MYiR 米尔电子
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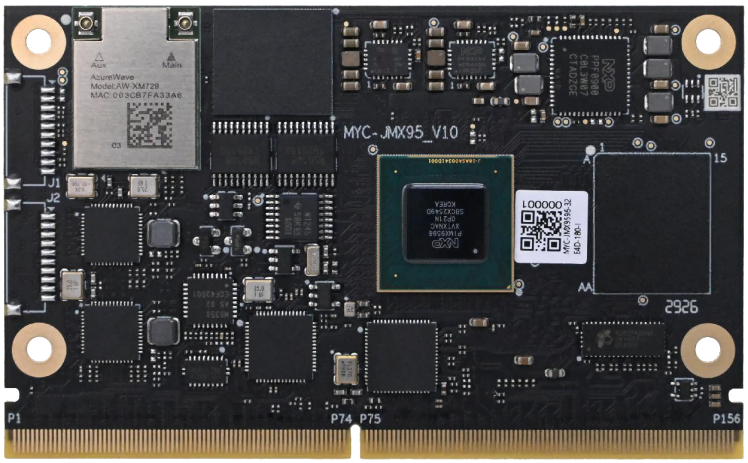
MYC-JMX95X
System-On-Module
Overview



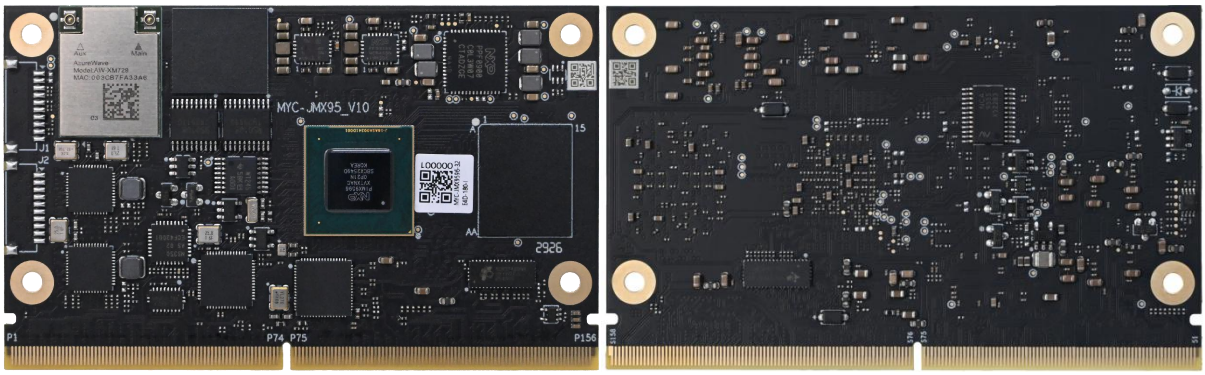
- ✓ *NXP i.MX95 based on 1.8GHz Six Cortex-A55 cores, plus M7 & M33 Real-time Cores for Low-latency & Secure Control*
- ✓ *2.0 TOPS NPU for Edge AI/ML Inference*
- ✓ *Arm Mali-G310 GPU with 2D/3D Acceleration*
- ✓ *4GB/8GB LPDDR5, 32GB/64GB eMMC, 32Kbit EEPROM*
- ✓ *Onboard Wi-Fi 6 & BT 5.4 Module*
- ✓ *SMARC 2.2 314-pin Expansion Connector*
- ✓ *Supports Working Temperature Ranging from -40 to 85 Celsius*
- ✓ *Linux BSP & Yocto Support*

Measuring just 80mm x 50mm, the MYC-JMX95X is a high-performance SMARC System-On-Module (SOM) powered by the NXP i.MX95 (MIMX9596XVTXNAC) processor. It features 6x Cortex-A55 cores running up to 1.8 GHz for application processing, a Cortex-M7 for real-time control, and a Cortex-M33 for secure system management, along with a 2 TOPS eIQ Neutron NPU for AI inference acceleration.

The MYC-JMX95X SOM integrates LPDDR5 (4GB/8GB), eMMC (32GB/64GB), and 32Kbit EEPROM for flexible storage options, plus an onboard Wi-Fi 6 & BT 5.4 module. Security is reinforced by an independent TPM 2.0 chip, while the integrated PMIC delivers efficient power management.

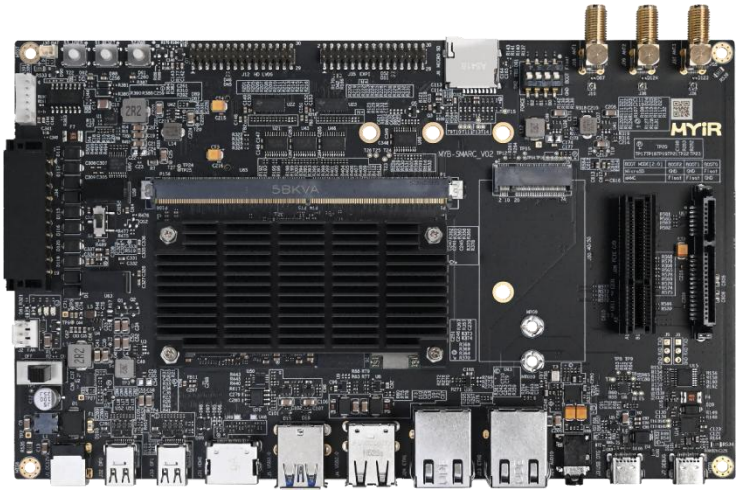
The 314-pin SMARC connector, compliant with SMARC 2.1/2.2, delivers versatile expansion options: dual Gigabit Ethernet, flexible multi-display outputs (HDMI up to 4K@30Hz, dual LVDS, and MIPI-DSI), PCIe Gen3, USB 3.0/2.0, and CAN FD, as well as a full suite of UARTs, SPI, I2C, PWM, and ADC for peripheral integration.

MYIR provides a complete Linux BSP (Yocto, kernel 6.12.49) with example code and documentation to accelerate time-to-market. The module operates from -40°C to +85°C and is CE & RoHS certified, making it ideal for industrial control, in-vehicle infotainment, and smart-edge IoT platforms that demand secure, reliable, and AI-accelerated performance.



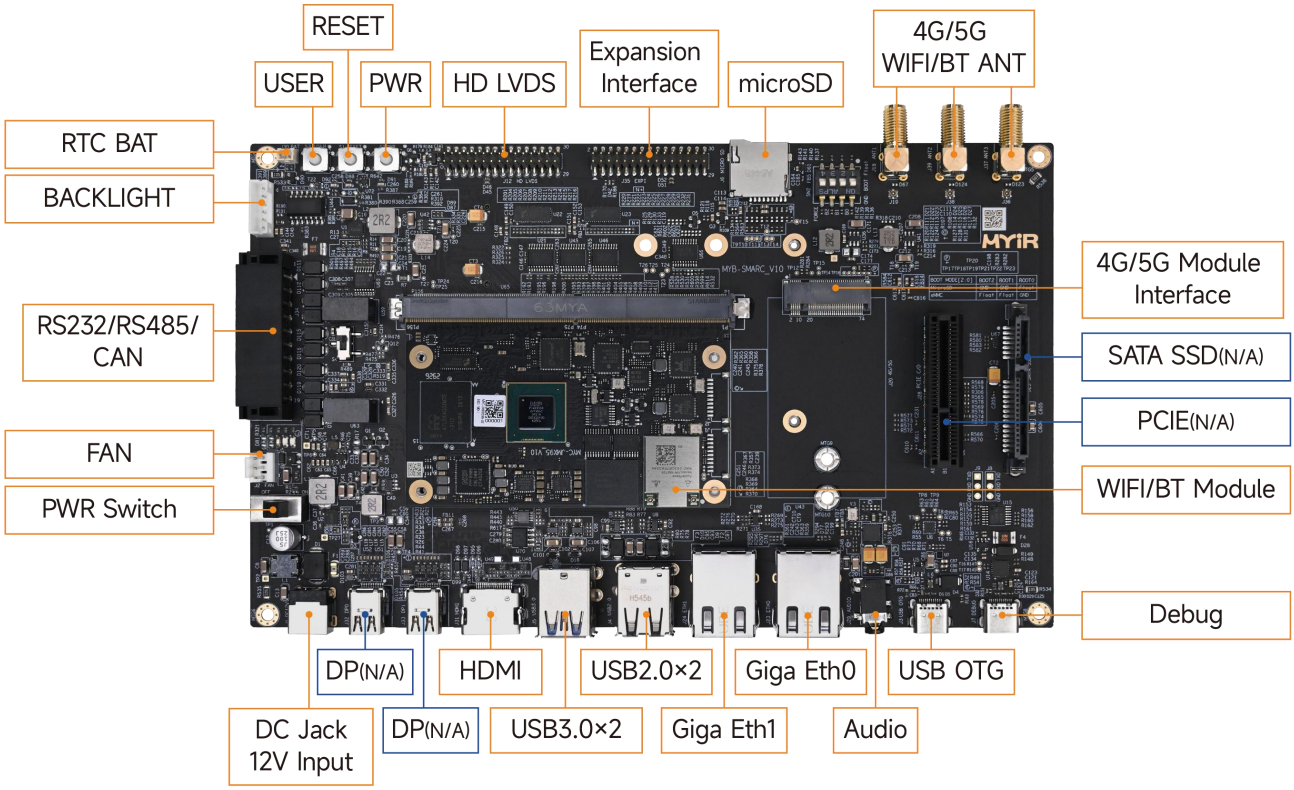
MYC-JMX95X System-On-Module (Top-view and Bottom-view)

The MYD-JMX95X development board combines the MYC-JMX95X SOM with a carrier board via a 314-pin SMARC connector. The carrier board delivers extensive evaluation interfaces, including dual Gigabit Ethernet, onboard Wi-Fi 6/BT 5.4, 4G/5G cellular support via mini PCIe socket with dual Micro SIM, HDMI/MIPI-DSI display, dual LVDS, MIPI-CSI camera, audio I/O, M.2-2280 PCIe for NVMe SSD, Micro SD, multiple USB (2x USB 3.0 Host, 2x USB 2.0 Host, and 1x USB 2.0 OTG), and dual CAN FD, RS485 & RS232 shared on a single Phoenix connector. This rich I/O portfolio makes it an ideal platform for rapid prototyping in edge-AI, industrial, and automotive applications.

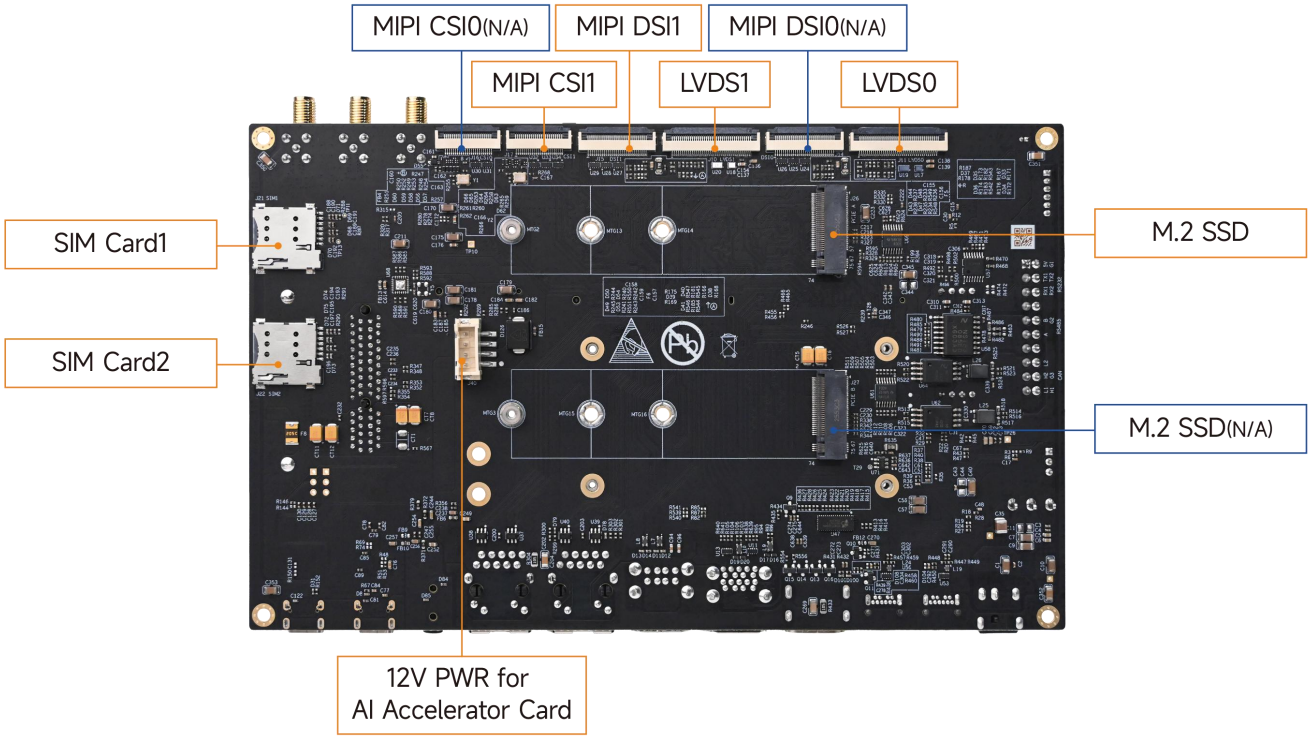


MYD-JMX95X Development Board (delivered with heatsink pre-installed)

For enhanced development flexibility, MYIR offers optional accessories for the MYD-JMX95X, including the MY-CAM003M MIPI camera module, MY-LVDS070C 7-inch LVDS display, and MY-MIPI101C-V2 10.1-inch MIPI display to deliver a streamlined, ready-to-use development experience.



MYD-JMX95X Development Board (Top-view)

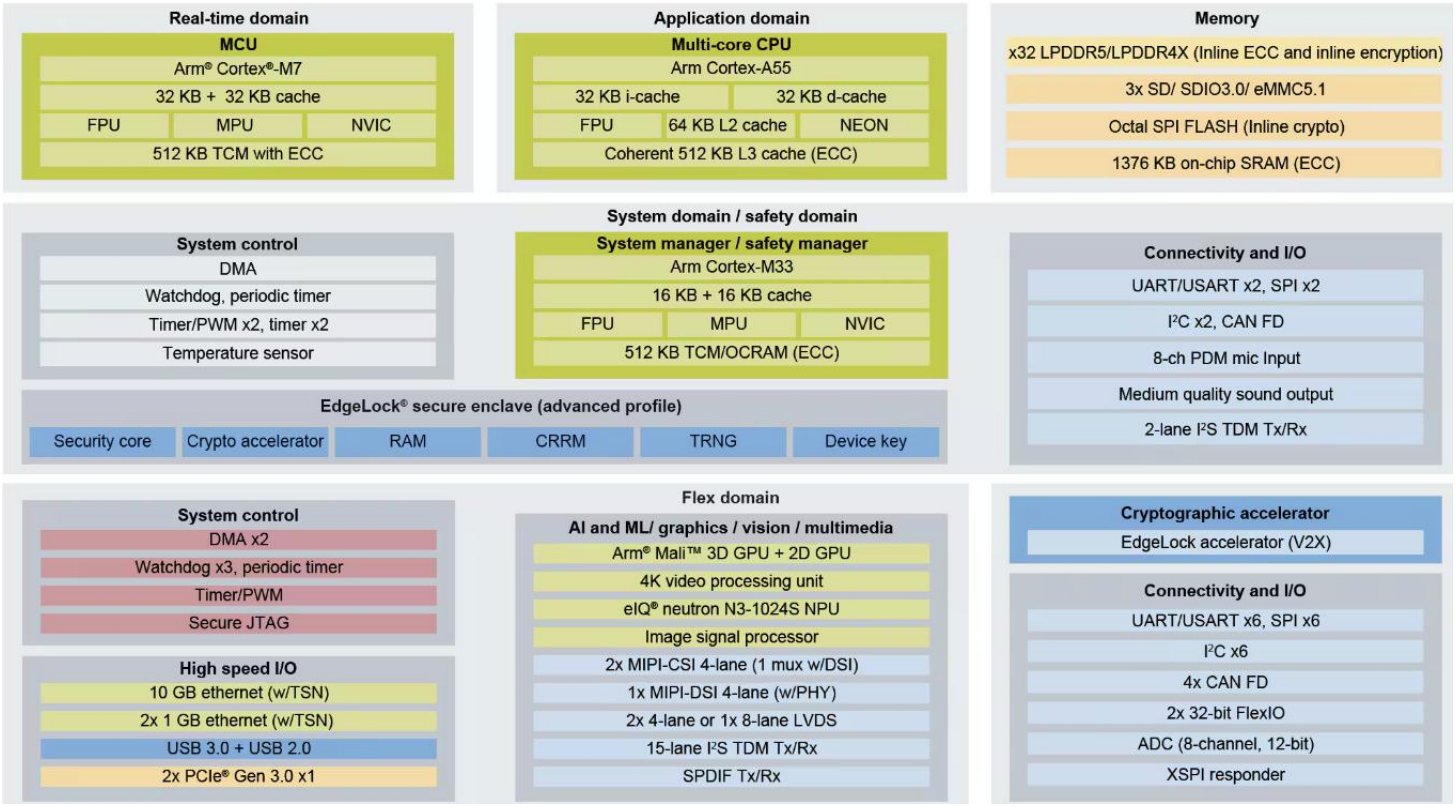


MYD-JMX95X Development Board (Bottom-view)

Hardware Specification

The MYC-JMX95 System-on-Module (SOM) is powered by the NXP i.MX95 applications processor (MIMX9596XVTXNAC), which comes in a 15mm x 15mm, 0.5mm pitch FCBGA package. The i.MX95 integrates up to six Arm Cortex-A55 cores and features a built-in Cortex-M33 that can be configured as a safety island, making it the first i.MX family device to support hardware-enforced functional safety. Built on NXP's Energy Flex architecture, the processor delivers an optimal balance of performance and power efficiency for industrial, IoT, and automotive applications.

The i.MX95 also integrates advanced graphics and video cores, powerful vision and machine learning acceleration, and an EdgeLock® secure enclave for hardware-level security, supporting energy-efficient edge computing. It has a rich set of peripherals including USB 3.0/2.0, PCIe Gen3, CAN-FD, MIPI-CSI/DSI, SAI audio, and multiple UART/SPI/I2C interfaces, making the i.MX95 well-suited for a broad range of high-end industrial, automotive, medical, and AIoT applications requiring intelligent edge-AI features and optimized power architecture.



IMX95 Processor Block Diagram

The MYC-JMX95X takes full features of NXP i.MX95 processor and the main features are characterized as below:

Mechanical Parameters

- Dimensions: 82 mm x 50 mm
- PCB Layers: 12-layer design
- Power supply: +5V/2A
- Working temperature: -40~85 Celsius (industrial grade)

Processor

- NXP i.MX95 processor (MIMX9596XVTXNAC)
  - Hexa-core 64-bit Arm Cortex-A55 microprocessor subsystem up to 1.8 GHz
  - Cortex-M7 real-time core (up to 800 MHz)
  - Cortex-M33 system-management core (up to 333 MHz)
  - Integrated 2 TOPS eIQ Neutron NPU (INT8 @ 1 GHz)
  - Arm Mali-G310 3D GPU

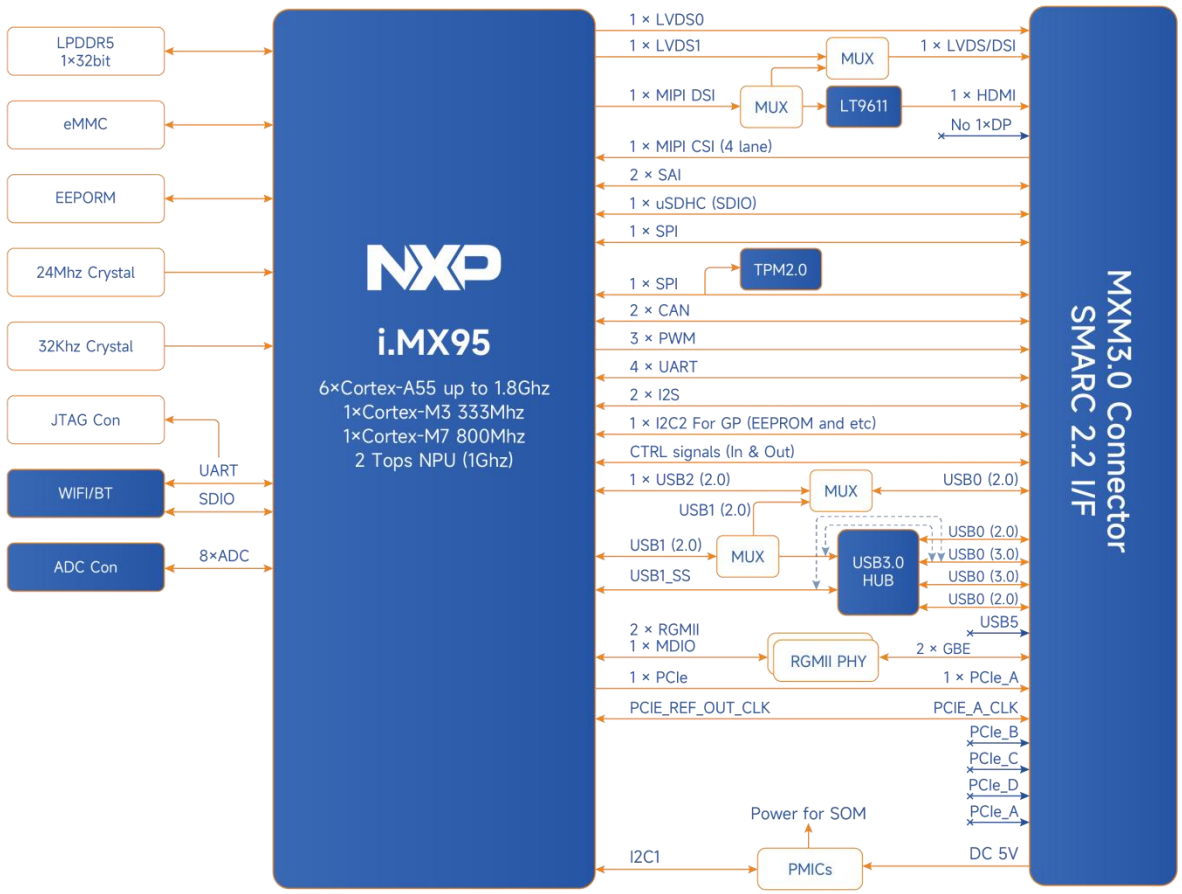
Memory

- 4GB / 8GB LPDDR5 (single-chip)
- 32GB / 64GB eMMC
- 32Kbit EEPROM

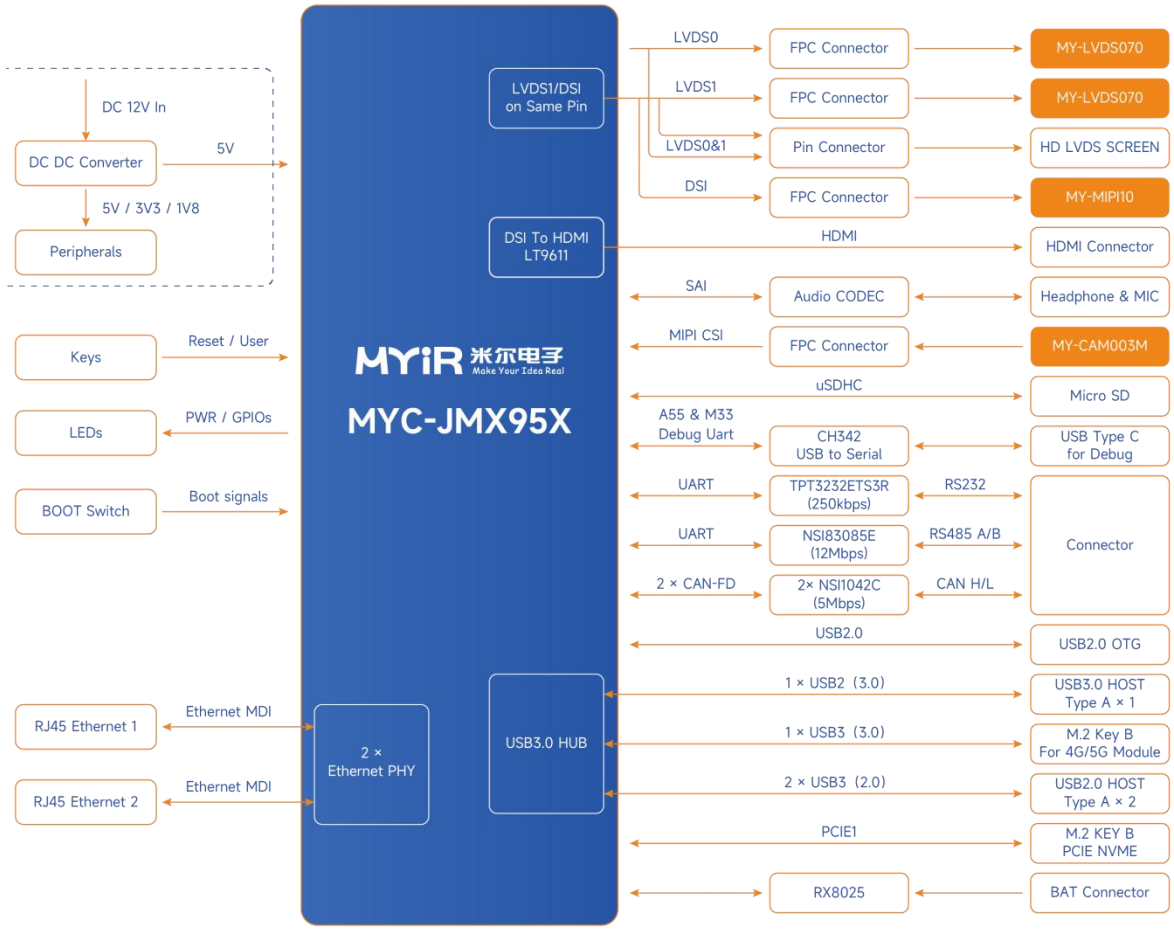
Peripherals and Signals Routed to Pins

- Onboard WiFi 6 + Bluetooth 5.4 Module
- Independent TPM 2.0 security chip
- Power Management IC (PMIC)
- 314-pin SMARC Expansion Connector
  - 2x RGMII
  - 1x PCIe Gen3.0
  - 1x USB 2.0 OTG
  - 2x USB 3.0 Host
  - 2x USB 2.0 Host
  - 2x CAN FD
  - 4x UART
  - 2x SPI
  - 2x SAI
  - 1x uSDHC (SDIO)
  - 3x I2C
  - 1x MIPI-DSI /1x HDMI (transferred via MIPI-DSI)
  - 2x LVDS
  - 1x MIPI-CSI

  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-JMX95X Function Block Diagram



MYD-JMX95X Function Block Diagram

Software Features

The MYC-JMX95X System-On-Module is fully compatible with Linux and comes with a complete set of software packages. To assist clients in speeding up their projects, the source code for the kernel and various peripheral drivers is included. Below is a summary of the main software features:

Item	Features	Description	Source Code
Bootloader	U-boot	Boot program uboot_2025.04	YES
Linux kernel	Linux kernel	Customized based on official kernel_6.12.49 version	YES
Device driver	USB HOST/OTG	USB HOST/OTG driver	YES
	Ethernet	YT8531SH driver	YES
	RS232	RS232 driver	YES
	RS485	RS485 driver	YES
	CAN	CAN driver	YES
	RTC	RTC driver	YES
	GPIO	GPIO driver	YES
	Audio	Audio driver (ES8388)	YES
	WIFI/BT	WiFi/Bluetooth driver (AW-XM729)	YES
	TPM2.0	TPM driver	-
File system	myir-image-full	Linux Yocto image with pre-built GUI	YES

MYC-JMX95X Software Features

Order Information

Product Item	Part No.	Packing List
MYC-JMX95X System-On-Module	MYC-JMX9596-32E4D-180-I	✓ One MYC-JMX95X SOM (Heatsink not included)
	MYC-JMX9596-64E8D-180-I	
MYD-JMX95X Development Board	MYD-JMX9596-32E4D-180-I	✓ One MYD-JMX95X Board (includes MYC-JMX95X SOM, with heatsink pre-installed) ✓ One 12V/2A Power Adapter ✓ One USB Type-A to Type-C cable ✓ One Quick Start Guide ✓ One WIFI antenna ✓ One antenna cable
	MYD-JMX9596-64E8D-180-I	
MY-CAM003M MIPI Camera Module	MY-CAM003M	✓ MY-CAM003M MIPI Camera Module
MY-LVDS070C 7-inch LCD Module	MY-LVDS070C	✓ MY-LVDS070C 7-inch LVDS Display Module with Capacitive Touch Screen
MY-MIPI101C-V2 10.1-inch LCD Module	MY-MIPI101C-V2	✓ MY-MIPI101C-V2 10.1-inch MIPI LCD Module with Capacitive Touch Screen

Note:
1. One MYD-JMX95X Development Board comprises one MYC-JMX95X 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-JMX95X, whether reducing, adding or modifying the existing hardware according to customer's requirement.

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