

Accelerate to The Future

PEMUX Introduction

The PEMUX allows users to deliver with maximum 56 lane of PCI Express 3.0 to PEMUX backplane while taking advantage of the speed and increased bandwidth of PCI Express.

■ What is PEMUX ?

- **Bringing PCI Express to your SBC with maximum lane signal quantity, increased speed and bandwidth**
PEMUX is designed for AI computing usage. AI computing needs to expand accelerator card, and PEMUX can provide up to 56 lane PCIe signals to the backplane.
All PCIe signal connect to CPU directly, this is perfect for applications that require minimal latency.
- **New pin definition for PCIe signal pass through to backplane**
With the maximization of PCIe lane signal quantity, we need the brand new pin define for supporting all signals pass through to the backplane, we called PEMUX design which defined by IEI.

■ The Advantage of PEMUX

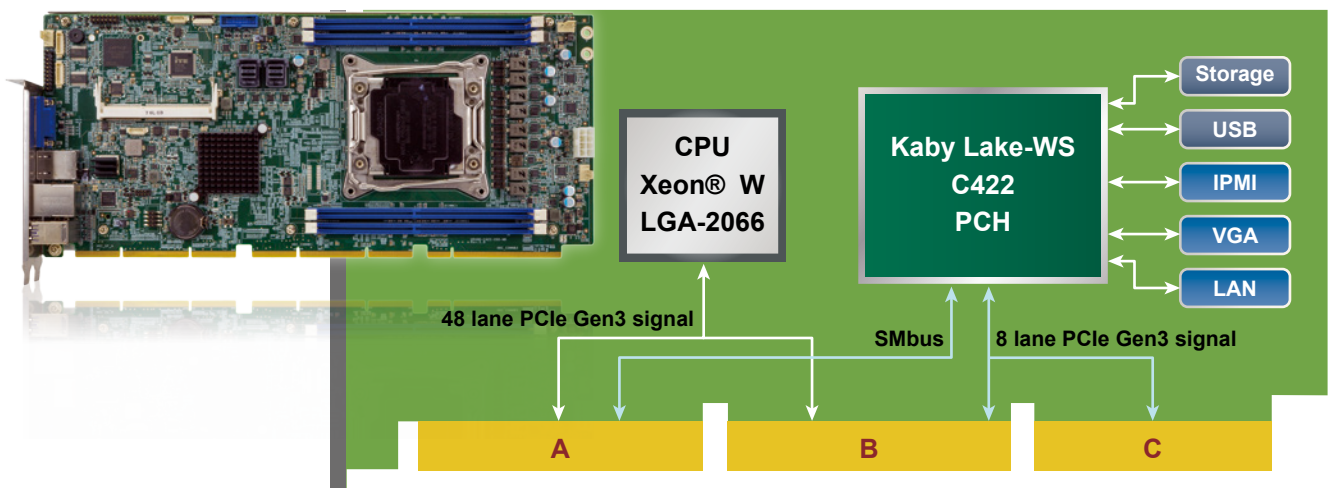
- Maximum 56 lane PCIe signals signals to fulfill AI deep learning or inference demand
- IPMI remote management

■ The Benefits of PEMUX

- With the backplane can expand up to 4 dual width graphics cards
- Use Intel® Xeon W High performance processor

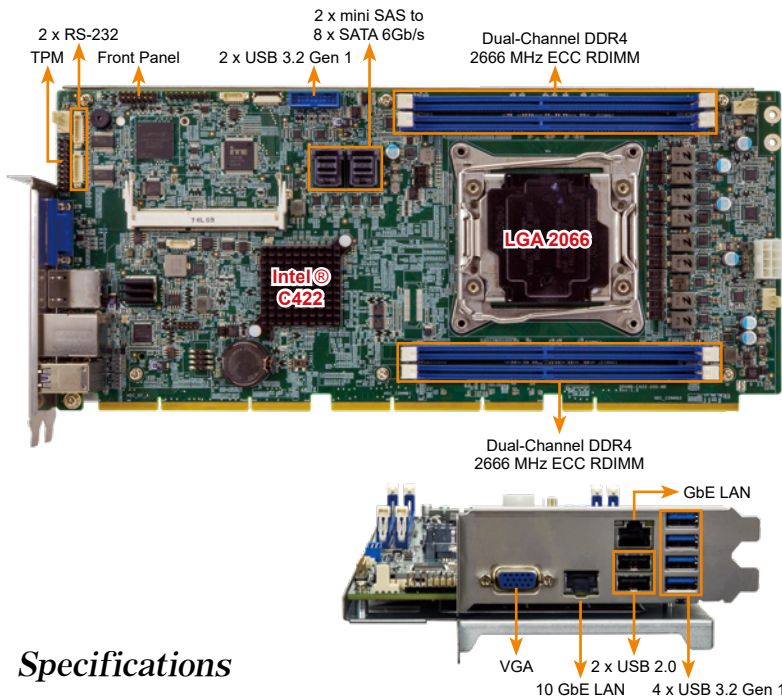
■ Full-size PEMUX PCIe Slot Configuration

Full-size SBC Type			Server & Graphic Grade	
Combination			A	B
PCIe Slots Available (non switch)	CPU	x16		2
		x8	4	
		x4	4	4
	PCH	x4	2	2
Backplane Solution			PEMUX-DB series	



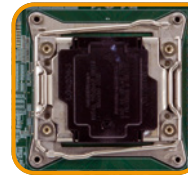
PEMUX-XEW1

Full-size PEMUX CPU Card supports LGA2066 Intel® Xeon® W CPU per, Intel® C422, DDR4 ECC RDIMM, IPMI VGA output, Aquantia 10GbE, USB 3.2 Gen 1 (5Gb/s), SATA 6Gb/s, M.2 and RoHS



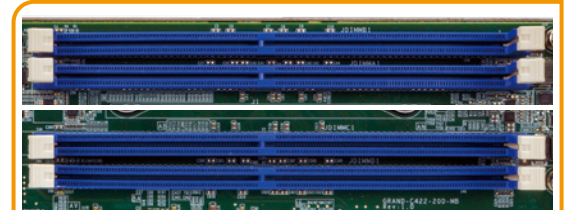
Specifications

- ◆ Form Factor
PEMUX Full-size CPU card (12 layers)
- ◆ CPU
LGA2066 socket supports Intel® Xeon W processor
- ◆ Chipset
Intel® C422
- ◆ Memory
Four 288-pin Dual-Channel DDR4 ECC RDIMM/LRDIMM supported up to 256GB
- ◆ BIOS
UEFI BIOS
- ◆ Super I/O
Fintek F81216D
- ◆ EC
iWDD
- ◆ Display Output
1 x VGA port (from IPMI)
- ◆ Ethernet
LAN1: 1 GbE NIC: Intel® i210-AT with NCSI support
LAN2: 10 GbE NIC: Aquantia AQC107
- ◆ External I/O Interface
2 x USB 2.0
4 x USB 3.2 Gen 1 (5Gb/s)
- ◆ Internal I/O Interface
1 x M.2 M Key (2280, PCIe Gen3 x4)
1 x USB DOM header
2 x mini SAS 8643 (for 8 x SATA 6Gb/s)
2 x RS-232 pin header
2 x USB 3.2 Gen 1 pin header
- ◆ Front Panel
1 x Front Panel (Power LED, HDD LED, Speaker, Power Button, Reset Button)
- ◆ Audio
Supports by IEI AC-KIT-888S-R10 audio kit (2 x 5 pin)
- ◆ TPM
1 x TPM (2 x 10-pin)
- ◆ SMBus
1 x SMBus to backplane
- ◆ Expansion
56-Lane PCIe signal via golden finger
- ◆ Watchdog Timer
software Programmable support 1~255 sec. System reset
- ◆ Fan Connector
1 x 4-pin Smart fan connector (CPU fan)
2 x 4-pin Smart fan connector (System CPU fan)
- ◆ Power Supply
5V/12V, AT/ATX support
- ◆ Operating Temperature
-20°C ~ 40°C
- ◆ Operating Humidity
5% ~ 95%, non-condensing
- ◆ Dimensions
338.58 mm x 150.5 mm
- ◆ Weight
700g



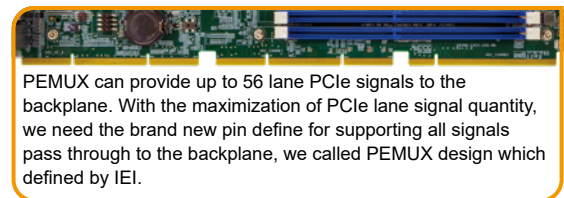
LGA 2066

Support Intel® Xeon W series CPU



Four 288-pin DDR4 ECC RDIMM/LRDIMM Supported

Four 288-pin 2666MHz dual-channel DDR4 SDRAM ECC RDIMM / LRDIMM (system max.256GB) supports in IEI full-size server grade CPU card.



PEMUX can provide up to 56 lane PCIe signals to the backplane. With the maximization of PCIe lane signal quantity, we need the brand new pin define for supporting all signals pass through to the backplane, we called PEMUX design which defined by IEI.



TPM 2.0 Support



Features

- PEMUX full-size server / graphic grade solution
- LGA2066 socket supports Intel® Xeon W processor
- Four 288-pin Dual-Channel DDR4 ECC RDIMM/LRDIMM supports up to 256GB
- Supports IPMI VGA display
- Support M.2 M Key(2280, PCIe Gen3 x4)
- Intel® PCIe GbE Intel® i210-AT with NCSI support
- Aquantia AQC107 10 GbE NIC
- Supports RAID function via SATA 6Gb/s
- TPM 2.0 hardware security function supported by TPM module

Packing List

- 1 x PEMUX-XEW1 single board computer
- 1 x mini SAS to 4 SATA cable
- 1 x QIG

Ordering Information


Part No.	Description
PEMUX-XEW1-R10	Full-size PEMUX CPU Card supports LGA2066 Intel® Xeon® W C422, DDR4 ECC RDIMM/LRDIMM, VGA, Intel® PCIe GbE, Aquantia 10GbE, USB 3.2 Gen 1 (5Gb/s), USB 2.0, SATA 6Gb/s, HD Audio, IPMI and RoHS
32102-000100-200-RS	SATA power cable, MOLEX 8981-4M to SATA15P, 150MM
CF-2011B-RS	High performance LGA1355/1356/2011 cooler kit, 130W
32037-000600-100-RS	1 x mini SAS to 4 SATA Cable
32005-005000-100-RS	RS-232 cable, 150MM, P=1.25

PEMUX Backplane

Accelerate to The Future

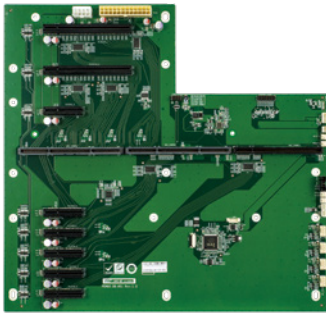
Server grade backplane accommodates multiple PCIe x8 and PCIe x4 add-on cards. It is specially designed for intensive AI computing applications such as deep learning and inference engine that requires more numbers of PCIe slot for accelerator cards. Given the multiple PCIe slots support, it provides a more efficiency solution for end-users.

Selection Guide

 4U rack-mount chassis

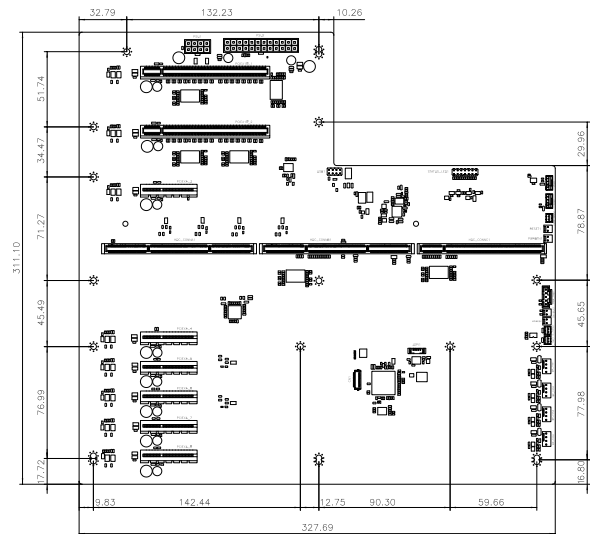
Model Name	PEMUX-DB-10S1	PEMUX-DB-8S1
Total Slots	11	9
PCIe Lanes	x16	2 (Gen 3.0)
	x8	4 (Gen 3.0)
	x4	6 (Gen 3.0)
	x1	
PSU type	24+8pin ATX	24+8pin ATX
Chsaais Option	RACK-360G RACK-3000G	RACK-360G RACK-3000G

PEMUX-DB-8S1-R10

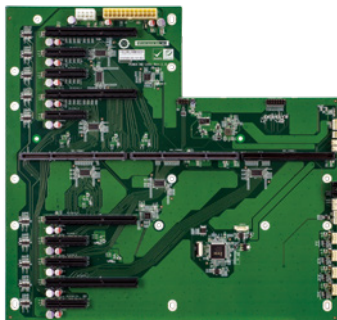


Ordering Information

PEMUX-DB-8S1-R10	1-Slot PEMUX backplane, 2 PCIe Gen 3.0 x16 w/ x16 slot,6 PCIe Gen3.0 x4 w/ x4 slots, and RoHS
RACK-360G	4U 14-slot full-size rack-mount chassis
RACK-3000G	4U 14-slot full-size rack-mount chassis
41005-4223C2-00-RS	Rear card frame; black
41005-4222C3-00-RS	Rear card frame; white

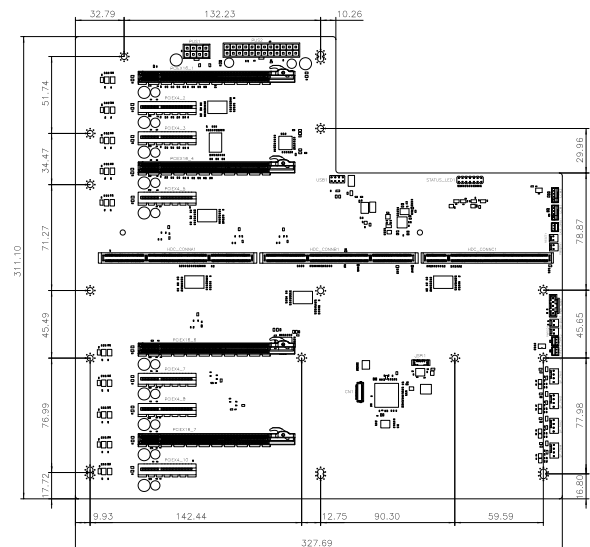


PEMUX-DB-10S1-R10



Ordering Information

PEMUX-DB-10S1-R10	1-Slot PEMUX backplane, 4 PCIe Gen 3.0 x8 w/ x16 slot,6 PCIe Gen3.0 x4 w/ x4 slots, and RoHS
RACK-360G	4U 14-slot full-size rack-mount chassis
RACK-3000G	4U 14-slot full-size rack-mount chassis
41005-4223C2-00-RS	Rear card frame; black
41005-4222C3-00-RS	Rear card frame; white



PICMG 1.3

The PICMG 1.3 allows users to protect their investment in PCI technology while taking advantage of the speed and increased bandwidth of PCI Express

What is PICMG 1.3 ?

- Bringing PCI Express to your SBC with increased speed and bandwidth**
 PICMG 1.3 is designed to interface with PCI Express peripherals on a backplane. The PCI Express interconnects with the backplane and can operate at x1, x4, x8, x16, and more, depending on the capabilities of both the SHB and the backplane.
- Support PCI on board with flexibility**
 The optional PCI portion of the SHB interconnected with the backplane allows for 32-bit operation. The clock rate can be 33 MHz, 66 MHz, 100 MHz, and 133 MHz, depending on how the backplane and SHB are designed.
- Miscellaneous IO**
 SATA, USB, IPMB, SMBus, Geographic Addressing, and PCI Wake Up to the backplane are specified, simplifying the cabling on SHB for the system.

PICMG 1.3 Key Features

- PCI Express**
 20 PCI Express lanes are supported, including PCI Express x16, x4 and x1 configurations
- ATX power signals are supported**
 Provides AUX voltages for standby power and sleep states (soft starts, wake on LAN), supports PSON#, PWRGD, PWRRBT# and ACPI states

Why PICMG 1.3?

- This new technology is expected to allow PCIe transmission rates to keep pace with processor and I/O advances for the next 10 years or more.
- Same basic mechanical dimensions are maintained to minimize chassis redesign expense
- Better host board power management and simplified I/O cabling
- Supports PCI Express and PCI option cards without driver changing

The future will be....

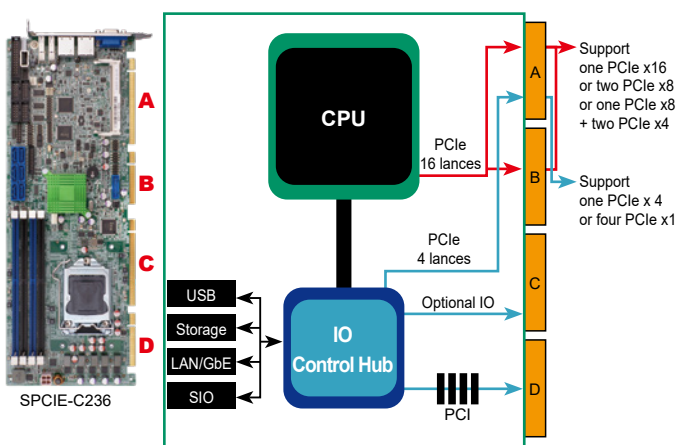
Faster CPU

Faster chipsets & system busses

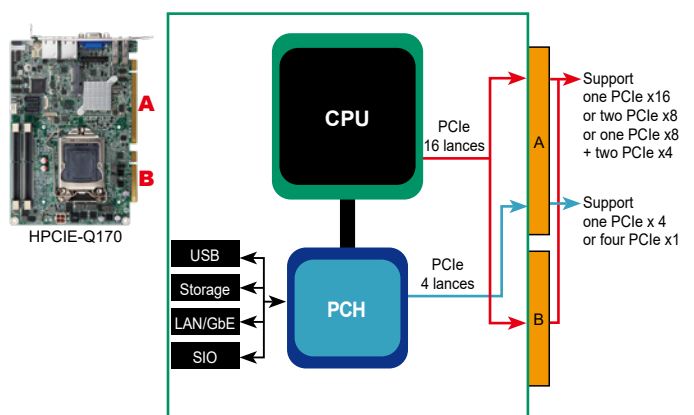
Chipsets are migrating toward PCI Express

Graphic & Server Grade PICMG 1.3 Solutions

Full-size PICMG 1.3 Solutions



Half-size PICMG 1.3 Solutions



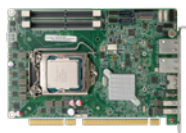
Full-Size PICMG 1.3 PCIe Slot Configuration

Full-size SBC Type		Server & Graphic Grade		Server Grade			
Combination		A	B	C	D	E	F
PCIe Slots Available (Non-switch)	CPU	x16	1	1	-	-	-
		x8	-	-	2	2	1
		x4	-	-	-	-	2
	PCH	x4	-	1	-	1	-
		x1	4	-	4	-	4
Backplane Solution		IEI PE/PXE series		IEI SPE/SPXE series			

Half-Size PICMG 1.3 PCIe Slot Configuration

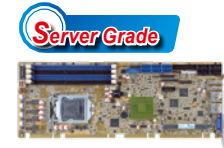
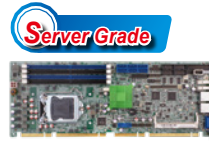
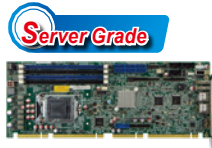
Half-size SBC Type		Any Type		High Performance			
Combination		A	B	C	D	E	F
PCIe Slots Available (Non-switch)	CPU	x16	1	1	-	-	-
		x8	-	-	2	2	1
		x4	-	-	-	-	2
	PCH	x4	-	1	-	1	-
		x1	4	-	4	-	4

PICMG 1.3 Selection Guide



Model Name	HPCIE-Q470	HPCIE-C236	HPCIE-Q170
CPU Socket	LGA1200	LGA 1151	LGA 1151
CPU Type	10th/11th Gen Intel® Core™ i9/i7/i5/i3, Pentium® and Celeron® processor (up to 65W)	Intel® Xeon® E3 v5/v6, 6th/7th Gen Intel® Core™ i3, Pentium® or Celeron® processor	Intel® Core™ i7/i5/i3, Pentium®, Celeron® processor
Chipset	Intel® Q470 / Q470E	Intel® C236	Intel® Q170
Memory	2 x 260-pin 2933 MHz dual-channel DDR4 SO-DIMMs (system max. 64GB)	Two 260-pin 1866/2133 MHz dual-channel DDR4 SO-DIMMs (system max. 32 GB)	Two 260-pin 1866/2133 MHz dual-channel DDR4 SO-DIMMs (system max. 32 GB)
Display Interface	1 x HDMI 1.4 (up to 4096 x 2160@30Hz)	Dual display supported 1 x VGA 1 x iDP interface	Dual display supported 1 x VGA 1 x iDP interface
Ethernet	LAN1: Intel® I225V 2.5GbE controller (colay with I225-LM) LAN2: Intel® I225V 2.5GbE controller (colay with I225-LM)	LAN1 : Intel® I219LM PCIe controller LAN2: Intel® I211AT PCIe controller	LAN1: Intel® I219-LM with Intel® AMT 11.0 support LAN2: Intel® I211-AT Ethernet controller
I/O Interface	2 x USB 3.2 Gen 1 Type-A 1 x USB 3.2 Gen 2 Type-C 2 x USB 2.0 pin header 2 x RS-232/422/485 pin header	2 x USB 3.2 Gen 1 (Type-A) 1 x KB/MS pin header 4 x USB 2.0 pin header 2 x RS-232/422/485 pin header	1 x 6-pin wafer for KB/MS 2 x RS-232/422/485 2 x USB 3.2 Gen 1 4 x USB 2.0
Storage Interface	2 x SATA 6Gb/s (RAID 0/1 supported) 1 x M.2 (M Key)	1 x mSATA (SATA & USB signal) 2 x SATA 6Gb/s (RAID 0/1 supported)	1 x mSATA (SATA & USB signal) 2 x SATA 6Gb/s (RAID 0/1 supported)
Audio	1 x IAUDIO, support IEI AC-KIT-888S audio kit (2 x 5 pin)	Supports by IEI AC-KIT-888S-R10 audio kit	
Digital I/O	12-bit digital I/O (2 x 7 pin)	8-bit programmable digital I/O	
Power Consumption	3.3V@0.11A, 5V@1.12A, 12V@13.31A, 5VSB@0.15A (Intel® Core™ i9-11900K CPU with 4 GB 3200 MHz DDR4 memory)	5V@0.13A, 12V@7.89A, 3.3V@0.10A, 5VSB@0.20A (Intel® Xeon® E3-1275 v5 3.60 GHz with two 16 GB 2133 MHz DDR4 memory)	5V@0.15A, 12V@8.39A, 3.3V@0.11A, 5VSB@0.21A (Intel® Core™ i7-6700K 4.0GHz with two 16 GB 2133 MHz DDR4 memory)
Watchdog Timer	Software programmable supports 1~255 sec. system reset		
Operation Environment	Temperature Range: 0°C ~ 60°C Relative Humidity: 5% ~ 95%, non-condensing	Temperature Range: -20°C ~ 60°C (-4°F ~ 140°F) Relative Humidity: 5% ~ 95%, non-condensing	
Expansion Slot	16-lanes PCIe via golden finger 4-lanes PCIe via golden finger 1 x M.2 (A Key) 1 x M.2 (M Key)	16-lanes PCIe via golden finger 4-lanes PCIe via golden finger 1 x Full/Half-size PCIe Mini card slot (supports mSATA)	16-lanes PCIe via golden finger 4-lanes PCIe via golden finger 1 x Full/Half-size PCIe Mini card slot (supports mSATA)
CPU Cooler	CF-115XA-R10 CF-1156C-R20 CF-1156D-R30 CF-115XE-R10	CF-115XA-R10 CF-1156C-R20 CF-1156D-R30 CF-115XE-R10	CF-115XA-R10 CF-1156C-R20 CF-1156D-R30 CF-115XE-R10

PICMG 1.3 Selection Guide



Model Name	SPCIE-C246	SPCIE-C236	SPCIE-C2260-i2
CPU Socket	LGA1151	LGA1151	LGA 1150
CPU Type	Intel® Xeon® E, 8th/9th generation Core™ i9/i7/i5/i3, Pentium®, Celeron® processor	Intel® Xeon® E3, Core™ i3, Pentium®, Celeron® processor	Intel® Xeon® E3, 4th/5th generation Core™ i3, Pentium®, Celeron® processor
Chipset	Intel® C246	Intel® C236	Intel® C226
Memory	Four 288-pin 2666MHz dual-channel DDR4 SDRAM unbuffered DIMMs support up to 128GB ECC & non-ECC	Four 288-pin 1866/2133 MHz Dual-Channel DDR4 ECC & non-ECC unbuffered DIMM supported up to 64GB	Four 240-pin 1600/1333 MHz dual-channel DDR3 & DDR3L SDRAM unbuffered DIMMs (system max. 32 GB)
Display Interface	Dual display supported 1 x HDMI 1 x DP	Triple display supported 1 x VGA 1 x iDP interface	Dual display supported 1 x VGA 1 x iDP interface
Ethernet	LAN1 : Intel® I219LM PCIe controller LAN2: Intel® I211AT PCIe controller(Co-lay I210-AT)	LAN1: Intel® I219LM Clarkville-V with Intel® AMT 11.0 supported LAN2: Intel® I210 PCIe controller	LAN1 : Intel® I217LM PCIe controller LAN2: Intel® I210AT PCIe controller
I/O Interface	2 x USB 3.2 Gen 1 (Type-A) 1 x USB 2.0 (Type-A) 1 x KB/MS pin header 1 x RS-422/485 pin header 2 x USB 3.2 Gen 1 pin header 3 x RS-232 pin header 6 x USB 2.0 pin header	1 x 6-pin wafer for KB/MS 1 x LPT 2 x RS-232 2 x RS-232/422/485 4 x USB 3.2 Gen 1 7 x USB 2.0	2 x USB 3.2 Gen 1 (Type-A) 1 x KB/MS pin header 1 x LPT pin header 1 x RS-422/485 pin header 2 x USB 3.2 Gen 1 pin header 4 x USB 2.0 (Golden finger) 4 x USB 2.0 pin header 4 x RS-232 pin header
Storage Interface	6 x SATA 6Gb/s (RAID 0/1/5/10 supported)	6 x SATA 6Gb/s (RAID 0/1/5/10 supported)	6 x SATA 6Gb/s (RAID 0/1/5/10 supported)
Audio	Supports by IEI AC-KIT-888S-R10 audio kit		
Digital I/O	8-bit programmable digital I/O		
Power Consumption	5V@3.12A, 12V@6.85A, 3.3V@1.13A, 5VSB@0.15A (4.0 GHz Intel® Core™ i7-8700K CPU with four 16 GB 2666 MHz DDR4 memory)	5V@3.22A, 12V@6.81A, 3.3V@1.21A, 5VSB@0.18A (Intel® Xeon® E3-1275 v5 3.60 GHz CPU with 64GB (four 16GB) 2133 MHz DDR4 memory)	5V@3.55A, 12V@0.37A, Vcore_12V@7.61A, 3.3V@1.55A, 5VSB@0.13A (Intel® E3-1240 v3 3.4GHz CPU with 16 GB (four 4GB) 1333 MHz DDR3 memory)
Watchdog Timer	Software programmable supports 1~255 sec. system reset		
Operation Environment	Temperature Range: -20°C ~ 60°C (-4°F ~ 140°F) Relative Humidity: 5% ~ 95%, non-condensing		
Expansion Slot	1 x M.2 M key 16-lanes PCIe via golden finger 4-lanes PCIe via golden finger 4 x PCI signal via golden finger	1 x PCIe x16 & 4 x PCIe x1 signal via golden finger 4 x PCI signal via golden finger 1 x M.2 M Key	1 x PCIe x16 & 4 x PCIe x1 signal via golden finger 4 x PCI signal via golden finger 1 x Full-size PCIe Mini card slot (support mSATA)
CPU Cooler	CF-1150SA-R10 CF-1150SB-R11 CF-1150SC-R20 CF-1150SE-R11	CF-1150SA-R10 CF-1150SB-R11 CF-1150SC-R20 CF-1150SE-R11	CF-1150SA-R10 CF-1150SB-R11 CF-1150SC-R20 CF-1150SE-R11

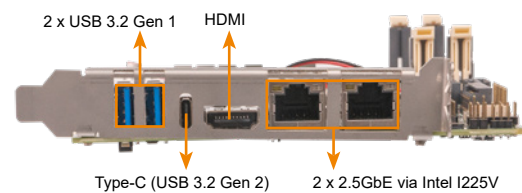
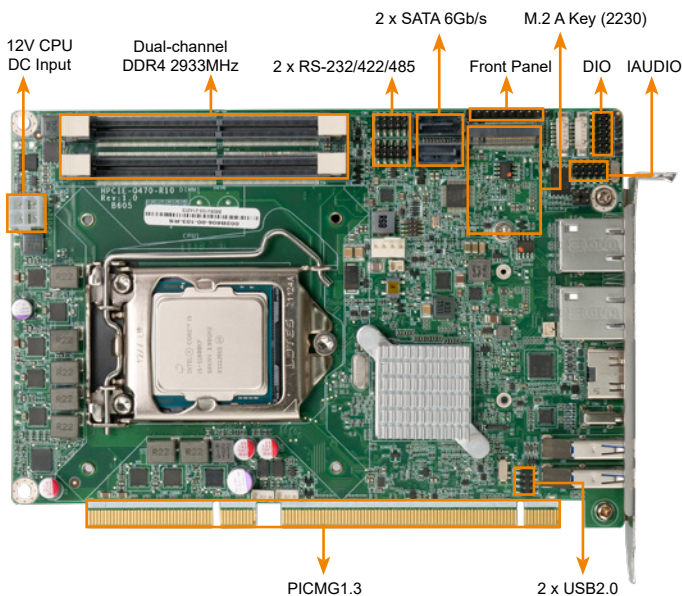
PICMG 1.3 Selection Guide



Model Name	PCIE-Q470	PCIE-Q370	PCIE-Q170	PCIE-H810	PCIE-Q870-i2
CPU Socket	LGA1200	LGA1151	LGA1151	LGA 1150	LGA 1150
CPU Type	10th/11th Gen Intel® Core™ i9/i7/i5/i3, Pentium® and Celeron® processor (up to 65W)	8th/9th generation Intel® Core™ i9/i7/i5/i3, Pentium®, Celeron® processor	6th/7th generation Intel® Core™ i9/i7/i5/i3, Pentium®, Celeron® processor	4th/5th generation Intel® Core™ i9/i7/i5/i3, Pentium®, Celeron® processor	4th/5th generation Intel® Core™ i9/i7/i5/i3, Pentium®, Celeron® processor
Chipset	Intel® Q470 / Q470E	Intel® Q370	Intel® Q170	Intel® H81	Intel® Q87
Memory	Four 288-pin 2933 MHz dual-channel DDR4 SDRAM Unbuffered DIMMs (system Max. 128 GB)	Four 288-pin 2666MHz dual-channel DDR4 SDRAM unbuffered DIMMs support up to 64GB	Four 288-pin 1866/2133 MHz dual-channel non-ECC unbuffered DDR4 DIMMs (system max. 64 GB)	Two 240-pin 1600/1333 MHz dual-channel DDR3 & DDR3L SDRAM unbuffered DIMMs (system max. 16 GB)	Four 240-pin 1600/1333 MHz dual-channel DDR3 & DDR3L SDRAM unbuffered DIMMs (system max. 32 GB)
Display Interface	1 x HDMI 1.4 (up to 4096 x 2160@30Hz)	Dual display supported 1 x VGA 1 x DP PCIe-Q370-HDMI 1 x HDMI 1 x DP	Dual display supported 1 x VGA 1 x iDP interface	Dual display supported 1 x VGA 1 x iDP interface	Dual display supported 1 x VGA 1 x iDP interface
Ethernet	LAN1: Intel® I225V 2.5GbE controller (colay with I225-LM) LAN2: Intel® I225V 2.5GbE controller (colay with I225-LM)	LAN1: Intel® I219LM PCIe controller LAN2: Intel® I211-AT PCIe controller (colay I210-AT)	LAN1: Intel® I219LM PCIe controller LAN2: Intel® I210 PCIe controller	LAN1: Realtek RTTL8111E PCIe controller LAN2: Realtek RTTL8111E PCIe controller	LAN1: Intel® I217LM with Intel® AMT 9.0 support LAN2: Intel® I210-AT PCIe controller with NCSI support
I/O Interface	2 x USB 3.2 Gen 1 (Type-A) 1 x USB 3.2 Gen 2 (Type-C) 2 x USB 2.0 pin header 2 x USB 3.2 Gen 1 pin header 1 x Internal USB 3.2 Gen 1 (Type-A 180°) 2 x RS-232 pin header 2 x RS-422/485 pin header	2 x USB 3.2 Gen 2 (Type-A) 1 x USB 2.0 (Type-A) 1 x KB/MS (Type-A) 1 x RS-422/485 pin header 2 x USB 3.2 Gen 1 pin header 3 x RS-232 pin header 6 x USB 2.0 pin header	2 x USB 3.2 Gen 1 (Type-A) 1 x KB/MS pin header 1 x LPT pin header 1 x USB 2.0 (interface Type-A) 2 x USB 3.2 Gen 1 pin header 2 x RS-232/422/485 pin header 2 x RS-232 pin header 6 x USB 2.0 pin header	2 x USB 2.0 (Type-A) 1 x KB/MS pin header 1 x LPT pin header 1 x RS-422/485 pin header 1 x USB 2.0 (interface Type-A) 2 x RS-232 pin header 2 x USB 3.2 Gen 1 pin header 4 x USB 2.0 (Golden finger) 4 x USB 2.0 pin header	2 x USB 3.2 Gen 1 (Type-A) 1 x KB/MS pin header 1 x LPT pin header 1 x RS-422/485 pin header 2 x USB 3.2 Gen 1 pin header 4 x RS-232 pin header 4 x USB 2.0 (Golden finger) 4 x USB 2.0 pin header
Storage Interface	4 x SATA 6Gb/s (RAID 0/1/5/10 supported)	6 x SATA 6Gb/s (RAID 0/1/5/10 supported)	6 x SATA 6Gb/s (RAID 0/1/5/10 supported)	2 x SATA 3Gb/s 2 x SATA 6Gb/s	6 x SATA 6Gb/s (RAID 0, 1, 5, 10 supported)
Audio	Supports by IEI AC-KIT-888S-R10 audio kit				
Digital I/O	12-bit digital I/O (2x7 pin)	8-bit programmable digital I/O			
Power Consumption	3.3V@1.04A, 5V@8.61A, 12V@12.33A (Intel® Core™ i9-11900K CPU with 4 GB 3200 MHz DDR4 memory)	5V@3.12A, 12V@6.85A, 3.3V@1.13A, 5VSB@0.15A (Intel® Core™ i7-8700K 4.0 GHz CPU with four 16 GB 2666 MHz DDR4 memory)	5V@3.12A, 12V@6.85A, 3.3V@1.13A, 5VSB@0.15A (Intel® Core™ i7-6700K 4.0GHz CPU with 64GB (four 16GB) 2133 MHz DDR4 memory)	5V@3.41A, 12V@0.35A, Vcore_12V@7.52A, 3.3V@1.41A, 5VSB@0.12A (Intel® Core™ i7-4770K 3.90 GHz CPU with 8 GB (two 4 GB) 1333 MHz DDR3 memory)	5V@3.55A, 12V@0.37A, Vcore_12V@7.61A, 3.3V@1.55A, 5VSB@0.13A (3.4GHz Intel® Qual CoreCPU with four GB 1333 MHz DDR3 memory)
Watchdog Timer	Software programmable supports 1~255 sec. system reset				
Operation Environment	Temperature Range: 0°C ~ 60°C (32°F ~ 140°F) Relative Humidity: 5% ~ 95%, non-condensing	Temperature Range: -20°C ~ 60°C (-4°F ~ 140°F) Relative Humidity: 5% ~ 95%, non-condensing			
Expansion Slot	1 x PCIe x16 & 4 x PCIe x1 signal via golden finger 4 x PCI signal via golden finger 1 x M.2 A Key 1 x M.2 B Key 1 x M.2 M Key	1 x M.2 M key 1 x PCIe x16 & 4 x PCIe x1 signal via golden finger 4 x PCI signal via golden finger	1 x PCIe x16 & 4 x PCIe x1 signal via golden finger 4 x PCI signal via golden finger 1 x Full/Half-size PCIe Mini card slot	1 x PCIe x16 & 4 x PCIe x1 signal via golden finger 4 x PCI signal via golden finger 1 x Full/Half-size PCIe Mini card slot (support mSATA)	1 x PCIe x16 & 4 x PCIe x1 signal via golden finger 4 x PCI signal via golden finger 1 x Full/Half-size PCIe Mini card slot (support mSATA)
CPU Cooler	CF-1150SA-R10 CF-1150SB-R11 CF-1150SC-R20 CF-1150SE-R11	CF-1150SA-R10 CF-1150SB-R11 CF-1150SC-R20 CF-1150SE-R11	CF-1150SA-R10 CF-1150SB-R11 CF-1150SC-R20 CF-1150SE-R11	CF-1150SA-R10 CF-1150SB-R11 CF-1150SC-R20 CF-1150SE-R11	CF-1150SA-R10 CF-1150SB-R11 CF-1150SC-R20 CF-1150SE-R11

HPCIE-Q470

Half-size PICMG 1.3 CPU Card supports LGA1200 10th/11th Gen Intel® Core™ i9/i7/i5/i3, Pentium®, Celeron® Processor with Intel® Q470 / Q470E, DDR4 SO-DIMM, HDMI, Dual Intel® 2.5GbE, USB 3.2 Gen 2, SATA 6Gb/s, M.2, IAUDIO, and RoHS



Half-size PICMG 1.3



Standard PICMG 1.3 SBCs have several advantages over non-standard SBCs. Firstly, they are more maintainable than a motherboard system and have a much lower mean time to repair (MTTR). Secondly, it is easy to upgrade to a newer or faster processor if desired.

Features



Support 10th/11th Generation Intel® Processor

Support 10th/11th Generation Intel® Core™ i9/i7/i5/i3, Pentium® and Celeron® processor (LGA 1200 slot), unleashing optimal performance, and can handle multiple tasks at the same time.



Support Intel® I225V 2.5GbE Controller

Support triple RJ45 network interfaces, based on Intel® I225V 2.5GbE network controller to achieve up to 2.5GbE network transmission rate.



Support Multiple Interface

The HPCIE-Q470 equips one USB Type-C (10Gb/s), two USB 3.2 Gen 1 (5Gb/s), providing faster transmission rates. It also supports two internal USB 2.0 ports, M.2 A key for Bluetooth, Wi-Fi module expansion, and M.2 M key for NVMe storage expansion.



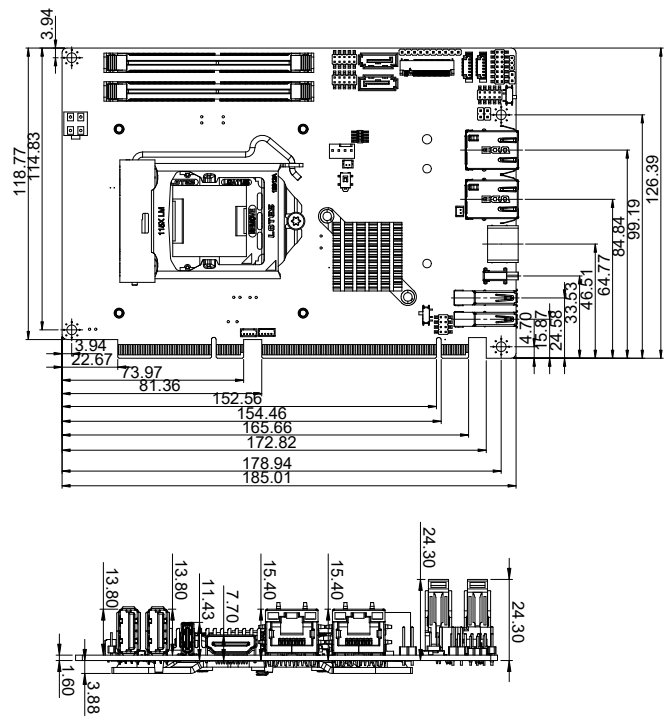
Multiple Backplane Options

Support 16-lane PCIe signal from CPU and 4-lane PCIe signal from PCH via golden finger, and multiple backplane options are available to meet various requirements.

Specifications

- ◆ CPU
LGA1200 10th/11th Gen Intel® Core™ i9/i7/i5/i3, Pentium® and Celeron® processor (support up to 65W)
- ◆ Chipset
Intel® Q470/Q470E
- ◆ BIOS
AMI UEFI BIOS
- ◆ Memory
2 x 260-pin 2933 MHz dual-channel DDR4 SO-DIMMs (system max. 64GB)
- ◆ Graphics Engine
10th Generation CML-S up to Intel® UHD Graphics 630, Intel® HD 9th Generation Display Engine based on 16 low power execution units supporting DX2015, OpenGL 5.X and OpenCL2.x, ES 2.0
11th Generation RKL-SXe 12th Generation Graphics Architecture, Intel® UHD Graphics 750, supports 12-bit end-to-end, support AV1, VP9, HEVC 12b, HDR10, FP16
- ◆ Display Output
1 x HDMI 1.4 (up to 4096 x 2160@30Hz)
- ◆ Ethernet
LAN1: Intel® I225V 2.5GbE controller (Colay with I225-LM)
LAN2: Intel® I225V 2.5GbE controller (Colay with I225-LM)
- ◆ External I/O Interface
2 x USB 3.2 Gen 1 (5Gb/s)
1 x USB 3.2 Gen 2 (10Gb/s) by USB Type-C
- ◆ Internal I/O Interface
2 x SATA 6Gb/s (Support RAID 0/1)
2 x USB 2.0 (2x4 pin, P=2.0)
2 x RS-232/422/485 (2x5 pin, P=2.0) (RS-485 support AFC)
- ◆ SMBus/ I²C
1 x SMBus (1x4 pin)
- ◆ I²C
1 x I²C (1x4 pin)
- ◆ Audio
1 x AUDIO, support IEI AC-KIT-888S Audio Module (2x5 pin)
- ◆ Front Panel
1 x Front panel connector (1x10 pin)
Power LED, HDD LED, Power Button, Reset Button
- ◆ LAN LED
2 x LAN LED (1x2 pin)
- ◆ Expansion
16-lanes PCIe signal from CPU via golden finger (supports x16, or x8 + x8, or x4 + x4 + x8)
4-lanes PCIe signal from PCH via golden finger (supports x4, or x1 + x1 + x1 + x1)
1 x M.2 A key (2230) with PCIe Gen3 x2/USB 2.0
1 x M.2 M key (2280/2242) with PCIe Gen3 x4
- ◆ Digital I/O
1 x 12-bit digital I/O (2x6 pin)
- ◆ TPM
Intel® PTT (TPM 2.0)
- ◆ Fan Connector
1 x CPU fan connector (1x4 pin)
- ◆ Chassis Open
1 x Chassis intrusion (1x2 pin)
- ◆ Power Supply
5V/12V, ATX/AT power supply
Support AT/ATX mode
ErP/EuP
- ◆ Watchdog Timer
Software programmable, support 1~255 sec. system reset
- ◆ Power Consumption
3.3V@0.11A, 5V@1.12A, 12V@13.31A, 5VSB@0.15A
(Intel® Core™ i9-11900K CPU with 4 GB 3200 MHz DDR4 memory)
- ◆ Operating Temperature
0°C ~ 60°C
- ◆ Storage Temperature
-30°C ~ 70°C
- ◆ Operating Humidity
5% ~ 95%, non-condensing
- ◆ Dimension
169 mm x 126 mm
- ◆ Weight
GW:1000g / NW:420g
- ◆ Certification
CE/FCC compliant

Dimensions (Unit: mm)



Packing List

1 x HPCIE-Q470 single board computer	1 x SATA cable
1 x Mini jumper pack	1 x QIG

Ordering Information

Part No.	Description
HPCIE-Q470-R10	Half-size PICMG 1.3 CPU Card supports 14nm LGA1200 Intel® 10th/11th Generation Core™ i9/i7/i5/i3, Celeron® and Pentium® processor with Intel® Q470 / Q470E, DDR4 SO-DIMM, Dual Intel® 2.5GbE, USB 3.2, SATA 6Gb/s, M.2, IAUDIO and RoHS

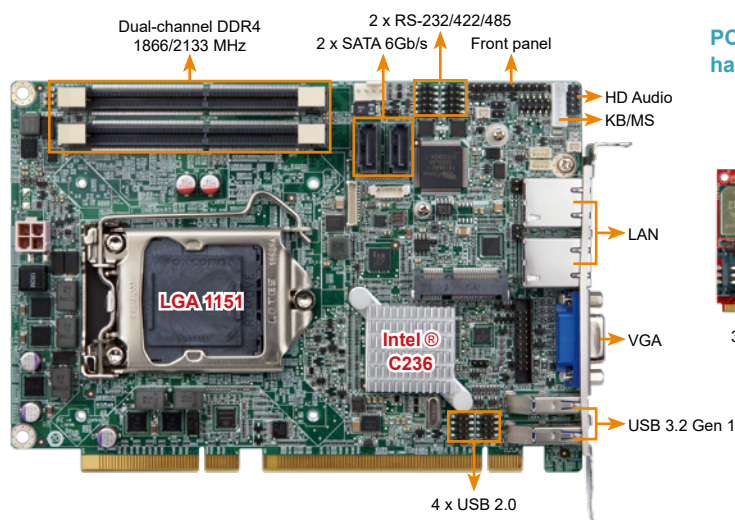
Optional Accessories

Part No.	Description
CB-USB02A-RS	Dual port USB cable with bracket, 300mm, P=2.0
32102-000100-200-RS	SATA power cable, MOLEX 5264-4P to SATA15P
32205-002700-200-RS	RS-232/422/485 cable, 200mm, P=2.0
CF-115XA-R10	High-performance LGA1155/1156/1200 cooler kit, 1U chassis compatible 73W
CF-1156C-R20	LGA1155/1156/1200 cooler kit, 1U chassis compatible, 45W
CF-1156D-R30	LGA1155/1156/1200 cooler kit, 1U chassis compatible, 65W
CF-115XE-R10	High-performance LGA1155/1156/1200 cooler kit, 95W
AC-KIT-888S-R10	Realtek ALC888S 7.1 Channel HD Audio peripheral board, RoHS

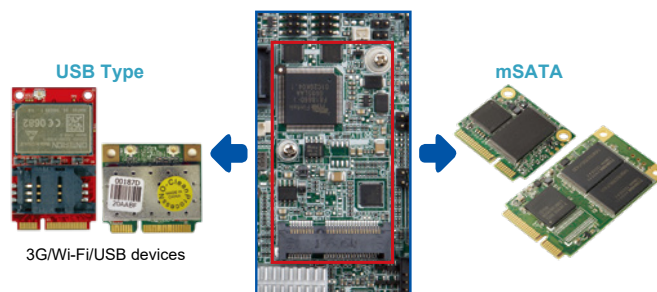


HPCIE-C236

Half-size PICMG 1.3 CPU Card supports LGA 1151 Intel® Xeon® E3, Core™ i3/Pentium®/Celeron® CPU with Intel® C236, ECC & non-ECC DDR4 SO-DIMM, VGA, iDP, Dual Intel® PCIe GbE, USB 3.2 Gen 1 (5Gb/s), SATA 6Gb/s, mSATA, HD Audio, Intel® AMT and RoHS



PCIe Mini slot provides mSATA and USB signal for full-size or half-size mSATA SSD and wireless LAN card.



Specifications

- ◆ CPU
LGA 1151 socket supports Intel® Xeon® E3 v5/v6, 6th/7th generation Core™ i3, Pentium® or Celeron® processor
- ◆ Chipset
Intel® C236
- ◆ Memory
Two 260-pin 1866/2133 MHz dual-channel DDR4 ECC and non-ECC unbuffered SO-DIMMs support up to 32 GB
- ◆ BIOS
UEFI BIOS
- ◆ Graphics Engine
Intel® HD Graphics Gen 9 supports DX11/12, OpenCL 2.x and OpenGL 4.3/4.4 Decode/Encode for HEVC, VP8, VP9, VDENC
- ◆ Display Output
1 x VGA (up to 1920x1200@60 Hz)
1 x iDP interface for HDMI, LVDS, VGA, DVI, DP (up to 3840x2160@60 Hz)
- ◆ Ethernet
LAN1: Intel® I219LM Clarkville-V with Intel® AMT 11.0 support
LAN2: Intel® I210 PCIe controller
- ◆ External I/O Interface
2 x USB 3.2 Gen 1 (5Gb/s)
- ◆ Internal I/O Interface
1 x KB/MS (1x6 pin, P=2.0) 2 x SATA 6Gb/s (RAID 0, 1 supported)
1 x mSATA (SATA & USB signal) 4 x USB 2.0 (2x4 pin, P=2.0)
2 x RS-232/422/485 (2x5 pin, P=2.0)
- ◆ Front Panel
1 x Front panel (1x10 pin, power LED, HDD LED, speaker, power button, reset button)
- ◆ LAN LED
2 x LAN LED (1x2 pin)
- ◆ Audio
Support 7.1-channel HD Audio by IEI AC-KIT-888S-R10 kit
- ◆ SMBus
1 x SMBus (1x4 pin)
- ◆ I²C
1 x I²C (1x4 pin)
- ◆ Expansion
16-lane PCIe signal from CPU via golden finger (supports x16, or x8 + x8, or x4 + x4 + x8)
4-lane PCIe signal from Q170 via golden finger
1 x Full/Half-size PCIe Mini card slot (supports mSATA)
- ◆ Watchdog Timer
Software programmable supports 1~255 sec. system reset
- ◆ Digital I/O
8-bit digital I/O (2x5 pin)
- ◆ Fan Connector
1 x CPU smart fan (1x4 pin)
- ◆ Power Supply
5V/12V, AT/ATX support
- ◆ Power Consumption
5V@0.13A, 12V@7.89A, 3.3V@0.10A, 5VSB@0.20A (Intel® Xeon® E3-1275 v5 3.60 GHz with two 16 GB 2133 MHz DDR4 memory)
- ◆ Operating Temperature
-20°C ~ 60°C
- ◆ Operating Humidity
5% ~ 95%, non-condensing
- ◆ Dimensions
169 mm x 126 mm
- ◆ Weight
GW: 1000g / NW: 420g
- ◆ CE/FCC compliant



Features

- PICMG 1.3 half-size CPU card
- LGA 1151 socket supports Intel® Xeon® E3 v5/v6, 6th/7th generation Core™ i3, Pentium® or Celeron® processor
- Dual-channel DDR4 1866/2133MHz
- Supports dual independent display by VGA & internal DP pin header
- Intel® PCIe GbE with Intel® AMT 11.0 supported
- Support Full/Half-size PCIe Mini card slot (supports mSATA)
- Supports RAID 0, 1 function via SATA 6Gb/s

Packing List

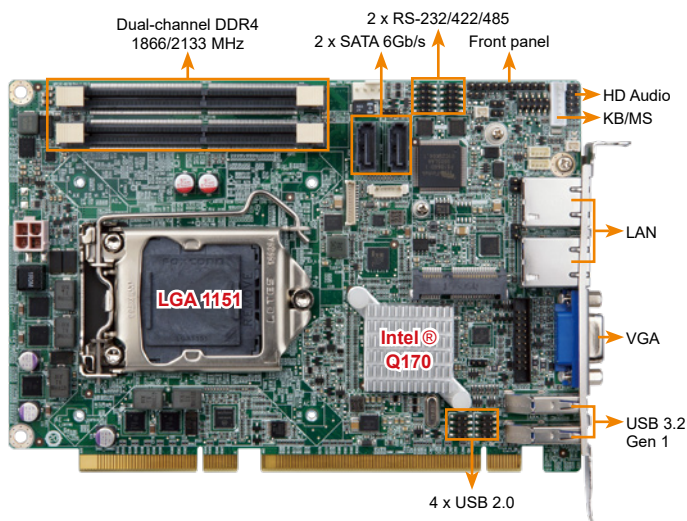
- 1 x HPCIE-C236 single board computer
- 1 x SATA cable
- 1 x QIG

Ordering Information

Part No.	Description
HPCIE-C236-R10	Half-size PICMG 1.3 CPU card supports LGA 1151 Intel® Xeon® E3, Core™ i3/Pentium®/Celeron® CPU with Intel® C236, ECC & non-ECC DDR4 SO-DIMM, VGA, iDP, dual Intel® PCIe GbE, USB 3.2 Gen 1 (5Gb/s), SATA 6Gb/s, mSATA, HD Audio, Intel® AMT and RoHS
19800-000075-RS	PS/2 KB/MS cable with bracket, 220mm, P=2.0
32102-000100-200-RS	SATA power cable, MOLEX 5264-4P to SATA15P
32205-002700-200-RS	RS-232/422/485 cable, 200mm, P=2.0
AC-KIT-888S-R10	Realtek ALC888S 7.1 Channel HD Audio peripheral board, RoHS
CF-115XA-R10	High-performance LGA 1155/LGA 1156 cooler kit, 1U chassis compatible, 73W
CF-1156C-R20	LGA 1155/LGA 1156 cooler kit, 1U chassis compatible, 45W
CF-1156D-R30	LGA 1155/LGA 1156 cooler kit, 1U chassis compatible, 65W
DP-DP-R10	DisplayPort to DisplayPort converter board (for IEI iDP connector)
DP-DVI-R10	DisplayPort to DVI-D converter board (for IEI iDP connector)
DP-HDMI-R10	DisplayPort to HDMI converter board (for IEI iDP connector)
DP-LVDS-R10	DisplayPort to LVDS converter board (for IEI iDP connector)
DP-VGA-R10	DisplayPort to VGA converter board (for IEI iDP connector)

HPCIE-Q170

Half-size PICMG 1.3 CPU Card supports LGA 1151 Intel® Core™ i7/i5/i3, Pentium® or Celeron® CPU with Intel® Q170, DDR4 SO-DIMM, VGA/iDP, Dual Intel® PCIe GbE, USB 3.2 Gen 1 (5Gb/s), SATA 6Gb/s, mSATA, HD Audio, Intel® AMT and RoHS



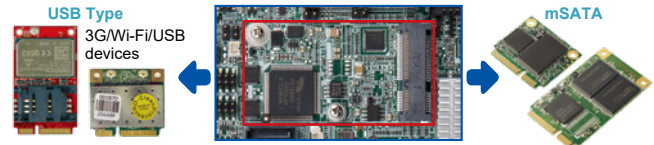
Intel® 6th generation Core™ CPU + Intel® Q170 support 3 controllers of PCI Express Gen 3

Number of PCIe Controller	Configuration
1	PCIe x16
2	PCIe x8, PCIe x8
3	PCIe x4, PCIe x4, PCIe x8

Sets PCIe x16 signal via BIOS

PEG port configuration	
USB Power SW1	[1 x8, 2 x4 PCIe]
USB Power SW2	[+5V DUAL]
USB Power SW2	[+5V DUAL]

PCIe Mini slot provides mSATA and USB signal for full-size or half-size mSATA SSD and wireless LAN card.



Specifications

- ◆ CPU
LGA 1151 socket supports Intel® 6th/7th generation Core™ i7/i5/i3, Pentium® or Celeron® processor
- ◆ Chipset
Intel® Q170
- ◆ Memory
Two 260-pin 1866/2133 MHz dual-channel DDR4 non-ECC unbuffered SO-DIMMs support up to 32 GB
- ◆ BIOS
UEFI BIOS
- ◆ Graphics Engine
Intel® HD Graphics Gen 9 supports DX11/12, OpenCL 2.x and OpenGL 4.3/4.4 Decode/Encode for HEVC, VP8, VP9, VDENC
- ◆ Display Output
1 x VGA (up to 1920x1200@60 Hz)
1 x iDP interface for HDMI, LVDS, VGA, DVI, DP (up to 3840x2160@60 Hz)
- ◆ Ethernet
LAN1: Intel® I219LM Clarkville-V with Intel® AMT 11.0 support
LAN2: Intel® I211 PCIe controller
- ◆ External I/O Interface
2 x USB 3.2 Gen 1 (5Gb/s)
- ◆ Internal I/O Interface
1 x KB/MS (1x6 pin)
1 x mSATA (SATA & USB signal)
2 x RS-232/422/485 (2x5 pin, P=2.0)
- ◆ Front Panel
1 x Front panel (1x10 pin, power LED, HDD LED, speaker, power button, reset button)
- ◆ LAN LED
2 x LAN LED (1x2 pin)
- ◆ Audio
Support 7.1-channel HD Audio by IEI AC-KIT-888S-R10 kit
- ◆ SMBus
1 x SMBus (1x4 pin)
- ◆ I²C
1 x I²C (1x4 pin)
- ◆ Expansion
16-lane PCIe signal from CPU via golden finger (supports x16, or x8 + x8, or x4 + x4 + x8)
4-lane PCIe signal from Q170 via golden finger
1 x Full/Half-size PCIe Mini card slot (supports mSATA)
- ◆ Watchdog Timer
Software programmable supports 1~255 sec. system reset
- ◆ Digital I/O
8-bit digital I/O (2x5 pin)
- ◆ Fan Connector
1 x CPU smart fan (1x4 pin)
- ◆ Power Supply
5V/12V, AT/ATX support
- ◆ Power Consumption
5V@0.15A, 12V@8.39A, 3.3V@0.11A, 5VSB@0.21A (Intel® Core™ i7-6700K 4.0GHz with two 16 GB 2133 MHz DDR4 memory)
- ◆ Operating Temperature
-20°C ~ 60°C
- ◆ Operating Humidity
5% ~ 95%, non-condensing
- ◆ Dimensions
169 mm x 126 mm
- ◆ Weight
GW: 1000g / NW: 420g
- ◆ CE/FCC compliant



Features

- PICMG 1.3 half-size CPU card
- LGA 1151 Intel® 6th/7th generation Core™ i7/i5/i3, Pentium® or Celeron® processor supported
- Two 260-pin 1866/2133 MHz dual-channel DDR4 SO-DIMMs support up to 32 GB
- Supports dual independent display by VGA & internal DP pin header
- PCIe Mini card slot supports mSATA & USB 2.0
- Intel® PCIe GbE with Intel® AMT 11.0 supported
- Supports RAID 0, 1 function via SATA 6Gb/s
- IEI jumper-less function

Packing List



1 x HPCIE-Q170 single board computer
1 x SATA cable
1 x QIG

Ordering Information

Part No.	Description
HPCIE-Q170-R10	Half-size PICMG 1.3 CPU card supports LGA 1151 Intel® Core™ i7/i5/i3, Pentium® or Celeron® CPU with Intel® Q170, DDR4 SO-DIMM, dual Intel® PCIe GbE, VGA, iDP, mSATA, SATA 6Gb/s, USB 3.2 Gen 1 (5Gb/s), PCIe Mini, HD Audio, Intel® AMT and RoHS
19800-000075-RS	PS/2 KB/MS cable with bracket, 220mm, P=2.0
32102-000100-200-RS	SATA power cable, MOLEX 5264-4P to SATA15P
32205-002700-200-RS	RS-232/422/485 cable, 200mm, P=2.0
AC-KIT-888S-R10	Realtek ALC888S 7.1 Channel HD Audio peripheral board, RoHS
CF-115XA-R10	High-performance LGA 1155/LGA 1156 cooler kit, 1U chassis compatible, 73W
CF-1156C-R20	LGA 1155/LGA 1156 cooler kit, 1U chassis compatible, 45W
CF-1156D-R30	LGA 1155/LGA 1156 cooler kit, 1U chassis compatible, 65W
DP-DP-R10	DisplayPort to DisplayPort converter board (for IEI iDP connector)
DP-DVI-R10	DisplayPort to DVI-D converter board (for IEI iDP connector)
DP-HDMI-R10	DisplayPort to HDMI converter board (for IEI iDP connector)
DP-LVDS-R10	DisplayPort to LVDS converter board (for IEI iDP connector)
DP-VGA-R10	DisplayPort to VGA converter board (for IEI iDP connector)

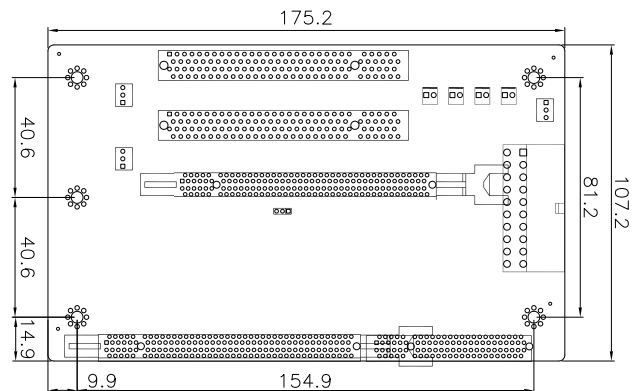
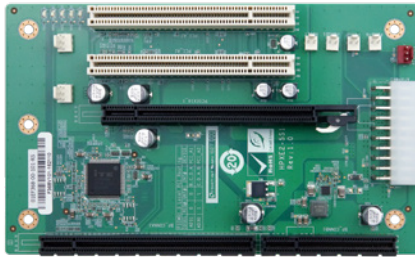
PICMG 1.3 Passive Backplane for Half-Size CPU Card

Selection Guide

 PAC series wall-mount chassis  4U rack-mount chassis

PICMG 1.3 (PCIe+PCI)	Model	HPXE2-5S1	HPXE2-8S1
Total Slot		5	8
Expansion Slots	PCIe x16	1 (Gen 3.0)	
	PCIe x8		2 (Gen 3.0)
	PCIe x4		
	PCIe x1		
	PCI-X		
	PCI	2	4
PSU Type		24+4-pin ATX	24+4-pin ATX
Chassis Option		PR-1500G	PAC-125G
		N/A	RACK-3000G RACK-360G
Note		ATX power	ATX power

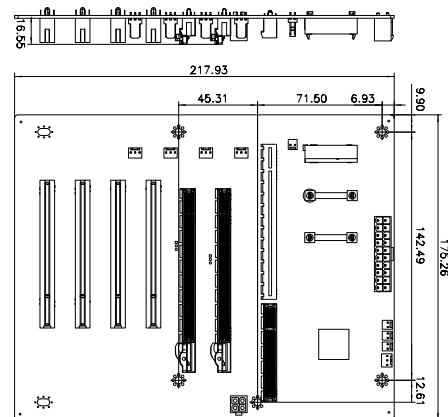
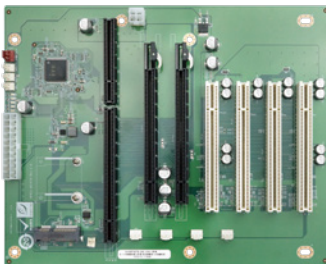
HPXE2-5S1-R10



Ordering Information

HPXE2-5S1-R10	5-slot PICMG 1.3 backplane for half-size SBC, with two PCI slots and one PCIe x16 slot (x16 signal) (PCIe Gen 3.0)
PR-1500G	5-slot half-size compact chassis

HPXE2-8S1-R10

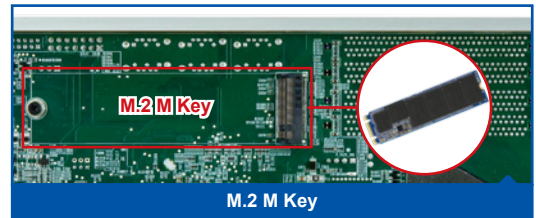
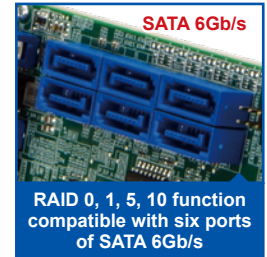
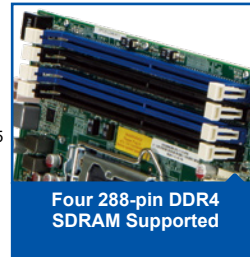
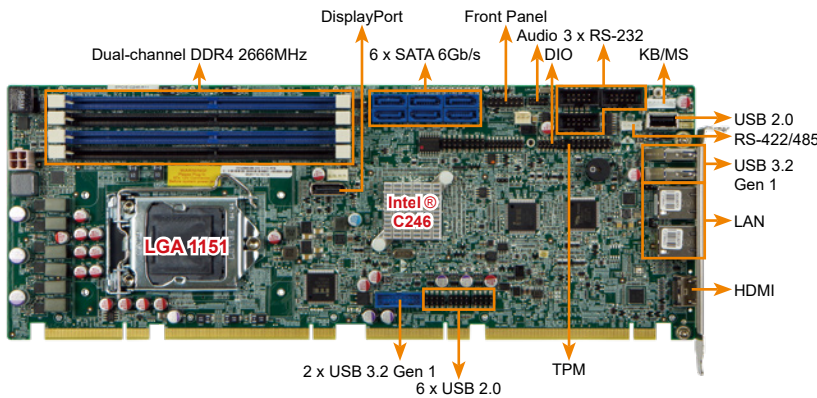


Ordering Information

HPXE2-8S1-R10	8-slot PICMG 1.3 backplane for half-size SBC, with four PCI slots and two PCIe x 16 slot (x8 signal) (PCIe Gen 3.0)
PAC-125G	10-slot full-size compact chassis
RACK-3000G	4U 14-slot full-size rack-mount chassis
RACK-360G	4U 14-slot full-size rack-mount chassis

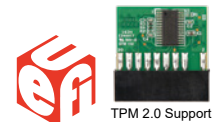
SPCIE-C246

Full-size PICMG 1.3 CPU Card supports LGA1151 Intel® Xeon® E, Core™ i9/i7/i5/i3/ Pentium®/Celeron® CPU per Intel® C246, ECC & non-ECC DDR4, HDMI, DP, Dual Intel® PCIe GbE, USB 3.2 Gen 1 (5Gb/s), SATA 6Gb/s, M.2, HD Audio, Intel® AMT and RoHS



Specifications

- ◆ CPU
LGA1151 socket supports Intel® Xeon® E, 8th/9th generation Core™ i9/i7/i5/i3, Pentium® or Celeron® processor
- ◆ Chipset
Intel® C246
- ◆ Memory
Four 288-pin 2666MHz dual-channel DDR4 SDRAM unbuffered DIMMs support up to 64GB ECC & non-ECC
- ◆ BIOS
AMI UEFI BIOS
- ◆ Graphic Engine
Intel® HD Graphics Gen 9 Engines with Low power 16 execution unit, supports DX2015, OpenGL 5.X and OpenCL2.x, ES 2.0
- ◆ Display Output
Dual display supported
1 x HDMI (up to 4096 x 2304@30Hz)
1 x Internal DisplayPort (up to 4096 x 2304@60Hz)
- ◆ Ethernet
LAN1: Intel® I219LM PHY
LAN2: Intel® I211-AT PCIe controller (Co-lay I210-AT)
- ◆ External I/O Interface
2 x USB 3.2 Gen 1 (5Gb/s) (Rear IO Type-A)
1 x USB 2.0 (Type-A 180°)
- ◆ Internal I/O Interface
1 x KB/MS (1x6 pin)
1 x RS-422/485 (1x4 pin, P=2.0)
2 x USB 3.2 Gen 1 (5Gb/s) (2x10 pin)
3 x RS-232 (2x5 pin, P=2.54)
6 x SATA 6Gb/s (RAID 0/1/5/10 supported)
6 x USB 2.0 (2x4 pin, P=2.54)
- ◆ Audio
Support 7.1 channel HD Audio by IEI AC-KIT-888S-R10 kit
- ◆ Front Panel
1 x Front panel (Power LED, HDD LED, Speaker, Power Button, Reset Button)
- ◆ LAN LED
2 x LAN LED (1x2 pin)
- ◆ TPM
1 x TPM (2x10 pin)
- ◆ SMBus
1 x SMBus (1x4 pin)
- ◆ I²C
1 x I²C (1x4 pin)
- ◆ Expansion
1 x M.2 M key (2280, PCIe Gen3 x4)
1 x PCIe x16 & 4 x PCIe x1 signal via golden finger
4 x PCI signal via golden finger
- ◆ Watchdog Timer
Software programmable support 1~255 sec. system reset
- ◆ Digital I/O
8-bit digital I/O (2x5 pin)
- ◆ Fan Connector
1 x CPU smart fan (1x4 pin)
1 x System smart fan (1x3 pin)
- ◆ Power Supply
AT/ATX power supply
Support AT/ATX mode
ErP/EuP Compliant
- ◆ Power Consumption
5V@3.12A, 12V@6.85A, 3.3V@1.13A, 5VSB@0.15A
(4.0 GHz Intel® Core™ i7-8700K CPU with four 16 GB 2666 MHz DDR4 memory)
- ◆ Operating Temperature
-20°C ~ 60°C
- ◆ Operating Humidity
5% ~ 95%, non-condensing
- ◆ Dimensions
338 mm x 126 mm
- ◆ Weight
GW: 1000g / NW: 500g
- ◆ CE/FCC compliant



Features

- PICMG 1.3 full-size CPU card
- LGA1151 Intel® Xeon® E, 8th/9th generation Core™ i9/i7/i5/i3, Celeron® and Pentium® processor supported
- Dual-channel DDR4 2666MHz
- Support HDMI and internal DP display
- Intel® PCIe GbE with Intel® AMT 11.0 supported
- Support M.2 M key for storage (PCIe x4)
- Supports RAID 0, 1, 5, 10 function via SATA 6Gb/s

Packing List

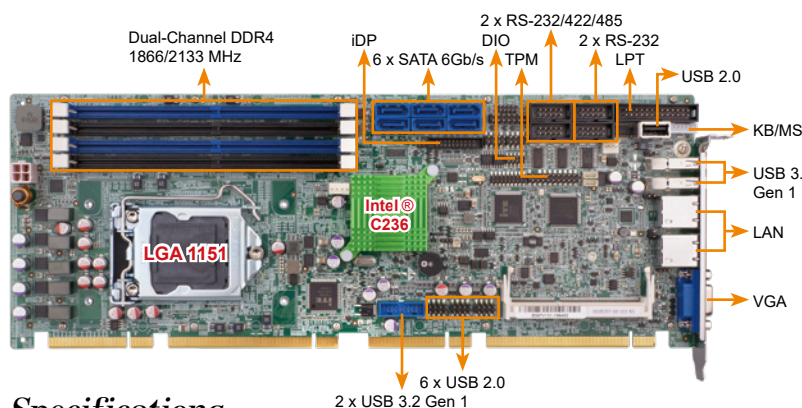
1 x SPCIE-C246 single board computer	1 x SATA cable
1 x Mini jumper pack	1 x QIG (Quick Installation Guide)

Ordering Information

Part No.	Description
SPCIE-C246-R11	Full-size PICMG 1.3 CPU Card supports LGA1151 Intel® Xeon® E, Core™ i9/i7/i5/i3/Pentium®/Celeron® CPU per Intel® C246, ECC & non-ECC DDR4, HDMI, DP, Dual Intel® PCIe GbE, M.2, USB 3.2 Gen 1 (5Gb/s), SATA 6Gb/s, HD Audio, iAMT and RoHS
19800-000075-RS	PS/2 KB/MS cable with bracket, 220mm, P=2.0
CB-USB02-RS	Dual port USB 2.0 cable with bracket, 300mm, P=2.54
19800-010500-200-RS	USB 3.2 Gen 1 (5Gb/s) cable with bracket, 450mm
32102-000100-200-RS	SATA power cable, MOLEX 5264-4P to SATA15P
32205-000702-200-RS	RS-232 cable, 230mm, P=2.54
32205-003800-300-RS	RS-422/485 cable, 200mm, P=2.0
AC-KIT-888S-R10	Realtek ALC888S 7.1 Channel HD Audio peripheral board, RoHS
CF-1150SA-R10	Special cooler kit for LGA1150, High-performance compatible, 95W
CF-1150SB-R11	Special cooler kit for LGA1150, High-performance compatible, 65W
CF-1150SC-R20	Special cooler kit for LGA1150, 1U chassis compatible, 65W
CF-1150SE-R11	Special cooler kit for LGA1150, high-performance compatible, 95W

SPCIE-C236

Full-size PICMG 1.3 CPU Card supports LGA 1151 Intel® Xeon® E3, Core™ i3/Pentium®/Celeron® CPU per Intel® C236, ECC & non-ECC DDR4, VGA/iDP, Dual Intel® PCIe GbE, mSATA, PCIe Mini, USB 3.2 Gen 1 (5Gb/s), SATA 6Gb/s, HD Audio, Intel® AMT and RoHS



PCIe Mini & mSATA colay



▲ Half-size wireless LAN card

PCIe Mini interface provides SATA, PCIe x1 and USB signals to support full-size or half-size devices, such as mSATA, PCIe devices, and wireless LAN cards.



TPM 2.0 Support



Specifications

- ◆ CPU
LGA 1151 socket supports Intel® Xeon® E3 v5/v6, 6th/7th generation Core™ i3, Pentium® or Celeron® processor
- ◆ Chipset
Intel® C236
- ◆ Memory
Four 288-pin 1866/2133 MHz dual-channel ECC & non-ECC unbuffered DDR4 DIMMs support up to 64GB
- ◆ BIOS
UEFI BIOS
- ◆ Graphics Engine
Intel® HD Graphics Gen 9 supports DX11/12, OpenCL 2.x and OpenGL 4.3/4.4 Decode/Encode for HEVC, VP8, VP9, VDENC
- ◆ Display Output
Dual independent display
1 x VGA (up to 1920x1200@60 Hz)
1 x iDP interface for HDMI, LVDS, VGA, DVI and DisplayPort (up to 3840x2160@60 Hz)
- ◆ Ethernet
LAN1: Intel® I219LM Clarkville-V with Intel® AMT 11.0 supported
LAN2: Intel® I210 PCIe controller
- ◆ External I/O Interface
2 x USB 3.2 Gen 1 (5Gb/s)
- ◆ Internal I/O Interface
1 x KB/MS (1x6 pin) 2 x RS-232/422/485 (2x5 pin, P=2.54)
1 x LPT (2x13 pin) 2 x USB 3.2 Gen 1 (5Gb/s) (2x10 pin)
1 x mSATA (SATA & USB signal) 6 x SATA 6Gb/s (RAID 0/1/5/10 supported)
1 x USB 2.0 (180° Type-A) 6 x USB 2.0 (2x4 pin, P=2.54)
2 x RS-232 (2x5pin, P=2.54)
- ◆ Front Panel
1 x Front Panel (1x10 pin, power LED, HDD LED, speaker, power button, reset button)
- ◆ LAN LED
2 x LAN LED (1x2 pin)
- ◆ Audio
Support 7.1 channel HD Audio by IIEI AC-KIT-888S-R10 kit
- ◆ TPM
1 x TPM (2x10 pin)
- ◆ SMBus
1 x SMBus (1x4 pin)
- ◆ I²C
1 x I²C (1x4 pin)
- ◆ Expansion
16-lane PCIe link from CPU via golden finger:
Supports one PCIe x16, or two PCIe x8, or one PCIe x8 + two PCIe x4 on the backplane (configured via BIOS)
4-lane PCIe link from PCH via golden finger:
Supports four PCIe x1 slots or one PCIe x4 slot on the backplane (configured via BIOS switch)
1 x Full/Half-size PCIe Mini card slot (supports mSATA)
- ◆ Watchdog Timer: Software programmable, supports 1~255 sec. system reset
- ◆ Digital I/O: 8-bit digital I/O (2x5 pin)
- ◆ Fan Connector
1 x CPU smart fan (1x4 pin)
1 x System smart fan (1x3 pin)
- ◆ Power Supply
5V/12V, AT/ATX support
- ◆ Power Consumption
5V@3.22A, 12V@6.81A, 3.3V@1.21A, 5VSB@0.18A (Intel® Xeon® E3-1275 v5 3.60 GHz CPU with 64GB (16GBx4) 2133 MHz DDR4 memory)
- ◆ Operating Temperature
-20°C ~ 60°C
- ◆ Operating Humidity
5% ~ 95%, non-condensing
- ◆ Dimensions
338 mm x 126 mm
- ◆ Weight
GW: 1000g / NW: 420g
- ◆ CE/FCC compliant

Features

- PICMG 1.3 full-size CPU Card
- LGA 1151 Intel® Xeon® E3 v5/v6, 6th/7th generation Core™ i3, Pentium® or Celeron® processor supported
- Four 288-pin 1866/2133MHz DDR4 ECC & non-ECC unbuffered DIMM
- Supports dual independent display by VGA & internal DP pin header
- Supports PCIe Mini device & mSATA via PCIe Mini card slot
- Intel® PCIe GbE with Intel® AMT 11.0 supported
- Supports RAID 0, 1, 5, 10 function via SATA 6Gb/s
- TPM 1.2 & 2.0 hardware security function supported by TPM module

Packing List

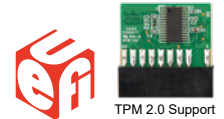
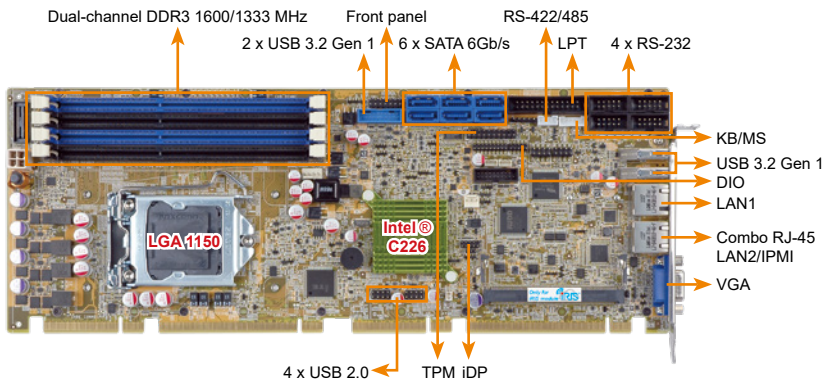
1 x SPCIE-C236 single board computer	1 x Mini jumper pack
1 x SATA cable	1 x QIG

Ordering Information

Part No.	Description
SPCIE-C236-R10	Full-size PICMG 1.3 CPU Card supports LGA 1151 Intel® Xeon® E3, Core™ i3/Pentium®/Celeron® CPU per Intel® C236, ECC & non-ECC DDR4, Dual Intel® PCIe GbE, VGA/iDP, USB 3.2 Gen 1 (5Gb/s), SATA 6Gb/s, PCIe Mini, HD Audio, Intel® AMT, and RoHS
19800-000049-RS	LPT flat cable, 240mm, P=2.54
19800-000075-RS	PS/2 KB/MS cable with bracket, 220mm, P=2.0
CB-USB02-RS	Dual port USB 2.0 cable with bracket, 300mm, P=2.54
19800-010500-200-RS	USB 3.2 Gen 1 (5Gb/s) cable with bracket, 450mm
32102-000100-200-RS	SATA power cable, MOLEX 5264-4P to SATA15P
32205-000702-200-RS	RS-232 cable, 230mm, P=2.54
32205-003800-300-RS	RS-422/485 cable, 200mm, P=2.0
AC-KIT-888S-R10	Realtek ALC888S 7.1 Channel HD Audio peripheral board, RoHS
CF-1150SA-R10	Special cooler kit for LGA1150, high-performance compatible, 95W
CF-1150SB-R11	Special cooler kit for LGA1150, high-performance compatible, 65W
CF-1150SC-R20	Special cooler kit for LGA1150, 1U chassis compatible, 65W
CF-1150SE-R11	Special cooler kit for LGA1150, high-performance compatible, 95W
DP-DP-R10	DisplayPort to DisplayPort converter board (for IIEI iDP connector)
DP-DVI-R10	DisplayPort to DVI-D converter board (for IIEI iDP connector)
DP-HDMI-R10	DisplayPort to HDMI converter board (for IIEI iDP connector)
DP-LVDS-R10	DisplayPort to LVDS converter board (for IIEI iDP connector)
DP-VGA-R10	DisplayPort to VGA converter board (for IIEI iDP connector)

SPCIE-C2260-i2

Full-size PICMG 1.3 CPU Card supports LGA 1150 Intel® Xeon® E3, Core™ i3, Pentium® and Celeron® with Intel® C226, DDR3, VGA, iDP, Dual Intel® PCIe GbE, SATA 6Gb/s, mSATA, PCIe Mini, RS-232, HD Audio and RoHS



Specifications

- ◆ CPU
LGA 1150 Intel® Xeon® E3, Core™ i3, Pentium® or Celeron® processor supported
- ◆ Chipset
Intel® C226
- ◆ Memory
Four 240-pin 1600/1333 MHz dual-channel DDR3 & DDR3L SDRAM ECC and non-ECC unbuffered DIMMs support up to 32 GB
- ◆ BIOS
UEFI BIOS
- ◆ Graphics Engine
Intel® HD Graphics Gen 7.5 supports DX11.1 and OpenCL 1.2, OpenGL 3.2 Full MPEG2, VC1, AVC Decode
- ◆ Display Output
1 x VGA (up to 1920x1200@60 Hz)
1 x iDP interface for HDMI, LVDS, VGA, DVI, DP (up to 3840x2160@60 Hz)
- ◆ Ethernet
LAN1: Intel® I217LM with Intel® AMT 9.0 support
LAN2: Intel® I210-AT PCIe controller with NCSI support
- ◆ Audio
Support 7.1 channel HD Audio by IEI AC-KIT-888S-R10 kit
- ◆ External I/O Interface
2 x USB 3.2 Gen 1 (5Gb/s)
- ◆ Internal I/O Interface
1 x KB/MS (1x6 pin)
1 x LPT (2x13 pin)
1 x mSATA
1 x RS-422/485 (1x4 pin, P=2.0)
2 x USB 3.2 Gen 1 (5Gb/s) (2x10 pin)
4 x USB 2.0 (Golden finger)
4 x USB 2.0 (2x4 pin, P=2.54)
4 x RS-232 (2x5pin, P=2.54)
6 x SATA 6Gb/s (RAID 0/1/5/10 supported)
- ◆ LAN LED
2 x LAN LED (1x2 pin)
- ◆ TPM
1 x TPM (2x10 pin)
- ◆ SMBus
1 x SMBus (1x4 pin)
- ◆ I²C
1 x I²C (1x4 pin)
- ◆ Infrared Interface
1 x Infrared Interface (1x5 pin)
- ◆ Digital I/O
8-bit digital I/O (2x5 pin)
- ◆ Front Panel
1 x Front panel (2x7 pin, power LED, HDD LED, speaker, power button, reset button)
- ◆ Expansion
PCIe signal and PCI signal via golden finger
1 x Full-size PCIe Mini card slot (colay mSATA)
- ◆ Watchdog Timer
Software programmable, supports 1~255 sec. system reset
- ◆ Fan Connector
1 x CPU smart fan (1x4 pin)
1 x System smart fan (1x3 pin)
- ◆ Power Supply
5V/12V, AT/ATX support
- ◆ Power Consumption
5V@3.55A, 12V@0.37A, Vcore_12V@7.61A, 3.3V@1.55A, 5VSB@0.13A (Intel® E3-1240 v3 3.4GHz CPU with 16 GB (four 4 GB) 1333 MHz DDR3 memory)
- ◆ Operating Temperature: -20°C ~ 60°C
- ◆ Storage Temperature: -30°C ~ 70°C
- ◆ Operating Humidity: 5% ~ 95%, non-condensing
- ◆ Dimensions: 338 mm x 126 mm
- ◆ Weight: GW: 1200g / NW: 420g
- ◆ CE/FCC compliant

Features

- PICMG 1.3 full-size server grade solution
- LGA 1150 Intel® Xeon® E3, Core™ i3, Pentium® or Celeron® processor supported
- Four 240-pin 1600/1333 MHz dual-channel DDR3 DIMMs support up to 32 GB
- Supports dual independent display by VGA and iDP interfaces
- Supports PCIe Mini devices and mSATA via PCIe Mini socket
- Supports RAID function via SATA 6Gb/s
- Stiffener bars
- IEI jumper-less function

Packing List


- 1 x SPCIE-C2260-i2 single board computer
- 1 x Dual RS-232 cable
- 1 x USB 2.0 cable
- 2 x SATA cable
- 1 x QIG


Ordering Information

Part No.	Description
SPCIE-C2260-i2-R10	Full-size PICMG 1.3 CPU Card supports LGA 1150 Intel® Xeon® E3, Core™ i3, Pentium® and Celeron® with Intel® C226, DDR3, VGA, iDP, Dual Intel® PCIe GbE, SATA 6Gb/s, mSATA, PCIe Mini, RS-232, HD Audio and RoHS
19800-000049-RS	LPT flat cable, 240mm, P=2.54
19800-000075-RS	PS/2 KB/MS cable with bracket, 220mm, P=2.0
19800-010500-200-RS	USB 3.2 Gen 1 (5Gb/s) cable with bracket, 450mm
32102-000100-200-RS	SATA power cable, MOLEX 5264-4P to SATA15P
32205-003800-300-RS	RS-422/485 cable, 200mm, P=2.0
AC-KIT-888S-R10	Realtek ALC888S 7.1 Channel HD Audio peripheral board, RoHS
CF-1150SB-R11	Special cooler kit for LGA 1150, high-performance compatible, 65W
CF-1150SC-R20	Special cooler kit for LGA1150, 1U chassis compatible, 65W
CF-1150SE-R11	Special cooler kit for LGA1150, high-performance compatible, 95W
DP-DP-R10	DisplayPort to DisplayPort converter board (for IEI iDP connector)
DP-DVI-R10	DisplayPort to DVI-D converter board (for IEI iDP connector)
DP-HDMI-R10	DisplayPort to HDMI converter board (for IEI iDP connector)
DP-LVDS-R10	DisplayPort to LVDS converter board (for IEI iDP connector)
DP-VGA-R10	DisplayPort to VGA converter board (for IEI iDP connector)
TPM-IN01-R20	20-pin Infineon TPM module, software management tool, firmware v3.17

PICMG 1.3 Backplane

Selection Guide

 PAC series wall-mount chassis

 4U rack-mount chassis

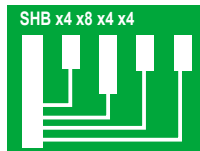

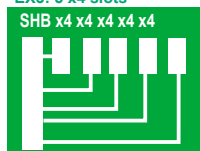

Backplane		SPE-6S	SPE-9S	SPXE-11S	SPXE-14S
Total	Slot	6	7	11	14
PCIe	x16				
	x8		1 (x16 connector) (Gen 3.0)		1 (x16 connector) (Gen 3.0)
	x4	5 (Gen 3.0)	3 (Gen 3.0)	6 (x16 connector) (Gen 3.0)	
	x1				12 (x4 connector) (Gen 3.0)
	PCI-X				
	PCI		3	4	
PSU Type		24+4-pin ATX	24+4-pin ATX	24+8-pin ATX	24+8-pin ATX
Chassis Option		PAC-106G PAC-1000G	PAC-125G	RACK-305G RACK-360G RACK-3000G	RACK-305G RACK-360G RACK-3000G

IEI Server Grade Backplane Solution

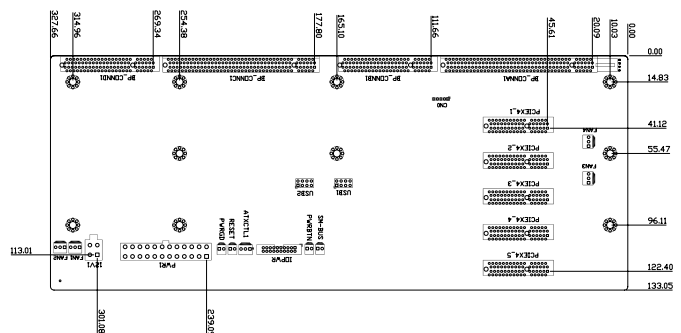
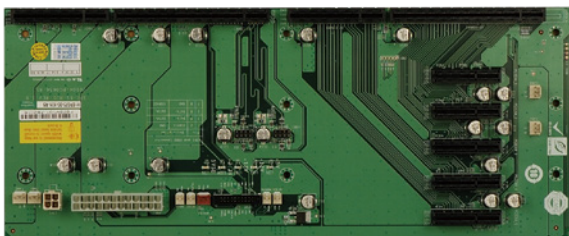
Server grade backplane accommodates PCIe x8 and multiple PCIe x4 add-on cards. It is specially designed for intensive data transfer applications such as server data storage and any application that requires more than one PCIe x4 or four PCIe x1 cards. Given the multiple PCIe x4 and x1 support, it provides a more cost effective solution for end-users by reducing the number of systems required.

System Solution for options

Backplane	Total Slot	PCIe						PSU Type	Chassis Option
		x16	x8	x4	x1	PCI-X	PCI		
SPE-6S	6	-	-	5	-	-	-	24+4-pin ATX	PAC-106G PAC-1000G
SPE-9S	7	-	1 (x16 connector)	3	-	-	3	24+4-pin ATX	PAC-125G
SPXE-11S	11	-	-	6 (x16 connector)	-	-	4	24+8-pin ATX	RACK-305G RACK-360G RACK-3000G
SPXE-14S	14	-	1 (x16 connector)	-	12 (x4 connector)	-	-	24+8-pin ATX	RACK-305G RACK-360G RACK-3000G

Server Grade Backplane	
Example	Corresponding Model
<p>EX2: 1 x8 & 3 x4 slots</p>  <p>SHB x4 x8 x4 x4</p>	<p>SPE-9S</p> 
<p>EX3: 5 x4 slots</p>  <p>SHB x4 x4 x4 x4 x4</p>	<p>SPE-6S</p> 

SPE-6S-R10



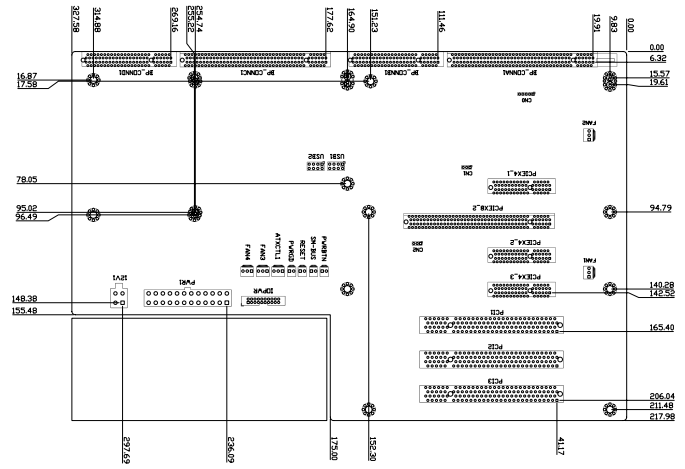
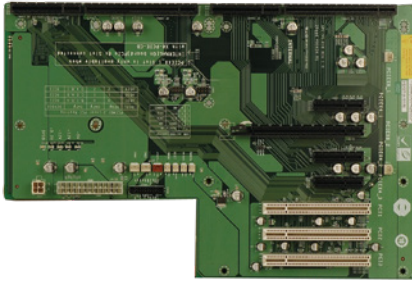
Ordering Information

SPE-6S-R10	6-slot PICMG 1.3 backplane with five PCIe x4 slots (PCIe Gen 3.0)
PAC-106G	6-slot full-size compact chassis
PAC-1000G	6-slot full-size compact chassis

Note: PCIEX4_3 can not work with SPCIE-C2060, SPCIE-C2160, SPCIE-C22260, SPCIE-C236 & HPCIE-C236.



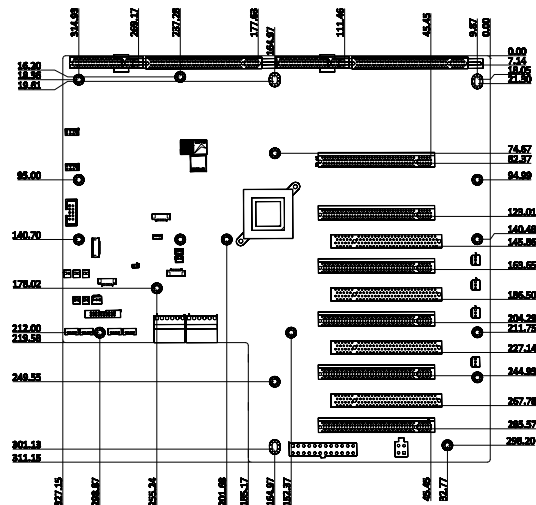
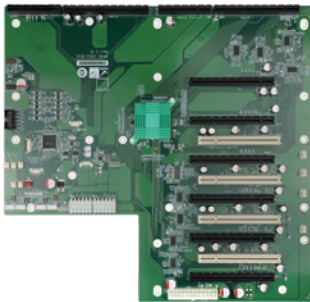
SPE-9S-R11



Ordering Information

SPE-9S-R11	7-slot PICMG 1.3 backplane with one PCIe x16 slot (x8 signal), three PCIe x4 slots and three PCI slots (PCIe Gen 3.0)
PAC-125G	10-slot full-size compact chassis

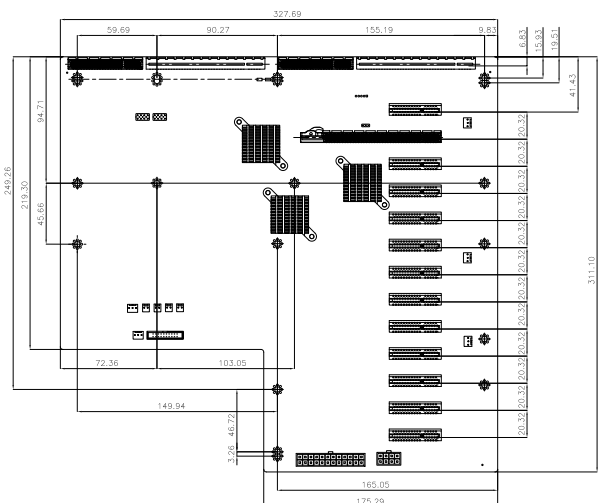
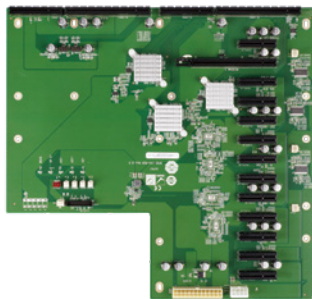
SPXE-11S-R10



Ordering Information

SPXE-11S-R10	11-Slot PICMG 1.3 PCIe to PCIe Switch (PLX PEX8724) Backplane, 6 PCIe Gen 3.0 x4 w/ x16 slot, 4 PCI, RoHS (PCIe Gen 3.0)
RACK-305G	4U 14-slot full-size rack-mount chassis
RACK-360G	4U 14-slot full-size rack-mount chassis
RACK-3000G	4U 14-slot full-size rack-mount chassis

SPXE-14S-R20

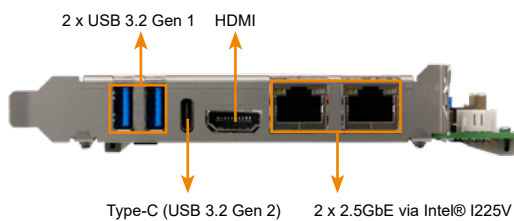
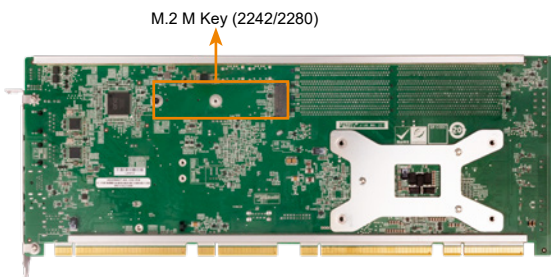
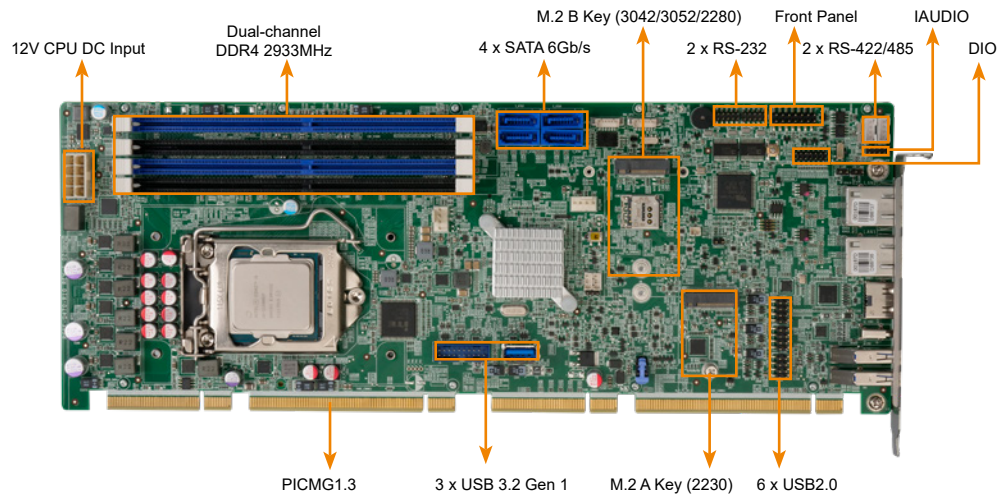


Ordering Information

SPXE-14S-R20	14-slot PICMG 1.3 backplane with one PCIe x16 slot (x8 signal) and twelve PCIe x4 slots (x1 signal) (PCIe Gen 3.0)
RACK-305G	4U 14-slot full-size rack-mount chassis
RACK-360G	4U 14-slot full-size rack-mount chassis
RACK-3000G	4U 14-slot full-size rack-mount chassis

PCIE-Q470

Full-size PICMG 1.3 CPU Card supports LGA1200 10th/11th Gen Intel® Core™ i9/i7/i5/i3, Pentium®, Celeron® Processor with Intel® Q470 / Q470E, DDR4, HDMI, Dual Intel® 2.5GbE, USB 3.2, SATA 6Gb/s, M.2, IAUDIO and RoHS



Features



Support 10th/11th Generation Intel® Processor

Support 10th/11th Generation Intel® Core™ i9/i7/i5/i3, Pentium® and Celeron® processor (LGA 1200 slot), unleashing optimal performance, and can handle multiple tasks at the same time.



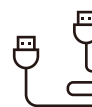
Support Intel® I225V 2.5GbE Controller

Support dual RJ45 network interfaces, based on Intel® I225V 2.5GbE network controller to achieve up to 2.5GbE network transmission rate.



Support Multiple Interface

Support one PCIe x16 signal via golden finger (support x16 or x8 + x8 or x4 + x4 + x8), four PCIe x1 signal from PCH via golden finger (support 1 x4 or four x1), four PCI signal via golden finger, M.2 A key for Bluetooth, Wi-Fi module expansion, M.2 B key for 5G module expansion and M.2 M key for NVMe storage expansion.



USB 3.2 Gen 2 / USB 2.0, up to 10Gb/s Transmission Rate

The motherboard is designed based on the USB 3.2 protocol. One USB Type-C (10Gb/s) and two USB 3.2 Gen 1 (5Gb/s) are provided on the I/O panel, and there are USB 3.2 Gen 1 and USB 2.0 ports onboard for additional wiring options.

Full-size PICMG 1.3

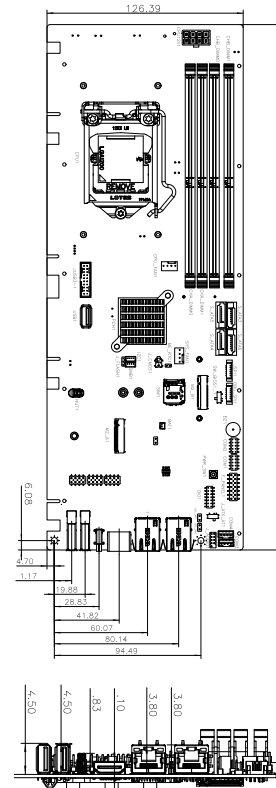


Standard PICMG 1.3 SBCs have several advantages over non-standard SBCs. Firstly, they are more maintainable than a motherboard system and have a much lower mean time to repair (MTTR). Secondly, it is easy to upgrade to a newer or faster processor if desired.

Specifications

- ◆ CPU
LGA1200 10th/11th Gen Intel® Core™ i9/i7/i5/i3, Pentium® and Celeron® processor (support up to 65W)
- ◆ Chipset
Intel® Q470/Q470E
- ◆ BIOS
AMI UEFI BIOS
- ◆ Memory
4 x 288-pin 2933 MHz dual-channel DDR4 DIMMs (system max. 128GB)
- ◆ Graphics Engine
10th Generation CML-S up to Intel® UHD Graphics 630, Intel® HD 9th Generation Display Engine based on 16 low power execution units supporting DX2015, OpenGL 5.X and OpenCL2.x, ES 2.0
11th Generation RKL-S Xe 12th Generation Graphics Architecture, Intel® UHD Graphics 750, supports 12-bit end-to-end, support AV1, VP9, HEVC 12b, HDR10, FP16
- ◆ Display Output
1 x HDMI 1.4 (up to 4096 x 2160@30Hz)
- ◆ Ethernet
LAN1: Intel® I225V 2.5GbE controller (colay with I225-LM)
LAN2: Intel® I225V 2.5GbE controller (colay with I225-LM)
- ◆ External I/O Interface
2 x USB 3.2 Gen 1 (5Gb/s)
1 x USB 3.2 Gen 2 (10Gb/s) by USB Type-C
- ◆ Internal I/O Interface
4 x SATA 6Gb/s (support RAID 0/1/5/10)
6 x USB 2.0 (2x4 pin, P=2.54)
2 x USB 3.2 Gen 1 (5Gb/s) (2x10 pin)
1 x USB 3.2 Gen 1 (Type-A 180°)
2 x RS-232 (2x5 pin, P=2.0)
2 x RS-422/485 (1x4 pin, P=2.54) (RS-485 support AFC)
- ◆ SMBus/ I²C
1 x SMBus (1x4 pin)
- ◆ I²C
1 x I²C (1x4 pin)
- ◆ Audio
1 x IAUDIO, support IEI AC-KIT-888S Audio Module (2x5 pin)
- ◆ Front Panel
1 x Front panel connector (2x7 pin)
Power LED, HDD LED, Power Button, Reset Button
- ◆ LAN LED
2 x LAN LED (1x2 pin)
- ◆ Expansion
1 x PCIe x16 signal via golden finger (support x16, or x8 + x8, or x4 + x4 + x8)
4 x PCIe x1 signal from PCH via golden finger (support1 x4, or 4 x1)
4 x PCI signal via golden finger
1 x M.2 A Key (2230) (with PCIe Gen3 x2/USB 2.0)
1 x M.2 B Key (3042/3052/2242/2280) w/ SIM holder (with PCIe Gen3 x2/USB 2.0)
1 x M.2 M Key (2280/2242) (with PCIe x4)
- ◆ Digital I/O
1 x 12-bit digital I/O (2x7 pin)
- ◆ TPM
Intel® PTT (TPM 2.0)
- ◆ Fan Connector
1 x CPU fan connector (1x4 pin)
1 x System fan connector (1x4 pin)
- ◆ Chassis Open
1 x Chassis intrusion (1x2 pin)
- ◆ Power Supply
ATX/AT power supply
Support AT/ATX mode
ErP/EuP Compliant
- ◆ Watchdog Timer
Software programmable, support 1~255 sec. system reset
- ◆ Power Consumption
3.3V@1.04A, 5V@8.61A, 12V@12.33A
(Intel® Core™ i9-11900K CPU with 4 GB 3200 MHz DDR4 memory)
- ◆ Operating Temperature
0°C ~ 60°C
- ◆ Storage Temperature
-30°C ~ 70°C
- ◆ Operating Humidity: 5% ~ 95%, non-condensing
- ◆ Dimension: 338 mm x 126 mm
- ◆ Weight: GW:1000g / NW:500g
- ◆ Certification: CE/FCC compliant

Dimensions (Unit: mm)



Packing List

1 x PCIE-Q470 single board computer	1 x Mini jumper pack
1 x SATA cable	1 x QIG

Ordering Information

Part No.	Description
PCIE-Q470-R10	Full-size PICMG 1.3 CPU Card supports LGA1200 Intel® 10th/11th Gen. Core™ i9/i7/i5/i3, Pentium®, Celeron® Processor with Intel® Q470 / Q470E, DDR4, HDMI, Dual Intel® 2.5GbE, USB 3.2, SATA 6Gb/s, M.2, IAUDIO and RoHS

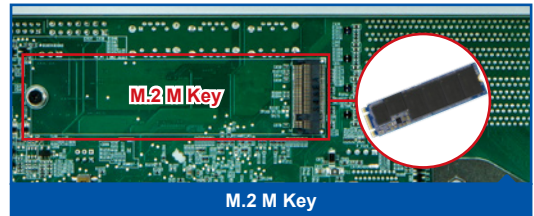
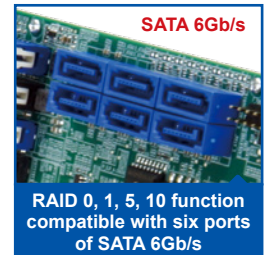
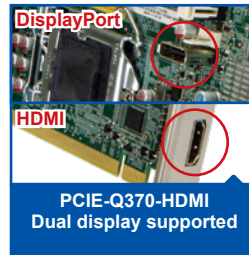
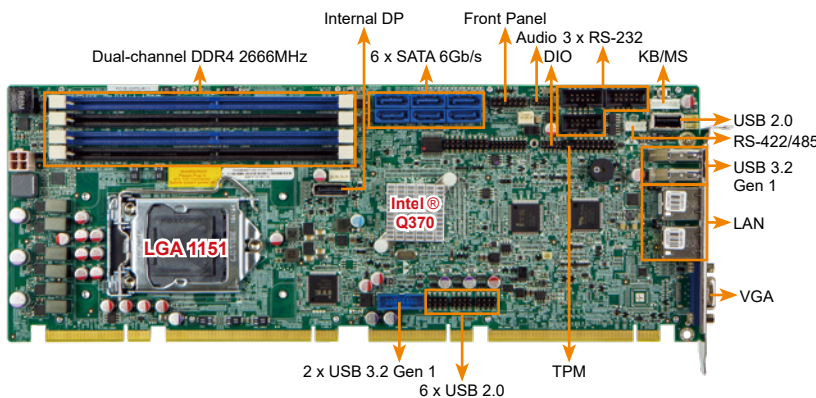
Optional Accessories

Part No.	Description
CB-USB02-RS	Dual port USB cable with bracket, 300mm, P=2.54
32102-000100-200-RS	SATA power cable, MOLEX 5264-4P to SATA15P
32205-002700-200-RS	RS-232/422/485 cable, 200mm, P=2.0
CF-1150SA-R10	Special cooler kit for LGA1150/1151/1200, high-performance compatible, 95W
CF-1150SB-R11	Special cooler kit for LGA1150/1151/1200, high-performance compatible, 65W
CF-1150SC-R20	Special cooler kit for LGA1150/1151/1200, 1U chassis compatible, 65W
CF-1150SE-R11	Special cooler kit for LGA1150/1151/1200, high-performance compatible, 95W



PCIE-Q370

Full-size PICMG 1.3 CPU Card supports LGA1151 Intel® Core™ i9/i7/i5/i3/Pentium®/ Celeron® CPU per Intel® Q370, DDR4, VGA, Dual Intel® PCIe GbE, SATA 6Gb/s, USB 3.2 Gen 1 (5Gb/s), M.2, HD Audio, Intel® AMT and RoHS



Specifications

- ◆ CPU
LGA1151 socket supports 8th/9th generation Intel® Core™ i9/i7/i5/i3, Pentium® or Celeron® processor
- ◆ Chipset
Intel® Q370
- ◆ Memory
Four 288-pin 2666MHz dual-channel DDR4 SDRAM unbuffered DIMMs support up to 64GB
- ◆ BIOS
AMI UEFI BIOS
- ◆ Graphic Engine
Intel® HD Graphics Gen 9 Engines with Low power 16 execution unit, supports DX2015, OpenGL 5.X and OpenCL2.x, ES 2.0
- ◆ Display Output
 - » PCIE-Q370-R11
Dual display supported
1 x VGA (up to 1920 x 1080@60Hz) 1 x Internal DP (up to 4096 x 2304@60Hz)
 - » PCIE-Q370-HDMI-R11**
Dual display supported
1 x HDMI (up to 4096 x 2304@30Hz) 1 x Internal DP (up to 4096 x 2304@60Hz)
- ◆ Ethernet
LAN1: Intel® I219LM PHY
LAN2: Intel® I211-AT PCIe controller (Co-lay I210-AT)
- ◆ External I/O Interface
2 x USB 3.2 Gen 1 (5Gb/s) (Rear IO Type-A)
1 x USB 2.0 (Type-A 180°)
- ◆ Internal I/O Interface
1 x KB/MS (1x6 pin) 3 x RS-232 (2x5 pin, P=2.54)
1 x RS-422/485 (1x4 pin, P=2.0) 6 x SATA 6Gb/s (RAID 0/1/5/10 supported)
2 x USB 3.2 Gen 1 (5Gb/s) (2x10 pin) 6 x USB 2.0 (2x4 pin, P=2.54)
- ◆ Audio
Support 7.1 channel HD Audio by IEI AC-KIT-888S-R10 kit
- ◆ Front Panel
1 x Front panel (Power LED, HDD LED, Speaker, Power Button, Reset Button)
- ◆ LAN LED
2 x LAN LED (1x2 pin)
- ◆ TPM
1 x TPM (2x10 pin)
- ◆ SMBus
1 x SMBus (1x4 pin)
- ◆ I²C
1 x I²C (1x4 pin)
- ◆ Expansion
1 x M.2 M key (2280, PCIe Gen3 x4)
1 x PCIe x16 & 4 x PCIe x1 signal via golden finger
4 x PCI signal via golden finger
- ◆ Watchdog Timer
Software programmable support 1~255 sec. system reset
- ◆ Digital I/O
8-bit digital I/O (2x5 pin)
- ◆ Fan Connector
1 x CPU smart fan (1x4 pin)
1 x System smart fan (1x3 pin)
- ◆ Power Supply
AT/ATX power supply
Support AT/ATX mode
ErP/EuP Compliant
- ◆ Power Consumption
5V@3.12A, 12V@6.85A, 3.3V@1.13A, 5VSB@0.15A
(4.0 GHz Intel® Core™ i7-8700K CPU with four 16 GB 2666 MHz DDR4 memory)
- ◆ Operating Temperature
-20°C ~ 60°C
- ◆ Operating Humidity
5% ~ 95%, non-condensing
- ◆ Dimension: 338 mm x 126 mm
- ◆ Weight: GW: 1000g / NW: 500g
- ◆ CE/FCC compliant



Features

- PICMG 1.3 full-size CPU card
- LGA1151 Intel® 8th/9th Generation Core™ i9/i7/i5/i3, Celeron® and Pentium® processor supported
- Dual-channel DDR4 2666MHz
- Support VGA/HDMI and internal DP display
- Intel® PCIe GbE with Intel® AMT 11.0 supported
- Support M.2 M key for storage (PCIe x4)
- Supports RAID 0, 1, 5, 10 function via SATA 6Gb/s

Packing List

1 x PCIE-Q370 single board computer	1 x Mini jumper pack
1 x SATA cable	1 x QIG (Quick Installation Guide)

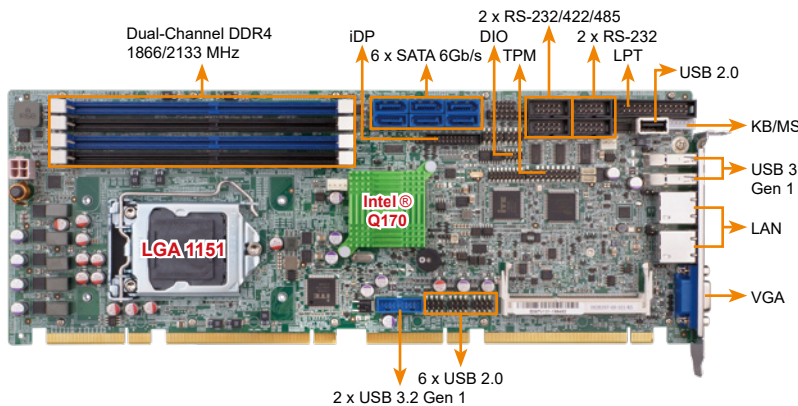
Ordering Information

Part No.	Description
PCIE-Q370-R11	Full-size PICMG 1.3 CPU Card supports LGA1151 Intel® Core™ i9/i7/i5/i3/Pentium®/Celeron® CPU per Intel® Q370, DDR4, VGA, DP, Dual Intel® PCIe GbE, USB 3.2 Gen 1, SATA 6Gb/s, M.2, HD Audio, iAMT and RoHS
PCIE-Q370-HDMI-R11**	Full-size PICMG 1.3 CPU Card supports LGA1151 Intel® Core™ i9/i7/i5/i3/Pentium®/Celeron® CPU per Intel® Q370, DDR4, HDMI, DP, Dual Intel® PCIe GbE, USB 3.2 Gen 1, SATA 6Gb/s, M.2, HD Audio, iAMT and RoHS
19800-000075-RS	PS/2 KB/MS cable with bracket, 220mm, P=2.0
19800-000100-100-RS	Cable module, USB cable, 6, 300mm, 28AWG, (A) USB A type female*4, (B) Dupont 2X4P P=2.54 female*2, ONE PCS PKG w/ label, with bracket, RoHS
19800-010500-200-RS	Cable module, USB 3.0 internal cable+bracket, 3, 450mm, 30AWG, (A) USB 3.0 20pin P=2.0, (B) USB 9pin A type female*2, bracket+M3 screw*2, lotes, RoHS
32102-000100-200-RS	SATA power cable, MOLEX 5264-4P to SATA15P
32205-000702-200-RS	RS-232 cable, 230mm, P=2.54
32205-003800-300-RS	RS-422/485 cable, 200mm, P=2.0
AC-KIT-888S-R10	Realtek ALC888S 7.1 Channel HD Audio peripheral board, RoHS
CB-USB02-RS	Dual ports USB cable with bracket
CF-1150SA-R10	Special cooler kit for LGA1150, High-performance compatible, 95W
CF-1150SB-R11	Special cooler kit for LGA1150, High-performance compatible, 65W
CF-1150SC-R20	Special cooler kit for LGA1150, 1U chassis compatible, 65W
CF-1150SE-R11	Special cooler kit for LGA1150, high-performance compatible, 95W

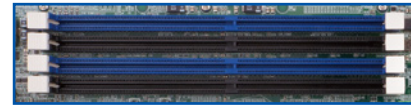
**By order production, MOQ: 100

PCIE-Q170

Full-size PICMG 1.3 CPU Card supports LGA1151 Intel® Core™ i7/i5/i3/Pentium®/Celeron® CPU per Intel® Q170, DDR4, VGA/iDP, Dual Intel® PCIe GbE, PCIe Mini, mSATA, USB 3.2 Gen 1 (5Gb/s), SATA 6Gb/s, HD Audio, Intel® AMT and RoHS



Four 288-pin DDR4 SDRAM Supported



RAID 0, 1, 5, 10 function compatible with six ports of SATA 6Gb/s



Specifications

- ◆ CPU
 - LGA 1151 socket supports Intel® 6th/7th generation Core™ i7/i5/i3, Pentium® or Celeron® processor
- ◆ Chipset
 - Intel® Q170
- ◆ Memory
 - Four 288-pin 1866/2133 MHz dual-channel unbuffered DDR4 DIMMs support up to 64GB
- ◆ BIOS
 - UEFI BIOS
- ◆ Graphic Engine
 - Intel® HD Graphics Gen 9 supports DX11/12, OpenCL 2.x and OpenGL 4.3/4.4
 - Decode/Encode for HEVC, VP8, VP9, VDENC
- ◆ Display Output
 - Dual independent display
 - 1 x VGA (up to 1920x1200@60 Hz)
 - 1 x iDP interface for HDMI, LVDS, VGA, DVI and DisplayPort (up to 3840x2160@60 Hz)
- ◆ Ethernet
 - LAN1: Intel® I219LM Clarkville-V with Intel® AMT 11.0 supported
 - LAN2: Intel® I210 PCIe controller
- ◆ External I/O Interface
 - 2 x USB 3.2 Gen 1 (5Gb/s)
- ◆ Internal I/O Interface
 - 1 x KB/MS (1x6 pin)
 - 1 x LPT (2x13 pin)
 - 1 x mSATA (SATA & USB signal)
 - 1 x USB 2.0 (180° Type-A)
 - 2 x RS-232 (2x5pin, P=2.54)
- ◆ Front Panel
 - 1 x Front Panel (1x10 pin, power LED, HDD LED, speaker, power button, reset button)
- ◆ LAN LED
 - 2 x LAN LED (1x2 pin)
- ◆ Audio
 - Support 7.1 channel HD Audio by IEI AC-KIT-888S-R10 kit
- ◆ TPM
 - 1 x TPM (2x10 pin)
- ◆ SMBus
 - 1 x SMBus (1x4 pin)
- ◆ I²C
 - 1 x I²C (1x4 pin)
- ◆ Expansion
 - 16-lane PCIe link from CPU via golden finger:**
 - Supports one PCIe x16, or two PCIe x8, or one PCIe x8 + two PCIe x4 on the backplane (configured via BIOS)
 - 4-lane PCIe link from PCH via golden finger:**
 - Supports four PCIe x1 slots or one PCIe x4 slot on the backplane (configured via BIOS switch)
 - 1 x Full/Half-size PCIe Mini card slot
 - Four PCI signal via golden finger**
- ◆ Watchdog Timer
 - Software programmable, supports 1~255 sec. system reset
- ◆ Digital I/O
 - 8-bit digital I/O (2x5 pin)
- ◆ Fan Connector
 - 1 x CPU smart fan (1x4 pin)
 - 1 x System smart fan (1x3 pin)
- ◆ Power Supply
 - 5V/12V, AT/ATX support
- ◆ Power Consumption
 - 5V@3.12A, 12V@6.85A, 3.3V@1.13A, 5VSB@0.15A
 - (Intel® Core™ i7-6700K 4.0GHz CPU with 64GB (16GB x 4) 2133 MHz DDR4 memory)
- ◆ Operating Temperature
 - 20°C ~ 60°C
- ◆ Operating Humidity
 - 5% ~ 95%, non-condensing
- ◆ Dimensions: 338 mm x 126 mm
- ◆ Weight: GW: 1000g / NW: 420g
- ◆ CE/FCC compliant

Features

- PICMG 1.3 full-size CPU Card
- LGA 1151 Intel® 6th/7th generation Core™ i7/i5/i3, Pentium® or Celeron® processor supported
- Four 288-pin 1866/2133MHz dual-channel DDR4 UDIMMs support up to 64GB
- Supports dual independent display by VGA & internal DP pin header
- Supports PCIe Mini device & mSATA via PCIe Mini card slot
- Intel® PCIe GbE with Intel® AMT 11.0 supported
- Supports RAID 0, 1, 5, 10 function via SATA 6Gb/s
- TPM 1.2 & 2.0 hardware security function supported by TPM module

Packing List

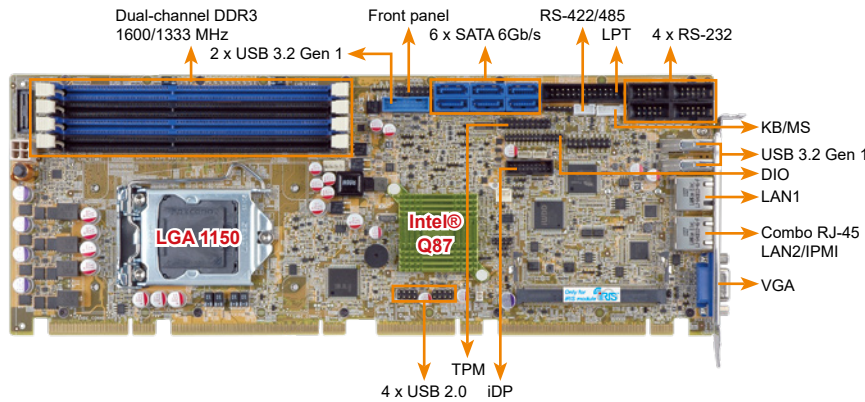
1 x PCIE-Q170 single board computer	1 x Mini jumper pack
1 x SATA cable	1 x QIG

Ordering Information

Part No.	Description
PCIE-Q170-R10	Full-size PICMG 1.3 CPU Card supports LGA1151 Intel® Core™ i7/i5/i3/Pentium®/Celeron® CPU per Intel® Q170, DDR4, VGA/iDP, Dual Intel® PCIe GbE, PCIe Mini, USB 3.2 Gen 1 (5Gb/s), SATA 6Gb/s, mSATA, HD Audio, iAMT and RoHS
19800-000049-RS	LPT flat cable, 240mm, P=2.54
19800-000075-RS	PS/2 KB/MS cable with bracket, 220mm, P=2.0
CB-USB02-RS	Dual port USB 2.0 cable with bracket, 300mm, P=2.54
19800-010500-200-RS	USB 3.2 Gen 1 (5Gb/s) cable with bracket, 450mm
32102-000100-200-RS	SATA power cable, MOLEX 5264-4P to SATA15P
32205-000702-200-RS	RS-232 cable, 230mm, P=2.54
32205-003800-300-RS	RS-422/485 cable, 200mm, P=2.0
AC-KIT-888S-R10	7.1 channel HD Audio kit with Realtek ALC892 support dual audio streams
CF-1150SA-R10	Special cooler kit for LGA1150, High-performance compatible, 95W
CF-1150SB-R11	Special cooler kit for LGA1150, High-performance compatible, 65W
CF-1150SC-R20	Special cooler kit for LGA1150, 1U chassis compatible, 65W
CF-1150SE-R11	Special cooler kit for LGA1150, high-performance compatible, 95W
DP-DP-R10	DisplayPort to DisplayPort converter board (for IEI iDP connector)
DP-DVI-R10	DisplayPort to DVI-D converter board (for IEI iDP connector)
DP-HDMI-R10	DisplayPort to HDMI converter board (for IEI iDP connector)
DP-LVDS-R10	DisplayPort to LVDS converter board (for IEI iDP connector)
DP-VGA-R10	DisplayPort to VGA converter board (for IEI iDP connector)

PCIE-Q870-i2

Full-size PICMG 1.3 CPU Card supports LGA 1150 Intel® Core™ i7/i5/i3, Pentium® and Celeron® CPU per Intel® Q87, DDR3, VGA, iDP, Dual PCIe GbE, mSATA, PCIe Mini and RoHS



Specifications

- ◆ CPU
LGA 1150 Intel® 4th generation Core™ i7/i5/i3, Pentium® or Celeron® processor supported
- ◆ Chipset
Intel® Q87
- ◆ Memory
Four 240-pin 1600/1333 MHz dual-channel unbuffered DDR3 & DDR3L SDRAM DIMMs support up to 32 GB
- ◆ BIOS
UEFI BIOS
- ◆ Graphics Engine
Intel® HD Graphics Gen 7.5 supports DX11.1, OpenCL 1.2 and OpenGL 4.2
Full MPEG2, VC1, AVC Decode
- ◆ Display Output
1 x VGA (up to 1920x1200@60 Hz)
1 x iDP interface for HDMI, LVDS, VGA, DVI, DP (up to 3840x2160@60 Hz)
- ◆ Ethernet
LAN1: Intel® I217LM with Intel® AMT 9.0 support
LAN2: Intel® I210-AT PCIe controller with NCSI support
- ◆ External I/O Interface
2 x USB 3.2 Gen 1 (5Gb/s)
- ◆ Internal I/O Interface
1 x KB/MS (1x6 pin) 2 x USB 3.2 Gen 1 (5Gb/s) (2x10 pin)
1 x LPT (2x13 pin) 4 x RS-232 (2x5pin, P=2.54)
1 x mSATA 4 x USB 2.0 (2x4 pin, P=2.54)
1 x RS-422/485 (1x4 pin, P=2.0) 4 x USB 2.0 (Golden finger)
6 x SATA 6Gb/s (RAID 0/1/5/10 supported)
- ◆ Front Panel
1 x Front panel (2x7 pin, power LED, HDD LED, speaker, power button, reset button)
- ◆ LAN LED
2 x LAN LED (1x2 pin)
- ◆ Audio
Support 7.1 channel HD Audio by IEI AC-KIT-888S-R10 kit
- ◆ TPM
1 x TPM (2x10 pin)
- ◆ SMBus
1 x SMBus (1x4 pin)
- ◆ I²C
1 x I²C (1x4 pin)
- ◆ Infrared Interface
1 x Infrared Interface (1x5 pin)
- ◆ Expansion
PCIe signal and PCI signal via golden finger
1 x Full-size PCIe Mini card slot (supports mSATA)
- ◆ Watchdog Timer
Software programmable, supports 1~255 sec. system reset
- ◆ Digital I/O
8-bit digital I/O (2x5 pin)
- ◆ Fan Connector
1 x CPU smart fan (1x4 pin)
1 x System smart fan (1x3 pin)
- ◆ Power Supply: 5V/12V, AT/ATX support
- ◆ Power Consumption
5V@3.55A, 12V@0.37A, Vcore_12V@7.61A, 3.3V@1.55A, 5VSB@0.13A (Intel® Core™ i7-4770K 3.90 GHz CPU with 16 GB (4x4 GB) 1333 MHz DDR3 memory)
- ◆ Operating Temperature: -20°C ~ 60°C
- ◆ Storage Temperature: -30°C ~ 70°C
- ◆ Operating Humidity: 5% ~ 95%, non-condensing
- ◆ Dimensions: 338 mm x 126 mm
- ◆ Weight: GW: 1200g / NW: 420g
- ◆ CE/FCC compliant

Features

- PICMG 1.3 full-size graphics grade solution
- LGA 1150 Intel® 4th generation Core™ i7/i5/i3, Pentium® or Celeron® processor supported
- Four 240-pin 1600/1333 MHz dual-channel DDR3 DIMMs support up to 32 GB memory
- Supports dual independent display by VGA & iDP interfaces
- Supports PCIe Mini devices and mSATA via PCIe Mini socket
- Supports RAID function via SATA 6Gb/s

Packing List

- 1 x PCIE-Q870-i2 single board computer
- 1 x Dual RS-232 cable
- 1 x USB 2.0 cable
- 2 x SATA cable
- 1 x QIG

Ordering Information

Part No.	Description
PCIE-Q870-i2-R10	Full-size PICMG 1.3 CPU Card supports LGA 1150 Intel® Core™ i7/i5/i3, Pentium® and Celeron® CPU per Intel® Q87, DDR3, VGA, iDP, Dual PCIe GbE, mSATA, PCIe Mini and RoHS
19800-000049-RS	LPT flat cable, 240mm, P=2.54
19800-000075-RS	PS/2 KB/MS cable with bracket, 220mm, P=2.0
19800-010500-200-RS	USB 3.2 Gen 1 (5Gb/s) cable with bracket, 450mm
32102-000100-200-RS	SATA power cable, MOLEX 5264-4P to SATA15P
32205-003800-300-RS	RS-422/485 cable, 200mm, P=2.0
AC-KIT-888S-R10	7.1-channel HD Audio kit with Realtek ALC892 supports dual audio streams
CF-1150SB-R11	Special cooler kit for LGA 1150, high-performance compatible, 65W
CF-1150SC-R20	Special cooler kit for LGA 115X, 1U chassis compatible, 65W, copper
CF-1150SE-R11	Special cooler kit for LGA 115X, high-performance compatible, 95W, copper
DP-DP-R10	DisplayPort to DisplayPort converter board (for IEI iDP connector)
DP-DVI-R10	DisplayPort to DVI-D converter board (for IEI iDP connector)
DP-HDMI-R10	DisplayPort to HDMI converter board (for IEI iDP connector)
DP-LVDS-R10	DisplayPort to LVDS converter board (for IEI iDP connector)
DP-VGA-R10	DisplayPort to VGA converter board (for IEI iDP connector)
TPM-IN01-R20	20-pin Infineon TPM module, software management tool, firmware v3.17

PICMG 1.3 Passive Backplane

Selection Guide

PAC series wall-mount chassis

4U/5U rack-mount chassis

1U/2U rack-mount chassis

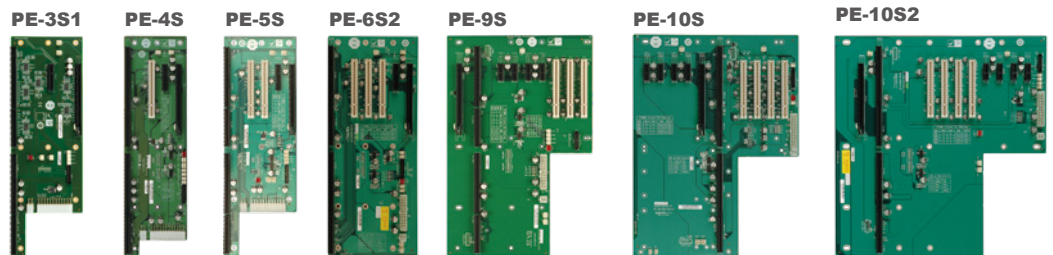
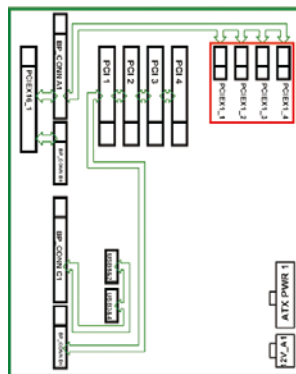
PICMG 1.3 (PCIe+PCI)	Model	PE-2SD1	PE-3S1	PE-4S	PE-5S	PE-5S2	PE-6S	PE-6S2	PE-6SD	PE-6SD3
Total Slot		2	5	4	5	5	6	6	5	5
Expansion Slots	PCIe Slots	x16 *	1 (Gen 2.0)	1 (Gen 3.0)	1	1 (Gen 2.0)	1 (Gen 2.0)	1 (Gen 2.0)	1 (Gen 2.0)	1 (Gen 2.0)
		x4		1 (Gen 3.0)	1	1 (Gen 2.0)		1 (Gen 2.0)		1 (Gen 2.0)
	PCI-X Slots						3 (Gen 2.0)	2 (Gen 2.0)		3 (Gen 2.0)
		PCI Slots			1	2		2	3	
USB Connectors by Pin Header		4		4	4	4	4	4	4	4
PSU Type		24+4-pin ATX	24+4-pin ATX	24+4-pin ATX	24+4-pin ATX	24+4-pin ATX	24+4-pin ATX	24+4-pin ATX	24+4-pin ATX	24+4-pin ATX
Chassis		RACK-1150-PE	RACK-500AI	N/A	N/A	N/A	RACK-305G RACK-360G RACK-3000G PAC-1700G PAC-125 G	PAC-106G PAC-1000G	N/A	N/A
Note		1U Type							2U Type	2U Type

PICMG 1.3 (PCIe+PCI)	Model	PE-7S	PE-8S	PE-9S	PE-10S	PE-10S2	PXE-13S	
Total Slot		7	8	9	10	10	13	
Expansion Slots	PCIe Slots	x16 *	1 (Gen 2.0)	1 (Gen 2.0)	1 (Gen 2.0)	1 (Gen 2.0)	1 (Gen 3.0)	
		x4						
	PCI-X Slots		2 (Gen 2.0)	3 (Gen 2.0)	4 (Gen 2.0)	4 (Gen 2.0)	4 (Gen 2.0)	3 (Gen 3.0)
		PCI Slots						
USB Connectors by Pin Header		4	4	4	4	4	4	
PSU Type		24+4-pin ATX	24+4-pin ATX	24+4-pin ATX	24+4-pin ATX	24+4-pin ATX	24+4-pin ATX	
Chassis		PAC-1700G	PAC-125G	N/A	RACK-305G RACK-360G RACK-3000G	RACK-3000G RACK-305G RACK-360G	RACK-3000G RACK-305G RACK-360G	
Note							PCIe to PCI Bridge Backplane	

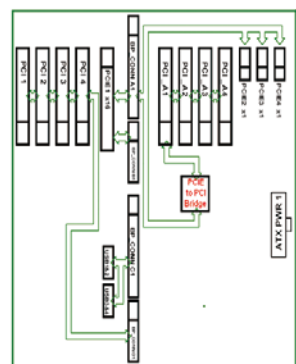
*When using a PCIe x16 add-on card, the length of the card must not exceed 167mm or 6.57 inches.

IEI Graphics Grade Backplane Solution

The graphics grade backplane solution targets the applications which concern system speed and performance. It has higher performance over cost ratio than the previous PICMG 1.0 solution.

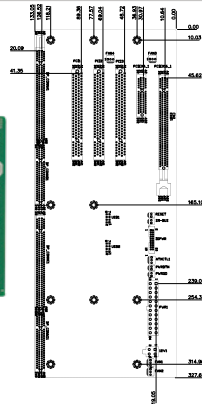
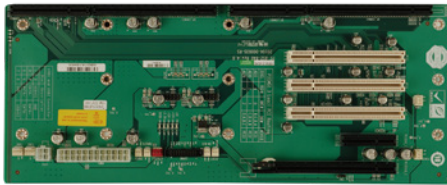


- Twenty PCIe lanes in total
- One PCIe x16 slot
- Up to four PCIe x1 or one PCIe x4 slot
- Up to four local PCI slots (w/o bridge)



PE-6S2-R40

Mounting holes compatible with PCI-6S



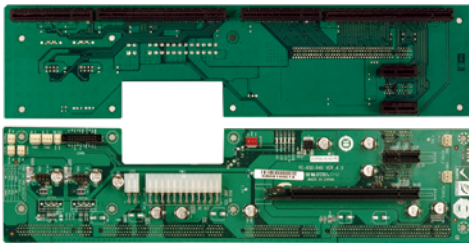
Ordering Information

PE-6S2-R40	6-slot backplane with one PCIe x16 slot, one PCIe x4 slot and three PCI slots (PCIe Gen 2.0)
PAC-106G *	6-slot full-size compact chassis
PAC-1000G	6-slot full-size compact chassis

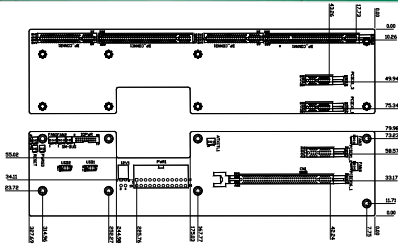
* When using a PCIe x16 add-on card, the length of the card must not exceed 167mm or 6.57 inches.

PE-6SD-R40

Mounting holes compatible with PCI-6SD



2U Type

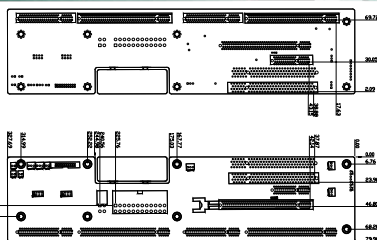
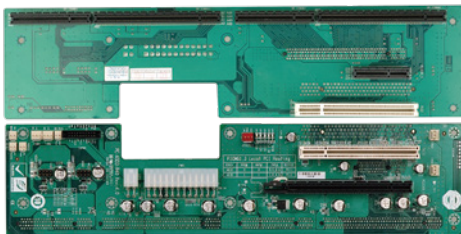


Ordering Information

PE-6SD-R40	5-slot backplane with one PCIe x16 slot and three PCIe x1 slots (PCIe Gen 2.0)
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PE-6SD3-R40

Mounting holes compatible with PCI-6SD

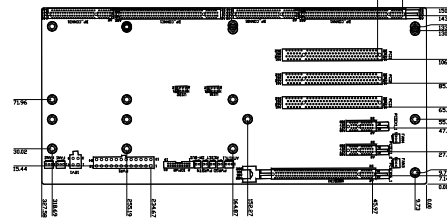
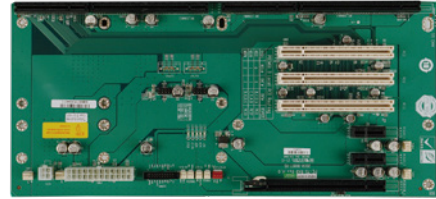


Ordering Information

PE-6SD3-R40	5-slot backplane with one PCIe x16 slot, one PCIe x4 slot and two PCI slots (PCIe Gen 2.0)
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PE-7S-R40

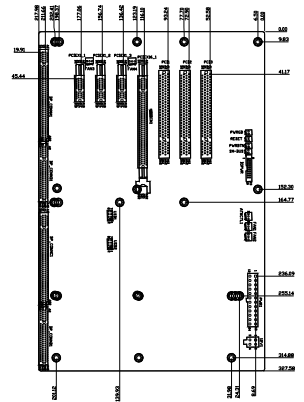
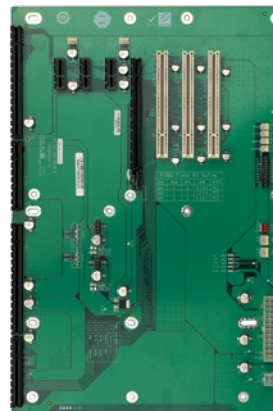
Mounting holes compatible with PCI-7S



Ordering Information

PE-7S-R40	7-slot backplane with one PCIe x16 slot, two PCIe x1 slots and three PCI slots (PCIe Gen 2.0)
PAC-1700G	7-slot full-size compact chassis

PE-8S-R40

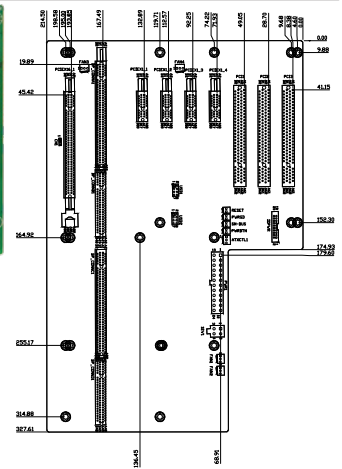
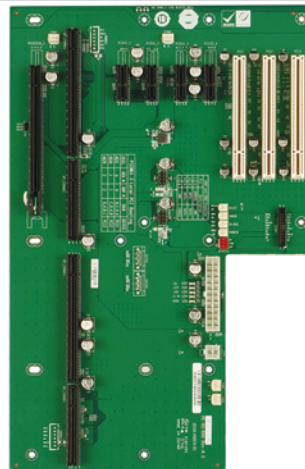


Ordering Information

PE-8S-R40	8-slot backplane with one PCIe x16 slot, three PCIe x1 slots and three PCI slots (PCIe Gen 2.0)
PAC-125G	10-slot full-size compact chassis

PE-9S-R40

Mounting holes compatible with PCI-10S2

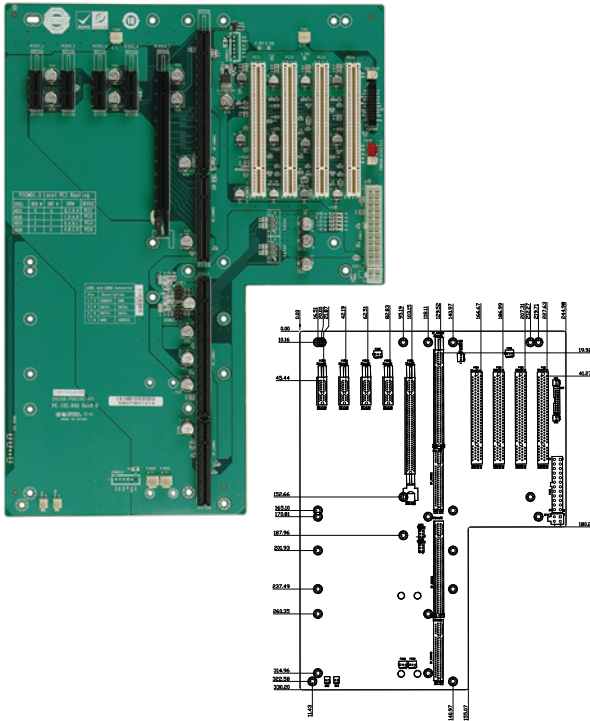


Ordering Information

PE-9S-R40	9-slot backplane with one PCIe x16 slot, four PCIe x1 slots and three PCI slots (PCIe Gen 2.0)
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PE-10S-R40

Mounting holes compatible with PCI-14S

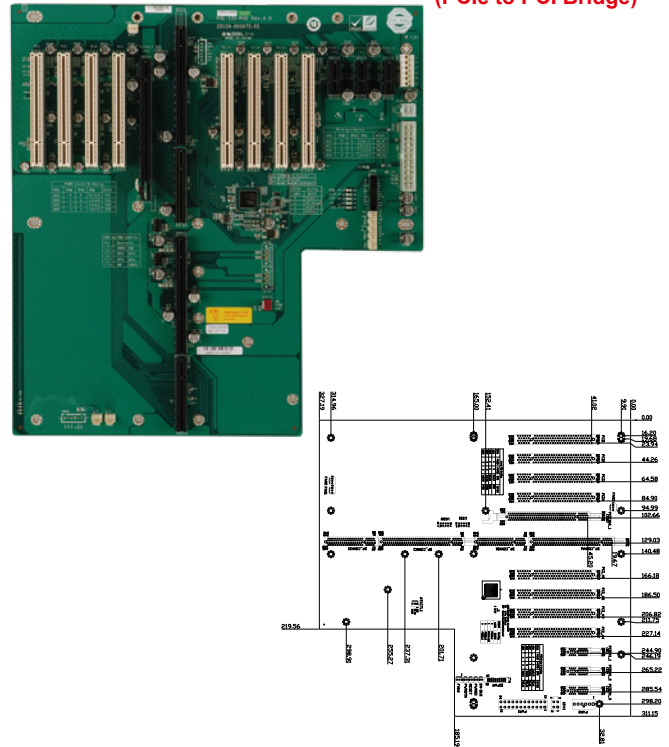


Ordering Information	
PE-10S-R40	10-slot backplane with one PCIe x16 slot, four PCIe x1 slots and four PCI slots (PCIe Gen 2.0)
RACK-305G	4U 14-slot full-size rack-mount chassis
RACK-360G	4U 14-slot full-size rack-mount chassis
RACK-3000G	4U 14-slot full-size rack-mount chassis

PXE-13S-R51

Mounting holes compatible with PCI-14S

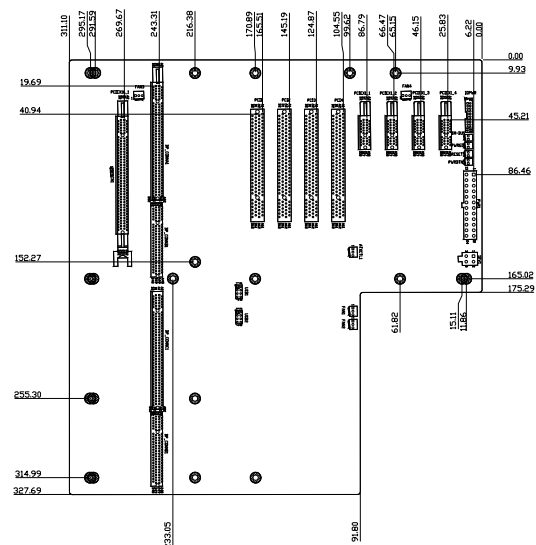
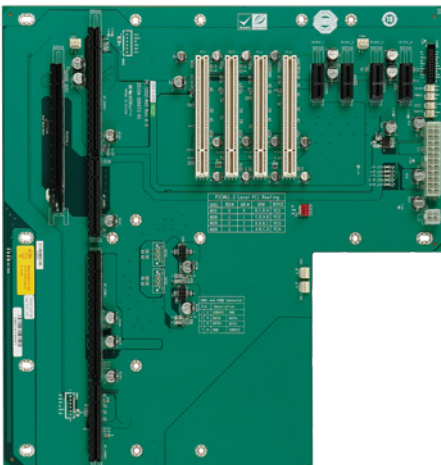
(PCIe to PCI Bridge)



Ordering Information	
PXE-13S-R51	13-slot backplane with one PCIe x16 slot, three PCIe x1 slots and eight PCI slots (PCIe Gen 3.0)
RACK-3000G	4U 14-slot full-size rack-mount chassis
RACK-305G	4U 14-slot full-size rack-mount chassis
RACK-360G	4U 14-slot full-size rack-mount chassis

PE-10S2-R40

Mounting holes compatible with PCI-14S



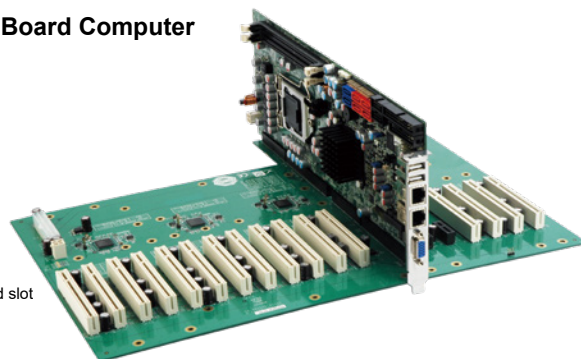
Ordering Information	
PE-10S2-R40	10-slot backplane with one PCIe x16 slot, four PCIe x1 slots and four PCI slots (PCIe Gen 2.0)
RACK-3000G	4U 14-slot full-size rack-mount chassis
RACK-305G	4U 14-slot full-size rack-mount chassis
RACK-360G	4U 14-slot full-size rack-mount chassis

PCI/PX Backplane

Supports PCI and ISA slot on one backplane! For PICMG 1.0 Single Board Computer

The advantages of using the PICMG 1.0 card are numerous:

1. Supports standard PICMG version 1.0 slot on the PCI/PX series passive backplane
2. Compatible with all available PCI/ISA cards. PCI/PX backplane is also integrated with the ROCKY series card slot



Selection Guide

 PAC series wall-mount chassis

 4U/5U rack-mount chassis

 1U/2U rack-mount chassis

RoHS Ready



RoHS Ready



RoHS Ready



RoHS Ready



Model	PCI-5S2A-RS-R40 PCI-5S2-RS-R40	PCI-6S-RS-R40	PCI-7S-RS-R41	PCI-8S-RS-R40
Total Slot	5	6	7	8
PCI Slot	4	4	4	4
ISA Slot	1	2	3	4
PSU Type	ATX/AT	ATX/AT	ATX/AT	ATX/AT
Chassis	N/A	PAC-106G PAC-1000G	PAC-1700G	N/A

RoHS Ready



RoHS Ready



RoHS Ready



RoHS Ready



Model	PCI-10S-RS-R41	PX-10S-RS-R50	PCI-12S-RS-R40	PCI-14S-RS-R40
Total Slot	10	10	12	14
PCI Slot	4	7	4	4
ISA Slot	5	3	7	9
PSU Type	ATX/AT	ATX/AT	ATX/AT	ATX/AT
Chassis	PAC-125G	PAC-125G	RACK-3000G	N/A
Note				

RoHS Ready



RoHS Ready

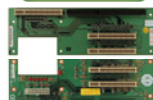


RoHS Ready



Model	PCI-14S3-RS-R40	PX-14S3-RS-R50	PX-14S5-RS-R50
Total Slot	14	14	14
PCI Slot	4	12	7
ISA Slot	9	2	6
PSU Type	ATX/AT	ATX/AT	ATX/AT
Chassis	RACK-305G RACK-360G RACK-3000G	RACK-305G RACK-360G RACK-3000G	RACK-305G RACK-360G RACK-3000G

RoHS Ready

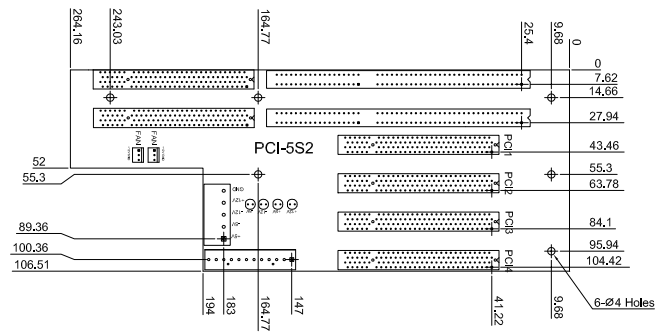
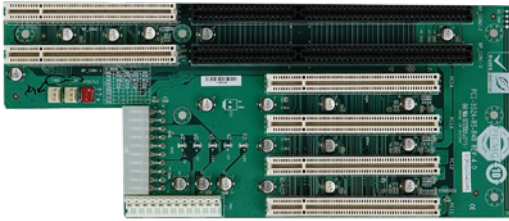


RoHS Ready



Model	PCI-5SD6-RS-R40	PCI-6SD-RS-R40
Total Slot	6	6
PCI Slot	L2+R2	L1+R1
ISA Slot		L1+R1
PSU Type	ATX	ATX
Chassis	RACK-220G	RACK-220G

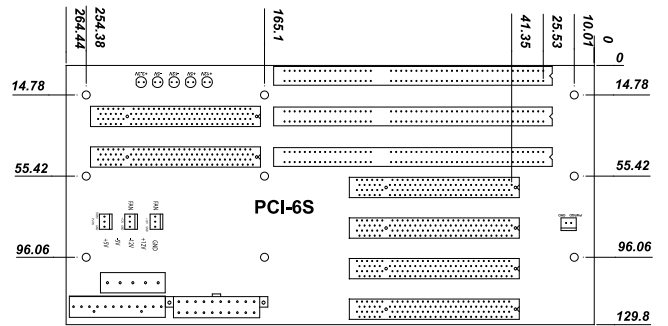
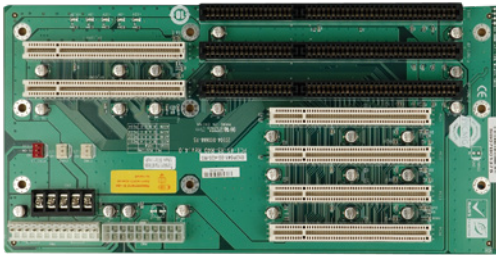
PCI-5S2-RS-R40/PCI-5S2A-RS-R40



Ordering Information

PCI-5S2-RS-R40	5-slot AT power backplane with four PCI slots and one ISA slot
PCI-5S2A-RS-R40	5-slot ATX power backplane with four PCI slots and one ISA slot

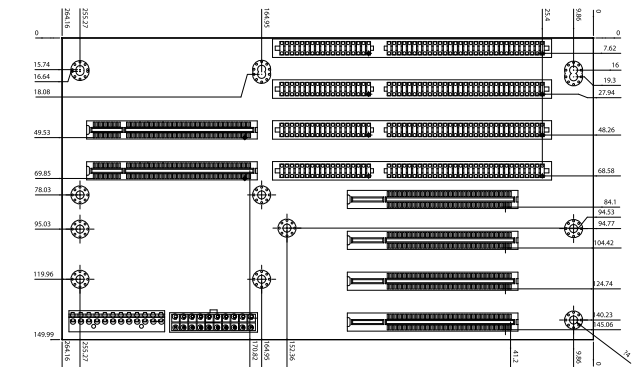
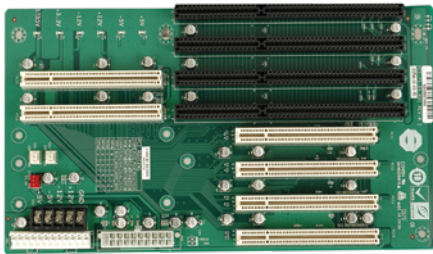
PCI-6S-RS-R40



Ordering Information

PCI-6S-RS-R40	6-slot backplane with four PCI slots and two ISA slots
PAC-106G	6-slot full-size compact chassis
PAC-1000G	6-slot full-size compact chassis

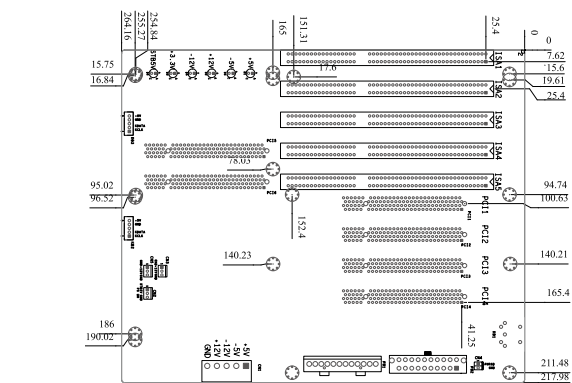
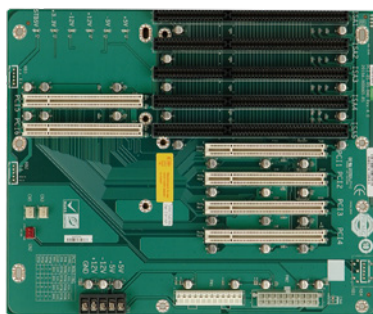
PCI-7S-RS-R41



Ordering Information

PCI-7S-RS-R41	7-slot backplane with four PCI slots and three ISA slots
PAC-1700G	7-slot full-size compact chassis

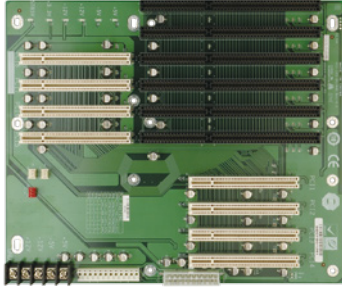
PCI-8S-RS-R40



Ordering Information

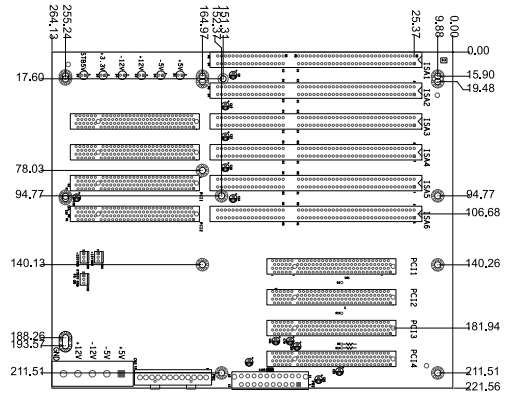
PCI-8S-RS-R40	8-slot backplane with four PCI slots and four ISA slots
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PCI-10S-RS-R41

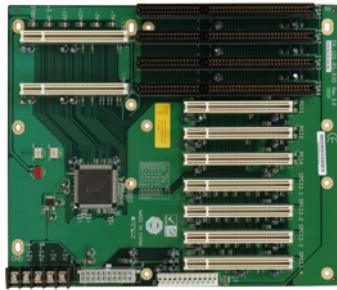


Ordering Information

PCI-10S-RS-R41	10-slot backplane with four PCI slots and five ISA slots
PAC-125G	10-slot full-size compact chassis

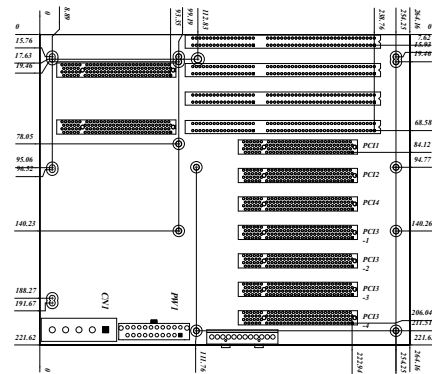


PX-10S-RS-R50

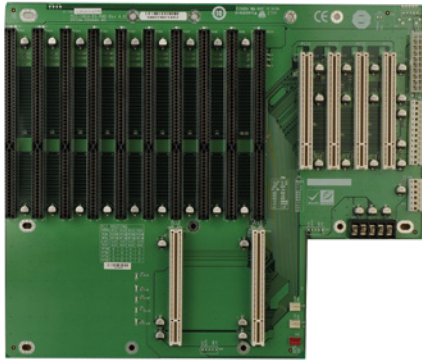


Ordering Information

PX-10S-RS-R50	10-slot backplane with seven PCI slots and three ISA slots
PAC-125G	10-slot full-size compact chassis

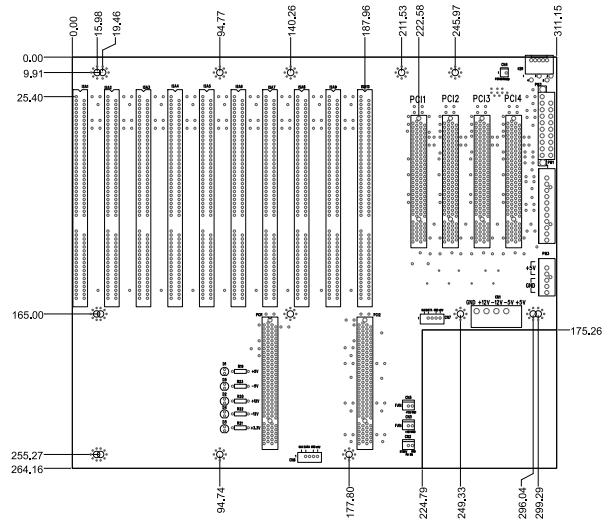


PCI-14S3-RS-R40

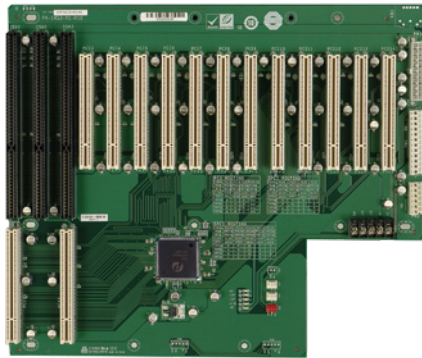


Ordering Information

PCI-14S3-RS-R40	14-slot backplane with four PCI slots and nine ISA slots
RACK-305G	4U 14-slot full-size rack-mount chassis
RACK-360G	4U 14-slot full-size rack-mount chassis
RACK-3000G	4U 14-slot full-size rack-mount chassis

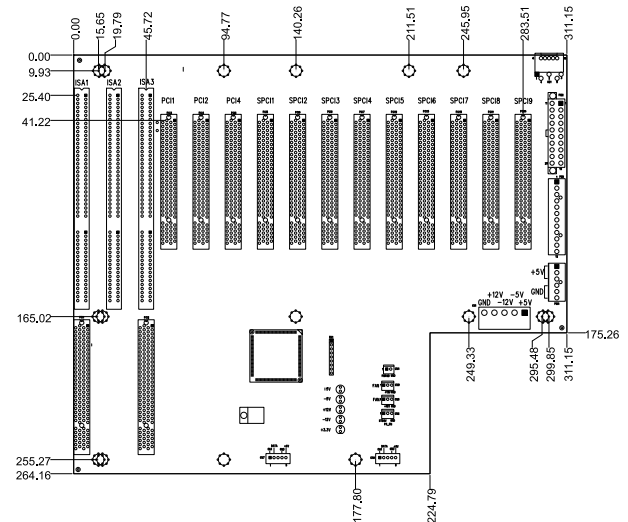


PX-14S3-RS-R50

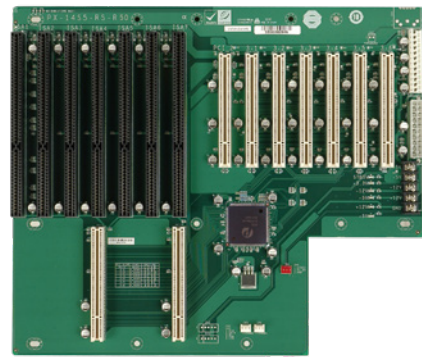


Ordering Information

PX-14S3-RS-R50	14-slot backplane with twelve PCI slots and two ISA slots
RACK-305G	4U 14-slot full-size rack-mount chassis
RACK-360G	4U 14-slot full-size rack-mount chassis
RACK-3000G	4U 14-slot full-size rack-mount chassis

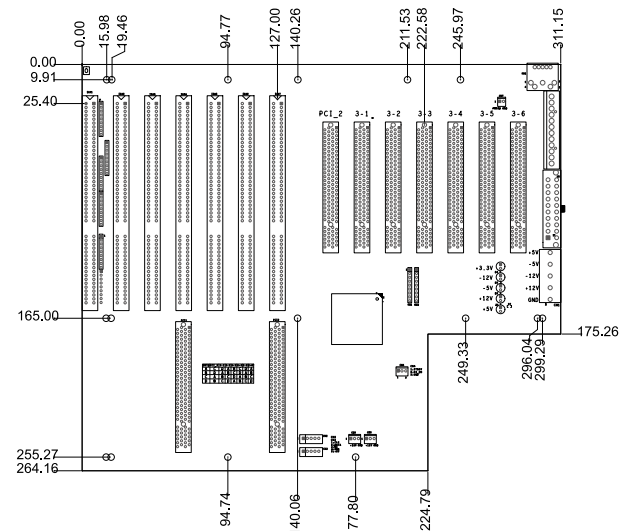


PX-14S5-RS-R50

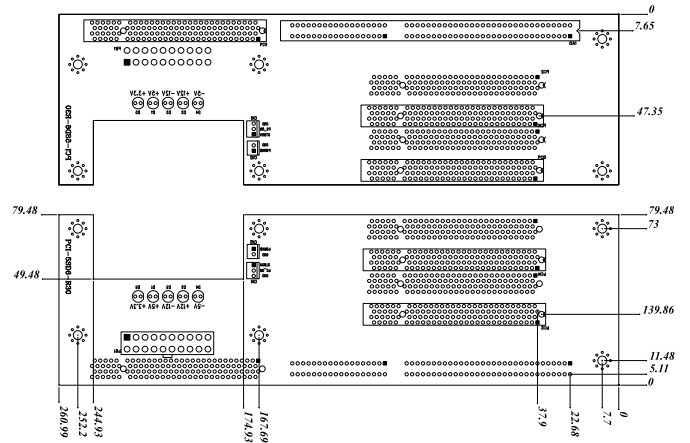
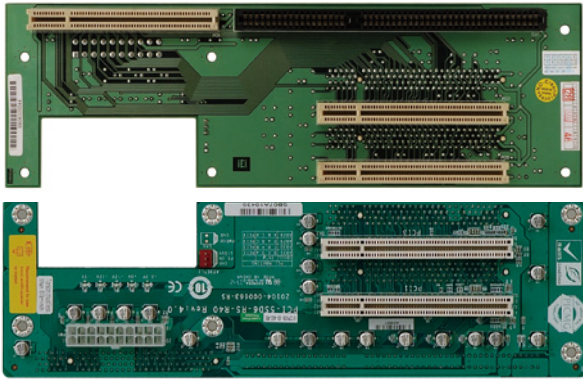


Ordering Information

PX-14S5-RS-R50	14-slot backplane with seven PCI slots and six ISA slots
RACK-305G	4U 14-slot full-size rack-mount chassis
RACK-360G	4U 14-slot full-size rack-mount chassis
RACK-3000G	4U 14-slot full-size rack-mount chassis



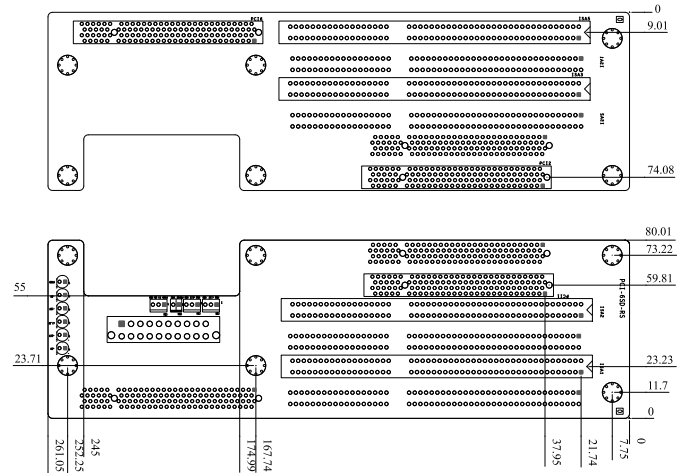
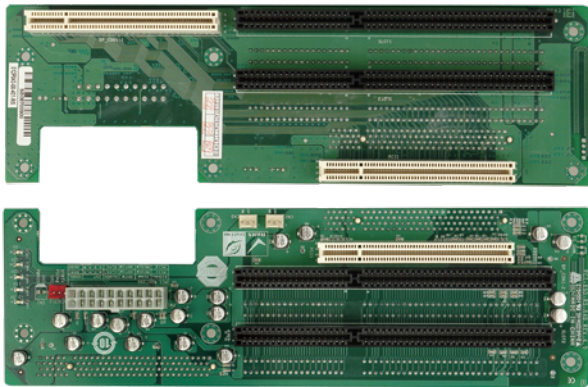
PCI-5SD6-RS-R40 2U Type



Ordering Information

PCI-5SD6-RS-R40	2U chassis backplane with four PCI slots
RACK-220G	2U 6-slot full-size rack-mount chassis

PCI-6SD-RS-R40 2U Type

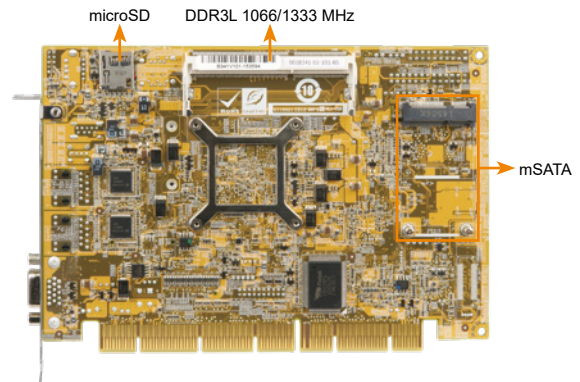
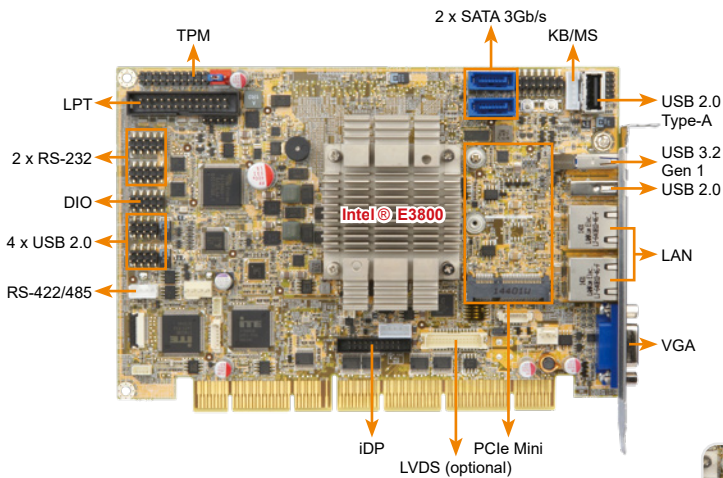


Ordering Information

PCI-6SD-RS-R40	2U chassis backplane with two PCI slots and two ISA slots
RACK-220G	2U 6-slot full-size rack-mount chassis

PCISA-BT

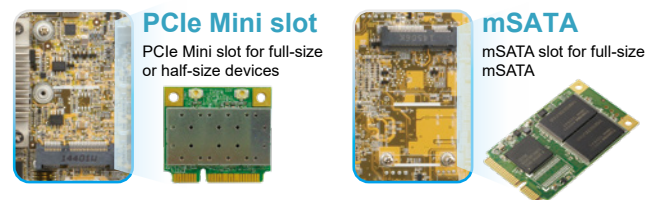
Half-size PCISA CPU Card supports 22nm Intel® Atom™ On-board SoC with VGA, iDP, Dual Intel® PCIe GbE, USB 3.2 Gen 1 (5Gb/s), PCIe Mini, SATA, mSATA, COM, Audio and RoHS



Specifications

- ◆ SoC
 - Intel® Atom™ E3845 on-board SoC (1.91GHz, quad-core, 2MB cache, TDP=10W)
 - Intel® Atom™ E3825 on-board SoC (1.33GHz, dual-core, 1MB cache, TDP=6W)
 - Intel® Atom™ E3815 on-board SoC (1.46GHz, single-core, 512KB cache, TDP=5W)
- ◆ Memory
 - One 204-pin 1333/1066 MHz single-channel DDR3L SDRAM unbuffered SO-DIMM slot supports up to 8GB
- ◆ Graphics Engine
 - Intel® HD Graphics Gen 7 Engines with 4 execution units, supporting DX11.1, OpenGL 4.2 and OpenCL 1.2
- ◆ Display Output
 - Dual independent display
 - 1 x VGA (up to 2560x1600@60Hz)
 - 1 x 18/24-bit dual-channel LVDS (up to 1920x1200@60Hz) (optional, MOQ: 100 pcs/lot)
 - 1 x iDP interface for HDMI, LVDS, VGA, DVI, DP (up to 2560x1600@60Hz)
- ◆ Ethernet
 - LAN1: Intel® I211-AT PCIe controller
 - LAN2: Intel® I211-AT PCIe controller
- ◆ External I/O Interface
 - 1 x USB 2.0
 - 1 x USB 3.2 Gen 1 (5Gb/s)
- ◆ Internal I/O Interface

1 x KB/MS (1x6 pin)	1 x USB 2.0 (180° Type-A)
1 x LPT (2x13 pin)	2 x RS-232 (2x5 pin, P=2.54)
1 x mSATA	2 x SATA 3Gb/s
1 x RS-422/485 (1x4 pin, P=2.0)	4 x USB 2.0 (2x4 pin, P=2.54)
- ◆ Audio
 - Support 7.1 channel HD Audio by IEI AC-KIT-888S-R10 kit
 - 1 x Front Audio (2x5 pin)
- ◆ TPM
 - 1 x TPM (2x10 pin)
- ◆ SMBus
 - 1 x SMBus (1x4 pin)
- ◆ I²C
 - 1 x I²C (1x4 pin)
- ◆ Infrared Interface
 - 1 x Infrared interface (1x5 pin)
- ◆ Expansion
 - 1 x microSD socket
 - 1 x PCIe Mini slot
 - PCI and ISA signal via golden finger
- ◆ Watchdog Timer
 - Software programmable supports 1~255 sec. system reset
- ◆ Digital I/O
 - 8-bit digital I/O (2x5 pin)
- ◆ Fan Connector
 - 1 x CPU smart fan (1x4 pin)
 - 1 x System smart fan (1x3 pin)
- ◆ Power Supply
 - 5V/12V, AT/ATX support
- ◆ Power Consumption
 - 5V@1.55A, 12V@0.74A (Intel® Atom™ E3845 1.91GHz CPU with one 8 GB 1333 MHz memory)
- ◆ Operating Temperature
 - 20°C ~ 60°C
- ◆ Storage Temperature
 - 30°C ~ 70°C
- ◆ Dimensions
 - 185 mm x 128 mm
- ◆ Weight
 - GW: 1000g / NW: 250g
- ◆ CE/FCC compliant



Features

- Half-size PCISA CPU card supports 22nm Intel® Atom™ or Celeron® on-board SoC
- Supports dual LAN by Intel® I211-AT PCIe controllers
- Supports 1.35 V 1333/1066 MHz DDR3L SDRAM up to 8 GB
- Supports dual independent display with one analog CRT, iDP and one 24-bit dual-channel LVDS (optional)
- COM, USB 3.2 Gen 1 (5Gb/s), SATA 3Gb/s, PCIe Mini, mSATA and HD Audio support

Packing List

1 x PCISA-BT single board computer

1 x SATA cable

1 x QIG

Ordering Information

Part No.	Description
PCISA-BT-E38451-R11	Half-size PCISA CPU card supports Intel® Atom™ E3845 (10W) on-board SoC with VGA, iDP, dual Intel® PCIe GbE, PCIe Mini, USB 3.2 Gen 1 (5Gb/s), SATA, mSATA, COM, Audio and RoHS
PCISA-BT-E38251-R11	Half-size PCISA CPU card supports Intel® Atom™ E3825 (6W) on-board SoC with VGA, iDP, dual Intel® PCIe GbE, PCIe Mini, USB 3.2 Gen 1 (5Gb/s), SATA, mSATA, COM, Audio and RoHS
PCISA-BT-E38151-R11	Half-size PCISA CPU card supports Intel® Atom™ E3815 (5W) on-board SoC with VGA, iDP, Dual Intel® PCIe GbE, USB 3.1, PCIe Mini, SATA, mSATA, COM, Audio and RoHS
19800-000049-RS	LPT flat cable, 240mm, P=2.54
19800-000075-RS	PS/2 KB/MS cable with bracket, 220mm, P=2.0
19800-020100-100-RS	RS-232 cable with bracket, Dual 10-pin to dual DB-9, 230mm, P=2.54
32102-000100-200-RS	SATA power cable, MOLEX 5264-4P to SATA15P
32205-003800-300-RS	RS-422/485 cable, 200mm, P=2.0
AC-KIT-892HD-R10	Realtek ALC892 7.1-channel HD Audio peripheral board
DP-DP-R10	DisplayPort to DisplayPort converter board (for IEI iDP connector)
DP-DVI-R10	DisplayPort to DVI-D converter board (for IEI iDP connector)
DP-HDMI-R10	DisplayPort to HDMI converter board (for IEI iDP connector)
DP-LVDS-R10	DisplayPort to LVDS converter board (for IEI iDP connector)
DP-VGA-R10	DisplayPort to VGA converter board (for IEI iDP connector)
TPM-IN01-R20	20-pin Infineon TPM module, software management tool, firmware v3.17

Note: Models with other CPUs not listed in the table are requested by MOQ - 100 pcs/lot.

IP/IPX Series Backplane

Supports PCI and ISA slot on one backplane!
For half-size PCISA series single board computers

The advantages of using the PCISA card are numerous:

1. Supports standard PISA version 1.0 slot on the IP/IPX series passive backplane.
2. Compatible with all available PCI/ISA cards. IP/IPX backplane is also integrated with the PCISA series card slot.

Selection Guide

 PAC series wall-mount chassis  4U rack-mount chassis

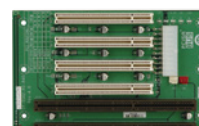
RoHS Ready



RoHS Ready



RoHS Ready



Model	IP-3S-RS	IP-4S-RS	IP-5SA2-RS
Total Slot	3	4	5
PCI Slot	2	3	4
ISA Slot			
PSU Type	AT	AT	ATX
Chassis	PAC-53GH	N/A	PR-1500G

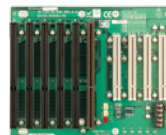
RoHS Ready



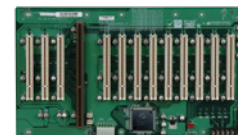
RoHS Ready



RoHS Ready

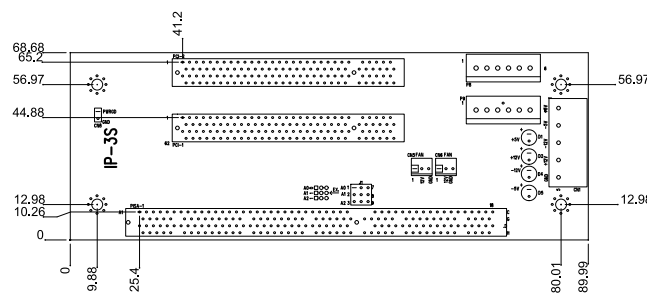


RoHS Ready



Model	IP-6S-RS	IP-6SA-RS	IP-10S-RS	IPX-13S-RS
Total Slot	6	6	10	13
PCI Slot	3	3	4	12
ISA Slot	2	2	5	
PSU Type	AT	ATX	ATX/AT	ATX/AT
Chassis	PAC-1000G	PAC-106G PAC-1000G	PAC-125G	RACK-305G RACK-360G RACK-3000G

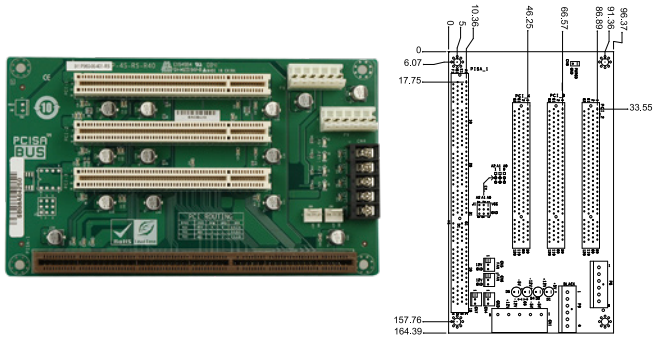
IP-3S-RS-R40



Ordering Information

IP-3S-RS-R40	3-slot backplane with two PCI slots
PAC-53GH	3-slot half-size compact chassis

IP-4S-RS-R40

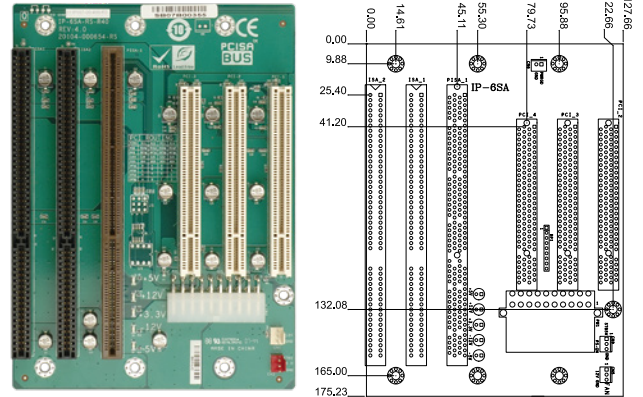


Ordering Information

IP-4S-RS-R40 4-slot backplane with three PCI slots

IP-6SA-RS-R40

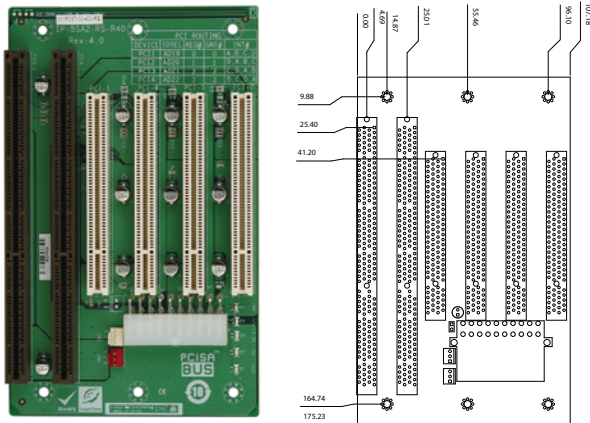
ATX power



Ordering Information

IP-6SA-RS-R40 6-slot backplane with three PCI slots and two ISA slots
 PAC-106G 6-slot full-size compact chassis
 PAC-1000G 6-slot full-size compact chassis

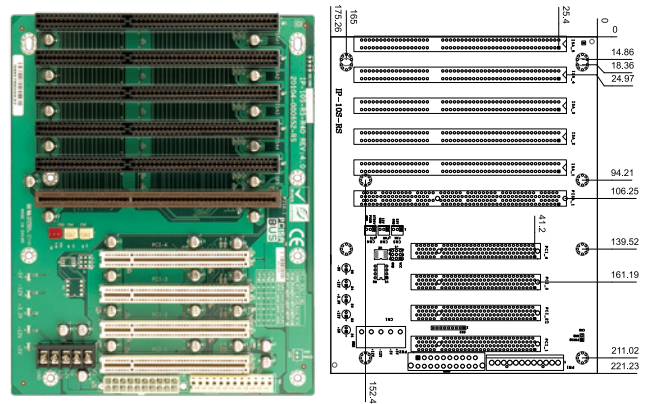
IP-5SA2-RS-R40



Ordering Information

IP-5SA2-RS-R40 5-slot backplane with four PCI slots
 PR-1500G 5-slot half-size compact chassis

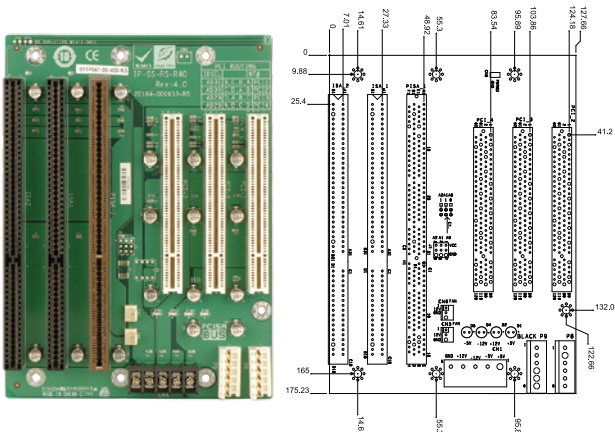
IP-10S-RS-R40



Ordering Information

IP-10S-RS-R40 10-slot backplane with four PCI slots and five ISA slots
 PAC-125G 10-slot full-size compact chassis

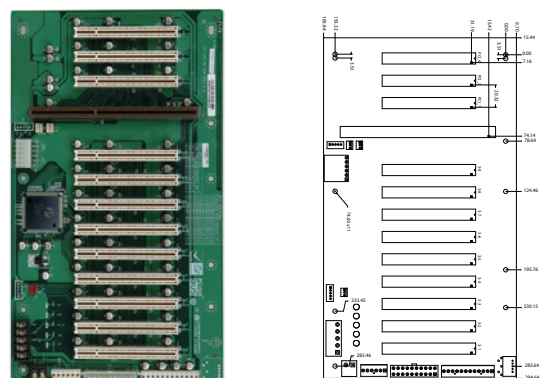
IP-6S-RS-R40



Ordering Information

IP-6S-RS-R40 6-slot backplane with three PCI slots and two ISA slots
 PAC-1000G 6-slot full-size compact chassis

IPX-13S-RS-R40

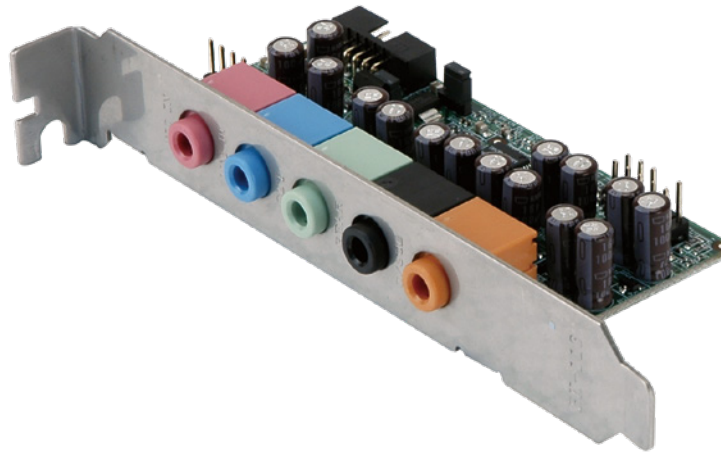


Ordering Information

IPX-13S-RS-R40 13-slot backplane with twelve PCI slots
 RACK-305G 4U 14-slot rack-mount chassis
 RACK-360G 4U 14-slot rack-mount chassis
 RACK-3000G 4U 14-slot rack-mount chassis

AC-KIT-888S

Realtek ALC888S 7.1 Channel HD Audio Peripheral Board, RoHS



Features

- Realtek ALC888S HD Audio codec IC supported
- Five audio jacks for microphone, 7.1+2-channel high definition audio input and output
- High performance 7.1+2-channel high definition audio board provides 7.1-channel sound playback and multiple streaming through the front panel stereo outputs
- Digital to Analog Converter (DAC) with 97dB Signal to Noise Ratio (SNR)
- Analog to Digital Converter (ADC) with 90dB Signal to Noise Ratio (SNR)
- All the Digital to Analog Converter (DAC) supports 44.1k/48k/96k/192kHz sampling rate
- All the Analog to Digital Converter (ADC) supports 44.1k/48k/88.2k/96k/192kHz sample rate
- Driver supports Windows® 2000/2003/XP/Vista/7/10 (32/64 bits) and Linux (Ubuntu or Debian)
- CE/FCC compliant

Ordering Information

AC-KIT-888S-R10	Realtek ALC888S 7.1 Channel HD Audio peripheral board, RoHS
32107-001100-100-RS	Audio cable with length of 200 mm, 2x5 pin, pitch=2.0 mm

Packing List

1 x AC-KIT-888S audio peripheral board	
1 x Audio cable	1 x QIG

Dimensions (Unit: mm)

