BCO-500-ADL SERIES

FANLESS MINI INDUSTRIAL COMPUTER

REAL-TIME DATA PROCESSING FOR RUGGED EDGE COMPUTING

COMPACT INDUSTRIAL COMPUTER

The BCO Series are designed and built to withstand deployment in challenging environments, managing workloads at the rugged edge for processing, storage, connectivity, and machine learning. This series is capable of accommodating various edge workloads, ranging from power-efficient computing to robust processing capabilities.

- Deployment Ready Solution
- High-Performance Efficiency
- Fast Time To Market
- Compact & Ruggedized Design

Industrial Fanless Mini Computer

Revolutionizing Industrial Edge IoT with BCO-500-ADL Series

The BCO-500-ADL is a fanless mini embedded computer that brings robust performance and connectivity to the most space constrained applications. Powered by 12th Generation Intel Alder Lake N, the BCO-500-ADL provides an industrial alternative to consumer-grade Intel NUCs. It's mini form factor allows the computer to seamlessly retrofit into space-constrained applications and integrate with IoT devices and sensors.

Utilizing these advanced processors, the BCO-500-ADL elivers faster performance, smoother operation, and accelerated data processing, enhancing overall efficiency. It's dual CPU compatibility makes it an optimal choice for demanding industrial-edge IoT applications, offering cost-effective, reliable, and deployment-ready solutions where speed, flexibility, and integration are critial.

BCO-500-ADL SERIES Key Features

- 12th Gen Intel Alder Lake N
- DDR5 Memory
- Rich IIoT Connectivity
- M.2 Expansion
- Industrial Grade Fanless Design
- World Class Certifications: CE, FCC Class A, UL
- Optional DIN-Rail Mounting

Smart Cities

Rugged Edge Computing

Remote Monitoring

Industrial Automation

IoT Gateways

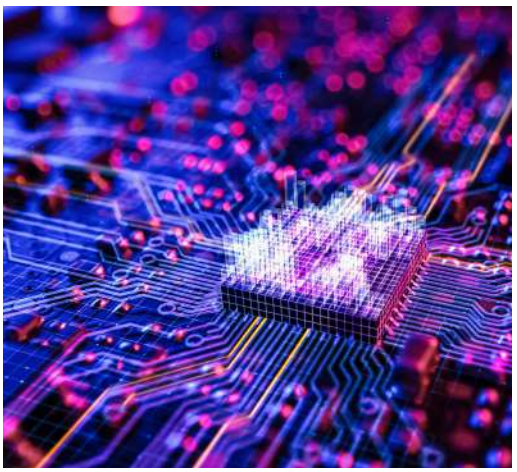
Leveraging 12th Gen Intel® Alder Lake N97 & Intel® N305 Processor for Industrial Edge IoT

The BCO-500-ADL Series is powered by the 12th Gen Intel® Alder Lake-N processor N97 and the Intel® N305, offering versatile performance options for embedded industrial computing. These processors combine low power consumption with exceptional efficiency, making them ideal for compact, fanless mini PCs. With SoC integration, they streamline system design, while industrial-grade durability ensures reliable operation in demanding environments, minimizing downtime and maintenance costs.

Efficiency Meets Performance

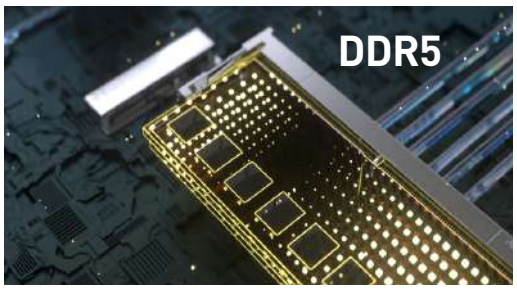
The BCO-500-ADL Series supports both the 12th Gen Intel® IoTG Alder Lake-N N97 and i3-N305 processors, offering flexibility for diverse industrial applications. Built with efficiency cores (E-cores, Gracemont Architecture), this processor delivers exceptional multitasking capabilities while maintaining superior power efficiency. It's ideal for applications requiring a balance between high performance and energy savings.

With dual processor compatibility, the BCO-500-ADL Series is a versatile choice for applications demanding flexibility, energy efficiency, and reliable long-term performance



High-Speed DDR5 Memory

The BCO-500-ADL Series features DDR5 system memory, providing exceptional performance and responsiveness with a maximum capacity of 16 GB. The default configuration includes 8 GB of memory, validated by Premio for quick deployment-ready solutions, ensuring seamless multitasking, faster data processing, and smoother system operation.



Rich, High Speed I/O

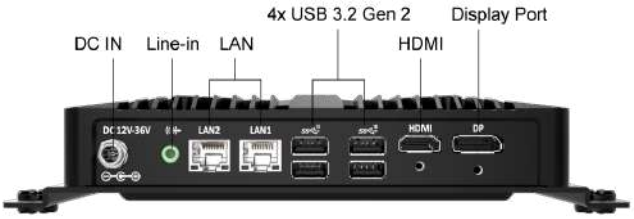
The BCO-500-ADL features comprehensive I/O connectivity on-board within its form factor. The I/O provides seamless integration, compatibility, and performance with various IoT devices and sensors.

Dual 4K Independent Displays

The BCO-500-ADL Series provides dual display support with 1x HDMI and 1x DisplayPort connections, both offering 4K resolutions (3840 x 2160 @30Hz and 4096 x 2304 @60Hz) respectively. These high-definition options ensure crisp visuals and smooth performance for various industrial and commercial applications.

Up to 4x USB 3.2

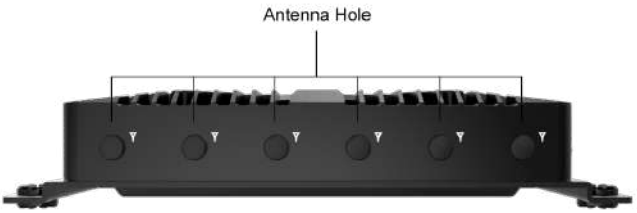
The BCO-500-ADL Series offers extensive up to 4x USB 3.2 connectivity, supporting up to 4x USB 3.2 ports for seamless data transfer and efficient peripheral device usage. With 2x USB 3.2 Gen2 ports and 2x USB 3.2 Gen1 ports, users can experience fast data transfer rates, enhancing productivity and versatility in industrial and commercial environments. Additionally, for applications requiring fewer USB ports, the BCO-500-ADL series provides support for 2x USB 3.2 Gen1 ports.



Front Panel

Side Panel

COM Port



Rear Panel

Dual COM Ports

The BCO-500-ADL features dual DB9 connectors, offering robust serial communication capabilities. COM1 supports RS232, RS422, and RS485 protocols, providing versatile connectivity for a wide range of industrial devices. Additionally, COM2 is dedicated to RS232 communication, ensuring compatibility with legacy equipment.

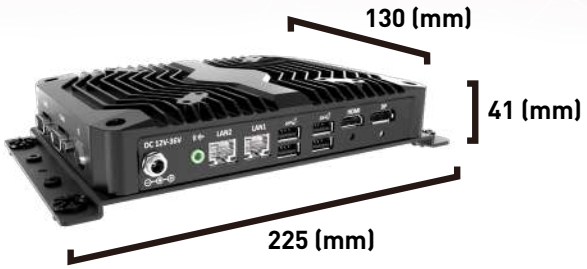
M.2 Expansion for Scalable Storage and Connectivity

M.2 B Key

The BCO-500-ADL provides M.2 expansion slots integration for both storage and wireless connectivity. Its M.2 B-Key slot supports high speed PCIe SATA SSDs and comes pre-installed with a 128GB SSD. Additionally, its M.2 E Key slot offers integration for Wi-Fi and Bluetooth wireless connectivity, allowing for robust IoT connectivity.

Small Form Factor

The BCO-500-ADL stands out as an ultra-compact solution tailored for edge IIoT applications. With dimensions measuring just 225mm x 130mm x 41mm, its compact form factor makes it ideal for deployment in space-constrained industrial environments. This small fanless computer allows for seamless integration into edge computing setups where space optimization is essential. Despite its compact size, the BCO-500-ADL delivers robust performance and reliability, ensuring uninterrupted operation of critical industrial processes in diverse IIoT applications.



Flexible Mounting

With flexible mounting options such as wall mounting and optional DIN-rail mounting, the BCO-500-ADL adapts effortlessly to diverse industrial environments. This versatility facilitates easy installation, accommodating specific space constraints and installation preferences. Whether mounted on a wall or a DIN-rail, this compact mini computer ensures secure placement and dependable operation, making it an ideal choice for various industrial applications.

Wall Mount

DIN-Rail Mount

Discrete Hardware Security with TPM 2.0

The integration of TPM 2.0 (Trusted Platform Module) in the BCO-500-ADL ensures heightened security and data integrity for edge IIoT environments. By facilitating secure boot processes, data encryption, device authentication, and remote attestation, TPM 2.0 effectively safeguards against unauthorized access, data breaches, and malware attacks, enhancing the trustworthiness and reliability of the BCO-500-ADL in industrial settings.

Wide Voltage Input

Whether deployed in factories, warehouses, or outdoor installations, the BCO-500-ADL series can reliably withstand fluctuations in power supply, ensuring uninterrupted operation and enhanced reliability for critical industrial applications. The BCO-500-ADL model is equipped with a wide voltage input range of 12-36VDC, ensuring compatibility with various power sources commonly found in industrial settings.

Industrial-Grade Durability

The BCO-500-ADL is engineered for industrial-grade durability, boasting robust specifications to thrive in harsh operating conditions. With a wide operating temperature range of -10°C up to 50°C, it maintains reliable performance even in environments with fluctuating temperatures. Additionally, its shock resistance of up to 50G and vibration resistance of up to 5Grms, in compliance with MIL-STD-810G, ensure resilience against physical stressors commonly encountered in industrial settings.

IEC60068-2-27:2008

With SSD: 50G half-sin 11ms Designed to comply with MIL-STD-810G Method 514.7 Procedure

IEC60068-2-64:2008

With SSD: 5 Grms (5 - 500 Hz, 0.5 hr/axis) Designed to comply with MIL-STD-810G Method 514.7

World-Class Certification

Supported by essential certifications, including CE, FCC and RoHS 3.0, the BCO-500-ADL Series ensures compliance with electromagnetic compatibility regulations and environmental standards. These certifications support the BCO-500-ADL Series' reliability and safety in industrial deployments worldwide.

- CE
- FCC Class A (47 CFR part 15.109 and part 15.107)
- RoHS 3.0 (Directive 2015/863/EU)15.109 and part 15.107)
- UL61010-2-201
- VCCI, RCM

We Design, Manufacture, and Service customers around the world

BCO-500-ADL SERIES

intel
Alder Lake

Model	BCO-500-ADL
CPU Support	12th Gen Intel® IoTG Alder Lake-N N97 Processor Intel® Core™ i3-N305 Processor
Memory	DDR5 4800MT/s SODIMM. Max. up to 16GB (Default: 8GB)
Display	1x 4K HDMI 1.4b 1x 4K DisplayPort 1.4a
Storage	1x M.2 B Key (2042/2280/3042, SATA/PCIe x1, support SATA)
Expansion	1x M.2 E Key (2230, PCIe x1, USB 2.0, support Wifi/Bluetooth)
I/O	2x RJ45 (2.5GbE) 1x RS-232/422/485 1x RS-232 4x USB 3.2 Gen 2 (10 Gbps)
Power	3-pin, AT/ATX 12~36V
Certification	CE, FCC Class A, UL, VCCI, RCM
Operating Temperature	N97 CPU: -10°C to 50°C (12W) i3-N305 CPU: -10°C to 45°C (15W)
Dimensions (WxDxH)	225 x 130 x 41 (mm)