MYiR 米尔电子
Make Your Idea Real

MYC-LT536
System-On-Module
Overview

- ✓ Allwinner T536 processor based on 1.6GHz Quad ARM Cortex-A55 Cores and 600MHz RISC-V E907 MCU
- ✓ 2Tops NPU (T536MX-CEN2), Graphic 2D, VPU 4K HD Video Codec
- ✓ 1GB/2GB/4GB LPDDR4, 8GB/16GB/32GB eMMC, 32Kbit EEPROM
- ✓ Power Management IC (PMIC)
- ✓ 381-pin Expansion Interface with LGA Package
- ✓ Supports for Linux 5.10 OS

Measuring only 43mm by 45mm, the MYC-LT536 is a compact System-On-Module (SOM) based on the Allwinner T536 processor (T536MX-CEX/T536MX-CEN2). It boasts a quad-core ARM Cortex-A55 CPU running at 1.6GHz and a RISC-V E907 MCU operating at 600MHz. The module supports a 2Tops NPU (only for T536MX-CEN2), 2D graphics and a VPU for 4K HD video codec capabilities. The MYC-LT536 incorporates the T536 processor and offers onboard options of 1GB/2GB/4GB LPDDR4 memory, 8GB/16GB/32GB eMMC storage, a 32Kbit EEPROM, and a Power Management IC (PMIC). It features a 381-pin expansion interface in an LGA package, which simplifies soldering onto base boards. This interface enables the base board to carry most I/O signals to and from the SOM.


MYC-LT536 System-On-Module Top-view and Bottom-view

The MYC-LT536 SOM supports the Linux 5.10 operating system. MYIR provides a comprehensive software package, including kernel and driver source codes as well as compilation tools, to enable users to start their development rapidly and easily. It can be used in various applications such as power equipment, industrial control, human-machine interaction, smart robotics, education, and more.

MYIR provides the MYD-LT536 Development Board for evaluating the MYC-LT536 SOM. This board is assembled by soldering the MYC-LT536 onto a base board which is served as an expansion board specifically tailored for using with the MYC-LT536 SOM. It is equipped with two USB2.0, one USB Type-C debug interface, two Gigabit Ethernet, one USB to 10/100Mbps Ethernet interface, one Local Bus interface, one WiFi/Bluetooth module, a Micro SD card slot, and an NVMe PCIe M.2 2280 SSD Interface. The board also features a diverse set of multimedia interfaces, such as one LVDS display interface and one audio interface. Moreover, the board offers flexibility for expansion through various peripheral signals accessible via the RPI Interface (GPIO/I2C/UART/SPI/CAN) and the MI FANs PI Interface (GPIO/I2C/UART/SPI/USB/PWM), enabling users to customize and enhance their development experience.
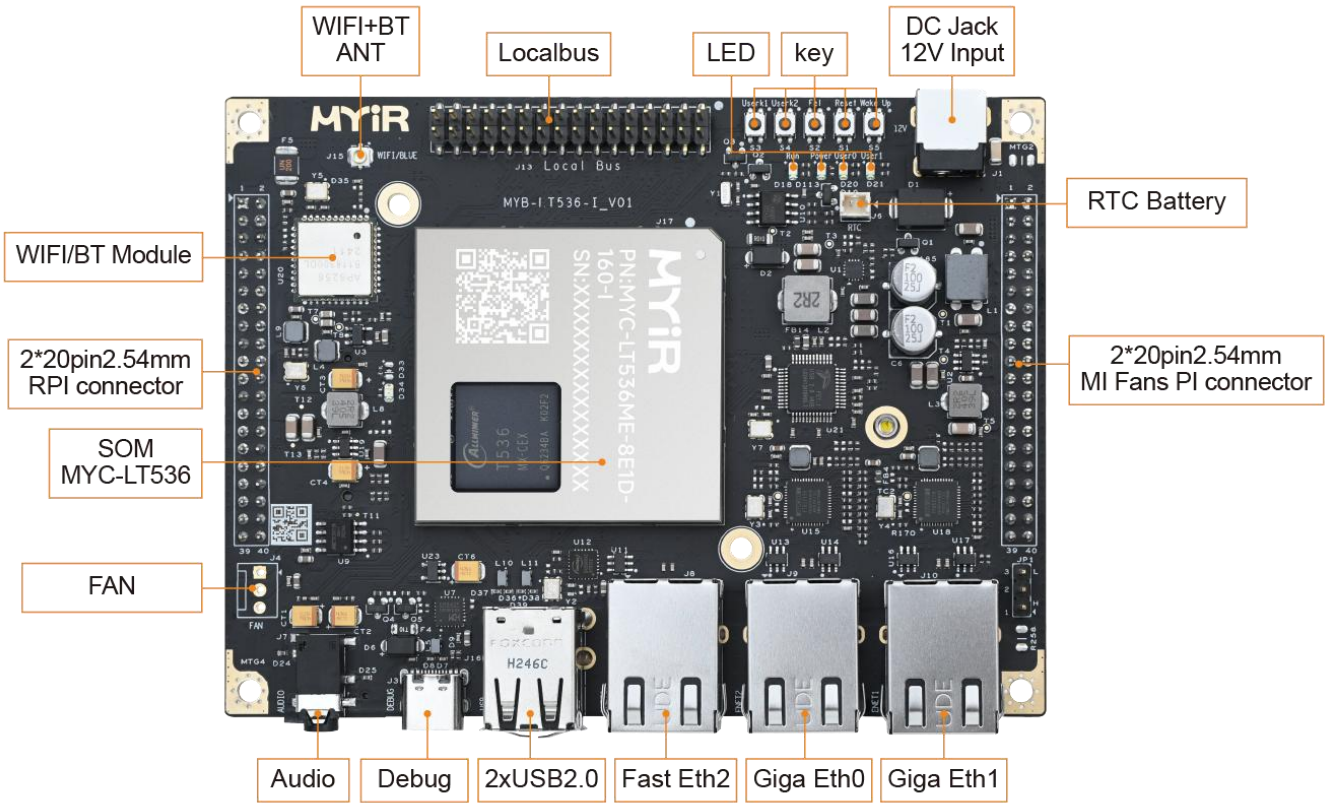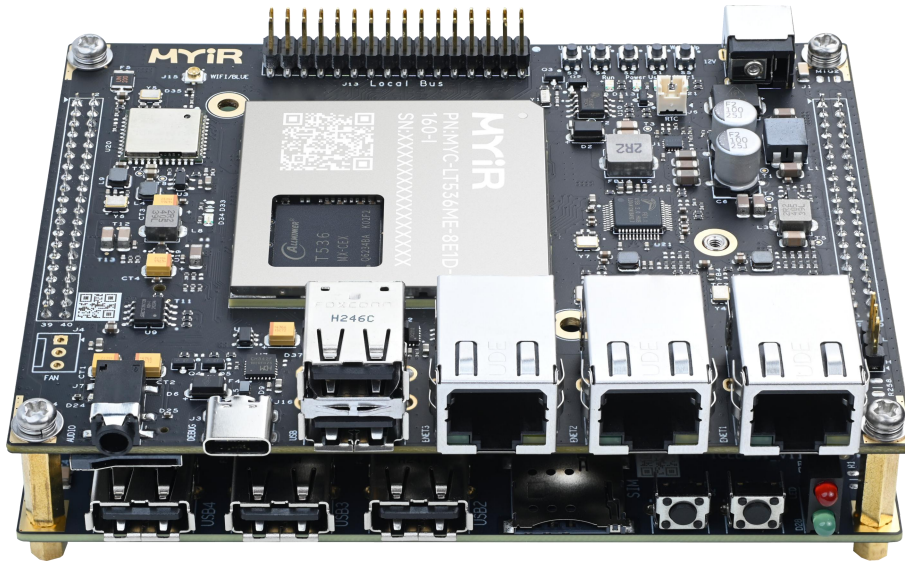
MYD-LT536 Development Board Top-view
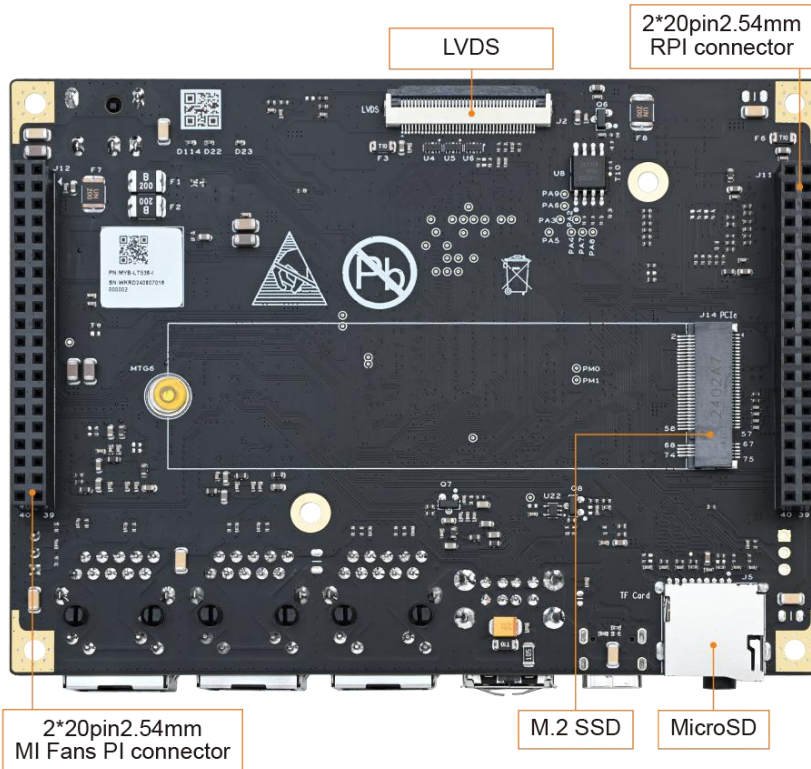
MYD-LT536 Development Board Bottom-view

MYIR offers the MYD-LT526-GK Development Kit, which includes the MYD-LT526 development board and the MY-ICEB001 expansion board. The expansion board extends the capabilities by adding three USB2.0 ports, one RS232 port, two RS485 ports, two CAN interfaces, and one Mini-PCIe slot for a USB-based 4G LTE Module with a SIM card holder. Additionally, the kit comes with necessary accessories such as a quick start guide, a USB Type-C cable, a 12V/2A power adapter, a WiFi/Bluetooth PCB antenna, and four phoenix connectors. MYIR also provides the MY-LVDS070C 7-inch LCD module as an optional add-on. These enhanced features significantly extend the board's capabilities, enabling users to develop applications flexibly according to their project requirements.

MYD-LT536 Development Board Integrates with the MY-ICEB001 Expansion Board
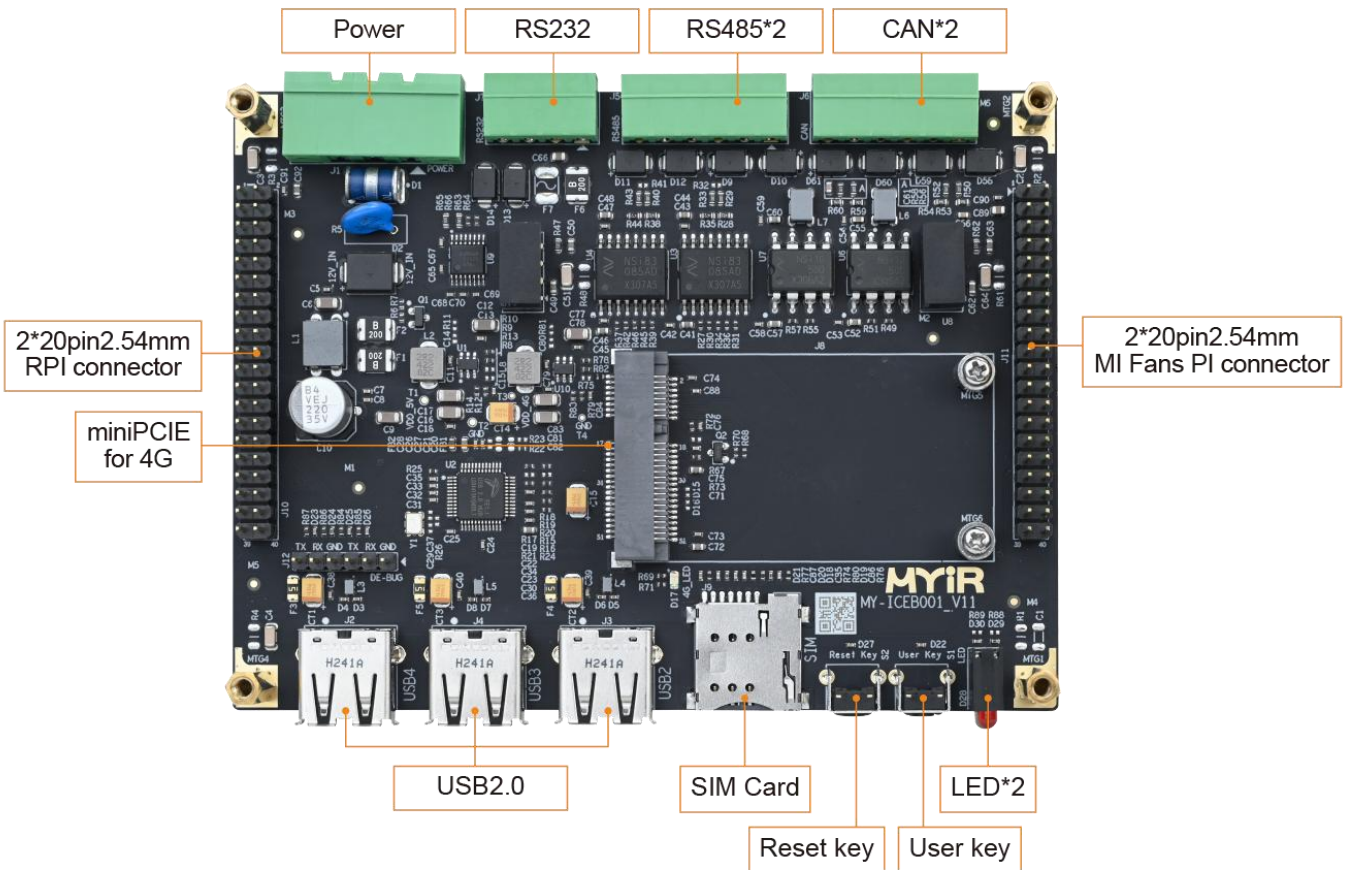

MY-ICEB001 Expansion Board

Hardware Specification

The T536 series processor is a quad-core high-performance processor launched by Allwinner for industrial and intelligent applications. This processor integrates a quad-core Cortex-A55 and an RISC-V E907 coprocessor, featuring a 2TOPS NPU, 2D graphics, and 4K HD video codec capabilities. It comes with a variety of rich multimedia interfaces, including RGB, MIPI-DSI, LVDS, Parallel CSI, supporting displays up to 1080p@60fps. Additionally, the processor supports dual Gigabit Ethernet interfaces, PCIE2.1/USB3.1, high-speed Localbus interfaces, 4x CAN FD interfaces, and 17x UART function interfaces, and so on.

It is applicable to the new generation of power intelligent equipment, industrial Internet equipment, industrial control equipment, industrial robots, commercial display, touch all-in-one machine, engineering machinery, rail transportation and other advanced industrial fields.
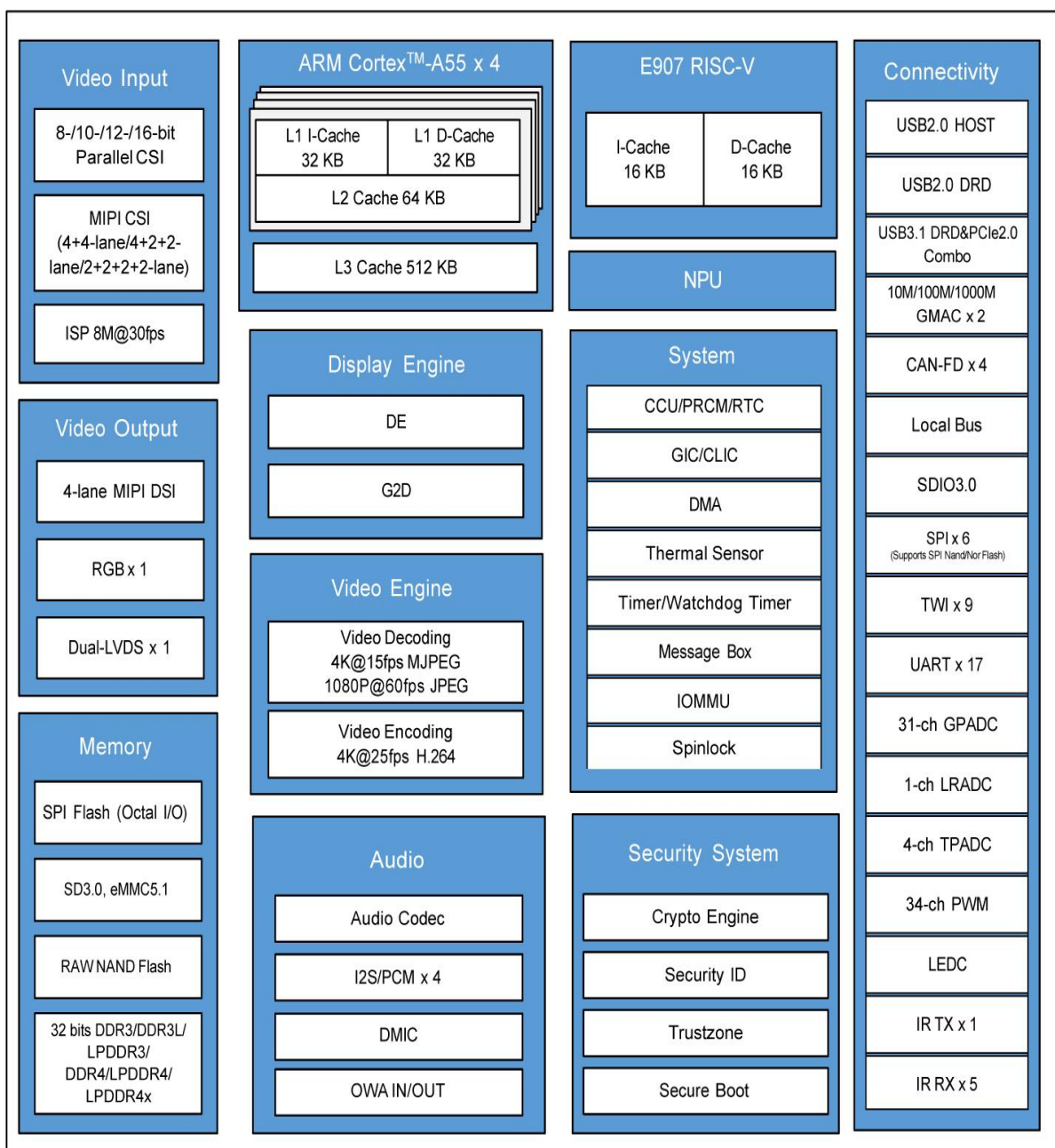
T536 Processor Block Diagram

The MYC-LT536 System-On-Module leverages the full capabilities of the Allwinner T536 processor, showcasing the following key features:

Mechanical Parameters
- Dimensions: 43mm x 45mm
- PCB Layers: 12-layer design
- Power supply: +5V/3A
- Working temperature: -40~85 Celsius (industrial grade)

Processor
- Allwinner T536 processor (T536MX-CEX/T536MX-CEN2)
  - Quad-core ARM Cortex-A55@1.6GHz
  - E907 RISC-V@600MHz
  - Graphic 2D
  - VPU 4K HD Video Codec
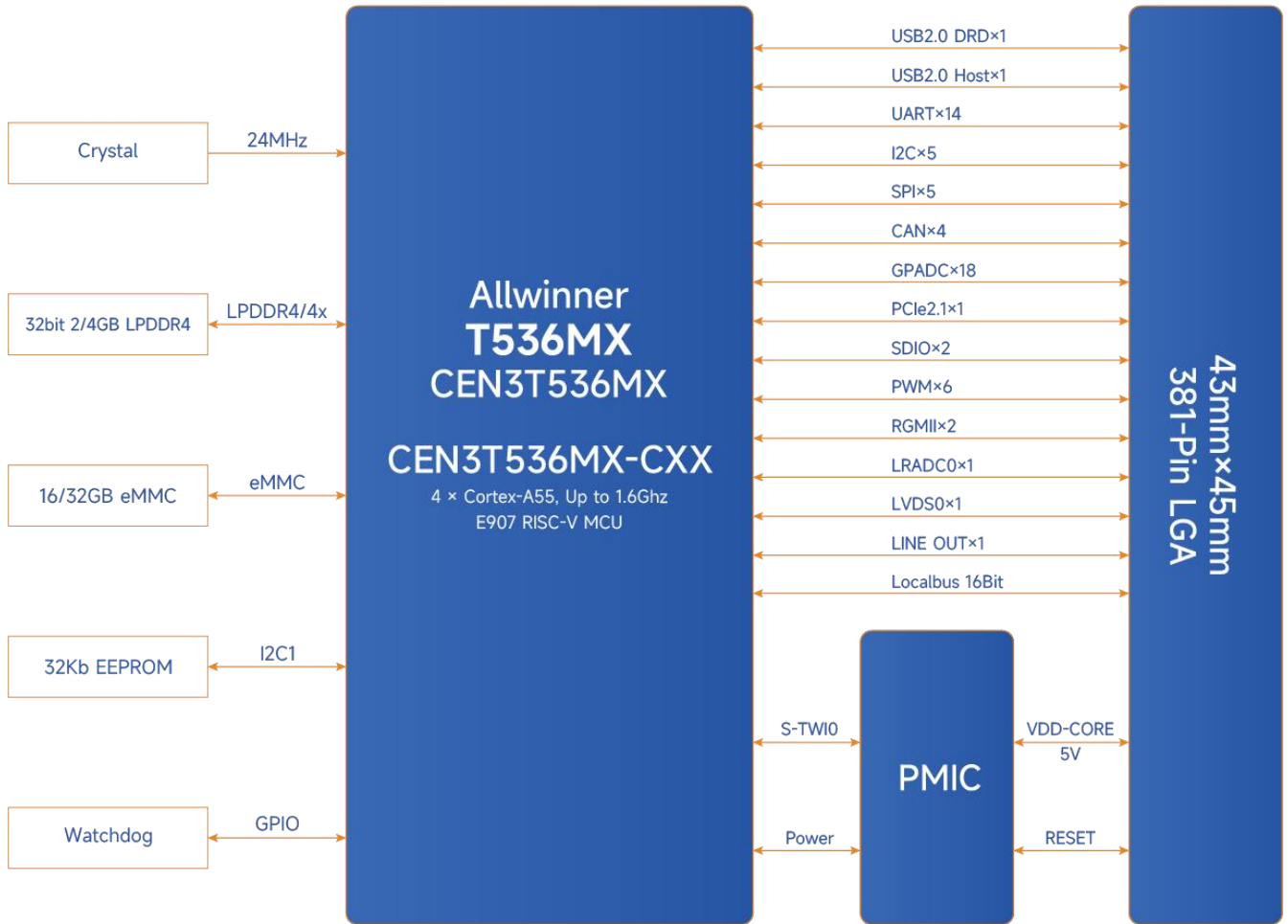 - Up to 2 Tops NPU (for T536MX-CEN2 only)

Memory and Storage
- 1GB/2GB/4GB LPDDR4
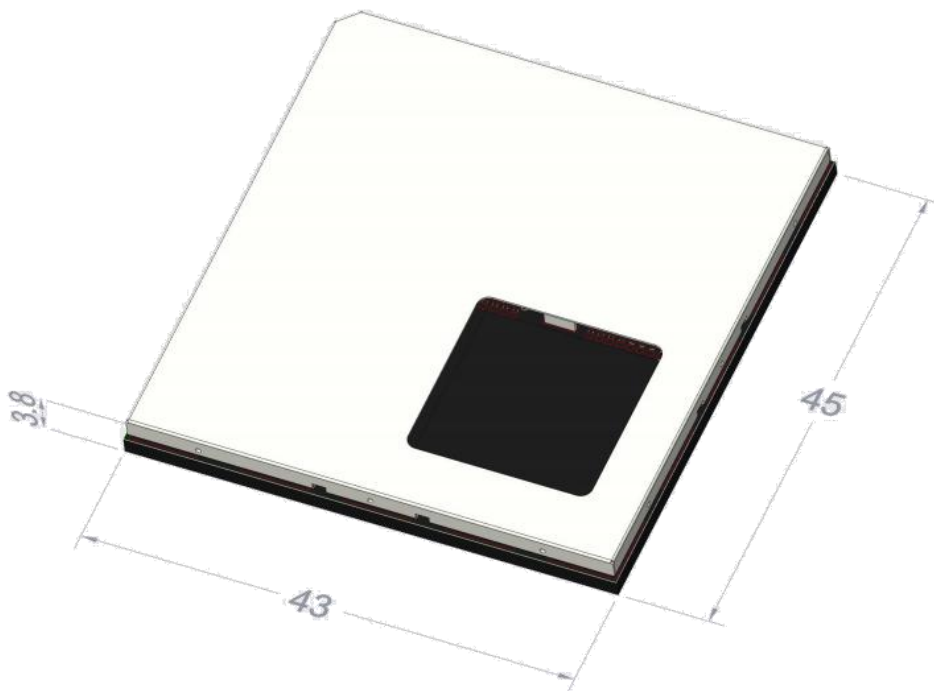- 8GB/16GB/32GB eMMC
- 32Kbit EEPROM

Peripherals and Signals Routed to Pins
- Power Management IC
- 381-pin LGA Expansion Interface
  - 2x RGMII
  - 1x PCIe 2.0 (reused with USB 3.1 DRD)
  - 1x USB 2.0 DRD
  - 1x USB 2.0 Host
  - 1x SD V3.0, 4bits
  - 1x SDIO V3.0, 4bits
  - 8/16-bit width Localbus
  - 17x UART
  - 6x SPI
  - 9x I2C
  - 4x CAN FD
  - 1x LINEOUT
  - 4x I2S/PCM
  - 1x SPDIF TX, 1x SPDIF RX
  - 1x Parallel DSI, supports RGB/BT.656/i8080, 1080p@60fps
  - 1x LVDS
  - 1x MIPI DSI
  - 1x Parallel CSI
  - 1x MIPI CSI
  - 1x ISP, 8M@30fps offline mode, 5M@30fps online mode
  - 1x 26-ch GPADC,12-bit, 1MHz
  - 34x PWM

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.

Crystal — 24MHz →

32bit 2/4GB LPDDR4 — LPDDR4/4x →

16/32GB eMMC — eMMC →

32Kb EEPROM — I2C1 →

Watchdog — GPIO →

Allwinner
T536MX
CEN3T536MX

CEN3T536MX-CXX

4 × Cortex-A55, Up to 1.6Ghz
E907 RISC-V MCU

USB2.0 DRD×1
USB2.0 Host×1
UART×14
I2C×5
SPI×5
CAN×4
GPADC×18
PCIe2.1×1
SDIO×2
PWM×6
RGMII×2
LRADC0×1
LVDS0×1
LINE OUT×1
Localbus 16Bit

43mm×45mm
381-Pin LGA

PMIC

S-TWI0
VDD-CORE 5V
Power
RESET

MYC-LT536 Function Block Diagram

3.8

45

43

MYC-LT536 Dimensions Chart (Unit: MM)

Software Features

The MYC-LT536 SOM supports for Linux OS and is furnished with comprehensive software packages. To facilitate clients in accelerating their projects, the kernel and numerous peripheral drivers are provided in source code format. The following is a concise overview of the software's key features:

Item	Features	Description	Source Code
Bootloader	TFA	First bootloader 2.8.15	YES
	U-boot	Second bootloader uboot_2022.10	YES
Linux kernel	Linux kernel	Customized base on official kernel_5.10 version	YES
Device driver	USB Host	USB Host driver	YES
	USB OTG	USB OTG driver	YES
	EEPROM	BL24C32F driver	YES
	I2C	I2C bus driver	YES
	SPI	SPI bus driver	YES
	Ethernet	YT8531SH-CA driver	YES
		SR9900AI driver	YES
	LVDS	MY-LVDS070C display module driver (1024*600 pixels resolution)	YES
	RTC	LK8563T driver	YES
	GPIO	Generic GPIO driver	YES
	UART	RS232/RS485 Driver	YES
	CAN	CAN Driver	YES
	WiFi	AP6256 driver	YES
	BT	AP6256 driver	YES
File system	myir_image_lt536_gk.img	Full-featured images built with buildroot	YES

MYD-LT536 Software Features

Order Information

Product Item	Part No.	Packing List
MYC-LT536 System-On-Module	MYC-LT536ME-8E1D-160-I (1GB LPDDR4, 8GB eMMC, without NPU) MYC-LT536ME-16E2D-160-I (2GB LPDDR4, 16GB eMMC, without NPU) MYC-LT536MN2-32E4D-160-I (4GB LPDDR4, 32GB eMMC, with NPU)	✓ One MYC-LT536 SOM
MYD-LT536-GK Development Kit	MYD-LT536ME-8E1D-160-I-GK (1GB LPDDR4, 8GB eMMC, without NPU) MYD-LT536ME-16E2D-160-I-GK (2GB LPDDR4, 16GB eMMC, without NPU) MYD-LT536MN2-32E4D-160-I-GK (4GB LPDDR4, 32GB eMMC, with NPU)	✓ One MYD-LT536 Development Board (including MYC-LT536 SOM) ✓ One MY-ICEB001 Expansion Board ✓ One 12V/2A Power adapter ✓ One USB Type-C cable ✓ One WiFi/BT PCB antenna (with ipex connector) ✓ Four phoenix connectors ✓ One Quick Start Guide
MY-LVDS070C 7-inch LCD Module	MY-LVDS070C	**Add-on Options** ✓ MY-LVDS070C Module

Note:

1. One MYD-LT536 Development Board comprises one MYC-LT536 SOM mounted onto the base board. If you require additional SOMs, you may place orders for extras.

2. Bulk discounts are available. For inquiries, kindly contact MYIR.

3. We cater to custom design requests based on the MYD-LT536, whether it involves reducing, adding or modifying the existing hardware components to suit the customers' specific needs.

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