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VALUABLE PRODUCTS

Product Selection Manual



Industrial computer chassis classification



We have successfully developed a variety of 1U/2U/3U/4U rack-mounted/wall-mounted industrial computers, supporting industrial motherboards of multiple sizes such as ATX/Micro ATX and mini-ITX. According to the actual project requirements, we independently match the chassis and motherboard to provide customers with more flexible and cost-effective selection solutions.

4U INDUSTRIAL COMPUTER CHASSIS

Appearance (example)			
Model	SIN-610L	SIN-610X	SIN-610P
Size (mm)	427mm×480mm×177mm(W*D*H)	430mm×471.4mm×176mm(W*D*H)	427mm×450mm×177mm(W*D*H)
Material	Environmentally friendly, fingerprint-resistant 1.2mm SGCC	Environmentally friendly, fingerprint resistant 1.2mm SGCC	Ma Steel (environmentally friendly, fingerprint-resistant 1.2mm SGCC)
Hard disk location	1*3.5" hard drive bays (compatible with 1*2.5" SSD)	1* 3.5" HDD (the optical drive bay is compatible with 1*2.5" HDD/SSD)	2*3.5" hard disk slots, 1*2.5" SSD 1*3.5" floppy drive, compatible with 3.5" hard disk
CD-ROM space	3*front 5.25" optical drive bays (compatible with 1*3.5" hard drive bay or 1*2.5" SSD)	3*5.25" optical drive bays	2*5.25" optical drive bays
Power supply	4U standard ATX power supply	4U standard ATX power supply	4U standard ATX power supply
Expand space	7 full-height PCI/PCIE expansion slots, insertion	7 full-height PCI/PCIE expansion slots, insertion	7 full-height PCI/PCIE expansion slots, insertion
System control	POWER LED*1, HDD LED*1, RESET SW*1, POWER SW*1	Power LED*1, HDD LED*1, Power SW*1	POWER LED*1, HDD LED*1, RESET SW*1, POWER SW*1
USB	Supports 2 front USB2.0 interfaces	Supports 2 front USB2.0 interfaces	Supports 2 front USB2.0 interfaces
Suitable for motherboard	ATX, Micro ATX, mini ITX Standard ISA/PCI/PCIMG industrial baseboard + CPU long card (14 slots)	ATX, Micro ATX, mini ITX	ATX, Micro ATX, mini ITX Standard ISA/PCI/PCIMG industrial baseboard + CPU long card (14 slots)

4U INDUSTRIAL COMPUTER CHASSIS

Appearance (example)			
Model	DT-510M	SIN-610H	DT-610S
Size (mm)	427mm×450mm×177mm(W*D*H)	427mm×480mm×177mm(W*D*H)	427mm×330mm×176mm(W*D*H)
Material	Environmentally friendly, fingerprint-resistant 1.2mm SGCC	Environmentally friendly, fingerprint resistant 1.2mm SGCC	Environmentally friendly, fingerprint resistant 1.2mm SGCC
Hard disk location	1*3.5" hard drive bays (compatible with 1*2.5" SSD)	1* 3.5" HDD (the optical drive bay is compatible with 1*2.5" HDD/SSD)	2*3.5" hard disk slots, 1*2.5" SSD 1*3.5" floppy drive, compatible with 3.5" hard disk
CD-ROM space	2*front 5.25" optical drive bays (compatible with 1*3.5" hard drive bay or 1*2.5" SSD)	3*5.25" optical drive bays	2*5.25" optical drive bays
Power supply	4U standard ATX power supply	4U standard ATX power supply	4U standard ATX power supply
Expand space	7 full-height PCI/PCIE expansion slots, insertion	7 full-height PCI/PCIE expansion slots, insertion	7 full-height PCI/PCIE expansion slots, insertion
System control	POWER LED*1, HDD LED*1, RESET SW*1, POWER SW*1	Power LED*1, HDD LED*1, Power SW*1	POWER LED*1, HDD LED*1, RESET SW*1, POWER SW*1
USB	Supports 2 front USB2.0 interfaces	Supports 2 front USB2.0 interfaces	Supports 2 front USB2.0 interfaces
Suitable for motherboard	ATX, Micro ATX, mini ITX Standard ISA/PCI/PCIMG industrial baseboard + CPU long card (14 slots)	ATX, Micro ATX, mini ITX Standard ISA/PCI/PCIMG industrial baseboard + CPU long card (14 slots)	ATX, Micro ATX, mini ITX

4U INDUSTRIAL COMPUTER CHASSIS

Appearance (example)			
Model	SIN-610P	SIN-4000	SIN-4100
Size (mm)	427mm×450mm×177mm(W*D*H)	428mm×550mm×177mm(W*D*H)	427mm×450mm×177mm(W*D*H)
Material	Ma Steel (environmentally friendly, fingerprint-resistant 1.2mm SGCC)	Aluminum alloy, environmentally friendly and fingerprint-resistant 1.2mm SGCC	Environmentally friendly, fingerprint resistant 1.2mm SGCC
Hard disk location	2*3.5" hard disk slots, 1*2.5" SSD 1*3.5" floppy drive, compatible with 3.5" hard disk	2 front hot-swappable 3.5" hard drive slots, compatible with 2.5 hard drives, built-in 1*3.5" hard drive slot or 2*2.5" hard drive slots	3*standard 3.5" hard drive slots, hard drive bracket adopts spring shock absorption design
CD-ROM space	2*5.25" optical drive bays	1 ultra-thin notebook optical drive bay	1*5.25" optical drive bays
Power supply	4U standard ATX power supply	4U standard ATX power supply	4U standard ATX power supply
Expand space	7 full-height PCI/PCIE expansion slots, insertion	7 full-height PCI/PCIE expansion slots, insertion	7 full-height PCI/PCIE expansion slots, insertion
System control	POWER LED*1, HDD LED*1, RESET SW*1, POWER SW*1	1*Power SW, 1*Power LED, 1*HDD LED, 1*Reset 8.9" LCD, touch keyboard (87 keys) + mouse (USB port)	POWER LED*1, HDD LED*1, RESET SW*1, POWER SW*1, AUO 8.4" industrial grade LCD screen, optional resistive touch screen, with touch mouse, industrial grade keyboard
USB	Supports 2 front USB2.0 interfaces	Supports 2 front USB2.0 interfaces	Supports 2 front USB2.0 interfaces
Suitable for motherboard	ATX, Micro ATX, mini ITX Standard ISA/PCI/PCIMG industrial baseboard + CPU long card (14 slots)	ATX, Micro ATX, mini ITX	ATX, Micro ATX, mini ITX

2U INDUSTRIAL COMPUTER CHASSIS

Appearance (example)			
Model	<p style="text-align: center;">SIN-61025</p>	<p style="text-align: center;">SIN-61029</p>	<p style="text-align: center;">SIN-61027</p>
Size (mm)	<p style="text-align: center;">430mm×480mm×90mm(W*D*H)</p>	<p style="text-align: center;">428mm×450mm×88.5mm(W*D*H)</p>	<p style="text-align: center;">433mm×480mm×88mm(W*D*H)</p>
Material	<p>Ma Steel (environmentally friendly, fingerprint-resistant 1.2mm SGCC)</p>	<p>Ma Steel (environmentally friendly, fingerprint-resistant 1.2mm SGCC)</p>	<p>Environmentally friendly, fingerprint resistant 1.2mm SGCC</p>
Hard disk location	<p>2*3.5" hard drive bays</p>	<p>2*3.5" hard drive bays</p>	<p>2*3.5" hard drive bays</p>
CD-ROM space	<p>1*5.25" optical drive bays</p>	<p>1*5.25" optical drive bays</p>	<p>1*5.25" optical drive bays</p>
Power supply	<p>2U standard ATX power supply</p>	<p>Standard 2U power supply or redundant power supply</p>	<p>2U standard ATX power supply</p>
Expand space	<p>7 half-height PCI/PCIE expansion slots, vertical insertion</p>	<p>7 half-height PCI/PCIE expansion slots, vertical insertion</p>	<p>2 full-height PCI/PCIE expansion slots, insertion</p>
System control	<p>POWER LED*1, HDD LED*1, RESET SW*1, POWER SW*1</p>	<p>POWER LED*1, HDD LED*1, RESET SW*1, POWER SW*1</p>	<p>POWER LED*1, HDD LED*1, RESET SW*1, POWER SW*1</p>
USB	<p>Supports 2 front USB2.0 interfaces</p>	<p>2 * USB 2.0 / Optional USB 3.0</p>	<p>Supports 2 front USB2.0 interfaces</p>
Suitable for motherboard	<p>ATX, Micro ATX, mini ITX</p>	<p>ATX, Micro ATX, mini ITX</p>	<p>ATX, Micro ATX, mini ITX</p>

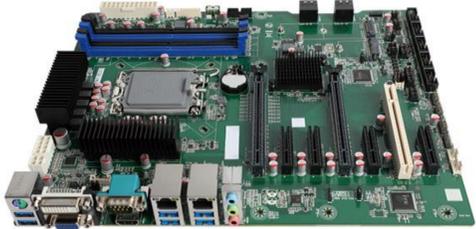
2/3U INDUSTRIAL COMPUTER CHASSIS

Appearance (example)			
Model	<p style="text-align: center;">SIN-61026</p>	<p style="text-align: center;">SIN-S2010MB</p>	<p style="text-align: center;">SIN-S3010MB</p>
Size (mm)	<p style="text-align: center;">430mm×500mm×90mm(W*D*H)</p>	<p style="text-align: center;">430mm×306mm×90mm(W*D*H)</p>	<p style="text-align: center;">430mm×306mm×132mm(W*D*H)</p>
Material	<p>Ma Steel (environmentally friendly, fingerprint-resistant 1.2mm SGCC)</p>	<p>Ma Steel (environmentally friendly, fingerprint-resistant 1.2mm SGCC)</p>	<p>Environmentally friendly, fingerprint resistant 1.2mm SGCC</p>
Hard disk location	<p>2*3.5" hard drive bays</p>	<p>2*3.5" hard drive bays</p>	<p>2*3.5" hard drive bays</p>
CD-ROM space	<p>1*5.25" optical drive bays</p>	<p>1*5.25" optical drive bays</p>	<p>1*5.25" optical drive bays</p>
Power supply	<p>Standard 2U power supply or redundant power supply</p>	<p>2U standard ATX power supply</p>	<p>3U standard ATX power supply</p>
Expand space	<p>7 half-height PCI/PCIE expansion slots, vertical insertion</p>	<p>2 half-height PCI/PCIE expansion slots, vertical insertion</p>	<p>4 full-height PCI/PCIE expansion slots, insertion</p>
System control	<p>POWER LED*1, HDD LED*1, RESET SW*1, POWER SW*1</p>	<p>POWER LED*1, HDD RESET SW*1, POWER SW*1</p>	<p>POWER LED*1, HDD LED*1, RESET SW*1, POWER SW*1</p>
USB	<p>Supports 2 front USB2.0 interfaces</p>	<p>2 * USB 2.0 / Optional USB 3.0</p>	<p>Supports 2 front USB2.0 interfaces</p>
Suitable for motherboard	<p>ATX, Micro ATX, mini ITX</p>	<p>Micro ATX, mini ITX</p>	<p>Micro ATX, mini ITX</p>

1U INDUSTRIAL COMPUTER CHASSIS

Appearance (example)			
Model	SIN-61014	SIN-S1010MB	
Size (mm)	430mm×450mm×44mm(W*D*H)	463mm×275mm×45mm(W*D*H)	
Material	Ma Steel (environmentally friendly, fingerprint-resistant 1.2mm SGCC)	Ma Steel (environmentally friendly, fingerprint-resistant 1.2mm SGCC)	
Hard disk location	1*2.5" hard drive bays	1*2.5" hard drive bays	
CD-ROM space	—	—	
Power supply	Standard 1U power supply or redundant power supply	1U standard ATX power supply	
Expand space	1 half-height PCI/PCIE expansion slots, vertical insertion	—	
System control	POWER LED*1, HDD LED*1, RESET SW*1, POWER SW*1	POWER LED*1, HDD RESET SW*1, POWER SW*1	
USB	Supports 2 front USB2.0 interfaces	2 * USB 2.0 / Optional USB 3.0	
Suitable for motherboard	ATX, Micro ATX, mini ITX	mini ITX	

ATX INDUSTRIAL MOTHERBOARD

<p>Appearance (example)</p>			
<p>Model</p>	<p>SIN-BQ670MA</p>	<p>SIN-BQ670MA2</p>	<p>SIN-JQ670MA</p>
<p>Size (mm)</p>	<p>305*244mm</p>	<p>305*244mm</p>	<p>305*244mm</p>
<p>CPU</p>	<p>Intel® 12/13/14th Gen Core™ i3/i5/i7/i9, Pentium®, Celeron® CPU, LGA1700</p>	<p>Support Intel® 12/13/14th Gen Core™ i3/i5/i7/i9 Pentium®, Celeron® CPU</p>	<p>Intel® LGA1700 12/13/14th Gen Socket Processor (Formerly Alder Lake-S, TDP 125W)</p>
<p>Chipset</p>	<p>Intel® Q670 Chipset</p>	<p>Intel® Q670 Chipset</p>	<p>Intel® Q670E Chipset</p>
<p>Memory</p>	<p>DDR4-3200,4*U-DIMM, up to 128GB</p>	<p>DDR5-4400, 4*U-DIMM, up to 192 GB</p>	<p>4 x DDR5 4800/4000MHz Dual Channel U-DIMM, up to 192GB</p>
<p>Storage</p>	<p>4*SATA 3.0, 1*M.2 (Key-M, 2242/2280, PCIe x4 Gen4 NVMe/ SATA SSD)</p>	<p>4*SATA 3.0 1*M.2 (Key-M, 2280, NVMe/SATA SSD)</p>	<p>4 x SATA III 1 x SATA Power Connector</p>
<p>Expansion Interface</p>	<p>2*PCIe x16 Slot (1*PCIe x16 Gen4 or 2*PCIe x8 Gen4) 3*PCIe x4 Slot (PCIe x4 Gen4) 1*PCIe x4 Slot (PCIe x4 Gen3) 1*M.2 (Key-E, 2230, PCIe+USB 2.0+ CNVi, Wifi+BT) 1*PCI</p>	<p>2*PCIe x16, 3*PCIe x4, 2*PCI 1*M.2 (Key-E, 2230, PCIe+USB 2.0)</p>	<p>1 x PCIe Gen.4 x16 or 2 x PCIe Gen.4 x 8 2 x PCIe Gen.4 x4, 2 x PCIe Gen.3 x1, 1 x PCI 1 x M-Key 2242/2280 (PCIe 4.0 x4) Support NVMe 1 x M-Key 2242/2280 (PCIe 4.0 x 4/SATA interface) support NVMe 1 x E-Key 2230 (USB 2.0/PCIe 3.0 x1) Support CNVi 1 x B-Key 3042/3052 (PCIe Gen.3 x1/USB3.2 Gen.2/USB2.0 interface) support 4G/5G Module 1 x Nano SIM Card Slot</p>
<p>System</p>	<p>Windows 10/11, Linux</p>	<p>Windows 10/11, Linux</p>	<p>Windows 10/11, Linux</p>
<p>TPM</p>	<p>TPM2.0, Optional</p>	<p>/</p>	<p>TPM2.0 (Optional)</p>
<p>I/O Interface</p>	<p>1*Intel® i225-V 2.5GbE Ethernet Controller, RJ45 1*Intel® i219-V GbE Ethernet PHY, RJ45 4*RS232, 1*RS232/RS485/RS422, 1*RS232/RS485 8*USB 3.0, 5*USB 2.0 Realtek® Audio HDA Codec, with MIC/Line-out/Line-in 1*PS/2 Port (Keyboard & Mouse) 8*Programmable GPIO 1*Case Open Header</p>	<p>2*Intel® GbE Controller, RJ45 6*RS232 6*USB 3.0, 9*USB 2.0 Realtek® Audio HDA Codec, with MIC/Line-out/Line-in 8*GPIO, 1*PS/2, 1*ESPI, 1*SM Bus, 1*SPDIF, 1*Case Open</p>	<p>1 *RJ45 for Intel® I226-LM 2.5GbE 2*RJ45 for Intel® I226-V 2.5GbE 6 x USB 3.2 Gen2 Internal USB Type A (Vertical) for 1 x USB 3.2(Gen.2) Internal Header for 2 x USB 3.2 Internal Header for 2 x USB 2.0 Internal USB Type A (Vertical) for 1 x USB 2.0 2 x DB-9 for RS-232/422/485 Internal Header for 4 x RS-232 8-Bit GPIO MIC/Line-out/Line-in</p>
<p>Display Interface</p>	<p>1*DVI-D: max resolution up to 1920*1200@60Hz 1*HDMI 1.4b: max resolution up to 4096*2160@30Hz 1*VGA: max resolution up to 1920*1200@60Hz 1*eDP: max resolution up to 4096*2304@60Hz</p>	<p>1*VGA, 1*HDMI, 1*DVI-D</p>	<p>1 x DP1.4a (Max Resolution: 4096 x 2304@60Hz) 1 x HDMI 2.0b (Max Resolution: 4096 x 2160@60Hz) 1 x VGA (Max Resolution: 1920 x 1080 @60Hz)</p>
<p>Multiple Display</p>	<p>Triple</p>	<p>Triple</p>	<p>Triple</p>
<p>Temperature</p>	<p>Operation: 0°C~60°C, Storage: -25°C~75°C</p>	<p>Operation: 0°C~60°C, Storage: -20°C~75°C</p>	<p>Operation: 0°C~60°C, Storage: -20°C~85°C</p>

ATX INDUSTRIAL MOTHERBOARD

<p>Appearance (example)</p>			
<p>Model</p>	<p>SIN-IZ790MA</p>	<p>SIN-WR680MA</p>	<p>SIN-JH610MA</p>
<p>Size (mm)</p>	<p>305*244mm</p>	<p>305*244mm</p>	<p>305*244mm</p>
<p>CPU</p>	<p>LGA1700 socket: Support for the 14th, 13th, and 12th Generation Intel® Core™, Pentium® Gold and Celeron® Processors</p>	<p>Support Intel® 12/13/14th Gen Core™ i3/i5/i7/i9 Pentium®, Celeron® CPU, Max 125W</p>	<p>Intel® LGA1700 12/13/14th Gen Socket Processor (Formerly Alder Lake-S, TDP 125W)</p>
<p>Chipset</p>	<p>Intel® Z790 Chipset</p>	<p>Intel® R680E Chipset</p>	<p>Intel® H610/H610E</p>
<p>Memory</p>	<p>4 x DDR DIMM sockets supporting up to 128 GB (32 GB single DIMM capacity) of system memory</p>	<p>Dual-channel DDR5 (ECC/non-ECC) 4400 MT/s (ECC support will depend on CPU)Up to 128GB 4 x 288-pin UDIMMs</p>	<p>2 x DDR5 4800MHz, Dual Channel SO-DIMM, up to 96GB</p>
<p>Storage</p>	<p>4 x SATA 6Gb/s 2 x M.2 (Socket 3, M key, type 22110/2280 PCIe 4.0 x4/x2 SSD support) 1 x M.2(Socket 3, M key, type 22110/2280 SATA and PCIe 4.0 x4 SSD support)</p>	<p>4 x SATA 3.0 (RAID 0/1/5/10) 1 x M key (Signal from CPU) 2280/22110, 1 x M key (Signal Shared by PCIe Slot5) 2242/2280</p>	<p>4 x SATA III 1 x M-Key 2242/2280 (PCIe 3.0 x2)</p>
<p>Expansion Interface</p>	<p>1 x PCI Express x16 slot, supporting PCIe 5.0 and running at x16 (PCIEX16) 1 x PCI Express x16 slot, supporting PCIe 4.0 and running at x4 (PCIEX4_1) 1 x PCI Express x16 slot, supporting PCIe 3.0 and running at x4 (PCIEX4_2)</p>	<p>2*PCIe x16(Signal configured as 1 PCIe x16 or 2 PCIe x8) 4*PCIe x4 1PCIe x1 1 x E key (PCIe x1), 2230 1 x B key (PCIe x2), 2242/2280</p>	<p>1*PCIe x16 2 x PCIe x4 (PCIe2 is NC + PCIe x4 on PCIe3, or PCIe x1 on PCIe2 + PCIe x2 on PCIe3) 1 x E-Key 2230 (USB2.0) Support CNVi 4*PCI</p>
<p>System</p>	<p>Windows 10/11</p>	<p>Windows 10/11, Linux</p>	<p>Windows 10/11, Linux</p>
<p>TPM</p>	<p>TPM2.0, Optional</p>	<p>Infineon® SLB9672VU2.0</p>	<p>TPM2.0</p>
<p>I/O Interface</p>	<p>1 x USB Type-C® port, with USB 3.2 Gen 2x2 support 2 x USB 3.2 Gen 2 Type-A ports (red) 3 x USB 3.2 Gen 1 ports, 4 x USB 2.0/1.1 ports 1 x USB Type-C® header, with USB 3.2 Gen 2 support 1 x USB 3.2 Gen 1 header, 2 x USB 2.0/1.1 headers 2 x Thunderbolt™ add-in card connectors 1 x HDMI 2.0 port 1 x RJ-45 port (Realtek® 2.5GbE LAN chip) 1 x optical S/PDIF Out connector, 2 x audio jacks</p>	<p>8 x USB 3.2 Gen 2 x1 (8 x rear) 2 x USB 3.2 Gen 1 Ports (2 x internal) 3 x USB 2.0 (3 x internal with one Vertical Type-A Connector) 6 x COM ports (1 x rear, 5 x internal) COM1~2: RS-232/422/485, Ring/0V/5V/12V, Auto-flow Control (Default set to Ring) COM3~6: RS-232/422/485, 0V/5V/12V, Auto-flow Control 16-bits GPIO (8 x GPI; 8 x GPO), 5V 1 x PS/2 port 4 x Intel® I225-LM 2.5GbE LAN</p>	<p>1 x RJ45 for Intel® I226-V 2.5GbE 1 x RJ45 for Intel® I219-V GbE 4 x USB 3.2 Gen 1x1 (5Gbps, Formerly USB 3.1 Gen 1) 2 x USB 2.0 Internal Header for 4 x USB 2.0 Internal USB Type A (Vertical) for 2 x USB 2.0 2 x DB-9 for RS-232/422/485 Internal Header for 4 x RS-232 16 bit GPIO (5V) Co-lay LPT Line-In Line-Out MIC-In</p>
<p>Display Interface</p>	<p>1 x HDMI port, supporting a maximum resolution of 4096x2160@60 Hz</p>	<p>VGA up to 1920 x 1200 @60Hz HDMI up to 4096 x 2160 @60Hz DP up to 4096 x 2304 @60Hz</p>	<p>1 x LVDS/eDP (Max. Resolution: 1920 x 1080 @60Hz, Option) 1 x DP1.4 (Max Resolution: 7680 x 4320@60Hz) 1 x HDMI 2.0 (Max Resolution: 4096 x 2304@60Hz) 1 x VGA (Max Resolution: 1920 x 1200 @60Hz)</p>
<p>Multiple Display</p>	<p>Single</p>	<p>Triple</p>	<p>Triple</p>
<p>Temperature</p>	<p>Operation: 0°C~50°C, Storage: -25°C~75°C</p>	<p>Operation: 0°C~60°C, Storage: -20°C~80°C</p>	<p>Operation: -10°C~60°C, Storage: -20°C~70°C</p>

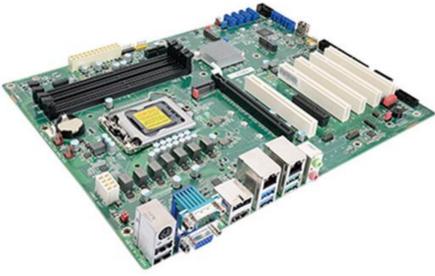
ATX INDUSTRIAL MOTHERBOARD

Appearance (example)			
Model	SIN-WH610MA	SIN-BH610MA	SIN-WW480MA
Size (mm)	305*244mm	305*220mm	305*244mm
CPU	LGA1700 socket: Support for the 14th, 13th, and 12th Generation Intel® Core™, Pentium® Gold and Celeron® Processors,Max 65W	Intel® 12/13/14th Generation Core™ i3/i5/i7/i9, Pentium®, Celeron® CPU, LGA1700	10th Gen Intel® Comet Lake-S Xeon®, Core™ i9/i7/i5/i3, Pentium®, Celeron® Processor, Max 125W
Chipset	Intel® H610E Chipset	Intel® H610 Chipset	Intel® W480E Chipset
Memory	2 x 288-pin UDIMMs Dual-channel DDR5 (non-ECC) 5600 MHz Up to 64GB	DDR4-3200, 2*U-DIMM, up to 64GB	4 x 288-pin UDIMMs Dual-channel DDR4 (ECC/non-ECC) 2933 MHz Up to 128GB
Storage	4 x SATA 3.0	3*SATA 3.0 1*SATA 3.0/ 1*M.2 (Key-B, 2280, SATA)	4 x SATA 3.0 (RAID 0/1/5/10) 3 x M.2 M key (PCIe x4 NVMe, signal shared with PCIe Slot 1 & 3 & 5), 2 with 2242/2260/2280, 1 with 2242/2260/2280/22110
Expansion Interface	1 x PCIe x16 (Gen 5) , 1 x PCIe x4 (Gen3), 5x PCI	1*PCIe x16 Slot 3*PCIe x4 Slot 3*PCI	1 x PCIe x16 (Gen 3) or 2 PCIe x8 (Gen 3), 3 x PCIe x4 (Gen 3), 2 x PCI, 1 x Mini-PCIe (Full/Half-size) slots (mSATA)
System	Windows 10/11, Linux	Windows 10/11, Linux	Windows 10/11, Linux
TPM	Infineon® SLB9672VU2.0	TPM2.0, Optional	Infineon SLB 9670VQ2.0
I/O Interface	1 x PS/2 port 2 x USB 3.2 Gen 2 x1 Ports (2 x Rear) 2 x USB 3.2 Gen 1 x1 Ports (2 x Rear) 5 x USB 2.0-Ports (2 x Rear, 3 x Internal with one Vertical Type-A) 6 x COM-Ports for COM1 ~ 6 (2 Rear, 4 x Internal) COM1 RS-232/422/485 0V/5V/12V, Auto-flow Control Supported COM2/3/4/5/6 RS-232, COM2 0V/5V/12V 8-bits GPIO (4 x GPI; 4 x GPO), 5V 1 x Intel® I219LM GbE LAN PHY 1 x Intel® I225-V 2.5GbE LAN	1*Intel® i225-V 2.5GbE Ethernet Controller, RJ45 1*Intel® i219-V GbE Ethernet PHY, RJ45 4*RS232, 2*RS232/RS485 4*USB 3.0, 7*USB 2.0 MIC/Line-out/Line-in 1*PS/2 Port 8*Programmable GPIO	1 x Intel® I219-LM GbE LAN PHY 3 x Intel® I210-AT GbE LAN 1 x PS/2(wafer Connector) 6 x USB 3.2 Gen 2 (6 x rear) 2 x USB 3.2 Gen 1 (2 x internal) 5 x USB 2.0 (2 x rear, 3 x internal with one Vertical Type-A Connector) 10 x COM ports (1 x rear, 9 x internal) COM1~2: RS-232/422/485, Ring/0V/5V/12V, Auto-flow Control COM3~6: RS-232/422/485 with 0V/5V/12V Auto-flow Control Supported COM7~10: RS-232, 0V/5V/12V 16-bits GPIO(8 x GPI; 8 x GPO), 5V
Display Interface	VGA up to 1920 x 1200 @60Hz HDMI up to 4096 x 2160 @24Hz	1*DVI-D: max resolution up to 1920*1200@60Hz 1*HDMI 1.4b: max resolution up to 4096*2160@30Hz 1*VGA: max resolution up to 1920*1200@60Hz	VGA up to 1920 x 1200 @60Hz HDMI™ up to 4096 x 2160 @30Hz DP up to 4096 x 2304 @60Hz eDP up to 4096 x 2304 @60Hz
Multiple Display	2 independent displays	Triple	Triple
Temperature	Operation: 0°C~60°C, Storage: -20°C~80°C	Operation: 0°C~60°C, Storage: -25°C~75°C	Operation: -10°C~60°C, Storage: -20°C~80°C

ATX INDUSTRIAL MOTHERBOARD

<p>Appearance (example)</p>			
<p>Model</p>	<p>SIN-IW480MA</p>	<p>SIN-BQ470MA</p>	<p>SIN-ZQ470MA</p>
<p>Size (mm)</p>	<p>305*244mm</p>	<p>305*244mm</p>	<p>305*244mm</p>
<p>CPU</p>	<p>Intel® Xeon® W series processors 10th Generation Intel® Core™ processors/ Intel® Pentium® processors/ Intel® Celeron® processors</p>	<p>Intel® 10/11th Generation Core™ i3/i5/i7/i9, Pentium®, Celeron® CPU, LGA1200</p>	<p>Intel® 10/11th Generation Core™ i3/i5/i7/i9, Pentium®, Celeron® CPU, LGA1200 TDP support up to 125W</p>
<p>Chipset</p>	<p>Intel® W480E Chipset</p>	<p>Intel® Q470 Chipset</p>	<p>Intel® Q470E Chipset</p>
<p>Memory</p>	<p>4 x DDR4 DIMM sockets supporting up to 128 GB (32 GB single DIMM capacity) of system memory Dual channel memory architecture</p>	<p>DDR4-2400/2666/2933, 4*U-DIMM, up to 128 GB</p>	<p>4*288-pin Non-ECC UDIMM up to 128GB (Core™ i5/i7 only support non-ECC) Dual Channel DDR4 2400/2666/2933MHz(Non-ECC)</p>
<p>Storage</p>	<p>8 x SATA 6Gb/s connectors ,RAID 0,1,5,10 1 x M.2 M key, type 2280/22110 PCIe x4/x2 SSD support) 1 x M.2 M key, type 2280/22110 SATA a nd PCIe x4/x2 SSD support)</p>	<p>4*SATA 3.0 1*M.2 (Key-M, 2242/2280, PCIe x4/ SATA SSD)</p>	<p>4 x SATA 3.0 (up to 6Gb/s, SATA 3) RAID 0/1/5/10</p>
<p>Expansion Interface</p>	<p>1 x PCI Express x16 slot, running at x16 (PCIEX16) 1 x PCI Express x16 slot, running at x8 (PCIEX8) 2 x PCI Express x16 slots, running at x4 (PCIEX4_1, PCIEX4_2) 1 x PCI Express x1 slot 1 x M.2 Socket 1 connector for an Intel® CNVi wireless module only (CNVi)</p>	<p>2*PCIe x16 Slot (1*PCIe x16 Gen3 or 2*PCIe x8 Gen3) 3*PCIe x4 Slot (PCIe x4 Gen3) 2*PCI, 1*Mini-PCIe (Wifi+4G)</p>	<p>2 x PCIe x16 (Gen 3) (1 x16 signal or 2 x8 signal) 3 x PCIe x4 (Gen 3) (2 x4 signal and 1 x1 signal) 2 x PCI 1 x M.2 2242/2260/2280 M key (PCIe Gen3 x4 NVMe/SATA/Intel® Optane Memory and intel RST support) 1 x M.2 2242/2260/2280 M key (PCIe Gen3 x4 NVMe/Intel® Optane Memory and intel RST support) 1 x M.2 2230 E key (USB 2.0/PCIe x1 shared with PCIe x1 slot, opt., MOQ required)</p>
<p>System</p>	<p>Windows 10</p>	<p>Windows 10/11, Linux</p>	<p>Windows 10 IoT Enterprise 64-bit Windows Server 2019 (opt. only support Intel® i210) Linux</p>
<p>TPM</p>	<p>/</p>	<p>SLB 9670VQ2.0, TPM2.0, Support Intel PTT</p>	<p>Infineon TPM2.0 (opt., MOQ required)</p>
<p>I/O Interface</p>	<p>Intel® 2.5GbE LAN chip (2.5 Gbit/1 Gbit/100 Mbit)(LAN2) Intel® GbE LAN chip (1 Gbit/100 Mbit)(LAN1) 1 x PS/2 keyboard/mouse port 1 x USB 3.2 Gen 2 Type-A port (red) 3 x USB 3.2 Gen 1 ports, 4 x USB 2.0/1.1 ports 1 x USB 3.2 Gen 1 port (USB30_OB) 1 x USB Type-C™ header, with USB 3.2 Gen 2 support 1 x USB 3.2 Gen 1 header, 1 x USB 2.0/1.1 header 5 x audio jacks 2 x serial port headers</p>	<p>2*Intel® 1Gbps PCIe Ethernet Controller, RJ45 4*RS232, 1*RS232/RS485/RS422, 1*RS232/RS485 6*USB 3.0, 7*USB 2.0 MIC/Line-out/Line-in 1*PS/2 Port 8*Programmable GPIO</p>	<p>1 x Intel® I210AT PCIe (10/100/1000Mbps) 1 x Intel® I219LM PHY with iAMT12.0 (10/100/1000Mbps) (only Xeon, Core i9/ i7/i5 supports iAMT) 1 x RS-232/422/485 (RS-232 w/ power) (DB-9) 1 x RS-232/422/485 (RS-232 w/ power) (2.54mm pitch) 4 x RS-232 (2.54mm pitch) 2 x USB 3.2 Gen2, 2 x USB 3.2 Gen1, 4 x USB 2.0 2 x USB 3.2 Gen 2 (Key B 20-pin) 2 x USB 2.0 (2.54mm pitch, Colay vertical Type A, opt.: MOQ required) 1 x USB 2.0 Vertical Type A 1 x Front Audio Header 1 x S/PDIF(Internal) 1 x 16-bit DIO (Internal), 1 x PS/2 (mini-DIN-6)(Internal)</p>
<p>Display Interface</p>	<p>1 x HDMI port, max resolution of 4096x2160@30 Hz 2 x DisplayPorts, max resolution of 4096x2304@60 Hz</p>	<p>1*DVI-D: max resolution up to 1920*1200@60Hz 1*HDMI 1.4b: max resolution up to 4096*2160@30Hz 1*VGA: max resolution up to 1920*1200@60Hz 1*eDP: max resolution up to 4096*2304@60Hz</p>	<p>1 x VGA, resolution up to 1920x1200 @ 60Hz 1 x DP++, resolution up to 4096x2160 @ 60Hz 1 x HDMI 1.4b, resolution up to 4096x2160 @ 24Hz</p>
<p>Multiple Display</p>	<p>Triple</p>	<p>Triple</p>	<p>Triple</p>
<p>Temperature</p>	<p>Operation: 0°C~50°C, Storage: -20°C~70°C</p>	<p>Operation: 0°C~60°C, Storage: -25°C~75°C</p>	<p>Operation: -5°C~65°C, Storage: -30°C~60°C</p>

ATX INDUSTRIAL MOTHERBOARD

<p>Appearance (example)</p>			
<p>Model</p>	<p>SIN-ZH420MA</p>	<p>SIN-JH420MA</p>	<p>SIN-BH470MA</p>
<p>Size (mm)</p>	<p>305*244mm</p>	<p>305*220mm</p>	<p>305*244mm</p>
<p>CPU</p>	<p>Intel® 10/11th Generation Core™ i3/i5/i7/i9, Pentium®, Celeron® CPU, LGA1200 TDP support up to 125W</p>	<p>Intel® LGA1200 10/11th Gen Socket Processor (Formerly Comet Lake-S, TDP 125W)</p>	<p>Support Intel® 10/11th Generation Core / Pentium/ Celeron Desktop CPU, LGA1200 Support MAX CPU TDP: Deca-Core 125W</p>
<p>Chipset</p>	<p>Intel® H420E Chipset</p>	<p>Intel® H420E Chipset</p>	<p>Intel® H470 Chipset</p>
<p>Memory</p>	<p>2* 288-pin Non-ECC UDIMM up to 64GB Dual Channel DDR4 2400/2666/2933MHz</p>	<p>2 x DDR4 2933/2666MHz LONG DIMM DRAM, up to 64GB</p>	<p>DDR4-2400/2666/2933/3200MHz, 4 * Non-ECC U-DIMM Slot, Up to 128GB</p>
<p>Storage</p>	<p>4 x SATA 3.0 (up to 6Gb/s) one SATA port share with M.2 M-key 1 x M.2 2242/2260/2280 M key (SATA as option, MOQ required)</p>	<p>4 x SATA III (SATA4 Co-Lay M-key) 1 x M-key 2242/2280 (SATA interface, Co-lay SATA4)</p>	<p>Supports RST RAID 0,1,5,10, 4 * SATA3.0 7P Connector 1 * M.2 Key-M Slot (SATA, Support SATA SSD, 2242/2280)</p>
<p>Expansion Interface</p>	<p>1 x PCIe x16 (Gen 3) 1 x PCIe x4 (Gen 3) 5 x PCI</p>	<p>1 x PCIe x16 1 x PCIe x4 5 x PCI</p>	<p>2 * PCI Slot 1 * Mini PCI-E Slot (WiFi+4G/3G, with 1 * Full-Size SIM Card Slot) 1 * PCI-E 16x Slot (PCIe 16X GEN3) 2 * PCI-E 4x Slot (PCIe 4X GEN3)</p>
<p>System</p>	<p>Windows 10 IoT Enterprise 64-bit Windows 11 GAC Linux Ubuntu 20.04</p>	<p>Windows® 11 (64bit) Windows® 10 (64bit) Linux</p>	<p>Windows 10 64-bit, Linux</p>
<p>TPM</p>	<p>Infineon TPM2.0 (opt., MOQ required)</p>	<p>TPM2.0 (Optional)</p>	<p>SLB 9670VQ2.0, TPM2.0 (Not onboard by default), Support Intel PTT Default</p>
<p>I/O Interface</p>	<p>1 x Intel® I210AT PCIe (10/100/1000Mbps) 1 x Intel® I219LM/I219V (10/100/1000Mbps) 1 x RS-232/422/485 (RS-232 w/ power) (DB-9) 1 x RS-232/422/485 (RS-232 w/ power) (2.54mm pitch) 4 x RS-232 (2.54mm pitch) 4 x USB 3.2 Gen1, 2 x USB 2.0, 1 x Line-out/1 x Mic-in 1 x Line-in (opt., MOQ required) 2 x USB 3.2 Gen 1 (Internal) 2 x USB 2.0 (2.54mm pitch, colay vertical Type A, opt.: MOQ required) 1 x Front Audio Header, 1 x S/PDIF 1 x 16-bit DIO (Internal) 1 x PS/2 (mini-DIN-6) (Internal)</p>	<p>1 x RJ45 for Intel® I226-V 2.5GbE 1 x RJ45 for Intel® I219-LM GbE 4 x USB 3.2 Gen 1x1 (5Gbps, Formerly USB 3.1 Gen 1) 2 x USB 2.0 Internal Header for 2 x USB 2.0 Internal USB Type A (Vertical) for 1 x USB 2.0 2 x DB-9 for RS-232/422/485 with 5V/12V header Internal Header for 4 x RS-232 with 5V/12V header 16 bit GPIO (5V) Co-lay LPT(internal), 1 x LPT (Co-lay GPIO)</p>	<p>1 * I219-LM GBE LAN Chip (10/100/1000 Mbps, RJ45) 1 * I210 GBE LAN Chip (10/100/1000 Mbps, RJ45) 1 * Line-out + Line-in + MIC 1 * RS232 (COM1, DB9/M) 3 * RS232 (COM2/5/6, Header) 1 * RS232/RS422/RS485 (COM3, Header) 1 * RS232/RS485 (COM4, Header) 4 * USB3.0 (TYPE-A, Rear IO) 2 * USB3.0 (Header, Internal) 2 * USB2.0 (TYPE-A, Rear IO) 1 * USB2.0 (Vertical TYPE-A, Internal) 4 * USB2.0 (Header, Internal) 8 bitGPIO (internal), 1 * PS/2 Connector (Keyboard & Mouse)</p>
<p>Display Interface</p>	<p>1 x VGA, VGA: resolution up to 1920x1200 @ 60Hz 1 x DP++, DP++: resolution up to 4096x2160 @ 60Hz 1 x HDMI 1.4b, HDMI: resolution up to 4096x2160 @ 24Hz</p>	<p>2 x HDMI 1.4 (Max Resolution: 4096 x 2160@30Hz) 1 x VGA (Max Resolution: 1920 x 1080 @60Hz)</p>	<p>1 * DVI-D (DVI-I): Support DVI-D, max resolution up to 1920x1200@60Hz 1 * HDMI 1.4b (TYPE-A): up to 4096x2160@30Hz 1 * VGA (DB15/F): max resolution up to 1920x1200@60Hz 1 * eDP (Header): max resolution up to 4096x2304@60Hz</p>
<p>Multiple Display</p>	<p>VGA + DP++ / VGA + HDMI / DP++ + HDMI (Dual Display)</p>	<p>Triple</p>	<p>Triple</p>
<p>Temperature</p>	<p>Operation: -5°C~65°C, Storage: -40°C~85°C</p>	<p>Operation: 0°C~60°C, Storage: -20°C~85°C</p>	<p>Operation: 0°C~60°C, Storage: -25°C~75°C</p>

ATX INDUSTRIAL MOTHERBOARD

<p>Appearance (example)</p>			
<p>Model</p>	<p>SIN-BH470MA1</p>	<p>SIN-JQ370MA</p>	<p>SIN-BQ370MA</p>
<p>Size (mm)</p>	<p>305*220mm</p>	<p>305*244mm</p>	<p>305*244mm</p>
<p>CPU</p>	<p>Intel® 10th Generation Core™ i3/i5/i7/i9, Pentium®, Celeron® CPU, LGA1200</p>	<p>Intel® LGA1151 Gen 8/9 Coffee Lake Processor Core i7/i5/i3, Pentium, Celeron (Max. 95W TDP)</p>	<p>Intel® 8th and 9th Generation Core™ i3/i5/i7, Pentium®, Celeron® CPU, LGA1151</p>
<p>Chipset</p>	<p>Intel® H470 Chipset</p>	<p>Intel® Q370 Chipset</p>	<p>Intel® H470 Chipset</p>
<p>Memory</p>	<p>DDR4-2133/2400/2666/2933, 2*U-DIMM, up to 64 GB</p>	<p>4 * U-DIMM,DDR4 2666MHz Dual CH SDRAM non-ECC up to 128GB</p>	<p>DDR4-2400/2666, 4*U-DIMM, up to 64 GB</p>
<p>Storage</p>	<p>3*SATA 3.0 1*M.2 (Key-M,2242/2280, PCIe2/ SATA SSD)</p>	<p>5 * SATAIII support RAID 0, 1, 5, 10 1* M.2 M-key (2242/2260/2280/22110 PCIe4 with SATA interface) support NVMe</p>	<p>4*SATA 3.0, 1*SATA 3.0/ mSATA</p>
<p>Expansion Interface</p>	<p>1*PCIe x16, 2*PCIe x4, 4*PCI 1*M.2 (Key-E, 2230, PCIe+USB 2.0, BT)</p>	<p>2* PCI 1* PCIe x1 1* PCIe x4 support NVMe (share SATA interface with M.2 M-key) 2* PCIe x16 there are two configurations if plug one PCIe x16 card in one slot, the other slot is disable; or plug one PCIe x8 card in one slot, the other slot is able to plug one PCIe x8/x4/x1 card. 1* M.2 E-key</p>	<p>1*PCIe x16, 3*PCIe x4, 1*PCIe x4 or 1*PCIe x2 + 1*Mini-PCIe(Wifi/3G/4G Supported), 2*PCI</p>
<p>System</p>	<p>Windows 10/11, Linux</p>	<p>Windows® 11 (64bit) Windows® 10 (64bit) Linux</p>	<p>Windows10, Linux</p>
<p>TPM</p>	<p>Supports onboard TPM 1.2/2.0 (optional, not onboard by default)</p>	<p>TPM2.0 (Optional)</p>	<p>TPM 2.0</p>
<p>I/O Interface</p>	<p>2*Intel® 1Gbps PCIe Ethernet Controller, RJ45 4*RS232, 2*RS232/RS485 8*USB 3.0, 5*USB 2.0 MIC/Line-out/Line-in 1*PS/2 Port (Keyboard & Mouse) 8*programmable GPIO</p>	<p>2* Intel GbE (1* i219LM, 1* i210AT) 4* USB3.1 (Gen.2), 2* USB3.1 (Gen.1) 2* USB3.1 internal (Gen. 1), 4* USB 2.0 internal 1* Line-In, 1* Line-Out, 1* MIC 1* RS232/422/485 9* COM internal (COM2 support RS232/422/485) 1* Line-In, 1* Line-Out, 1* MIC 1* GPIO internal 1* PS/2 internal</p>	<p>2*Intel® 1Gbps PCIe Ethernet Controller, RJ45 4*RS232,1*RS232/RS485/RS422, 1*RS232/RS485 6*USB 3.0, 7*USB 2.0 MIC/Line-out/Line-in 1*PS/2 Port (Keyboard & Mouse) 8*Programmable GPIO</p>
<p>Display Interface</p>	<p>1*VGA: max resolution up to 1920*1200@60Hz 1*HDMI: max resolution up to 4096*2160@30Hz 1*eDP: max resolution up to 4096*2304@60Hz 1*DVI-D: max resolution up to 1920*1200@60Hz</p>	<p>1* VGA (Max Resolution: 1920x1080@60Hz) 1* HDMI 1.4 (Max Resolution: 4096x2160@30Hz) 1* DVI-D (Max. Resolution: 1920x1200@60Hz) 1* DP (Max Resolution: 4096x2304@60Hz)</p>	<p>1*DVI-D: max resolution up to 1920*1200@60Hz 1*HDMI 1.4b: max resolution up to 4096*2160@24Hz 1*VGA: max resolution up to 1920*1200@60Hz 1*eDP: max resolution up to 1920*1200@60Hz</p>
<p>Multiple Display</p>	<p>Dual Display</p>	<p>Triple</p>	<p>Triple</p>
<p>Temperature</p>	<p>Operation: -0°C~60°C, Storage: -25°C~75°C</p>	<p>Operation: 0°C~60°C, Storage: -20°C~85°C</p>	<p>Operation: 0°C~60°C, Storage: -25°C~75°C</p>

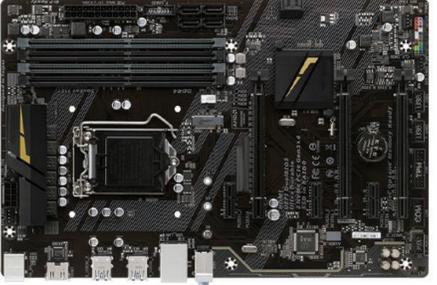
ATX INDUSTRIAL MOTHERBOARD

<p>Appearance (example)</p>			
<p>Model</p>	<p>SIN-WQ370MA</p>	<p>SIN-WQ370MA2</p>	<p>SIN-BH310MA</p>
<p>Size (mm)</p>	<p>305*244mm</p>	<p>305*244mm</p>	<p>305*244mm</p>
<p>CPU</p>	<p>8/9th Gen Intel® Desktop Coffee Lake-S i7/i5/i3/Pentium®/Celeron® Series Processor, Max 95W</p>	<p>9th/8th Gen Intel® Coffee Lake Refresh-S/Coffee Lake-S, Core™ i7/i5/i3, Pentium®, Celeron® Processor, Max 95W</p>	<p>Intel® 8th and 9th Generation Core™ i3/i5/i7, Pentium®, Celeron® CPU, LGA1151</p>
<p>Chipset</p>	<p>Intel® Q370 Chipset</p>	<p>Intel® Q370 Chipset</p>	<p>Intel® H310 Chipset</p>
<p>Memory</p>	<p>4 x 288-pin UDIMM, Dual-channel DDR4 (non-ECC) 2666 MHz Up to 64 GB</p>	<p>4 x 288-pin UDIMMs, Dual-channel DDR4(non-ECC) 2666 MHz Up to 128GB</p>	<p>DDR4-2400/2666, 2*U-DIMM, up to 32 GB</p>
<p>Storage</p>	<p>6 x SATA 3.0 (RAID 0/1/5/10, SATA port 6 share with M.2 M Key)</p>	<p>4 x SATA 3.0 (RAID 0/1/5/10, SATA port 4 share with M.2 M Key)</p>	<p>3*SATA 3.0, 1*SATA 3.0/ mSATA</p>
<p>Expansion Interface</p>	<p>3*PCIe x 16 (Signal configured as 1 PCIe x16 or 2 PCIe x8 or 1 PCIe x 8 + 2 PCIe x4) 2*PCI x 4 (PCIe x16 Slot Type; 1*PCIe x4 NVMe) 2*PCI x 1 1 x M key (PCIe x4 NVMe, SATA 3.0), 2242/2260/2280 1 x E key (PCIe x1, USB 2.0), 2230</p>	<p>2* PCIe x 16 (Signal configured as 1 PCIe x16 or 2 PCIe x8) 3* PCIe x 4(PCIe x16 Slot Type; 2*PCIe x4 NVMe) 1 x M.2 M key (PCIe x4 NVMe, Intel® Optane™ Memory Support, SATA 3.0), 2242/2260/2280</p>	<p>1*PCIe x16, 1*PCIe x4 or 1*PCIe x2 + 1*PCIe x1 + 1*Mini-PCIe (Wifi/3G/4G supported), 4*PCI</p>
<p>System</p>	<p>Windows 10 IoT Enterprise LTSC/SAC 1809 (64-bit, RS5) Linux (Support by request)</p>	<p>Windows 10 IoT Enterprise LTSC/SAC 1809 (64-bit, RS5) Windows 11 IoT Enterprise (64-bit, 22H2, Pre-scan) Linux (Support by request)</p>	<p>Windows10, Linux</p>
<p>TPM</p>	<p>Infineon SLB 9665TT2.0</p>	<p>Infineon SLB 9665TT2.0</p>	<p>TPM 2.0</p>
<p>I/O Interface</p>	<p>1 x Intel® I219-LM GbE LAN PHY 2 x Intel® I210-AT GbE LAN 1 x PS/2 port by Y-cable for keyboard and mouse 7 x USB 2.0 (2 x rear, 5 x internal with one Vertical Type-A) 6 x USB 3.2 Gen 2 (rear) 10 x COM ports (internal) COM1~2: RS-232/422/485, Ring/0V/5V/12V, Autoflow Control COM3~10: RS-232, 0V/5V/12V 16-bits GPIO (8 x GPI; 8 x GPO), 5V</p>	<p>1 x Intel® I219-LM GbE LAN PHY 2 x Intel® I210-AT GbE LAN 1 x PS/2 port by Y-cable for keyboard and mouse 7 x USB 2.0 (2 x rear, 5 x internal with one Vertical Type-A) 6 x USB 3.2 Gen 2 (rear) 6 x COM ports (internal) COM1~2: RS-232/422/485, Ring/0V/5V/12V, Auto-flow Control COM3~6: RS-232, 0V/5V/12V 16-bits GPIO (8 x GPI; 8 x GPO), 5V</p>	<p>2*Intel® 1Gbps PCIe Ethernet Controller, RJ45 4*RS232, 2*RS232/RS485 4*USB 3.0, 5*USB 2.0 MIC/Line-out/Line-in 1*PS/2 Port (Keyboard & Mouse) 8*Programmable GPIO</p>
<p>Display Interface</p>	<p>1* VGA up to 1920 x 1200 @60Hz 1* HDMI™ up to 4096 x 2160 @24Hz 1* DP up to 4096 x 2304 @60Hz</p>	<p>1* VGA up to 1920 x 1200 @60Hz 1* HDMI™ up to 4096 x 2160 @24Hz 1* DP up to 4096 x 2304 @60Hz</p>	<p>1*DVI-D: max resolution up to 1920x1200@60Hz 1*HDMI 1.4b: max resolution up to 4096x2160@30Hz 1*VGA: max resolution up to 1920x1200@60Hz 1*eDP: max resolution up to 1920x1200@60Hz</p>
<p>Multiple Display</p>	<p>Triple</p>	<p>Triple</p>	<p>Dual</p>
<p>Temperature</p>	<p>Operation: -10°C~60°C, Storage: -20°C~80°C</p>	<p>Operation: -10°C~60°C, Storage: -20°C~80°C</p>	<p>Operation: 0°C~60°C, Storage: -25°C~75°C</p>

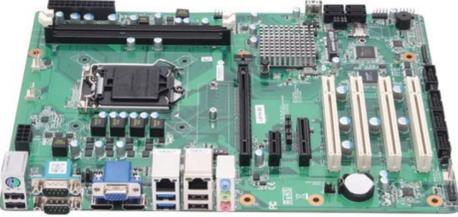
ATX INDUSTRIAL MOTHERBOARD

Appearance (example)			
Model	SIN-BQ270MA	SIN-JH110MA	SIN-WH110MA
Size (mm)	305*244mm	305*220mm	305*244mm
CPU	Intel® 6/7/8/9th Generation Core™ i3/i5/i7/i9, Pentium®, Celeron® CPU, LGA1151	Intel® LGA1151 Socket supports 6th/7th/8th/9th Gen Core Processor (Max. 100w)	7th/6th Gen Intel® Desktop Kaby Lake/Skylake i7/i5/i3/Pentium® /Celeron® Series Processor, Max 65W
Chipset	Intel® Q270 Chipset	Intel® H110 Chipset	Intel® H110 Chipset
Memory	DDR4-2400/2666/2933, 4*U-DIMM, up to 64GB	2 x DDR4 2133MHz DRAM, Dual Channel Long-DIMM, up to 64GB	2 x 288-pin UDIMMs Dual-channel DDR4 2133/2400 MHz Up to 32GB
Storage	4*SATA 3.0 1*M.2 (Key-M, 2242/2280, PCIe x4 NVMe/ SATA SSD)	4 x SATA 3.0	4 x SATA 3.0
Expansion Interface	2 * PCIe x16 Slot (1*PCIe x16 Gen3 or 2*PCIe x8 Gen3) 3 * PCIe x4 Slot (PCIe x4 Gen3) 2 * PCI, 1*Mini-PCIe (Wifi+4G)	1 x PCIe x16 1 x PCIe x4 1 x PCIe x1 4 x PCI 1 x M-Key 2242/2280	1 * PCIe x16, 1 * PCIe x4 1(PCIe x16 Slot Type) 5 * PCI
System	Windows 10/11, Linux	Windows® 10 (64bit) Windows® 8 / 8.1 (64bit), Windows® 8 / 8.1 (32bit) Windows® 7 (64bit), Windows® 7 (32bit) Linux	Windows 7 (32/64-bit) (Skylake-S Series CPU Only) Windows 8.1 (64-bit) (Skylake-S Series CPU Only) Windows 10 IoT Enterprise LTSC/SAC 1809 (64-bit, RS5) Linux (Support by request)
TPM	SLB 9670VQ2.0, TPM2.0, Support Intel PTT	TPM 2.0 (Optional)	Box header
I/O Interface	2*Intel® 2.5Gbps PCIe Ethernet Controller, RJ45 4*RS232, 1*RS232/RS485/RS422, 1*RS232/RS485 6*USB 3.0, 7*USB 2.0 Realtek® HDA Codec, with MIC/Line-out/Line-in 1*PS/2 Port (Keyboard & Mouse) 8*Programmable GPIO	28 RJ45 for Intel®I211-AT 4xUSB 3.0 2xUSB 2.0 Internal Header for 3xUSB 2.0 2xDB-9 for RS-232/422/485 Internal Header for 4xCOM 8-Bit GPIO 1 x PS/2 Realtek Audio Codec (Optional)with MIC/Line-out/Line-in	1 x Intel® I219-LM GbE LAN PHY 1 x Intel® I211-AT GbE LAN 5 x USB 2.0 (2 x rear, 3 x internal with one Vertical Type-A) 4 x USB 3.2 Gen 1 (rear) 6 x COM ports (2 x rear, 4 x internal) COM1: RS-232/422/485, 0V/5V/12V, Auto-flow Control COM2~6: RS-232, COM2: 0V/5V/12V GPIO 1: 8-bits (4 x GPI; 4 x GPO by default), 5V GPIO 2: 8-bits (8 x GPI or 8 x GPO by request), 5V 1 x PS/2 port by Y-cable for keyboard and mouse
Display Interface	1*DVI-D: max resolution up to 1920*1200@60Hz 1*HDMI: max resolution up to 4096x2160@24Hz 1*VGA: max resolution up to 1920x1200@60Hz 1*eDP: max resolution up to 1920x1200@60Hz	1 x HDMI 1.4 (Max Resolution: 4096 x 2304@24Hz) 1 x VGA (Max Resolution: 1920 x 1080 @60Hz)	1 * VGA up to 1920 x 1200 @60Hz 1 * HDMI™ up to 4096 x 2160 @24Hz
Multiple Display	Triple	Dual	Dual
Temperature	Operation: 0°C~60°C, Storage: -25°C~75°C	Operation: 0°C~60°C, Storage: -20°C~85°C	Operation: -10°C~60°C, Storage: -20°C~80°C

ATX INDUSTRIAL MOTHERBOARD

<p>Appearance (example)</p>			
<p>Model</p>	<p>SIN-BH110MA</p>	<p>SIN-JQ170MA</p>	<p>SIN-IZ270MA</p>
<p>Size (mm)</p>	<p>305*217mm</p>	<p>305*244mm</p>	<p>305*244mm</p>
<p>CPU</p>	<p>Intel® 6/7/8/9th Generation Core™ i3/i5/i7, Pentium®, Celeron® CPU, LGA1151</p>	<p>Intel LGA 1151 Socket ,Intel®6/7th Gen Core™ i3, i5, i7 & Pentium Processors</p>	<p>7t/6th generation Intel® Core™ i3/i5/i7 processors/ Pentium®/Celeron® processors LGA1151</p>
<p>Chipset</p>	<p>Intel® H110 Chipset</p>	<p>Intel® Q170 Chipset</p>	<p>Intel® Z270 Chipset</p>
<p>Memory</p>	<p>DDR4-2400, 2*U-DIMM, up to 32 GB</p>	<p>4 * U-DIMM4 DDR4 2133MHz Dual CH up to 64GB</p>	<p>4 x DDR4 DIMM sockets supporting up to 64 GB of system memory</p>
<p>Storage</p>	<p>4*SATA 3.0, 1*mSATA</p>	<p>4 * SATAIII (6.0Gb/s)</p>	<p>6 x SATA 1 x M.2 connector (Socket 3, M key, type 2242/2260/2280 SATA and PCIe x4/x2 SSD support) Support for RAID 0, RAID 1, RAID 5, and RAID 10</p>
<p>Expansion Interface</p>	<p>1*PCIe x16, 1*PCIe x4, 1*PCIe x1, 4*PCI, 2*Mini-PCIe (1*mSATA, 1*Wifi/3G/4G supported)</p>	<p>1 *PCIe x16, 1 *PCIe x8(shared with PCIe16), 3 *PCIex1 1 *mini PCIe (full size) 1 *M.2[PCIe x4 M - key, 2242/2260/2280/22110 shared with SATA1(ME FW option)]</p>	<p>1 x PCI Express x16 slot, running at x16 (PCIEX16) 2 x PCI Express x16 slots, running at x4 (PCIEX4_1/PCIEX4_2) 3 x PCI Express x1 slots</p>
<p>System</p>	<p>Windows 7/8.1/10, Linux</p>	<p>Windows 7/8.1/10, Linux</p>	<p>Windows® 10 64-bit (for 7th Generation Intel® Processors) Windows® 10 64-bit / Windows® 8.1 64-bit / Windows® 7 32-bit / 64-bits (for 6th Generation Intel® Processors)</p>
<p>TPM</p>	<p>-</p>	<p>TPM Header</p>	<p>-</p>
<p>I/O Interface</p>	<p>2*Intel® 1Gbps PCIe Ethernet Controller, RJ45 4*RS232, 2*RS232/RS485 4*USB 3.0, 5*USB 2.0 Realtek® ALC662 5.1 channel HDA Codec, with MIC/Line-out/Line-in 1*PS/2 Port (Keyboard & Mouse) 1*LPT Header 8*Programmable GPIO</p>	<p>2*RJ45 LAN (Intel i219LM & i210-AT) 6 * USB 3.0, 4 * USB 2.0 (Internal) 1 * COM (RS232/422/485 with 5V/12V selectable header) 9 * COM (COM2 RS232/422/485, COM3~10 RS232 with 5V/12V selectable header) Line-in / MIC / Line-out 1 * PS/2 8 - bit GPIO (Internal)</p>	<p>1 * Realtek® GbE LAN chip (10/100/1000 Mbit) 6 x USB 3.1 Gen 1 ports (4 ports on the back panel, 2 ports available through the internal USB header) 6 x USB 2.0/1.1 ports (2 ports on the back panel, 4 ports available through the internal USB headers) 1 x serial port header 1 x PS/2 3 x audio jacks (Line In, Line Out, Mic In)</p>
<p>Display Interface</p>	<p>1*VGA: max resolution up to 1920*1200@60Hz 1*HDMI: max resolution up to 4096*2160@24Hz 1*DVI-D: max resolution up to 1920*1200@60Hz 1*eDP: max resolution up to 1920*1200@60Hz</p>	<p>1*DVI-D Max. resolution 1920*1080@60Hz 1*HDMI 2.0 Max. resolution 4096*2160@60Hz 1*DP Max. resolution 4096*2304@60Hz</p>	<p>1 x HDMI port, supporting a maximum resolution of 4096x2160@24 Hz</p>
<p>Multiple Display</p>	<p>Dual</p>	<p>Triple</p>	<p>-</p>
<p>Temperature</p>	<p>Operation: 0°C~60°C, Storage: -25°C~75°C</p>	<p>Operation: 0°C~60°C, Storage: -20°C~85°C</p>	<p>Operation: 0°C~50°C, Storage: -20°C~70°C</p>

ATX INDUSTRIAL MOTHERBOARD

<p>Appearance (example)</p>			
<p>Model</p>	<p>SIN-JH81MA</p>	<p>SIN-BH81MA</p>	<p>SIN-WB75MA</p>
<p>Size (mm)</p>	<p>305*220mm</p>	<p>305*244mm</p>	<p>305*220mm</p>
<p>CPU</p>	<p>Intel® LGA1150 Socket supports 4th Gen. Core Processor (Max. 90W)</p>	<p>Intel® 4th Generation Core™ i3/i5/i7, Pentium®, Celeron® CPU, LGA1150</p>	<p>LGA1155, Supports 3rd Intel Core processor, TDP: 95W</p>
<p>Chipset</p>	<p>Intel® H81 Chipset</p>	<p>Intel® H81 Chipset</p>	<p>Intel® B75 Chipset</p>
<p>Memory</p>	<p>2* LONG DIMM DDR3/DDR3L 1600/1333MHz DRAM up to 16GB</p>	<p>DDR3-1333/1600, 2*U-DIMM, up to 16 GB</p>	<p>4 x DDR3L 1333/1066 MHz SO-DIMM</p>
<p>Storage</p>	<p>2* SATAIII (6.0Gb/s) 2* SATAII (3.6Gb/s) 1* M.2 (M-key, 2242/2280, SATA Interface, CO-lay SATA4)</p>	<p>1*SATA 3.0, 2*SATA 2.0, 1*mSATA</p>	<p>5 x SATA2.0</p>
<p>Expansion Interface</p>	<p>1* PCIe x16 1* PCIe x4 slot or 1* PCIe x16 + 2* PCIe x1 slot 4* PCI slots 1* Mini PCIe, full size (USB2.0 interface)</p>	<p>1*PCIe x16, 1*PCIe x4, 1*PCIe x1, 4*PCI, 1*Mini-PCIe(mSATA supported)</p>	<p>1 x PCI-E x16 Slot 5 x PCI 1 x PCI-Ex4 Slot</p>
<p>System</p>	<p>Windows 7, 8, 10, Linux</p>	<p>Windows 7/8.1/10, Linux</p>	<p>Windows Win7, Win10, Ubuntu</p>
<p>TPM</p>	<p>TPM2.0 (option)</p>	<p>—</p>	<p>TPM 1.2 box-header</p>
<p>I/O Interface</p>	<p>1* Intel i217LM GbE RJ45 1* Intel i211AT GbE RJ45 2* USB3.0, 4* USB2.0, 2* USB 2.0 (internal), 1* USB2.0 (Erect) 2* RS232/422/485 (support 5/12V TTL) 4* RS232 (COM3/4 support 5/12V TTL, internal) 1* PS/2 1* GPIO (16 bit, Co-lay Parallel) Line-in, Line-out, MIC</p>	<p>2*Intel® 1Gbps PCIe Ethernet Controller, RJ45 5*RS232, 1*RS232/RS485 2*USB 3.0, 8*USB 2.0 Realtek® ALC662 5.1 channel HDA Codec, with MIC/Line-out 2*PS/2 Port (Keyboard & Mouse) 1*LPT Header 8*Programmable GPIO</p>	<p>2 x Intel I211-AT GbE LAN 4 x USB 2.0 1 x Audio jack Line-in/ Line-out / Mic-in 2 x USB 3.0 2 x RS232/422/485, DB9 connector PS/2 (for Y cable use) 1 x USB 2.0 Header (support 1 device) 2 x USB 2.0 Header (support 4 devices) 4 x Serial Header for RS232 1 x DIO(GPIO) 8 bit (4-In, 4-Out) Header 1 x LPT</p>
<p>Display Interface</p>	<p>1* VGA (Max Resolution: 1920×1080@60Hz) 2* HDMI 1.4 (Max Resolution: 2560×1600@60Hz)</p>	<p>1*VGA: max resolution up to 1920*1200@60Hz 1*DVI: max resolution up to 1920*1200@60Hz</p>	<p>1 x DVI-D, up to 1920 x 1200 @60 Hz 1 x VGA, up to 2048 x 1536 @75Hz</p>
<p>Multiple Display</p>	<p>Dual</p>	<p>Dual</p>	<p>Dual</p>
<p>Temperature</p>	<p>Operation: 0°C~60°C, Storage: -20°C~70°C</p>	<p>Operation: 0°C~60°C, Storage: -25°C~75°C</p>	<p>Operation: 0°C~60°C, Storage: -20°C~70°C</p>

ATX INDUSTRIAL MOTHERBOARD

Appearance (example)			
Model	SIN-JH61MAI		
Size (mm)	305*220mm		
CPU	Intel® LGA1155 Socket supports Sandy/IVY Bridge Core Processor Max. 90W		
Chipset	Intel® H61 Chipset		
Memory	2* DDR3 1333/1066MHz SDRAM SO-DIMM up to 32GB		
Storage	4* SATAII (3.0Gb/s)		
Expansion Interface	1* Mini PCIe (Full size) 1* PCIe x16 1* PCIe x1 5* PCI		
System	Windows 7, 8, 10, Linux		
TPM	TPM2.0 (option)		
I/O Interface	1* PS/2 4* USB2.0, 4* USB2.0 (Internal) 2* COM (COM3: RS232/422/485, COM1: RS232) 4* COM (COM4: RS232/422/485, COM2/5/6: RS232 internal) 2* RJ45 Line-in, Line-out, MIC 1* GPIO (8bit, 5V internal)		
Display Interface	1* VGA (Max Resolution : 1920×1080@60Hz) 1* DVI-D (Max Resolution : 2560×1600@60Hz)		
Multiple Display	Dual		
Temperature	Operation: 0°C~60°C, Storage: -20°C~70°C		

MICRO-ATX INDUSTRIAL MOTHERBOARD

Appearance (example)			
Model	SIN-BQ670MB	SIN-JQ670MB	SIN-JH610MB1
Size (mm)	244*244mm	244*244mm	244*244mm
CPU	Intel® 12/13/14th Generation Core™ i3/i5/i7/i9, Pentium®, Celeron® CPU, LGA1700	Intel® LGA1700 12/13/14th Gen Socket Processor (Formerly Alder Lake-S, TDP 125W)	Intel® LGA1700 12/13/14th Gen Socket Processor (Formerly Alder Lake-S, TDP 125W)
Chipset	Intel® Q670 Chipset	Intel® Q670 Chipset	Intel® B75 Chipset
Memory	DDR4-3200, 4*U-DIMM, up to 128GB	4 x DDR5 4800/4000MHz Dual Channel U-DIMM, up to 192GB	2 x DDR4 3200MHz Dual Channel U-DIMM, up to 64GB
Storage	4*SATA 3.0 1*M.2 (Key-M, 2242/2280, SATA SSD)	3 x SATA3.0 (RAID 0, 1, 5, 10) 1 x SATA Power Connector	4 x SATA 3.0
Expansion Interface	1*PCIe x16 Slot 2*PCIe x4 Slot 1*PCI 1*M.2 (Key-E, 2230, PCIe+USB 2.0, Wifi+BT)	1 x PCIe Gen.5 x16 1 x PCIe Gen.4 x4 2 x PCIe Gen.3 x4 1 x M-Key 2242/2260/2280/22110 (SATA/PCIe 4.0 x4) Support NVMe 1 x E-Key 2230 (USB 2.0/PCIe Gen.4 x1) Support CNVi	1 x PCIe x16 (Gen.4) 1 x PCIe 3.0 x4 2 x PCI 1 x M-key 2242/2280 (PCIe x4 Gen.3 interface, Co-lay PCI-Ex4) 1 x M-key 2242/2280 (SATA interface, Co-lay SATA4) 1 x B-Key 3042/3052 (USB 3.2/USB 2.0) for 4G/5G Module 1 x E-Key 2230 (CNVi/PCIe x1/USB2.0) Support WiFi/BT Module 1 x SIM Card Slot
System	Windows 10/11, Linux	Windows® 11 (64bit) Windows® 10 (64bit) Windows® 10 (32bit) Linux	Windows® 11 (64bit) Windows® 10 (64bit) Linux
TPM	TPM2.0 (option)	—	TPM2.0 (Optional)
I/O Interface	2*Intel® 1Gbps Ethernet Controller, RJ45 1*Intel® 2.5Gbps Ethernet Controller, RJ45 4*RS232, 1*RS232/RS485, 1*RS232/RS485/RS422 8*USB 3.0, 8*USB 2.0 Realtek® Audio HDA Codec, with MIC/Line-out/Line-in 8*Programmable GPIO	1 x RJ45 for Intel® I219-LM GbE 1 x RJ45 for Realtek® RTL8153 GbE 1 x RJ45 for Intel® I226-V 2.5GbE 6 x USB 3.2 Gen 2x1 (10Gbps, Formerly USB 3.1 Gen 2) Internal Header for 1 x USB 3.2 Internal Header for 9 x USB 2.0 Internal USB Type A (Vertical) for 2 x USB 2.0 1 x DB-9 for RS-232/422/485 Internal Header for 5 x RS-232 8-Bit GPIO, 1 x PS/2	2 x RJ45 for Intel® I226-V 2.5GbE 1 x RJ45 for Intel® I219-V GbE 3 x USB 3.2 Gen 1x1 (5Gbps, Formerly USB 3.1 Gen 1) 3 x USB 2.0 Internal Header for 4 x USB 2.0 Internal USB Type A (Vertical) for 1 x USB 2.0 2 x DB-9 for RS-232/422/485 Internal Header for 4 x RS-232 16-Bit GPIO 1 x PS/2
Display Interface	1*DP++: max resolution up to 4096*2160@30Hz 1*DVI-D: max resolution up to 1920*1200@60Hz 1*VGA: max resolution up to 1920*1200@60Hz 1*eDP: max resolution up to 4096*2304@60Hz	1 x DP1.4a (Max Resolution: 4096 x 2304@60Hz) 2 x HDMI 2.0b (Max Resolution: 4096 x 2160@60Hz) 1 x VGA (Max Resolution: 1920 x 1080 @60Hz)	1 x DP1.4 (Max Resolution: 7680 x 4320@60Hz) 1 x HDMI 2.0 (Max Resolution: 4096 x 2304@60Hz) 1 x VGA (Max Resolution: 2560 x 1600 @60Hz)
Multiple Display	Quad	Quad	Triple
Temperature	Operation: 0°C~60°C, Storage: -20°C~75°C	Operation: 0°C~60°C, Storage: -20°C~85°C	Operation: -10°C~60°C, Storage: -20°C~70°C

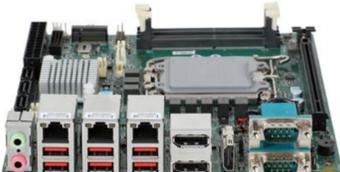
MICRO-ATX INDUSTRIAL MOTHERBOARD

<p>Appearance (example)</p>			
<p>Model</p>	<p>SIN-IH610MB</p>	<p>SIN-JQ470MB</p>	<p>SIN-JH310MB</p>
<p>Size (mm)</p>	<p>244*244mm</p>	<p>244*244mm</p>	<p>244*244mm</p>
<p>CPU</p>	<p>LGA1700 socket: Support for the 14th, 13th, and 12th Generation Intel® Core™, Pentium® Gold and Celeron® Processors</p>	<p>Intel® LGA 1200 Socket support 10th Gen. Core processor (Max. 95W)</p>	<p>Intel® LGA1151 8th Gen Socket Processor (Formerly Coffee Lake-S, TDP 65W)</p>
<p>Chipset</p>	<p>Intel® H610 Chipset</p>	<p>Intel® Q470E Chipset</p>	<p>Intel® H310 Chipset</p>
<p>Memory</p>	<p>2 x DDR4 DIMM sockets supporting up to 64 GB (32 GB single DIMM capacity) of system memory 3200/3000/2933/2666/2400/2133 MT/s</p>	<p>4* DDR4 2933/2666/2400MHz long DIMM up to 128GB</p>	<p>2 x DDR4 2666MHz UDIMM, up to 64GB</p>
<p>Storage</p>	<p>1 x M.2 connector (Socket 3, M key, type 2260/2280 PCIe 3.0 x4/x2 SSD support) 4 x SATA 6Gb/s connectors</p>	<p>6* SATAIII (6 Gb/s) support RAID 0/1/5/10 1* M.2 M-key (2242/2260/2280/22110, PCIe x4 interface) support NVMe 1* M.2 M-key (2260/2280, PCIe x2 interface)</p>	<p>3 x SATA 3.0 1 x Full Size Mini-PCIe</p>
<p>Expansion Interface</p>	<p>1 x PCI Express x16 slot, running at x16 (PCI Express 4.0 standard) 1 x PCI Express x1 slot (PCI Express 3.0 standard)</p>	<p>1* M.2 E-key (2230, PCIe/USB2.0 interface) support CNVi 1* PCIe x16 1* PCIe x8 (share with PCIe x16) 1* PCIe x4 1* PCIe x1</p>	<p>1 x PCIe x16 1 x PCIe x1 2 x PCI 1 x M-key 2242/2260/2280/22110 (SATA Interface) 1 x SIM Card Slot</p>
<p>System</p>	<p>Windows 11 64-bit Windows 10 64-bit</p>	<p>Windows 10, Windows 11, Linux</p>	<p>Windows® 11 (64bit) Windows® 10 (64bit) Linux</p>
<p>TPM</p>	<p>—</p>	<p>TPM2.0</p>	<p>TPM1.2/2.0 (Optional)</p>
<p>I/O Interface</p>	<p>1*Realtek® GbE LAN chip (1 Gbps/100 Mbps) 4 x USB 3.2 Gen 1 ports (2 ports on the back panel, 2 ports available through the internal USB header) 4 x USB 2.0/1.1 ports on the back panel 1 x serial port header 1 x PS/2 keyboard port 1 x PS/2 mouse port 3 x audio jacks</p>	<p>1* Intel® i219-LM GbE, 1* Intel® i210-AT GbE 2* Intel® i225-LM 2.5GbE 4* USB 3.2 (Gen.2) 2* USB 3.2 (Gen.1)internal, 4 * USB 2.0 internal 2 RS232/422/485, 4* RS232 internal 1* GPIO (8-bit) internal</p>	<p>2 x RJ45 for Realtek® RTL8111H GbE 4 x USB 3.2 Gen 1x1 (5Gbps, Formerly USB 3.1 Gen 1) 2 x USB 2.0 Internal Header for 2 x USB 2.0 1 x DB-9 for RS-232/422/485 Internal Header for 9 x RS-232/422/485 Line-In, Line-Out, MIC-In 8-Bit GPIO 1 x PS/2</p>
<p>Display Interface</p>	<p>1 x VGA port, supporting a maximum resolution of 1920x1200@60 Hz</p>	<p>2* HDMI 1.4 (Max Resolution: 4096x2160@30Hz)</p>	<p>1 x DVI-D (Max. Resolution: 1920 x 1200@60Hz) 1 x DP (Max Resolution: 4096 x 2304@60Hz) 1 x HDMI (Max Resolution: 4096 x 2160@30Hz) 1 x VGA (Max Resolution: 1920 x 1080 @60Hz)</p>
<p>Multiple Display</p>	<p>—</p>	<p>Dual</p>	<p>Dual</p>
<p>Temperature</p>	<p>Operation: 0°C~50°C, Storage: -20°C~75°C</p>	<p>Operation: 0°C~60°C, Storage: -20°C~85°C</p>	<p>Operation: 0°C~60°C, Storage: -20°C~85°C</p>

MICRO-ATX INDUSTRIAL MOTHERBOARD

Appearance (example)			
Model	SIN-JH110MB	SIN-JH110MB1	SIN-IH110MB
Size (mm)	244*244mm	244*244mm	244*180mm
CPU	Intel® LGA1151 6th/7th Gen Socket Processor (Formerly Skylake/Kaby Lake, TDP 65W)	Intel® LGA1151 6/7 th SkyLake/KabyLake Processor (Max. 65W TDP)	Intel LGA1151, Intel®7th/6th Generation (Max.65W TDP)
Chipset	Intel® H110 Chipset	Intel® H110 Chipset	Intel® H110 Chipset
Memory	2 x DDR4 2133MHz, Dual Channel SO-DIMM, up to 32GB	2*DDR4 ,Dual CH DDR4 2133MHz UDIMM up to 32GB	2 x DDR4 DIMM sockets supporting up to 32 GB Support for ECC UDIMM
Storage	3 x SATA III 1 x Full Size Mini-PCIe	3* SATAIII	4 x SATAIII 6Gb/s
Expansion Interface	1 x PCIe x16 1 x PCIe x1 2 x PCI 1 x M-Key 2242/2260/2280/22110 (SATA Interface) 1 x SIM Card Slot	- 1* Mini PCIe (full size) - 1* PCIe x16 slot - 1* PCIe x4 slot - 2* PCI - 1* SIM card slot	1 x PCI Express x16 slot, running at x16 (The PCI Express x16 slots conform to PCI Express 3.0 standard.) 1 x PCI Express x1 slot (The PCI Express x1 slot conforms to PCI Express 2.0 standard.) 2 x PCI slots
System	Windows® 10 (64bit)Windows® 8 / 8.1 (64bit) Windows® 8 / 8.1 (32bit)Windows® 7 (64bit) Windows® 7 (32bit),Linux	Windows 10, Windows 11, Linux	Windows 7/8.1/10
TPM	TPM (Optional)	—	TPM (Optional)
I/O Interface	2 x RJ45 for Realtek® RTL8111G GbE 4 x USB 3.0, 2 x USB 2.0, Internal Header for 3 x USB 2.0 1 x DB-9 for RS-232/422/485 1 x DB-9 for RS-232 Internal Header for 8 x RS-232 8-Bit GPIO 1 x PS/2 Line in , Line out , MIC in	2* Ethernet RJ45 4* USB 3.0 & 2* USB2.0 Line-In, Line-Out, MIC 2* COM (COM 1 support RS232/422/485) 2* USB 2.0, 1* USB2.0 (Vertical type) 1* PS/2 Internal Header for 8* COM 1* GPIO (8 bit)	1x RJ45 2x USB 3.0,2 x USB 2.0 1 x COM serial port 3 x audio jacks (Line In, Line Out, Mic In) 2 x PS/2 1 x serial port header 1 x USB 3.0 header,2 x USB 2.0 headers
Display Interface	1 x DVI-D (Max. Resolution: 1920 x 1200@60Hz) 1 x HDMI 2.0 (Max Resolution: 4096 x 2160@24Hz) 1 x VGA (Max Resolution: 1920 x 1080 @60Hz)	1xVGA (Max Resolution: 1920x1080@60Hz) 1x DVI-D (Max Resolution: 1920x1200@60Hz) 1xHDMI 1.4(Max Resolution: 4096x2160@24Hz)	1 x VGA, maximum resolution of 1920x1200@60 Hz 1 x HDMI , maximum resolution of 4096x2160@24 Hz
Multiple Display	Dual	Dual	Dual
Temperature	Operation: 0°C~60°C, Storage: -20°C~85°C	Operation: 0°C~60°C, Storage: -20°C~85°C	Operation: 0°C~50°C, Storage: -20°C~70°C

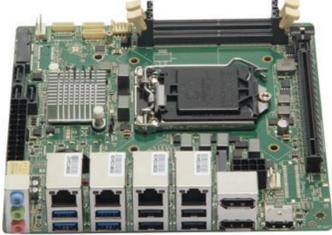
MICRO-ATX /MINI-ITX INDUSTRIAL MOTHERBOARD

Appearance (example)			
Model	SIN-IH81MB	SIN-WR68EMC	SIN-JQ67EMC
Size (mm)	244*180mm	170*170mm	244*180mm
CPU	Intel® LGA1150 Intel 4thGen Processor (Max TDP 65W)	Intel Core 12/13/14th Gen i9/i7/i5/i3/Pentium®/Celeron® Series Processor, Max 65W TDP	Intel LGA 1700 Socket supports 12th /13th Gen. Core™ i3/i5/i7 processors Max.65W TDP
Chipset	Intel® H81 Chipset	Intel® R680E Chipset	Intel® Q670E Chipset
Memory	2 x DDR3 1600/1333 MHz, non-ECC Dual Channel DIMM, up to 16GB	2 x 260-pin DDR4 SO-DIMMsDual-channel (ECC/non-ECC) 3200MT/s,Up to 64GB	2* DDR5 4800MHz SO-DIMM up to 64GB
Storage	2 x SATA III 2 x SATA II	3 x SATA 3.0 (Support RAID 0/1/5)	4 x SATAIII 6Gb/s port 1* M.2 M-key,type-2280 (supports NVMe) 1* M.2 M-Key,type-2242/2280 slot (supports NVMe)
Expansion Interface	1 x PCI Express x16 slot, running at x16 1 x PCI Express x1 slot (The PCI Express slots conform to PCI Express 2.0 standard.) 2 x PCI slots	1 x PCIe x16 (Gen 4) 1 x M key (PCIe x4 NVMe), 2242/2280 1 x E key (PCIe x1, USB 2.0, CNVi), 2230 1 x B key (PCIe x1, USB 3.2 Gen 2 x 1, USB 2.0), 3042 (with SIM Holder)	1* PCIe16(Gen.4 x4 slot) 1* M.2 E-key,type-2230, USB2.0/PCIe x1 interface supports CNVi 1* M.2 B-key, type-3042,USB3.2 Gen.1/USB2.0/PCIe x1 interface supports 4G Module 1*SIM card slot
System	Windows 10/8.1/8/7	Windows 10 IoT Enterprise 2021 LTSC (64-bit) Windows 11 IoT Enterprise 24H2 LTSC(64-bit) Linux (Support by request)	Windows 7/8.1/10
TPM	TPM (Optional)	—	TPM (Optional)
I/O Interface	1 x RJ-45 port 2 x USB 3.0,2 x USB 2.0 2 x PS/2,1 x parallel port 1*COM 2 x USB 2.0 header 1 x serial port header Line in Line out MIC in	3 x Intel® I225-LM 2.5GbE LAN 6 x USB 3.2 Gen 2 (rear) 2 x USB 3.2 Gen 1 (internal) 2 x USB 2.0 (internal) 4 x COM ports COM1: RS-232/422/485, RI/5V/12V, Auto-flow Control COM2~4: RS-232/422/485, 0V/5V/12V, Auto-flow Control 16-bits (8 x GPI; 8 x GPO), 5V Line-out , MIC-in	1* Intel i225-LM 2.5GbE + 7* Intel i225-V 2.5GbE 1* RJ-45 RS232 COM 2* USB 3.2 Gen.2 port , 2* USB 3.2 Gen.1 port 2* RS232 COM port header 1* GPIO header 1* PS/2 Keyboard & Mouse header 2 * 9-Pin USB 2.0/1.1 header for 4* USB 2.0/1.1 port
Display Interface	1 x VGA,maximum resolution of 1920x1200 1 x HDMI , maximum resolution of 4096x2160	LVDS up to 1920 x 1200@60Hz eDP up to 4096 x 2304@60Hz HDMI up to 4096 x 2160@24Hz DP up to 4096 x 2304@60Hz	1 x HDMI (Max Resolution: 1920 x 1080@60Hz)
Multiple Display	Dual	Quad	Single display
Temperature	Operation: 0°C~50°C, Storage: -20°C~70°C	Operation: 0°C~60°C, Storage: -20°C~80°C	Operation: 0°C~60°C, Storage: -20°C~85°C

MICRO-ATX /MINI-ITX INDUSTRIAL MOTHERBOARD

Appearance (example)			
Model	SIN-BH610MC	SIN-JH610MC	SIN-JH610MC1
Size (mm)	180*210mm	170*170mm	170*170mm
CPU	Intel®Core™ 12/13/14thGen i3/i5/i7/i9, Pentium® ,Celeron®Processors, LGA-1700,Max 65W	Intel® LGA1700 12/13/14th Gen Socket Processor (Formerly Alder Lake-S, TDP 65W)	Intel® LGA1700 12/13/14th Gen Socket Processor (Formerly Alder Lake-S, TDP 65W)
Chipset	Intel® H610 Chipset	Intel® H610 Chipset	Intel® H610 Chipset
Memory	2 x DDR4-3200, 2*U-DIMM, up to 64GB	2 x DDR5 5600MHz, Dual Channel SO-DIMM, up to 96GB	2 x DDR4 3200MHz, Dual Channel SO-DIMM, up to 64GB
Storage	2*SATA 3.0 1*M.2 (M-Key 2280, PCIe4.0 x2, NVMe)	2 x SATA III	2 x SATA III 1 x SATA Power Connector
Expansion Interface	1*PCIe4.0 x16 / 1*PCIe x16 GF 1*Mini-PCIe (PCIe3.0 x1+USB2.0, WiFi+4G)	1 x PCIe x16 (Gen.4) 1 x M-Key 2242/2280 (PCIe 3.0 x4) Support NVMe 1 x E-Key 2230 (CNVi/PCIe x1/USB2.0) Support WiFi/BT Module	1 x M-Key 2242/2280 (PCIe 3.0 x4) 1 x E-Key 2230 (CNVi/PCIe x1/USB2.0) Support WiFi/BT Module
System	Windows 10/11 64bit, Linux	Windows® 11 (64bit) Windows® 10 (64bit) Linux	Windows® 11 (64bit) Windows® 10 (64bit) Linux
TPM	—	TPM (Optional)	TPM (Optional)
I/O Interface	5*Intel®GbE Controller, RJ45 1*POE Power Connector (4*LAN support POE) 2*RS232/RS422/RS485, 2*RS232, 2*TTL 6*USB 3.2 Gen1, 4*USB 2.0 MIC/Line-out 8*Programmable GPIO	2 x RJ45 for Realtek® RTL8111H GbE 4 x USB 3.2 Gen 1x1 (5Gbps, Formerly USB 3.1 Gen 1) 6 x USB 2.0 Internal Header for 2 x USB 2.0 Internal Header for 2 x RS-232/422/485 Internal Header for 8 x RS-232 8-Bit GPIO	2 x RJ45 for Realtek® RTL8111H GbE 2 x USB 3.2 Gen 2x1 (10Gbps, Formerly USB 3.1 Gen 2) Internal Header for 2 x USB 3.2 Internal Header for 5 x USB 2.0 Internal Header for 2 x RS-232 Internal Header for 2 x RS-232/422/485 Internal Header for 2 x RS-232 with 5V/12V header 8-Bit GPIO
Display Interface	1 x HDMI: max 1920*1080@60Hz 1 x VGA: max 1920*1080@60Hz	2 x HDMI 2.0 (Max Resolution: 4096 x 2160@60Hz) 1 x VGA (Max Resolution: 1920 x 1080 @60Hz)	1 x LVDS (Max. Resolution: 2560 x 1600 @60Hz) 1 x eDP (Max Resolution: 1920 x 1080@60Hz) 1 x DP1.4 (Max Resolution: 7680 x 4320@60Hz) 1 x HDMI 2.0 (Max Resolution: 4096 x 2160@60Hz)
Multiple Display	Dual	Triple	Triple
Temperature	Operation: 0°C~60°C, Storage: -20°C~75°C	Operation: -10°C~60°C, Storage: -20°C~70°C	Operation: 0°C~60°C, Storage: -20°C~70°C

MINI-ITX INDUSTRIAL MOTHERBOARD

<p>Appearance (example)</p>			
<p>Model</p>	<p>SIN-JQ470MC</p>	<p>SIN-JH420MC</p>	<p>SIN-WH310MC</p>
<p>Size (mm)</p>	<p>170*170mm</p>	<p>170*170mm</p>	<p>170*170mm</p>
<p>CPU</p>	<p>Intel® LGA1200 10/11th Gen Socket Processor (Formerly Comet Lake-S, TDP 65W)</p>	<p>Intel® LGA1200 Socket supports 10/11th Gen Core Processor, Max. 65W</p>	<p>Intel® Corei7/i5/i3/Pentium®/Celeron® IOTG Processor, Max 65W</p>
<p>Chipset</p>	<p>Intel® Q470E Chipset</p>	<p>Intel® H420E Chipset</p>	<p>Intel® H310 Chipset</p>
<p>Memory</p>	<p>2 x DDR4 3200MHz, Dual Channel SO-DIMM, up to 64GB</p>	<p>2* DDR4 2933/2666MHz SO-DIMM up to 64GB</p>	<p>2 x 260-pin DDR4 SO-DIMMs Dual-channel DDR4 (non-ECC) 2666MHz Up to 64 GB</p>
<p>Storage</p>	<p>3 x SATA 3.0 (Support RAID 0/1/5/10)</p>	<p>1* SATAIII 1* M.2 M-key (2280, PCI-Ex4 interface, support NVMe SSD)</p>	<p>3 x SATA 3.0 (Support AHCI Mode)</p>
<p>Expansion Interface</p>	<p>1 x PCIe x16 1 x M-Key 2242/2280 (PCIe x4) support NVMe SSD 1 x E-Key 2230 (CNVi/PCIe x1/USB2.0) Support WiFi/BT Module</p>	<p>1* PCI-E x16 slot (Maximum power supply 75W) 1* M.2 B-key (3042/3052, USB3.2/USB2.0, support 3G/4G/5G Module) 1* M.2 E-key (2230, PCI-Ex1/USB2.0, support WIFI/BT)</p>	<p>1 x PCIe x16 1 x M Key (SATA), 2242/2280 1 x Full-size Mini-PCIe</p>
<p>System</p>	<p>Windows® 11 (64bit) Windows® 10 (64bit) Linux</p>	<p>Windows 10, Windows 11, Linux</p>	<p>Windows 10 IoT Enterprise LTSC/SAC 1809 (64-bit, RS5) Linux (Support by request)</p>
<p>TPM</p>	<p>—</p>	<p>—</p>	<p>TPM (Optional)</p>
<p>I/O Interface</p>	<p>1 x RJ45 for Intel® I226-V 2.5GbE 1 x RJ45 for Intel® I219-LM GbE 6 x USB 3.2 Gen 1x1 (5Gbps, Formerly USB 3.1 Gen 1) Internal Header for 3 x USB 2.0 Internal Header for 4 x USB 3.2 Gen 1x1 (5Gbps, Formerly USB 3.1 Gen 1) 2 x DB-9 for RS-232/422/485 with 5V/12V header Internal Header for 2 x RS-232 Internal Header for 2 x RS-232 with 5V/12V header 8-Bit GPIO</p>	<p>1* Intel® i226-V 2.5GbE, 1* Intel® i219-LM GbE 4* USB3.2 (Gen1), 1* Audio Jack (Line-out + MIC) 4* USB2.0 (Internal) 2* RS232/422/485(COM1/2 Support 5V/12V TTL, Internal) 4* RS232 (COM3/4 Support 5/12V TTL, Internal) 1* GPIO (8 bit,5V, Internal)</p>	<p>1 x Intel® I219-LM GbE LAN PHY 3 x Intel® I211-AT GbE LAN 4 x USB 2.0 (rear) 4 x USB 3.2 Gen1 (rear) 4 x COM ports COM1: RS-232/422/485, RI/5V/12V, Auto-flow Control COM2~4: RS-232,0V/5V/12V(RS-232/422/485 by option) 16-bits GPIO</p>
<p>Display Interface</p>	<p>1 x LVDS/eDP (Max Resolution : LVDS: 2560 x 1600@60Hz, eDP: 3840 x 2160@30Hz) 1 x DP1.4 (Max Resolution: 5120 x 3200@60Hz) 1 x HDMI 1.4 (Max Resolution: 4096 x 2160@30Hz) 1 x VGA (Max Resolution: 1920 x 1080 @60Hz)</p>	<p>2* HDMI 1.4 (Max Resolution : 4096x2160@30Hz, HDMI1 Co-lay VGA) 1* DP1.4 (Max Resolution : 5120x3200@60Hz) 1* LVDS/eDP (Max Resolution : LVDS: 2560x1600@60Hz)</p>	<p>1 x HDMI, up to 4096 x 2160@24Hz 1 x DP, up to 4096 x 2304@60Hz</p>
<p>Multiple Display</p>	<p>Triple</p>	<p>Dual</p>	<p>Dual</p>
<p>Temperature</p>	<p>Operation: 0°C~60°C, Storage: -20°C~70°C</p>	<p>Operation: 0°C~60°C, Storage: -20°C~70°C</p>	<p>Operation: -10°C~60°C, Storage: -20°C~80°C</p>

MINI-ITX INDUSTRIAL MOTHERBOARD

<p>Appearance (example)</p>			
<p>Model</p>	<p>SIN-BH310MC</p>	<p>SIN-BH31CMC</p>	<p>SIN-BH110MC</p>
<p>Size (mm)</p>	<p>170*170mm</p>	<p>170*170mm</p>	<p>170*170mm</p>
<p>CPU</p>	<p>Intel® 8th and 9th Generation Core™ i3/i5/i7, Pentium®, Celeron® CPU, LGA1151</p>	<p>Intel® 6/7/8/9th Generation Core/Pentium®/Celeron® Desktop Processors, LGA1151, Max 65W TDP</p>	<p>Support Intel® 6/7/8/9th Generation Core / Pentium/ Celeron Desktop CPU, LGA1151 Support MAX CPU TDP: Hexa-Core 95W</p>
<p>Chipset</p>	<p>Intel® H310 Chipset</p>	<p>Intel® H310C Chipset</p>	<p>Intel® H110 Chipset</p>
<p>Memory</p>	<p>DDR4-2400/2666, 2*U-DIMM, up to 32 GB</p>	<p>Support DDR4 2133 MHz, 2 * U-DIMM Slot, Up to 32GB</p>	<p>Support DDR4-2133/2400MHz, non-ECC U-DIMM Slot, Up to 32GB</p>
<p>Storage</p>	<p>2*SATA 3.0, 1*mSATA</p>	<p>2 * SATA 3.0 Port +1 * mSATA</p>	<p>2 * SATA3.0</p>
<p>Expansion Interface</p>	<p>1*PCIe x16 2*Mini-PCIe (1*mSATA,1*Wifi/3G/4G supported)</p>	<p>1 x PCIe x16 Mini PCI-E1 supports WIFI and 4G Mini PCI-E2 supports mSATA 1 * SIM Card Slot</p>	<p>1 * PCI-E 16x Slot 1 * Mini PCI-E Slot (mSATA/WIFI+4G/3G, default mSATA+4G/3G), with 1 * Full-Size SIM Card Slot 1 * PCI-E 16x Golden Finger (1*PCIEx16 [2] + 2*PCIEx1 + 1*USB2.0)</p>
<p>System</p>	<p>Windows 10, Linux</p>	<p>Windows 7/8/10, Server 2008/2012, Linux</p>	<p>Windows7/8.1/10, Linux</p>
<p>TPM</p>	<p>—</p>	<p>—</p>	<p>TPM (Optional)</p>
<p>I/O Interface</p>	<p>2*Realtek® 1Gbps PCIe Ethernet Controller, RJ45 6*RS232 (Up to 18*RS232 with SVIO Module) 4*USB 3.0, 6*USB 2.0 (Up to 18*RS232 with SVIO Module) Realtek® 5.1 channel HDA Codec, with MIC/Line-out 1*PS/2 Port (Keyboard & Mouse) 8*Programmable GPIO</p>	<p>2 * Realtek GBE LAN Chip (10/100/1000 Mbps, RJ45) 6 * RS232 10 * USB:8 * Rear I/O(USB2.0) +2 * Rear I/O(USB3.0/USB2.0) 8 * GPIO 1 * PS/2(keyboard)</p>	<p>1 * I219 GBE LAN Chip (10/100/1000 Mbps, RJ45) 4 * I210 GBE LAN Chip (10/100/1000 Mbps, RJ45) + 4 * POE Connector 1 * POE Power Connector 4 * USB3.0 (TYPE-A) 2 * USB2.0 (TYPE-A) 2 * USB2.0 (Header) 2 * RS232/RS422/RS485 (COM1/2, DB9/M) 2 * RS232 (COM3/4, Header) 2 * TTL (COM5/6, EXT-CARD Header) 8 * GPIO</p>
<p>Display Interface</p>	<p>1*HDMI: max resolution up to 3840*2160@24Hz 1*VGA: max resolution up to 1920*1200@60Hz</p>	<p>1 * VGA 1 * HDMI</p>	<p>1 * VGA, max resolution up to 1920*1200@60Hz 1 * HDMI 1.4b, max resolution up to 4096*2160@24Hz</p>
<p>Multiple Display</p>	<p>Dual</p>	<p>Dual</p>	<p>Dual</p>
<p>Temperature</p>	<p>Operation: 0°C~60°C, Storage: -25°C~75°C</p>	<p>Operation: 0°C~60°C, Storage: -20°C~75°C</p>	<p>Operation: 0°C~60°C, Storage: -20°C~75°C</p>

MINI-ITX INDUSTRIAL MOTHERBOARD

Appearance (example)			
Model	SIN-JH110MC	SIN-WH110MC	SIN-BH81MC
Size (mm)	170*170mm	170*170mm	170*180mm
CPU	Intel® LGA1151 6th/7th Gen Socket Processor (Formerly Skylake/Kaby Lake, TDP 65W)	7th/6th Gen Intel® Desktop Kaby Lake/Skylake Core™ i7/i5/i3/ Pentium®/Celeron® Series Processor, Max 65W	Intel® 4th Generation Core™ i3/i5/i7, Pentium®, Celeron® CPU, LGA1150
Chipset	Intel® H110 Chipset	Intel® H110 Chipset	Intel® H81 Chipset
Memory	2 x DDR4 2133MHz, Dual Channel SO-DIMM, up to 32GB	2 x 260-pin SO-DIMMs Dual-channel DDR4 (non-ECC) 2133MHz/2400MHz (7th Gen) Up to 32 GB	DDR3-1333/1600, 2*U-DIMM, up to 16 GB
Storage	2 x SATA III 1 x Full Size Mini-PCIe 1 x Full Size mSATA	2 * SATA 3.0 Port +1 * mSATA	1*SATA 3.0, 1*SATA 2.0, 1*mSATA
Expansion Interface	1 x PCIe x16 1 x M-Key 2242/2260 1 x SIM Card Slot	1 x PCIe x16 Mini PCI-E1 supports WIFI and 4G Mini PCI-E2 supports mSATA 1 * SIM Card Slot	1*PCIe x16 Slot (colay with PCIe x16 in Gold Finger) 1*PCIe x16 Gold Finger (up to PCIe x4 + USB 2.0 + PCIe x16) 1*Mini-PCIe (1*mSATA+3G/4G supported, Wifi optional)
System	Windows® 11 (64bit), Windows® 10 (64bit) Windows® 8 / 8.1 (64bit), Windows® 8 / 8.1 (32bit) Windows® 7 (64bit), Windows® 7 (32bit) Linux	Windows 7 (32/64-bit) Windows 8.1 (64-bit) Windows 10 IoT Enterprise LTSC/SAC 1809 (64-bit, RS5) Linux (Support by request)	Windows7/8.1/10, Linux
TPM	—	—	TPM 2.0
I/O Interface	2 x RJ45 for Realtek® RTL8111H GbE 4 x USB 3.0 Internal Header for 4 x USB 2.0 4 x DB-9 for RS-232/422/485 2 (COM5 option RS-232 or RS-232/422/485) 8-Bit GPIO	1 x Intel® I219-LM GbE-PHY 1 x Intel® I210-AT PCIe GbE LAN(Co-lay I211-AT) 5 x USB 2.0 (2 x rear, 3 x internal with one Vertical Type-A) 4 x USB 3.2 Gen 1 (rear) 5 x COM ports (COM1: rear, COM2~4: internal) COM1: RS-232/422/485, 0V/5V/12V COM2~5: RS-232, 0V/5V/12V 8-bits GPIO(4 x GPI, 4 x GPO),	4*Intel® 1Gbps PCIe Ethernet Controller, RJ45 2*RS232, 2*TTL, 2*RS232/RS485/RS422 2*USB 3.0, 8*USB 2.0 8*Programmable GPIO MIC/Line-out/Line-in
Display Interface	1 x eDP (Max Resolution: 4096 x 2304@60Hz) 1 x DP (Max Resolution: 4096 x 2304@60Hz) 1 x HDMI (Max Resolution: 4096 x 2160@24Hz)	1 * VGA 1 * HDMI	1*VGA: max resolution up to 1920*1200@60Hz 1*HDMI: max resolution up to 3840*2160@30Hz
Multiple Display	Dual	Dual	Dual
Temperature	Operation: 0°C~60°C, Storage: -25°C~85°C	Operation: 0°C~60°C, Storage: -20°C~75°C	Operation: 0°C~60°C, Storage: -25°C~75°C

MINI ITX INDUSTRIAL MOTHERBOARD

Appearance (example)			
Model	DTX-JH61MC		
Size (mm)	305*220mm		
CPU	LGA1155 , Intel core 2/3th GenSandy Bridge processor Max TDP 65W		
Chipset	Intel® H61 Chipset		
Memory	1* 240-pin DDR3 DIMM slot,Dual Channel DDR3 memory up to 8GB		
Storage	2* SATA2.0 3Gb/s		
Expansion Interface	1* Mini PCI-E connector (Half size) 1* M-SATA connector (Full size) 1* PCIe16 slot		
System	Windows XP,7, 8, 10, Linux		
TPM	—		
I/O Interface	2* GIGALAN Realtek® 8111G Chip 8* USB 2.0/1.1(4 distribute in back panel, 4 distribute in mid-board) 2* USB 2.0/1.1 headers for 4 USB 2.0/1.1 ports 2* COM ports (support 5V/12V) 8* COM headers (2*Support RS422/RS485 for COM6、COM8) 1* 10-pin GPIO header		
Display Interface	2* VGA ports(VGA+DVI Option, Max. Resolution: 1920×1200@60Hz)		
Multiple Display	Dual		
Temperature	Operation: 0°C~60°C, Storage: -20°C~70°C		