



MM02-10 Series

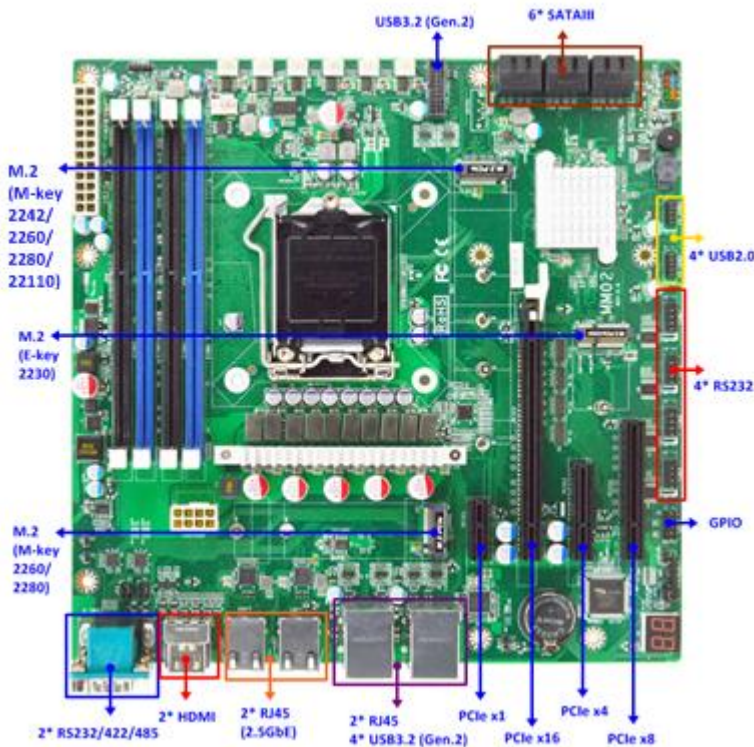
Intel® Comet Lake-S Q470E Chipset, support LGA1200 CPU (Max 95W), DDR4 up to 128GB, 6* SATAIII

1. Intel® LGA1200 Socket supports 10th Gen. Core Processor (Max 95W)
2. Intel® Comet Lake-S Q470E Chip
3. Support 4* DDR4 2933/2666/2400MHz Long-DIMM up to 128GB
4. 1* Intel® i219LM GbE, 1* Intel® i210AT GbE, 2* i225LM 2.5GbE
5. 6* SATA III (6Gb/s) support RAID 0/1/5/10 & 2* M.2 (M-key), 1* M.2 (E-key) supports CNVi, 1* PCIe x16, 1* PCIe x8, 1* PCIe x4, 1* PCIe x1
6. 2* HDMI Output
7. 2* RS232/422/485, 4* RS232
8. 6* USB3.2 (Gen.2), 4* USB2.0
9. ATX Power Input
10. Support TPM2.0 (MM02-12 only)
11. Micro ATX Form Factor (244 * 244 mm)



I/O Diagram

Mechanical Drawings (Unit = mm)



Specifications

Model

- MM02-10
- MM02-12 (TPM2.0)

Processor System

- Intel® LGA1200 Socket supports 10th Gen. Core Processor (Max 95W)
- Intel Q470E chipset
- AMI 128Mb Flash ROM BIOS

Memory

4* Long DIMM DDR4 2933/2666/2400 MHz DRAM up to 128GB

Ethernet

- 1* Intel® i219LM GbE & 1* Intel® i210AT GbE
- 2* Intel® i225LM 2.5GbE

Rear I/O

- 2* HDMI
- 2* RJ45 (GbE)
- 2* RJ45 (2.5GbE)
- 4* USB3.2 (Gen.2)
- 2* COM (support RS232/422/485)

Storage

- 6* SATAIII (6.0Gb/s, support RAID 0/1/5/10)
- 2* M.2 (M-key): 1* 2242/2260/2280/22110 (PCIe x4 interface) support NVMe, 1* 2260/2280 (PCIe x2 interface)

Power

ATX PWR (8+24 pin)

- AT: Directly PWR on as Power input ready
- ATX: Press Button to PWR on after Power input ready

Temperature

- Operating: 0°C ~ 60°C
- Storage: -20°C ~ 85°C
- Humidity: 10% ~ 90% RH @40°C (non-condensing)

Warranty

2 Years Limited Warranty

Form Factor

Micro ATX (244 x 244 mm)

Expansion Slot

- 2* M.2 (M-key): 1* 2242/2260/2280/22110 (PCIe x4 interface) support NVMe, 1* 2260/2280 (PCIe x2 interface)
- 1* M.2 E-key, 2230 (PCIe x1 /USB2.0 interface) support CNVi
- 6* SATAIII support RAID 0/1/5/10
- 1* PCIe x16
- 1* PCIe x8 (share with PCIe x16)
- 1* PCIe x4
- 1* PCIe x1

Graphics

- Intel® HD Graphics, shared memory
- 2* HDMI 1.4 (Max Resolution: 4096x2160@30Hz)
- Support Dual Displays

Audio

N/A

Internal I/O

- 1* USB 3.2 (Gen.2)
- 4* USB 2.0
- 4* COM (RS232)
- 6* SATAIII (support RAID 0/1/5/10)
- 1* M.2 M-key 2242/2260/2280/22110 (PCIe x4 interface) support NVMe
- 1* M.2 M-key 2260/2280 (PCIe x2 interface)
- 1* E-key 2230 (PCIe x1 /USB2.0 interface) support CNVi
- 1* GPIO (8-bit)
- 1* Chassis intrusion
- 1* SMBUS/I2C
- 1* AT mode
- 1* TPM2.0 (MM02-12 only)

Watchdog Timer

- From Super I/O to drag RESETCON#
- 256 segments (10sec ~ 255min)

Compliance

CE, FCC, RoHS, REACH

OS Support

Windows 10, Linux

* Specifications subject to change without notice, not responsible for typographical errors. Does not include HDD or OS.

Accessories

Parts Number	Description	Parts Number	Description
-----	MM02 M/B	F04-MB-0XX-F	MM02 I/O shield