

EMS-MTU

Intel® Meteor Lake-U Core™ Ultra 7/5 Processor Fanless Rugged Embedded System



Product Features

- Intel® Meteor Lake-U 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
- Fanless operation Temperature from -40°C ~ 65°C
- Wide range DC power input from +9~36V
- 2 x 262-pin SODIMM socket Max. up to 64GB DDR5 5600MT/s
- Support 5G (Sub-6G) module, M.2 NVMe SSD Gen4 x 4
- CE, FCC Class B, IP50
- Support HW TPM 2.0

Specification

System Information	
Processor	Intel® Core™ Ultra Processor Meteor Lake-U Intel® Core™ Ultra 7 Processor 165U (By project) Intel® Core™ Ultra 7 Processor 155U Intel® Core™ Ultra 5 Processor 135U (By project) Intel® Core™ Ultra 5 Processor 125U
System Memory	2 x 262-pin SODIMM socket Max. up to 64GB DDR5 5600MT/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	TPM 2.0
Expansion	
M.2	1 x M.2 Key-B 2242/3042/3052 support SATA3 / PCIe Gen4x1/ USB3.2 Gen2 and SIM slot (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)
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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 Wi-Fi 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)
Wire-Control Power On/Off	1 x 2-Pin Terminal Block for wire-control power on/off
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	1 x Mic-In 1 x Line-Out
DP	1 x DP++
HDMI	2 x HDMI
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
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Left I/O

Antenna	2 x Antenna with dust cover
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Display

Graphic Chipset	Intel® Graphics
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Resolution DP++ : Max. resolution 4096x2304 @ 60Hz
HDMI : 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. Current: 13A)

Voltage Input Connector 1 x 3-pin Phoenix connector

ACPI Single power ATX Support S0, 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 ~ 65°C (w/SSD) ambient air flow (w/ 32G DDR5)
-40°C ~ 60°C (w/SSD) ambient air flow (w/ 64G DDR5, Maximum capacity)

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 49 mm (Standard)
240mm x 150mm x 75 mm (w/ IET module)

Weight 2.1 kg (System)
2.9 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

