AXIOMTEK

www.axiomtek.com

2023
Embedded
Boards & Modules

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New Product **Highlights**

System on Modules

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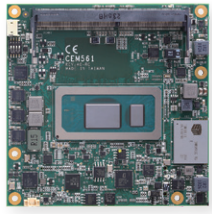
COM Express Type 7 Basic Module with Intel® Xeon® D-1700 Processor

- Intel® Xeon® D-1700 Processor (Ice Lake D)
- 4 DDR4-2666 SO-DIMM for up to 128 GB memory (optional)
- 1 PCIe x16 Gen4, 1 PCIe x8 Gen3, 8 PCIe x1 Gen3
- 2 SATA Gen3
- 4 USB 3.0 and 4 USB 2.0
- 4 10GBase-KR
- Supports TPM 2.0



CEM561 >>Page 16

COM Express Type 6 Compact Module with 12th Gen Intel® Core™ or Celeron® Processor

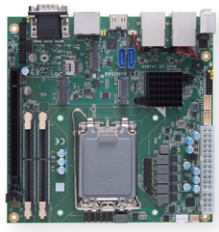
- 12th gen Intel® Core™ i7/i5/i3 or Celeron® processor (Alder Lake U)
- Dual channel DDR4-3200 SO-DIMM for up to 64GB
- Up to 8 lanes of PCI Express
- 2 SATA Gen3
- 4 USB 3.0 and 8 USB 2.0
- Supports NVMe for up to 512GB (by request)
- Supports TPM 2.0
- Enabler Middleware (eAPI) intelligent remote management software

CEM320 >>Page 25

COM Express Type 10 Mini Module with Intel Atom® x6000E Series or Intel® Celeron® N/J Series

- Intel Atom® x6000E series or Intel® Celeron® N/J processor (Elkhart Lake)
- 8GB/16GB LPDDR4 memory onboard
- Up to 4 lanes of PCI Express
- 2 SATA 3.0
- 2 USB 3.0 and 8 USB 2.0
- eMMC and TPM2.0 onboard

Mini-ITX Motherboards



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Mini-ITX SBC with LGA1700 Socket 12th Gen Intel® Core™ Processor, Intel® Q670E, 2 HDMI, DisplayPort++, eDP, 2 GbE LAN, and HD Audio

- LGA1700 socket 12th gen Intel® Core™ i7/i5/i3 processor
- Intel® Q670E chipset
- 2 DDR4 SO-DIMM for up to 64GB of memory
- 4 USB 3.2 and 4 USB 2.0
- 4 COM ports
- 2 SATA-600 and 1 M.2 Key M 2280
- 1 PCIe x16, 1 M.2 Key E 2230, and 1 M.2 Key B 3052/3042

Mini-ITX Motherboards

MANO561 >>Page 69

Thin Mini-ITX SBC with LGA1700 12th Gen Intel® Core™ i9/i7/i5/i3, HDMI, VGA, LVDS, USB 3.2, M.2, and Dual GbE LAN

- LGA1700 12th gen Intel® Core™ i9/i7/i5/i3 processor
- Intel® H610 chipset
- 2 DDR4 SO-DIMM for up to 64GB memory
- 2 USB 3.2 Gen1 and 5 USB 2.0
- 2.5GbE LAN and 4 COM ports
- 1 PCIe x16, 1 M.2 Key E, and 1 M.2 Key B
- 1 Full-size mini-PCIe slot
- 1 SATA-600
- 12 to 24 VDC power in

MANO560 >>Page 71

Mini-ITX SBC with LGA1700 12th Gen Intel® Core™ i9/i7/i5/i3, DisplayPort++, HDMI, VGA, LVDS, USB 3.2, M.2, and Dual GbE LAN

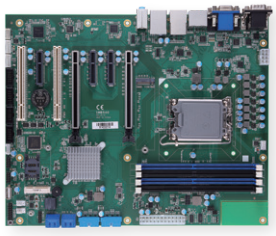
- LGA1700 12th gen Intel® Core™ i9/i7/i5/i3 processor
- Intel® H610 chipset
- 2 DDR4 SO-DIMM for up to 64GB memory
- 2 USB 3.2 Gen1 and 5 USB 2.0
- 4 COM port
- 1 PCIe x16 and 1 M.2 Key E slot
- 1 Full-size mini-PCIe slot
- 1 SATA-600
- 1 M.2 Key B for USB 3.2 interface 5G module

MANO321 >>Page 79

Thin Mini-ITX SBC with Intel® Celeron® Processor J6412, HDMI, VGA, LVDS, USB 3.1, Mini PCIe, M.2 Key B, and HD Audio

- Intel® Celeron® processor J6412
- 2 DDR4 SO-DIMM for up to 32GB of memory
- 1 PCIe x2 for PCIe x4 expansion slot
- 1 PCIe Mini Card slot and PCIe x1
- 4 USB 3.1 and 4 USB 2.0
- 1 SATA-600 and 1 M.2 Key B
- Supports 6 COM
- Low profile
- 9 to 20 VDC power in
- HDMI, VGA, LVDS with triple view supported

ATX Motherboards

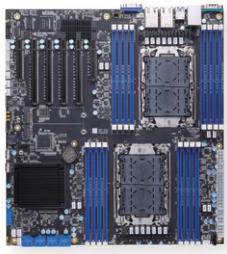


IMB540 >>Page 86

ATX Motherboard with LGA1700 Socket 12th Gen Intel® Core™ i9/i7/i5/i3, Pentium® or Celeron® Processor, Intel® R680E, USB 3.2 Gen2, SATA 3.0, GbE and 2.5GbE LAN, VGA, DisplayPort++, DVI-D, and HDMI

- LGA1700 socket 12th gen Intel® Core™ i9/i7/i5/i3, Pentium® or Celeron® processor (Alder Lake-S)
- Four 288-pin DDR4-3200 ECC/non-ECC un-buffered Long-DIMM, up to 128GB
- DisplayPort++, VGA, DVI-D and HDMI with quad view supported
- Supports M.2 Key M 2280
- 4 USB 3.2 Gen2, 4 USB 3.2 Gen 2x1 and 2 Dual USB 3.2 Gen 1x1
- TPM 2.0 supported (optional)

EATX Motherboards

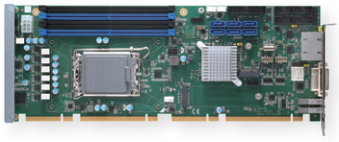


IMB760 >>Page 100

EATX Motherboard with Dual LGA4189 Socket 3rd Gen Intel® Xeon® Scalable Processors, Intel® C627A, 4 PCIe x16, 2 PCIe x8, VGA, NVMe, and IPMI

- Dual 3rd gen Intel® Xeon® Scalable processors (Ice Lake-SP)
- 16 288-pin DDR4-3200 RDIMM for up to 1TB of memory
- 4 PCIe x16 and 2 PCIe x8
- Supports 2 M.2 Key M for NVMe with RAID 0 & 1
- Supports TPM 2.0 module (optional)
- Two 10GbE ports
- IPMI (optional)

Slot CPU Cards

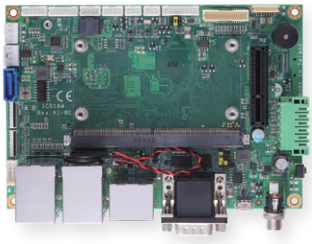


SHB160 >>Page 104

PICMG 1.3 Full-size CPU Card with LGA1700 12th Gen Intel® Core™ i7/i5/i3, Pentium® or Celeron® Processor, Intel® R680E/Q670E, SATA 3.0, M.2 E/M Key USB 3.2 Gen1/Gen2, Dual 2.5GbE LAN and DVI-I

- LGA1700 12th Gen Intel® Core™ i7/i5/i3, Pentium® or Celeron® processor (up to 125W)
- Intel® R680E/Q670E chipset
- 4 DDR5-4400 U-DIMM up to 128GB ECC/Non ECC memory
- Supports Intel® AMT and vPro (R680E)
- TPM 2.0 supported (optional)
- Supports dual 2.5GbE
- Supports PLT Port
- Supports M.2 Key M / E (R680E)
- Supports PCIe 4.0 through the gold fingers

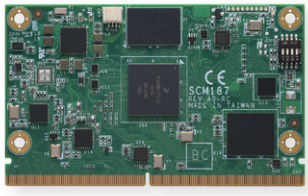
ARM-based Embedded Boards



SCB184 >>Page 114

Application Baseboard for SMARC v2.0/v2.1 Modules

- Ready-to-use SMARC v2.0/v2.1 Baseboard
- Compatible with Axiomtek and other SMARC Modules
- 3.5” Form Factor
- Platform for Rapid Customizing
- Support of Fast Implementation and Improved Time to Market
- USB 3.2 Gen1
- GbE LAN
- Micro SD Card Slot and SIM Card Slot
- M.2 Key B Slot for 5G Module
- HDMI, DisplayPort interfaces
- Dual-channel LVDS Interfaces
- 12V-24V Wide Voltage
- Reset Button

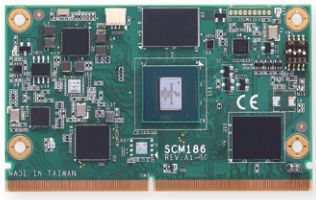


SCM187 >>Page 116

RISC Embedded SMARC v2.1 SoM with i.MX 8M Mini Quad Core 1.6 GHz SoC, 4GB RAM and 8GB eMMC

- SMARC 2.1 (82 x 50 mm)
- NXP i.MX 8M Mini Quad A53 Core Processor
- Dual CANBus 2.0B
- Dual-channel 24-bit LVDS
- HDMI up to FHD Resolution (option)
- 10/100/1000 Mbps Ethernet
- USB 2.0
- MIPI-CSI
- Audio
- Yocto 4.0

ARM-based Embedded Boards

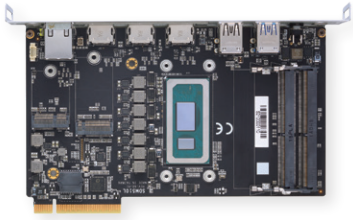


SCM186 >>Page 118

RISC Embedded SMARC v2.0 SoM with i.MX 8M Plus Quad 1.8 GHz SoC, 4GB RAM and 8GB eMMC

- SMARC 2.0 (82 x 50 mm)
- NXP i.MX 8M Plus Quad A53 Core Processor
- Neural Processing Unit (NPU), up to 2.3 TOPS
- Cortex-M7 for Real-time Control
- Dual CANBus 2.0B
- HDMI up to 4K Resolution
- Dual-channel 24-bit LVDS
- 10/100/1000 Mbps Ethernet
- USB 3.2 Gen1
- MIPI-CSI
- Audio
- Yocto 3.3

Smart Display Modules



SDM510L >>Page 126

Intel® Smart Display Module Large (Intel® SDM-L) with 12th Gen Intel® Core™ i7/i5/i3 or Intel® Celeron® Processor and Intel® Iris® Xe Graphics with 8K60Hz or up to Four 4K60Hz Supported

- Intel® Smart Display Module (Intel® SDM) specification
- 12th gen Intel® Core™ i7/i5/i3 or Intel® Celeron® processor (Alder Lake-H/P/U series)
- 2 DDR4-3200 SO-DIMM
- M.2 Key E slot
- M.2 Key M slot
- 3 HDMI, 3 USB 3.2 Gen2, 1 USB 2.0, and 1 LAN
- Supports Intel® OpenVINO™ and Intel vPro®

1

System on Modules

Axiomtek's SoM (System on Module) solution includes COM Express modules (CEM) and Qseven modules. In conjunction with a suitable baseboard, Axiomtek's SoM solution is an optimal solution for embedded applications to fulfill the various vertical applications that SBC (Single Board Computer) usually cannot satisfy. SoM is designed with all necessary components, offering the most updated interface and excellent computing performance to reduce TCO (Total Cost of Ownership) and improve time to market.

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	CEM530	COM Express Type 6 Basic Module with Intel® Xeon® or 9th/8th Gen Intel® Core™ Processor and Intel® CM246/QM370	19
	CEM521	COM Express Type 6 Compact Module with 8th Gen Intel® Core™ & Celeron® Processor	22
NEW	CEM320	COM Express Type 10 Mini Module with Intel Atom® x6000E Series or Intel® Celeron® N/J Series	25
	CEM311	COM Express Type 10 Mini Module with Intel® Pentium® Processor N4200 & Celeron® Processor N3350	28
	CEM310	COM Express Type 10 Mini Module with Intel Atom® x5 and x7 Processor	31
	CEM130	COM Express Type 6 Compact Module with AMD Ryzen™ Embedded V1000 Processor	34

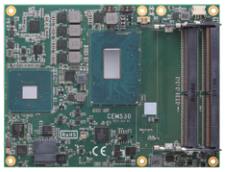
Embedded Boards and Modules

System on Modules

Selection Guide

NEW

NEW



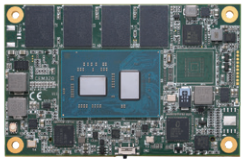
Features\Models			CEM710	CEM561	CEM530
Form Factor			COM Express® Type 7 Basic	COM Express Type 6 Compact	COM Express Type 6 Compact
CPU Level			Intel® Xeon® D-1700 LCC	12th gen Intel® Core™/ Celeron®	Intel® Xeon® or 9th/8th gen Intel® Core™
CPU Socket			Onboard	Onboard	Onboard
Core Logic Chipset			SoC integrated	SoC integrated	Intel® CM246/Intel® QM370
Memory Type			DDR4-2666	DDR4-3200	DDR4-2666
Max. DRAM Capacity			64GB (128GB optional)	64GB	64GB (96GB optional)
Cache RAM Capacity			SoC integrated	SoC integrated	SoC integrated
BIOS			AMI UEFI BIOS (Legacy Free)	AMI UEFI BIOS (Legacy Free)	AMI UEFI BIOS (Legacy Free)
Watchdog Timer			65536 levels, 0 to 65535 sec.	65536 levels, 0 to 65535 sec.	65536 levels, 0 to 65535 sec.
Onboard Storage			N/A	NVME up to 512GB (optional)	N/A
Onboard GPIO			4-in/4-out	4-in/4-out	4-in/4-out
I/O	SATA		2 x SATA-600	3 x SATA-600	4 x SATA-600
	TPM		TPM 2.0	TPM 2.0	TPM 2.0
	Serial	COM 1	TX/RX	TX/RX	TX/RX
		COM 2	TX/RX	TX/RX	TX/RX
		COM 3	N/A	N/A	N/A
		COM 4	N/A	N/A	N/A
	USB		4 x USB 3.0 4 x USB 2.0	4 x USB 3.0 8 x USB 2.0	4 x USB 3.0 8 x USB 2.0
Display			N/A	1 x LVDS (eDP 1.4 optional) 1 x VGA (default) 2 x DDI	1 x LVDS (eDP 1.4 optional) 1 x VGA (default) 1 x DDI
Ethernet			1 x 10/100/1000/2500 Mbps	1 x 10/100/1000/2500 Mbps	1 x 10/100/1000 Mbps
Audio			Codec on baseboard	Codec on baseboard	Codec on baseboard
Hardware Monitoring			Yes	Yes	Yes
SMBus			Yes	Yes	Yes
Expansion Interface			1 x PCIe x16 Gen3 1 x PCIe x8 Gen3 8 x PCIe x1 Gen2	8 x PCIe x1 Gen3	1 x PCIe x16 Gen3 8 x PCIe x1 Gen3
Power Management			ACPI	ACPI	ACPI
Operating Temperature			0°C to +70°C (+32°F to +158°F)	-40°C to +85°C (-40°F to +185°F)	Industrial:-40°C to 85°C (-40°F to 185°F) Standard: 0°C to 60°C (32°F to140°F)
Relative Humidity			10%- 95%, non-condensing	10%- 95%, non-condensing	10%- 95%, non-condensing
EMI Compliance			CE	CE	CE

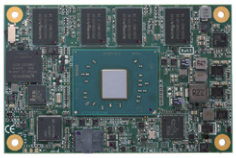
* All specifications and photos are subject to change without notice.

System on Modules

Selection Guide

NEW





Features\Models			CEM521	CEM320	CEM311
Form Factor			COM Express Type 6 Compact	COM Express Type 10 Mini	COM Express Type 10 Mini
CPU Level			8th gen Intel®Core™/ Celeron® 4305UE	Intel Atom® x6000E Series or Intel® Celeron® N/J Series	Intel® Pentium® N4200 or Intel® Celeron® N3350
CPU Socket			Onboard	Onboard	Onboard
Core Logic Chipset			SoC integrated	SoC integrated	SoC integrated
Memory Type			DDR4-2400	LPDDR4-4267	DDR3L-1866/LPDDR4
Max. DRAM Capacity			64GB	16GB/ 8GB	4GB (default)/8GB (optional)
Cache RAM Capacity			SoC integrated	SoC integrated	SoC integrated
BIOS			AMI UEFI BIOS (Legacy Free)	AMI UEFI BIOS (Legacy Free)	AMI UEFI BIOS (Legacy Free)
Watchdog Timer			65536 levels, 0 to 65535 sec.	65536 levels, 0 to 65535 sec.	65536 levels, 0 to 65535 sec.
Onboard Storage			eMMC 5.1 up to 64GB (optional)	eMMC 5.1 up to 64GB	eMMC 5.0 up to 64GB (optional)
Onboard GPIO			4-in/4-out	4-in/4-out	4-in/4-out
I/O	SATA		3 x SATA-600	2 x SATA-600	2 x SATA-600
	TPM		TPM 2.0	TPM 2.0	N/A
	Serial	COM 1	TX/RX	TX/RX	TX/RX
		COM 2	TX/RX	TX/RX	TX/RX
		COM 3	N/A	N/A	N/A
		COM 4	N/A	N/A	N/A
	USB		4 x USB 3.0 8 x USB 2.0	2 x USB 3.0 8 x USB 2.0	2 x USB 3.0 8 x USB 2.0
Display			1 x LVDS (eDP 1.4 optional) 1 x VGA (default) 1 x DDI	1 x LVDS (eDP optional) 1 x DDI	1 x DDI 1 x LVDS (eDP optional)
Ethernet			1 x 10/100/1000 Mbps	1 x 10/100/1000/2500 Mbps	1 x 10/100/1000 Mbps
Audio			Codec on baseboard	Codec on baseboard	Codec on baseboard
Hardware Monitoring			Yes	Yes	Yes
SMBus			Yes	Yes	Yes
Expansion Interface			8 x PCIe x1 Gen3	4 x PCIe x1	4 x PCIe x1
Power Management			ACPI	ACPI	ACPI
Operating Temperature			Industrial:-40°C to 85°C (-40°F to 185°F) Standard:-20°C to +70°C (-4°F to +158°F)	Industrial:-40°C to +85°C (-40°F to +185°F) Standard:-20°C to +70°C (-4°F to +158°F)	Industrial:-40°C to +85°C (-40°F to +185°F) Standard:-20°C to +70°C (-4°F to +158°F)
Relative Humidity			10%- 95%, non-condensing	10%- 95%, non-condensing	10%- 95%, non-condensing
EMI Compliance			CE	CE	CE

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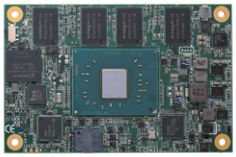


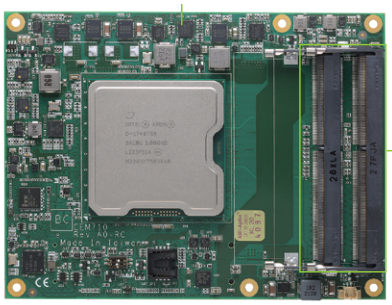
Features\Models			CEM310	CEM130
Form Factor			COM Express® Type 10 Mini	COM Express Type 6 Compact
CPU Level			Intel Atom® x5/x7	AMD Ryzen™ Embedded V1000
CPU Socket			Onboard	Onboard
Core Logic Chipset			SoC integrated	SoC integrated
Memory Type			DDR3L-1866	DDR4-2400/3200
Max. DRAM Capacity			4GB (default)/8GB (optional)	32GB (dual channel)
Cache RAM Capacity			SoC integrated	SoC integrated
BIOS			AMI UEFI BIOS (Legacy Free)	AMI UEFI BIOS (Legacy Free)
Watchdog Timer			65536 levels, 0 to 65535 sec.	65536 levels, 0 to 65535 sec.
Onboard Storage			eMMC 5.0 up to 64GB (optional)	N/A
Onboard GPIO			4-in/4-out	4-in/4-out
I/O	SATA		2 x SATA-600	2 x SATA-600
	TPM		N/A	TPM 2.0
	Serial	COM 1	TX/RX	TX/RX
		COM 2	TX/RX	TX/RX
		COM 3	N/A	N/A
		COM 4	N/A	N/A
	USB		2 x USB 3.0 8 x USB 2.0	3 x USB 3.0 8 x USB 2.0
Display			1 x DDI 1 x LVDS (eDP optional)	1 x VGA 1 x LVDS (eDP 1.3 optional) 2 x DDI (supports HDMI 1.4/DVI/DP 1.2*) *HDMI 2.0/DP 1.4 needs Redriver chip on carrier board
Ethernet			1 x 10/100/1000 Mbps	1 x 10/100/1000 Mbps
Audio			Codec on baseboard	Codec on baseboard
Hardware Monitoring			Yes	Yes
SMBus			Yes	Yes
Expansion Interface			4 x PCIe x1	7 x PCIe x1 via PCIe bridge
Power Management			ACPI	ACPI
Operating Temperature			Industrial:-40°C to +85°C (-40°F to +185°F) Standard:-20°C to +70°C (-4°F to +158°F)	-20°C to +60°C (-4°F to +140°F)
Relative Humidity			10%- 95%, non-condensing	10%- 95%, non-condensing
EMI Compliance			CE	CE

* All specifications and photos are subject to change without notice.

CEM710 NEW

COM Express Type 7 Basic Module with Intel® Xeon® D-1700 Processor

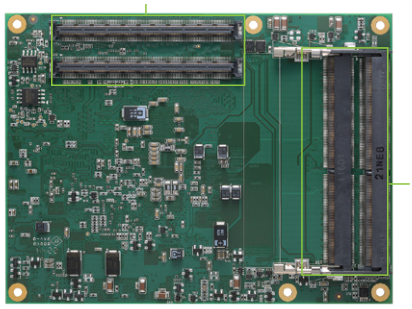
Intel® Xeon® D-1700 series



2 x DDR4 SO-DIMM

▲ Front view

COM Express connector



2 x DDR4 SO-DIMM (optional)

▲ Rear view

Features

- Intel® Xeon® D-1700 Processor (Ice Lake D)
- 4 DDR4-2666 SO-DIMM for up to 128 GB memory (optional)
- 1 PCIe x16 Gen4, 1 PCIe x8 Gen3, 8 PCIe x1 Gen3
- 2 SATA Gen3
- 4 USB 3.0 and 4 USB 2.0
- 4 10GBase-KR
- Supports TPM 2.0

Specifications

Core System

CPU	Intel® Xeon® D-1712TR (4 x 2.0 GHz, 10MB cache, 50G Eth, 39W) Intel® Xeon® D-1735TR (8 x 2.2 GHz, 15MB cache, 50G Eth, 59W) Intel® Xeon® D-1715TER (4 x 2.4 GHz, 10MB cache, 50G Eth, 50W) Intel® Xeon® D-1732TE (8 x 1.9 GHz, 15MB cache, 50G Eth, 52W) Intel® Xeon® D-1746TER (10 x 2.0 GHz, 15MB cache, 100G Eth, 67W)
System Memory	Default: 2 x 260-pin DDR4-2666 ECC SO-DIMM, up to 64GB Optional: 4 x 260-pin DDR4-2666 ECC SO-DIMM, up to 128GB
Chipset	SoC integrated
BIOS	AMI uEFI (Legacy free)
Storage	N/A
Watchdog Timer	65536 levels, 0 to 65535 sec.
Expansion Interface	1 x PCIe x16 Gen4 1 x PCIe x8 Gen3 8 x PCIe x1 Gen3
Battery Lithium	N/A
Power Input	ATX: +12V, +5VSB AT: +12V

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I/O	
SATA	2 x SATA Gen3
Hardware Monitoring	Yes
Ethernet	1 x 10/100/1000/2500 Mbps Ethernet with Intel® I226 4 x 10GBASE-KR with Intel® 10G external PHY
Audio	N/A
USB	4 x USB 3.0 4 x USB 2.0
Serial	2 x TX/RX
TPM	TPM 2.0
SMBus	Yes
Others	1 x I^2C 1 x LPC 1 x SPI
GPIO	4-CH in & 4-CH out
Smart Battery	N/A
Mechanical and Environmental	
Dimensions	125 x 95 mm
Board Thickness	2.0 mm
Operating Temperature	0°C to +70°C (+32°F to +158°F)
Humidity	10%- 95% relative humidity, non-condensing
Vibration Endurance	3.5 Grms

Packing List

Quick installation guide

Ordering Information

Standard	
CEM710-D1712TR (P/N: TBD)	COM Express Type 7 basic module with Intel® Xeon® D-1712TR, 10GBASE-KR, USB 3.0, and TPM
CEM710-D1735TR (P/N: TBD)	COM Express Type 7 basic module with Intel® Xeon® D-1735TR, 10GBASE-KR, USB 3.0, and TPM
CEM710-D1715TER (P/N: TBD)	COM Express Type 7 basic module with Intel® Xeon® D-1715TER, 10GBASE-KR, USB 3.0, and TPM
CEM710-D1732TE (P/N: TBD)	COM Express Type 7 basic module with Intel® Xeon® D-1732TE, 10GBASE-KR, USB 3.0, and TPM
CEM710-D1746TER (P/N: TBD)	COM Express Type 7 basic module with Intel® Xeon® D-1746TER, 10GBASE-KR, USB 3.0, and TPM
Optional	
CEB94701 (P/N: E394701100)	COM Express Type 7 development board
TBD	CEM710 heat pipe cooler
TBD	CEM710 heat spreader

* All specifications and photos are subject to change without notice.

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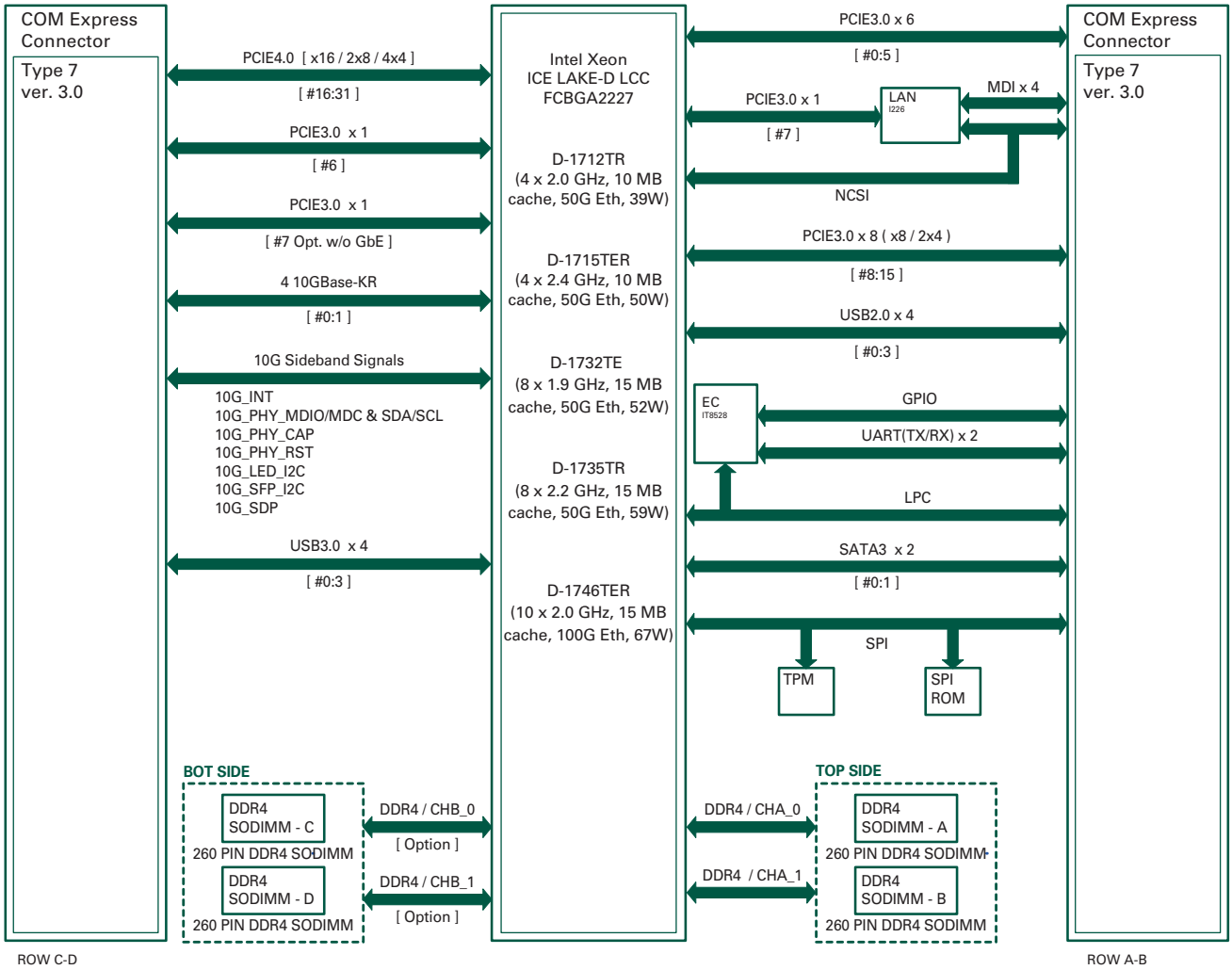

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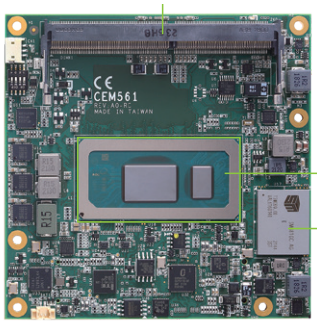
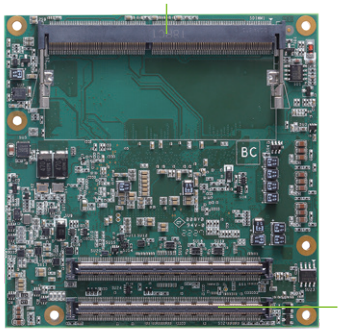
CEM561 NEW

COM Express Type 6 Compact Module with 12th Gen Intel® Core™ or Celeron® Processor



▲ Front view



▲ Rear view

Features

- 12th gen Intel® Core™ i7/i5/i3 or Celeron® processor (Alder Lake U)
- Dual channel DDR4-3200 SO-DIMM for up to 64GB
- Up to 8 lanes of PCI Express
- 2 SATA Gen3
- 4 USB 3.0 and 8 USB 2.0
- Supports NVMe for up to 512GB (by request)
- Supports TPM 2.0
- Enabler Middleware (eAPI) intelligent remote management software

Specifications

Core System	
CPU	Intel® Core™ i7-1265UE/i5-1245UE/i3-1215UE processor or Intel® Celeron® processor 7305E
System Memory	2 x Dual-channel DDR4-3200 SO-DIMM slot, up to 64GB
Chipset	SoC integrated
BIOS	AMI uEFI (Legacy free)
SSD	NVMe for up to 512GB (optional)
Watchdog Timer	65536 levels, 0 to 65535 sec.
Expansion Interface	1 x PCIe x4 Gen4 + 5 x PCIe Gen3 (NVMe SKUs) 2 x PCIe x4 Gen4 + 5 x PCIe Gen3 (without NVMe SKU) Up to 2 x PCIe x4 Gen4 + 8 x PCIe Gen3 (by request)
Battery Lithium	Yes
Power Input	ATX: +12V, +5VSB AT: +12V
Display	
Chipset	Intel® gen 9 Graphics Engine Supports Gfx- DX12.0, OCL2.0, OGL4.3
Display Interface	1 x LVDS; 18/24-bit single/dual channel (optional eDP 1.4b HBR3: 5120 x 3200@@60Hz 1 x VGA; 1920 x 1200 @60Hz (default) 2 x DDI (with up to 8K supported)

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I/O	
SATA	2 x SATA Gen3
Hardware Monitoring	Yes
Ethernet	1 x 10/100/1000/2500 Mbps Ethernet with Intel® I226-LM; supports Wake-on-LAN, PXE Boot ROM
Audio	HD link interface to baseboard for Codec
USB	4 x USB 3.0 8 x USB 2.0
Serial	1 x LPC 1 x SPI 2 x TX/RX
TPM	TPM 2.0
SMBus	Yes
Others	1 x I^2C
GPIO	4-CH in & 4-CH out
Smart Battery	Yes
Mechanical and Environmental	
Dimensions	95 x 95 mm
Board Thickness	2.0 mm
Operating Temperature	-40°C to +85°C (-40°F to +185°F), operation with system thermal solution
Humidity	10%- 95% relative humidity, non-condensing
Vibration Endurance	3.5 Grms

Packing List

Quick installation guide

Ordering Information

Standard	
CEM561-i7-1265 (P/N: TBD)	COM Express Type 6 compact module with Intel® Core™ i7-1265UE, DDI, VGA, LVDS, 2.5GbE LAN, 64GB NVMe, and TPM
CEM561-i5-1245 (P/N: TBD)	COM Express Type 6 compact module with Intel® Core™ i5-1245UE, DDI, VGA, LVDS, 2.5GbE LAN, 64GB NVMe, and TPM
CEM561-i3-1215 (P/N: TBD)	COM Express Type 6 compact module with Intel® Core™ i3-1215UE, DDI, VGA, LVDS, 2.5GbE LAN, 64GB NVMe, and TPM
CEM561-Cel-7305 (P/N: TBD)	COM Express Type 6 compact module with Intel® Celeron® 7305E, DDI, VGA, LVDS, 2.5GbE LAN, and TPM
Optional	
CEB94011 (P/N: E394011100)	COM Express Type 6 evaluation board
TBD	CEM561 heat sink with fan
TBD	CEM561 heat spreader

* All specifications and photos are subject to change without notice.

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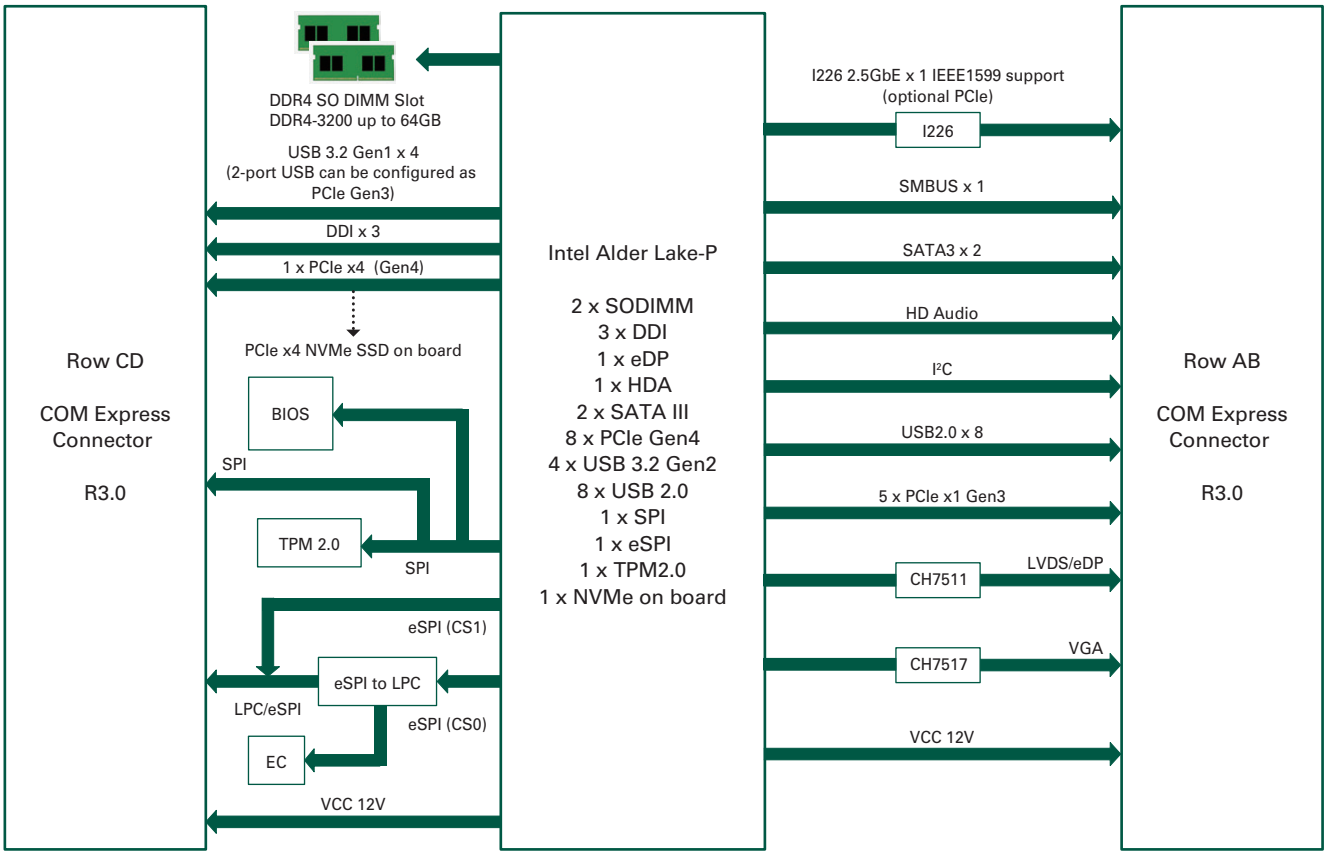

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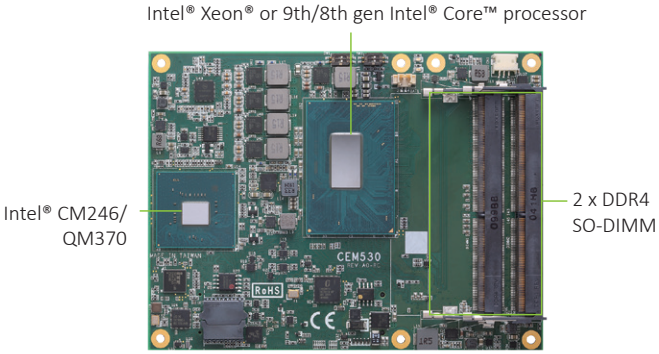
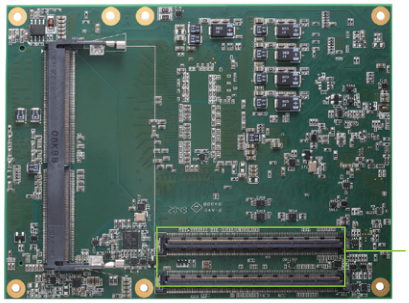
CEM530

COM Express Type 6 Basic Module with Intel® Xeon® or 9th/8th Gen Intel® Core™ Processor and Intel® CM246/QM370





▲ Rear view

Features

- Intel® Xeon® or 9th/8th gen Intel® Core™ processor
- Intel® CM246/QM370 chipset
- Dual channel DDR4-2666 SO-DIMM for up to 64GB of memory
- 1 PCIe x16 and 8 PCIe x1 Gen3
- 4 SATA Gen3 with RAID 0/1/5/10
- 4 USB 3.2 and 8 USB 2.0
- Supports TPM 2.0

Specifications

Core System	
CPU	Intel® Xeon® or 9th/8th gen Intel® Core™ processor (Coffee Lake & Coffee Lake Refresh)
System Memory	Dual channel DDR4-2666 SO-DIMM, up to 64GB (or 96GB by request)
Chipset	Intel® CM246/Intel® QM370
BIOS	AMI uEFI (Legacy Free)
Storage	N/A
Watchdog Timer	65536 levels, 0 to 65535 sec.
Expansion Interface	1 x PCIe x16 Gen3 8 x PCIe x1 Gen3
Battery Lithium	N/A
Power Input	ATX: +12V, +5VSB; AT: +12V
Display	
Chipset	Intel® Gen 9 HD Graphic Gfx APIs- DX11/12, OCL2.x, OGL 4.3/4.4 3 independent displays
Display Interface	1 x LVDS; 18/24-bit single/dual channel (default), optional with eDP 1.4: 4096 x 2304 @60Hz 1 x VGA; 1920 x 1200 @60Hz (default) 2 x DDI (DisplayPort 1.2: 4096 x 2304 @60Hz/HDMI 1.4: 4096 x 2160 @30/24Hz)

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I/O	
SATA	4 x SATA Gen3 with RAID 0/1/5/10
Hardware Monitoring	Yes
Ethernet	1 x 10/100/1000 Mbps Ethernet with Intel® I219-LM; supports Wake-on-LAN, PXE Boot ROM
Audio	HD link interface to baseboard for Codec
USB	4 x USB 3.2 Gen2 8 x USB 2.0
Serial	1 x LPC 1 x SPI 2 x TX/RX
TPM	TPM 2.0
SMBus	Yes
Others	1 x I^2C
GPIO	4-CH in & 4-CH out (SDIO optional)
Smart Battery	Yes
Mechanical and Environmental	
Dimensions	125 x 95 mm
Board Thickness	2.0 mm
Operating Temperature	-40°C to +85°C (-40°F to +185°F) with system thermal solution (operation with heatsink and fan)
Humidity	10%- 95% relative humidity, non-condensing
Vibration	3.5 Grms

Packing List

Quick installation guide

Ordering Information

Standard	
CEM530-E-2276ME+ CM246 (P/N: E38D530106)	COM Express Type 6 basic module with Intel® Xeon® E-2276ME, CM246, DDI/LVDS, GbE LAN, USB 3.0, and TPM
CEM530-i7-9850HE+ QM370 (P/N:E38D530107)	COM Express Type 6 basic module with Intel® Core™ i7-9850HE, QM370, DDI/LVDS, GbE LAN, USB 3.0, and TPM
CEM530-i3-9100HL+ QM370 (P/N:E38D530102)	COM Express Type 6 basic module with Intel® Core™ i3-9100HL, QM370, DDI/LVDS, GbE LAN, USB 3.0, and TPM
CEM530-G4930E+ CM246 (P/N: E38D530105)	COM Express Type 6 basic module with Intel® Core™ G4930E, CM246, DDI/LVDS, GbE LAN, USB 3.0, and TPM
CEM530-E-2176ME+ CM246 (P/N: E38D530108)	COM Express Type 6 basic module with Intel® Xeon® E-2176ME, CM246, DDI/LVDS, GbE LAN, USB 3.0, and TPM
CEM530-i7-8850H+ QM370 (P/N: E38D530110)	COM Express Type 6 basic module with Intel® Core™ i7-8850H, QM370, DDI/LVDS, GbE LAN, USB 3.0, and TPM
CEM530-i5-8400H+ QM370 (P/N: E38D530111)	COM Express Type 6 basic module with Intel® Core™ i5-8400H, QM370, DDI/LVDS, GbE LAN, USB 3.0, and TPM
CEM530-i3-8100H+ QM370 (P/N: E38D530113)	COM Express Type 6 basic module with Intel® Core™ i3-8100H, QM370, DDI/LVDS, GbE LAN, USB 3.0, and TPM

*Any other SKUs (9th or 8th gen Intel® Core™ processor) and combination are supported by request. Please contact sales for the details.

Optional	
CEB94011 (P/N: E394011100)	CEB94011 COM Express Type 6 evaluation board
E39J015100	CEM530/CEM520 heat sink with fan
E39J006100	CEM530/CEM520 heat spreader

*CEM530 shared the same thermal solution with CEM520.

* All specifications and photos are subject to change without notice.

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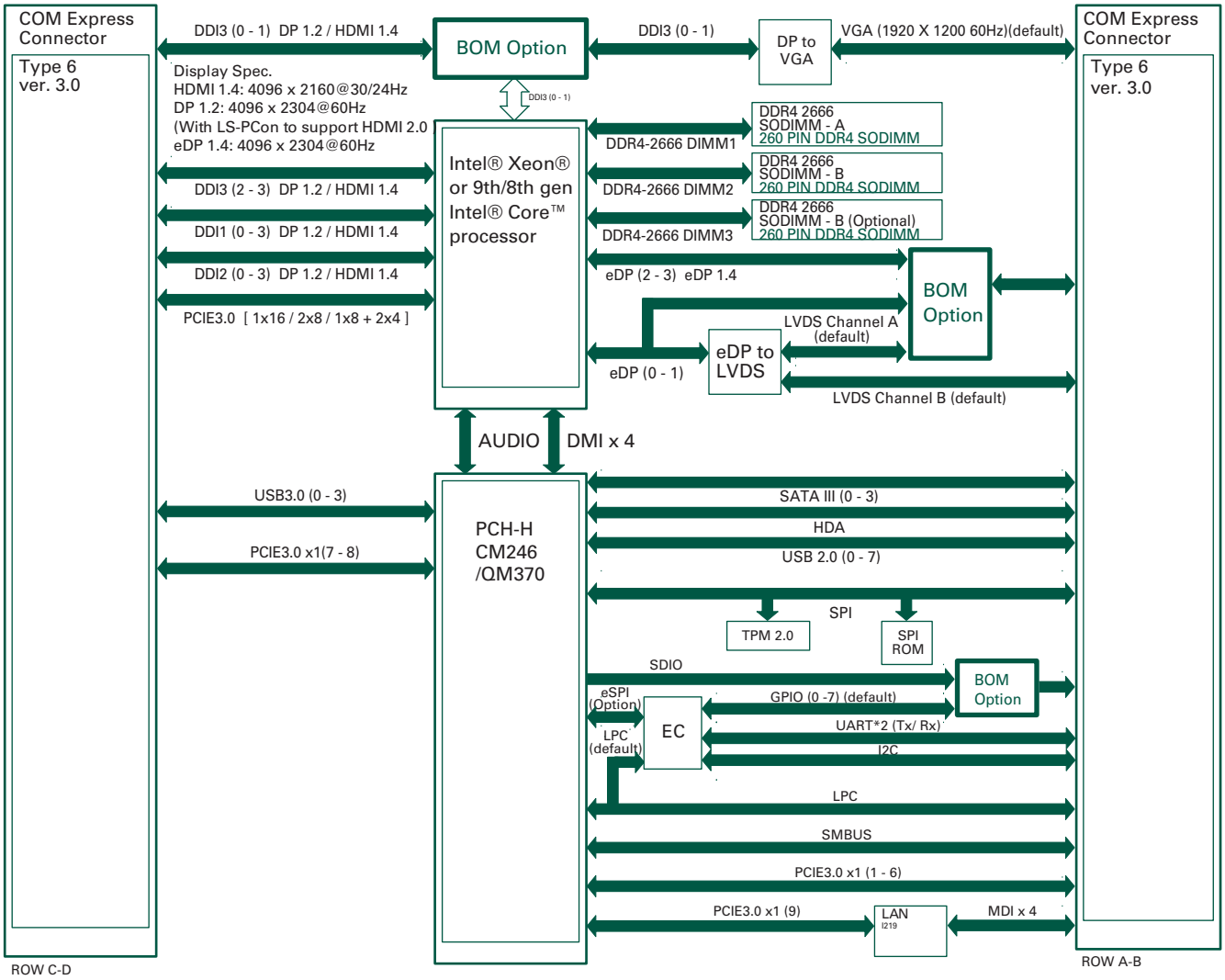

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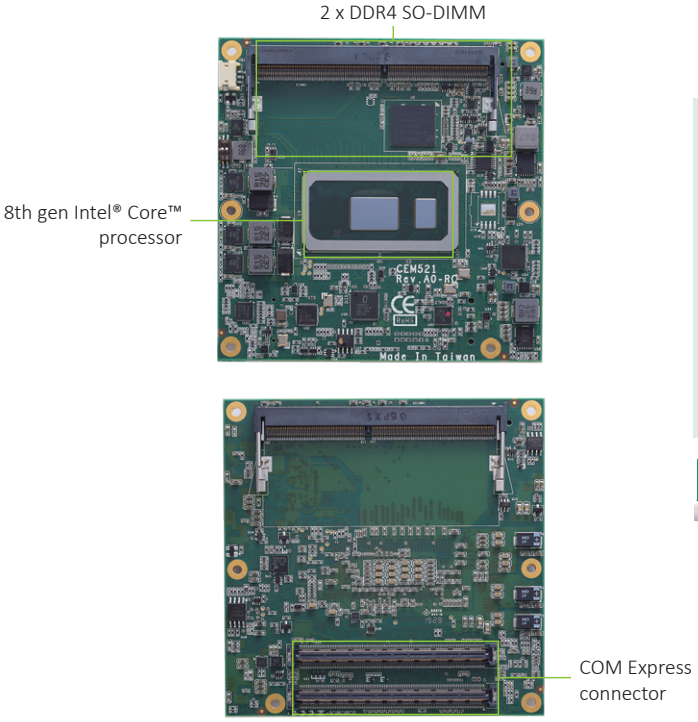
CEM521

COM Express Type 6 Compact Module with 8th Gen Intel® Core™ & Celeron® Processor



▲ Rear view

Features

- 8th gen Intel® Core™ i7/i5/i3 and Celeron® processors (Whiskey Lake-U)
- 2 dual-channel DDR4-2400 SO-DIMM for up to 64GB
- Max. up to 8 lanes of PCI Express
- 3 SATA Gen3
- 4 USB 3.0 and 8 USB 2.0
- Supports eMMC for up to 64G (optional)
- TPM 2.0 supported
- AMS.AXView intelligent remote management software

Specifications

Core System	
CPU	Intel® Core™ i7-8665UE/i5-8365UE/i3-8145UE processor (Whiskey Lake-U) & Intel® Celeron® processor 4305UE
System Memory	2 x Dual-channel DDR4-2400 SO-DIMM slot, up to 64GB
Chipset	SoC integrated
BIOS	AMI uEFI (Legacy free)
SSD	eMMC for up to 64G (optional)
Watchdog Timer	65536 levels, 0 to 65535 sec.
Expansion Interface	8 x PCI Express Gen3 (max. 5 PCIe Devices with LAN)
Battery Lithium	Yes
Power Input	ATX: +12V, +5VSB AT: +12V
Display	
Chipset	Intel® gen 9 Graphics Engine Supports Gfx- DX12.0, OCL2.0, OGL4.3
Display Interface	1 x LVDS; 18/24-bit single/dual channel (optional eDP 1.4 : 4096 x 2304@60Hz) 1 x VGA; 1920 x 1200 @60Hz (default) 1 x DDI (DisplayPort 1.2: 4096 x 2304@60Hz/ HDMI 1.4: 4096 x 2160@30/24Hz)

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I/O	
SATA	3 x SATA Gen3
Hardware Monitoring	Yes
Ethernet	1 x 10/100/1000 Mbps Ethernet with Intel® i219-LM; supports Wake-on-LAN, PXE Boot ROM
Audio	HD link interface to baseboard for Codec
USB	4 x USB 3.0 8 x USB 2.0
Serial	1 x LPC 1 x SPI 2 x TX/RX
TPM	TPM 2.0
SMBus	Yes
Others	1 x I^2C
GPIO	4-CH in & 4-CH out (SDIO optional)
Smart Battery	Yes
Mechanical and Environmental	
Dimensions	95 x 95 mm
Board Thickness	2.0 mm
Operating Temperature	Industrial:-40°C to +85°C (-40°F to +185°F) with system thermal solution Standard:-20°C to +70°C (-4°F to +158°F), operation
Humidity	10%- 95% relative humidity, non-condensing
Vibration Endurance	3.5 Grms

Packing List

Quick installation guide

Ordering Information

Standard	
CEM521-i7-8665UE (P/N: E38D521100)	COM Express Type 6 compact module with Intel® Core™ i7-8665UE, DDI, VGA, LVDS, GbE LAN, USB 3.0, and TPM
CEM521-i5-8365UE (P/N: E38D521102)	COM Express Type 6 compact module with Intel® Core™ i5-8365UE, DDI, VGA, LVDS, GbE LAN, USB 3.0, and TPM
CEM521-i3-8145UE (P/N: E38D521104)	COM Express Type 6 compact module with Intel® Core™ i3-8145UE, DDI, VGA, LVDS, GbE LAN, USB 3.0, and TPM
CEM521-Cel-4305UE (P/N: E38D521105)	COM Express Type 6 compact module with Intel® Celeron® 4305UE, DDI, VGA, LVDS, GbE LAN, USB 3.0, and TPM
CEM521-i7-8665UE (Ind.) (P/N: E38D521110)	COM Express Type 6 compact module with Intel® Core™ i7-8665UE, DDI, VGA, LVDS, GbE LAN, USB 3.0, and TPM (wide temperature)
CEM521-i5-8365UE (Ind.) (P/N: E38D521111)	COM Express Type 6 compact module with Intel® Core™ i5-8365UE, DDI, VGA, LVDS, GbE LAN, USB 3.0, and TPM (wide temperature)
CEM521-i3-8145UE (Ind.) (P/N: E38D521112)	COM Express Type 6 compact module with Intel® Core™ i3-8145UE, DDI, VGA, LVDS, GbE LAN, USB 3.0, and TPM (wide temperature)
Optional	
CEB94011 (P/N: E394011100)	COM Express Type 6 evaluation board
E39J016100	CEM521 heat sink with fan
7128D521000E	CEM521 heat spreader

* All specifications and photos are subject to change without notice.

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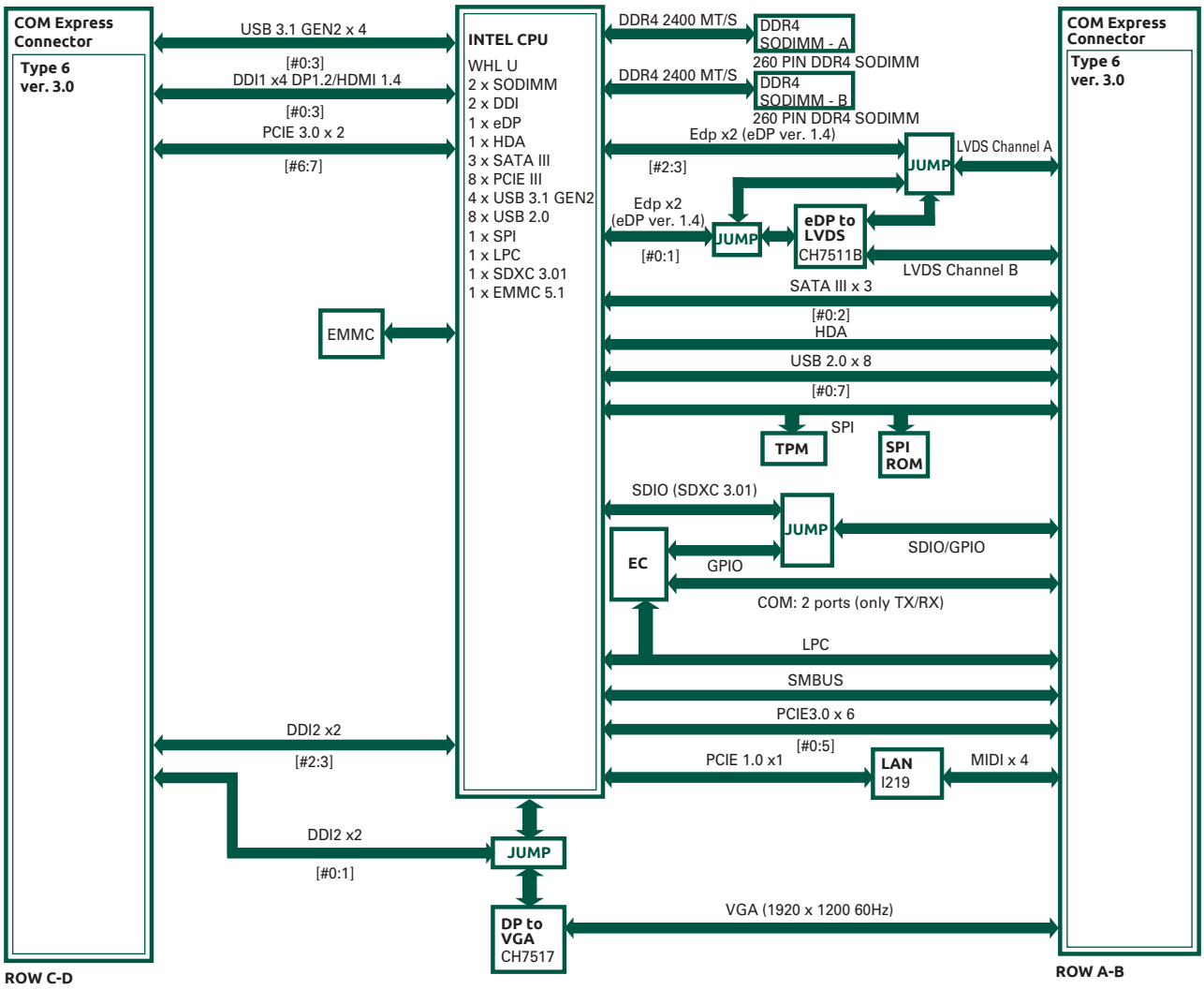

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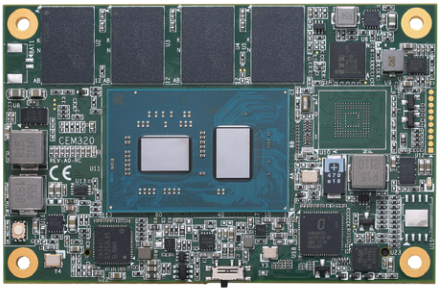
CEM320 NEW

COM Express Type 10 Mini Module with Intel Atom® x6000E Series or Intel® Celeron® N/J Series



Features

- Intel Atom® x6000E series or Intel® Celeron® N/J processor (Elkhart Lake)
- 8GB/16GB LPDDR4 memory onboard
- Up to 4 lanes of PCI Express
- 2 SATA 3.0
- 2 USB 3.0 and 8 USB 2.0
- eMMC and TPM2.0 onboard

Specifications

Core System	
CPU	Intel Atom® x6413E (1.5GHz), Intel® Celeron® N6210 (1.2GHz) Intel® Celeron® J6412 (2.0GHz)
System Memory	8GB/16GB LPDDR4 memory onboard
Chipset	SoC integrated
BIOS	AMI UEFI BIOS (Legacy Free)
Storage	32GB/64GB eMMC onboard
Watchdog Timer	65536 levels, 0 to 65535 sec.
Expansion Interface	4 x PCIe x1 (3 x1 while internal LAN is connected)
Battery Lithium	Yes
Power Input	ATX: +12V, +5VSB AT: +12V Wide range input: +4.75V to +20V
Display	
Chipset	Intel® Gen11 Graphics Engines (SoC integrated) OpenGL* 4.5, DirectX* 12, OpenCL*1.2, Vulkan 1.1
Display Interface	1 x DDI 1 x LVDS (eDP optional)

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I/O	
SATA	2 x SATA 3.0
Hardware Monitoring	Yes
Ethernet	1 x 10/100/1000/2500 Mbps Ethernet with Intel® I226; supports Wake-on-LAN, PXE Boot ROM
Audio	HD link interface to baseboard for Codec
USB	2 x USB 3.0 8 x USB 2.0
Serial	1 x LPC 1 x SPI 2 x TX/RX
TPM	TPM 2.0
SMBus	Yes
Others	1 x I^2C
GPIO	4-CH in & 4-CH out
Smart Battery	Yes
Mechanical and Environmental	
Dimensions	84 x 55 mm
Board Thickness	2.0 mm
Operating Temperature	Industrial:-40°C to +85°C (-40°F to +185°F) with system thermal solution Standard:-20°C to +70°C (-4°F to +158°F)
Humidity	10%- 95% relative humidity, non-condensing
Vibration Endurance	3.5 Grms

Packing List

Quick installation guide

Ordering Information

Standard	
CEM320-X6413-16GB (P/N: TBD)	COM Express Type 10 Mini module with Intel Atom® X6413E, LPDDR4 16GB, 64GB eMMC, DDI, LVDS, USB 3.0, and GbE LAN (Ind. Temp)
CEM320-N6210-8GB (P/N: TBD)	COM Express Type 10 Mini module with Intel® Celeron® N6210, LPDDR4 8GB, 32GB eMMC, DDI, LVDS, USB 3.0, and GbE LAN (Ind. Temp)
CEM320-J6412-8GB (P/N: TBD)	COM Express Type 10 Mini module with Intel® Celeron® J6412, LPDDR4 8GB, 32GB eMMC, DDI, LVDS, USB 3.0, and GbE LAN (Ind. temp)
Optional	
TBD	CEM320 heatspreader
5078D840200E	Heatsink with fan
CEB94017 (P/N: E394017101)	COM Express Type 10 development baseboard

* All specifications and photos are subject to change without notice.

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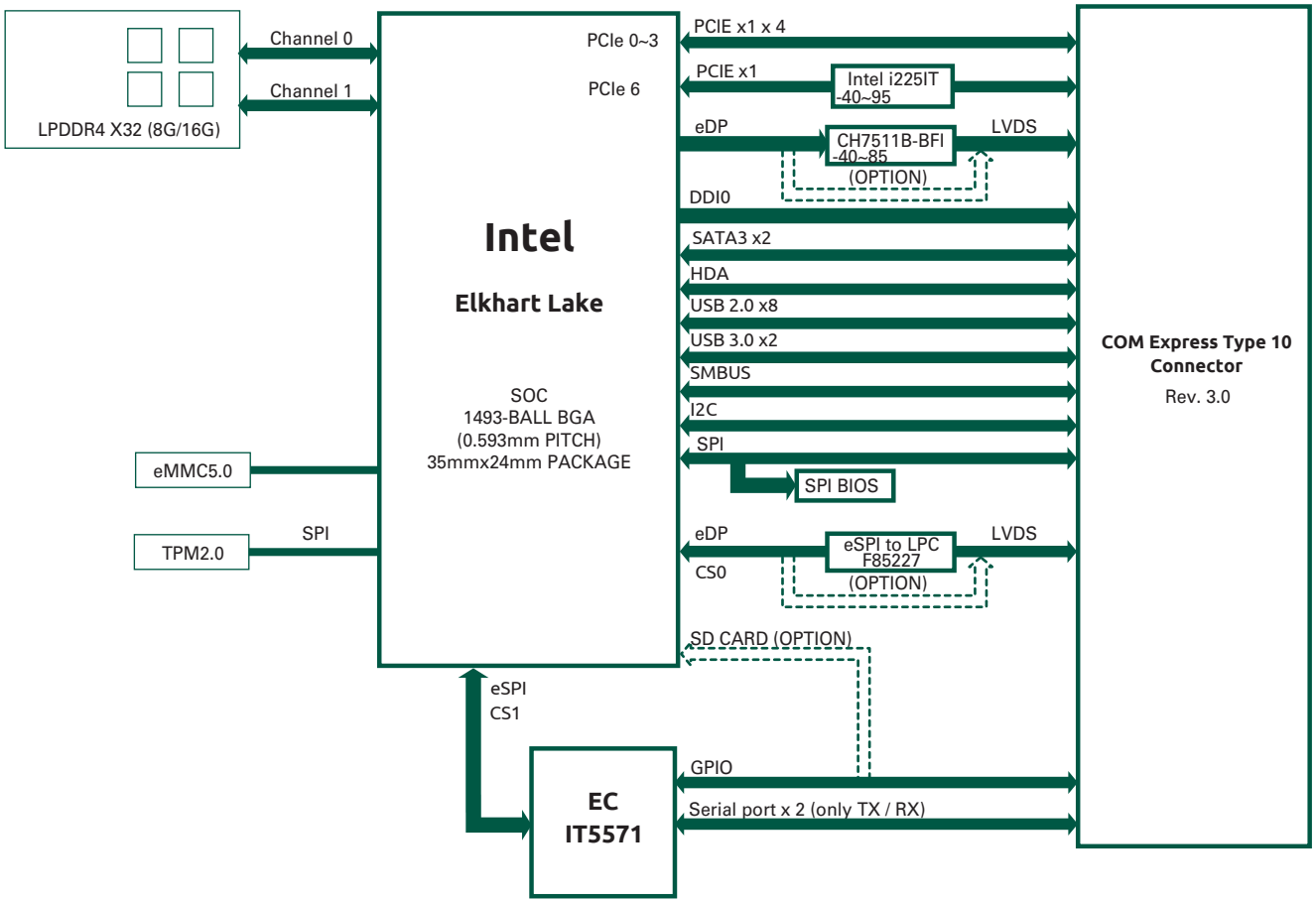

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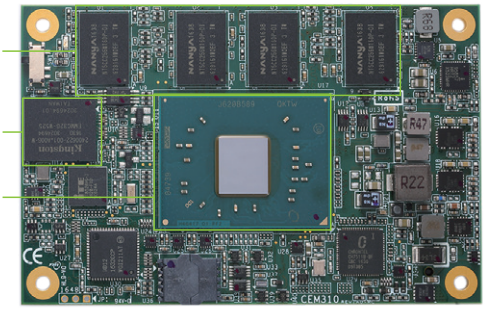
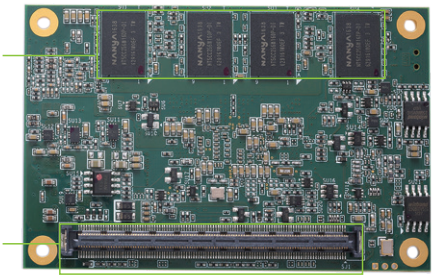
CEM311

COM Express Type 10 Mini Module with Intel® Pentium® Processor N4200 & Celeron® Processor N3350





▲ Rear view

Features

- Intel® Pentium® processor N4200 & Celeron® processor N3350 (Apollo Lake)
- 4GB DDR3L / 8GB LPDDR4 memory onboard
- Max. up to 4 lanes of PCI Express
- 2 SATA-600
- 2 USB 3.0 and 8 USB 2.0

Specifications

Core System	
CPU	Intel® Pentium® processor N4200 & Celeron® processor N3350 (Apollo Lake) onboard
System Memory	4GB DDR3L memory onboard 8GB LPDDR4 memory onboard
Chipset	SoC integrated
BIOS	AMI uEFI (Legacy free)
Storage	eMMC 5.0 upto 64GB (optional)
Watchdog Timer	65536 levels, 0 to 65535 sec.
Expansion Interface	4 x PCIe x1 devices (3 x1 while internal LAN is connected)
Battery Lithium	N/A
Power Input	ATX: +12V, +5VSB AT: +12V Wide range input: +4.75V to +20V
Display	
Chipset	Intel® Gen 9 Graphics Engine Support Gfx-DX12.0, OCL2.0, OGL 4.3
Display Interface	1 x DDI (DP, HDMI, DVI) 1 x LVDS; 18/24-bit single channel (eDP optional)

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I/O	
MIO	1 x LPC interface 1 x SPI interface 2 x Serial TX/RX 1 x I^2C
SATA	2 x SATA-600
Hardware Monitoring	Yes
Ethernet	1 x 10/100/1000 Mbps Ethernet with Intel® i211AT; supports Wake-on-LAN, PXE Boot ROM
Audio	HD link interface to baseboard for Codec
USB	2 x USB 3.0 8 x USB 2.0
TPM	N/A
SMBus	Yes
Digital I/O	4-CH in & 4-CH out
Smart Battery	Yes
Mechanical and Environmental	
Dimensions	84 x 55 mm
Board Thickness	2.0 mm
Temperature	-20°C to +70°C (-4°F to +158°F), operation
Operation Humidity	10%- 95% relative humidity, non-condensing
Vibration	3.5 Grms

Packing List

Quick installation guide

Ordering Information

Standard	
CEM311PG-N4200 (P/N: E38D311103)	COM Express Type 10 compact module with Intel® Pentium® N4200, DDI/LVDS, USB 3.0, and GbE LAN
CEM311PG-N3350 (P/N: E38D311100)	COM Express Type 10 compact module with Intel® Celeron® N3350, DDI/LVDS, USB 3.0, and GbE LAN
CEM311-G3C-P1G (P/N:E38D311107)	COM Express Type 10 compact module with Intel® Pentium® N4200, DDI/LVDS, USB 3.0, GbE LAN, LPDDR4 8GB, and eMMC 64GB
CEM311-H2B-P1G (P/N:E38D311108)	COM Express Type 10 compact module with Intel® Pentium® N3350, DDI/LVDS, USB 3.0, GbE LAN, LPDDR4 4GB, and eMMC 32GB
7128D311000E	CEM311 heat spreader
E39J011100	CEM311 heat sink without fan

* All specifications and photos are subject to change without notice.

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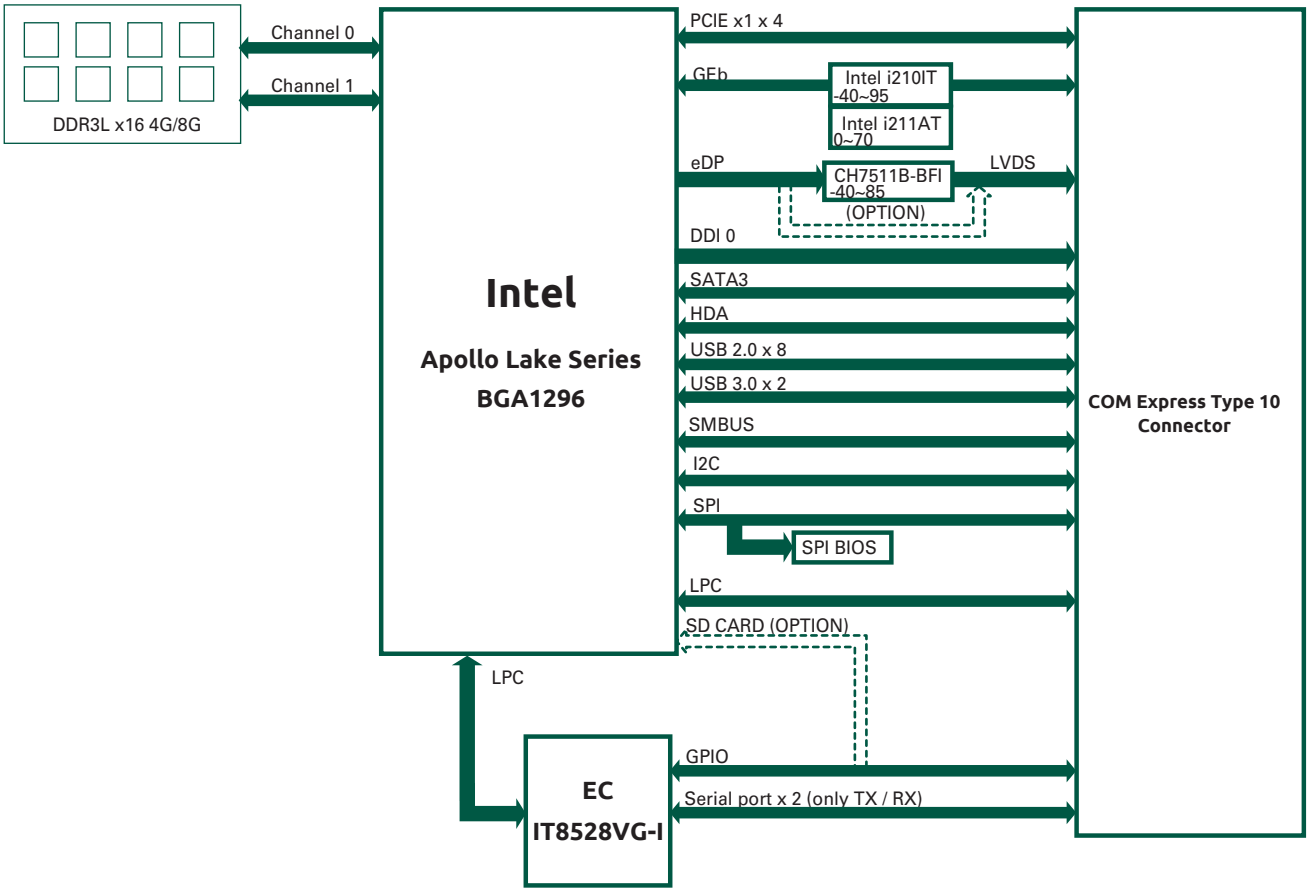

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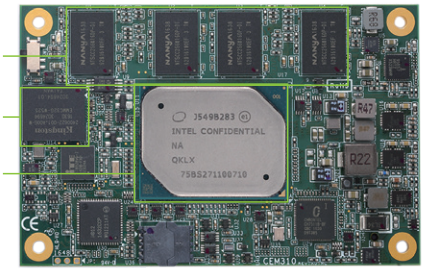
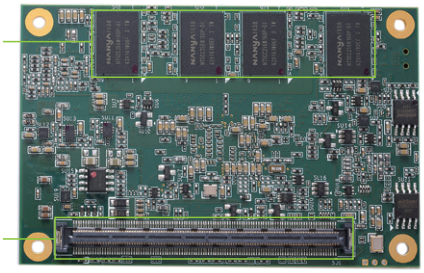
CEM310

COM Express Type 10 Mini Module with Intel Atom® x5 and x7 Processor





▲ Rear view

Features

- Intel Atom® x5 and x7 processors (Apollo Lake)
- 4GB DDR3L / 8GB LPDDR4 memory onboard
- Max. up to 4 lanes of PCI Express
- 2 SATA-600
- 2 USB 3.0 and 8 USB 2.0

Specifications

Core System	
CPU	Intel Atom® x7-E3950 (2.0 GHz) Intel Atom® x5-E3940 (1.8 GHz) Intel Atom® x5-E3930 (1.8 GHz)
System Memory	4GB DDR3L memory onboard 8GB LPDDR4 memory onboard
Chipset	SoC integrated
BIOS	AMI UEFI BIOS (Legacy Free)
Storage	eMMC 5.0 up to 64GB (optional)
Watchdog Timer	65536 levels, 0 to 65535 sec.
Expansion Interface	4 x PCIe x1 (3 x1 while internal LAN is connected)
Battery Lithium	N/A
Power Input	ATX: +12V, +5VSB AT: +12V Wide range input: +4.75V to +20V
Display	
Chipset	Intel® Gen 9 Graphics Engine Supports Gfx – DX12.0, OCL2.0, OGL 4.3
Display Interface	1 x DDI (DisplayPort, HDMI, DVI) 1 x LVDS; 18/24-bit single channel (eDP optional)

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I/O	
SATA	2 x SATA-600
Hardware Monitoring	Yes
Ethernet	1 x 10/100/1000 Mbps Ethernet with Intel® i210-IT; supports Wake-on-LAN, PXE Boot ROM
Audio	HD link interface to baseboard for Codec
USB	2 x USB 3.0 8 x USB 2.0
Serial	1 x LPC 1 x SPI 2 x TX/RX
TPM	N/A
SMBus	Yes
Others	1 x I^2C
GPIO	4-CH in & 4-CH out
Smart Battery	Yes
Mechanical and Environmental	
Dimensions	84 x 55 mm
Board Thickness	2.0 mm
Operating Temperature	Industrial:-40°C to +85°C (-40°F to +185°F) with system thermal solution Standard:-20°C to +70°C (-4°F to +158°F)
Humidity	10%- 95% relative humidity, non-condensing
Vibration Endurance	3.5 Grms

Packing List

Quick installation guide

Ordering Information

Standard	
CEM310PG-E3930+4GB (Ind) (P/N: E38D310100)	COM Express Type 10 Mini module with Intel® Atom® x5-E3930, DDI, LVDS, USB 3.0, and GbE LAN (Ind. Temp)
CEM310PG-E3940+4GB (Ind) (P/N: E38D310102)	COM Express Type 10 Mini module with Intel® Atom® x5-E3940, DDI, LVDS, USB 3.0, and GbE LAN (Ind. Temp)
CEM310PG-E3950+4GB (Ind) (P/N: E38D310103)	COM Express Type 10 Mini module with Intel® Atom® x7-E3950, DDI, LVDS, USB 3.0, and GbE LAN (Ind. temp)
CEM310PG-E3930+4GB (P/N: E38D310104)	COM Express Type 10 Mini module with Intel® Atom® x5-E3930, DDI, LVDS, USB 3.0, and GbE LAN
CEM310PG-E3940+4GB (P/N: E38D310105)	COM Express Type 10 Mini module with Intel® Atom® x5-E3940, DDI, LVDS, USB 3.0, and GbE LAN
CEM310PG-E3950+4GB (P/N: E38D310106)	COM Express Type 10 Mini module with Intel® Atom® x7-E3950, DDI, LVDS, USB 3.0, and GbE LAN
CEM310-D3C-P1G (P/N:E38D310110)	COM Express Type 10 Mini module with Intel® Atom® x7-E3950, DDI, LVDS, USB 3.0, and GbE LAN LPDDR4 8GB eMMC 64GB (Ind. Temp)
CEM310-F2B-P1G (P/N:E38D310111)	COM Express Type 10 Mini module with Intel® Atom® x7-E3930, DDI, LVDS, USB 3.0, and GbE LAN LPDDR4 4GB eMMC 32GB (Ind. Temp)
Optional	
7128D310000E	CEM310 heatspreader
5078D840200E + 7128D310000E	Heatsink with fan (cooler + heatspreader)
CEB94017 (P/N: E394017101)	COM Express Type 10 development baseboard

* All specifications and photos are subject to change without notice.

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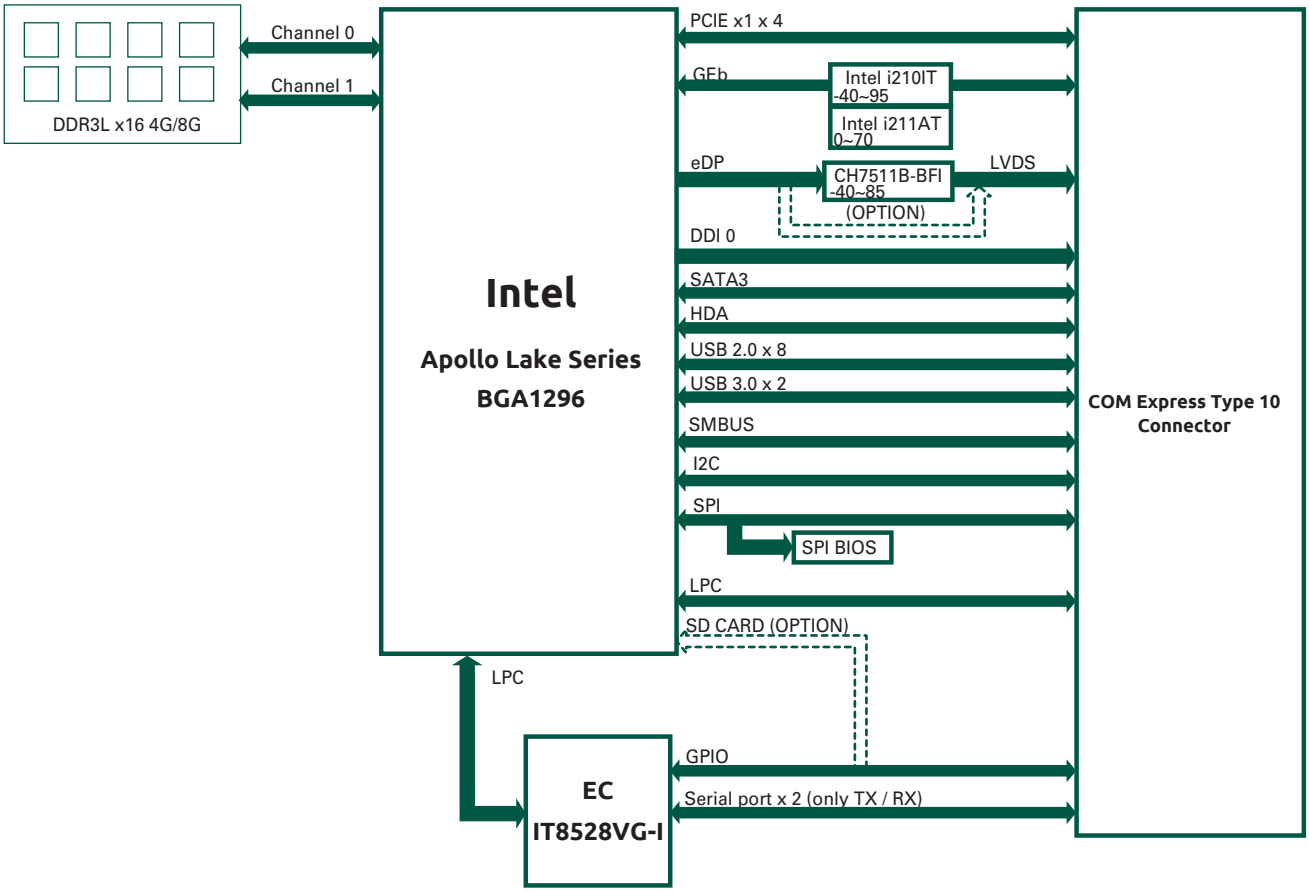

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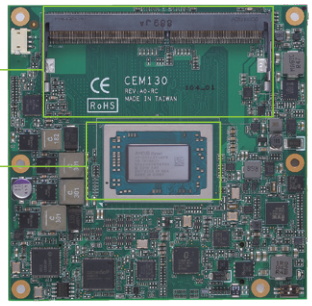
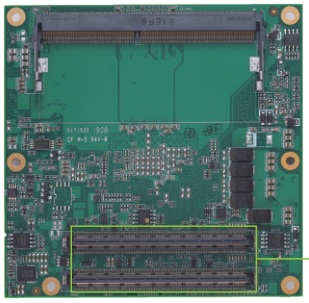
CEM130

COM Express Type 6 Compact Module with AMD Ryzen™ Embedded V1000 Processor





▲ Rear view

Features

- AMD Ryzen™ Embedded V1000 processors
- 2 DDR-2400/3200 SO-DIMM for up to 64GB of memory
- Max. up to 7 lanes of PCI Express
- 2 SATA-600
- 3 USB 3.0 and 8 USB 2.0
- TPM 2.0 supported
- Wide voltage input from +8V to +20V

Specifications

Core System	
CPU	AMD Ryzen™ Embedded V1000 series V1202B / 2.3 GHz (12-25W) V1605B / 2.0 GHz (12-25W) V1756B / 3.25 GHz (35-54W) V1807B / 3.35 GHz (35-54W)
System Memory	2 x DDR4-2400/3200 SO-DIMM, up to 64GB (dual channel)*, non-ECC/ECC memory *Memory speed was depend on memory rank.
Chipset	SoC integrated
BIOS	AMI uEFI (Legacy free)
Storage	N/A
Watchdog Timer	65536 levels, 0 to 65535 sec.
Expansion Interface	7 x PCIe x1 via PCIe bridge
Battery Lithium	N/A
Power Input	ATX: +12V, +5VSB AT: +12V Wide range input: +8V to +20V
Display	
Graphic	Radeon™ RX Vega Graphics with up to 11 compute units H.265 (10-bit) decode & (8-bit) encode, VP9 decode
Display Interface	1 x VGA; 1920 x 1200 @60Hz 1 x LVDS dual-channel 18/24-bit or eDP 1.3 (optional) 2 x DDI (HDMI 1.4, DVI, DisplayPort 1.2)*

*HDMI 2.0 needs redriver chip on carrier board/DisplayPort 1.4 needs Redriver chip on carrier board

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I/O	
SATA	2 x SATA-600
Hardware Monitoring	Yes
Ethernet	1 x 10/100/1000 Mbps Ethernet with Intel® i210; supports Wake-on-LAN, PXE Boot ROM
Audio	HD link interface to baseboard for Codec
USB	3 x USB 3.0 8 x USB 2.0
Serial	1 x LPC 1 x SPI 2 x TX/RX
TPM	TPM 2.0
SMBus	Yes
Others	1 x I^2C
GPIO	4-CH in & 4-CH out
Smart Battery	Yes
Mechanical and Environmental	
Dimensions	95 x 95 mm
Board Thickness	2.0 mm
Operating Temperature	-20°C to +60°C (-4°F to +140°F)
Humidity	10%- 95% relative humidity, non-condensing

*Memory speed was depend on memory rank.

Packing List

Quick installation guide

Ordering Information

Standard	
CEM130-V1202B (P/N: E38D130103)	COM Express Type 6 Compact module with AMD Ryzen™ Embedded V1202B, DDI, LVDS, GbE LAN, USB 3.0 and TPM
CEM130-V1605B (P/N: E38D130102)	COM Express Type 6 Compact module with AMD Ryzen™ Embedded V1605B, DDI, LVDS, GbE LAN, USB 3.0 and TPM
CEM130-V1756B (P/N: E38D130101)	COM Express Type 6 Compact module with AMD Ryzen™ Embedded V1756B, DDI, LVDS, GbE LAN, USB 3.0 and TPM
CEM130-V1807B (P/N: E38D130100)	COM Express Type 6 Compact module with AMD Ryzen™ Embedded V1807B, DDI, LVDS, GbE LAN, USB 3.0 and TPM
Optional	
CEB94011 (P/N: E394011100)	COM Express Type 6 application board
E39J014100	CEM130 heat sink with fan
7128D130000E	CEM130 heat spreader

* All specifications and photos are subject to change without notice.

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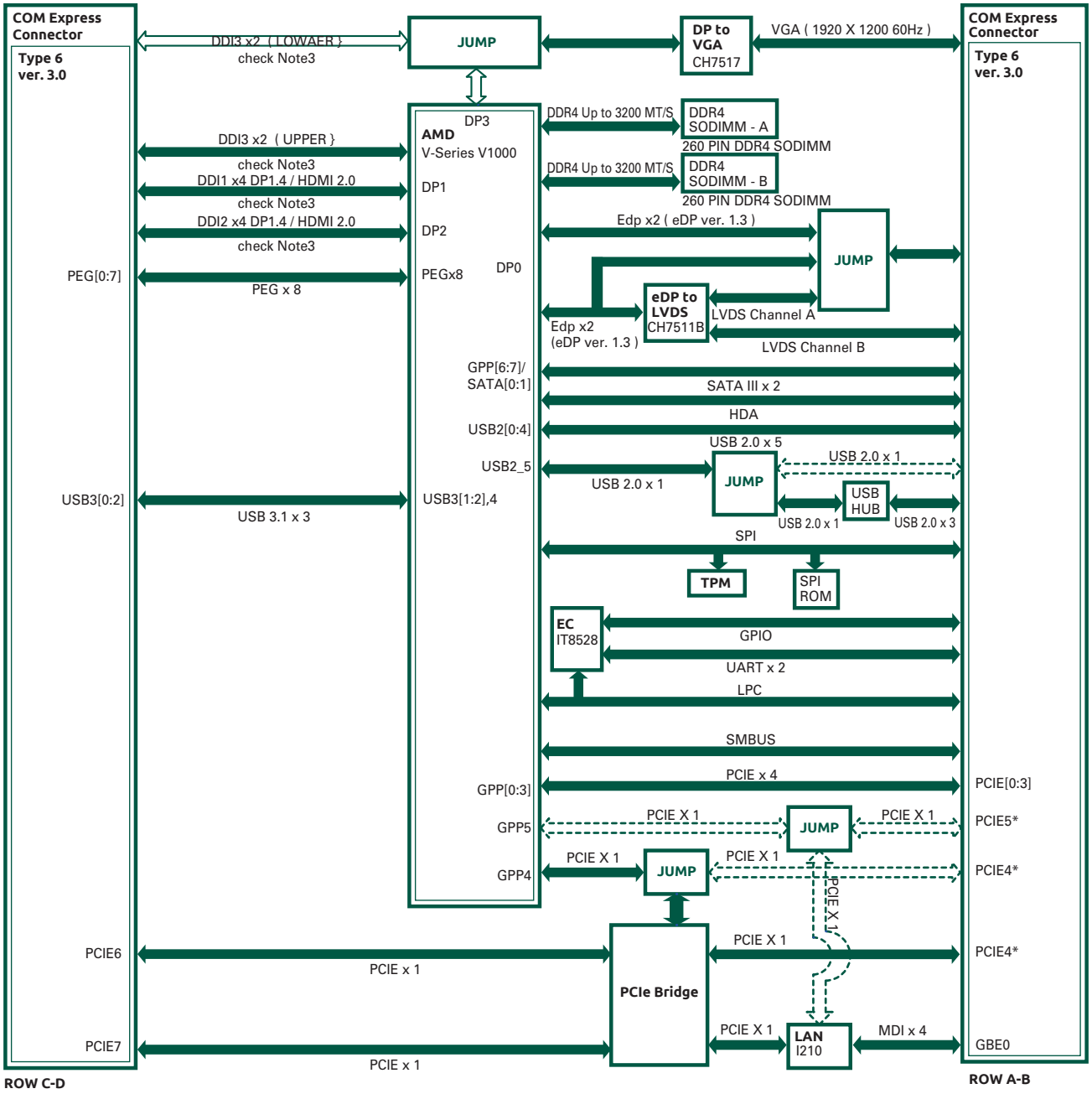

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2

1.8" Embedded Board

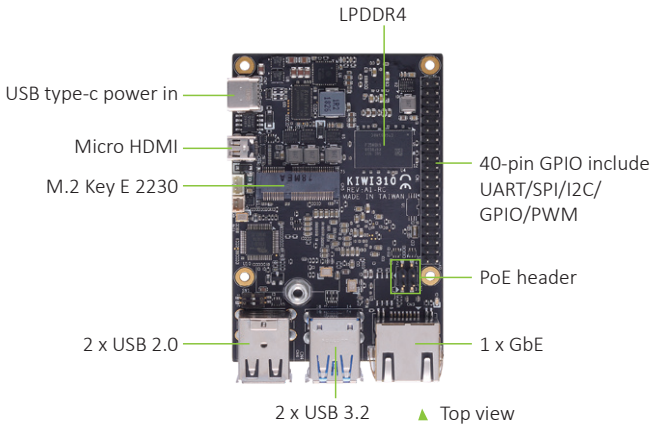
Axiomtek's 1.8” KIWI embedded board measuring just at 84 x 56 mm, with low power consumption, fanless design, and cost-efficient features, is ideal for space-constrained applications.

KIWI310	1.8" SBC with Intel® Celeron® Processor N3350, Micro HDMI, 1 GbE LAN, 2 USB 3.2, and 40-pin GPIO	28

Embedded Boards and Modules

KIWI310

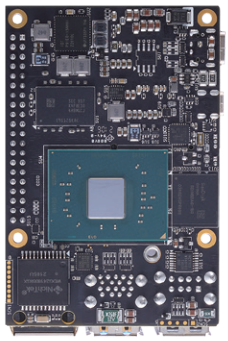
1.8" SBC with Intel® Celeron® Processor N3350, Micro HDMI, 1 GbE LAN, 2 USB 3.2 and 40-pin GPIO



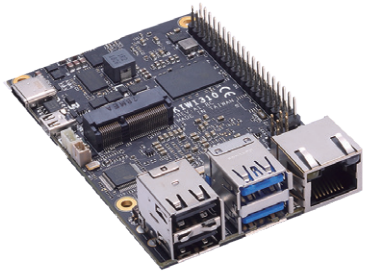
▲ Top view

Features

- Tiny 1.8-inch embedded board
- Intel® Celeron® processor N3350 onboard
- On-board LPDDR4 for up to 4GB of memory
- One GbE LAN and one M.2 Key E
- On-board eMMC for up to 64GB
- 40-pin GPIO
- Supports operating system: Linux, Android, Windows



▲ Bottom view



▲ Side view

▲ APC208

Specifications

Core System	
CPU	Intel® Celeron® processor N3350
System Memory	On-board LPDDR4, up to 4GB
Chipset	SoC integrated
BIOS	AMI
Storage	eMMC, up to 64GB
Watchdog Timer	255 levels, 1 to 255 sec
Expansion Interface	1 x M.2 Key E (USB2.0, PCIe) in 2230 40-pin GPIO includes UART, I^2C, SPI, GPIO, PWM
Battery Lithium	Lithium 3V/220 mAh
Power Input	USB PD (supports USB Type C PD, 9V/3A, 12V/3A, 15V/3A, 20V/3A)
Power Requirements	Intel® Celeron® N3350 @ 1.1 GHz 4GB LPDDR4 USB Type C PD, 9V/3A, 12V/3A, 15V/3A, 20V/3A
Display	
Chipset	Intel® integrated Gen9 graphic engine
Memory Size	Share system memory
Display Interface	1 x Micro HDMI

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I/O	
SATA	N/A
Hardware Monitoring	Detect CPU/system temperature and voltage
Ethernet	1 x 10/100/1000 Mbps Ethernet with REALTEK RTL8111; support Wake-on-LAN, PXE Boot ROM
USB	2 x USB 2.0 2 x USB 3.2
TPM	N/A
Mechanical and Environmental	
Dimensions	85mm × 56mm
Board Thickness	1.6 mm
Operating Temperature	0°C to +60°C (+32° F to 140° F)
Humidity	10% to 95% relative humidity, non-condensing

APC208, Fanless Chassis

SBC Option	KIWI310-J1B-H (P/N: E3D0310100) KIWI310-J2C-H (P/N: E3D0310101)
I/O	1 x GbE 2 x USB 3.2 2 x USB 2.0 1 x micro HDMI 1 x USB Type C PWR in
Dimensions	60 (2.36") (W) * 96 (3.78") (D) *37 (1.46) (H) mm
Operating Temperature	0°C to +40°C (+32° F to 104° F)
APC208	Fanless Embedded Chassis

Packing List

1 x KIWI310
1 x KIWI310 heatsink

Ordering Information

Standard	
KIWI310-J1B-H (P/N: E3D0310100)	1.8" SBC with Intel® Celeron® processor N3350, 2GB LPDDR4 & 32GB eMMC, Micro HDMI, 1 GbE LAN, 2 USB 3.2, and 2 USB 2.0
KIWI310-J2C-H (P/N: E3D0310101)	1.8" SBC with Intel® Celeron® processor N3350, 4GB LPDDR4 & 64GB eMMC, Micro HDMI, 1 GbE LAN, 2 USB 3.2, and 2 USB 2.0
Optional	
509000000100	USB type-c PD adaptor, FSP065-A1BR3
59902000030E	US Power cord

*Android supported by request.

* All specifications and photos are subject to change without notice.

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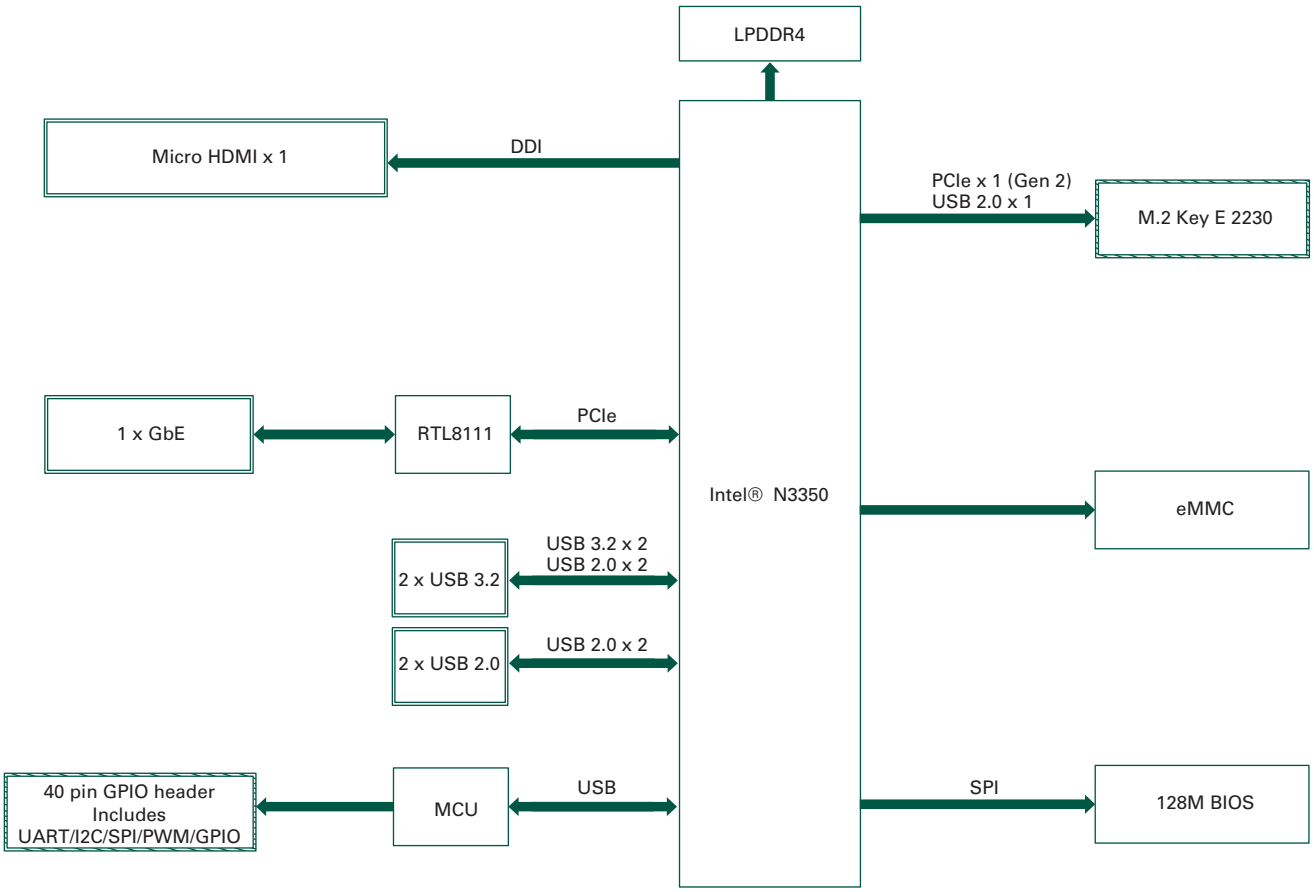

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3

Pico-ITX SBCs

The Pico-ITX SBC is the world's smallest x86 embedded board, measured at the size of 100 mm x 72 mm only. The Pico-ITX SBC provides system developers and OEMs with an ultra compact yet highly integrated platforms that deliver excellent computing performance at remarkably low power consumption. For car PCs, in-flight entertainment systems, industrial automation systems and even portable devices, the Pico-ITX SBC meets customer's demands in compact-size, fanless operation, low power consumption and versatile I/O.

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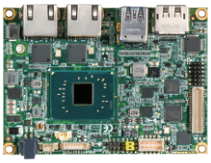
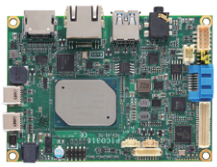
Pico-ITX SBCs

Selection Guide

Features\Models			PICO319	PICO318	PICO317
Form Factor			Pico-ITX	Pico-ITX	Pico-ITX
CPU Level			Intel® Atom® x5-E3940	Intel® Pentium® N4200/ Celeron® N3350 and J455	Intel Atom® x5-E3940
CPU Socket			Onboard	Onboard	Onboard
Core Logic Chipset			SoC integrated	SoC integrated	SoC integrated
Memory Type			DDR3L-1867	DDR3L-1867	DDR3L-1867
Max. DRAM Capacity			8GB	8GB	8GB
Cache RAM Capacity			Integrated in CPU	Integrated in CPU	Integrated in CPU
BIOS			AMI UEFI BIOS	AMI UEFI BIOS	AMI UEFI BIOS
Watchdog Timer			65536 levels, 0 to 65535 sec.	65536 levels, 0 to 65535 sec.	65536 levels, 0 to 65535 sec.
SSD			1 x M.2 Key B 22 x 42 or 30 x 42 1 x mSATA (Optional)	1 x M.2 Key B 22 x 42 or 30 x 42 1 x mSATA (Optional)	1 x mSATA (Optional)
Digital I/O			4-channel in/out programmable	4-channel in/out programmable	N/A
I/O	SATA		N/A	N/A	1 x SATA-600
	Serial	COM 1	RS-232/422/485	RS-232/422/485	RS-232
		COM 2	RS-232	RS-232	RS-232
	USB		2 x USB 3.0 2 x USB 2.0	2 x USB 3.0 2 x USB 2.0	3 x USB 3.0 2 x USB 2.0
Display			1 x DisplayPort++ 1 x LVDS	1 x DisplayPort++ 1 x LVDS	1 x HDMI 1 x LVDS
Ethernet			2 x 10/100/1000 Mbps Ethernet	2 x 10/100/1000 Mbps Ethernet	1 x 10/100/1000 Mbps Ethernet
Audio			HD Codec	HD Codec	HD Codec
Hardware Monitoring			Yes	Yes	Yes
SMBus			Yes	Yes	Yes
Expansion Interface			1 x Half-size PCI Express Mini Card slot	1 x Half-size PCI Express Mini Card slot	1 x Full-size PCI Express Mini Card slot
Power Management			ACPI	ACPI	ACPI
Battery			Lithium	Lithium	Lithium
Operating Temperature			-40°C to +70°C (-40°F to +158°F)	-20°C to +60°C (-4°F to +140°F)	-40°C to +70°C (-40°F to +158°F)
Relative Humidity			10%- 95%, non-condensing	10%- 95%, non-condensing	10%- 95%, non-condensing
EMI Compliance			CE	CE	CE

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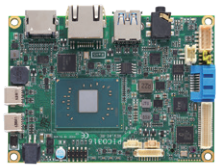
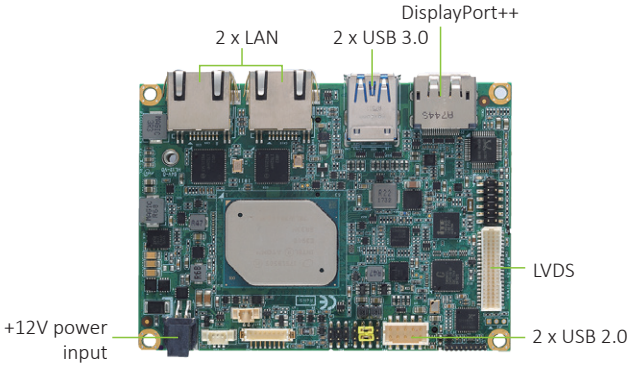


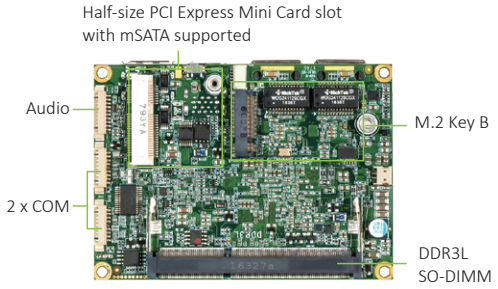
Features\Models			PICO316	PICO52R
Form Factor			Pico-ITX	Pico-ITX
CPU Level			Intel® Pentium® N4200, Celeron® N3350 and J455	8th gen Intel® Core™ i7/i5/i3 & Celeron®
CPU Socket			Onboard	Onboard
Core Logic Chipset			SoC integrated	SoC integrated
Memory Type			DDR3L-1867	DDR4-2400
Max. DRAM Capacity			8GB	32GB
Cache RAM Capacity			Integrated in CPU	Integrated in CPU
BIOS			AMI UEFI BIOS	AMI UEFI BIOS
Watchdog Timer			65536 levels, 0 to 65535 sec.	65536 levels, 0 to 65535 sec.
SSD			1 x mSATA (Optional)	64GB eMMC (optional)
Digital I/O			N/A	4-channel in/out programmable
I/O	SATA		1 x SATA-600	1 x SATA-600
	Serial	COM 1	RS-232	RS-232/422/485
		COM 2	RS-232	RS-232/422/485
	USB		3 x USB 3.0 2 x USB 2.0	2 x USB 3.2 2 x USB 2.0
Display			1 x HDMI 1 x LVDS	1 x LVDS 1 x DisplayPort++ 1 x HDMI
Ethernet			1 x 10/100/1000 Mbps Ethernet	2 x 10/100/1000 Mbps Ethernet
Audio			HD codec	N/A
Hardware Monitoring			Yes	Yes
SMBus			Yes	Yes
Expansion Interface			1 x Full-size PCI Express Mini Card slot	1 x M.2 Key E 22x30
Power Management			ACPI	ACPI
Battery			Lithium	Lithium
Operating Temperature			-20°C to +60°C (-4°F to +140°F)	-20°C to +60°C (-4°F to +140°F)
Relative Humidity			10%- 95%, non-condensing	10%- 95%, non-condensing
EMI Compliance			CE	CE

* All specifications and photos are subject to change without notice.

PICO319

Pico-ITX SBC with Intel Atom® x5-E3940 Processor, DisplayPort++, LVDS, 2 GbE LAN, and Audio

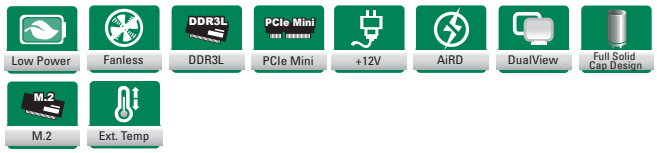




▲ Rear view

Features

- Intel Atom® x5-E3940 processor
- 1 DDR3L SO-DIMM for up to 8GB of memory
- 1 PCI Express Mini Card slot with mSATA supported
- 2 GbE LAN
- M.2 Key B



▲ Side view

▲ Assembly view

Specifications

Core System	
CPU	Intel® Atom® x5-E3940 processor onboard
System Memory	1 x 204-pin DDR3L-1867 SO-DIMM, up to 8GB
Chipset	SoC integrated
BIOS	AMI
SSD	1 x M.2 Key B (SATA, USB 2.0, USB 3.0, PCIe x2 optional) in 22 x 42 or 30 x 42 1 x mSATA (Optional)
Watchdog Timer	65536 levels, 1 to 65535 sec.
Expansion Interface	1 x Half-size PCI Express Mini Card slot
Battery Lithium	Lithium 3V/220 mAh
Power Input	2 x 2-pin connector +12V DC-in only AT Auto Power On function supported
Power Requirements	Intel® Atom® x5-E3940 @1.6 GHz 8GB DDR3L, min. RMS: +12V @1.3A
Display	
Chipset	Intel® integrated Gfx graphic engine
Memory Size	Share system memory
Display Interface	1 x DisplayPort++ 1 x LVDS; 18/24-bit single/dual channel

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I/O	
SATA	N/A
Hardware Monitoring	Detect CPU/system temperature and voltage
Ethernet	2 x 10/100/1000 Mbps Ethernet with Intel® i211-AT; support Wake-on-LAN, PXE Boot ROM
Audio	HD Codec audio as MIC-in/Line-in/Line out with Realtek ALC662
USB	2 x USB 2.0 2 x USB 3.0
Serial	1 x RS-232/422/485 1 x RS-232
TPM	N/A
SMBus	Yes; compatible with I^2C
Digital I/O	4-channel in/out programmed
Mechanical and Environmental	
Dimensions	100 x 72 mm
Board Thickness	1.6 mm
Operating Temperature	-40°C to +70°C (-40°F to 158°F)
Humidity	10% to 95% relative humidity, non-condensing

Packing List

Accessories	
594H3160400E	Power cable, L=100 mm

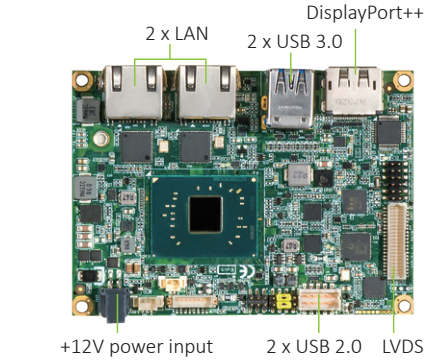
Ordering Information

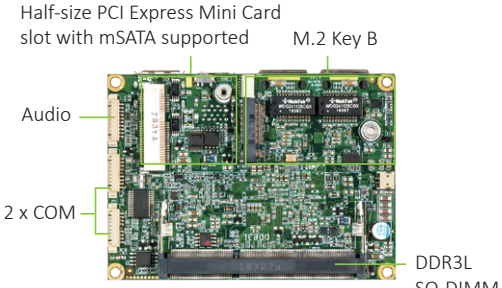
Standard	
PICO319PGGA-E3940 (P/N: E38H319100)	Pico-ITX SBC with Intel® Atom® x5-E3940 processor (1.6 - 1.8 GHz, 2MB cache, 9.5W), DisplayPort++, LVDS, 2 GbE LAN, 2 USB 2.0, and 2 USB 3.0 (without heatsink)
Optional	
PICO319PGGA-E3940 70°C (P/N: E38H319101)	Pico-ITX SBC with Intel® Atom® x5-E3940 processor (1.6- 1.8 GHz, 2MB cache, 9.5W), DisplayPort++, LVDS, 2 GbE LAN, 2 USB 2.0, and 2 USB 3.0 (with heatsink)
7128H319000E	Heatspreader
594H3180400E	Power cable for adapter, L=180mm
50966124050E	Adapter 12V 60W FSP060-DHAN3 with screw
59312260020E	Audio cable with bracket, P=1.25 mm, L=450 mm
59380880250E	COM port cable DB9-9 x 1-pin, P=1.25 mm, L=250 mm
594E8422800E	2 x USB 2.0 cable with bracket, L=180 mm
594H3186800E	Buzzer cable 9 x 5.5 mm 2-pin, L=40 mm
E393A19100	AX93A19 SIM card slot board

* All specifications and photos are subject to change without notice.

PICO318

Pico-ITX SBC with Intel® Pentium® Processor N4200/Celeron® Processor N3350 and J3455, DisplayPort++, LVDS, 2 GbE LAN and Audio





▲ Rear view

Features

- Intel® Pentium® processor N4200/Celeron® processor N3350 and J3455
- 1 DDR3L SO-DIMM for up to 8GB of memory
- 1 PCI Express Mini Card slot with mSATA supported
- 2 GbE LAN
- M.2 Key B

▲ Assembly view

▲ APC203

Specifications

Core System	
CPU	Intel® Pentium® processor N4200 & Celeron® processor N3350 and J3455 onboard
System Memory	1 x 204-pin DDR3L-1867 SO-DIMM, up to 8GB
Chipset	SoC integrated
BIOS	AMI
SSD	1 x M.2 Key B (SATA, USB 2.0, USB 3.0, PCIe x2 optional) in 22 x 42 or 30 x 42 1 x mSATA (Optional)
Watchdog Timer	65536 levels, 0 to 65535 sec.
Expansion Interface	1 x Half-size PCI Express Mini Card slot
Battery Lithium	Lithium 3V/220 mAh
Power Input	2 x 2-pin connector +12V DC-in only AT Auto Power On function supported
Power Requirements	Pentium® N4200 @ 1.1 GHz, min. RMS: +12V @1.3A Celeron® N3350 @ 1.1 GHz, min. RMS: +12V @1.1A Celeron® J3455 @1.5 GHz, min. RMS: +12V @1.8A
Display	
Chipset	Intel® integrated Gfx graphic engine
Memory Size	Share system memory
Display Interface	1 x DisplayPort++ 1 x LVDS; 18/24-bit single/dual channel
I/O	
SATA	N/A
Hardware Monitoring	Detect CPU/system temperature and voltage
Ethernet	2 x 10/100/1000 Mbps Ethernet with Intel® i211-AT; support Wake-on-LAN, PXE Boot ROM
Audio	HD Codec audio as Mic-in/Line-in/Line-out with Realtek ALC662
USB	2 x USB 2.0 2 x USB 3.0
Serial	1 x RS-232/422/485 1 x RS-232
TPM	N/A
SMBus	Yes; compatible with I^2C
Digital I/O	4-channel in/out programmable

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Mechanical and Environmental	
Dimensions	100 x 72 mm
Board Thickness	1.6 mm
Operating Temperature	-20°C to +60°C (-4°F to +140°F)
Humidity	10% to 95% relative humidity, non-condensing

Packing List

Accessories	
594H3160400E	Power cable, L=100 mm

APC203, Industrial Chassis

SBC Option	PICO318PGGA-N3350 (P/N: E38H318102)
I/O	2 x GbE LAN 2 x USB 3.0 1 x DisplayPort++ 1 x 12V DC Jack
Dimensions (with wall mount ear)	152.5 mm (6”) (W) x 107.5 mm (4.23”) (D) x 37.5mm (1.48”) (H)
Operating Temperature	-10°C to +50°C (+14°F to +122°F)
APC203 (P/N: E27P203100)	APC203 w/N3350, 8GB RAM, 64GB M.2 Key B card and 12V/60W adapter

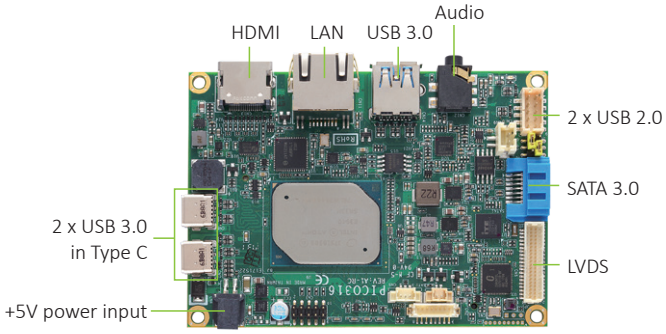
Ordering Information

Standard	
PICO318PGGA-N4200 (P/N: E38H318101)	Pico-ITX SBC with Intel® Pentium® processor N4200 (1.1- 2.5 GHz, 2MB cache, 6W), DisplayPort++, LVDS, 2 GbE LAN, 2 USB 2.0, and 2 USB 3.0 (without heatsink)
PICO318PGGA-N3350 (P/N: E38H318100)	Pico-ITX SBC with Intel® Celeron® processor N3350 (1.1- 2.4 GHz, 2MB cache, 6W), DisplayPort++, LVDS, 2 GbE LAN, 2 USB 2.0, and 2 USB 3.0 (without heatsink)
PICO318PGGA-J3455 (P/N: E38H318105)	Pico-ITX SBC with Intel® Celeron® processor J3455 (1.5- 2.3 GHz, 2MB cache, 10W), DisplayPort++, LVDS, 2 GbE LAN, 2 USB 2.0 and 2 USB 3.0 (without heatsink)
Optional	
PICO318PGGA-N3350 60°C (P/N: E38H318102)	Pico-ITX SBC with Intel® Celeron® processor N3350 (1.1- 2.4 GHz, 2MB cache, 6W), DisplayPort++, LVDS, 2 GbE LAN, 2 USB 2.0, 2 USB 3.0, and heatsink
PICO318PGGA-N4200 60°C (P/N:E38H318103)	Pico-ITX SBC with Intel® Pentium® processor N4200 (1.1- 2.5 GHz, 2MB cache, 6W), DisplayPort++, LVDS, 2 GbE LAN, 2 USB 2.0, 2 USB 3.0, and heatsink
PICO318PGGA-J3455 60°C (P/N: E38H318106)	Pico-ITX SBC with Intel® Celeron® processor J3455 (1.5- 2.3 GHz, 2MB cache, 10W), DisplayPort++, LVDS, 2 GbE LAN, 2 USB 2.0, 2 USB 3.0, and heatsink
7128H316000E	Heatspreader
594H3180400E	DC power cable for adapter, L=180 mm
50966124050E	Adapter 12V 60W FSP060-DHAN3 with screw
59312260020E	Audio cable with bracket, P=1.25 mm, L=450 mm
59380880250E	COM port cable DB9-9 x 1-pin, P=1.25 mm, L=250 mm
594E8422800E	2 x USB 2.0 cable with bracket, L=180 mm
594H3186800E	Buzzer cable 9 x 5.5 mm 2-pin, L=40mm
E393A19100	AX93A19 SIM card slot board

* All specifications and photos are subject to change without notice.

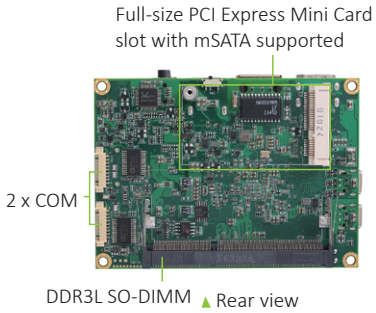
PICO317

Pico-ITX SBC with Intel Atom® x5-E3940 Processor, HDMI, LVDS, GbE LAN and Audio



Features

- Dual-core Intel Atom® x5-E3940 processor (code name: Apollo Lake)
- 1 DDR3L-1867 SO-DIMM for up to 8GB of memory
- 2 COM, 2 USB 2.0, and 3 USB 3.0
- 1 Full-size PCI Express Mini Card slot with mSATA supported
- Wide operating temperature range from-40°C to +70°C



▲ Rear view

▲ Side view

▲ Assembly view for 70°C thermal solution

Specifications

Core System	
CPU	Intel Atom® x5-E3940 processor onboard
System Memory	1 x 204-pin DDR3L-1867 SO-DIMM, up to 8GB
Chipset	SoC integrated
BIOS	AMI
SSD	1 x mSATA (Optional)
Watchdog Timer	65536 levels, 0 to 65535 sec.
Expansion Interface	1 x Full-size PCI Express Mini Card slot with mSATA supported
Battery Lithium	Lithium 3V/220 mAh
Power Input	2 x 2-pin connector +5V DC-in only AT Auto Power On function supported
Power Requirements	Intel Atom® x5-E3940 @1.6 GHz 8GB DDR3L, min. RMS: +5V @2.9A
Display	
Chipset	Intel® integrated Gfx graphic engine
Memory Size	Share system memory
Display Interface	1 x HDMI 1 x LVDS; 18/24-bit single/dual channel

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I/O	
SATA	1 x SATA-600
Hardware Monitoring	Detect CPU/system temperature and voltage
Ethernet	1 x 10/100/1000 Mbps Ethernet with Intel® I211-AT; supports Wake-on-LAN, PXE Boot ROM
Audio	HD Codec audio as Line-out with Realtek ALC888S
USB	2 x USB 2.0 3 x USB 3.0
Serial	2 x RS-232
TPM	N/A
SMBus	Yes; compatible with I^2C
Digital I/O	N/A
Mechanical and Environmental	
Dimensions	100 x 72 mm
Board Thickness	1.6 mm
Operating Temperature	-40°C to +70°C (-40°F to +158°F)
Humidity	10% to 95% relative humidity, non-condensing

Packing List

Accessories	
594H3160400E	Power cable, L=100 mm

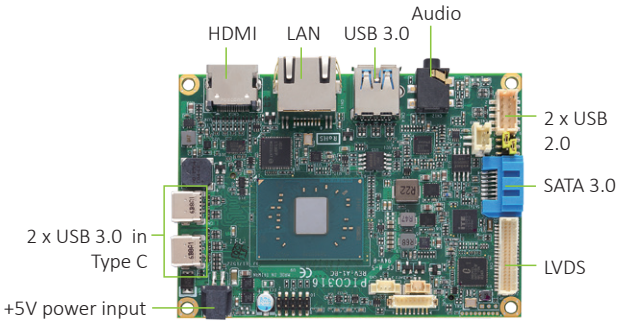
Ordering Information

Standard	
PICO317HGA-E3940 (P/N: E38H317100)	Pico-ITX SBC with Intel Atom® x5-E3940 processor (1.6- 1.8 GHz, 2MB cache, 9.5W), HDMI, LVDS, GbE LAN, 3 USB 3.0, and 2 USB 2.0 (without heatsink)
Optional	
PICO317HGA-E3940 70°C (P/N: E38H317101)	Pico-ITX SBC with Intel Atom® x5-E3940 processor (1.6- 1.8 GHz, 2MB cache, 9.5W), HDMI, LVDS, GbE LAN, 3 USB 3.0, and 2 USB 2.0 with heatsink
59380880250E	COM port cable DB9-9 x 1P, P=1.25, L=250 mm
7128H316000E	Heatspreader
594E8422800E	2 USB 2.0 cables with bracket, L=180 mm
E29R114100	5V/6A 30W adapter

* All specifications and photos are subject to change without notice.

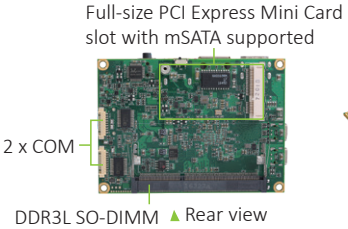
PICO316

Pico-ITX SBC with Intel® Pentium® Processor N4200 & Celeron® Processor N3350/J3455, LVDS, HDMI, GbE LAN, and Audio



Features

- Intel® Pentium® processor N4200 & Celeron® processor N3350/J3455
- 1 DDR3L SO-DIMM for up to 8GB of memory
- 2 USB 2.0 and 3 USB 3.0
- 1 PCI Express Mini Card slot with mSATA supported



▲ Rear view

▲ Side view

▲ Assembly view for 60°C thermal solution

▲ Assembly view for 70°C thermal solution

Specifications

Core System	
CPU	Intel® Pentium® processor N4200 & Celeron® processor N3350/J3455 onboard
System Memory	1 x 204-pin DDR3L-1867 SO-DIMM, up to 8GB
Chipset	SoC integrated
BIOS	AMI
SSD	1 x mSATA (Optional)
Watchdog Timer	65536 levels, 1 to 65535 sec.
Expansion Interface	1 x Full-size PCI Express Mini Card slot with mSATA supported
Battery Lithium	Lithium 3V/220mAH
Power Input	2 x 2-pin connector +5V DC-in only AT Auto Power On function supported
Power Requirements	Intel® Pentium® N4200 @ 1.1 GHz 8GB DDR3L Max RMS: +5V @ 3.3A Intel® Celeron® N3350 @ 1.1 GHz 8GB DDR3L Max RMS: +5V @ 2.3A Intel® Celeron® J3455 @1.5 GHz 8GB DDR3L Max RMS: +5V @4A
Display	
Chipset	Intel® integrated Gfx graphic engine
Memory Size	Share system memory
Display Interface	1 x LVDS; 18/24-bit single/dual channel 1 x HDMI

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I/O	
SATA	1 x SATA-600
Hardware Monitoring	Detect CPU/system temperature and voltage
Ethernet	1 x 10/100/1000 Mbps Ethernet with Intel® I211-AT; supports Wake-on-LAN, PXE Boot ROM
Audio	HD Codec audio as Line-out with Realtek ALC888S
USB	2 x USB 2.0 3 x USB 3.0
Serial	2 x RS-232
TPM	N/A
SMBus	Yes; compatible with I^2C
Digital I/O	N/A
Mechanical and Environmental	
Dimensions	100 x 72 mm
Board Thickness	1.6 mm
Operating Temperature	Standard:-20°C to +60°C (-4°F to +140°F) Optional:-20°C to +70°C (-4°F to +158°F)
Humidity	10% to 95% relative humidity, non-condensing

Packing List

Accessories	
594H3160400E	Power Cable L=100 mm

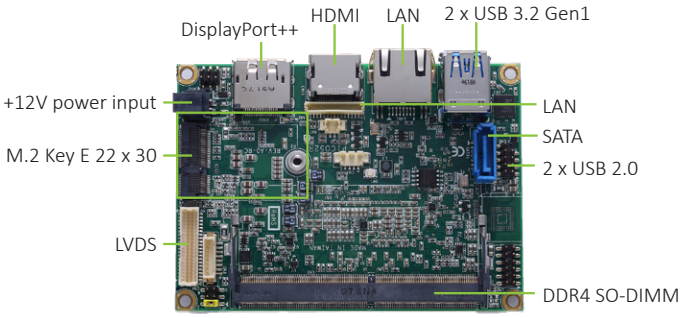
Ordering Information

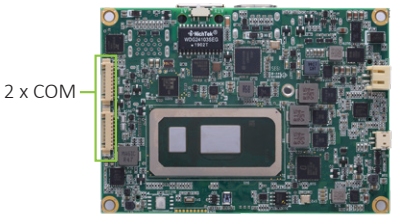
Standard	
PICO316HGA-N4200 (P/N: E38H316101)	Pico-ITX SBC with Intel® Pentium® processor N4200 (1.1 to 2.5 GHz, 2MB Cache, 6W), LVDS, HDMI, GbE LAN, 3 USB 3.0, and 2 USB 2.0 without heatsink
PICO316HGA-N3350 (P/N: E38H316100)	Pico-ITX SBC with Intel® Celeron® processor N3350 (1.1 to 2.4 GHz, 2MB Cache, 6W), LVDS, HDMI, GbE LAN, 3 USB 3.0, and 2 USB 2.0 without heatsink
PICO316HGA-J3455 (P/N: E38H316106)	Pico-ITX SBC with Intel® Celeron® processor J3455 (1.5 to 2.3 GHz, 2MB cache, 10W), LVDS, HDMI, GbE LAN, 3 USB 3.0, and 2 USB 2.0 without heatsink
Optional	
PICO316HGA-N3350 60°C (P/N: E38H316102)	Pico-ITX SBC with Intel® Celeron® processor N3350 (1.1 to 2.4 GHz, 2MB Cache, 6W), LVDS, HDMI, GbE LAN, 3 USB 3.0, 2 USB 2.0, and low profile heatsink
PICO316HGA-N4200 60°C (P/N: E38H316103)	Pico-ITX SBC with Intel® Pentium® processor N4200 (1.1 to 2.5 GHz, 2MB Cache, 6W), LVDS, HDMI, GbE LAN, 3 USB 3.0, 2 USB 2.0, and low profile heatsink
PICO316HGA-N3350 70°C (P/N: E38H316104)	Pico-ITX SBC with Intel® Celeron® processor N3350 (1.1 to 2.4 GHz, 2MB Cache,6W), LVDS, HDMI, GbE LAN, 3 USB 3.0, 2 USB 2.0, and high profile heatsink
PICO316HGA-N4200 70°C (P/N: E38H316105)	Pico-ITX SBC with Intel® Pentium® processor N4200 (1.1 to 2.5 GHz, 2MB Cache,6W), LVDS, HDMI, GbE LAN, 3 USB 3.0, 2 USB 2.0, and high profile heatsink
PICO316HGA-J3455 60°C (P/N: E38H316107)	Pico-ITX SBC with Intel® Celeron® processor J3455 (1.5 to 2.3 GHz, 2MB cache, 10W), LVDS, HDMI, GbE LAN, 3 USB 3.0, and 2 USB 2.0, and high profile heatsink
E29R114100	5V/6A 30W adapter
7128H316000E	Heatspreader
59380880250E	COM port cable, DB9--9 x 1P, L=250 mm, P=1.25
594E8422800E	2 x USB 2.0 cable with bracket, L=180 mm

* All specifications and photos are subject to change without notice.

PICO52R

Pico-ITX SBC with 8th Gen Intel® Core™ i7/i5/i3 & Celeron® Processor, DisplayPort++, HDMI, LVDS, and 2 GbE LAN





▲ Rear view

Features

- 8th gen Intel® Core™ i7/i5/i3 and Celeron® processor
- 1 DDR4 SO-DIMM for up to 32GB of memory
- 2 USB 2.0 and 2 USB 3.2 Gen1
- 2 GbE LAN
- M.2 Key E
- Intel® AMT 11 supported

▲ APC201

Specifications

Core System	
CPU	8th gen Intel® Core™ i7/i5/i3 and Celeron® processor onboard
System Memory	1 x 260-pin DDR4-2400 SO-DIMM, up to 32GB
Chipset	N/A
BIOS	AMI
SSD	64GB eMMC (optional)
Watchdog Timer	65536 levels, 0 to 65535 sec.
Expansion Interface	1 x M.2 Key E (PCIe x1, USB 2.0 in 22x30)
Battery Lithium	Lithium 3V/220 mAh
Power Input	2 x 2-pin connector +12V DC-in only AT Auto Power On function supported
Power Requirements	Intel® Core™ i7-8665UE @1.7 GHz 16GB DDR4, min. RMS. +12V@2.9A Intel® Core™ i5-8365UE @1.6 GHz 16GB DDR4, min. RMS. +12V@2.7A Intel® Core™ i3-8145UE @2.2 GHz 16GB DDR4, min. RMS. +12V@2.3A Intel® Celeron® 4305UE @2.0 GHz 16GB DDR4, min. RMS. +12V@2.0A
Display	
Chipset	Intel® HD Graphics
Memory Size	Share system memory
Display Interface	1 x DisplayPort++ 1 x HDMI 1.4 1 x LVDS; 18/24-bit single/dual channel
I/O	
SATA	1 x SATA-3
Hardware Monitoring	Detect CPU/system temperature, voltage and fan speed
Ethernet	1 x 10/100/1000 Mbps Ethernet with Intel® i219-LM; supports Wake-on-LAN, PXE Boot ROM 1 x 10/100/1000 Mbps Ethernet with Intel® i211-AT; supports Wake-on-LAN, PXE Boot ROM
Audio	N/A
USB	2 x USB 2.0 2 x USB 3.2 Gen1
Serial	2 x RS-232/422/485
TPM	N/A
SMBus	Yes; compatible with I^2C
Digital I/O	4-channel in/out programmable

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Mechanical and Environmental	
Dimensions	100 x 72 mm
Board Thickness	1.6 mm
Operating Temperature	-20°C to +60°C (-4°F to 140°F)
Humidity	10% to 95% relative humidity, non-condensing

Packing List

Accessories	
8593A241000E	AX93A24, RJ-45 I/O board
594H52R2700E	LAN cable, P=2.0, L=200 mm
594H3160400E	Power cable, L=100mm
59406308010E	SATA cable, L=150mm
59429070600E	SATA power cable 2P, P=2.0, L=200 mm

APC201, Industrial Chassis

SBC Option	PICO52RHPGG-i3-8145UE w/fan
I/O	1 x GbE LAN, 2 x USB 3.2 Gen2, 1 x DisplayPort++, 1 x HDMI, and 1 x 12V DC Jack
Dimensions (with wall mount ear)	152.5 mm (6”) (W) x 107.5 mm (4.23”) (D) x 50mm (1.97”) (H)
Operating Temperature	-10°C to +50°C (+14°F to +122°F)
APC201-i3-8145UE (P/N:E27P201100)	APC201 w/i3-8145UE, 8GB RAM, 64GB eMMC and 12V/60W adapter

Ordering Information

Standard	
PICO52RHPGG-i7-8665UE (P/N: E38H52R100)	Pico-ITX SBC with 8th gen Intel® Core™ i7-8665UE, DisplayPort++, HDMI, LVDS, and 2 GbE LAN
PICO52RHPGG-i5-8365UE (P/N: E38H52R101)	Pico-ITX SBC with 8th gen Intel® Core™ i5-8365UE, DisplayPort++, HDMI, LVDS, and 2 GbE LAN
PICO52RHPGG-i3-8145UE (P/N: E38H52R102)	Pico-ITX SBC with 8th gen Intel® Core™ i3-8145UE , DisplayPort++, HDMI, LVDS, and 2 GbE LAN
PICO52RHPGG-Celeron-4305UE (P/N: E38H52R103)	Pico-ITX SBC with 8th gen Intel® Celeron® 4305UE, DisplayPort++, HDMI, LVDS, and 2 GbE LAN
Optional	
PICO52RHPGG-i7-8665UE W/FAN (P/N: E38H52R107)	Pico-ITX SBC with 8th gen Intel® Core™ i7-8665UE, DisplayPort++, HDMI, LVDS, 2 GbE LAN, and fan
PICO52RHPGG-i5-8365UE W/FAN (P/N: E38H52R108)	Pico-ITX SBC with 8th gen Intel® Core™ i5-8365UE, DisplayPort++, HDMI, LVDS, 2 GbE LAN, and fan
PICO52RHPGG-i3-8145UE W/FAN (P/N: E38H52R109)	Pico-ITX SBC with 8th gen Intel® Core™ i3-8145UE, DisplayPort++, HDMI, LVDS, 2 GbE LAN, and fan
PICO52RHPGG-CELERON-4305UE W/FAN (P/N: E38H52R110)	Pico-ITX SBC with 8th gen Intel® Celeron® 4305UE, DisplayPort++, HDMI, LVDS, 2 GbE LAN, and fan
7128H51R000E	Heatspreader
594H3180400E	DC power cable for adapter, L=180 mm
50966124050E	Adapter 12V 60W FSP060-DHAN3 with screw
59380880250E	COM port cable DB9--9x1P, P=125 mm, L=250 mm
594H51R2810E	USB cable 2 x 5P-cut P9 P2.0/2 x USB-4P, L=180 mm
594H3186800E	Buzzer cable 9 x 5.5 mm 2-pin, L=40mm

* All specifications and photos are subject to change without notice.

4

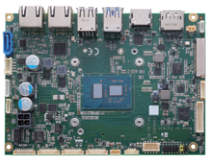
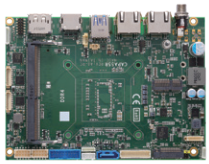
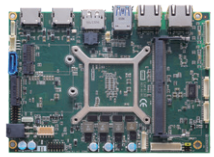
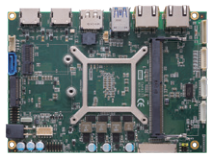
3.5" Embedded Boards

Axiomtek's industrial-grade 3.5-inch embedded board provides an enhanced, feature-rich and easy-to-deploy solution for varying embedded applications. It comes with a small form factor, lower power consumption CPU, high network connectivity, stunning graphical performance, and abundant I/O connectivity. It is a highly versatile platform designed for IoT and intelligent systems such as industrial automation, self-service terminals, digital signage, POS/kiosk displays, medical, and more.

Selection Guide		55
CAPA322	3.5" Embedded SBC with Intel® Celeron® Processor N6210/J6412 or Intel Atom® x6413E Processor, HDMI, LVDS, DisplayPort, Optional eDP, and Dual 2.5GbE LAN	56
CAPA55R	3.5" Embedded SBC with 11th Gen Intel® Core™ i7/i5/i3, Celeron® Processor, DisplayPort++, HDMI, LVDS, 1 GbE LAN, and 2.5GbE LAN	58
CAPA13R	3.5" Embedded SBC with AMD Ryzen™ Embedded V1807B/V1605B APU, DisplayPort++, 2 HDMI, LVDS, and 4 GbE LAN	60
CAPA13S	3.5" Embedded SBC with AMD Ryzen™ Embedded V1807B/V1605B APU, DisplayPort++, 2 HDMI, eDP, and 3 GbE LAN	62

3.5" Embedded Boards

Selection Guide

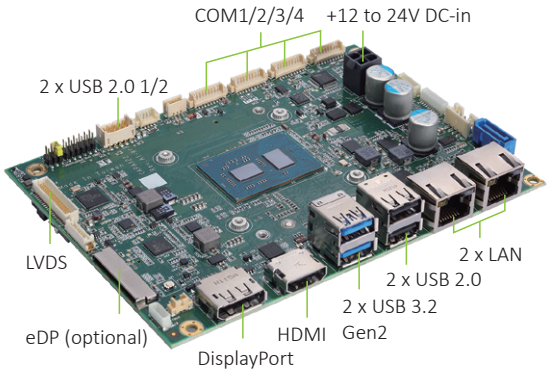





Features\Models			CAPA322	CAPA55R	CAPA13R	CAPA13S
Form Factor			3.5"	3.5"	3.5"	3.5"
CPU Level			Intel® Celeron® N6210/J6412 or Intel Atom® x6413E	11th gen Intel® Core™ i7/i5/i3 & Celeron®	AMD® RYZEN™ Embedded V1807B and V1605B APU	AMD® RYZEN™ Embedded V1807B and V1605B APU
CPU Socket			Onboard	Onboard	Onboard	Onboard
Core Logic Chipset			SoC integrated	SoC integrated	SoC integrated	SoC integrated
Memory Type			DDR4-3200	DDR4-3200	DDR4-3200/2400	DDR4-3200/2400
Max. DRAM Capacity			32GB	64GB	16GB	16GB
Cache RAM Capacity			Integrated in CPU	Integrated in CPU	Integrated in CPU	Integrated in CPU
BIOS			AMI UEFI BIOS	AMI UEFI BIOS	AMI UEFI BIOS	AMI UEFI BIOS
Watchdog Timer			65536 Levels, 0 to 65535 sec.	65536 Levels, 0 to 65535 sec.	256 Levels, 0 to 255 sec.	256 Levels, 0 to 255 sec
SSD			1 x mSATA 1 x M.2 Key B 22 x 42 (Optional)	1 x M.2 Key M 22 x 80 (NVMe)	1 x M.2 Key B 22 x 42	1 x M.2 Key B 22 x 42
Digital I/O			8 channels in/out programmable	8 channels in/out programmable	8 channels in/out programmable	8 channels in/out programmable
I/O	SATA		1 x SATA-600	1 x SATA-600	1 x SATA-600	1 x SATA-600
	Serial	COM 1	RS-232/422/485	RS-232/422/485	RS-232/422/485	RS-232/422/485
		COM 2	RS-232/422/485	RS-232/422/485	RS-232	RS-232
		COM 3	RS-232	N/A	N/A	N/A
		COM 4	RS-232	N/A	N/A	N/A
	USB		4 x USB 2.0 2 x USB 3.2	4 x USB 2.0 3 x USB 3.2	2 x USB 2.0 2 x USB 3.2	2 x USB 2.0 2 x USB 3.2
Display			1 x DisplayPort 1 x HDMI 1 x LVDS 1 x eDP (Optional)	1 x DisplayPort++ 1 x HDMI 1 x LVDS 1 x eDP (optional)	1 x DisplayPort++ 2 x HDMI 1 x LVDS	1 x DisplayPort++ 2 x HDMI 1 x eDP
Ethernet			2 x 10/100/1000/2500 Mbps	1x 10/100/1000 Mbps 1 x 10/100/1000/2500 Mbps	2 x 10/100/1000 Mbps 2 x 10/100/1000 Mbps (optional)	2 x 10/100/1000 Mbps 1 x 10/100/1000 Mbps (optional)
Audio			HD audio link	HD audio link	HD audio link	HD Codec
Hardware Monitoring			Yes	Yes	Yes	Yes
SMBus			Yes	Yes	Yes	Yes
Expansion Interface			1 x M.2 Key E 22 x 30 1 x M.2 Key B 30 x 42/30 x 50 1 x PCI Express Mini card (Optional)	1 x M.2 Key E 22 x 30 1 x M.2 Key B 30 x 42/30 x 50	1 x M.2 Key E 22 x 30	1 x M.2 Key E 22 x 30
Power Management			ACPI	ACPI	ACPI	ACPI
Battery			Lithium	Lithium	Lithium	Lithium
Operating Temperature			-20°C to +70°C (-4°F to 158°F) -40°C to +85°C (-40°F to 185°F)	-20°C to +70°C (-4°F to +158°F)	-20°C to +60°C (-4°F to 140°F)	-20°C to +60°C (-4°F to 140°F)
Relative Humidity			10% to 95%, non-condensing	10% to 95%, non-condensing	10% to 95%, non-condensing	10% to 95%, non-condensing
EMI Compliance			CE	CE	CE	CE

* All specifications and photos are subject to change without notice.

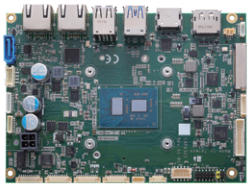
CAPA322

3.5" Embedded SBC with Intel® Celeron® Processor N6210/J6412 or Intel Atom® x6413E Processor, HDMI, LVDS, DisplayPort, Optional eDP, and Dual 2.5GbE LAN

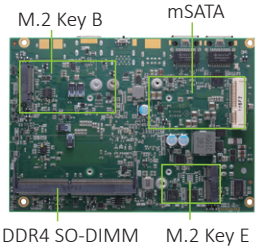


Features

- Intel® Celeron® processor N6210/J6412 or Intel Atom® x6413E processor
- 1 DDR4 SO-DIMM for up to 32GB
- 4 USB 2.0 and 2 USB 3.2 Gen2
- 1 PCI Express Mini Card slot with mSATA supported
- 1 M.2 Key E and 1 M.2 Key B



▲ Top view



▲ Rear view

Specifications

Core System	
CPU	Intel® Celeron® processor N6210/J6412 or Intel Atom® x6413E processor onboard
System Memory	1 x 260-pin DDR4-3200 SO-DIMM, up to 32GB
Chipset	SoC integrated
BIOS	AMI
SSD	1 x mSATA 1 x M.2 Key B (PCIe x2, USB 2.0 in 22 x 42) (optional)
Watchdog Timer	65536 levels, 1 to 65535 sec.
Expansion Interface	1 x Full-size PCI Express Mini Card slot (optional) 1 x M.2 Key E (PCIe x1, USB 2.0 in 22 x 30) 1 x M.2 Key B (PCIe x1, USB 3.2 Gen1, USB 2.0 in 30 x 42 or 30 x 50)
Battery Lithium	Lithium 3V/220mAH
Power Input	2 x 2-pin connector +12V to 24V DC-in AT Auto Power On function supported
Display	
Chipset	Intel® integrated UHD graphics
Memory Size	Share system memory
Display Interface	1 x HDMI 1 x DisplayPort 1 x LVDS 1 x eDP (optional)

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I/O	
SATA	1 x SATA-600
Hardware Monitoring	Detect CPU/system temperature and voltage
Ethernet	2 x 10/100/1000/2500 Mbps Ethernet with Intel(R) I225-V supports Wake-on-LAN, PXE Boot ROM
Audio	HD Audio link via pin header
USB	4 x USB 2.0 2 x USB 3.2 Gen2
Serial	2 x RS-232/422/485 2 x RS-232
TPM	TPM 2.0 (optional)
SMBus	Yes, compatible with I^2C
Digital I/O	8-channel in/out programmed
Mechanical and Environmental	
Dimensions	146 x 104 mm
Board Thickness	1.6 mm
Operating Temperature	-20°C to +70°C (-4°F to 158°F) for Intel® Celeron® processor -40°C to +85°C (-40°F to 185°F) for Intel® Atom® x6413E processor
Humidity	10% to 95% relative humidity, non-condensing

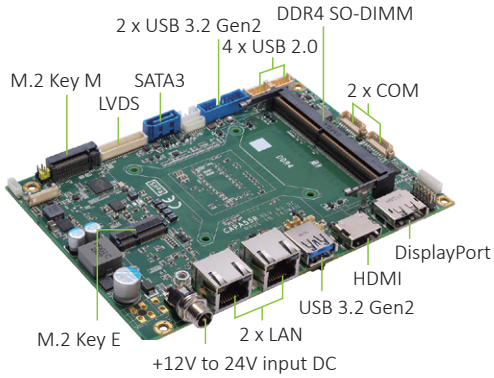
Ordering Information

Standard	
CAPA322-J6412-L (P/N: E38E322101)	3.5" Embedded SBC with Intel® Celeron® processor J6412 (2.0-2.6 GHz, 10W), HDMI/LVDS (eDP)/DisplayPort, 2.5GbE LAN, GbE LAN, and heatsink
CAPA322-N6210-L (P/N: E38E322100)	3.5" Embedded SBC with Intel® Celeron® processor N6210 (1.2-2.6 GHz, 6.5W), HDMI/LVDS (eDP)/DisplayPort, 2.5GbE LAN, GbE LAN, and heatsink
CAPA322-x6413E-L (E38E322102)	3.5" Embedded SBC with Intel Atom® x6413E processor (1.5-3.0 GHz, 9W), HDMI/LVDS (eDP)/DisplayPort, 2.5GbE LAN, GbE LAN, and heatsink
Optional	
AX93A19 (P/N: E393A19100)	SIM card slot board
AX93A22 (P/N: E393A22100)	HD codec audio board for Mic-in/Line-in/Line-out
594E8422800E	2 USB 2.0 wafer cables w/bracket, 180 mm
59380880250E	COM port cable DB-9 x 1P, P=1.25 mm, L=250 mm
594H3186800E	Buzzer cable 9 x 5.5 mm 2-pin, L=40 mm

* All specifications and photos are subject to change without notice.

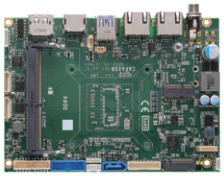
CAPA55R

3.5" Embedded SBC with 11th Gen Intel® Core™ i7/i5/i3, Celeron® Processor, DisplayPort++, HDMI, LVDS, 1GbE LAN and 2.5GbE LAN

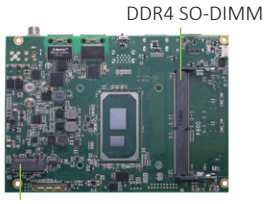


Features

- 11th gen Intel® Core™ i7/i5/i3 & Celeron® Processor
- 2 DDR4 SO-DIMM for up to 64GB of memory
- GbE LAN and 2.5GbE LAN ports
- 3 M.2 expansion slot



▲ Top view



▲ Rear view

▲ Assembly view (Fan)

▲ Assembly view (Heatsink)

Specifications

Core System	
CPU	11th gen Intel® Core™ i7/i5/i3 & Celeron® Processor (cTDP up to 28W)
System Memory	2 x 260-pin dual-channel DDR4-3200MHz SO-DIMM, up to 64GB
BIOS	AMI
SSD	1 x M.2 Key M (PCIe x4 in 22 x 80)
Watchdog Timer	65536 levels, 0 to 65535 sec.
Expansion Interface	1 x M.2 Key E (PCIe x1, USB 2.0 in 22 x 30) 1 x M.2 Key B (SATA, USB 3.2 gen2, USB 2.0 in 30 x 42 or 30 x 50) 1 x SIM connector via pin header
Battery Lithium	Lithium 3V/220 mAh
Power Input	1 x DC Jack 12V to 24V DC in AT Auto Power On function supported
Display	
Chipset	Intel integrated Gfx graphic engine
Memory Size	Share System memory
Display Interface	1 x HDMI 1.4 1 x LVDS; 18/24-bit single/dual channel 1 x eDP (optional) 1 x DisplayPort ++

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I/O	
SATA	1 x SATA-600
Hardware Monitoring	Detect CPU/system temperature, voltage and fan speed
Ethernet	1 x 10/100/1000 Mbps Ethernet with Intel® I219-LM 1 x 10/100/1000/2500 Mbps Ethernet with Intel® I225-LM
Audio	HD Audio link via pin header
USB	3 x USB 3.2 Gen2 4 x USB 2.0
Serial	2 x RS-232/422/485
TPM	TPM 2.0 on board
SMBus	Yes, compatible with I^2C
Digital I/O	8-channel in/out programmed
Mechanical and Environmental	
Dimensions	146 x 104 mm
Board Thickness	1.6 mm
Operating Temperature	-20°C to +70°C (-4°F to 158°F)
Humidity	10% to 95% relative humidity, non-condensing

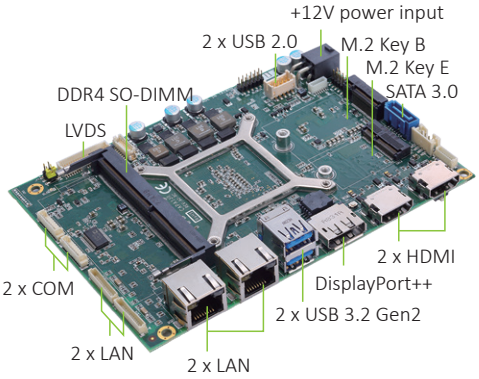
Ordering Information

Standard	
CAPA55RPHGG-i7-1185G7E w/fan (P/N: E38E55R100)	11th gen Intel® Core™ i7-1185G7E 3.5" SBC with DisplayPort++, HDMI, LVDS, GbE LAN, 2.5GbE LAN, and cooler
CAPA55RPHGG-i5-1145G7E w/fan (P/N: E38E55R101)	11th gen Intel® Core™ i5-1145G7E 3.5" SBC with DisplayPort++, HDMI, LVDS, GbE LAN, 2.5GbE LAN, and cooler
CAPA55RPHGG-i3-1115G4E w/fan (P/N: E38E55R102)	11th gen Intel® Core™ i3-1115G4E 3.5" SBC with DisplayPort++, HDMI, LVDS, GbE LAN, 2.5GbE LAN, and cooler
CAPA55RPHGG-CELERON-6305E w/fan (P/N: E38E55R103)	11th gen Intel® Celeron® 6305E 3.5" SBC with DisplayPort++, HDMI, LVDS, GbE LAN, 2.5GbE LAN, and cooler
Optional	
CAPA55R-I71185-H (P/N: E38E55R110)	11th gen Intel® Core™ i7-1185G7E 3.5" SBC with DisplayPort++, HDMI, LVDS, GbE LAN, 2.5GbE LAN, and heatsink
CAPA55R-I51145-H (P/N: E38E55R111)	11th gen Intel® Core™ i5-1145G7E 3.5" SBC with DisplayPort++, HDMI, LVDS, GbE LAN, 2.5GbE LAN, and heatsink
CAPA55R-I31115-H (P/N: E38E55R112)	11th gen Intel® Core™ i3-1115G4E 3.5" SBC with DisplayPort++, HDMI, LVDS, GbE LAN, 2.5GbE LAN, and heatsink
CAPA55R-6305E-H (P/N: E38E55R113)	11th gen Intel® Celeron® 6305E 3.5" SBC with DisplayPort++, HDMI, LVDS, GbE LAN, 2.5GbE LAN, and heatsink
AX93A19 (P/N: E393A19100)	SIM card slot board
AX93A22 (P/N: E393A22100)	HD codec audio board for Mic-in/Line-in/Line-out
594E8422800E	2 USB 2.0 wafer cables w/bracket, 180 mm
59380880250E	COM port cable DB-9 x 1P, P=1.25 mm, L=250 mm
594H3186800E	Buzzer cable 9 x 5.5 mm 2-pin, L=40 mm
59451522810E	USB 3.0 cable 20P to USB type-A/FE*2, L=40 mm
713000000400	CAPA55R heat spreader

* All specifications and photos are subject to change without notice.

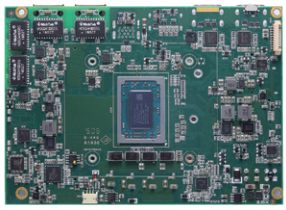
CAPA13R

3.5" Embedded SBC with AMD Ryzen™ Embedded V1807B/V1605B APU, DisplayPort++, 2 HDMI, 2.5GbE LAN, and heatsink 4 GbE LAN



Features

- AMD Ryzen™ Embedded V1807B and V1605B APU
- 1 DDR4 SO-DIMM for up to 16GB of memory
- Supports quad-view display
- 4 GbE LAN
- M.2 Key E
- M.2 Key B



▲ Rear view

▲ Assembly View

▲ APC200

Specifications

Core System	
CPU	AMD Ryzen™ Embedded V1807B/V1605B APU onboard
System Memory	1 x 260-pin DDR4-2400 (V1605B), DDR4-3200 (V1807) SO-DIMM, up to 16GB
Chipset	SoC integrated
BIOS	AMI
SSD	1 x M.2 Key B (SATA, USB 2.0, PCIe x2 for optional) in 22 x 42 or 30 x 42
Watchdog Timer	255 levels, 1 to 255 sec.
Expansion Interface	1 x M.2 Key E (PCIe x1, USB 2.0) in 22 x 30
Battery Lithium	Lithium 3V/220 mAh
Power Input	2 x 2-pin connector +12V DC-in only AT Auto Power On function supported
Power Requirement	AMD V1605B @2.0 GHz 16GB DDR4, min. RMS. +12V@2.5A AMD V1807B @3.35 GHz 16GB DDR4, min. RMS. +12V@4.2A
Display	
Chipset	AMD Radeon™ RX Vega Graphics
Memory Size	Share System memory
Display Interface	1 x DisplayPort++ 2 x HDMI 1 x LVDS; 18/24-bit single/dual channel
I/O	
SATA	1 x SATA-600
Hardware Monitoring	Detect CPU/system temperature, voltage and fan speed
Ethernet	2 x 10/100/1000 Mbps Ethernet with Realtek RTL8111G; support Wake-on-LAN, PXE Boot ROM 2 x 10/100/1000 Mbps Ethernet with Realtek RTL8111G; support Wake-on-LAN, PXE Boot ROM (optional)
Audio	HD audio link
USB	2 x USB 2.0 2 x USB 3.2 Gen2
Serial	1 x RS-232/422/485 1 x RS-232

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I/O	
TPM	ST ST33HTPH2E32AHB4 with TPM 2.0 compliant
SMBus	N/A
Digital I/O	8-channel in/out programmed
Mechanical and Environmental	
Dimensions	146 x 104 mm
Board Thickness	1.6 mm
Operating Temperature	-20°C to +60°C (-4°F to 140°F)
Humidity	10%- 95% relative humidity, non-condensing

APC200, Industrial Chassis

SBC Option	CAPA13RPHGG-V1605B w/fan (P/N: E38E13R108)
I/O	2 x GbE LAN 2 x USB 3.2 Gen2 1 x DisplayPort++ 2 x HDMI 1 x 12V DC Jack
Dimensions (with wall mount ear)	197.4 mm (7.77") (W) x 139.6 mm (5.5") (D) x 49.6 mm (1.95") (H)
Operating Temperature	-10°C to +50°C (+14°F to +122°F)
APC200-2G-V1605B (P/N: E27P200100)	Embedded chassis with CAPA13RPHGG-V1605B, 8GB RAM, 64GB M.2 Key B card and 12V/60W adapter

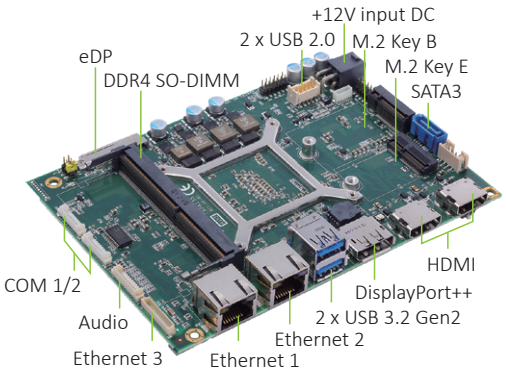
Ordering Information

Standard	
CAPA13RPHGG-V1605B (P/N: E38E13R104)	3.5” Embedded SBC with AMD Ryzen™ V1605B (2.0- 3.6 GHz, 2MB Cache, 15W), DisplayPort++, 2 HDMI, LVDS and 2 GbE LAN; without fan
CAPA13RPHGG-V1605B w/fan (P/N: E38E13R108)	3.5” Embedded SBC with AMD Ryzen™ V1605B (2.0- 3.6 GHz, 2MB Cache, 15W), DisplayPort++, 2 HDMI, LVDS, 2 GbE LAN and fan
CAPA13RPHGG-V1807B (P/N: E38E13R103)	3.5” Embedded SBC with AMD Ryzen™ V1807B (3.35- 3.8 GHz, 2MB Cache, 45W), DisplayPort++, 2 HDMI, LVDS and 2 GbE LAN; without fan
CAPA13RPHGG-V1807B w/fan (P/N: E38E13R107)	3.5” Embedded SBC with AMD Ryzen™ V1807B (3.35- 3.8 GHz, 2MB Cache, 45W), DisplayPort++, 2 HDMI, LVDS, 2 GbE LAN and fan
Optional	
CAPA13RPH4G-V1605B (P/N: E38E13R101)	3.5” Embedded SBC with AMD Ryzen™ V1605B (2.0-3.6 GHz, 2MB Cache, 15W), DisplayPort++, 2 HDMI, LVDS, and 4 GbE LAN; without fan
CAPA13RPH4G-V1605B w/fan (P/N: E38E13R106)	3.5” Embedded SBC with AMD Ryzen™ V1605B (2.0-3.6 GHz, 2MB Cache, 15W), DisplayPort++, 2 HDMI, LVDS, 4 GbE LAN, and fan
CAPA13RPH4G-V1807B (P/N: E38E13R100)	3.5” Embedded SBC with AMD Ryzen™ V1807B (3.35-3.8 GHz, 2MB Cache, 45W), DisplayPort++, 2 HDMI, LVDS, and 4 GbE LAN; without fan
CAPA13RPH4G-V1807B w/fan (P/N: E38E13R105)	3.5” Embedded SBC with AMD Ryzen™ V1807B (3.35-3.8 GHz, 2MB Cache, 45W), DisplayPort++, 2 HDMI, LVDS, 4 GbE LAN, and fan
AX93A22 (P/N: E393A22100)	HD codec audio board for Mic-in/Line-in/Line-out
594H3186800E	Buzzer cable 9 x 55 mm 2-pin, L=400 mm
59380880250E	COM port cable DB9--9 x 1P, P=1.25, L=250 mm
594E8422800E	2 x USB 2.0 cable with bracket, 180 mm
7128E13R000E	Heatspreader

* All specifications and photos are subject to change without notice.

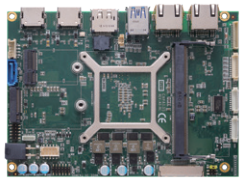
CAPA13S

3.5" Embedded SBC with AMD Ryzen™ Embedded V1807B/V1605B APU, DisplayPort++, 2 HDMI, eDP, and 3 GbE LAN

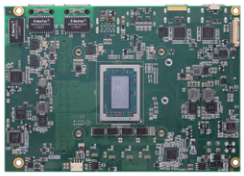


Features

- AMD Ryzen™ Embedded V1807B and V1605B APU
- 1 DDR4 SO-DIMM for up to 16GB of memory
- Supports quad-view 4K/2K display
- 3 GbE LAN
- M.2 Key E
- M.2 Key B



▲ Top view



▲ Rear view

▲ Assembly View

Specifications

Core System	
CPU	AMD Ryzen™ Embedded V1807B/V1605B APU onboard
System Memory	1 x 260-pin DDR4-2400 (V1605B), DDR4-3200 (V1807B) SO-DIMM, up to 16GB
Chipset	SoC integrated
BIOS	AMI
SSD	1 x M.2 Key B (SATA, USB 2.0, PCIe x2 for optional) in 22 x 42 or 30 x 42
Watchdog Timer	255 levels, 1 to 255 sec.
Expansion Interface	1 x M.2 Key E (PCIe x1, USB 2.0) in 22 x 30
Battery Lithium	Lithium 3V/220 mAh
Power Input	2 x 2-pin connector +12V DC-in only AT Auto Power On function supported
Power Requirement	AMD V1605B @2.0 GHz 16GB DDR4, min. RMS. +12V@3.1A AMD V1807B @3.35 GHz 16GB DDR4, min. RMS. +12V@5.1A
Display	
Chipset	AMD Radeon™ RX Vega Graphics
Memory Size	Share System memory
Display Interface	1 x DisplayPort++ 2 x HDMI 1 x eDP

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I/O	
SATA	1 x SATA-600
Hardware Monitoring	Detect CPU/system temperature, voltage and fan speed
Ethernet	2 x10/100/1000 Mbps Ethernet with Realtek RTL8111G; support Wake-on-LAN, PXE Boot ROM 1 x10/100/1000 Mbps Ethernet with Realtek RTL8111G; support Wake-on-LAN, PXE Boot ROM (optional)
Audio	HD Codec audio as Mic-in/Line-in/Line-out with Realtek ALC662
USB	2 x USB 2.0 2 x USB 3.2 Gen2
Serial	1 x RS-232/422/485 1 x RS-232
TPM	ST ST33HTPH2E32AHB4 with TPM 2.0 compliant
SMBus	N/A
Digital I/O	8-channel in/out programmed
Mechanical and Environmental	
Dimensions	146 x 104 mm
Board Thickness	1.6 mm
Operating Temperature	-20°C to +60°C (-4°F to 140°F)
Humidity	10%- 95% relative humidity, non-condensing

Ordering Information

Standard	
CAPA13S-GGA-V1605B: FAN (P/N: E38E13S103)	3.5” Embedded SBC with AMD Ryzen™ V1605B (2.0- 3.6 GHz, 2MB Cache, 15W) DisplayPort++, 2 HDMI, eDP, 2 GbE LAN, audio, and fan
CAPA13S-GGA-V1807B: FAN (P/N: E38E13S102)	3.5” Embedded SBC with AMD Ryzen™ V1807B (3.35- 3.8 GHz, 2MB Cache, 45W) DisplayPort++, 2 HDMI, eDP, 2 GbE LAN, audio, and fan
Optional	
CAPA13S-3GA-V1605B: FAN (P/N: E38E13S101)	3.5” Embedded SBC with AMD Ryzen™ V1605B (2.0-3.6 GHz, 2MB Cache, 15W), DisplayPort++, 2 HDMI, eDP, 3 GbE LAN, audio, and fan
CAPA13S-3GA-V1807B: FAN (P/N: E38E13S100)	3.5” Embedded SBC with AMD Ryzen™ V1807B (3.35-3.8 GHz, 2MB Cache, 45W), DisplayPort++, 2 HDMI, eDP, 3 GbE LAN, audio, and fan
594H3186800E	Buzzer cable 9 x 55 mm 2-pin, L=400 mm
59380880250E	COM port cable DB9--9 x 1P, P=1.25, L=250 mm
594E8422800E	2 x USB 2.0 cable with bracket, 180 mm
7128E13R000E	Heatspreader

* All specifications and photos are subject to change without notice.

5

Mini-ITX Motherboards

Mini-ITX motherboards are designed with rich functionality and reliable performance in a small footprint that measures just 170 x 170 mm. Mini-ITX Motherboards provide greater flexibility for applications in which compact size and power-efficiency are required, such as kiosks, POS, lottery machines, gaming systems, factory automation, DSA, and more.

Selection Guide		65
NEW MANO566	Mini-ITX SBC with LGA1700 Socket 12th Gen Intel® Core™ Processor, Intel® Q670E, 2 HDMI, DisplayPort++, eDP, 2 GbE LAN, and HD Audio	67
NEW MANO561	Thin Mini-ITX SBC with LGA1700 12th Gen Intel® Core™ i9/i7/i5/i3, HDMI, VGA, LVDS, USB 3.2, M.2, and Dual GbE LAN	69
NEW MANO560	Mini-ITX SBC with LGA1700 12th Gen Intel® Core™ i9/i7/i5/i3, DisplayPort++, HDMI, VGA, LVDS, USB 3.2, M.2, and Dual GbE LAN	71
MANO540	Mini-ITX SBC with FCLGA1200 10th Gen Intel® Core™ i9/i7/i5/i3, DisplayPort++, HDMI, VGA, eDP, USB 3.2, M.2, and Dual GbE LAN	73
MANO526	Mini-ITX SBC with LGA1151 Socket 9th/8th Gen Intel® Core™ Processor, Intel® Q370, VGA, DisplayPort++, eDP, 2 GbE LAN, and HD Audio	75
MANO522	Mini-ITX SBC with LGA1151 Socket 9th/8th Gen Intel® Core™ i7/i5/i3 Processor, HDMI, VGA, LVDS, USB 3.2 Gen 1, mSATA, M.2, and Dual GbE LAN	77
NEW MANO321	Thin Mini-ITX SBC with Intel® Celeron® Processor J6412, HDMI, VGA, LVDS, USB 3.1, Mini PCIe, M.2 Key B, and HD Audio	79

Mini-ITX Motherboards

Selection Guide

Features\Models			MANO566	MANO561	MANO560
Form Factor			Mini-ITX	Mini-ITX	Mini-ITX
CPU Level			12th gen Intel® Core™ i7/i5/i3, Pentium® & Celeron®	12th gen Intel® Core™ i9/i7/i5/i3 Pentium® & Celeron®	12th gen Intel® Core™ i9/i7/i5/i3 Pentium® & Celeron®
CPU Socket			LGA1700	LGA1700	LGA1700
Core Logic Chipset			Intel® Q670E	Intel® H610	Intel® H610
Memory Type			DDR4-3200	Integrated in CPU	DDR4-3200/2666/2400
Max. DRAM Capacity			64GB	64GB	64GB
Cache RAM Capacity			Integrated in CPU	Integrated in CPU	Integrated in CPU
BIOS			AMI	AMI	AMI
Watchdog Timer			255 levels, 1 to 255 sec.	255 levels, 1 to 255 sec.	255 levels, 1 to 255 sec.
SSD			1 x M.2 Key M , Support NVMe	1 x M.2 Key B	1 x M.2 Key B
Digital I/O			8-in/out	8-in/out	8-in/out
I/O	SATA		2 x SATA-600	1 x SATA-600	1 x SATA-600
	Serial	COM 1	RS-232/422/485	RS-232/422/485	RS-232/422/485
		COM 2	RS-232/422/485	RS-232	RS-232
		COM 3	RS-232/422/485	RS-232	RS-232
		COM 4	RS-232/422/485	RS-232	RS-232
		COM 5	N/A	N/A	N/A
		COM 6	N/A	N/A	N/A
	USB		4 x USB 3.2 4 x USB 2.0	2 x USB 3.2 Gen1 5 x USB 2.0	2 x USB 3.2 Gen1 5 x USB 2.0
Display			2 x HDMI 1 x DisplayPort++ 1 x eDP	2 x HDMI 1 x LVDS 1 x VGA	1 x DisplayPort++ 1 x HDMI 1 x LVDS 1 x VGA
Ethernet			2 x 10/100/1000/2500 Mbps	1 x 2500/1000/100/10 Mbps 1 x 1000/100/10 Mbps	1 x 2500/1000/100/10 Mbps 1 x 1000/100/10 Mbps
Audio			HD Codec	HD Codec	HD codec
Hardware Monitoring			Yes	Yes	Yes
Expansion Interface			1 x PCIe x16 1 x M.2 Key M 2280 1 x M.2 Key E 2230 1x M.2 Key B 3052/3042	1 x PCIe x16 1 x M.2 Key B 1 x M.2 Key E 2230 1 x PCIe Mini Card slot	1 x PCIe x16 1 x M.2 Key B 1 x M.2 Key E 2230 1 x PCIe Mini Card slot
Power Management			ACPI	ACPI	ACPI
Battery			Lithium	Lithium	Lithium
Operating Temperature			0°C to +60°C (+32°F to +140°F)	0°C to +60°C (+32°F to +140°F)	0°C to +60°C (+32°F to +140°F)
Relative Humidity			10%- 95%, non-condensing	10%- 95%, non-condensing	10%- 95%, non-condensing
EMI Compliance			CE	CE	CE

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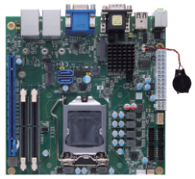
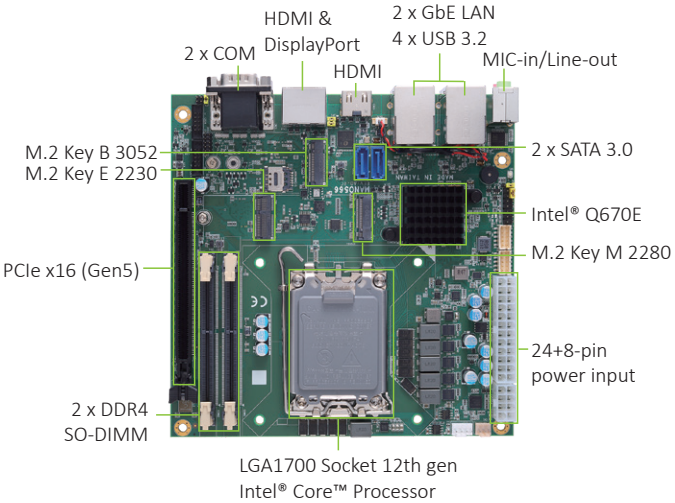


Features\Models			MANO540	MANO526	MANO522	NEW MANO321
Form Factor			Mini-ITX	Mini-ITX	Mini-ITX	Mini-ITX
CPU Level			10th gen Intel® Core™ i9/i7/i5/i3, Pentium® & Celeron®	9th/8th gen Intel® Core™ i7/i5/i3, Pentium® & Celeron®	9th/8th gen Intel® Core™ i7/i5/i3	Intel® Celeron® Processor J6412
CPU Socket			FCLGA1200	LGA1151	LGA1151	Onboard
Core Logic Chipset			Intel® H410	Intel® Q370	Intel® H310	SoC integrated
Memory Type			DDR4-2933/2666/2400	DDR4-2400/2666	DDR4-2666/2400	DDR4-3200/2666/2400
Max. DRAM Capacity			64GB	32GB	64GB	32GB
Cache RAM Capacity			Integrated in CPU	Integrated in CPU	Integrated in CPU	Integrated in CPU
BIOS			AMI	AMI	AMI	AMI
Watchdog Timer			255 levels, 1 to 255sec.	255 levels, 1 to 255 sec.	255 levels, 1 to 255 sec.	255 levels, 1 to 255 sec.
SSD			1 x M.2 Key B	1 x M.2 Key M	1 x mSATA	1 x mSATA
Digital I/O			8-in/out	8-in/out	8-in/out	8-in/out
I/O	SATA		2 x SATA-600	2 x SATA-600	2 x SATA-600	2 x SATA-600
	Serial	COM 1	RS-232/422/485	RS-232/422/485	RS-232/422/485	RS-232/422/485
		COM 2	RS-232/422/485	RS-232	RS-232	RS-232/422/485
		COM 3	RS-232	RS-232	RS-232	RS-232/422/485
		COM 4	RS-232	RS-232	RS-232	RS-232/422/485
		COM 5	RS-232	RS-232	RS-232	N/A
		COM 6	RS-232	RS-232	RS-232	N/A
	USB		2 x USB 3.2 Gen1 5 x USB 2.0	4 x USB 3.0 4 x USB 2.0	4 x USB 3.2 2 x USB 2.0	4 x USB 3.2 4 x USB 2.0
Display			1 x VGA 1 x HDMI 1 x DisplayPort++ 1 x eDP	1 x VGA 1 x DisplayPort++ 1 x eDP	1 x VGA 1 x HDMI 1 x LVDS; 18/24-bit single/dual channel	2 x HDMI 1 x DisplayPort++ 1 x eDP
Ethernet			2 x 10/100/1000 Mbps	2 x 10/100/1000 Mbps	2 x 10/100/1000 Mbps	2 x 10/100/1000/2500 Mbps
Audio			HD codec	HD codec	HD Codec	HD Codec
Hardware Monitoring			Yes	Yes	Yes	Yes
Expansion Interface			1 x PCIe x16 1 x M.2 Key B 1 x M.2 Key E 2230 1 x PCIe Mini Card slot	1 x M.2 Key E 1 x PCIe x16	1 x PCIe x16 1 x M.2 Key E 22 x 30	1 x PCIe x4 1 x M.2 Key B 1 x PCIe Mini Card slot
Power Management			ACPI	ACPI	ACPI	ACPI
Battery			Lithium	Lithium	Lithium	Lithium
Operating Temperature			0°C to +60°C (+32°F to +140°F)	0°C to +60°C (+32°F to +140°F)	0°C to +60°C (+32°F to +140°F)	0°C to +60°C (+32°F to +140°F)
Relative Humidity			10%- 95%, non-condensing	10%- 95%, non-condensing	10%- 95%, non-condensing	10%- 95%, non-condensing
EMI Compliance			CE	CE	CE	CE

* All specifications and photos are subject to change without notice.

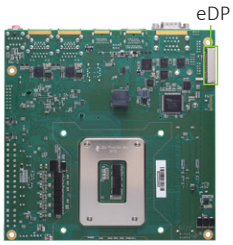
MANO566 NEW

Mini-ITX SBC with LGA1700 Socket 12th Gen Intel® Core™ Processor, Intel® Q670E, 2 HDMI, DisplayPort++, eDP, 2 GbE LAN, and HD Audio

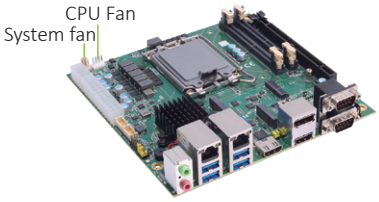


Features

- LGA1700 socket 12th gen Intel® Core™ i7/i5/i3 processor
- Intel® Q670E chipset
- 2 DDR4 SO-DIMM for up to 64GB of memory
- 4 USB 3.2 and 4 USB 2.0
- 4 COM ports
- 2 SATA-600 and 1 M.2 Key M 2280
- 1 PCIe x16, 1 M.2 Key E 2230, and 1 M.2 Key B 3052/3042



▲ Rear view



▲ Side view

Specifications

Core System	
CPU	LGA1700 socket 12th gen Intel® Core™ i7/i5/i3, Intel® Pentium® processor Gold or Celeron® processor (up to 65W)
System Memory	2 x 260-pin DDR4-3200 SO-DIMM, up to 64GB
Chipset	Intel® Q670E
BIOS	AMI
SSD	1 x M.2 Key M (2280) with support of NVMe
Watchdog Timer	255 levels, 1 to 255 sec.
Expansion Interface	1 x PCIe x16 1 x M.2 Key E (2230) 1 x M.2 Key B (3052/3042)
Battery Lithium	Lithium 3V/220mAH
Power Input	24+4-pin ATX connector Supports AT Mode Auto Power function
Display	
Chipset	Intel® UHD Graphics 700 series engine
Memory Size	Share system memory
Display Interface	1 x DisplayPort++ 1 x eDP 2 x HDMI

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I/O	
SATA	2 x SATA-600
Hardware Monitoring	Detect CPU/system temperature, voltage, and fan speed
Ethernet	2 x 10/100/1000/2500 Mbps Ethernet with Intel® I226-LM and with Wake-on-LAN and PXE Boot ROM supported
Audio	HD Codec audio as MIC-in/Line-out with Realtek ALC888S
USB	4 x USB 3.2 4 x USB 2.0
Serial	4 x RS-232/422/485 (with +5V/+12V power)
TPM	Onboard TPM 2.0
Digital I/O	8-channel in/out programmed
Mechanical and Environmental	
Dimensions	170 x 170 mm
Board Thickness	1.6 mm
Operating Temperature	0°C to +60°C (+32°F to +140°F)
Humidity	10% to 95% relative humidity, non-condensing

Packing List

I/O bracket

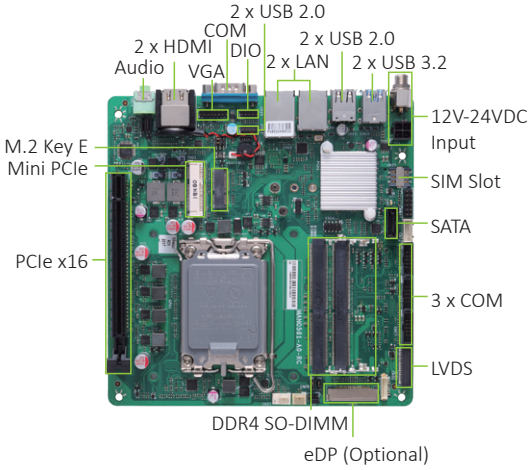
Ordering Information

Standard	
MANO566 (P/N: TBD)	Mini-ITX SBC with LGA1700 Socket 12th Gen Intel® Core™ Processor, Intel® Q670E, 2 HDMI, DisplayPort++, eDP, 2 GbE LAN, HD Audio, and bulk packing

* All specifications and photos are subject to change without notice.

MANO561 NEW

Thin Mini-ITX SBC with LGA1700 12th Gen Intel® Core™ i9/i7/i5/i3, HDMI, VGA, LVDS, USB 3.2, M.2, and Dual GbE LAN



Features

- LGA1700 12th gen Intel® Core™ i9/i7/i5/i3 processor
- Intel® H610 chipset
- 2 DDR4 SO-DIMM for up to 64GB memory
- 2 USB 3.2 Gen1 and 5 USB 2.0
- 2.5GbE LAN and 4 COM ports
- 1 PCIe x16, 1 M.2 Key E, and 1 M.2 Key B
- 1 Full-size PCI Express mini card slot
- 1 SATA-600
- 12 to 24 VDC power in

M.2 Key B (2242/3042/3052)

▲ Rear view

▲ Side view

▲ ECM550

Specifications

Core System	
CPU	LGA1700 12th gen Intel® Core™ i9/i7/i5/i3, Intel® Pentium® processors Gold/Celeron® processors (up to 65W)
System Memory	2 x 260-pin DDR4-3200/2666/2400 SO-DIMM, up to 64GB
Chipset	Intel® H610
BIOS	AMI
Watchdog Timer	255 levels, 1 to 255 sec.
Expansion Interface	1 x PCIe x16 1 x M.2 Key B 2242/3042/3052 (supports SATA & USB 3.2 Gen1) 1 x M.2 Key E 2230 1 x PCIe Mini Card slot (supports PCIe x1 & USB 2.0) 1 x SIM slot for M.2 Key B
Battery Lithium	Lithium 3V/220mAH
Power Input	1 x 12 to 24V DC Jack 1 x 12 to 24V 4-pin ATX connector
Display	
Chipset	Intel® UHD Graphics
Memory Size	Share system memory
Display Interface	2 x HDMI 1 x LVDS (eDP BOM optional) 1 x VGA

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I/O	
SATA	1 x SATA-600
Hardware Monitoring	Detect CPU/system temperature, voltage and fan speed
Ethernet	1 x 2500/1000/100/10 Mbps Gigabit/Fast Ethernet; supports Wake-on-LAN, PXE with Intel® I225-V 1 x 1000/100/10 Mbps Gigabit/Fast Ethernet; supports Wake-on-LAN, PXE with Intel® I219-V
Audio	HD Codec audio as MIC-in/Line-in/Line-out with Realtek ALC897
USB	2 x USB 3.2 Gen1 5 x USB 2.0
Serial	1 x RS-232/422/485 (with +5V/+12V power) 3 x RS-232
TPM	Onboard TPM 2.0 (TPM IC: SLB9670)
Digital I/O	8-channel in/out programmed
Mechanical and Environmental	
Size	170 x 170 mm
Board Thickness	1.6 mm
Operating Temperature	0°C to +60°C (+32°F to +140°F)
Relative Humidity	10%- 95% relative humidity, non-condensing

ECM550, Embedded Chassis

Construction	Heavy-duty cold-rolled steel	
Indicator	1 x Blue LED for system power-on 1 x Amber LED HDD Active	
Panel I/O	Front	4 x D-Sub connector 1 x Power button 2 x USB 2.0 1 x Reset button
	Rear	1 x Standard Thin Mini-ITX I/O bracket space
ECM550 (P/N:E272550101)	Embedded Thin MicroBox for Low Power Mini-ITX SBC	

Packing List

I/O bracket 2cps (Thin and Standard)

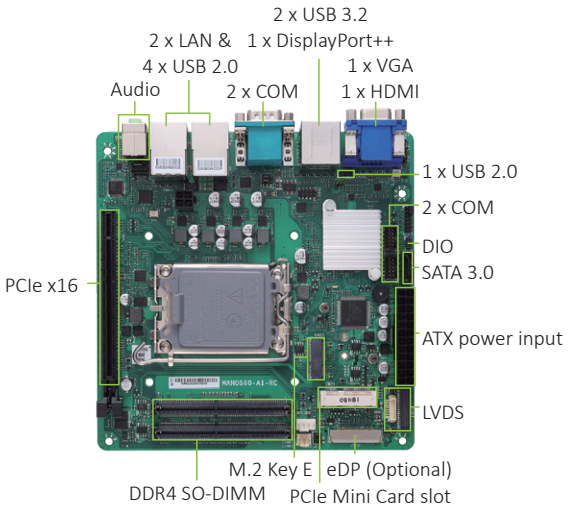
Ordering Information

Standard	
MANO561-H-B (P/N: E38M561100)	Mini-ITX SBC with LGA1700 12th gen Intel® Core™ processor, HDMI, VGA, LVDS, USB 3.2, M.2, dual GbE LAN, HD audio, and bulk packing
MANO561-H-S (P/N: E38M561101)	Mini-ITX SBC with LGA1700 12th gen Intel® Core™ processor, HDMI, VGA, LVDS, USB 3.2, M.2, dual GbE LAN, HD audio, and single box packing
Optional	
505000001000	LGA1700 Cooler 1U 4500RPM
505000001100	LGA1700 Cooler 1.5U 5500RPM
594P8802810E	USB Cable 1.25_4pin Housing L: 150 mm
594M5402100E	COM Cable DB9M/DUPONT 2 x 5 P2.0 L=20 cm
59386831010E	SATA2 Signal Cable 180D, L=350 mm (RC)
594E3420610E	Cable 4P housing to SATA/180D L:300 mm
5095AD24000E	ADAPTER 19V 120W w/screw
590000015500	VGA cable 250mm DSUB 15P (F)/HS (2004-H-2x8P)16P
590000021900	USB cable L:250mm w/SCREW x4pcs USB Type A x2, 2x5P pitch:2mm
594P8802810E	USB to 1.25_4pin Housing L:150mm

* All specifications and photos are subject to change without notice.

MANO560 NEW

Mini-ITX SBC with LGA1700 12th Gen Intel® Core™ i9/i7/i5/i3, DisplayPort++, HDMI, VGA, LVDS, USB 3.2, M.2, and Dual GbE LAN



Features

- LGA1700 12th gen Intel® Core™ i9/i7/i5/i3 processor
- Intel® H610 chipset
- 2 DDR4 SO-DIMM for up to 64GB memory
- 2 USB 3.2 Gen1 and 5 USB 2.0
- 4 COM port
- 1 PCIe x16 and 1 M.2 Key E slot
- 1 Full-size PCI Express mini card slot
- 1 SATA-600
- 1 M.2 Key B for USB 3.2 interface 5G module

▲ Rear view

▲ ECM500

Specifications

Core System	
CPU	LGA1700 12th gen Intel® Core™ i9/i7/i5/i3, Intel® Pentium® processors Gold/Celeron® processors (up to 65W)
System Memory	2 x 260-pin DDR4-3200/2666/2400 SO-DIMM, up to 64GB
Chipset	Intel® H610
BIOS	AMI
Watchdog Timer	255 levels, 1 to 255 sec.
Expansion Interface	1 x PCIe x16 1 x M.2 Key B 1 x M.2 Key E 2230 1 x PCIe Mini Card slot
M.2 Key B Expansion Function Option	USB 3.2 Gen1 for 3042/3052 5G module or SATA interface for 2242 SSD
Battery Lithium	Lithium 3V/220mAH
Power Input	Standard 12V ATX power 24+4 pin ATX connector AT mode auto power function supported
Display	
Chipset	Intel® UHD Graphics
Memory Size	Share system memory
Display Interface	1 x DisplayPort++ 1 x HDMI 1 x LVDS (eDP BOM optional) 1 x VGA

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I/O	
SATA	1 x SATA-600
Hardware Monitoring	Detect CPU/system temperature, voltage and fan speed
Ethernet	1 x 2500/1000/100/10 Mbps Gigabit/Fast Ethernet supports Wake-on-LAN, PXE with Intel® I225-V 1 x 1000/100/10 Mbps Gigabit/Fast Ethernet supports Wake-on-LAN, PXE with Intel® I219-V
Audio	HD Codec audio as MIC-in/Line-in/Line-out with Realtek ALC897
USB	2 x USB 3.2 Gen1 5 x USB 2.0
Serial	1 x RS-232/422/485 (with +5V/+12V power) 3 x RS-232
PS/2 Combo Port	N/A
TPM	Onboard TPM 2.0 (TPM IC: SLB9670)
SMBus	N/A
Digital I/O	8-channel in/out programmed
Mechanical and Environmental	
Size	170 x 170 mm
Board Thickness	1.6 mm
Operating Temperature	0°C to +60°C (+32°F to +140°F)
Relative Humidity	10%- 95% relative humidity, non-condensing

ECM500, Embedded Chassis

Construction	Heavy-duty cold-rolled steel
I/O	1 x Power button 1 x Standard Mini-ITX I/O bracket space 3 x D-Sub connector 1 x PCI Express card slot
Dimensions	217.2 mm (8.55") (D) x 300 mm (11.81") (W) x 74 mm (2.91") (H)
ECM500 (P/N: E272500101)	Embedded MicroBox for low power Mini-ITX SBC

Packing List

I/O bracket

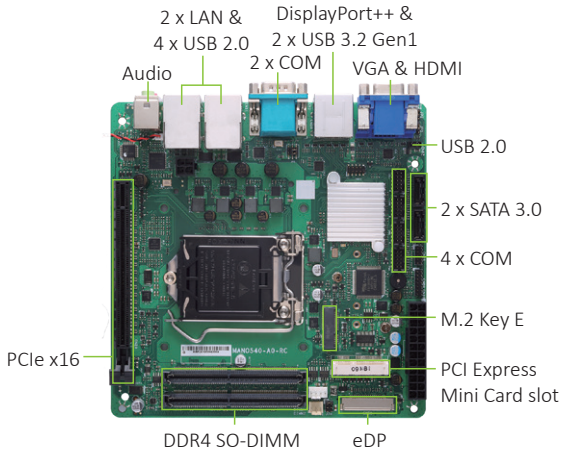
Ordering Information

Standard	
MANO560-H-B-U (P/N: E38M560100)	Mini-ITX SBC with LGA1700 12th gen Intel® Core™ Processer, DP++, HDMI, VGA, LVDS, USB 3.2, M.2 for USB 3.2 interface, mPCIe: SATA+USB, dual GbE LAN, HD audio, and bulk packing
MANO560-H-S-U (P/N: E38M560101)	Mini-ITX SBC with LGA1700 12th gen Intel® Core™ Processer, DP++, HDMI, VGA, LVDS, USB 3.2, M.2 for USB 3.2 interface, mPCIe: SATA+USB, dual GbE LAN, HD audio, and single box packing
MANO560-H-B-S (P/N: E38M560102)	Mini-ITX SBC with LGA1700 12th gen Intel® Core™ Processer, DP++, HDMI, VGA, LVDS, USB 3.2, M.2 for SATA interface, mPCIe: PCIe+USB, dual GbE LAN, HD audio, and bulk packing
MANO560-H-S-S (P/N: E38M560103)	Mini-ITX SBC with LGA1700 12th gen Intel® Core™ Processer, DP++, HDMI, VGA, LVDS, USB 3.2, M.2 for SATA interface, mPCIe: PCIe+USB, dual GbE LAN, HD audio, and single box packing
Optional	
505000001000	LGA1700 Cooler 1U 4500RPM
505000001100	LGA1700 Cooler 1.5U 5500RPM
594P8802810E	USB Cable 1.25_4pin Housing L: 150 mm
594M5402100E	COM Cable DB9M/DUPONT 2 x 5 P2.0 L=20 cm
59386831010E	SATA2 Signal Cable 180D, L=350 mm (RC)

* All specifications and photos are subject to change without notice.

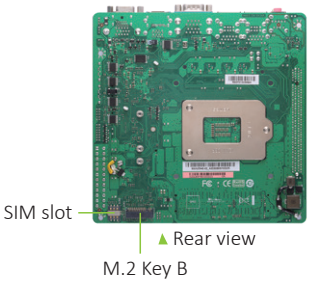
MANO540 NEW

Mini-ITX SBC with FCLGA1200 10th Gen Intel® Core™ i9/i7/i5/i3, DisplayPort++, HDMI, VGA, eDP, USB 3.2, M.2, and Dual GbE LAN



Features

- FCLGA1200 10th gen Intel® Core™ i9/i7/i5/i3 processor
- Intel® H410 chipset
- 2 DDR4 SO-DIMM for up to 64GB memory
- 2 USB 3.2 Gen1 and 5 USB 2.0
- 6 COM port
- 1 PCIe x16 and 1 M.2 Key E slot
- 1 Full-size PCI Express mini card slot
- 2 SATA-600
- 1 M.2 Key B for USB 3.2 interface 5G module



▲ Rear view

▲ ECM500

Specifications

Core System	
CPU	FCLGA1200 10th gen Intel® Core™ i9/i7/i5/i3, Intel® Pentium® processors Gold/Celeron® processors (up to 65W)
System Memory	2 x 260-pin DDR4-2933/2666/2400 SO-DIMM, up to 64GB
Chipset	Intel® H410
BIOS	AMI
Watchdog Timer	255 levels, 1 to 255 sec.
Expansion Interface	1 x PCIe x16 1 x M.2 Key B 1 x M.2 Key E 2230 1 x PCIe Mini Card slot
M.2 Key B Expansion Function Option	USB 3.2 Gen1 for 3042/3052 5G module or SATA interface for 2242/2280 SSD
Battery Lithium	Lithium 3V/220mAH
Power Input	Standard 12V ATX power 24+4 pin ATX connector AT Mode Auto Power Function supported
Display	
Chipset	Intel® integrated Gfx graphic engine
Memory Size	Share system memory
Display Interface	1 x DisplayPort++ 1 x HDMI 2.0 1 x eDP 1 x VGA

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I/O	
SATA	2 x SATA-600
Hardware Monitoring	Detect CPU/system temperature, voltage and fan speed
Ethernet	1 x 10/100/1000 Mbps Ethernet with Intel® i211-AT; supports Wake-on-LAN, PXE Boot ROM 1 x 10/100/1000 Mbps Ethernet with Intel® i219-V; supports Wake-on-LAN, PXE Boot ROM
Audio	HD Codec audio as MIC-in/Line-out with Realtek ALC897/888S
USB	2 x USB 3.2 Gen1 5 x USB 2.0
Serial	2 x RS-232/422/485 (with +5V/+12V power) 4 x RS-232
PS/2 Combo Port	N/A
TPM	Onboard TPM 2.0 (optional)
SMBus	N/A
Digital I/O	8-channel in/out programmed
Mechanical and Environmental	
Dimensions	170 x 170 mm
Board Thickness	1.6 mm
Operating Temperature	0°C to +60°C (+32°F to +140°F)
Relative Humidity	10%- 95% relative humidity, non-condensing

ECM500, Embedded Chassis

Construction	Heavy-duty cold-rolled steel
I/O	1 x Power button 1 x Standard Mini-ITX I/O bracket space 3 x D-Sub connector 1 x PCI Express card slot
Dimensions	217.2 mm (8.55") (D) x 300 mm (11.81") (W) x 74 mm (2.91") (H)
ECM500 (P/N: E272500101)	Embedded MicroBox for low power Mini-ITX SBC

Packing List

I/O bracket

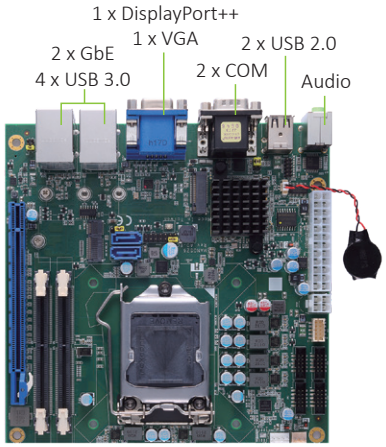
Ordering Information

Standard	
MANO540-H-B (P/N: E38M540100)	Mini-ITX SBC with FCLGA1200 10th gen Intel® Core™ i9/i7/i5/i3 processor, DP++, HDMI, VGA, eDP, USB 3.2, M.2 for USB 3.2 interface, dual GbE LAN, HD Audio and bulk packing
MANO540-H-S (P/N: E38M540101)	Mini-ITX SBC with FCLGA1200 10th gen Intel® Core™ i9/i7/i5/i3 processor, DP++, HDMI, VGA, eDP, USB 3.2, M.2 for USB3.2 interface, dual GbE LAN, HD Audio and single box packing
MANO540-H-B-A (P/N: E38M540102)	Mini-ITX SBC with FCLGA1200 10th gen Intel® Core™ i9/i7/i5/i3 processor, DP++, HDMI, VGA, eDP, USB 3.2, M.2 for SATA interface, dual GbE LAN, HD Audio and bulk packing
MANO540-H-S-A (P/N: E38M540103)	Mini-ITX SBC with FCLGA1200 10th gen Intel® Core™ i9/i7/i5/i3 processor, DP++, HDMI, VGA, eDP, USB 3.2, M.2 for SATA interface, dual GbE LAN, HD Audio and single box packing
Optional	
594M5402100E	COM cable DB9/DUPONT 2x5 P2.0, L=20 cm
594P8802810E	USB to 1.25 4pin housing, L:150 mm
71377AGC000E	FCLGA1200 1.5U Cooler
E272500101	ECM500, Embedded MicroBox for low power Mini-ITX SBC

* All specifications and photos are subject to change without notice.

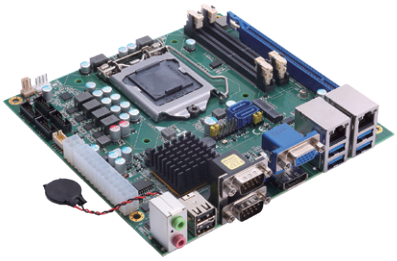
MANO526

Mini-ITX SBC with LGA1151 Socket 9th/8th Gen Intel® Core™ Processor, Intel® Q370, VGA, DisplayPort++, eDP, 2 GbE LAN, and HD Audio



Features

- LGA1151 socket 9th/8th gen Intel® Core™ i7/i5/i3 processor
- Intel® Q370 chipset
- 2 DDR4 SO-DIMM for up to 32GB of memory
- 4 USB 3.0 and 4 USB 2.0
- 6 COM ports
- 2 SATA-600 and 1 M.2 Key M
- PCIe x16 and M.2 Key E



▲ Side view

Specifications

Core System	
CPU	LGA1151 socket 9th/8th gen Intel® Core™ i7/i5/i3, Intel® Pentium® processors Gold/Celeron® processors (up to 65W)
System Memory	2 x 260-pin DDR4-2666/2400 SO-DIMM up to 32GB
Chipset	Intel® Q370
BIOS	AMI
SSD	1 x M.2 Key M (2242/2260/2280); supports NVMe
Watchdog Timer	255 levels, 1 to 255 sec.
Expansion Interface	1 x PCIe x16 1 x M.2 Key E (22 x 30)
Battery Lithium	Lithium 3V/220mAH
Power Input	STD 12V ATX power 24+4 pin ATX connector AT Mode Auto Power Function supported
Display	
Chipset	Intel® integrated Gfx graphic engine
Memory Size	Share system memory
Display Interface	1 x DisplayPort++ 1 x eDP 1 x VGA

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I/O	
SATA	2 x SATA-600
Hardware Monitoring	Detect CPU/system temperature, voltage and fan speed
Ethernet	1 x 10/100/1000 Mbps Ethernet with Intel® i211-AT; supports Wake-on-LAN, PXE Boot ROM 1 x 10/100/1000 Mbps Ethernet with Intel® i219-LM; supports Wake-on-LAN, PXE Boot ROM
Audio	HD Codec audio as MIC-in/Line-in/Line-out with Realtek ALC888S
USB	4 x USB 3.0 4 x USB 2.0
Serial	1 x RS-232/422/485 (with +5V/+12V power) 5 x RS-232
TPM	Onboard TPM 2.0
SMBus	N/A
Digital I/O	8-channel in/out programmed
Mechanical and Environmental	
Dimensions	170 x 170 mm
Board Thickness	1.6 mm
Operating Temperature	0°C to +60°C (+32°F to +140°F)
Humidity	10% to 95% relative humidity, non-condensing

Packing List

I/O bracket

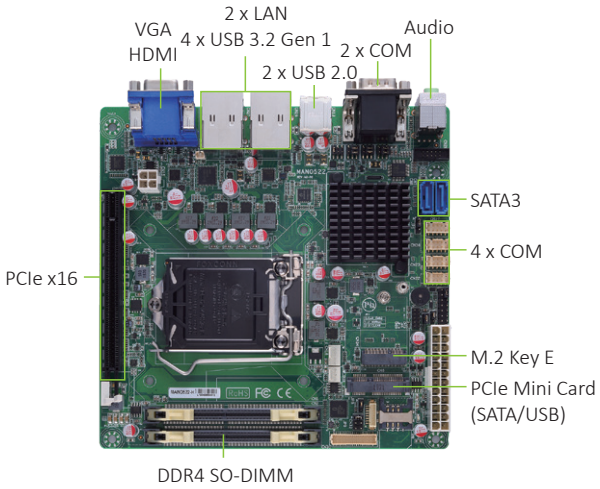
Ordering Information

Standard	
MANO526	Mini-ITX SBC with LGA1151 socket 9th/8th gen Intel® Core™ processor, Intel® Q370, VGA, DisplayPort++, eDP, 2 GbE LAN, and HD Audio
Optional	
594M5002100E	2 x COM port, P=2.0 mm, L=300 mm
594E8422800E	2 x USB 2.0 wafer cable with bracket, P=2.0, L=180 mm
713PL76A000E	LGA1156 1.5U, H=36.5

* All specifications and photos are subject to change without notice.

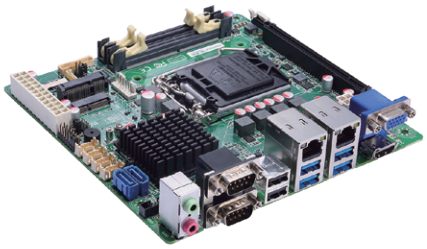
MANO522

Mini-ITX SBC with LGA1151 Socket 9th/8th Gen Intel® Core™ i7/i5/i3 Processor, HDMI, VGA, LVDS, USB 3.2 Gen 1, mSATA, M.2, and Dual GbE LAN



Features

- LGA1151 socket 9th/8th gen Intel® Core™ i7/i5/i3 processor
- Intel® H310 chipset
- 2 DDR4 SO-DIMM for up to 64GB of memory
- 4 USB 3.2 Gen 1 and 2 USB 2.0
- 6 COM ports
- 2 SATA-600 and 1 mSATA
- PCIe x16 and M.2 Key E



▲ Side view

Specifications

Core System	
CPU	LGA1151 socket 9th/8th gen Intel® Core™ i7/i5/i3 processor (up to 65W)
System Memory	2 x 260-pin DDR4-2666/2400 SO-DIMM, up to 64GB
Chipset	Intel® H310
BIOS	AMI
SSD	1 x mSATA
Watchdog Timer	255 levels, 1 to 255 sec.
Expansion Interface	1 x PCIe x16 1 x M.2 Key E 22 x 30
Battery Lithium	Lithium 3V/220mAH
Power Input	24+4 pin ATX connector AT Mode Auto Power Function supported
Display	
Chipset	Intel® integrated Gfx graphic engine
Memory Size	Share system memory
Display Interface	1 x VGA 1 x HDMI 1 x LVDS; 18/24-bit single/dual channel

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I/O	
SATA	2 x SATA-600
Hardware Monitoring	Detect CPU/system temperature, voltage and fan speed
Ethernet	1 x 10/100/1000 Mbps Ethernet with Intel® i211-AT; supports Wake-on-LAN, PXE Boot ROM 1 x 10/100/1000 Mbps Ethernet with Intel® i219-LM; supports Wake-on-LAN, PXE Boot ROM
Audio	HD Codec audio as MIC-in/Line-in/Line-out with Realtek ALC662
USB	4 x USB 3.2 Gen 1 2 x USB 2.0
Serial	1 x RS-232/422/485 (with +5V/+12V power) 5 x RS-232
PS/2 Combo Port	N/A
TPM	Firmware TPM 2.0 (fTPM 2.0)
SMBus	N/A
Digital I/O	8-channel in/out programmable
Mechanical and Environmental	
Dimensions	170 x 170 mm
Board Thickness	1.6 mm
Operating Temperature	0°C to +60°C (+32°F to +140°F)
Humidity	10% to 95% relative humidity, non-condensing

Packing List

I/O bracket, heatsink

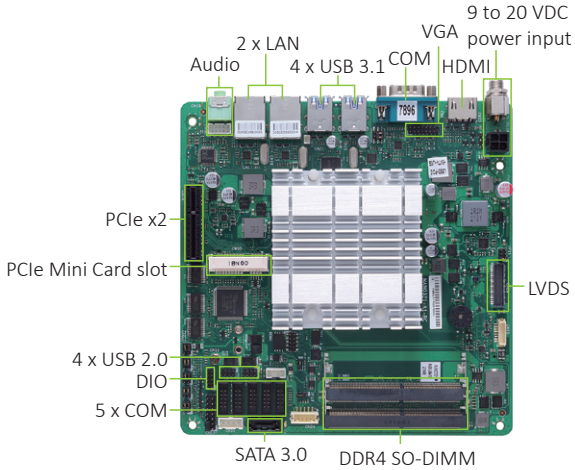
Ordering Information

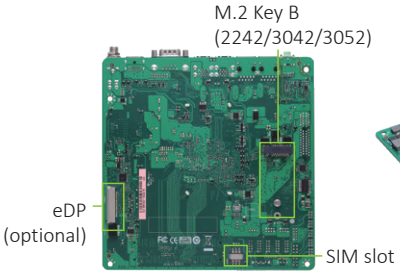
Standard	
MANO522VGGA-H310 (P/N:E38M522101)	Mini-ITX SBC with LGA1151 socket 9th/8th gen Intel® Core™ processor, Intel® H310, HDMI, VGA, LVDS, 2 GbE LAN, HD audio and gift box
Optional	
594M5002100E	2 x COM port, P=2.0 mm, L=300 mm
59384500100E	Audio cable with bracket, P=2.0 mm, L=420 mm
594E8422800E	2 x USB 2.0 wafer cable with bracket, P=2.0, L=180 mm

* All specifications and photos are subject to change without notice.

MANO321 NEW

Thin Mini-ITX SBC with Intel® Celeron® Processor J6412, HDMI, VGA, LVDS, USB 3.1, Mini PCIe, M.2 Key B, and HD Audio





▲ Rear view

▲ Side view

Features

- Intel® Celeron® processor J6412
- 2 DDR4 SO-DIMM for up to 32GB of memory
- 1 PCIe x2 for PCIe x4 expansion slot
- 1 PCIe Mini Card slot and PCIe x1
- 4 USB 3.1 and 4 USB 2.0
- 1 SATA-600 and 1 M.2 Key B
- Supports 6 COM
- Low profile
- 9 to 20 VDC power in
- HDMI, VGA, LVDS with triple view supported

Specifications

Core System	
CPU	Intel® Celeron® processor J6412
System Memory	2 x 260-pin DDR4-3200/2666/2400 SO-DIMM, up to 32GB
Chipset	SoC integrated
BIOS	AMI
Watchdog Timer	255 levels, 1 to 255 sec.
Expansion Interface	1 x PCIe x4 slot with PCIe x2 signal 1 x M.2 Key B 1 x PCIe Mini Card slot 1 x SIM Card slot *M.2 Key B function option: USB 3.1 for 3042/3052 5G module or SATA interface for 2242 SSD
SSD	1 x mSATA
Battery	Lithium 3V/220 mAH
Power Input	1 x 9 to 20V DC Jack 1 x 9 to 20V 4-pin ATX connector
Display	
Chipset	Intel® Integrated UHD Graphics
Memory Size	Shared memory
Display Interface	1 x HDMI 1.4b 1 x VGA 1 x LVDS (eDP BOM optional)

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I/O	
SATA	1 x SATA-600
Ethernet	2 x 10/100/1000 Mbps Ethernet with Realtek RTL8111H with support of Wake-on-LAN, PXE Boot ROM
Audio	HD Codec audio as MIC-in/Line-in/Line-out with Realtek ALC897/888S
USB	4 x USB 2.0 (internal) 4 x USB 3.1 (rear I/O)
Seria	1 x RS-232/422/485 and 4 x RS-232 (internal) 1 x RS-232/422/485 (rear I/O)
TPM	Infenon SLB9760 T2.0 with TPM 2.0 compliant
SMBus	1 x 1*5 SMBus pin header
Digital I/O	8-channel in/out programmable
Mechanical and Environmental	
Dimensions	170 x 170 mm
Board Thickness	1.6 mm
Operating Temperature	0°C to +60°C (+32°F to +140°F)
Humidity	10% to 95% relative humidity, non-condensing

Packing List

I/O bracket, heatsink

Ordering Information

Standard	
MANO321-J-B-U (P/N: E38M321100)	Thin Mini-ITX SBC with Intel® Celeron® processor J6412, HDMI, VGA, LVDS, USB 3.1, Mini PCIe, M.2 Key B for USB 3.1, and HD audio; bulk packing
MANO321-J-S-U (P/N: E38M321101)	Thin Mini-ITX SBC with Intel® Celeron® processor J6412, HDMI, VGA, LVDS, USB 3.1, Mini PCIe, M.2 Key B for USB 3.1, and HD audio; single box packing
MANO321-J-B-S (P/N: E38M321102)	Thin Mini-ITX SBC with Intel® Celeron® processor J6412, HDMI, VGA, LVDS, USB 3.1, Mini PCIe, M.2 Key B for SATA, and HD audio; bulk packing
MANO321-J-S-S (P/N: E38M321103)	Thin Mini-ITX SBC with Intel® Celeron® processor J6412, HDMI, VGA, LVDS, USB 3.1, Mini PCIe, M.2 Key B for SATA, and HD audio; single box packing
Optional	
594M5402100E	COM cable DB9M/DuPont 2 x 5 P2.0 L= 20 cm
594E3420610E	Cable 4P housing to SATA/180D L: 300 mm
59386831010E	SATA2 signal cable 180D, L= 350 mm (RC)
590000015500	VGA cable 250 mm DSUB 15P (F) /HS(2004-H-2x8P)16P Pitch=2.0
590000009900	USB 2.0 TYPE-A Fx2 /HS(2004-H-2x4P)8P
5095AD24000E	Adapter 19V 120W w/screw

* All specifications and photos are subject to change without notice.

6

ATX Motherboards

Axiomtek's high performance ATX motherboards (305 x 244 mm) support a wide range of computing capacities and rich I/O and expansion slots. The industrial ATX motherboards are ideal platforms for applications in digital video recorder, POS system, intelligent transportation system, multi-media center and more.

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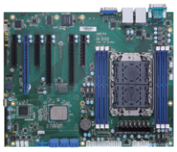
IMB700	ATX Motherboard with LGA4189 Socket 3rd Gen Intel® Xeon® Scalable Processors,Intel® C621A, 3 PCIe x16, 3 PCIe x8, VGA, and NVMe	84
NEW IMB540	ATX Motherboard with LGA1700 Socket 12th Gen Intel® Core™ i9/i7/i5/i3, Pentium® or Celeron® Processor, Intel® R680E, USB 3.2 Gen2, SATA 3.0, GbE and 2.5GbE LAN, VGA, DisplayPort++, DVI-D, and HDMI	86
IMB530	ATX Motherboard with LGA1200 Socket 10th Gen Intel® Core™ i9/i7/i5/i3, Xeon® E Processor, Intel® W480E, ECC DDR4, USB 3.2 Gen2, NVMe, Dual LAN, VGA, DisplayPort++, DVI-D, and HDMI	88
IMB525R	ATX Motherboard with LGA1151 Socket 9th/8th Gen Intel® Core™, Xeon® E Processor, Intel® C246, USB 3.1 Gen2, SATA 3.0, PCI Express Mini Card Slot, VGA, DisplayPort++, DVI-D, and HDMI	90
IMB524R	ATX Motherboard with LGA1151 Socket 9th/8th Gen Intel® Core™ Processor, Intel® H310, USB 3.1 Gen1, SATA 3.0, PCI Express Mini Card Slot, VGA, DisplayPort++, DVI-D, and HDMI	92
IMB523R	ATX Motherboard with LGA1151 Socket 9th/8th Gen Intel® Core™ Processor, Intel® Q370, USB 3.1 Gen2, SATA 3.0, PCI Express Mini Card Slot, VGA, DisplayPort++, DVI-D, and HDMI	94
IMB520R	ATX Motherboard with LGA1151 Socket 9th/8th Gen Intel® Core™ Processor, Intel® Q370, USB 3.1 Gen2, SATA 3.0, Dual LAN, VGA, DisplayPort++, DVI-D, and HDMI	96

Embedded Boards and Modules

ATX Motherboards

Selection Guide



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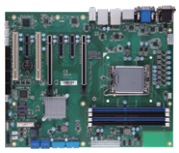

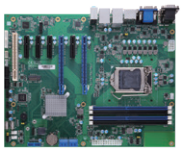

Features\Models			IMB700	IMB540	IMB530
Form Factor			ATX	ATX	ATX
CPU Level			3rd gen Intel® Xeon® Scalable	12th gen Intel® Core™ i9/i7/i5/i3, Pentium® or Celeron®	10th gen Intel® Core™ i9/i7/i5/i3 Xeon® E, Pentium® or Celeron®
CPU Socket			LGA4189	LGA1700	LGA1200
Core Logic Chipset			Intel® C621A	Intel® R680E	Intel® W480E
Memory Type			DDR4-3200	DDR4-3200	DDR4-2933
Max. DRAM Capacity			384GB	128GB	128GB
Cache RAM Capacity			Integrated in CPU	Integrated in CPU	Integrated in CPU
BIOS			AMI	AMI	AMI
Watchdog Timer			255 levels, 1 to 255 sec.	255 levels, 1 to 255 sec.	255 levels, 1 to 255 sec.
Digital I/O			8-channel programmable	8-channel programmable	8-channel programmable
I/O	SATA		6 x SATA-600	4 x SATA-600	4 x SATA-600
	Serial	COM 1	RS-232/422/485	RS-232/422/485	2 x RS-232 (Internal box header)
		COM 2	N/A	RS-232/422/485	2 x RS-232 (Internal box header)
		COM 3	N/A	RS-232	2 x RS-232/422/485 (rear I/O)
		COM 4	N/A	RS-232	2 x RS-232/422/485 (rear I/O)
		COM 5	N/A	RS-232	N/A
		COM 6	N/A	RS-232	N/A
	USB		4 x USB 3.1 Gen1 (rear I/O) 2 x USB 3.1 Gen1 (internal box header) 6 x USB 2.0 (internal box header) 1 x USB 2.0 (180D TypeA)	4 x USB 3.2 Gen2x1 2 x Dual USB3.2 Gen1x1 4 x USB 2.0 1 x USB 2.0 Type A	2 x USB 3.2 Gen2 4 x USB 3.2 Gen1 8 x USB 2.0
SIM Card Slot			N/A	SIM with PCIe Mini Card slot	N/A
Display			1 x VGA	1 x VGA 1 x DVI-D 1 x HDMI 1 x DisplayPort++	1 x VGA 1 x DVI-D 1 x HDMI 1 x DisplayPort++
Ethernet			2 x 10/100/1000 Mbps Ethernet	1 x 10/100/1000/2500 Mbps Ethernet 1 x 10/100/1000 Mbps Ethernet	2 x 10/100/1000 Mbps Ethernet
Audio			HD Codec	HD Codec	HD Codec
Hardware Monitoring			Yes	Yes	Yes
SMBus			Yes	Yes	Yes
Expansion Interface			3 x PCIe x16 3 x PCIe x8 1 x M.2 key M 2280	2 x PCIe x16 3 x PCIe x4 2 x PCI 1 x PCIe Mini Card slot	2 x PCIe x16 3 x PCIe x4 1 x PCIe x4 w/PCIe x1 signal 1 x PCI
Power Management			ACPI	ACPI	ACPI
Battery			Lithium	Lithium	Lithium
Operating Temperature			0°C to +60°C (+32°F to +140°F)	0°C to +60°C (+32°F to +140°F)	0°C to +60°C (+32°F to +140°F)
Relative Humidity			10% to 95%, non-condensing	10% to 95%, non-condensing	10% to 95%, non-condensing
EMI Compliance			CE	CE	CE

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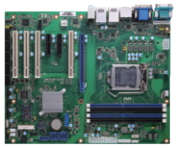
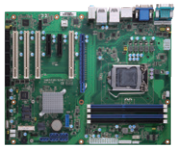
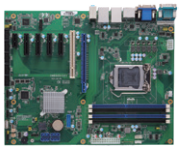


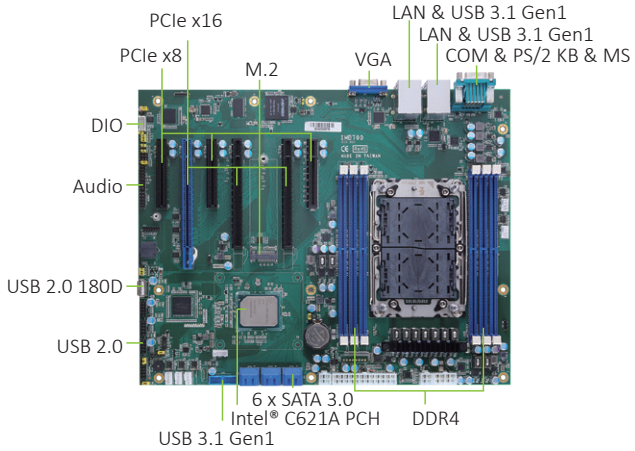



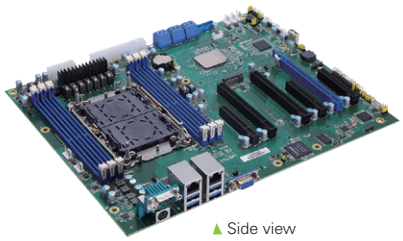
Features\Models			IMB525R	IMB524R	IMB523R	IMB520R
Form Factor			ATX	ATX	ATX	ATX
CPU Level			9th/8th gen Intel® Core™ i7/i5/i3, Xeon® E, Pentium® or Celeron®	9th/8th gen Intel® Core™ i7/i5/i3, Pentium® or Celeron®	9th/8th gen Intel® Core™ i7/i5/i3, Pentium® or Celeron®	9th/8th gen Intel® Core™ i7/i5/i3, Pentium® or Celeron®
CPU Socket			LGA1151	LGA1151	LGA1151	LGA1151
Core Logic Chipset			Intel® C246	Intel® H310	Intel® Q370	Intel® Q370
Memory Type			DDR4-2666/2400	DDR4-2666/2400	DDR4-2666/2400	DDR4-2400/2666
Max. DRAM Capacity			128GB	64GB	128GB	128GB
Cache RAM Capacity			Integrated in CPU	Integrated in CPU	Integrated in CPU	Integrated in CPU
BIOS			AMI	AMI	AMI	AMI
Watchdog Timer			255 levels, 1 to 255 sec.	255 levels, 1 to 255 sec.	255 levels, 1 to 255 sec.	255 levels, 1 to 255 sec.
Digital I/O			8-channel programmable	8-channel programmable	8-channel programmable	8-channel programmable
I/O	SATA		5 x SATA-600	4 x SATA-600	5 x SATA-600	4 x SATA-600
	Serial	COM 1	RS-232/422/485	RS-232/422/485	RS-232/422/485	RS-232/422/485
		COM 2	RS-232/422/485	RS-232/422/485	RS-232/422/485	RS-232/422/485
		COM 3	RS-232	RS-232	RS-232	RS-232
		COM 4	RS-232	RS-232	RS-232	RS-232
		COM 5	RS-232	RS-232	RS-232	RS-232
		COM 6	RS-232	RS-232	RS-232	RS-232
	USB		2 x USB 3.1 Gen2 4 x USB 3.1 Gen1 7 x USB 2.0	4 x USB 3.1 Gen1 5 x USB 2.0	2 x USB 3.1 Gen2 4 x USB 3.1 Gen1 7 x USB 2.0	2 x USB 3.1 Gen2 4 x USB 3.1 Gen1 7 x USB 2.0
SIM Card Slot			Yes	Yes	Yes	N/A
Display			1 x VGA 1 x DVI-D 1 x HDMI 1 x DisplayPort++	1 x VGA 1 x DVI-D 1 x HDMI 1 x DisplayPort++	1 x VGA 1 x DVI-D 1 x HDMI 1 x DisplayPort++	1 x VGA 1 x DVI-D 1 x HDMI 1 x DisplayPort++
Ethernet			2 x 10/100/1000 Mbps Ethernet	2 x 10/100/1000 Mbps Ethernet	2 x 10/100/1000 Mbps Ethernet	2 x 10/100/1000 Mbps Ethernet
Audio			HD Codec	HD Codec	HD Codec	HD Codec
Hardware Monitoring			Yes	Yes	Yes	Yes
SMBus			Yes	Yes	Yes	Yes
Expansion Interface			1 x PCIe x16, 2 x PCIe x4, 4 x PCI, 1 x PCIe Mini Card	1 x PCIe x16, 2 x PCIe x 1 w/PCIe x1 signal 4 x PCI, 1 x PCIe Mini Card	1 x PCIe x16, 2 x PCIe x4, 4 x PCI, 1 x PCIe Mini Card	1 x PCIe x16, 4 x PCIe x4, 1 x PCIe x1, 1 x PCI
Power Management			ACPI	ACPI	ACPI	ACPI
Battery			Lithium	Lithium	Lithium	Lithium
Operating Temperature			0°C to +60°C (+32°F to +140°F)	0°C to +60°C (+32°F to +140°F)	0°C to +60°C (+32°F to +140°F)	0°C to +60°C (+32°F to +140°F)
Relative Humidity			10% to 95%, non-condensing	10% to 95%, non-condensing	10% to 95%, non-condensing	10% to 95%, non-condensing
EMI Compliance			CE	CE	CE	CE

* All specifications and photos are subject to change without notice.

IMB700

ATX Motherboard with LGA4189 Socket 3rd Gen Intel® Xeon® Scalable Processors, Intel® C621A, 3 PCIe x16, 3 PCIe x8, VGA, and NVMe





▲ Side view

Features

- 3rd gen Intel® Xeon® Scalable processors (Ice Lake-SP)
- Six 288-pin DDR4-3200 RDIMM for up to 384GB of memory
- 3 PCIe x1 and 3 PCIe x8
- Supports M.2 Key M
- TPM 2.0 supported (optional)
- Supports multiple graphic cards
- Supports internal USB dongle

Specifications

Core System	
CPU	3rd gen Intel® Xeon® scalable processors (TDP up to 270W)
System Memory	6 x DDR4-3200 R-DIMM ECC memory, up to 384GB
Chipset	Intel® C621A
BIOS	AMI
SSD	M.2 key M 2280 with PCIe x4 signal
Watchdog Timer	255 levels, 1 to 255 sec.
Expansion Interface	Slot1: PCIe x8 Slot2: PCIe x16 (Gen4) Slot3: M.2 key M 2280 (signal: x4) Slot4: PCIe x16 (Gen4) Slot5: PCIe x8 slot (signal: x0 or x8) Slot6: PCIe x16 (signal: x16 or x8) Slot7: PCIe x8
Display	
Chipset	AST2510
Memory Size	N/A
Display Interface	1 x VGA

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I/O	
SATA	6 x SATA-600 with RAID 0/1/5/10
Hardware Monitoring	Detect CPU/system temperature, voltage and supports Smart fan control
Ethernet	2 x 10/100/1000 Mbps Ethernet (Intel® i210-AT)
Audio	HD Codec audio as MIC-in/Line-in/Line-out/Speaker-out with audio kit AX93242 (optional)
USB	4 x USB 3.1 Gen1 (rear I/O) 2 x USB 3.1 Gen1 (internal box header) 6 x USB 2.0 (internal box header) 1 x USB 2.0 (180D TypeA)
Serial	1 x RS-232/422/485 (rear I/O)
PS/2 Combo Port	1 x PS/2 keyboard and mouse
TPM	TPM 2.0 module (optional)
SMBus	Yes
Digital I/O	8-channel programmable
Mechanical and Environmental	
Dimensions	305 x 244 mm
Board Thickness	1.6 mm
Operating Temperature	0°C to +60°C (+32°F to +140°F), depends on cooler solution
Humidity	10% to 95% relative humidity, non-condensing

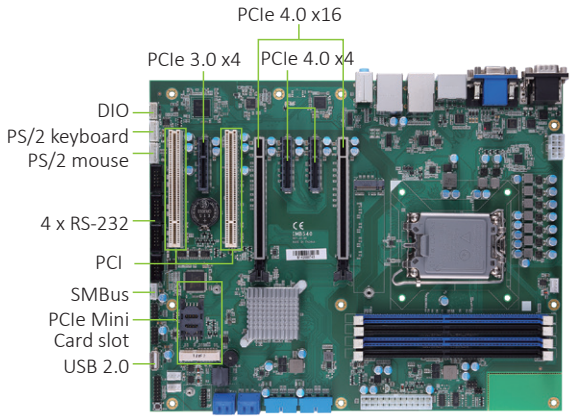
Ordering Information

Standard	
IMB700-S: ATX LGA4189 Ice Lake SP single (P/N: E38F700101)	ATX Motherboard with LGA4189 socket 3rd gen Intel® Xeon® scalable processors, Intel® C621A, 3 PCIe x16, 3 PCIe x8, VGA, and NVMe
Optional	
5938A808010E	2 x USB 2.0 cable with bracket, P=2.54 mm, L=190 mm
5938A808020E	2 x USB 2.0 cable with bracket, P=2.54 mm, L=400 mm
83935151000E	TPM 2.0 module (AX93515)
E393242100	AX93242-RC HD audio converter kit
5948C122800E	2 x USB 3.1 Gen1 cable with bracket, L=400 mm
593826A0000E	SATA signal cable/red, L=500 mm
713WFB30000E	IMB700_CL_LGA4189_4U_CPU above 205W
713JYC1M000E	IMB700_CL_LGA4189_2U_CPU under 205W

* All specifications and photos are subject to change without notice.

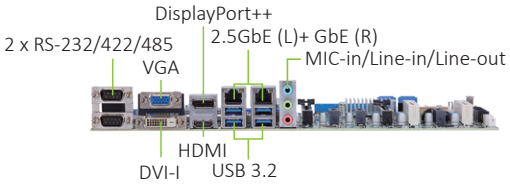
IMB540 NEW

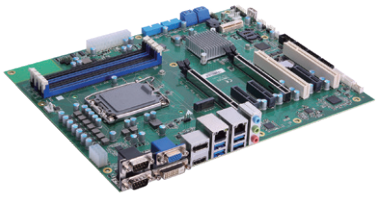
ATX Motherboard with LGA1700 Socket 12th Gen Intel® Core™ i9/i7/i5/i3, Pentium® or Celeron® Processor, Intel® R680E, USB 3.2 Gen2, SATA 3.0, GbE and 2.5GbE LAN, VGA, DisplayPort++, DVI-D, and HDMI



Features

- LGA1700 socket 12th gen Intel® Core™ i9/i7/i5/i3, Pentium® or Celeron® processor (Alder Lake-S)
- Four 288-pin DDR4-3200 ECC/non-ECC un-buffered Long-DIMM, up to 128GB
- DisplayPort++, VGA, DVI-D and HDMI with quad view supported
- Supports M.2 Key M 2280
- 4 USB 3.2 Gen2, 4 USB 3.2 Gen 2x1 and 2 Dual USB 3.2 Gen 1x1
- TPM 2.0 supported (optional)





▲ Side view

Specifications

Core System	
CPU	LGA1700 socket 12th gen Intel® Core™ i9/i7/i5/i3, Pentium® or Celeron® processor (Up to 125W)
System Memory	4 x 288-pin DDR4-3200 ECC/Non-ECC un-buffered Long-DIMM, up to 128GB (ECC memory is available for Intel® R680E only)
Chipset	Intel® R680E
BIOS	AMI BIOS
SSD	M.2 key M 2280 in support of PCIe x4 via CPU
Watchdog Timer	255 levels, 1 to 255 sec.
Expansion Interface	2 x PCIe Gen4 x16 slot (signal: x16 + x0 or x8 + x8) 3 x PCIe x4 slot open ended (1 x Gen3 + 2 x Gen4) (signal by PCH) 1 x PCIe Mini Card slot (signal: PCIe x1) 2 x 32-bit PCI slot, default clock is 33 Mhz, PCI clock could be selected between 33 or 66 MHz by jumper (signal by PCH)
Battery	Lithium 3 V/ 220 mAH
Display	
Chipset	Intel® UHD Graphics
Memory Size	Share system memory
Display Interface	1 x VGA . Up to 1920x1200 @60Hz 1 x HDMI 1.4b Up to 4096x2160 @24Hz 1 x Displayport++ (DP 1.2) Up to 4096x2304 @60Hz 1 x DVI-D Up to 1920×1200 @60Hz

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I/O	
SATA	4 x SATA-600 with RAID 0/1/5/10
Hardware Monitoring	Detect CPU/system temperature, voltage and supports smart fan control
Ethernet	1 x 10/100/1000/2500 Mbps with Intel® I225-LM; supports Wake-on-LAN, PXE Boot ROM, TSN, and Intel® AMT with Intel vPro® 1 x 10/100/1000 Mbps with Intel® I211-AT; supports Wake-on-LAN, PXE Boot ROM
Audio	HD Codec audio as MIC-in/Line-in/Line-out
USB	4 x USB 3.2 Gen 2x1 (10Gbps) (Rear I/O) 2 x Dual USB 3.2 Gen 1x1 (5Gbps) (Internal, Box Header) 4 x USB 2.0 (Internal, Pin Header) 1 x USB 2.0 (Internal, 180D type A)
Serial	4 x RS-232 (internal box header) 2 x RS-232/422/485 (rear I/O)
PS/2 Combo Port	1 x PS/2 keyboard (internal box header) 1 x PS/2 mouse (internal box header)
TPM	TPM 2.0 (optional)
SMBus	Yes
Digital I/O	8-channel programmable
Mechanical and Environmental	
Dimensions	305 x 244 mm
Board Thickness	1.6 mm
Operating Temperature	0°C to +60°C (+32°F to +140°F)
Humidity	10% to 95% relative humidity, non-condensing

Ordering Information

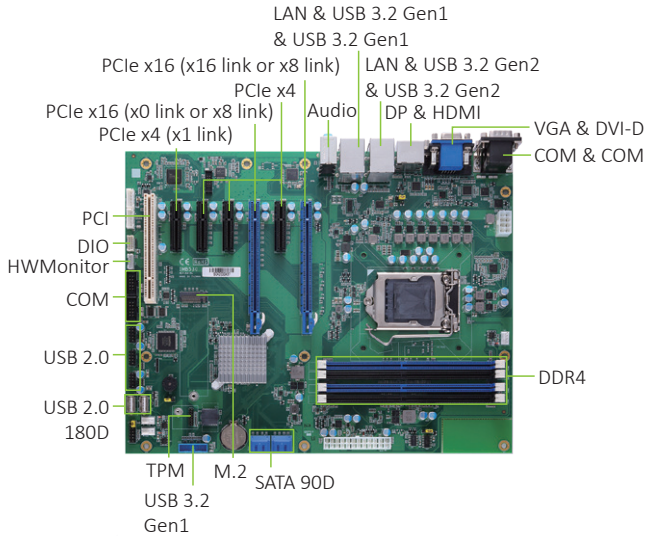
Standard	
IMB540-S: ATX board, 12th Gen, R680E (P/N: E38F540100)	ATX motherboard with LGA1700 socket 12th gen Intel® Core™ i9/i7/i5/i3, Pentium® or Celeron® processor, Intel® R680E, USB 3.2 Gen2 x 1, SATA 3.0, GbE and 2.5GbE LAN, VGA, DisplayPort++, DVI-D, and HDM (Single Packing)
IMB540-S: ATX board, 12th Gen, R680E (P/N: E38F540101)	ATX motherboard with LGA1700 socket 12th gen Intel® Core™ i9/i7/i5/i3, Pentium® or Celeron® processor, Intel® R680E, USB 3.2 Gen2 x 1, SATA 3.0, GbE and 2.5GbE LAN, VGA, DisplayPort++, DVI-D, and HDMI (Bulk Packing)
Optional	
5938A808010E	2 x USB 2.0 cable with bracket, P=2.54 mm, L=190 mm
5938A808020E	2 x USB 2.0 cable with bracket, P=2.54 mm, L=400 mm
5948C122800E	2 x USB 3.2 Gen1 cable with bracket, L=400 mm
59380000290E	PS/2 keyboard & mouse cable with bracket
593826A0000E	SATA signal cable/red, L=500 mm
59384500100E	Audio cable with bracket, P=2.0 mm, L=450 mm
59380402010E	1 x COM port cable with bracket, P=2.54 mm, L=300 mm
59380703000E	2 x COM port cable with bracket, P=2.54 mm, L=300 mm
83935151000E	TPM 2.0 module (AX93515)
713000000500	CPU heatsink for 1U chassis (AX61135TM)
711000000500	CPU cooler for 2U, 4U, and wall mount chassis

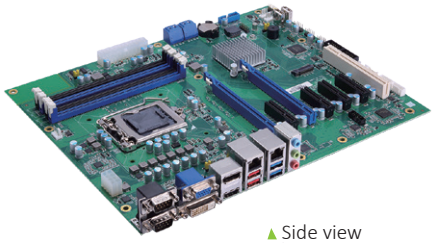
*Please refer to the user's manual for the system CPU support list.

* All specifications and photos are subject to change without notice.

IMB530

ATX Motherboard with LGA1200 Socket 10th Gen Intel® Core™ i9/i7/i5/i3, Xeon® E Processor, Intel® W480E, ECC DDR4, USB 3.2 Gen2, NVMe, Dual LAN, VGA, DisplayPort++, DVI-D, and HDMI





▲ Side view

Features

- LGA1200 socket 10th gen Intel® Core™ i9/i7/i5/i3, Xeon® E, Pentium® or Celeron® processor (Comet Lake)
- Four 288-pin DDR4-2933 ECC/non-ECC un-buffered Long-DIMM, up to 128GB
- DisplayPort++, VGA, DVI-D and HDMI with triple-view supported
- Supports M.2 Key M 2280
- 2 USB 3.2 Gen2 and 4 USB 3.2 Gen1
- TPM 2.0 supported (optional)

Specifications

Core System	
CPU	LGA1200 socket 10th gen Intel® Core™ i9/i7/i5/i3, Xeon® E, Pentium® or Celeron® processor (up to 125W)*
System Memory	4 x 288-pin DDR4-2933 ECC/non-ECC un-buffered Long-DIMM, up to 128GB (ECC memory is available for Intel® Xeon® and Core™ i3 processors)
Chipset	Intel® W480E
BIOS	AMI BIOS
SSD	M.2 Key M 2280 (signal: PCIe x4/SATA)
Watchdog Timer	255 levels, 1 to 255 sec.
Expansion Interface	1 x PCIe x16 slot (signal: x16 or x8) 1 x PCIe x16 slot (signal: x0 or x8) 3 x PCIe x4 slot open ended 1 x PCIe x4 slot open ended (signal: x1) 1 x PCI
Battery	Lithium 3 V/ 220 mAH
Display	
Chipset	Intel® HD Graphic
Memory Size	Share system memory
Display Interface	1 x VGA 1 x DVI-D 1 x HDMI 1 x DisplayPort++

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I/O	
SATA	4 x SATA-600 with RAID 0/1/5/10
Hardware Monitoring	Detect CPU/system temperature, voltage and supports smart fan control
Ethernet	1 x 10/100/1000 Mbps Ethernet with Intel® i219-LM; supports Wake-on-LAN, PXE Boot ROM, iAMT 1 x 10/100/1000 Mbps Ethernet with Intel® i211-AT; supports Wake-on-LAN, PXE Boot ROM
Audio	HD Codec audio as MIC-in/Line-in/Line-out
USB	2 x USB 3.2 Gen2 (rear I/O) 2 x USB 3.2 Gen1 (rear I/O) 2 x USB 3.2 Gen1 (internal, box header) 6 x USB 2.0 (internal, pin header) 2 x USB 2.0 (internal, 180D type A)
Serial	2 x RS-232 (Internal box header) 2 x RS-232/422/485 (rear I/O)
PS/2 Combo Port	1 x PS/2 keyboard (internal box header)
TPM	TPM 2.0 (optional)
SMBus	Yes
Digital I/O	8-channel programmable
Mechanical and Environmental	
Dimensions	305 x 244 mm
Board Thickness	1.6 mm
Operating Temperature	0°C to +60°C (+32°F to +140°F)
Humidity	10% to 95% relative humidity, non-condensing

Ordering Information

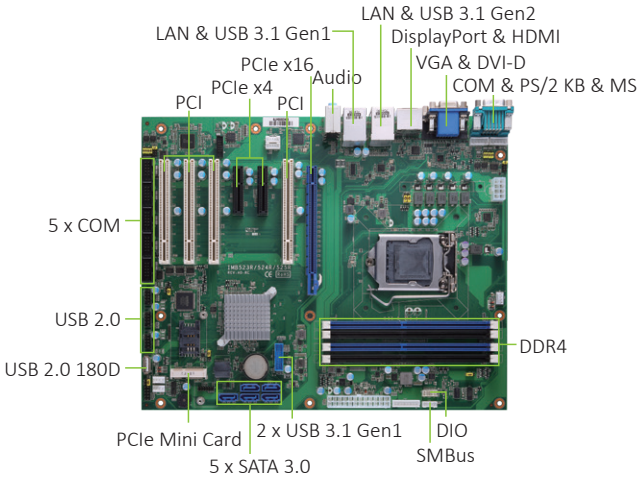
Standard	
IMB530-S: ATX board, 10th Gen, W480E (P/N: E38F530101)	ATX motherboard with LGA1200 socket 10th gen Intel® Core™ i9/i7/i5/i3, Xeon® E, Pentium® or Celeron® processor, Intel® W480E, USB 3.2 Gen2, SATA 3.0, GbE LAN, VGA, DisplayPort++, DVI-D, and HDMI
Optional	
5938A808010E	2 x USB 2.0 cable with bracket, P=2.54 mm, L=190 mm
5938A808020E	2 x USB 2.0 cable with bracket, P=2.54 mm, L=400 mm
5948C122800E	2 x USB 3.2 Gen1 cable with bracket, L=400 mm
59380000290E	PS/2 keyboard & mouse cable with bracket
593826A0000E	SATA signal cable/red, L=500 mm
59384500100E	Audio cable with bracket, P=2.0 mm, L=450 mm
59380402010E	1 x COM port cable with bracket, P=2.54 mm, L=300 mm
59380703000E	2 x COM port cable with bracket, P=2.54 mm, L=300 mm
83935151000E	TPM 2.0 module (AX93515)
5076E510000E	CPU heatsink for 1U chassis (AX61135TM)
50761222000E	CPU cooler for 2U, 4U, and wall mount chassis

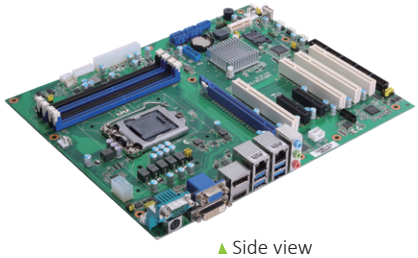
*Please refer to the user's manual for the system CPU support list.

* All specifications and photos are subject to change without notice.

IMB525R

ATX Motherboard with LGA1151 Socket 9th/8th Gen Intel® Core™, Xeon® E Processor, Intel® C246, USB 3.1 Gen2, SATA 3.0, PCI Express Mini Card Slot, VGA, DisplayPort++, DVI-D, and HDMI





▲ Side view

Features

- LGA1151 socket 9th/8th gen Intel® Core™ i7/i5/i3, Xeon® E, Pentium® or Celeron® processor (Coffee Lake Refresh)
- Four 288-pin DDR4-2666/2400 ECC DIMM for up to 128GB of memory
- DisplayPort, DVI-D, HDMI and VGA with triple-view supported
- 5 SATA-600 with RAID 0/1/5/10
- 1 PCI Express Mini Card slot
- 2 USB 3.1 Gen2 and four USB 3.1 Gen1
- TPM 2.0 supported (optional)

Specifications

Core System	
CPU	LGA1151 socket 9th/8th gen Intel® Core™ i7/i5/i3, Xeon® E, Pentium® or Celeron® processor (up to 95W)
System Memory	4 x 288-pin DDR4-2666/2400 ECC DIMM, up to 128GB (Intel® Core™ i7/i5 only support non-ECC)
Chipset	Intel® C246
BIOS	AMI BIOS
Watchdog Timer	255 levels, 1 to 255 sec.
Expansion Interface	1 x PCIe x16 slot 2 x PCIe x4 slot 4 x PCI slot 1 x PCIe Mini Card slot with PCIe x1 & USB 2.0 & SATA
Battery	Lithium 3 V/ 220 mAH
Display	
Chipset	Intel® HD Graphic
Memory Size	Share system memory
Display Interface	1 x VGA 1 x DVI-D 1 x HDMI 1 x DisplayPort++
I/O	
SATA	5 x SATA-600 with RAID 0/1/5/10
Hardware Monitoring	Detect CPU/system temperature, voltage and supports Smart fan control
Ethernet	1x 10/100/1000 Mbps Ethernet with Intel® i219-LM; supports Wake-on-LAN, PXE Boot ROM, iAMT 1 x 10/100/1000 Mbps Ethernet with Intel® i211-AT; supports Wake-on-LAN, PXE Boot ROM
Audio	HD Codec audio as MIC-in/Line-in/Line-out with Realtek ALC662

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I/O	
USB	2 x USB 3.1 Gen2 (rear I/O) 4 x USB 3.1 Gen1 (rear I/O, internal box header) 7 x USB 2.0 (pin header, 180D type A)
Serial	4 x RS-232 (Internal box header) 2 x RS-232/422/485 (COM 1: rear I/O; COM 2: internal box header)
PS/2 Combo Port	1 x PS/2 keyboard and mouse
TPM	TPM 2.0 (optional)
SMBus	Yes
Digital I/O	8-channel programmable
Mechanical and Environmental	
Dimensions	305 x 244 mm
Board Thickness	1.6 mm
Operating Temperature	0°C to +60°C (+32°F to +140°F)
Humidity	10% to 95% relative humidity, non-condensing

Ordering Information

Standard	
IMB525RVDHGGA-C246 (P/N: E38F525104)	ATX motherboard with LGA1151 socket 9th/8th gen Intel® Core™ i7/i5/i3, Xeon® E, Pentium® or Celeron® processor, Intel® C246, USB 3.1 Gen2, SATA 3.0, 2 GbE LAN, VGA, DisplayPort++, DVI-D, and HDMI
Optional	
5938A808010E	2 x USB 2.0 cable with bracket, P=2.54 mm, L=190 mm
5938A808020E	2 x USB 2.0 cable with bracket, P=2.54 mm, L=400 mm
5948C122800E	2 x USB 3.1 Gen1 cable with bracket, L=400 mm
59380000290E	PS/2 keyboard & mouse cable with bracket
593826A0000E	SATA signal cable/red, L=500 mm
59384500100E	Audio cable with bracket, P=2.0 mm, L=450 mm
59380402010E	1 x COM port cable with bracket, P=2.54 mm, L=300 mm
59380703000E	2 x COM port cable with bracket, P=2.54 mm, L=300 mm
83935151000E	TPM 2.0 module (AX93515)
5076E510000E	CPU heatsink for 1U chassis (AX61135TM)
50761222000E	CPU cooler for 2U, 4U, and wall mount chassis

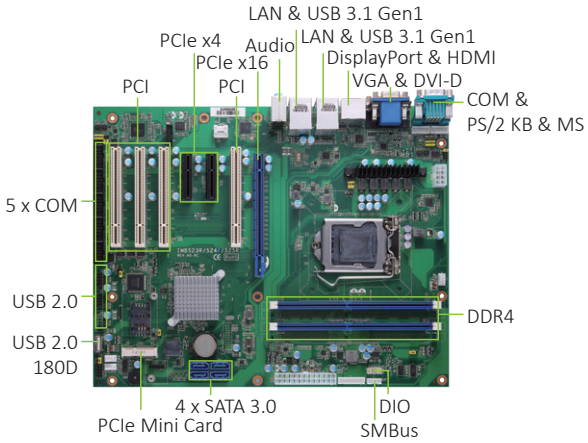
Processor List

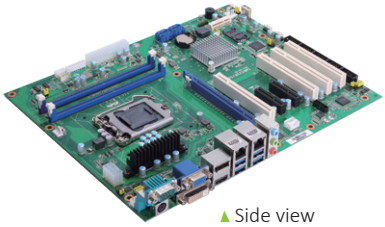
CPU	Speed	Cache	Cores	TDP
Intel® Core™ i7-9700TE Processor	1.8 GHz	12 MB	8	35 W
Intel® Core™ i7-8700K Processor	3.7 GHz	12 MB	6	95 W
Intel® Core™ i7-8700 Processor	3.2 GHz	12 MB	6	65 W
Intel® Core™ i7-8700T Processor	2.4 GHz	12 MB	6	65 W
Intel® Core™ i5-9500E Processor	3.0 GHz	9 MB	6	65 W
Intel® Core™ i5-9500TE Processor	2.2 GHz	9 MB	6	35 W
Intel® Core™ i5-9400 Processor	2.9 GHz	9 MB	6	65 W
Intel® Core™ i5-8400 Processor	2.8 GHz	9 MB	6	65 W
Intel® Core™ i5-8500T Processor	2.1 GHz	9 MB	6	35 W
Intel® Core™ i3-9100 Processor	3.6 GHz	6 MB	4	65 W
Intel® Core™ i3-9100E Processor	3.1 GHz	6 MB	4	65 W
Intel® Core™ i3-9100TE Processor	2.2 GHz	6 MB	4	35 W
Intel® Core™ i3-8100 Processor	3.6 GHz	6 MB	4	65 W
Intel® Core™ i3-8100T Processor	3.1 GHz	6 MB	4	35 W
Intel® Xeon® E-2278GE Processor	3.3 GHz	16 MB	8	80 W
Intel® Pentium® Gold G5400T Processor	3.1 GHz	4 MB	2	35 W
Intel® Celeron® G4900T Processor	2.9 GHz	2 MB	2	35 W

* All specifications and photos are subject to change without notice.

IMB524R

ATX Motherboard with LGA1151 Socket 9th/8th Gen Intel® Core™ Processor, Intel® H310, USB 3.1 Gen1, SATA 3.0, PCI Express Mini Card Slot, VGA, DisplayPort++, DVI-D, and HDMI





▲ Side view

Features

- LGA1151 socket 9th/8th gen Intel® Core™ i7/i5/i3, Pentium® & Celeron® processor (Coffee Lake Refresh)
- Two 288-pin DDR4-2666/2400 DIMM for up to 64GB of memory
- DisplayPort++, DVI-D, HDMI and VGA with dual-view supported
- 4 SATA-600
- 1 PCI Express Mini Card slot
- 4 USB 3.1 Gen1 and 5 USB 2.0
- TPM 2.0 supported (optional)

Specifications

Core System	
CPU	LGA1151 socket 9th/8th gen Intel® Core™ i7/i5/i3, Pentium® & Celeron® processor (up to 95W)
System Memory	2 x 288-pin DDR4-2666/2400 DIMM, up to 64GB
Chipset	Intel® H310
BIOS	AMI BIOS
Watchdog Timer	255 levels, 1 to 255 sec.
Expansion Interface	1 x PCIe x16 slot 2 x PCIe x4 slot (2 PCIe x1 signal) 4 x PCI slot 1 x PCIe Mini Card slot with PCIe x1 & USB 2.0
Battery	Lithium 3 V/ 220 mAH
Display	
Chipset	Intel® HD Graphic
Memory Size	Share system memory
Display Interface	1 x VGA 1 x DVI-D 1 x HDMI 1 x DisplayPort++
I/O	
SATA	4 x SATA-600
Hardware Monitoring	Detect CPU/system temperature, voltage and supports Smart fan control
Ethernet	1 x 10/100/1000 Mbps Ethernet with Intel® i219-LM; supports Wake-on-LAN, PXE Boot ROM 1 x 10/100/1000 Mbps Ethernet with Intel® i211-AT; supports Wake-on-LAN, PXE Boot ROM
Audio	HD Codec audio as MIC-in/Line-in/Line-out with Realtek ALC662

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I/O	
USB	4 x USB 3.1 Gen1 (rear I/O) 5 x USB 2.0 (pin header, 180D type A)
Serial	4 x RS-232 (Internal box header) 2 x RS-232/422/485 (COM 1: rear I/O; COM 2: internal box header)
PS/2 Combo Port	1 x PS/2 keyboard and mouse
TPM	TPM 2.0 (optional)
SMBus	Yes
Digital I/O	8-channel programmable
Mechanical and Environmental	
Dimensions	305 x 244 mm
Board Thickness	1.6 mm
Operating Temperature	0°C to +60°C (+32°F to +140°F)
Humidity	10% to 95% relative humidity, non-condensing

Ordering Information

Standard	
IMB524RVDHGGA-H310 (P/N: E38F524103)	ATX motherboard with LGA1151 socket 9th/8th gen Intel® Core™ i7/i5/i3, Pentium® & Celeron® processor, Intel® H310, USB 3.1 Gen1, SATA 3.0, 2 GbE LAN, VGA, DisplayPort, DVI-D and HDMI
Optional	
5938A808010E	2 x USB 2.0 cable with bracket, P=2.54 mm, L=190 mm
5938A808020E	2 x USB 2.0 cable with bracket, P=2.54 mm, L=400 mm
5948C122800E	2 x USB 3.1 Gen1 cable with bracket, L=400 mm
59380000290E	PS/2 keyboard & mouse cable with bracket
593826A0000E	SATA signal cable/red, L=500 mm
59384500100E	Audio cable with bracket, P=2.0 mm, L=450 mm
59380402010E	1 x COM port cable with bracket, P=2.54 mm, L=300 mm
59380703000E	2 x COM port cable with bracket, P=2.54 mm, L=300 mm
83935151000E	TPM 2.0 module (AX93515)
5076E510000E	CPU heatsink for 1U chassis (AX61135TM)
50761222000E	CPU cooler for 2U, 4U, and wall mount chassis

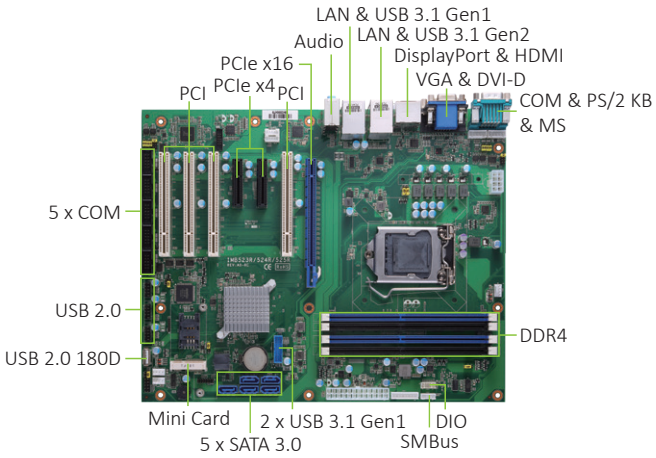
Processor List

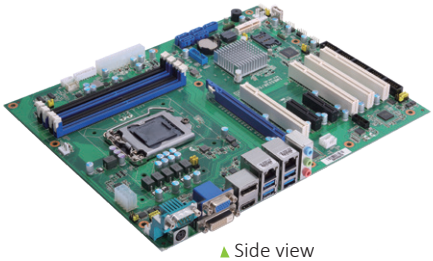
CPU	Speed	Cache	Cores	TDP
Intel® Core™ i7-9700TE Processor	1.8 GHz	12 MB	8	35 W
Intel® Core™ i7-8700K Processor	3.7 GHz	12 MB	6	95 W
Intel® Core™ i7-8700 Processor	3.2 GHz	12 MB	6	65 W
Intel® Core™ i7-8700T Processor	2.4 GHz	12 MB	6	65 W
Intel® Core™ i5-9500TE Processor	2.2 GHz	9 MB	6	35 W
Intel® Core™ i5-9500E Processor	3.0 GHz	9 MB	6	65 W
Intel® Core™ i5-9400 Processor	2.9 GHz	9 MB	6	65 W
Intel® Core™ i5-8400 Processor	2.8 GHz	9 MB	6	65 W
Intel® Core™ i3-9100 Processor	3.6 GHz	6 MB	4	65 W
Intel® Core™ i3-9100E Processor	3.1 GHz	6 MB	4	65 W
Intel® Core™ i3-9100TE Processor	2.2 GHz	6 MB	4	35 W
Intel® Core™ i3-8100 Processor	3.6 GHz	6 MB	4	65 W
Intel® Core™ i3-8100T Processor	3.1 GHz	6 MB	4	35 W
Intel® Pentium® Gold G5400T Processor	3.1 GHz	4 MB	2	35 W
Intel® Celeron® G4900T Processor	2.9 GHz	2 MB	2	35 W

* All specifications and photos are subject to change without notice.

IMB523R

ATX Motherboard with LGA1151 Socket 9th/8th Gen Intel® Core™ Processor, Intel® Q370, USB 3.1 Gen2, SATA 3.0, PCI Express Mini Card Slot, VGA, DisplayPort++, DVI-D, and HDMI





▲ Side view

Features

- LGA1151 socket 9th/8th gen Intel® Core™ i7/i5/i3, Pentium® & Celeron® processor (Coffee Lake Refresh)
- Four 288-pin DDR4-2666/2400 DIMM for up to 128GB of memory
- DisplayPort, DVI-D, HDMI and VGA with triple-view supported
- 5 SATA-600 with RAID 0/1/5/10
- 1 PCI Express Mini Card slot
- Two USB 3.1 Gen2 and four USB 3.1 Gen1
- TPM 2.0 supported (optional)

Specifications

Core System	
CPU	LGA1151 socket 9th/8th gen Intel® Core™ i7/i5/i3, Pentium® & Celeron® processor (up to 95W)
System Memory	4 x 288-pin DDR4-2666/2400 DIMM, up to 128GB
Chipset	Intel® Q370
BIOS	AMI BIOS
Watchdog Timer	255 levels, 1 to 255 sec.
Expansion Interface	1 x PCIe x16 slot 2 x PCIe x4 slot 4 x PCI slot 1 x PCIe Mini Card slot with PCIe x1 & USB 2.0 & SATA
Battery	Lithium 3 V/ 220 mAH
Display	
Chipset	Intel® HD Graphic
Memory Size	Share system memory
Display Interface	1 x VGA 1 x DVI-D 1 x HDMI 1 x DisplayPort++
I/O	
SATA	5 x SATA-600 with RAID 0/1/5/10
Hardware Monitoring	Detect CPU/system temperature, voltage and supports Smart fan control
Ethernet	1 x 10/100/1000 Mbps Ethernet with Intel® i219-LM; supports Wake-on-LAN, PXE Boot ROM, iAMT 1 x 10/100/1000 Mbps Ethernet with Intel® i211-AT; supports Wake-on-LAN, PXE Boot ROM
Audio	HD Codec audio as MIC-in/Line-in/Line-out with Realtek ALC662

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I/O	
USB	2 x USB 3.1 Gen2 (rear IO) 4 x USB 3.1 Gen1 (rear IO, internal box header) 7 x USB 2.0 (pin header, 180D type A)
Serial	4 x RS-232 (Internal box header) 2 x RS-232/422/485 (COM 1: rear I/O; COM 2: internal box header)
PS/2 Combo Port	1 x PS/2 keyboard and mouse
TPM	TPM 2.0 (optional)
SMBus	Yes
Digital I/O	8-channel programmable
Mechanical and Environmental	
Dimensions	305 x 244 mm
Board Thickness	1.6 mm
Operating Temperature	0°C to +60°C (+32°F to +140°F)
Humidity	10% to 95% relative humidity, non-condensing

Ordering Information

Standard	
IMB523RVDHGGA-Q370 (P/N: E38F523103)	ATX motherboard with LGA1151 socket 9th/8th gen Intel® Core™ i7/i5/i3, Pentium® & Celeron® processor, Intel® Q370, USB 3.1 Gen2, SATA 3.0, 2 GbE LANs, VGA, DisplayPort++, DVI-D and HDMI
Optional	
5938A808010E	2 x USB 2.0 cable with bracket, P=2.54 mm, L=190 mm
5938A808020E	2 x USB 2.0 cable with bracket, P=2.54 mm, L=400 mm
5948C122800E	2 x USB 3.1 Gen1 cable with bracket, L=400 mm
59380000290E	PS/2 keyboard & mouse cable with bracket
593826A0000E	SATA signal cable/red, L=500 mm
59384500100E	Audio cable with bracket, P=2.0 mm, L=450 mm
59380402010E	1 x COM port cable with bracket, P=2.54 mm, L=300 mm
59380703000E	2 x COM port cable with bracket, P=2.54 mm, L=300 mm
83935151000E	TPM 2.0 module (AX93515)
5076E510000E	CPU heatsink for 1U chassis (AX61135TM)
50761222000E	CPU cooler for 2U, 4U, and wall mount chassis

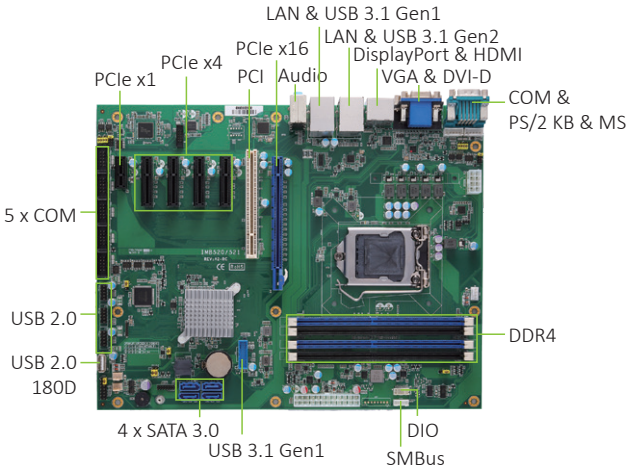
Processor List

CPU	Speed	Cache	Cores	TDP
Intel® Core™ i7-9700TE Processor	1.8 GHz	12 MB	8	35 W
Intel® Core™ i7-8700K Processor	3.7 GHz	12 MB	6	95 W
Intel® Core™ i7-8700 Processor	3.2 GHz	12 MB	6	65 W
Intel® Core™ i7-8700T Processor	2.4 GHz	12 MB	6	65 W
Intel® Core™ i5-9500E Processor	3.0 GHz	9 MB	6	65 W
Intel® Core™ i5-9500TE Processor	2.2 GHz	9 MB	6	35 W
Intel® Core™ i5-9400 Processor	2.9 GHz	9 MB	6	65 W
Intel® Core™ i5-8400 Processor	2.8 GHz	9 MB	6	65 W
Intel® Core™ i5-8500T Processor	2.1 GHz	9 MB	6	35 W
Intel® Core™ i3-9100 Processor	3.6 GHz	6 MB	4	65 W
Intel® Core™ i3-9100E Processor	3.1 GHz	6 MB	4	65 W
Intel® Core™ i3-9100TE Processor	2.2 GHz	6 MB	4	35 W
Intel® Core™ i3-8100 Processor	3.6 GHz	6 MB	4	65 W
Intel® Core™ i3-8100T Processor	3.1 GHz	6 MB	4	35 W
Intel® Pentium® Gold G5400T Processor	3.1 GHz	4 MB	2	35 W
Intel® Celeron® G4900T Processor	2.9 GHz	2 MB	2	35 W

* All specifications and photos are subject to change without notice.

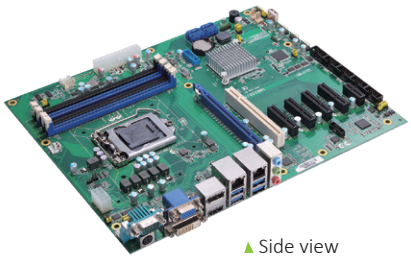
IMB520R

ATX Motherboard with LGA1151 Socket 9th/8th Gen Intel® Core™ Processor, Intel® Q370, USB 3.1 Gen2, SATA 3.0, Dual LAN, VGA, DisplayPort++, DVI-D, and HDMI



Features

- LGA1151 socket 9th/8th gen Intel® Core™ i7/i5/i3, Pentium® & Celeron® processor (Coffee Lake Refresh)
- Four 288-pin DDR4-2666/2400 DIMM for up to 128GB of memory
- VGA, DisplayPort++, DVI-D and HDMI with triple-view supported
- 4 SATA-600 with RAID 0/1/5/10
- Two USB 3.1 Gen2 and four USB 3.1 Gen1
- TPM 2.0 supported (optional)



▲ Side view

Specifications

Core System	
CPU	LGA1151 socket 9th/8th gen Intel® Core™ i7/i5/i3, Pentium® & Celeron® processor (up to 95W)
System Memory	4 x 288-pin DDR4-2666/2400 DIMM, up to 128GB
Chipset	Intel® Q370
BIOS	AMI BIOS
Watchdog Timer	255 levels, 1 to 255 sec.
Expansion Interface	1 x PCIe x16 slot 4 x PCIe x4 slot 1 x PCIe x1 slot 1 x PCI
Battery	Lithium 3 V/ 220 mAH
Display	
Chipset	Intel® HD Graphic
Memory Size	Share system memory
Display Interface	1 x VGA 1 x DVI-D 1 x HDMI 1 x DisplayPort++
I/O	
SATA	4 x SATA-600 with RAID 0/1/5/10
Hardware Monitoring	Detect CPU/system temperature, voltage and supports Smart fan control
Ethernet	1 x 10/100/1000 Mbps Ethernet with Intel® i219-LM; supports Wake-on-LAN, PXE Boot ROM, iAMT 1 x 10/100/1000 Mbps Ethernet with Intel® i211-AT; supports Wake-on-LAN, PXE Boot ROM
Audio	HD Codec audio as MIC-in/Line-in/Line-out with Realtek ALC662

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I/O	
USB	2 x USB 3.1 Gen2 (rear I/O) 4 x USB 3.1 Gen1 (rear I/O, internal box header) 7 x USB 2.0 (pin header, 180D type A)
Serial	4 x RS-232 (Internal box header) 2 x RS-232/422/485 (COM 1: rear, COM 2: internal box header)
PS/2 Combo Port	1 x PS/2 keyboard and mouse
TPM	TPM 2.0 (optional)
SMBus	Yes
Digital I/O	8-channel programmable
Mechanical and Environmental	
Dimensions	305 x 244 mm
Board Thickness	1.6 mm
Operating Temperature	0°C to +60°C (+32°F to +140°F)
Humidity	10% to 95% relative humidity, non-condensing

Ordering Information

Standard	
IMB520R (P/N: E38F520103)	ATX motherboard with LGA1151 socket 9th/8th gen Intel® Core™ i7/i5/i3, Pentium® & Celeron® processor, Intel® Q370, USB 3.1 Gen2, SATA 3.0, 2 GbE LAN, VGA, DisplayPort++, DVI-D, and HDMI
Optional	
5938A808010E	2 x USB 2.0 cable with bracket, P=2.54 mm, L=190 mm
5938A808020E	2 x USB 2.0 cable with bracket, P=2.54 mm, L=400 mm
5948C122800E	2 x USB 3.1 Gen1 cable with bracket, L=400 mm
59380000290E	PS/2 keyboard & mouse cable with bracket
593826A0000E	SATA signal cable/red, L=500 mm
59384500100E	Audio cable with bracket, P=2.0 mm, L=450 mm
59380402010E	1 x COM port cable with bracket, P=2.54 mm, L=300 mm
59380703000E	2 x COM port cable with bracket, P=2.54 mm, L=300 mm
83935151000E	TPM 2.0 module (AX93515)
5076E510000E	CPU heatsink for 1U chassis (AX61135TM)
50761222000E	CPU cooler for 2U, 4U, and wall mount chassis

Processor List

CPU	Speed	Cache	Cores	TDP
Intel® Core™ i7-9700TE Processor	1.8 GHz	12 MB	8	35 W
Intel® Core™ i7-8700K Processor	3.7 GHz	12 MB	6	95 W
Intel® Core™ i7-8700 Processor	3.2 GHz	12 MB	6	65 W
Intel® Core™ i7-8700T Processor	2.4 GHz	12 MB	6	65 W
Intel® Core™ i5-9500E Processor	3.0 GHz	9 MB	6	65 W
Intel® Core™ i5-9500TE Processor	2.2 GHz	9 MB	6	35 W
Intel® Core™ i5-9400 Processor	2.9 GHz	9 MB	6	65 W
Intel® Core™ i5-8400 Processor	2.8 GHz	9 MB	6	65 W
Intel® Core™ i5-8500T Processor	2.1 GHz	9 MB	6	35 W
Intel® Core™ i3-9100 Processor	3.6 GHz	6 MB	4	65 W
Intel® Core™ i3-9100E Processor	3.1 GHz	6 MB	4	65 W
Intel® Core™ i3-9100TE Processor	2.2 GHz	6 MB	4	35 W
Intel® Core™ i3-8100 Processor	3.6 GHz	6 MB	4	65 W
Intel® Core™ i3-8100T Processor	3.1 GHz	6 MB	4	35 W
Intel® Pentium® Gold G5400T Processor	3.1 GHz	4 MB	2	35 W
Intel® Celeron® G4900T Processor	2.9 GHz	2 MB	2	35 W

* All specifications and photos are subject to change without notice.

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EATX Motherboard

Axiomtek's high performance extended ATX motherboard (330mm x 305mm) is ready for AI in next-gen computing with dual Intel® Xeon® scalable processors and rich I/O and expansion slots. The EATX motherboard comes with an effective load balancing between two CPUs and multiple accelerator cards to stabilize computation loads and maximize computing power. Featuring optimized performance, more PCI Express Card slots, and high-density memory expansion, the EATX server motherboard enables high level computing, AI workload, and deep learning for the data-fueled future.

Selection Guide		99
NEW IMB760	EATX Motherboard with Dual LGA4189 Socket 3rd Gen Intel® Xeon® Scalable Processors, Intel® C627A, 4 PCIe x16, 2 PCIe x8, VGA, NVMe, and IPMI	100

Embedded Boards and Modules

EATX Motherboard

Selection Guide

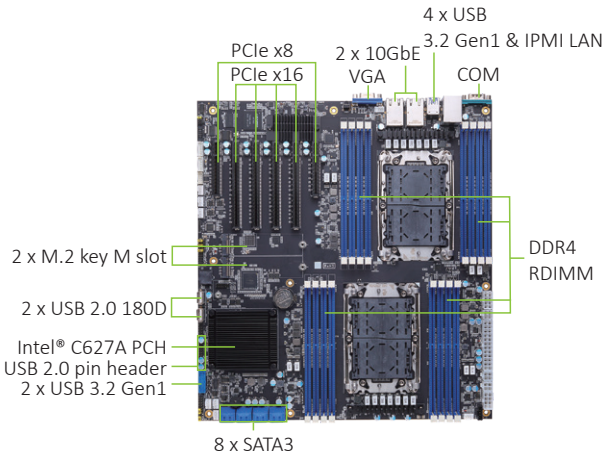
NEW

Features\Models			IMB760
Form Factor			EATX
CPU Level			Dual Intel® Xeon® Scalable Ice Lake-SP platform
CPU Socket			LGA4189
Core Logic Chipset			Intel® C627A
Memory Type			DDR4-3200
Max. DRAM Capacity			1TB
Cache RAM Capacity			Integrated in CPU
BIOS			AMI
Watchdog Timer			255 levels, 1 to 255 sec.
Digital I/O			8-channel programmable
I/O	SATA		8 x SATA-600
	Serial	COM 1	RS-232/422/485
		COM 2	N/A
		COM 3	N/A
		COM 4	N/A
		COM 5	N/A
		COM 6	N/A
	USB		4 x USB 3.2 Gen1 (rear I/O) 2 x USB 3.2 Gen1 (internal box header) 4 x USB 2.0 (internal box header) 2 x USB 2.0 (180D TypeA)
SIM Card Slot			N/A
Display			1 x VGA
Ethernet			1 x IPMI LAN via Intel® I210-AT (shared with BMC AST2500) 2 x 10GbE Ethernet (Intel® X550-AT2)
Audio			N/A
Hardware Monitoring			Yes
SMBus			Yes
Expansion Interface			4 x PCIe x16, 2 x PCIe x8
Power Management			ACPI
Battery			Lithium
Operating Temperature			10°C to +35°C (+50°F to +95°F)
Relative Humidity			10% to 95%, non-condensing
IPMI			ASPEED AST2500 BMC

* All specifications and photos are subject to change without notice.

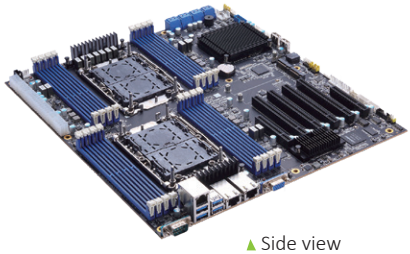
IMB760 NEW

EATX Motherboard with Dual LGA4189 Socket 3rd Gen Intel® Xeon® Scalable Processors, Intel® C627A, 4 PCIe x16, 2 PCIe x8, VGA, NVMe, and IPMI



Features

- Dual 3rd gen Intel® Xeon® Scalable processors (Ice Lake-SP)
- 16 288-pin DDR4-3200 RDIMM for up to 1TB of memory
- 4 PCIe x16 and 2 PCIe x8
- Supports 2 M.2 Key M for NVMe with RAID 0 & 1
- Supports TPM 2.0 module (optional)
- Two 10GbE ports
- IPMI (optional)



▲ Side view

Specifications

Core System	
CPU	3rd gen Intel® Xeon® Scalable processors (TDP up tp 270W)
System Memory	16 x DDR4-3200 RDIMM un-bufferrd memory, up to 1TB
Chipset	Intel® C627A
BIOS	AMI
Watchdog Timer	255 levels, 1 to 255 sec.
Expansion Interface	Slot2: PCIe x8 (Gen4) Slot3: PCIe x16 (Gen4) Slot4: PCIe x16 (Gen4) Slot5: PCIe x16 (Gen4) Slot6: PCIe x16 (Gen4) Slot7: PCIe x8 (Gen4)
Display	
Graphic	AST2500
Display Interface	1 x VGA

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I/O	
Storage	8 x SATA-600 with RAID 0/1/5/10 2 x M.2 key M 2280 (PCIe x4/SATA signal) for NVMe SSD with RAID 0, 1 supported
Hardware Monitoring	Detect CPU/system temperature, voltage and supports Smart fan control
Ethernet	1 x IPMI LAN via Intel® I210-AT (shared with BMC AST2500) 2 x 10GbE Ethernet (Intel® X550-AT2)
USB	4 x USB 3.2 Gen1 (rear I/O) 2 x USB 3.2 Gen1 (internal box header) 4 x USB 2.0 (internal box header) 2 x USB 2.0 (180D TypeA)
Serial	1 x RS-232/422/485 (rear I/O)
PS/2 Combo Port	1 x PS/2 keyboard (internal box header)
SMBus	Yes
Digital I/O	8-channel programmable
Fan	8 x 4-pin fan header (2 for the CPU & 6 for the system)
TPM	TPM 2.0 module (optional)
Mechanical and Environmental	
Dimensions	305 x 330 mm
Board Thickness	2.4 mm
Operating Temperature	10°C to +35°C (+50°F to +95°F) (depends on cooler solution)
Humidity	10% to 95% relative humidity, non-condensing
IPMI	ASPEED AST2500 BMC

Ordering Information

Standard	
IMB760-S: EATX dual LGA4189 Ice Lake SP single packing (P/N: E38F760105)	EATX Motherboard with dual LGA4189 Socket Intel® Xeon® Scalable processors, Intel® C627A, 4 PCIe x16, 2 PCIe x8, VGA, NVMe, and IPMI
Optional	
5938A808010E	2 x USB 2.0 cable with bracket, P=2.54 mm, L=190 mm
5938A808020E	2 x USB 2.0 cable with bracket, P=2.54 mm, L=400 mm
83935151000E	TPM 2.0 module (AX93515)
5948C122800E	2 x USB 3.1 Gen1 cable with bracket, L=400 mm
594G5208010E	SATA3 cable 180D w/B.sleeve, L=50 cm
713WFB30000E	IMB700_CL_LGA4189_4U_CPU above 205W
713JYC1M000E	IMB700_CL_LGA4189_2U_CPU under 205W

* All specifications and photos are subject to change without notice.

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Slot CPU Cards

The Slot CPU card family is featured by Intel® Core™ processors. The PICMG 1.3 full-size CPU card is ideal for performance-demanding and bandwidth-concerned applications.

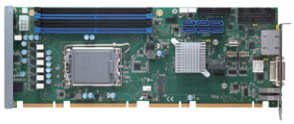
Selection Guide		103
NEW SHB160	PICMG 1.3 Full-size CPU Card with LGA1700 12th Gen Intel® Core™ i7/i5/i3, Pentium® or Celeron® Processor, Intel® R680E/Q670E, SATA 3.0, M.2 E/M Key USB 3.2 Gen1/Gen2, Dual 2.5GbE LAN, and DVI-I	104
SHB250R	PICMG 1.3 Half-size CPU Card with LGA1151 Socket 9th/8th Gen Intel® Core™ i7/i5/i3, Xeon® E, Pentium® or Celeron® Processor, Intel® C246/Q370/H310, SATA 3.0, USB 3.1 Gen1, LAN, and DVI-I	106
SHB150R	PICMG 1.3 Full-size CPU Card with LGA1151 Socket 9th/8th Gen Intel® Core™ Processor, Intel® C246/Q370/H310, SATA3, USB 3.1 Gen1/Gen2, Dual LAN, and DVI-I	108

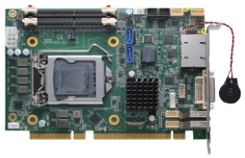
Embedded Boards and Modules

PICMG 1.3 Full-size/Half-size CPU Cards

Selection Guide

NEW



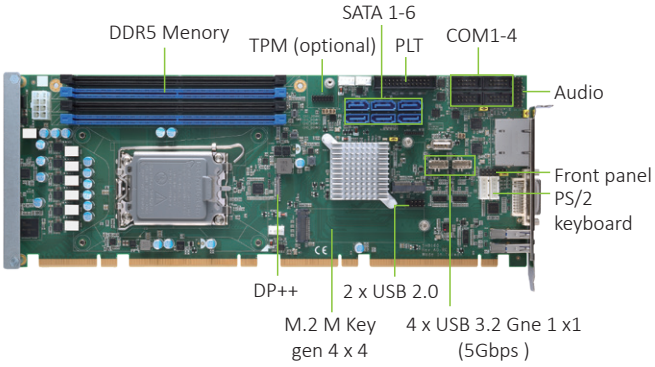


Features\Models			SHB160	SHB250R	SHB150R
Form Factor			PICMG 1.3	PICMG 1.3	PICMG 1.3
CPU Level			12th Gen Intel® Core™ i7/i5/i3, Pentium® or Celeron®	9th/8th gen Intel® Core™ i7/i5/i3, Xeon® E, Pentium® or Celeron®	9th/8th gen Intel® Core™ i7/i5/i3, Xeon® E, Pentium® or Celeron®
CPU Socket			LGA1700	LGA1151	LGA1151
Core Logic Chipset			Intel® R680E/Q670E	Intel® C246/Q370/H310	Intel® C246/Q370/H310
Memory Type			DR5-4400	DDR4-2666/2400	DDR4-2666/2400
Max. DRAM Capacity			128GB	64GB	64GB
Cache RAM Capacity			Integrated in CPU	Integrated in CPU	Integrated in CPU
BIOS			AMI	AMI	AMI
Watchdog Timer			255 levels, 1 to 255 sec.	255 levels, 1 to 255 sec.	255 levels, 1 to 255 sec.
SSD			M.2 Key M 2280 w/ PCIe 4.0 x4 signal	M.2 Key M 2242	M.2 Key M 2280 w/ PCIe x4 signal (C246, Q370)
Digital I/O			N/A	N/A	N/A
I/O	IDE		N/A	N/A	N/A
	SATA		6 x SATA-600, support RAID 0/1/5/10	C246/Q370: 2 x SATA-600, support RAID 0/1 H310: 2 x SATA-600	C246/Q370: 6 x SATA-600, support RAID 0/1/5/10 H310: 2 x SATA-600
	FDD		N/A	N/A	N/A
	LPT		1 x LPT	N/A	1 x LPT
	Serial	COM 1	RS-232/422/485	RS-232/422/485	RS-232/422/485
		COM 2	RS-232/422/485	RS-232/422/485	RS-232/422/485
		COM 3	RS-232	N/A	RS-232
		COM 4	RS-232	N/A	RS-232
		COM 5	N/A	N/A	N/A
		COM 6	N/A	N/A	N/A
	USB		2 x USB 3.2 Gen2x1 4 x USB 3.2 Gen1x1 7 x USB 2.0	4 x USB 3.1 Gen1 4 x USB 2.0	C246/Q370: 2 x USB 3.1 Gen2 4 x USB 3.1 Gen1 & 6 x USB 2.0 H310: 4 x USB 3.1 Gen1 & 6 x USB 2.0
	IrDA		N/A	N/A	N/A
IEEE 1394a			N/A	N/A	N/A
Display			1 x DVI-I 1 x DisplayPort (internal header)	1 x DVI-I 1 x DisplayPort++	1 x DVI-I 1 x DisplayPort++
Ethernet			2 x 10/100/1000/2500 Mbps Ethernet	2 x 10/100/1000 Mbps Ethernet	2 x 10/100/1000 Mbps Ethernet
Audio			HD Codec	HD Codec	HD Codec
Hardware Monitoring			Yes	Yes	Yes
SMBus			Yes	Yes	Yes
Expansion Interface			1 x PCIe x16, 1 x PCIe x4 or 4 x PCIe x1, 4 x PCI	1 x PCIe x16 1 x PCIe x4 or 4 x PCIe x1 4 x PCI	1 x PCIe x16 1 x PCIe x4 or 4 x PCIe x1 4 x PCI
Power Management			ACPI	ACPI	ACPI
Battery			Lithium	Lithium	Lithium
Operating Temperature			0°C to +60°C (+32°F to +140°F)	0°C to +60°C (+32°F to +140°F)	0°C to +60°C (+32°F to +140°F)
Relative Humidity			10% to 95%, non-condensing	10% to 95%, non-condensing	10% to 95%, non-condensing
EMI Compliance			CE	CE	CE

* All specifications and photos are subject to change without notice.

SHB160 NEW

PICMG 1.3 Full-size CPU Card with LGA1700 12th Gen Intel® Core™ i7/i5/i3, Pentium® or Celeron® Processor, Intel® R680E/Q670E, SATA 3.0, M.2 E/M Key USB 3.2 Gen1/Gen2, Dual 2.5GbE LAN, and DVI-I



Features

- LGA1700 12th Gen Intel® Core™ i7/i5/i3, Pentium® or Celeron® processor (up to 125W)
- Intel® R680E/Q670E chipset
- 4 DDR5-4400 U-DIMM up to 128GB ECC/Non ECC memory
- Supports Intel® AMT and vPro (R680E)
- TPM 2.0 supported (optional)
- Supports dual 2.5GbE
- Supports PLT Port
- Supports M.2 Key M / E (R680E)
- Supports PCIe 4.0 through the gold fingers

Specifications

Core System	
CPU	LGA1700 12th Gen Intel® Core™ i7/i5/i3, Pentium® or Celeron® processor (up to 125W)
System Memory	4 x DDR5-4400 ECC (R680E only) or non-ECC U-DIMM, up to 128GB
Chipset	Intel® R680E/ Q670E
BIOS	AMI UEFI BIOS
SSD	M.2 Key M 2280, PCIe 4.0 x4 signal
Watchdog Timer	225 levels, 1 to 255 sec.
Expansion Interface	1 x PCIe x16 Gen4 1 x PCIe x4 Gen4 or 4 x PCIe x1 Gen4 4 x 32-bit PCI bus masters
Battery	Lithium 3V/220 mAH
Power Consumption	Intel® Core™ i5-12400 with 32GB 4 x DDR5-4800, +12V_CPU @5.2A , +5V @4.64A, +3.3V @1.76A
Display	
Graphic	Intel® UHD Graphic
Memory Size	Share system memory
Display Interface	1 x DVI-I 1 x DisplayPort (internal header)
I/O	
SATA	6 x SATA-600, support RAID 0/1/5/10
Hardware Monitoring	Detect CPU/system temperature, voltage and fan speed
Ethernet	1 x 10/100/1000/2500 Mbps with Intel® I225-LM; supports Wake-on-LAN, PXE Boot ROM, TSN, and Intel® AMT with Intel vPro® 1 x 10/100/1000/2500 Mbps with Intel® I225-V; supports Wake-on-LAN, PXE Boot ROM.
Audio	HD Codec audio as MIC-in/Line-in/Line-out/Speaker-out with audio kit AX93242 (optional)
USB	2 x USB 3.2 Gen2x1 (Rear I/O) 4 x USB 3.2 Gen1x1 (Internal box header) 3 x USB 2.0 (2 x Internal pin header ,1x port with 180D type A) 4 x USB 2.0 (4 x ports on SHB connector-C via golden fingers)
Serial	2 x RS-232 2 x RS-232/422/485, mode selection by SW
PS/2 Combo Port	1 x PS/2 keyboard internal connector 1 x PS/2 mouse internal connector
TPM	TPM 2.0 module (optional)
Others	1 x LPT 1 x Smart CPU fan 2 x Smart system fan

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Mechanical and Environmental	
Dimensions	338 x 126 mm
Board Thickness	1.6 mm
Operating Temperature	0°C to +60°C (+32°F to +140°F)
Humidity	10% to 95% relative humidity, non-condensing

Packing List

Standard
User's manual

Ordering Information

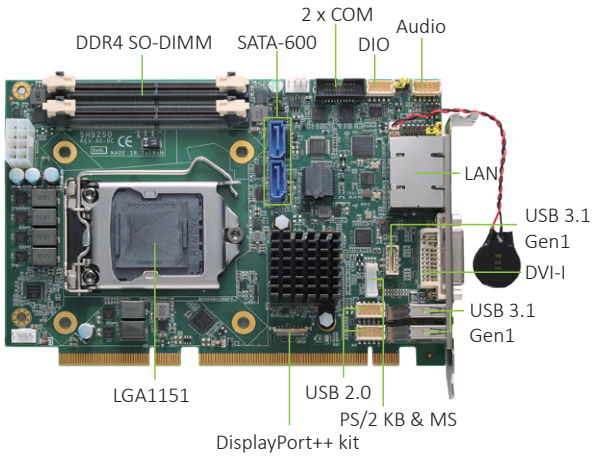
Standard	
SHB160DGG-R680E (P/N: TBC)	PICMG 1.3 full-size CPU card with 12th LGA1700 socket, Intel® R680E, ECC, DVI-I, 2.5GbE LAN, 6 x SATA, and PCIe x4 BIOS
SHB160DGG-R680E (P/N: TBC)	PICMG 1.3 full-size CPU card with 12th LGA1700 socket, Intel® R680E, ECC ,DVI-I, 2.5GbE LAN, 6 x SATA, and PCIe x1 BIOS
SHB160DGG-H610E (P/N: TBC)	PICMG 1.3 full-size CPU card with 12th LGA1700 socket, Intel® H610E, DVI-I, 2.5GbE LAN, 4 x SATA, and PCIe x4 BIOS
SHB160DGG-H610E (P/N: TBC)	PICMG 1.3 full-size CPU card with 12th LGA1700 socket, Intel® H610E, DVI-I, 2.5GbE LAN, 4 x SATA, and PCIe x1 BIOS
Optional	
5938A808010E	2 x USB 2.0 cable with bracket, P=2.54 mm, L=190 mm
5948C122800E	2 x USB 3.1 (Gen1) cable with bracket, L=400 mm
59401502800E	2 x USB 3.1 (Gen2) cable with bracket, L=400 mm
59380000290E	PS/2 keyboard & mouse cable with bracket
593826A0000E	SATA signal cable/red, L=500mm
E393242100	AX93242-RC HD audio converter kit
59380402010E	1 x COM port cable with bracket, P=2.54 mm, L=300 mm
59380703000E	2 x COM port cable with bracket, P=2.54 mm, L=300 mm
594826A0010E	DVI-I to DVI-D+VGA Y cable
83935151000E	TPM 2.0 module (AX93515)
83987091000E	DisplayPort kit
711000001500	2U Special cooler kit for SHB160, compatible, 65W
711000001400	1U Special cooler kit for SHB160, compatible, 125W

SHB160 series required specially designed cooler "711000001X00", please order as set

* All specifications and photos are subject to change without notice.

SHB250R

PICMG 1.3 Half-size CPU Card with LGA1151 socket 9th/8th Gen Intel® Core™ i7/i5/i3, Xeon® E, Pentium® or Celeron® Processor, Intel® C246/Q370/H310, SATA 3.0, USB 3.1 Gen1, LAN and DVI-I



Features

- LGA1151 socket 9th/8th gen Intel® Core™ i7/i5/i3, Xeon® E (C246), Pentium® or Celeron® processor
- Intel® C246/Q370/H310 chipset
- 2 DDR4-2666/2400 SO-DIMM for up to 64GB of memory
- Supports M.2 slot
- Supports Intel® AMT and vPro (C246/Q370)
- TPM 2.0 supported

Specifications

Core System	
CPU	LGA1151 9th/8th gen Intel® Core™ i7/i5/i3, Xeon® E (C246), Pentium® or Celeron® processor (8th up to 95W, 9th up to 35W)
System Memory	C246: 2 x 260-pin 2666/2400 with ECC un-buffered SO-DIMM, up to 64GB (Intel® Core™ i7/i5 only support non-ECC) Q370/H310: 2 x 260-pin 2666/2400 un-buffered SO-DIMM, up to 64GB
Chipset	Intel® C246/Q370 (Intel® vPro supported) Intel® H310
BIOS	AMI UEFI BIOS
Storage	M.2 Key M 2242 (Q370/C246 support PCIe 3.0 x4 or SATA-3, H310 supports SATA-3)
Watchdog Timer	225 levels, 1 to 255 sec.
Expansion Interface	1 x PCIe x16 Gen3 1 x PCIe x4 or 4 x PCIe x1 Gen3
Battery	Lithium 3V/220 mAH
Power Consumption	Intel® Core™ i7-9700TE, 32GB DDR4-2666 x 2 +5V @ 0.2A, +12V @ 3.8A, +3.3V @ 0.8A
Display	
Graphic	Intel® HD Graphic
Memory Size	Share system memory
Display Interface	1 x DVI-I 1 x DisplayPort++ (internal header)
I/O	
SATA	C246/Q370: 2 x SATA-600, support RAID 0/1 H310: 2 x SATA-600
Hardware Monitoring	Detect CPU/system temperature, voltage and fan speed
Ethernet	1 x 10/100/1000 Mbps Ethernet with Intel® i219-LM; supports Wake-on-LAN, RPL/PXE Boot ROM, AMT 1 x 10/100/1000 Mbps Ethernet with Intel® i211-AT; supports Wake-on-LAN, RPL/PXE Boot ROM
Audio	HD Codec audio as MIC-in/Line-in/Line-out/Speaker-out with Realtek ALC662
USB	4 x USB 3.1 Gen1 (2 ports in I/O, 2 ports in interanal box header) 4 x USB 2.0
Serial	2 x RS-232/422/485, mode selection by SW
PS/2 Combo Port	1 x PS/2 keyboard & mouse internal connector
TPM	TPM 2.0
DIO	8 channel programmable
Others	1 x Smart CPU fan 1 x Smart system fan

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Mechanical and Environmental	
Dimensions	185 x 126 mm
Board Thickness	1.6 mm
Operating Temperature	0°C to 60°C (32°F to 140°F) depending on CPU speed and system thermal solution
Humidity	10% to 95% relative humidity, non-condensing

Packing List

Standard
CPU card

Ordering Information

Standard	
SHB250RDGG-Q370 (P/N: E38C250100)	PICMG 1.3 half-size CPU card with LGA1151 socket, Intel® Q370, DVI-I, 2 GbE LAN, audio, and PCIe x4
SHB250RDGG-H310 (P/N: E38C250102)	PICMG 1.3 half-size CPU card with LGA1151 socket, Intel® H310, DVI-I, 2 GbE LAN, audio, and PCIe x4
SHB250RDGG-C246 (P/N: E38C250101)	PICMG 1.3 half-size CPU card with LGA1151 socket, Intel® C246, DVI-I, 2 GbE LAN, audio, and PCIe x4
Optional	
59380000300E	2 x COM port, with bracket, P=1.27 X 2.54, L=300 mm
59401502800E	1 x USB 3.1 Gen2 cable with bracket 20P, L=400 mm
59382631000E	2 x USB 2.0 cable with bracket 180 mm
594C2302500E	PS/2 keyboard & mouse cable
593826A0000E	SATA signal cable/red, L=500mm
594826A0010E	DVI-I to DVI-D+VGA Y cable
83987091000E	DisplayPort++ kit

Processor List

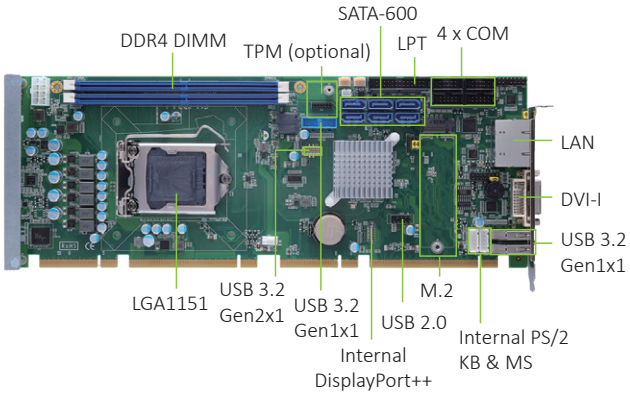
CPU	Speed	Cache	Cores	TDP
Intel® Core™ i7-9700TE Processor	1.8 GHz	12 MB	8	35 W
Intel® Core™ i7-8700K Processor	3.7 GHz	12 MB	6	95 W
Intel® Core™ i7-8700 Processor	3.2 GHz	12 MB	6	65 W
Intel® Core™ i7-8700T Processor	2.4 GHz	12 MB	6	65 W
Intel® Core™ i5-9500TE Processor	2.2 GHz	9 MB	6	35 W
Intel® Core™ i5-8400 Processor	2.8 GHz	9 MB	6	65 W
Intel® Core™ i5-8500T Processor	2.1 GHz	9 MB	6	35 W
Intel® Core™ i3-9100TE Processor	2.2 GHz	6 MB	4	35 W
Intel® Core™ i3-8100 Processor	3.6 GHz	6 MB	4	65 W
Intel® Core™ i3-8100T Processor	3.1 GHz	6 MB	4	35 W
Intel® Xeon® E-2176G Processor*	3.7 GHz	12 MB	6	80 W
Intel® Xeon® E-2278GE Processor*	3.3 GHz	16 MB	8	80 W
Intel® Pentium® Gold G5400T Processor	3.1 GHz	4 MB	2	35 W
Intel® Celeron® G4900T Processor	2.9 GHz	2 MB	2	35 W

* C246 use only

* All specifications and photos are subject to change without notice.

SHB150R

PICMG 1.3 Full-size CPU Card with LGA1151 Socket 9th/8th Gen Intel® Core™ i7/i5/i3, Xeon® E, Pentium® or Celeron® Processor, Intel® C246/Q370/H310, SATA 3.0, USB 3.2 Gen1/Gen2, Dual LAN, and DVI-I



Features

- LGA1151 Socket 9th/8th gen Intel® Core™ i7/i5/i3, Xeon® E (Intel® C246), Pentium® or Celeron® processor (up to 95W)
- Intel® C246/Q370/H310 chipset
- 2 DDR4-2666/2400 Long-DIMM for up to 64GB of memory
- Supports Intel® AMT and vPro (Intel® C246/Q370)
- Supports TPM 2.0 (optional)
- Supports M.2 Key M (Intel® C246/Q370)

Specifications

Core System	
CPU	LGA1151 9th/8th gen Intel® Core™ i7/i5/i3, Xeon® E (Intel® C246), Pentium® or Celeron® processor (up to 95W)
System Memory	Intel® C246: 2 x 288-pin 2666/2400 with ECC un-buffered Long-DIMM (Intel® Core™ i7/i5 only supports non-ECC), up to 64GB Intel® Q370/H310: 2 x 288-pin 2666/2400 un-buffered Long-DIMM, up to 64GB
Chipset	Intel® C246/Q370 (with Intel® vPro supported) Intel® H310
BIOS	AMI UEFI BIOS
SSD	M.2 Key M 2280, PCIe x4 signal (Intel® C246/Q370)
Watchdog Timer	225 levels, 1 to 255 sec.
Expansion Interface	1 x PCIe x16 Gen3 1 x PCIe x4 or 4 x PCIe x1 Gen3 4 x 32-bit PCI bus masters
Battery	Lithium 3V/220 mAH
Power Consumption	Intel® Core™ i7-9700TE with 32GB 2 x DDR4-2666 +12V @ 2.8A, +5V @ 2.4A, +3.3V @ 1.3A
Display	
Graphic	Intel® HD Graphic
Memory Size	Share system memory
Display Interface	1 x DVI-I 1 x DisplayPort++ (internal header)
I/O	
SATA	Intel® C246/Q370: 6 x SATA-600, support RAID 0/1/5/10 Intel® H310: 4 x SATA-600
Hardware Monitoring	Detect CPU/system temperature, voltage and fan speed
Ethernet	1 x 10/100/1000 Mbps Ethernet with Intel® I219-LM; supports Wake-on-LAN, RPL/PXE Boot ROM, Intel® AMT 1 x 10/100/1000 Mbps Ethernet with Intel® I211-AT; supports Wake-on-LAN, RPL/PXE Boot ROM
Audio	HD Codec audio as MIC-in/Line-in/Line-out/Speaker-out with audio kit AX93242 (optional)
USB	Intel® C246/Q370: 2 x USB 3.2 Gen2x1, 4 x USB 3.2 Gen1x1 & 6 x USB 2.0 (2 ports onboard, 4 ports on SHB connector-C golden fingers) Intel® H310: 4 x USB 3.2 Gen1x1 & & 6 x USB 2.0 (2 ports onboard, 4 ports on SHB connector-C golden fingers)
Serial	2 x RS-232 2 x RS-232/422/485, mode selection by SW
PS/2 Combo Port	1 x PS/2 keyboard internal connector 1 x PS/2 mouse internal connector
TPM	TPM 2.0 module (optional)
Others	1 x LPT 1 x Smart CPU fan 1 x Smart system fan

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Mechanical and Environmental	
Dimensions	338 x 126 mm
Board Thickness	1.6 mm
Operating Temperature	0°C to +60°C (+32°F to +140°F)
Humidity	10% to 95% relative humidity, non-condensing

Packing List

Standard	
CPU card	
59380402010E	COM cable with bracket
59415318000E	SATA signal cable, 460 mm

Ordering Information

Standard	
SHB150RDGG-Q370 (P/N: E38C150106)	PICMG 1.3 full-size CPU card with LGA1151 socket, Intel® Q370, DVI-I, 2 GbE LAN, and PCIe x4
SHB150RDGG-Q370 (P/N: E38C150107)	PICMG 1.3 full-size CPU card with LGA1151 socket, Intel® Q370, DVI-I, 2 GbE LAN, and PCIe x1
SHB150RDGG-H310 (P/N: E38C150108)	PICMG 1.3 full-size CPU card with LGA1151 socket, Intel® H310, DVI-I, 2 GbE LAN, and PCIe x4
SHB150RDGG-H310 (P/N: E38C150109)	PICMG 1.3 full-size CPU card with LGA1151 socket, Intel® H310, DVI-I, 2 GbE LAN, and PCIe x1
SHB150RDGG-C246 (P/N: E38C150110)	PICMG 1.3 full-size CPU card with LGA1151 socket, Intel® C246, DVI-I, 2 GbE LAN, and PCIe x4
SHB150RDGG-C246 (P/N: E38C150111)	PICMG 1.3 full-size CPU card with LGA1151 socket, Intel® C246, DVI-I, 2 GbE LAN, and PCIe x1
Optional	
5938A808010E	2 x USB 2.0 cable with bracket, P=2.54 mm, L=190 mm
5948C122800E	1 x Dual USB 3.2 (Gen1x1) cable with bracket, L=400 mm
59401502800E	1 x Dual USB 3.2 (Gen2x1) cable with bracket, L=400 mm
59380000290E	PS/2 keyboard & mouse cable with bracket
593826A0000E	SATA signal cable/red, L=500mm
E393242100	AX93242-RC HD audio converter kit
59380402010E	1 x COM port cable with bracket, P=2.54 mm, L=300 mm
59380703000E	2 x COM port cable with bracket, P=2.54 mm, L=300 mm
594826A0010E	DVI-I to DVI-D+VGA Y cable
83935151000E	TPM 2.0 module (AX93515)
83987091000E	DisplayPort++ kit with bracket

* All specifications and photos are subject to change without notice.

Processor List

CPU	Speed	Cache	Cores	TDP
Intel® Core™ i7-9700TE Processor	1.8 GHz	12 MB	8	35 W
Intel® Core™ i7-8700K Processor	3.7 GHz	12 MB	6	95 W
Intel® Core™ i7-8700 Processor	3.2 GHz	12 MB	6	65 W
Intel® Core™ i7-8700T Processor	2.4 GHz	12 MB	6	65 W
Intel® Core™ i5-9500E Processor	3.0 GHz	9 MB	6	65 W
Intel® Core™ i5-9500TE Processor	2.2 GHz	9 MB	6	35 W
Intel® Core™ i5-9400 Processor	2.9 GHz	9 MB	6	65 W
Intel® Core™ i5-8400 Processor	2.8 GHz	9 MB	6	65 W
Intel® Core™ i5-8500T Processor	2.1 GHz	9 MB	6	35 W
Intel® Core™ i3-9100 Processor	3.6 GHz	6 MB	4	65 W
Intel® Core™ i3-9100E Processor	3.1 GHz	6 MB	4	65 W
Intel® Core™ i3-9100TE Processor	2.2 GHz	6 MB	4	35 W
Intel® Core™ i3-8100 Processor	3.6 GHz	6 MB	4	65 W
Intel® Core™ i3-8100T Processor	3.1 GHz	6 MB	4	35 W
Intel® Xeon® E-2176G Processor*	3.7 GHz	12 MB	6	80 W
Intel® Xeon® E-2278GE Processor*	3.3 GHz	16 MB	8	80 W
Intel® Pentium® Gold G5400T Processor	3.1 GHz	4 MB	2	35 W
Intel® Celeron® G4900T Processor	2.9 GHz	2 MB	2	35 W

* C246 use only

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9

ARM-based Embedded Boards

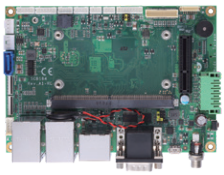
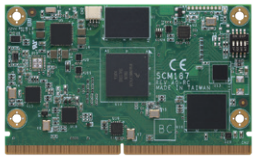
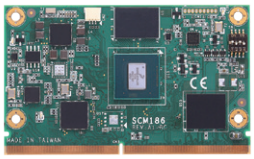
Axiomtek provides ARM-based computer-on-modules and single board computers for smart energy, intelligent automatic factory, and smart transportation applications. These highly reliable and stable motherboards support package services for Linux OS, providing a turnkey solution for customers to build up their ARM-based system solutions easily and efficiently. With professional NXP platform expertise and extensive board design experience, Axiomtek provides the highest quality and flexibility in board ODM selection.

	Selection Guide		112
NEW	SCB184	Application Baseboard for SMARC v2.0/v2.1 Modules	114
NEW	SCM187	RISC Embedded SMARC v2.1 SoM with i.MX 8M Mini Quad Core 1.6 GHz SoC, 4GB RAM and 8GB eMMC	116
NEW	SCM186	RISC Embedded SMARC v2.0 SoM with i.MX 8M Plus Quad Code 1.8 GHz SoC, 4GB RAM and 8GB eMMC	118
	SCM120	SMARC v1.0 SoM with iMX6 Quad/DualLite 800 MHz (Industrial) SoC, 1GB RAM, 4GB eMMC, GbE LAN, Audio, CAN, MIPI and PCAM	120
	Q7M120	Qseven v2.0 SoM with iMX6 Quad/DualLite 800 MHz (Industrial) SoC, 1GB RAM, 4GB eMMC, GbE LAN, Audio and CAN	122

Embedded Boards and Modules

ARM-based Embedded Boards

Selection Guide

Features\Models	SCB184	SCM187	SCM186
	NEW 	NEW 	NEW 
Form Factor	3.5" Form Factor, 146 x 102 mm Application Baseboard for SMARC Module	SMARC v2.1	SMARC v2.0
CPU Level	Depends on connected SMARC Module	Quad ARM Cortex A53 CPU i.MX 8M Mini 400 MHz/ 1.6GHz	Quad ARM Cortex A53 CPU i.MX 8M Plus 800 MHz, NPU up to 2.3 TOPS/ 1.8GHz
CPU Socket	Depends on connected SMARC Module	Onboard	Onboard
Core Logic Chipset	Depends on connected SMARC Module	SoC integrated	SoC integrated
Memory Type	Depends on connected SMARC Module	LPDDR4 onboard	LPDDR4 onboard
Max. DRAM Capacity	Depends on connected SMARC Module	4GB	4GB (up to 6GB)
RTC	1 x RTC-Battery (CR2032)	Battery on the baseboard is required	Battery on the baseboard is required
Watchdog Timer	Depends on connected SMARC Module	255 levels, 1 to 255 sec./min.	255 levels, 1 to 255 sec./min.
Storage	1 x Micro SD Card Slot	eMMC flash 8GB SDIO3.0 interface	eMMC flash 8GB SDIO3.0 interface
Digital I/O	10 x GPIO	14 x GPIO	12 x GPIO
TPM	TPM2.0 (option)	TPM2.0 (option)	TPM2.0 (option)
I/O Interface	**Internal I/O** 1 x PCIe x4 Slot 2 x USB 2.0 1 x Line In/Line Out 2 x CANBus 2 x I^2C 1 x SPI 1 x QSPI 1 x Dual-channel LVDS 1 x SIM Card Slot 1 x M.2 B-key 3052 Slot for 5G Module 1 x SATA for SATA III 1 x SATA Power 1 x Fan Control **External I/O** 1 x Micro SD Card Slot 4 x USB 3.2 Gen 1 1 x OS Flash 1 x DB9 for RS-232/RS-485 1 x DB9 for RS-232 1 x HDMI 1 x DisplayPort 1 x Reset Button 1 x Lockable DC Jack	1 x PCIe Gen2 x1 3 x USB 2.0 1 x OS Flash 1 x I^2S 2 x CANBus 3 x I^2C 2 x COM (TX/RX/RTS/CTS) 2 x COM (TX/RX for debug console) 1 x SPI 1 x QSPI 1 x Dual-channel 24-bit LVDS or 1 x HDMI (option) 1 x MIPI-CSI 4-lane 1 x SDIO3.0 interface	1 x PCIe Gen3 x1 4 x USB 2.0 2 x USB 3.2 Gen1 1 x OS Flash 2 x I^2S 2 x CANBus 3 x I^2C 2 x COM (TX/RX/RTS/CTS) 1 x COM (TX/RX for debug console) 1 x HDMI 1 x SPI 1 x QSPI 1 x Dual-channel 24-bit LVDS 1 x MIPI-CSI 4-lane 1 x MIPI-CSI 2-lane 1 x SDIO3.0 interface
Ethernet	2 x GbE LAN	1 x 10/100/1000 Mbps Ethernet	1 x 10/100/1000 Mbps Ethernet
Power Input	+12V-24V DC-in	+5V ± 5% DC-in	+5V ± 5% DC-in
OS	Depends on connected SMARC Module	Yocto 4.0, Linux Kernel 5.15.32	Yocto 3.3, Linux Kernel 5.10.35
Operating Temperature	-20°C to +70°C (-4°F to 158°F)	-40°C to +85°C (-40°F to 185°F)	0°C to +60°C (-32°F to 140°F)
Relative Humidity	10%- 95%, non-condensing	10%- 95%, non-condensing	10%- 95%, non-condensing

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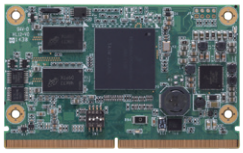
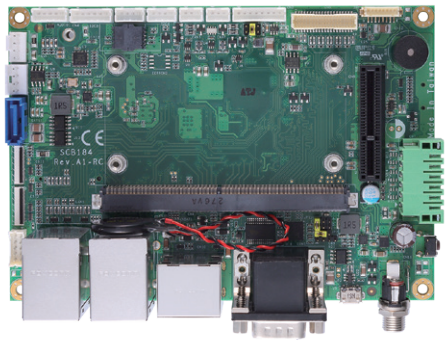


Features\Models	SCM120	Q7M120
Form Factor	SMARC v1.0	Qseven v2.0
CPU Level	ARM Cortex™-A9 CPU 800 MHz	ARM Cortex™-A9 CPU 800 MHz/ 1 GHz
CPU Socket	Onboard	Onboard
Core Logic Chipset	SoC integrated	SoC integrated
Memory Type	DDR3-1600 onboard	DDR3-1600 onboard
Max. DRAM Capacity	1GB	1GB
RTC	Battery on the baseboard is required	Battery on the baseboard is required
Watchdog Timer	255 levels, 1 to 255 sec./min.	255 levels, 1 to 255 sec./min.
Storage	eMMC flash 4GB	eMMC flash 4GB
Digital I/O	8 x GPIO	8 x GPIO
TPM	N/A	N/A
I/O Interface	1 x PCIe 1x USB 2.0 1 x OTG Client 1 x I²S 2 x CANBus 4 x I²C 3 x COM(TX/RX/RTS/CTS) 1 x Console 1 x MIPI v1.0 (2 lanes) 1 x PCAM 8-bit 1 x HDMI 1 x 24-bit TTL Signal 2 x Signal channel 24-bit LVDS 1 x SPI	1 x PCIe x1 1 x USB 2.0 1 x OTG Client 1 x I²S 2 x CANBus 3 x I²C 4 x COM (TX/RX/RTS/CTS) 1 x Console 1 x HDMI 1 x 24-bit TTL Signal 1 x SPI 2 x Signal channel 24-bit LVDS
Ethernet	1 x 10/100/1000 Mbps Ethernet	1 x 10/100/1000 Mbps Ethernet
Power Input	+5V ± 5% DC-in	+5V ± 5% DC-in
OS	Linux Kernel 3.0.35, Android 4.3	Linux Kernel 3.0.35, Android 4.3
Operating Temperature	-40°C to +85°C (-40°F to 185°F)	-40°C to +85°C (-40°F to 185°F)
Relative Humidity	10%- 95%, non-condensing	10%- 95%, non-condensing

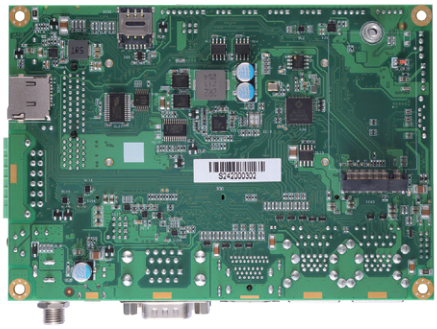
* All specifications and photos are subject to change without notice.

SCB184 NEW

Application Baseboard for SMARC v2.0/v2.1 Modules



▲ Top view

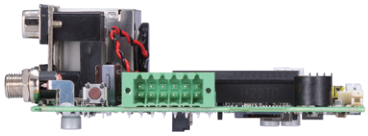


▲ Rear view

Features

- Ready-to-use SMARC v2.0/v2.1 Baseboard
- Compatible with Axiomtek and other SMARC Modules
- 3.5” Form Factor
- Platform for Rapid Customizing
- Support of Fast Implementation and Improved Time to Market
- USB 3.2 Gen1
- GbE LAN
- Micro SD Card Slot and SIM Card Slot
- M.2 Key B Slot for 5G Module
- HDMI, DisplayPort interfaces
- Dual-channel LVDS Interfaces
- 12V-24V Wide Voltage
- Reset Button

▲ Front view



▲ Side view

Specifications

Internal I/O and Features	
PCIe	1 x PCIe x4 Slot
USB	2 x USB 2.0
Audio	1 x Line In/ Line Out
CANBus	2 x CANBus
I^2C	2 x I^2C Header
SPI	1 x SPI Header
QSPI	1 x QSPI Header
Graphics	1 x Dual-channel LVDS
LTE/5G	1 x SIM Card Slot 1 x M.2 Key B 3052 Slot for 5G Module
SATA	1 x SATA for SATA III 1 x SATA Power
Fan	1 x Fan Control
Storage	1 x 8GB eMMC
RTC	1 x RTC-Battery (CR2032)
Security	1 x TPM 2.0 (option, none in default)
External I/O	
Ethernet	2 x GbE LAN
USB	4 x USB 3.2 Gen1 Type A
Graphics	1 x HDMI 1 x DisplayPort

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COM	1 x DB9 for RS232 1 x DB9 for RS232/RS485
OS Flash	1 x OS Flash
GPIO	10 x GPIO
Power	1 x Lockable DC Jack (12V-24V)
Reset	1 x Reset Button
Storage	1 x Micro SD slot
Mechanical and Environmental	
Power Input	12V-24V DC-in
Dimensions	146 x 102 mm (approx. 5.75" x 4.02")
Operating Temperature	-20°C to +70°C (-4°F to 158°F)
Operating Humidity	10%- 95%, non-condensing

* The connected SMARC module must also support the features for the connector to function. Refer to the SMARC module's datasheets for information about supported features.

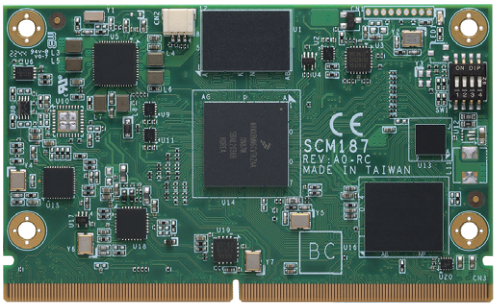
Ordering Information

Standard	
SCB184	Application Baseboard for SMARC 2.0/2.1 Modules, Compatible with Axiomtek's SCM186 and SCM187
Optional	
SCM186-4R8E-C	SMARC 2.0, NXP i.MX 8M Plus SoC Quad A53 with 4GB RAM, 8GB eMMC, HDMI, LVDS, LAN and USB Ports (Heatsink Excluded)
SCM186-4R8EC-184EVK	Evaluation Kit Boards, SMARC Module SCM186 with Baseboard SCB184 (Heatsink Excluded)
SCM186-HS-H	Heatsink, Passive Cooling Solution for SMARC Module SCM186 (0˚C to +60˚C)
SCM187-4R8E-I	SMARC 2.1, NXP i.MX 8M Mini SoC Quad A53 with 4GB RAM, 8GB eMMC, LVDS, LAN and USB Ports (Heatsink Excluded)
SCM187-4R8EI-184EVK	Evaluation Kit Boards, SMARC Module SCM187 with Baseboard SCB184 (Heatsink Excluded)
SCM187-HS-H	Heatsink, Passive Cooling Solution for SMARC Module SCM187 (-40˚C to +85˚C)

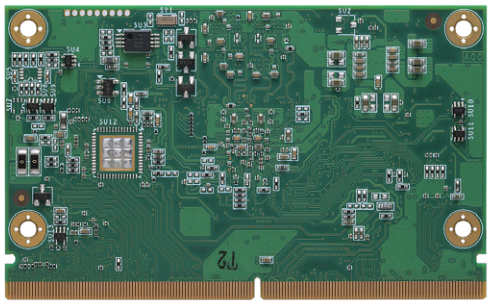
* All specifications and photos are subject to change without notice.

SCM187 NEW

RISC Embedded SMARC v2.1 SoM with i.MX 8M Mini Quad Core 1.6 GHz SoC, 4GB RAM and 8GB eMMC



▲ Top view



▲ Rear view

Features

- SMARC 2.1 (82 x 50 mm)
- NXP i.MX 8M Mini Quad A53 Core Processor
- Dual CANBus 2.0B
- Dual-channel 24-bit LVDS
- HDMI up to FHD Resolution (option)
- 10/100/1000 Mbps Ethernet
- USB 2.0
- MIPI-CSI
- Audio
- Yocto 4.0

Specifications

Core System	
CPU	NXP i.MX 8M Mini 1.6GHz SoC with Quad A53
System Memory	LPDDR4 4GB
Operating System	Yocto 4.0, Linux Kernel 5.15.32
Storage	1 x SDIO3.0 interface 1 x 8GB eMMC
RTC	Battery on the baseboard is required
Power Requirement	+5V ± 5%
I/O	
Graphics	1 x Dual-channel 24-bit LVDS or 1 x HDMI up to FHD Resolution (option)
Ethernet	1 x 10/100/1000 Mbps Ethernet
USB	3 x USB 2.0
COM	2 x UART TX/RX/RTS/CTS 2 x UART TX/RX (for debug console)
I^2C	3 x I^2C interface
QSPI	1 x QSPI
SPI	1 x SPI
CANBus	2 x CANBus
GPIO	14 x GPIO
OS Flash	1 x OS Flash
Audio	1 x I^2S
Camera Input	1 x MIPI-CSI 4-lane
Security	1 x TPM 2.0 (option, none in default)
Storage	1 x SDIO3.0 interface
PCIe	1 x PCIe Gen2 x1
Debug Header	1 x Debug Header

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Mechanical and Environmental	
Dimensions	82 x 50 mm (3.23” x 1.97”)
Board Thickness	1.2 mm ± 0.1 mm
Operating Temperature	-40°C to +85°C (-40°F to +185°F)

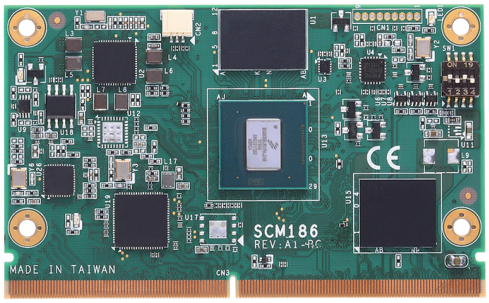
Ordering Information

Standard	
SCM187-4R8E-I	SMARC 2.1, NXP i.MX 8M Mini SoC Quad A53 with 4GB RAM, 8GB eMMC, LVDS, LAN, and USB ports (Heatsink Excluded)
Optional	
SCM187-4R8EI-184EVK	Evaluation Kit Boards, SMARC Module SCM187 with Baseboard SCB184 (Heatsink Excluded)
SCM187-HS-H	Heatsink, Passive Cooling Solution for SMARC Module SCM187 (-40˚C to +85˚C)

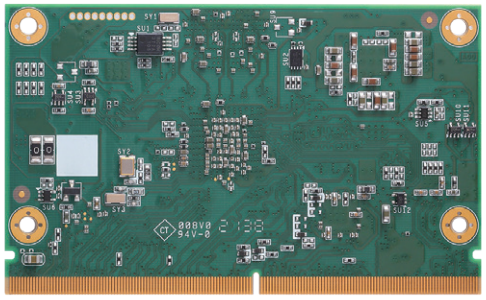
* All specifications and photos are subject to change without notice.

SCM186 NEW

RISC Embedded SMARC v2.0 SoM with i.MX 8M Plus Quad 1.8 GHz SoC, 4GB RAM and 8GB eMMC



▲ Top view



▲ Rear view

Features

- SMARC 2.0 (82 x 50 mm)
- NXP i.MX 8M Plus Quad A53 Core Processor
- Neural Processing Unit (NPU), up to 2.3 TOPS
- Cortex-M7 for Real-time Control
- Dual CANBus 2.0B
- HDMI up to 4K Resolution
- Dual-channel 24-bit LVDS
- 10/100/1000 Mbps Ethernet
- USB 3.2 Gen1
- MIPI-CSI
- Audio
- Yocto 3.3

Specifications

Core System	
CPU	NXP i.MX 8M Plus 1.8GHz SoC with Quad A53
System Memory	LPDDR4 4GB
AI Accelerator	NPU, up to 2.3 TOPS
Operating System	Yocto 3.3, Linux Kernel 5.10.35
Storage	1 x SDIO3.0 interface 1 x 8GB eMMC
RTC	Battery on the baseboard is required
Power Requirement	+5V ± 5%
I/O	
Graphics	1 x Dual-channel 24-bit LVDS 1 x HDMI (up to 1080p@60Hz/ 4K@30Hz)
Ethernet	1 x 10/100/1000 Mbps Ethernet
USB	2 x USB 3.2 Gen1 4 x USB 2.0
COM	2 x UART TX/RX/RTS/CTS 1 x UART TX/RX (for debug console)
I^2C	3 x I^2C interface
QSPI	1 x QSPI
SPI	1 x SPI
CANBus	2 x CANBus
GPIO	12 x GPIO
OS Flash	1 x OS Flash

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Audio	2 x I^2S
Camera Input	1 x MIPI-CSI 4-lane 1 x MIPI-CSI 2-lane
Security	1 x TPM 2.0 (option, none in default)
Storage	1 x SDIO3.0 interface
PCIe	1 x PCIe Gen3 x1
Mechanical and Environmental	
Dimensions	82 x 50 mm (3.23" x 1.97")
Board Thickness	1.2 mm ± 0.1 mm
Operating Temperature	0°C to +60°C (-32°F to +140°F)

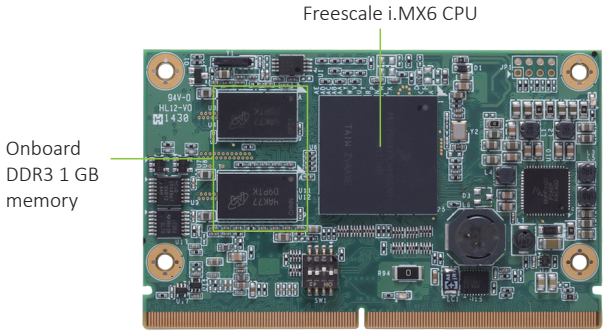
Ordering Information

Standard	
SCM186-4R8E-C	SMARC 2.0, NXP i.MX 8M Plus SoC Quad A53 with 4GB RAM, 8GB eMMC, HDMI, LVDS, LAN and USB Ports (Heatsink Excluded)
Optional	
SCM186-4R8EC-184EVK	Evaluation Kit Boards, SMARC Module SCM186 with Baseboard SCB184 (Heatsink Excluded)
SCM186-HS-H	Heatsink, Passive Cooling Solution for SMARC Module SCM186 (0˚C to +60˚C)

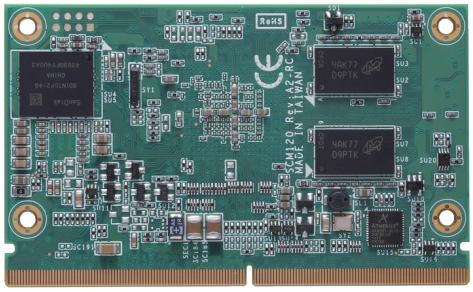
* All specifications and photos are subject to change without notice.

SCM120

SMARC v1.0 SoM with iMX6 Quad/DualLite 800 MHz (Industrial) SoC, 1GB RAM, 4GB eMMC, GbE LAN, Audio, CAN, MIPI and PCAM



▲ Top view



▲ Rear view

Features

- SMARC 1.0 (82 x 50 mm)
- Ultra low power consumption Cortex™-A9
- 2 CAN 2.0B
- 24-bit TTL signal
- LVDS/HDMI 1080P
- 10/100/1000 Mbps Ethernet
- Linux3.0.35/Android 4.3
- Audio

Specifications

Core System	
Processor	Freescale i.MX6 series SoC with Quad/DualLite ARM Cortex™-A9 CPU 800 MHz
System Memory	Onboard DDR3-1600, up to 1GB
OS	Linux kernel 3.0.35, Android 4.3
Storage	eMMC flash 4GB, SDIO interface, SATA interface (only quad support)
RTC	Battery on the Baseboard is required
Power Requirement	+3V to +5.25V
I/O	
Graphics	1 x 24-bit TTL signal 1 x Dual channel 24-bit LVDS 1 x HDMI 1080P
Ethernet	1 x 10/100/1000 Mbps Ethernet
Audio	Mic-in/Headphone
COM	3 x COM with TX/RX/RTS/CTS 1 x Console port
USB	1 x USB 2.0 1 x OTG client
I^2C	4 x I^2C interface
SPI	1 x SPI
CAN	2 x CAN
GPIO	8 x GPIO
PCIe	1 x PCIe
Camera	1 x MIPI v1.0, 2 x Lane 1 x PCAM 8-bit

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Mechanical and Environmental	
Dimensions	82 x 50 mm
Board Thickness	1.2 mm ± 0.1 mm
Operating Temperature	-40°C to +85°C (-40°F to +185°F)
Operation Humidity	10%- 95%, non-condensing

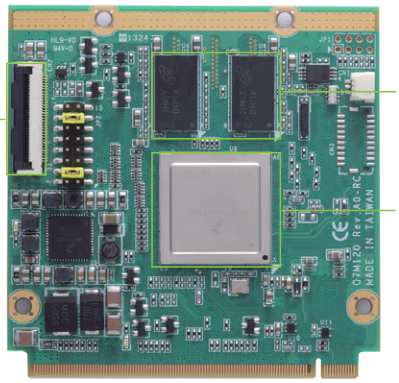
Ordering Information

Standard	
SCM120-DualLite-I	SMARC v1.0 module with Freescale iMX6 DualLite 800 MHz (industrial) SoC, 1GB RAM, 4GB eMMC, 1 GbE LAN, audio, and CAN
SCM120-Quad-I	SMARC v1.0 module with Freescale iMX6 Quad 800 MHz (industrial) SoC, 1GB RAM, 4GB eMMC, 1 GbE LAN, audio, CAN and SATA
Optional	
SCM120-120-EVK DualLite-I	Evaluation kit board
SCM120-120-EVK Quad-I	Evaluation kit board
5078S120100E	SCM120 heatspread (-40˚C to +70˚C)
5078Q120200E	Heatsink (-40˚C to +75˚C)

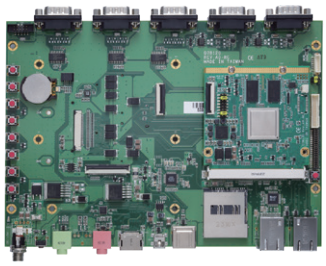
* All specifications and photos are subject to change without notice.

Q7M120

Qseven v2.0 SoM with iMX6 Quad/DualLite 800 MHz (Industrial) SoC, 1GB RAM, 4GB eMMC, GbE LAN, Audio and CAN



▲ Top view



▲ Rear view

Features

- Qseven v2.0 (70 x 70 mm)
- Ultra low power consumption Cortex™-A9
- 2 CAN
- 24-bit TTL signal
- LVDS/HDMI 1080P
- 10/100/1000 Mbps Ethernet
- Linux 3.0.35/Android 4.3
- Audio

Specifications

Core System	
Processor	Freescale i.MX6 Series SoC with Quad/DualLite/Solo ARM Cortex™-A9 CPU 800 MHz/1 GHz (only Solo)
System Memory	Onboard DDR3-1600, up to 1GB
OS	Linux kernel 3.0.35, Android 4.3
Storage	eMMC flash 4GB, SDIO interface SATA interface (Quad cores CPU)
RTC	Battery on the Baseboard is required
Power Requirement	+5V, 1A
I/O	
Graphics	1 x 24-bit TTL signal 2 x Signal channel 24-bit LVDS 1 x HDMI 1080P
Ethernet	1 x 10/100/1000 Mbps Ethernet
Audio	Mic-in/Headphone
COM	4 x COM with TX/RX/RTS/CTS (one with 3.3V TTL level) 1 x Console port
USB	1 x USB 2.0 1 x OTG client
I^2C	3 x I^2C Interface
SPI	1 x SPI
CAN	2 ports as 2.0B protocol-compatible Controller Area Network (CAN) interfaces
GPIO	8 button-detect
PCIe	1 x PCIe x1

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Mechanical and Environmental	
Dimensions	70 x 70 mm
Board Thickness	1.2 mm ± 0.1mm
Operating Temperature	-40°C to +85°C (-40°F to +185°F)
Operation Humidity	10%- 95%, non-condensing

Ordering Information

Standard	
Q7M120- DualLite-I (P/N:E38Q120100)	Qseven v2.0 module with Freescale iMX6 DualLite 800 MHz (industrial) SoC, 1GB RAM, 4GB eMMC, 1 GbE LAN, audio, and CAN
Q7M120- Quad-I (P/N:E38Q120102)	Qseven v2.0 module with Freescale iMX6 Quad 800 MHz (industrial) SoC, 1GB RAM, 4GB eMMC, 1 GbE LAN, audio, and CAN
Optional	
Q7M120-Quad-T	Qseven v2.0 module with Freescale iMX6 Quad 1 GHz (automotive) SoC, 1GB RAM, 4GB eMMC, 1 GbE LAN, audio, and CAN
Q7M120-120-EVK DualLite-I	Evaluation kit board
Q7M120-120-EVK Quad-I	Evaluation kit board
5078Q120100E	Q7M120 heatspread (-40˚C to 70˚C)
5078Q120200E	Heatsink (-40˚C to 75˚C)

* All specifications and photos are subject to change without notice.

10

Smart Display Modules

Axiomtek's advanced smart display module and smart kiosk module have been chosen by many industry- leading retail stores and grocery chains, to enhance customer shopping experience and improve store operations. The excellent performance of Module-series which can be integrated into the sleekest all-in-one designs offers customers speed, convenience and privacy through self-checkout terminals in delivering a comfortable shopping environment.

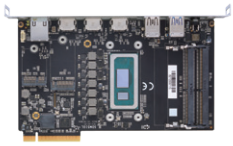
Selection Guide		125
NEW SDM510L	Intel® Smart Display Module Large (Intel® SDM-L) with 12th Gen Intel® Core™ i7/i5/i3 or Intel® Celeron® Processor and Intel® Iris® Xe Graphics with 8K60Hz or up to Four 4K60Hz Supported	126
SDM500L	Intel® Smart Display Module Large (Intel® SDM-L) with 8th Gen Intel® Core™ i7/i5/i3, Intel® Celeron® Processor, HDMI and LAN	128
SDM300S	Intel® Smart Display Module Small (Intel® SDM-S) with Intel® Pentium® Processor N4200 and Celeron® Processor N3350	130

Embedded Boards and Modules

Smart Display Modules

Selection Guide

NEW

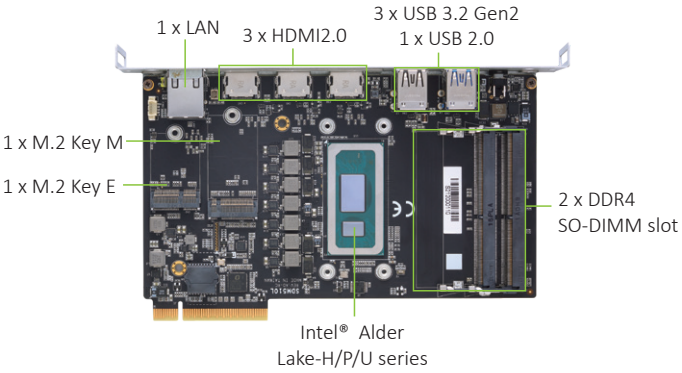


Features\Models		SDM510L	SDM500L	SDM300S
Form Factor		Intel® SDM Large	Intel® SDM Large	Intel® SDM Small
CPU Level		12th gen Intel® Core™ i7/i5/i3 (15W, 28W, 45W)	8th gen Intel® Core™ i7/i5/i3 (15W)	Intel® Pentium® N4200 & Celeron® N3350
CPU Socket		Onboard	Onboard	Onboard
Core Logic Chipset		SoC integrated	SoC integrated	SoC integrated
Memory Type		Dual-channel DDR4-3200 SO-DIMM	Dual-channel DDR4-2400 SO-DIMM	LPDDR4
Max. DRAM Capacity		32GB per channel	32GB per channel	4GB/8GB (optional)
Cache RAM Capacity		SoC integrated	SoC integrated	SoC integrated
BIOS		AMI UEFI BIOS	AMI UEFI BIOS	AMI UEFI BIOS
Watchdog Timer		255 levels, 1 to 255 sec./min.	255 levels, 1 to 255 sec./min.	255 levels, 1 to 255 sec./min.
SSD		1 x M.2 Key M slot	1 x M.2 Key M slot 1 x M.2 Key B slot	32GB (optional)/64GB eMMC onboard
I/O	Golden Finger	PCIe x8 (98-pin) 1 x USB 3.0 1 x HDMI 2.1 1 x DisplayPort 1.4 1 x Serial TX/RX 2 x I^2C	PCIe x8 (98-pin) 1 x USB 3.0 1 x HDMI 2.0 1 x DisplayPort 1.2 1 x Serial TX/RX 2 x I^2C	PCIe x8 (98-pin) 1 x USB 3.0 1 x HDMI 1.4 1 x DisplayPort 1.2 1 x Serial TX/RX 2 x I^2C
	Ethernet	2.5GbE with Intel® I225; supports Wake-on LAN (Intel® Core™ i7/i5: support Intel vPro®)	1 x 10/100/1000 Mbps with Intel® i211-AT; supports Wake-on-LAN, PXE Boot ROM	1 x 10/100/1000 Mbps with Intel® i211-AT; supports Wake-on-LAN, PXE Boot ROM
	Others	3 x USB 3.2 Gen2 1 x USB 2.0 3 x HDMI 2.0	4 x USB 3.0 1 x USB type C (optional) 1 x Mic-in 1 x Line-out 1 x HDMI 1.4 (optional)	2 x USB 3.0
SMBus		Yes	Yes	Yes
Expansion Interface		1 x M.2 Key E 1 x M.2 Key M slot	1 x M.2 Key E 1 x M.2 Key M slot 1 x M.2 Key B slot	1 x M.2 Key E 1 x PCIe x1 thru SDM edge connector
Power Input		Through SDM edge connector +12V & +3.3VBS	Through SDM edge connector +12V & +3.3VBS	Through SDM edge connector +12V & +3.3VBS
Battery		Lithium 3 V/220 mAH	Lithium 3 V/220 mAH	Lithium 3 V/220 mAH
Operating Temperature		0°C to 60°C (+32°F to +140°F)	0°C to 60°C (+32°F to +140°F) -20°C to 70°C (-20°F to +158°F) (optional)	0°C to +55°C (+32°F to +131°F)
Relative Humidity		10% to 95%, non-condensing	10% to 95%, non-condensing	10% to 95%, non-condensing
EMI Compliance		CE	CE	CE

* All specifications and photos are subject to change without notice.

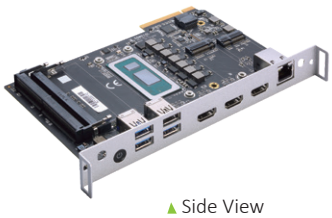
SDM510L NEW

Intel® Smart Display Module Large (Intel® SDM-L) with 12th Gen Intel® Core™ i7/i5/i3 or Intel® Celeron® Processor and Intel® Iris® Xe Graphics with 8K60Hz or up to Four 4K60Hz Supported

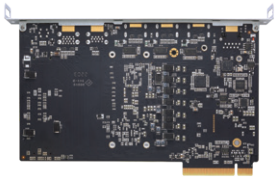


Features

- Intel® Smart Display Module (Intel® SDM) specification
- 12th gen Intel® Core™ i7/i5/i3 or Intel® Celeron® processor (Alder Lake-H/P/U series)
- 2 DDR4-3200 SO-DIMM
- M.2 Key E slot
- M.2 Key M slot
- 3 HDMI, 3 USB 3.2 Gen2, 1 USB 2.0, and 1 LAN
- Supports Intel® OpenVINO™ and Intel vPro®



▲ Side View



▲ Rear View

Specifications

Core System	
CPU	12th gen Intel® Core™ i7/i5/i3 or Intel® Celeron® processor (Alder Lake-H/P/U series)
System Memory	2 x 260-pin DDR4-3200 SO-DIMM
Chipset	SoC integrated
BIOS	AMI
SSD	1 x M.2 Key M 2242 slot
WatchDog Timer	255 levels, 1 to 255 sec.
Expansion Interface	1 x M.2 Key E 2230 slot for Wi-Fi/Bluetooth
Battery Lithium	Lithium 3V/220 mAH
Power Input	Through SDM golden finger +12V & +3.3VSB

Max. power consumption with turbo on i5-12600HE:120W, i3-1215UE:60W, Celeron 7305E:20W (No turbo mode)
Noted: Please check monitor maximum power supply to SDM.

Display	
Graphic	Intel® Iris® Xe Graphics (Core™ i7/i5) Intel® UHD Graphics (Core™ i3 and Celeron®)
Display Interface	3 x HDMI 2.0 (4K60Hz) (rear I/O) 1 x HDMI 2.1 (8K) (edge connector) 1 x DisplayPort 1.4 (8K) (edge connector) Noted: 1.Highly recommend configuring the SDM510L with minimum 16GB memory for four 4K (8K) optimized video performance. 2.4K/8K video playback results may vary based on video player.

I/O	
SDM Edge Connector	1 x USB 3.0 1 x HDMI 2.1 1 x DisplayPort 1.4 1 x Serial TX/RX 2 x I^2C
Ethernet	2.5GbE with Intel® I225 and supports Wake-on LAN (Intel® Core™ i7 and i5 support Intel vPro® function)
Audio	Audio by HDMI
USB	3 x USB 3.2 Gen2 1 x USB 2.0

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Mechanical and Environmental	
Dimensions	175 x 100 mm
Weight (net/gross)	252g/340g
Board Thickness	1.6 mm
Operating Temperature	0°C to 60°C (+32°F to +140°F)
Humidity	10%- 95% relative humidity, non-condensing

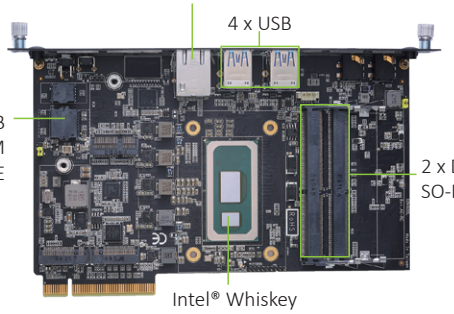
Ordering Information

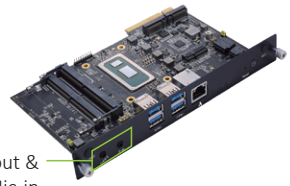
Standard	
SDM510L-I5H-3H1	SDM-L module with Intel® Core™ i5-12600HE processor (45W), 2 SO-DIMM, 1 M.2 SSD, 3 HDMI, 1 LAN, 3 USB 3.2 Gen2, and 1 USB 2.0
SDM510L-I3U-3H1	SDM-L module with Intel® Core™ i3-1215UE processor (15W), 2 SO-DIMM, 1 M.2 SSD, 3 HDMI, 1 LAN, 3 USB 3.2 Gen2, and 1 USB 2.0
SDM510L-CLU-3H1	SDM-L module with Intel® Celeron 7305E processor (15W), 2 SO-DIMM, 1 M.2 SSD, 3 HDMI, 1 LAN, 3 USB 3.2 Gen2, and 1 USB 2.0
Optional	
8812T1500A0E	Wi-Fi kit
M.2 SSD	M.2 Key M 2242; 64GB to 256GB
DDR4 SO-DIMM	DDR4 4GB to 32GB

* All specifications and photos are subject to change without notice.

SDM500L

Intel® Smart Display Module Large (Intel® SDM-L) with 8th Gen Intel® Core™ i7/i5/i3, Intel® Celeron® Processor, HDMI and LAN





▲ Side View

▲ Rear View

Features

- Intel® Smart Display Module (Intel® SDM) specification
- 8th gen Intel® Core™ i7/i5/i3 or Intel® Celeron® processor (Whiskey Lake-U)
- 2 DDR4-2400 SO-DIMM for up to 32G of memory
- M.2 Key E slot
- M.2 Key M slot
- M.2 Key B slot
- One HDMI, four USB 3.0, and LAN
- Supports Intel® AMT 12

Specifications

Core System	
CPU	8th gen Intel® Core™ i7/i5/i3 or Intel® Celeron® processor (Whiskey Lake-U)
System Memory	2 x 260-pin DDR4-2400 SO-DIMM, up to 32G
Chipset	SoC integrated
BIOS	AMI
SSD	1 x M.2 Key B 2242 slot 1 x M.2 Key M 2280 slot
WatchDog Timer	255 levels, 1 to 255 sec.
Expansion Interface	1 x M.2 Key E 2230 slot for Wi-Fi/BT
Battery Lithium	Lithium 3V/220 mAH
Power Input	Through SDM golden finger +12V & +3.3VSB
Display	
Graphic	Intel® gen 9 HD graphics
Display Interface	1 x HDMI 1.4 (4096 x 2160 @ 30p) (rear I/O, optional) 1 x DisplayPort 1.2 (4096 x 2304 @ 60p) (golden finger) 1 x HDMI 2.0 (4096 x 2160 @ 60p) (golden finger)
I/O	
SDM Golden Finger	1 x USB 3.0 1 x HDMI 2.0 1 x DisplayPort 1.2 1 x Serial TX/RX 2 x I^2C
Ethernet	1 x 10/100/1000 Mbps with Intel® i219; supports Wake-on-LAN (Core™ i5 and i7 support vPro function)
Audio	HD codec audio as Mic-in/Line-out with Realtek ALC662
USB	4 x USB 3.0, 1 x USB Type-C (optional)
Display	1 x HDMI 1.4 (optional)

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Mechanical and Environmental	
Dimensions	175 x 100 mm
Weight (net/gross)	252g/340g
Board Thickness	1.6 mm
Operating Temperature	0°C to 60°C (+32°F to +140°F) -20°C to 70°C (-20°F to +158°F) (optional)
Humidity	10% - 95% relative humidity, non-condensing

Packing List

1 x Quick installation guide

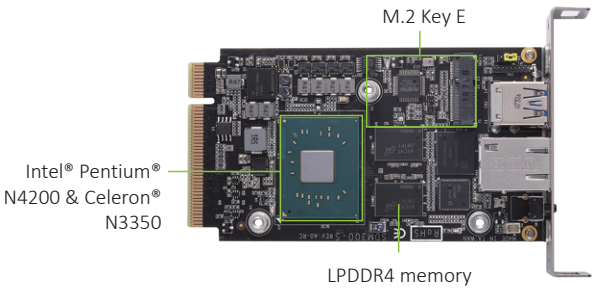
Ordering Information

Standard	
SDM500L-I3B-NN1 (P/N: E38X500118)	SDM-L module with Intel® Core™ i3-8145UE processor with 2 SO-DIMM, 2 M.2 SSD, 1 LAN, 4 USB 3.0, 1 Mic-in, and 1 Line-out
SDM500L-I3B-HC1 (P/N: E38X500119)	SDM-L module with Intel® Core™ i3-8145UE processor with 2 SO-DIMM, 2 M.2 SSD, 1 LAN, 4 USB 3.0, 1 Mic-in, 1 Line-out, 1 HDMI, and 1 USB Type-C
SDM500L-I5B-NN1 (P/N: E38X500120)	SDM-L module with Intel® Core™ i5-8365UE processor with 2 SO-DIMM, 2 M.2 SSD, 1 LAN, 4 USB 3.0, 1 Mic-in, and 1 Line-out
SDM500L-I5B-HC1 (P/N: E38X500121)	SDM-L module with Intel® Core™ i5-8365UE processor with 2 SO-DIMM, 2 M.2 SSD, 1 LAN, 4 USB 3.0, 1 Mic-in, 1 Line-out, 1 HDMI, and 1 USB Type-C
SDM500L-CLA-NN1 (P/N: E38X500122)	SDM-L module with Intel® Celeron-4305UE processor with 2 SO-DIMM, 2 M.2 SSD, 1 LAN, 4 USB 3.0, 1 Mic-in, 1 Line-out
Optional	
8812T1500A0E	Wi-Fi kit
M.2 SSD	M.2 2280-B-M 64 to 256GB
DDR4 SO-DIMM	4GB to 32GB

* All specifications and photos are subject to change without notice.

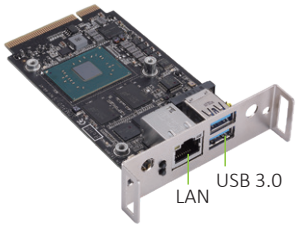
SDM300S

Intel® Smart Display Module Small (Intel® SDM-S) with Intel® Pentium® Processor N4200 and Celeron® Processor N3350



Features

- Intel® Smart Display Module (Intel® SDM) specification
- Intel® Pentium® processor N4200 & Celeron® processor N3350 (Apollo Lake)
- 4GB LPDDR4 memory onboard (8GB optional)
- 64GB eMMC onboard (32G optional)
- One M.2 Key E 2230 slot
- Two USB 3.0 and one GbE LAN
- Small design for easy integration into slim displays
- Optimized for digital signage, public kiosks, professional monitors, point-of-sale
- Projections for magic mirrors, beside terminals, hospitality, and more



▲ Side View

▲ Rear view

Specifications

Core System	
CPU	Intel® Pentium® processor N4200, Celeron® processor N3350 onboard
System Memory	LPDDR4 4GB memory onboard (8GB optional)
Chipset	SoC integrated
SSD	64GB eMMC onboard (32G optional)
WatchDog Timer	255 levels, 1 to 255 sec./min.
Expansion Interface	1 x M.2 Key E 2230 slot
Battery Lithium	Lithium 3 V/220 mAH
Power Input	Through SDM edge connector +12V & +3.3VBS
Display	
Graphic	Intel® HD Graphics 505/500 Supports Gfx- DX12.0, OCL 2.0, OGL 4.3
Display Interface (via SDM edge connector)	1 x DisplayPort 1.2 (4096 x 2304 @ 60p) 1 x HDMI 1.4 (3840 x 2160 @ 30p)
I/O	
SDM Golden Finger	Standard PCIe x8 (98-pin) 1 x USB 3.0 1 x HDMI 1.4 1 x DisplayPort 1.2 1 x Serial TX/RX 2 x I^2C
Ethernet	1 x 10/100/1000 Mbps with Intel® i211-AT; supports Wake-on-LAN, PXE Boot ROM
USB	2 x USB 3.0

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Mechanical and Environmental	
Dimensions	100 x 60 mm
Weight (net/gross)	146g/226g
Board Thickness	1.6 mm
Operating Temperature	0°C to +55°C (+32°F to +131°F)
Humidity	10% to 95% relative humidity, non-condensing

Packing List

1 x Quick installation guide

Ordering Information

Standard	
SDM300S-N4200-4GB (P/N: E38X300106)	SDM-S module with Intel® Pentium® processor N4200, DDR4 4GB, EMMC 64GB, 1 LAN, 2 USB 3.0
SDM300S-N3350-4GB (P/N: E38X300100)	SDM-S module with Intel® Celeron® processor N3350, DDR4 4GB, EMMC 64GB, 1 LAN, 2 USB 3.0
Optional	
8812T1500A0E	Wi-Fi Kit

* All specifications and photos are subject to change without notice.

11

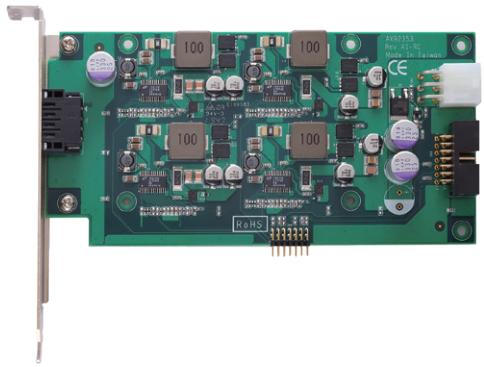
PCI Express Cards

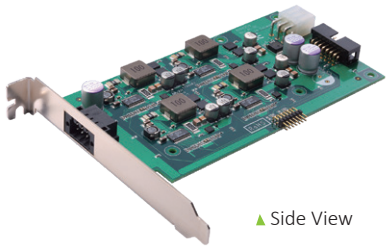
Axiomtek develops a full spectrum of add-on cards for machine vision and data acquisition applications to help customers accelerating their design and reducing development costs.

AX92353	4-CH Lighting Control Module	133
AX92352	2-CH Encoder Card with Real-Time Trigger I/O	134
AX92351	32-CH/64-CH Isolated Digital I/O PCI Express Card with Digital Filter	136
AX92325	2-port/4-port PCI Express 1GigE PoE Card with M12 X-coded Connector	138
AX92324	2-port 10GbE PoE PCI Express Card	140
AX92322	2-port/4-port GigE PCI Express Card	142
AX92321	4-port/8-port USB 3.0 PCI Express Card with 4 Independent Host Controllers	143
AX92320	2-port/4-port PCI Express GigE Frame Grabber Card	145

AX92353

4-CH Lighting Control Module





▲ Side View

Features

- 4-CH independent constant current LED drivers (up to 1 A)
- Supports strobe and trigger mode
- Intensity control by software
- Supports duration and delay time for LED output

Specifications

Channels	4-CH
Drive Methods	Current-controlled
Operating Mode	Strobe, Trigger
Output Current	Trigger mode 0.5A per CH Strobe mode 1A per CH
Output Voltage	24 VDC
Duration time	Trigger mode 10ms to 65s Strobe mode 10us to 10ms
Output current step size	50mA by software
I/O Connector	8 pin terminal connector (black)
Power Connector	6-pin ATX power connector (12V)
Power Requirements	Trigger mode 60W @12 VDC Strobe mode 120W @12 VDC
Dimensions	151 x 80 mm

Ordering Information

AX92353 (P/N: E392353100)	4-CH lighting control module (this optional module cannot be operating independently, please apply with AX92352.)
LED Power Cable (P/N: 59492350700E)	4P 4.2/6P 4.2, L=10 cm (only be used with IPC962/IPC964)

Packing list

CN-terminal block 4 x 2, cable (communication with AX92352)

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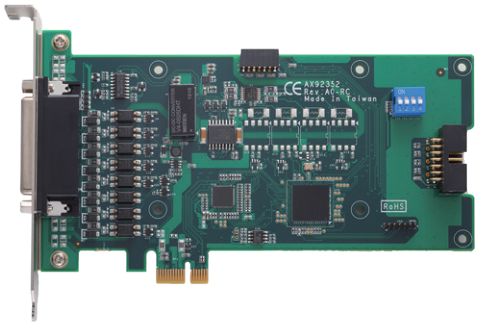
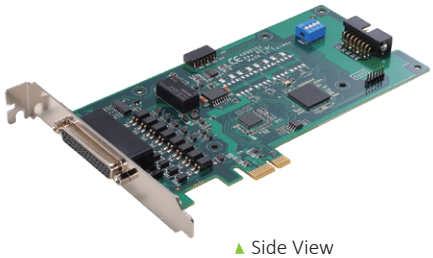
AX92352

2-CH Encoder Card with Real-Time trigger I/O





▲ Side View

Features

- Synchronizes devices via real-time I/O
- Applied to area scan and line scan applications
- Integrates multiple I/O
  - 2-CH 32-bit incremental quadrature encoder input
  - 4-CH trigger input
  - 4-CH trigger output
  - 8-CH isolated DI, 8-CH isolated DO
- Programmable interrupt functions
- PCI Express x1 compliant

Introduction

The AX92352 integrates advanced vision I/O capabilities for machine vision applications, such as synchronizing multiple frame grabbers in line scan and multiple cameras in area scan. It provides 2-CH encoder input with the FIFO function to achieve the tasks of position comparison and linear trigger. Furthermore, it also has trigger I/O with a microsecond-scale real-time control camera to capture images, as well as isolated DIO that can be used with other devices for your vision cases. The AX92352 vision I/O card can fit in the PCI Express slot of any vision control system to simplify the deployment of your machine vision platform.

Specifications

Isolated Encoder Input	
Channels	2-CH 32-bit incremental quadrature encoder input (A/B/Z)
Type	Differential or single-ended 5V, 12V open collector
Counter Mode	x1/4, x1/3, x1/2, x1, x2, x4
Input Filter	Programmable de-bounce filter
Frequency Input	Max. 1MHz
Operating Mode	Linear function, FIFO, Position latch
Isolated Trigger Input	
Channels	4-CH
Type	Sink
Input range	On (Logic 1): 3.3 to 30 VDC Off (Logic 0): 0 to 2 VDC
Response Time	1us (from trigger input to trigger output)
Input Filter	Programmable de-bounce filter
Isolated Trigger Output	
Channels	4-CH
Output Voltage	0 to 30 VDC, sink, open collector
Output Current	Current: max. 100mA per channel
Response Time	1us (from trigger input to trigger output)
Configuration	Derived from 4CH trigger input or encoder input. The user can set the pulse delay time and duration time
Trigger Sources	4CH trigger input/encoder: 4 x Linear function, 2 x FIFO (each channel supports two sources)

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Isolated Digital Input	
Channels	8-CH
Type	Sink/Source
Input Voltage	On (Logic 1): 10 to 30 VDC or dry contact Off (Logic 0): 0 to 3 VDC
Impedance	7.5KΩ
Isolated Digital Output	
Channels	8-CH
Output type	Sink, open collector
Supply voltage	5 to 30 VDC
Sink current	Max. 200 mA per channel
Interrupt	
Sources	Two interrupt sources from DI, Trigger/Latch input, Encoder Z phase, FIFO empty, encoder overflow and encoder linear function
General Specifications	
Bus Type	PCI Express x1
I/O Connector	D-sub 44-pin female connector
Isolation Voltage	2 kVDC
Power Requirements	180mA @ +3.3V (Max.) 120mA @ +12V (Max.)
Dimensions	168 x 100 mm
Board ID	Yes, 4-bit
Operating Temperature	0°C to +70°C (32°F to +158°F)
Storage Temperature	-20°C to +80°C (-4°F to +176°F)
Humidity	10 to 95% RH, non-condensing
Software Support	
EOS Support	Windows® 7/Windows® 10 (32/64bit)
Software Compatibility	C#, C/C++

Ordering Information

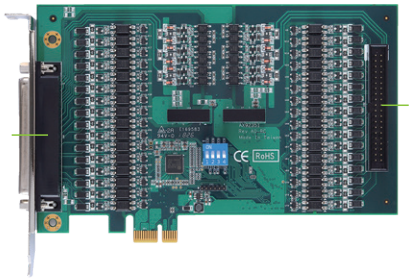
AX92352 (P/N: E392352100)	2-CH encoder card with real-time trigger I/O
AX92353 (P/N: E392353100)	4-CH lighting control module (this optional module cannot be operating independently, please apply with AX92352)
Accessories	
5A244AP1200E	44-pin DIN-rail terminal board DM44-AP12
594DM443500E	44-pin D-SUB cable, L=1m WHDM44/1.0-6954
594DM443510E	44-pin D-SUB cable, L=2m WHDM44/2.0-6954
594DM443520E	44-pin D-SUB cable, L=3m WHDM44/3.0-6954

*Specifications and certifications are based on options and may vary.

* All specifications and photos are subject to change without notice.

AX92351

32-CH/64-CH Isolated Digital I/O PCI Express Card with Digital Filter



▲ Side view

Features

- 16-CH or 32-CH isolated digital input (compatibility: sink and source)
- 16-CH or 32-CH isolated digital output (with output status read back)
- Interrupt capability (smart interrupt)
- Digital filter function
- Supports board ID

Introduction

The AX92351 is a 32-CH isolated DI and 32-CH isolated DO card. It comes with DI channels that support both sink and source input types for maximum application flexibility. The AX92351 also integrates digital filter and I/O interrupt (smart interrupt) functions, making it specifically suitable for factory automation, industrial on/off control and switch status sensing.

Specifications

Isolated Digital Input	
Isolation Voltage	2kV
Channels	16 (AX92351-32CH) 32 (AX92351-64CH)
Compatibility	Sink or source, dry or wet contact
Input Voltage	Input high voltage: 10 to 30V Input low voltage: 0 to 3V
Input Impendence	7.5KΩ
Interrupt Sources	Interrupt 0 (DI: CH 0-4) and 1 (DI: CH 8-12)
Response Speed	4KHz
Digital Filter	Yes
Isolated Digital Output	
Isolation Voltage	2kV
Channels	16 (AX92351-32CH) 32 (AX92351-64CH)
Compatibility	Sink or Source, Open collector
Output Current	100 mA/+30 VDC for all channels @ 100% duty
Supply Voltage	Max. 30 VDC
Max. Voltage Drop	3.5 VDC @ 100mA
Response Speed	4KHz
Over Current Protection	Yes

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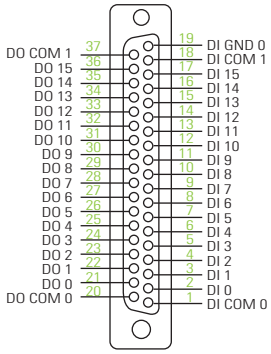
General Specifications	
Bus Type	PCI Express x1
Power Requirements	625mA @ +3.3V (Max.) 66mA @ +12V (Max.)
Dimensions	168 x 107 mm
Board ID	Yes, 4-bit
I/O Connector	Female DB37 x1 40-pin box header x1 (AX92351-64CH only)
Operating Temperature	0°C to +60°C (+32°F to +140°F)
Storage Temperature	-20°C to +80°C (-4°F to +176°F)
Humidity	10 to 95% RH, non-condensing
Software Support	
EOS Support	Windows® 7/10 (32/64-bit)
Software compatibility	C#, C/C++, LabVIEW

Digital Filter Table for DI Channels

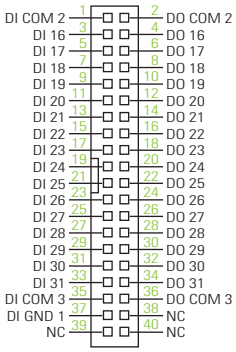
16 stages per DI channel; each channel can be set independently

Setting Data	Digital Filter Time	Setting Data	Digital Filter Time	Setting Data	Digital Filter Time	Setting Data	Digital Filter Time
0	function disable	4	700us	8	3ms	12	7ms
1	100us	5	900us	9	4ms	13	8ms
2	300us	6	1ms	10	5ms	14	9ms
3	500us	7	2ms	11	6ms	15	10ms

37-pin Female Connector (CN1)



40-pin Box-Header (CN2)
AX92351-64CH only



Ordering Information

AX92351-32CH (P/N: E392351104)	32-CH isolated digital I/O with digital filter
AX92351-64CH (P/N: E392351103)	64-CH isolated digital I/O with digital filter (includes one 40-pin box-header to 37-pin female cable)
Accessories	
5A237AP0200E	37-pin DIN-rail terminal board DM37-AP02
594DM373500E	37-pin D-Sub cable, L=1m WHDM37/1.0
594DM373510E	37-pin D-Sub cable, L=2m WHDM37/2.0
594DM373520E	37-pin D-Sub cable, L=3m WHDM37/3.0

* AX92351-64CH must be used in conjunction with two terminal boards and two D-Sub cables (all boards and cables are optional accessories available for purchase).

Packing list

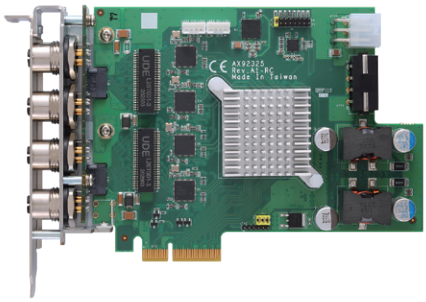
Standard

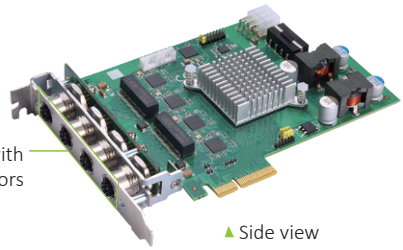
I/O bracket, 40-pin to DB37 cable (AX92351-64CH only)

* All specifications and photos are subject to change without notice.

AX92325

2-port/4-port PCI Express 1GigE PoE Card with M12 X-coded Connector





▲ Side view

Features

- Four M12 x-coded connectors with special design (to avoid occupying two slots, Patent No. I787783)
- 2 or 4 independent Gigabit PoE ports
- Supports 9.5KB Jumbo Frame and IEEE 1588
- Compliant with IEEE802.3at to deliver 30W at 54 VDC per port
- PCI Express x4 compliant
- 0°C to +60°C operating temperature range
- PoE power management software
- Supports LAN port smart on/off

Introduction

The AX92325 PoE (Power over Ethernet) card supports 2 or 4 independent Gigabit PoE ports, providing up to 30W at 54 VDC of power per port. It has a special design for the M12 connector that doesn't take up the space of other slots. With the support of PCIe x4 interface, the AX92325 can be easily integrated into Axiomtek's diverse products including industrial PCs, ATX motherboards, embedded systems, etc. Designed to help customers deploy machine vision cases and surveillance systems applications, the AX92325 brings not only expandable functionality but also flexible configurations to fulfill a variety of vertical application needs, delivering an ideal solution that will ultimately benefit customers with reduced costs, simpler installation, and lower maintenance need.

Specifications

Ethernet Communications	
Ethernet Port	2 or 4 GbE LANs by Intel® i210-AT controller, support 9.5KB jumbo frame and IEEE 1588
PoE Capability	IEEE 802.3at compliant, each port delivers up to 30W at 54 VDC
Speed	10/100/1000 Mbps
Port Connector	M12 x-coded connector
Power Requirements	
Input Voltage	12 VDC or 24 VDC
Overload Protection	Yes
Connection	4-pin Molex & 6-pin ATX power connector
Output PoE Power	Max. 20W w/ PCIe slot Max. 60W w/ 4-pin Molex power connector Max. 120W with 6 pin ATX power connector
Power Requirements	Power from PCIe slot (max. 20W PoE power output) 2.1A @ +12V 1.2A @ +3.3V Power from ATX power connector (max. 120W PoE power output) 12A @ +12V or 6A @ +24V 1.2A @ +3.3V (from PCIe slot) Power from Molex power connector (max. 60W PoE power output)
General Specifications	
Bus Type	PCI Express x4
Operating Temperature	0°C to +60°C (+32°F to +140°F) (with air flow)
Storage Temperature	-20°C to +80°C (-4°F to +176°F)
Humidity	10% to 95%, non-condensing
Dimensions (W x D)	168 x 111 mm
EOS Support	Windows® 7/10 (32/64-bit)

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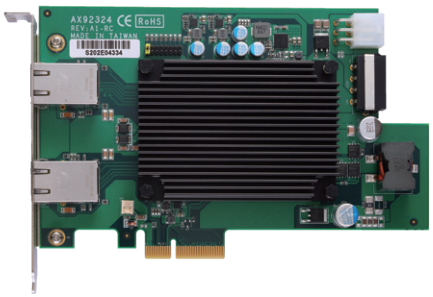
Ordering Information

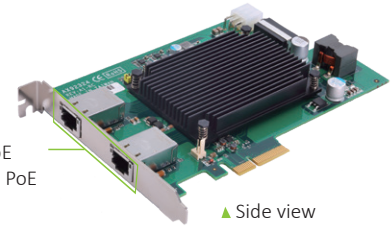
AX92325-2PoE (P/N: E392325102)	2-port PCIex4 1GbE PoE card with M12
AX92325-4PoE (P/N: E392325100)	4-port PCIex4 1GbE PoE card with M12
AX92325-2GbE (P/N: E392325103)	2-port PCIex4 1GbE card with M12
AX92325-4GbE (P/N: E392325101)	4-port PCIex4 1GbE card with M12
PoE Power Cable (P/N: 59492320700E)	4P 3.0/6P 4.2, L=10 cm (only be used with IPC962, IPC964 & IPC974)
Power Cable (P/N: 59492320730E)	6-pin ATX to Molex 4-pin power cable, L=150 mm (used for ATX power)

* All specifications and photos are subject to change without notice.

AX92324

2-port 10GbE PoE PCI Express Card





▲ Side view

Features

- Intel® Ethernet Controller X550-AT2, up to 10 Gbps data rate
- Supports 15.5KB Jumbo Frame and IEEE 1588
- Compliant with IEEE802.3at to deliver 25.5W per port
- PCI Express x4 compliant
- PoE power on/off via Power Manager software and API
- Operating temperature range from 0°C to 55°C

Introduction

The AX92324 is a dual-port 10GbE PEI Express card based on the Intel® Ethernet Controller X550-AT2. To meet the demands of the next-generation 10GbE cameras with high resolution and high-speed transmission over one single Ethernet cable, the AX92324 features the combination of 10GbE and IEEE802.3at compliant PoE capabilities. It also supports PoE power on/off and power budget settings via management software or API. The AX92324 is suitable for high bandwidth, high-speed transmission and low latency requirements for machine vision, intelligent surveillance and network applications.

Specifications

Ethernet Communications	
Ethernet Port	2 GbE LANs with Intel® X550-AT2 controller; supports 15.5KB jumbo frame and IEEE 1588
PoE Capability	IEEE 802.3at compliant; each port delivers up to 30W at 54 VDC
Data Rate	10Gbps/*5Gbps/*2.5Gbps/1Gbps/100Mbps (*Linux only)
Port Connector	8-pin RJ-45
Power Requirements	
Input Voltage	12 VDC or 24 VDC* (*24VDC ATX power connector is used for Axiomtek's system only)
Overload Protection	Yes
Connection	6-pin ATX power connector
Output PoE Power	Max. 20W w/ PCIe slot Max. 60W w/ 6-pin ATX power connector
Power Requirements	Power from PCIe slot (max. 20W PoE power output) 2.1A @ +12V 1.2A @ +3.3V Power from ATX power connector (max. 60W PoE power output) 6A @ +12V or 3A @ +24V 1.2A @ +3.3V (from PCIe slot)
General Specifications	
Bus Type	PCI Express x4
Operating Temperature	0°C to +55°C (+32°F to +131°F) (with air flow)
Storage Temperature	-20°C to +80°C (-4°F to +176°F)
Humidity	10% to 95%, non-condensing
Dimensions (W x D)	168 x 111 mm
OS Support	Windows® 7/10, Linux

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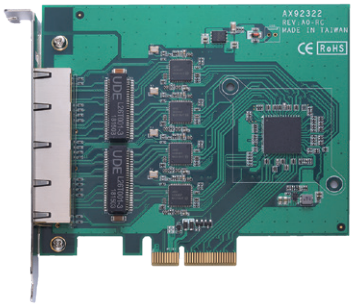
Ordering Information

AX92324-PoE (P/N: E392324100)	2-port 10GbE PCIe card with PoE
AX92324-w/o PoE (P/N: E392324101)	2-port 10GbE PCIe card
PoE Power Cable (P/N: 59492320700E)	4P 3.0/6P 4.2, L=10 cm (only used with IPC962/IPC964/IPC974)

* All specifications and photos are subject to change without notice.

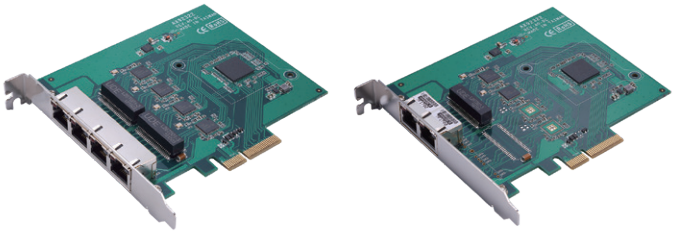
AX92322

2-port/4-port GigE PCI Express Card



Features

- 2 or 4 independent Intel® Ethernet Controller i210-AT
- Supports 9.5KB Jumbo Frame and IEEE 1588
- Supports two or four GbE LAN ports
- PCI Express x4 interface
- Operating temperature from 0˚C to 70°C



▲ Side view

Specifications

GigE	
Host Bus	4-lane Gen2 PCIe interface, compliant with PCI Express base specification, revision 2.0
Channels	2/4 ports
Ethernet Chip	2 or 4 x Intel® Ethernet Controller i210-AT Supports 9.5KB Jumbo Frame and IEEE 1588
Data Transfer Rate	10/100/1000 Mbps
General Specifications	
Bus Type	PCI Express x4
Power Consumption	Power from PCIe slot 1.73A@+3.3V max.
Dimensions	125 x 111 mm
I/O Connector	RJ-45
Operating temperature	0°C to +70°C (+32°F to +158°F)
Storage temperature	-20°C to +80°C (-4°F to +176°F)
Operating Humidity	10- 95% RH, non-condensing
OS	Windows® 7/10 (32/64-bit), Linux
Certification	CE

Ordering Information

AX92322-2GbE (P/N: E392322103)	2-port GigE PCI Express card
AX92322-4GbE (P/N: E392322102)	4-port GigE PCI Express card

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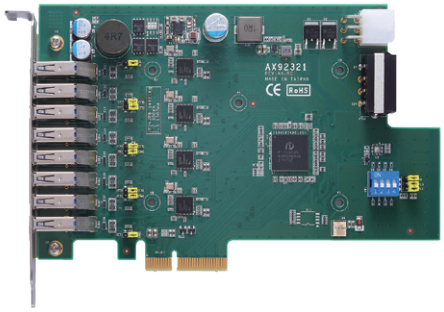
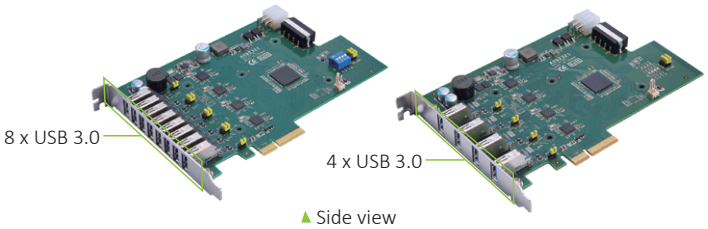
AX92321

4-port/8-port USB 3.0 PCI Express Card with 4 Independent Host Controllers





▲ Side view

Features

- 4 or 8 USB 3.0 ports
- 4 independent USB 3.0 host controllers
- 900 mA/1500 mA max. per port configurable via jumper settings
- Compliant with USB 3.0 Rev.1.0 and Intel® xHCI Rev.1.0
- PCI Express x4 interface
- Operating temperature from 0˚C to 70°C
- Supports Windows® 7/10 and Ubuntu 20.04 LTS
- Supports power on/off for each port via software settings

Introduction

The AX92321 has 4-port and 8-port versions for users to choose from for various applications. The 4-port AX92321 has four independent Renesas µPD720202 USB 3.0 host controllers to offer up to 5 Gbps bandwidth per port-even when four ports are used simultaneously. The AX92321 can be configured to support maximum of 900mA or 1500mA current output to supply stable power for various external USB devices. The AX92321 also supports power on/off control for each port via software settings. This USB 3.0 PCI Express card is able to operate under a wide operating temperature range of 0°C to 70°C, allowing it to be used in harsh environments for vision and factory automation applications.

Specifications

USB	
Channels	4 x USB 3.0 type A connector (AX92321-4U) 8 x USB 3.0 type A connector (AX92321-8U)
Controller	4 x Renesas µPD720202 host controllers Compliant with USB 3.0 specification and Intel® xHCI specification, revision 1.0
Max. Current	900/1500 mA maximum per port configurable via jumper settings
Data Transfer Rate	Super speed (5.0 Gbps)/high speed (480.0 Mbps)/full speed (12.0 Mbps)/low speed (1.5 Mbps)
General	
Bus Type	PCI Express x4 Gen2
Power Requirements	Power from PCIe slot (total power max. 20W USB power output) 2.1A@ +12V 0.8A @ +3.3V Power from ATX power connector 5A @ +12V or 2.5A @ +24V 0.8A @ +3.3V (from PCIe slot) Power from 4P Molex power connector 5A @ +12V 0.8A @ +3.3V (from PCIe slot)
Dimensions	168 mm (6.6”) x 107 mm (4.2”)
Power Connector	4-pin Molex connector 6-pin ATX power connector
Operating Temperature	0°C to +70°C (+32°F to +158°F)
Storage Temperature	-20°C to +80°C (-4°F to +176°F)
Operating Humidity	10- 95% RH, non-condensing
Certifications	CE compliance
OS	Windows® 7/10 (32/64-bit) Ubuntu 20.04 LTS
Software	Each port’s power on/off is controlled by software

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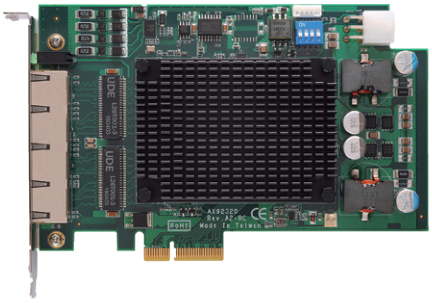
Ordering Information

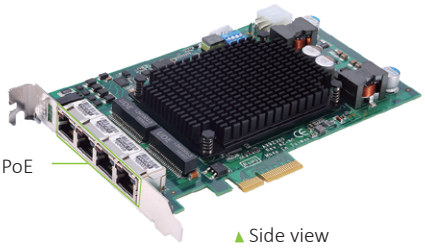
AX92321-4U (P/N: E392321103)	4-port USB 3.0 PCIe x4 card
AX92321-8U (P/N: E392321102)	8-port USB 3.0 PCIe x4 card
For IPC962/964 Riser Card Power Connector (P/N: 59492320700E)	Power cable 4P3.0/6P4.2, L=100 mm

* All specifications and photos are subject to change without notice.

AX92320

2-port/4-port PCI Express GigE Frame Grabber Card





▲ Side view

Features

- PCI Express x4 compliant
- 2 or 4 independent Gigabit PoE ports
- Supports 9.5KB Jumbo Frame and IEEE 1588
- Compliant with IEEE802.3at to deliver 30W at 54 VDC per port
- Up to 20/120W PoE power from PCIe 6-pin ATX power connector
- 0°C to +60°C operating temperature range
- PoE power management software
- Supports LAN port smart on/off

Introduction

The AX92320 PoE (Power over Ethernet) card supports 2 or 4 independent Gigabit PoE ports, providing up to 30W at 54 VDC of power per port. The AX92320 can fit in the PCI Express slot of any multi-channel vision control systems. It is designed to help customers develop and deploy machine vision and surveillance applications. Applications will greatly benefit through reduce cost, simpler installation and lower maintenance. Moreover, the AX92320 has a wide operating temperature of 0°C to 60°C (32°F to 140°F), making it suitable to be used in most severe environments.

Specifications

Ethernet Communications	
Ethernet Port	2 or 4 GbE LANs by Intel® i210-AT controller, support 9.5KB jumbo frame and IEEE 1588
PoE Capability	IEEE 802.3at compliant, each port delivers up to 30W at 54 VDC
Speed	10/100/1000 Mbps
Port Connector	8-pin RJ-45
Power Requirements	
Input Voltage	12 VDC or 24 VDC
Overload Protection	Yes
Connection	6-pin ATX power connector
Output PoE Power	Max. 20W w/ PCIe slot Max. 120W w/ 6-pin ATX power connector
Power Requirements	Power from PCIe slot (max. 20W PoE power output) 2.1A @ +12V 1.2A @ +3.3V Power from ATX power connector (max. 120W PoE power output) 12A @ +12V or 6A @ +24V 1.2A @ +3.3V (from PCIe slot)
General Specifications	
Bus Type	PCI Express x4
Operating Temperature	0°C to +60°C (+32°F to +140°F) (with air flow)
Storage Temperature	-20°C to +80°C (-4°F to +176°F)
Humidity	10% to 95%, non-condensing
Dimensions (W x D)	168 x 111 mm
EOS Support	Windows® 7/10 (32/64-bit)

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Ordering Information

AX92320-2GbE (P/N: E392320107)	2-port PCI Express GigE frame grabber card
AX92320-4GbE (P/N: E392320106)	4-port PCI Express GigE frame grabber card
PoE Power Cable (P/N: 59492320700E)	4P 3.0/6P 4.2, L=10 cm (only be used with IPC962, IPC964 & IPC974)
Power Cable (P/N: 59492320730E)	6-pin ATX to Molex 4-pin power cable, L=150 mm (used for ATX power)

* All specifications and photos are subject to change without notice.

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