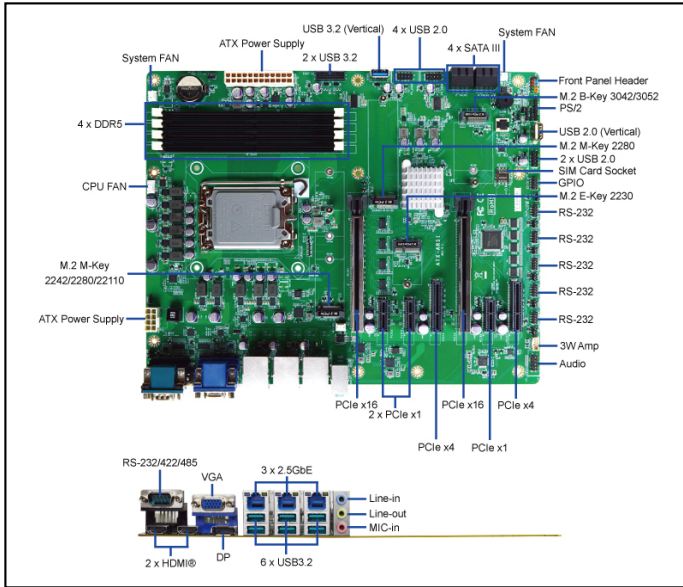


# ATX-ARS1-Q870



ATX

ATX Industrial Motherboard Supporting Intel® Core Ultra Processors (Series 2), Socket LGA1851



## Features

- Powered by Intel® Core™ Ultra processors (Arrow Lake-S) with Q870 chipset
- High-Speed Memory Support: 4 x DDR5 6400MT/s Dual Channel U-DIMM, up to 256GB
- Triple 2.5GbE Networking: 3 x Intel® 2.5GbE Ethernet ports
- Versatile Storage Options: 4 x SATA III with RAID 0/1/5/10, 2 x M.2 M-key (NVMe)
- Multiple Expansion Slots: 1 x B-Key, 1x E-Key, 2 x PCIe Gen.5 x16, 2 x PCIe Gen.4 x4, 3 x PCIe Gen.3 x1
- Comprehensive Quad Display Support: 2 x 4K HDMI 2.1 TMDs, 1 x 4K DP, and VGA
- Rich Connectivity: 9 x USB 3.2, 7 x USB 2.0, 6 x COM , 1 x 8 bits GPIO
- Enhanced Security: Onboard TPM 2.0 (optional)

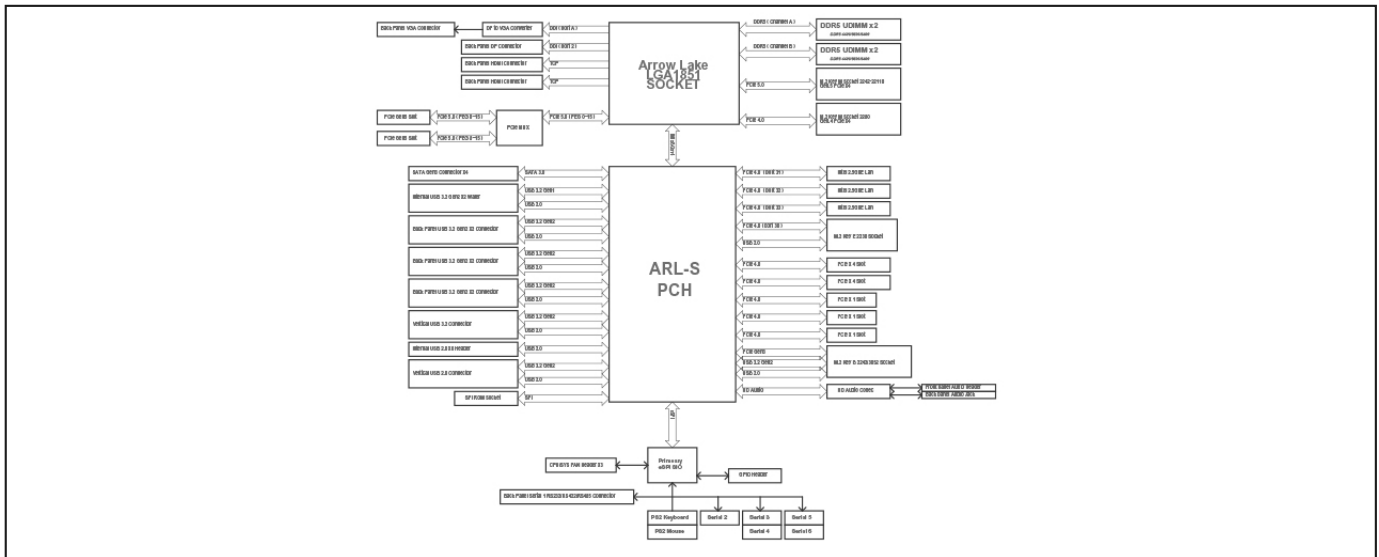
## Packing List

| PART NUMBER        | DESCRIPTION   | QTY |
|--------------------|---|-----|
| ATX-ARS1           | ATX-ARS1 MB   | 1   |
| G01-COM-H2M22-1F   | COM Port Cable, 22cm, Pitch 2.0                           | 2   |
| G01-SATA3-BL-1F    | SATA Cable, 50cm  | 2   |
| G01-PW4PS2S-322-1F | SATA Power Y cable, 5.0pitch for 32cm, 2.54pitch for 20cm | 1   |
| F04-MB-112-F       | IO Shield   | 1   |
| F01-SPBK-1F        | Jumper  | 2   |

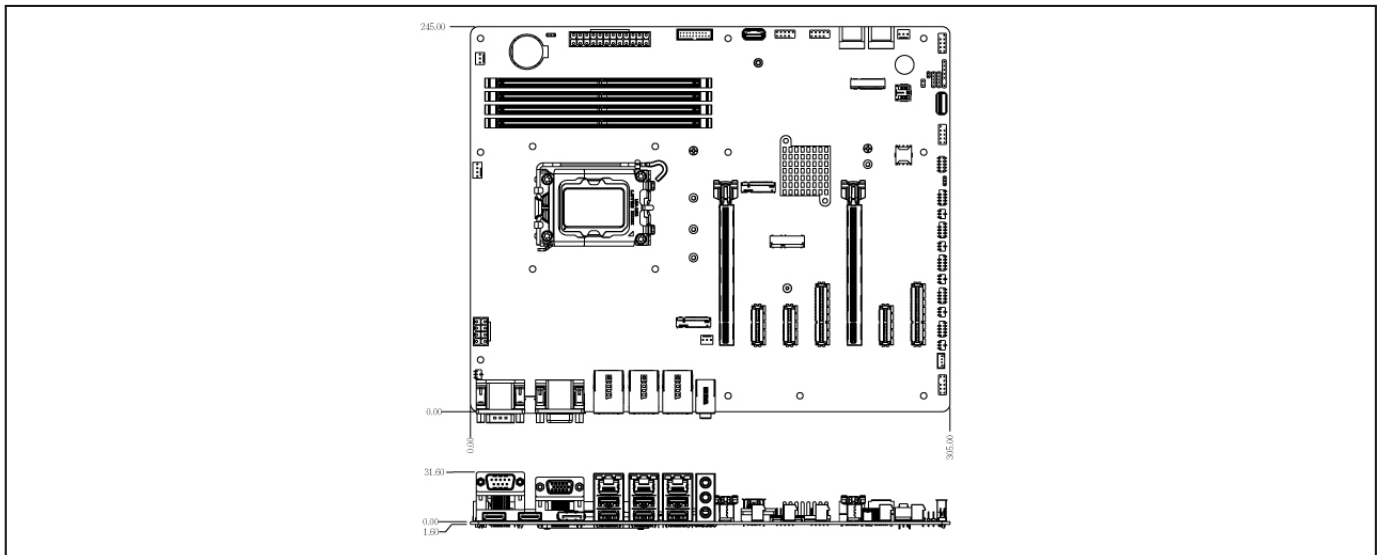
## Specifications

| SYSTEM                      |   |
|-----------------------------|---|
| MB FORM FACTOR              | ATX   |
| CPU                         | Intel® LGA1851 Socket, Processor Arrow Lake-S (MAX. TDP 125W)   |
| CHIPSET                     | Intel® Q870   |
| MEMORY                      | 4 x DDR5 6400MT/s, Dual Channel CU-DIMM, up to 256GB  |
| BIOS                        | UEFI  |
| WAKE ON LAN                 | Yes   |
| WATCHDOG TIMER              | 255 Levels  |
| SECURITY                    | Intel® PTT (Integrated fTPM)<br>TPM2.0 (dTPM, Optional)   |
| RTC BATTERY                 | Lithium Battery   |
| DIMENSION (W X D)           | 305.0 (W) x 244.0 (D) mm (12" x 9.6")   |
| OS SUPPORT                  | Windows® 11 (64bit), Linux  |
| POWER                       |   |
| POWER REQUIREMENT           | ATX Power Supply  |
| POWER ON MODE               | ATX (Default) Mode  |
| CONNECTOR                   | Internal 24+8-pin ATX Header  |
| DISPLAY                     |   |
| GPU                         | Intel® Graphics   |
| DP                          | 1 x DP1.4a (Max Resolution: 4096 x 2160@60Hz)   |
| HDMI®                       | 2 x HDMI® 2.1 TMDs (Max Resolution: 4096 x 2160@60Hz)   |
| VGA                         | 1 x VGA (Max Resolution: 1920 x 1080 @60Hz)   |
| MULTIPLE DISPLAY            | Support 4 Displays  |
| AUDIO                       |   |
| CODEC                       | Realtek codec   |
| Line-in                     | 1 x Audio Jack for Line-in  |
| Line-out                    | 1 x Audio Jack for Line-out   |
| MIC-in                      | 1 x Audio Jack for MIC-in   |
| AMPLIFIER                   | 3W  |
| LAN                         |   |
| ETHERNET                    | 1 x RJ45 for Intel® I226-LM 2.5GbE<br>2 x RJ45 for Intel® I226-V 2.5GbE vPro / iAMT Supported   |
| USB PORT                    |   |
| USB                         | 6 x USB 3.2 Gen 2<br>Internal Header for 2 x USB 3.2 Gen 1<br>Internal Header for 6 x USB 2.0<br>Internal USB Type A (Vertical) for 1 x USB 3.2 Gen 1x1<br>Internal USB Type A (Vertical) for 1 x USB 2.0                               |
| SERIAL PORT                 |   |
| COM                         | 1 x DB-9 for RS-232/422/485<br>Internal Header for 5 x RS-232   |
| INTERNAL I/O                |   |
| GPIO                        | 8-Bit   |
| SMBUS                       | Yes   |
| FAN                         | 1 x CPU Fan Header (Smart Fan)<br>2 x System Fan Header   |
| FRONT PANEL                 | HDD Active LED, Power LED, Power On/Off, Reset  |
| ADDITIONAL                  | 1 x Chassis intrusion<br>1 x AT/ATX Mode Selection  |
| STORAGE                     |   |
| SATA                        | 4 x SATA III  |
| RAID                        | Intel® VMD RAID 0, 1 & SATA RAID 0, 1, 5, 10  |
| EXPANSION                   |   |
| PCIe                        | 2 x PCIe Gen 5 x16 slots (1x PCIe Gen 5x16 or 2 x PCIe Gen 5 x8)<br>2 x PCIe Gen 4 x4<br>3 x PCIe Gen 4 x1  |
| M.2                         | 1 x M-Key 2242/2260/2280/22110 (PCIe Gen 5x4) support NVMe<br>1 x M-Key 2280 (PCIe Gen 4 x4) support NVMe<br>1 x E-Key 2230 (USB 2.0/PCIe Gen 3 x1) support CNVio<br>1 x B-Key 3042/3052 (USB3.1/USB2.0/PCIe Gen 3 x1) for 4G/5G module |
| SIM                         | 1 x Nano SIM Card Slot  |
| OTHERS                      |   |
| OTHER                       | 1 x PS/2  |
| ENVIRONMENT & CERTIFICATION |   |
| SHOCK                       | 15G, 11ms duration  |
| VIBRATION                   | 1 Grms/ 5- 500Hz/ Operation   |
| OPERATING TEMPERATURE       | -20°C - 60°C (-4°F - 140°F)   |
| STORAGE TEMPERATURE         | -20°C - 85°C (-4°F - 185°F)   |
| OPERATING HUMIDITY          | 10 - 90% Relative Humidity, Non-condensing  |
| STORAGE HUMIDITY            | 10 - 90% @40°C, Non-condensing  |
| CERTIFICATION               | CE/FCC Class A<br>LVD   |
| ESG DECLARATION             | EU RoHS, China RoHS, WEEE, REACH, TSCA Declaration, PRO65 Declaration, CMRT Report  |

## Block Diagram



## Dimension Unit: mm



## Ordering Information

| PART NUMBER | ATX-ARS1-Q8700010         | ATX-ARS1-Q8700210                          |
|-------------|---------------------------|--|
| CPU         | Intel® Socket LGA1851 CPU | Intel® Socket LGA1851 CPU                  |
| SECURITY    | Intel® PT (fTPM)          | Intel® PTT (fTPM) & TPM 2.0 (dTPM) Default |