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

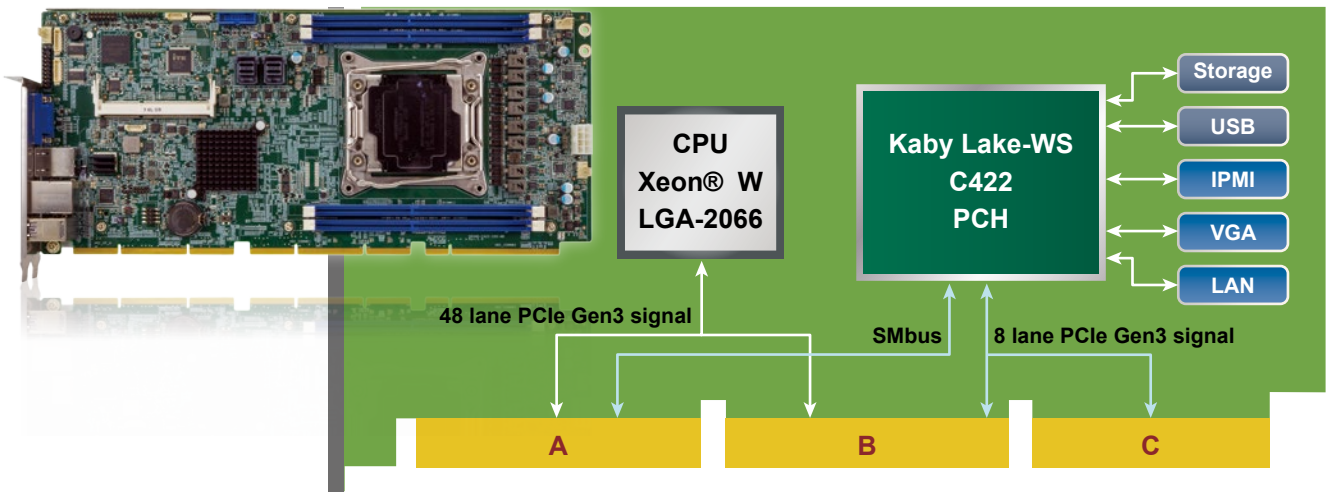
- Maximum 56 lane PCIe signals signals to fulfill AI deep learning or inference demand
- IPMI remote management

The Benefits of PEMUX

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

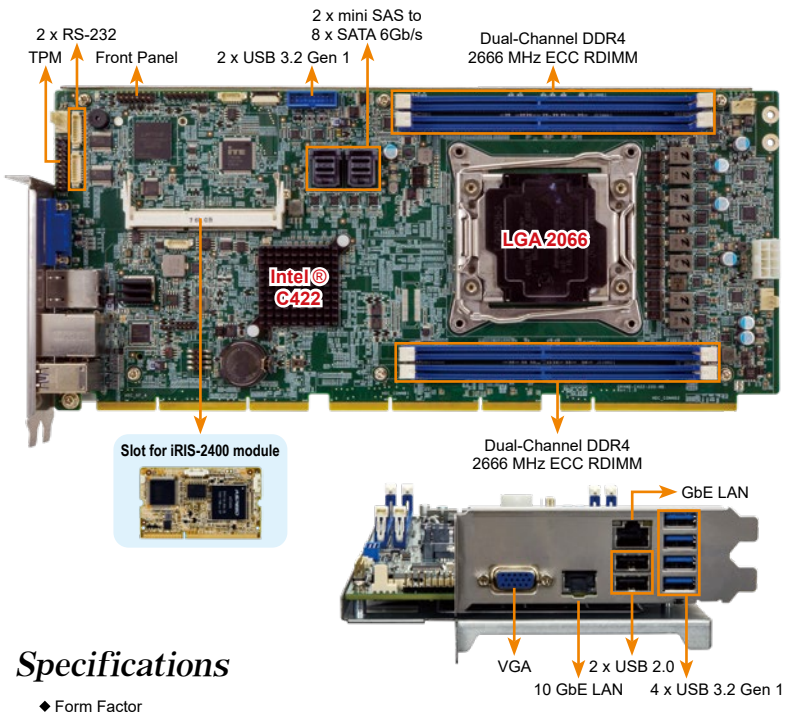
Full-size PEMUX PCIe Slot Configuration

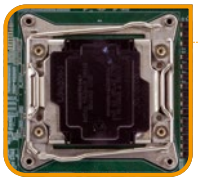
Full-size SBC Type			Server & Graphic Grade	
Combination			A	B
PCIe Slots Available (non switch)	CPU	x16		2
		x8	4	
		x4	4	4
	PCH	x4	2	2
Backplane Solution			PEMUX-DB series	



PEMUX-XEW1

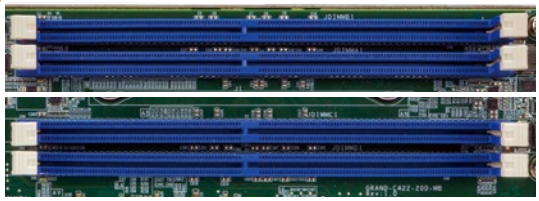
Full-size PEMUX CPU Card supports LGA2066 Intel® Xeon® W CPU per, Intel® C422, DDR4 ECC RDIMM, IPMI VGA output, Aquantia 10GbE, USB 3.2 Gen 1 (5Gb/s), SATA 6Gb/s, M.2 and RoHS





LGA 2066

Support Intel® Xeon W series CPU



Four 288-pin DDR4 ECC RDIMM/LRDIMM Suppotred

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

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 2280 (PCIe Gen3 x4)
  1 x USB DOM header
  2 x mini SAS 8643 (for 8 x SATA 6GB/s)
  2 x RS-232 by pin header
  2 x USB 3.2 Gen 1 (5Gb/s) pin header
- Front Panel
  1 x Front Panel (Power LED, HDD LED, Speaker, Power Button, Reset Button)
- Audio
  2x5 pin pin header
- TPM
  2 x 10-pin pin header
- 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

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 2280 SSD (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 V2.0 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 (Quick Installation Guide)

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
CF-2011B-RS	High performance LGA1355/1356/2011 cooler kit, 130W
iRIS-2400-R10	IPMI 2.0 adapter card with AST2400 BMC chip for DDR3 SO-DIMM socket interface
32037-000600-100-RS	1 x mini SAS to 4 SATA Cable
32005-005000-100-RS	RS-232 cable

PEMUX Backplane

Accelerate to The Future

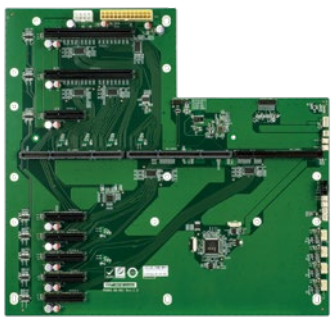
Server grade backplane accommodates multiple PCIe x8 and PCIe x4 add-on cards. It is specially designed for intensive AI computing applications such as deep learning and inference engine that requires more numbers of PCIe slot for accelerator cards. Given the multiple PCIe slots support, it provides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

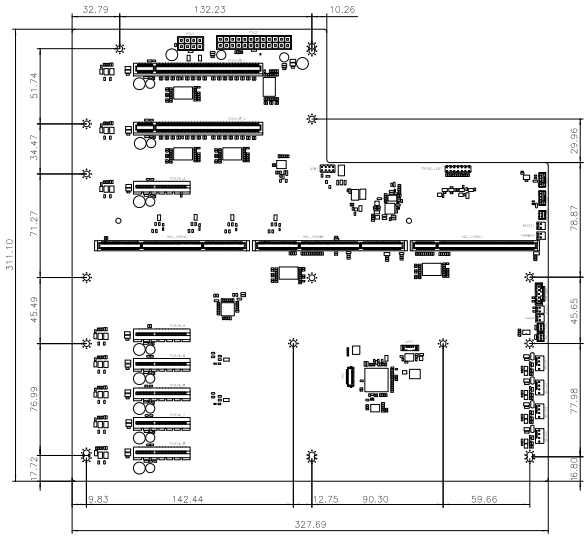
Selection Guide

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)	6 (Gen 3.0)
	x1		
PSU type		24+8pin ATX	24+8pin ATX
Chsaais Option		RACK-305G RACK-360G RACK-3000G	RACK-305G RACK-360G RACK-3000G

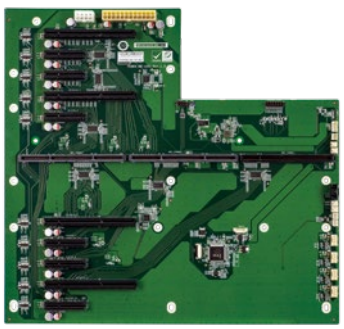
PEMUX-DB-8S1-R10

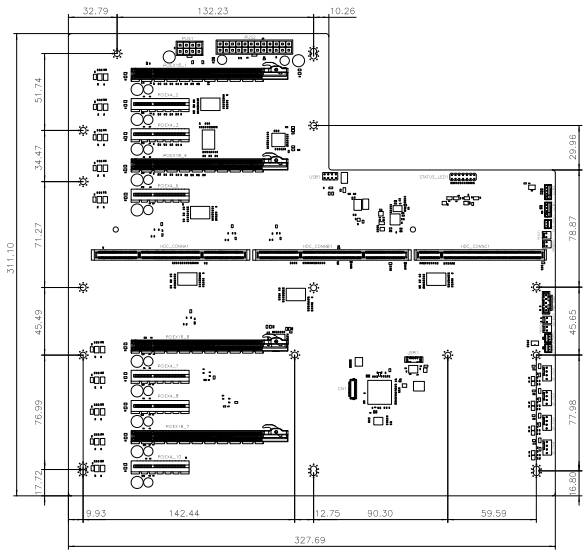




Ordering Information	
PEMUX-DB-8S1-R10	1-Slot PEMUX backplane, 2 PCIe Gen 3.0 x16 w/ x16 slot,6 PCIe Gen3.0 x4 w/ x4 slots, and RoHS
RACK-305G	4U 14-slot full-size rack-mount chassis
RACK-360G	4U 14-slot full-size rack-mount chassis
RACK-3000G	4U 14-slot full-size rack-mount chassis
41005-4223C2-00-RS	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-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
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 ?

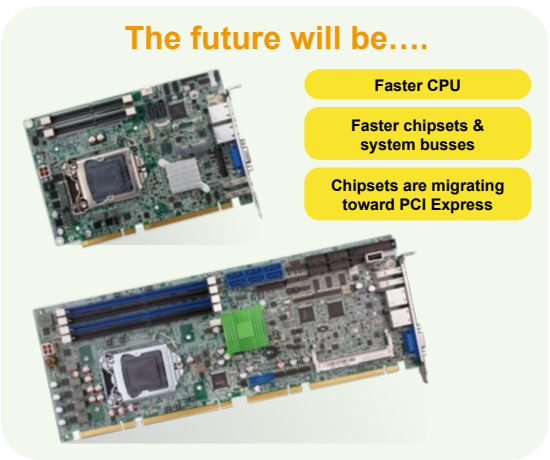
- **Bringing PCI Express to your SBC with increased speed and bandwidth**
  PICMG 1.3 is designed to interface with PCI Express peripherals on a backplane. The PCI Express interconnects with the backplane and can operate at x1, x4, x8, x16, and more, depending on the capabilities of both the SHB and 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

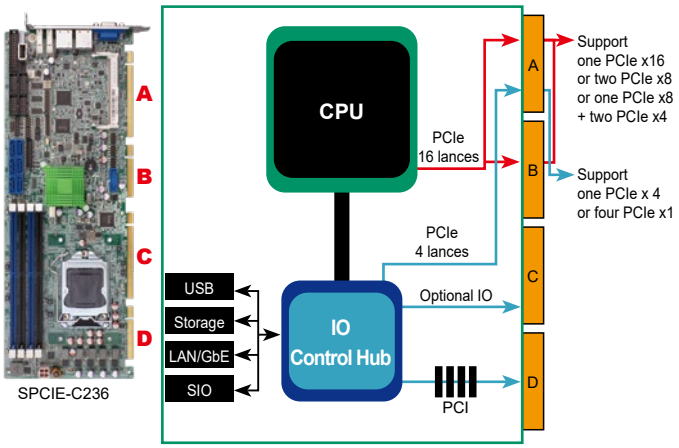
Why PICMG 1.3?

- 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

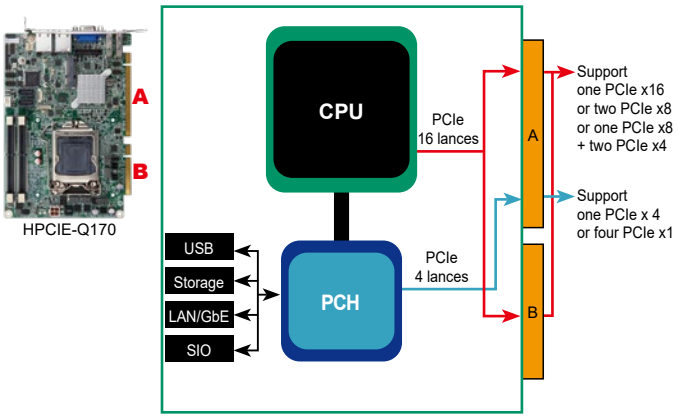


Graphic & Server Grade PICMG 1.3 Solutions

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 or NB	x16	1	1	-	-	-	-
		x8	-	-	2	2	1	1
		x4	-	-	-		2	2
	PCH or SB	x4	-	1	-	1	-	1
		x1	4	-	4	-	4	-
Backplane Solution			IEI PE/PXE series		IEI SPE/SPXE series			

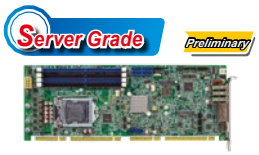
Half-Size PICMG 1.3 PCIe Slot Configuration

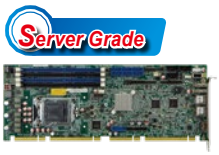
Half-size SBC Type			Any Type		High Performance			
Combination			A	B	C	D	E	F
PCIe Slots Available (Non-switch)	CPU	x16	1	1	-	-	-	-
		x8	-	-	2	2	1	1
		x4	-	-	-		2	2
	PCH	x4	-	1	-	1	-	1
		x1	4	-	4	-	4	-

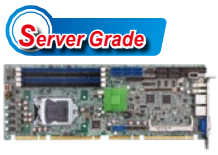
PICMG 1.3 Selection Guide

Model Name	HPCIE-W480	HPCIE-Q470	HPCIE-C236	HPCIE-Q170
CPU Socket	LGA1200	LGA1200	LGA 1151	LGA 1151
CPU Type	10th generation Intel® Xeon® W, Core™ i9/i7/5/i3 processor	10th generation Intel® Core™ i9/i7/5/i3/ Pentium® and Celeron® processor	Intel® Xeon® E3, Core™ i3, Pentium®, Celeron® processor	Intel® Core™ i7/i5/i3, Pentium®, Celeron® processor
Chipset	Intel® W480E	Intel® Q470E	Intel® C236	Intel® Q170
Memory	2 x 260-pin 2933 MHz dual-channel DDR4 SDRAM SO-DIMMs (ECC&non-ECC support) (system Max. 64 GB)	2 x 260-pin 2933 MHz dual-channel DDR4 SDRAM SO-DIMMs (system Max. 64 GB)	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	Triple independent display 1 x HDMI 1 x USB-C	Triple independent display 1 x HDMI 1 x USB-C	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 LAN2: Intel® I225V 2.5GbE controller	LAN1: Intel® I225V 2.5GbE controller LAN2: Intel® I225V 2.5GbE controller	LAN1: Intel® I219-LM with Intel® AMT 11.0 support LAN2: Intel® I211-AT Ethernet controller	LAN1: Intel® I219-LM with Intel® AMT 11.0 support LAN2: Intel® I211-AT Ethernet controller
iRIS Remote Management Module	N/A			
I/O Interface	1 x 422/485 (RS-485 support AFC) 1 x RS-232 3 x USB 3.2 Gen2 4 x USB 2.0	1 x 422/485 (RS-485 support AFC) 1 x RS-232 3 x USB 3.2 Gen2 4 x USB 2.0	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	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 6G/s (RAID 0/1 supported) 1 x M.2 (M Key)	2 x SATA 6G/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	Supports by IEI AC-KIT-888S-R10 audio kit			
Digital I/O	8-bit programmable I/O (8-bit GPIO is for programming I/O)		8-bit programmable digital I/O	
Power Consumption	TBD	TBD	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: -20ºC ~ 60ºC (-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 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-1150SB-R11 CF-1150SC-R20 CF-1150SE-R11	CF-1150SB-R11 CF-1150SC-R20 CF-1150SE-R11	CF-1150SB-R11 CF-1150SC-R20 CF-1150SE-R11	CF-1150SB-R11 CF-1150SC-R20 CF-1150SE-R11

PICMG 1.3 Selection Guide







Model Name	SPCIE-W480	SPCIE-C246	SPCIE-C236	SPCIE-C2260-i2
CPU Socket	LGA1200	LGA1151	LGA1151	LGA 1150
CPU Type	10th generation Intel® Xeon® W, Core™ i9/i7/5/i3 processor	Intel® Xeon® E, 8th/9th generation Core™ i9/i7/i5/i3, Pentium® or Celeron® processor	Intel® Xeon® E3, Core™ i3, Pentium®, Celeron® processor	Intel® Xeon® E3, Core™ i3, Pentium®, Celeron® processor
Chipset	Intel® W480E	Intel® C246	Intel® C236	Intel® C226
Memory	Four 288-pin 2933 MHz Dual-Channel DDR4 SDRAM Unbuffered DIMMs (ECC&non-ECC support) (system Max. 128 GB)	Four 288-pin 2666MHz dual-channel DDR4 SDRAM unbuffered DIMMs support up to 64GB 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	Triple independent display 1 x HDMI 2 x Internal 180º Type-C DP	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® I225V 2.5GbE controller LAN2: Intel® I225V 2.5GbE controller	LAN1: Intel® I219LM PHY LAN2: Intel® I211-AT 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 with Intel® AMT 9.0 support LAN2: Intel® I210-AT PCIe controller with NCSI support
iRIS Remote Management Module	N/A		1 x iRIS-2400 slot (Optional)	1 x iRIS-2400 slot
I/O Interface	4 x USB 3.2 Gen2 2 x USB 3.2 Gen1 1 x KB/MS 2 x RS-232 2 x RS-422/485 (RS485 support AFC) 6 x USB 2.0	1 x 6-pin wafer for KB/MS 1 x RS-422/485 3 x RS-232 4 x USB 3.2 Gen 1 7 x USB 2.0	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	1 x 6-pin wafer for KB/MS 1 x LPT 1 x RS-422/485 4 x RS-232 4 x USB 3.2 Gen 1 8 x USB 2.0
Storage Interface	4 x SATA 6Gb/s (RAID 0/1/5/10 supported) 1 x M.2 (B Key) 1 x M.2 (M Key)	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	TBD	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: -20ºC ~ 60ºC (-4°F ~ 140°F) Relative Humidity: 5% ~ 95%, non-condensing			
Expansion Slot	16-lanes PCIe via golden finger 4-lanes PCIe 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 16-lanes PCIe via golden finger 4-lanes PCIe via golden finger 4 x PCI signal via golden finger	1 x Full-size PCIe Mini card slot (support mSATA) 16-lanes PCIe via golden finger 4-lanes PCIe via golden finger 4 x PCI signal via golden finger	1 x Full-size PCIe Mini card slot (support mSATA)
CPU Cooler	CF-1150SB-R11 CF-1150SC-R20 CF-1150SE-R11	CF-1150SB-R11 CF-1150SC-R20 CF-1150SE-R11	CF-1150SB-R11 CF-1150SC-R20 CF-1150SE-R11	CF-1150SB-R11 CF-1150SC-R20 CF-1150SE-R11 CF-1150SF-R10

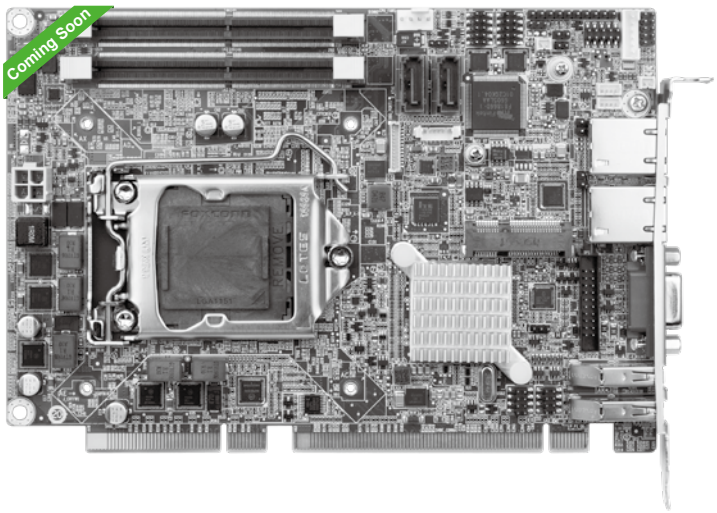
PICMG 1.3 Selection Guide

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 generation Intel® Core™ i9/i7/5/i3/Celeron® and Pentium® processor	8th/9th Generation Core™ i9/i7/ i5/i3, Celeron® and Pentium® processor	6th generation Intel® Core™ i7/ i5/i3, Celeron® and Pentium® processor	Intel® Core™ i7/i5/i3, Pentium®, Celeron® processor	Intel® Core™ i7/i5/i3, Pentium®, Celeron® processor
Chipset	Intel® 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	Triple independent display 1 x HDMI 2 x Internal 180º Type-C DP	Dual display supported 1 x VGA 1 x DP PCIE-Q370-HDMI 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	Dual display supported 1 x VGA 1 x iDP interface
Ethernet	LAN1: Intel® I225V 2.5GbE controller LAN2: Intel® I225V 2.5GbE controller	LAN1: Intel® I219LM PHY LAN2: Intel® I211-AT PCIe controller (Co-lay I210-AT)	LAN1: Intel® I219LM Clarkville-V with Intel® AMT 11.0 supported LAN2: Intel® I210 PCIe controller	LAN1: Realtek RTTL8111E PCIe controller LAN: Realtek RTTL8111E PCIe controller	LAN1: Intel® I217LM with Intel® AMT 9.0 support LAN2: Intel® I210-AT PCIe controller with NCSI support
iRIS Remote Management Module	N/A	N/A	1 x iRIS-2400 slot (optinoal)	N/A	1 x iRIS-2400 slot
I/O Interface	4 x USB 3.2 Gen2 2 x USB 3.2 Gen1 1 x KB/MS 2 x RS-232 2 x RS-422/485 (RS485 support AFC) 6 x USB 2.0	1 x 6-pin wafer for KB/MS 1 x RS-422/485 3 x RS-232 4 x USB 3.2 Gen 1 7 x USB 2.0	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	1 x 6-pin wafer for KB/MS 1 x LPT 1 x RS-422/485 2 x RS-232 2 x USB 3.2 Gen 1 8 x USB 2.0	1 x 6-pin wafer for KB/MS 1 x LPT 1 x RS-422/485 4 x RS-232 4 x USB 3.2 Gen 1 8 x USB 2.0
Storage Interface	4 x SATA 6Gb/s (RAID 0/1/5/10 supported) 1 x M.2 (B Key) 1 x M.2 (M Key)	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				IEI AC-KIT-888S-R10 7.1-channel HD Audio kit via the on-board 10-pin header connector
Digital I/O	8-bit programmable digital I/O				
Power Consumption	TBD	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@3.12A, 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: -20ºC ~ 60ºC (-4°F ~ 140°F) Relative Humidity: 5% ~ 95%, non-condensing				
Expansion Slot	16-lanes PCIe via golden finger 4-lanes PCIe 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 Full/Half-size PCIe Mini card slot 4 x PCI signal via golden finger	1 x Full-size PCIe Mini card slot (support mSATA)	1 x Full-size PCIe Mini card slot (support mSATA)
CPU Cooler	CF-1150SB-R11 CF-1150SC-R20 CF-1150SE-R11	CF-1150SB-R11 CF-1150SC-R20 CF-1150SE-R11	CF-1150SB-R11 CF-1150SC-R20 CF-1150SE-R11	CF-1150SB-R11 CF-1150SC-R20 CF-1150SE-R11 CF-1150SF-R10	CF-1150SB-R11 CF-1150SC-R20 CF-1150SE-R11 CF-1150SF-R10

HPCIE-Q470/W480

Half-size PICMG 1.3 CPU Card supports LGA1200 Intel® 10th Generation Core™ i9/i7/i5/i3, Celeron® and Pentium® CPU with Intel® Q470E/W480E, DDR4 SODIMM, HDMI, Type-C DP, Dual Intel® 2.5GbE, M.2, HD Audio, Intel® AMT and RoHS

Preliminary



Specifications

- CPU
  LGA1200 socket supports 10th generation Intel® Core™ i9/i7/i5/i3, Celeron® and Pentium® processor
- Chipset: Intel® Q470E/W480E
- BIOS: AMI UEFI BIOS
- Memory
  Two 260-pin 2666/2400 MHz Dual-channel DDR4 ECC and non-ECC unbuffered SO-DIMMs support up to 64GB
- Graphics 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
  1 x HDMI (up to 4096x2304 @ 30Hz)
  1 x Type-C DP (up to 4096x2304 @ 60Hz)
- Ethernet
  LAN1: Intel® I219LM PCIe controller with AMT 11.0 support
  LAN2: Intel® I211AT PCIe controller
- External I/O Interface
  3 x USB 3.2 Gen2
- Internal I/O Interface
  1 x RS-232 (2x5 pin, P=2.0)
  1 x RS-422/485 (2x5 pin, P=2.0) (RS-485 support AFC)
  2 x SATA 6G/s (RAID 0/1 supported)
  4 x USB 2.0 (2x4 pin, P=2.54)
- SMBus: 1 x SMBus (1x4 pin)
- I²C: 1 x I²C (1x4 pin)
- Audio
  Realtek ALC888S HD Audio codec
  1 x Analog audio (2x5 pin)
- 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)
- 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
  1 x M.2 A key (2230) with USB 2.0
  1 x M.2 M key (2280/2242)
- Digital I/O
  1 x 8-bit digital I/O (2x5 pin)
- TPM: 1 x TPM (2x10 pin)
- Fan Connector: 1 x CPU smart 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 Compliant
- Watchdog Timer: Software programmable support 1~255 sec. system reset
- Power Consumption: TBD
- Operating Temperature: -20°C ~ 60°C
- Storage Temperature: -30°C ~ 70°C
- Operating Humidity: 5% ~ 95%, non-condensing
- Dimensions: 169 mm x 126 mm
- Weight: GW: 1000g / NW: 420g
- CE/FCC compliant

TPM 2.0 Support

Features

- 10th Generation Intel® Core™ i9/i7/i5/i3, Celeron® and Pentium® processor
- Dual-channel DDR4 2666/2400MHz
- Support HDMI and Type-C DP
- Support M.2 A key for WLAN expansion and M.2 M key for Storage

Packing List

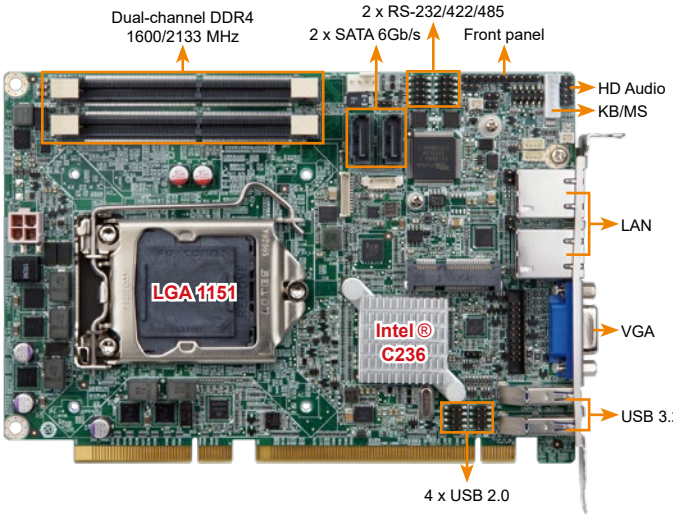
1 x HPCIE-Q470/W480 single board computer
1 x SATA cable
1 x QIG

Ordering Information

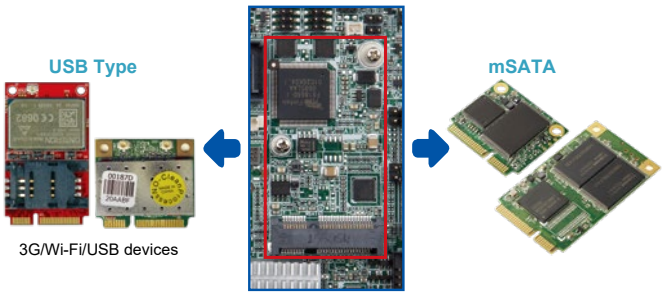
Part No.	Description
HPCIE-Q470-R10	Half-size PICMG 1.3 CPU Card supports 14nm LGA1200 Intel® 10th Generation Core™ i9/i7/i5/i3, Celeron® and Pentium® processor with Intel® Q470/W480, DDR4 SO-DIMM, HDMI, Dual DP, Dual Intel® PCIe GbE, USB 3.2, SATA 6Gb/s, M.2, HD Audio, Intel® AMT and RoHS
HPCIE-W480-R10	Half-size PICMG 1.3 CPU Card supports 14nm LGA1200 Intel® 10th Generation Core™ i9/i7/i5/i3, Celeron® and Pentium® processor with Intel® Q470/W480, DDR4 SO-DIMM, HDMI, Dual DP, Dual Intel® PCIe GbE, USB 3.2, SATA 6Gb/s, M.2, 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
19800-003100-100-RS	Dual port USB cable with bracket, 30mm, P=2.54
19800-010500-200-RS	USB 3.0 cable 457mm with bracket
32102-000100-200-RS	SATA power cable, MOLEX 5264-4P to SATA15P
32205-000702-100-RS	RS-232 cable, 230mm, P=2.54
CF1156A-RS-R11	High-performance LGA1155/1156 cooler kit, 1U chassis compatible 73W
CF-1156C-RS	LGA1155/LGA1156 cooler kit, 1U chassis compatible, 45W
CF-1156D-RS	LGA1155/LGA1156 cooler kit, 1U chassis compatible, 65W
CF-1156E-R11	High-performance LGA1155/1156 cooler kit, 95W
TPM-IN03-R10	20-pin Infineon SPI TPM2.0 module, software mangement tool, firmware V7.63

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
- 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)
  2 x SATA 6Gb/s (RAID 0, 1 supported)
  4 x USB 2.0 (2x4 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 full-size CPU card
- LGA1151 Intel® 8th Generation Xeon® E3, Core™ i7/i5/i3, Celeron® and Pentium® processor supported
- Dual-channel DDR4 2666MHz
- Support HDMI and 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

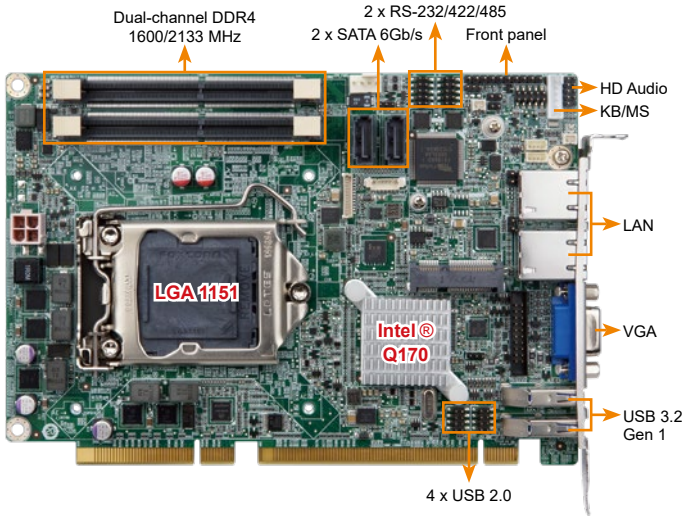
1 x HPCIE-C236 single board computer
1 x SATA cable
1 x QIG

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-892HD-R10	7.1-channel HD Audio kit with Realtek ALC892 supports dual audio streams
CF-115XA-R10	High-performance LGA 1155/LGA 1156 cooler kit, 1U chassis compatible, 73W
CF-115XC-R10	LGA 1155/LGA 1156 cooler kit, 1U chassis compatible, 45W
CF-115XD-R10	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)
SAIDE-KIT01-R10	SATA to IDE/CF converter board

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



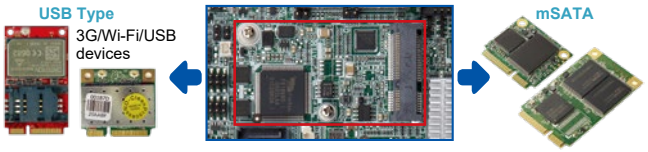
Intel® 6th generation Core™ CPU + Intel® Q170 support 3 controllers of PCI Express Gen 3

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          [1 x8, 2 x4 PCIE]
USB Power SW1                   [+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)
  2 x SATA 6Gb/s (RAID 0, 1 supported)
  4 x USB 2.0 (2x4 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-892HD-R10	7.1-channel HD Audio kit with Realtek ALC892 supports dual audio streams
CF-115XA-R10	High-performance LGA 1155/LGA 1156 cooler kit, 1U chassis compatible, 73W
CF-115XC-R10	LGA 1155/LGA 1156 cooler kit, 1U chassis compatible, 45W
CF-115XD-R10	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)
SAIDE-KIT01-R10	SATA to IDE/CF converter board

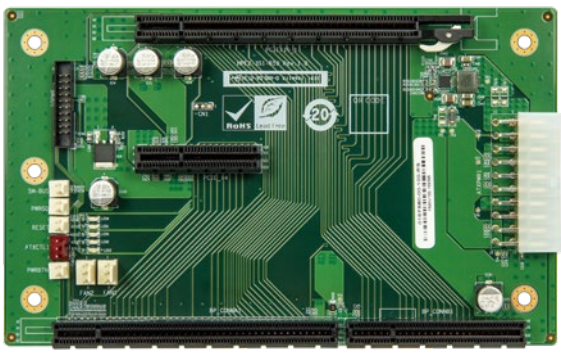
PICMG 1.3 Passive Backplane for Half-Size CPU Card

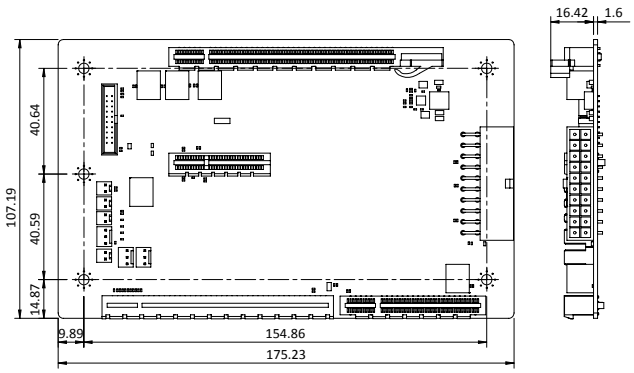
Selection Guide

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

PICMG 1.3 (PCIe+PCI)	Model	HPE2-3S1	HPXE2-5S1	HPXE2-6S1	HPXE2-7S1	HPXE2-8S1
Total Slot		5	5	6	7	8
Expansion Slots	PCIe x16	1 (Gen 3.0)	1 (Gen 3.0)	1 (Gen 3.0)		
	PCIe x8				2 (Gen 3.0)	2 (Gen 3.0)
	PCIe x4	1 (Gen 3.0)				
	PCIe x1					
	PCI-X					
	PCI		2	3	3	4
PSU Type			24+4-pin ATX	24+4-pin ATX	24+4-pin ATX	24+4-pin ATX
Chassis Option		PAC-400AI PR-1500G	PR-1500G	PAC-1000 PAC-106G	PAC-700G PAC-1700G	PAC-125G
		RACK-500AI	RACK-500G			RACK-3000G RACK-360G
Note		ATX power	ATX power	ATX power	ATX power	ATX power

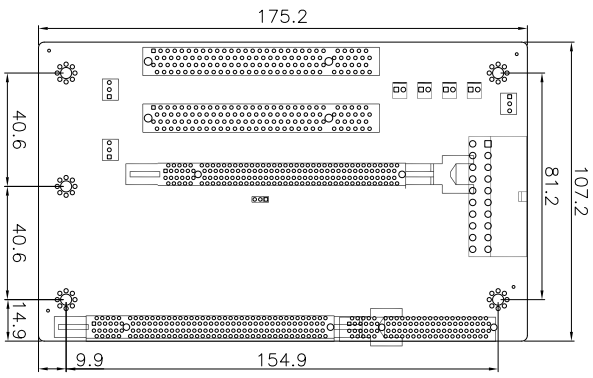
HPE2-3S1-R10





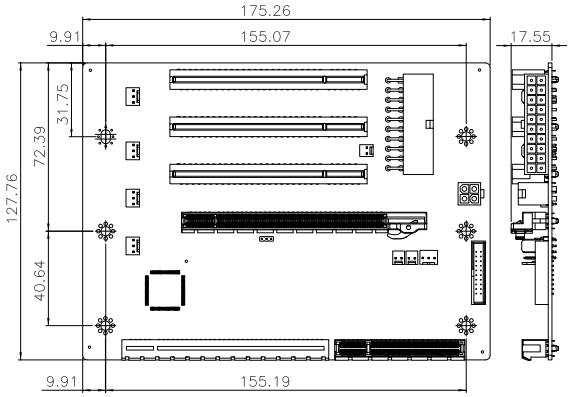
Ordering Information	
HPE2-3S1-R10	5-slot PICMG 1.3 backplane for half-size SBC, with one PCIe x16 Slot and one PCIe x4 slot, RoHS (PCIe Gen 3.0)
PAC--400AI	4-slot half-size compact chassis
PR-1500G	5-slot half-size compact chassis
RACK-500AI	5U 5-slot full-size rackmount chassis

HPXE2-5S1-R10



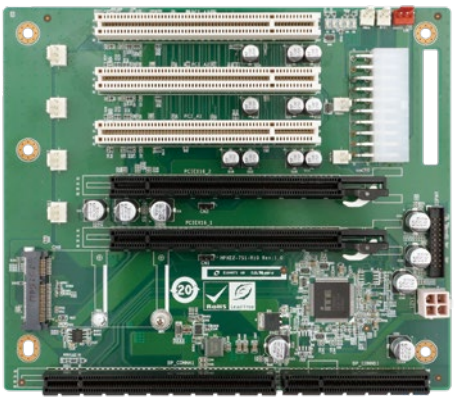
Ordering Information	
HPXE2-5S1-R10	5-slot PICMG 1.3 backplane for half-size SBC, with two PCI slots and one PCIe x16 slot (x16 signal) (PCIe Gen 3.0)
PR-1500G	5-slot half-size compact chassis
RACK-500G	5U 5-slot full-size rackmount chassis

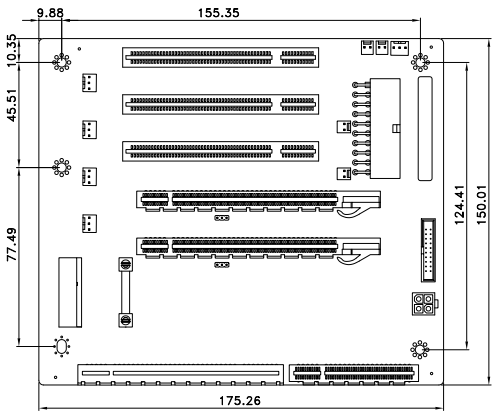
HPXE2-6S1-R10



Ordering Information	
HPXE2-6S1-R10	6-slot PICMG 1.3 backplane for half-size SBC, with three PCI slots and one PCIe x16 slot (x16 signal) (PCIe Gen 3.0)
PAC-1000G	6-slot full-size compact chassis
PAC-106G	6-slot full-size compact chassis

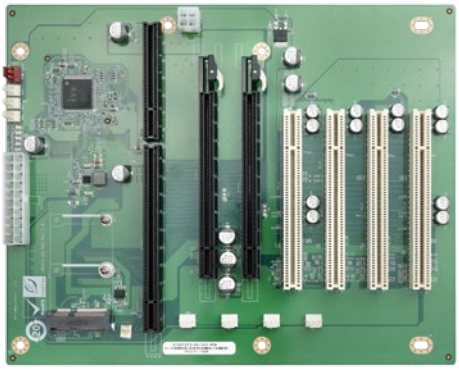
HPXE2-7S1-R10

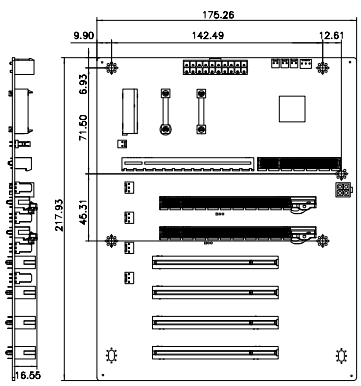




Ordering Information	
HPXE2-7S1-R10	7-slot PICMG 1.3 backplane for half-size SBC, with three PCI slots and two PCIe x16 slots (x8 signal) (PCIe Gen 3.0)
PAC-700G	7-slot half-size compact chassis
PAC-1700G	7-slot full-size compact chassis

HPXE2-8S1-R10

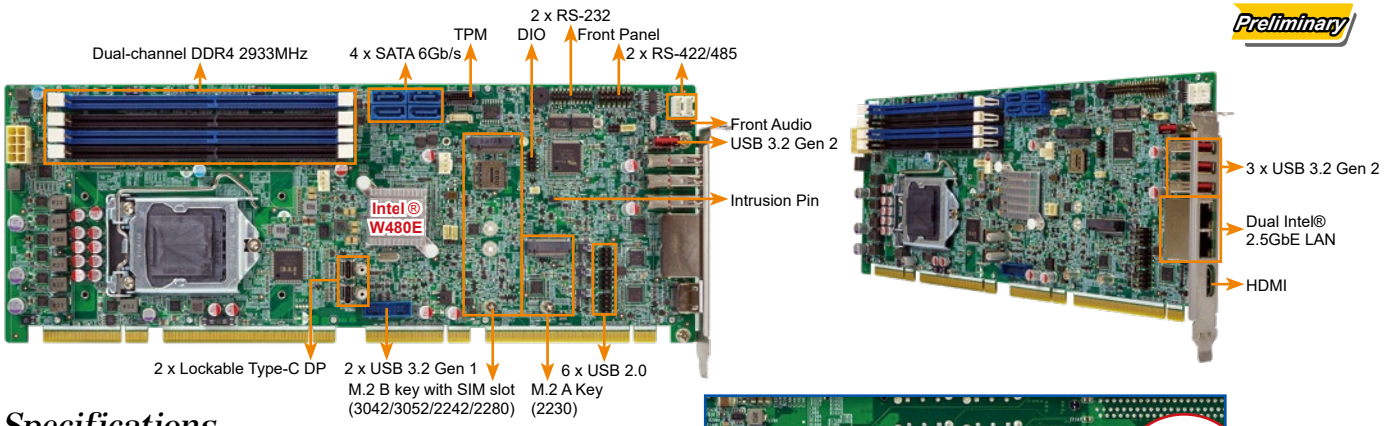


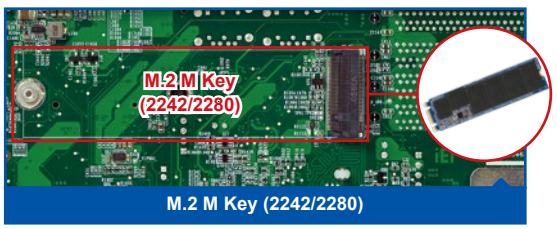


Ordering Information	
HPXE2-8S1-R10	8-slot PICMG 1.3 backplane for half-size SBC, with four PCI slots and two PCIe x 16 slot (x8 signal) (PCIe Gen 3.0)
PAC-125G	10-slot full-size compact chassis
RACK-3000G	4U 14-slot full-size rack-mount chassis
RACK-360G	4U 14-slot full-size rack-mount chassis

SPCIE-W480

Full-size PICMG 1.3 CPU Card supports 14nm LGA1200 Intel® 10th Gen Xeon® W, Core™ i9/i7/i5/i3 processor with Intel® W480E, ECC DDR4, HDMI, DP, Dual Intel® 2.5 GbE, USB 3.2, SATA 6Gb/s, M.2 and RoHS





TPM 2.0 Support

Specifications

- CPU
  LGA1200 Intel® 10th generation Xeon® W, Core™ i9/i7/i5/i3 processor
- Chipset
  Intel® W480E
- BIOS
  AMI UEFI BIOS
- Memory
  Four 288-pin 2933 MHz Dual-Channel DDR4 SDRAM Unbuffered DIMMs supported up to 128GB (ECC&non-ECC support)
- Graphics Engine
  Up to Intel® UHD Graphics 630, 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
  1 x HDMI (up to 4096 x 2304@30Hz)
  2 x Type-C DP (up to 4096 x 2304 @60Hz) (internal 180°)
- Ethernet
  LAN1: Intel® I225V 2.5GbE controller
  LAN2: Intel® I225V 2.5GbE controller
- External I/O Interface
  3 x USB 3.2 Gen2
- Internal I/O Interface
  1 x KB/MS (1x6 pin)
  1 x USB 3.2 Gen2 (Type A 180°)
  2 x USB 3.2 Gen1
  2 x RS-232 (2x5 pin, P=2.54)
  2 x RS-422/485 (2x5 pin, P=2.54) (RS485 support AFC)
  4 x SATA 6Gb/s (RAID 0/1/5/10 supported)
  6 x USB 2.0 (2x4 pin, P=2.54)
- SMBus: 1 x SMBus (1x4 pin)
- I²C: 1 x I²C (1x4 pin)
- Audio
  Realtek ALC888S HD Audio codec
  1 x Analog audio (2x5 pin)
- 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)
- Expansion
  1 x PCIe x16 signal via golden finger
  4 x PCIe x1 signal via golden finger
  4 x PCI signal via golden finger
  1 x M.2 A Key (2230)
  1 x M.2 M Key (2240/2280) with PCIe x4
  1 x M.2 B Key (3042/3052/2242/2280) with PCIe x2, USB 3.2 Gen1, SATA
- Digital I/O
  1 x 8-bit digital I/O (2x5 pin)
- TPM
  1 x TPM (2x10 pin)
- 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
  TBD
- 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: 1000g / NW: 500g
- CE/FCC compliant

Features

- LGA1200 Intel® 10th Generation Xeon® W, Core™ i9/i7/i5/i3 processor
- Dual-channel DDR4 2933MHz (ECC & non-ECC support)
- Support HDMI and Dual Type-C DP
- Support M.2 A key for WLAN expansion and M.2 M key for storage

Packing List

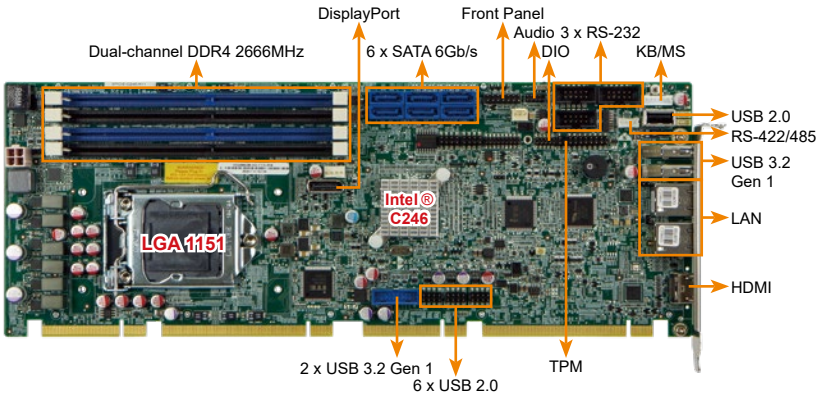
1 x SPCIE-W480 single board computer
1 x SATA cable
1 x Mini jumper pack
1 x QIG

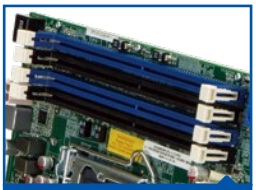
Ordering Information

Part No.	Description
SPCIE-W480-R10	Full-size PICMG 1.3 CPU Card supports LGA1200 Intel® 10th Generation Xeon® W, Core™ i9/i7/i5/i3 processor with Intel® W480E, ECC & non-ECC DDR4, HDMI, Dual DP, Dual Intel® 2.5GbE LAN, USB 3.2, SATA 6Gb/s, M.2, 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
19800-003100-100-RS	Dual port USB cable with bracket, 30mm, P=2.54
19800-003100-300-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
19800-010500-200-RS	USB 3.0 cable 457mm with bracket
32102-000100-200-RS	SATA power cable, MOLEX 5264-4P to SATA15P
32205-000702-100-RS	RS-232 cable, 230mm, P=2.54
32205-000702-100-RS	RS-232 cable, 230mm, P=2.54
32205-003800-300-RS	RS-422/485 cable, 200mm, P=2.0
CF1156A-RS-R11	High-performance LGA1155/1156 cooler kit, 1U chassis compatible 73W
CF-1156C-RS	LGA115X cooler kit, 1U chassis compatible, 45W
CF-1156D-RS	LGA115X cooler kit, 1U chassis compatible, 65W
CF-1156E-R11	High-performance LGA115X cooler kit, 95W
TPM-IN03-R10	20-pin Infineon SPI TPM2.0 module, software mangement tool, firmware V7.63

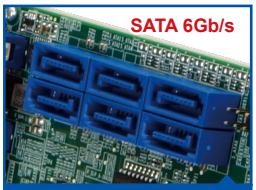
SPCIE-C246

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

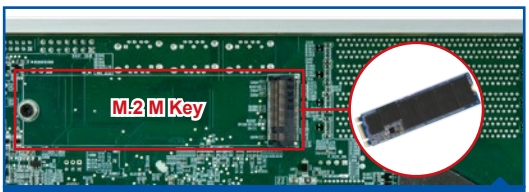




Four 288-pin DDR4 SDRAM Supported



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



M.2 M Key

TPM 2.0 Support

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 (C246)
- 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, Gen3 PCIe 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

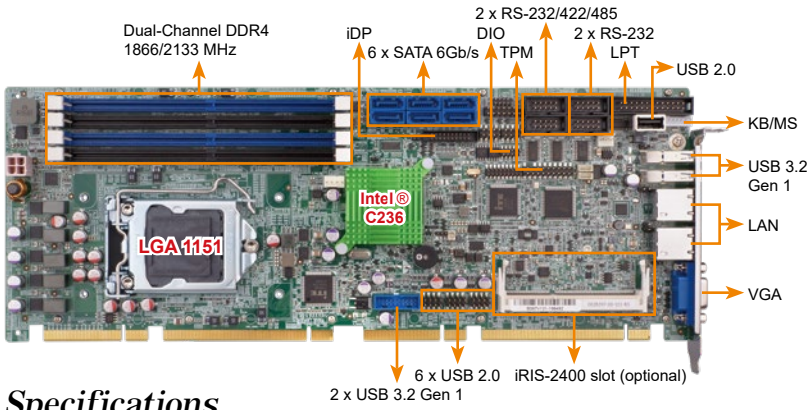
1 x SPCIE-C246 single board computer	1 x SATA cable
1 x Mini jumper pack	1 x QIG (Quick Installation Guide)

Ordering Information

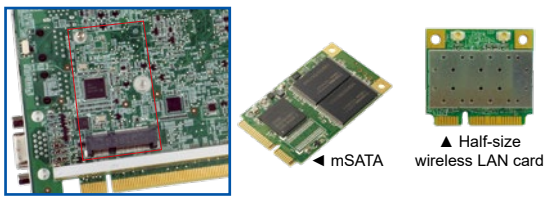
Part No.	Description
SPCIE-C246-R11	Full-size PICMG 1.3 CPU Card supports LGA1151 Intel® Xeon® E, Core™ i9/i7/i5/i3/Pentium®/Celeron® CPU per Intel® C246, ECC & non-ECC DDR4, HDMI, DP, Dual Intel® PCIe GbE, M.2, USB 3.2 Gen 1 (5Gb/s), SATA 6Gb/s, HD Audio, iAMT and RoHS
19800-000075-RS	PS/2 KB/MS cable with bracket, 220mm, P=2.0
19800-003100-300-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
32205-000702-100-RS	RS-232 cable, 230mm, P=2.54
32205-003800-300-RS	RS-422/485 cable, 200mm, P=2.0
AC-KIT-892HD-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
CF-1150SF-R10	Special cooler kit for LGA1150, 1U chassis compatible, 54W
SAIDE-KIT01-R10	SATA to IDE/CF Converter board

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, iRIS-2400 and RoHS



PCIe Mini & mSATA colay



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.

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)
  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)
  2 x RS-232/422/485 (2x5 pin, P=2.54)
  2 x USB 3.2 Gen 1 (5Gb/s) (2x10 pin)
  6 x SATA 6Gb/s (RAID 0/1/5/10 supported)
  6 x USB 2.0 (2x4 pin, 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)
- iRIS Remote Management Module
  1 x iRIS-2400 slot (optional)
- 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

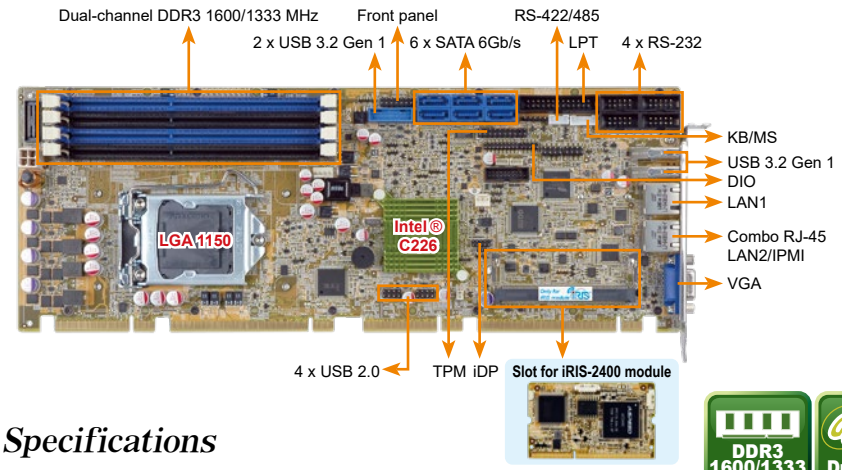
Ordering Information

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, VGA/ iDP, USB 3.2 Gen 1 (5Gb/s), SATA 6Gb/s, PCIe Mini, HD Audio, Intel® AMT, and RoHS
SPCIE-C236-i2-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, VGA/ iDP, USB 3.2 Gen 1 (5Gb/s), SATA 6Gb/s, PCIe Mini, HD Audio, Intel® AMT, iRIS-2400 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
19800-003100-300-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
32205-000702-100-RS	RS-232 cable, 230mm, P=2.54
32205-003800-300-RS	RS-422/485 cable, 200mm, P=2.0
AC-KIT-892HD-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
CF-1150SF-R10	Special cooler kit for LGA1150, 1U chassis compatible, 54W
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)
SAIDE-KIT01-R10	SATA to IDE/CF converter board

**By order production, MOQ: 100

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, iRIS-2400 and RoHS



PICMG 1.3 Server Grade Solution

IPMI 2.0 Compliant

TPM 2.0 Support

DDR3 1600/1333 | Dual GbE | USB 3.2 | SATA 6Gb/s | mSATA | iDP

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)
- iRIS Remote Management Module
  1 x iRIS-2400 slot
- 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
- Supports IPMI 2.0 via iRIS-2400 module

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, RS-232, PCIe Mini, HD Audio, iRIS-2400 and RoHS
iRIS-2400-R10	IPMI 2.0 adapter card with AST2400 BMC chip for DDR3 SO-DIMM socket interface
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-892HD-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 LGA1150, 1U chassis compatible, 65W
CF-1150SE-R11	Special cooler kit for LGA1150, high-performance compatible, 95W
CF-1150SF-R10	Special cooler kit for LGA1150, 1U chassis compatible, 54W
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

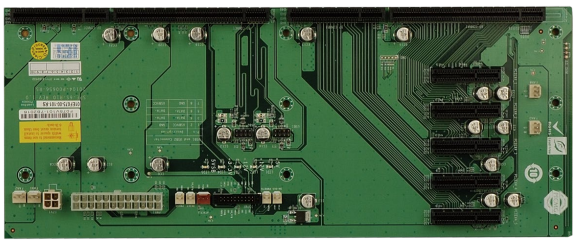
Backplane	Total	PCIe						PSU Type	Chassis Option
	Slot	x16	x8	x4	x1	PCI-X	PCI		
SPE-6S	6	-		5	-	-	-	24+4-pin ATX	PAC-106G PAC-1000G
SPE-9S	7	-	1 (x16 connector)	3			3	24+4-pin ATX	PAC-125G
SPXE-11S	11	-	-	6 (x16 connector)	-	-	4	24+8-pin ATX	RACK-305G RACK-360G RACK-3000G
SPXE-14S	14	-	1 (x16 connector)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

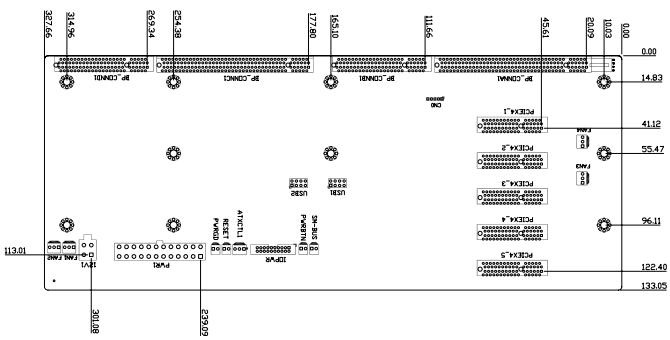
Server Grade Backplane

Example	Corresponding Model
EX2: 1 x8 & 3 x4 slots SHB x4 x8 x4 x4	SPE-9S
EX3: 5 x4 slots SHB x4 x4 x4 x4 x4	SPE-6S

SPE-6S-R10

Server Grade





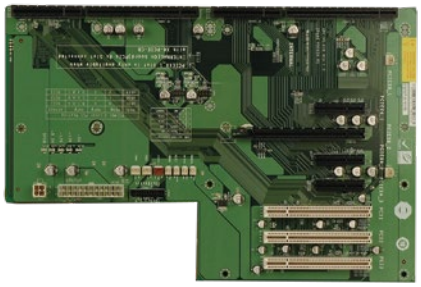
Ordering Information

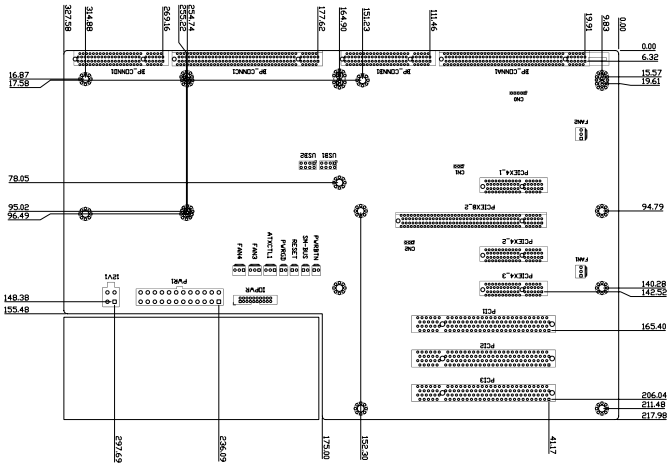
SPE-6S-R10	6-slot PICMG 1.3 backplane with five PCIe x4 slots (PCIe Gen 3.0)
PAC-106G	6-slot full-size compact chassis
PAC-1000G	6-slot full-size compact chassis

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

SPE-9S-R11

Server Grade

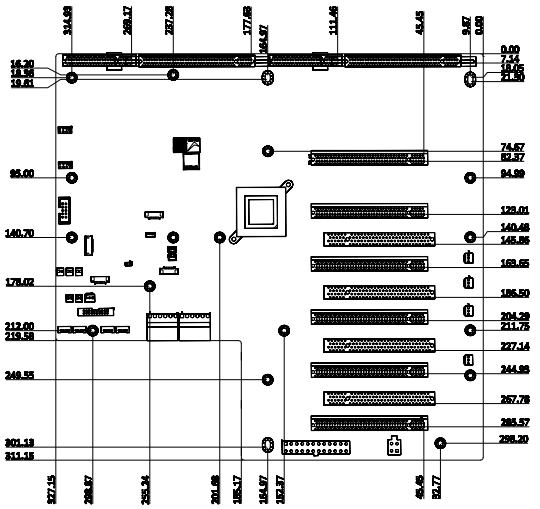




Ordering Information	
SPE-9S-R11	7-slot PICMG 1.3 backplane with one PCIe x16 slot (x8 signal), three PCIe x4 slots and three PCI slots (PCIe Gen 3.0)
PAC-125G	10-slot full-size compact chassis

SPXE-11S-R10

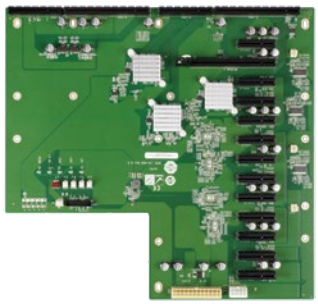
Server Grade

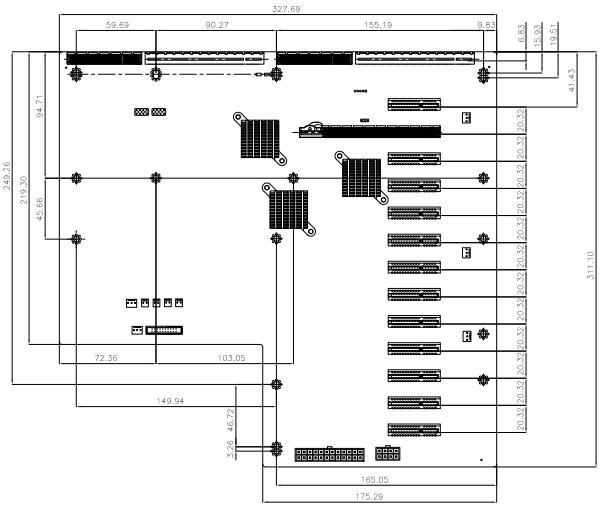


Ordering Information	
SPXE-11S-R10	11-Slot PICMG 1.3 PCIe to PCIe Switch (PLX PEX8724) Backplane, 6 PCIe Gen 3.0 x4 w/ x16 slot,4 PCI, RoHS (PCIe Gen 3.0)
RACK-305G	4U 14-slot full-size rack-mount chassis
RACK-360G	4U 14-slot full-size rack-mount chassis
RACK-3000G	4U 14-slot full-size rack-mount chassis

SPXE-14S-R20

Server Grade

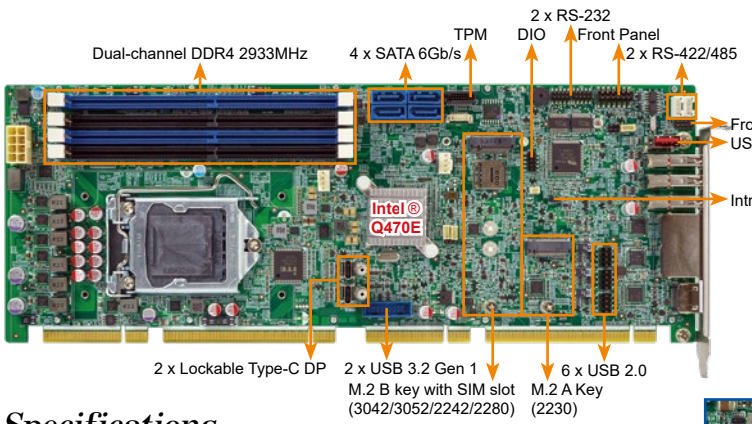




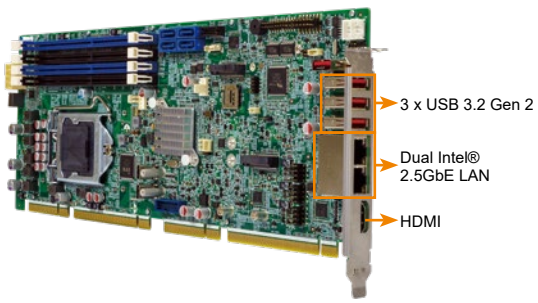
Ordering Information	
SPXE-14S-R20	14-slot PICMG 1.3 backplane with one PCIe x16 slot (x8 signal) and twelve PCIe x4 slots (x1 signal) (PCIe Gen 3.0)
RACK-305G	4U 14-slot full-size rack-mount chassis
RACK-360G	4U 14-slot full-size rack-mount chassis
RACK-3000G	4U 14-slot full-size rack-mount chassis

PCIE-Q470

Full-size PICMG 1.3 CPU Card supports 14nm LGA1200 Intel® 10th Gen Core™ i9/i7/i5/i3, Celeron® and Pentium® processor with Intel® Q470E, DDR4, HDMI, DP, Dual Intel® 2.5 GbE, USB 3.2, SATA 6Gb/s, M.2 and RoHS



Preliminary



M.2 M Key (2242/2280)

TPM 2.0 Support

Specifications

- CPU
  LGA1200 socket supports 10th generation Intel® Core™ i9/i7/i5/i3, Celeron® and Pentium® processor
- Chipset
  Intel® Q470E
- BIOS
  AMI UEFI BIOS
- Memory
  Four 288-pin 2933 MHz Dual-Channel DDR4 SDRAM Unbuffered DIMMs supported up to 128GB
- Graphics Engine
  Up to Intel® UHD Graphics 630, 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
  1 x HDMI (up to 4096 x 2304@30Hz)
  2 x Type-C DP (up to 4096 x 2304 @60Hz) (internal 180°)
- Ethernet
  LAN1: Intel® I225V 2.5GbE controller
  LAN2: Intel® I225V 2.5GbE controller
- External I/O Interface
  3 x USB 3.2 Gen2
- Internal I/O Interface
  1 x KB/MS (1x6 pin)
  1 x USB 3.2 Gen2 (Type A 180°)
  2 x USB 3.2 Gen1
  2 x 422/485 (2x5 pin, P=2.54) (RS485 support AFC)
  2 x RS-232 (2x5 pin, P=2.54)
  4 x SATA 6Gb/s (RAID 0/1/5/10 supported)
  6 x USB 2.0 (2x4 pin, P=2.54)
- SMBus
  1 x SMBus (1x4 pin)
- I²C
  1 x I²C (1x4 pin)
- Audio
  Realtek ALC888S HD Audio codec
  1 x Analog audio (2x5 pin)
- 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)
- Expansion
  1 x PCIe x16 signal via golden finger
  4 x PCIe x1 signal via golden finger
  4 x PCI signal via golden finger
  1 x M.2 A Key (2230)
  1 x M.2 M Key (2240/2280) with PCIe x4
  1 x M.2 B Key (3042/3052/2242/2280) with PCIe x2, USB3.2 Gen1, SATA
- Digital I/O
  1 x 8-bit digital I/O (2x5 pin)
- TPM
  1 x TPM (2x10 pin)
- 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
  TBD
- 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: 1000g / NW: 500g
- CE/FCC compliant

Features

- LGA1200 Intel® 10th Generation Core™ i9/i7/i5/i3, Celeron® and Pentium® processor
- Dual-channel DDR4 2933MHz
- Support HDMI and Type-C DP
- Support M.2 A key for WLAN expansion and M.2 M key for storage

Packing List

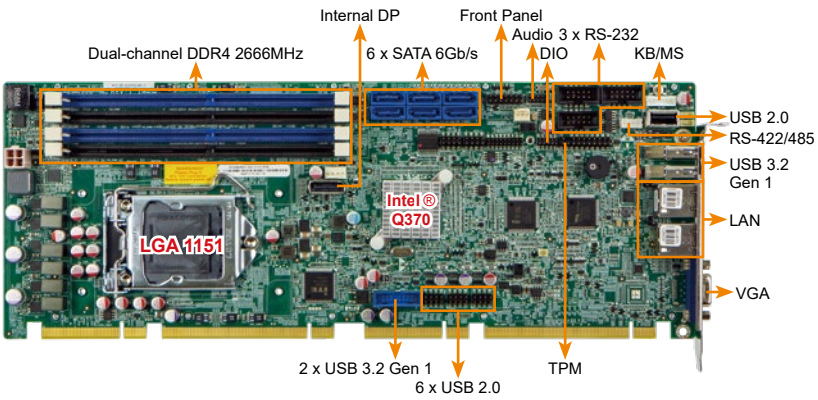
1 x PCIE-Q470 single board computer
1 x SATA cable
1 x Mini jumper pack
1 x QIG

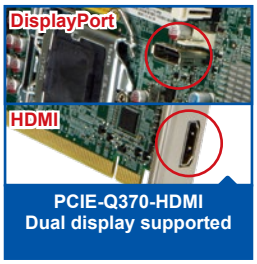
Ordering Information

Part No.	Description
PCIE-Q470-R10	Full-size PICMG 1.3 CPU Card supports LGA1200 Intel® 10th Generation Core™ i9/i7/i5/i3, Celeron® and Pentium® processor with Intel® Q470E, DDR4, HDMI, Dual DP, Dual Intel® 2.5GbE LAN, USB 3.2, SATA 6Gb/s, M.2, 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
19800-003100-100-RS	Dual port USB cable with bracket, 30mm, P=2.54
19800-003100-300-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
19800-010500-200-RS	USB 3.0 cable 457mm with bracket
32102-000100-200-RS	SATA power cable, MOLEX 5264-4P to SATA15P
32205-000702-100-RS	RS-232 cable, 230mm, P=2.54
32205-000702-100-RS	RS-232 cable, 230mm, P=2.54
32205-003800-300-RS	RS-422/485 cable, 200mm, P=2.0
CF1156A-RS-R11	High-performance LGA1155/1156 cooler kit, 1U chassis compatible 73W
CF-1156C-RS	LGA115X cooler kit, 1U chassis compatible, 45W
CF-1156D-RS	LGA115X cooler kit, 1U chassis compatible, 65W
CF-1156E-R11	High-performance LGA115X cooler kit, 95W
TPM-IN03-R10	20-pin Infineon SPI TPM2.0 module, software mangement tool, firmware V7.63

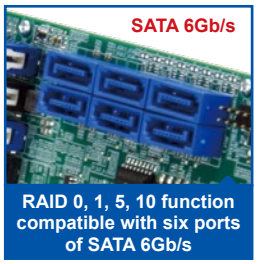
PCIE-Q370

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

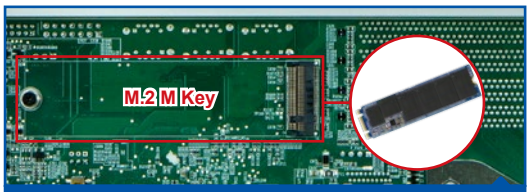




PCIE-Q370-HDMI
Dual display supported



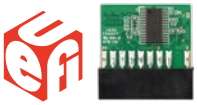
RAID 0, 1, 5, 10 function compatible with six ports of SATA 6Gb/s



M.2 M Key

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, Gen3 PCIe 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
- Diemension: 338 mm x 126 mm
- Weight: GW: 1000g / NW: 500g
- CE/FCC compliant


TPM 2.0 Support

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)

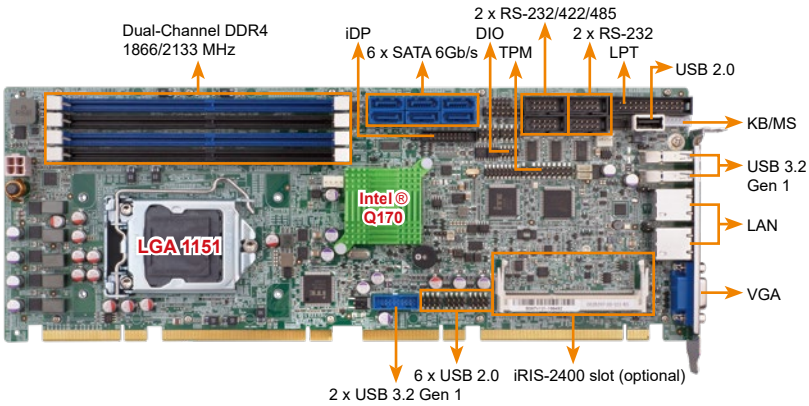
Ordering Information

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
19800-003100-300-RS	Dual port USB 2.0 cable with bracket, 300mm, P=2.54
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
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
32205-000702-100-RS	RS-232 cable, 230mm, P=2.54
32205-003800-300-RS	RS-422/485 cable, 200mm, P=2.0
AC-KIT-892HD-R10	7.1 channel HD Audio kit with Realtek ALC892 support dual audio streams
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
CF-1150SF-R10	Special cooler kit for LGA1150, 1U chassis compatible, 54W
SAIDE-KIT01-R10	SATA to IDE/CF Converter board

**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, iRIS-2400 and RoHS



Four 288-pin DDR4 SDRAM Supported

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

TPM 2.0 Support

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)
  2 x RS-232/422/485 (2x5 pin, P=2.54)
  2 x USB 3.2 Gen 1 (5Gb/s) (2x10 pin)
  6 x SATA 6Gb/s (RAID 0/1/5/10 supported)
  6 x USB 2.0 (2x4 pin, 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)
- iRIS Remote Management Module
  1 x iRIS-2400 slot (optional)
- 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

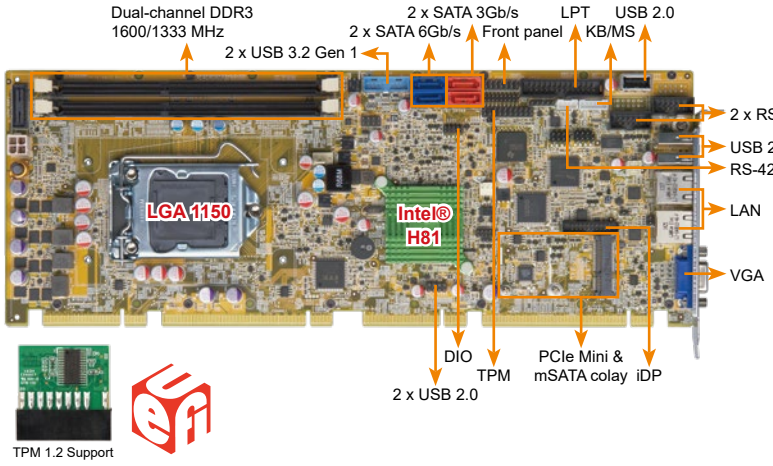
Ordering Information

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
PCIE-Q170-i2-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, iRIS-2400 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
19800-003100-300-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
32205-000702-100-RS	RS-232 cable, 230mm, P=2.54
32205-003800-300-RS	RS-422/485 cable, 200mm, P=2.0
AC-KIT-892HD-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
CF-1150SF-R10	Special cooler kit for LGA1150, 1U chassis compatible, 54W
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)
SAIDE-KIT01-R10	SATA to IDE/CF Converter board

**By order production, MOQ: 100

PCIE-H810

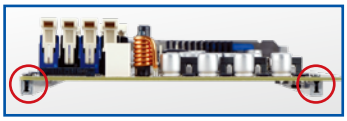
Full-size PICMG 1.3 CPU card supports LGA 1150 Intel® Core™ i7/i5/i3, Pentium® and Celeron® with Intel® H81, DDR3, VGA, iDP, Dual PCIe GbE, SATA 6Gb/s, mSATA, USB 3.2 Gen 1 (5Gb/s), RS-232, HD Audio and RoHS



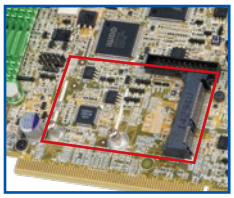
TPM 1.2 Support

Enhanced component protection

Prevent the damage of bottom components



PCIe Mini & mSATA colay



The PCIe Mini interface provides PCIe x1, USB and mSATA signal for full-size or half-size PCIe Mini devices, such as SSD, mSATA and wireless LAN cards.

◄ mSATA

▲ Half-size wireless LAN card

Specifications

- ◆ CPU
  4th generation LGA 1150 Intel® Core™ i7/i5/i3, Pentium® or Celeron® processor supported
- ◆ Chipset
  Intel® H81
- ◆ Memory
  Two 240-pin 1600/1333 MHz dual-channel unbuffered DDR3 & DDR3L SDRAM DIMMs support up to 16 GB
- ◆ BIOS
  UEFI
- ◆ Graphics Engine
  Intel® HD Graphics Gen 7.5 supports DX11.1, OpenCL 1.2 and OpenGL 3.2
  Full MPEG2, VC1, AVC Decode
- ◆ Display Output
  Dual independent display
  1 x VGA (up to 1920x1200@60 Hz)
  1 x iDP interface for HDMI, LVDS, VGA, DVI, DP (up to 3840x2160@60 Hz)
- ◆ Ethernet
  Dual Realtek RTL8111E PCIe GbE controllers supported
- ◆ External I/O Interface
  2 x USB 2.0
- ◆ Internal I/O Interface

1 x KB/MS (1x6 pin)	2 x SATA 3Gb/s (AHCI supported, no RAID)
1 x LPT (2x13 pin)	2 x SATA 6Gb/s
1 x RS-422/485 (1x4 pin, P=2.0)	2 x USB 3.2 Gen 1 (5Gb/s) (2x10 pin)
1 x USB 2.0 (180° Type-A)	4 x USB 2.0 (Golden finger)
2 x RS-232 (2x5 pin, P=2.54)	4 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 (2x7 pin, power LED, HDD LED, speaker, power button, reset button)
- ◆ LAN LED
  2 x LAN LED (1x2 pin)
- ◆ SMBus
  1 x SMBus (1x4 pin)
- ◆ I²C
  1 x I²C (1x4 pin)
- ◆ Infrared Interface
  1 x Infrared Interface (1x5 pin)
- ◆ Expansion
  1 x Full/Half-size PCIe Mini slot (supports mSATA)
  One PCIe x16 & four PCIe x1 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@3.41A, 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)
- ◆ 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: 1000g / NW: 420g
- ◆ CE/FCC compliant

Features

- PICMG 1.3 full-size solution
- 4th generation LGA 1150 Intel® Core™ i7/i5/i3, Pentium® or Celeron® processor supported
- Two 1600/1333 MHz DDR3 SDRAM DIMMs support up to 16 GB
- Dual Realtek PCIe GbE supported
- TPM v1.2 hardware security function supported by TPM module
- Stiffener bars
- IEI jumper-less function

Packing List

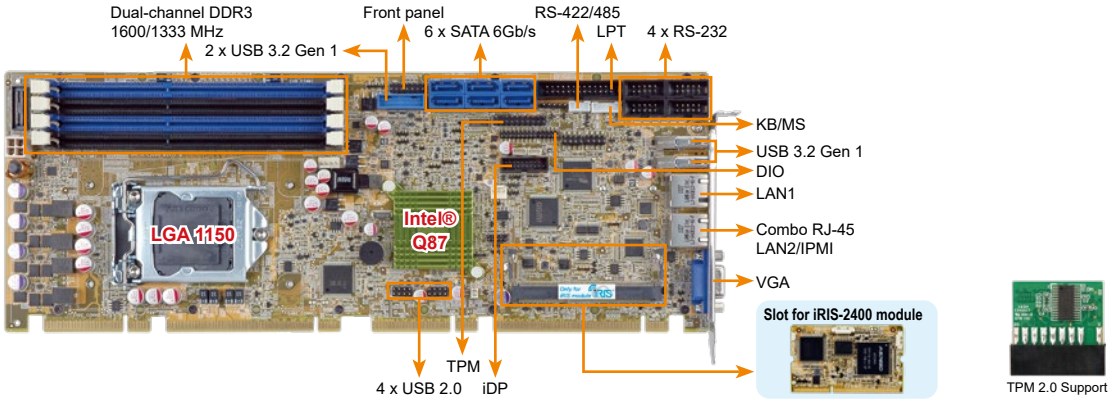
1 x PCIE-H810 single board computer
2 x SATA cable
1 x QIG

Ordering Information

Part No.	Description
PCIE-H810-R10	Full-size PICMG 1.3 CPU Card supports LGA 1150 Intel® Core™ i7/i5/i3, Pentium® and Celeron® CPU with Intel® H81, DDR3, VGA, iDP, dual PCIe GbE, SATA 6Gb/s, mSATA, RS-232, USB 3.2 Gen 1 (5Gb/s), 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
19800-003100-300-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
32205-000702-100-RS	RS-232 cable, 230mm, P=2.54
32205-003800-300-RS	RS-422/485 cable, 200mm, P=2.0
AC-KIT-892HD-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 1150, 1U chassis compatible, 65W
CF-1150SE-R11	Special cooler kit for LGA 1150, high-performance compatible, 95W
CF-1150SF-R10	Special cooler kit for LGA 1150, high-performance compatible, 54W
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

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, iRIS-2400 and RoHS



IPMI 2.0 Compliant

DDR3 1600 | USB 3.2 | SATA 6Gb/s | PCIe GbE | mSATA | iDP

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 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
- 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)
  6 x SATA 6Gb/s (RAID 0/1/5/10 supported)
  2 x USB 3.2 Gen 1 (5Gb/s) (2x10 pin)
  4 x RS-232 (2x5pin, P=2.54)
  4 x USB 2.0 (2x4 pin, P=2.54)
  4 x USB 2.0 (Golden finger)
- 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)
- iRIS Remote Management Module
  1 x iRIS-2400 slot
- 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
- Supports IPMI 2.0 via iRIS-2400 module

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 with Intel® Q87, DDR3, VGA, iDP, dual Intel® PCIe GbE, SATA 6Gb/s, mSATA, RS-232, PCIe Mini, Audio, iRIS-2400 and RoHS
iRIS-2400-R10	IPMI 2.0 adapter card with AST2400 BMC chip for DDR3 SO-DIMM socket interface
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-892HD-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
CF-1150SF-R10	Special cooler kit for LGA 115X Intel® CPU, 107x70x35, 54W
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

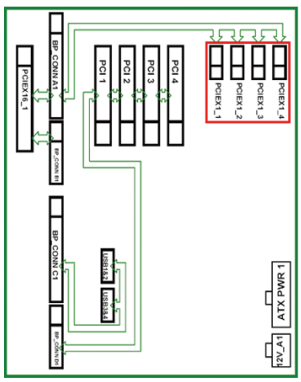
PICMG 1.3 (PCIe+PCI)	Model	PE-2SD1	PE-3S1	PE-4S	PE-5S	PE-5S2	PE-6S	PE-6S2	PE-6SD	PE-6SD3
Total Slot		2	5	4	5	5	6	6	5	5
Expansion Slots	PCIe Slots x16 *	1 (Gen 2.0)	1 (Gen 3.0)	1	1 (2.0)	1 (Gen 2.0)	1 (Gen 2.0)	1 (Gen 2.0)	1 (Gen 2.0)	1 (Gen 2.0)
	PCIe Slots x4		1 (Gen 3.0)	1	1 (Gen 2.0)			1 (Gen 2.0)		1 (Gen 2.0)
	PCIe Slots x1					3 (Gen 2.0)	2 (Gen 2.0)		3 (Gen 2.0)	
	PCI-X Slots									
	PCI Slots			1	2		2	3		2
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	RACK-500G	RACK-500G	RACK-305G RACK-360G RACK-3000G PAC- 1700G PAC-125	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	PXE-19S2
Total Slot		7	8	9	10	10	13	19
Expansion Slots	PCIe Slots x16 *	1 (Gen 2.0)	1 (Gen 2.0)	1 (Gen 2.0)	1 (Gen 2.0)	1 (Gen 2.0)	1 (Gen 3.0)	1 (Gen 3.0)
	PCIe Slots x4							
	PCIe Slots x1	2 (Gen 2.0)	3 (Gen 2.0)	4 (Gen 2.0)	4 (Gen 2.0)	4 (Gen 2.0)	3 (Gen 3.0)	1 (Gen 3.0)
	PCI-X Slots							
	PCI Slots	3	3	3	4	4	8	16
USB Connectors by Pin Header		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
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	N/A
Note							PCIe to PCI Bridge Backplane	

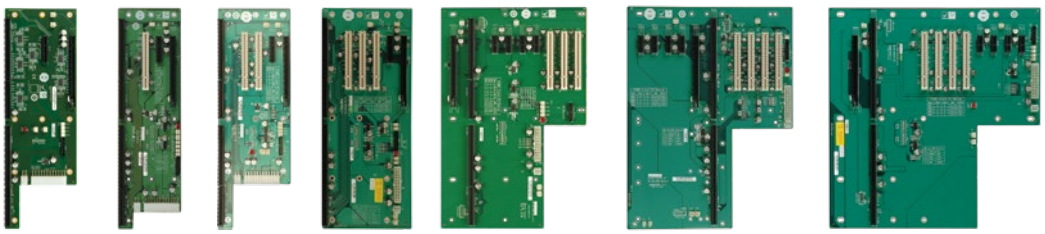
*When using a PCIe x16 add-on card, the length of the card must not exceed 167mm or 6.57 inches.

IEI Graphics Grade Backplane Solution

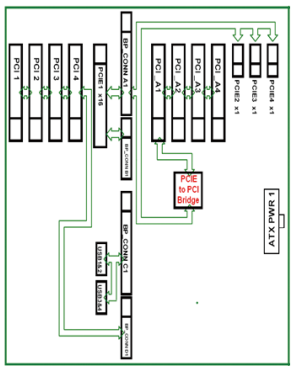
The graphics grade backplane solution targets the applications which concern system speed and performance. It has higher performance over cost ratio than the previous PICMG 1.0 solution.



PE-3S1 PE-4S PE-5S PE-6S2 PE-9S PE-10S PE-10S2

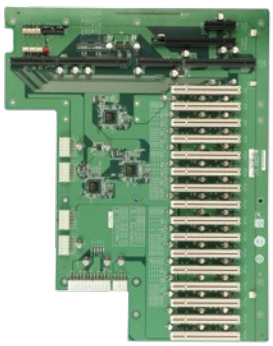


- Twenty PCIe lanes in total
- One PCIe x16 slot
- Up to four PCIe x1 or one PCIe x4 slot
- Up to four local PCI slots (w/o bridge)



PXE-13S

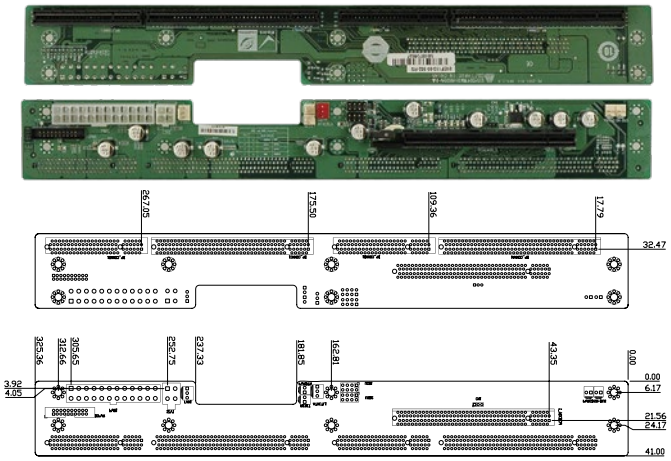
PXE-19S2



- Twenty PCIe lanes in total
- One PCIe x16 slot
- Up to four PCIe x1 slots
- PCI slots expandable via PCIe to PCI bridge

PE-2SD1-R10

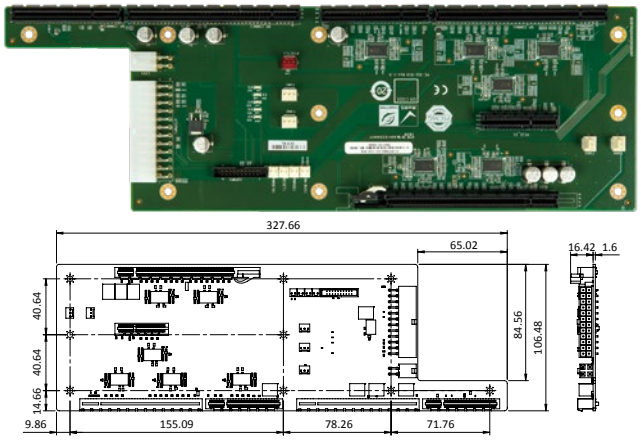
For 1U system!



Ordering Information	
PE-2SD1-R10	2-slot backplane with one PCIe slot (PCIe Gen 2.0)
RACK-1150G-PE	1U full-size rack-mount chassis

PE-3S1-R10

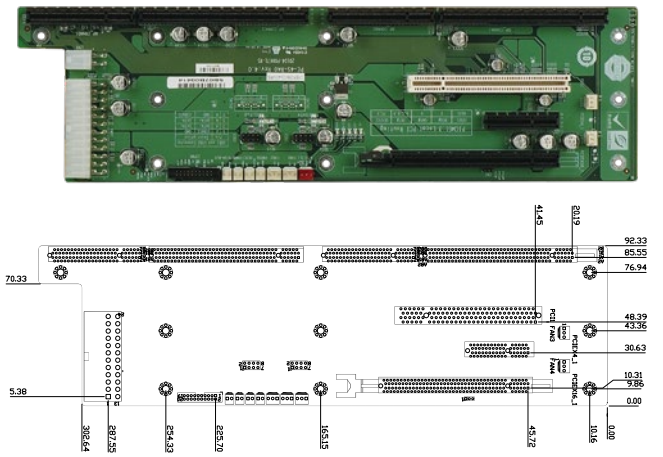
New



Ordering Information	
PE-3S1-R10	5-slot PICMG 1.3 backplane with one PCIe x16 slot and one PCIe x4 Slot, RoHS (PCIe Gen 3.0)
RACK-500AI	5U 5-slot full-size rackmount chassis

PE-4S-R40

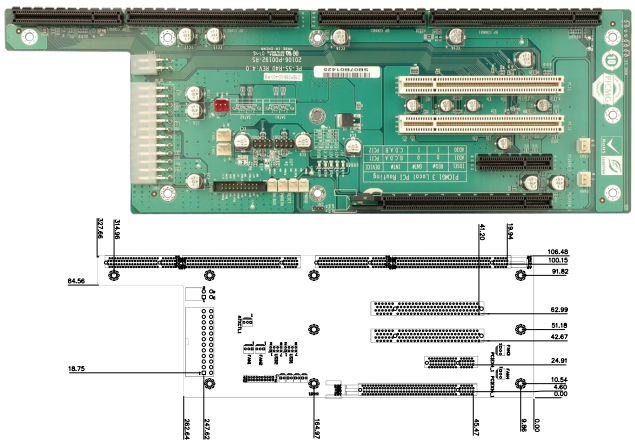
Mounting holes compatible with PCI-4S



Ordering Information	
PE-4S-R40	4-slot backplane with one PCIe x16 slot, one PCIe x4 slot and one PCI slot

PE-5S-R40

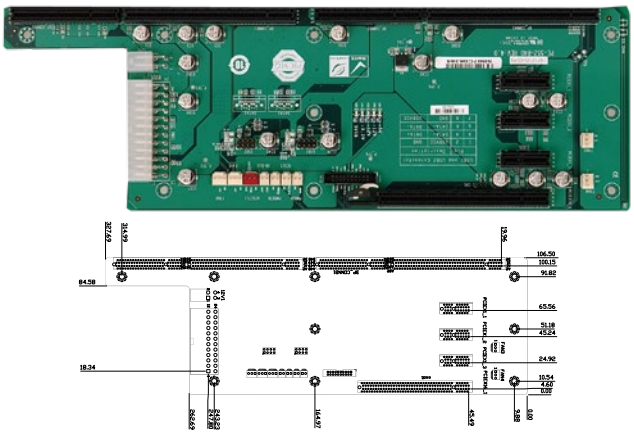
Mounting holes compatible with PCI-5S



Ordering Information	
PE-5S-R40	5-slot backplane with one PCIe x16 slot, one PCIe x4 slot and two PCI slots (PCIe Gen 2.0)
RACK-500G	5U 5-slot full-size rack-mount chassis

PE-5S2-R40

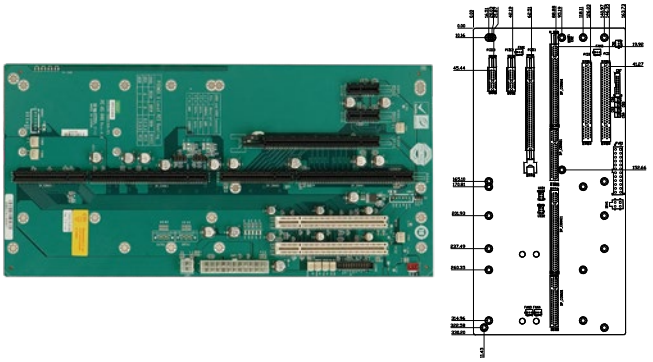
Mounting holes compatible with PCI-5S



Ordering Information	
PE-5S2-R40	5-slot backplane with one PCIe x16 slot and three PCIe x1 slots(PCIe Gen 2.0)
RACK-500G	5U 5-slot full-size rack-mount chassis

PE-6S-R41

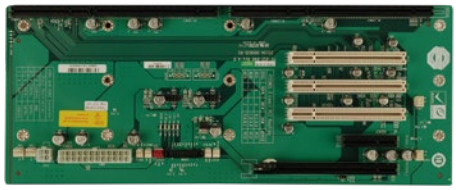
Mounting holes compatible with PCI-7S

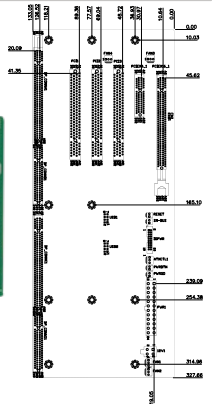


Ordering Information	
PE-6S-R41	6-slot backplane with one PCIe x16 slot, two PCIe x1 slots and two PCI slots (PCIe Gen 2.0)
RACK-305G	4U 14-slot full-size rack-mount chassis
RACK-360G	4U 14-slot full-size rack-mount chassis
RACK-3000G	4U 14-slot full-size rack-mount chassis
PAC-1700G	7-slot full-size compact chassis
PAC-125G	10-slot full-size compact chassis

PE-6S2-R40

Mounting holes compatible with PCI-6S





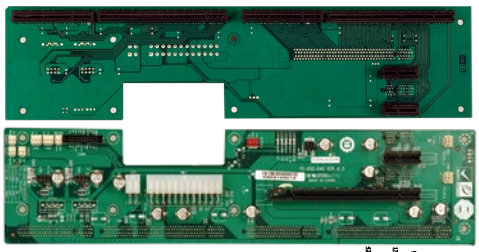
Ordering Information	
PE-6S2-R40	6-slot backplane with one PCIe x16 slot, one PCIe x4 slot and three PCI slots (PCIe Gen 2.0)
PAC-106G *	6-slot full-size compact chassis
PAC-1000G	6-slot full-size compact chassis

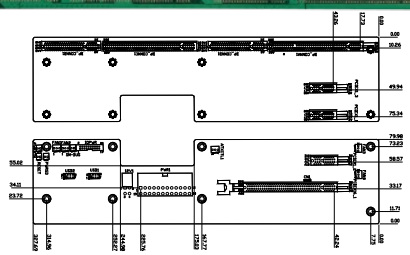
*** When using a PCIe x16 add-on card, the length of the card must not exceed 167mm or 6.57 inches.**

PE-6SD-R40

Mounting holes compatible with PCI-6SD

2U Type

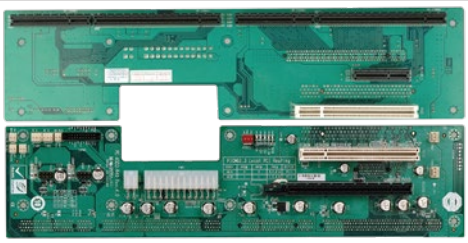


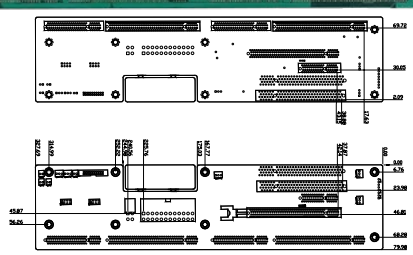


Ordering Information	
PE-6SD-R40	5-slot backplane with one PCIe x16 slot and three PCIe x1 slots (PCIe Gen 2.0)

PE-6SD3-R40

Mounting holes compatible with PCI-6SD

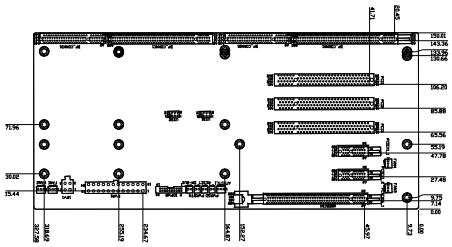




Ordering Information	
PE-6SD3-R40	5-slot backplane with one PCIe x16 slot, one PCIe x4 slot and two PCI slots (PCIe Gen 2.0)

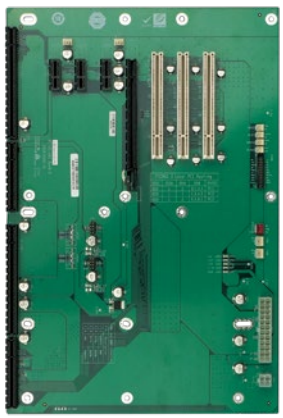
PE-7S-R40

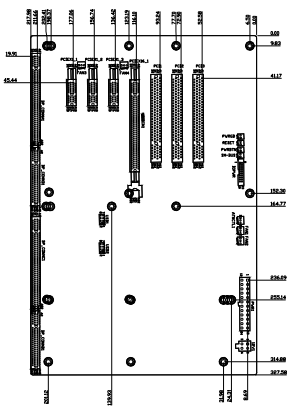
Mounting holes compatible with PCI-7S



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

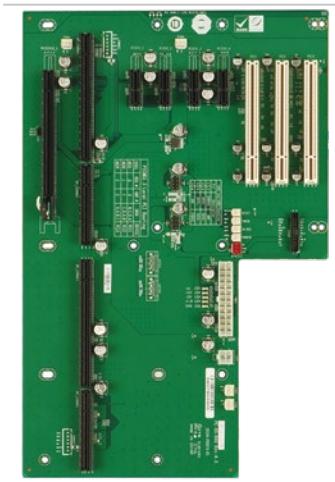


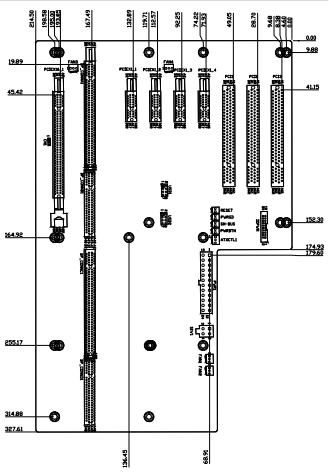


Ordering Information	
PE-8S-R40	8-slot backplane with one PCIe x16 slot, three PCIe x1 slots and three PCI slots (PCIe Gen 2.0)
PAC-125G	10-slot full-size compact chassis

PE-9S-R40

Mounting holes compatible with PCI-10S2

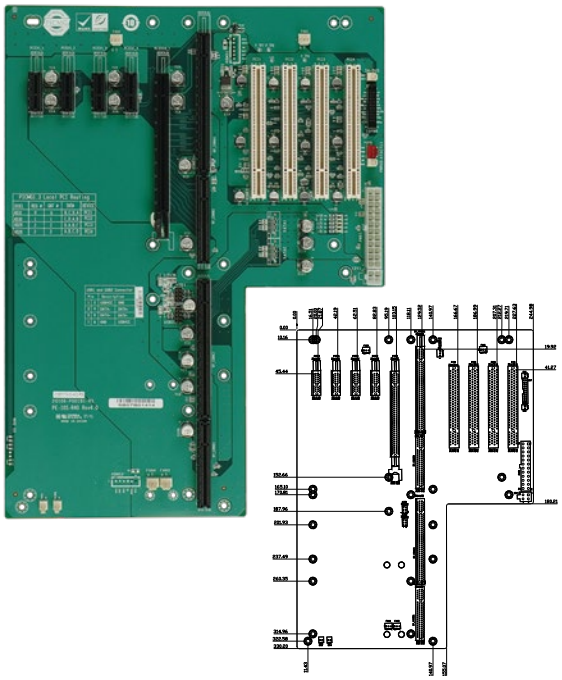




Ordering Information	
PE-9S-R40	9-slot backplane with one PCIe x16 slot, four PCIe x1 slots and three PCI slots (PCIe Gen 2.0)

PE-10S-R40

Mounting holes compatible with PCI-14S

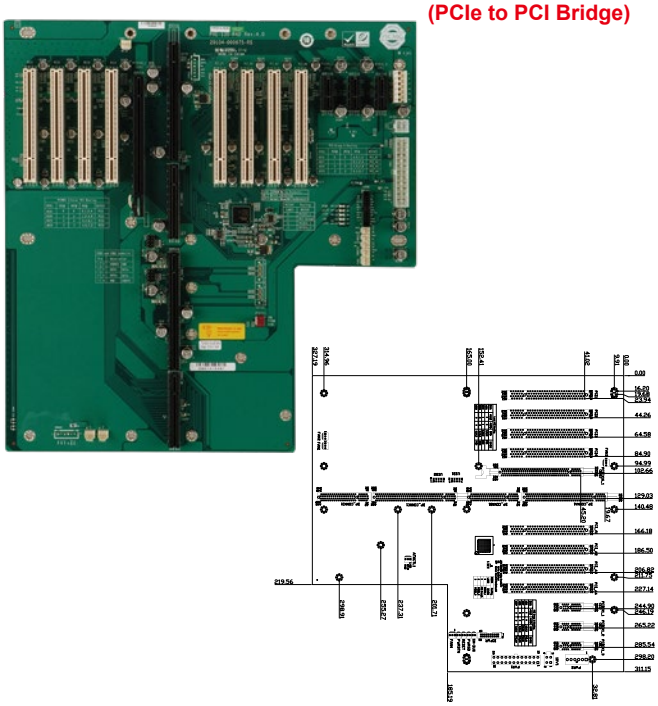


Ordering Information	
PE-10S-R40	10-slot backplane with one PCIe x16 slot, four PCIe x1 slots and four PCI slots (PCIe Gen 2.0)
RACK-305G	4U 14-slot full-size rack-mount chassis
RACK-360G	4U 14-slot full-size rack-mount chassis
RACK-3000G	4U 14-slot full-size rack-mount chassis

PXE-13S-R51

Mounting holes compatible with PCI-14S

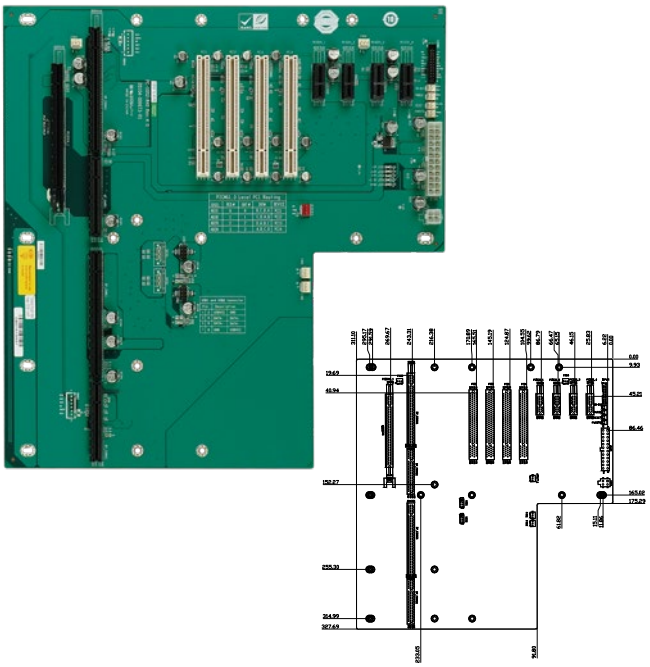
(PCIe to PCI Bridge)



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

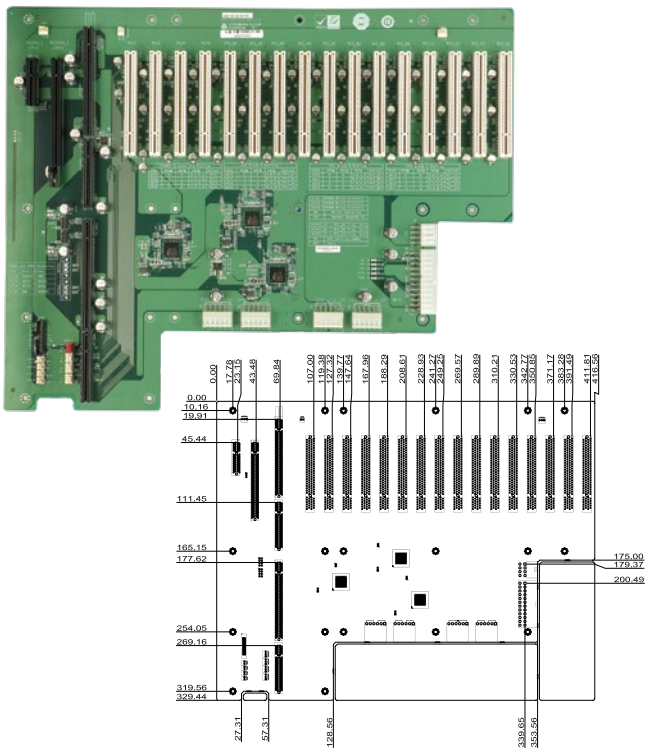


Ordering Information	
PE-10S2-R40	10-slot backplane with one PCIe x16 slot, four PCIe x1 slots and four PCI slots (PCIe Gen 2.0)
RACK-3000G	4U 14-slot full-size rack-mount chassis
RACK-305G	4U 14-slot full-size rack-mount chassis
RACK-360G	4U 14-slot full-size rack-mount chassis

PXE-19S2-R10

Mounting holes compatible with PCI-19S

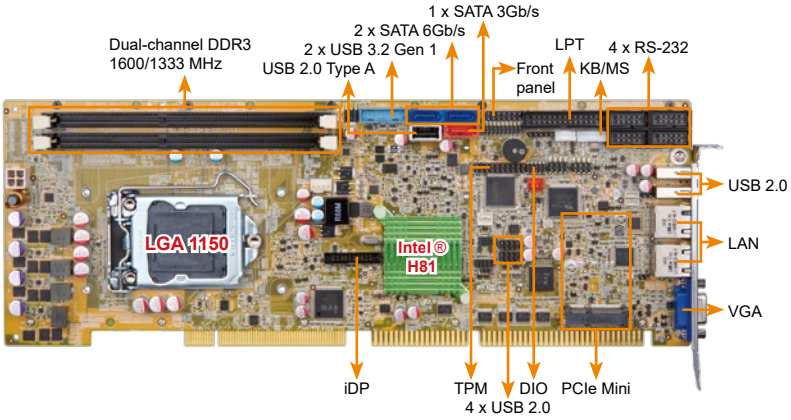
(PCIe to PCI Bridge)

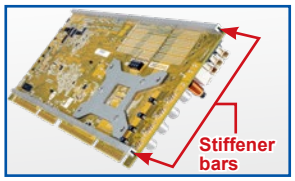


Ordering Information	
PXE-19S2-R10	19-slot backplane with one PCIe x16 slot, one PCIe x1 slot and sixteen PCI slots (PCIe Gen 3.0)

WSB-H810

Full-size PICMG 1.0 CPU Card supports LGA 1150 Intel® Core™ i7/i5/i3, Pentium® and Celeron® CPU with Intel® H81, DDR3, VGA, iDP, Dual Intel® GbE, PCIe Mini, USB 3.2 Gen 1 (5Gb/s), SATA 6Gb/s, mSATA, RS-232, HD Audio and RoHS

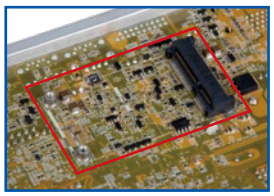




Enhanced stability

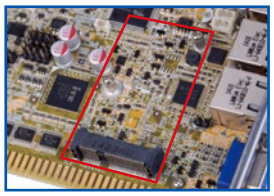
Strengthen the mechanism
Prevent PCB bending

PCIe Mini & mSATA connector



Support PCIe Mini & mSATA

◄ mSATA



Top-side PCIe Mini connector supports PCIe signal for half-size or full-size PCIe device. Solder-side PCIe Mini connector supports SATA 3Gb/s signal for full-size mSATA.

◄ PCIe Mini

Specifications

- CPU
  4th generation LGA 1150 Intel® Core™ i7/i5/i3, Pentium® or Celeron® processor supported
- Chipset
  Intel® H81
- Memory
  Twp 240-pin 1600/1333 MHz dual-channel DDR3 & DDR3L SDRAM unbuffered DIMMs support up to 16 GB
- BIOS
  UEFI
- 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
  Dual independent display
  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® I217-LM Ethernet controller
  LAN2: Intel® I211-AT Ethernet controller
- Audio
  Support 7.1 channel HD Audio by IEI AC-KIT-888S-R10 kit
- External I/O Interface
  2 x USB 2.0
- Internal I/O Interface
  1 x KB/MS (1x6 pin)
  1 x LPT (2x13 pin)
  1 x RS-422/485 (1x4 pin, P=2.0)
  1 x USB 2.0 (180° Type-A)
  1 x SATA 3Gb/s (AHCI supported, no RAID)
  2 x SATA 6Gb/s
  2 x USB 3.2 Gen 1 (5Gb/s) (2x10 pin)
  4 x RS-232 (2x5 pin, P=2.54)
  4 x USB 2.0 (2x4 pin, P=2.54)
- 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)
- Digital I/O
  8-bit digital I/O (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 Full-size PCIe Mini card slot (support mSATA)
  PCI and ISA signal via golden finger
- 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@3.4A, 12V@0.36A, Vcore_12V@7.48A, 3.3V@1.42A, 5VSB@0.13A
  (Intel® Core™ i7-4770K 3.90 GHz CPU with 8 GB (two 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 122 mm
- Weight: GW: 1000g / NW: 260g
- CE/FCC compliant

Features

- Full-size PICMG 1.0 with LGA 1150 Intel® CPU
- Two 1600/1333 MHz DDR3 SDRAM DIMM slots support up to 16 GB of memory
- Dual Intel® Gigabit Ethernet LAN controller
- SATA 6Gb/s and USB 3.2 Gen 1 (5Gb/s) supported
- TPM v1.2 hardware security function supported by TPM module
- Stiffener bars
- IEI jumper-less function

Packing List

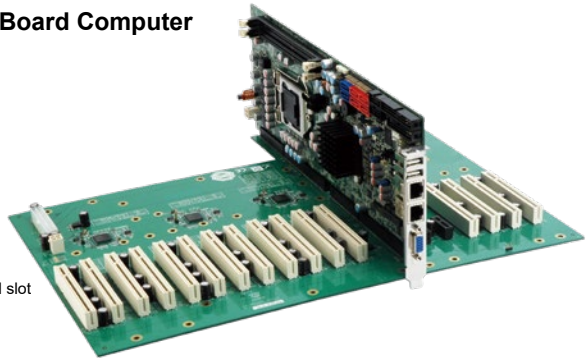
1 x WSB-H810 single board computer	
2 x SATA cable	1 x QIG

Ordering Information

Part No.	Description
WSB-H810-R10	Full-size PICMG 1.0 CPU card supports LGA 1150 Intel® Core™ i7/i5/i3, Pentium® and Celeron® CPU with Intel® H81, DDR3, VGA, iDP, dual Intel® GbE, PCIe Mini, USB 3.2 Gen 1 (5Gb/s), SATA 6Gb/s, mSATA, 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
32200-074800-RS	RS-422/485 cable, 200mm, P=2.0
32205-000702-100-RS	RS-232 cable, 230mm, P=2.54
AC-KIT-892HD-R10	7.1-channel HD Audio kit with Realtek ALC892 supports dual audio streams
CB-USB02-RS	Dual port USB 2.0 cable with bracket, 300mm, P=2.54
CF-1150SB-R11	Special cooler kit for LGA 1150, high-performance compatible, 65W
CF-1150SC-R20	Special cooler kit for LGA 1150, 1U chassis compatible, 65W
CF-1150SE-R11	Special cooler kit for LGA 1150, high-performance compatible, 95W
CF-1150SF-R10	Special cooler kit for LGA 1150, 1U chassis compatible, 54W
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

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

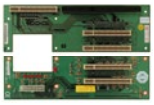
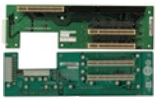
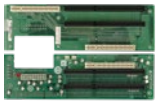
Selection Guide

PAC series wall-mount chassis | 4U/5U rack-mount chassis | 1U/2U rack-mount chassis

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	RACK-500G	PAC-106G PAC-1000G	PAC-1700G	N/A

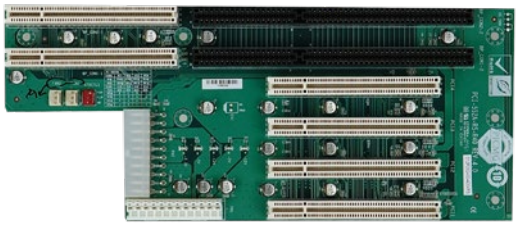
Model	PCI-10S-RS-R41	PX-10S-RS-R50	PCI-12S-RS-R40	PCI-14S-RS-R40
Total Slot	10	10	12	14
PCI Slot	4	7	4	4
ISA Slot	5	3	7	9
PSU Type	ATX/AT	ATX/AT	ATX/AT	ATX/AT
Chassis	PAC-125G	PAC-125G	RACK-3000G	N/A
Note				

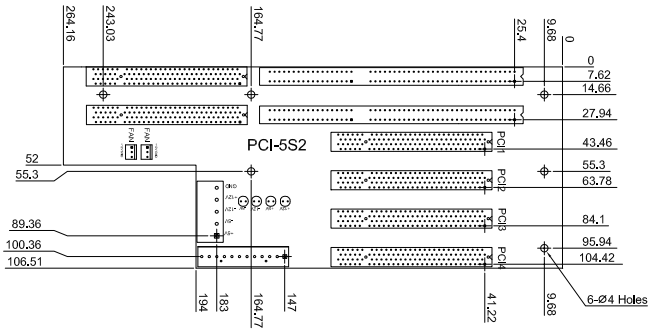
Model	PCI-14S3-RS-R40	PX-14S3-RS-R50	PX-14S5-RS-R50
Total Slot	14	14	14
PCI Slot	4	12	7
ISA Slot	9	2	6
PSU Type	ATX/AT	ATX/AT	ATX/AT
Chassis	RACK-305G RACK-360G RACK-3000G	RACK-305G RACK-360G RACK-3000G	RACK-305G RACK-360G RACK-3000G

Model	PCI-2SD2-RS-R41	PCI-5SD6-RS-R40	PCI-5SDA-RS-R40	PCI-6SD-RS-R40
Total Slot	2	6	6	6
PCI Slot	R2	L2+R2	L2+R2	L1+R1
ISA Slot				L1+R1
PSU Type	ATX/AT	ATX	ATX/AT	ATX
Chassis	RACK-1150G	RACK-220G	RACK-220G	RACK-220G

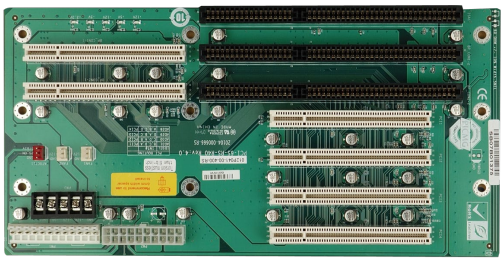
PCI-5S2-RS-R40/PCI-5S2A-RS-R40

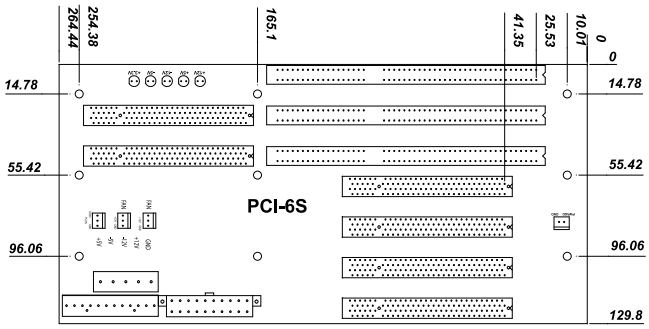




Ordering Information	
PCI-5S2-RS-R40	5-slot AT power backplane with four PCI slots and one ISA slot
PCI-5S2A-RS-R40	5-slot ATX power backplane with four PCI slots and one ISA slot
RACK-500G	5-slot full-size compact chassis

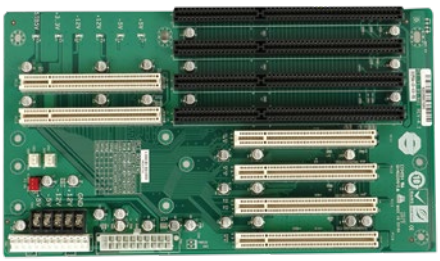
PCI-6S-RS-R40

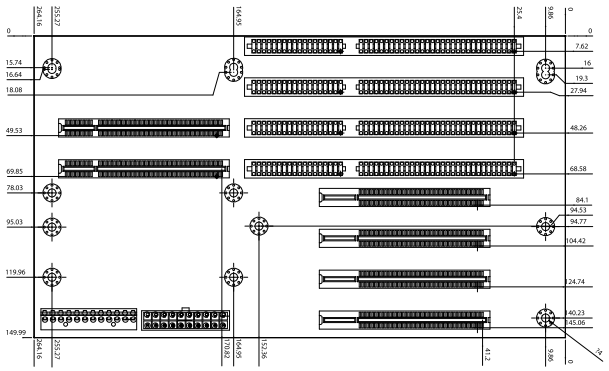




Ordering Information	
PCI-6S-RS-R40	6-slot backplane with four PCI slots and two ISA slots
PAC-106G	6-slot full-size compact chassis
PAC-1000G	6-slot full-size compact chassis

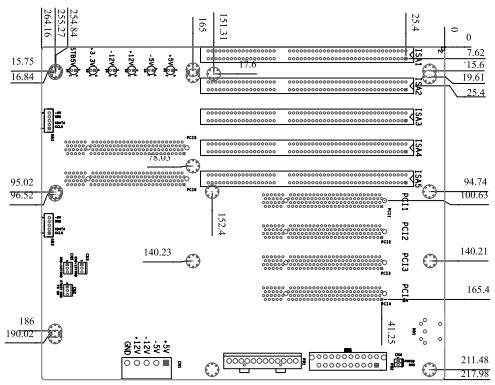
PCI-7S-RS-R41





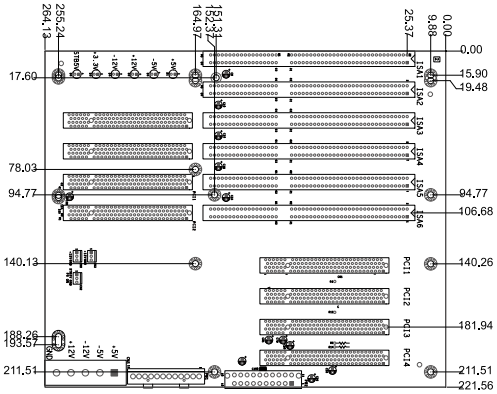
Ordering Information	
PCI-7S-RS-R41	7-slot backplane with four PCI slots and three ISA slots
PAC-1700G	7-slot full-size compact chassis

PCI-8S-RS-R40



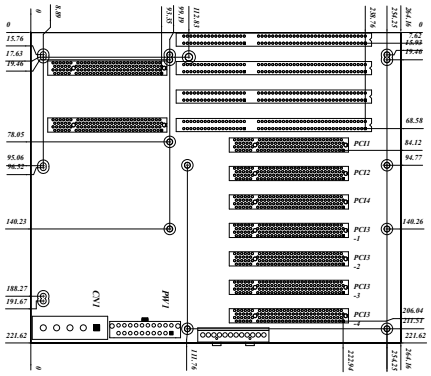
Ordering Information	
PCI-8S-RS-R40	8-slot backplane with four PCI slots and four ISA slots

PCI-10S-RS-R41



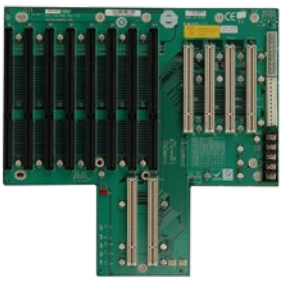
Ordering Information	
PCI-10S-RS-R41	10-slot backplane with four PCI slots and five ISA slots
PAC-125G	10-slot full-size compact chassis

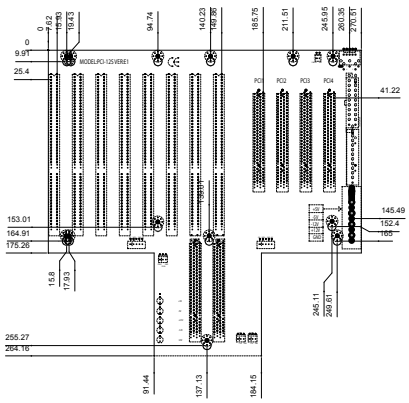
PX-10S-RS-R50



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

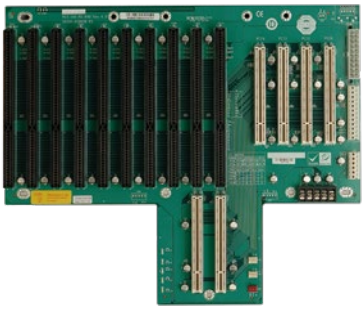
PCI-12S-RS-R40

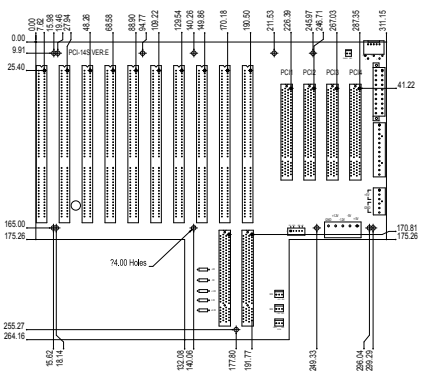




Ordering Information	
PCI-12S-RS-R40	12-slot backplane with four PCI slots and seven ISA slots
RACK-3000G	4U 14-slot full-size rack-mount chassis

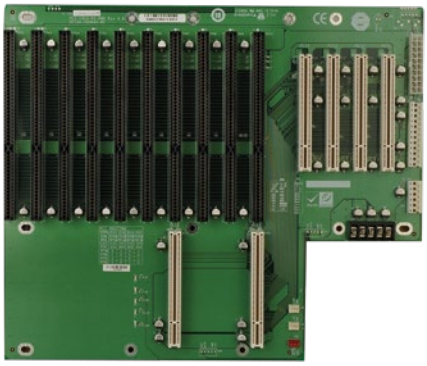
PCI-14S-RS-R40

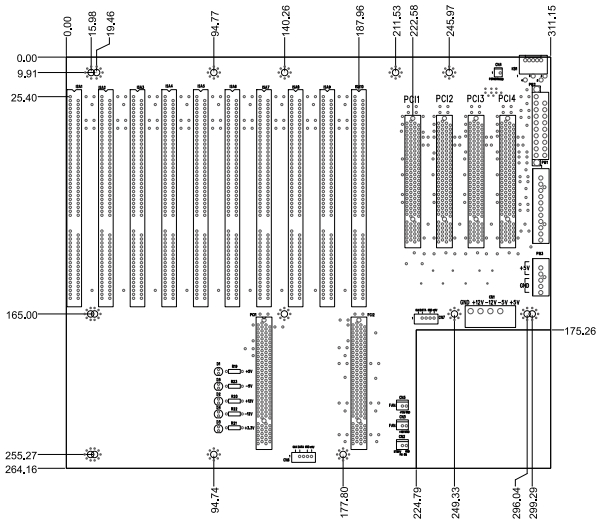




Ordering Information	
PCI-14S-RS-R40	14-slot backplane with four PCI slots and nine ISA slots

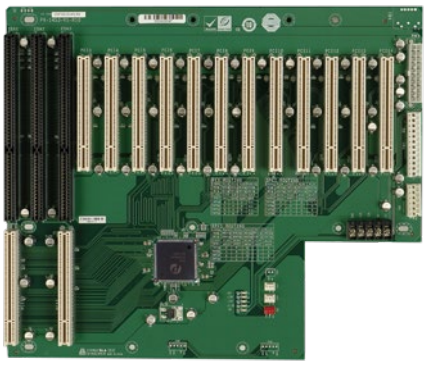
PCI-14S3-RS-R40

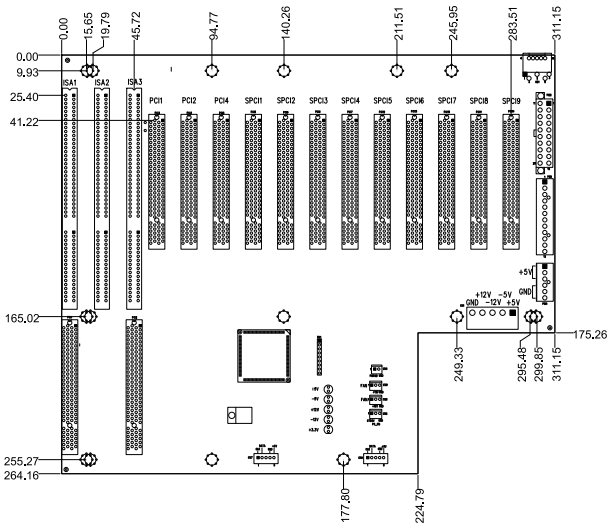




Ordering Information	
PCI-14S3-RS-R40	14-slot backplane with four PCI slots and nine ISA slots
RACK-305G	4U 14-slot full-size rack-mount chassis
RACK-360G	4U 14-slot full-size rack-mount chassis
RACK-3000G	4U 14-slot full-size rack-mount chassis

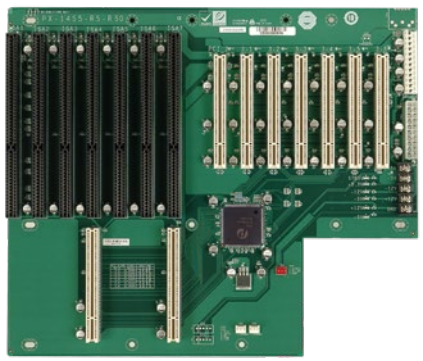
PX-14S3-RS-R50

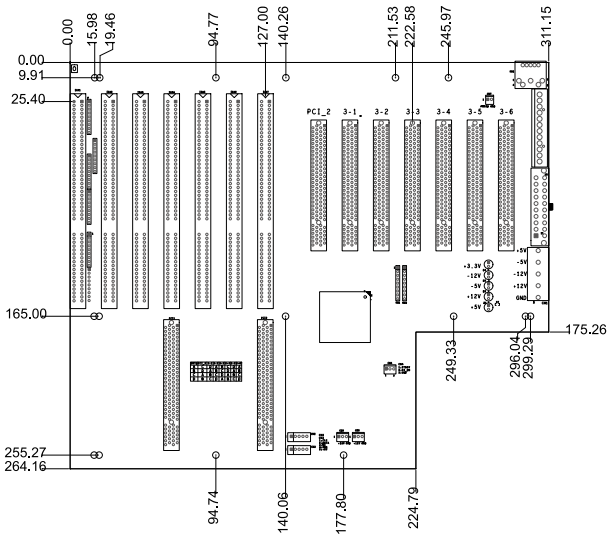




Ordering Information	
PX-14S3-RS-R50	14-slot backplane with twelve PCI slots and two ISA slots
RACK-305G	4U 14-slot full-size rack-mount chassis
RACK-360G	4U 14-slot full-size rack-mount chassis
RACK-3000G	4U 14-slot full-size rack-mount chassis

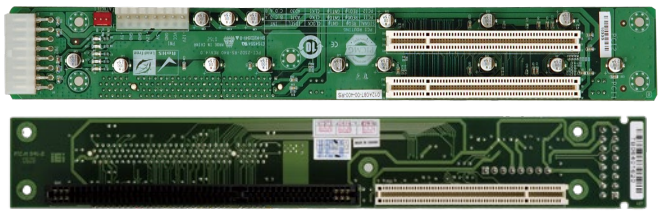
PX-14S5-RS-R50

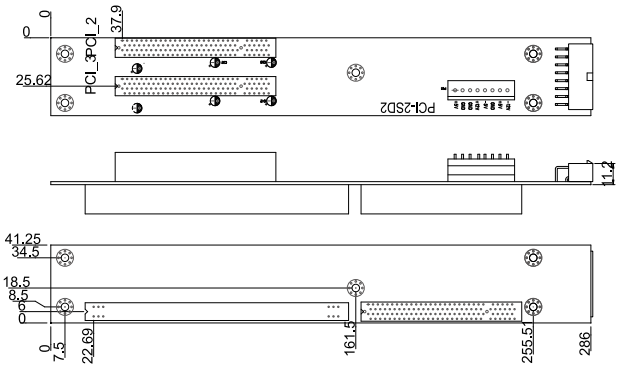




Ordering Information	
PX-14S5-RS-R50	14-slot backplane with seven PCI slots and six ISA slots
RACK-305G	4U 14-slot full-size rack-mount chassis
RACK-360G	4U 14-slot full-size rack-mount chassis
RACK-3000G	4U 14-slot full-size rack-mount chassis

PCI-2SD2-RS-R41

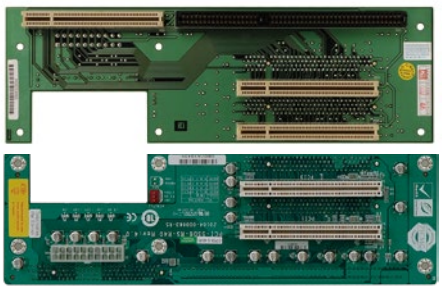


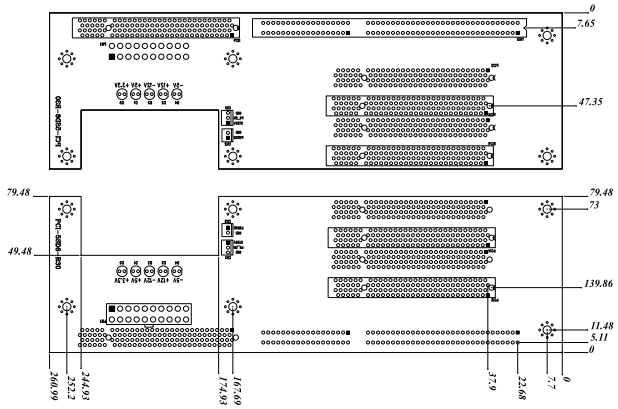


Ordering Information	
PCI-2SD2-RS-R41	1U chassis backplane with two PCI slots
RACK-1150G	1U full-size rack-mount chassis

* The adapter cable 32100-040600-RS is required when connecting PCI-2SD2-RS to a standard ATX supply.

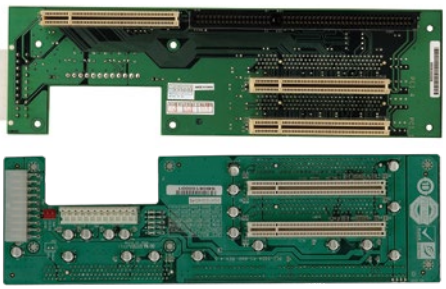
PCI-5SD6-RS-R40 2U Type

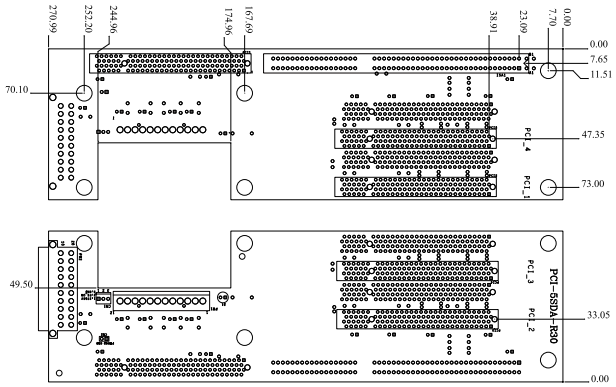




Ordering Information	
PCI-5SD6-RS-R40	2U chassis backplane with four PCI slots
RACK-220G	2U 6-slot full-size rack-mount chassis

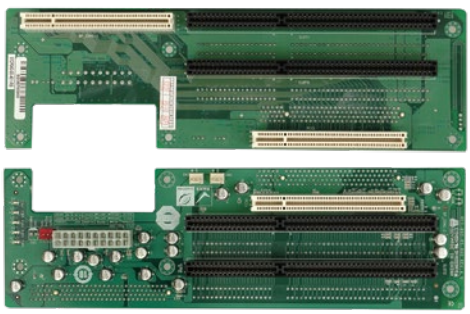
PCI-5SDA-RS-R40 2U Type

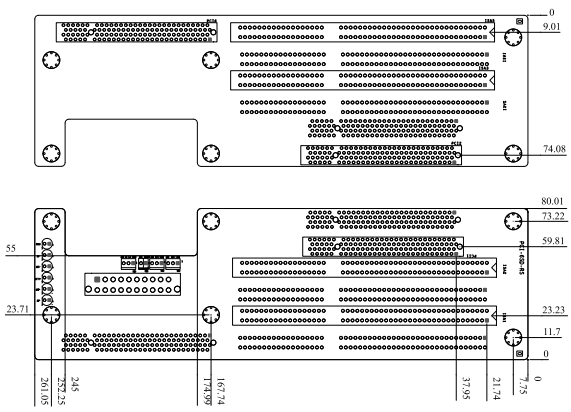




Ordering Information	
PCI-5SDA-RS-R40	2U chassis backplane with four PCI slots
RACK-220G	2U 6-slot full-size rack-mount chassis

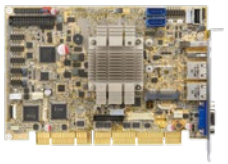
PCI-6SD-RS-R40 2U Type





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

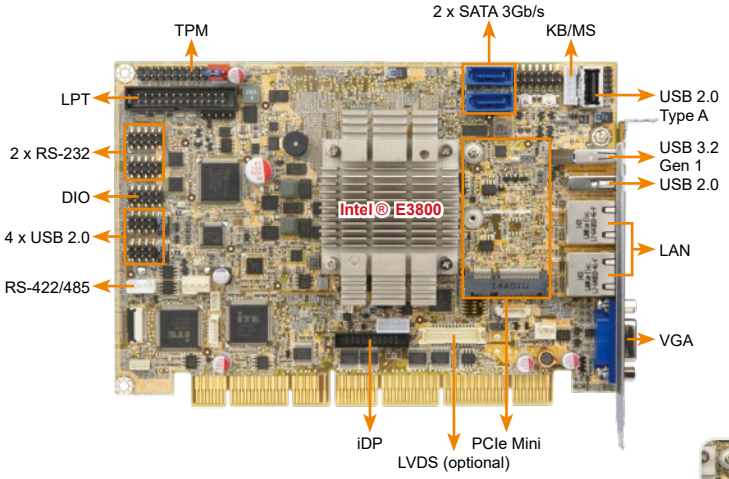
Half-size PICOe, ISA Selection Guide

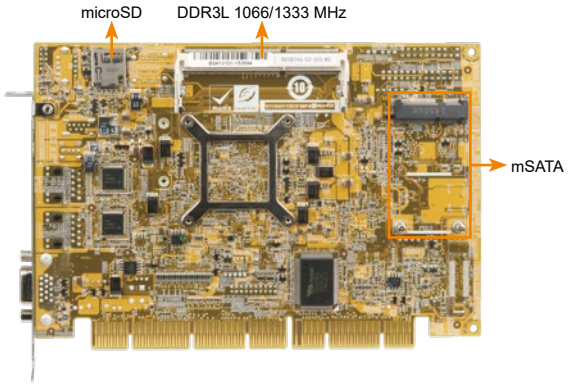


Model Name	PCISA-BT	IOWA-LX
CPU Socket	On board	On board
CPU Type	Intel® Atom™ E3845 on-board SoC (1.91GHz, quad-core, 2MB cache, TDP=10W) Intel® Atom™ E3825 on-board SoC (1.33GHz, dual-core, 1MB cache, TDP=6W)	AMD Geode™ LX600
Chipset	N/A	AMD Geode™ CS5536
Memory	One 204-pin 1066/1333 MHz single-channel DDR3L SDRAM unbuffered DIMM (system max. 8 GB)	On-board 128MB 200/266 MHz DDR SDRAM One 200-pin 200/266 MHz DDR SO-DIMM (system max. 512MB)
Display Interface	Dual display supported 1 x VGA 1 x iDP interface	1 x VGA
Ethernet	LAN1: Intel® I211-AT PCIe controller LAN2: Intel® I211-AT PCIe controller	10/100Mbps Realtek RTL8100C Ethernet controller
I/O Interface	1 x 6-pin wafer for KB/MS 1 x LPT 1 x RS-422/485 2 x RS-232 2 x USB 3.2 Gen 1 8 x USB 2.0	1 x Infrared interface 1 x LPT 1 x PS/2 KB/MS 1 x RS-422/485 2 x RS-232 4 x USB 2.0 (by pin header)
Storage Interface	1 x mSATA (colay SATA2, supports SATA 3Gb/s signal only) 2 x SATA 3Gb/s	1 x CF Type II 1 x FDD 1 x IDE 2 x SATA (RAID 0, 1)
Audio	IEI AC-KIT-888S-R10 7.1-channel HD Audio kit via the on-board 10-pin header connector	Realtek ALC203 with AC'97 codec
Digital I/O	8-bit digital I/O	
Power Consumption	5V@1.55A,12V@0.74A (Intel® Atom™ E3845 1.91GHz CPU, one 8 GB 1600 MHz memory)	5V@1.51A, 5VSb@0.09A (On-board AMD Geode™ LX600 CPU 366 MHz with on-board 128MB 200 MHz DDR memory and 512MB 333 MHz DDR memory)
Watchdog Timer	Software programmable supports 1~255 sec. system reset	
Operation Environment	Temperature Range: -20ºC ~ 60ºC (-4ºF ~ 140ºF) Relative Humidity: 5% ~ 95%, non-condensing	Temperature Range: 0ºC ~ 60ºC (32ºF ~ 140ºF) Relative Humidity: 5% ~ 95%, non-condensing
Expansion Slot	1 x PCIe Mini slot	NA
CPU Cooler	NA	Heatsink (fanless)

PCISA-BT

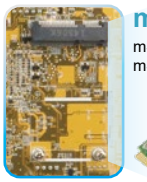
Half-size PCISA CPU Card supports 22nm Intel® Atom™ On-board SoC with VGA, iDP, Dual Intel® PCIe GbE, USB 3.2 Gen 1 (5Gb/s), PCIe Mini, SATA, mSATA, COM, Audio and RoHS





PCIe Mini slot

PCIe Mini slot for full-size or half-size devices



mSATA

mSATA slot for full-size mSATA

Specifications

- SoC
  Intel® Atom™ E3845 on-board SoC (1.91GHz, quad-core, 2MB cache, TDP=10W)
  Intel® Atom™ E3827 on-board SoC (1.75GHz, dual-core, 1MB cache, TDP=8W)
  Intel® Atom™ E3826 on-board SoC (1.46GHz, dual-core, 1MB cache, TDP=7W)
  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 OpenCL1.2
- 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 LPT (2x13 pin)
  1 x mSATA
  1 x RS-422/485 (1x4 pin, P=2.0)
  1 x USB 2.0 (180° Type-A)
  2 x RS-232 (2x5 pin, P=2.54)
  2 x SATA 3Gb/s
  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
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.

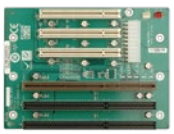
Selection Guide

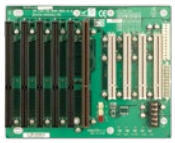
PAC series wall-mount chassis 4U rack-mount chassis

RoHS Ready

Model	IP-3S-RS	IP-4S-RS	IP-4S4-RS	IP-5SA2-RS
Total Slot	3	4	4	5
PCI Slot	2	3		4
ISA Slot			3	
PSU Type	AT	AT	AT	ATX
Chassis	PAC-53GH	PAC-400G PAC-42GH	PAC-400G PAC-42GH	PR-1500G

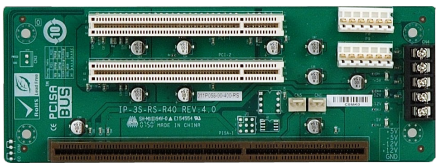
RoHS Ready

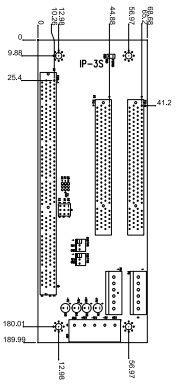




Model	IP-6S-RS	IP-6SA-RS	IP-10S-RS	IPX-13S-RS
Total Slot	6	6	10	13
PCI Slot	3	3	4	12
ISA Slot	2	2	5	
PSU Type	AT	ATX	ATX/AT	ATX/AT
Chassis	PAC-1000G	PAC-106G PAC-1000G	PAC-125G	RACK-305G RACK-360G RACK-3000G

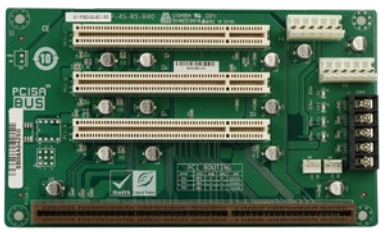
IP-3S-RS-R40

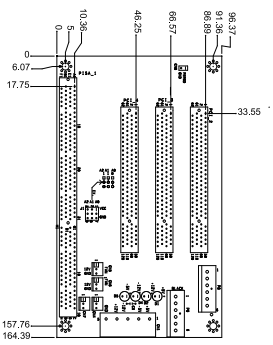




Ordering Information	
IP-3S-RS-R40	3-slot backplane with two PCI slots
PAC-53GH	3-slot half-size compact chassis

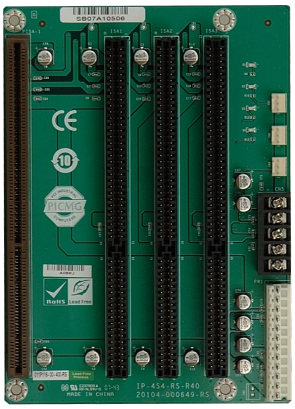
IP-4S-RS-R40

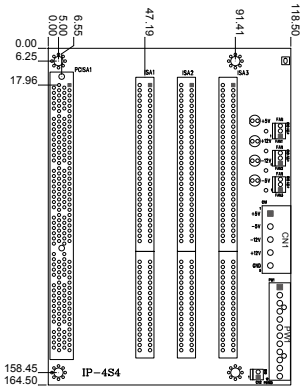




Ordering Information	
IP-4S-RS-R40	4-slot backplane with three PCI slots
PAC-400G	4-slot half-size compact chassis
PAC-42GH	4-slot half-size compact chassis

IP-4S4-RS-R40

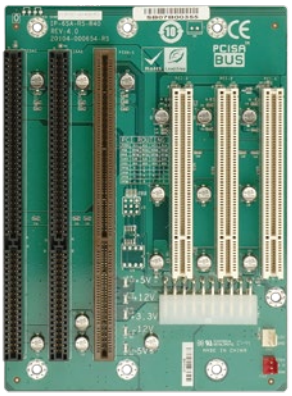


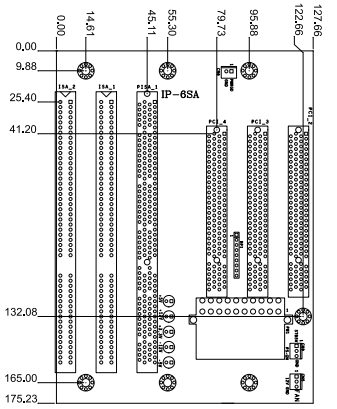


Ordering Information	
IP-4S4-RS-R40	4-slot backplane with three ISA slots
PAC-400G	4-slot half-size compact chassis
PAC-42GH	4-slot half-size compact chassis

IP-6SA-RS-R40

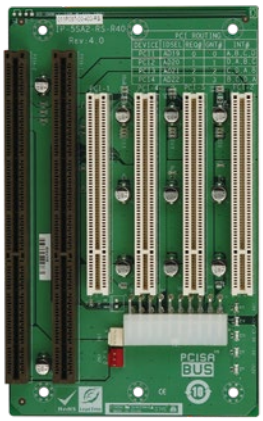
ATX power

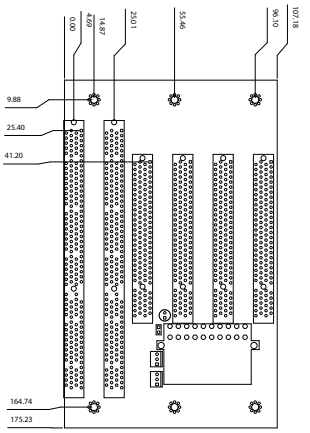




Ordering Information	
IP-6SA-RS-R40	6-slot backplane with three PCI slots and two ISA slots
PAC-106G	6-slot full-size compact chassis
PAC-1000G	6-slot full-size compact chassis

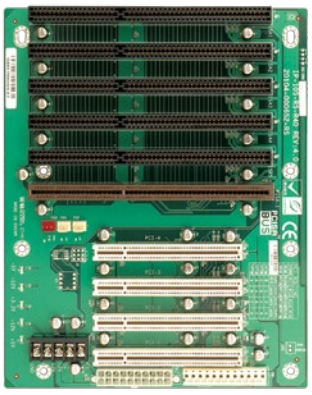
IP-5SA2-RS-R40

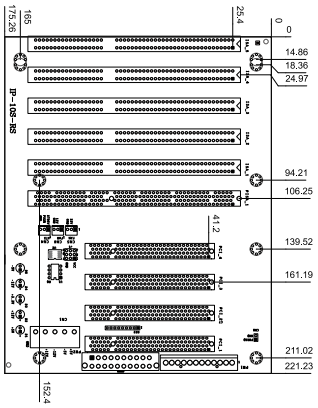




Ordering Information	
IP-5SA2-RS-R40	5-slot backplane with four PCI slots
PR-1500G	5-slot half-size compact chassis

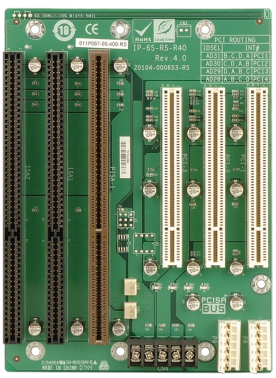
IP-10S-RS-R40

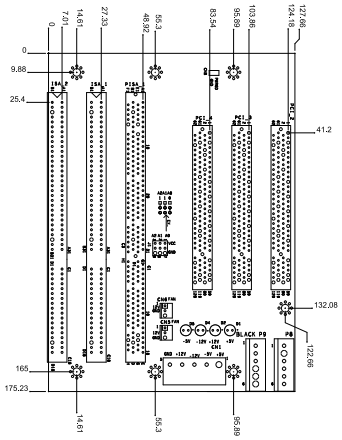




Ordering Information	
IP-10S-RS-R40	10-slot backplane with four PCI slots and five ISA slots
PAC-125G	10-slot full-size compact chassis

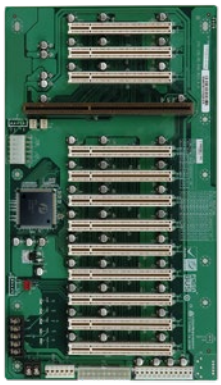
IP-6S-RS-R40

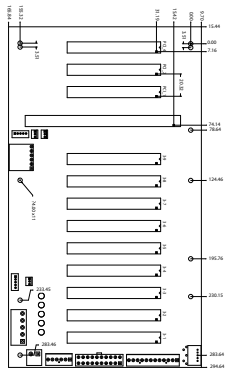




Ordering Information	
IP-6S-RS-R40	6-slot backplane with three PCI slots and two ISA slots
PAC-1000G	6-slot full-size compact chassis

IPX-13S-RS-R40

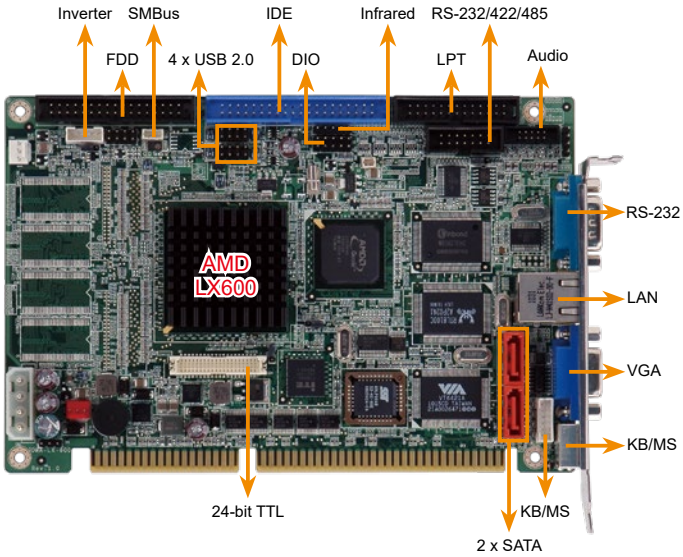


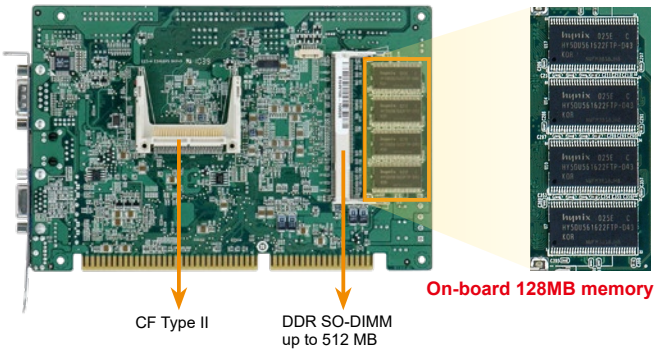


Ordering Information	
IPX-13S-RS-R40	13-slot backplane with twelve PCI slots
RACK-305G	4U 14-slot rack-mount chassis
RACK-360G	4U 14-slot rack-mount chassis
RACK-3000G	4U 14-slot rack-mount chassis

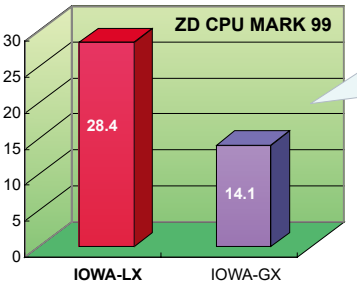
IOWA-LX

Half-size Pure ISA CPU Card with On-board AMD Geode™ LX600 Processor (366 MHz), 128KB L2 cache, On-board 128MB Memory, VGA, LAN, USB 2.0, CF, COM, LPT, Audio and RoHS





Performance Comparison Chart



IOWA-LX platform can easily replace the IOWA-GX platform without any impact to the system for increased levels of performance.

AMD Geode™ | Fanless | USB 2.0

Specifications

- CPU
  On-board AMD Geode™ LX600 processor (366 MHz), 128KB L2 cache
- Chipset
  AMD Geode™ CS5536
- BIOS
  Award BIOS
- Memory
  One 200-pin 266/200 MHz DDR SDRAM SO-DIMMs supports up to 512MB
  On-board 128MB DDR 266/200 MHz memory
- Graphics Engine
  VGA integrated in the AMD Geode™ LX600
- Display Output
  Single HD VOP 2.0 output
  1 x VGA (up to 1920x1440)
  1 x TFT (up to 1600x1200)
- External I/O Interface
  1 x KB/MS 1 x RS-232
- Internal I/O Interface
  1 x CF Type II 1 x RS-232/422/485 (2x7 pin, P=2.54)
  1 x FDD (2x17 pin) 1 x LPT (2x13 pin)
  1 x IDE (2x10 pin) 4 x USB 2.0 (2x4 pin, P=2.54)
  2 x SATA (RAID 0/1 supported on IOWA-LX-600S-R10)
- Ethernet
  10/100Mbps Realtek RTL8100C Ethernet controller
- Audio
  Realtek ALC203 with AC'97 codec
  1 x Front audio (2x5 pin)
- Expansion
  ISA bus supported via golden finger
- Digital I/O
  8-bit digital I/O (2x5 pin)
- Infrared Interface
  1 x Infrared Interface (1x5 pin)
- Watchdog Timer
  Software programmable supports 1~255 sec. system reset
- FAN connctor
  1 x Smart fan (1x3 pin)
- Power supply
  5V/12V, AT/ATX support
- Power Consumption
  5V@1.51A, 5VSb@0.09A
  (On-board AMD Geode™ LX 600 CPU 366 MHz with 128MB 200 MHz on-board DDR memory and 512MB 333 MHz DDR memory)
- Operating Temperature
  -10ºC ~ 60ºC
- Storage Temperature
  -20°C ~ 70°C
- Operating Humidity
  5% ~ 95%, non-condensing
- Weight
  GW: 1000g / NW: 250g
- CE/FCC compliant

Features

- ISA CPU card with on-board AMD Geode™ LX600 processor (366 MHz), 128KB L2 cache
- Flexible on-board DDR SDRAM and one SO-DIMM slot
- Enchanced TTL, RS-232, RS-422/485 and USB 2.0 interfaces for extened connectivities

Packing List

1 x IOWA-LX-600 single board computer
1 x Audio cable
1 x IDE flat cable
1 x KB/MS Y cable
1 x USB cable
1 x Mini jumper pack
1 x QIG

Ordering Information

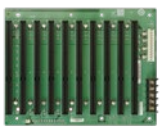
Part No.	Description
IOWA-LX-600-R10	Half-size pure ISA CPU card with on-board AMD Geode™ LX600 processor (366 MHz), 128KB L2 cache, on-board 128MB memory VGA, LAN, USB 2.0, COM, CF, LPT, audio and RoHS
IOWA-LX-600S-R10	Half-size pure ISA CPU card with on-board AMD Geode™ LX600 processor (366 MHz), 128KB L2 cache, on-board 128MB memory VGA, LAN, USB 2.0, SATA, CF, COM, LPT, Audio and RoHS
19800-000049-RS	LPT flat cable, 240mm, P=2.54
19800-004400-200-RS	RS-232 & RS-422/485 cable with bracket, 14-pin to two DB-9, 255mm, P=2.54
32801-000703-500-RS	SATA (7-pin to 7-pin) cable, 500mm
32200-000017-RS	FDD Cable, 520mm, P=2.54

BP Series Backplane

Selection Guide

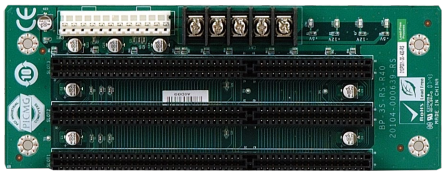
PAC series wall-mount chassis 4U rack-mount chassis

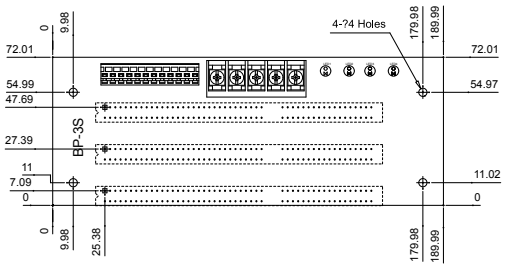
RoHS Ready



Model	BP-3S-RS-R40	BP-4S-RS-R40	BP-5S-RS-R40	BP-6S-RS-R40	BP-7S-RS-R40	BP-8S-RS-R41	BP-10S-RS-R40
Total Slot	3	4	5	6	7	8	10
ISA Slot	3	4	5	6	7	8	10
PSU Type	AT	AT	AT	AT	AT	AT	AT
Chassis	PAC-53GH	PAC-400G PAC-42GH	PR-1500G	PAC-106G PAC-1000G	PAC-700G PAC-1700G	N/A	PAC-125G

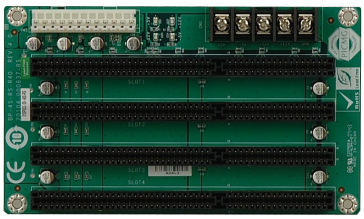
BP-3S-RS-R40

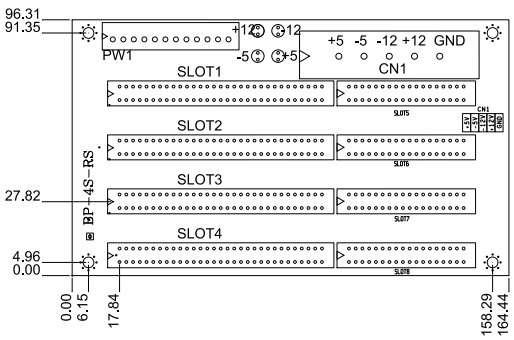




Ordering Information	
BP-3S-RS-R40	3-slot backplane with three ISA slots
PAC-53GH	3-slot half-size compact chassis

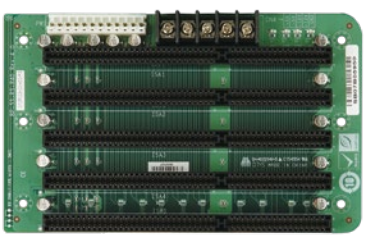
BP-4S-RS-R40

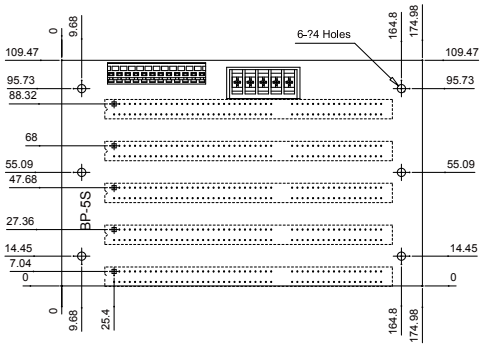




Ordering Information	
BP-4S-RS-R40	4-slot backplane with four ISA slots
PAC-400G	4-slot half-size compact chassis
PAC-42GH	4-slot half-size compact chassis

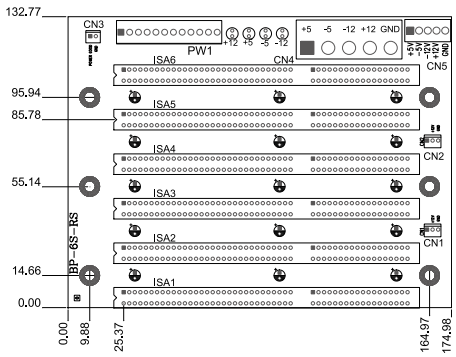
BP-5S-RS-R40





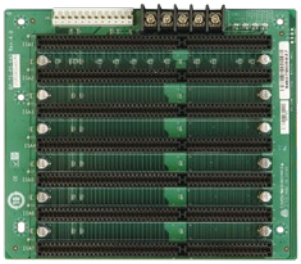
Ordering Information	
BP-5S-RS-R40	5-slot backplane with five ISA slots
PR-1500G	5-slot half-size compact chassis

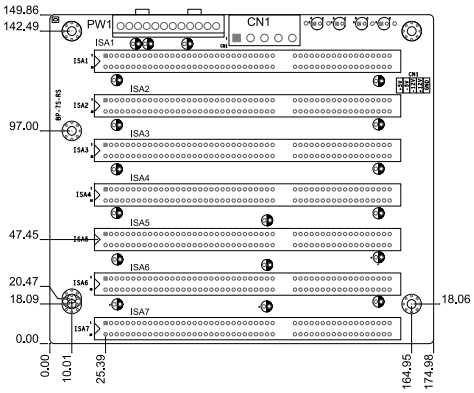
BP-6S-RS-R40



Ordering Information	
BP-6S-RS-R40	6-slot backplane with six ISA slots
PAC-106G	6-slot full-size compact chassis
PAC-1000G	6-slot full-size compact chassis

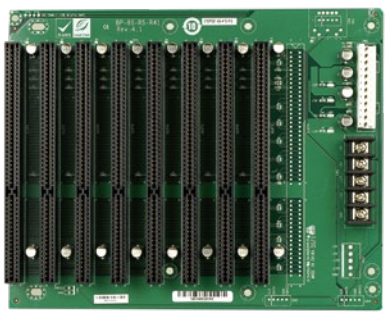
BP-7S-RS-R40

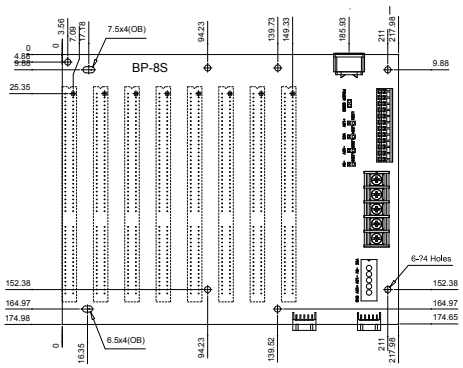




Ordering Information	
BP-7S-RS-R40	7-slot backplane with seven ISA slots
PAC-700G	7-slot half-size compact chassis
PAC-1700G	7-slot full-size compact chassis

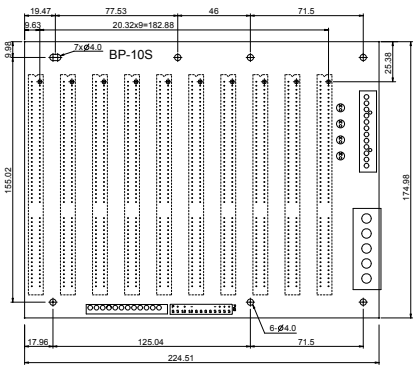
BP-8S-RS-R41





Ordering Information	
BP-8S-RS-R41	8-slot backplane with eight ISA slots

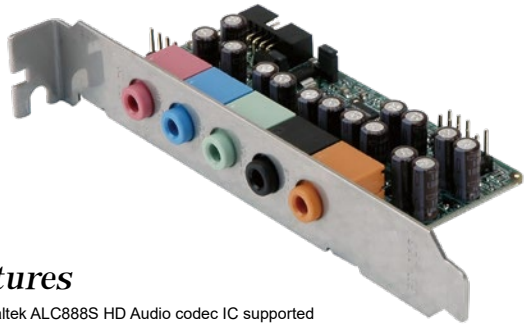
BP-10S-RS-R40



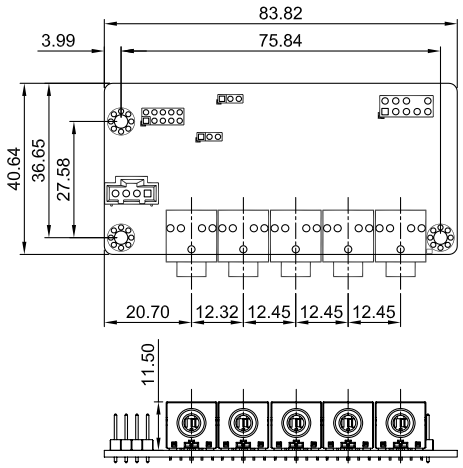
Ordering Information	
BP-10S-RS-R40	10-slot backplane with ten ISA slots
PAC-125G	10-slot full-size compact chassis

AC-KIT-888S

Realtek ALC888S 7.1 Channel HD Audio Peripheral Board, RoHS



Dimensions (Unit: mm)



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

Packing List

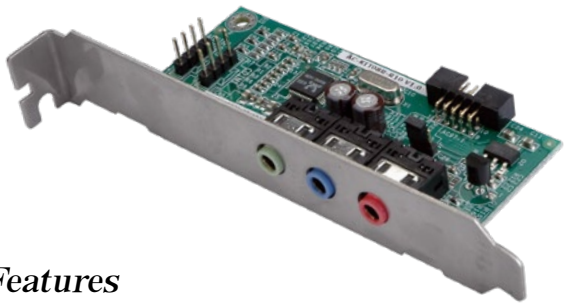
1 x AC-KIT-888S audio peripheral board	
1 x Audio cable	1 x QIG

Ordering Information

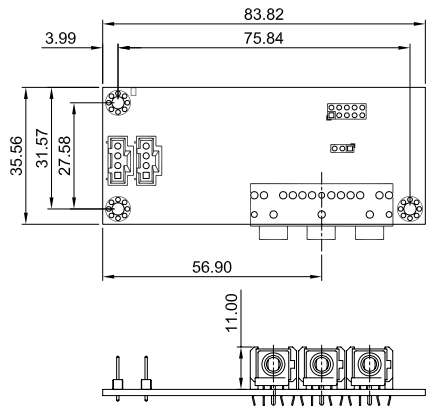
AC-KIT-888S-R10	Realtek ALC888S 7.1 Channel HD Audio peripheral board, RoHS
32107-001100-100-RS	Audio cable with length of 200 mm, 2x5 pin, pitch=2.0 mm

AC-KIT08R

Audio Converter Card via Realtek ALC655 AC'97 5.1-Channel Audio Daughter Board, RoHS



Dimensions (Unit: mm)



Features

- Realtek ALC655 AC'97 audio codec IC supported
- Three audio jacks for microphone, 5.1-channel AC'97 audio input and output
- Full duplex AC'97 2.3 compatible 5.1-channel audio codec designed for PC multimedia system
- Supports double sampling rate (96kHz) of DVD audio playback
- Driver supports Windows® 2000/2003/XP/VISTA/7 (32/64 bits) and Linux (Ubuntu or Debian)
- CE/FCC compliant

Packing List

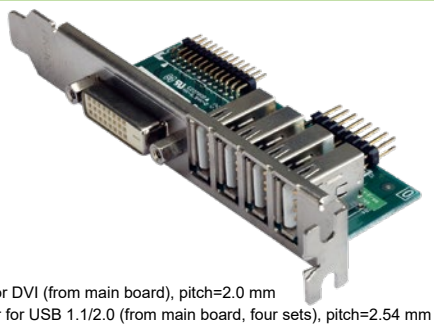
1 x AC-KIT08R audio peripheral board	
1 x Audio cable	1 x QIG

Ordering Information

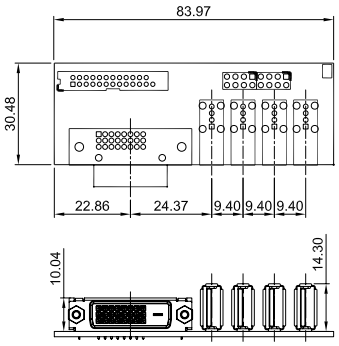
AC-KIT08R-R10	Realtek ALC655 AC'97 5.1-channel audio peripheral board
32107-001100-100-RS	Audio cable with length of 200 mm, 2x5 pin, pitch=2.0 mm

IO-KIT-001-R20

DVI and 4 x USB 1.1/2.0 Translation Daughter Board with Bracket, RoHS



Dimensions (Unit: mm)



Features

- 26-pin header for DVI (from main board), pitch=2.0 mm
- 2 x 8-pin header for USB 1.1/2.0 (from main board, four sets), pitch=2.54 mm
- DVI-D connector on edge
- Four USB 1.1/2.0 connectors on edge
- CE/FCC compliant

Packing List

1 x IO-KIT-001-R20 (DVI and four USB 1.1/2.0 translation daughter board)
1 x DVI cable
1 x USB cable
1 x QIG

Ordering Information

IO-KIT-001-R20	DVI and four USB 1.1/2.0 translation daughter board
32001-009900-100-RS	USB cable with length of 200 mm, 2 x 8-pin, pitch=2.54 mm
32104-000100-100-RS	DVI cable with length of 200 mm, 2 x 13-pin, pitch=2.0 mm