MYiR 米尔电子
Make Your Idea Real

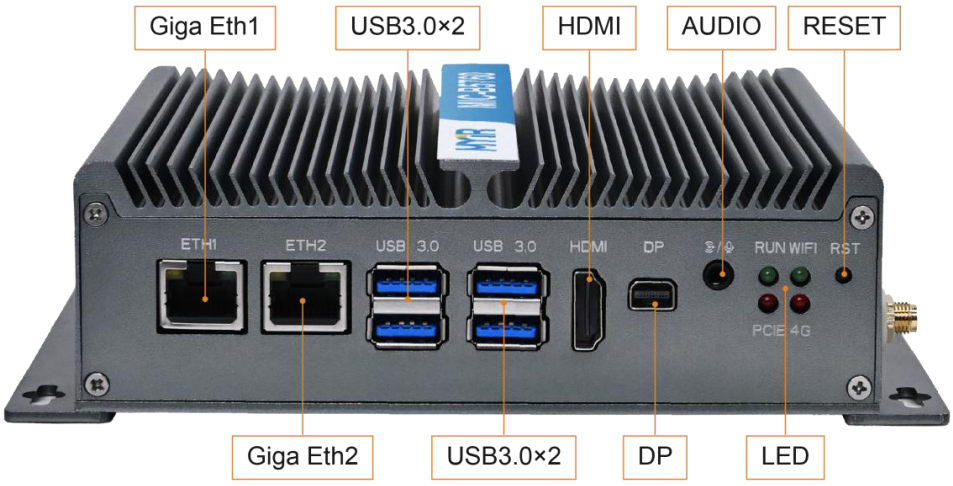
MIC-B5760 IPC Box Overview

- ✓ RK3576J Processor based on 1.6GHz Quad-core ARM Cortex-A72 and 1.4GHz Quad-core ARM Cortex-A53
- ✓ Equipped with a 6 TOPS NPU Accelerator and a 3D GPU
- ✓ 4GB LPDDR5, 32GB eMMC, 4KB EEPROM
- ✓ 1x Debug Port, 2x Gigabit Ethernet, 4x USB 3.0, 1x MicroSD, 1x SIM Card Slot
- ✓ 2x RS485, 1x RS232, 1x RS485/RS232, 2x CAN, 4x DI, 4x DO
- ✓ Onboard WiFi/Bluetooth Module and Mini-PCIe Slot for 4G/5G Module
- ✓ Onboard M.2 (PCIe) M-Key 2280 Slot for SSD and Computing Power Card
- ✓ Supports HDMI and Mini DP Display, and Audio In/Out
- ✓ Supports Linux (Yocto), Debian
- ✓ Rugged and Fanless Enclosure Design
- ✓ Operating Temperature -40° C ~ 85° C

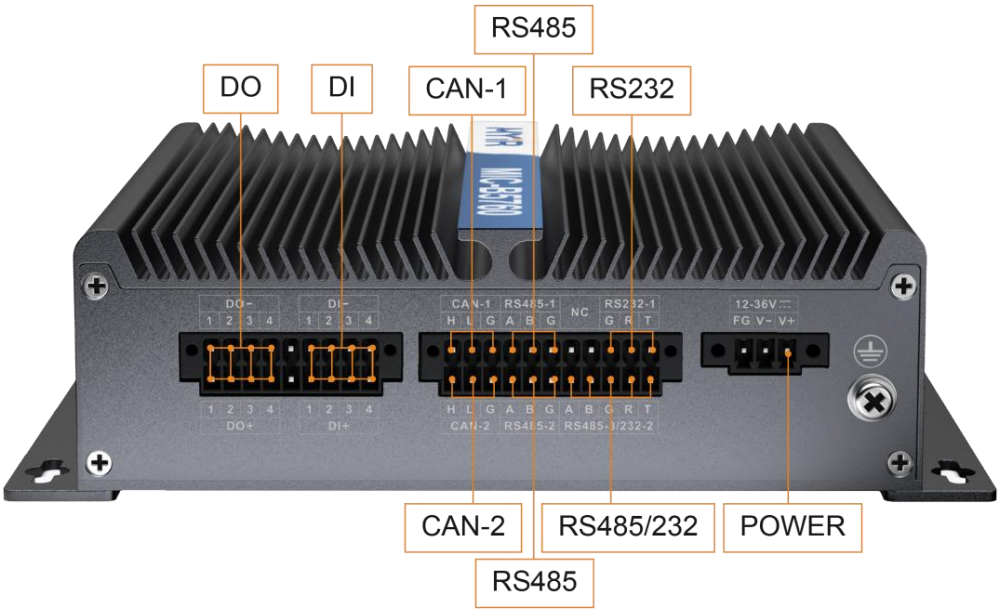
The **MIC-B5760** is a rugged aluminum-alloy Industrial PC (IPC) Box suited for applications such as industrial automation, data acquisition, energy storage, intelligent transportation, security monitoring, medical devices, edge gateways, factory automation, PLC replacement and upgrade solutions, and automated testing.

Powered by the **Rockchip RK3576J** industrial-grade SoC (**octa-core CPU up to 1.6GHz, 6 TOPS NPU, 3D GPU**) with **LPDDR5** memory, it delivers strong computing and AI performance. Storage and acceleration are expandable via an **M.2 (PCIe) 2280 slot**, with **eMMC** and UFS options. The device provides a rich set of peripheral interfaces: **2x Gigabit Ethernet, 4x USB 3.0, HDMI and Mini DP display outputs, and a 3.5mm audio input/output jack**. Wireless connectivity includes **WiFi/Bluetooth**, as well as **4G/5G** cellular via an onboard mini PCIe slot and Micro SIM card slot. Industrial interfaces include **isolated 2x CAN FD, 2x RS485, 2x RS232, 1x RS485/RS232, and GPIOs**.

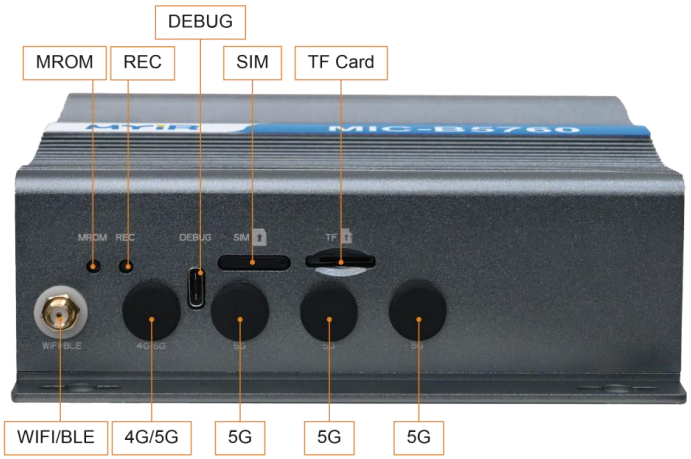
MYIR offers comprehensive software support for **Linux (Yocto) and Debian** operating systems, including U-Boot, **Linux kernel 6.1**, driver source code, and development tools. Detailed documentation such as product manuals, user guides, and development references are also provided to facilitate secondary development and accelerate custom application deployment.



MIC-B5760 Front View



MIC-B5760 Bear View

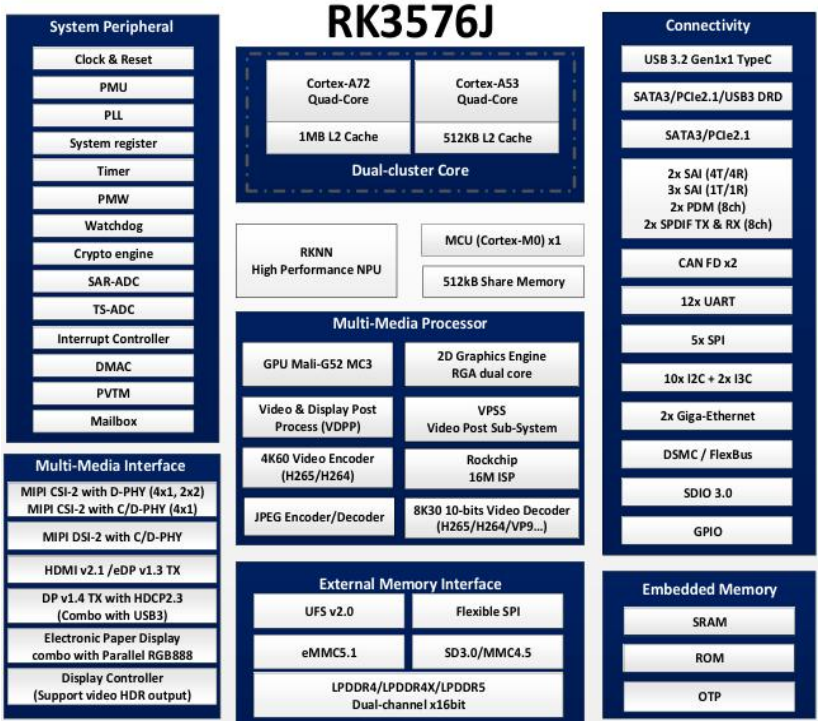


MIC-B5760 Side View

Hardware Specification

The MIC-B5760 IPC Box is built around the Rockchip RK3576J SoC, which is a high-performance, industrial-grade processor designed to meet the rigorous demands of industrial automation, edge computing, and smart manufacturing. Built on an advanced octa-core CPU architecture, it integrates four ARM Cortex-A72 cores (up to 2.1GHz) and four ARM Cortex-A53 cores (up to 1.9GHz), while featuring a powerful 6 TOPS NPU accelerator and a high-performance 3D GPU. This combination delivers exceptional computational power and efficient AI inference, providing a robust foundation for intelligent industrial solutions and complex data processing tasks.

The processor excels in multimedia capabilities, supporting high-resolution 8K@30fps/4K@120fps video decoding (compatible with H.265, VP9, AVS2, and AV1) and 4K@60fps video encoding (H.265, H.264). It also offers a comprehensive suite of multimedia interfaces, including HDMI, eDP, DP, MIPI-DSI, Parallel RGB, and MIPI CSI, alongside a 16M Pixel ISP to ensure superior visual performance and flexible display configurations. Furthermore, the RK3576J provides extensive peripheral expansion options, featuring Dual Gigabit Ethernet ports, PCIE 2.1, USB 3.2, SATA 3, DSMC/Flexbus, CAN FD, and UART. This rich array of interfaces ensures robust connectivity and scalability, making it highly adaptable to a wide range of demanding industrial environments.



RK3576J Processor Block Diagram

The MIC-B5760 IPC Box takes full advantages of the Rockchip RK3576J processor. The main features are listed in the following table.

Item	Features
Processor	Rockchip RK3576J processor - Octa-core Arm MPU with 4x Cortex-A72 cores, 4x Cortex-A53 cores Normal mode: 4*ARM Cortex-A72 @1.6GHz + 4*ARM Cortex-A53 @1.4GH Overdrive mode: 4*ARM Cortex-A72 @2.1GHz + 4*ARM Cortex-A53 @1.9GHz - Arm Cortex-M0 MCU at 400MHz for user application - Arm Mali-G52 MC3 3D GPU - 6 TOPS NPU supports INT4/8/16/FP16/BF16/TF32
Memory	4GB LPDDR5 (8GB available as a customization option)
Storage	32GB eMMC (64GB or 128GB UFS available as customization options) 4KB EEPROM 1x Micro SD card slot 1x M.2 (PCIe) M-Key 2280 slot for SSD storage and AI computing card expansion
Multimedia Interfaces	1x HDMI (supports up to 4K@120Hz resolution) 1x Mini DisplayPort (DP) (supports up to 4K@60Hz resolution) 1x 3.5mm Audio Jack (headphone output and microphone input)
Communication Interfaces	1x Type-C USB-UART Debug Interface 4x USB 3.0 Host Type-A Ports 2x 10/100/1000Mbps Gigabit Ethernet Interfaces Onboard WiFi/BT Module (complies with IEEE 802.11 a/b/g/n/ac/ax standard, supports WiFi 6+BT V5.4) with 1x WiFi/BT antenna interface 1x Mini-PCIe Slot for 4G/5G Module, paired with 1x Micro SIM card slot 2x CAN FD with isolation 2x RS485 with isolation, 1x RS232 with isolation, 1x RS485/RS232 with isolation 4x DI with isolation, 4x DO with isolation
Others	External Watchdog Supercapacitor backup, supports 5-second power-off delay 1x External RTC (requires external 3.3V battery) 1x Onboard buzzer 4x LEDs (Power/System, WiFi, PCIe SSD, 4G/5G) 3x Buttons (Reset, RECOVERY, MASKROM)
Power Supply	DC 12~36V / 5A (via Phoenix connector)
Dimensions	150x 150x 49mm (without mounting bracket)
	170x 150x 49mm (with mounting bracket)
Operating Temp.	-40°C~+85°C (Industrial Grade)
Net Weight	840g
Installation	Desktop/Wall mounted (can be customized for Rail mounted)

Software Features

The MIC-B5760 offers support for Linux (Yocto), Debian operating systems and is equipped with comprehensive software packages. Below is a brief overview of the key software features:

Item	Features	Description	Source Code
Bootloader	Pre-loader	First Bootloader Program	NO
	U-Boot	U-Boot 2017.09	YES
Kernel	Linux kernel	Customized based on Rockchip's official Linux kernel 6.1	YES
Drivers	EEPROM	EEPROM (BL24C32F) driver	YES
	USB	USB driver	YES
	Ethernet	Ethernet (YT8531SH) driver	YES
	HDMI	HDMI driver	YES
	DP	DP driver	YES
	MIPI DSI	MIPI DSI driver	YES
	Audio	ES8390 audio driver	YES
	RTC	RX8025 driver	YES
	GPIO	GPIO driver	YES
	RS232	RS232 driver	YES
	RS485	RS485 driver	YES
	CAN	CAN driver	YES
	WiFi	WiFi (BL-M8800DS7-80I) driver	YES
	BT	Bluetooth (BL-M8800DS7-80I) driver	YES
File system	myir-image-mic-b5760-debian	Image built based on Debian system	YES
	myir-image-mic-b5760-yocto	Linux image built with Yocto	YES
	myir-image-mic-b5760-yocto-preempt-rt	Rt Linux image built with Yocto	YES

MIC-B5760 Software Features

Order Information

Item	Part No.	Packing List
MIC-B5760 IPC Box	MIC-B5760-IB411000	✓ One MIC-B5760 IPC Box (4GB LPDDR5 +32GB eMMC) ✓ One Quick Start Guide ✓ One 3.5 mm pitch 18-pin Phoenix connector ✓ One 3.5 mm pitch 22-pin Phoenix connector ✓ One 3.81 mm pitch 3-pin Phoenix connector ✓ One WiFi/Bluetooth antenna

MYIR Electronics Limited

Headquarter Address: Room 04, 6th Floor, Building No.2, Fada Road, Yunli Smart Park, Bantian, Longgang District, Shenzhen, Guangdong, China 518129

Factory Address: Room 201, Block C, Shengjianli Industrial Park, Dafu Industrial Zone, Guanlan, Longhua District, Shenzhen, 518110, China

Website: https://en.myir.cn
Email: sales@myir.cn
Tel: +86-755-22984836