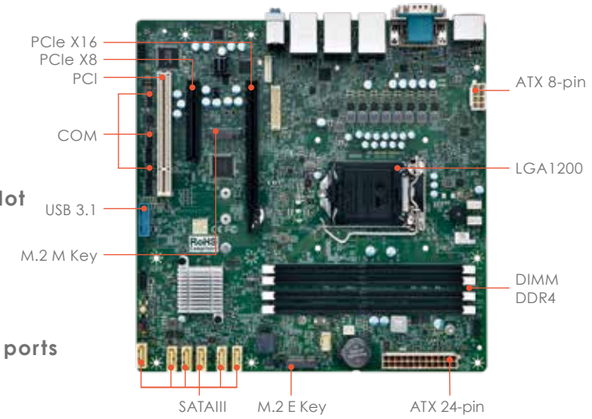
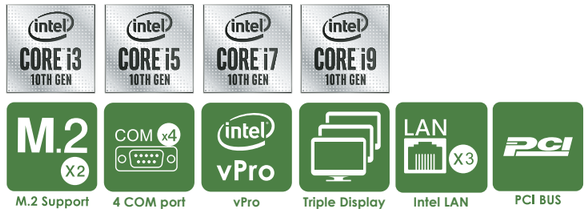
PH10CMU

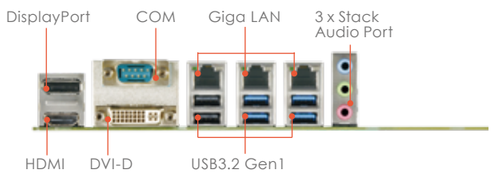
Micro-ATX Form Factor
Intel® Comet Lake Processor with H420E / Q470E / W480E Chipset

Features

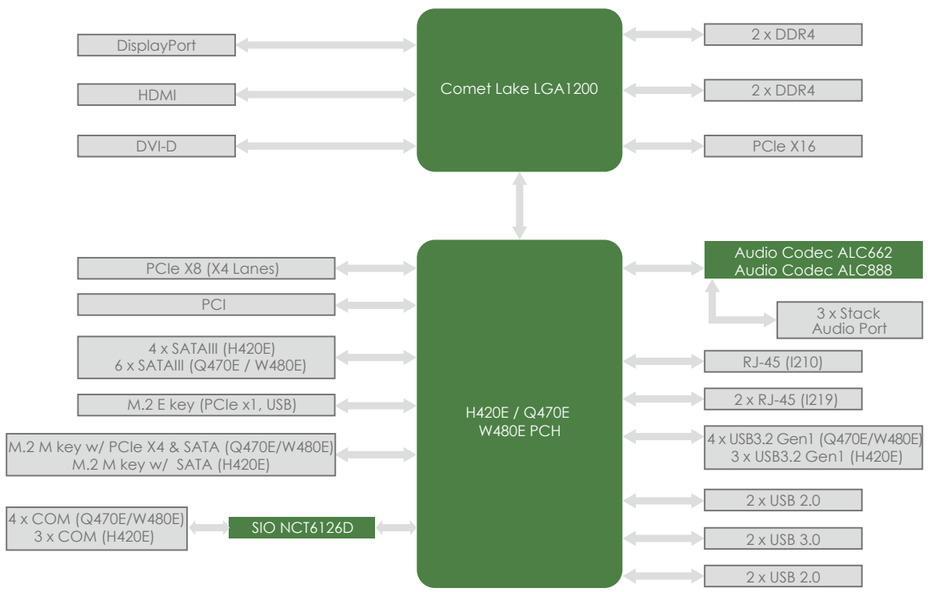
- Up to Intel® Comet Lake 10th Gen i9 125W (10 Cores) LGA1200 processor
- Intel® H420E / Q470E / W480E Chipset
- Intel® vPro technology supported
- 4 x DDR4 DIMM, support up to 64GB
- Support 1 x PCIe X16 slot, 1 x PCIe X8 slot, 1 x PCI slot, 1 x M.2 2280 slot, 1 x M.2 2230 slot
- Support triple display for 1 x DisplayPort, 1 x HDMI and 1 x DVI
- Up to 6 x SATAIII (support RAID 0, 1, 5, 10)
- Up to 3 x Intel® Gigabit Ethernet
- Up to 6 x USB 3.2 Gen1, 4 x USB 2.0, 4 x COM ports
- ATX power input







Block Diagram



Industrial Motherboard

PH10CMU Micro ATX

MITAC COMPUTING TECHNOLOGY CORP.

MECHANICAL	
Form Factor	Micro-ATX 9.6" x 9.6" (244mm x 244mm)
SYSTEM	
Processor	10th Gen Intel® Comet Lake LGA1200 Socket Processor, Core i9/i7/i5/i3 up to 10-core TDP Max. 125W
Chipset	Intel® Q470E / W480E (Support RAID 0 / 1 / 5 / 10), H420E
Memory	DDR4 2933MHz, Max. 64 GB (Non-ECC: H420E / Q470E, ECC: W480E), 4 x 288-pin U-DIMM
Graphics	Intel® HD Graphics
Ethernet	Intel® I219-LM Giga LAN + Intel® I210-AT Giga LAN + Intel® I210-AT Giga LAN (optional)
Audio	Realtek® ALC662 / ALC888
I/O Chipset	Nuvoton NCT6126D(eSPI)
TPM	TPM Header (support TPM module board NPCT750)
Expansion Slot	PCIe 3.0 X16 slot PCIe x16 support 3 options of PCIe switch: #1: 1 x PCIe X16, #2: 2 x PCIe X8, #3: 1 x PCIe X8 + 2 x PCIe X4 PCIe 2.0 X8 slot (X4 Lanes), PCIe x4 lanes is switched with M.2 2242/2260/2280 slot, PCI slot M.2 2242 / 2260 / 2280 M key (PCIe x4 ,SATA), M.2 2280 for H420E support SATA only M.2 2230 E key (PCIe x1, USB2.0, CNVi)
BIOS	256 Mbit SPI
H / W Monitor	Temperature Monitor, Voltage Monitor, Fan Monitor
Watchdog Timer	1~255 Steps by Software Program
Smart Fan Control	CPU Fan / System Fan
GRAPHICS	
VGA	—
DVI	Up to 1920 x 1200 @60 Hz
HDMI	Up to 4K (4096 x 2160) @30 Hz
DisplayPort	Up to 4K (4096 x 2304) @60 Hz
LVDS	—
eDP (Option)	Up to 4K (4096 x 2304) @60 Hz
REAR I/O	
USB	2 x USB 2.0 / 4 x USB 3.2 Gen1 (Q470E / W480E) / 3 x USB 3.2 Gen1 (H420E)
Display I/O	1 x HDMI 1.4 / 1 x DisplayPort 1.2 / 1 x DVI-I
Audio I/O	1 x 3-stack Audio Jack (Mic-in, Line-in, and Line-out)
LAN I/O	3 x RJ-45 (1 x Optional)
Serial Port	1 x RS232
PS/2 Port	—
Others	—
INTERNAL CONNECTORS	
Storage	6 x SATAIII (Q470E / W480E) / 4 x SATAIII (H420E)
USB	2 x USB 3.2 Gen1 2 x USB 2.0
Display I/O	1 x Backlight Connector / 1 x eDP
Audio I/O	—
Serial Port	2 x RS232 / 1 x RS232 / 422 / 485
PS/2 Port	—
Parallel Port	—
GPIO	1 x MiAPI Header (Programmable, Support 10-bit GPIO)
Fan	1 x 4-pin CPU Fan Connector, 1x 4-pin System Fan Connector
Power	1 x 8-pin ATX Power Connector, 1 x 24-pin ATX Power Connector, 1 x AT / ATX Mode Select Jumper
Others	1 x Front Audio Header (Mic-in & Line-out), 1 x Chassis Intrusion, 1 x CMOS Jumper
POWER REQUIREMENT	
Power Input	ATX Power 8-pin + ATX Power 24-pin
ENVIRONMENTAL	
Operating Temperature	0 ~ 60°C (32 ~140°F)
Storage Temperature	-20 ~ 70°C (-4 ~158°F)
Operating Humidity	10% ~ 95% R/H, non-condensing
Certification	CE & FCC Class A (Class B by request for customization SKU)
OS	
OS Support	Windows® 10 64-bit Linux (support by request)

Ordering Information

Model Number	Chipset	PCIe X16/ X8/ PCI	M.2 2280 / 2230	LAN	SATA	DisplayPort/ HDMI DVI-D/ DVI-I	eDP	USB 3.1/ 2.0	COM	Power
PH10CMU-H420E	Intel® H420E	1 / 0 / 0	1 / 1	2	4	1 / 1 / 1 / 0	0	5 / 4	3	ATX Power (24-pin + 8-pin)
PH10CMU-Q470	Intel® Q470E	1 / 1 / 0	1 / 1	2	6	1 / 1 / 1 / 0	0	6 / 4	3	ATX Power (24-pin + 8-pin)
PH10CMU-Q470-3LAN	Intel® Q470E	1 / 1 / 1	1 / 1	3	6	1 / 1 / 0 / 1	1	6 / 4	4	ATX Power (24-pin + 8-pin)
PH10CMU-W480-3LAN	Intel® W480E	1 / 1 / 1	1 / 1	3	6	1 / 1 / 0 / 1	1	6 / 4	4	ATX Power (24-pin + 8-pin)

Packing List

Packing		
• 1 x Motherboard	• 1 x 50cm SATA Cable	• 1 x I/O Bracket

*Stückliste kann variieren. Sollten Sie Interesse an einer fixen Version haben, sprechen Sie uns an.
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