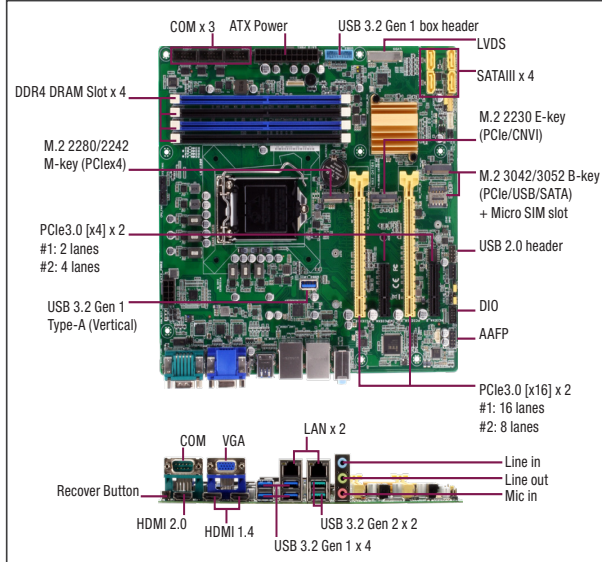


# MAX-Q470A

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

Industrial Motherboards



## 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



## 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)<br>non-ECC, un-buffered memory<br>Dual channel memory architecture                                                                                                                                                               |
| I/O Chipset              | IT5121E + F81216HD                                                                                                                                                                                                                                                               |
| Ethernet                 | Intel® PHY i219LM Giga LAN (supports Intel® AMT 12.0) x 1<br>Intel® i210AT Giga LAN x 1,<br>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,<br>PCIe 3.0[x16] (8 lanes) x 1,<br>PCIe 3.0[x4] Slot x 1,<br>PCIe 3.0[x4] Slot (2 lanes) x 1,<br>M.2 2230 E-key (PCIe/CNV) x 1,<br>M.2 3042/3052/2242 B-key (PCIe/USB/SATA) x 1,<br>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,<br>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                                                                                                                                                                                                                                                                 |

| 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<br>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<br>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, Windows® 11 64bit,<br>Linux Ubuntu 64bit (20.04.0/Kernel 5.4)                                                                                                                |

## Packing List

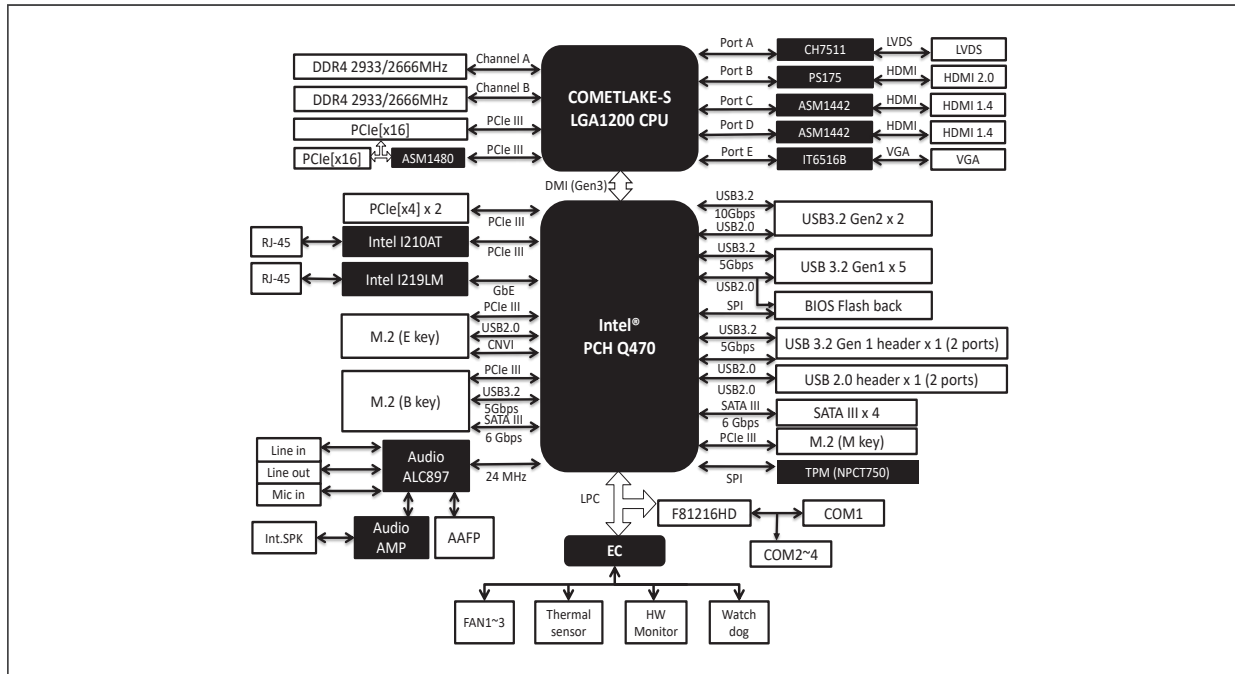
- 14001-00630100 SATA 6G Cable (7P, 180; 90, 500mm 2 in 1)
- 14001-00400100 COM Port Cable (9P, 260mm, p=2.54mm w/bracket)
- I/O Shield
- MAX-Q470A

# MAX-Q470A

09

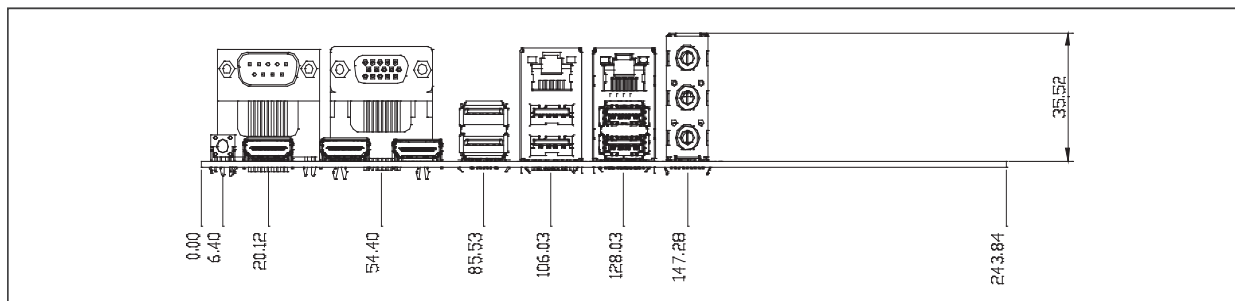
Industrial Motherboards

## Block Diagram



## Dimension

Unit: mm



## Ordering Information

| Part number       | CPU             | RAM                 | Fan/<br>Fanless | Display                     | LVDS | Storage                                     | LAN           | USB                                                                                                                     | RS-232 | RS-232/<br>422/485 | Expansion Slot                                                                                                                                                                                                     | Power | TPM     | Temp.                     |
|-------------------|-----------------|---------------------|-----------------|-----------------------------|------|---------------------------------------------|---------------|-------------------------------------------------------------------------------------------------------------------------|--------|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|---------|---------------------------|
| MAX-Q470A-A11-210 | 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/CNV) 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)   |

## 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