



KEY FEATURES

- Intel® Core™ Ultra Series 2 processors (Arrow Lake-S) with Q870 chipset
- 2 x 262-pin CSO-DIMM DDR5 6400 MHz, SO-DIMM DDR5 5600 MHz, up to 128GB (64GB per DIMM)
- 1 x PCIe x16 (Gen5), 1 x USB4/Thunderbolt™4, 4 x USB 3.2 Gen2, 2 x USB 3.2 Gen1, 4 x USB 2.0, 1 x M.2 Key E, 2 x M.2 Key M, 1 x M.2 Key B, 2 x COM, 2 x SATA3
- 1 Intel® 1 Gigabit LAN, 1 x Intel® 2.5 Gigabit LAN
- Supports Quad display, 2 x HDMI 2.1, 1 x DP 2.1 (1 from Type-C), 1 x DP 1.4a, 1 x LVDS or eDP
- TPM 2.0 onboard IC
- Supports Intel® vPro, VMD RAID 0/1
- 12~28V DC-In (Lockable DC Jack)/ 12V DC-In only (BOM option)

SPECIFICATIONS

Form Factor

Dimensions	Mini-ITX (6.7-in x 6.7-in x 1.03-in, 17.0 cm x 17.0 cm x 2.6 cm)
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Processor System

CPU	Intel® Core™ Ultra Series 2 processors (Arrow Lake-S), up to 65W
Chipset	Q870
Socket	LGA1851
BIOS	AMI SPI 256 Mbit

Memory

Technology	Dual Channel DDR5 5600/6400 MHz
Capacity	128GB (64GB per DIMM)
Socket	2 x 262-pin SO-DIMM

Graphics

Controller	Intel® X® LPG Graphics
HDMI	HDMI 2.1 Max resolution up to 7680x4320@60Hz
DisplayPort	DisplayPort 2.1/1.4a, 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	Quad display (Included 1 output from Type-C)

Expansion Slot

PCIe	1 x PCIe x16 (Gen5, support riser card x8/x8, x8/x4/x4)
M.2	1 x M.2 (Key E, 2230) with PCIe Gen4 x1, USB 2.0 and CNVi for Wireless 1 x M.2 (Key B, 3042/3052) with PCIe Gen4 x1, USB 3.2 Gen1, and USB 2.0

Audio

Interface	Realtek® ALC897 HD, High Definition Audio. Line-out, Mic-in
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Ethernet

Controller/ Speed	LAN1: Intel® I219LM with 10/100/1000 Mbps, supports vPro LAN2: Intel® I226V with 10/100/1000/2500 Mbps
Connector	2 x RJ-45

Rear I/O

HDMI	2 x HDMI 2.1
DisplayPort	1 x DP 1.4a++
Ethernet	1 x 1 Gigabit LAN 1 x 2.5 Gigabit LAN
USB	4 x USB 3.2 Gen2 1 x USB4/Thunderbolt™4 (5V/3A, supports DP 2.1 display output) * For Thunderbolt support, please refer to support list.
Audio	2 (Line-out, Mic-in or Line-out, Line-in (BOM option))
DC Jack	1 DC-in

Internal Connector

USB	2 x USB 3.2 Gen1 (1 x USB 3.2 wafer) 4 x USB 2.0 (2 x 2.54 pitch header)
COM	COM1, COM3 (RS-232/422/485)
GPIO	4 x GPI, 4 x GPO
LVDS	1 (Connector with LVDS/eDP signal, switch by BIOS)
SATA PWR Output	1
Speaker Header	1

Storage

M.2	1 x M.2 (Key M, 2242/2280) with PCIe Gen4 x4 and SATA3 and USB 2.0 for SSD 1 x M.2 (Key M, 2242) with PCIe Gen4 x4 and SATA3 for SSD* *Recommend using M2X4-SATA-4P module to support extra 4 SATA ports (Support by special BIOS)
SATA	2 x SATA3 (6Gb/s)
RAID	Intel® VMD RAID 0/1 **supported by identical interface (PCIe or SATA) PCIe interface: M.2 Key B+ M.2 Key M, 2 x M.2 Key M SATA interface: 2 x SATA port

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	12~28V DC-In with 4-pin wafer PWR cable or DC Jack (Screw type) 12V DC-In only (BOM option)
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	-20°C ~ 70°C
Storage Temp	-40°C ~ 85°C
Operating Humidity	5% ~ 90% (non-condensing)
Storage Humidity	5% ~ 90% (non-condensing)

BLOCK DIAGRAM



