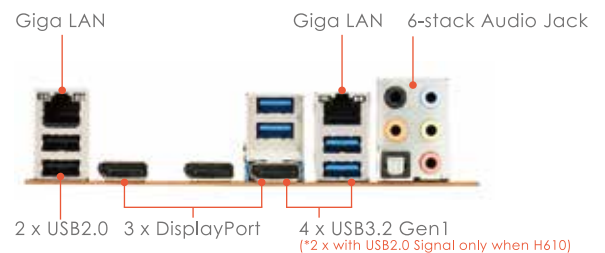
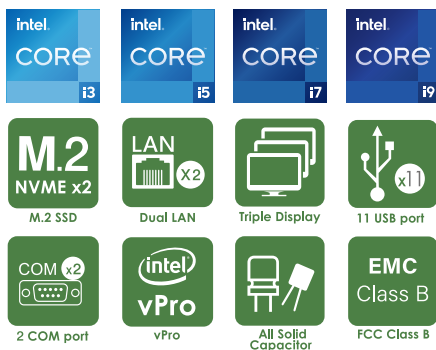


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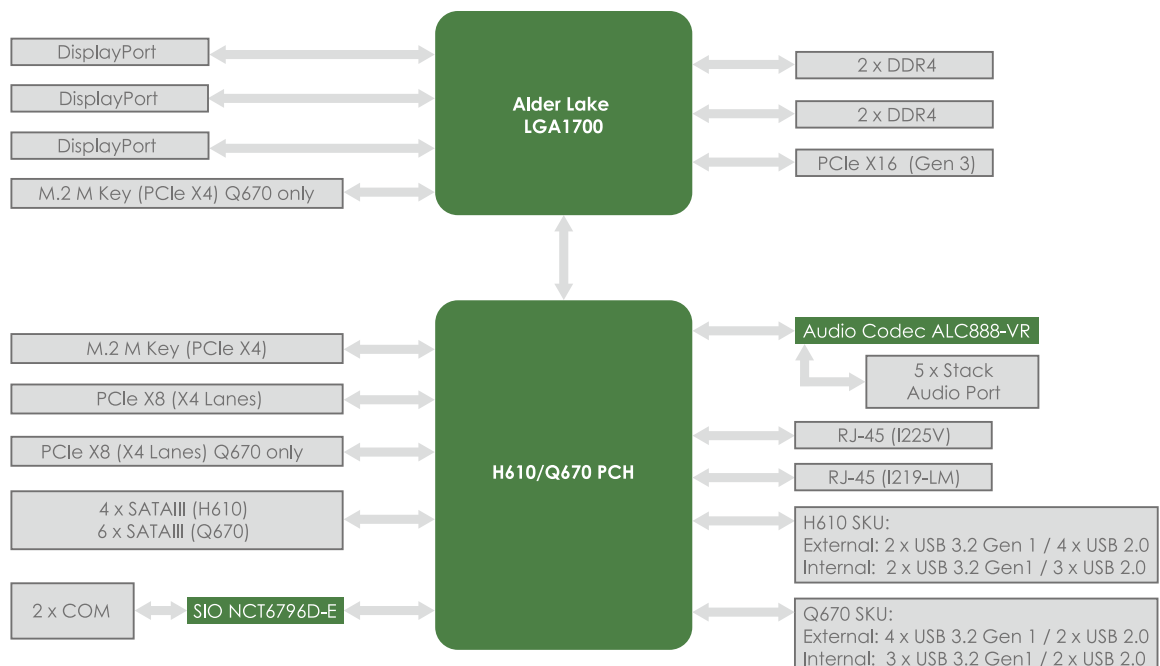
Micro-ATX Form Factor
**Intel® Raptor Lake-S Refresh 14th/Raptor Lake-S 13th/
 Alder Lake-S 12th Processor**

Features

- Intel® Raptor Lake-S Refresh 14th/Raptor Lake-S 13th/
Alder Lake-S 12th i9/i7/i5/i3 125W processor
- Intel® Q670 Chipset
- Intel® vPro technology support (Q670)
- 4x DDR4 U-DIMM up to 128GB
- 1 x PCIe X16 slot, 2 x PCIe X8 slot (x4 Lanes),
2 x M.2 2280/2210 M-key (NVME)
- Support triple display for 3 x DisplayPort
- Up to 6 x SATAIII (support RAID 0, 1, 5, 10)
- Up to 2 x Intel® Gigabit Ethernet
- Up to 7 x USB 3.2 Gen1, 4 x USB 2.0,
2 x COM ports
- ATX power input



Block Diagram



PH10ADU Micro ATX

ECHANICAL	
Form Factor	Micro-ATX: 9.6" x 9.6" (244 mm x 244 mm)
SYSTEM	
Processor	14th/13th/12th Gen Intel® Raptor Lake-S Refresh/ Raptor Lake-S/ Alder Lake-S LGA1700 Socket Processor / Core i9/i7/i5/i3 Processor / TDP 125W
Chipset	Intel® Q670 / H610
Memory	4 x 288-pin U-DIMM / DDR4 3200 MHz/ Max. 128 GB (Non-ECC)
Graphics	Intel® UHD Graphics 770
Ethernet	Intel® I219-LM Giga LAN + Intel® I225V 2.5 Giga LAN
Audio	Realtek® ALC888-VR
I/O Chipset	Nuvoton NCT6796D-E
TPM	TPM Header / (support optional TPM module board NPCT750)
Expansion Slot	For Q670: PCIe 3.0 X16 slot 2 x PCIe 3.0 X8 slot (X4 Lanes) M.2 2280 / 22110 M key (PCIe X4 ,SATA) M.2 2280 / 22110 M key (PCIe X2, SATA) For H610: PCIe 3.0 X16 slot 1 x PCIe 3.0 X8 slot (X4 Lanes) M.2 2280 / 22110 M key (PCIe X2)
BIOS	AMI 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	—
HDMI	—
DisplayPort	Up to 4K (4096 x 2304) @60 Hz
LVDS	—
eDP (Option)	—
REAR I/O	
USB	4 x USB 3.2 Gen 1 (2 x with USB2.0 Signal only when H610) 2 x USB 2.0
Display I/O	3 x DisplayPort 1.2
Audio I/O	1 x 6-stack Audio Jack
LAN I/O	2 x RJ-45
Serial Port	—
PS/2 Port	—
Others	—
INTERNAL CONNECTORS	
Storage	6 x SATAIII (4 x SATAIII when H610)
USB	2 x USB 2.0/ 2 x USB 3.2 Gen1/ 1 x USB 3.2 Gen1 Type A connector (This Type A connector is with USB2.0 Signal only when H610)
Display I/O	—
Audio I/O	1 x Front Audio
Serial Port	2 x RS232
PS/2 Port	—
Parallel Port	—
GPIO	—
Fan	1 x 4-pin CPU Fan Header / 3 x 4-pin system Fan Header
Power	1 x 8-pin ATX Power Connector/ 1 x 24-pin ATX Power Connector
Others	1 x CMOS Jumper/ 1 x FIO header/ 1 x SPI TPM header
POWER REQUIREMENT	
Power Input	ATX 8-pin + ATX 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 B
OS	
OS Support	Linux (support by request) / Ubuntu 20.04 / Windows® 10 64-bit / Windows® 11 64bit,

Ordering Information

Model Number	Chipset	PCIe x16 /PCIe x8	M.2 22110	LAN	SATA	DP	USB 3.1 /2.0	COM Port	Power
PH10ADU-H610	Intel® H610	1/1	1	2	4	3	7/4	2	ATX Power (24-pin + 8-pin)
PH10ADU-Q670	Intel® Q670	1/2	2	2	6	3	4/7	2	ATX Power (24-pin + 8-pin)

Packing List

Packing

● 1 x 50 cm SATA Cable

● 1 x I/O Bracket

● 1 x Motherboard