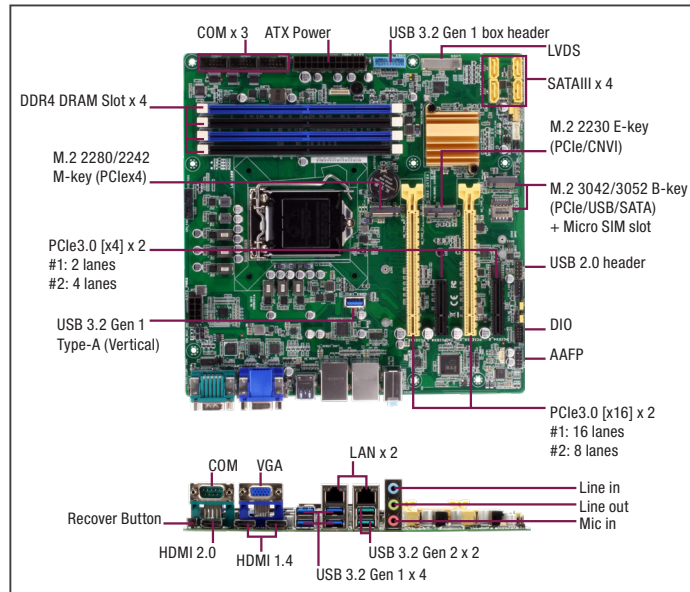


# MAX-Q470A

Micro-ATX Industrial Motherboard with 10th Generation Intel® Core™ Processor, DDR4 DRAM, Multiple Display Ports, Supports iAMT 12.0



## Specifications

System	
Processor	Intel® 10th Generation (Comet Lake-S) Core™ i9 /i7/ i5 /i3, Pentium 14nm LGA 1200 socket Processor, Max. 10 Core 80W
Chipset	Intel® Q470E Express Chipset
Memory	DIMM x 4, DDR4 (2933/2666/2400 MHz, max. 128GB) non-ECC, un-buffered memory Dual channel memory architecture
I/O Chipset	IT5121E + F81216HD
Ethernet	Intel® PHY i219LM Giga LAN (supports Intel® AMT 12.0) x 1 Intel® i211AT Giga LAN x 1, RJ45 x 2
Audio	Realtek® ALC897 6-Channel High Definition Audio CODEC
TPM	Nuvoton NPCT750AADYX TPM2.0 onboard (optional; default: onboard)
Expansion Slots	PCIe 3.0[x16] Slot (16 lanes) (8 lanes when dual use PCIe[x16]) x 1, PCIe 3.0[x16] Slot (8 lanes) x 1, PCIe 3.0[x4] Slot x 1, PCIe 3.0[x4] Slot (2 lanes) x 1, M.2 2230 E-key (PCIe/CNVl) x 1, M.2 2280/2242 M-key (PCIex4) x 1, M.2 3042/3052/2242 B-key (PCIe/USB/SATA) x 1, Micro SIM card Slot x 1
BIOS	256Mbit Flash ROM, AMI BIOS
H/W Monitor	Temperature Monitor on CPU/Chassis, Voltage Monitor on Vcore/5V/3.3V/12V, Fan Monitor on CPU/Chassis
WatchDog Timer	1~255 steps by software program
Smart Fan Control	CPU Fan/ Chassis Fan x 2
Wake On LAN/ PXE	Yes (WOL / PXE)
Power State	S3, S4, S5
Graphics	
Graphics Chipset	Intel® Graphics Media Accelerator
Graphics Multi Display	HDMI+HDMI+VGA, HDMI+HDMI+LVDS, HDMI+VGA+LVDS, HDMI+HDMI+HDMI
VGA	Up to 1920 x 1200 @60Hz (via IT6516B)
DVI	—
HDMI	Up to 4096 x 2160 @ 60 / 30 Hz, with Digital Audio
Display Port	—
LVDS	Up to 1920 x 1200 @ 60 Hz, Dual Channel 18/24 bit
eDP	—
Backlight Control	Yes
Environment & Power & ME	
Battery	Lithium battery
Power Requirement	24-pin ATX connector x 1, 8-pin (2x4) ATX 12V Power connector x 1
Operation Temperature	32°F ~140°F (0°C ~ 60°C)
Storage Temperature	-40°F ~185°F (-40°C ~85°C)
Operation Humidity	0%~90%RH, non-condensing
Certificate	CE & FCC Class A

## Features

- 10th Generation Intel® Core™ LGA1200 Processor
- Supports Power 10 Core 80W max.
- DDR4 2933/2666/2400 MHz, max. 128GB
- Three Independent Displays: HDMI x 3 (2.0 x 1, 1.4 x 2), VGA x 1, LVDS x 1
- Dual Intel® Gigabit Ethernet, LAN1 Supports iAMT 12.0
- USB 3.2 Gen2 x 2, USB 3.2 Gen1 x 7, USB 2.0 x 2
- BIOS recovery function, convenient way to flash BIOS if needed
- TPM Onboard

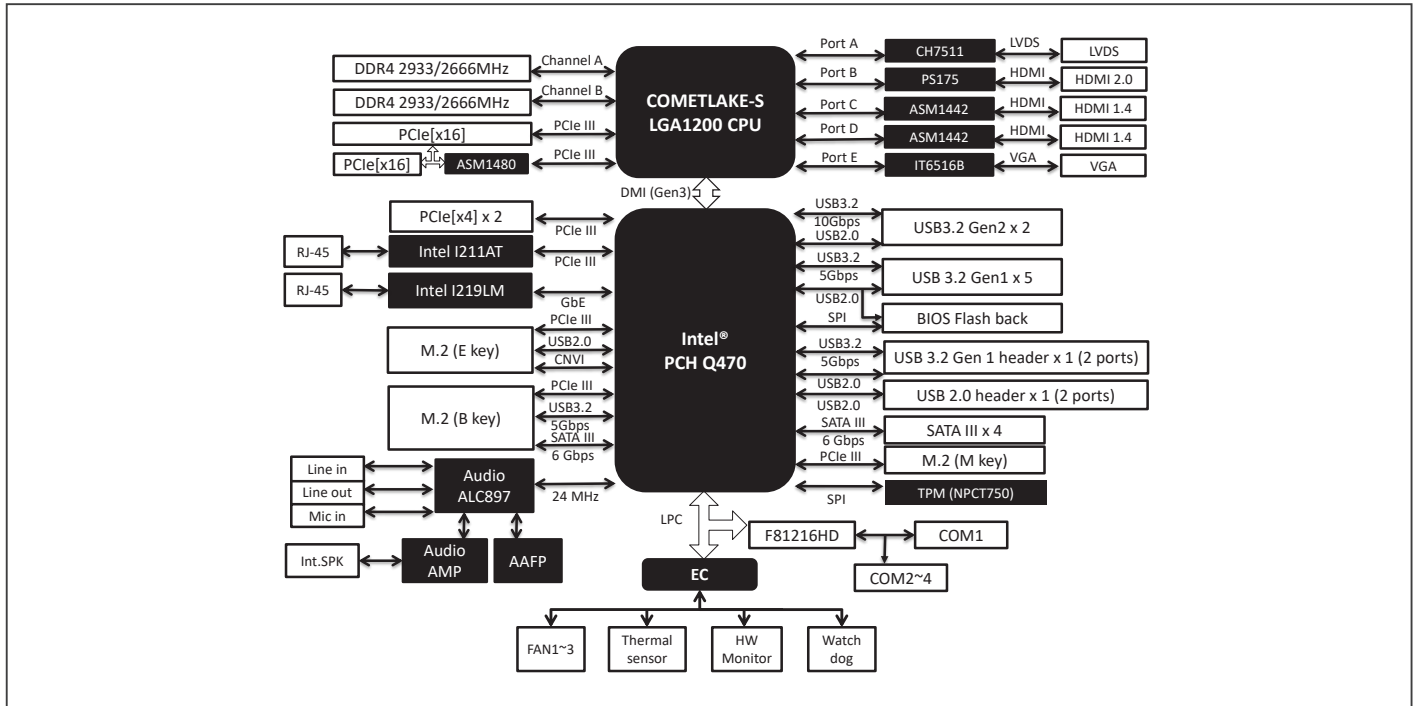


Form Factor	Micro-ATX Form Factor, 9.6"x9.6" (244 mm x 244 mm)
Weight	1.76 lb (0.8 Kg)
MTBF (Hours)	259,360 Hrs
Rear Panel I/O Ports	
USB	USB 3.2 Gen2 ports (10 Gbps) x 2, USB 3.2 Gen1 ports (5 Gbps) x 4
Display I/O	VGA x 1, HDMI x 3 (2.0 x 1, 1.4 x 2)
Audio I/O	Audio Jack x 3: Line-in, Mic-in, Line-out
LAN I/O	LAN (RJ45) ports x 2
Serial Port	DB-9 COM (supports RS-232/422/485, 5V/12V/RI) x 1
PS/2 Port	—
Others	BIOS recovery button
Internal I/O Connectors	
Storage	SATA III (6.0Gb/s) ports x 4, support RAID 0/1/5/10 M.2 2280/2242 M-key (PCIex4) x 1
USB	USB3.2 Gen1 box header support additional 2 USB ports (2x5PIN, p=2.54mm) x 1, USB3.2 Gen1 Type A (vertical) connector x 1, USB 2.0 header support additional 2 USB ports (2x5PIN, p=2.54mm) x 1
Display I/O	40-pin LVDS connector x 1
Audio I/O	speaker header (Line-out) x 1, AAFP x 1
Serial Port	RS-232 headers x 3
PS/2 Port	—
Parallel Port	—
DIO	8-bit Digital I/O interface (In/Out programmable) x 1
FAN	CPU Fan connector(s) (4-pin) x 1, Chassis Fan connector(s) (4-pin) x 2
Power	24-pin EATX Power header x 1 8-pin EATX 12V Power connector x 1
Others	Chassis Intrusion x 1, AT/ATX mode select jumper x 1, Front panel header x 1, Clear CMOS jumper x 1, 3-pin ME lock header x 1, Buzzer on board x 1
OS	
OS Support	Windows® 10 64bit, Linux Ubuntu 64bit (20.04.0/Kernel 5.4)

## Packing List

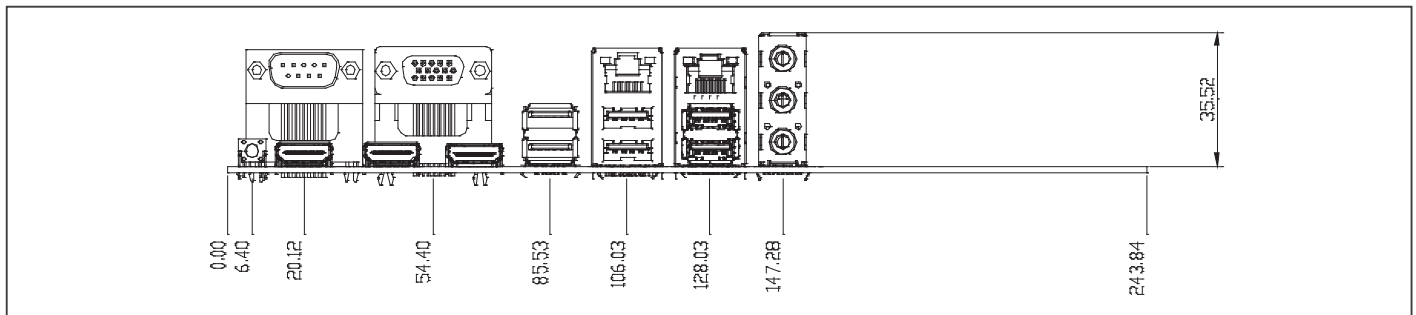
- 14001-00630100 SATA 6G Cable (7P, 180; 90, 500mm 2 in 1)
- 14001-00400100 COM Port Cable (9P, 260mm, p=2.54mm w/bracket)
- I/O Shield
- MAX-Q470A

### Block Diagram



### Dimension

Unit: mm



### Ordering Information

Part number	CPU	RAM	Fan/ Fanless	Display	LVDS	Storage	LAN	USB	RS-232	RS-232/ 422/485	Expansion Slot	Power	TPM	Temp.
MAX-Q470A-A10	LGA 1200 socket	DDR4 2933/2666/2400	Fan	HDMI x 3, VGA x 1, LVDS x 1	1	SATA3 x 4, M.2 2280/2242 M-key (PCIex4) x 1	Intel@GbE x 2	USB 3.2 Gen2 x 2, USB 3.2 Gen1 x 4, USB 3.2 Gen1 box header x 1, USB 3.2 Gen1 (vertical) type A x 1, USB 2.0 header x 1	3	1	PCIe[x16] x 1, PCIe[x16] (8lanes) x 1, PCIe[x4] x 1, PCIe[x4] (2lanes) x 1, M.2 2230 E-key (PCIe/CNVI) x 1, M.2 2280/2242 M-key (PCIex4) x 1, M.2 3042/3052/2242 B-key (PCIe/USB/SATA) x 1, Micro SIM card Slot x 1	ATX	Onboard	32°F ~ 140°F (0°C ~ 60°C)

### Optional Accessories

Part Number	Description
1709100330	USB 2.0 cable (9P, 330MM, p=2.54mm, w/bracket)
170910020K	USB 2.0 cable (9P, 200MM, p=2.54mm, w/o bracket)
1700190450	USB3.2 Gen 1 Cable (19P, 450mm, w/bracket)
AP-FNTH1Q370010	CPU Cooler (2-Ball Bearing, 2U, TDP Max. 100W)