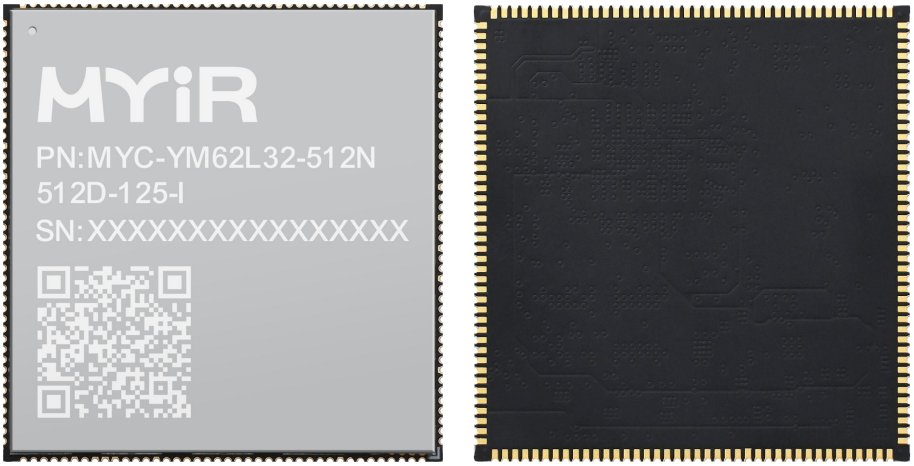
MYiR 米尔电子
Make Your Idea Real

MYC-YM62LX
System-On-Module
Overview

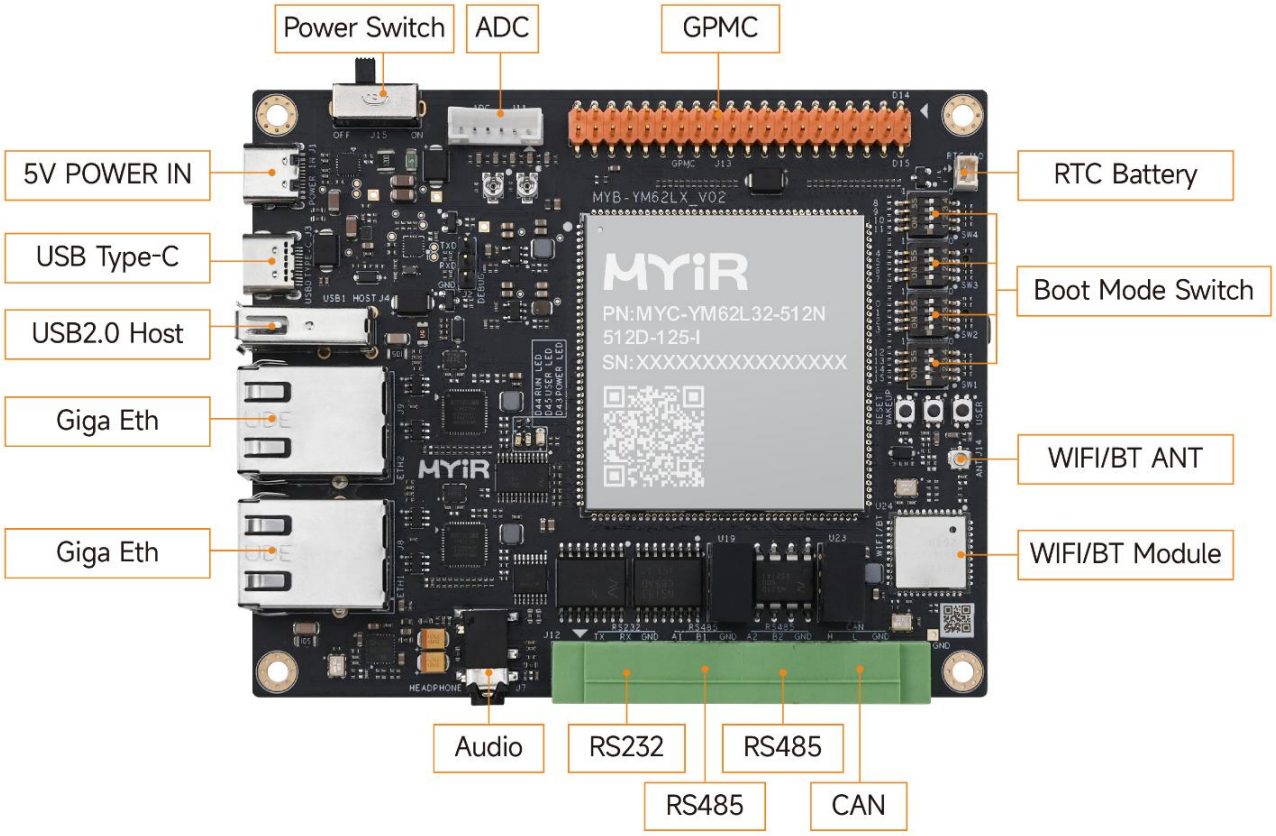
- ✓ *TI Sitara AM62Lx Processor based on up to 1.25GHz Dual Arm Cortex-A53 Cores*
- ✓ *512MB/1GB DDR4, 8GB eMMC/512MB NAND FLASH, 4KB EEPROM*
- ✓ *164-pin Expansion Interface with LCC Package*
- ✓ *Supports Running Linux*
- ✓ *Supports Working Temperature Ranging from -40 to 85 Celsius*

Measuring only 43mm by 45mm, the MYC-YM62LX is a compact System-on Module (SoM) based on the TI AM62Lx (AM62L32BOGHAANBR) microprocessor, which feature up to 1.25GHz one dual-core ARM Cortex-A53. In addition to the AM62Lx MPU, the MYC-YM62LX is equipped with 512MB/1GB DDR4 memory, 8GB eMMC/512MB NAND flash storage, and 4KB EEPROM. The expansion interface comes in a 164-pin LCC package, offering various communication and control interfaces such as RGMII, MIPI DSI, USB2.0, MMC, I2C, ADC, CANFD, UART, SPI, and GPMC communication bus, facilitating connection with other devices. MYIR provides complete software package for Linux running on the MYC-YM62LX to help users launch their development quickly and easily. The module is well-suited for IoT, HMI, and general applications with display functions, as well as some AIoT applications such as home appliance display and control, handheld POS, and building intercom.

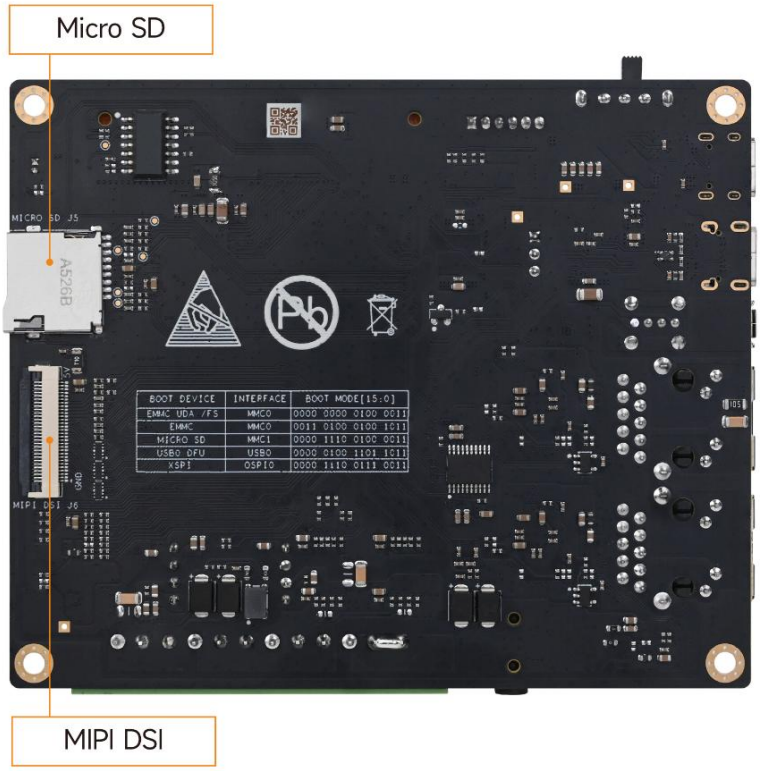


MYC-YM62LX System-On-Module (Top-view and Bottom-view)

The MYD-YM62LX development board integrates the MYC-YM62LX System-On-Module (SOM) with a dedicated carrier board, connected via a 164-pin expansion interface. The carrier board features a double-sided component layout and delivers comprehensive connectivity, 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. For enhanced development flexibility, MYIR 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)



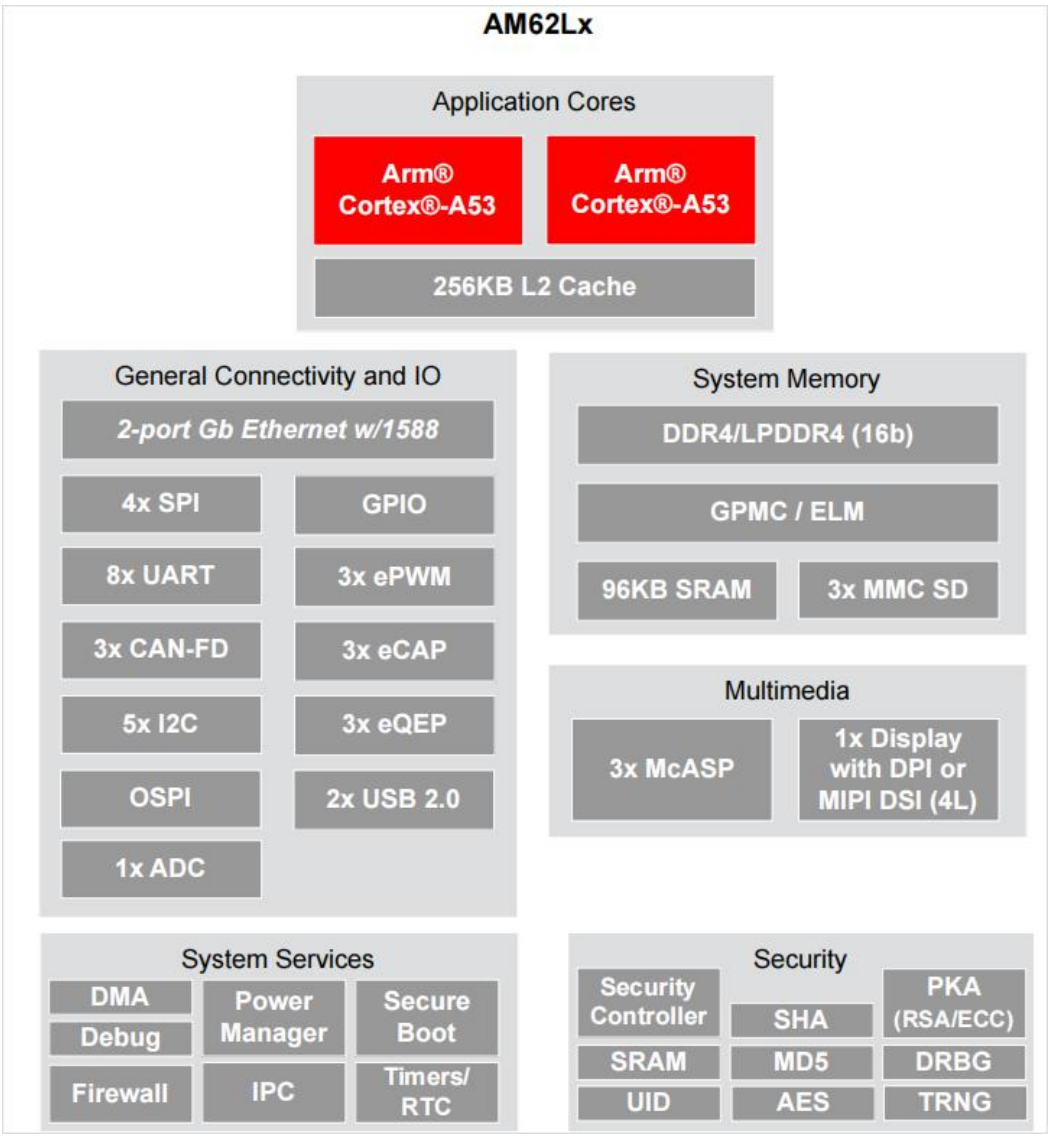
MYD-YM62LX Development Board (Bottom-view)

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 MYC-YM62LX takes full features of TI AM62Lx processor and the main features are characterized as below:

Mechanical Parameters

- Dimensions: 43mm x 45mm
- PCB Layers: 10-layer design
- Power supply: +5V/2A
- Working temperature: -40~85 Celsius (industrial grade)

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

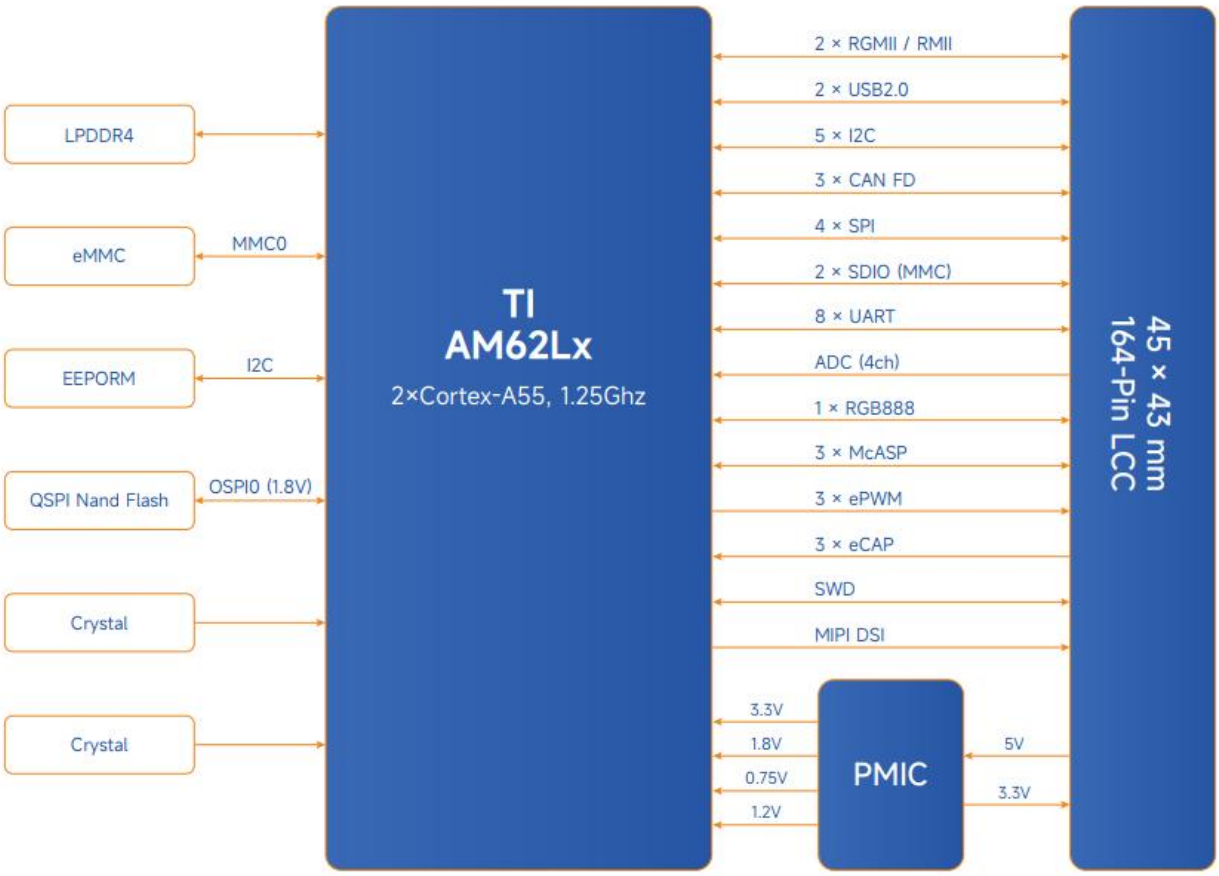
Memory

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

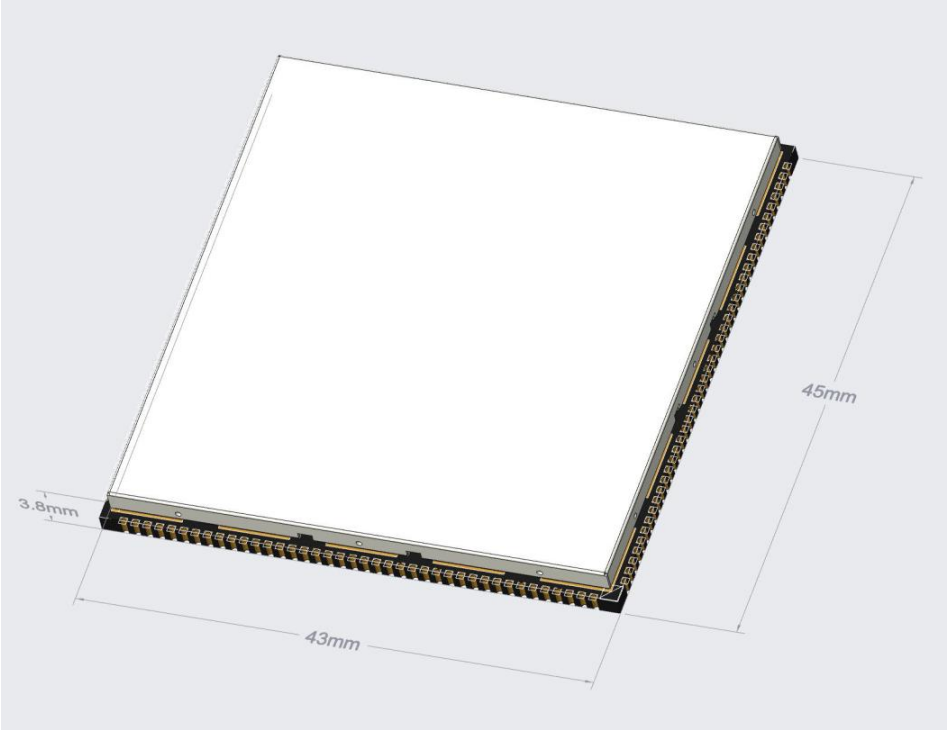
Peripherals and Signals Routed to Pins

- 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.



MYC-YM62LX Function Block Diagram



MYC-YM62LX Dimension Diagram

Software Features

The MYC-YM62LX 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	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

MYC-YM62LX Software Features

Order Information

Product Item	Part No.	Packing List
MYC-YM62LX System-On-Module	MYC-YM62L32-8E1D-125-I	✓ One MYC-YM62LX SOM
	MYC-YM62L32-512N512D-125-I	
MYD-YM62LX Development Board	MYD-YM62L32-8E1D-125-I	✓ One MYD-YM62LX Board (including MYC-YM62LX SOM) ✓ One USB to TTL cable ✓ One USB Type A to Type C cable ✓ One Quick Start Guide
	MYD-YM62L32-512N512D-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.

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