MYiR 米尔电子
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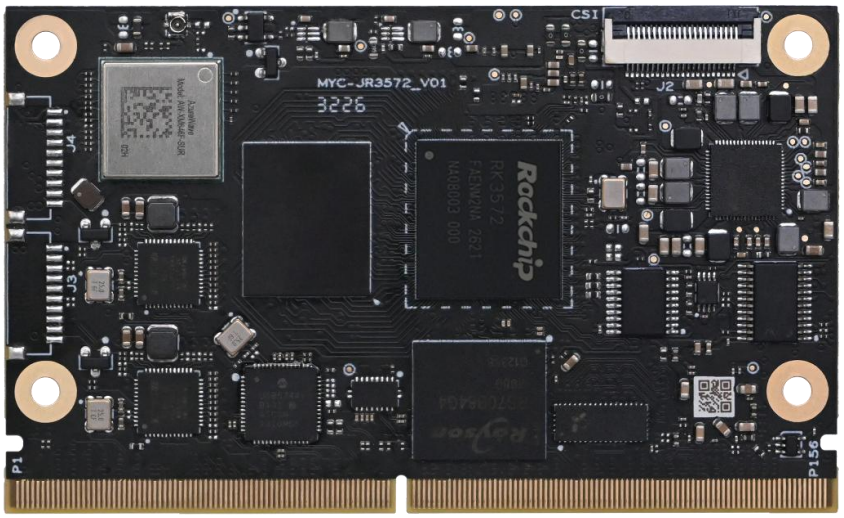
MYC-JR3572
System-On-Module
Overview





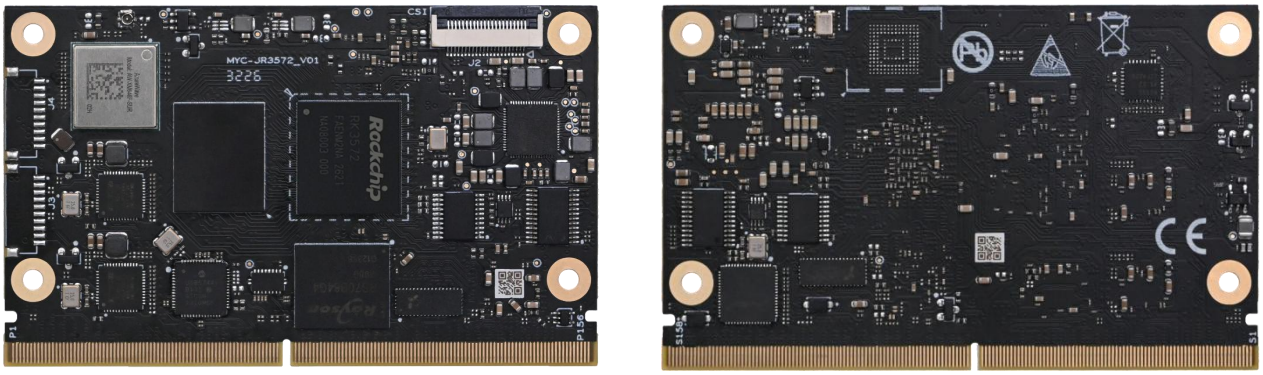
- ✓ *Rockchip RK3572 based on an octa-core CPU (2x Cortex-A73 @ 2.2 GHz + 6x Cortex-A53 @ 2.1 GHz)*
- ✓ *4 TOPS NPU and Arm Mali-G310V2 MC1 3D GPU*
- ✓ *Supports Up to 8K@30fps/4K@120fps High Frame Rate Video Decoding*
- ✓ *4GB LPDDR5, 64GB eMMC, 32Kbit EEPROM*
- ✓ *Onboard Wi-Fi 6 & BT 5.4 Module*
- ✓ *Onboard discrete TPM 2.0 security chip*
- ✓ *SMARC 2.2 314-pin Expansion Connector*
- ✓ *Yocto Linux and Real-time Linux (PREEMPT-RT) support*

Measuring 82mm x 50mm, the MYC-JR3572 is a high-performance SMARC System-on-Module (SOM) powered by the Rockchip RK3572 processor. It features an octa-core 64-bit CPU combining two Cortex-A73 cores (up to 2.2 GHz) and six Cortex-A53 cores (up to 2.1 GHz) for application processing, a RISC-V core for real-time control, and a 4 TOPS NPU with an Arm Mali-G310V2 3D GPU for edge AI inference and graphics.

The MYC-JR3572 SOM integrates 4GB LPDDR5, 64GB eMMC and 32Kbit EEPROM, plus an onboard Wi-Fi 6 and BT 5.4 module, a Gigabit Ethernet PHY and a USB 3.0 HUB. Security is reinforced by a discrete TPM 2.0 chip and the RK3572's built-in security subsystem, while the integrated PMIC delivers efficient power management.

The 314-pin SMARC 2.2 connector delivers versatile expansion options, including dual Gigabit Ethernet, multi-display outputs (HDMI, plus 2x LVDS or 1x MIPI-DSI — LVDS and MIPI-DSI are mutually exclusive), 2x MIPI-CSI camera inputs, 2x SATA 3.1 or 1x SATA 3.1 + 1x PCIe 2.1 (PCIe0 and SATA are mutually exclusive), USB 3.0 / USB 2.0, and 2x CAN FD, as well as a full suite of UART, SPI, I2C, PWM, SDIO, and SAI interfaces for peripheral integration.

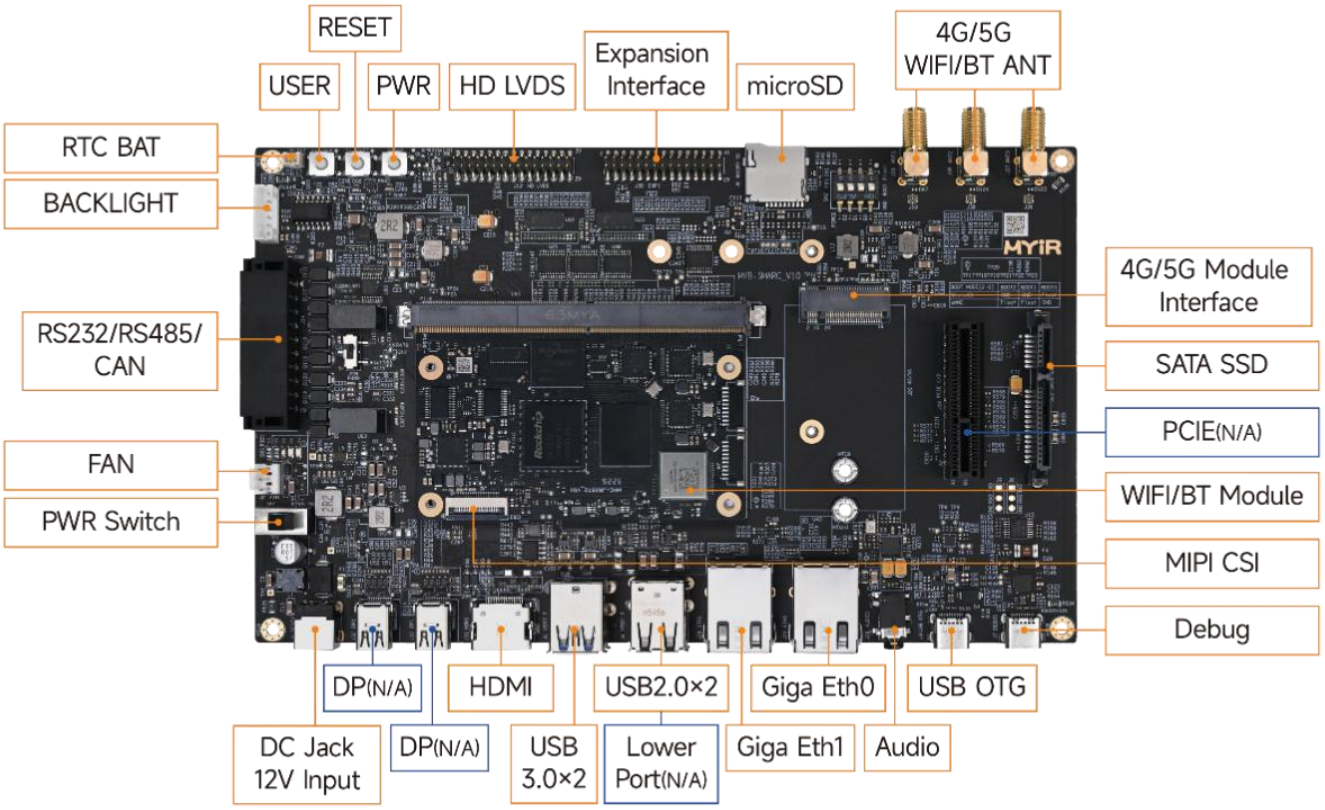
MYIR provides a complete software package to accelerate time-to-market, including a Yocto Linux BSP (kernel 6.12) with Real-time Linux (PREEMPT-RT) support, the RKNN AI inference toolchain, the RKLLM large-model deployment framework, an EtherCAT master protocol stack, as well as open-source drivers and documentation. The module is ideal for industrial control systems, robot controllers, medical devices, edge computing gateways and energy storage EMS.



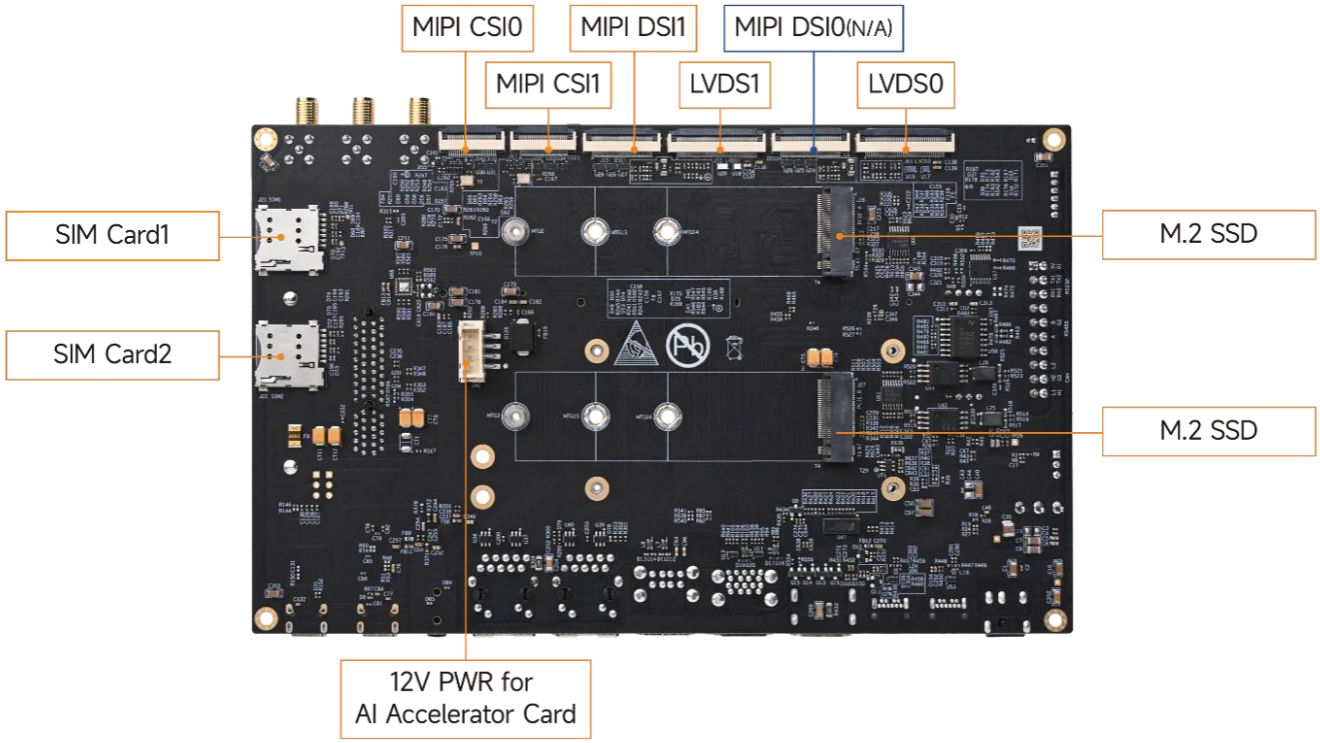
MYC-JR3572 System-On-Module (Top-view and Bottom-view)

The MYD-JR3572 development board combines the MYC-JR3572 SOM with the MYB-SMARC carrier board through a 314-pin SMARC 2.2 connector. The carrier board delivers extensive evaluation interfaces: dual Gigabit Ethernet and 4G/5G cellular support via an M.2 B-key socket with dual SIM; display and camera options including HDMI, MIPI-DSI and 2x LVDS (MIPI-DSI and LVDS cannot be used simultaneously), 2x MIPI-CSI camera inputs and audio I/O; dual M.2 M-Key 2280 sockets for AI accelerator cards or NVMe SSDs, plus SATA SSD and microSD storage; four USB ports (2x USB 3.0, 1x USB 2.0 and 1x USB 2.0 OTG); and dual CAN FD, RS485 and RS232 on terminal blocks. This rich I/O portfolio makes it an excellent platform for rapid prototyping and evaluation of RK3572-based solutions.

To enhance development flexibility, MYIR offers optional display and camera accessories for the MYD-JR3572: the MY-MIPI101C-V2 10.1-inch MIPI display, the MY-LVDS070C 7-inch LVDS display, and the MY-CAM003M (5MP) / MY-CAM005M (13MP) MIPI-CSI camera modules, providing a streamlined, ready-to-use development experience.



MYD-JR3572 Development Board (Top-view)

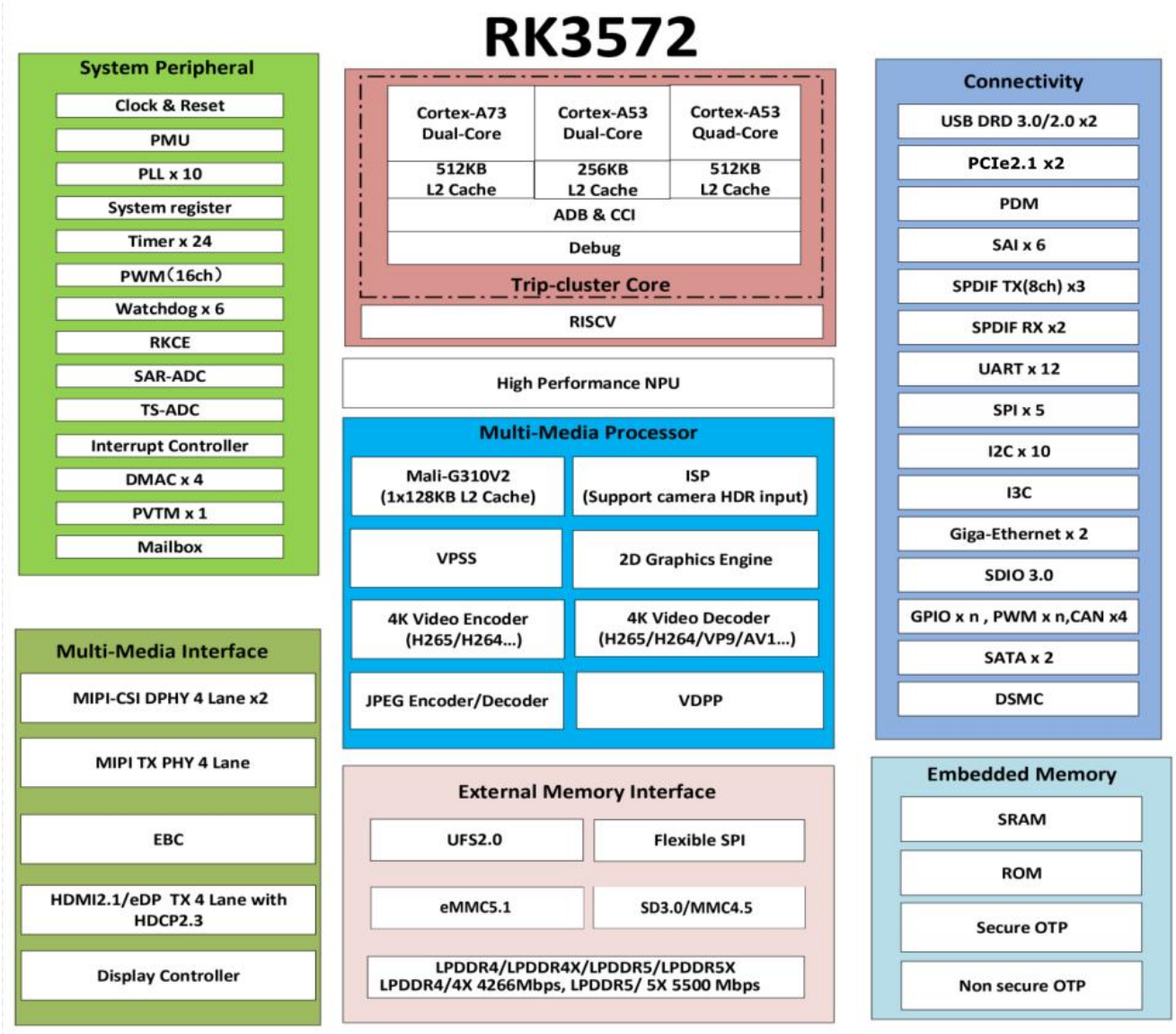


MYD-JR3572 Development Board (Bottom-view)

Hardware Specification

The MYC-JR3572 System-on-Module (SOM) is powered by the Rockchip RK3572 applications processor, a next-generation mid-range AIoT SoC built on an 8nm process as the direct upgrade of the RK3568/RK3566. The processor integrates an octa-core 64-bit CPU combining 2x Cortex-A73 @2.2GHz and 6x Cortex-A53 @2.1GHz with a RISC-V real-time core in a heterogeneous architecture, balancing high-performance computing and real-time control. Its 4 TOPS NPU supports INT4/INT8/INT16/FP4/FP8/FP16/BF16 mixed precision and W4A16 asymmetric quantization, and is capable of running mainstream CNN as well as lightweight Transformer models, together with an Arm Mali-G310V2 3D GPU and a 12MP ISP.

The processor also provides a comprehensive peripheral set covering dual Gigabit Ethernet, 2x PCIe 2.1, 2x SATA 3.1, quad CAN-FD, DSMC high-speed parallel interface and multiple display/camera interfaces (HDMI, eDP, MIPI-DSI, Parallel RGB and MIPI-CSI) with dual-display support, and it supports LPDDR5/LPDDR5X memory, making the RK3572 well-suited for industrial control, robot controllers, medical devices, edge computing gateways and energy storage EMS applications.



RK3572 Series Processor Block Diagram

The MYC-JR3572 takes full advantage of the Rockchip RK3572 processor and the main features are characterized as below:

Mechanical Parameters

- Dimensions: 82mm x 50mm
- PCB Layers: 12-layer design
- Power Supply: +5V
- Working temperature: 0~+70 Celsius (commercial grade)

Processor

- Rockchip RK3572 processor
  - Octa-core 64-bit CPU: 2x Cortex-A73 @ 2.2 GHz + 6x Cortex-A53 @ 2.1 GHz
  - RISC-V core for real-time control
  - 4 TOPS NPU, supporting INT4, INT8, INT16, FP4, FP8, FP16 and BF16 operations, together with W4A16 asymmetric MAC acceleration
  - Arm Mali-G310V2 MC1 GPU, supporting OpenGL ES 3.2, Vulkan 1.2, OpenCL 3.0 and AFBC compression
  - 8K@30fps or 4K@120fps decode (H.265, VP9, AVS2, AV1); 4K@40fps encode (H.265, H.264)
  - ISP supporting up to 12MP with multiple display interfaces (HDMI / eDP / MIPI-DSI / Parallel RGB)

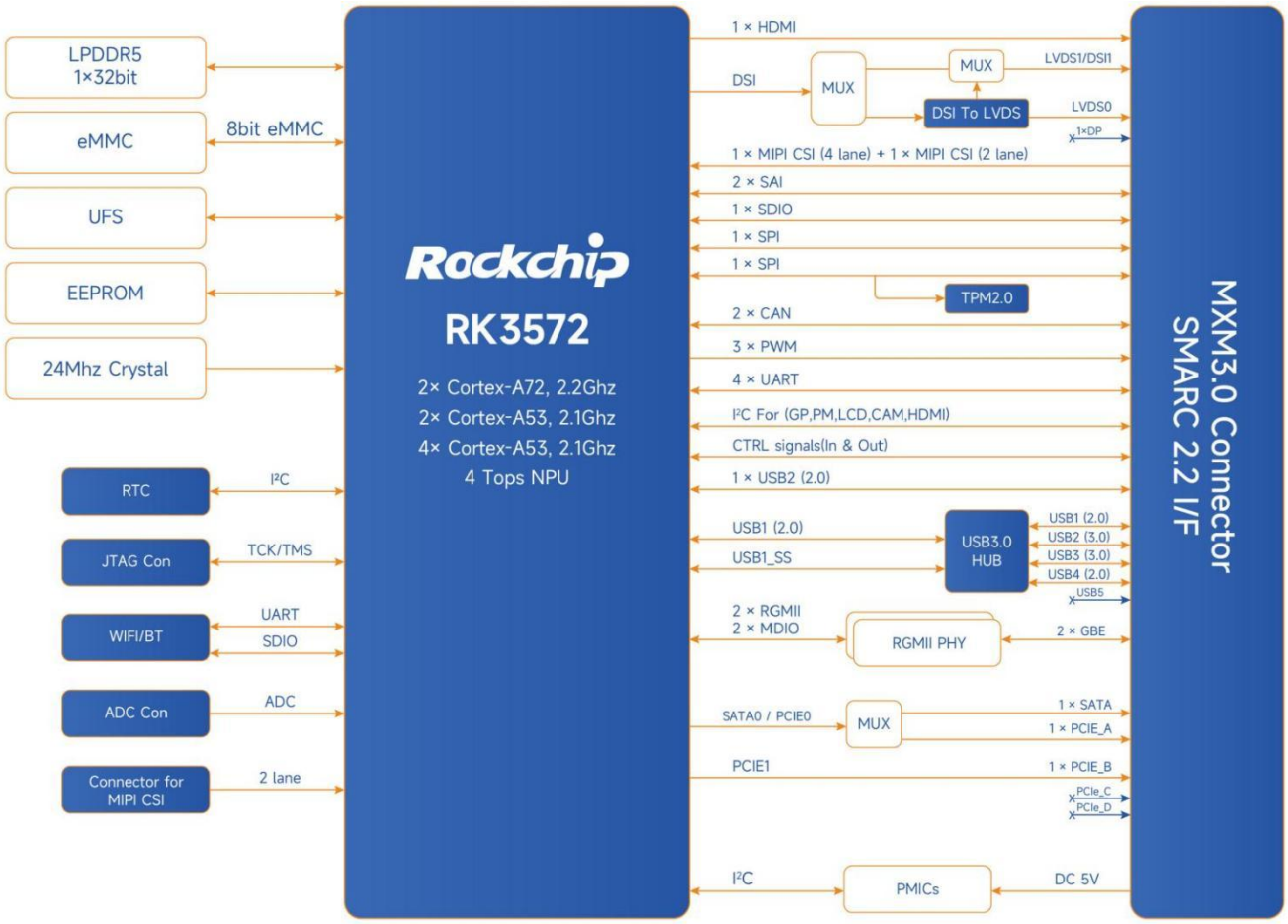
Memory

- 4GB LPDDR5
- 64GB eMMC
- 32Kbit EEPROM

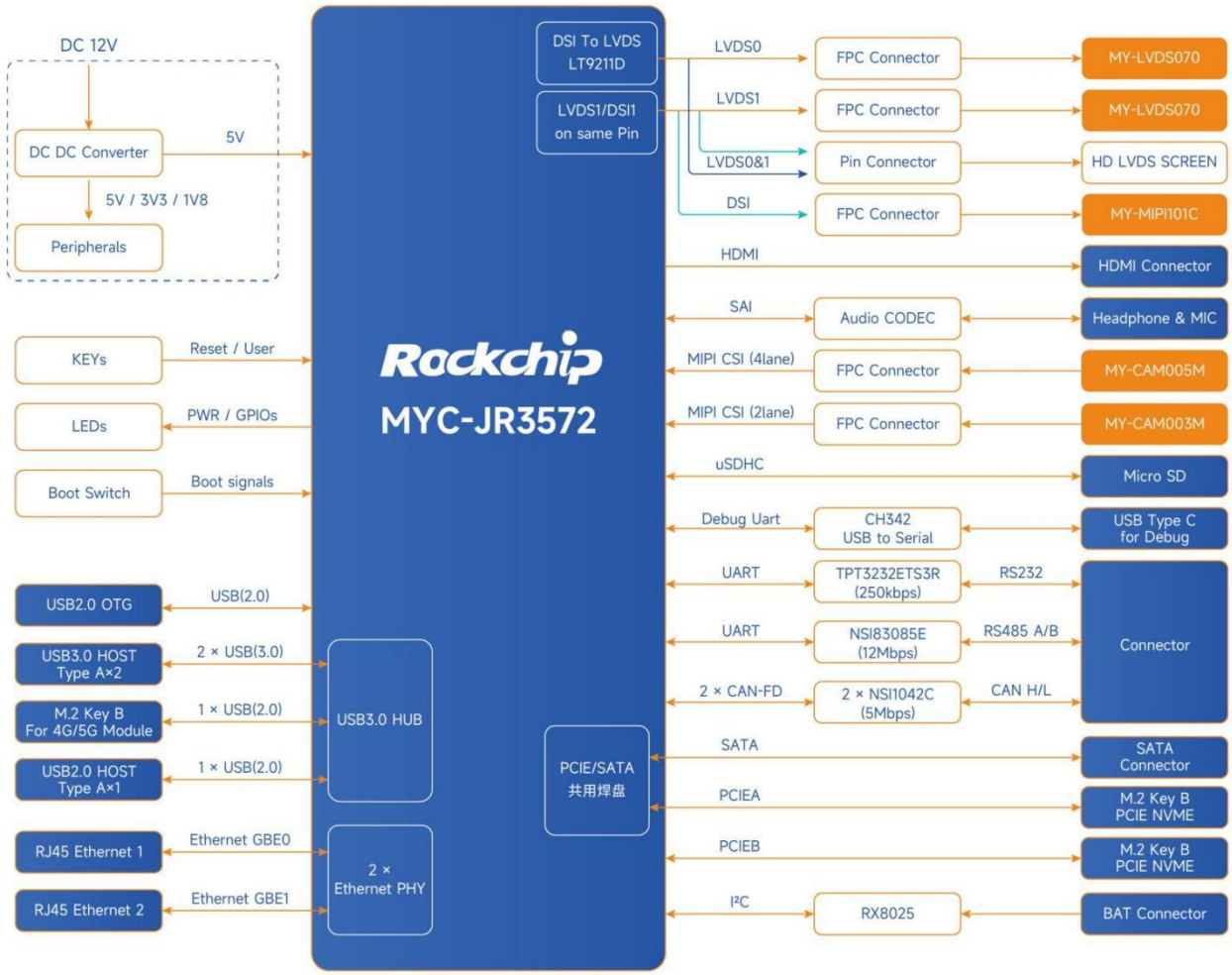
Peripherals and Signals Routed to Pins

- Onboard WiFi 6 (802.11a/b/g/n/ac/ax) + Bluetooth 5.4 Module
- Independent TPM 2.0 security chip
- Gigabit Ethernet PHY
- 314-pin SMARC 2.2 Expansion Connector
  - 2x Gigabit Ethernet, 10/100/1000Mbps auto-negotiation
  - 1x USB 2.0 OTG
  - 2x USB 2.0 Host
  - 2x USB 3.0 Host
  - 2x PCIe 2.1 (PCIe0 and SATA are mutually exclusive)
  - 1x SATA 3.1 (PCIe0 and SATA are mutually exclusive)
  - 2x CAN FD
  - 4x UART
  - 2x SPI
  - 4x I2C
  - 1x SDIO
  - 3x PWM
  - 14x GPIO
  - 2x MIPI-CSI
  - 2x LVDS (MIPI-DSI and LVDS are mutually exclusive)
  - 1x MIPI-DSI (MIPI-DSI and LVDS are mutually exclusive)
  - 1x HDMI
  - 2x SAI

  Note: the peripheral signals brought out to the expansion interface are listed in maximum number. Some signals are reused. Please refer to the processor datasheet and the SOM pinout description file.



MYC-JR3572 Function Block Diagram



MYD-JR3572 Function Block Diagram

Software Features

The MYC-JR3572 System-on-Module (SOM) comes with a complete Yocto Linux BSP, including kernel and peripheral driver source code to help customers accelerate development. The key software features are summarized below:

Item	Features	Description	Source Code
Bootloader	U-boot	Boot program uboot_2025.04	YES
Kernel	Linux kernel	Customized based on official kernel_6.12 version	YES
Driver	EEPROM	BL24C32F driver	YES
	Ethernet	YT8531SH driver	YES
	WIFI	AW-XM646 driver	YES
	BT	AW-XM646 driver	YES
	4G	EM05-CE driver	YES
	5G	RM500Q-CN driver	YES
	LVDS	LT9211 driver	YES
	MIPI DSI	MIPI-DSI driver	YES
	HDMI	HDMI driver	YES
	MIPI CSI	OV5640 and OV13855 driver	YES
	Audio	ES8390 driver	YES
	RTC	RX-8025T driver	YES
	Micro SD	SD card driver	YES
	UART	RS485/RS232 driver	YES
	CAN	CAN driver	YES
	GPIO	GPIO driver	YES
File system	myir-image-jr3572-yocto	Linux Image built as Yocto	YES

MYC-JR3572 Software Features

Order Information

Product Item	Part No.	Packing List
MYC-JR3572 System-On-Module	MYC-JR3572-64E4D-220-C	✓ One MYC-JR3572 SOM (Heatsink not included)
MYD-JR3572 Development Board	MYD-JR3572-64E4D-220-C	✓ One MYD-JR3572 Board (includes MYC-JR3572 SOM, with pre-installed heatsink) ✓ One 12V/2A Power Adapter ✓ One USB Type-A to Type-C cable ✓ One Quick Start Guide ✓ One Wi-Fi IPEX antenna ✓ One Wi-Fi rod antenna
MY-MIPI101C-V2 10.1-inch LCD Module	MY-MIPI101C-V2	✓ MY-MIPI101C-V2 10.1-inch MIPI LCD Module with Capacitive Touch Screen
MY-LVDS070C 7-inch LCD Module	MY-LVDS070C	✓ MY-LVDS070C 7-inch LVDS Display Module with Capacitive Touch Screen
MY-CAM003M MIPI Camera Module	MY-CAM003M	✓ MY-CAM003M MIPI Camera Module
MY-CAM005M MIPI Camera Module	MY-CAM005M	✓ MY-CAM005M MIPI Camera Module
Note: *1. One MYD-JR3572 Development Board comprises one MYC-JR3572 SOM mounted onto the base board. If you require additional SOMs, you may place order for extras.* *2. Bulk discounts are available. Please contact MYIR for inquiries.* *3. We accept custom design based on the MYD-JR3572, whether reducing, adding or modifying the existing hardware according to customer's requirement.*		

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