

# EMS-ARH

**Intel® Arrow Lake-H Core™ Ultra 7/5 Processor Fanless Rugged Embedded System**



## Product Features

- Intel® Arrow Lake-H Core™ Ultra 7/5 Processor
- Rich I/O, 4-USB3.2, 2-USB2.0, 1-DP, 2-HDMI, 2-COM, 2-LAN, 1-8bit GPIO
- Support IET module for IO expansion
- Wide range DC power input from +9~36V
- 2 x 262-pin SODIMM socket Max. up to 64GB DDR5 6400MT/s
- Support 5G (Sub-6G) module, M.2 NVMe SSD Gen4 x 4
- Fanless operation Temperature from -40°C ~ 50°C
- CE, FCC Class B

## Specification

### System Information

<b>Processor</b>	Intel® Core™ Ultra processors (Series 2), Meteor Lake-H Intel® Core™ Ultra 7 Processor 255H Intel® Core™ Ultra 5 Processor 225H
<b>System Memory</b>	2 x 262-pin SODIMM socket Max. up to 64GB DDR5 6400 MT/s
<b>BIOS Information</b>	AMI uEFI BIOS 256 Mbit SPI Flash ROM
<b>Watchdog Timer</b>	H/W Reset, 1sec. ~ 65535sec.
<b>H/W Status Monitor</b>	CPU & system temperature monitoring and Voltages monitoring
<b>TPM</b>	dTPM 2.0
<b>iAMT</b>	Selected SKUs
<b>SBC</b>	EMS-ARH

### Expansion

<b>M.2</b>	1 x M.2 Key-B 2242/3042/3052 support SATA3 / PCIe Gen4x1/ USB3.2 Gen2 and SIM slot1 (internal) 1 x M.2 Key-E 2230 for Wi-Fi & BT Module (USB2.0 / PCIe Gen4x1)
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IET

1 x IET interface (1 x DDI, 4 x PCIe Gen4x1, 3 x USB2.0, 1 x SMBus, eSPI)

## Storage

**M.2** 1 x M.2 Key-M 2280 (1 x PCIe Gen4x4), support NVMe  
1 x M.2 Key-B 2242, support SATA (share with expansion slot)

## Front I/O

**Power Button** 1 x Push Button for Power on/off

**Reset Button** 1 x Push Button for Reset

**LED Indicator** 1 x Power LED (Blue)  
1 x Storage LED (Yellow)  
1 x LTE LED (Green)  
1 x Wifi LED (Green)

**USB** 2 x USB2.0

**COM Port** 2 x COM RS232/422/485 (BIOS & Jumper)

**Digital I/O** 1 x 8-bit GPIO (DB9)

**SIM Slot** 1 x Internal SIM slot

**Wire-Control Power On/Off** 1 x 2-Pin Terminal Block

**Antenna** 2 x Antenna with dust cover

## Rear I/O

**USB** 4 x USB 3.2 Gen.1 (5Gbp/s)(w/ USB 2.0)

**LAN Port** 2 x RJ-45

**Audio** Mic-In, Line-Out

**DP** 1 x DP++1.4

**HDMI** 2 x HDMI 2.0b

**Antenna** 2 x Antenna with dust cover

**AC/DC Input** 1 x 3-Pin Terminal Block (V+, V-, GND)

## Right I/O

**Antenna** 2 x Antenna with dust cover

## Left I/O

**Antenna** 2 x Antenna with dust cover

## Display

**Graphic Chipset**

Intel® Arc™ GPU

<b>Resolution</b>	DP++ 1.4: 4096x2304 @ 60Hz HDMI 2.0b : Max. resolution 4096x2304 @ 60Hz
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## Audio

<b>Audio Codec</b>	Realtek ALC888S HD codec
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## Ethernet

<b>LAN Chipset</b>	2 x Intel I226-IT
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<b>Specification</b>	2 x 10/100/1000/2.5G GbE compatible
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## Power Requirement

<b>Voltage Input Spec.</b>	DC in typical 12/24V (+9V ~ +36V), wide voltage single power input TVS component for surge protection Reverse current/voltage protection(Max. Currency: 13A)
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<b>Voltage Input Connector</b>	3-Pin Terminal Block
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<b>ACPI</b>	Single power ATX Support S0, S3, S4, S5 ACPI 5.0 Compliant
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<b>Power Mode</b>	AT/ATX (ATX is default setting)
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## Software Support

<b>OS</b>	Win 10 / Win 11/ Linux
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## Certification

<b>Certification Information</b>	CE, FCC Class B
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## Mechanical & Environmental

<b>Operating Temp.</b>	-40°C ~ 50°C (w/SSD) ambient w/ air flow
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<b>Storage Temp.</b>	-30°C ~ 70°C (-22°F ~ 158°F)
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<b>Operating Humidity</b>	40°C @ 95% Relative Humidity, Non-condensing
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<b>Dimension (W x L x H)</b>	240mm x 150mm x 59 mm (Standard) 240mm x 150mm x 85 mm (w/ IET module)
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<b>Weight</b>	2.3 kg (System) 3.1 kg (w_Package)
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<b>Vibration Test</b>	With SSD : 2Grms, IEC 60068-2-64, Random, 5 ~ 500Hz, 0.5hr/axis
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<b>Shock Test</b>	With SSD : 55Grms, IEC 60068-2-27, Half Sine, 11ms
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<b>IP Rating</b>	IP 50
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<b>Mounting Kit</b>	Wall mount kit (standard) DIN RAIL (optional)
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