

MIC-P5760 IPC Box Overview

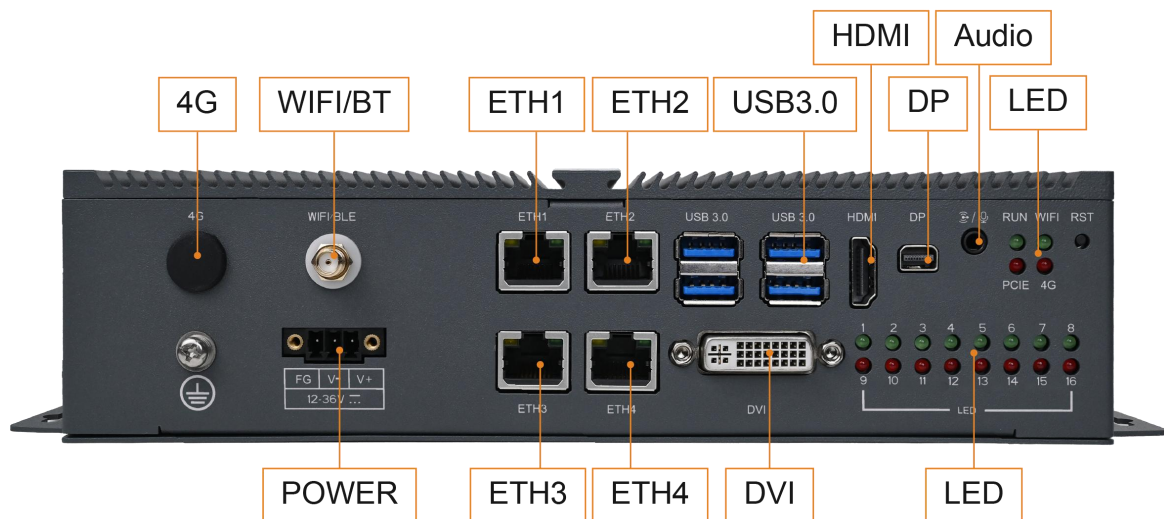


- ✓ RK3576J Processor based on 1.6GHz Quad-core ARM Cortex-A72 and 1.4GHz Quad-core ARM Cortex-A53
- ✓ Equipped with a 6 TOPS NPU Accelerator and a 3D GPU
- ✓ 4GB LPDDR5, 32GB eMMC, 4KB EEPROM
- ✓ 1x Debug Port, 4x Gigabit Ethernet, 4x USB 3.0, 1x MicroSD, 1x SIM Card Slot
- ✓ 8x RS485, 2x RS232, 4x CAN FD, 8x DI, 14x DO, 4x ADC
- ✓ 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, Mini DP, and DVI Display, and Audio In/Out
- ✓ Supports Linux (Yocto), Debian
- ✓ Rugged and Fanless Enclosure Design
- ✓ Operating Temperature -40°C~+85°C

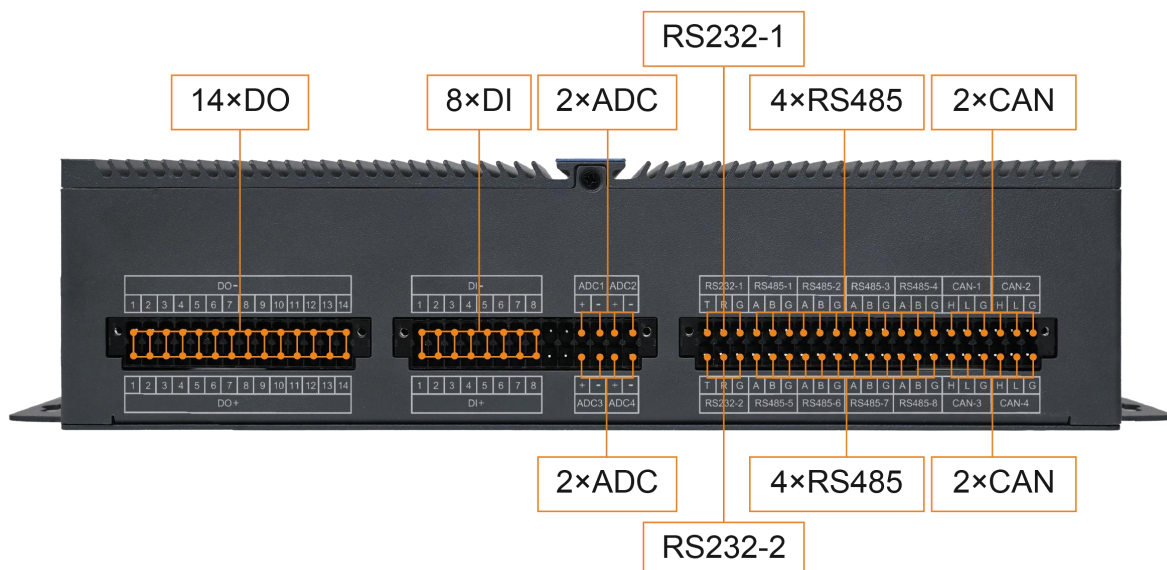
The **MIC-P5760** is a powerful Industrial PC (IPC) Box built around the **Rockchip RK3576J** processor and housed in a rugged aluminum alloy enclosure. Designed for applications including EV charging piles, intelligent power distribution, commercial energy management, and industrial automation, it delivers reliable edge intelligence to energy infrastructure.

Powered by the **Rockchip RK3576J** industrial-grade SoC (featuring an octa-core CPU up to 1.6GHz, 6 TOPS NPU, and 3D GPU) paired with LPDDR5 memory, it delivers robust computing and AI performance. Storage and acceleration can be expanded via an **M.2 (PCIe) 2280 slot**, with eMMC and UFS options available. The device offers a rich array of peripheral interfaces: **4x Gigabit Ethernet, 4x USB 3.0, HDMI, DVI, and Mini DP display outputs, plus a 3.5mm audio input/output jack**. Wireless connectivity includes **WiFi/Bluetooth**, as well as **4G/5G** cellular support via an onboard mini PCIe slot and Micro SIM card slot. Moreover, it integrates **8 isolated RS485 ports, 2 isolated RS232 ports, 4 isolated CAN FD interfaces, rich digital I/O (8x DI + 14x DO), and 4x ADC inputs** within a wide-temperature, wide-voltage platform, making it ready for harsh field deployment.

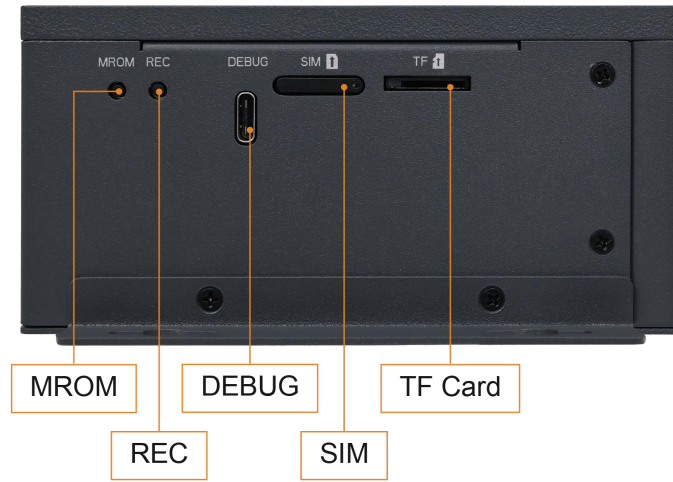
MYIR provides comprehensive software support for **Linux (Yocto) and Debian** operating systems, including U-Boot, **Linux kernel 6.1**, driver source code, and development tools. Detailed documentation such as product manuals, user guides, and development references is also available to facilitate secondary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



MIC-P5760 Front View



MIC-P5760 Rear View

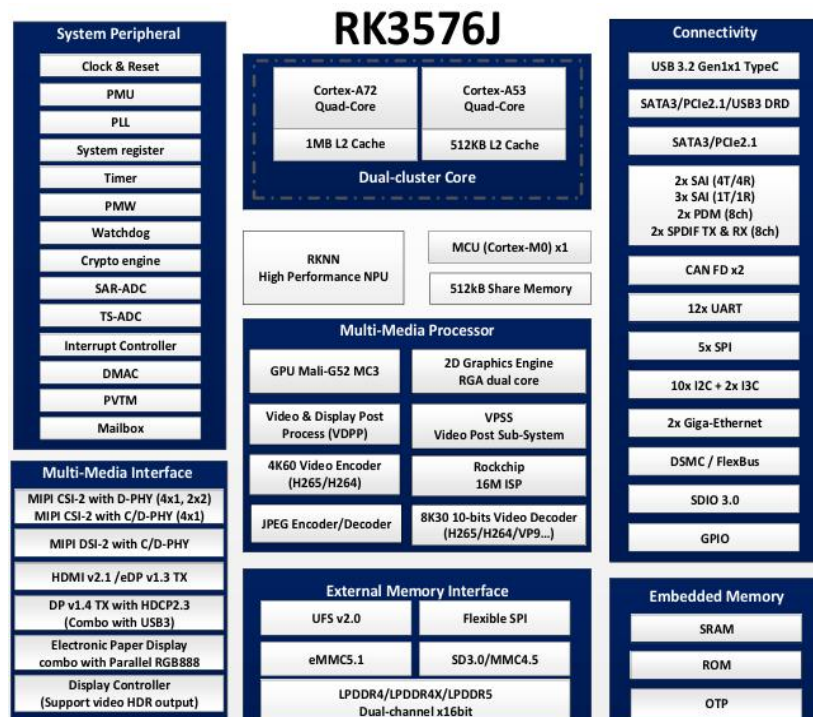


MIC-P5760 Side View

Hardware Specification

The MIC-P5760 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-P5760 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: 4x Cortex-A72 @1.6GHz + 4x Cortex-A53 @1.4GHz) (Overdrive mode: 4x Cortex-A72 @2.1GHz + 4x 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 DVI 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 4x 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) 1x WiFi/BT antenna interface 1x Mini-PCIe Slot for 4G/5G Module, paired with 1x Micro SIM card slot 4x CAN FD (isolated) 8x RS485 (isolated), 2x RS232 (isolated) 8x DI (isolated), 14x DO (isolated) 4x ADC inputs
Others	1x External Watchdog 1x Supercapacitor backup, supports 5-second power-off delay 1x External RTC (requires external 3.3V battery) 1x Onboard buzzer 20x LEDs (one for power/system status, one for Wi-Fi, one for PCIe SSD, and one for 4G/5G connectivity, plus sixteen user-configurable LEDs) 3x Buttons (Reset, RECOVERY, MASKROM)
Power Supply	DC 12~36V / 5A (via Phoenix connector)
Dimensions	230 x 119 x 59mm (without mounting bracket)
	260 x 119 x 59mm (with mounting bracket)
Operating Temp.	-40°C~+85°C (Industrial Grade)
Net Weight	1,190g
Installation	Desktop/Wall mounted (can be customized for Rail mounted)

MIC-P5760 Hardware Features



Software Features

The MIC-P5760 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
	DVI	DVI 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
	ADC	ADC driver	YES
	WiFi	WiFi (BL-M8800DS7-80I) driver	YES
	BT	Bluetooth (BL-M8800DS7-80I) driver	YES
File system	myir-image-mic-p5760-debian	Image built based on Debian system	YES
	myir-image-mic-p5760-yocto	Linux image built with Yocto	YES
	myir-image-mic-p5760-yocto-preempt-rt	Rt Linux image built with Yocto	YES

MIC-P5760 Software Features

**Order Information**

Item	Part No.	Packing List
MIC-P5760 IPC Box	MIC-P5760-IB411000	✓ One MIC-P5760 IPC Box (4GB LPDDR5 +32GB eMMC) ✓ One Quick Start Guide ✓ One 3.5 mm pitch 28-pin Phoenix connector ✓ One 3.5 mm pitch 42-pin Phoenix connector ✓ One 3.81 mm pitch 3-pin Phoenix connector ✓ One WiFi/Bluetooth antenna

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