BCO-500-RK3568J SERIES

ARM®-BASED FANLESS MINI INDUSTRIAL COMPUTER

PURPOSE-BUILT FOR INDUSTRIAL IOT AND EDGE INTEGRATION

COMPACT INDUSTRIAL COMPUTER

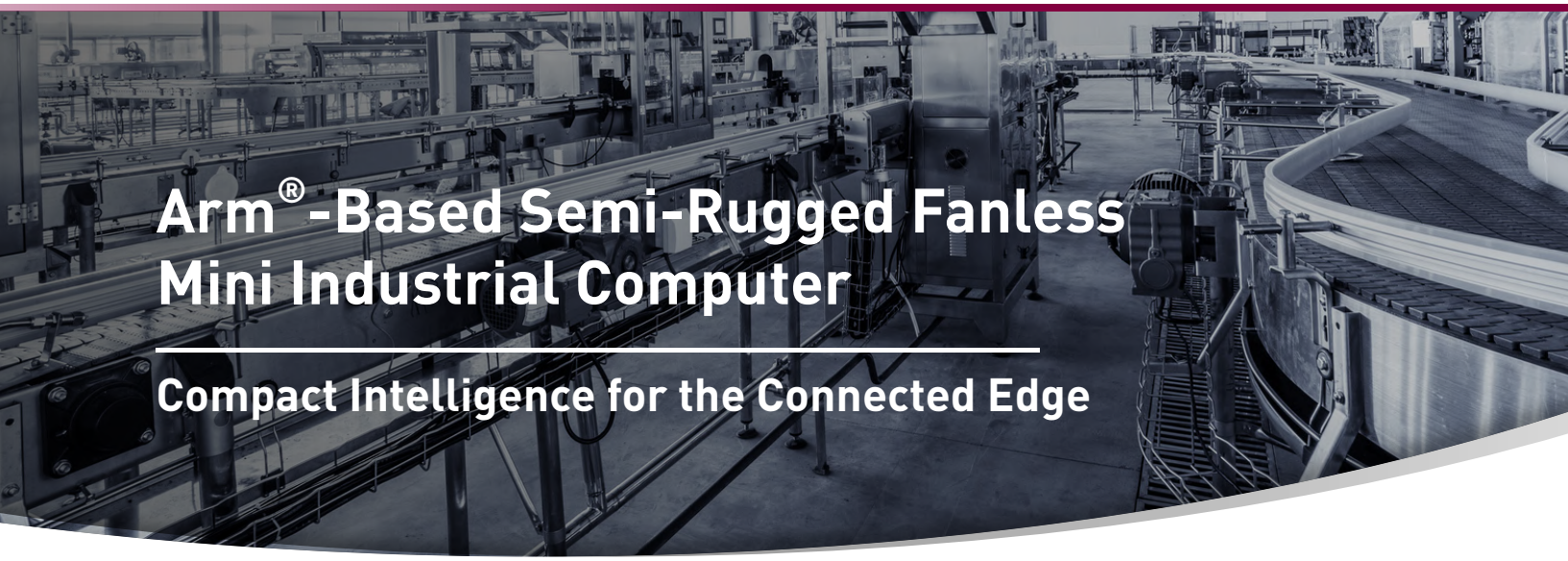
The BCO Series is designed and built to withstand deployment in semi-rugged environments, managing workloads at the edge for processing, storage, connectivity, and machine learning. This series can accommodate various edge workloads, ranging from power-efficient computing to more demanding processing tasks, all within a compact and fanless design.

- Deployment Ready Solution
- Power-Efficient Performance
- Fast Time To Market
- Compact & Ruggedized Design

Product Brief

Arm®-based Fanless Mini Industrial Computer

BC0-500-ROK Series



Arm® -Based Semi-Rugged Fanless Mini Industrial Computer

Compact Intelligence for the Connected Edge

The BCO-500-RK3568J Series is an Arm®-based, fanless mini industrial computer purpose-built for edge computing in space-constrained and semi-rugged environments. Powered by the Rockchip RK3568J processor, this compact system balances power efficiency with versatile I/O, wireless expansion, and flexible OS support—including Android 13 and Debian 11.

Optimized for applications such as industrial IoT, kiosks, HMI systems, and IoT gateways, the BCO-500-RK3568J Series enables fast integration and reliable operation in connected edge environments. Its compact footprint and fanless thermal design make it an ideal fit for automation systems, smart infrastructure, and embedded deployments in commercial and industrial settings.

Key Features

- Rockchip RK3568J Quad-core Arm® Processor
- Ultra-Compact Form Factor
- IIoT-Centric Connectivity
- Robust Cellular & Wireless Connectivity
- Edge-Optimized OS Support (Android 13 / Debian 11)
- Industrial-Grade Reliability
- World-Class Safety Certifications

Kiosks and Retail

IoT Gateways

Industrial Automation

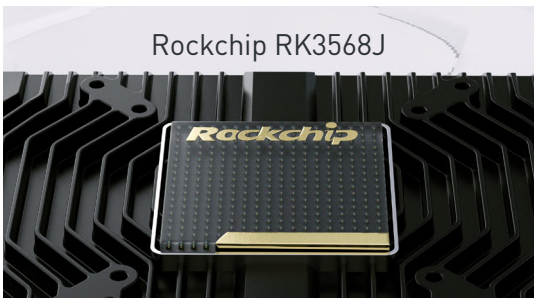
Smart Cities

Rugged Edge Computing

Power-Efficient Processing with Arm®-Based Architecture

The BCO-500-RK3568J series marks Premio's first Arm®-based industrial computer powered by the Rockchip RK3568J System-on-Chip (SoC). This brings a new level of power efficiency and integration to the company's rugged edge portfolio. Built on a quad-core Arm® Cortex®-A55 architecture and 22nm process, the RK3568J delivers the responsiveness and stability needed for fanless, space-constrained environments.

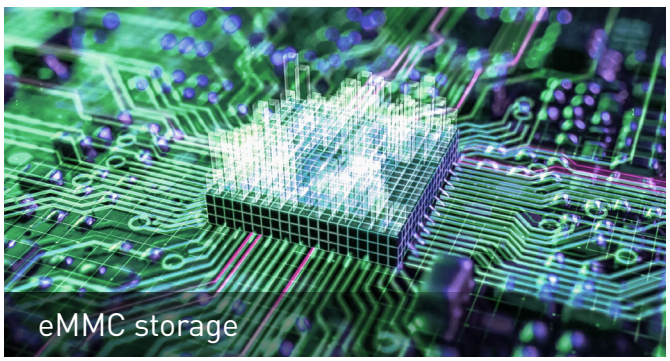
Paired with 4GB of LPDDR4 memory soldered on the board, this fanless mini computer ensures fast data access and energy-efficient performance. This compact and reliable design supports a range of industrial applications including kiosks, HMI systems, and IoT gateways. With integrated GPU and multimedia capabilities, it also handles graphical interfaces and video playback with ease.

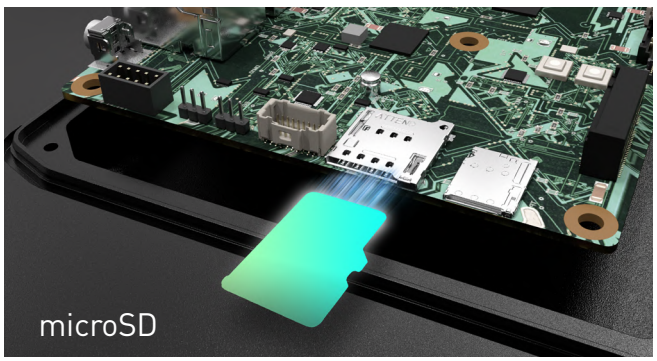


- Rockchip RK3568J Arm® Quad Coretex®-A55, up to 2.0 GHz
- 4GB LPDDR4 2133 MHz

Flexible Storage Options

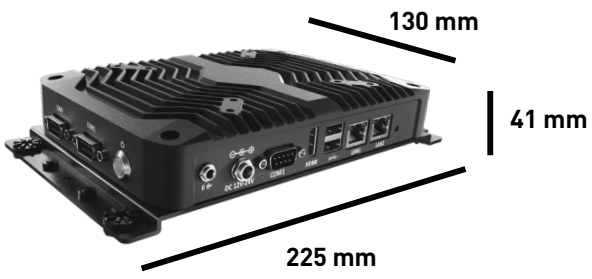
The BCO-500-RK3568J series offers onboard storage designed for reliability and ease of integration in industrial environments. It comes equipped with 64GB of eMMC storage, providing fast, non-volatile memory ideal for OS installation, application data, and system logs. For additional flexibility, a microSD card slot is available directly on the board, allowing developers to expand storage capacity or facilitate quick OS/image updates in the field.





Ultra-Compact Form Factor

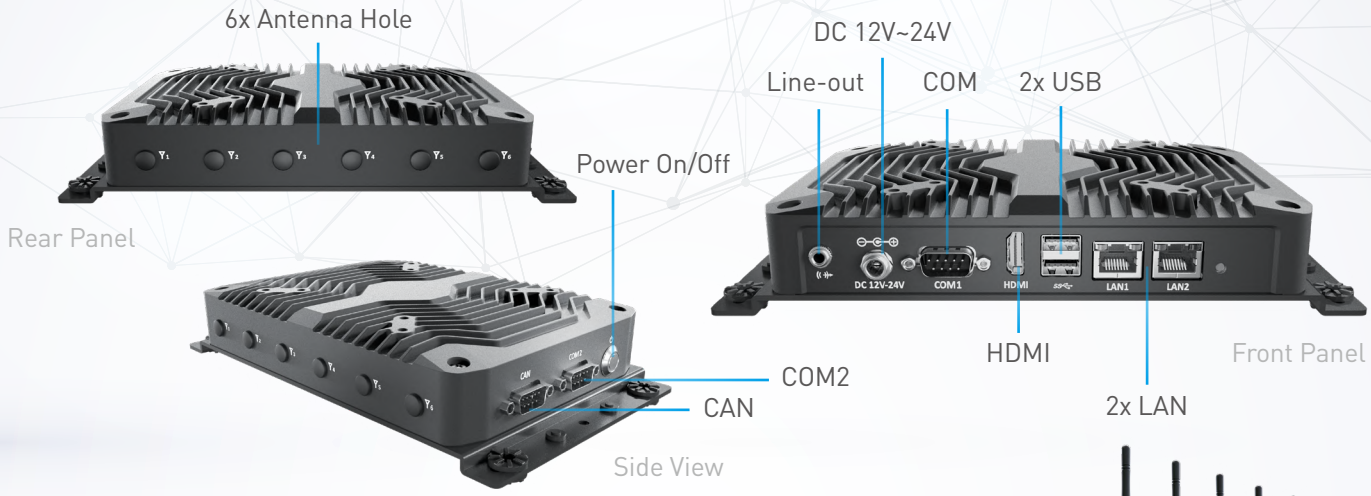
This industrial computer offers a footprint comparable to a typical Intel® NUC, but with enhanced durability and industrial-grade reliability. Its slim profile and semi-rugged, fanless design make it ideal for control cabinets, wall-mounted enclosures, and other space-constrained edge environments where size, thermal efficiency, and longevity are critical.



IIoT-Centric Connectivity for Seamless Integration

Despite its compact form factor, the BCO-500-RK3568J series offers robust I/O connectivity designed to simplify integration with diverse IoT devices and industrial sensors. The onboard I/O enables reliable communication, fast data exchange, and flexible deployment in edge environments.

- 2x COM ports supporting RS-232, RS-422, and RS-485 for industrial-grade serial communication
- 1x CAN port for real-time communication with industrial control systems
- 2x GbE(LAN) for high-speed network connectivity



Robust Cellular & Wireless Connectivity

The BCO-500-RK3568J series supports 4G/LTE connectivity via the M.2 B Key slot paired with the Nano SIM socket, while the M.2 E Key slot enables Wi-Fi and Bluetooth functionality, making it ideal for remote or mobile edge

CAN Bus for In-Vehicle Communication

The BCO-500-RK3568J series features an integrated CAN Bus port, enabling direct, real-time communication with in-vehicle systems and industrial controllers. This reduces reliance on a central host computer, streamlines system architecture, and simplifies wiring for more efficient deployments.

Edge-Optimized OS Support

Running on Android 13 and Debian 11, the BCO-500-RK3568J series offers flexibility for applications ranging from interactive HMIs and kiosks to edge computing tasks like data processing and IoT gateway operations. With both operating systems optimized for the Rockchip platform, this mini industrial computer delivers a seamless development and deployment experience.

Flexible Mounting Options

To accommodate diverse installation scenarios, the BCO-500-RK3568J series supports standard wall and VESA mounting for easy integration into control panels, equipment frames, or display systems. An optional DIN-rail kit adds flexibility for cabinet-based or space-constrained edge deployments.

- DIN-Rail Mount

- Wall Mount

- VESA Mount

Industrial-Grade Reliability

Engineered for long-term operation in challenging industrial settings, this Arm®-based fanless mini computer features a semi-rugged design tested to MIL-STD-810G standards for shock and vibration. Its compact, solid-state construction makes it well-suited for deployment in control cabinets, production lines, edge enclosures, and even outdoor kiosks—maintaining consistent performance under environmental stress.

- Operating Temperature: -40°C to 70°C
- Shock and Vibration: 50G and 5Grms
- Power Input: 12-24VDC

World-Class Safety Certifications

Developed under the IEC 62443-4-1 secure development process, the BCO-500-RK3568J Series is built with cybersecurity at its core. It also meets a range of internationally recognized safety and EMC standards, enabling safe and reliable operation in regulated industrial environments worldwide. From factory automation to control systems and edge deployments, the mini computer is ready for global integration.

- UL 61010-1 & UL 61010-2-201
- CE & FCC Class A
- UKCA & IC

We Design, Manufacture, and Service customers around the world

BCO-500-RK3568J Series

Model	BCO-500-RK3568J
CPU	Rockchip RK3568J Arm® Quad Cortex®-A55, up to 2.0 GHz
Memory	4GB LPDDR4 2133 MHz
Display	1x HDMI Max resolution 4096 x2160 @60Hz
Storage	64GB eMMC for OS
Expansion	1x M.2 B Key (3042, SATA3, USB 2.0) support for 4G/LTE 1x M.2 E Key (2230, USB 2.0) for Wi-Fi/Bluetooth
I/O	3x RS-232/422/485 2x USB 3.0 Type A 2x GbE RJ45 (10/100/1000 Mbps) 1x Audio Line-out
Internal I/O	2x USB 2.0 1x microSD Slot 1x Nano SIM Socket
Power	AT/ATX (Optional), 12-24VDC
Operating Temperature	-40°C to 70°C
Certification	UL 61010-1, UL 61010-201, CE, FCC Class A, UKCA, IC
Dimensions (WxHxD)	225 x 130 x 41 (mm)