

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 ~ 70°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	Meteor Lake-U Intel® Core™ Ultra 7 Processor Intel® Core™ Ultra 5 Processor
System Memory	2 x 262-pin SODIMM socket Max. up to 64GB DDR5 5600MT/s
I/O Chipset	EC ITE IT8528E
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

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)
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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 Wifi LED (Green)
USB	2 x USB2.0
COM Port	2 x COM RS232/422/485 (select via BIOS, auto flow control via HW)
Digital I/O	1 x 8-bit GPIO (DB9)
SIM Slot	1 x Internal SIM slot
Wire-Control Power On/Off	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	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	Xe LPG Graphics
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Resolution	DP++ 1.4: 4096x2304 @ 60Hz HDMI 2.0b : Max. resolution 4096x2304 @ 60Hz
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Audio

Audio Codec	Realtek ALC888S HD codec
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Ethernet

LAN Chipset	2 x Intel I226-IT
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Specification	2 x 10/100/1000/2.5G GbE compatible
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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)
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Voltage Input Connector	1 x 3-pin Phoenix connector
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ACPI	Single power ATX Support S0,S3, S4, S5 ACPI 5.0 Compliant
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Power Mode	AT/ATX (ATX is default setting)
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Software Support

OS	Win 10 / Win 11/ Linux
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Certification

Certification Information	CE, FCC Class B
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Mechanical & Environmental

Operating Temp.	-40°C ~ 70°C (w/SSD) ambient w/ air flow
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Storage Temp.	-30°C ~ 70°C (-22°F ~ 158°F)
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Operating Humidity	40°C @ 95% Relative Humidity, Non-condensing
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Dimension (W x L x H)	240mm x 150mm x 49 mm (Standard) 240mm x 150mm x 75 mm (w/ IET module)
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Weight	2.1 kg (System) 2.9 kg (w_Package)
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Vibration Test	With SSD : 5Grms, IEC 60068-2-64, Random, 5 ~ 500Hz, 0.5hr/axis
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Shock Test	With SSD : 55Grms, IEC 60068-2-27, Half Sine, 11ms
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IP Rating	IP 50
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Mounting Kit	Wall mount kit (standard) DIN RAIL (optional)
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Singel 3 | B-2550 Kontich | Belgium | Tel. +32 (0)3 458 30 33
info@alcom.be | www.alcom.be
Rivium 1e straat 52 | 2909 LE Capelle aan den IJssel | The Netherlands
Tel. +31 (0)10 288 25 00 | info@alcom.nl | www.alcom.nl