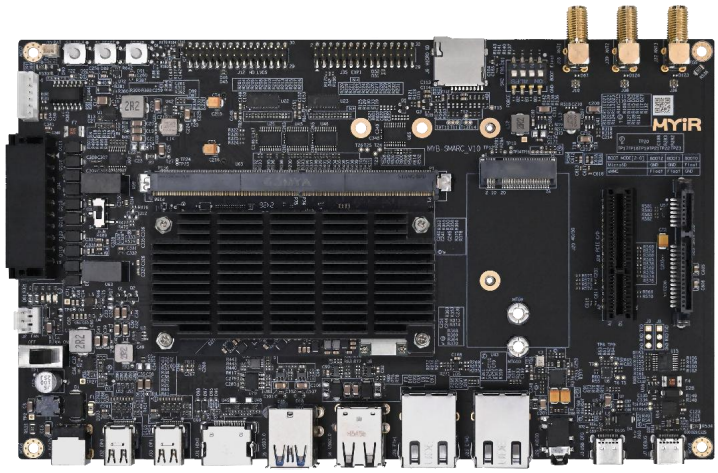
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MYD-JR3588 Development Board Overview





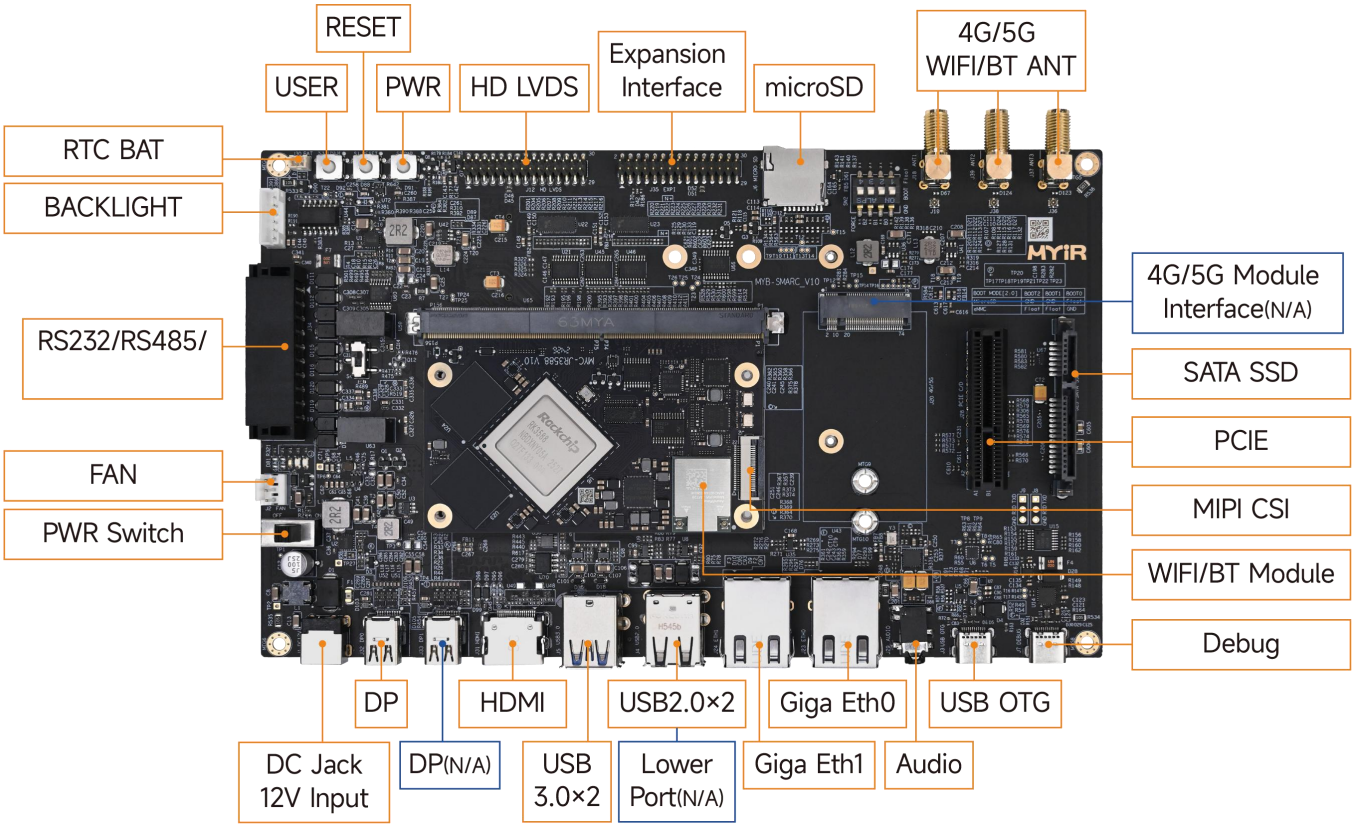
- ✓ *Powered by the MYC-JR3588 SMARC SOM*
- ✓ *Rockchip RK3588(J) octa-core Arm CPU (4x Cortex-A76 + 4x Cortex-A55) + 3x Cortex-M0@200MHz, up to 2.4GHz (RK3588) / 1.6GHz (RK3588J)*
- ✓ *6 TOPS NPU and Arm Mali-G610 MP4 3D GPU*
- ✓ *8GB LPDDR5, 64GB eMMC, 32Kbit EEPROM*
- ✓ *2x USB 3.0 Host, 1x USB 2.0 Host, 1x USB 2.0 OTG, 1x RS485, 1x RS232*
- ✓ *Dual Gigabit Ethernet, Wi-Fi 6 and Bluetooth 5.4*
- ✓ *1x M.2 M-key 2280 slot (NVMe SSD / AI compute card), 1x 22-pin SATA SSD interface*
- ✓ *1x HDMI, 1x DisplayPort, 2x LVDS (or 1x LVDS + 1x MIPI-DSI), 3x MIPI-CSI, Audio I/O*
- ✓ *Ready-to-use Yocto Linux BSP*
- ✓ *Supports Optional Camera and Display Modules*

The MYD-JR3588 is a complete evaluation and prototyping platform for embedded designs based on the Rockchip RK3588 processor. It integrates an octa-core CPU with four Cortex-A76 and four Cortex-A55 cores, a 6 TOPS NPU and an Arm Mali-G610 MP4 quad-core GPU, and provides rich multimedia and communication interfaces, making it well suited to high-end applications such as edge computing, robotics, intelligent security, AGV/AMR, smart healthcare and in-vehicle displays.

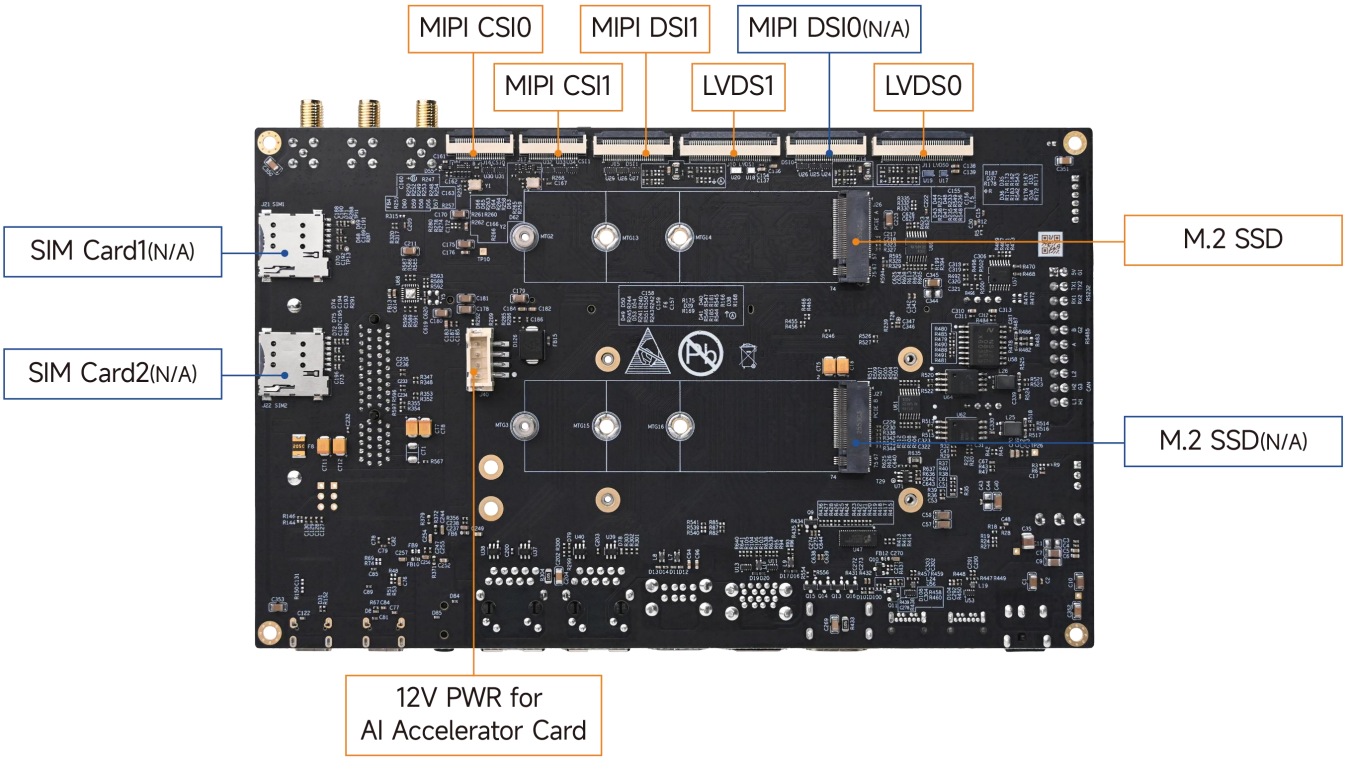
The board consists of the MYC-JR3588 SOM and the MYB-SMARC base board, interconnected via a standard SMARC 2.2 interface. The SOM integrates the RK3588 processor with 8 GB LPDDR5, 64 GB eMMC and 32 Kbit EEPROM, plus an onboard Wi-Fi 6 / Bluetooth 5.4 module, a Gigabit Ethernet PHY and an independent TPM 2.0 security chip, forming a complete core system. The base board provides extensive I/O for application development: dual Gigabit Ethernet; 2x USB 3.0 and 1x USB 2.0 hosts plus 1x USB 2.0 OTG; RS485 and RS232 via terminal blocks; an M.2 M-key 2280 socket for an AI compute card or NVMe SSD; a 22-pin SATA connector; and a MicroSD slot. For multimedia, it supports quad-display via HDMI, DP, MIPI-DSI and LVDS, along with 3x MIPI-CSI camera inputs and audio I/O.



MYC-JR3588 System-On-Module



MYD-JR3588 Development Board (Top-view)



MYD-JR3588 Development Board (Bottom-view)

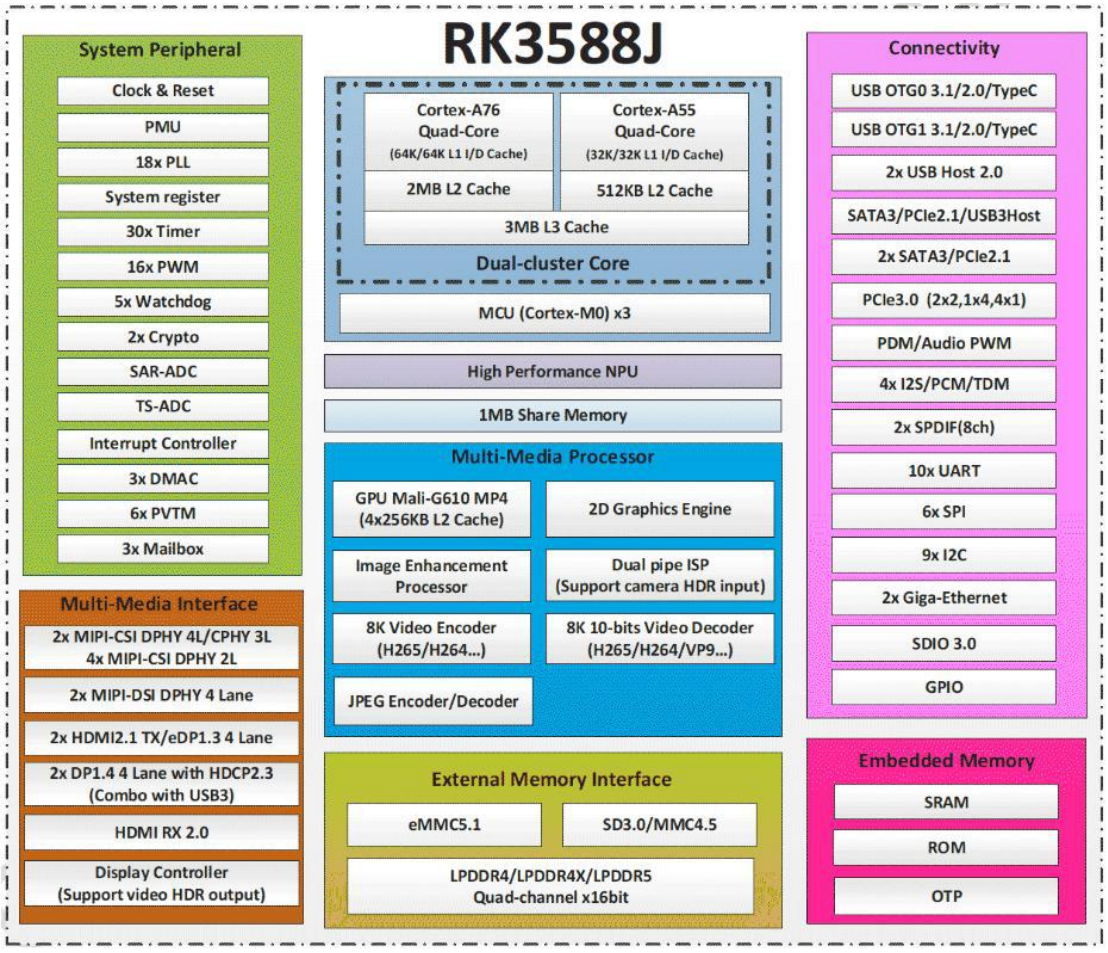
To enhance development flexibility, MYIR offers optional display and camera accessories for the MYD-JR3588: the MY-MIPI101C-V2 10.1-inch MIPI display, the MY-LVDS070C 7-inch LVDS display, and the MY-CAM003M (5MP) and MY-CAM005M (13MP) MIPI-CSI camera modules, providing a streamlined, plug-and-play development experience.

To support rapid development, MYIR provides a comprehensive software package comprising U-Boot, Linux kernel 6.1.141, peripheral drivers and a full set of development tools, backed by thorough documentation including the product manual, hardware user manual, hardware design guide, base board schematics (PDF), and Linux software evaluation and development guide. With stable reference designs and a ready-to-use software environment, MYIR helps developers streamline prototyping, reduce development risks and bring products to market faster.

Hardware Specification

The MYC-JR3588 System-on-Module (SOM) is powered by the Rockchip RK3588 applications processor, which is offered in two grades: the commercial RK3588 and the industrial RK3588J. The processor is built on an octa-core 64-bit CPU combining 4x Cortex-A76 and 4x Cortex-A55 cores with 3 Cortex-M0 real-time cores, and integrates a 6 TOPS NPU for edge AI inference and an ARM Mali-G610 MP4 3D GPU. Its multimedia engine supports 8K@60fps video decoding (H.265, VP9) and 8K@30fps encoding (H.265, H.264), together with a rich set of display and camera interfaces including HDMI, eDP, DP, MIPI-DSI, Parallel RGB, MIPI-CSI ,48M ISP

The processor also provides a comprehensive peripheral set covering dual Gigabit Ethernet, PCIe 3.0, USB 3.1, SATA 3.0, SDIO, UART, making the RK3588 well-suited for a broad range of high-end industrial, robotics, medical and AIoT applications requiring intelligent edge-AI features with optimized power consumption.



RK3588 Processor Block Diagram

The MYD-JR3588 Development Board is using the MYC-JR3588 SOM as core controller board. It takes full advantage of Rockchip RK3588 processor and the main features are characterized as below:

Mechanical Parameters

- Dimensions: 205mm x 126mm (base board), 82mm x 50mm (SOM)
- PCB Layers: 6-layer design (base board), 12-layer design (SOM)
- Power supply: +12V/5A (base board), +5V (SOM)
- Working temperature: -40~85 Celsius (industrial grade) or 0~70 Celsius (commercial grade)

The MYD-JR3588 Controller Board (MYC-JR3588)



MYC-JR3588 System-On-Module (Top-view and Bottom-view)

Memory

- 8GB LPDDR5
- 64GB eMMC
- 32Kbit EEPROM

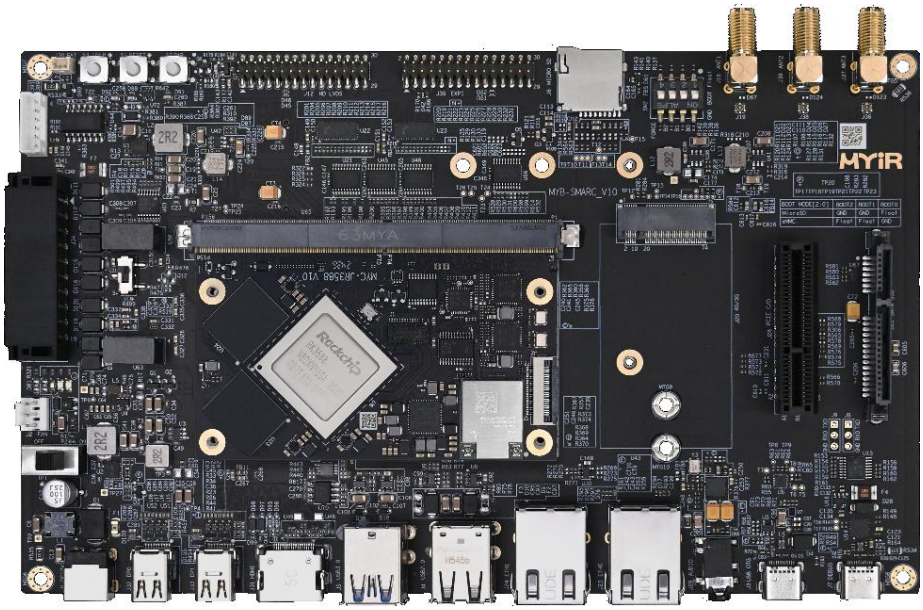
Peripherals and Signals Routed to Pins

- 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 GBE MDI, 10/100/1000Mbps
  - 1x USB 2.0 OTG
  - 1x USB 2.0 OTG
  - 1x USB 2.0 Host
  - 2x USB 3.0 Host
  - 1x PCIE3.0 4-lane or 2x PCIE3.0 2-lane
  - 1x SATA 3.0
  - 4x UART
  - 2x SPI
  - 3x I2C
  - 1x SDIO
  - 3x PWM
  - 14x GPIO
  - 3x MIPI CSI (2x 4-lane, 1x 2-lane)
  - 2x LVDS (or 1xLVDS + 1x MIPI DSI, MIPI DSI is multiplexed with LVDS1)

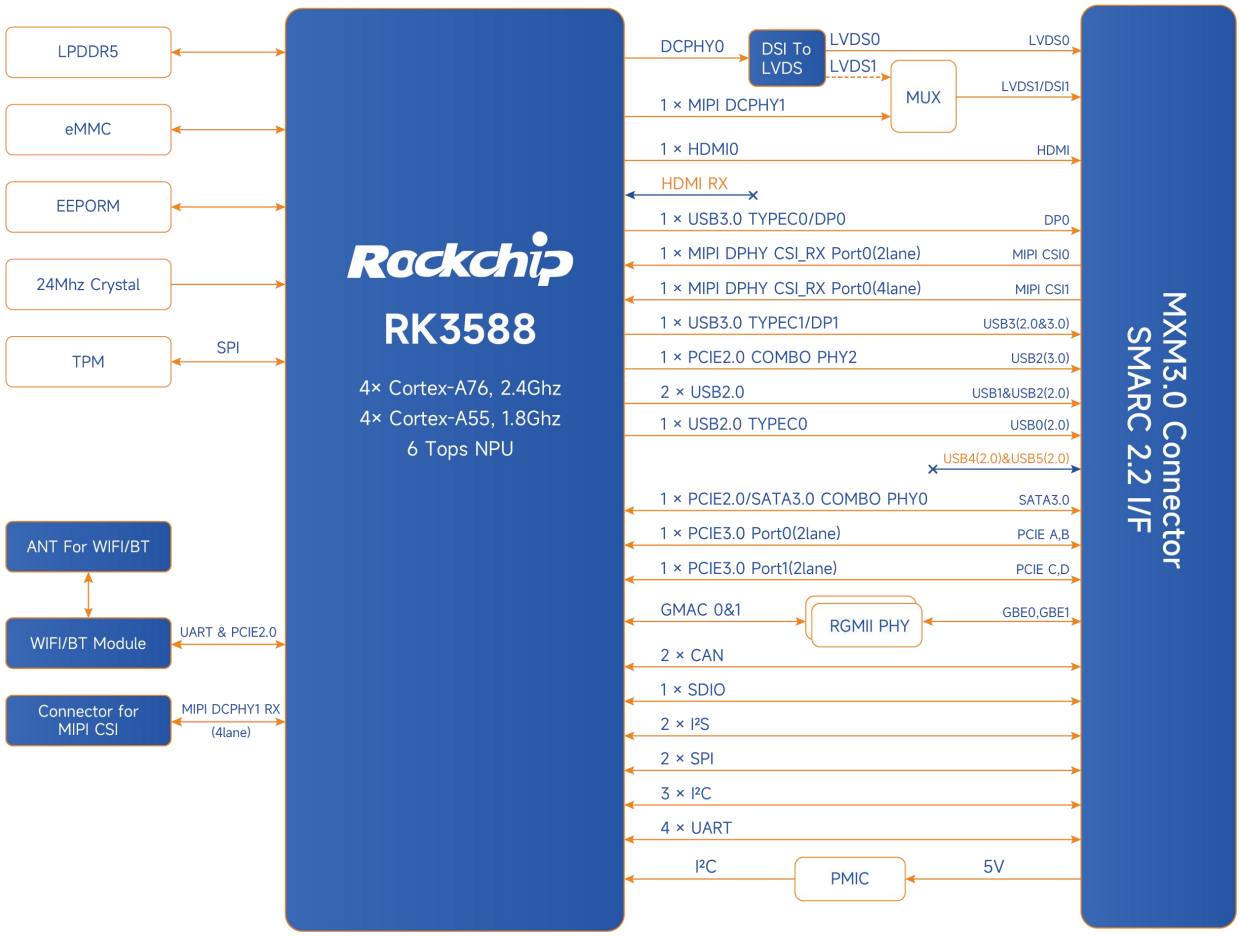
- 1x HDMI, 1x DP
- 2x I2S

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.

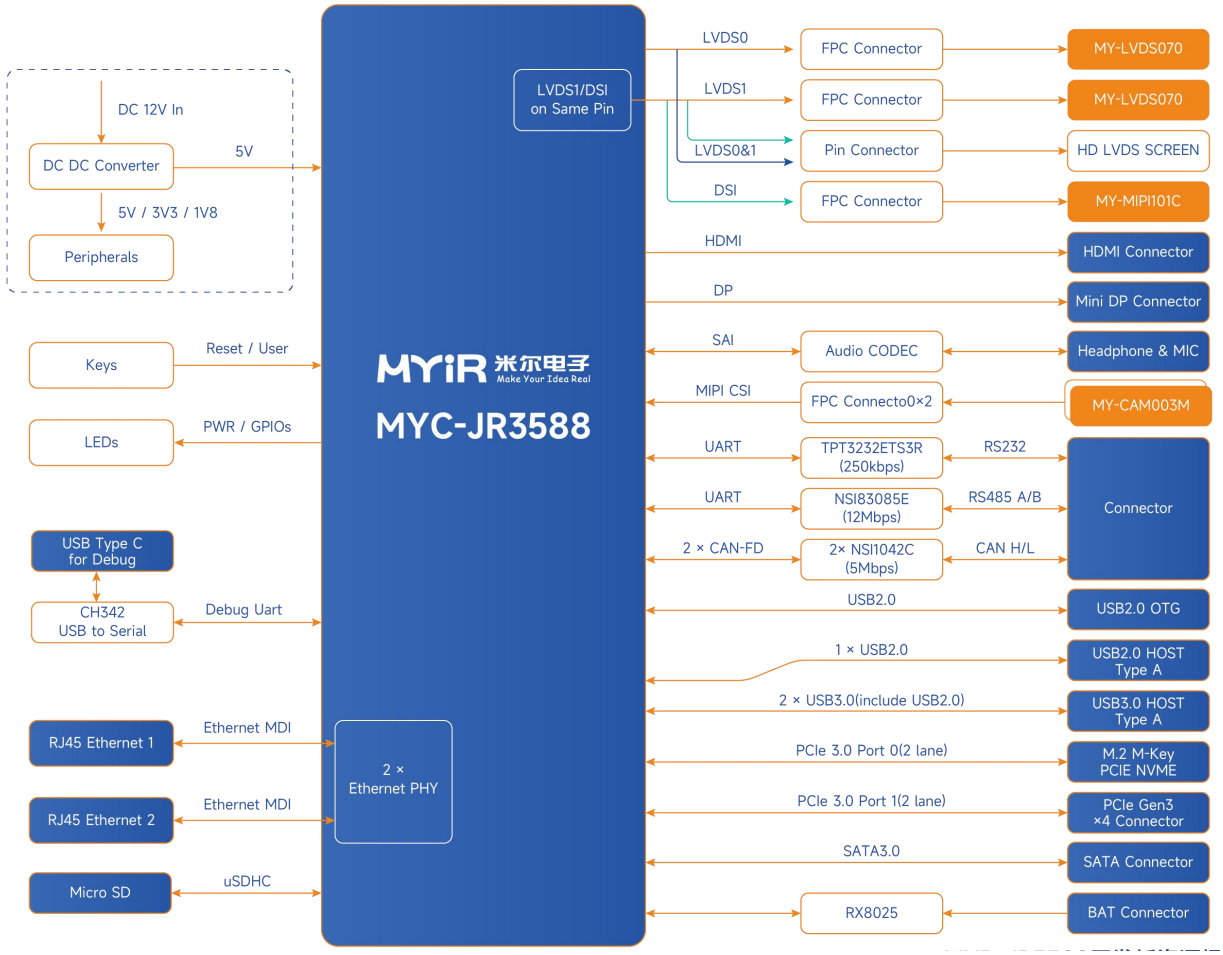
The MYD-JR3588 Development Board Base Board



- 1x Power Jack
- 1x Power Switch
- Serial Ports
  - 1x RS232 (Isolated)
  - 1x RS485 (Isolated)
  - 1x Debug Interface (USB Type-C)
- USB
  - 2x USB3.0 Host ports
  - 1x USB2.0 Host ports
  - 1x USB2.0 OTG port
- 2x 10/100/1000Mbps Ethernet interfaces
- 2x external antenna connectors (one for WiFi and one 4G/5G)
- 1x Micro SD card slot
- 1x HDMI interface
- 2x LVDS (or 1x MIPI-DSI + 1x LVDS)
- 1x DP interface
- 3x MIPI-CSI Camera Interfaces
- 1x Audio Input and Output Interface
- 3x Buttons (one for Reset, one for User, one for ON/OFF)
- 3x LEDs (one for Power indicator, one for System status indicator, one for User LED)



MYC-JR3588 Function Block Diagram



MYD-JR3588 Function Block Diagram

Software Features

The MYD-JR3588 development board supports Linux OS, and comes with comprehensive software packages. To help clients accelerate their projects, the kernel and various peripheral drivers are provided in source code format. Here is a brief overview of the key software features:

Item	Features	Description	Source Code
Bootloader	U-boot	Boot program uboot_2017.09	YES
Kernel	Linux kernel	Customized based on official kernel_6.1 version	YES
Driver	EEPROM	BL24C32F driver	YES
	Ethernet	YT8531SH driver	YES
	WIFI	AW-XM729 driver	YES
	BT	AW-XM729 driver	YES
	LVDS	LT89211 driver	YES
	MIPI DSI	MIPI DSI driver	YES
	HDMI	HDMI driver	YES
	DP	DP 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
	GPIO	GPIO driver	YES
	TPM2.0	TPM driver	-
File system	myir-image-jr3588-yocto	Linux Image built as Yocto	YES

MYD-JR3588 Software Features

Order Information

Product Item	Part No.	Packing List
MYC-JR3588 System-On-Module	MYC-JR3588-64E8D-240-C	✓ One MYC-JR3588 SOM (Heatsink not included)
	MYC-JR3588J-64E8D-160-I	
MYD-JR3588 Development Board	MYD-JR3588-64E8D-240-C	✓ One MYD-JR3588 Board (includes MYC-JR3588 SOM, with pre-installed heatsink) ✓ One 12V/5A Power Adapter ✓ One USB Type-A to Type-C cable ✓ One Quick Start Guide ✓ One Wi-Fi IPEX antenna ✓ One Wi-Fi rod antenna
	MYD-JR3588J-64E8D-160-I	
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-JR3588 Development Board comprises one MYC-JR3588 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-JR3588, whether reducing, adding or modifying the existing hardware according to customer's requirement.*		

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