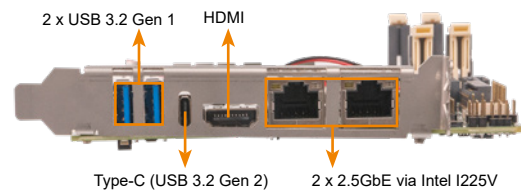
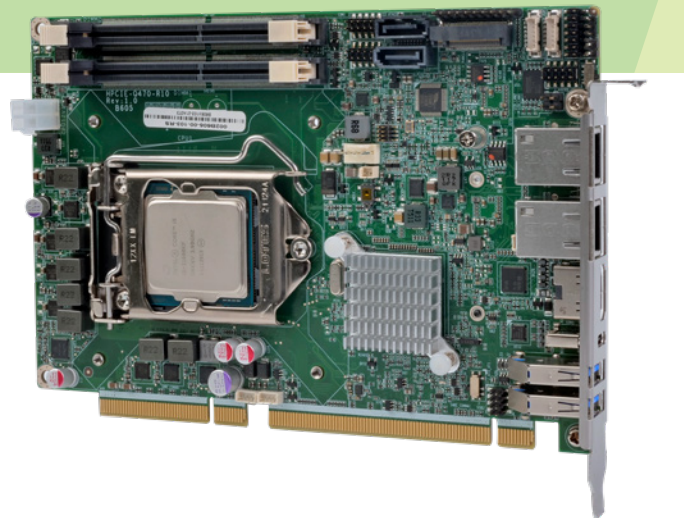
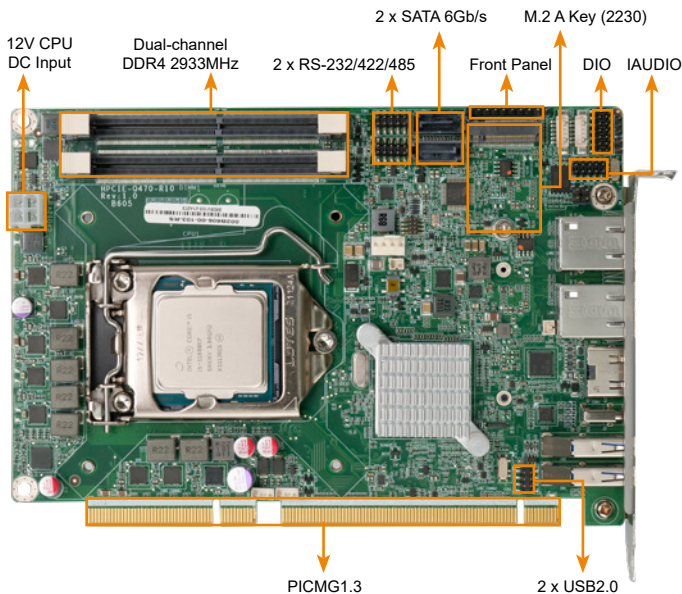


# HPCIE-Q470

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



## Half-size PICMG 1.3



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

## Features



### Support 10th/11th Generation Intel® Processor

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



### Support Intel® I225V 2.5GbE Controller

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



### Support Multiple Interface

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



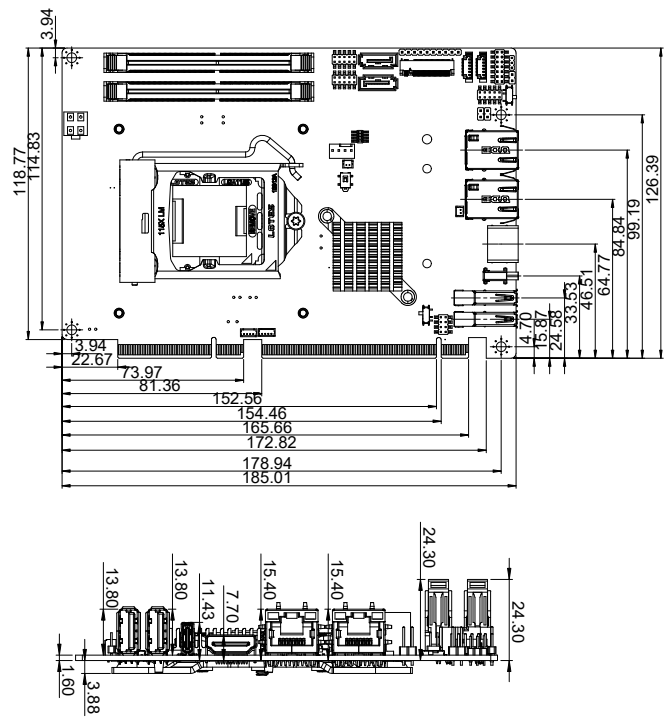
### Multiple Backplane Options

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

## Specifications

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

## Dimensions (Unit: mm)



## Packing List

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

## Ordering Information

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

## Optional Accessories

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

