

JCO SERIES

EDGE AI INDUSTRIAL COMPUTERS

CUSTOMIZABLE FANLESS
COMPUTER WITH NVIDIA JETSON
ORIN SERIES



NEXT-GENERATION EDGE AI COMPUTING SOLUTION

The JCO Series industrial computer, powered by the advanced NVIDIA Jetson platform, is a standout in AI and industrial computing. This series offers exceptional AI computing capabilities, making it perfect for sophisticated robotics, autonomous machinery, and high-end embedded AI tasks. Designed to withstand harsh industrial conditions, the JCO Series ensures consistent performance even in extreme environments.



Ultra-Compact
Form Factor



Rich I/O
Configuration



World-Class
Certification



Ruggedized
Fanless Solution



Accelerate Edge AI and IIoT with JCO-1000 Series

The JCO-1000 Series, powered by NVIDIA Jetson Orin Nano modules, is engineered for versatile Edge AI and IIoT applications. The JCO-1000 series is a rugged fanless computer that can withstand harsh environments from wide temperature to tough shock and vibration. This series offers configurations ranging from 40 to 100 TOPS of AI performance, adaptable between 7W and 25W, to ensure efficiency and power in applications like drones, security, and IIoT. Leveraging advanced Ampere architecture with up to 2048 CUDA and 64 Tensor cores, the JCO-1000 Series meets the needs of real-time AI inference in Industrial 4.0 era, purpose-built for mission-critical deployments, all within the smallest Jetson form factor.

Key Features

- Power Efficient Edge AI Computer with Nvidia Jetson Orin NX and Nano Modules
- 4x USB 3.2 Gen 2 (10 Gbps)
- 4K Display
- 1x External Dual Nano SIM socket
- Out-of-Band Module for Remote Management
- 8-bit DIO
- CAN Bus
- Built Rugged. Built Ready Fanless Design
- World-Class Certification: CE, FCC Class B, UL-Listed, RoHS 3.0, REACH

Key Markets and Applications



Smart City



Industrial 4.0



IIoT

Security &
Surveillance

Drone

Disaster
Management



Jetson Orin Nano



Jetson Orin NX

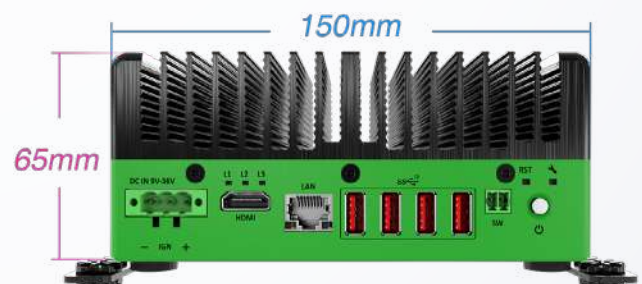
Enhanced AI Inference with Power Efficient Processing Modules

The NVIDIA Jetson Orin NX and Orin Nano modules are pivotal in enhancing edge AI capabilities, providing substantial AI performance with efficient power consumption. The Orin NX, offering up to 100 TOPS of AI performance with power configurations between 10W and 25W, is tailored for demanding edge applications requiring intense computational power in compact environments. On the other hand, the Orin Nano provides up to 40 TOPS and is designed for efficiency, with power options from 7W to 15W, making it ideal for smaller-scale, yet still AI-intensive applications. Both modules support diverse AI-driven tasks in industries ranging from autonomous vehicles to smart infrastructure, equipped with memory options to suit various needs—16GB and 8GB for the Orin NX, and 8GB and 4GB for the Orin Nano—thereby enhancing the deployment and performance of edge AI solutions.

	Jetson Orin NX Series		Jetson Orin Nano Series	
	Jetson Orin NX 16GB	Jetson Orin NX 8GB	Jetson Orin Nano 8GB	Jetson Orin Nano 4GB
AI Performance	100 TOPS	70 TOPS	40 TOPS	20 TOPS
GPU	1024-core NVIDIA Ampere architecture GPU with 32 Tensor Cores		1024-core NVIDIA Ampere architecture GPU with 32 Tensor Cores	512-core NVIDIA Ampere architecture GPU with 16 Tensor Cores
CPU	8-core Arm® Cortex®-A78AE v8.2 64-bit CPU 2MB L2 + 4MB L3	6-core Arm® Cortex®-A78AE v8.2 64-bit CPU 1.5MB L2 + 4MB L3	6-core Arm® Cortex®-A78AE v8.2 64-bit CPU 1.5MB L2 + 4MB L3	
Power	10W - 25W	10W - 20W	7W - 15W	7W - 10W

Ultra-Compact Form Factor

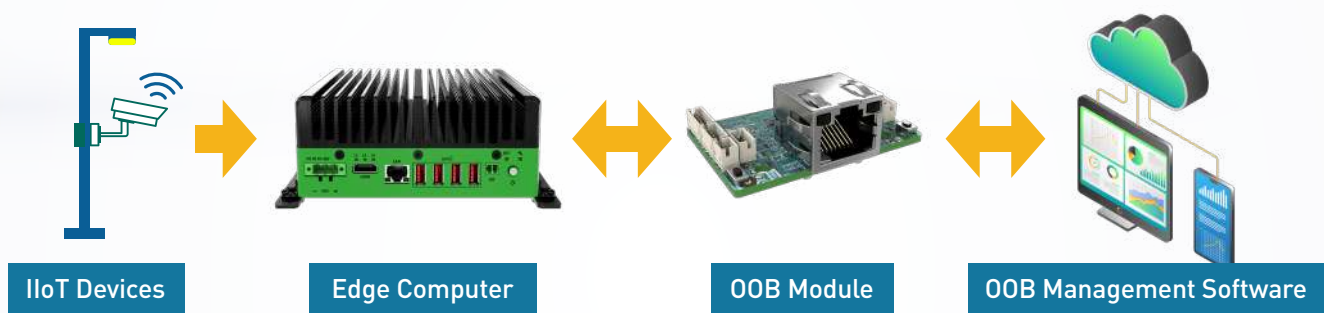
The JCO-1000-ORN Series has an ultra-compact form factor, making it ideal for space-constrained industrial environments. Despite its small size, this rugged AI edge computer delivers powerful performance and can be easily integrated into tight spaces, such as control panels, cabinets, or mobile platforms. Its compact design allows for flexible installation without sacrificing the durability or functionality needed for demanding industrial automation and edge AI applications.



Gain Remote Access by OOB Management Module

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- The JCO-1000-ORN features an on-board Out-Of-Band (OOB) device management module accessed through 1x RJ45.
- Allxon OOB device management is a hardware-based technology that allows remote device management with 24/7 monitoring and management features.
- By integrating the OOB module in JCO-1000-ORN, it enables proactive monitoring and alerts, simplifies remote updates and configuration, and ultimately enables efficient, secure, and reliable management of Edge AI deployments.



NVMe Storage Expandability

Delivering high-speed storage expansion through M Key, 2242/2280 slot with NVMe capabilities, providing high-speed storage options that enhance data transfer and system performance. This feature allows for the integration of state-of-the-art NVMe SSDs, ensuring quick data access and efficient storage solutions suited for intensive edge computing applications.



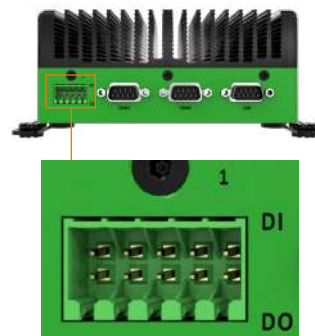
High-Speed 5G & Wireless Connectivity

The JCO-1000 Series offers advanced connectivity options to cater to diverse operational requirements. It is equipped with an external dual nano SIM socket and an M.2 B Key interface, specifically designed for 5G cellular connections, enabling high-speed, low-latency communication ideal for remote and mobile edge computing scenarios. Additionally, it features an M.2 E Key slot for Wi-Fi and Bluetooth modules, facilitating local network connections and peripheral device communication. This combination ensures versatile connectivity, supporting both wide-area cellular networks and local Wi-Fi communications.



Stable & Reliable DIO Signal Transmission

The JCO-1000 Series is designed with 8-bit isolated DIO, providing essential digital signaling capabilities suitable for basic control and monitoring tasks. The 8-bit DIO offers electrical isolation, protecting the device and connected equipment from electrical surges and noise, making it ideal for more complex or electrically noisy environments.



Rich I/O configurations

Built-In CAN Bus

The built-in CAN features electrical isolation to enhance system safety and signal integrity. This isolated CAN interface facilitates reliable communication in automotive and industrial environments, enabling devices to exchange data with robust error detection and correction mechanisms, making it particularly suitable for applications requiring secure and fault-tolerant vehicle network communications.

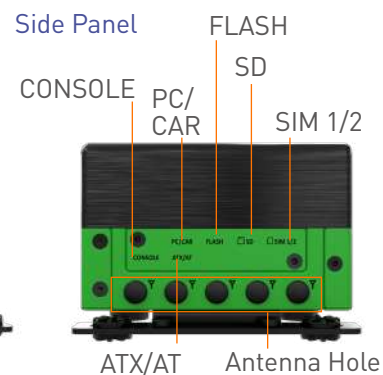
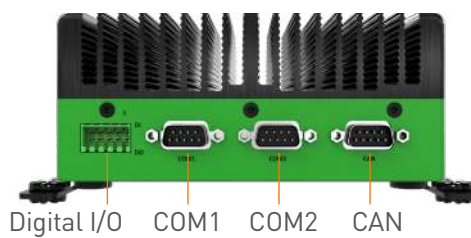
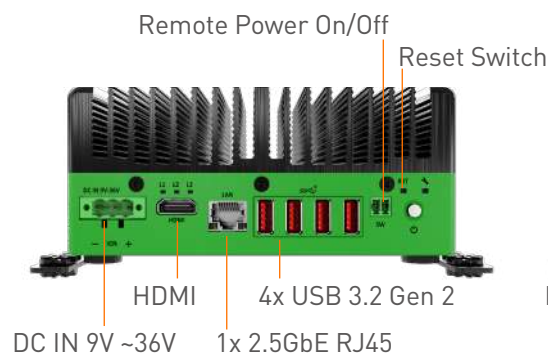
1x 4K HDMI Port

The JCO-1000 Series supports 1x HDMI 2.0 with 4K resolution (3840 x 2160) at 60Hz, providing high-definition video output for clear visual presentations and real-time data displays, suitable for applications requiring detailed graphical interfaces or video streaming.

Front Panel

Rear Panel

Side Panel



1x 2.5 GbE Ethernet

The JCO-1000 Series is equipped with 1x 2.5 GbE Ethernet port, offering a significant speed boost over traditional gigabit Ethernet, delivering up to 2.5 times faster data transfer rates. This increased bandwidth enables smoother, faster network performance, making it ideal for video streaming, and large file transfers. In addition, the 2.5 GbE port provides low latency, ensuring quicker response times and more efficient data transmission, perfect for reducing lag in demanding tasks such as real-time collaboration or high-performance computing.

4x USB 3.2 Gen 2

Featuring four USB 3.2 Gen 2 (10 Gbps), the JCO-1000-ORN offers high-speed data transfer up to 10Gbps, ideal for quickly transferring large files, connecting external storage devices, or streaming high-definition media.

Versatile Mounting Options

The JCO-1000-ORN Series offers versatile mounting options with both wall mount and DIN rail mount capabilities. These mounting choices provide flexibility in installation, allowing the system to be securely positioned on walls, in enclosures, or onto DIN rails within control panels. This adaptability is especially valuable in compact or dynamic environments where space is limited, ensuring the JCO-1000 ORN can be seamlessly integrated without disrupting existing infrastructure.



Wall mount



Din rail mount

Built Rugged, Built Ready

The JCO-1000 series is engineered for industrial-grade durability, ensuring reliable performance under harsh conditions.

- Wide Operating Temperature (-20°C up to 60°C)
- Shock & Vibration Resistance (MIL-STD-810G Compliant, shock resistance of up to 50G and vibration resistance of 5 Grms)
- TPM 2.0
- Power Protection: OVP, OCP, and RPP



World-Class Safety Certifications

Engineered for industrial-grade reliability, the JCO-1000 Series is tested and validated with world-class safety certifications, including CE, FCC, UL 62368-1 Ed. 3, RoHS 3.0, and REACH. CE and FCC ensure that the device meets the regulatory requirements for electromagnetic compatibility. The system is also certified with UL 62368-1, 3rd Edition, ensuring safe usage in IT and electrical equipment environments. Furthermore, RoHS 3.0 and REACH certifications highlight the product's commitment to environmental sustainability by restricting hazardous substances and ensuring safe material use, making it a reliable choice for industrial applications worldwide.

- CE, FCC Class B
- RoHS 3.0
- UL 62368-1 Ed. 3
- REACH



**WE DESIGN,
MANUFACTURE, AND
SERVICE CUSTOMERS
AROUND THE WORLD**



NEW

JCO-1000-ORN SERIES Entry-Level AI Computer



JCO-1000-ORN-A

Processor	NVIDIA® Jetson Orin™ NX/Nano GPU with 32 Tensor Cores
Display	1x HDMI 2.0, 3840 x 2160 @ 60Hz
Storage	1x M.2 (M Key, 2242/2280, PCIe x4, NVMe) (Default 128GB), 1x Micro SD 2.0 Slot
Expansion Slot	1x M.2 (B Key, 2242/3042/3052, PCIe x1, USB 3.2 Gen1, Support 4G/5G Module) 1x M.2 (E Key, 2230, PCIe x1, USB 2.0, Support Wi-Fi/Bluetooth)
I/O	CAN 2.0 B, 2x RS-232/422/485, 4 in / 4 out (Isolated), 1x 2.5GbE RJ45, 4x USB 3.2 Gen 2 (10 Gbps), 1x USB Type-C (For OS Flash), 1x Micro USB (Console)
OoB	1x RJ45 (Optional OoB Management Module)
Power	DC IN 9-36V, AT, ATX 3-pin Terminal Block
Operating Temperature	-20°C to 55°C (25W, NX Module) -20°C to 60°C (15W, Nano Module)
Shock & Vibration	With SSD: 5 Grms, 5 - 500 Hz, 0.5 hr/axis With SSD: 50G, half sine, 11ms
Certification	CE, FCC Class B, UL 62368-1, 3rd Ed., RoHS 3.0, REACH
Dimensions	150 (W) x 105 (D) x 65 (H) mm
Mounting Options	Wall Mounting / DIN Rail (Optional)