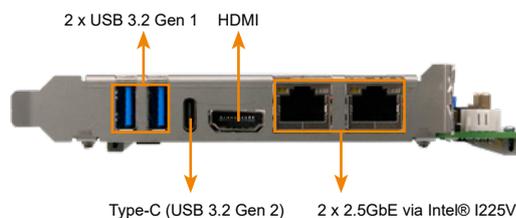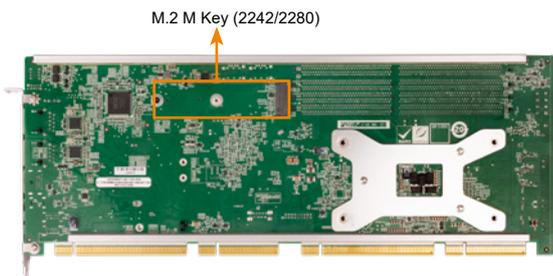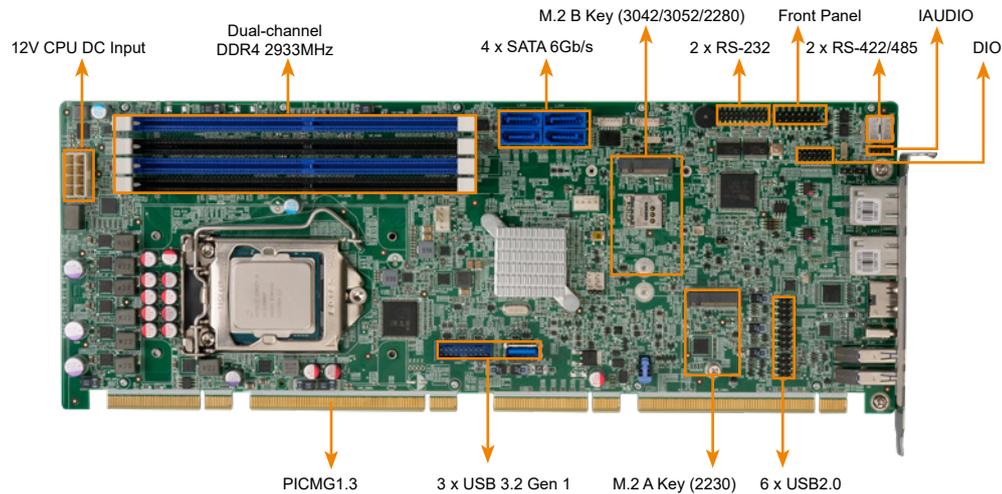# PCIE-Q470

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

- 12V CPU DC Input
- Dual-channel DDR4 2933MHz
- 4 x SATA 6Gb/s
- M.2 B Key (3042/3052/2280)
- 2 x RS-232
- Front Panel
- 2 x RS-422/485
- IAUDIO
- DIO
- PICMG1.3
- 3 x USB 3.2 Gen 1
- M.2 A Key (2230)
- 6 x USB2.0

- M.2 M Key (2242/2280)

- 2 x USB 3.2 Gen 1
- HDMI
- Type-C (USB 3.2 Gen 2)
- 2 x 2.5GbE via Intel® I225V

Icons: DDR4 2933 | HDMI | Type-C USB 3.2 10Gb/s | M.2 | 2.5GbE LAN | SERIAL ATA SATA 6Gb/s

Features

Support 10th/11th Generation Intel® Processor

Support 10th/11th Generation Intel® Core™ i9/i7/i5/i3, Pentium® and Celeron® processor (LGA 1200 slot), unleashing optimal performance, and can handle multiple tasks at the same time.
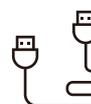
Support Intel® I225V 2.5GbE Controller

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

Support Multiple Interface

Support one PCIe x16 signal via golden finger (support x16 or x8 + x8 or x4 + x4 + x8), four PCIe x1 signal from PCH via golden finger (support1 x4 or four x1), four PCI signal via golden finger, M.2 A key for Bluetooth, Wi-Fi module expansion, M.2 B key for 5G module expansion and M.2 M key for NVMe storage expansion.

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

The motherboard is designed based on the USB 3.2 protocol. One USB Type-C (10Gb/s) and two USB 3.2 Gen 1 (5Gb/s) are provided on the I/O panel, and there are USB 3.2 Gen 1 and USB 2.0 ports onboard for additional wiring options.
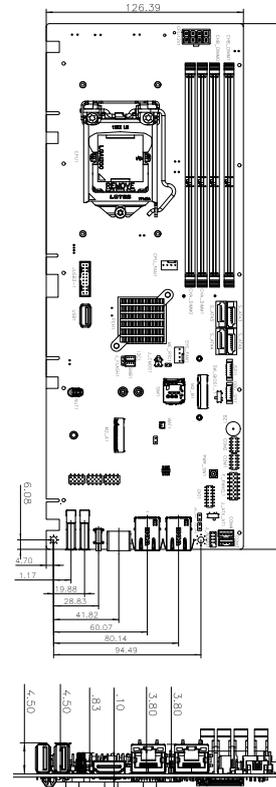
Full-size PICMG 1.3

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

Specifications

◆ **CPU**
LGA1200 10th/11th Gen Intel® Core™ i9/i7/i5/i3, Pentium® and Celeron® processor (support up to 65W)

◆ **Chipset**
Intel® Q470/Q470E

◆ **BIOS**
AMI UEFI BIOS

◆ **Memory**
4 x 288-pin 2933 MHz dual-channel DDR4 DIMMs (system max. 128GB)

◆ **Graphics Engine**
10th Generation CML-S up to Intel® UHD Graphics 630, Intel® HD 9th Generation Display Engine based on 16 low power execution units supporting DX2015, OpenGL 5.X and OpenCL2.x, ES 2.0
11th Generation RKL-S Xe 12th Generation Graphics Architecture, Intel® UHD Graphics 750, supports 12-bit end-to-end,support AV1, VP9, HEVC 12b, HDR10, FP16

◆ **Display Output**
1 x HDMI 1.4 (up to 4096 x 2160@30Hz)

◆ **Ethernet**
LAN1: Intel® I225V 2.5GbE controller (colay with I225-LM)
LAN2: Intel® I225V 2.5GbE controller (colay with I225-LM)

◆ **External I/O Interface**
2 x USB 3.2 Gen 1 (5Gb/s)
1 x USB 3.2 Gen 2 (10Gb/s) by USB Type-C

◆ **Internal I/O Interface**
4 x SATA 6Gb/s (support RAID 0/1/5/10)
6 x USB 2.0 (2x4 pin, P=2.54)
2 x USB 3.2 Gen 1 (5Gb/s) (2x10 pin)
1 x USB 3.2 Gen 1 (Type-A 180°)
2 x RS-232 (2x5 pin, P=2.0)
2 x RS-422/485 (1x4 pin, P=2.54) (RS-485 support AFC)

◆ **SMBus/ I²C**
1 x SMBus (1x4 pin)

◆ **I²C**
1 x I²C (1x4 pin)

◆ **Audio**
1 x IAUDIO, support IEI AC-KIT-888S Audio Module (2x5 pin)

◆ **Front Panel**
1 x Front panel connector (2x7 pin)
Power LED, HDD LED, Power Button, Reset Button

◆ **LAN LED**
2 x LAN LED (1x2 pin)

◆ **Expansion**
1 x PCIe x16 signal via golden finger (support x16, or x8 + x8, or x4 + x4 + x8)
4 x PCIe x1 signal from PCH via golden finger (support1 x4, or 4 x1)
4 x PCI signal via golden finger
1 x M.2 A Key (2230) (with PCIe Gen3 x2/USB 2.0)
1 x M.2 B Key (3042/3052/2242/2280) w/ SIM holder (with PCIe Gen3 x2/USB 2.0)
1 x M.2 M Key (2280/2242) (with PCIe x4)

◆ **Digital I/O**
1 x 12-bit digital I/O (2x7 pin)

◆ **TPM**
Intel® PTT (TPM 2.0)

◆ **Fan Connector**
1 x CPU fan connector (1x4 pin)
1 x System fan connector (1x4 pin)

◆ **Chassis Open**
1 x Chassis intrusion (1x2 pin)

◆ **Power Supply**
ATX/AT power supply
Support AT/ATX mode
ErP/EuP Compliant

◆ **Watchdog Timer**
Software programmable, support 1~255 sec. system reset

◆ **Power Consumption**
3.3V@1.04A, 5V@8.61A, 12V@12.33A
(Intel® Core™ i9-11900K CPU with 4 GB 3200 MHz DDR4 memory)

◆ **Operating Temperature**
0ºC ~ 60ºC

◆ **Storage Temperature**
-30ºC ~ 70ºC

◆ **Operating Humidity:** 5% ~ 95%, non-condensing

◆ **Dimension:** 338 mm x 126 mm

◆ **Weight:** GW:1000g / NW:500g

◆ **Certification:** CE/FCC compliant

Dimensions *(Unit: mm)*

Packing List

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

Ordering Information

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

Optional Accessories

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

CB-USB02-RS	32102-000100-200-RS	32205-002700-200-RS	CF-1150SA-R10
CF-1150SB-R11	CF-1150SC-R20	CF-1150SE-R11	