

MYD-LD25X

Hardware user manual



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MYIR Electronics Limited

History

Version	Author	Participants	Date	Description
V1.0	Bai		20240820	Initial release
V1.1	Bai		20241106	Update WIFI



Contents

History	1
Contents	2
1. Overview	4
1.1. Introduction to the board	4
1.2. System chart	5
1.3. Physical marking drawing	7
1.4. Key interface parameter	8
1.5. Reference data	9
2. Power supply parameter	10
2.1. Power tree	10
2.2. Power consumption	11
2.3. Power requirement	11
3. BOOT configuration	12
4. Interface specification	13
4.1. Power interface	15
4.1.1. Pin definition	16
4.2. Debugging serial port	17
4.2.1. Pin definition	17
4.3. Key	18
4.3.1. Pin definition	18
4.4. LED	19
4.4.1. Pin definition	19
4.5. TF card interface	20
4.5.1. Pin definition	20
4.6. Raspberry PI interface	21
4.6.1. Pin definition	21
4.7. USB interface	23
4.7.1. Pin definition	24
4.8. Ethernet interface	26



4.8.1. Pin definition	26
4.9. Audio interface	29
4.9.1. Pin definition	29
4.10. HDMI interface	30
4.10.1. Pin definition	31
4.11. RTC battery port	32
4.11.1. Pin definition	32
4.12. LVDS interface	33
4.12.1. Pin definition	33
4.13. CSI interface	35
4.13.1. Pin definition	35
4.14. Wi-Fi/BT interface	37
4.14.1. Pin definition	37
5. module declaration	38
5.1. WIFI module	38
5.1.1. Pin definition	39
6. Mechanical Dimensions	41
7. Evaluation board configuration	43
7.1. Evaluate board configuration models	43
7.2. Evaluation board packing list	44
7.3. Evaluation board supported accessory modules	44
8. Part Number of Connectors on EVK	45
Appendix A	46
Warranty & Technical Support Services	46

1. Overview

MYD-LD25X is an evaluation board development kit based on STM32MP25x processor design launched by Shenzhen MYIR Electronics Co., LTD. It is composed of SOM MYC-LD25X and base board MYB-LD25X, which provides many interface resources. Including but not limited to Ethernet, OTG function, USB2.0, LVDS output, MIPI DSI to HDMI, MIPI CSI, Headphone, external dedicated low power RTC, Micro SD, compatible Raspberry PI interface, Bluetooth /WIFI module, etc. This manual is convenient for users to understand the interface definition and functional application of the evaluation board, and also has certain guiding significance for project development using our company's MYC-LD25X SOM.

1.1. Introduction to the board

The SOM adopts high-density high-speed circuit board design, single-sided device layout, and integrates the processor, eMMC, DDR, EEPROM, PMIC power supply and other circuits on the 37mm*39mm board.

Double-sided device layout is adopted on the evaluation board. Support Gigabit Ethernet, support OTG function, single channel 4 lane LVDS output, audio input/output interface, Micro SD card slot, HDMI interface, compatible with Raspberry PI dual-row pin interface, LED indicator, MIPI DSI to HDMI interface, MIPI CSI interface, WIFI module, debugging serial port.

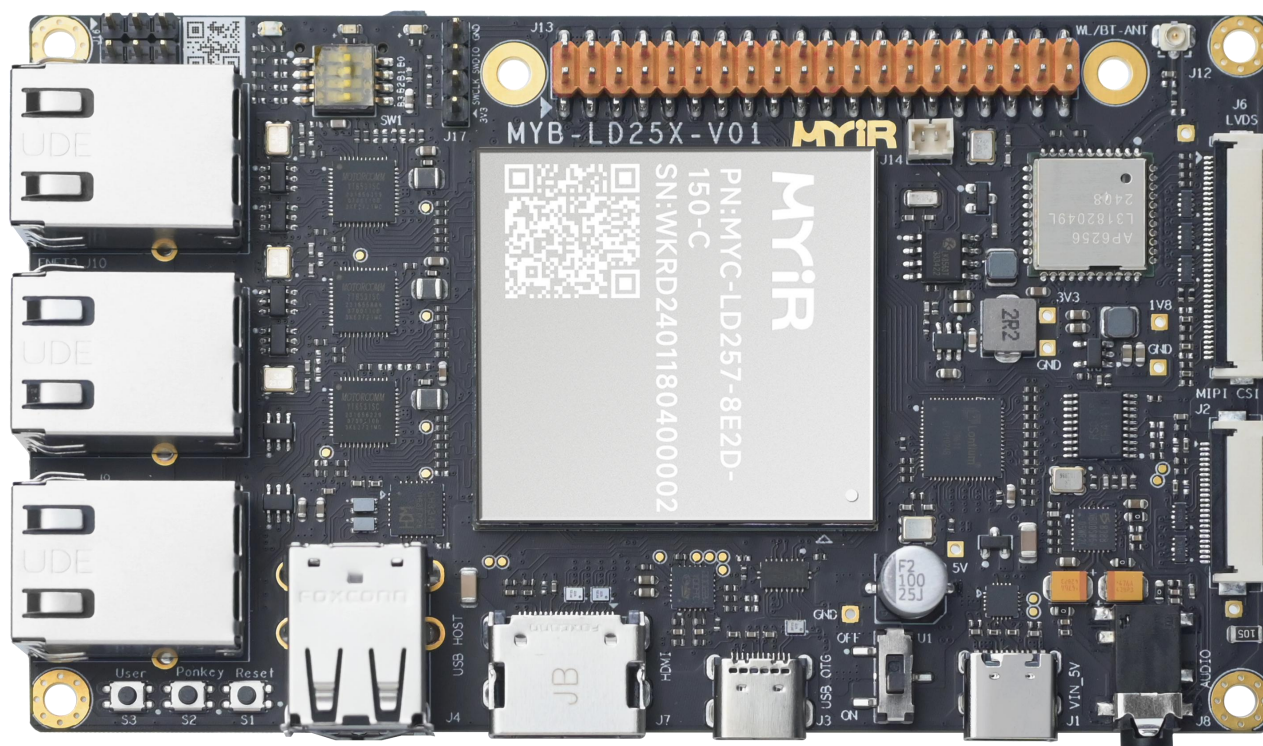


Figure 1- 1 MYD-LD25X Top-view

1.2. System chart

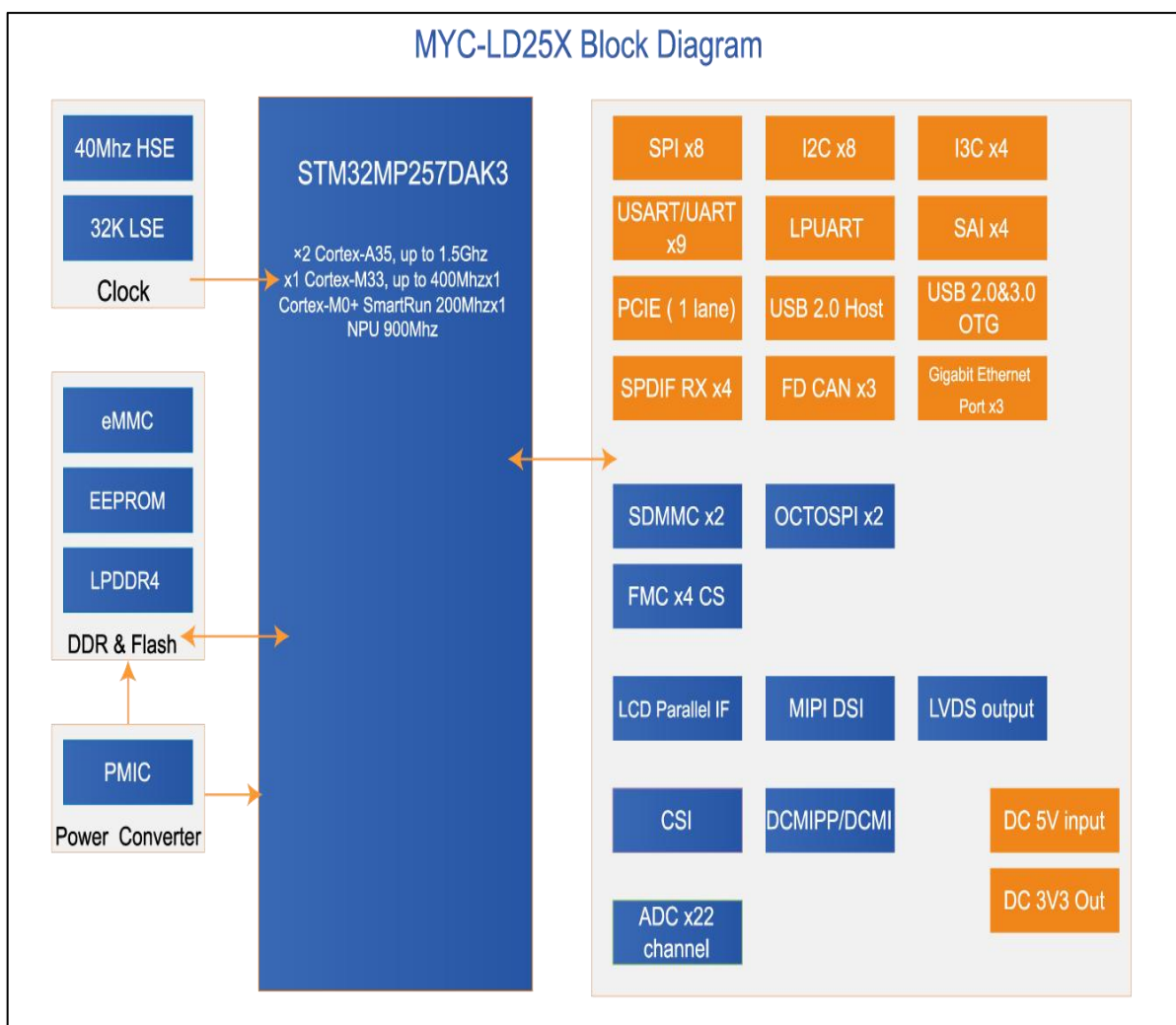


Figure 1- 2 SOM block diagram

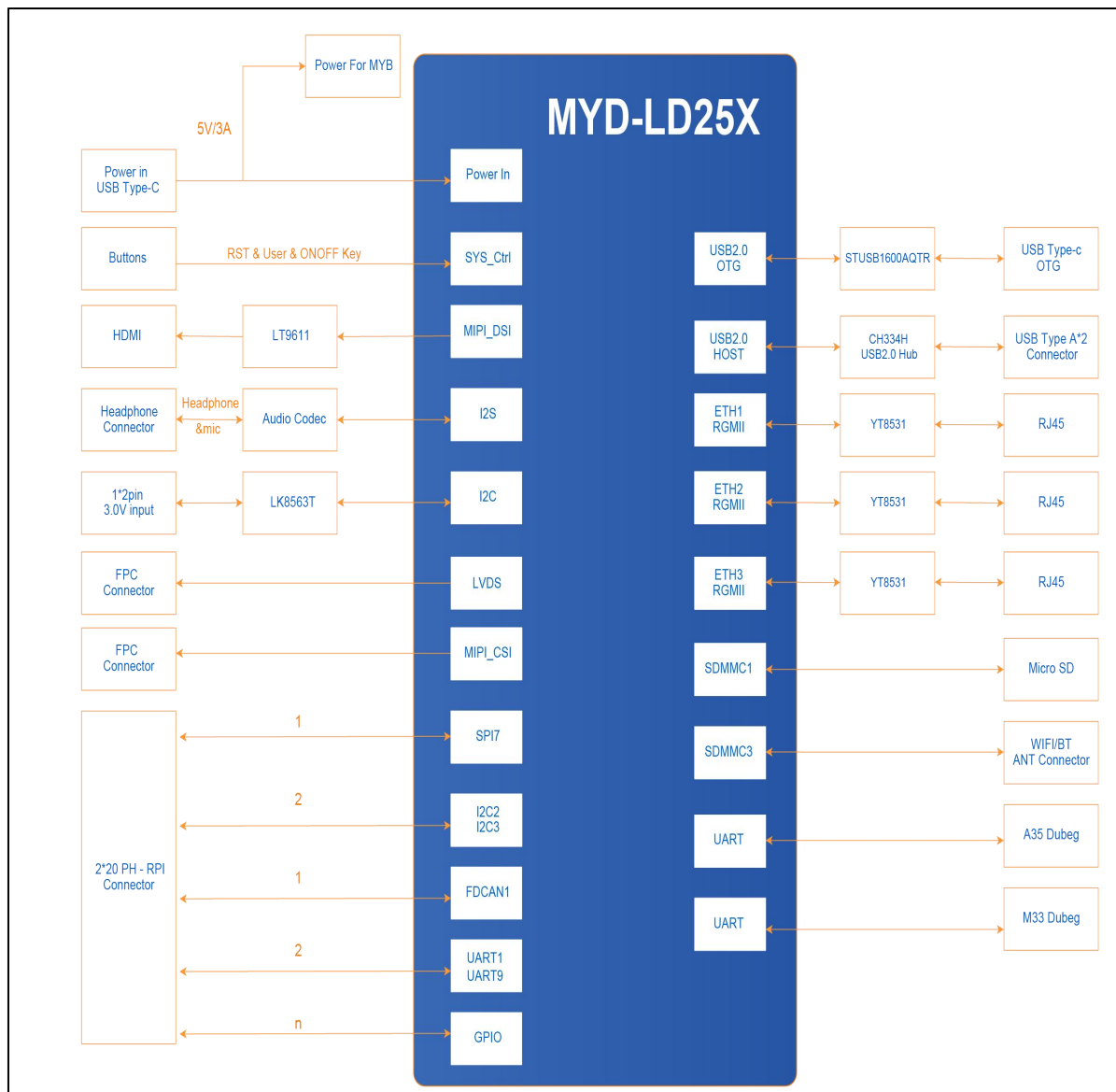


Figure 1- 3 Development board block diagram

1.3. Physical marking drawing

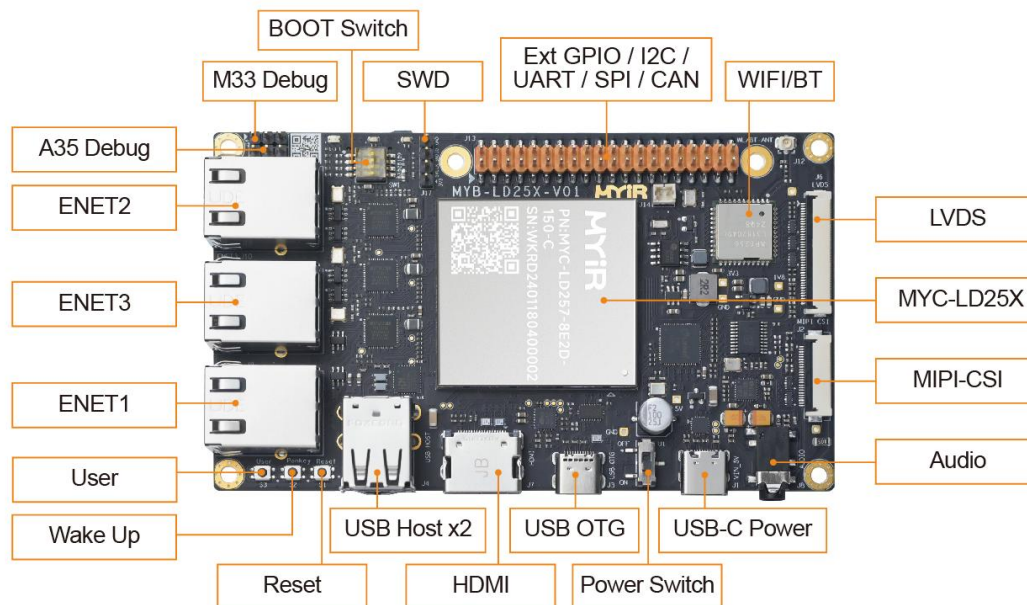


Figure 1- 4 MYD-LD25X Top-view

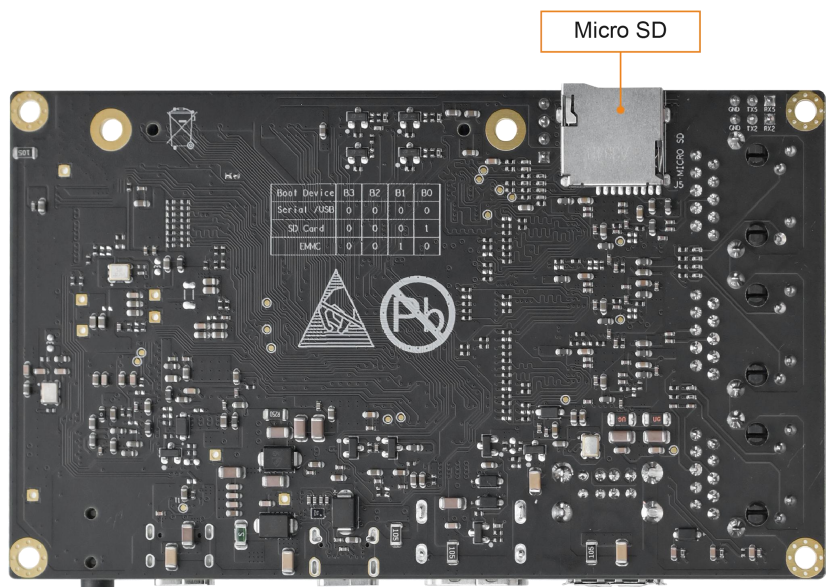


Figure 1-5 MYD-LD25X Bottom-view

1.4. Key interface parameter

Features & Interfaces	describe
input mains	USB Type-C power port, 5V/3A
Ethernet	3 x RJ45 ports, supporting 10M/100M/1000M bps Ethernet
USB2.0/3.0	2 x USB 2.0 HOST 1 x USB 2.0 OTG
Debugging serial port	Two UART debugging interfaces (Cortex-A35, Cortex-M33)
RTC	1 x RTC
Audio	1 x Audio 1 x MIC
Display	1 x LVDS 1 x HDMI
Key	1 x Wake Up key 1 x Reset key 1 x User key
Ble/WIFI	1 x BT, 1 x WIFI
Micro SD	Supports booting from Micro SD
MIPI CSI	1 x CSI
Raspberry PI	1 Route Raspberry PI port

Table 1-1 MYD-LD25X Key interface parameters



1.5. Reference data

MYIR Electronics provides supporting software and hardware documents, including but not limited to product manuals, hardware design guides, device manuals, software development guides, system images, etc.

2. Power supply parameter

2.1. Power tree

The system input voltage is 5V. The power supply path is DC-DC, 5V to 3.3V, 3.3V to 1.8V. The power tree is shown in the following figure.

The evaluation board and the 5V of the SOM are powered by the same power supply, and the 5V of the evaluation board and the SOM are separated by the reserved 0.25R resistance. The SOM must be powered on first. The 3.3V and 1.8V power supply of the evaluation board is controlled by the 3.3V power output of the SOM. The 5V evaluation board provides LVDS, USB, HDMI, CSI and other power supplies. The 3.3V output of the SOM is used to supply power to the TF card, and the 3.3V output of the evaluation board is used to supply power to Ethernet, RTC, GPIO port, WIFI, UART, etc.

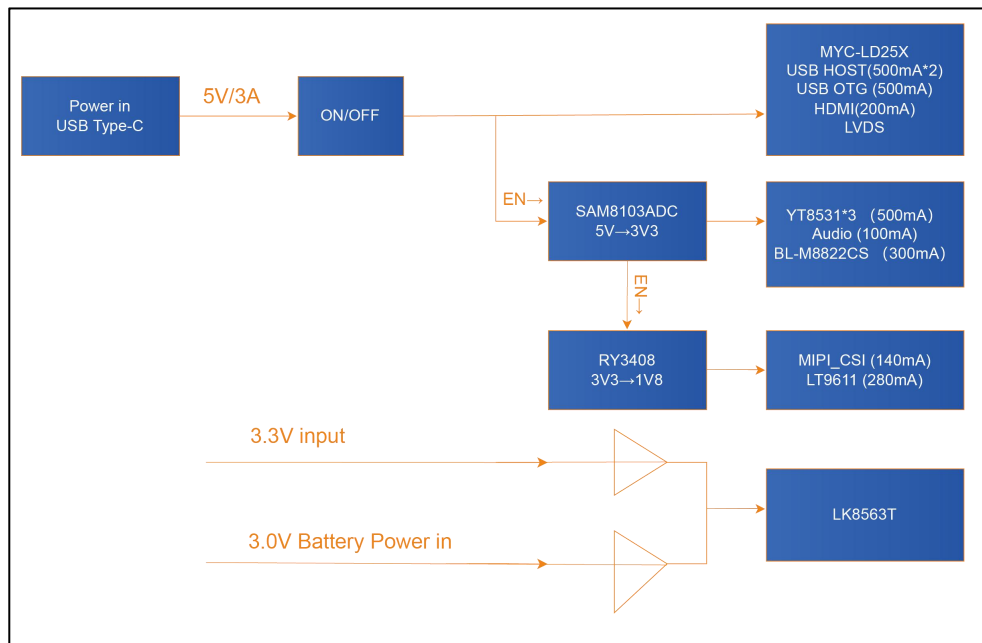


Figure 2 - 1 Evaluate board power tree

2.2. Power consumption

operating conditions	Supply voltage (V)	Average current (A)	Total power consumption (W)
The no-load phase	5V	0.16	0.8
The Full-load phase (USB*2+ENET*2+HDMI+MIP I CSI camera+otg+SD Card* 1+aging)	5V	0.83	4.15
The Full-load phase (ENET*2+USB*2+LVDSI+MIP I CSI camera+otg+SD Card* 1+aging)	5V	1.42	7.1
The mem is dormant (echo mem)	5V	0.26	1.3
freeze hibernation (echo freeze)	The software does not support Freeze hibernation mode		

Table 2 - 1 Evaluate board power consumption

2.3. Power requirement

The MYD-LD25X power interface is a USB Type-C interface. Select an adapter with +5V voltage and 3A current to supply power, and ensure that the output capacity of the power supply meets the power consumption of the board. Now most of the adapter output on the market is 5V/9V/12V, etc. Our single board power supply circuit uses the fast charge protocol power chip CH224, which has been configured as 5V voltage output by default.

This section lists the power consumption and current of boards under different conditions. Reserve sufficient margin when selecting an adapter for power supply.

3. BOOT configuration

With the MYC-LD25X SOM, the minimum system internal has been configured to low by default; When we get the evaluation board, we only need to switch the dip switch to the corresponding configuration according to the silk screen information, and then we can download or start.

BOOT_MODE[3:2:1:0]	Boot Device	Remarks
0000	Serial/USB Downloader	Default USB download mode
0001	SD card boot	
0010	Emmc boot	

Table 3-1 Startup items of the evaluation board

4. Interface specification

The overall layout of ports on the evaluation board is as follows: Subsequent diagrams of local interface circuits in this section correspond exactly to this layout.

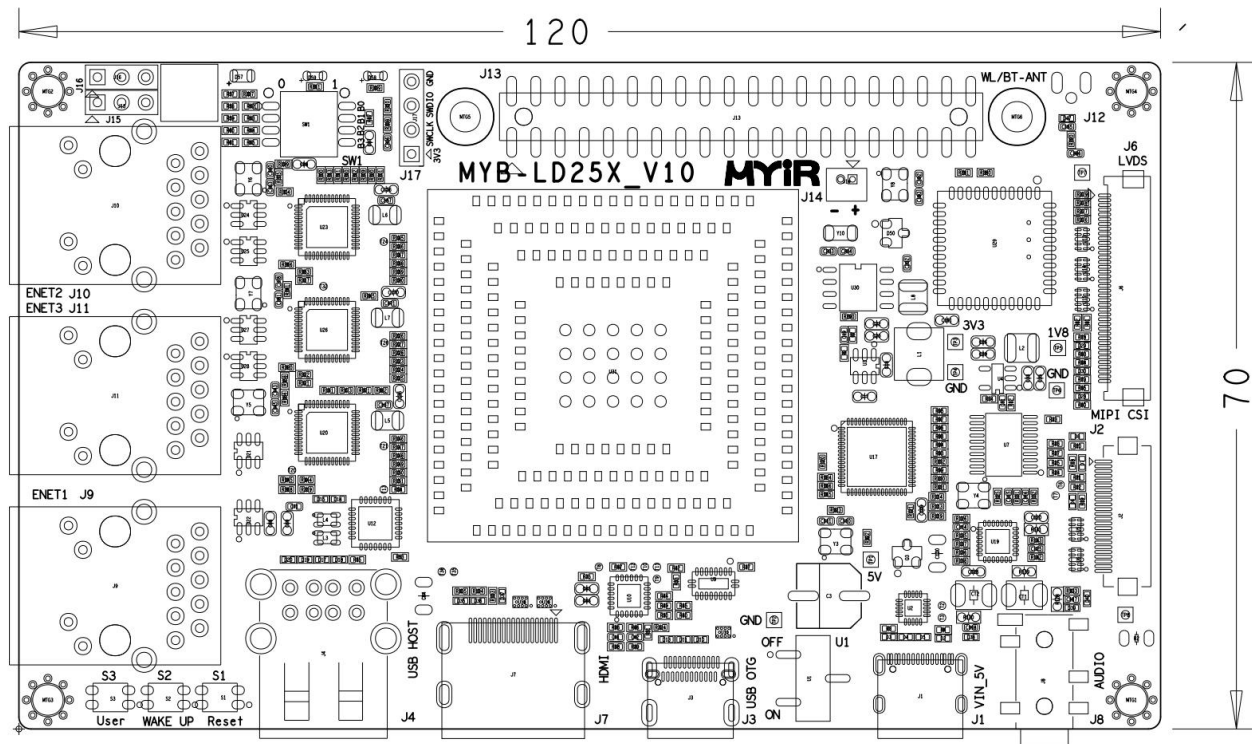


Figure 4 - 1 MYD-LD25X Evaluation board Interface distribution - Top layer

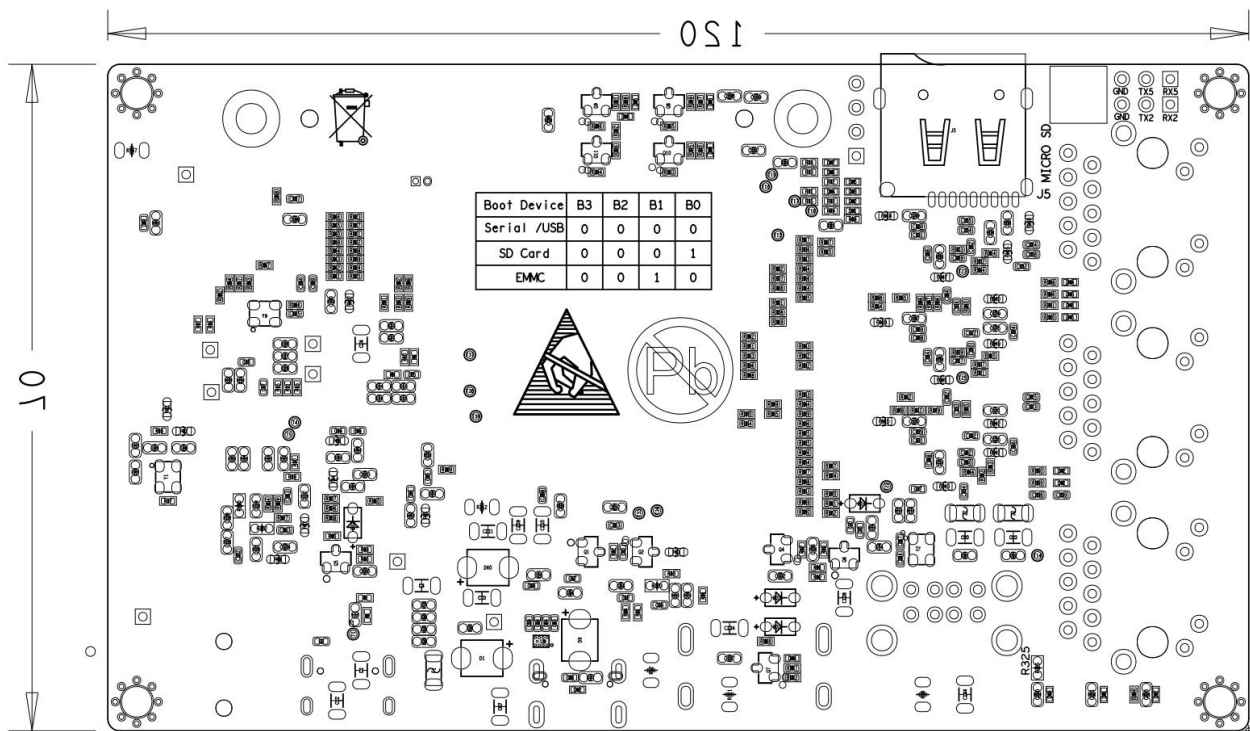


Figure 4 - 2 MYD-LD25X Evaluation board interface distribution -Bottom layer

4.1. Power interface

It is recommended that the power supply interface of the MYD-LD25X evaluation board use a 5V/3A adapter and a USB Type-C port as the power input.

at present most of the adapter output on the market is 5V/9V/12V, etc. Our power supply circuit adopts the fast charge protocol power chip CH224, which has been configured as 5V voltage output by default. for specific circuit design, you can refer to our hardware design guide manual.

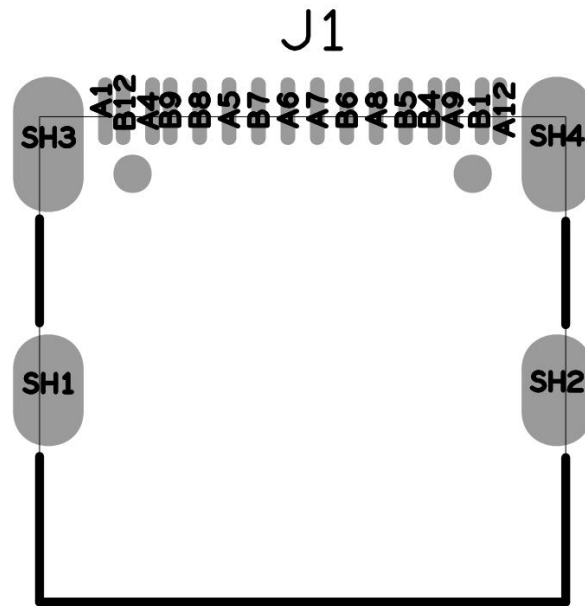


Figure 4 - 3 Power interface diagram

4.1.1. Pin definition

Ref	Pin	Function	signal	Comments
J1	A4	USB 5V Power	VDD_VBUS	
	B4	USB 5V Power	VDD_VBUS	
	A9	USB 5V Power	VDD_VBUS	
	B9	USB 5V Power	VDD_VBUS	
	A6	USB Data+	USB_DP	
	A7	USB Data-	USB_DN	
	B6	USB Data+	USB_DP	
	B7	USB Data-	USB_DN	
	A5	USB CC1	USB CC1	
	B5	USB CC2	USB CC2	
	A8	NC	NC	
	B8	NC	NC	
	A1	GND	GND	
	B1	GND	GND	
	A12	GND	GND	
	B12	GND	GND	
	SH1	GND_EARTH	GND_EARTH	
	SH2	GND_EARTH	GND_EARTH	
	SH3	GND_EARTH	GND_EARTH	
	SH4	GND_EARTH	GND_EARTH	

Table 4 - 1 Power interface description

4.2. Debugging serial port

MYD-LD25X development board A55 debugging serial port uses UART2, the interface is J15; The M33 debugging serial port uses UART5 and J16 as the default debugging serial ports. You are advised not to use these two serial ports as other devices.

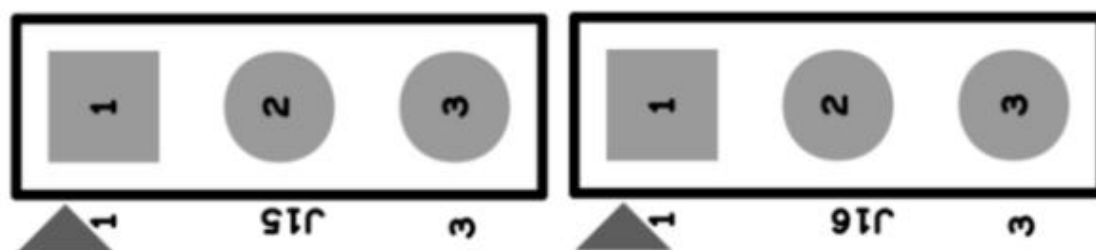


Figure 4 -4 debugging serial port

4.2.1. Pin definition

Ref	Pin	Function	signal	Comments
J15	1	UART2 data receive	PA8_USART2_RX	
	2	UART2 data sending	PA4_USART2_TX	
	3	GND	GND	
J16	1	UART5 data receive	PG10_UART5_RX	
	2	UART5 data sending	PG9_UART5_TX	
	3	GND	GND	

Table 4 - 2 Trial port description

4.3. Key

The MYD-LD25X Evaluation board is designed with keys*3 and switch*1. The keys are wake button, reset button and user-defined button respectively. Power switch control.

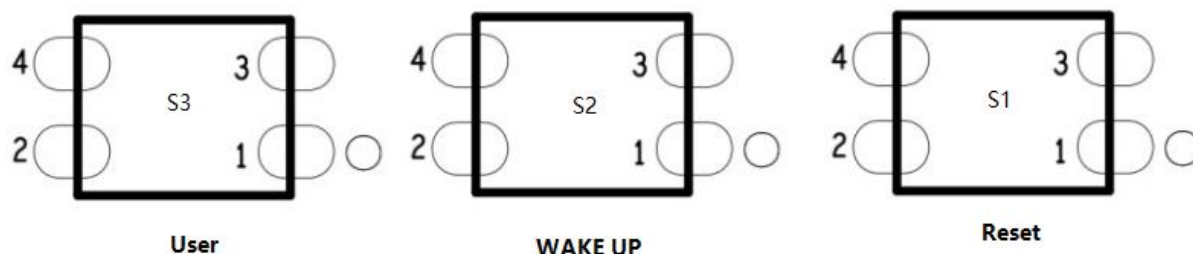


Figure 4-5 Key switch

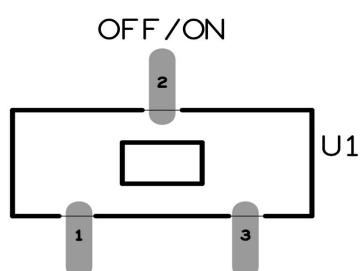


Figure 4-6 Power switch

4.3.1. Pin definition

Ref	Pin	Function	signal	Comments
S1	1-2	GND	GND	
	3-4	CPU Reset	RST_N	Used to reset the core board. Low level is active
S2	1-2	GND	GND	
	3-4	WAKE UP	Ponkey_N	Used to wake up CPU
S3	1-2	GND	GND	
	3-4	User	PB15	Press the key to generate the corresponding event/interrupt
U1	2	Power input	VDD_VBUS	
	3	Power output	VDD_VBUS_5V	

Table 4 - 3 button instruction

4.4. LED

The MYD-LD25X evaluation board is designed with 1 power light (red light) and 1 user-defined indicator light (blue light), and 1 running indicator light (green light). The functions are 3.3V power indicator, user indicator, and normal operation indicator.

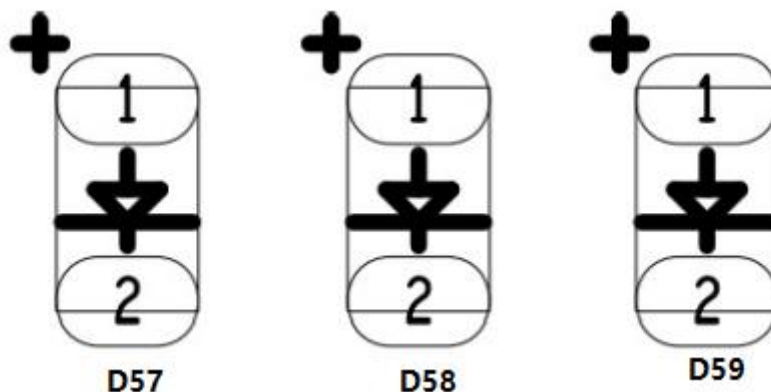


Figure 4-7 LED indicator

4.4.1. Pin definition

Ref	Pin	Function	signal	Comments
D57	1	Power indicator, red	VDD_3V3	On: The device is powered on Off: The device is powered off
	2	GND	GND	
D58	1	power supply	VDD_3V3	
	2	User light, blue light	PZ5_SPI8_SCK	
D59	1	power supply	VDD_3V3	
	2	Running indicator, green	PH4_BOOTFAILN_UART7_TX	

Table 4 - 4 LED light description

4.5. TF card interface

One Micro SD card circuit is designed on the evaluation board, which supports the functions of Micro SD startup and storage.

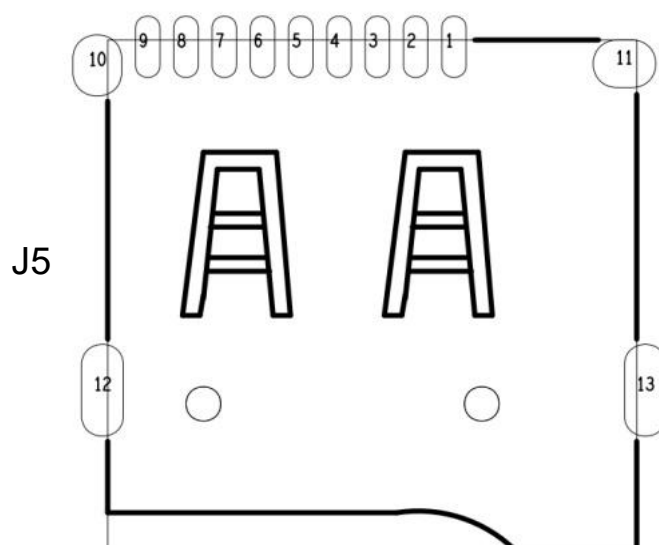


Figure 4 - 8 Micro SD card diagram

4.5.1. Pin definition

Ref	Pin	Function	signal	Comments
J5	1	SDMMC1 Data 2 signal	SDMMC1_D2	
	2	SDMMC1 Data 3 signal	SDMMC1_D3	
	3	SDMMC1 Indicates the command signal	SDMMC1_CMD	
	4	3V3 Power supply	VDD_CARD	
	5	SDMMC1 Clock signal	SDMMC1_CK	
	6	GND	GND	
	7	SDMMC1 Indicates the data 0 signal	SDMMC1_D0	
	8	SDMMC1 Data 1 signal	SDMMC1_D1	
	9	SDMMC1 insertion detection	PD3_SDMMC1_DET	
	10	GND	GND	
	11	GND	GND	
	12	GND	GND	
	13	GND	GND	

Table 4 - 5 Description of ports on the Micro SD card

4.6. Raspberry PI interface

The evaluation board is designed with a 2.54MM pitch 2*20 Pin double row pin, interface J13, which can be connected to the Raspberry PI module. MY-WIREDCOM module is the Raspberry PI peripheral interface form launched by MYIR Electronics, supporting RS232 interface, isolated RS485 interface, isolated CAN interface.

Users can choose the Raspberry PI interface MY-WIREDCOM module launched by MYIR Electronics. See section 7.3 Accessories Modules for more information on modules.

In addition to the external Raspberry PI module, it also provides a rich peripheral interface GPIO/SPI/UART/I2C/CAN, which is convenient for users to connect with other devices.

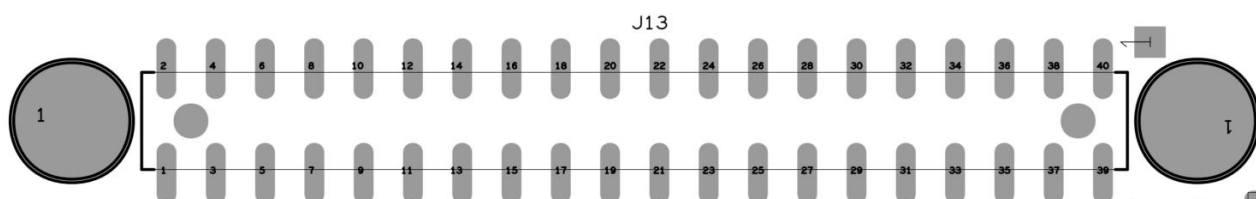


Figure 4-9 Ports of the Raspberry PI

4.6.1. Pin definition

Ref	Pin	Function	signal	Comments
J13	1	Power supply 3.3V	VDD_3V3	output
	2	Power supply 5V	VDD_5V	output
	3	I2C2 data signal	PB4_I2C2_SDA	
	4	Power supply 5V	VDD_5V	output
	5	I2C2 clock signal	PB5_I2C2_SCL	
	6	GND	GND	
	7	Used as GPIO	PD11_UART4_TX	
	8	UART9 Data sending	PG8_UART9_TX	
	9	GND	GND	
	10	UART9 Data receive	PI5_UART9_RX	
	11	Used as GPIO	PB6_UART4_RX	
	12	Used as GPIO	PI9_FDCAN2_TX	
	13	Used as GPIO	PI6_USART3_TX	
	14	Used as GPIO	GND	
	15	Used as GPIO	PI7_USART3_RX	
	16	CAN1 Data receive	PB11_FDCAN1_RX	
	17	Power supply 3.3V	VDD_3V3	output
	18	CAN1 Send data	PB9_FDCAN1_TX	



19	SPI7 main outgoing and incoming data signal	PG11_SPI7_MOSI	
20	GND	GND	
21	SPI7 main in/out data signal	PG12_SPI7_MISO	
22	Used as GPIO	PI10_FDCAN2_RX	
23	SPI7 clock signal	PG13_SPI7_SCK	
24	SPI7 select signal CS0	PI1_SPI7_NSS	
25	GND	GND	
26	SPI7 selected signal CS1	PZ8	
27	I2C3 data signal	PG2_I2C3_SDA	
28	I2C3 clock signal	PG1_I2C3_SCL	
29	Used as GPIO	PZ0_SPI8_MOSI	
30	Used as GPIO	GND	
31	Used as GPIO	PF10_UART8_TX	
32	Used as GPIO	PG3_ADC1_INP3	
33	Used as GPIO	PF11_UART8_RX	
34	GND	GND	
35	Used as GPIO	PI3_USART1_CTS	
36	Used as GPIO	PG4_ADC1_INP4	
37	UART1 Data sending	PG14_USART1_TX	
38	Used as GPIO	PI8	
39	GND	GND	
40	UART1 Data receive	PG15_USART1_RX	

Table 4-6 Description of Raspberry PI ports

4.7. USB interface

Evaluation board designed USB OTG and USB HOST interface; The USB3DR from the SOM supports DRP mode, adopts STUSB1600 chip, and matches Type-C interface J3. The other USBH supports only HOST mode and uses the USB2.0 HUB chip to expand two USB Host ports. The extended 2 channels are directly led out through the double-layer USB Type A connector, interface J4.

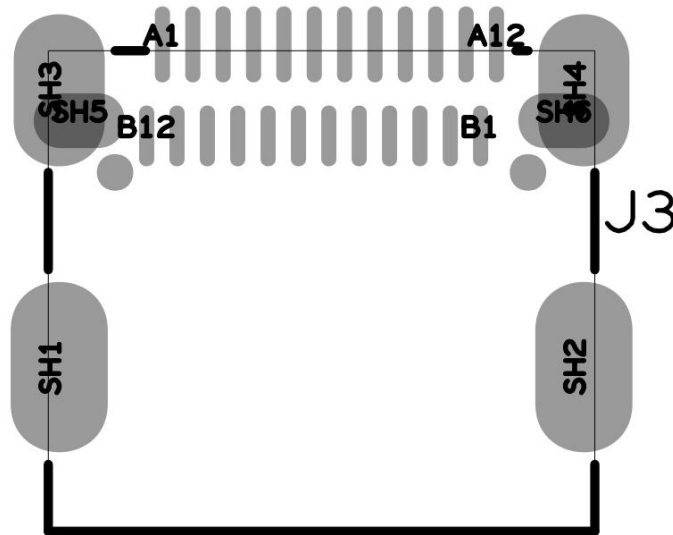


Figure 4-10 USB OTG port

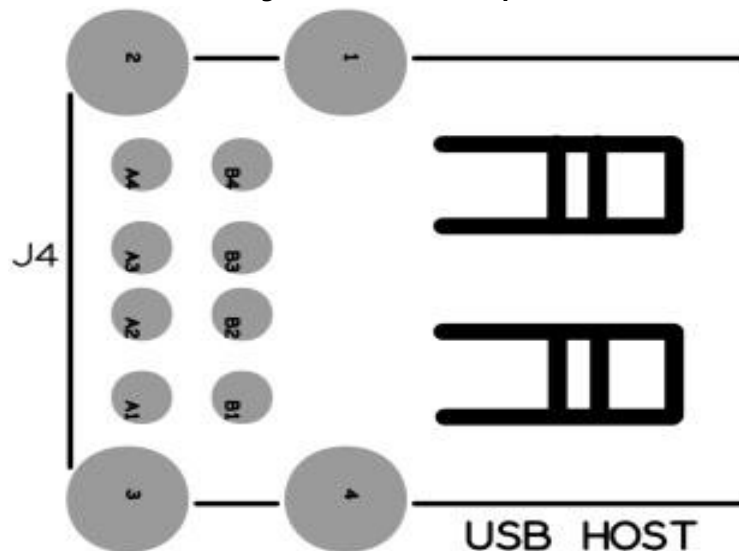


Figure 4-11 USB HOST port

4.7.1. Pin definition

Ref	Pin	Function	signal	Comments
J3	A4	USB 5V Power	VDD_USB0_VBUS	
	A9	USB 5V Power	VDD_USB0_VBUS	
	B9	USB 5V Power	VDD_USB0_VBUS	
	B4	USB 5V Power	VDD_USB0_VBUS	
	A6	USB3DR data differential signal +	USB3DR_DP	
	A7	USB3DR data differential signal -	USB3DR_DM	
	B6	USB3DR data differential signal +	USB3DR_DP	
	B7	USB3DR data differential signal -	USB3DR_DM	
	A2	Send a data differential signal +	SSTXP1	
	A3	Send a data differential signal -	SSTXN1	
	B11	Receive data differential signal +	SSRXP1	
	B10	Receive data differential signal -	SSRXN1	
	B2	Send a data differential signal +	SSTXP2	
	B3	Send a data differential signal -	SSTXN2	
	A11	Receive data differential signal +	SSRXP2	
	A10	Receive data differential signal -	SSRXN2	
	A5	Detect and output analog signals	USBCC1	
	B5	Detect and output digital signals	USBCC2	
	A8	NC	NC	
	B8	NC	NC	
	A1	GND	GND	
	A12	GND	GND	
	B12	GND	GND	
	B1	GND	GND	
	SH1	GND_EARTH	GND_EARTH	



	SH2	GND_EARTH	GND_EARTH	
	SH3	GND_EARTH	GND_EARTH	
	SH4	GND_EARTH	GND_EARTH	
	SH5	GND_EARTH	GND_EARTH	
	SH6	GND_EARTH	GND_EARTH	

Table 4 -7 Description of USB OTG ports

Ref	Pin	Function	signal	Comments
J4	A1	USB 5V Power	VDD_5V_VBUS_1	
	A2	HOST2 data differential signal -	HOST2_USB_DM	
	A3	HOST2 data differential signal +	HOST2_USB_DP	
	A4	GND	GND	
	B1	USB 5V Power	VDD_5V_VBUS_2	
	B2	HOST1 data differential signal -	HOST1_USB_DM	
	B3	HOST1 data differential signal +	HOST1_USB_DP	
	B4	GND	GND	
	1	GND_EARTH	GND_EARTH	
	2	GND_EARTH	GND_EARTH	
	3	GND_EARTH	GND_EARTH	
	4	GND_EARTH	GND_EARTH	

Table 4-8 Description of USB HOST ports

4.8. Ethernet interface

The evaluation board designs a 3-way Ethernet communication interface, and the RGMII communication interface leads to the integrated network transformer integrated RJ45 connector through the PHY chip. This design uses the RGMII mode and the 3-way RJ45 interface, of which 1 is the RJ45 interface led by the embedded Ethernet switch in the chip.

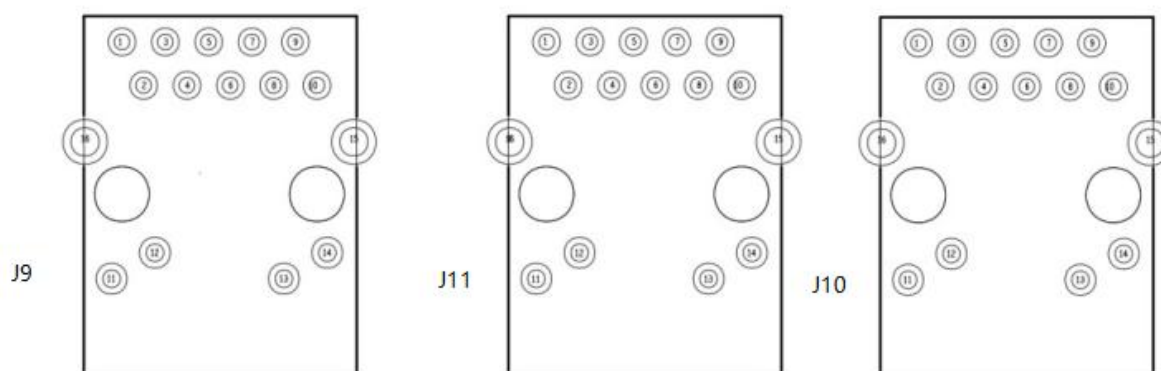


Figure 4 - 12 Ethernet interface signal diagram

4.8.1. Pin definition

Ref	Pin	Function	signal	Comments
J9	1	Network port 1 Differential signal 0+	ET1_TRP0	
	2	Network port 1 Differential signal 0-	ET1_TRN0	
	3	Network port 1 Differential signal 1+	ET1_TRP1	
	4	Network port 1 Differential signal 1-	ET1_TRN1	
	5	GND	GND	
	6	GND	GND	
	7	Network port 1 Differential signal 2+	ET1_TRP2	
	8	Network port 1 Differential signal 2-	ET1_TRN2	
	9	Network port 1 Differential signal 3+	ET1_TRP3	
	10	Network port 1 Differential signal 3-	ET1_TRN3	
	11	Signal of network port 1-LED1	ETH1_LED1	
	12	GND	GND	
	13	GND	GND	
	14	Signal of network port 1-LED2	ETH1_LED2	
	15	GND_EARTH	GND_EARTH	



	16	GND_EARTH	GND_EARTH	
J10	1	Network port 2 Differential signal 0+	ET2_TRP0	
	2	Network port 2 Differential signal 0-	ET2_TRN0	
	3	Network port 2 Differential signal 1+	ET2_TRP1	
	4	Network port 2 Differential signal 1-	ET2_TRN1	
	5	GND	GND	
	6	GND	GND	
	7	Network port 2 Differential signal 2+	ET2_TRP2	
	8	Network port 2 Differential signal 2-	ET2_TRN2	
	9	Network port 2 Differential signal 3+	ET2_TRP3	
	10	Network port 2 Differential signal 3-	ET2_TRN3	
	11	Signal of network port 2-LED1	ETH2_LED1	
	12	GND	GND	
	13	GND	GND	
	14	Signal of network port 2-LED2	ETH2_LED2	
	15	GND_EARTH	GND_EARTH	
	16	GND_EARTH	GND_EARTH	
J11	1	Network port 3 Differential signal 0+	ET3_TRP0	
	2	Network port 3 Differential signal 0-	ET3_TRN0	
	3	Network port 3 Differential signal 1+	ET3_TRP1	
	4	Network port 3 Differential signal 1-	ET3_TRN1	
	5	GND	GND	
	6	GND	GND	
	7	Network port 3 Differential signal 2+	ET3_TRP2	
	8	Network port 3 Differential signal 2-	ET3_TRN2	
	9	Network port 3 Differential signal 3+	ET3_TRP3	



	10	Network port 3 Differential signal 3-	ET3_TRN3	
	11	Signal of network port 3-LED1	ETH3_LED1	
	12	GND	GND	
	13	GND	GND	
	14	Signal of network port 3-LED2	ETH3_LED2	
	15	GND_EARTH	GND_EARTH	
	16	GND_EARTH	GND_EARTH	

Table 4-9 Description of Ethernet ports

4.9. Audio interface

The evaluation board is designed with 1 Audio interface and a headphone seat with a circular diameter of $\Phi 3.50\text{mm}$.

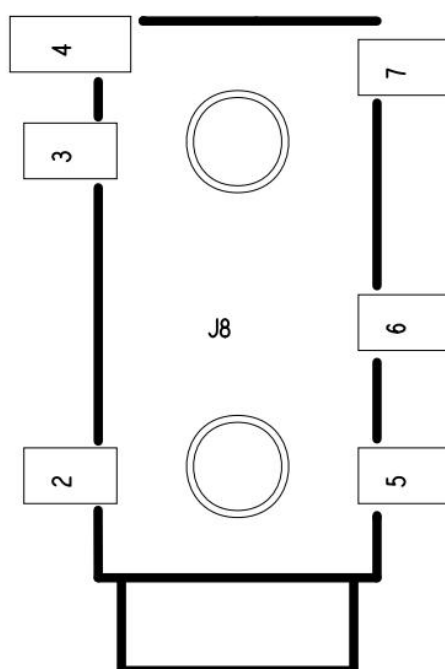


Figure 4 - 13 Audio interface diagram

4.9.1. Pin definition

Ref	Pin	Function	signal	Comments
J8	2	Earphone reference ground signal	AUDIO_AGND	
	3	Earphone left channel output	AUDIO1_LOUT_L	
	4	NC	NC	
	5	MIC recording input	AUD_MIC	
	6	Earphone right channel output	AUDIO1_LOUT_R	
	7	NC	NC	

Table 4 - 10 Audio Interface description

4.10. HDMI interface

The native display interface of the evaluation board is MIPI DSI interface, which does not support HDMI interface. In order to facilitate the use of customers, we use LT9611 chip in the design of the board to convert MIPI DSI signal into HDMI signal to support the display screen of HDMI interface. The interface is J7, and the 5V power supply of HDMI must be connected to the Schottky diode in series. To prevent external devices from charging the board after shutdown, choose a Schottky diode with reduced on-voltage.

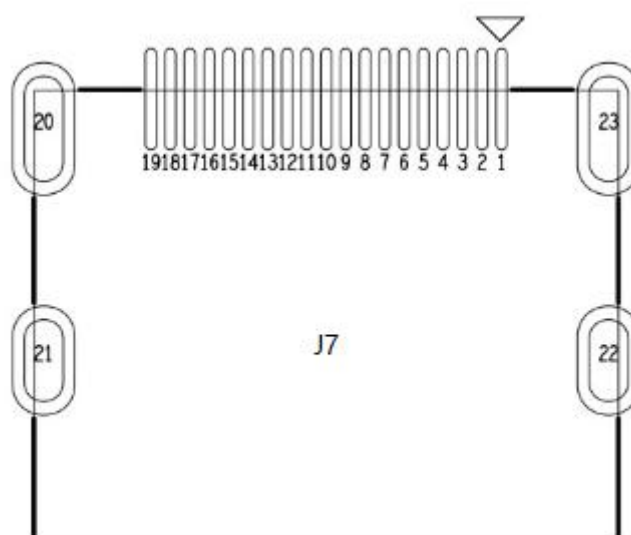


Figure 4 - 14 HDMI interface diagram

4.10.1. Pin definition

Ref	Pin	Function	signal	Comments
J7	1	HDMI differential data signal 2 +	TX2_DP_OUT	
	2	GND	GND	
	3	HDMI differential data signal 2 -	TX2_DN_OUT	
	4	HDMI differential data signal 1 +	TX1_DP_OUT	
	5	GND	GND	
	6	HDMI differential data signal 1 -	TX1_DN_OUT	
	7	HDMI differential data signal 0 +	TX0_DP_OUT	
	8	GND	GND	
	9	HDMI differential data signal 0 -	TX0_DN_OUT	
	10	HDMI differential clock signal +	TX_CKP_OUT	
	11	GND	GND	
	12	HDMI differential clock signal -	TX_CKN_OUT	
	13	Open leakage output and Schmidt trigger input	CEC_A	
	14	NC	NC	
	15	HDMI I2C clock signal	DDC_SCL_A	
	16	HDMI I2C data signal	DDC_SDA_A	
	17	GND	GND	
	18	Power supply 5V	VDD_5V_HDMI	
	19	HDMI hot swap signal	HPD_DET	
	20	GND_EARTH	GND_EARTH	
	21	GND_EARTH	GND_EARTH	
	22	GND_EARTH	GND_EARTH	
	23	GND_EARTH	GND_EARTH	

Table 4 - 11 HDMI port description

4.11. RTC battery port

The RTC standby interface circuit is designed in the evaluation board. The real-time clock module LK8563T with I2C bus function is used, and 3.0V battery is needed for the J14 seat. It can be used to maintain the operation of the RTC circuit when the system is powered down.

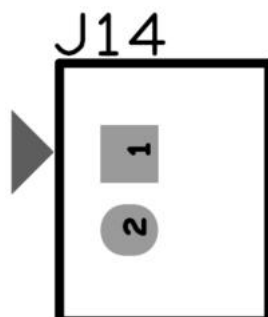


Figure 4 - 15 Battery interface diagram

4.11.1. Pin definition

Ref	Pin	Function	signal	Comments
J14	1	Power supply 3V	VDD_BAT	
	2	GND	GND	

Table 4 - 12 Description of RTC battery ports

4.12. LVDS interface

The evaluation board is designed with only one single-channel LVDS interface, which is led out using a 40PIN front-insert and clamshell FPC seat that can be touched both front and back. The core board generates two LVDS signals. Currently, the evaluation board supports only a single LVDS interface display.

Users can choose MY-LVDS070C module, a 7-inch LVDS LCD screen launched by MYIR Electronics. See section 7.3 Accessories Modules for more information on modules.

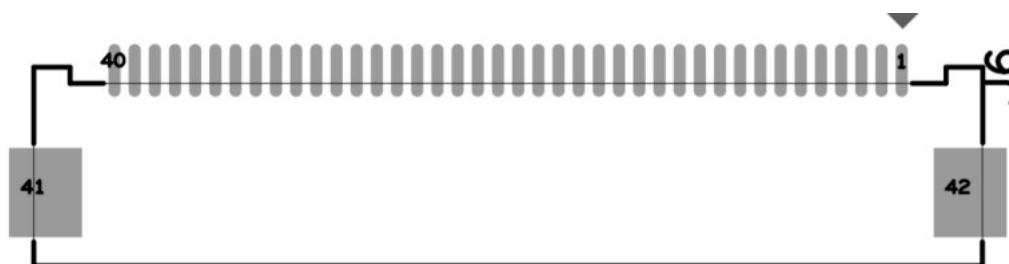


Figure 4-16 Ports of a single-channel LVDS

4.12.1. Pin definition

Ref	Pin	Function	signal	Comments
J6	1	NC	NC	
	2	Power supply 5V	VDD_5V	
	3	Power supply 5V	VDD_5V	
	4	NC	NC	
	5	NC	NC	
	6	NC	NC	
	7	GND	GND	
	8	LVDS1 Differential data signal 0 -	LVDS1_TX0_N	
	9	LVDS1 Differential data signal 0 +	LVDS1_TX0_P	
	10	GND	GND	
	11	LVDS1 Differential data signal 1 -	LVDS1_TX1_N	
	12	LVDS1 Differential data signal 1 +	LVDS1_TX1_P	
	13	GND	GND	
	14	LVDS1 Differential data signal 2 -	LVDS1_TX2_N	
	15	LVDS1 Differential data signal 2 +	LVDS1_TX2_P	
	16	GND	GND	



Ref	Pin	Function	signal	Comments
	17	LVDS1 differential clock signal -	LVDS1_CLK_N	
	18	LVDS1 differential clock signal +	LVDS1_CLK_P	
	19	GND	GND	
	20	LVDS1 differential data signal 3 -	LVDS1_TX3_N	
	21	LVDS1 differential data signal 3 +	LVDS1_TX3_P	
	22	GND	GND	
	23	NC	NC	
	24	NC	NC	
	25	GND	GND	
	26	NC	NC	
	27	Backlight control	PH5_TIM2_CH1	
	28	Enable control	PB0_TIM16_CH1	
	29	NC	NC	
	30	GND	GND	
	31	NC	NC	
	32	NC	NC	
	33	I2C3 data signal	PG2_I2C3_SDA	
	34	I2C3 clock signal	PG1_I2C3_SCL	
	35	NC	NC	
	36	Interrupt signal control	PB3_TIM20_CH3	
	37	NC	NC	
	38	NC	NC	
	39	NC	NC	
	40	NC	NC	
	41	GND	GND	
	42	GND	GND	

Table 4 - 13 LVDS Interface definition

4.13. CSI interface

The evaluation board supports a MIPI CSI interface camera with 2 channels of data. The camera interface adopts a 0.5mm FPC row seat, which can be contacted both front and back. Reference bit number J2.

Users can choose the MY-CAM003M camera module from MYIR Electronics. See Section 7.3 Accessories Modules for more information on modules.



Figure 4 - 17 CSI interface diagram

4.13.1. Pin definition

Ref	Pin	Function	signal	Comments
J2	1	Power supply 5V	VDD_5V	
	2	Module power enable signal	PD1_FDCAN3_RX	
	3	NC	NC	
	4	I2C8 data signal	I2C8_SDA_1V8	
	5	I2C8 clock signal	I2C8_SCL_1V8	
	6	Reset signal	PD2_1V8	
	7	enable signal	PD0_1V8	
	8	GND	GND	
	9	CSI master clock signal	MCLK	
	10	GND	GND	
	11	NC	NC	
	12	NC	NC	
	13	GND	GND	
	14	NC	NC	
	15	NC	NC	
	16	GND	GND	
	17	CSI Differential clock signal +	CSI_CLK_P	
	18	CSI Differential clock signal -	CSI_CLK_N	
	19	GND	GND	



Ref	Pin	Function	signal	Comments
	20	CSI differential data signal 1+	CSI_D1_P	
	21	CSI differential data signal 1-	CSI_D1_N	
	22	GND	GND	
	23	CSI differential data signal 0+	CSI_D0_P	
	24	CSI differential data signal 0-	CSI_D0_N	
	25	GND	GND	
	26	GND	GND	

Table 4 - 13 Description of the CSI interface

4.14. Wi-Fi/BT interface

The evaluation board designs a WIFI and Bluetooth module for wireless communication, and the module leads out the Bluetooth and WIFI antenna interface, which is convenient to lead out the antenna signal when using. The interface diagram is as follows.

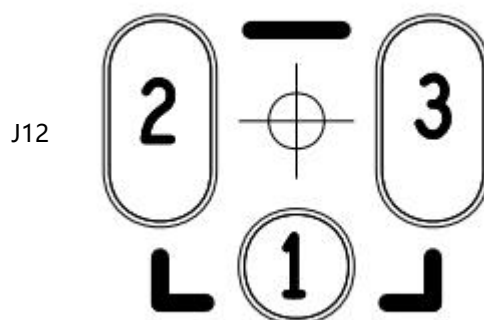


Figure 4 - 18 Wi-Fi antenna interface diagram

4.14.1. Pin definition

Ref	Pin	Function	signal	Comments
J12	1	RF signal transmission	WL_BT_ANT	
	2	GND	GND	
	3	GND	GND	

Table 4 - 15 Wi-Fi interface Description

5. module declaration

5.1. WIFI module

The evaluation board adopts AP6256 module, and one SDIO signal and UART signal are generated through the SOM to communicate with the WIFI module, so as to realize WIFI and Bluetooth functions, which is convenient for users to develop and use.

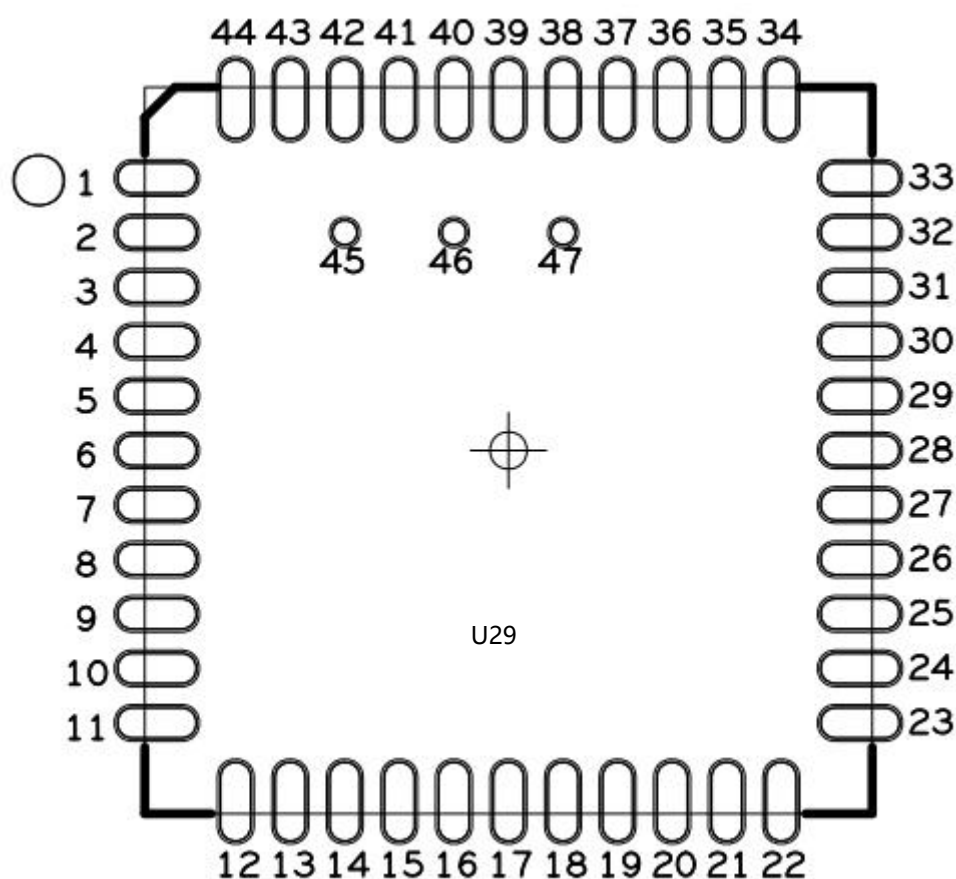


Figure 5-1 Diagram of the WIF module

5.1.1. Pin definition

Ref	Pin	Function	signal	Comments
U29	1	GND	GND	
	2	RF signal transmission	WL_BT_ANT	
	3	GND	GND	
	4	NC	NC	
	5	NC	NC	
	6	Used as GPIO	PD4	The host wakes up the Bluetooth device
	7	Used as GPIO	PD6	The Bluetooth device wakes up the host
	8	NC	NC	
	9	3.3V power input	VDD_3V3	
	10	Crystal input	XTAL_IN	
	11	Crystal output	XTAL_OUT	
	12	Used as GPIO	PD5_TIM1_CH3N	The WIFI part uses the internal regulator to power on/off
	13	Used as GPIO	PZ6_SPI8_NSS	Wlan wakes up the host
	14	SDMMC Data signal 2	PB12_SDMMC3_D2	
	15	SDMMC Data signal 3	PI11_SDMMC3_D3	
	16	SDMMC Sends commands and replies	PD12_SDMMC3_CMD	
	17	SDMMC Clock signal	PB13_SDMMC3_CK	
	18	SDMMC Data 0 signal	PB14_SDMMC3_D0	
	19	SDMMC Data 1 signal	PD13_SDMMC3_D1	
	20	GND	GND	
	21	Module Internal depressurization generates pins	/	
	22	3.3V power input	VDD_SDIO	
	23	Module internal depressurization generates pins	/	
	24	32.768kHz crystal oscillator	External low power clock input	
	25	NC	NC	
	26	NC	NC	
	27	NC	NC	
	28	NC	NC	

	29	SDIO mode select pin	SDIO_VSEL	SDIO_VSEL ---- H (SDIO=1.8V) SDIO_VSEL ---- L (SDIO=3.3V)
	30	NC	NC	
	31	GND	GND	
	32	NC	NC	
	33	GND	GND	
	34	Used as GPIO	PD7	The Bluetooth part uses the internal regulator to power on/off
	35	NC	NC	
	36	GND	GND	
	37	NC	NC	
	38	NC	NC	
	39	NC	NC	
	40	NC	NC	
	41	Band flow control sends an allow signal	PF15_USART6_CTS	Bluetooth UART RTS N interface
	42	Serial port receives data signals	PF14_USART6_RX	Bluetooth UART TXD interface
	43	Serial port sends data signals	PF13_USART6_TX	Bluetooth UART RXD interface
	44	Band flow control sends a request signal	PG5_USART6_RTS	Bluetooth UART CTS N interface
	45	NC	NC	
	46	NC	NC	
	47	NC	NC	

Table 5-1 Description of ports on the WIF module

6. Mechanical Dimensions

SOM: size 37mm*39mm, 12-layer high density PCB design, gold settling process, no lead.

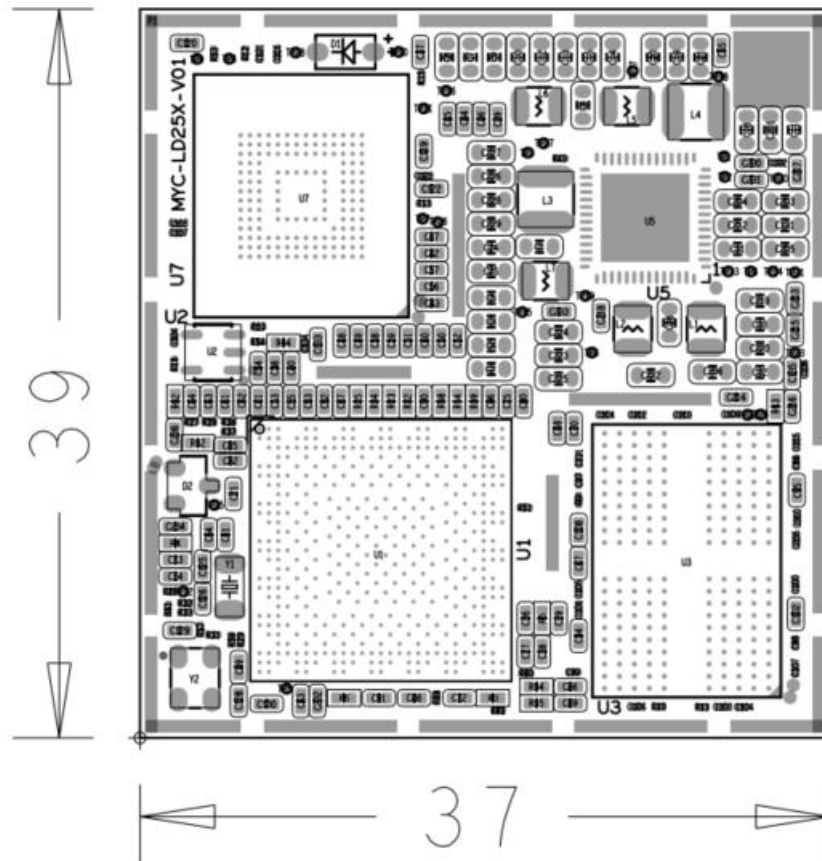


Figure 6 - 1 SOM size(Unit: mm)

Evaluation plate evaluation board: size 120 mm x 70 mm, 6-ply plate, gold sinking process, lead-free.

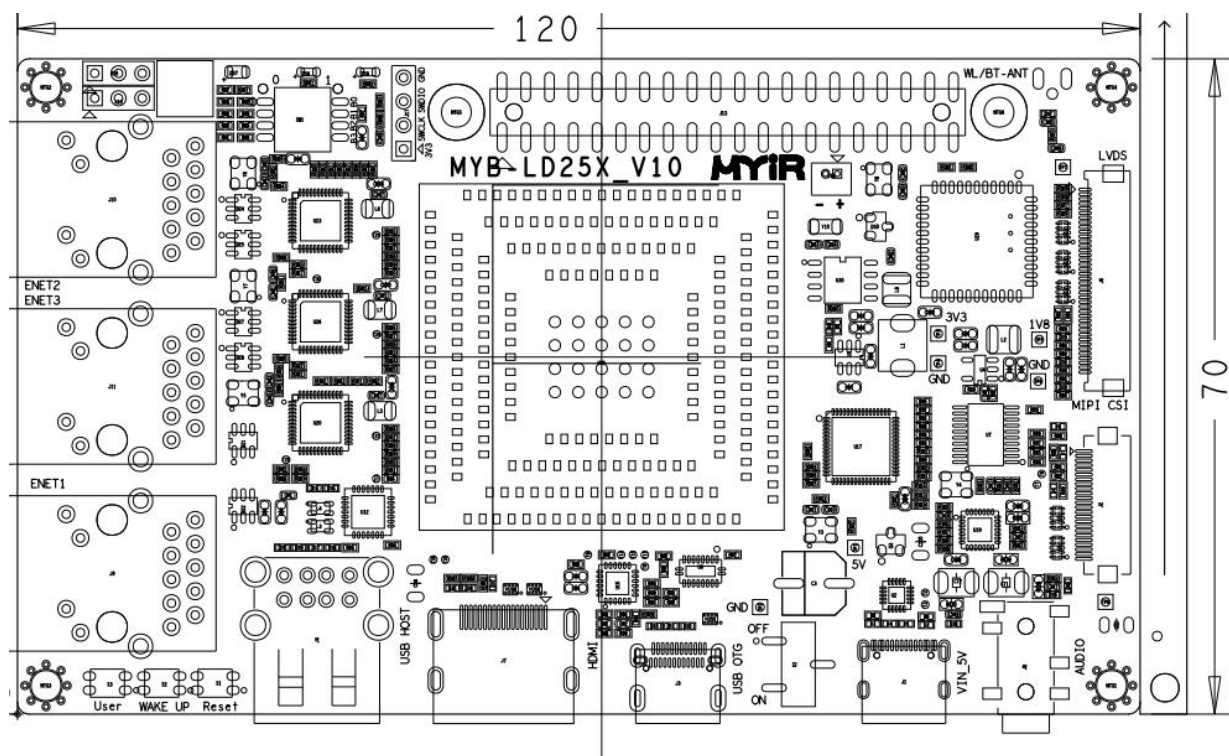


Figure 6 - 2 Evaluation board size (mm)

7. Evaluation board configuration

7.1. Evaluate board configuration models

Product model	MYD-LD257-8E1D-150-C
Master chip	STM32MP257DAK3
operating temperature	0°C ~ +70°C
Memory	1GB LPDDR4
Storage	8GB eMMC

Table 7 - 1 Optional evaluation board kit 1

Product model	MYD-LD257-8E2D-150-C
Master chip	STM32MP257DAK3
operating temperature	0°C ~ +70°C
Memory	2GB LPDDR4
Storage	8GB eMMC

Table 7-2 Optional evaluation board kit 2

Product model	MYD-LD257-8E1D-150-I
Master chip	STM32MP257DAK3
operating temperature	-40°C ~ +85°C
Memory	1GB LPDDR4
Storage	8GB eMMC

Table 7-3 Optional evaluation board kit 3

Product model	MYDLD257-8E2D-150-I
Master chip	STM32MP257DAK3
operating temperature	-40°C ~ +85°C
Memory	2GB LPDDR4
Storage	8GB eMMC

Table 7-4 Optional evaluation board kit 4

7.2. Evaluation board packing list

Project	Explain
board card	x1 EVK board
QSG	x1 quick start guide
Cables	x1 Debug (USB To TTL UART)

Table 7-5 packing list

7.3. Evaluation board supported accessory modules

Part type	Explain	Link
MY-LVDS070C	7 "LVDS capacitive touch LCD screen	https://www.myirtech.com/list.asp?id=634
MY-WIREDCOM	Compatible with the wired communication interface module defined by the Raspberry PI interface. Supports R232 ports, isolated RS485 ports, and isolated CAN ports.	https://www.myirtech.com/list.asp?id=665
MY-CAM003M	MIPI CSI turn camera module	https://www.myirtech.com/list.asp?id=611

Table 7-6 Optional accessory module

8. Part Number of Connectors on EVK

Name	Material type	Brand	Reference digit
Power input	BTCR-16-307	GDZ	J1
MIPI CSI	FPC05024-17205	ATOM	J2
Type-C	UT12111-B1609-7F	GDZ	J3
USB Host	UB11121-8FDE-4F	Foxconn	J4
Micro SD	WQ21801-B2180-7F	Foxconn	J5
LVDS	FPC05040-17205	ATOM	J6
HDMI	QJ51191-LFB4-7F	Foxconn	J7
Headphone Mic in	704-06700003-A	SongCheng	J8
RJ45	S11-ZZ-0319	UDE	J9,J10,J11
WIFI Antenna interface	U.FL-R-SMT-1(01)	HRS	J12
Raspberry PI interface	12251220CNG4M110R01-O	GDZ	J13
2 Pin RTC Battery socket	A1251-2A	GDZ	J14
Debug	12251103CNG4S115001	GDZ	J15, J16
JATG	2251104CNG4S115001	GDZ	J17

Table 8 - 1 evaluation board connector material model

Appendix A

Warranty & Technical Support Services

MYIR Electronics Limited is a global provider of ARM hardware and software tools, design solutions for embedded applications. We support our customers in a wide range of services to accelerate your time to market.

MYIR is an ARM Connected Community Member and work closely with ARM and many semiconductor vendors. We sell products ranging from board level products such as development boards, single board computers and CPU modules to help with your evaluation, prototype, and system integration or creating your own applications. Our products are used widely in industrial control, medical devices, consumer electronic, telecommunication systems, Human Machine Interface (HMI) and more other embedded applications. MYIR has an experienced team and provides custom design services based on ARM processors to help customers make your idea a reality.

The contents below introduce to customers the warranty and technical support services provided by MYIR as well as the matters needing attention in using MYIR's products.

Service Guarantee

MYIR regards the product quality as the life of an enterprise. We strictly check and control the module design, the procurement of components, production control, product testing, packaging, shipping and other aspects and strive to provide products with best quality to customers. We believe that only quality products and excellent services can ensure the long-term cooperation and mutual benefit.

Price

MYIR insists on providing customers with the most valuable products. We do not pursue excess profits which we think only for short-time cooperation. Instead, we hope to establish long-term cooperation and win-win business with customers. So we will offer reasonable prices in the hope of making the business greater with the customers together hand in hand.

Delivery Time

MYIR will always keep a certain stock for its regular products. If your order quantity is less than the amount of inventory, the delivery time would be within three days; if your order quantity is greater than the number of inventory, the delivery time would be always four to six weeks. If for any urgent delivery, we can negotiate with customer and try to supply the goods in advance.

Technical Support

MYIR has a professional technical support team. Customer can contact us by email (support@myirtech.com), we will try to reply you within 48 hours. For mass production and customized products, we will specify person to follow the case and ensure the smooth production.

After-sale Service

MYIR offers one year free technical support and after-sales maintenance service from the purchase date. The service covers:

Technical support service

MYIR offers technical support for the hardware and software materials which have provided to customers;

- To help customers compile and run the source code we offer;
- To help customers solve problems occurred during operations if users follow the user manual documents;
- To judge whether the failure exists;
- To provide free software upgrading service.
- However, the following situations are not included in the scope of our free technical support service:
 - Hardware or software problems occurred during customers' own development;
 - Problems occurred when customers compile or run the OS which is tailored by themselves;
 - Problems occurred during customers' own applications development;
 - Problems occurred during the modification of MYIR's software source code.

After-sales maintenance service

The products except LCD, which are not used properly, will take the twelve months free maintenance service since the purchase date. But following situations are not included in the scope of our free maintenance service:

- The warranty period is expired;
- The customer cannot provide proof-of-purchase or the product has no serial number;
- The customer has not followed the instruction of the manual which has caused the damage the product;
- Due to the natural disasters (unexpected matters), or natural attrition of the components, or unexpected matters leads the defects of appearance/function;
- Due to the power supply, bump, leaking of the roof, pets, moist, impurities into the boards, all those reasons which have caused the damage of the products or defects of appearance;
- Due to unauthorized weld or dismantle parts or repair the products which has caused the damage of the products or defects of appearance;
- Due to unauthorized installation of the software, system or incorrect configuration or computer virus which has caused the damage of products.

Warm tips:

- MYIR does not supply maintenance service to LCD. We suggest the customer first check the LCD when receiving the goods. In case the LCD cannot run or no display, customer should contact MYIR within 7 business days from the moment get the goods.
- Please do not use finger nails or hard sharp object to touch the surface of the LCD.
- MYIR suggests user purchasing a piece of special wiper to wipe the LCD after long time use, please avoid clean the surface with fingers or hands to leave fingerprint.
- Do not clean the surface of the screen with chemicals.

- Please read through the product user manual before you using MYIR's products.
- For any maintenance service, customers should communicate with MYIR to confirm the issue first. MYIR's support team will judge the failure to see if the goods need to be returned for repair service, we will issue you RMA number for return maintenance service after confirmation.

Maintenance period and charges

MYIR will test the products within three days after receipt of the returned goods and inform customer the testing result. Then we will arrange shipment within one week for the repaired goods to the customer. For any special failure, we will negotiate with customers to confirm the maintenance period.

For products within warranty period and caused by quality problem, MYIR offers free maintenance service; for products within warranty period but out of free maintenance service scope, MYIR provides maintenance service but shall charge some basic material cost; for products out of warranty period, MYIR provides maintenance service but shall charge some basic material cost and handling fee.

Shipping cost

During the warranty period, the shipping cost which delivered to MYIR should be responsible by user; MYIR will pay for the return shipping cost to users when the product is repaired. If the warranty period is expired, all the shipping cost will be responsible by users.

Products Life Cycle

MYIR will always select mainstream chips for our design, thus to ensure at least ten years continuous supply; if meeting some main chip stopping production, we will inform customers in time and assist customers with products updating and upgrading.

Value-added Services

- MYIR provides services of driver development base on MYIR's products, like serial port, USB, Ethernet, LCD, etc.
- MYIR provides the services of OS porting, BSP drivers' development, API software development, etc.
- MYIR provides other products supporting services like power adapter, LCD panel, etc.
- ODM/OEM services.

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