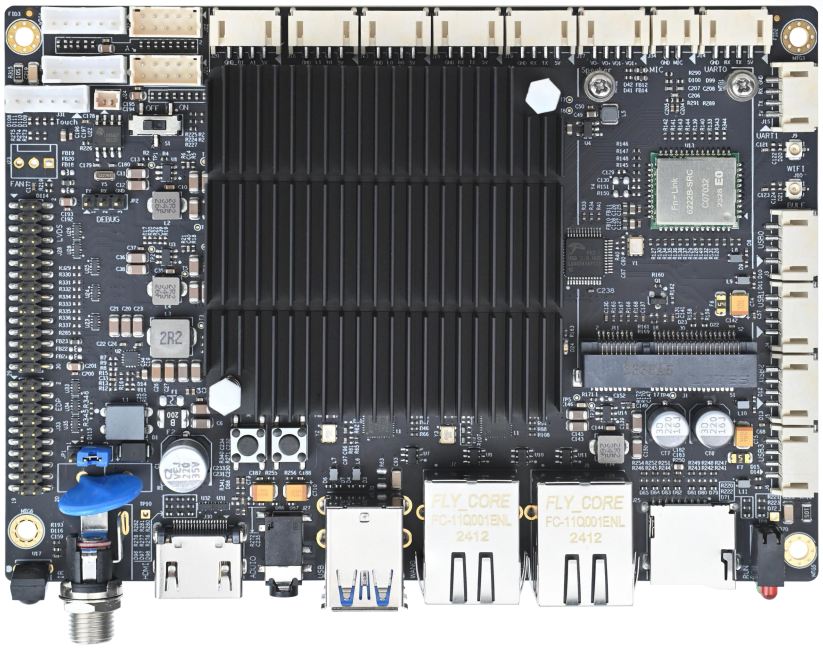
MYiR 米尔电子
Make Your Idea Real

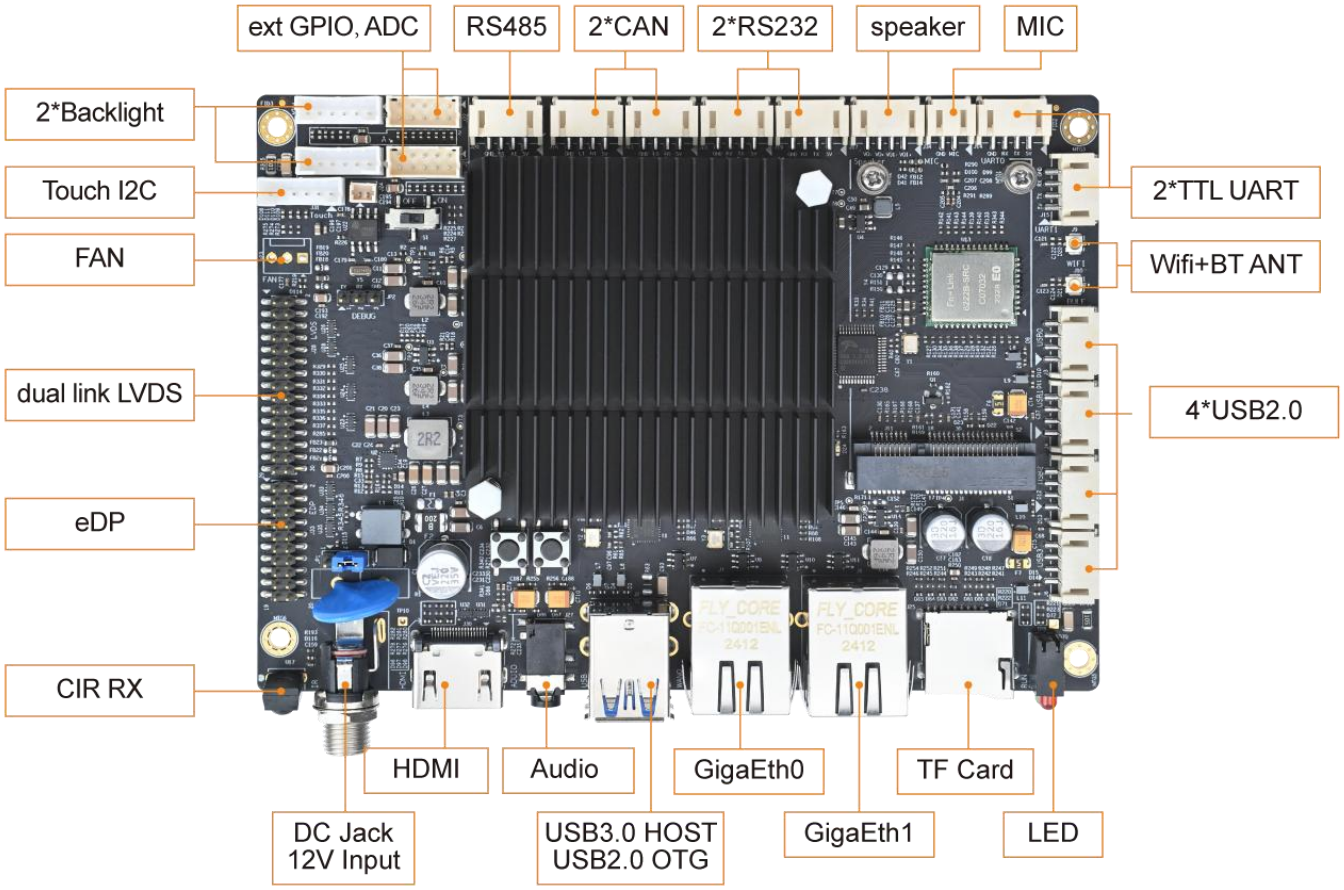
MYD-LT527-SX
Overview



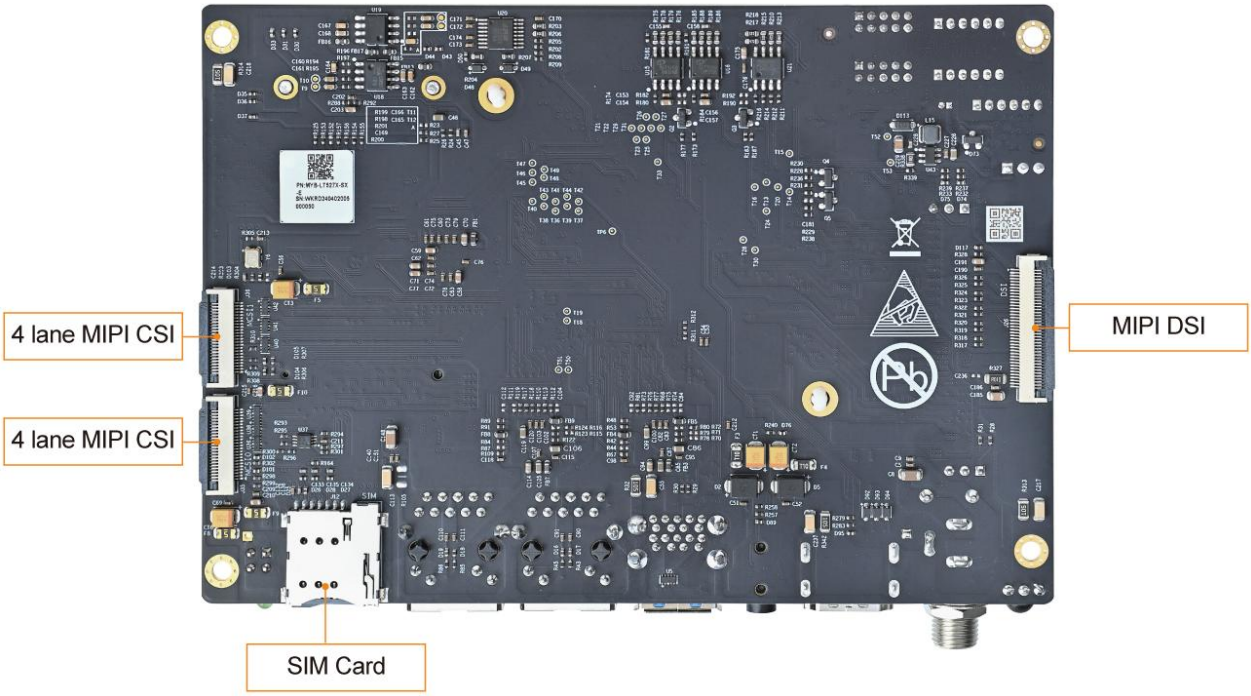
- ✓ *Commercial Display Board based on Allwinner T527 Processor*
- ✓ *Up to 1.8GHz Octa-core ARM Cortex-A55 MPU with GPU*
- ✓ *2GB LPDDR4, 16GB eMMC Flash, 32Kbit EEPROM*
- ✓ *2x RS232, RS485, 1x USB 3.0, 5x USB 2.0, 2 x CAN, Micro SD card Slot*
- ✓ *2x Gigabit Ethernet, WiFi/Bluetooth, PCIe Slot for USB based 4G/5G Module*
- ✓ *2x MIPI-CSI, HDMI/Mini-DP/MIPI-DSI/LVDS, Audio Input/Output*
- ✓ *Supports for Android OS*
- ✓ *Optional Camera Module*

The MYD-LT527-SX is an excellent commercial display board specially designed for visual display devices, catering to the demands of commercial and advertising sectors. It is built around MYIR's MYC-LT527 SOM with integrated highly efficient Allwinner T527 processor, 2GB of LPDDR4 memory, and 16GB of eMMC storage. It is ready to run Android Operating System and supports an extended working temperature range from -20 to 70 degrees Celsius.

The T527 processor stands out with its Octa-core ARM Cortex-A55 MPU and is capable of operating at up to 1.8GHz, along with a G57 MC1 GPU, supporting 4K@30fps H.265 video decoding and 1080@60fps H.264 video encoding, guaranteeing superior video processing. Leveraging the extensive features of the T527 processor, the MYD-LT527-SX delivers exceptional multimedia performance. The board offers a diverse array of video output interfaces, including HDMI, eDP, MIPI-DSI, and a 1*Dual-LVDS, along with video input interfaces, specifically 2*MIPI-CSI, enabling seamless multi-screen displays. Moreover, it offers a wide range of advanced connectivity options, such as dual Gigabit Ethernet, one USB3.0 and five USB2.0 ports, two CAN interfaces, a Mini PCIe interface for USB based 4G/5G module, a Micro SD card slot, dual RS232 and RS485 interfaces, as well as an onboard WiFi/Bluetooth module, all enhancing its network and data transfer capabilities. With its robust performance and versatile interfaces, the MYD-LT527-SX is ideally suited for high-performance industrial robots, energy and power systems, medical devices, display control integrated machines, edge intelligent boxes, vehicle terminals, and other embedded devices that require advanced multimedia functionalities.

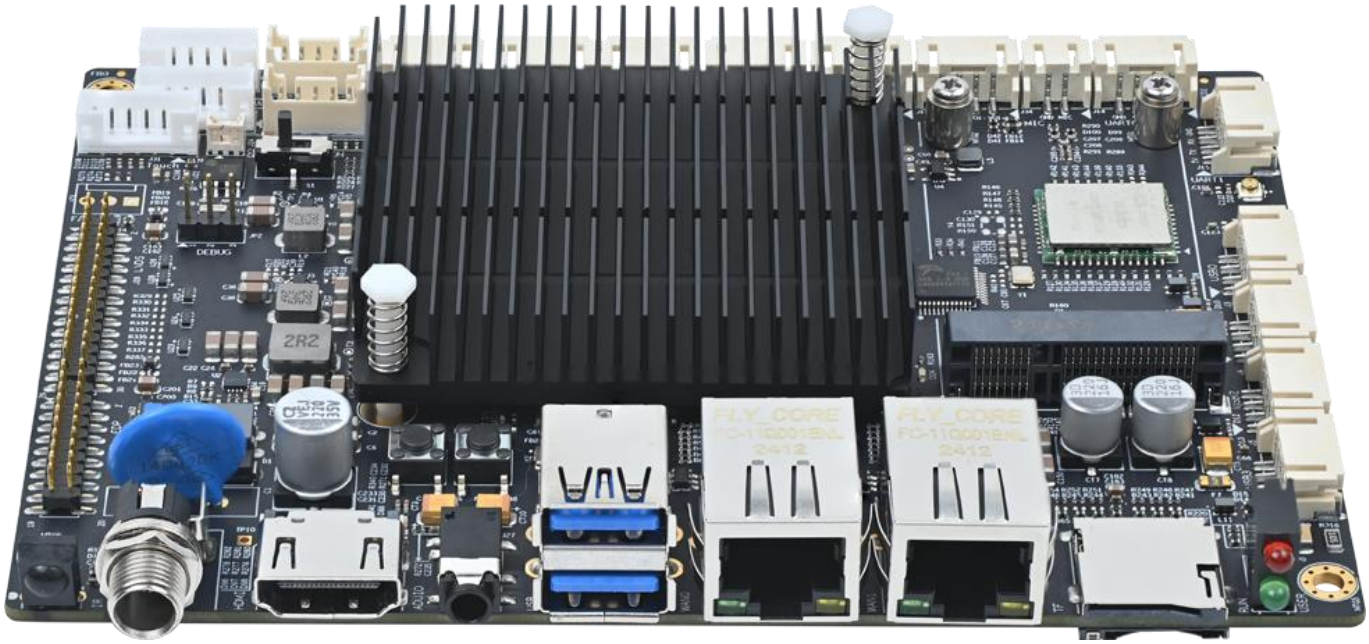


MYD-LT527-SX Top-view



MYD-LT527-SX Bottom-view

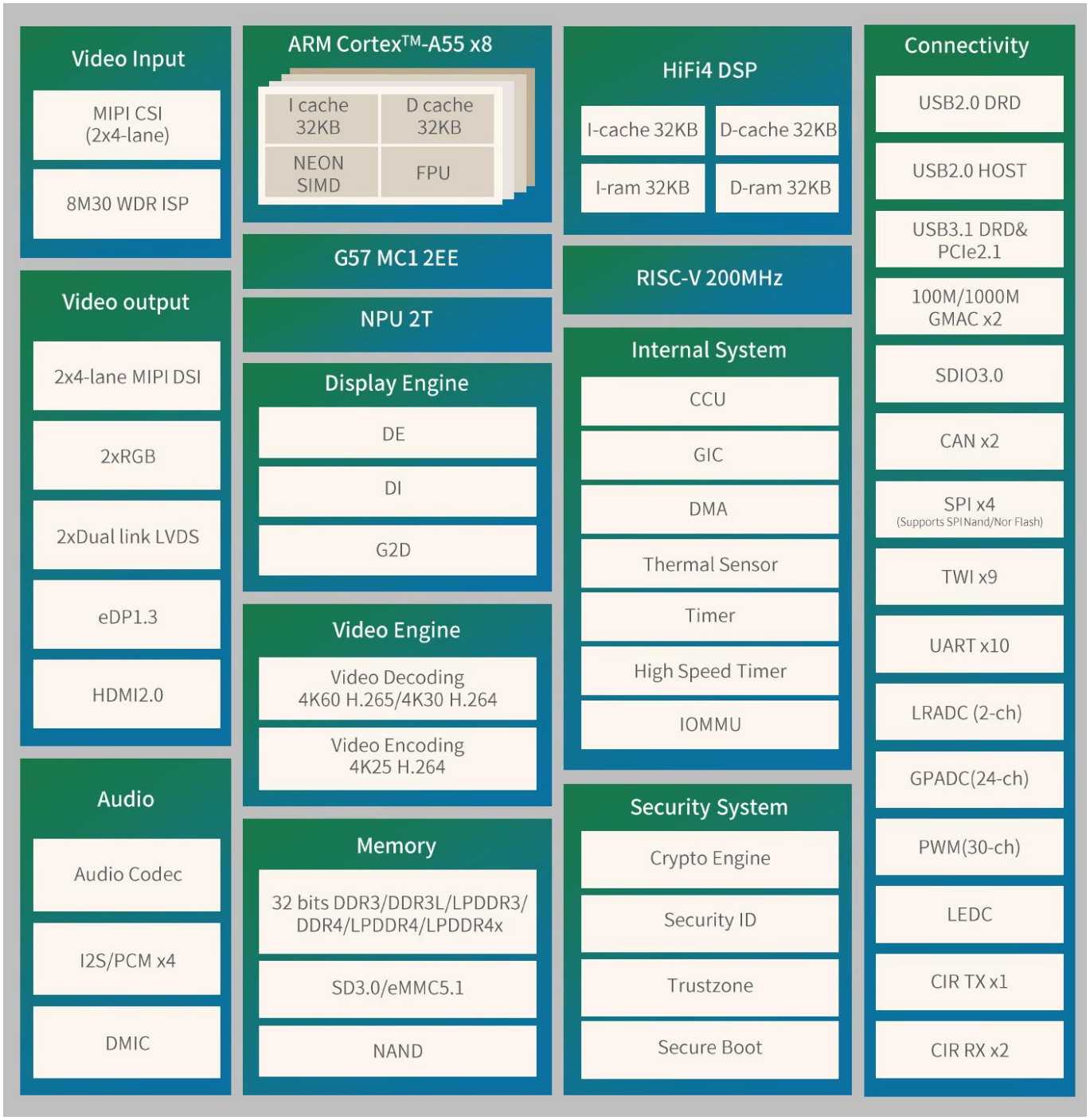
The MYD-LT527-SX is delivered with a Quick Start Guide and one power plug. MYIR also offers the MY-CAM003M MIPI Camera Module as an add-on option for the board.



MYD-LT527-SX (delivered with heatsink installed by default)

Hardware Specification

Allwinner T527 series features high-performance octa-core Cortex-A55 AI platform SoCs for the electronic commercial, industrial, and automotive fields. The chip family integrates octa-core Cortex-A55 CPU, a HiFi4 DSP, 2 TOPS NPU, G57 MC1 GPU, 32-bit DDR3/DDR3L/DDR4/LPDDR3/LPDDR4/LPDDR4X DRAM, high-speed interfaces (PCIe2.1 and USB3.1), automotive interface (CAN), multi video output interfaces (2*RGB/2*Dual-LVDS/2*MIPI DSI/HDMI/eDP), and video input interfaces (MIPI CSI). The chip family supports 4K@60fps H.265 decoder, 4K@30fps H.264 decoder, 1080p@60fps H.264 encoder, DI, and SmartColor system, which provides users with smooth experience and professional AI visual effect. T527 series can be used in Content sharing and self-service interactive terminals, Smart manufacturing, and other electronic commercial and industrial devices.

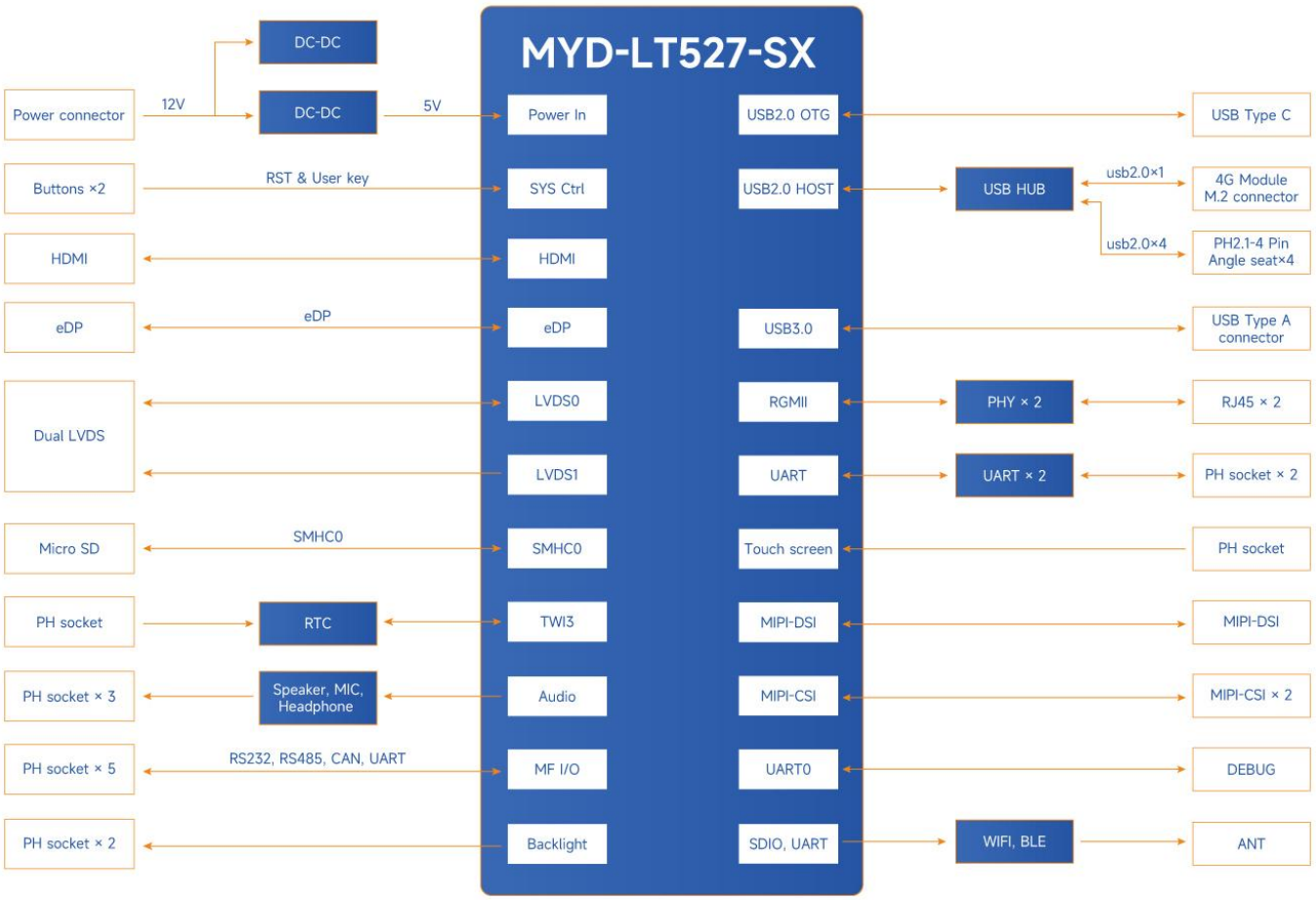


T527 Processor Block Diagram

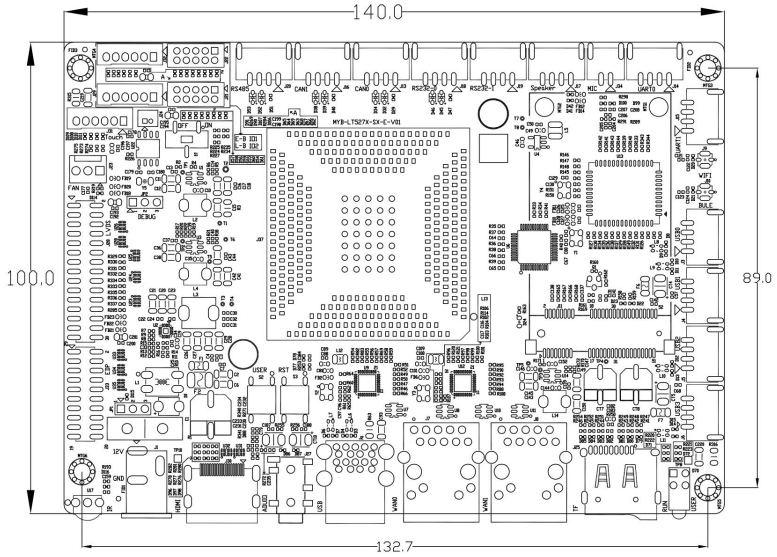
MYIR is using the T527M00X0DCH device for the MYD-LT527-SX. The main differences of the T527 series devices are described as in below form:

Devices	NPU	Video Decoder	Package
T527H02X0DCH	Support	H.265, 4K@60fps, 10bits	17 mm x 17 mm, FCBGA 664 balls
T527H00X0DCH	Not Support	H.265, 4K@60fps, 10bits	17 mm x 17 mm, FCBGA 664 balls
T527M02X0DCH	Support	H.265, 4K@30fps, 8bits	17 mm x 17 mm, FCBGA 664 balls
T527M00X0DCH	Not Support	H.265, 4K@30fps, 8bits	17 mm x 17 mm, FCBGA 664 balls

T527 Series Device Summary



Function Block Diagram of MYD-LT527-SX



MYD-LT527-SX Dimensions Chart (Unit: MM)

The MYD-LT527-SX takes full features of Allwinner T527 MPU and the main features are characterized as below:

Mechanical Parameters

- Dimensions: 140mm x 100mm
- PCB Layers: 6-layer design
- Power supply: 12V/2A
- Working temperature: -20~70 Celsius

Processor

- Allwinner LT527 processor, Octa-core ARM CortexTM-A55, up to 1.8 GHz

Memory

- 2GB LPDDR4
- 16GB eMMC
- 32Kbit EEPROM

Peripherals and Interfaces

- Serial ports
  - 1x RS485
  - 2x RS232
  - 2x TTL
  - 1x Debug UART (TTL)
- USB
  - 1x USB 2.0 OTG (Type-A)
  - 1x USB 3.0 HOST (Type-A)
  - 4x USB 2.0 HOST (4-pin header connector)
  - 1x Mini PCIe Interface for USB based 4G/5G Module
- 1x SIM Card Slot
- 2x Gigabit Ethernet Interfaces
- 2x CAN Interfaces
- WiFi/Bluetooth Module (complies with IEEE 802.11 ac standard and supports Bluetooth V5.0)
- 1x IR RX Jack (input)
- 1x Micro SD Card Slot
- Video Output
  - 1x HDMI output interface
  - 1x Dual-channel LVDS display interface
  - 1x eDP Display interface
  - 1x MIPI-DSI interface
- 2 x MIPI CSI camera interfaces
  Supports MYIR's MY-CAM003M MIPI Camera Module
- Audio Input and Output
  - 1x 3.5mm Headphone Jack
  - 1x MIC interface
  -1 x stereo Speaker interface
- 2x Extension Interfaces (GPIO, ADC)
- 2x Buttons (one for Reset, and one for User)
- 2x LEDs (One for Power LED; and one for User LED, using as ERROR LED by default)

Software Features

The MYD-LT527-SX Commercial Display Board offers supports for Android OS and is equipped with comprehensive software packages. Below is a brief overview of the key software features:

Item	Feature	Description	Image
Bootloader	U-boot	Boot program uboot_2018.02	
		Scanning, reading, and writing to the contents of eMMC/TF cards	Support
		ext2/3/4 file system access through EMMC/TF card	Support
		Complete upgrade of the image through TF card	Support
		Device Tree FIT	Support
		Memory read and write test, I2C read and write, reset	Support
Kernel	Linux kernel	Customized base on official kernel_5.15 version Android version: Q (13.0)	
	Network support	TCP/IP network protocol stack	Support
		Ethernet Protocol	Support
		Net Bridge, IP Route, Netfilter	Support
		qmi_wwan protocol and USB serial	Support
		CAN bus subsystem	Support
		Bluetooth subsystem	Support
		Wireless protocol stack	Support
		IPV6	Support
	File system	DEVTMPFS	Support
		Ext2/3/4 File System	Support
		Overlay File System	Support
		VFAT File System	Support
	Multimedia module	Multimedia-related modules include video input modules supported by the platform, such as VPU, UVC, and V4L2.	Support
	Sound module	Audio-related modules, audio input and output devices supported by the platform.	Support
	Graphics module	Display-related modules, such as the platform-supported backlight, display, GPU, etc.	Support
	Input subsystem	Buttons, HID, and touch subsystems. Input devices supported by the platform.	Support
	USB gadget	Mass storage, rndis, serial	Support
Drivers	MMC	Emmc driver	Source code
	SPI	SPI driver	Source code
	I2C	I2C driver	Source code
	USB Host	USB driver	Source code
	Ethernet	Gigabit Ethernet Driver	Source code

	RS232/RS485/ Uart	Serial driver	Source code
	Camera	MIPI Camera driver (OV5640)	Source code
	GPIO key	Key driver	Source code
	RTC	RTC driver	Source code
	Gpio Led	LED driver	Source code
	HDMI	HDMI driver	Source code
	Touch	Touch screen driver	Source code
	WIFI	WiFi driver	Source code
	bt	Bluetooth driver	Source code
	Audio	Audio driver	Source code
	LVDS	LVDS driver	Source code
File system	Kernel firmware	wifi_realtek firmware, bcmwifi firmware	Support
	Initial subsystem	Init (zygote)	Support
		ueventd	Support
	System Tools	Bash shell environment	Support
		Coreutils (chgrp, chmod, chown, kill, cp, dd...)	Support
		util-linux (fdisk, fsck...)	Support
		tar with long options	Support
		top	Support
		e2fsck	Support
		resize2fs	Support
		gzip	Support
	System settings	localized data (C en_US)	Support
		time zone information (Asia/Shanghai)	Support
		User and password (User: root, password is empty)	Support
	Test Tools	memtester	Support
		i2c-tools	Support
		microcom	Support
		hwclock	Support
		gdbserver	Support
		getevent	Support
		tslib, ts_test, ts_calibrate	Support
		hexdump	Support
	Development language	JAVA	Support
		C/C++	Support
		Kotlin	Support
	Database	sqlite3	Support

	Network applications	scp	Support
		netstat	Support
		iptables	Support
		iperf	Support
		iproute2 (iproute)	Support
		udhcpc	Support
		pppd	Support
		ifconfig	Support
		openssh server (sshd)	Support
		openssh client (ssh)	Support
		wpa-supplicant	Support
		wpa-supplicant-cli (wpa_cli)	Support
		tcpdump	Support
		route	Support
	Security	openssl-devel	Support
	Word processing	grep	Support
		Sed	Support
		Awk	Support
	Multimedia	alsa-utils	Support
	Others	bc	Support
SDK	Tool Chain: gcc-arm-10.3-2021.07-x86_64-aarch64-none-linux-gnu		Support
	C function library: glibc		Support
	C++ function library: libstdc++		Support
	libssl-dev		Support
	libxml2		Support
	libcedarx		Support

MYD-LT527-SX Software Features

Order Information

Product Item	Part No.	Packing List
MYD-LT527-SX	MYD-LT527M-16E2D-180-E-SX	✓ One MYD-LT527-SX board ✓ One Power Plug ✓ One Quick Start Guide
MY-CAM003M MIPI Camera Module	MY-CAM003M	**Add-on Options** ✓ MY-CAM003M Module ✓ 12V/2A Power Adapter
12V/2A Power Adapter	22001.00004	

Note:

1. Customers need to prepare their own 12V DC power adapter. The power adapter cannot be directly inserted for use. Please refer to the Quick Start Guide and DIY to properly connect with the power plug provided by MYIR before use. The optional 12V/2A power adapter provided by MYIR is only for evaluation and testing purposes.

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

3. We cater to custom design requests based on the MYD-LT527-SX, whether it involves reducing, adding or modifying the existing hardware components to suit the customers' specific needs.

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