



KEY FEATURES

- Intel® 14th/13th/12th Gen (Raptor Lake-S Refresh/Raptor Lake-S/Alder Lake-S) Core™ Processors with H610 chipset
- 2 x 288-pin Long-DIMM DDR5 4800/5600 MHz, up to 96GB (48 GB per DIMM)
- 1 x PCIe x16 (Gen5), 1 x PCIe x4 (Gen3), 2 x PCIe x1 (Gen3), 4 x USB 3.2 Gen1, 6 x USB 2.0, 1 x M.2 Key E, 1 x M.2 Key M, 6 x COM, 4 x SATA3
- 2 x Intel 1 Gigabit LAN
- Supports Triple display, 1 x HDMI 2.0b, 1 x HDMI 1.4b, 1 x DP 1.4a, 1 x LVDS or eDP
- TPM 2.0 onboard IC
- ATX PWR (8+24 Pin)

SPECIFICATIONS

Form Factor

Dimensions	Micro-ATX (9.6-in x 9.6-in x 1.56-in, 24.4 cm x 24.4 cm x 3.97 cm)
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Processor System

CPU	Intel® 14th/13th/12th Gen (Raptor Lake-S Refresh/ Raptor Lake-S/Alder Lake-S) Core™ Processors, up to 65W
Chipset	Intel® H610
Socket	LGA 1700
BIOS	AMI SPI 256 Mbit

Memory

Technology	Dual Channel DDR5 4800/5600 MHz* * Actual memory frequency depends on the CPU types and DRAM modules, for more information refer to https://www.asrockind.com/en-gb/index.php?route=newsblog/faq&faq_id=90 technical FAQ.
Capacity	96GB (48GB per DIMM)
Socket	2 x 288-pin Long-DIMM

Graphics

Controller	Intel® UHD Graphics
HDMI	HDMI 1.4b: Max resolution up to 4096 x 2160@30Hz HDMI 2.0b: Max resolution up to 4096 x 2160@60Hz
DisplayPort	DisplayPort 1.4a, DP++ Max resolution up to 4096x2160@60Hz
LVDS	Dual channel 24 bit up to 1920 x 1200@60Hz (Connector shared with eDP)
eDP	Max resolution up to 1920 x 1080@60Hz (Connector shared with LVDS)
MultiDisplay	Triple Display

Expansion Slot

PCIe	1 x PCIe x16 (Gen5) 1 x PCIe x4 (Gen3) 2 x PCIe x1 (Gen3)
M.2	1 x M.2 (Key E, 2230) with CNVi for Wireless

Audio

Interface	Realtek ALC662 HD, High Definition Audio. Line-In, Line-Out, Mic-In
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Ethernet

Controller/ Speed	LAN1: Intel® I210AT with 10/100/1000 Mbps (Optional: supports PoE) LAN2: Intel® I219V with 10/100/1000 Mbps
Connector	2 x RJ-45

Rear I/O

HDMI	1 x HDMI 2.0b 1 x HDMI 1.4b
DisplayPort	1 x DP++
Ethernet	2 x 1 Gigabit LAN
USB	4 x USB 3.2 Gen1 2 x USB 2.0
Audio	3 (Line-In/Line-Out/Mic-In)
Serial Port	COM1 (RS-232/422/485), COM2 (RS-232)

Internal Connector

USB	4 x USB 2.0 (1 x 2.54 pitch header, 2 x USB 2.0 Type-A vertical con)
COM	COM3, COM4, COM5, COM6 (RS-232)
Parallel	1 (shared with GPIO)
GPIO	8 x GPI, 8 x GPO (shared with LPT header)
LVDS	1 (Connector with LVDS/eDP signal, switch by BIOS)
Speaker Header	1
PS/2	1 x PS/2 header
Thunderbolt header	1

Storage

M.2	1 x M.2 (Key M, 2242/2280/25110) with PCIe x 1 for SSD
SATA	4 x SATA3

Security

TPM	TPM 2.0 onboard IC
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Watchdog Timer

Output	From Super I/O to drag RESETCON#
Interval	256 Segments, 0, 1, 2, ...255sec

Power Requirements

Input PWR	ATX PWR (24+8-pin)
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 ~ 70°C
Storage Temp	-40°C ~ 85°C
Operating Humidity	5% ~ 90%
Storage Humidity	5% ~ 90%

BLOCK DIAGRAM

