



### KEY FEATURES

- Intel® Core™ processors (Arrow Lake-S) with Q870 chipset
- 4 x 288-pin CU-DIMM DDR5 6400 MHz, U-DIMM DDR5 5600 MHz, up to 192GB (48GB per DIMM)
- 1 x PCIe x16 (Gen5), 1 x PCIe x8 (Gen5), 2 x PCIe x4 (Gen4), 2 x PCIe x1 (Gen4), 2 x USB4/Thunderbolt™4, 6 x USB 3.2 Gen2, 4 x USB 3.2 Gen1, 1 x M.2 Key B, 1 x M.2 Key E, 2 x M.2 Key M, 6 x COM, 4 x SATA3
- 2 x Intel 1 Gigabit LAN
- Supports Quad display, 2 x HDMI 2.1 TMDS, 2 x DP 2.1 (2 from Type-C), 1 x DP 1.4a
- TPM 2.0 onboard IC
- Supports Intel® vPro, VMD RAID 0/1/5/10
- ATX PWR (8+8+24 Pin)

### SPECIFICATIONS

#### Form Factor

|            |                                                             |
|------------|-------------------------------------------------------------|
| Dimensions | ATX (12-in x 9.6-in x 1.81-in, 30.5 cm x 24.4 cm x 4.61 cm) |
|------------|-------------------------------------------------------------|

#### Processor System

|         |                                                    |
|---------|----------------------------------------------------|
| CPU     | Intel® Core™ processors (Arrow Lake-S), up to 125W |
| Chipset | Q870                                               |
| Socket  | LGA1851                                            |
| BIOS    | AMI SPI 256 Mbit                                   |

#### Memory

|            |                                 |
|------------|---------------------------------|
| Technology | Dual Channel DDR5 6400/5600 MHz |
| Capacity   | 192GB (48GB per DIMM)           |
| Socket     | 4 x 288-pin Long-DIMM           |

#### Graphics

|              |                                                                   |
|--------------|-------------------------------------------------------------------|
| Controller   | Intel® X® LPG Graphics                                            |
| HDMI         | HDMI 2.1 TMDS<br>Max resolution up to 7680x4320@60Hz              |
| DisplayPort  | DisplayPort 2.1/1.4a, DP++<br>Max resolution up to 4096x2160@60Hz |
| MultiDisplay | Quad display (Included 2 output from Type-C)                      |

#### Expansion Slot

|      |                                                                                                                                                                         |
|------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| PCIe | 2 x PCIe Gen5 Slots (PCIe1/PCIe5: single at x16 (PCIe1); dual at x8 (PCIe1) / x8 (PCIe5)) (PCIe1: Support Riser card x8/x8)<br>2 x PCIe x4 (Gen4)<br>2 x PCIe x1 (Gen4) |
| M.2  | 1 x M.2 (Key E, 2230) with PCIe Gen4 x1, USB 2.0 and CNVi for Wireless<br>1 x M.2 (Key B, 3042/3052) with PCIe Gen4 x1, USB 2.0                                         |

#### Audio

|           |                                                                     |
|-----------|---------------------------------------------------------------------|
| Interface | Realtek ALC897 HD, High Definition Audio. Line-In, Line-Out, Mic-In |
|-----------|---------------------------------------------------------------------|

#### Ethernet

|                   |                                                                                                       |
|-------------------|-------------------------------------------------------------------------------------------------------|
| Controller/ Speed | LAN1: Intel® I219LM with 10/100/1000 Mbps, supports vPro<br>LAN2: Intel® I210AT with 10/100/1000 Mbps |
| Connector         | 2 x RJ-45                                                                                             |

#### Rear I/O

|             |                                                                                                                                                |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------------|
| HDMI        | 2 x HDMI 2.1 TMDS                                                                                                                              |
| DisplayPort | 1 x DP 1.4a++                                                                                                                                  |
| Ethernet    | 2 x 1 Gigabit LAN                                                                                                                              |
| USB         | 5 x USB 3.2 Gen2<br>1 x USB4/Thunderbolt™4 (5V/3A, supports DP 2.1 display output)<br>* For Thunderbolt support, please refer to support list. |
| Audio       | 3 (Line-In/Line-Out/Mic-In)                                                                                                                    |
| COM         | COM1, COM2 (RS-232/422/485)                                                                                                                    |

#### Internal Connector

|          |                                                                                                                                                                                                      |
|----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| USB      | 4 x USB 3.2 Gen1 (2 x USB 3.2 header)<br>1 x USB 3.2 Gen2 vertical Con<br>1 x USB4/Thunderbolt™4 (5V/3A, supports DP 2.1 display output)<br>* For Thunderbolt support, please refer to support list. |
| COM      | COM3 (RS-232/TTL 5V/ccTalk, switch by Jumper setting)<br>COM4, COM5, COM6 (RS-232)                                                                                                                   |
| Parallel | 1 (shared with GPIO)                                                                                                                                                                                 |
| GPIO     | 8 x GPI, 8 x GPO (shared with LPT header)                                                                                                                                                            |

#### Storage

|      |                                                                                                                                             |
|------|---------------------------------------------------------------------------------------------------------------------------------------------|
| M.2  | 1 x M.2 (Key M, 2242/2280/22110/25110) with PCIe Gen5 x4 for SSD<br>1 x M.2 (Key M, 2242/2280) with PCIe Gen4 x4 for SSD                    |
| SATA | 4 x SATA3 (6Gb/s)                                                                                                                           |
| RAID | Intel® VMD RAID 0/1/5/10<br>**supported by identical interface (PCIe or SATA)<br>PCIe interface: 2 x M.2 Key M<br>SATA interface: SATA port |

#### Security

|     |                    |
|-----|--------------------|
| TPM | TPM 2.0 onboard IC |
|-----|--------------------|

#### 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+8-pin)                                                                                                      |
| Power On  | AT/ATX Supported<br>- AT : Directly PWR on as power input ready<br>- 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%     |
| Storage Humidity   | 5% ~ 90%     |