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

Expansion	
M.2	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)

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
Resolution	DP++ 1.4: 4096x2304 @ 60Hz HDMI 2.0b : Max. resolution 4096x2304 @ 60Hz

Audio

Audio Codec	Realtek ALC888S HD codec

Ethernet

LAN Chipset	2 x Intel I226-IT
Specification	2 x 10/100/1000/2.5G GbE compatible

Power Requirement

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

Software Support

OS	Win 10 / Win 11/ Linux

Certification

Certification Information	CE, FCC Class B

Mechanical & Environmental

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

IP Rating	IP 50
Mounting Kit	Wall mount kit (standard) DIN RAIL (optional)