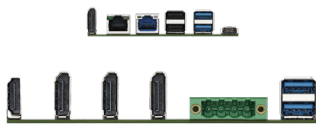
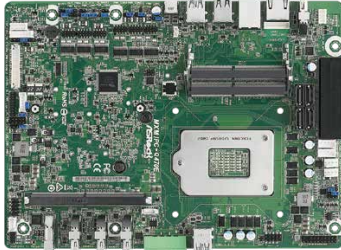


# MXM IPC-Q470E

Proprietary Motherboard



## KEY FEATURES

- Intel® 10th Gen (Comet lake-S) Core™ Processors with Q470E chipset
- 2 x 260-pin SO-DIMM, Support Dual Channel DDR4 2933 (i9/i7 CPU) / 2666 (i5/i3 CPU) / 2400 (Pentium/ Celeron CPU), up to 64GB
- Supports MXM Graphics Card (Type-A or Type-B , Up to 150W)
- 1 x PCIe x4 Gen3, 1 x mini-PCIe
- 4 x USB 3.2 Gen1, 1 x USB 3.2 Gen1 (Type-C), 4 x USB 2.0, 1 x M.2 Key E, 2 x M.2 Key M, 1 x M.2 Key B, 6 x COM, 4 x SATA3
- 1 x Intel 1 Gigabit LAN, 1 x Intel 2.5 Gigabit LAN
- Support Hepta display, 1 x DP 1.2, 1 x VGA, 1 x eDP 1.4 / LVDS (from CPU) and 3 x DP 1.2, 1 x HDMI 2.0a (from MXM)
- TPM 2.0 on Board
- 1 x Intel 1 Gigabit LAN, 1 x Intel 2.5 Gigabit LAN
- Supports Intel® vPro, AMT, RAID 0/1/5/10
- 18~26V DC-In wide range DC input with lockable connector (Max power 300W)

## SPECIFICATIONS

### Form Factor

|            |                   |
|------------|-------------------|
| Dimensions | (7.0-in x 9.6-in) |
|------------|-------------------|

### Processor System

|         |   |
|---------|---|
| CPU     | Intel® 10th Gen (Cometlake-S) Core™ Processors, up to 125 W |
| Chipset | Intel® Q470E  |
| Socket  | LGA1200   |
| BIOS    | AMI SPI 256 Mbit  |

### Memory

|            |   |
|------------|---|
| Technology | Dual Channel DDR4 2933 / 2666 / 2400 MHz<br>- Intel Core i9 / i7 CPUs support DDR4 up to 2933 MHz<br>- Intel Core i5 / i3 CPUs support DDR4 up to 2666 MHz<br>- Intel Pentium/Celeron CPU support DDR4 up to 2400 MHz |
| Capacity   | 64GB (32GB per DIMM)  |
| Socket     | 2 x 260-pin SO-DIMM   |

### Graphics

|              |   |
|--------------|---|
| Controller   | - CPU integrated graphics to support 1 x DP + 1 x VGA + 1 eDP / LVDS (Gen9 Intel® Graphics, Support for DirectX 11/12, OpenCL 2.0)<br>- Add on MXM Graphic Card (Type B) to support 3 x DP + 1 x HDMI<br>- NVIDIA® Quadro series P5000, NVIDIA® GeForce GTX 1050 / 1060 / 1070 / 1080 |
| HDMI         | HDMI 2.0a<br>Max resolution up to 4096 x 2160 @60Hz   |
| DisplayPort  | DisplayPort 1.2 , DP++<br>Max resolution up to 4096 x 2160 @60Hz  |
| VGA          | Max resolution up to 1920 x 1200 @60Hz  |
| LVDS         | Dual channel 24 bit up to 1920 x 1200 @60Hz   |
| eDP          | eDP 1.4 Max resolution up to 4096 x 2304 @60Hz  |
| DVI          | N/A   |
| MultiDisplay | Hepta Display   |

### Expansion Slot

|            |   |
|------------|---|
| PCIe       | 1 x PCIe x4 Gen3  |
| PCI        | N/A   |
| mini-PCIe  | 1 x Full Size with PCIe x1 and USB 2.0  |
| M.2        | 1 x M.2 (Key E, 2230) with PCIe x1, USB 2.0 and CNVi for Wireless and BT<br>1 x M.2 (Key B, 3042 / 3052) with PCIe x1 / USB 3.0 / USB 2.0 and SIM for 4G / 5G |
| SIM Socket | 1x SIM socket connected to M.2 key B  |

### Audio

|           |  |
|-----------|--|
| Interface | Realtek ALC897 HD, High Definition Audio. Line-In / Line-Out / Mic-In<br>3W audio amplifier supported (Realtek ALC122) |
|-----------|--|

### Ethernet

|                   |  |
|-------------------|--|
| Controller/ Speed | LAN1: Intel® I219LM, with 10 / 100 / 1000 Mbps, support AMT / vPro<br>LAN2: Intel® I225LM with 10 / 100 / 1000 / 2500 Mbps |
| Connector         | 2 x RJ-45  |

### Front I/O

|             |                        |
|-------------|------------------------|
| Power In    | Phoenix Contact        |
| HDMI        | 1 x HDMI 2.0a from MXM |
| DisplayPort | 3 x DP 1.2 from MXM    |
| USB         | 2 x USB 3.2 (Gen1)     |
| Audio       | N/A                    |

### Rear I/O

|             |  |
|-------------|--|
| HDMI        | N/A  |
| DisplayPort | 1 x DP 1.2 from CPU  |
| DVI         | N/A  |
| Ethernet    | 1 x 1 Gigabit LAN<br>1 x 2.5 Gigabit LAN                       |
| USB         | 2 x USB 2.0<br>2 x USB 3.2 (Gen1)<br>1 x USB 3.2 (Gen1) Type-C |
| Audio       | N/A  |
| COM         | N/A  |
| PS2         | N/A  |

### Internal Connector

|                 |  |
|-----------------|--|
| USB             | 2 x USB 2.0 (1 x 2.54 pitch header)            |
| COM             | 4 x COM (RS-232), 2 x COM (RS-232 / 422 / 485) |
| Parallel        | N/A  |
| GPIO            | 8 x GPI, 8 x GPO                               |
| TPM             | TPM 2.0 onboard                                |
| LVDS            | 1 (shared with eDP)                            |
| eDP             | 1 (shared with LVDS)                           |
| VGA             | 1  |
| SATA PWR Output | 2  |
| Audio Header    | 1  |
| PS2 Header      | 1  |

### Storage

|       |   |
|-------|---|
| M.2   | 1 x M.2 (Key M, 2242 / 2260 / 2280) with SATA3_2 and PCIe x4 for SSD<br>1 x M.2 (Key M, 2242 / 2260 / 2280) with SATA3 or PCIe x4 for SSD |
| mSATA | N/A   |
| SATA  | 4 x SATA3 (6Gb/s)   |
| RAID  | Intel® SATA RAID 0/1/5/10   |
| eMMC  | N/A   |

### Watchdog Timer

|          |                                    |
|----------|------------------------------------|
| Output   | From Super I/O to drag RESETCON#   |
| Interval | 256 Segments, 0, 1, 2, ..., 255sec |

### Power Requirements

|           |   |
|-----------|---|
| Input PWR | 18~26V DC-In Jack (220W for Quadro P5000, GTX1060/1070, 270W for GTX1080)   |
| Power On  | AT/ATX Supported<br>- AT : Directly PWR on as power input ready<br>- ATX : Press button to PWR on after power input ready |

### Environment

|                    |              |
|--------------------|--------------|
| Operating Temp     | 0°C - 60°C   |
| Storage Temp       | -40°C - 85°C |
| Operating Humidity | 5% - 90%     |
| Storage Humidity   | 5% - 90%     |

## Assured Systems

Assured Systems is a leading technology company with over 1,500 regular clients in 80 countries, deploying over 85,000 systems to a diverse customer base in 12 years of business. We offer high-quality and innovative rugged computing, display, networking and data collection solutions to the embedded, industrial, and digital-out-of-home market sectors.

### US

[sales@assured-systems.com](mailto:sales@assured-systems.com)

Sales: +1 347 719 4508

Support: +1 347 719 4508

1309 Coffeen Ave  
Ste 1200  
Sheridan  
WY 82801  
USA

### EMEA

[sales@assured-systems.com](mailto:sales@assured-systems.com)

Sales: +44 (0)1785 879 050

Support: +44 (0)1785 879 050

Unit A5 Douglas Park  
Stone Business Park  
Stone  
ST15 0YJ  
United Kingdom

VAT Number: 120 9546 28

Business Registration Number: 07699660