

BCO-500-MTL SERIES

FANLESS MINI INDUSTRIAL COMPUTER

POWERED BY INTEL® CORE™ ULTRA
SERIES 1 PROCESSORS (METEOR LAKE-U)



SEMI-RUGGED MINI INDUSTRIAL COMPUTER

The BCO-500 Series is a family of fanless mini embedded computers engineered for semi-rugged environments, delivering reliable performance for edge processing, storage, and connectivity. Its compact footprint allows seamless integration into space-constrained applications, enabling effortless connection to IoT devices and sensors for real-time data and machine learning workloads.



Deployment
Ready Solution



Multicore Edge
Performance



Fast Time To
Market



Ultra Compact Design

Semi-Rugged Fanless Mini Industrial Computer

AI-Driven Performance for the Connected Edge

The BCO-500-MTL Series expands Premio's family of semi-rugged mini industrial computers, the BCO-500 Series, bringing next-generation performance and AI acceleration to edge deployments. Built on Intel® Core™ Ultra Series 1 architecture, it integrates an Intel® Arc™ GPU and Intel® AI Boost NPU to deliver up to 11 TOPS of AI acceleration, enabling responsive performance for compute-intensive and AI-driven workloads at the edge.

Engineered for semi-rugged environments, the BCO-500-MTL Series combines energy-efficient processing, versatile I/O, and wireless expandability within a space-saving, fanless chassis. Its robust design ensures reliable operation in applications such as interactive kiosks, smart retail, factory automation, and industrial IoT, where performance and durability are equally critical.

Key Features

- Intel® Core™ Ultra Series 1 Processors (Meteor Lake-U)
- Ultra-Compact Form Factor
- Flexible Storage Expansion
- High-Speed IIoT-Centric Connectivity
- Robust Cellular Connectivity
- Flexible Mounting Options
- Industrial-Grade Reliability
- Intel® PTT & dTPM 2.0 Support
- World-Class Safety Certifications



Kiosks and Retail



IIoT Gateways



Edge AI

Industrial
Automation

Digital Signage

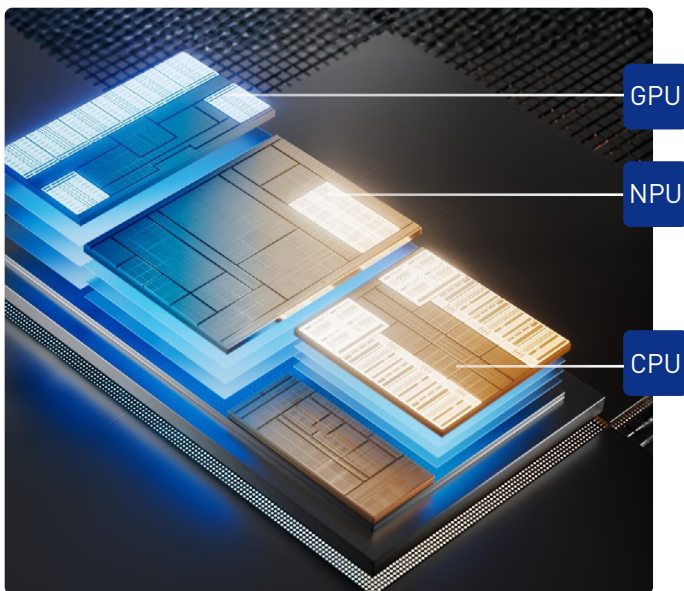
Next-Gen Performance Powered by Intel® Core™ Ultra Processors



Built on the advanced Intel® 4 process and Meteor Lake's tiled architecture, the BCO-500-MTL Series delivers next-generation computing performance in a compact, fanless design. Available with Intel® Core™ Ultra 5 125U and Ultra 7 155U processors, it brings enhanced efficiency, scalability, and integrated AI capability to edge applications.

3D Performance Hybrid Architecture

The Meteor Lake platform combines 2 P-cores, 8 E-cores, and 2 LP E-cores for up to 12 cores/14 threads of hybrid computing. Dynamically balances workloads for faster, more efficient processing at the edge.



Integrated AI and Graphics Acceleration

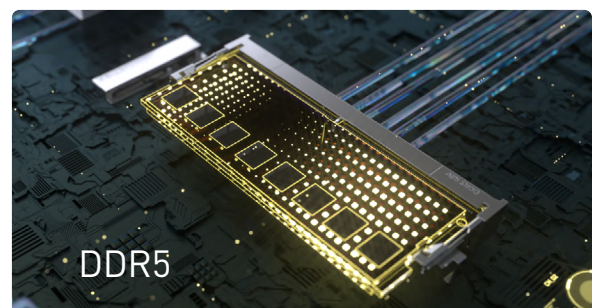
Unlike previous processors, Meteor Lake integrates both Intel® Arc™ GPU and Intel® AI Boost NPU for parallel AI and graphics acceleration. Together they deliver up to 11 TOPS of on-device AI performance—powering computer vision and intelligent automation without external GPUs.

Ultra-Low Power U-Series Design

Delivers up to 4.8 GHz performance within a 15 W TDP, enabling fanless, energy-efficient operation. This design ensures sustained reliability and energy savings for 24/7 industrial use in fanless deployments.

High-Speed DDR5 Memory Support

The BCO-500-MTL Series features a DDR5 5600 MHz SODIMM slot supporting up to 32 GB of high-speed memory for enhanced data throughput and system responsiveness.





Ultra-Compact Form Factor

Measuring only 225 × 130 × 48 mm, the BCO-500-MTL Series delivers high-performance edge computing in a remarkably small footprint. Its slim, fanless chassis fits effortlessly into tight spaces such as kiosks, control cabinets, and embedded enclosures, maximizing installation flexibility without sacrificing performance.



Flexible Storage Expansion

The BCO-500-MTL Series provides versatile, high-speed storage options optimized for industrial edge workloads. It supports NVMe SSDs for fast data access and reliable performance across multiple configurations.

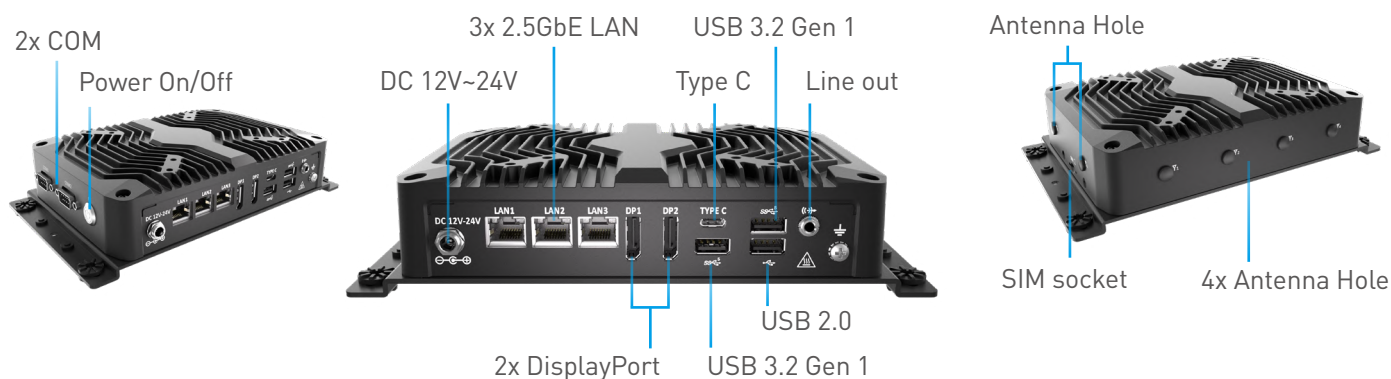


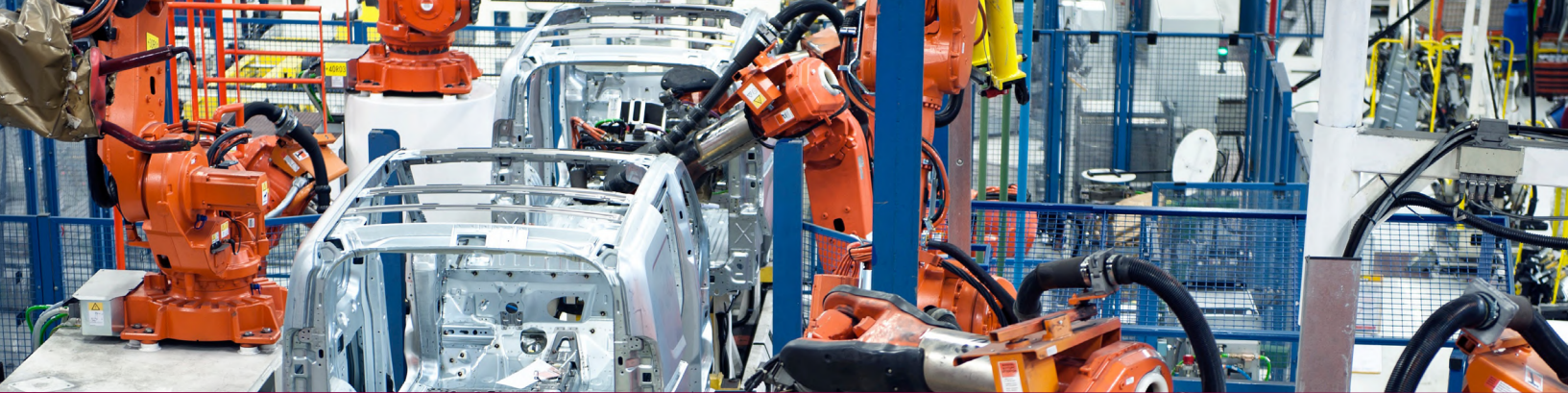
- 1× M.2 M Key (2280) for NVMe SSD
- 1× M.2 B Key (3042/3052) for NVMe or additional expansion

IIoT-Ready Connectivity

Despite its compact size, the BCO-500-MTL Series offers robust I/O connectivity designed to simplify integration with diverse IIoT devices and industrial sensors. The onboard interfaces enable reliable communication, fast data exchange, and flexible deployment in edge environments.

- 3× 2.5GbE LAN ports for high-speed network connectivity and redundancy
- 2× COM ports supporting RS-232/422/485 for industrial-grade serial communication
- 1× USB 3.2 Gen 1 Type-C (5 Gbps) for fast peripheral and device connection





Robust Wireless & Cellular Connectivity

The BCO-500-MTL Series provides flexible wireless expansion for connected edge applications, enabling seamless communication in remote or mobile deployments. It supports 4G/5G connectivity via the M.2 B Key [3042/3052] with a SIM socket onboard, along with Wi-Fi and Bluetooth through the M.2 E Key [2230]—delivering reliable wireless communication across industrial and IoT environments.



Industrial-Grade Reliability

Engineered for long-term operation in demanding industrial environments, this system features a semi-rugged design tested to MIL-STD-810G standards for shock and vibration resistance. Its solid-state construction ensures reliable performance in control cabinets, production lines, and other harsh edge environments—maintaining stability under continuous operation.

- Operating Temperature: -20°C to 60°C
- Shock and Vibration: 50G and 5Grms
- Power Input: 12–24VDC



TPM 2.0 Security

To ensure data integrity and system protection, the BCO-500-MTL Series integrates Intel® Platform Trust Technology (PTT) and dTPM 2.0, providing hardware-based encryption and secure key storage. This enables trusted boot, device authentication, and enhanced cybersecurity for mission-critical industrial applications.



Flexible Mounting Options

Designed for installation flexibility, the BCO-500-MTL Series supports Wall Mount, VESA Mount, and optional DIN-Rail Mount configurations, allowing placement from different angles to fit various industrial layouts. Its versatile design ensures secure and efficient integration in control panels, kiosks, and enclosures.



- Wall Mount



- VESA Mount



- DIN-Rail Mount (optional)

World-Class Safety Certifications

Developed under the IEC 62443-4-1 secure development process, the BCO-500-MTL Series meets globally recognized safety and EMC standards to ensure reliable, secure, and compliant operation in industrial environments. Its design emphasizes long-term dependability and adherence to international regulatory requirements.

- UL 62368 Ed. 3
- CE
- FCC Class A



WE DESIGN,
MANUFACTURE, AND
SERVICE CUSTOMERS
AROUND THE WORLD



BCO-500-MTL Series

intel



Model	BCO-500-MTL
CPU	- Intel® Core™ Ultra 5 Processor 125U 12M Cache, up to 4.30 GHz - Intel® Core™ Ultra 7 Processor 155U 12M Cache, up to 4.80 GHz
Memory	1x 262-Pin DDR5 5600MHz S0-DIMM. Max. up to 32GB (Non-ECC)
Display	2x DP++ 1.4 up to 3040x2160 @60Hz
Storage	1x M.2 M Key (2280, PCIe x4 Gen 4/SATA) support for NVMe/SATA SSD, Auto Detect
Expansion	1x M.2 B Key (3042/3052, PCIe x2+USB 3.0+USB 2.0) support for 4G/5G/NVMe 1x M.2 E Key (2230, PCIe+USB 2.0) for Wifi/Bluetooth
I/O	2x DisplayPort 2x COM, 1x USB 3.2 Type-C, 2x USB 3.2 Gen 1, 1x USB 2.0 3x 2.5GbE RJ45 1x Audio Line-out
Internal I/O	1x SIM Socket
Power	AT/ATX (Default ATX), 12-24VDC
Operating Temperature	-20°C to 60°C
Certification	UL 62368 Ed. 3 (pending), CE, FCC Class A, UKCA
Dimensions (WxHxD)	225 x 130 x 48 [mm]