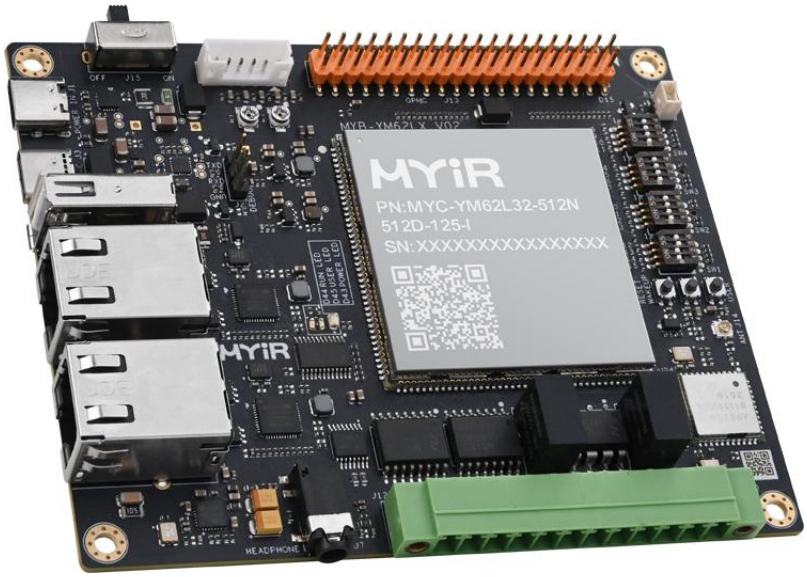
MYiR 米尔电子
Make Your Idea Real

MYD-YM62LX Development Board Overview

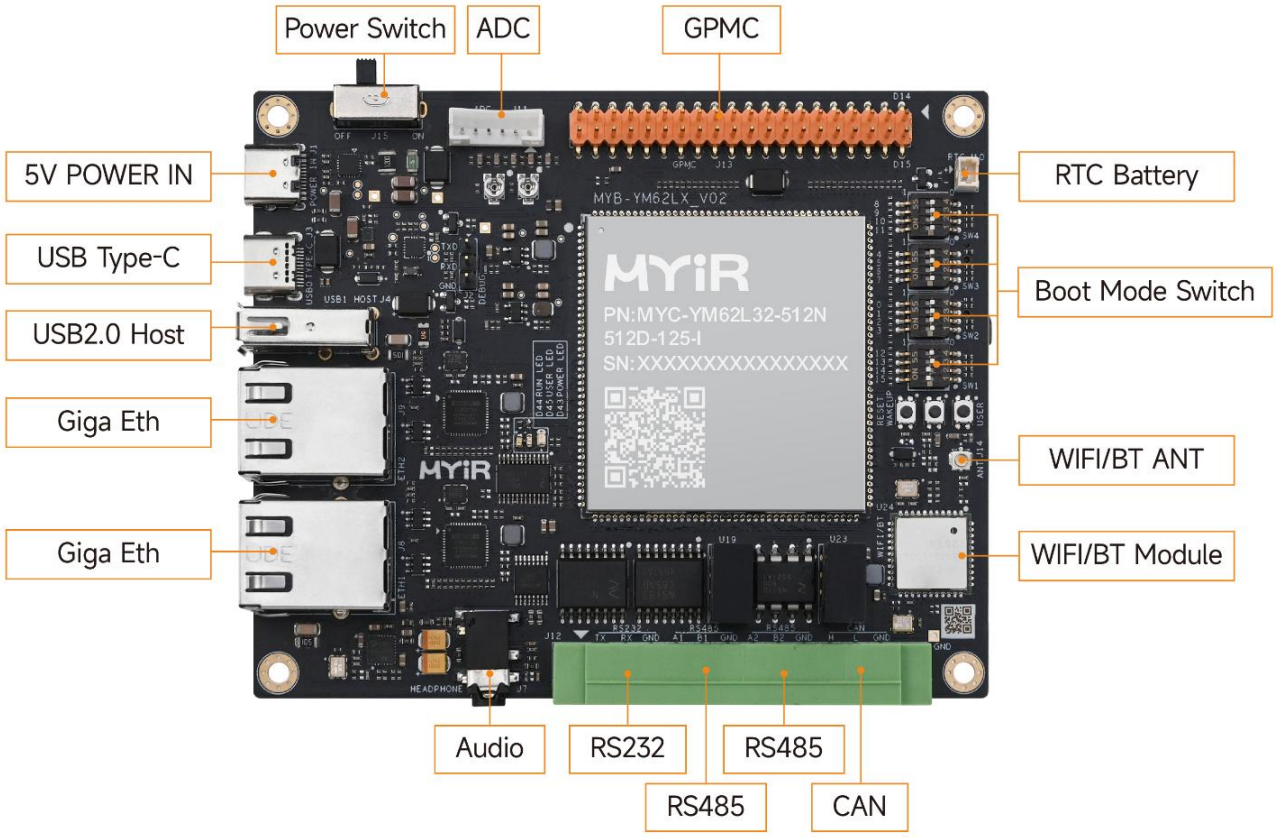


- ✓ *MYC-YM62LX SOM as Controller Board*
- ✓ *TI Sitara AM62Lx Processor based on up to 1.25GHz Dual Arm Cortex-A53 Cores*
- ✓ *512MB/1GB DDR4, 8GB eMMC/512MB NAND FLASH, 4KB EEPROM*
- ✓ *1x USB 2.0 Host, 1x USB 2.0 OTG, 2x RS485, 1x RS232, 1x CAN, 1x Micro SD Card Slot, 4x ADC*
- ✓ *2x Gigabit Ethernet, WiFi/Bluetooth Module*
- ✓ *Supports MIPI-DSI Display and Audio Input/Output*
- ✓ *Supports Linux OS*

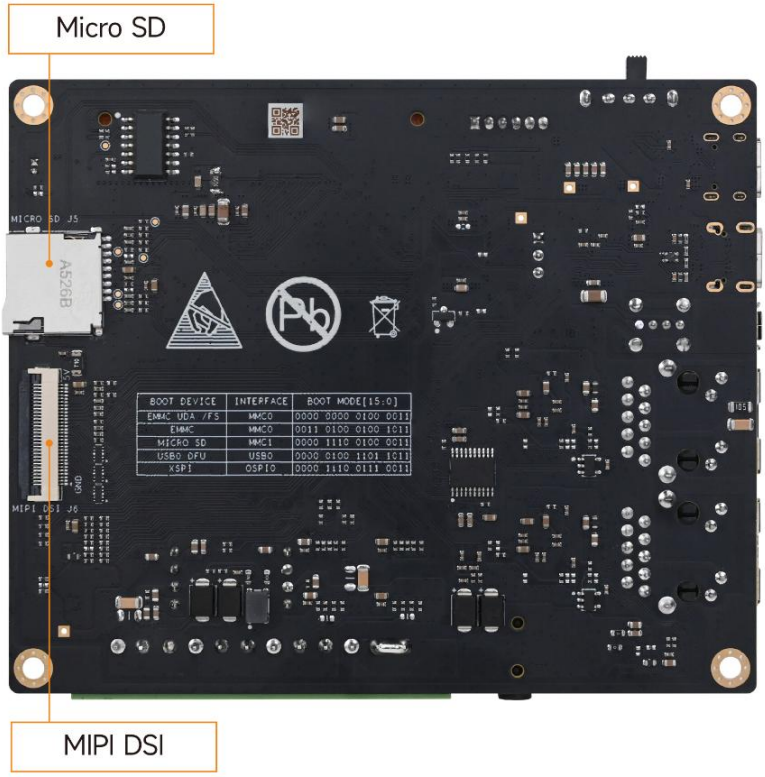
The MYD-YM62LX development board is an advanced evaluation platform for the TI AM62Lx processor. This highly integrated SoC features a dual-core Arm Cortex - A53 CPU running at 1.25 GHz, with 32KB L1 DCache and 32KB L1 ICache per core, offering strong processing performance and fast response capabilities.

The MYD-YM62LX integrates a MYC-YM62LX System-On-Module (SOM) with a dedicated carrier board, which are connected via a 164-pin expansion interface. The SOM includes the processor, 512MB/1GB DDR4 memory, 8GB eMMC/512MB NAND flash storage, 4KB EEPROM, and some circuits to form a minimum system. The carrier board brings out as many features of the processor as possible and showcases the AM62Lx's extensive peripheral set, including dual Gigabit Ethernet, one USB 2.0 port, one USB 2.0 Host port, one RS232, two RS485, one CAN interface, and 4-channel ADC. It also supports WiFi/Bluetooth via an onboard module, MIPI-DSI display output, and audio input/output. The board is ready to run Linux and is provided with complete software package as well as detailed documentations. As a comprehensive and reliable reference design, the MYD-YM62LX provides an ideal foundation for developing solutions based on the TI AM62Lx processor family.

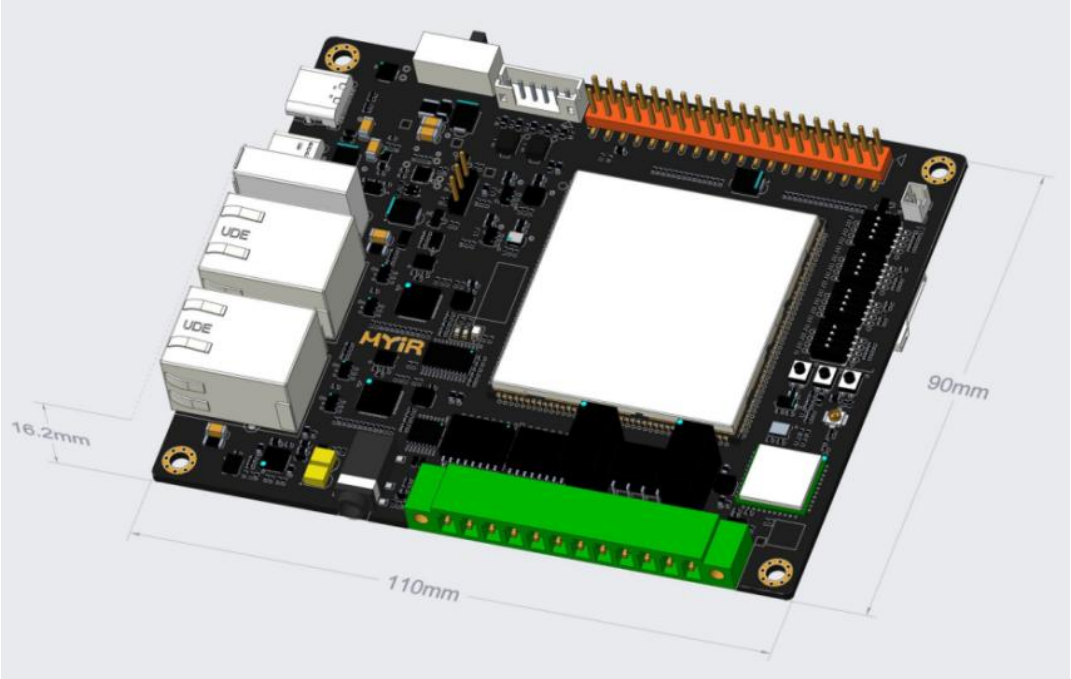
For enhanced development flexibility, MYIR also offers the MY-MIPI101C-V2 10.1-inch LCD Module as an optional accessory compatible with the MYD-YM62LX board, enabling a streamlined and effective development experience.



MYD-YM62LX Development Board (Top-view)



MYD-YM62LX Development Board (Bottom-view)



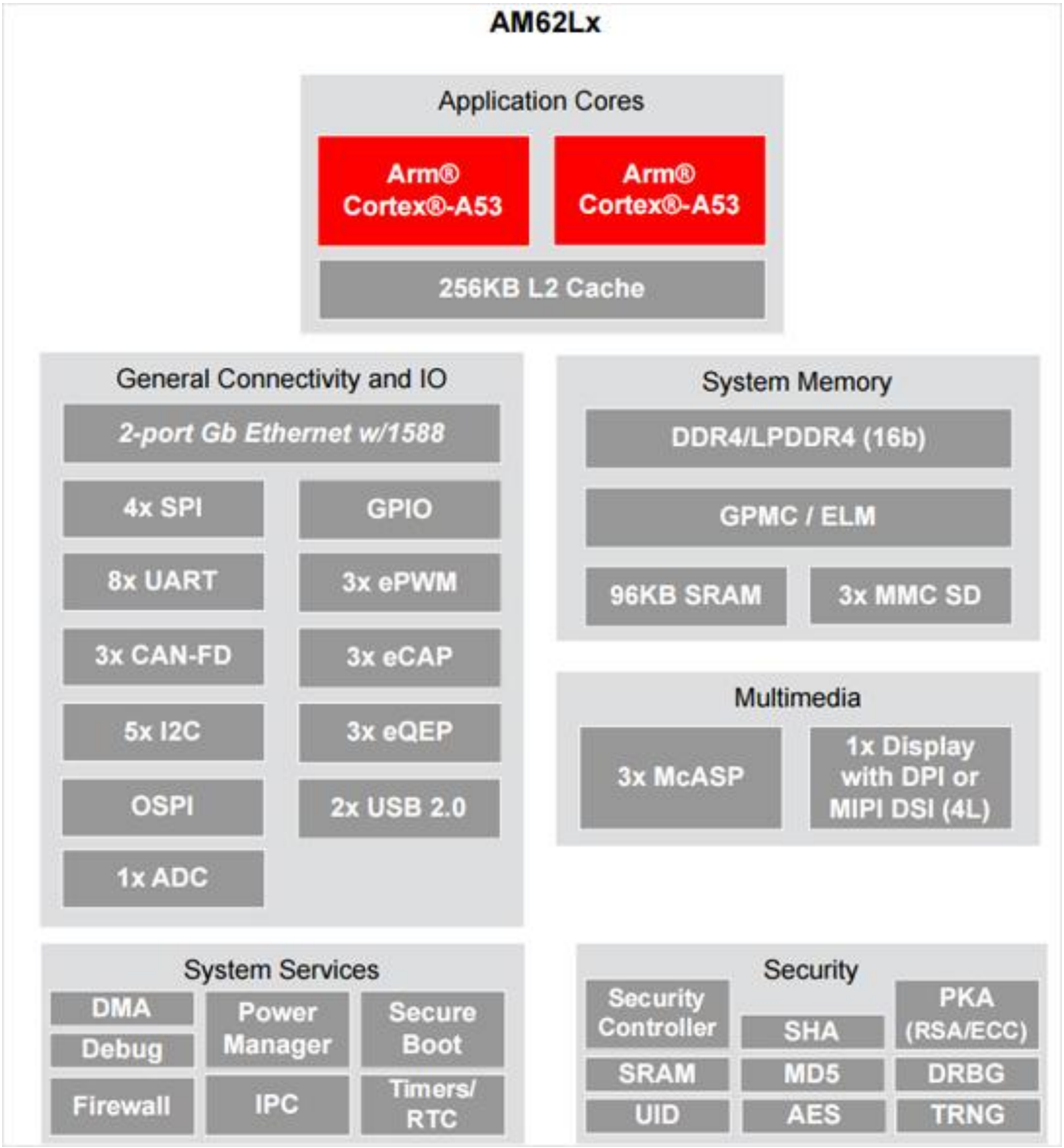
MYD-YM62LX Dimension Diagram

Hardware Specification

The MYC-YM62Lx System-on-Module (SOM), integrated into the MYD-YM62Lx development board, is powered by the TI YM62Lx microprocessor (AM62L32BOGHAANBR). This processor features a dual-core ARM Cortex-A53 architecture (reaching up to 1.25 GHz), complemented by 256 KB of L2 cache, with each A53 core equipped with 32 KB L1 data cache and 32 KB L1 instruction cache.

The low-cost & performance optimized AM62L family of application processors are built for Linux application development. With scalable Arm® Cortex®-A53 core performance and embedded features such as: Multimedia DSI/DPI support, integrated ADC on chip, advanced lower power management modes, and extensive security options for IP protection with the built-in security features.

The AM62Lx devices includes an extensive set of peripherals that make it a well-suited general-purpose device for a broad range of industrial applications while offering intelligent features and optimized power architecture as well. In addition, the extensive set of peripherals included in AM62Lx enables system-level connectivity, such as: USB, MMC/SD, OSPI, CAN-FD and an ADC.



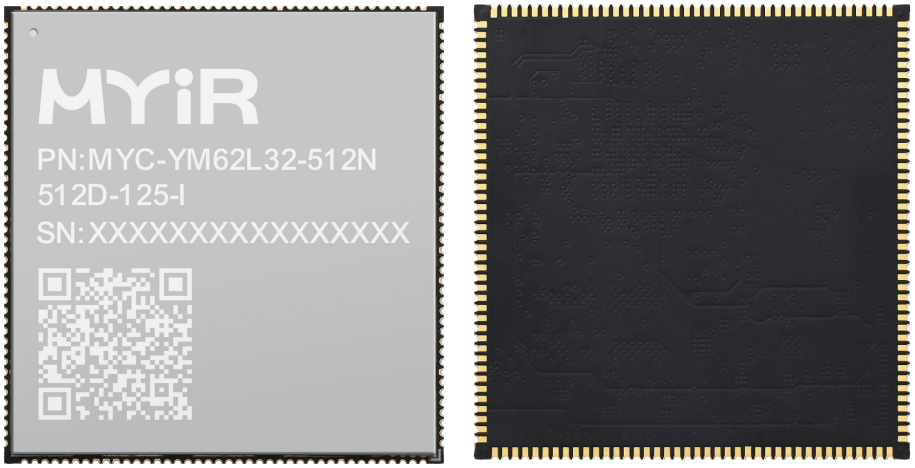
AM62Lx Processor Block Diagram

The MYD-YM62LX Development Board features the MYC-YM62LX System-On-Module as its core controller and is equipped with the TI AM62Lx processor. Its primary characteristics are as follows:

Mechanical Parameters

- Dimensions: 110mm x 90mm (base board), 43mm x 45mm (SOM)
- PCB Layers: 6-layer design (base board), 10-layer design (SOM)
- Power supply: 5V/3A (base board), 5V/2A (SOM)
- Working temperature:-40~85 Celsius

The MYD-YM62LX Controller Board (MYC-YM62LX System-On-Module)



MYC-YM62LX Top-view and Bottom-view

Processor

- TI AM62Lx processor (AM62L32BOGHAANBR)
  - Dual 64-bit Arm Cortex-A53 microprocessor subsystem up to 1.25GHz
  - Dual-core Cortex-A53 with 256KB L2 Cache
  - Each A53 core has 32KB L1 DCache and 32KB L1 ICache

Memory

- 512MB/1GB DDR4
- 512MB NAND FLASH/8GB eMMC
- 4KB EEPROM

Peripherals and Signals Routed to Pins

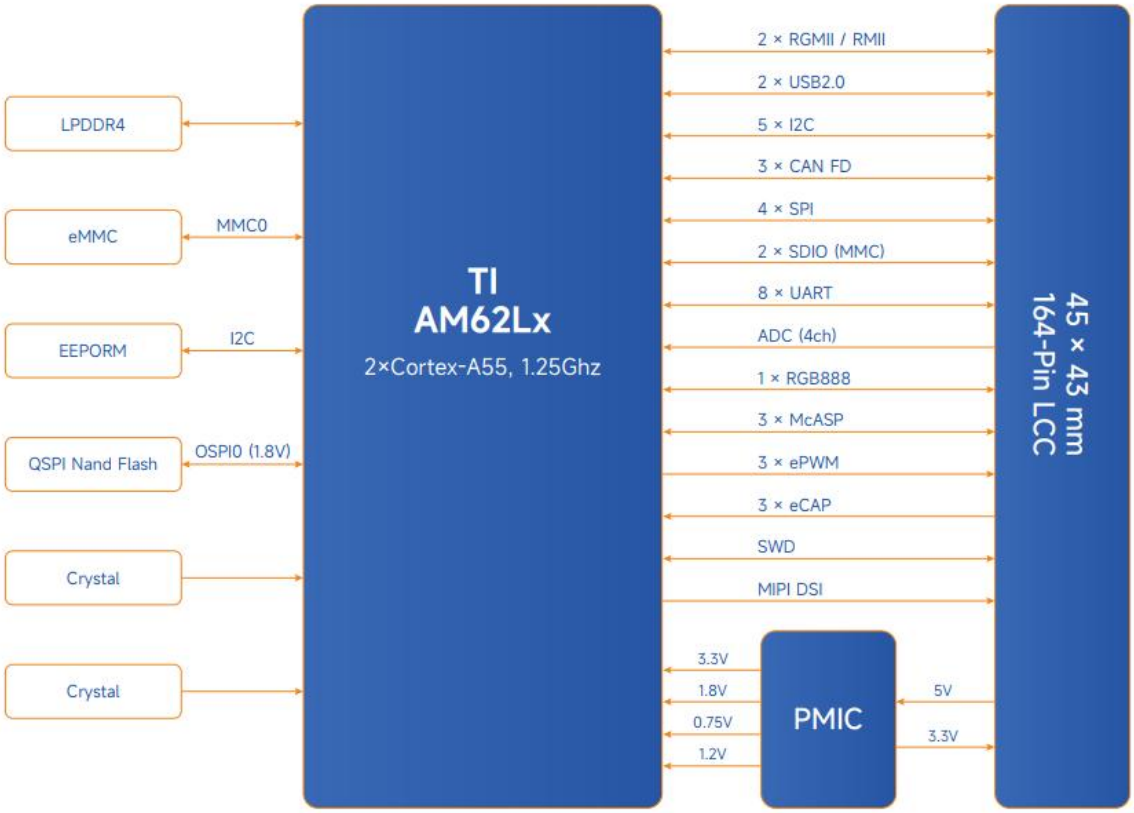
- 164-pin Castellated-Hole Expansion Interface (LCC Package)
  - 2x 4-bit SD/SDIO
  - 1x MIPI-DSI
  - 2x RGMII/RMII
  - 3x Multichannel Audio Serial Ports (McASPs)
  - 2x USB 2.0, Support OTG
  - 8x UART (UART0 is the Debug port)
  - 3x CAN-FD
  - 4x SPI
  - 5x I2C
  - 1x 4-ch ADC (10-bit Analog-to-Digital Converter, up to 1MSPS)

- 3x ePWM, enhanced PWM modules
- 3x eQEP, enhanced Quadrature Encoder Pulse modules
- 3x eCAP, enhanced Capture modules
- 1x GPMC (General-Purpose Memory Controller, up to 133MHz)

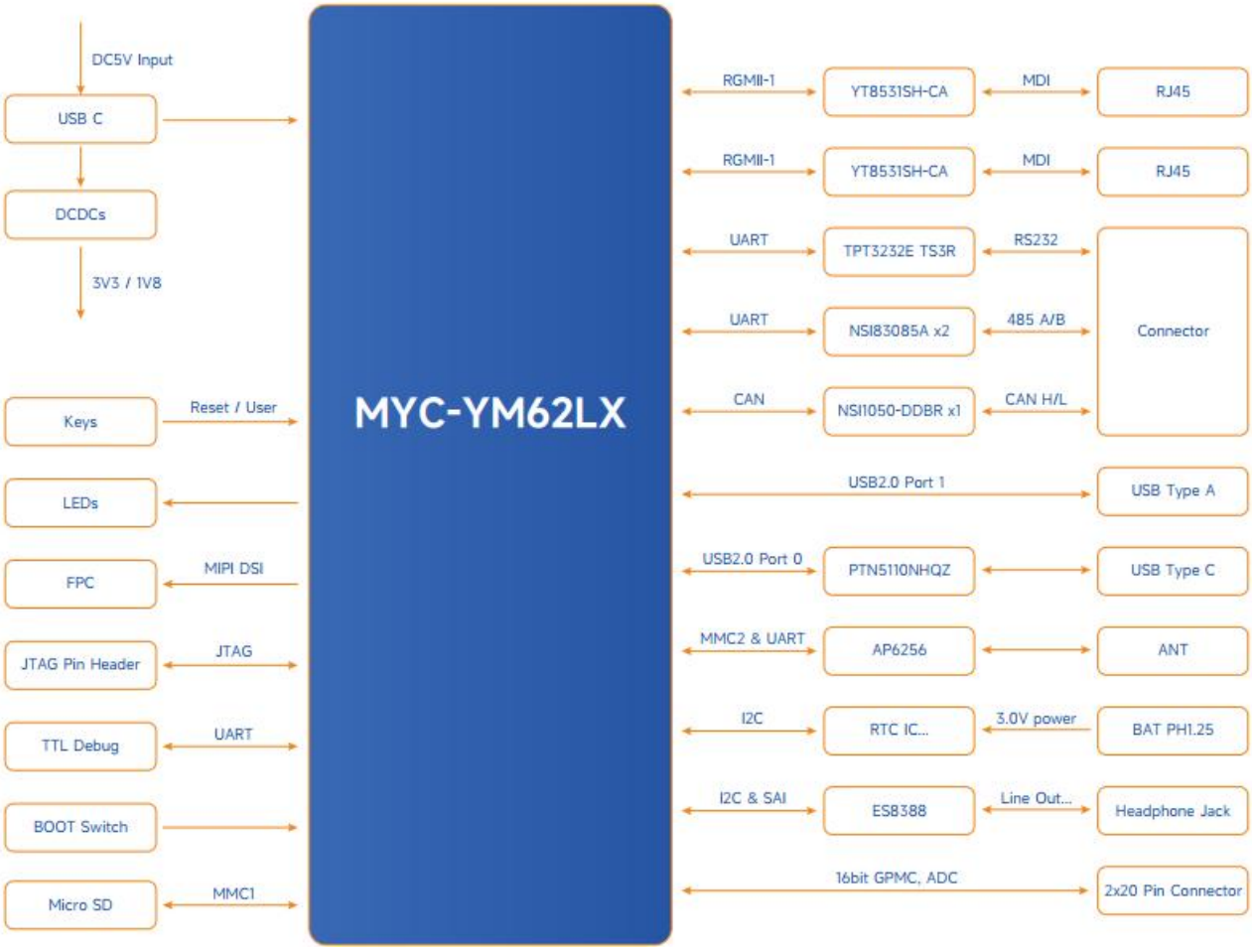
Note: the peripheral signals brought out to the expansion interface are listed in maximum number. Some signals are reused. Please refer to the processor datasheet and the SOM pinout description file.

The MYD-YM62Lx Development Board Base Board

- 1x Power Switch (On/OFF)
- 1x USB Power Supply Interface (5V/3A, Type-C)
- 1x TTL Debug serial port
- 1x USB 2.0 Host (Type-A)
- 1x USB 2.0 OTG (Type-C)
- 2x Gigabit Ethernet
- 1x RS232
- 2x RS485
- 1x CAN
- 1x WiFi/Bluetooth module
- 1x WIFI/BT ANT
- 1x Micro SD card slot
- 1x 4-channel ADC
- 1x GPMC
- 1x Audio input/output interface
- 1x MIPI DSI interface



MYC-YM62LX System-On-Module Function Block Diagram



MYD-YM62LX Development Board Function Block Diagram

Software Features

The MYD-YM62Lx development board 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	ATF	First bootloader: ATF 2.12.2	YES
	SPL	Second bootloader: SPL	YES
	U-boot	Secondary bootloader uboot_2025.01	YES
Kernel	Linux kernel	Customized based on the official kernel version 6.12	YES
Drivers	USB HOST	USB HOST Driver	YES
	USB OTG	USB OTG Driver	YES
	I2C	I2C Bus Driver	YES
	SPI	SPI bus driver	YES
	Ethernet	YT8531SH Driver	YES
	Audio	ES8388 Audio Driver	YES
	GPIO	General GPIO Driver	YES
	Micro SD	SD Card Storage Driver	YES
	UART	RS485/RS232 Driver	YES
	CAN	CAN Driver	YES
	ADC	ADC Driver	YES
	WiFi	AP6256 Driver	YES
	GPMC	GPMC Driver	YES
File system	myir-image-core	Images built with Yocto that do not include a GUI interface and support rt-linux	YES
	myir-image-full	Full-featured images built with Yocto that include QT and HMI	YES

MYD-YM62LX Software Features

Order Information

Product Item	Part No.	Packing List
MYD-YM62Lx Development Board	MYD-YM62L32-512N512D-125-I	✓ One MYD-YM62Lx Board (including MYC-YM62Lx SOM) ✓ One Quick Start Guide ✓ One USB to TTL cable ✓ One USB Type A to Type-C cable
	MYD-YM62L32-8E1D-125-I	
MYC-YM62Lx System-On-Module	MYC-YM62L32-512N512D-125-I	✓ One MYC-YM62LX SOM
	MYC-YM62L32-8E1D-125-I	
MY-MIPI101C-V2 10.1-inch LCD Module	MY-MIPI101C-V2	Add-on Option ✓ MY-MIPI101C-V2 10.1-inch LCD Module

Note:

1. One MYD-YM62LX Development Board comprises one MYC-YM62LX 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-YM62LX, 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