Vision for Imagination

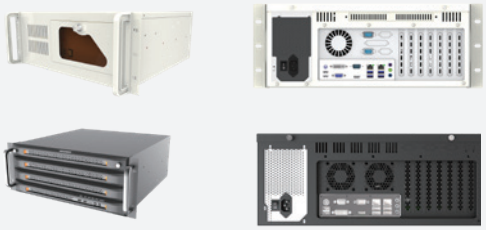
MACHINE VISION
INDUSTRIAL PERSONAL COMPUTER CATALOG

Hikrobotics.com

HIKROBOT

Guidance

Rackmount Industrial PC P7



- The computer is shock-resistant, corrosion-resistant, radiation-proof, and has excellent stability
- Provides abundant interfaces for various types of external devices
- Supports accommodating multiple hard disks, and supports hard disk RAID

Wall-Mounted Industrial PC P17

- The body size is diverse to suit various application scenarios
- There are many types of interfaces, and they have certain expansion performance
- Supports wall mounting and countertop placement for saving space

Server P22

- It can be flexibly configured as needed, and supports local privatization
- The chip has powerful performance, and supports multiple graphics cards to work in parallel
- Supports using with AI deep learning software for efficient algorithm training

Industrial Panel PC P26

- The touchscreen is integrated with the chassis for small size and light weight
- 8" to 21" capacitive/resistive touchscreen for excellent interactive experience
- Supports a variety of installation methods to achieve quick installation

Compact Industrial PC P26

- The small body can be installed inside large devices
- Higher IP protection level and low maintenance costs
- Fanless and supports cover heat dissipation technology, achieving low noise and low energy consumption

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Hikrobot

Hikrobot is a global product and solution supplier specializing in machine vision and mobile robots. Focused on IIoT, smart logistics, and smart manufacturing, we build open cooperation ecosystems, provide services to industry and logistics customers, and are committed to continuously promoting intelligentization and leading the intelligent manufacturing process

Machine Vision

With efforts in industrial vision sensing application and hardware technology, the company provides customers with leading machine vision products. The products cover industrial camera, lens, vision box, industrial smart camera and related accessory. Through rigorous EMC, safety and reliability tests, Hikrobot guarantees the high precision, high efficiency and high environmental performance of each product. The machine vision products are widely used in industrial automation sectors such as consumer electronics, semiconductors and logistics, as a part of the vision applications like positioning guidance, measurement, quality inspection, code reading, OCR, etc. They help users to greatly improve productivity, accuracy and stability

Overview

Introduction

The Industrial Personal Computer (IPC) is an industrial control computer. It adopts a bus structure, and is specially used to detect and control the manufacturing processes, electromechanical equipment, technical equipment, data parameters, etc. IPC has important computer attributes and features. It is composed of a main board, a CPU, hard disks, memory modules, external peripherals, and interfaces. Through special designs such as reinforcement, dustproof, moisture-proof, corrosion-proof, and radiation-proof, it can run stably in harsh environments compared with consumer-grade computers. In addition, the rich variety of interfaces and powerful expansion performance of industrial computer make it possible to meet the applications of various industries

Key Features

Reliability

It can operate stably in dust, smoke, high/low temperature, humid, vibration, and corrosive environments. The MTTF (Mean Time to Failure) is more than 100,000 hours, while the MTTF of ordinary computers is only 10,000 to 15,000 hours

Real-time

It can detect and control the industrial production process in real time and online, give rapid response to changes in working conditions, and timely collect and output adjustment (WatchDog Timer function) to ensure the normal operation of the system

Standard Structure

The IPC has powerful input and output functions, including LAN, PCIe, USB 3.0 and other rich interfaces. It can be connected with various peripherals, machine vision cameras, video surveillance systems, etc., suitable for various application scenarios

Product Selection

Rackmount Industrial PC

Key Features

Strong adaptability to the environment

The chassis is designed with a steel structure, and has undergone special treatments such as reinforcement, dustproof, moisture-proof, anti-corrosion, and anti-radiation. It can operate stably in harsh working environments

Extreme extensibility and compatibility

Provides multiple PCIe slots and other types of interfaces to connect to a variety of external devices

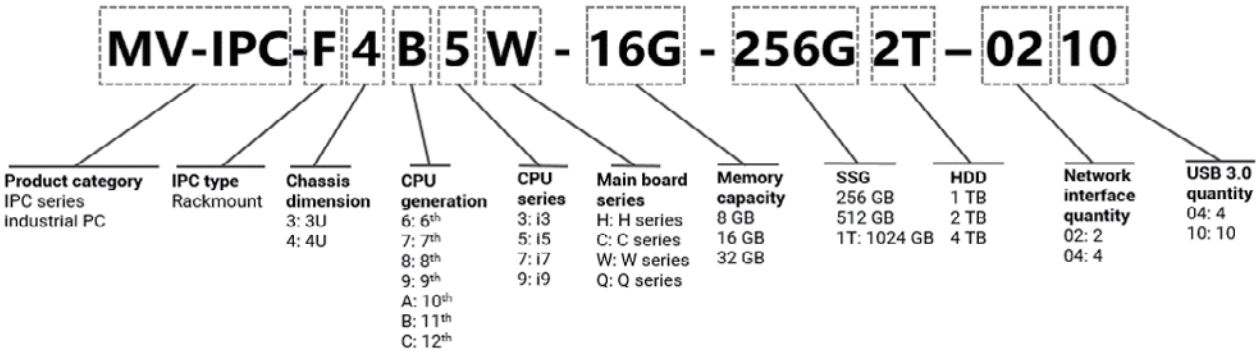
Diverse combinations and flexible configurations

Supports the free choice of memory module, SSD, HDD and other devices according to demand, and the products can cover the whole industry

24 hours continuous running test

The products are produced in a controlled workshop with constant temperature and humidity, have undergone a variety of load tests and trials, and meet the requirements of relevant technical specifications

Naming Rule

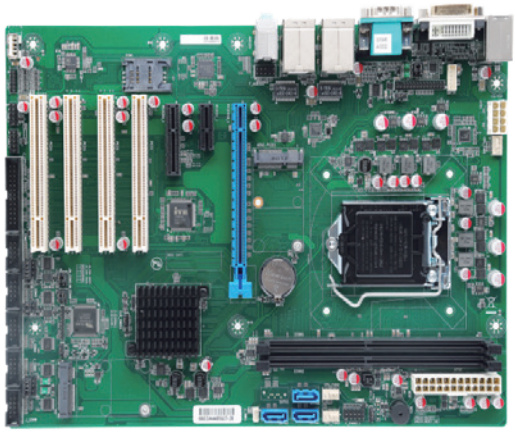


Main Board Selection

H110 Series Chipset

Parameter \ Model	MV-IPC-MB-H11A-211-0204
CPU	Intel® Core™ 6th/7th/8th/9th generation i3/i5/i7, Pentium, Celeron CPU with LGA1151 socket Support CPU TDP: 65 W
Chipset	Intel® H110 chipset, ATX main board
Memory	2 DDR4 2600 MHz U-DIMM memory slots Individual memory module capacity up to 32 GB, with a total memory capacity up to 64 GB
Storage	3 SATA interfaces 1 mSATA interface
Operating system	Windows 7/8/10 (Only 6th generation support Windows 7), Linux
Network interface	2 Intel® GigE interfaces
USB interface	4 USB 3.0 interfaces 2 USB 2.0 interfaces 2 built-in USB 2.0 signals (header) 1 built-in USB 2.0 Type-A interface
Serial port	1 RS-232 interface 2 RS-232/RS-485 headers 3 RS-232 headers
Extended interface	1 PCIe x16 interface 1 PCIe x4 interface 1 PCIe x1 interface 4 PCI interfaces 1 Mini PCIe interface
Display interface	Supports two independent display interfaces (1 VGA, 1 HDMI, 1 DVI) 1 VGA, max. resolution 1920 × 1200 @ 60 Hz 1 HDMI, max. resolution 4096 × 2160 @ 24 Hz 1 DVI, max. resolution 1920 × 1200 @ 60 Hz
Audio interface	Mic-in, Line-out, Line-in
GPIO	8-bit GPIO
BIOS	AMI UEFI BIOS (supports Watchdog Timer)
Power	ATX power, ATX/AT power on/off mode is supported
Power supply	Standard ATX (24P + 8P)
Dimension	ATX, 305 mm × 217 mm (12.0" × 8.5")
Temperature	Working temperature: 0 °C to 60 °C (32 °F to 140 °F) Storage temperature: –20 °C to 75 °C (–4 °F to 167 °F)

Outline drawing

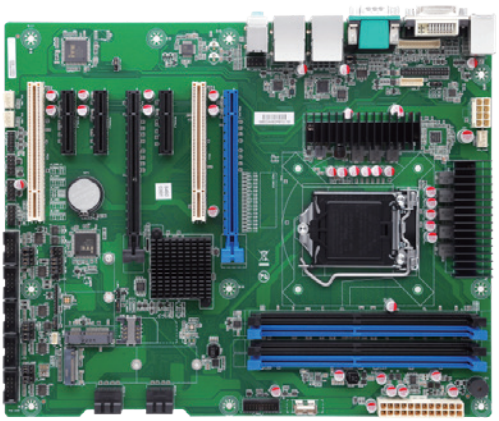


H110 chipset

Q270 Series Chipset

Parameter \ Model	MV-IPC-MB-Q27A-423-0204
CPU	Intel® Core™ 6th/7th/8th/9th generation i3/i5/i7/i9, Pentium, Celeron CPU with LGA1151 socket Support CPU TDP: 95 W
Chipset	Intel® Q270 chipset, ATX main board
Memory	4 DDR4 2600 MHz U-DIMM memory slots Individual memory module capacity up to 32 GB, with a total memory capacity up to 128 GB
Storage	4 SATA interfaces 1 M.2 NVMe/SATA 2242/2280 interface Supports RAID 0, RAID 1, RAID 5, RAID 10
Operating system	Windows 7/8/10 (Only 6th generation support Windows 7), Linux
Network interface	2 Intel® GigE interfaces
USB interface	4 USB 3.0 interfaces 2 USB 2.0 interfaces 2 built-in USB 3.0 signals (header) 4 built-in USB 2.0 signals (header) 1 built-in USB 2.0 Type-A interface
Serial port	1 RS-232 interface 3 built-in RS-232 headers 1 built-in RS-232/RS-422/RS-485 header 1 built-in RS-232/RS-485 header
Extended interface	2 PCIe x16 interfaces (x8 signal) 3 PCIe x4 interfaces 2 PCI interfaces 1 Mini PCIe interface
Display interface	Supports three independent display interfaces (1 VGA, 1 HDMI, 1 DVI) 1 VGA, max. resolution 1920 × 1200 @ 60 Hz 1 HDMI, max. resolution 4096 × 2160 @ 24 Hz 1 DVI, max. resolution 1920 × 1200 @ 60 Hz
Audio interface	Mic-in, Line-out, Line-in
GPIO	8-bit GPIO
BIOS	AMI UEFI BIOS (supports Watchdog Timer)
Power	ATX power, ATX/AT power on/off mode is supported
Power supply	Standard ATX (24P + 8P)
Dimension	Standard ATX, 305 mm × 244 mm (12.0" × 9.6")
Temperature	Working temperature: 0 °C to 60 °C (32 °F to 140 °F) Storage temperature: –20 °C to 75 °C (–4 °F to 167 °F)

Outline drawing

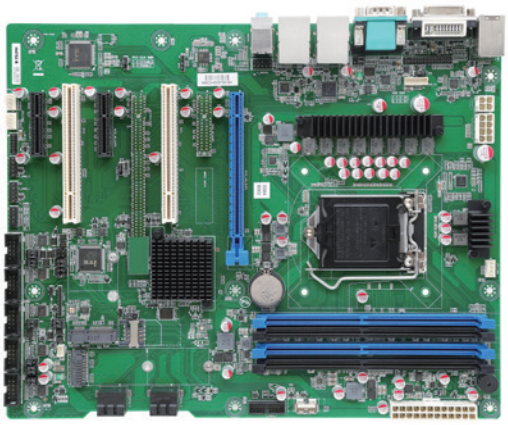


Q270 chipset

H470 Series Chipset

Parameter \ Model	MV-IPC-MB-H47A-412-0204
CPU	Intel® Core™ 10th/11th generation i3/i5/i7/i9 CPU with LGA1200 socket Support CPU TDP: 125 W
Chipset	Intel® H470 chipset, ATX main board
Memory	4 DDR4 3200 MHz U-DIMM memory slots Individual memory module capacity up to 32 GB, with a total memory capacity up to 128 GB
Storage	4 SATA interfaces 1 M.2 SATA 2242/2280 interface Supports RAID 0, RAID 1, RAID 5, RAID 10
Operating system	Windows 10/11, Linux
Network interface	2 Intel® GigE interfaces
USB interface	4 USB 3.0 interfaces 2 USB 2.0 interfaces 2 built-in USB 3.0 signals (header) 4 built-in USB 2.0 signals (header) 1 built-in USB 2.0 Type-A interface
Serial port	1 RS-232/RS-422/RS-485 interface 4 RS-232 headers 1 RS-232/RS-422/RS-485 header
Extended interface	1 PCIe x16 interface (x16 signal) 2 PCIe x4 interfaces (x4 signal) 2 PCI interfaces (32-bit) 1 Mini PCIe interface
Display interface	Supports three independent display interfaces (1 DVI, 1 VGA, 1 HDMI) 1 DVI, max. resolution 1920 × 1200 @ 60 Hz 1 VGA, max. resolution 1920 × 1200 @ 60 Hz 1 HDMI, max. resolution 4096 × 2160 @ 30 Hz
Audio interface	Mic-in, Line-out, Line-in
GPIO	8-bit GPIO
BIOS	AMI UEFI BIOS (supports Watchdog Timer)
Power	ATX power, ATX/AT power on/off mode is supported
Power supply	Standard ATX (24P + 8P + 4P)
Dimension	Standard ATX, 305 mm × 244 mm (12.0" × 9.6")
Temperature	Working temperature: 0 °C to 60 °C (32 °F to 140 °F) Storage temperature: –20 °C to 75 °C (–4 °F to 167 °F)

Outline drawing

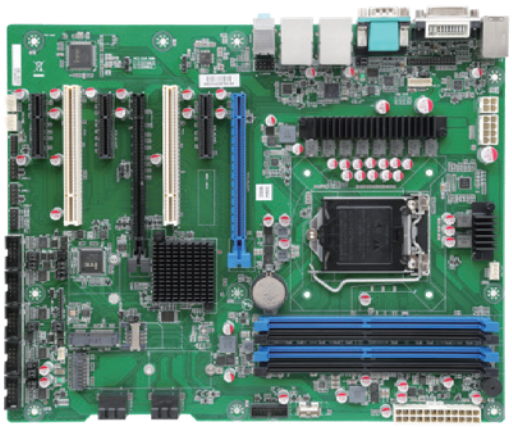


H470 chipset

Q470 Series Chipset

Parameter \ Model	MV-IPC-MB-Q47A-423-0204
CPU	Intel® Core™ 10th/11th generation i3/i5/i7/i9, Pentium, Celeron CPU with LGA1200 socket Support CPU TDP: 125 W
Chipset	Intel® Q470 chipset, ATX main board
Memory	4 DDR4 3200 MHz U-DIMM memory slots Individual memory module capacity up to 32 GB, with a total memory capacity up to 128 GB
Storage	4 SATA interfaces 1 M.2 NVMe/SATA 2242/2280 interface Supports RAID 0, RAID 1, RAID 5, RAID 10
Operating system	Windows 10/11, Linux
Network interface	2 Intel® GigE interfaces
USB interface	4 USB 3.0 interfaces 2 USB 2.0 interfaces 2 built-in USB 3.0 signals (header) 4 built-in USB 2.0 signals (header) 1 built-in USB 2.0 Type-A interface
Serial port	1 RS-232 interface 3 RS-232 headers 1 RS-232/RS-422/RS-485 header 1 RS-232/RS-485 header
Extended interface	1 PCIe x16 interface (single x16 signal or double x8 signal) 3 PCIe x4 interfaces (x4 signal) 2 PCI interfaces (32-bit) 1 Mini PCIe interface
Display interface	Supports three independent display interfaces (1 VGA, 1 HDMI, 1 DVI) 1 VGA, max. resolution 1920 × 1200 @ 60 Hz 1 HDMI, max. resolution 4096 × 2160 @ 24 Hz 1 DVI, max. resolution 1920 × 1200 @ 60 Hz
Audio interface	Mic-in, Line-out, Line-in
GPIO	8-bit GPIO
BIOS	AMI UEFI BIOS (supports Watchdog Timer)
Power	ATX power, ATX/AT power on/off mode is supported
Power supply	Standard ATX (24P + 8P + 4P)
Dimension	Standard ATX, 305 mm × 244 mm (12.0" × 9.6")
Temperature	Working temperature: 0 °C to 60 °C (32 °F to 140 °F) Storage temperature: –20 °C to 75 °C (–4 °F to 167 °F)

Outline drawing

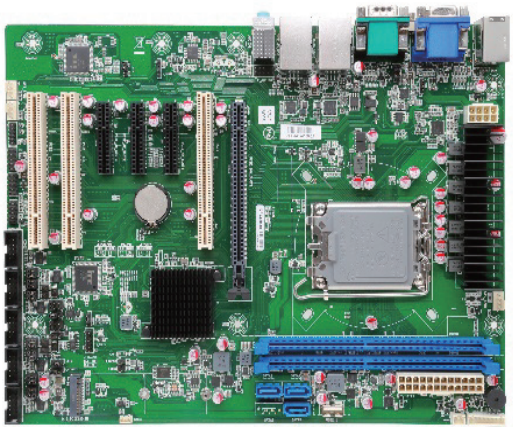


Q470 chipset

H610 Series Chipset

Parameter \ Model	MV-IPC-MB-H61A-213-0204
CPU	Intel® Core™ 12th/13th generation i3/i5/i7/i9, Pentium, Celeron CPU with LGA1700 socket Support CPU TDP: 65 W
Chipset	Intel® H610 chipset, ATX main board
Memory	2 DDR4 3200 MHz U-DIMM memory slots Individual memory module capacity up to 32 GB, with a total memory capacity up to 64 GB
Storage	3 7-pin SATA 3.0 interfaces 1 M.2 SATA 2242/2280 interface
Operating system	Windows 10/11, Linux
Network interface	2 Intel® GigE interfaces
USB interface	4 USB 3.0 interfaces 2 USB 2.0 interfaces 3 USB 2.0 signals (header) 1 built-in USB 2.0 Type-A interface (for dongle connection)
Serial port	1 RS-232 interface 2 RS-232/RS-485 headers 3 RS-232 headers
Extended interface	1 PCIe x16 interface 3 PCIe x4 interfaces (default: x2 signal) 3 PCI interfaces
Display interface	Supports three independent display interfaces (1 DVI-D, 1 VGA, 1 HDMI) 1 DVI-D, max. resolution 1920 × 1200 @ 60 Hz 1 VGA, max. resolution 1920 × 1080 @ 60 Hz 1 HDMI, max. resolution 4096 × 2160 @ 30 Hz
Audio interface	Mic-in, Line-out, Line-in
GPIO	8-bit GPIO
BIOS	AMI UEFI BIOS (supports Watchdog Timer)
Power	ATX power, ATX/AT power on/off mode is supported
Power supply	Standard ATX (24P + 8P)
Dimension	Standard ATX, 305 mm × 244 mm (12.0" × 9.6")
Temperature	Working temperature: 0 °C to 60 °C (32 °F to 140 °F) Storage temperature: –20 °C to 75 °C (–4 °F to 167 °F)

Outline drawing

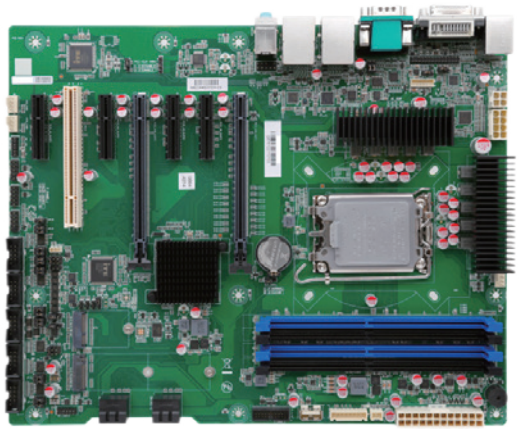


H610 chipset

Q670 Series Chipset

Parameter \ Model	MV-IPC-MB-Q67A-424-0206
CPU	Intel® Core™ 12th/13th generation i3/i5/i7/i9, Pentium, Celeron CPU with LGA1700 socket Support CPU TDP: 125 W
Chipset	Intel® Q670 chipset, ATX main board
Memory	4 DDR4 3200 MHz U-DIMM memory slots Individual memory module capacity up to 32 GB, with a total memory capacity up to 128 GB
Storage	4 SATA interfaces 1 M.2 NVMe/SATA 2242/2280 interface Supports RAID 0, RAID 1, RAID 5, RAID 10
Operating system	Windows 10/11, Linux
Network interface	2 Intel® GigE interfaces
USB interface	6 USB 3.0 interfaces 2 built-in USB 3.0 signals (header) 4 built-in USB 2.0 signals (header) 1 built-in USB 2.0 Type-A interface (for dongle connection)
Serial port	1 RS-232 interface 3 RS-232 headers 1 RS-232/RS-422/RS-485 header 1 RS-232/RS-485 header
Extended interface	2 PCIe x16 interfaces (x8 signal) 4 PCIe x4 interfaces (x4 signal) 1 PCI interface
Display interface	Supports three independent display interfaces (1 VGA, 1 HDMI, 1 DVI) 1 VGA, max. resolution 1920 × 1200 @ 60 Hz 1 HDMI, max. resolution 4096 × 2160 @ 30 Hz 1 DVI, max. resolution 1920 × 1200 @ 60 Hz
Audio interface	Mic-in, Line-out, Line-in
GPIO	8-bit GPIO
BIOS	AMI UEFI BIOS (supports Watchdog Timer)
Power	ATX power, ATX/AT power on/off mode is supported
Power supply	Standard ATX (24P + 8P + 4P)
Dimension	Standard ATX, 305 mm × 244 mm (12.0" × 9.6")
Temperature	Working temperature: 0 °C to 60 °C (32 °F to 140 °F) Storage temperature: –20 °C to 75 °C (–4 °F to 167 °F)

Outline drawing

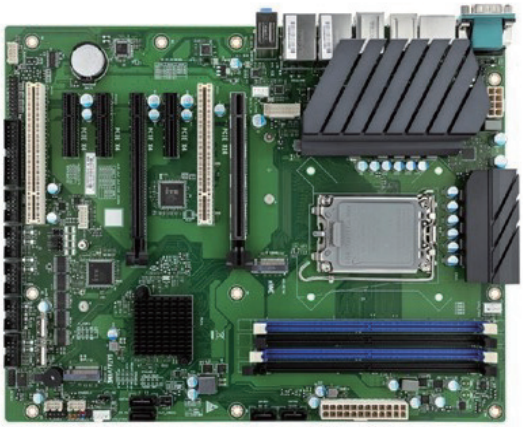


Q670 chipset

W680 Series Chipset

Parameter \ Model	MV-IPC-MB-W68A-423-0210
CPU	Intel® Core™ 12th/13th generation i3/i5/i7/i9, Pentium, Celeron CPU with LGA1700 socket Support CPU TDP: 125 W
Chipset	Intel® W680 chipset, ATX main board
Memory	4 DDR5 4400/4800/5200/5600 MHz U-DIMM ECC/Non-ECC memory slots Individual memory module capacity up to 32 GB, with a total memory capacity up to 128 GB
Storage	4 7-pin SATA 3.0 interfaces 2 M.2 2242/2280 interfaces (1 NVMe interface, 1 NVMe/SATA self-adaptive interface)
Operating system	Windows 10/11, Linux
Network interface	2 Intel® GigE interfaces
USB interface	10 USB 3.0 interfaces 2 built-in USB 2.0 signals (header) 2 built-in USB 2.0 Type-A interfaces (for dongle connection)
Serial port	1 RS-232/RS-422/RS-485 interface 4 RS-232 headers 1 RS-232/RS-422/RS-485 header
Extended interface	2 PCIe x16 interfaces (1 x16 signal, 1 x4 signal) 3 PCIe x4 interfaces (x4 signal) 2 PCI interfaces
Display interface	Supports three independent display interfaces (1 HDMI, 2 DP) 1 HDMI, max. resolution 4096 × 2160 @ 30 Hz 2 DP, max. resolution 4096 × 2160 @ 60 Hz
Audio interface	Mic-in, Line-out, Line-in
GPIO	16-bit GPIO
BIOS	AMI UEFI BIOS (supports Watchdog Timer)
Power	ATX power, ATX/AT power on/off mode is supported
Power supply	Standard ATX (24P + 16P)
Dimension	Standard ATX, 305 mm × 244 mm (12.0" × 9.6")
Temperature	Working temperature: –10 °C to 60 °C (14 °F to 140 °F) Storage temperature: –40 °C to 85 °C (–40 °F to 185 °F)

Outline drawing



W680 chipset

Optional List

Type	Description	Parameter
Memory (RAM)	DDR4 8 GB	288-Pin DDR4 U-DIMM, 8 GB, 3200 MHz
	DDR4 16 GB	288-Pin DDR4 U-DIMM, 16 GB, 3200 MHz
	DDR4 32 GB	288-Pin DDR4 U-DIMM, 32 GB, 3200 MHz
	DDR5 16 GB	288-Pin DDR5 U-DIMM, 16 GB, 4800 MHz
	DDR5 32 GB	288-Pin DDR5 U-DIMM, 32 GB, 4800 MHz
Solid State Drive (SSD)	256 GB 2.5" SSD	2.5", SATA interface, no cache, 550 MB/s sequential read, 480 MB/s sequential write
	512 GB 2.5" SSD	2.5", SATA interface, no cache, 550 MB/s sequential read, 515 MB/s sequential write
	1 TB 2.5" SSD	2.5", SATA interface, no cache, 550 MB/s sequential read, 515 MB/s sequential write
	512 GB NVMe SSD	M.2 interface, NVMe protocol PCIe 3.0 x4, no cache, 3400 MB/s sequential read, 2600 MB/s sequential write
	1 TB NVMe SSD	M.2 interface, NVMe protocol PCIe 3.0 x4, no cache, 3500 MB/s sequential read, 3200 MB/s sequential write
Hard Disk Drive (HDD)	1 TB 3.5" surveillance HDD	3.5", surveillance-grade, 1 TB, 5700 rpm, 32 MB cache, SATA interface
	2 TB 3.5" surveillance HDD	3.5", surveillance-grade, 2 TB, 5400 rpm, 32 MB cache, SATA interface
	4 TB 3.5" surveillance HDD	3.5", surveillance-grade, 4 TB, 5400 rpm, 256 MB cache, SATA interface
	8 TB 3.5" enterprise HDD	3.5", enterprise-grade, 8 TB, 7200 rpm, 256 MB cache, SATA interface
	12 TB 3.5" enterprise HDD	3.5", enterprise-grade, 12 TB, 7200 rpm, 256 MB cache, SATA interface
	20 TB 3.5" enterprise HDD	3.5", enterprise-grade, 20 TB, 7200 rpm, 512 MB cache, SATA interface
Operating system (OS)	Win10 IoT Ent 2021 LTSC High End	Win10 2021 enterprise high-end edition authorization code, which can be used to activate i7/i9
	Win10 IoT Ent 2021 LTSC Value	Win10 2021 enterprise value edition authorization code, which can be used to activate i3/i5
Graphics	RTX 4060Ti	Graphics memory: GDDR6 8 GB, core frequency (Base): 2310 MHz; core frequency (Boost): 2580 MHz, graphics memory bandwidth 288 GB/s, power requirement: 550 W and above, 2 slots
	RTX 4060	Graphics memory GDDR6 8 GB, core frequency (Boost): 2490 MHz, graphics memory bandwidth: 272 GB/s, power requirement: 550 W and above, 2 slots
	RTX 3060	Graphics memory: GDDR6 12 GB, core frequency (Base): 1320 MHz, core frequency (Boost): 1807 MHz, graphics memory bandwidth: 360 GB/s, power requirement: 550 W and above, 2 slots
	GTX 1660S	Graphics memory: GDDR6 6 GB, core frequency (Base): 1530 MHz, core frequency (Boost): 1815 MHz, graphics memory bandwidth 336 GB/s, power requirement: 500 W and above, 2 slots
	GT1030	Graphics memory: GDDR3 4 GB, bit width: 64 bit, core frequency: 902 MHz, graphics memory frequency: 1600 MHz, power requirement: 300 W and above, 1 slot
	GT730	Graphics memory: GDDR3 1 GB, core frequency: 902 MHz, graphics memory frequency: 1600 MHz, power requirement: 250 W and above, 2 slots

More Chassis

MV-IPC-C400*

- Adopts a unique front panel design that conforms to industrial aesthetics, a flexible and unique mechanical design, and hand screws for tool-free disassembly
- Adopts detachable hanger handles, and the structure is still stable after the handles are removed
- Compatible with ATX, Micro-ATX, Mini-ITX industrial main boards
- Supports 2 HDD expansion bays of 2.5", and 2 HDD expansion bays of 3.5"
- Chassis dimension: 483 mm (L) × 452 mm (W) × 177.5 mm (H) (19.0" × 17.8" × 7.0") (with hangers)

MV-IPC-C4610KC

- Compatible with ATX, Micro-ATX, Mini-ITX industrial main boards
- Provides shock-resistant disk drive bays
- Provides the remote switch to meet the needs of remote control
- Adopts multiple heat dissipation design, and supports full heat dissipation of high-performance CPU + GPU
- Chassis dimension: 483 mm (L) × 452 mm (W) × 177 mm (H) (19.0" × 17.8" × 7.0") (with hangers)

MV-IPC-C4508E

- Compatible with ATX, Micro-ATX, Mini-ITX industrial main boards
- Supports 1 HDD expansion bays of 2.5", and 9 HDD expansion bays of 3.5"
- Provides 7 full-height PCI/PCIe extended slots
- The chassis door and plate are integrated, and they are protected by locks, which effectively prevents unauthorized operation
- Chassis dimension: 500 mm (L) × 483 mm (W) × 177 mm (H) (19.7" × 19.0" × 7.0") (with hangers)

Rackmount Industrial PC

Key Features

Provides various sizes, applicable to scenes with limited installation space

The chassis has a variety of sizes and shapes, which can be flexibly adjusted according to actual needs, and is very suitable for scenes with limited installation space

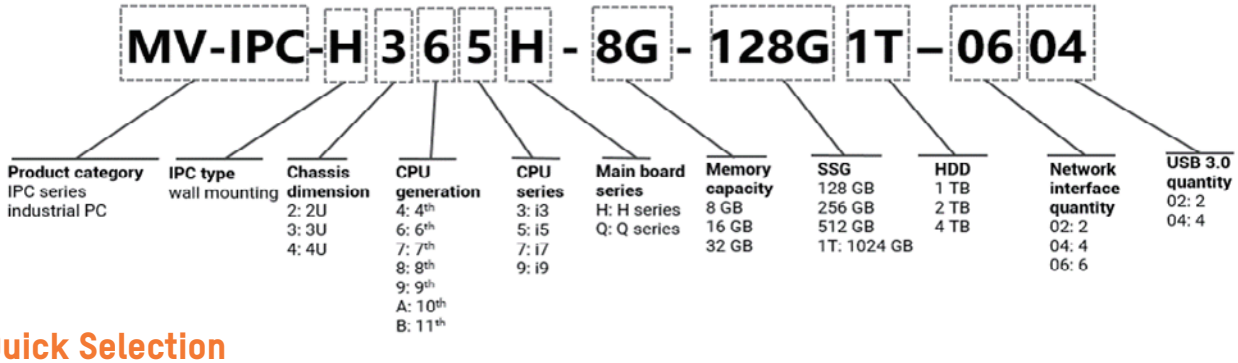
Supports wall mounting for saving space

Depending on the site, the IPC can be fixed on the wall or placed on the tabletop to save space

Excellent extensibility

Provides USB3.0, PCIe and other interfaces, and supports extended frame grabbers, I/O boards, etc

Naming Rule



Quick Selection

Dimension	Model	CPU	Memory	Storage*	Power consumption	Network interface	Other interface	Extended interface
3U	MV-IPC-H367H-8G-1000G-0604	i7-6700	8GB	1000G	150W	2 on-board, 4 extended	USB interface: 4 USB 3.0, 2 USB 2.0, 2 built-in USB 2.0 (1 header), 2 built-in USB 2.0 Type-A COM interface: 2 COM Display interface: VGA + DVI + HDMI	1 PCIe x16, 2 PCI2 PCI
	MV-IPC-H367H-8G-1000G-0204	i7-6700	8GB	1000G	150W	2 on-board		1 PCIe x16, 1 PCIe x4, 2 PCI
	MV-IPC-H365H-8G-128G2T-0604	i5-6500	8GB	128G+2T	150W	2 on-board, 4 extended		1 PCIe x16, 2 PCI
	MV-IPC-H365H-8G-128G2T-0204	i5-6500	8GB	128G+2T	150W	2 on-board		1 PCIe x16, 1 PCIe x4, 2 PCI
	MV-IPC-H365H-8G-128G1T-0604	i5-6500	8GB	128G+1T	150W	2 on-board, 4 extended		1 PCIe x16, 2 PCI
	MV-IPC-H365H-8G-128G1T-0204	i5-6500	8GB	128G+1T	150W	2 on-board		1 PCIe x16, 1 PCIe x4, 2 PCI
	MV-IPC-H365H-8G-256G-0604	i5-6500	8GB	256G	150W	2 on-board, 4 extended		1 PCIe x16, 2 PCI
	MV-IPC-H365H-8G-256G-0204	i5-6500	8GB	256G	150W	2 on-board		1 PCIe x16, 1 PCIe x4, 2 PCI
	MV-IPC-H363H-4G-256G-0304	i3-6100	4GB	256G	150W	2 on-board, 1 extended		1 PCIe x16, 2 PCI
	MV-IPC-H363H-4G-256G-0204	i3-6100	4GB	256G	150W	2 on-board		1 PCIe x16, 2 PCI
3U	MV-IPC-H347H-8G-1000G-0602	i7-4770	8GB	1000G	150W	2 on-board, 4 extended	USB interface: 2 USB 3.0, 4 USB 2.0, 2 built-in USB 2.0 (1 header), 1 built-in USB 2.0 Type-A COM interface: 2 COM Display interface: VGA + DVI + HDMI	1 PCIe x16, 2 PCI
	MV-IPC-H345H-8G-128G2T-0602	i5-4570	8GB	128G+2T	150W	2 on-board, 4 extended		
	MV-IPC-H345H-8G-128G1T-0602	i5-4570	8GB	128G+1T	150W	2 on-board, 4 extended		
	MV-IPC-H345H-8G-256G-0602	i5-4570	8GB	256G	150W	2 on-board, 4 extended		
	MV-IPC-H343H-4G-256G-0302	i3-4130	4GB	256G	250W	2 on-board, 1 extended		
2U	MV-IPC-H247H-8G-1000G-0602	i7-4770	8GB	1000G	150W	2 on-board, 4 extended	USB interface: 2 USB 3.0, 8 USB 2.0 COM interface: 2 COM Display interface: VGA + HDMI	N/A
	MV-IPC-H245H-8G-128G2T-0602	i5-4570	8GB	128G+2T	150W	2 on-board, 4 extended		
	MV-IPC-H245H-8G-128G1T-0602	i5-4570	8GB	128G+1T	150W	2 on-board, 4 extended		
	MV-IPC-H245H-8G-256G-0602	i5-4570	8GB	256G	150W	2 on-board, 4 extended		
	MV-IPC-H243H-4G-256G-0302	i3-4130	4GB	256G	150W	2 on-board, 1 extended		

* (G refers to GB SDD and T refers to TB HDD)

Specification

6th Generation CPU 3U Series

Parameter \ Model	MV-IPC-H36xH
CPU	Intel® Core™ 6th generation i3/i5/i7 CPU with LGA1151 socket
Chipset	Intel® H110 chipset, mATX main board
Memory	2 DDR4 2133/2666/3200 MHz U-DIMM memory slots Individual memory module capacity up to 16 GB, with a total memory capacity up to 32 GB
Storage	3 SATA 3.0 interfaces 1 M.2 2280 SATA interface
Operating system	Default: Windows 10 64-bit (unactivated)
Network interface	2 on-board Intel® GigE interfaces (I219LM + I225V)
USB interface	4 USB 3.0 interfaces ; 2 USB 2.0 interfaces ; 2 built-in USB 2.0 (1 header) ; 2 built-in USB 2.0 Type-A interfaces
Serial port	1 on-board RS-232/RS-422/RS-485 interface 5 built-in RS-232 headers
Extended slot	1 PCIe x16 ; 1 PCIe x4 ; 2 PCI
Display interface	1 VGA ; 1 DVI-D ; 1 HDMI
Audio interface	Line-out, Mic-in
Power input	110 VAC to 240 VAC
Rated power consumption	150W
Dimension	3U chassis, 330 mm × 300 mm × 159 mm (13.0" × 11.8" × 6.3") (L × W × H)
Installation method	Wall mounting and countertop placement
Weight	Approx. 6.8 kg (15.0 lb.)
Temperature	Working temperature: 0 °C to 50 °C (32 °F to 122 °F) Storage temperature: –10 °C to 60 °C (14 °F to 140 °F)
Humidity	20% RH to 95% RH (no condensation)

4th Generation CPU 3U Series

Parameter \ Model	MV-IPC-H34xH
CPU	Intel® Core™ 4th generation i3/i5/i7 CPU with LGA1150 socket
Chipset	Intel® H81 chipset, m-ATX main board
Memory	2 DDR3 1333/1600 MHz U-DIMM memory slots Individual memory module capacity up to 8 GB, with a total memory capacity up to 16 GB
Storage	3 SATA interfaces 1 mSATA interface
Operating system	Default: Windows 10 64-bit (unactivated)
Network interface	2 on-board Intel® GigE interfaces (I218V + RTL8111H)
USB interface	2 on-board USB 3.0 interfaces 4 on-board USB 2.0 interfaces 2 built-in USB 2.0 (1 header) 1 built-in USB 2.0 Type-A interface

Parameter \ Model	MV-IPC-H34xH
Serial port	1 on-board RS-232/RS-422/RS-485 interface 5 built-in RS-232 headers
Extended slot	1 PCIe x16 ; 1 PCIe x4 (x2 signal) ; 2 PCI
Display interface	1 VGA ; 1 DVI-D ; 1 HDMI1 HDMI
Audio interface	Mic-in, Line-out
Power input	110 VAC to 240 VAC
Rated power consumption	150 W
Dimension	3U chassis, 330 mm × 300 mm × 159 mm (13.0" × 11.8" × 6.3") (L × W × H)
Installation method	Wall mounting and countertop placement
Weight	Approx. 8.5 kg (18.7 lb.)
Temperature	Working temperature: 0 °C to 50 °C (32 °F to 122 °F) Storage temperature: –10 °C to 60 °C (14 °F to 140 °F)
Humidity	20% RH to 95% RH (no condensation)

4th Generation CPU 2U Series

Parameter \ Model	MV-IPC-H24xH
CPU	Intel® Core™ 4th generation i3/i5/i7 CPU with LGA1150 socket
Chipset	Intel® H81 chipset, ITX main board
Memory	2 DDR3 1333/1600 MHz U-DIMM memory slots Individual memory module capacity up to 8 GB, with a total memory capacity up to 16 GB
Storage	2 SATA interfaces ; 1 mSATA interface
Operating system	Default: Windows 10 64-bit (unactivated)
Network interface	2 on-board Intel® GigE interfaces (RTL8111F)
USB interface	2 USB 3.0 interfaces ; 8 USB 2.0 interfaces
Serial port	2 on-board RS-232 interfaces ; 4 built-in RS-232 headers
Extended slot	1 PCIe x16 (half-height)
Display interface	1 VGA ; 1 HDMI
Audio interface	MiC-in, Line-in
Power input	115 VAC to 230 VAC
Rated power consumption	150W
Dimension	2U chassis, 290 mm × 257 mm × 91.5 mm (11.4" × 10.1" × 3.6") (L × W × H)
Installation method	Wall mounting and countertop placement
Weight	Approx. 4.3 kg (9.5 lb.)
Temperature	Working temperature: 0 °C to 50 °C (32 °F to 122 °F) Storage temperature: –10 °C to 60 °C (14 °F to 140 °F)
Humidity	20% RH to 95% RH (no condensation)

Dimension

Outline drawing (front)

6th generation CPU 3U Series
4th generation CPU 3U Series

4th generation CPU 2U Series

Outline drawing (rear interfaces)

IPC-H365H-8G-128G1T-0604
IPC-H365H-8G-128G2T-0604
IPC-H365H-8G-256G-0604
IPC-H367H-8G-1000G-0604

MV-IPC-H367H-8G-1000G-0204
MV-IPC-H365H-8G-128G2T-0204
MV-IPC-H365H-8G-128G1T-0204
MV-IPC-H365H-8G-256G-0204
MV-IPC-H363H-4G-256G-0204

IPC-H363H-4G-256G-0304

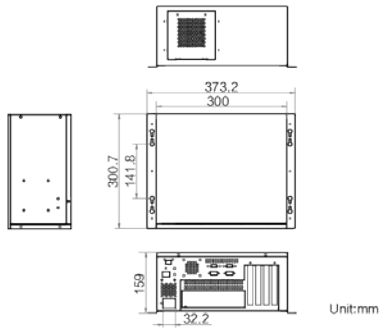
MV-IPC-H347H-8G-1000G-0602
MV-IPC-H345H-8G-128G2T-0602
MV-IPC-H345H-8G-128G1T-0602
MV-IPC-H345H-8G-256G-0602

MV-IPC-H343H-4G-256G-0302

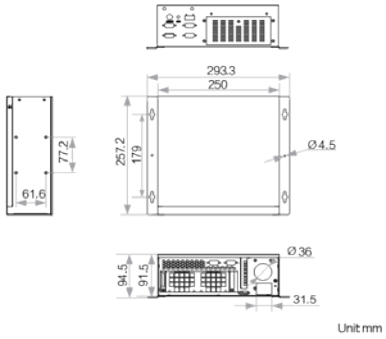
MV-IPC-H247H-8G-1000G-0602
MV-IPC-H245H-8G-128G2T-0602
MV-IPC-H245H-8G-128G1T-0602
MV-IPC-H245H-8G-256G-0602

MV-IPC-H243H-4G-256G-0302

Mechanical dimension drawing



3U Series diagram



2U Series diagram

More Chassis

2U Wall-Mounted Chassis

MV-IPC-C2120H

- The 2U chassis is compact in size, supports wall mounting and countertop placement, and is suitable for environments with low extensibility and limited installation space
- Supports 150 W to 500 W FLEX power supplies, and the front POWER SW
- Supports 2 HDD expansion bays of 2.5", and 1 HDD expansion bays of 3.5"
- Provides 2 front dual-ball 5020 system fans for tool-free maintenance of the dust net
- Chassis dimension: 258 mm (L) × 250 mm (W) × 92 mm (H) (10.2" × 9.8" × 3.6") (without bracket)

3U Wall-Mounted Chassis

MV-IPC-C3709H

- The 3U chassis supports 1 PCIe extended slot, and is compatible with Mini-ITX industrial main boards
- Supports 1 SSD expansion bays of 2.5", and 1 HDD expansion bays of 3.5"
- Supports 200 W to 500 W mini-ATX power supplies
- Provides a 10 cm fan as standard
- Chassis dimension: 275 mm (L) × 200 mm (W) × 135 mm (H) (10.8" × 7.9" × 5.3") (without bracket)

MV-IPC-C3120H

- The 3U chassis supports mATX and Mini-ITX main boards, and supports 4 full-height PCIe/PCI extended slots
- Supports 2 HDD expansion bays of 2.5", and 1 HDD expansion bays of 3.5"
- Supports 150 W to 500 W FLEX power supplies, and the rear POWER SW
- Provides 1 front dual-ball 8025 system fans for tool-free maintenance of the dust net
- Chassis dimension: 301 mm (L) × 330 mm (W) × 159 mm (H) (11.9" × 13.0" × 6.3") (without bracket)

Server

AI-Training Server

Key Features

High-performance configurations for a smooth operating experience
Provides 11th generation Intel® Core™ i7 CPU, 8 core and 16 threads, the max boost clock is up to 4.4 GHz

Graphics Card
Provides built-in RTX 3090 graphics, and the 24 GB memory can provide powerful image processing capabilities

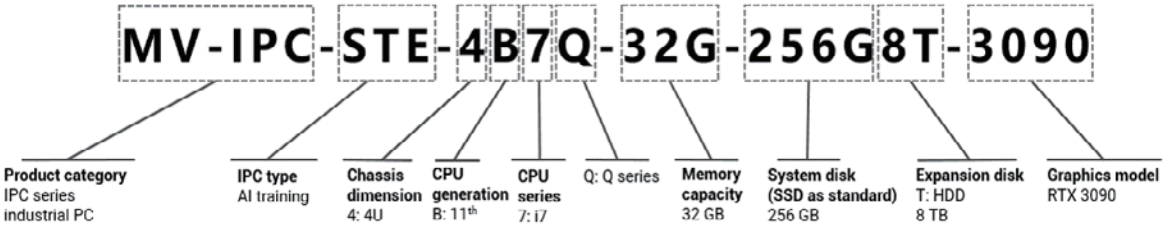
Built-in AI services such as inference/training
It is a dedicated industrial computer for AI training, which can meet the needs of customers for localized deployment. It includes 8 AI training functions, such as object detection, image classification, and character training. One training task and two verification tasks can be performed at the same time

The model can be transformed and reused to multiple platforms after training
Supports model transformation, the model can be applied to multiple platforms such as the VisionMaster algorithm development platform and the SC series smart cameras platform. It is widely used in PCB, automobile spare parts, 3C, new energy and smart healthcare industries

Multi-slot design
Supports the expansion of multiple PCIe x8 frame grabbers to connect multiple high-power cameras

Good hardware and software adaptability, with simple operation to easily deploy tasks
The training software has been tested for compatibility and stability, and the UI interface has been re-optimized to make the operation more convenient and the deployment of training tasks easier

Naming Rule



Specification

Parameter \ Model	MV-IPC-STE-4B7Q-32G-256G8T-3090
CPU	Intel® Core™ i7-11700 CPU, 8 cores 16 threads
Memory	Default: 32 GB ; 4 DDR4 U-DIMM memory slots ; Individual memory module capacity up to 32 GB, with a total memory capacity up to 128 GB
Storage	M.2 SSD
GPU	RTX 3090 ; Graphics memory capacity: 24 GB GDDR6X ; Graphics memory frequency: 19500 MHz ; Graphics memory bandwidth: 936.2 GB/s ; Max. resolution: 7680 × 4320 ; Supports four independent display interfaces: 1 HDMI + 3 DP display output
Graphics core frequency	Base: 1400 MHz, Boost: 1700 MHz
Network interface	3 Intel® GigE interfaces
USB interface	2 USB 2.0 interfaces (front) ; 6 USB 3.0 interfaces (rear) ; 2 built-in USB 2.0 Type-A interfaces
Serial port	1 RS-232/RS-422/RS-485 interface (rear) ; 1 built-in RS-232/RS-422/RS-485 interface ; 2 built-in RS-232/RS-485 interfaces ; 2 built-in RS-232 interfaces
Number of training tasks	Supports singal task training
Number of verification tasks	Supports 2 verification tasks to perform in parallel
Sub-account management	Supports the sub-account permissions setting and sub-account resource allocation

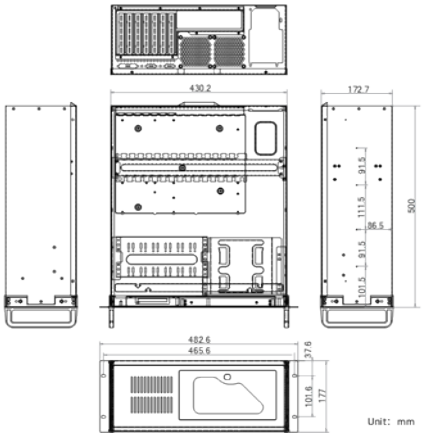
Parameter \ Model	MV-IPC-STE-4B7Q-32G-256G8T-3090
Dataset management	The number of images in the dataset ≤ 100,000 (the size of a single image < 100 MB, and the resolution < 100 million) Supports upload of JPG, JPEG, PNG, BMP format images, and supports direct upload of zip format compression package
Task type	Object detection, image classification, character training, image retrieval, instance segmentation, anomaly detection, image segmentation, unsupervised training
Data labeling	Supports manual labeling, multi-person collaborative labeling, intelligent pre-labeling
Model-related function	Supports model training, model validation and model transformation after training
Power consumption	850 W
Power supply	100 VAC to 240 VAC
Dimension	4U chassis, 430.2 mm × 500 mm × 172.7 mm (16.9" × 19.7" × 6.8") (L × W × H)
Installation method	Cabinet
Weight	Approx. 17.5 kg (38.6 lb.)
Temperature	Working temperature: 0 °C to 45 °C (32 °F to 113 °F) Storage temperature: –20 °C to 60 °C (–4 °F to 140 °F)
Humidity	10% RH to 95% RH (no condensation)

Dimension

Outline drawing (front)

Outline drawing (rear interfaces)

Mechanical dimension drawing



Tailor-Made Server

Multi-Expansion Server

Key Features

Powerful CPU performance
The server is equipped with Intel® Xeon® 4310 CPU which has 12 cores and 24 threads. The CPU has excellent multi-task parallelism and multiple built-in accelerators, which can greatly improve the performance of AI, analytics, networking, and storage, and is 30% faster than the traditional Core™ 11th generation i9 CPU

Excellent extensibility
Adopts an industrial-grade main board with multiple extended slots, providing 7 PCIe x8/x16 slots for easy expansion of 1 GPU, 6 frame grabbers, and 6 times the access capacity of 10-Gigabit cards, CXP cards, and optical port cards

Data collection, storage, and processing are all in one
One device integrates three functions: multi-card expansion, high-speed processing, and high-speed storage, which is more space-saving, and the layout is simpler and more flexible

High-Speed Read/Write Server

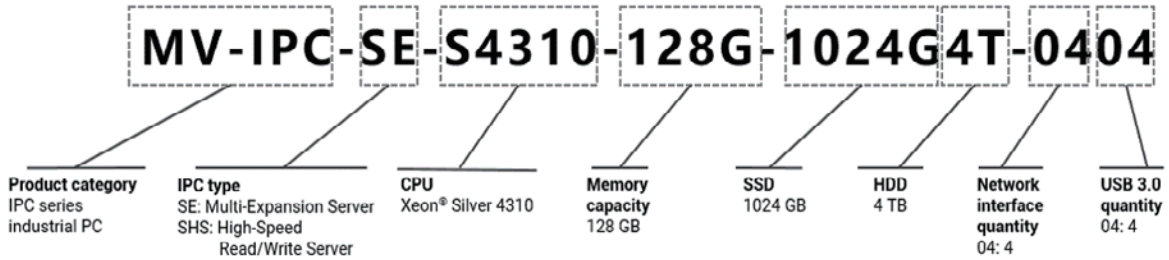
Key Features

Ultra high-speed sequential read and write performance
The high-speed read/write server is a professional image storage algorithm and storage medium, and the max. write speed is up to 14G/s

Mass storage
Supports up to 16 TB mass storage space to ensure long-term data storage

Professional structure design and air duct design
The high-speed read/write server has an excellent air duct design to avoid the write speed slowdown caused by overheating of the storage medium, and supports the expansion of the graphics

Naming Rule



Quick Selection

Series	Model	CPU	Chipset	Memory	SSD	HDD	Graphics	Max. power consumption	Interface
Multi-Expansion Server	MV-IPC-SE-S4310-128G-1024G4T-0404	S4310	C621A	4*32G	960G Nvme	4T HDD	N/A	1300 W	Network interface: 4 GigE interfaces USB interface: 4 USB 3.0 Extended interface: 4 PCIe x16, 3 PCIe x8
	MV-IPC-SE-S4310-128G-1024G8T-0404					8T HDD			
	MV-IPC-SE-S4310-128G-1024G12T-0404					12T HDD			
	MV-IPC-SE-S4310-128G-1024G20T-0404					20T HDD			
High-Speed Read/Write Server	MV-IPC-SHS-S4310- 64G-1T8R-0404	S4310	C621A	2*32G	8T NVME	N/A	GT730	850W	Network interface: 4 GigE interfaces USB interface: 4 USB 3.0 Extended interface: 3 PCIe x16, 3 PCIe x8
	MV-IPC-SHS-S4310- 64G-2T8R-0404				16T NVME				
	MV-IPC-SHS-S4310- 64G-1T2R-0404				2T NVME				
	MV-IPC-SHS-S4310- 64G-2T2R-0404				4T NVME				

Specification

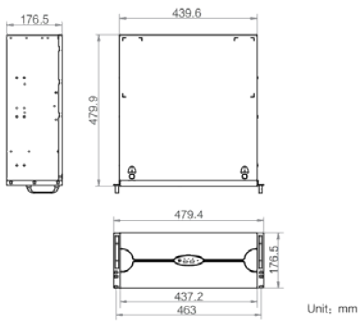
Parameter \ Model	MV-IPC-SE-S4310 Series/MV-IPC-SHS-S4310 Series
CPU	Intel® Xeon® Silver 4310 CPU, 12 cores, 24 threads, base clock: 2.1 GHz, max. boost clock: 3.3 GHz, base power consumption: 120 W
Memory	8 DDR4 2666/2933/3200 MHz ECC RDIMM memory slots Individual memory module capacity up to 256 GB 3DS RDIMM, with a total memory capacity up to 2 TB
Storage	2 7-pin SATA 3.0 interfaces ; 2 Mini-SAS HD SATA 3.0 interfaces ; 2 M.2 2242/2280 interfaces (SATA/PCIe 3.0 x2) ; 2 built-in HDD expansion bays of 3.5" ; 1 built-in HDD expansion bay of 2.5"
Operating system	Windows 10/11
Network interface	4 Intel® 2.5G GigE interfaces ; 1 GigE IPMI dedicated management port
USB interface	4 USB 3.0 interfaces (rear) ; 2 USB 2.0 interfaces (front)
Serial port	1 RS-232 interface (rear)
Display interface	1 VGA, max. resolution 1920 × 1080 @ 60 Hz
Other interface	1 UID interface
Extended interface	4 standard PCIe x16 slots (PCIe 4.0) ; 3 PCIe x8 slots (PCIe 4.0)
USB interface	2 built-in USB 3.0 headers ; 2 built-in USB 2.0 headers ; 1 USB 2.0 Type-A interface
Serial port	1 RS-232 header
Other interface	1 VROC header ; 1 VGA header ; 1 TPM header ; standard ATX 24 + 8 + 4 pin ; 1 standard PMBus interface
Input range	100 VAC to 240 VAC
Output power	1300 W (input: 200 VAC to 240 VAC) ; 850 W (input: 100 VAC to 120 VAC)
Installation method	Cabinet
Dimension	437.5 mm × 480 mm × 176.5 mm (17.2" × 18.9" × 6.9") (L × W × H)
Weight	Approx. 18.8 kg (41.4 lb.)
Temperature	Working temperature: 0 °C to 40 °C (32 °F to 104 °F) ; Storage temperature: –20 °C to 60 °C (–4 °F to 140 °F)
Humidity	8% RH to 90% RH (no condensation)

Dimension

Outline drawing (front)

Outline drawing (rear interfaces)

Mechanical dimension drawing



Industrial Panel PC

Key Features

Touchscreen design
Provides 8" to 21" capacitive/resistive interactive touchscreen. The chassis and screen adopt an all-in-one design. Supports touch operation and user-friendly UI design to bring a comfortable user experience

Excellent interactive experience
Supports a customized human-machine interaction interface

Suitable for scenarios that require frequent debugging
The touchscreen can operate, change and issue instructions to the system in time. The convenient operation process is suitable for frequent debugging scenarios

Various installation methods, flexibly responding to different environments
Supports rail mounting, wall mounting, open mounting and other installation methods

Product Coverage

Supports multiple screen sizes from 8" to 21"

Provides capacitive/resistive interactive touchscreen

Compact Industrial PC

Key Features

Low power consumption and low heat production
Mostly adopts low-power and power-saving CPUs, and the overall power consumption is low

Compact in structure, supports wide temperature operation
Adopts a closed fanless design with a higher IP protection level. It is not only dust-proof, moisture-proof, and vibration-proof, but also enhances the ability to resist electromagnetic interference, and can realize wide temperature operation

Adapts to complex and harsh onsite environments
Provides a compact structure and stable performance, designed for industrial sites

Easy to install, supports plug and play
Mostly adopts a power adapter

Product Coverage

Up to 12th generation Intel® Core™ CPUs can be configured

Some products support PCIe extended slots

Industry Case

Photovoltaic

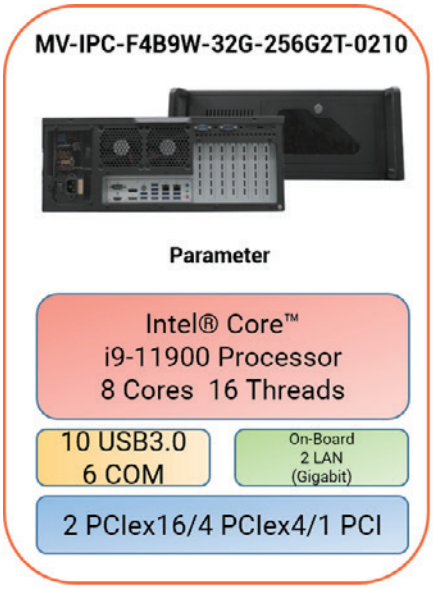
Industry Background

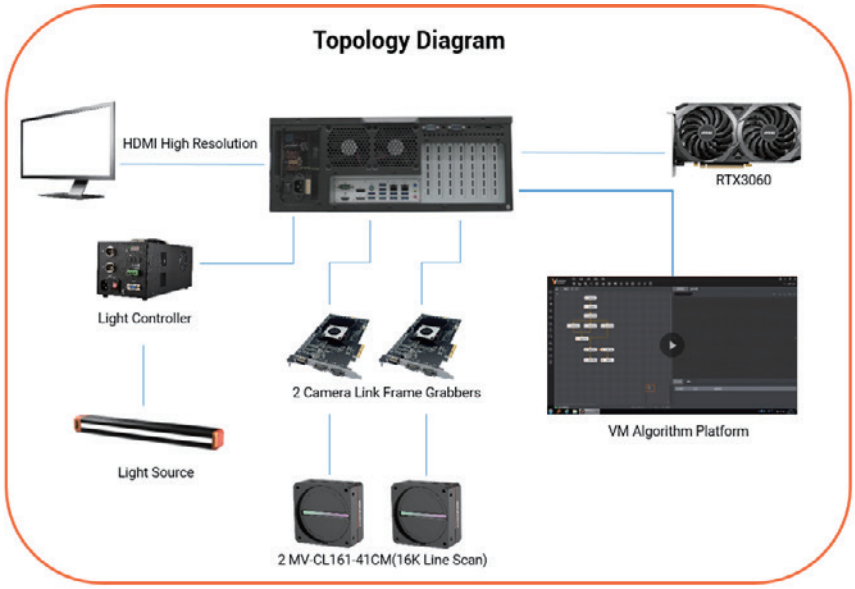
Photovoltaic solar energy is the fastest growing and most dynamic research field over recent years. In the photovoltaic industry chain structure, the wafer is processed into a battery chip, which is the most central step to achieve photovoltaic conversion. In order to improve the quality of solar cells, it is necessary to apply machine vision to EL detection at key stages of assembly production. EL detection aims to detect internal defects in battery chips (wafer) and assemblies

Due to the need to analyze and identify fine cracks on wafer and the high detection accuracy requirements, extremely high demands are placed on the performance and quality of the industrial PC:

Extremely strong computing power is required for the stability and fast operation of software (VM)	Extremely strong expansion performance is required to ensure high detection accuracy, the use with deep learning graphics, and a variety of frame grabbers	Stable computing power and network environment are required to ensure the efficient transmission of industrial camera data

Solution





In line with the industry demand, Hikrobot offers the MV-IPC-F4B9W-32G-256G2T-0210 4U rackmount industrial PC with the following advantages:

Strong performance	The product is equipped with Intel® Core™ i9-11900 processor, 8 cores, 16 threads, and a turbo boost up to 5.3 GHz. Its powerful processing performance offers enormous momentum to the VM algorithm development platform
Rich extended interface	Equipped with Nvidia ® RTX3060 graphics, it supports up to 4 Cameralink frame grabbers. Besides, 10 USB 3.0 interfaces and 6 COM ports offer platforms to light controllers, motion control boards, and high-speed NICs
Excellent software compatibility	Greatly compatible with the VM algorithm platform, it ensures seamless secondary software development for customers, freeing the worry of compatibility
Dual Intel network interface and stable network	The onboard Intel interfaces offer stable data transmission capabilities, significantly reducing packet loss during data transfer when connecting external industrial cameras

Autonomous Mobile Robot

Industry Background

With the ongoing industrial intelligence revolution, smart logistics that relies on modern technologies such as big data, cloud platforms, and intelligent sensing, has achieved real-time, controllable, and convenient logistics services. The use and management of AMR (Autonomous Mobile Robot) has also become an increasingly discussed topic. The scheduling and guidance of AMR in the entire warehouse management system rely on the industrial PC, which serves as a bridge between the AMR and the cloud platform, sending and receiving instructions in real-time and uploading data

To ensure precise operation of the equipment and achieve cloud data communication, extremely high demands are placed on the performance and quality of the industrial PC:

Excellent computing performance is required to ensure the integrated architecture of navigation, inbound, and cloud transmission	Stable network is needed to ensure the stable and efficient data transmission among AMRs, parking spaces, and cloud storage	In the logistics and warehousing environment, 24/7 continuous operation is required, which demands high environmental adaptability

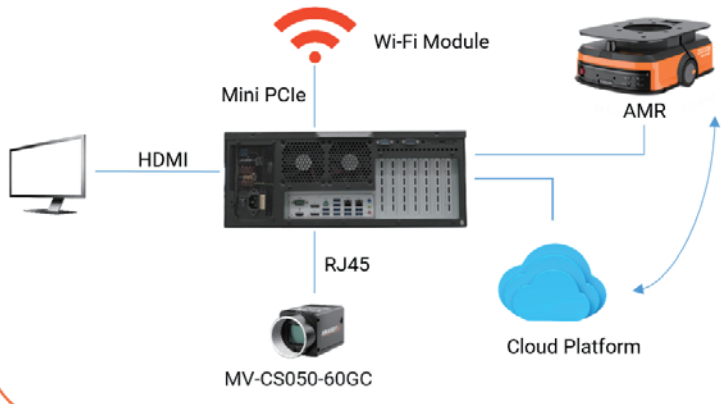
Solution

MV-IPC-F485H-8G-256G1T-0204

Parameter

- Intel® Core™ i5-8500 Processor
- 4 USB3.0/6 COM/2 LAN
- 1 PCIex16/2 PCIex4/4 PCI/1 Mini PCIe

Topology Diagram



According to the industry demand, Hikrobot offers the MV-IPC-F485H-8G-256G1T-0204 4U rackmount industrial PC with the following advantages:

Efficient computing power	The product is equipped with Intel® Core™ i5-8500 processor, featuring 6 cores, 6 threads, and a turbo boost up to 4.1 GHz. It provides computing power assurance for cloud data connectivity and AMR scheduling
Rich interface	With data collection, transmission and upload through the Wi-Fi module , the product's own mini-PCIe interface ensures accurate feedback of AMR inbound data
Excellent environmental adaptability	The product has good dust protection and cooling abilities, and good earthquake and interference resistance, ensuring 24/7 continuous operation in complex environments

Logistics

Industry Background

The advent of logistics barcodes has enabled the sharing of data and the synchronized transmission of goods and information from manufacturers to transportation exchanges. Barcodes are involved in the logistics industry at various stages, from inbound management, outbound management, warehouse internal management, to the final delivery stage

As the central carrier of logistics barcode readers, high adaptability to environments and high-speed processing performance are required:

Excellent computing power support from the industrial PC is required to meet the need for barcode recognition under the high-speed operation of conveyor belts and achieve ultra-high accuracy	To ensure comprehensive scanning of package surfaces in 6 sides without omission, it is essential to guarantee stable operation when multiple code reading cameras are connected	Excellent environmental adaptability is required to ensure long-term stable operation under harsh conditions

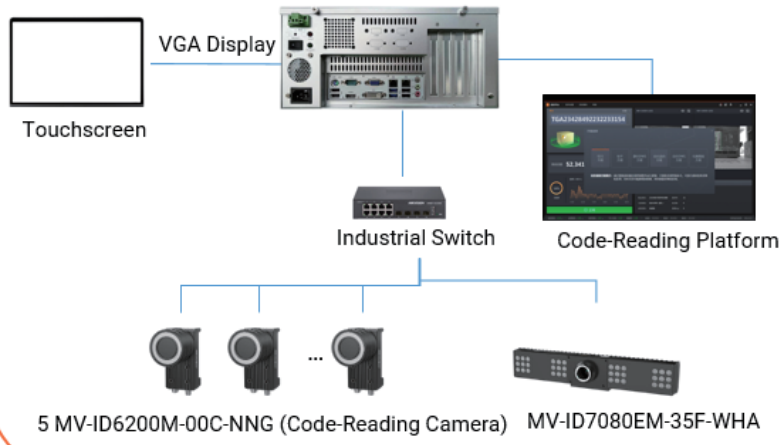
Solution

MV-IPC-H345H-8G-256G-0602-X1

Parameter

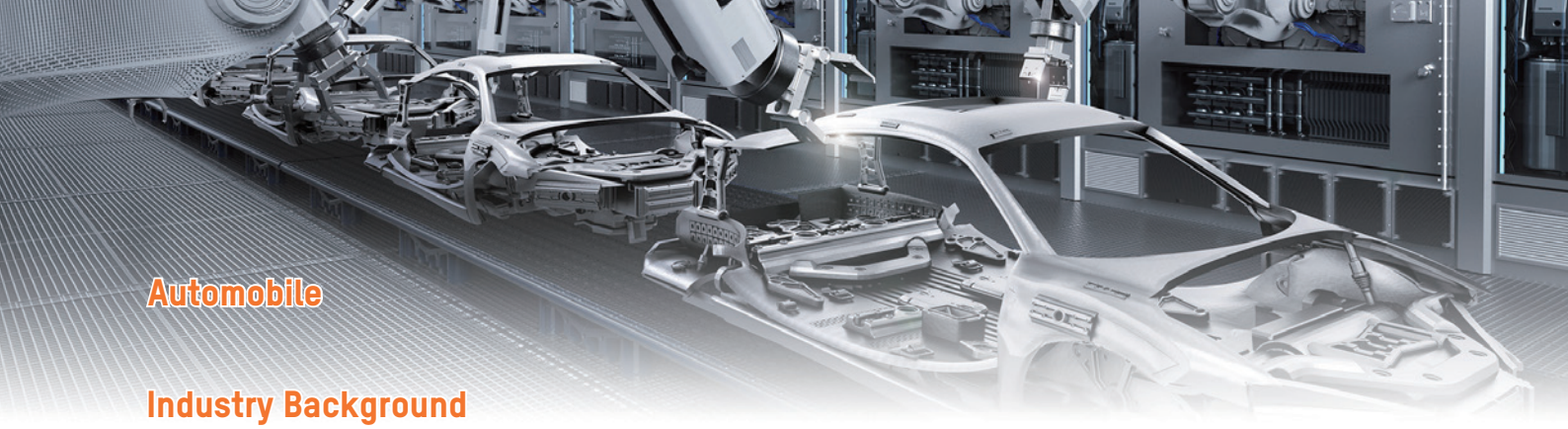
- Intel® Core™ i5-4570 Processor
- 6 COM
- On-Board 2 LAN (Gigabit) + 4 Port Network Card

Topology Diagram



According to the industry demand, Hikrobot offers the MV-IPC-H345H-8G-256G-0602-X1 3U wall-mounted industrial PC with the following advantages:

Efficient computing power	Equipped with the Intel® Core™ i5-4570 processor, the product can handle multiple camera data while maintaining accurate and stable operation of the AI algorithm of the code-reading platform. The product is user-friendly and efficient, saving labor costs of the industry
Rich interface	The product has 6 serial ports, 8 USB ports, VGA/HDMI and other interfaces, and fully supports display, code sweeper and other intelligent function expansion
Excellent environmental adaptability	The product has good dustproof and cooling ability, and after the oven aging test, 24/7 continuous operation can be guaranteed



Automobile

Industry Background

China's intelligent manufacturing and automation industries have accelerated their development, particularly in the automotive and auto parts manufacturing sectors which are gradually adopting various CNC system equipment. Vulcanization of tire is a critical part of China's auto parts manufacturing industry. With the deep integration of information and the ongoing wave of IoT, digital upgrade has become an inevitable trend in the industry's development

A well-known domestic tire vulcanizing machine equipment manufacturer has set high standards for the quality and performance of its core computing unit—the industrial PC—to ensure continuous and stable operation of its equipment under complex working conditions:

The industrial PC needs to be compact, lightweight and easy to install	Convenient operational performance is essential for adjusting parameters at any time to meet different production demands	The environment is characterized by long-term high temperature and dust. Excellent environmental adaptability is required to ensure long-term stable operation under such harsh conditions on-site

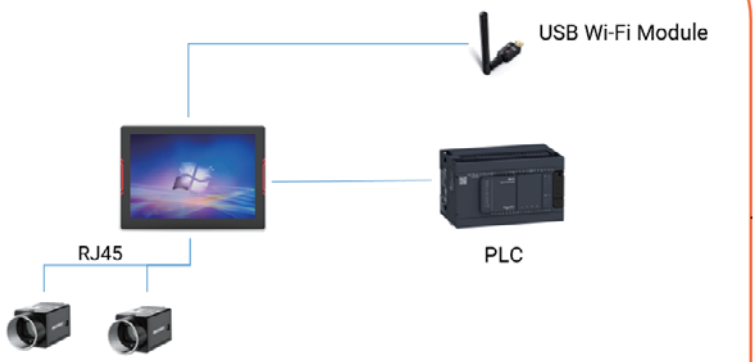
Solution

MV-IPC-T15C20-4G-128G-216-X

Parameter

- Intel® J1900 Processor
- 15" Capacitive Touchscreen
- On-Board 2 LAN/3 COM
- 12 VDC to 24 VDC Wide Input Voltage

Topology Diagram

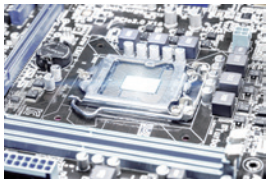


According to industry demand, Hikrobot offers the MV-IPC-T15C20-4G-128G-216-X 15-inch industrial panel PC with the following advantages:

Excellent performance	The product is equipped with the Intel ® J1900 processor and excellent chip architecture. It can operate stably and can receive transmission data quickly
Rich interface	The product has interfaces such as 3 serial ports, 2 network interfaces, 6 USB ports and VGA, fully supporting the access of display and PLC
Excellent environmental adaptability	The product is dustproof, waterproof, and high-temperature resistant with high ingress protection. It supports DC 12-24V wide voltage input, ensuring stable and worry-free operation
Smooth interactive experience	The 15-inch all-in-one large capacitive touchscreen supports multi-point touch, providing a seamless user experience

Appendix

Main board



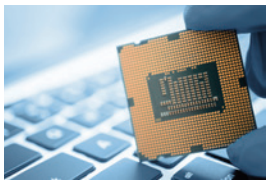
A main board is the skeleton of a computer that holds and connects various parts and components of the computer. The main function is to transmit various electronic signals, and some chips are also responsible for preliminary processing of some peripheral data. The main types are now ATX (standard), M-ATX (compact), and ITX (mini)

Main board ATX main board : Commonly known as the "large board", it offers good extensibility, rich interfaces, with 7 expansion slots and a size of 305 x 244 mm. It is currently the most common standard main board

M-ATX main board : The compact Micro-ATX main board, commonly referred to as the "small board," has 4 expansion slots and a size of 244 x 244 mm. It is now quite common in small computers

ITX main board : Commonly known as the "mini board," it has limited extensibility with only 1 expansion slot. The size of the ITX main board is 170 x 170 mm

CPU



The CPU resembles the human brain. It is the ultimate execution unit for information processing, program operation, and is located in a special slot on the main board inside the device. The CPU and main board are mutually compatible, and different main boards support different CPU models. The main parameters of the CPU are: clock speed, cache, bus structure, number of core threads

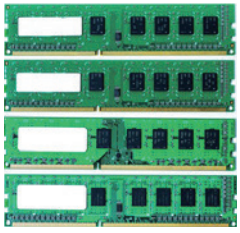
Clock speed : It refers to the operating frequency at which the CPU performs calculations, and is also known as the internal clock frequency. Generally, the higher the clock speed is, the faster the calculation speed of the CPU will be

Number of cores : It refers to the number of processing units that a CPU has. For example, an 8-core CPU has 8 cores, each acting as an independent processing unit

Number of threads : It is a logical concept that refers to the simulated number of CPU cores. For instance, one CPU core can simulate 2 threads, meaning that a single-core CPU functions similarly to a dual-core CPU

The meaning of CPU naming suffix : Some Intel CPUs include suffixes like K/F/M/U in their names, which primarily mean: K: Unlocked for overclocking ; F: No graphics version ; M: Dual-core mobile version ; U: Ultra-low power consumption version

Random Access Memory (RAM)



RAM plays a key role in the entire computer. Its first function is to temporarily store the processing data of the processor (CPU). Its second function is to exchange data with external storage devices such as solid-state disk and hard disk drive. The main parameters of RAM are capacity, frequency, and memory timing

Capacity : It refers to the size of the memory space, indicating how many gigabytes (G) of data can be held. Theoretically, the larger the capacity, the better

Timing : It refers to the delay time of memory in different working stages. The lower the memory timing value, the shorter the working delay

DDRx : This is a type of high-bandwidth computer memory specification. Currently, the most popular ones are DDR3, DDR4, and DDR5, with their frequencies increasing with each generation. DDRx memory is not backward compatible due to changes in the interface

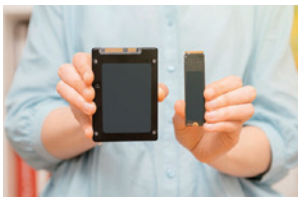
ECC : This is a more advanced memory data error-checking mechanism. It can not only detect multi-bit errors, but also can correct single-bit errors. Memory with the ECC label indicates it has an ECC error-checking mechanism

Non-ECC : Non-ECC memory is the most common consumer-level memory with no cache, no registers, and less latency, and is typically used for desktop computers

MHz : Clock frequency, which refers to the number of times the clock signal switches between high and low levels within 1 second

MT/s : A unit of memory standardized transfer rate, for DDRx memory (DoubleData Rate), 1MHz = 2Mt/s

Storage Drive



Storage drive is one of the most important memories in the industrial PC. Most of the software that a computer needs to function properly is stored on the storage drive. Depending on the architecture, storage drive is currently divided into two categories: HDD and SSD

Solid State Drive (SSD)

Solid state drives are hard drives made of solid-state electronic storage chip arrays, mainly consisting of master control units and storage arrays. The current mainstream solid state drives are a wide variety of types, and they are distinguished mainly through interface type and transport protocol

According to the transport protocol, they can be classified into SATA and Nvme, and according to the interface type, they can be classified into SATA and M.2

The SATA protocol is the most widely used transport protocol available, with fast transfer speeds, efficient execution and hot plugging support

NVMe protocol is a transport protocol developed specifically for flash memory products that maximizes SSD product performance while reducing latency, and therefore is the preferred protocol for M.2 interface SSD. It is important to note that only 11th Generation and above CPUs support Nvme protocol SSD

Hard Disk Drive (HDD)

Hard disk drives are computer storage devices that integrate precision mechanics, microelectronic circuits, and electromagnetic conversion, serving as one of the primary storage media for computers. They consist of one or more magnetic disks made of aluminum or glass, magnetic heads, rotation shafts, control motors, head controllers, data converters, interfaces, and cache

They are divided into enterprise and surveillance hard drives according to the applicable customer base:

- Surveillance hard drives : They are generally used in streaming media playback and video surveillance fields, suitable for 24/7 operation. However, their overall reliability is lower compared to enterprise hard drives
- Enterprise hard drives : They offer the highest reliability, have more robust error-correcting capabilities, and the highest ratings when considering overall performance. They are most suitable for storing important data

HDD vs. SSD

	Rate	Read-write lifetime	Shock resistance	Weight, volume	Capacity size	Data resiliency
Hard Disk Drive (HDD)	Average speed 60~80M/s	30,000 hours/motor and disk wear	Poor	Heavy weight, large volume	Large	Easy
Solid State Disk (SATA SSD)	Average speed 150~300 M/s	3000 writes	Extremely high	Lightweight and compact	Small	Difficult
Solid State Drive (NVMe SSD PCIE3.0)	Average speed 3000~3500 M/s	3000 writes	Extremely high	Lightweight and compact	Small	Difficult

RAID

RAID, or redundant array of independent disks, simply referred to as "disk arrays," is essentially a system that combines multiple independent disks into one large disk system, which results in better storage performance and higher reliability than a single disk. Depending on the combination mode, the main RAID levels used under the usage scenario of the industrial PC is RAID 0/1/5/10

Type	RAID0	RAID1	RAID5	RAID10
Reading and writing performance	Best reading and writing performance	The reading speed is the same as that of a single disk, but writing requires writing to both sides	The reading speed is similar to that of RAID0, and writing performance is better than that of RAID1 and less than that of RAID0	The reading speed is similar to that of RAID0 and writing performance is similar to that of RAID1
Security	Worst	Best	RAID0 <RAID5 <RAID1	Same as RAID1
Redundancy type	None	Yes, mirroring 100%	Parity check	Yes, mirroring 100%
Number of disks	2 or 2*n (at least 2)	⩾ 2	⩾ 3	⩾ 4
Connection mode	Series	Parallel	Parallel	
Disk utilization rate	Highest	Poor	General	Poor
Fault tolerance	No bug fixing capability	Yes	Yes	Yes
Scenario	General personal users	Server, database storage	Finance, database storage	Banking, finance, archive management

Power Supply

It is an enclosed and independent component installed inside the chassis, serving as the energy core of the entire computer. Its function is to convert AC power into stable and reliable DC power with different voltages such as 5V, 12V, and 3.3V, which is supplied to the system board, various adapters, and expansion cards inside the chassis. The stability of power supply affects the stability of all accessories. The main power supply used in the industrial PC is ATX power supply and FLEX power supply

ATX power supply : It is the most popular power supply and is also available with ATX main boards. The common power on the market is: 300W, 500W, 650W, 850W, and 1000W. Currently, the rackmount industrial PCs all provide ATX power supply by default

FLEX power supply : As a major member of mini power supply, it is mostly applied in wall-mounted and other small chassis with features of small noise and small size. With the development of technology, the rated power of some FLEX power supplies can reach up to 300W or even 400W

Differences between ATX and FLEX power supply : ATX power supplies are larger in size and some can provide a rated power of over 1000W; FLEX power supplies are smaller in size, provide lower rated power, and generate less noise

API

The main purpose of API is to complete the exchange of information between the main system of the industrial PC and the external device

VGA, DVI, HDMI, DP : They act as a path for connecting the display information generation/playback device to the display. The quality of the interface image transfer varies between different types. The theoretical maximum resolutions supported are:

- VGA : 1920×1080@60fps 

- DVI-I : 2560×1600@60fps 

- HDMI : 3840×2160@30fps 

- DP : 3840×2160@60fps 

USB 3.0 interface : short for universal serial bus. As a high-speed serial bus, its extremely high transmission speed can meet high-speed data transfer applications, hence its wide application fields

USB 2.0 is currently a popular data transmission interface and is often used in consumer-level computers with the maximum transmission speed increasing to 480Mbps
USB 3.0 has extremely fast transmission speed that can theoretically reach 5 Gbps, 10 times faster than the previous generation USB 2.0

Network interface : It refers to the LAN interface (LAN port), which is used primarily for routers to connect to the LAN. The typical rate is 10M, 100M and the maximum is 1000M. The maximum transmission distance is 100m. The network port in the industrial PC is generally a GigE interface (1000M)

Serial port : In serial communication, a standard interface is required for both communicating parties. This allows different devices to be easily connected and communicate through a physical interface (hardware). Common serial protocols are RS-232, RS-422, RS-485, etc

RS-232 : The RS232 interface is usually presented in the form of 9 pins (DB9) and is the most widely used serial interface in the PC and communication industry. It is defined as a single-ended standard that increases the communication distance in low-speed serial communications

RS-422 : Developed from RS-232, it improves on the disadvantages of its predecessor: short transmission distance (a maximum transmission distance of 15 m) and low speed. RS-422 defines a single-phase, balanced communications interface that increases transmission rates to 10Mbps and maximum transmission distances to 1200m

RS-485 : The RS-485 standard adds multi-point and bi-directional communication capabilities over RS-422. When interconnecting multiple stations, it can save signal lines, making it convenient for high-speed and long-distance transmission

SATA interface : SATA is one of the mainstream hard drive interfaces. SATA interface is easy to identify with a very distinct L-form and simple interface structure. It supports hot plugging, offers fast transmission speeds, and has high execution efficiency. It is used to connect 2.5-inch SSD and 3.5-inch mechanical drives

PCIe interface : It is a high-speed serial computer expansion bus standard that has been updated to the fifth generation PCIe5.0 with the development of technology. PCIe is scalable to support expansion graphics, NIC, capture cards, and others. The bandwidth of the PCIe interface is also related to its corresponding number of aisles. The higher the number of aisles, the faster the transmission speed and the longer the slot length. PCIe can be divided into PCIe X1, PCIe X2, PCIe X4, PCIe X8 and PCIe X16 by length. The corresponding transmission speed and bandwidth are shown in the table below:

PCIe version	Encoding mode	Transmission speed	Bandwidth			
			x1	x4	x8	x16
PCIe 3.0	128b/130b	8 GT/s	984.6 MB/s	3.938GB/s	7.877GB/s	15.754GB/s
PCIe 4.0	128b/130b	16 GT/s	3.938 GB/s	7.877GB/s	15.754GB/s	31.50GB/s
PCIe 5.0	128b/130b	32 GT/s	7.877 GB/s	15.754GB/s	31.50GB/s	64GB/s

It is important to note that the graphics card is usually connected to the PCIe x16 slot closest to the CPU

PCI interface : A slot that supports the PCI (Peripheral Component Interconnect) bus protocol. PCI interfaces are used to connect devices such as network, and others that comply with the PCI bus standard. PCI slots are on the main board and are usually opal. The PCI interface of the industrial PC is mainly connected to the motion control card

RAM slot : The slot in which the memory stick is installed. The type and amount of memory supported by the main board are determined by the RAM slot. The number of RAM slots ranges from just two to as many as eight. When configuring dual channel memory, the memory must be inserted in the same color slot

PCI interface

RAM slot

Glossary

CPU (Central Processing Unit)

A central processor is a place in which all kinds of codes are executed and all kinds of logic are processed, and therefore it can be called the brain of a computer

HDD (Hard Disk Drive)

Mechanical hard drive is the traditional hard drive mainly composed of platter, disk head, spindle, control motor, read/write head controller, data converter, interface, cache, and so on

RAM (Random Access Memory)

Random-access memory is one of the internal memories of a computer, and is the most important one among them. It is commonly referred to as (running) memory in the computer and is much faster than a hard drive

SSD (Solid-State Drive)

Solid-state drive is a hard drive made from an array of solid-state electronic storage chips

USB (Universal Serial Bus)

Universal serial bus is a standard of serial bus and also a technical specification of input and output interface. Known as the universal interface, it is frequently used in 3C digital products, computers, mobile phones, printers, game consoles, etc. and has evolved into an industry standard

Power consumption

It refers to the power consumed by the device and the unit is watt (W)

RAID-Array

RAID-array is intended to back up a single part of the original for the purpose of enhancing its security, which is widely used in information and communication systems

Bus

It is the common communication backbone composed of transmission wiring harness made of wires for transmitting information between various functional components of a computer. It is a common channel for the CPU, memory, input, and output devices to transfer information

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