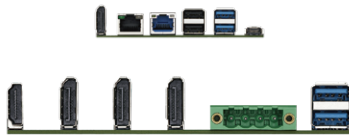
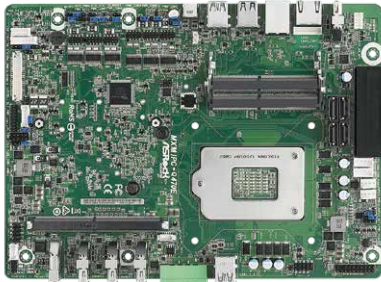


MXM IPC-Q470E

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)
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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 - Intel Core i9 / i7 CPUs support DDR4 up to 2933 MHz - Intel Core i5 / i3 CPUs support DDR4 up to 2666 MHz - 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) - Add on MXM Graphic Card (Type B) to support 3 x DP + 1 x HDMI - NVIDIA® Quadro series P5000, NVIDIA® GeForce GTX 1050 / 1060 / 1070 / 1080
HDMI	HDMI 2.0a Max resolution up to 4096 x 2160 @60Hz
DisplayPort	DisplayPort 1.2 , DP++ 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 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 3W audio amplifier supported (Realtek ALC122)
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Ethernet

Controller/ Speed	LAN1: Intel® I219LM, with 10 / 100 / 1000 Mbps, support AMT / vPro 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 1 x 2.5 Gigabit LAN
USB	2 x USB 2.0 2 x USB 3.2 (Gen1) 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 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 - AT : Directly PWR on as power input ready - 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%