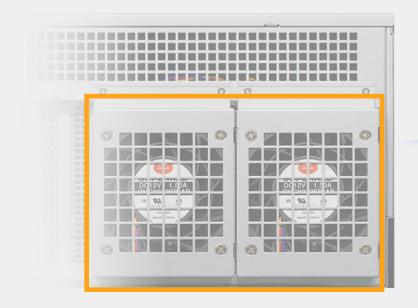
Supports 4*PCle 5.0X16, 2*PCle 5.0X16, 1*PCle 5.0X8, Supports up to 4 double-width, full-length, full-height GPU cards such as RTX 4090, 4080, 4070, etc.







4 hot-swappable 8038 temperature-controlled fans, linear airflow design





ICS-4040

4 high-speed 8038 fans + 2 tail fan modules, straight-through efficient heat dissipation airflow duct

IC	S-2	202	0
Order	ing	Sp	ecs

Model No.	CPU	Introduction	
ICS-2020-B02-1600	Intel® Xeon 4th-gen Scalable series processors + Intel® C741 PCH	16*DDR5 3DS RDIMM/RDIMM, 2*LAN, 1*IPMI, 6*USB3.0, 1*COM, 1*VGA, 2*2.5" SAS/SATA bay, 2*PCIe 5.0X16, 1*PCIe5.0X8, 2*M.2(PCIe4.0X2), 4*8038 temperature-controlled fan	1600W,1+1 redundant power supply
ICS-2020-B02-1200			1200W,1+1 redundant power supply
ICS-2020-B02-800			800W, 1+1 redundant power supply
ICS-2020-B02-550			550W, 1+1 redundant power supply

ICS-4040 Ordering Specs

	Model No.	СРИ	Introduction	
	ICS-4040-B08-2200	Intel® Xeon 4th-gen Scalable series processors + Intel® C741 PCH		2200W, 1+1 redundant power supply
7	ICS-4040-B08-2000		16*DDR5 LRDIMM/RDIMM, 2*LAN, 1*IPMI, 6*USB3.0, 1*COM, 1*VGA, 8*3.5/2.5" SAS/SATA bay, 2*2.5" SAS /SATA bay(built-in), 1*9.5mm optical drive bay, 6*PCIe5.0 X16, 1*PCIe5.0X8, 2*M.2(PCIe 4.0X4), 4*8038 temperature controlfan+2*8038 fan module(rear)	2000W, 1+1 redundant power supply
	ICS-4040-B08-1600			1600W, 1+1 redundant power supply
	ICS-4040-B08-1200			1200W, 1+1 redundant power supply
	ICS-4040-B08-800			800W, 1+1 redundant power supply
	ICS-4040-B08-550			550W, 1+1 redundant power supply

04 Market Direction for ICS Control Servers

车速:0km/h 排队时长:40s

Urban Traffic Management

Roadside MEC
Holographic Intersection
Traffic Center Cloud Management
Holographic Station/Airport

Rail Transit

Comprehensive Subway
Station Monitoring

Holographic Subway Station

Highways

Cloud Toll Virtualization
Comprehensive Management
of Physical Tolls
Holographic Highway

Smart Cities and Security

Video Surveillance Center

Management

Al Video Surveillance Video Surveillance NVR **Industrial Automation**

10 Control Virtualization

Factory Information Manageme



05 ICS-2020/4040 New Product Progress





Prototype Testing: Mid-May 2024



Small Batch Production: Early July 2024



PART 03

《Machine Vision Dedicated Controller KMDA-5611/6611》

Reese Li, Customer Solution Manager, Shenzhen Office



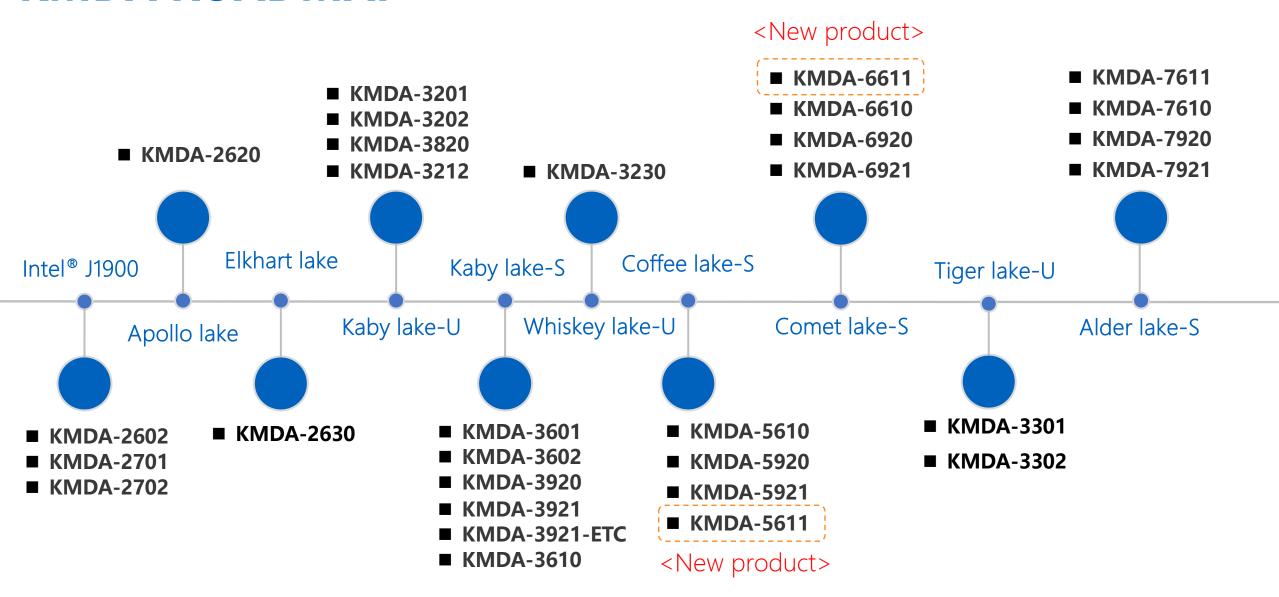
JHCTECH

01	KMDA Roadmap
02	New Product Features
03	Ordering Specification
04	Market Direction
05	New Product Progress

CONTENTS

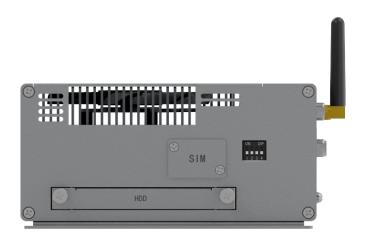


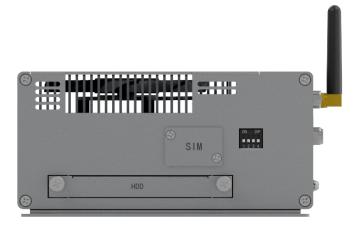
KMDA ROADMAP





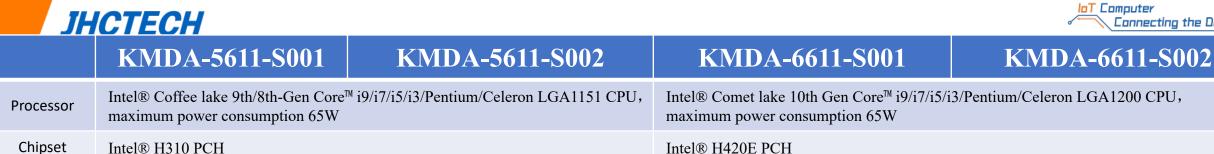












IoT Computer Connecting the Dots

HDMI maximum 4096*2160@30Hz, VGA maximum resolution 1920*1200@60Hz

Intel® Comet lake 10th Gen Core™ i9/i7/i5/i3/Pentium/Celeron LGA1200 CPU,

Intel® H310 PCH Intel® H420E PCH

2*260-Pin SODIMM, dual-channel DDR4 2666/2400MHz, maximum 64GB 2*260-Pin SODIMM, dual-channel DDR4 2933MHz, maximum 64GB Memory

HDMI maximum resolution 4096*2160@24Hz, VGA maximum resolution 1920*1200@60Hz

KMDA-5611/6611-S001: 1*Intel I210AT + 1*Intel I219LM Gigabit Ethernet port, PCIe X1full bandwidth, 10M/100M/1000Mbps adaptive, supports WOL

4*Intel I210AT POE+ (at.) Ethernet ports, PCIe X1full bandwidth, 10M/100M/1000Mbps adaptive, supports WOL

KMDA-5611/6611-S002:

Display

Ethernet

I/O Interfaces

Storage

1*Intel I210AT + 1*Intel I219LM Ethernet ports, PCIe X1full bandwidth, 10M/100M/1000Mbps adaptive, supports WOL

KMDA-5611/6611-S001:

2*USB3.1 Type A, 5Gbps transfer speed; 2*USB2.0 Type A; 1*USB2.0 Type A (built-in); 1*RS232/485 switchable via DIP switch (DB9 male),

KMDA-5611/6611-S002:

2*USB3.1 Type A, 5Gbps transfer speed; 8-channel USB3.0 dedicated controller, support USB3.0 cameras; 2*USB2.0 Type A; 1*USB2.0 Type A (built-in); 1*RS232/485

switchable via DIP switch (DB9 male), 1*RS232(DB9 male); 32-bit isolated DIO (2*18pin Phoenix connectors)

•1*2.5" SATA3 hot-swappable hard drive bay, supports transfer speeds up to 6Gbps, 1*full-length mSATA, with SATA 3.0 and USB 2.0 signals, supports mSATA storage drives

•1*full-length Mini-PCIe, with SIM card slot, supports 4G/WIFI/PCIe signal function modules

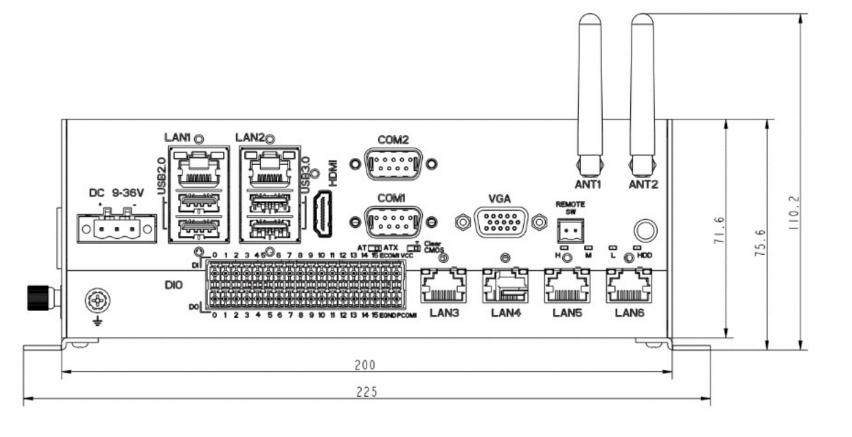
Expansion Power

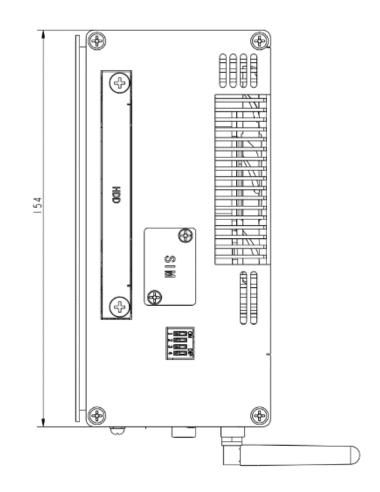
•DC 9-36V power supply, with short circuit, over-voltage, and over-current protection Supply

1*RS232(DB9 male); 32位 isolated DIO(2*18pin Phoenix connectors)





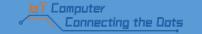




(W*D*H)

KMDA-5611/6611: 225*154*75.6 mm (including installation components)





KMDA-5611/6611 Product Features

- Multi-port POE+ network port design
- 2 High-current power supply for USB 3.0

Multi-channel high-speed isolation

Modular design for easy CPU upgrade

- **5** Entire I210 chipset network
- Single-side interface output for simple application wiring

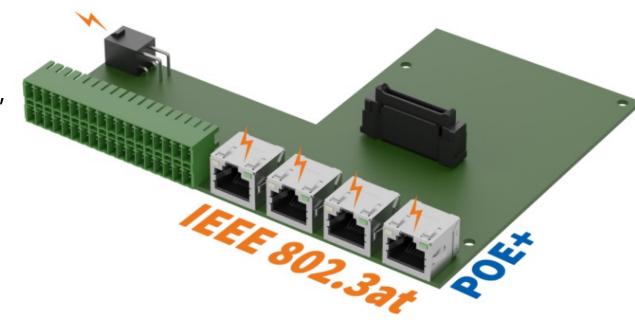
7 Diverse installation options





Multi-port POE+ network port design

- Simultaneous transmission of data and power, reducing the number of system cables and lowering wiring costs
- Supports connection of more vision components (high-definition industrial cameras, smart cameras, encoders, light source controllers, etc.)
- Compliant with IEEE 802.3at standard, supports advanced management functions such as remote device power control, energy consumption monitoring, fault isolation, and improving system intelligence management.

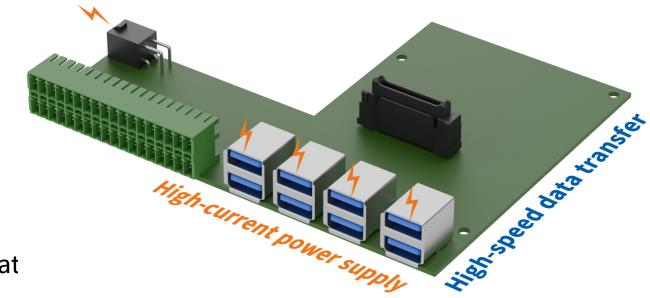






High-current power supply for USB3.0

- ➤ 8-channel high-current power supply USB3.0 interface can provide sufficient power support to more high-power devices (such as high-performance industrial cameras, sensors, LED lighting, etc.), especially suitable for machine vision applications requiring high-brightness illumination or high-speed image capture.
- Achieve fast data transmission to meet the processing requirements of large amounts of dat in the field of machine vision, plug and play, convenient for device connection and replacement.





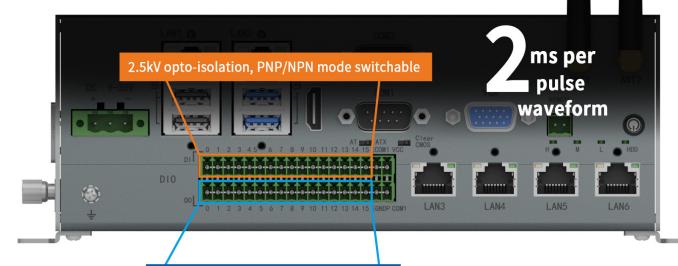


32-channel high-speed isolated DIO

➤ 32-bit Isolated DIO, 16-bit DI with 2.5KV Optical Isolation, supports switchable PNP and NPN modes; 16-bit DO with 2.5KV optically isolated Darlington output, built-in matching resistors, selectable according to different drive currents

Effectively prevents ground loops, noise interference, voltage surges, etc., enhancing the overall anti-interference capability of the system and the reliability of data transmission

➤ Pulse cycle reaches 2ms/pulse wave, enabling fast response and precise control of various digital devices such as triggers, relays, motor drivers, and accurately collecting digital signals from sensors, encoders, and other equipment.

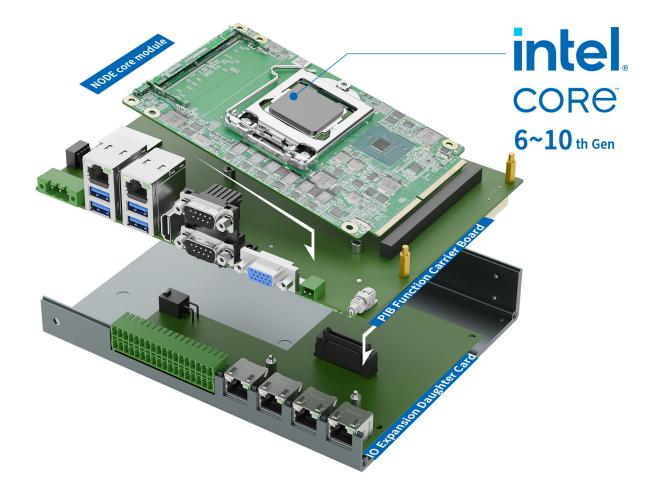






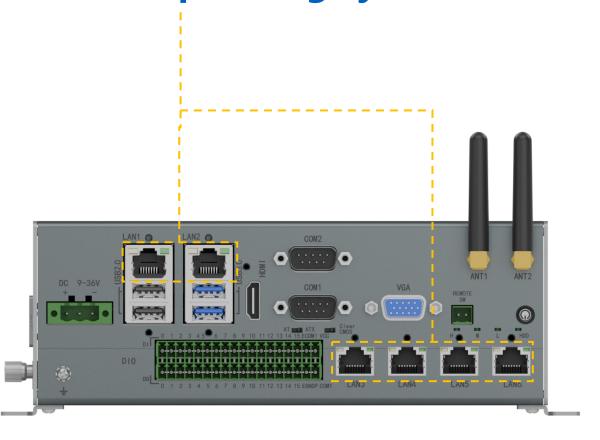
Modular design with easy CPU upgrades

NODE core module + PIB function carrier board + IO expansion daughter card combination design, allowing easy CPU upgrades from 6th to 10th generation





I210AT network chip, high stability and versatility, compatible with various operating systems







Single-sided interface, simplified application wiring

- Makes cable connections, equipment installation, and subsequent maintenance more intuitive and straightforward
- ➤ Helps reduce equipment depth, especially suitable for space-constrained industrial environments such as compact control cabinets, embedded workstations, or wall-mounted installation scenarios. This can optimize internal chassis space utilization, providing more room for arranging other critical components.









Diverse installation options







Horizontal desktop installation

Wall-mounted installation

DIN rail installation



Ordering Info





Model	Description
KMDA-5611-S001	Embedded Box PC, Intel® 8th/9th Coffee lake LGA1151 CPU, H310 PCH, 2*DDR4 SODIMM, 2*LAN, 4*POE+, 2*USB3.1, 3*USB2.0, 2*COM,1*HDMI, 1*VGA, 32bit isolated DIO, 1*mSATA, 1*2.5" SATA bay, 1*Mini PCIe, 1*SIM slot, DC 9-36V.
PA-120DC19	AC/DC Power Adapter, DC 19V/6.32A,120W

Model	Description
KMDA-6611-S001	Embedded Box PC, Intel® 10th Comet lake LGA1200 CPU, H420E PCH, 2*DDR4 SODIMM, 2*LAN, 4*POE+, 2*USB3.2, 3*USB2.0, 2*COM,1*HDMI, 1*VGA, 32bit isolated DIO, 1*mSATA, 1*2.5" SATA bay, 1*Mini PCIe, 1*SIM slot, DC 9-36V.
PA-120DC19	AC/DC Power Adapter,DC 19V/6.32A,120W

Model	Description
KMDA-5611-S002	Embedded Box PC, Intel® 8th/9th Coffee lake LGA1151 CPU, H310 PCH, 2*DDR4 SODIMM, 2*LAN, 2*USB3.1, 8*USB3.0, 3*USB2.0, 2*COM,1*HDMI, 1*VGA, 32bit isolated DIO, 1*mSATA, 1*2.5" SATA bay, 1*Mini PCIe, 1*SIM slot, DC 9-36V.
PA-120DC19	AC/DC power Adapter, DC 19V/6.32A,120W
Model	Description
Model KMDA-6611-S002	Embedded Box PC, Intel® 10th Comet lake LGA1200 CPU, H420E PCH,



Market Directions



Machine Vision

- Logistics Vision
- Sorting Photovoltaic Vision Inspection
- Intelligent Quality Inspection Machines
- Automotive Manufacturing Inspection



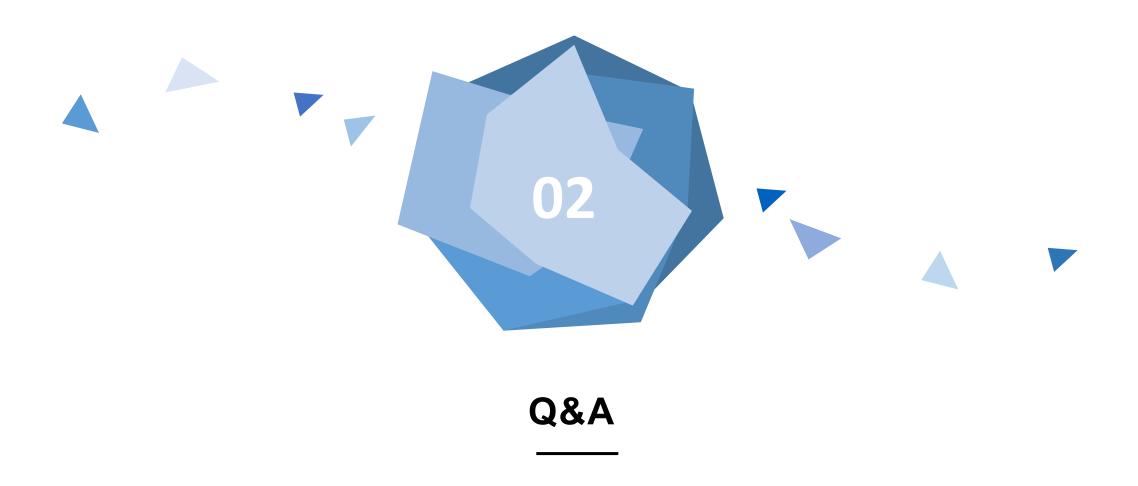
Industrial Manufacturing

- Industrial Robotic Arms
- Laser Cutting Machines/Engraving Machines/CNC Machining Centers
- Dispensing Machines/3D Printers Distributed Control Systems
- Distributed control system(DCS)



New Product Progress

Small Batch: May 2024



Stay in Touch



JHC Technology Development Co.,Ltd.



@ Shenzhen JHC Technology Development Co., Ltd.



@JHCTECH



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Youtube

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