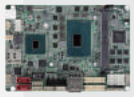
ARBOR

Embedded Computing

ARM-Based Computing

Computer-on-modules



Single Board Computers

Industrial Motherboards

Trusted Embedded Computing Platform

ARBOR offers advanced embedded technology and a dedicated service team to help you get the best ROI

Full-service OEM/ODM Solutions

Our dedicated RD/BIOS service team provides customization support from initial prototype design all the way through development, manufacturing, assembly, logistics, and after sales services.

Wide Temperature Design & Validation

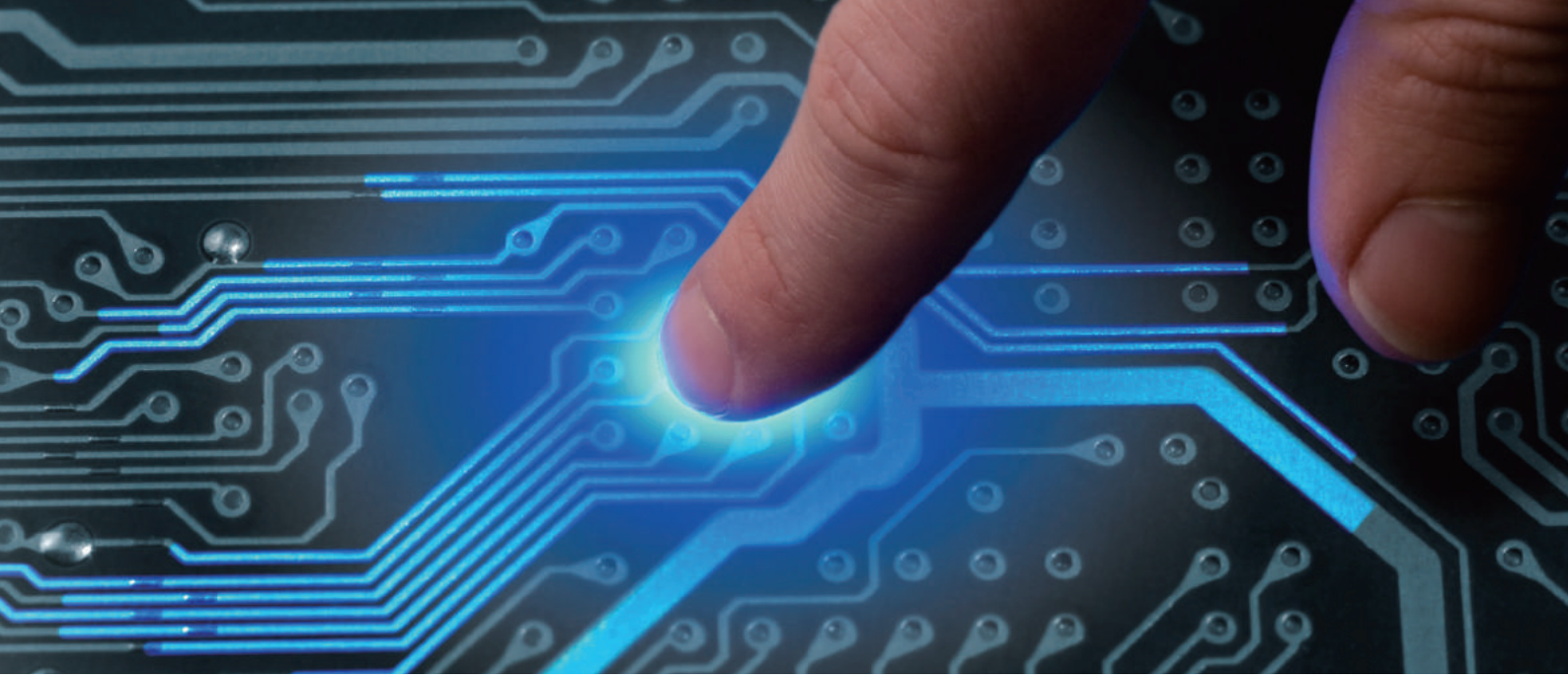
ARBOR COM Express modules can be operated in an extended temperature range of –40°C to +85°C, and have passed stringent vibration tests. The exclusive use of high quality components and highly effective thermal solutions ensure that the modules are rugged enough for use in harsh environments.

In-house Technologies and Expertise

ARBOR has extensive expertise in power MCU design for automation control. Its BIOS Anti-Crash Technology (ACT) enables embedded systems to recover BIOS code from a secondary on-board flash memory and restart in case of a system BIOS failure.

Conformal Coating Service

To provide maximum PCB operational lifespan and functionality, ARBOR offers automated conformal coating services to protect components and circuitry from dust, fungus, moisture and salt spray.



15 Years Longevity Commitment

Most of ARBOR board products carry a life cycle commitment of 15 years from first production. ARBOR will notify customers in advance of component revisions or End-of-Life scheduling, and provide options in qualifying updated components and modules.

Strategic Partner Ecosystem

ARBOR extends our technology and business capability through a powerful alliance ecosystem of industry-leading companies including Intel®, AMD®, Microsoft, as well as the leading standards development organizations, such as PICMG & SGeT.

Quality Assurance

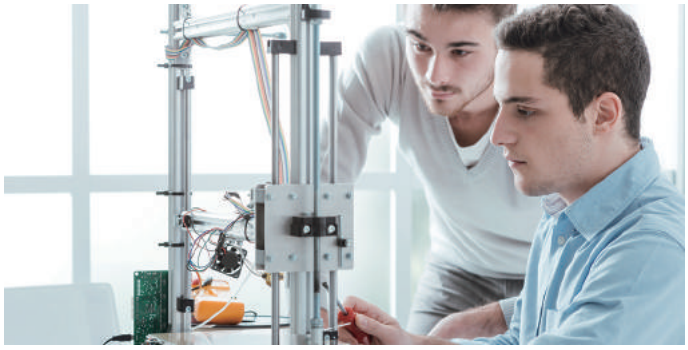
ARBOR's products are certified to comply with applicable regulatory bodies for their application to determine the quality of products, as well as ensure operational safety in embedded applications.

Medical Regulation Compliance

ARBOR is ISO 13485 and ISO 14971 certified, filling the requirements for implementing a comprehensive quality management system (QMS) for the design and manufacture of medical devices.

Embedded Hardware & Software Design Competency

Accelerating your embedded development with lower risk



Hardware Services

ARBOR offers a full lineup of embedded boards in different form factors to fulfill different industrial chassis. In addition to supporting the strong mechanical & thermal solution, our reliable components feature industrial-grade chipsets, and have passed stringent validation testing to an operating temperature range of up to -40°C to 85°C. ARBOR also has extensive expertise in power MCU design.

Software Services

- Embedded BIOS/bootloaders
- Embedded OS/licenses
- Embedded tools
- Trusted Platform Module (TPM)
- SHA1
- BIOS Anti-Crash Technology (ACT)

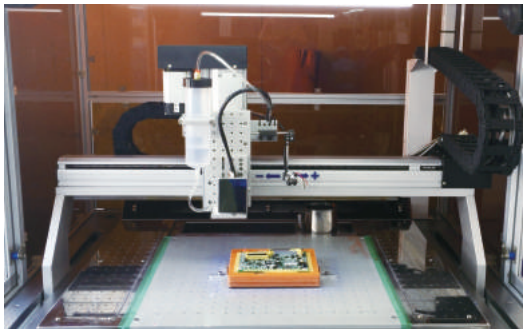
Validation & Testing

ARBOR provides rigorous product verification to ensure its ruggedness and performance to meet customers' requirements.

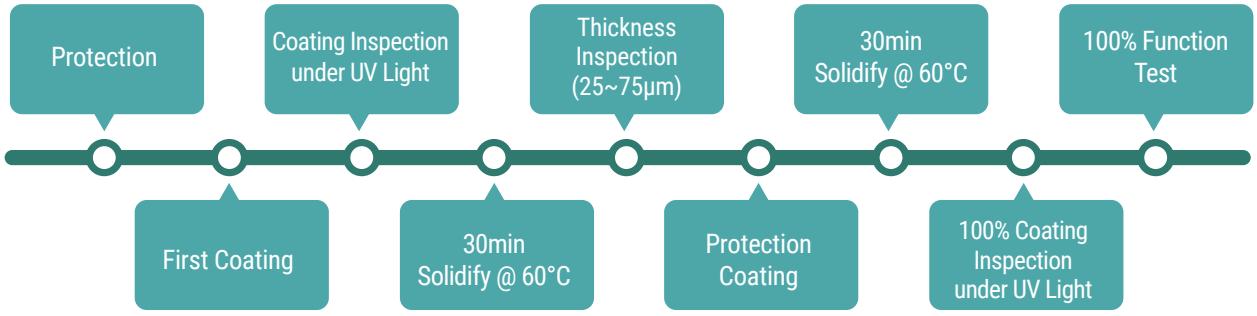
- EMI/EMC validation
- Vibration, shock and drop tests
- Humidity and temperature tests
- Thermal analysis
- Performance & compatibility tests

Automated Conformal Coating Services

ARBOR provides the automated conformal coating service, with an acrylic coating being applied to the whole surface of the board except contact pins, to protect the components & circuitry against dust, fungus, moisture and salt spray. Conformal coating also prevents short circuits and corrosion of metal between conductors.



Coating Flow Chart



Supported Form Factors

CPU on Module	
Qseven	70 x 70 mm
COM Express Mini	84 x 55 mm
COM Express Compact	95 x 95 mm
COM Express Basic	125 x 95 mm
ETX	114 x 95 mm

Single Board Computer	
PC/104	96 x 90 mm
3.5"	146 x 102 mm
EPIC	165 x 115 mm
Slot Computing	338 x 122 / 185 x 122mm
Industrial Motherboard	
Mini-ITX	170 x 170 mm
Micro-ATX	244 x 244 mm

Building a Trustworthy, long-term Service

Increasing the value of applications at every level of evolution

Extended Product Lifecycle

Unlike commercial motherboards with a typical lifespan of 12 to 18 months, motherboards in embedded computing applications, where design processes can last as long as two years, 3-5 year life cycles are a must. To deliver long-life products, ARBOR selects key components that offer long-life availability, and have adopted Product Lifecycle Management (PLM) systems to manage product design, collaboration, and manufacturing processes effectively.

Parts do go End-of-Life, but ARBOR manages that process by making sure component revision and EOL notifications are made at least 180-days before occurring, helping customers facilitate smooth transitions. Most of ARBOR board products carry a life cycle commitment of 15 years from first production. ARBOR will notify customers in advance of component revisions or End-of-Life scheduling, and provide options in qualifying updated components and modules.

ARBOR 25th Anniversary

25 years of embedded experience

Up to 15 years longevity commitment from first production

EOL notifications are made within 180 days before occurring

Ecosystem Partners

To deliver up-to-date technologies and solutions to our clients, ARBOR extends our technology and business capability through a powerful alliance ecosystem of industry-leading companies and organizations. Together, we provide our customers the top notch services to streamline their projects.

Full Experience of Industry Standards

ARBOR holds the most required ISO certification and industry standards to ensure our products and manufacturing capabilities meet the worldwide regulations and standards compliance. Our customers have no need to worry about getting documents for their product development. With our internal and external test laboratories, this allows manufacturers to circulate industrial products freely within the internal market of the USA, Europe and China.

Certified Quality Assurance

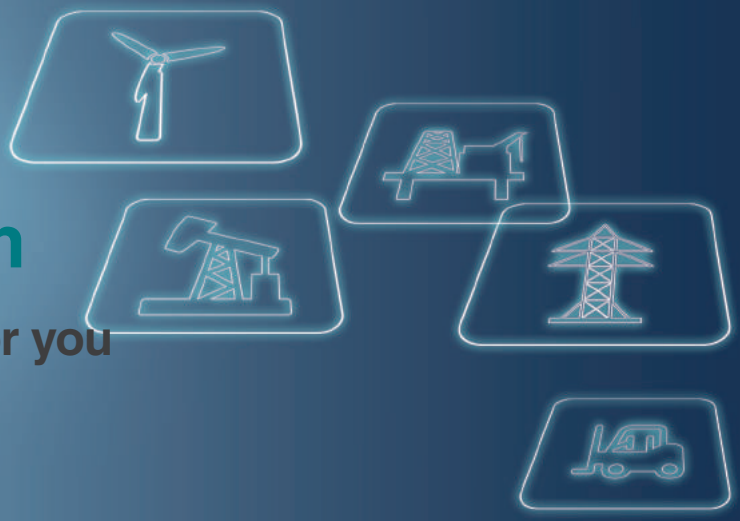
- ISO 9001:2008
- ISO 14001
- CE
- FCC

Medical Regulation Compliance

- IEC60601-1, EN60601-1, EN60601-1-2
- UL60601-1
- ISO 13485
- ISO 14971

ARM-Based Computing Platform

Linux customization tailored for you



ARBOR provides ARM-based computer-on-module for general, communication and mobility purposes to fulfill the diverse market demands. We offer a series of flexible, highly customizable and cost effective small form factor and Qseven ARM-based computer-on-module that can meet the requirements for power-efficient IoT devices and performance-oriented professional applications.

Board-to-System Service

ARBOR provides full-board customization service with our ARM-based computer-on-module to meet customer's requirements. We also offer customization from board-to-system, including early planning, design and development. With our responsive workflow, experienced R&D technologies and integrated services, ARBOR delivers high-quality OEM/ODM services to maximize your business success.

OS Customization

ARBOR offers full Linux operating system, drivers and software customization service for our ARM-based computing solutions. Our expert software team can tailor the OS to meet your requirements. This includes Android customization, Yocto, Ubuntu and Debian. We also offer BSP (Board Support Package) to support customers who are developing their own project.

ARM-Based Computer-On-Module	
	
SoM	QSeven

Custom Your ARM-Based Solutions with ARBOR

ARM-Based Solutions

- **Form Factor**
  - Qseven R2.1
  - Stamp 1 Small Form Factor
- **Configurations**
  - Texas Instruments
  - Rockchip 瑞芯微电子
  - NXP
- **Architecture**
  - Wi-Fi, Bluetooth, Ethernet, Touch and panel, HDMI
- **Advantages**
  - Small Form Factor
  - Low-Power Consumption
  - Linux Support
- **Software**
  - yocto PROJECT

Contact us for your custom design.

ARM-Based Embedded Systems

				
IOT-800N Slim Panel PC	PC1017 Price Checking Terminal	RP-101K Open Frame Touch Panel Kit	M1166 Medical Thin Client	M1861 Medical Infotainment Terminal

Computer on Modules

Building your embedded projects easier and faster!

Computer on Module perfectly meets your custom application requirements while helping you reach your goals for time-to-market, saving money, design flexibility and risk minimization. With a versatile portfolio of low-power CPU available from Intel®, AMD® and VIA supporting fanless operation, your embedded system will enjoy the benefits of high CPU performance per watt. ARBOR's Computer on Module supports different form factor includes COM Express, Qseven and ETX System on Module to meet every type of demands in your applications.

PICMG Standard Compliant

As an active member of PICMG, ARBOR's COM Express comes with the latest module specifications and pinout definitions.

High Efficient Thermal Solution

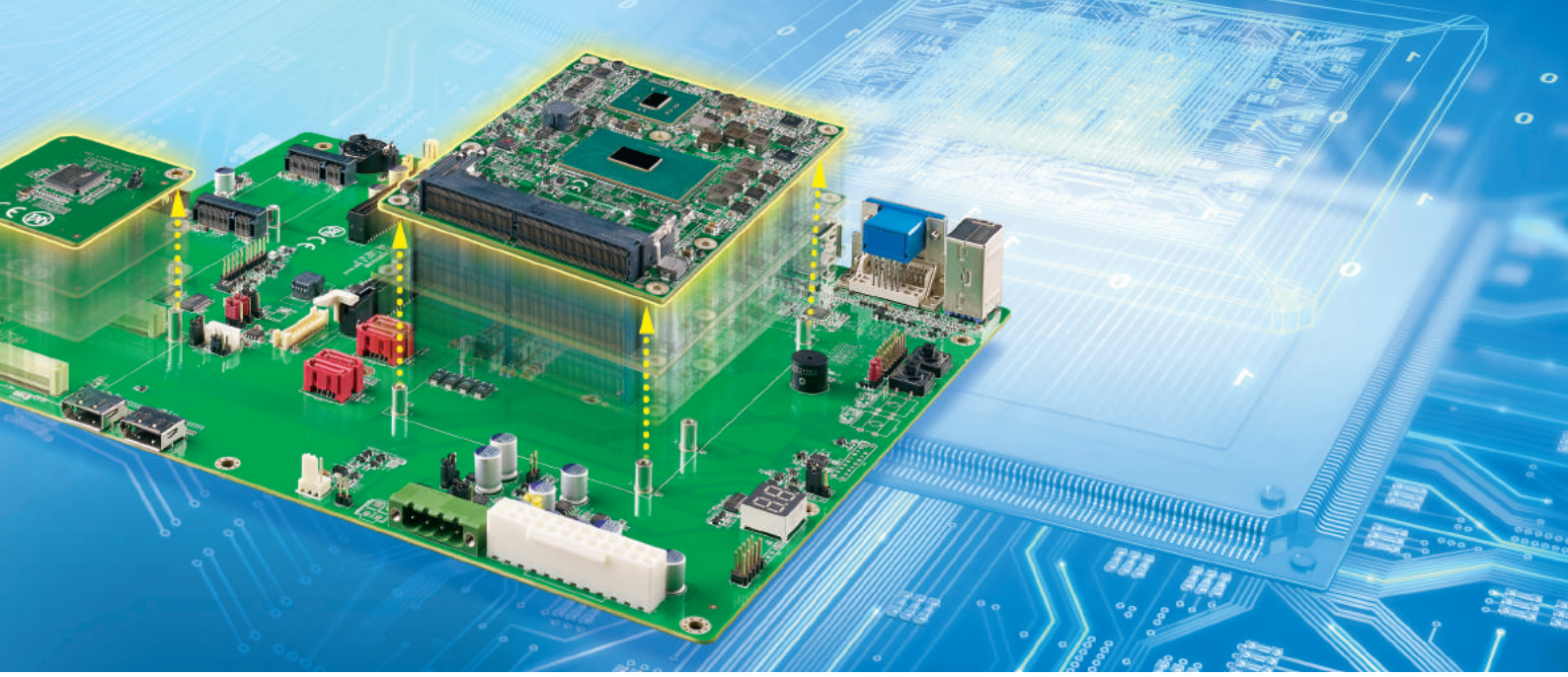
ARBOR uses specially CNC-machined aluminum heat-spreaders to contact hot spots in order to efficiently distribute the heat to the outside heat sink.

Conformal Coating Services

Upon customer request, this optional service that protects the components & circuitry against dust, fungus, moisture and salt spray.

Supported Form Factors

			
COM Express	ETX	Qseven	Carrier Board



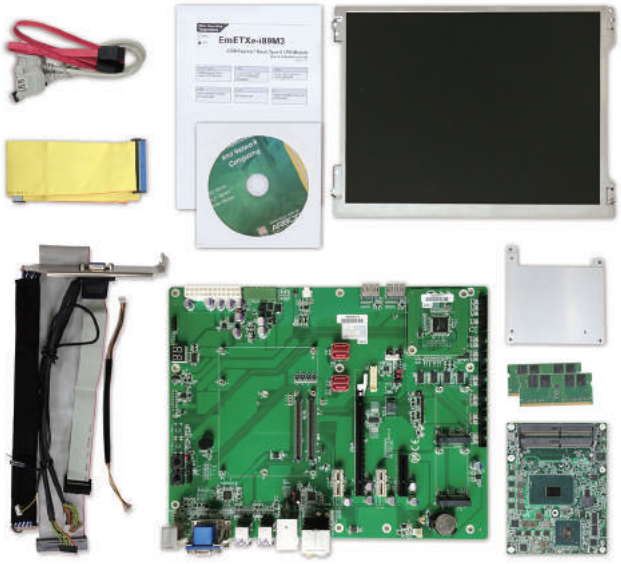
Quick, Easy Way to Start Your Own Embedded Projects

COM Express Type 6 Starter Kit

Kit Contents

- COM Express Type 6 CPU module of your choice
- RAM module
- ATX size reference carrier board
- Selected hardware and software components.
- All required accessories
- Quick installation guide

Get starter kit here



Target Applications

Medical Equipment

- Ultrasounds
- X-rays

Industrial Automation

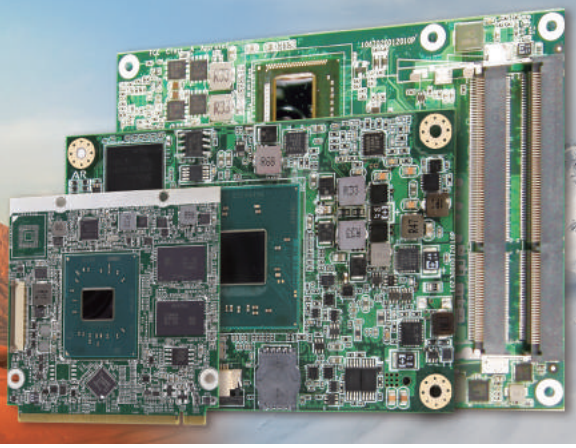
- Industrial imaging
- HMI

Harsh Environment Applications

- Heavy duty industry
- Field works, military

Single Board Computers

Meet industrial grade design and quality



ARBOR Single Board Computer (SBC) series ranging from 3.5”, PC/104, PC/104-Plus and EPIC, to a wide range of full-size and half-size Slot Computing boards. ARBOR’s SBCs are designed around the powerful core logic embodied within the chipsets from Intel® and AMD®. Highly integrated designs allow them to fit the minimal /critical space requirements of most embedded applications.

Moreover, ARBOR’s slot based SBCs are all based on open PICMG standards. All of these slot-based SBCs are ideally suited for applications in compact and rugged enclosures suited for mission-critical applications.

Reliable and Rugged Designs

- Wide temperature design option
- Industrial-grade components
- Conformal coating services

Ready-to-use Platforms

- X86 architecture, Intel® & AMD®
- PICMG, SGeT standards complinace

Extensive I/O Interfaces

- Expandable by PCI Express, Mini PCI Express and M.2 slots
- I/O extension options

Conformal Coating Services

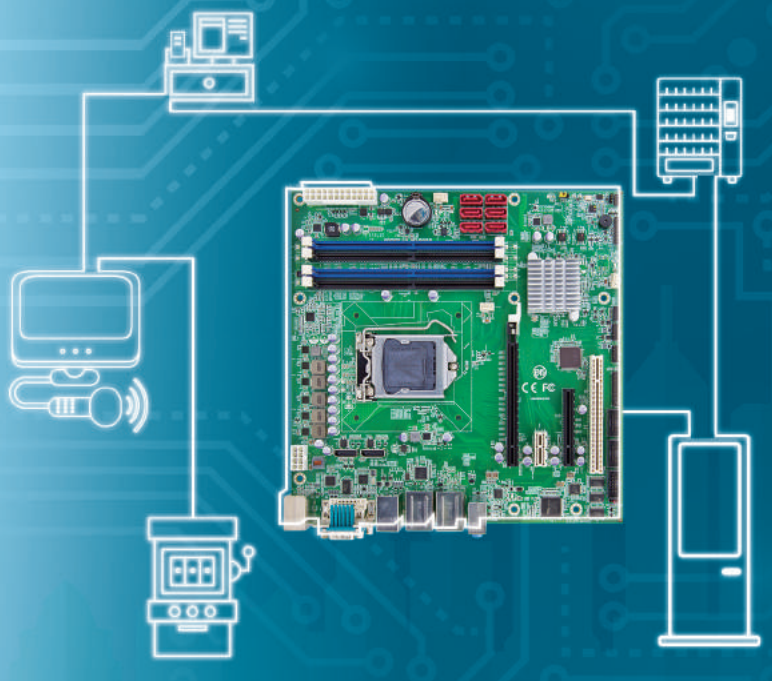
To protect the components & circuitry against dust, fungus, moisture and salt spray.

Supported Form Factors

			
PC/104	3.5” Compact	EPIC	Slot Computing

Industrial Motherboards

Minimal configuration and maintenance required



ARBOR offers plenty of industrial motherboard series in different form factors including Micro ATX and Mini-ITX. All industrial motherboards are designed with Intel® chipsets based on demand from system integrators, and ideal alternatives to platforms needing industrial features such as longevity, reliability and manageability, including many controller, server and gaming machine applications.

Customization & Configuration

- One-stop SW/HW integration
- Extensive I/O expansion

Reliability & Longevity

- Fanless Thermal Solution System
- Long term availability 10+ years
- Extended temp. of -20~70°C option
- Wide-Range DC Input

Ready for Vertical Markets

- Standards form factors for easy integration
- Industrial design for the complete product life cycle

Supported Form Factors

	
Mini-ITX	Micro-ATX

Selection Guide

ARM-Based Qseven Module

Model	EmQ-RK390
Form Factor	Qseven® R2.1
Dimension	70 x 70 mm
Processor	Rockchip RK3399 Dual-core Cortex-A72 + Quad-core Cortex-A53 processor
Memory	LPDDR3 2GB, optional 4GB
Storage	16GB eMMC Flash
Graphics	Mali-T860MP4 GPU
Display	1 x Dual Channel 18/24-bit LVDS 1 x HDMI
Camera	2 x MIPI-CSI
Audio	I2S Link
LAN	1 x GbE (Realtek® RTL8153B)
Wifi+BT	N/A
USB 2.0	4
USB 3.0	1
Serial Ports	5
SDIO	1, supported
DIO	8-bit DI, 8-bit DO
GPIO	Supported
I2C	Supported
Watchdog Timer	1~255 level reset
Expansion Bus	1 x PCIex4, configurable to x1 (default) , x2 or x4
Power Input	5V/3A
Operating Temperature	-20 ~ 70°C
OS support	Linux-Ubuntu, Buildroot, Android 8.1

Model	PBQ-9020
Form Factor	Carrier Board for Qseven module
Dimension	165 x 115 mm
Display	1 x Dual Channel 18/24 bit LVDS; 1 x HDMI
Camera	2 x MIPI CSI
Audio	1 x speaker, I2S link
Ethernet	2 x GbE RJ-45
USB 2.0	4
USB 3.0	1
Serial Port	2 x RS232/422/485 selectable; 2 x RS-232
SDIO	1 x SD socket
DIO	8-bit DI, 8-bit DO
GPIO	8 bit GPIO
ExpansionBus	N/A
Power Requirement	5V/3A
Operating Temperature	-20 ~ 70°C

ARM-Based System on Module

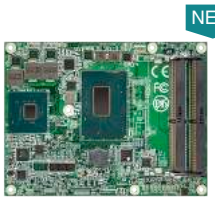
Model	SOM-RK391	SOM-RP301
Form Factor	SOM-1	SOM-1
Dimension	69.6 x 70 mm	69.6 x 50 mm
Processor	Rockchip RK3399 Dual-core Cortex-A72 + Quad-core Cortex-A53	RockChip PX30 Quad-Core ARM Cortex-A35, 1.5GHz
Memory	LPDDR4 2GB, optional to 4GB	LPDDR3 1GB, optional to 4GB
Storage	16GB eMMC Flash	Option internal eMMC with SDIO 5.1
Graphics	Mali-T860MP4 GPU	Mali-G31GPU
Display	1 x HDMI, 1 x MIPI DSI, 1 x eDP	LVDS or MIPI DSI
Camera	2 x MIPI CSI RX (up to 13MP)	1 x MIPI CSI RX (upto 8MP)
Audio	2 x 1W Speaker; 2 x Analog MIC; 1 x Digital MIC; 1 x Headphone	1 x 1W Speaker; 1 x Analog MIC; 1 x Digital MIC; 1 x Headphone
LAN	1 x GbE	1 x 10/100 Ethernet port
Wifi+BT	2T2R 802.11 a/b/g/n/ac Wifi + BT 5.0 (RSDB)	1 x 802.11 b/g/n and BT 4.0
USB 2.0	4	4 with USB Hub
USB 3.0	2 (Type C)	N/A
Serial Ports	2 UART ports, 2-wire; 2 UART ports, 4-wire	2 UART ports, 2-wire; 2 UART ports, 4-wire
RTC	Supported	Supported
SDIO	Supported	Supported
DIO	8-bit DI, 8-bit DO	N/A
GPIO	Supported	Supported
SPI	2	2
I2C	2	2
Power Input	5V/3A	5V/1.5A
Operating Temperature	-10 ~ 60°C	-10°C ~ 70°C
OS support	Linux-Buildroot, Debian, Android	Linux-Buildroot, Debian, Android

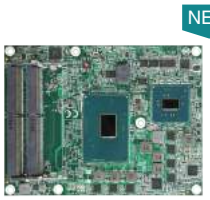
Model	PBA-9000
Form Factor	Carrier Board for SOM series
Dimension	165 x 115 mm
Display	1 x HDMI; 1x MIPI DSI; 1 x eDP
Camera	2 x MIPI CSI RX (upto 13MP)
Audio	2 x 1W Speaker; 2 x Analog MIC; 1 x Digital MIC; 1 x Headphone
Ethernet	1 x GbE RJ-45
USB 2.0	4
USB 3.0	2 (Type C)
Serial Port	2 UART ports, 2-wire; 2 UART ports, 4-wire
RTC	Supported
SDIO	Supported
DIO	8-bit DI, 8-bit DO
GPIO	Supported
Power Input	5V/3A
Operating Temperature	-20 ~ 70°C

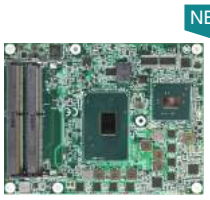
Wide-Temperature CPU Modules

Model	EmQ-i230J-WT	QSM-662E	EmNANO-i230V-WT	NAO-660E
Form Factor	Qseven® R1.2	Qseven® R1.2	COM Express® Compact Type 10	COM Express® Mini Type 10
Dimension	70 x 70 mm	70 x 70 mm	84 x 55 mm	84 x 55 mm
Processor	Intel® Atom™ Processor E3800 family E3825 1.33GHz E3845 1.91GHz	Intel® Atom™ Processor E3800 family E3825 1.33GHz E3845 1.91GHz	Intel® Atom Processor E3800 family E3825 1.33GHz E3845 1.91GHz	Intel® Atom™ Processor E3800 family E3825 1.33GHz E3845 1.91GHz
Chipset	N/A	N/A	N/A	N/A
Memory	Soldered onboard 4GB DDR3L SDRAM, upgradable to 4GB (OEM request)	Soldered onboard 2GB DDR3L SDRAM	Soldered Onboard 4GB DDR3L SDRAM	Soldered onboard 2GB DDR3L SDRAM
Video Output	Analog RGB (via RSV Pin), 1 x DDI port	Analog RGB (via RSV Pin), 1 x DDI port	1 x DDI port	1 x DDI port
LVDS	Dual Channels 24-bit	Dual Channels 24-bit	Single Channel 24-bit	Single Channel 24-bit
Audio	HD link	HD link	HD Link	HD link
Ethernet	1 x GbE	1 x GbE	1 x GbE	1 x GbE
Mass Storage	2 x SATA300, eMMC 4.5 (OEM request)	2 x SATA300, eMMC 4.5 (OEM request)	2 x SATA300	2 x SATA300
RS-232	N/A	N/A	2 x RX/TX	2 x RX/TX
RS-232/422/485	N/A	N/A	N/A	N/A
USB 2.0	8	8	8	8
USB 3.0	N/A	N/A	1	1
Digital I/O	N/A	N/A	N/A	N/A
Expansion Bus	3 x PCIe x1, SDIO, I2C	3 x PCIe x1, SDIO, I2C	3x PCIe x1, SDIO, SMBbus, SPI, LPC, I2C	3 x PCIe x1, SDIO, LPC, I2C
Power Input	DC 5V, 5VSB	DC 5V, 5VSB	DC 12V / 5V Auto Detect	DC 12V / 5V Auto Detect
Operating Temperature	-40 ~ 85°C (-40 ~ 185°F)	-40 ~ 85°C (-40 ~ 185°F)	-40 ~ 85°C (-40 ~ 185°F)	-40 ~ 85°C (-40 ~ 185°F)

All WT boards are BTO request







Model	EmETXe-i91M0-WT	EmETXe-i90M0-WT	EmETXe-i90M3-WT	EmETXe-i89M0-WT
Form Factor	COM Express® Basic Type 6	COM Express® Compact Type 6	COM Express® Compact Type 6	COM Express® Basic Type 6
Dimension	125 x 95 mm	125 x 95 mm	125 x 95 mm	125 x 95 mm
Processor	8th Gen. Intel® Core™ Processor i7-8850EQ 3.7GHz i5-8400EQ 4.2GHz	7th Gen. Intel® Core™ Processor i7-7820EQ 3.7GHz i5-7442EQ 2.9GHz	7th Gen. Intel® Core™ i7-7820EQ 2.8GHz i5-7442EQ 2.7GHz	6th Gen. Intel® Core™ Processor i7-6822EQ 2.8GHz E3-1505M 3.7GHz
Chipset	QM370	QM175	QM175	QM170
Memory	2 x DDR4 SO-DIMM Sockets	2 x DDR4 SO-DIMM Sockets	2 x DDR4 SO-DIMM Sockets	2 x DDR4 SO-DIMM Sockets
Video Output	3 x DDI ports	3 x DDI ports	Analog RGB, 2 x DDI ports	3 x DDI ports
LVDS	Dual Channels 24-bit	Dual Channels 24-bit	Dual Channels 24-bit	Dual Channels 24-bit
Audio	HD link	HD link	HD link	HD link
Ethernet	1 x GbE	1 x GbE	1 x GbE	1 x GbE
Mass Storage	4 x SATA600	4 x SATA600	4 x SATA600	4 x SATA600
RS-232	2 x RX/TX	2 x RX/TX	2 x RX/TX	2 x RX/TX
RS-232/422/485	N/A	N/A	N/A	N/A
USB 2.0	8	8	8	8
USB 3.0	4	4	4	4
Digital I/O	8-bit Programmable	8-bit Programmable	8-bit Programmable	8-bit Programmable
Expansion Bus	8 x PCIe x1, 1 x PEG x16, I2C	8 x PCIe x1, 1 x PCIe x16, I2C, LPC	8 x PCIe x1, 1 x PCIe x16, I2C, LPC	8 x PCIe x1, I2C, 1 x PCIe x16, LPC
Power Input	DC 8.5V~20V, +5VSB	DC 8.5V~20V, +5VSB	DC 8.5V~20V, +5VSB	DC 5~20V, 5VSB
Operating Temperature	-40 ~ 85°C (-40 ~ 185°F)	-40 ~ 85°C (-40 ~ 185°F)	-40 ~ 85°C (-40 ~ 185°F)	-40 ~ 85°C (-40 ~ 185°F)

All WT boards are BTO request




Model	EmETXe-i89M3-WT	EmETXe-i87M2-WT	EmETXe-i87M0-WT	COM-880E
Form Factor	COM Express® Basic Type 6	COM Express® Basic Type 6	COM Express® Basic Type 6	COM Express® Basic Type 6
Dimension	125 x 95 mm	125 x 95 mm	125 x 95 mm	125 x 95 mm
Processor	6th Gen. Intel® Core™ Processor i7-6822EQ 2.8GHz i5-6442EQ 2.7GHz	5th Gen. Intel® Core™ Processor i7-5700EQ 2.6GHz	4th Gen. Intel® Core™ Processor i7-4700EQ 2.4GHz i5-4402E 1.6GHz i3-4102E 1.6GHz i3-4112E 1.8GHz	3rd Gen. Intel®Core™ Processor i7-3517UE 1.7GHz i7-3612QE 2.1GHz
Chipset	QM170	QM87	QM87	QM77
Memory	2 x DDR4 SO-DIMM Sockets	2 x DDR3L ECC SO-DIMM Sockets	2 x DDR3L SO-DIMM Sockets	2 x DDR3 SO-DIMM Sockets
Video Output	Analog RGB, 2 x DDI ports	Analog RGB, 3 x DDI ports	Analog RGB, 3 x DDI ports	Analog RGB, 3 x DDI ports
LVDS	Dual Channels 24-bit	Dual Channels 24-bit	Dual Channels 24-bit (OEM request)	Dual Channels 24-bit
Audio	HD link	HD link	HD link	HD link
Ethernet	1 x GbE	1 x GbE	1 x GbE	1 x GbE
Mass Storage	4 x SATA600	2 x SATA300, 2 x SATA600	2 x SATA300, 2 x SATA600	2 x SATA300, 2 x SATA600
RS-232	2 x RX/TX	N/A	N/A	N/A
RS-232/422/485	N/A	N/A	N/A	N/A
USB 2.0	8	8	8	8
USB 3.0	4	4	4	4
Digital I/O	8-bit Programmable	8-bit Programmable	8-bit Programmable	8-bit Programmable
Expansion Bus	8 x PCIe x1, I2C, 1 x PCIe x16, LPC	6 x PCIe x1, 1 x PCIe x16	8 x PCIe x1, 1 x PCIe x16, LPC	7 x PCIe x1 1 x PCIe x16 Gen3, LPC
Power Input	DC 5~20V, 5VSB	DC 12V, 5VSB	DC 12V, 5VSB	DC 12V, 5VSB
Operating Temperature	-40 ~ 85°C (-40 ~ 185°F)	-40 ~ 85°C (-40 ~ 185°F)	-40 ~ 85°C (-40 ~ 185°F)*	-40 ~ 85°C (-40 ~ 185°F)

All WT boards are BTO request
*Note: Connector on CPU module




NEW


Model	COM-870E	COM-873E	EmETXe-i90U0-WT	EmETXe-i89U0-WT
Form Factor	COM Express® Basic Type 6	COM Express® Basic Type 2	COM Express® Compact Type 6	COM Express® Compact Type 6
Dimension	125 x 95 mm	125 x 95 mm	95 x 95 mm	95 x 95 mm
Processor	Intel® Celeron® Processor 827E 1.4GHz	2nd Gen. Intel® Core™ i7-2610UE 1.5GHz, Celeron® 827E 1.4GHz	7th Gen. Intel® Core™ Processor i7-7600U 3.9GHz i5-7300U 3.5GHz	6th Gen. Intel® Core™ Processor i7-6600U 2.6GHz i5-6300U 2.3GHz i3-6100U 2.3GHz Celeron® 3955U 2.3GHz
Chipset	HM65	QM67/ HM65	N/A	N/A
Memory	2 x DDR3 SO-DIMM Sockets	2 x DDR3 SO-DIMM Sockets	2 x DDR4 SO-DIMM sockets	2 x DDR4 SO-DIMM Sockets
Video Output	Analog RGB, 3 x DDI ports	Analog RGB, 1 x DDI port*	2 x DDI ports	2 x DDI ports
LVDS	Dual Channels 24-bit	Dual Channels 24-bit	Dual Channels 24-bit	Dual Channels 24-bit
Audio	HD link	HD link	HD link	HD link
Ethernet	1 x GbE	1 x GbE	1 x GbE	1 x GbE
Mass Storage	2 x SATA300, 2 x SATA600	2 x SATA300, 2 x SATA600	2 x SATA eMMC 5.0 (OEM Request)	2 x SATA600, eMMC 5.0 (OEM Request)
RS-232	N/A	N/A	2 x RX/TX	2 x RX/TX
RS-232/422/485	N/A	N/A	N/A	N/A
USB 2.0	8	8	8	8
USB 3.0	N/A	N/A	4	4
Digital I/O	8-bit Programmable	8-bit Programmable	8-bit Programmable	8-bit Programmable
Expansion Bus	7 x PCIe x1 1 x PCIe x16 Gen3, LPC	5 x PCIe x1, 1 x PCIe x16, LPC, 4 x PCI	8 x PCIe x1, I2C	8 x PCIe x1, I2C
Power Input	DC 12V, 5VSB	DC 12V, 5VSB	DC 5V~20V, 5VSB	DC 5~20V, 5VSB
Operating Temperature	-40 ~ 85°C (-40 ~ 185°F)	-40 ~ 85°C (-40 ~ 185°F)	-40 ~ 85°C (-40 ~ 185°F)	-40 ~ 85°C (-40 ~ 185°F)

All WT boards are BTO request
*Note: Connector on CPU module

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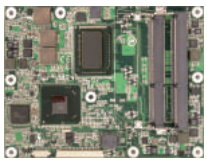

Model	EmETXe-i88U0-WT	EmETXe-i87U2-WT	EmETXe-i2309-WT	EmETXe-a10M0-WT	EmETX-i2304-WT
Form Factor	COM Express® Compact Type 6	COM Express® Compact Type 6	COM Express® Compact Type 6	COM Express® Compact Type 6	ETX 3.02
Dimension	95 x 95 mm	95 x 95 mm	95 x 95 mm	95 x 95 mm	114 x 95 mm
Processor	5th Gen. Intel® Core™ Processor i7-5650U 2.2GHz	4th Gen. Intel® Core™ Processor i7-4650U 1.7GHz	Intel® Atom™ Processor E3845 1.91GHz	AMD "Zen" APU 4C/4T V1404I Processor	Intel® Atom Processor E3800 family E3825 1.33GHz E3845 1.91GHz
Chipset	N/A	N/A	N/A	N/A	N/A
Memory	1 x DDR3L SO-DIMM Sockets	1 x DDR3L SO-DIMM Socket	1 x DDR3L SO-DIMM Socket	2 x DDR4 ECC SO-DIMM Sockets	1 x DDR3L SO-DIMM Socket
Video Output	2 x DDI ports	2 x DDI ports	Analog RGB, 1 x DDI port	3 x DDI ports	Analog RGB, 1 x DDI port*
LVDS	Dual Channels 24-bit	Dual Channels 24-bit	Dual Channels 24-bit	Dual Channels 24-bit	Dual Channels 24-bit
Audio	HD link	HD link	HD link	HD audio link	Realtek® ALC662
Ethernet	1 x GbE	1 x GbE (PHY)	1 x GbE	1 x GbE	1 x 10/100Mbps
Mass Storage	3 x SATA600	3 x SATA600	2 x SATA300, eMMC 4.5 (OEM request)	2 x SATA600	1 x Ultra ATA 2 x SATA300
RS-232	N/A	N/A	1 x RX/TX	2 x RX/TX	1 x RS-232
RS-232/422/485	N/A	N/A	N/A	N/A	1 x RS-232/422/485 (by Carrier Board)
USB 2.0	8	8	8	8	4
USB 3.0	2	2	1	4	N/A
Digital I/O	8-bit Programmable	8-bit Programmable	N/A	8-bit programmable	N/A
Expansion Bus	8 x PCIe x1, LPC	8 x PCIe x1, LPC	7 x PCIe x1, LPC, SDIO	8 x PCIe x1, 1 x PCIe x8, SPI, LPC	4 x PCI & ISA, LPC
Power Input	DC 12V, 5VSB	DC 12V, 5VSB	DC 12V	DC 5V~20V, +5VSB	DC 5V, 5VSB
Operating Temperature	-40 ~ 85°C (-40 ~ 185°F)	-40 ~ 85°C (-40 ~ 185°F)	-40 ~ 85°C (-40 ~ 185°F)	-40 ~ 85°C (-40 ~ 185°F)	-40 ~ 85°C (-40 ~ 185°F)

All WT boards are BTO request

CPU Modules

Model	EmQ-i2401	EmQ-i240A	EmQ-i2200	EmQ-i2205	EmQ-i2301
Form Factor	Qseven® R2.0	Qseven® R2.1	Qseven® R2.0	Qseven® R2.0	Qseven® R1.2
Dimension	70 x 70 mm	70 x 70 mm	70 x 70 mm	70 x 70 mm	70 x 70 mm
Processor	Intel® Celeron® Processor N3350 2.4GHz / Intel® Pentium® Processor N4200 2.5GHz	Intel® Celeron® Processor N3350 2.4GHz / Intel® Pentium® Processor N4200 2.5GHz	Intel® Celeron Processor N3160	Intel® Celeron processor N3060 2.48GHz N3160 2.24GHz	Intel® Atom™ Processor E3800 family E3825 1.33GHz, E3845 1.91GHz
Chipset	N/A	N/A	N/A	N/A	N/A
Memory	Soldered onboard 4GB DDR3L SDRAM	Soldered onboard 8GB LPDDR4 SDRAM	Soldered onboard 4GB DDR3L SDRAM	Soldered onboard 2GB DDR3L SDRAM, upgradable to 4GB	Soldered onboard 2GB DDR3L SDRAM, 4GB (OEM request)
Video Output	1 x DDI port	1 x DisplayPort	1 x DisplayPort / HDMI selectable port	2 x DisplayPorts, 1 x eDP port	Analog RGB (via RSV Pin), 1 x DDI port
LVDS	Dual Channels 24-bit	Dual Channels 24-bit	Dual Channels 24-bit	N/A	Dual Channels 24-bit
Audio	HD link	HD link	HD link	HD Link	HD link
Ethernet	1 x GbE	1 x GbE	1 x GbE	1 x GbE	1 x GbE
Mass Storage	2 x SATA600, eMMC (OEM Request)	2 x SATA eMMC 5.0 (OEM Request)	2 x SATA600, eMMC (OEM Request)	2 x SATA600	2 x SATA300, eMMC 4.5 (OEM request)
RS-232	N/A	N/A	1 x RX/TX	1 x UART port(TX/RX only)	N/A
RS-232/422/485	N/A	N/A	N/A	N/A	N/A
USB 2.0	4	6	4	4	8
USB 3.0	2	2	2	2	N/A
Digital I/O	N/A	N/A	N/A	N/A	N/A
Expansion Bus	4 x PCIe x1, SDIO, I2C	4 x PCIe x1, I2C, SDIO	3 x PCIe x1, SDIO, I2C	3 x PCIe x1, I2C, SDIO	3 x PCIe x1, SDIO, I2C
Power Input	DC 5V, 5VSB	DC 5V, 5VSB	DC 5V	DC 5V	DC 5V, 5VSB
Operating Temperature	-40~85°C (-40 ~ 185°F)	-20~ 85°C (-4~185°F)	-20~70°C (-4 ~ 158°F)	-20 ~ 70°C (-4 ~ 158°F)	-20~70°C (-4 ~ 158°F)

All WT boards are BTO request




Model	EmQ-a50M1	EmNANO-i2402	EmNANO-i2300	EmNANO-a56M0
Form Factor	Qseven® R1.2	COM Express® Mini Type 10	COM Express® Mini Type 10	COM Express® Mini Type 10
Dimension	70 x 70mm	84 x 55 mm	84 x 55 mm	84 x 55 mm
Processor	AMD G-Series Processor G-T40E 1.0GHz	Intel® Celeron® Processor N3350 2.4GHz / Intel® Pentium® Processor N4200 2.5GHz	Intel® Atom™ Processor E3800 family E3825 1.33GHz E3845 1.91GHz	AMD G-Series Processor GX-210HA 1.0GHz
Chipset	A50M	N/A	N/A	N/A
Memory	Soldered Onboard 2GB DDR3L SDRAM	Soldered onboard 4GB DDR3L SDRAM	Soldered onboard 2GB DDR3L SDRAM	Soldered onboard 2GB DDR3L SDRAM
Video Output	Analog RGB (via RSV pin), 1 x DDI port	1 x DDI port	Analog RGB (via RSV pin), 1 x DDI port	Analog RGB (via RSV pin), 1 x DDI port
LVDS	Dual Channels 18/24-bit	Single Channel 24-bit	Single Channel 24-bit	Single Channel 18-bit
Audio	HD link	HD link	HD link	HD link
Ethernet	1 x GbE	1 x GbE	1 x GbE	1 x GbE
Mass Storage	2 x SATA600, 8GB NANDrive (OEM req u est)	2 x SATA600 EMMC 5.0 (OEM Request)	2 x SATA300	2 x SATA600
RS-232	N/A	1 x RX/TX	2 x RX/TX	N/A
RS-232/422/485	N/A	N/A	N/A	N/A
USB 2.0	8	8	8	8
USB 3.0	N/A	2	1	2
Digital I/O	N/A	N/A	N/A	8-bit Programmable
Expansion Bus	3 x PCIex1, LPC	4 x PCIex1, SDIO, I2C	2 x PCIex1, SDIO, LPC, I2C	3 x PCIe x1, LPC
Power Input	DC 5V, 5VSB	DC 12V / 5V Auto Detect	DC 12V / 5V Auto Detect	DC 12V, 5VSB
Operating Temperature	-20~70°C (-4 ~ 158°F)	-20~ 85°C (-4~185°F)	-20~70°C (-4 ~ 158°F)	-20~70°C (-4 ~ 158°F)

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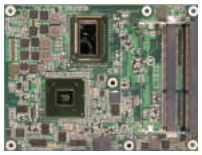
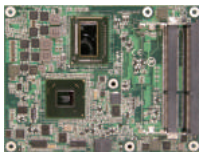
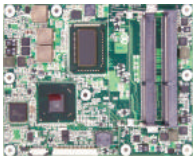





Model	EmETXe-i77M2	EmETXe-i67M2 EmETXe-i65M2	EmETXe-i67M1 EmETXe-i65M1	EmETXe-i88U4
Form Factor	COM Express® Basic Type 6	COM Express® Basic Type 6	COM Express® Basic Type 2	COM Express® Compact Type 6
Dimension	125 x 95 mm	125 x 95 mm	125 x 95 mm	95 x 95 mm
Processor	3rd Gen. Intel® Core™ i7-3517UE 1.7GHz i7-3612QE 2.1GHz i7-3555LE 2.5GHz	2nd Gen. Intel® Core™ i7-2610UE 1.5GHz i7-2715QE 2.1GHz Celeron® 827E 1.4GHz	2nd Gen. Intel® Core™ i7- 2610UE 1.5GHz, Celeron® 827E 1.4GHz	5th Gen. Intel® Xeon processor D-1539 1.6GHz D-1508 2.2GHz D-1527 2.2GHz
Chipset	QM77	QM67/HM65	QM67/ HM65	N/A
Memory	2 x DDR3 SO-DIMM Sockets	2 x DDR3 SO-DIMM Sockets	2 x DDR3 SO-DIMM Sockets	2 x DDR4 ECC SO-DIMM Sockets
Video Output	Analog RGB, 3 x DDI ports	Analog RGB, 3 x DDI ports	Analog RGB, 1 x DDI port (OEM request)	N/A
LVDS	Dual Channels 24-bit	Dual Channels 24-bit	Dual Channels 24-bit	N/A
Audio	HD link	HD link	HD link	HD audio link
Ethernet	1 x GbE	1 x GbE (PHY)	1 x GbE	1 x GbE
Mass Storage	2 x SATA300, 2 x SATA600	2 x SATA300, 2 x SATA600	2 x SATA300, 2 x SATA600	4 x SATA600
RS-232	N/A	N/A	N/A	N/A
RS-232/422/485	N/A	N/A	N/A	N/A
USB 2.0	8	8	8	8
USB 3.0	4	N/A	N/A	4
Digital I/O	8-bit Programmable	8-bit Programmable	8-bit Programmable	8-bit
Expansion Bus	7 x PCIe x1, 1 x PCIe x16, LPC	7 x PCIe x1, 1 x PCIe x16, LPC	5 x PCIe x1, 1 x PCIe x16, LPC, 4 x PCI	1 x PCIe x16 lane, 8 x PCIe x1 lanes, I2C Interface
Power Input	DC 12V, 5VSB	DC 12V, 5VSB	DC 12V, 5VSB	DC 12V, +5VSB
Operating Temperature	-20~70°C (-4 ~ 158°F)	-20~70°C (-4 ~ 158°F)	-20~70°C (-4 ~ 158°F)	0 ~ 60°C (52 ~ 140°F)

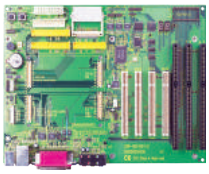


Model	EmETXe-a58M0	EmETX-a58M1	EmETX-a55E0
Form Factor	COM Express® Compact Type 6	ETX 3.02	ETX 3.02
Dimension	95 x 95 mm	114 x 95 mm	114 x 95 mm
Processor	AMD G-series Processor GX-412HC 1.6Ghz	AMD G-Series Processor GX-212JC 1.2Ghz GX-218GL 1.8Ghz	AMD G-Series Processor G-T56N 1.65GHz G-T40N 1.0GHz
Chipset	N/A	N/A	A55E
Memory	1 x DDR3L SO-DIMM Socket	1 x DDR3 SO-DIMM Socket	1 x DDR3 SO-DIMM Socket
Video Output	Analog RGB, 2 x DDI port	Analog RGB / 1x DVI 1 x DDI	Analog RGB 1 x DDI
LVDS	N/A	Dual Channels 24-bit	Dual Channels 24-bit
Audio	HD link	Realtek® ALC662	Realtek® ALC886
Ethernet	1 x GbE	1 x 10/100Mbps	1 x 10/100Mbps
Mass Storage	2 x SATA600	2 x SATA600	2 x SATA600
RS-232	N/A	1 x RS-232	1 x RS-232
RS-232/422/485	N/A	1 x RS-232/422/485 (by Carrier Board)	1 x RS-232/422/485 (by Carrier Board)
USB 2.0	7	4	4
USB 3.0	2	N/A	N/A
Digital I/O	N/A	N/A	N/A
Expansion Bus	7x PCIe x1, SDIO	4 x PCI (OEM request)	4 x PCI, ISA, LPC
Power Input	DC 12V, 5VSB	DC 5V, 5VSB	DC 5V, 5VSB
Operating Temperature	0 ~ 60°C (32 ~ 140°F)	0 ~ 60°C (0 ~ 140°F)	-20~70°C (-4 ~ 158°F)



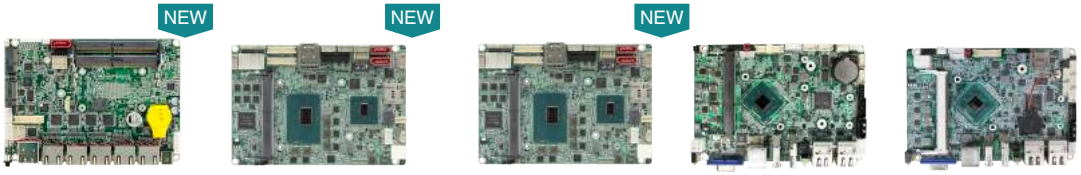

Model	PBQ-900L	PBQ-3000	PBN-9007	PBC-900J
Form Factor	EPIC form factor Qseven Carrier Board	EPIC form factor Qseven Carrier Board	COM Exp. Mini Type 10 Carrier Board	COM Exp. Basic Type 6 Carrier Board
Dimension	165 x 115 mm	165 x 115 mm	125 x 95 mm	125 x 95 mm
Graphics interface	1 x LVDS connector, 1 x DVI connector	1 x VGA connector, 1 x LVDS connector, 1 x DisplayPort connector	1 x LVDS connector, 1 x DisplayPort connector	1 x VGA connector, 1 x LVDS connector
Audio	Realtek® ALC662	Realtek® ALC662	Realtek® ALC662	Realtek® ALC662
Ethernet	2 x RJ-45 connectors	2 x RJ-45 connectors	2 x RJ-45 connectors	2 x LAN connectors
Storage	1 x SATA connector, 1 x M.2 socket	2 x SATA connectors	1 x SATA connector, 1 x CFast socket	1 x SATA connector, 1 x mSATA socket
Serial Port	3 x RS-232, 1 x RS-232/422/485 1 x UART	3 x RS-232, 1 x RS-232/422/485	1 x RS-232, 1 x RS-232/422/485	3 x RS-232, 1 x RS-232/422/485
LPT Port	N/A	N/A	N/A	1
USB 2.0	1	6	4	2
USB 3.0/2.0	2	N/A	2	2
Digital I/O	8-bit Programmable	8-bit Programmable	8-bit Programmable	16-bit Programmable
Expansion Bus	SMBus, I2C, SDIO, 1 x M.2 socket	1 x Mini-Card Socket, LPC	1 x Mini-Card Socket, SIM socket	1 x Mini-Card Socket, PCI/104
Power Input	10V ~ 30V	10V ~ 30V	DC 12V	DC 12V
Operating Temperature	-40 ~ 85°C (-40 ~ 185°F)	-40 ~ 85°C (-40 ~ 185°F)	-40 ~ 85°C (-40 ~ 185°F)	-40 ~ 85°C (-40 ~ 185°F)




Model	PBE-1700	PBE-1702	PBE-1705-F1	PBE-1000	PBE-1100
Form Factor	ATX form factor COM Exp. Type 2 Evaluation Board	ATX form factor COM Exp. Type 6 Evaluation Board	ATX form factor COM Exp. Type 6 Evaluation Board	ATX form factor ETX Evaluation Board	ETX Carrier Board
Dimension	305 x 244 mm	305 x 244 mm	305 x 244 mm	305 x 210 mm	114 x 95 mm
Graphics interface	1 x VGA connector, 1 x LVDS connector	1 x VGA connector, 1 x DVI connector, 1 x LVDS connector, 2 x DisplayPort connectors	1 x VGA/DVI connector, 1 x LVDS connector, 2 x DisplayPort connectors	1 x VGA connector, 1 x LVDS connector	1 x VGA connector, 1 x LVDS connector
Audio	Realtek® ALC888	Realtek® ALC888	Realtek® ALC888	Mic-in/ Line-in/ Line-out	Mic-in/ Line-in/ Line-out
Ethernet	1 x RJ-45 connector	2 x RJ-45 connectors	1 x RJ-45 connector	1 x RJ-45 connector	2 x LAN connectors
Storage	4 x SATA connectors, 1 x Ultra ATA connector, 1 x FDD connector, 1 x CF II socket	4 x SATA connectors	4 x SATA connectors	2 x Ultra ATA connectors, 1 x FDD connector, 1 x CF II socket	1 x Ultra ATA connector, 1 x FDD connector, 1 x CF II socket
Serial Port	2 x RS-232	2 x RS-232	6 x RS-232	3 x RS-232, 1 x RS-232/422/485	3 x RS-232, 1 x RS-232/422/485
USB 2.0	6	2	2	5	4
USB 3.0/2.0	N/A	N/A	4	N/A	N/A
Digital I/O	8-bit Programmable	8-bit Programmable	8-bit Programmable	16-bit DIO 8-in/ 8-out	16-bit DIO 8-in/ 8-out
Expansion Bus	2 x PCIe x1 slots, 1 x ExpressCard socket	2 x PCIe x1 slots, 1 x PCIe x 4 slot, 1 x PCIex16 slot, 2 x Mini-Card sockets	2 x PCIe x1 slots, 1 x PCIe x 4 slot, 1 x PCIex16 slot, 2 x Mini-Card sockets	4 x PCI slots, 3 x ISA slots	PC-104-Plus
Power Input	AT/ ATX	ATX	DC 5~20V / ATX	AT/ ATX	DC 12V, 5V
Operating Temperature	-40 ~ 85°C (-40 ~ 185°F)	-40 ~ 85°C (-40 ~ 185°F)	-40 ~ 85°C (-40 ~ 185°F)	-40 ~ 85°C (-40 ~ 185°F)	-40 ~ 85°C (-40 ~ 185°F)

Wide-Temperature Single Board Computers



Model	EmCORE-i90U2-WT	EmCORE-i90M2-WT	EmCORE-i89M2-WT	EmCORE-i2305-WT	EmCORE-i230G-WT
Form Factor	3.5"	3.5"	3.5"	3.5"	3.5"
Dimension	146 x 102 mm	146 x 102 mm	146 x 102 mm	146 x 102 mm	146 x 102 mm
Processor	6th/7th Gen. Intel® Core™ Processor i7-7600U 2.8GHz i5-7300U 2.6GHz i3-7100U 2.4GHz	7th Gen. Intel® Quad Core™ Processor i5-7442EQ 2.1Ghz	6th Gen. Intel® Quad Core™ Processor i5-6442EQ 2.8GHz i7-6822EQ 3.4GHz	Intel® Atom™ Processor E3800 family E3825 1.33GHz E3845 1.91GHz Celeron® Processor N2807 1.58GHz N2930 1.83GHz	Intel® Atom™ Processor E3800 family E3825 1.33GHz E3845 1.91GHz
Chipsets	N/A	QM175	QM170	N/A	N/A
Memory	2 x DDR4 SO-DIMM sockets	1 x DDR4 SO-DIMM Socket	1 x DDR4 SO-DIMM Socket	1 x DDR3L SO-DIMM Socket	1 x DDR3L SO-DIMM Socket
Graphic interface	1 x HDMI 1 x DisplayPort	1 x HDMI 1 x DisplayPort	1 x HDMI 1 x DisplayPort	Analog RGB, 1 x HDMI	Analog RGB, HDMI
LVDS	Dual Channels 24-bit	Dual Channels 24-bit	Dual Channels 24-bit	Dual Channels 24-bit	Dual Channels 24-bit
Audio	Realtek® ALC269	Realtek® ALC662	Realtek® ALC662	Realtek® ALC662	Realtek® ALC662
Ethernet port	5 x GbE	2 x GbE	2 x GbE	2 x GbE	2 x GbE
Storage	1 x SATA600 1 x M.2 B-key	2 x SATA600 1 x M.2 M-key	2 x SATA600 1 x M.2 M-key	1 x SATA300, 1 x mSATA , eMMC 4.5 (OEM request, E3800 family only)	1 x SATA300, 1 x CFast socket, eMMC 4.5 (OEM request)
Serial port	4 x RS-232/422/485 selectable	4 x RS-232 2 x RS-232/422/485 selectable	4 x RS-232 2 x RS-232/422/485 selectable	1 x RS-232 1 x RS-232/485 selectable	2 x RS-232/485 selectable
USB 2.0	4	2	2	4	6
USB 3.0/2.0	4	4	4	1	1
Digital I/O	8-bit Programmable	8-bit Programmable	8-bit Programmable	8-bit Programmable	8-bit Programmable
Expansion Bus	1 x M.2 E-key, 1 x Micro SIM socket	1 x Mini-Card Socket 1 x SIM socket	1 x Mini-Card Socket 1 x SIM socket	1 x Mini-Card Socket, 1 x micro-SDXC socket, 2 x I2C ports (OEM request, E3800 family only)	1 x Mini-Card Socket, 1 x micro SDXC socket, 1 x micro SIM socket
Power Input	DC 9V / 36V	DC 12V	DC 12V	DC 12V	DC 12V
Operating Temperature	-40 ~ 85°C (-40 ~ 185°F)	-40 ~ 85°C (-40 ~ 185°F)	-40 ~ 85°C (-40 ~ 185°F)	-40 ~ 85°C (-40 ~ 185°F)*	-40 ~ 85°C (-40 ~ 185°F)

All WT boards are BTO request




Model	EasyBoard-882E	EasyBoard-872E	Em104P-i2313	Em104-i230F
Form Factor	3.5"	3.5"	ETXP	PC/104
Dimension	146 x 102 mm	146 x 102 mm	114 x 95 mm	96 x 90 mm
Processor	3rd Gen. Intel® Core™ Processor i7-3517UE 1.7GHz	2nd Gen. Intel® Celeron® Processor 827E 1.4GHz	Intel® Atom™ Processor E3825 1.33GHz E3845 1.91GHz	Intel® Atom™ Processor E3825 1.33GHz E3845 1.91GHz
Chipsets	QM77	HM65	N/A	N/A
Memory	1 x DDR3 SO-DIMM Socket	1 x DDR3 SO-DIMM Socket	1 x DDR3L SO-DIMM Socket	1 x DDR3L SO-DIMM Socket
Graphic interface	DVI-I	DVI-I	Analog RGB	Analog RGB
LVDS	Dual Channels 24-bit	Dual Channels 24-bit	Dual Channels 24-bit	Dual Channels 24-bit
Audio	Realtek® ALC662	Realtek® ALC662	Realtek® ALC662	Realtek® ALC662
Ethernet port	2 x GbE	2 x GbE	1 x 10/100Mbps 1 x GbE	2 x GbE
Storage	2 x SATA600 1 x CFast socket	2 x SATA600 1 x CFast socket	1 x Ultra ATA 2 x SATA300, 1 x CF II socket	1 x SATA300, 1 x mSATA socket
Serial port	1 x RS-232 1 x RS-232/422/485 selectable	1 x RS-232 1 x RS-232/422/485 selectable (extra 4 x RS-232 via SCDB-1293)	3 x RS-232 1 x RS-232/422/485 selectable	2 x RS-232 2 x RS-232/422/485 selectable
USB 2.0	4	6	4	2
USB 3.0/2.0	2	N/A	N/A	1
Digital I/O	N/A	16-bit Programmable by SCDB-349R	16-bit DIO 8-in/8-out	8-bit Programmable
Expansion Bus	1 x Mini-Card Socket 1 x micro SIM socket	1 x Mini-Card Socket LPC (Low Pin Count) 1 x SIM socket	PC/104-Plus	PC/104
Power Input	DC 12V	DC 12V	DC 12V, 5V	DC 12V, 5V
Operating Temperature	-40 ~ 85°C (-40 ~ 185°F)	-40 ~ 85°C (-40 ~ 185°F)	-40 ~ 85°C (-40 ~ 185°F)	-40 ~ 85°C (-40 ~ 185°F)

All WT boards are BTO request

Single Board Computers

Slot Computing






Model	EmCORE-i77M3	EmCORE-i65M3	EmCORE-a55E1	HiCORE-i89Q1/Q2	HiCORE-i67Q1/67Q2	HiCORE-i61H2
Form Factor	3.5"	3.5"	3.5"	PICMG 1.3 full size SBC	PICMG 1.3 full size SBC	PICMG 1.0 full size SBC
Dimension	146 x 102 mm	146 x 102 mm	146 x 102 mm	338 x 126 mm	338 x 126 mm	338 x 122 mm
Processor	3rd Gen. Intel® Core™ Processor i7-3517UE 1.7GHz	2nd Gen. Intel® Celeron® Processor 827E 1.4GHz	AMD G-Series Processor G-T56N 1.65GHz G-T40N 1.0GHz	6nd Gen. Intel® Core™ i7/i5/i3 Processor (Socket LGA1151)	3rd/2nd Gen. Intel® Core™ i7/i5/i3 Processor (Socket LGA1155)	3rd/2nd Gen. Intel® Core™ i7/i5/i3 Processor (Socket LGA1155)
Chipsets	QM77	HM65	A55E	Q170	Q67	H61
Memory	1 x DDR3 SO-DIMM Socket	1 x DDR3 SO-DIMM Socket	1 x DDR3 SO-DIMM Socket	4 x DDR4 Long-DIMM Sockets	2 x DDR3 Long-DIMM Sockets	2 x DDR3 Long-DIMM Sockets
Graphic interface	DVI-I	DVI-I	Analog RGB, HDMI	DVI-I (89Q1) Analog RGB (89Q2) DisplayPort	Analog RGB	Analog RGB
LVDS	Dual Channels 24-bit	Dual Channels 24-bit	Dual Channels 24-bit	N/A	N/A	N/A
Audio	Realtek® ALC662	Realtek® ALC662	Realtek® ALC662	HD Audio Link	Realtek® ALC886	HD Audio Link
Ethernet port	2 x GbE	2 x GbE	2 x GbE	2 x GbE	2 x GbE	2 x GbE
Storage	2 x SATA600, 1 x CFast socket	2 x SATA600, 1 x CFast socket	2 x SATA600, 1 x CFast socket	6 x SATA600	2 x SATA600, 4 x SATA300, RAID 0, 1, 5, 10 supported	4 x SATA300
Serial port	1 x RS-232 1 x RS-232/422/485 selectable	1 x RS-232 1 x RS-232/422/485 selectable (extra 4 x RS-232 via SCDB-1293)	5 x RS-232 1 x RS-232/422/485 selectable	1 x RS-232 1 x RS-232/422/485	1 x RS-232 1 x RS-232/422/485 selectable	1 x RS-232 1 x RS-232/422/485 selectable
USB 2.0	4	6	6	8	14	10
USB 3.0/2.0	2	N/A	N/A	2	N/A	N/A
Digital I/O	N/A	16-bit Programmable by SCDB-349R	8-bit Programmable	8-bit Programmable	8-bit Programmable	8-bit Programmable
Expansion Bus	1 x Mini-Card Socket, 1 x micro SIM socket	1 x Mini-Card Socket, LPC (Low Pin Count), 1 x SIM socket	1 x Mini-Card Socket, 1 x SIM socket	PCI/ PCIe golden finger	PCI/ PCIe golden finger	PCI/ ISA golden finger
Power Input	DC 12V	DC 12V	DC 12V	DC 12V, 5VSB	DC 12V, 5V	DC 12V, 5V
Operating Temperature	-20 ~ 70°C (-4 ~ 158°F)	-20 ~ 70°C (-4 ~ 158°F)	0 ~ 70°C (32 ~ 158°F)	0 ~ 60°C (32 ~ 122°F)	0 ~ 60°C (32 ~ 140°F)	0 ~ 60°C (32 ~ 140°F)

Industrial Motherboards





Model	ITX-i89H0	ITX-i2203	ITX-i77M0	ITX-i67M0	ITX-a55E3
Form Factor	Mini-ITX	Mini-ITX	Mini-ITX	Mini-ITX	Mini-ITX
Dimension	170 x 170 mm	170 x 170 mm	170 x 170 mm	170 x 170 mm	170 x 170 mm
Processor	6th Gen. Intel® Core™ i3-6100E 2.7GHz / Intel® Xeon® E3-1505L V5 2.0GHz E3-1515M V5 2.8GHz	Intel® Celeron® Processor N3160 1.6GHz	3rd/2nd Gen. Intel® Core™ i7/i5/i3 Processor (Socket-G rPGA988)	2nd Gen. Intel® Core™ i7/i5/i3 Processor (Socket-G rPGA988)	AMD G-Series Processor G-T40N 1.0GHz
Chipsets	CM236	N/A	QM77	QM67	A55E
Memory	2 x DDR4 ECC SO-DIMM Sockets	1 x DDR3L SO-DIMM Socket	2 x DDR3 SO-DIMM Sockets	2 x DDR3 SO-DIMM Sockets	Soldered Onboard 2GB DDR3 SDRAM
Graphic interface	1 x HDMI 2 x DisplayPort	2 x HDMI	1 x DVI-I	1 x DVI-I	1 x DVI-I
LVDS	N/A	Dual Channels 24-bit	Dual Channels 24-bit	Dual Channels 24-bit	Dual Channels 24-bit
Audio	Realtek® ALC662	Realtek® ALC269	Realtek® ALC886	Realtek® ALC886	Realtek® HD ALC662
Ethernet port	1 x GbE	2 x GbE	2 x GbE	2 x GbE	2 x GbE
Storage	2 x SATA600 1 x M.2 M-key	1 x SATA600 1 x M.2 B-key eMMC 4.5 (OEM Request)	2 x SATA600 4 x SATA300	2 x SATA600 4 x SATA300	2 x SATA600, 1 x mSATA socket
Serial port	1 x UART interface (TX, RX, CTS, RTS)	1 x RS-232/422/485 selectable	5 x RS-232 1 x RS-232/422/485 selectable	5 x RS-232 1 x RS-232/422/485 selectable	4 x RS-232 2 x RS-232/422/485 selectable
USB 2.0	4	4	8	12	8
USB 3.0/2.0	6	4	4	N/A	N/A
Digital I/O	N/A	N/A	16-bit Programmable	16-bit Programmable	8-bit Programmable
Expansion Bus	1 x PCIe Gen 3.0 x16 1 x M.2 E-key, 1 x LPC	1 x PCIe x1 1 x M.2 E-key 1 x micro SIM socket	1 x PCIe x16 1 x Mini-card socket	1 x PCIe x16 1 x Mini-card socket	1 x PCI, 1 x Mini-card socket, 1 x PCIe x1 slot, 1 x SIM socket
Power Input	DC12V	DC24V	DC12V	DC12V	DC 9 ~ 36V
Operating Temperature	-20 ~ 70°C (-4 ~ 158°F)	-20 ~ 70°C (-4 ~ 158°F)	-20 ~ 70°C (-4 ~ 158°F)	-20 ~ 70°C (-4 ~ 158°F)	-20 ~ 70°C (-4 ~ 158°F)

NEW




Model	MB-i89Q0	MB-i87Q0	MB-i77Q0	MB-i67Q0
Form Factor	Micro-ATX Motherboard	Micro-ATX	Micro-ATX	Micro-ATX
Dimension	244 x 244 mm	244 x 244 mm	244 x 244 mm	244 x 244 mm
Processor	6th Gen. Intel® Core™ i7/i5/i3 Processor (Socket LGA1151)	4th Gen. Intel® Core™ i7/ i5/ i3 Processor (Socket LGA1150)	3rd/2nd Gen. Intel® Core™ i7/i5/i3 Processor (Socket LGA1155)	3rd/2nd Gen. Intel® Core™ i7/i5/i3 Processor (Socket LGA1155)
Chipsets	Q170	Q87	Q77	Q67
Memory	4 x DDR4 Long-DIMM Sockets	4 x DDR3 Long-DIMM Sockets	4 x DDR3 Long-DIMM Sockets	4 x DDR3 Long-DIMM Sockets
Graphic interface	1 x DVI-I 2 x DisplayPort	1 x DVI-I 1 x DisplayPort	2 x DVI	1 x DVI-I Analog RGB
LVDS	N/A	N/A	Dual Channels 24-bit	N/A
Audio	Realtek® ALC269	Realtek® ALC662	Realtek® ALC886	Realtek® ALC886
Ethernet port	2 x GbE	2 x GbE	2 x GbE	2 x GbE
Storage	6 x SATA600 RAID 0, 1, 5, 10 supported	6 x SATA600 RAID 0, 1, 5, 10 supported	2 x SATA600, 4 x SATA300	2 x SATA600, 4 x SATA300
Serial port	2 x RS-232 4 x RS-232 (OEM request)	2 x RS-232/422/485 selectable	3 x RS-232 1 x RS-232/422/485 selectable	3 x RS-232 1 x RS-232/422/485 selectable
USB 2.0	10	10	10	14
USB 3.0/2.0	4	4	4	N/A
Digital I/O	N/A	16-bit Digital I/O, 8-in & 8-out	16-bit Digital I/O, 8-in & 8-out	16-bit Programmable
Expansion Bus	1 x PCI 1 x PCIe x16 1 x PCIe x4 in x8 1 x PCIe x1	1 x PCI 1 x PCIe x16 1 x PCIe x4 in x8	1 x PCI 1 x PCIe x16 1 x PCIe x4 in x8 1 x PCIe x1	1 x PCI 1 x PCIe x16 1 x PCIe x4 in x8 1 x PCIe x1
Power Input	24-pin + 4-pin ATX power connector	24-pin + 4-pin ATX power connector	24-pin + 4-pin ATX power connector	24-pin + 4-pin ATX power connector
Operating Temperature	0 ~ 60°C (32 ~ 140°F)	0 ~ 60°C (32 ~ 140°F)	0 ~ 60°C (32 ~ 140°F)	0 ~ 60°C (32 ~ 140°F)

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