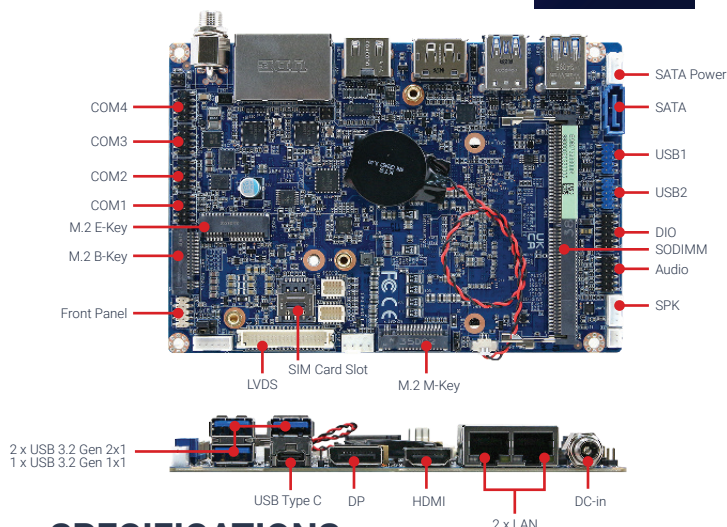


ECM-MTL

3.5" SBC Single Board Computer, Intel® Core™ Ultra 5
Processor 125U/125H Onboard



Features

- Intel® Core™ Ultra 5 Processor 125U (15W) or Intel® Core™ Ultra 5 Processor 125H (28W) Onboard
- Intel® Meteor Lake-U & H platform
- Bottom Layer Soldered Processor
- 1 x DDR5 5600MHz SODIMM socket supports up to 48GB
- Supports 4 independent display: 1 x DP, 1 x HDMI, 1 x 2CH LVDS or eDP, 1 x USB Type C support DP
- 1 x USB Type C support DP
- Dual LAN: 1 x Intel® I226-LM and I226-V Ethernet Controllers (2.5GbE)
- Expansion Slots: M.2 B-Key, M.2 E-Key, M.2 M-Key
- 6 x COM Ports
- DC in +12V ~ +24V

SPECIFICATIONS

System	
Processor	Intel® Core™ Ultra 5 Processor 125U (15W) - with Heatsink Intel® Core™ Ultra 5 Processor 125H (28W) - with Cooler Formerly Meteor Lake-U & H platform
Memory	1 x 262-pin DDR5 5600MHz SODIMM socket supports up to 48GB
I/O Chipset	EC ITE IT5782VG
BIOS	AMI BIOS, 256Mbit SPI Flash ROM
Ethernet	1 x Intel® Gigabit Ethernet Controller I226-LM (2.5 GbE) 1 x Intel® Gigabit Ethernet Controller I226-V (2.5 GbE)
Audio Codec	Realtek HD Audio, 2 x 2W 4Ω Amplifier
Expansion Interface	1 x M.2 M-Key 2280 (1 x PCIe Gen4 x4) for NVME SSD 1 x M.2 B-Key 2242/3042/3052 with 1 x PCIe x1 Gen 2 or SATA, USB 3.2 Gen1x1, USB 2.0 with 1 x Nano SIM card slot for WWAN+GNSS Note: Only one SIM card supported. I2S and PCM not supported. 1 x M.2 E-Key 2230 for Wi-Fi module (1 x PCIe x1 & USB 2.0)
Storage through	1 x M.2 M-Key 2280 (1 x PCIe Gen4 x4) for NVME SSD 1 x M.2 B-Key 2242/3042/3052 with 1 x PCIe x1 Gen 2 or SATA, USB 3.2 Gen1x1, USB 2.0 with 1 x Nano SIM card slot for WWAN+GNSS 1 x SATA III connector
H/W Status Monitor	CPU & system temperature monitoring Voltages monitoring
TPM	TPM 2.0
Supported OS	Windows 11 64-bit, Linux
Graphics	
Chipset	Intel® Xe LPG Graphics
Interface & Resolution	1 x DP 1.4a: 7680 x 4320@30 Hz 1 x USB Type C support DP: 4096 x 2160@60Hz 1 x HDMI 2.0b: 4096x2160@60Hz 1 x LVDS/eDP: 1920 x 1080 Dual channel 18/24-bits LVDS
Multi-Display	Support 4 Independent Displays

External I/O Ports

Display	1 x DP 1.4a 1 x HDMI 2.0b
USB	2 x USB 3.2 Gen 2 x1 1 x USB 3.2 Gen 1 x1 1 x USB Type-C 5V 3A
LAN	2 x RJ45
Power Input	1 x DC Jack (lockable)

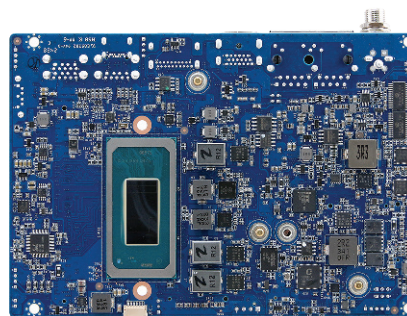
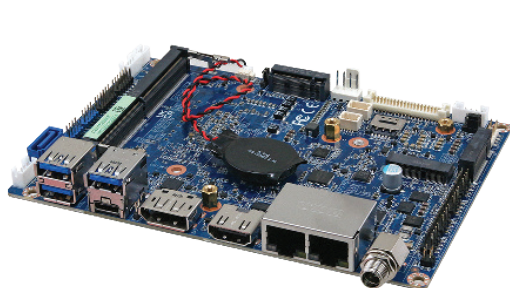
Internal I/O Connectors

Display	1 x LVDS/eDP
USB	2 x USB 2.0 Headers for 4 x USB 2.0 Ports
COM	6 x COM Port Headers
Audio	2 x 6-pin Hheaders for Line-in, Line-out, Mic-in
SATA	1 x SATA III, 1 x 4-pin SATA Power Connector
GPIO	1 x 8-bits GPIO Header
DC-in	1 x 4-pin DC-in Connector

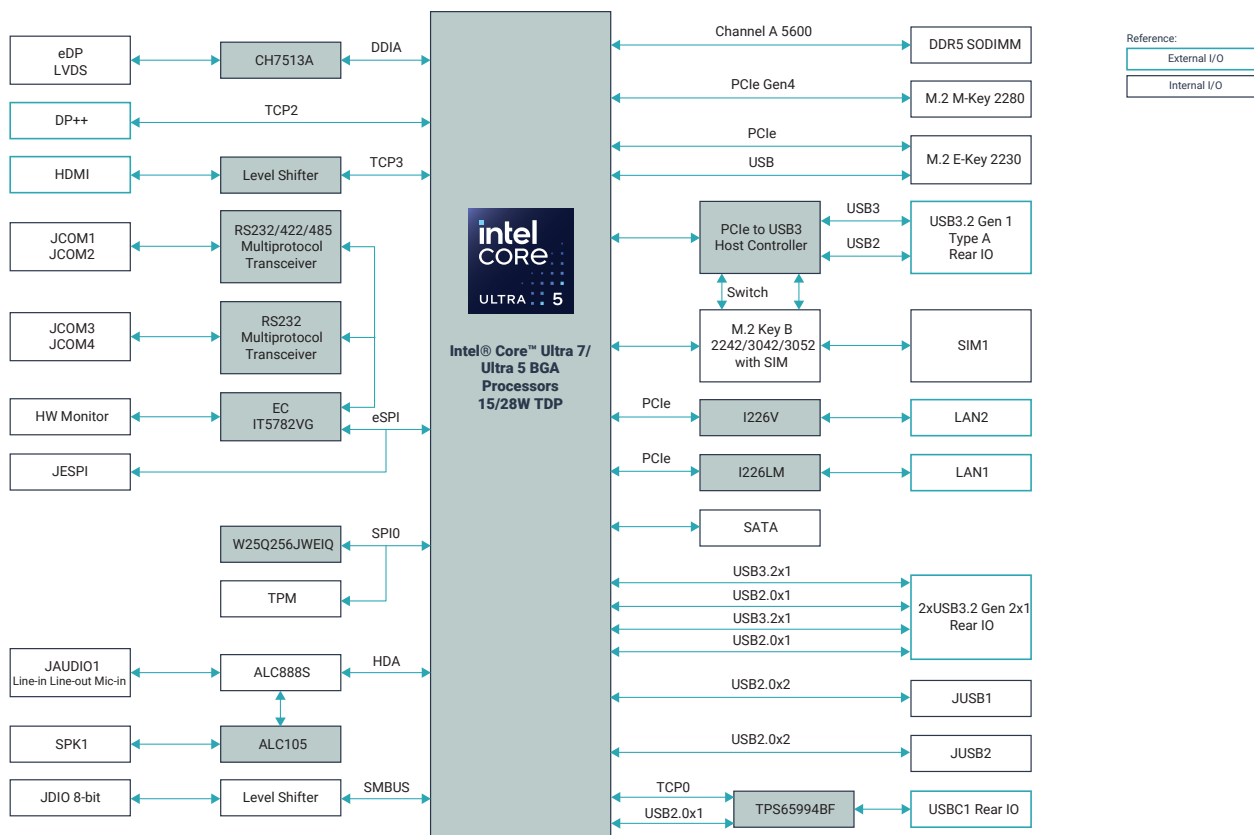
Mechanical, Power, and Environment

Power	+12V ~ +24V Wide Range DC-In
Operating Temp	0°C to 60°C (32°F ~ 140°F) with 0.5m/s air flow
Storage Temp	-40°C ~ 75°C (-40°F ~ 167°F)
OP Humidity	40°C @ 95% Relative Humidity, Non-condensing
Regulatory Compliance	CE, FCC, RoHS Compliant
Form Factor	3.5" Single Board Computer (SBC)
Dimensions	5.7" x 4" (146mm x 102mm)
Weight	0.44lbs (0.2kg)

SPECIFICATIONS / ADDITIONAL PRODUCT PHOTOS



BLOCK DIAGRAM



ORDERING INFORMATION

Model Name	CPU Onboard / CPU Socket	Cooling Design
ECM-MTL-125U-A1R	Intel® Core™ Ultra 5 Processor 125H (15W)	Heatsink
ECM-MTL-125H-A1R	Intel® Core™ Ultra 5 Processor 125U (28W)	Cooler

PACKING LIST

- ✓ 1 x Motherboard
- ✓ 1 x Serial ATA cable (7-pin, standard)
- ✓ 1 x Wire SATA power cable (15-pin, 4P/2.0mm)
- ✓ 1 x Flat Cable 9P(M)-PHD (10P/2.0mm)
- ✓ 1 x CPU Heatsink/Cooler
- ✓ 3 x M.2 Screws
- ✓ Graphene Sheet



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