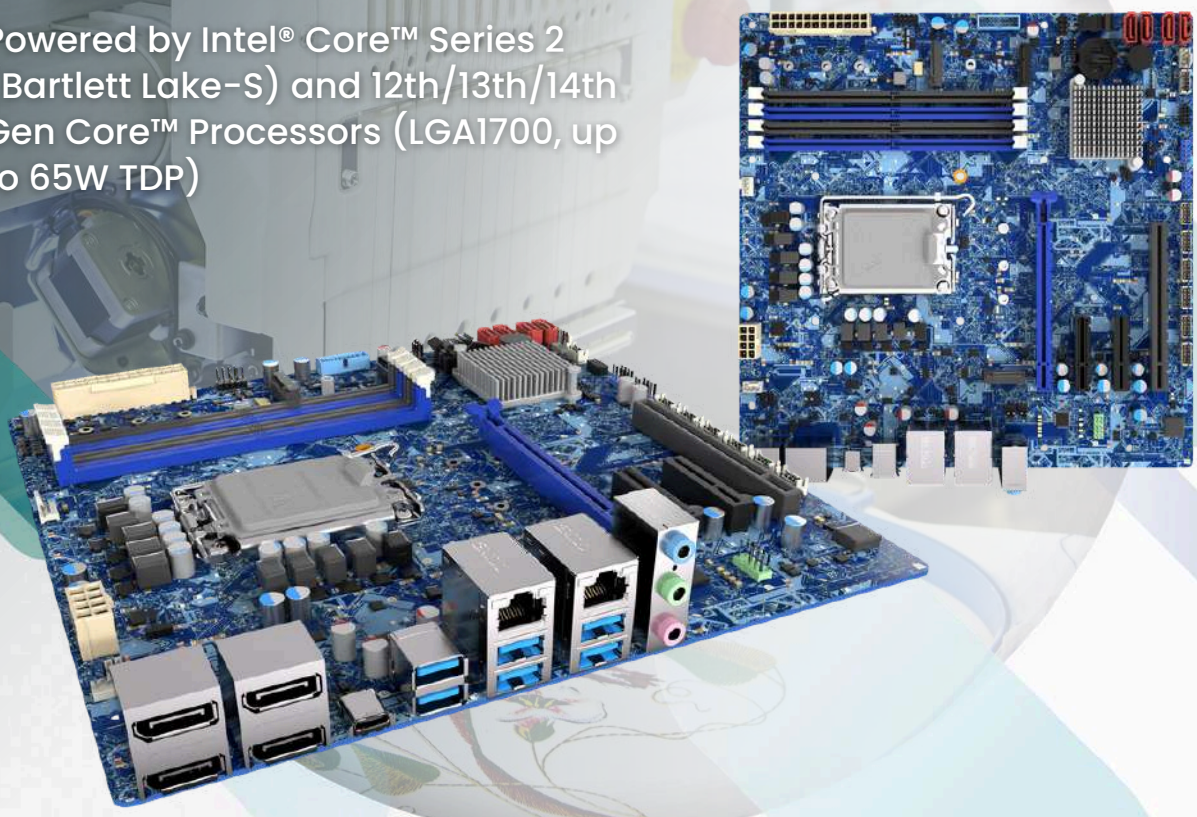
CT-MBL01

Micro-ATX Industrial Motherboard

Powered by Intel® Core™ Series 2 (Bartlett Lake-S) and 12th/13th/14th Gen Core™ Processors (LGA1700, up to 65W TDP)



High-Performance Micro-ATX Industrial Motherboard for Scalable Edge Systems

The CT-MBL01 is designed for performance-driven industrial systems and scalable edge deployments. Built to support a wide range of Intel® Core™ processors, it delivers strong compute capability, flexible expansion, and rich connectivity for industrial automation, machine vision, and embedded AI applications. Its Micro-ATX form factor enables greater expandability while maintaining system integration efficiency.

- Deployment Ready Solution
- Industrial Grade
- Fast Time To Market
- Ruggeddized Design

Product Brief
Micro-ATX Industrial Motherboard
CT-MBL01

Powering Flexible Edge Computing with Intel® Core™ Processors

Introducing the CT-MBL01, a Micro-ATX industrial motherboard engineered for high-performance industrial computing. Supporting Intel® Core™ Series 2 (Bartlett Lake-S) and 12th/13th/14th Gen processors, it provides a scalable platform for diverse edge workloads.

Built on the Intel® Q670E chipset, the CT-MBL01 enables stable performance, enterprise-level manageability, and long lifecycle support for industrial deployments.

The CT-MBL01 supports high-speed DDR5 memory, PCIe Gen 5 expansion, quad independent displays, dual LAN networking, and flexible M.2 connectivity. Its Micro-ATX design provides enhanced expandability and system customization for industrial applications requiring higher I/O density and performance.

Key Features

- Intel® Core™ Series 2 / 14th / 13th / 12th Gen processors (LGA1700)
- Intel® Q670E chipset with enterprise-grade stability
- 4× DDR5 4400 MT/s UDIMM slots for high-speed memory
- 1x PCIe x16 Gen 5 + multiple PCIe expansion slots
- Quad independent displays via 4x DP++
- Dual LAN: 1x 1GbE + 1x 2.5GbE
- M.2 M-Key, M-Key, and E-Key expansion
- Rich industrial I/O with COM, USB, and GPIO

OEM & ODM Solutions

Embedded AI Applications

AI Factory

Machine Vision & Metrology

Industrial Automation

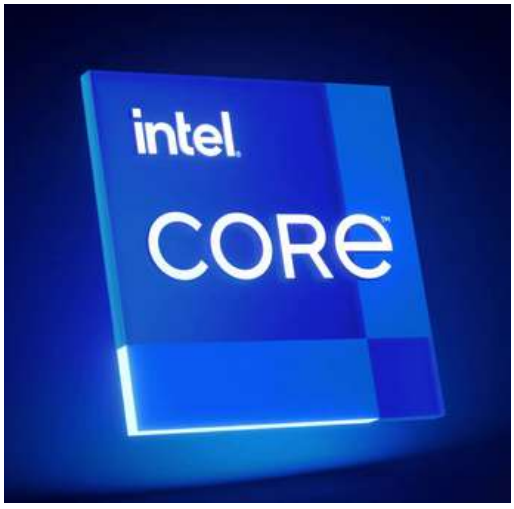
Edge AI Systems

Advanced Hybrid Architecture Powered by Intel® Core™ Processors

Hybrid Core Architecture

The CT-MBL01 leverages Intel® Core™ processors with a hybrid architecture designed for modern industrial workloads.

By combining Performance-cores and Efficient-cores, the platform enables optimized workload distribution between high-demand processing and background operations. This ensures improved performance efficiency for multi-threaded industrial applications and real-time edge processing.



Powerful Multi-Core Design

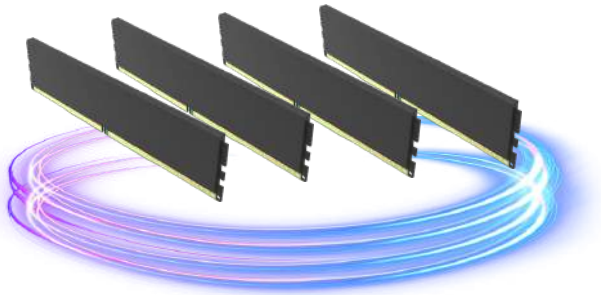
Designed for high-performance industrial computing, the CT-MBL01 supports:

- Up to 24 cores and high-frequency performance (CPU dependent)
- Hybrid P-core and E-core architecture
- Optimized for AI inference, automation, and data processing

Performance-cores handle compute-intensive workloads such as analytics and AI processing, while Efficient-cores improve system efficiency for continuous operations.

High-Bandwidth DDR5 Memory

Equipped with 4x DDR5 4400 MT/s UDIMM slots, the CT-MBL01 delivers high-bandwidth memory performance for demanding industrial workloads. This enables faster data processing, improved multitasking, and reliable performance across industrial applications.



Equipped with 4x DDR5 4400 MT/s UDIMM slots

Quad Independent Display Outputs

Supports four independent 4K displays for monitoring, control, and visualization. Enables operators to view more data at once, improving efficiency and decision making in industrial environments.

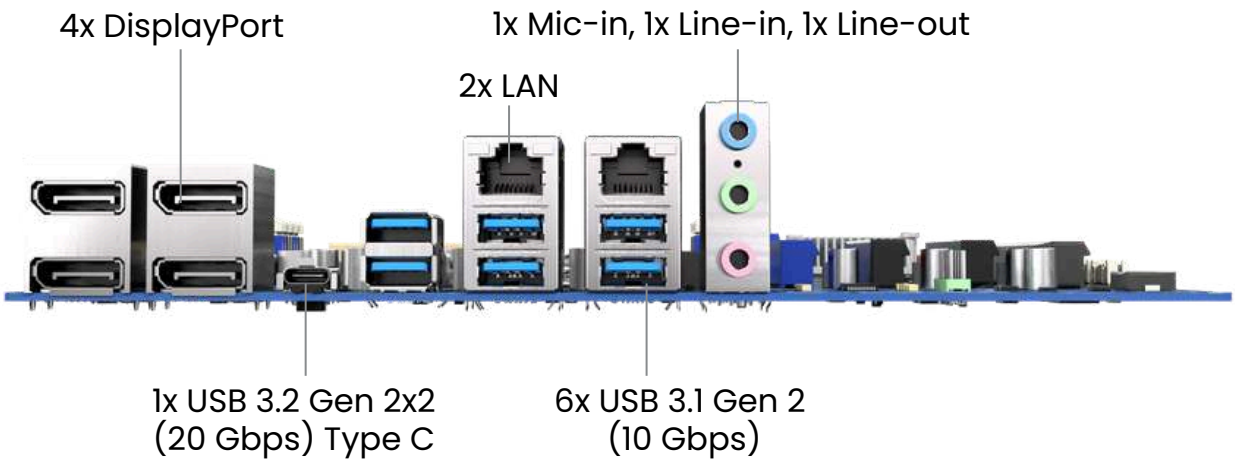
It features 4x DisplayPort (DP++) outputs, supporting up to 4K resolution (4096 x 2304) for high-quality visual output.

Rich Industrial I/O Connectivity

Designed to meet the connectivity demands of industrial environments, the CT-MBL01 provides a comprehensive set of high-speed and legacy interfaces:

- 2x LAN (1x 1GbE + 1x 2.5GbE with Wake-on-LAN / PXE)
- Up to 6x USB 3.1 Gen 2 + USB Type-C (20Gbps)
- 6x COM ports for industrial device integration
- 8-bit GPIO for control systems

This ensures seamless integration with both modern and legacy industrial equipment.



Flexible Storage and Wireless Expansion

The CT-MBL01 provides versatile storage and connectivity options for modern edge systems:

- M2x M.2 M-Key (PCIe x4 NVMe / SATA)
- 1x M.2 E-Key for Wi-Fi / Bluetooth
- 4x SATA with RAID 0/1/5/10 support

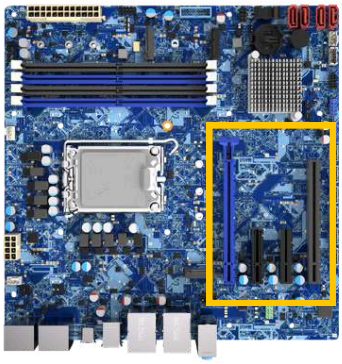
These features enable high-speed storage, redundancy, and flexible wireless connectivity.

PCIe Gen 5 Expansion for High-Performance Systems

The CT-MBL01 features multiple PCIe slots to support high-performance expansion:

- 1x PCIe x16 Gen 5 slot
- 1x PCIe x16 (Gen 4, x4 lane)
- 2× PCIe x4 slots (Gen 4 & Gen 3)

Supports high-performance GPUs, AI accelerators, and add-in cards to meet growing system demands. Multiple PCIe slots enable flexible expansion for vision processing, networking, and industrial I O, allowing one system to handle more workloads.



Industrial-Grade Durability

The CT-MBL01 is built for reliable operation in demanding industrial environments, supporting continuous workloads with:

- Operating temperature range of 0°C to 60°C
- CE / FCC Class B certification
- TPM 2.0 for hardware-based security

Applications

Industrial Automation & PLC Integration

Machine Vision and Inspection Systems

Embedded AI and Edge Computing

OEM / ODM Industrial Platforms

We Design, Manufacture, and Service Customers Around the World

CHICAGO
CALIFORNIA (HQ)
TAIWAN (HQ)
MALAYSIA

CT-MBL01 Micro-ATX Industrial Motherboard

Model	CT-MBL01
CPU	Intel® Core™ Series 2 (Bartlett Lake-S) and 12th/13th/14th Gen Intel® Core™ i9/i7/i5/i3 processors
Memory	4x DDR5 4400 MT/s UDIMM, up to 128GB
Storage	1x M.2 M/ NVMe PCIe x4 Gen 4/ 2242, 2260, 2280
Display	4x DP++ (4096 x 2304)
Rear I/O	2x GbE RJ45, 4x DP, 1x Mic-in, 1x Line-in, 1x Line-out 6x USB 3.1 Gen 2 (10 Gbps), 1x USB 3.2 Gen 2x2 (20 Gbps) Type C
Internal I/O	6x RS-232
Expansion	1x PCIe x16 Slot (Gen 5), 1x PCIe x16 Slot (Gen 4, 4-Lane) 1x PCIe x4 Slot (Gen 4, Open End), 1x PCIe x4 Slot (Gen 3, Open End)
Operating Systems	Windows 10/11 IoT Enterprise LTSC Linux Ubuntu 5.X
Operating Temperature	0°C to 60°C
TPM	TPM 2.0
Dimension	244 x 244mm

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