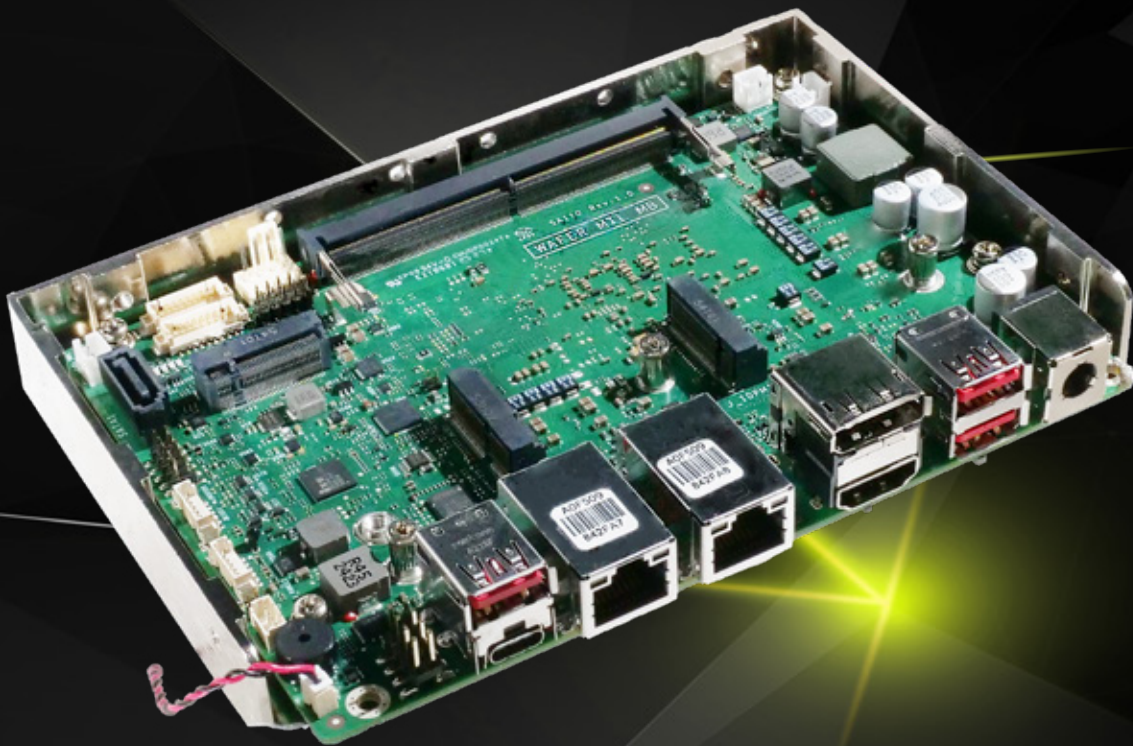


# WAFER-MTL

3.5 SBC supports Intel® mobile Meteor Lake-U on-board processor

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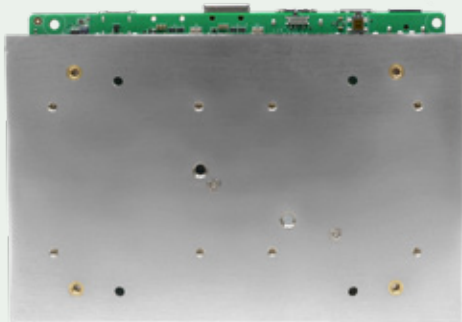
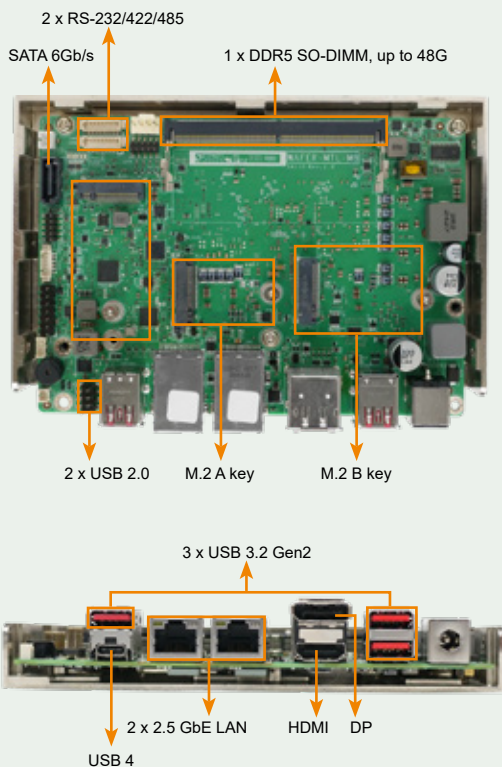
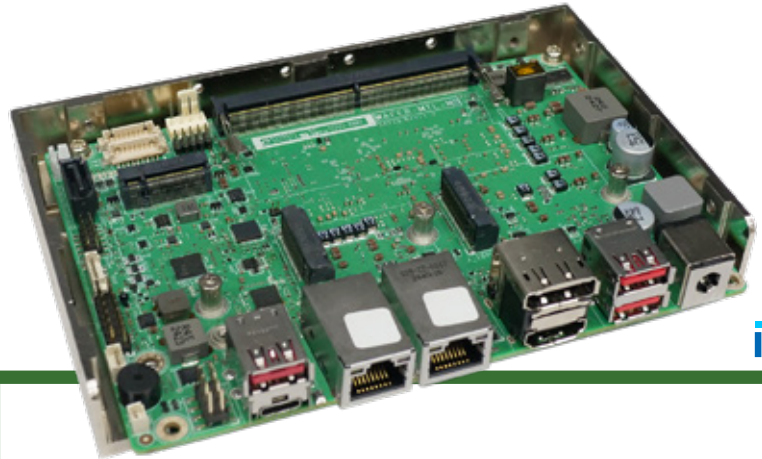
- Support 5600MHz DDR5 SO-DIMM, up to 48G
- Quadruple independent displays DP, HDMI, iDPM and USB4
- High speed I/O interface for USB4, USB 3.2 Gen 2, SATA 6Gb/s
- Support M.2 B key and M.2 E key for expansion



[www.ieiworld.com](http://www.ieiworld.com)

# WAFER-MTL

3.5" SBC with Intel® Meteor Lake-U Core™ Ultra Processor with Quad Displays, DDR5, Double Intel® I226V 2.5 GbE, USB3.2, M.2, SATA, COM, SoC, RoHS



**DDR5**  
5600 MHz

**x4**  
Quad Display

**USB 4**

**2.5GbE LAN**

**TPM 2.0**



## Powered by Intel® Core™ Ultra (Meteor Lake-U) for Next-Level Edge Performance

Experience superior AI acceleration and efficient multi-core computing with Intel® Core™ Ultra processors. Delivering up to 14 cores at 15W TDP, the WAFER-MTL offers the perfect balance of performance and power efficiency for edge AI, smart automation, and industrial applications.



## High-Speed 5600MHz DDR5 Memory — Up to 48GB

Equipped with next-generation DDR5 SO-DIMM, the platform delivers higher bandwidth, lower latency, and improved energy efficiency. With support for up to 48GB, it easily handles data-intensive workloads, real-time analytics, and multi-tasking environments.



## Quadruple Independent Display Outputs for Advanced Visual Solutions

Enable multi-display digital signage, smart retail, or AI-vision systems with support for four independent displays including HDMI, DP, USB4, and IEI's iDPM interface. Enjoy up to 4K resolution and flexible display configurations for any embedded scenario.



## Next-Generation Connectivity: USB4, Dual 2.5GbE & High-Speed I/O

Designed for high-bandwidth and low-latency data transmission, the board includes USB4 (40Gb/s), USB 3.2 Gen2, SATA 6Gb/s, and dual Intel® 2.5GbE LAN. It offers seamless integration with cameras, storage devices, cloud gateways, and industrial peripherals.

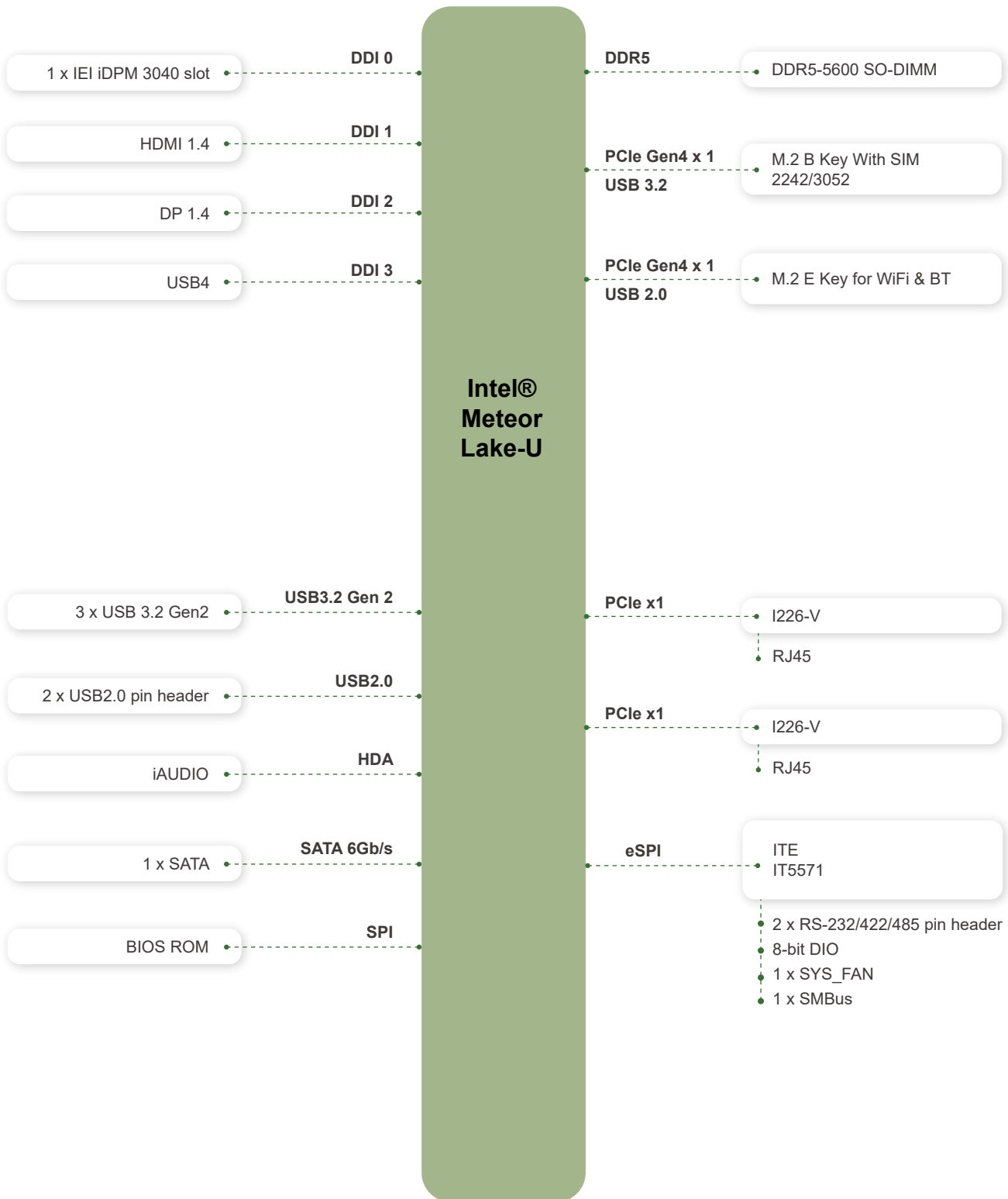


## Flexible Expansion with M.2 and Wide Power Input — Built for Industrial Deployment

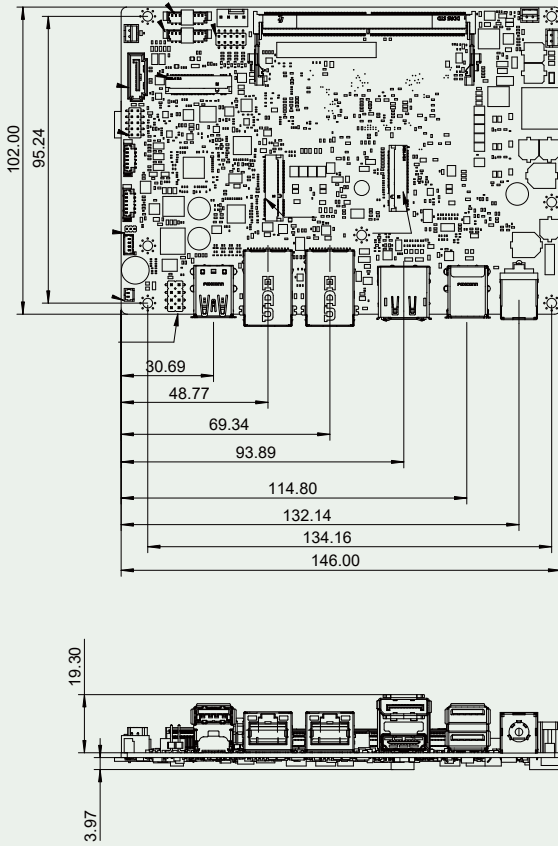
Featuring M.2 B-Key and E-Key slots for 5G/LTE, Wi-Fi, Bluetooth, or SSD expansion, plus a wide 12–28V DC input



# Block Diagram



### Dimensions



### Specifications

Model	WAFER-MTL
SoC	Intel® Core™ Ultra Meteor Lake-U on-board processor Intel® Core™ Ultra 155U(up to 4.8GHz, 14-core, 15W TDP) Intel® Core™ Ultra 125U(up to 4.3GHz, 14-core, 15W TDP)
BIOS	AMI UEFI BIOS
Memory	1 x DDR5-5600 SO-DIMM, up to 48G
Graphics Engine	Intel® New Xe LPG Graphics
Display Output	Quadruple independent display 1 x HDMI 1.4 (up to 4K @30Hz) 1 x DP1.4 (up to 4K @60Hz) 1 x USB4 (up to 4K @60Hz) (up to 40Gb/s) 1 x IEI iDPM 3040 slot (only for IEI display module)
Ethernet	2 x Intel® I226-V 2.5GbE controller (Colay with I226-LM)
External I/O Interface	3 x USB 3.2 Gen 2 (10Gb/s)
Internal I/O Interface	1 x SATA 6Gb/s 2 x USB 2.0 (2x4 pin, P=2.0) 2 x RS-232/422/485 (1x9 pin)
SMBus/I2C	1 x SMBus (1x4 pin)
Audio	1 x iAUDIO, support IEI AC-KIT-888S Audio Module (2x5 pin)
Front Panel	1 x Front Panel Power (2x7 pin)
Expansion	1 x M.2 E Key for WIFI & BT 2230 (PCIe Gen4 x 1 & USB 2.0) 1 x M.2 B Key 2242/3052 (PCIe Gen4 x1 & USB 3.2 Gen1) 1 x On-board SIM card socket for M.2 B Key
Digital I/O	1 x 8-bit Digital I/O (2x5 pin)
TPM	Intel® PTT
FAN connector	1 x System Fan Connect (1x4 pin)
Power supply	12V-28V DC power supply Support AT/ATX mode
Watchdog Timer	Software Programmable support 1~255 sec. System reset
Power Consumption	12V@2.78A (Intel® Core™ Ultra 7 165U with DDR5 32G Memory)
Operating Temperature	-10°C ~ 60°C
Storage Temperature	-30°C ~ 70°C
Operating Humidity	5% ~ 95%,non-condensing
Diemension	146mm x 102mm
Weight	GW:850g / NW:350g
Certification	CE/FCC Compliant

### Optional Accessories



### Packing List

1 x WAFER-MTL single board computer	1 x QIG
1 x SATA with power cable kit (PN: 32801-000201-200-RS)	

### Ordering Informaiton

WAFER-MTL-U5A-R10	3.5" SBC with Intel® Meteor Lake-U Core™ Ultra 5 Processor 125U with Quad Displays, DDR5, Double Intel®I226V 2.5 GbE, USB3.2, M.2,SATA,COM, SoC, RoHS
WAFER-MTL-U7A-R10	3.5" SBC with Intel® Meteor Lake-U Core™ Ultra 7 Processor 155U with Quad Displays, DDR5, Double Intel® I226V 2.5 GbE, USB3.2, M.2, SATA, COM, SoC, RoHS

### Optional Accessories

AC-KIT-888S-R10	Realtek ALC888S 7.1 Channel HD Audio peripheral board, RoHS
CB-USB02A-RS	Dual port USB cable with bracket, 300mm, P=2.00
32102-000100-200-RS	SATA power cable, MOLEX 5264-4P to SATA15P
32005-003500-200-RS	Round cable, RS-232/422/485, 300mm, P=1.25
CM-WAFER-WF-R10	Cooler Module (W/FAN); Mechanical; for 3.5" WAFER series, RoHS
CM-WAFER-WOF-R10	Cooler Module (W/O FAN); Mechanical; for 3.5" WAFER series, RoHS