

MYD-YM62X

EVK Hardware User`s Guide



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MYIR Electronics Limited

History

Version	Author	Participants	Date	Description
V1.0	MYIR		20230825	Official release



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1. Overview

MYD-YM62X is an evaluation board development kit based on TI AM62x design by ShenZhen MYIR Electronics Co., LTD. It consists of core panel MYC-YM62X and bottom panel MYB-Y62X, providing numerous interface resources. Including but not limited to Ethernet, USB2.0 Host, USB 2.0 OTG, LVDS output, audio output, external dedicated low power RTC, Micro SD, GPMC, and reserved M.2 KEY B slot to support 4G / 5G function. This manual facilitates users to understand the interface definition and functional application of the evaluation board, which also has certain guiding significance for the project development of our core board MYC-YM62X.

1.1. EVK Introduction

The MYC-YM62X module is designed with a high density and high speed circuit board, and integrates the processor, AM62x、DDR4、eMMC、E2PROM、PMIC circuits on the 43mm*45mm board.

The carried board adopts double-sided device layout, which supports Gigabit Ethernet, USB2.0 HOST Type A, USB2.0 OTG Type-C, double channel 4 lane LVDS output, 2 single channel LVDS combined into HD LVDS output, support audio power amplifier output, Micro SD card slot, 4G / 5G module supporting M. 2 Key B interface.

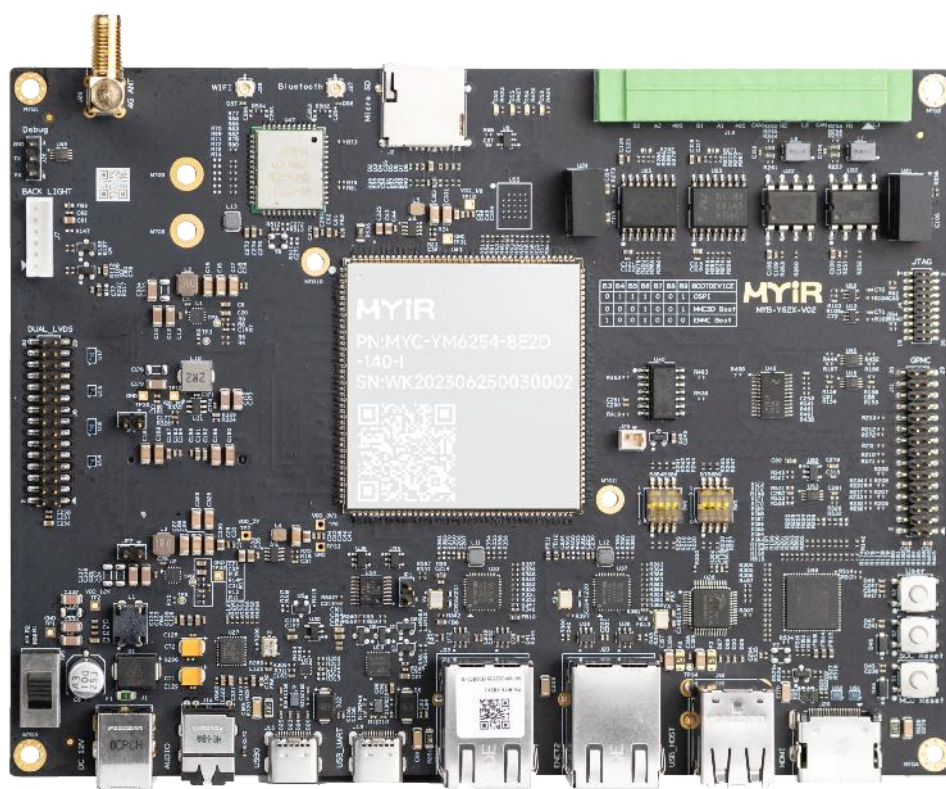


Figure 1- 1 MYD-YM62X Kit



1.2. Block Diagram

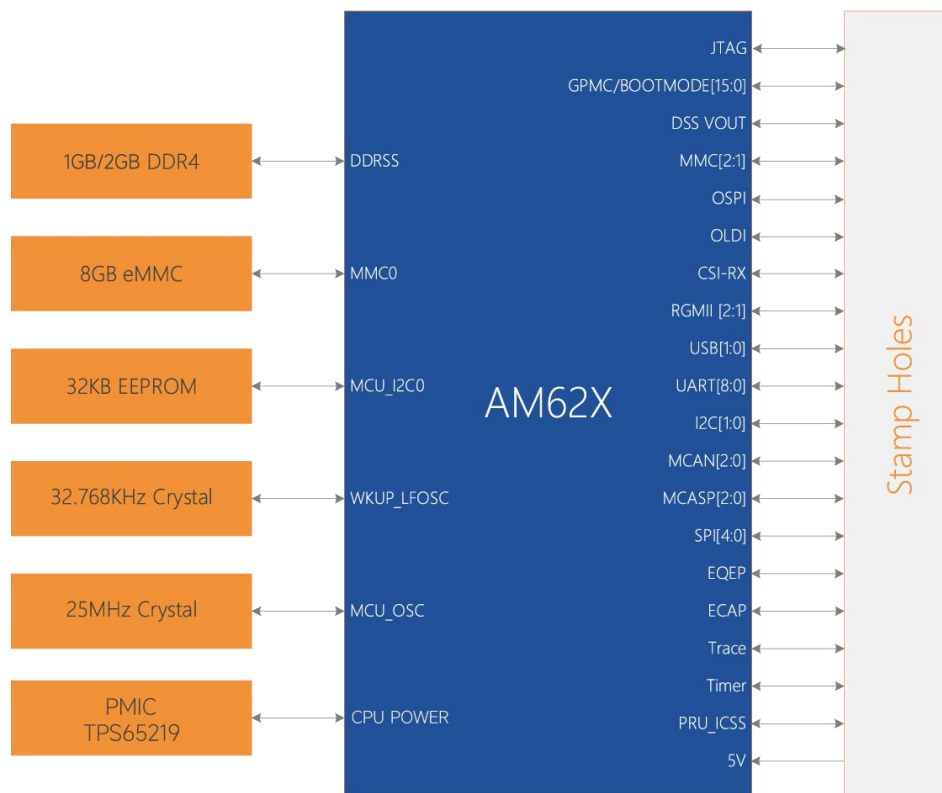


Figure 1- 2 Module Diagram



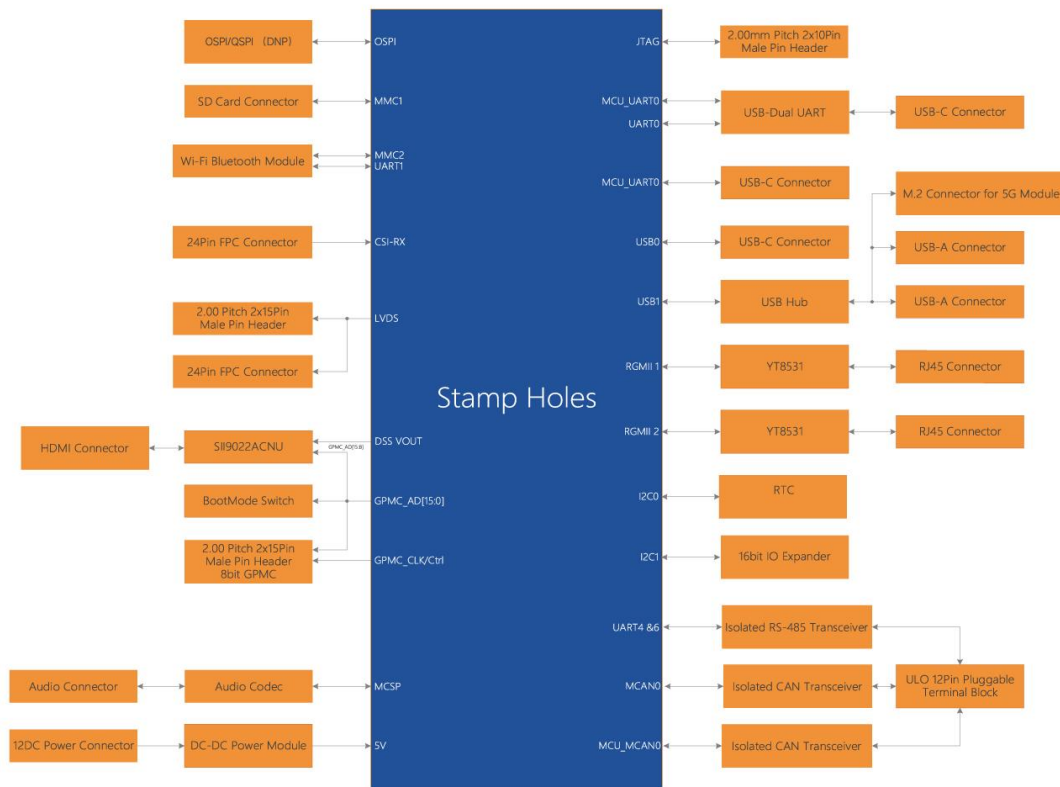


Figure 1- 3 Carrier Board Diagram



1.3. EVK Physical Image

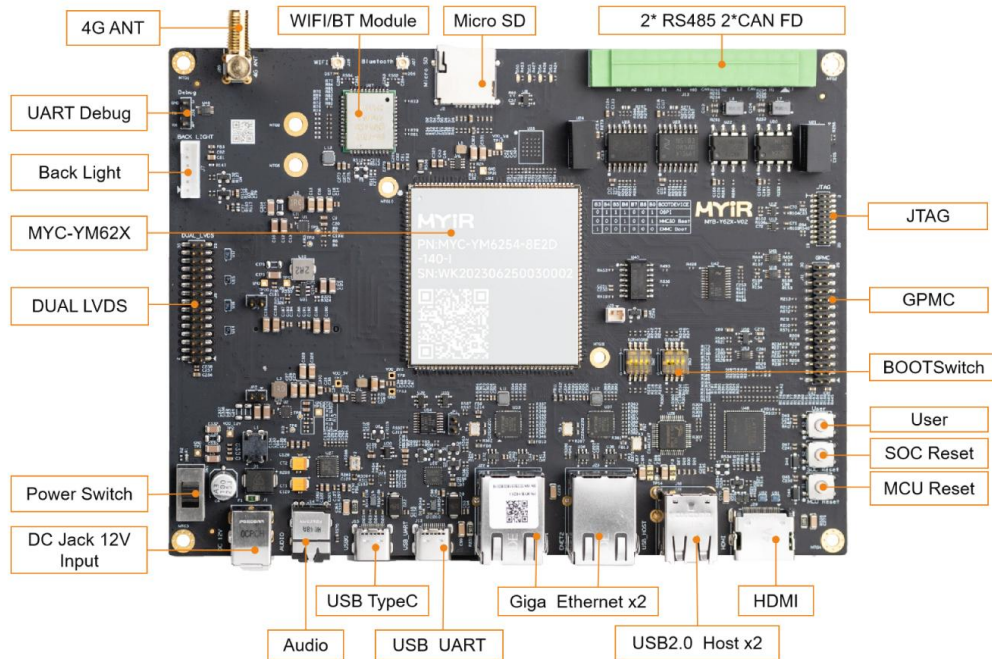


Figure 1- 4 MYD-YM62X Top View of EVK

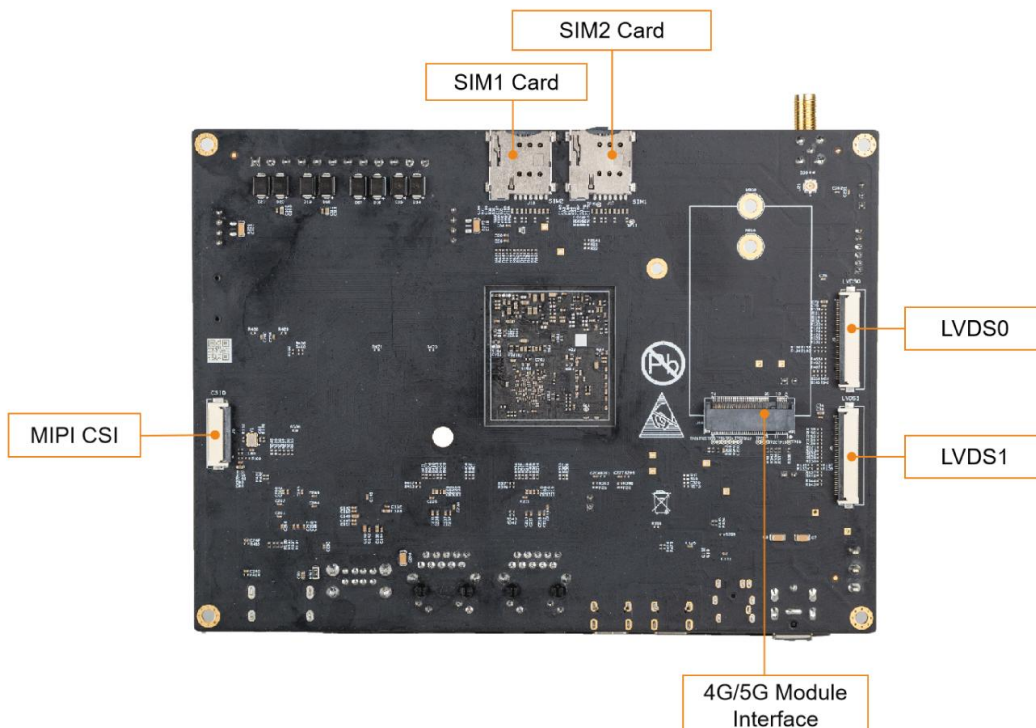


Figure 1- 5 MYD-YM62X Bottom View of EVK



1.4. Key interface parameter

Interface	Description
DC Power Supply	DC 12V
Ethernet	X2 RJ45 with 1000Mbps Ethernet,support 10M/100Mbps
USB	x1 USB 2.0 OTG Type C x2 USB 2.0 HOST Type A
Debug interface	x1 3.3V IO Level UART x1 Type C Debug port
M.2 Key B	x1, to mount 4G/5G module
Micro SIM	x2 Micro SIM card slot
Audio Out	x1 audio input and output
Display	X2 single link LVDS output, x1 dual link LVDS output & 6 pin XH connector for power backlight
Key	Reset,User
GPMC	2x15pin double row pin header
SDIO WIFI	2.4G WIFI&Bluetooth
Micro SD	x1 Micro SD,boot from Micro SD
HDMI	x1 RGB to HDMI signal
CSI	x1 CSI with virtual channels (up to 16)

Table 1-1 MYD-YM62X Key Interface Parameter



1.5. Reference Resource

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. Please go to <http://d.myirtech.com/MYD-YM62X/> to download.



2. Power Parameters

2.1. Power Tree

The input voltage is 12V. The power supply path is 12V to 5V, 12V to 3.9V, and 5V to 3.3/1.8V.

Both the carrier board and module need 5V power supply. Do not tie them together, make sure that the power for module should be prior to carrier board.

The bottom board and the core board 5V are powered separately, as implemented by 2 independent 12V to 5V DC-DC. Base plate 5V provides LVDS, USB2.0, and 5V to 3.3V DC-DC power supply. 12 to 3.9V is used to power the Mini PCIE 4G module. The 3.3V voltage is used to power the Ethernet, RTC, GPIO, WIFI, etc

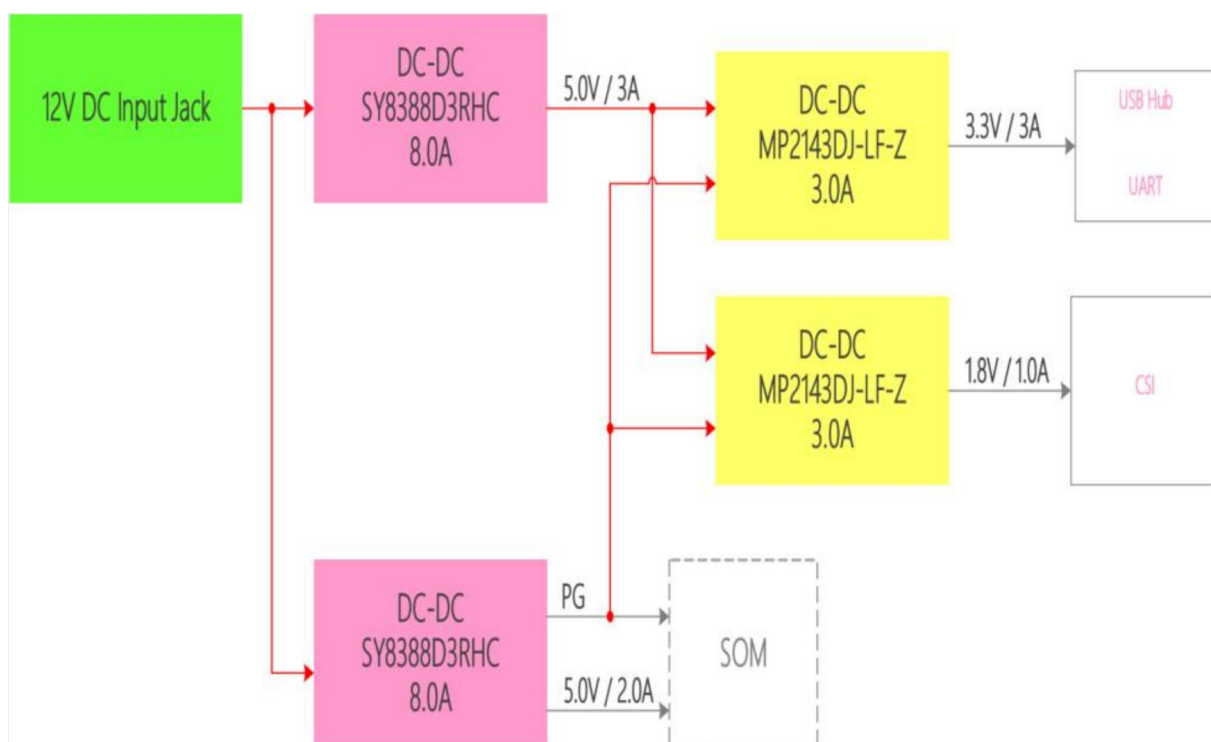


Figure 2 - 1 EVK Power Tree



2.2. Power Consumption

Condition	Voltage	Current	Power Consumption
MEM Sleep mode command: echo mem > /sys/power/state	12.0V	-	0
Linux Under the environment no load conditions	12.0V	0.15A	1.8W
Linux Under the environment USB Hostx2,LAN+OTG+SD Card+Aging program, CPU full-load	12.0V	0.36A	4.32W

Table 2 - 1 EVK Power Consumption

2.3. Requirement of Power Supply

The recommend supply voltage of MYD-YM62X carried board is 12V. Please be noted that add a DC jack converter before connect the power adapter with EVK board.otherwise the EVK board may not work due to unmatched DC jack..



3. BOOT configure

Using the MYC-YM62X core board, the base board can be designed to start the circuit board from the corresponding start item (OSPI, MMCSD, EMMC), The dial-up code in the bottom board adopts the 3V3 of the core board.

B3	B4	B5	B6	B7	B8	B9	BOOTDEVICE
0	1	1	1	0	0	1	OSPI
0	0	0	1	0	0	1	MMCSD BOOT
1	0	0	1	0	0	0	EMMC BOOT

图 3-1 boot 配置电路



4. Interface Layout

The overall interface layout of the evaluation board is shown as follows: The diagram of the local interface circuit later in this section corresponds exactly to this layout.

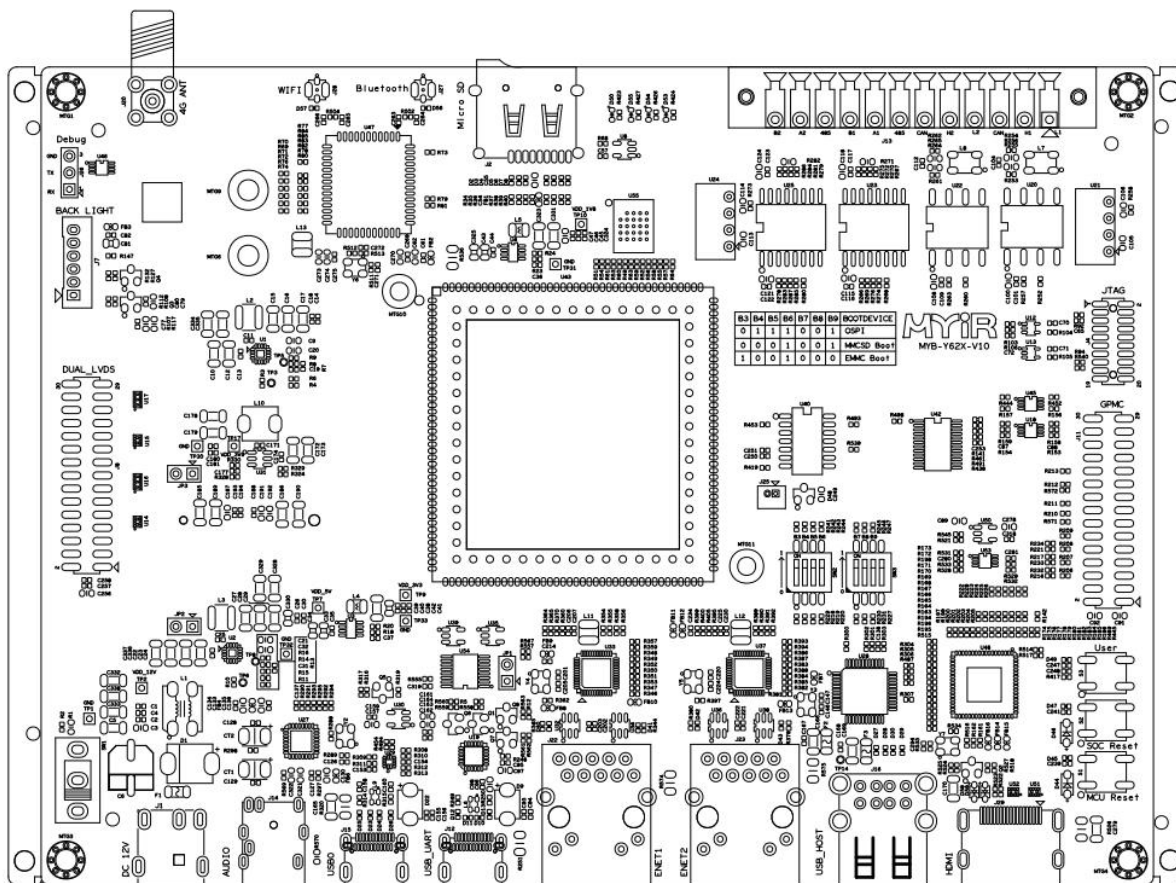


Figure 4 - 1 MYD-YM62X Interface Layout Top View



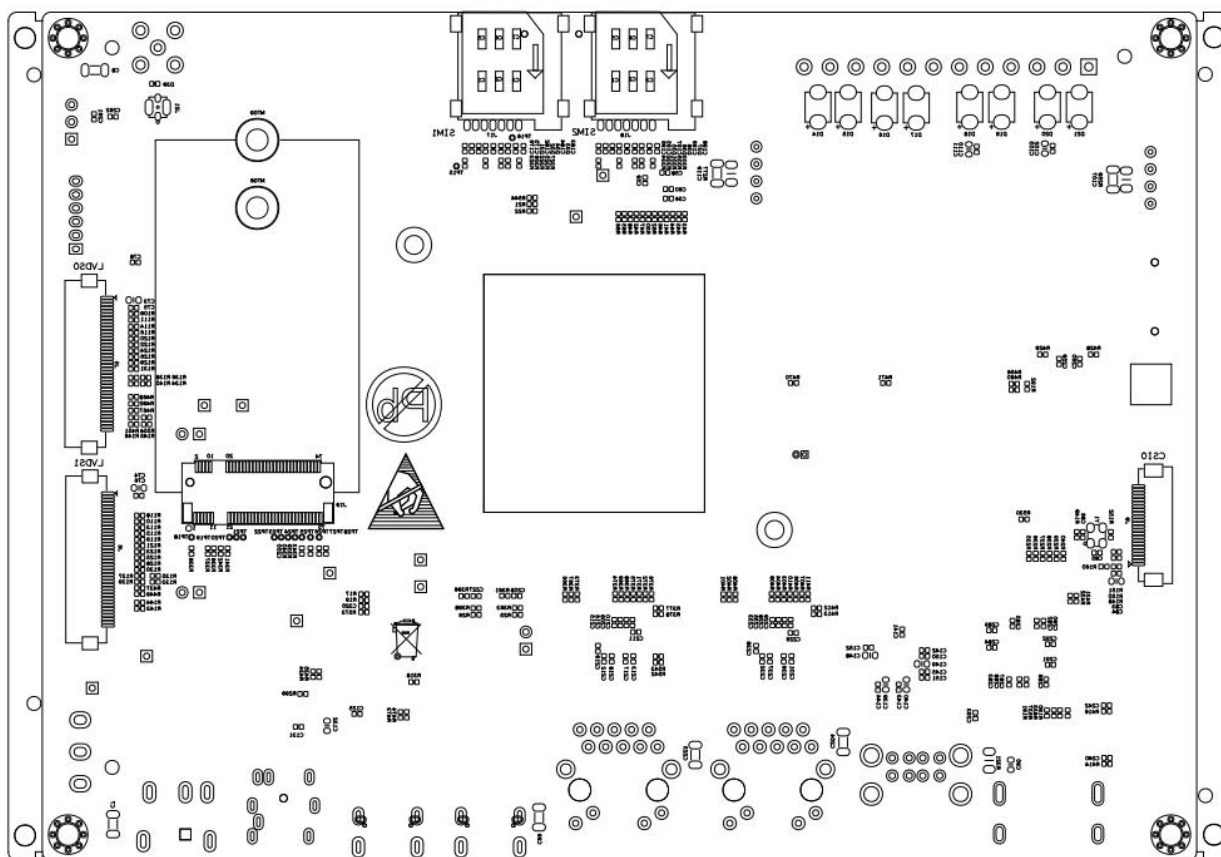


Figure 4 - 2 MYD-YM62X Interface Layout Bottom View



4.1. Power Interface

You are advised to use a 12V DC adapter as the power input. A matching adapter and adapter are available.

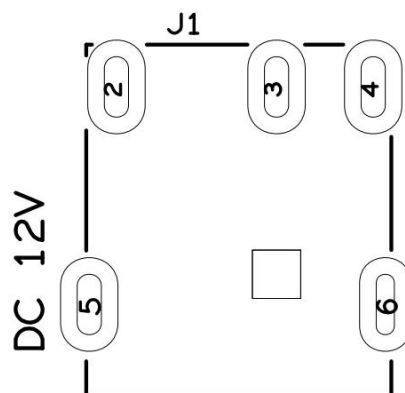


Figure 4 - 3 Connector of Power Input

4.1.1. Pin Description

Ref	Pin	Function	signal	Comments
J1	2	POWER GND	GND_VDD_IN	DC Socket: specifies the DC male header Outer diameter 5.5mm, inner diameter 1.7mm
	3	NC	NC	
	4	12V Power IN	VDD_IN	
	5	GND_EARTH	GND_EARTH	
	6	GND_EARTH	GND_EARTH	
	2	POWER GND	GND_VDD_IN	

Table 4 - 1 Power Interface Pin Description



4.2. Debug

The evaluation board has provide two interfaces for debug,UART debug and USB Type C debug. MYIR recommend to use uart-type-c Debug .

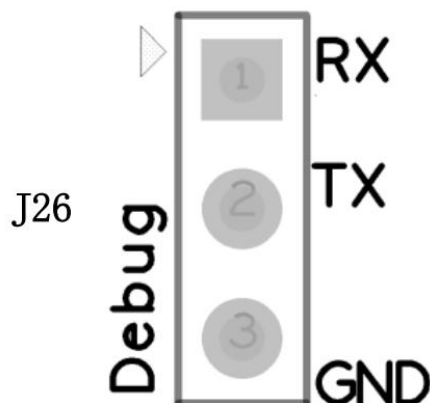


Figure 4 - 4 UART Debug Interface

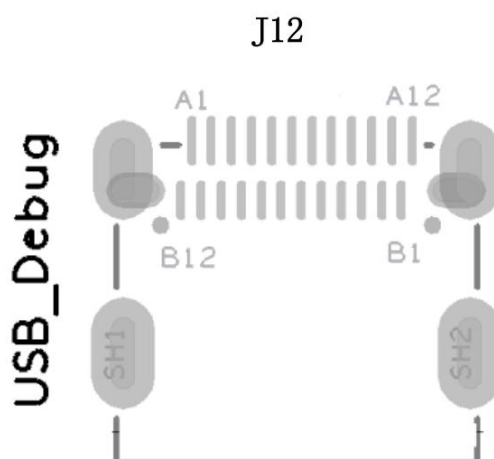


Figure 4 - 5 USB Type C Debug Interface

4.2.1. Pin Description

Ref	Pin	Function	signal	Comments
J26	1	UART0 Data receive	SoC_WKUP_UART0_RXD	
	2	UART0 Data transmit	SoC_WKUP_UART0_TXD	
	3	GND	GND	

Table 4 - 2 UART Debug Pin Description



Ref	Pin	Function	signal	Comments
J12	A4	USB 5V Power	USB_TC_VBUS	
	A9	USB 5V Power	USB_TC_VBUS	
	B4	USB 5V Power	USB_TC_VBUS	
	B9	USB 5V Power	USB_TC_VBUS	
	A6	USB Data+	DEBUG_USB_DP	
	A7	USB0 Data-	DEBUG_USB_DN	
	B6	USB0 Data+	DEBUG_USB_DP	
	B7	USB0 Data-	DEBUG_USB_DN	
	A2	NC	NC	
	A3	NC	NC	
	B11	NC	NC	
	B10	NC	NC	
	B2	NC	NC	
	B3	NC	NC	
	A11	NC	NC	
	A10	NC	NC	
	A5	To detect connection	USB2CC1	
	B5	To detect connection	USB2CC1	
	A8	NC	NC	
	B8	NC	NC	
	A1	GND	GND	
	A12	GND	GND	
	B12	GND	GND	
	B1	GND	GND	

Table 4 - 3 USB Type C Pin Description



4.3. Key

The evaluation board is designed with three buttons, reset button, soc reset button and user-defined button.

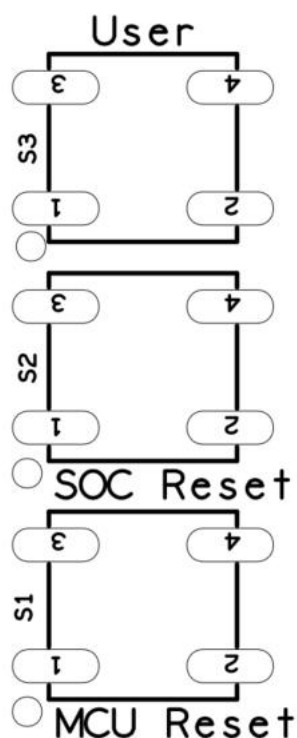


Figure 4 - 6 Key Interface

4.3.1. Pin Description

Ref	Pin	Function	signal	Comments
S1	/	Reset	SoC_GPMCO_BE1n	Press press produces the corresponding event / interrupt
S2	/	SOC Reset	SoC_RESET_REQz	For reset SOC, low level effective
S3	/	MCU Reset	SoC_MCU_RESETz	For reset MCU, low level effective

Table 4 - 4 Key Pin Description



4.4. LED

The evaluation board has designed with one power LED and three programmable LEDs.

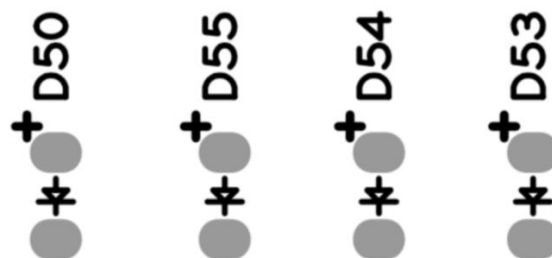


Table 4 - 7 LED Interface

4.4.1. Pin Description

Ref	Pin	Function	signal	Comments
D50	/	Power Indicator	VDD_3V3	
D53	/	System Run Indicator	D4	
D54	/	User-defined Indicator	USER_LED	IO expand
D55	/	4G/5G Status Indicator	WWAN_LED_n	4G/5G indicator light

Table 4 - 5 LED Pin Description



4.5. Micro SD Slot

One Micro SD card circuit is designed for the evaluation board. It supports both booting from Micro SD and storage operations.

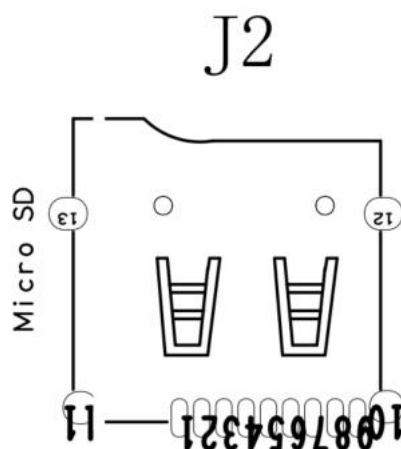


Figure 4 - 8 Micro SD

4.5.1. Pin Description

Ref	Pin	Function	signal	Comments
J2	1	MMC1 data 2	MMC1_D2	
	2	MMC1 data 3	MMC1_D3	
	3	MMC1 command signal	MMC1_CMD	
	4	Power supply for micro SD	VDD_SD_3V3	
	5	MMC1 clock	MMC1_CLK	
	6	GND	GND	
	7	MMC1 data 0	MMC1_D0	
	8	MMC1 data 1	MMC1_D1	
	9	MMC1 card detect	MMC1-DET	
	10	GND	GND	
	11	GND	GND	
	12	GND	GND	
	13	GND	GND	

Table 4 - 6 Micro SD Pin Description



4.6. GPMC Connector

A double row 2x15 pin header designed on the EVK board of which design is J11, can provides Memory controller.

Convenient between users and other devices.



Figure 4 - 9 Expansion Connector Interface

4.6.1. Pin Description

Ref	Pin	Function	signal	Comments
J11	1	3.3V	VDD_3V3	
	2	5V	VDD_5V	
	3	GND	GND	
	4	GND	GND	
	5	SoC_GPMC0_CLK	GPMC clock	
	6	SoC_GPMC0_AD0/BOOTMODE00	GPMC Data 0	
	7	SoC_GPMC0_CSn0	GPMC Chip Select 0	
	8	SoC_GPMC0_AD1/BOOTMODE01	GPMC Data 1	
	9	SoC_GPMC0_WEn	GPMC Write Enable	
	10	SoC_GPMC0_AD2/BOOTMODE02	GPMC Data 2	
	11	SoC_GPMC0_OEn_REn	GPMC Output Enable	
	12	SoC_GPMC0_AD3/BOOTMODE03	GPMC Data 3	
	13	GND	GND	
	14	GND	GND	
	15	SoC_GPMC0_WAIT0	GPMC External Indication of Wait0	
	16	SoC_GPMC0_AD4/BOOTMODE04	GPMC Data 4	
	17	SoC_GPMC0_ADVn_ALE	GPMC Address Valid	
	18	SoC_GPMC0_AD5/BOOTMODE05	GPMC Data 5	
	19	SoC_GPMC0_DIR	GPMC Data Bus Signal Direction Control	
	20	SoC_GPMC0_AD6/BOOTMODE06	GPMC Data 6	
	21	SoC_GPMC0_BE0n_CLE	GPMC Lower-Byte Enable	





Ref	Pin	Function	signal	Comments
	22	SoC_GPMC0_AD7/BOOTMODE07	GPMC Data 7	
	23	GND	GND	
	24	GND	GND	
	25	NC	NC	
	26	NC	NC	
	27	NC	NC	
	28	NC	NC	
	29	NC	NC	
	30	NC	NC	

Table 4- 7 GPMC Pin Description



4.7. USB

The evaluation board has built-in two usb2.0, USB0 and USB1. Both supports HOST、Device mode.

Two of the four extended ports are directly lead out through the double-layer USB Type A connector,the third route is used to connect to 5G module,and the fourth circuit is not used.

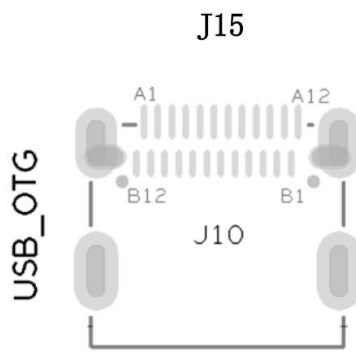


Figure 4 - 10 USB Type C Interface

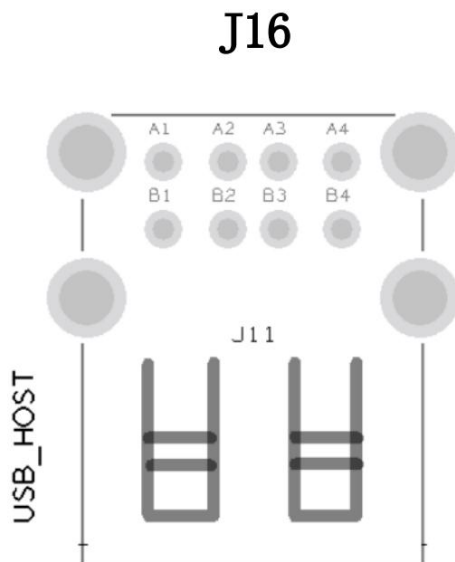


Figure 4 - 11 USB Type A Interface



4.7.1. Pin Description

Ref	Pin	Function	signal	Comments
J10	A4	USB 5V Power	USB_TC_VBUS	
	A9	USB 5V Power	USB_TC_VBUS	
	B4	USB 5V Power	USB_TC_VBUS	
	B9	USB 5V Power	USB_TC_VBUS	
	A6	USB0 Data+	USB0_P	
	A7	USB0 Data-	USB0_N	
	B6	USB0 Data+	USB0_P	
	B7	USB0 Data-	USB0_N	
	A2	NC	NC	
	A3	NC	NC	
	B11	NC	NC	
	B10	NC	NC	
	B2	NC	NC	
	B3	NC	NC	
	A11	NC	NC	
	A10	NC	NC	
	A5	To detect connection	USB2CC1	
	B5	To detect connection	USB2CC1	
	A8	NC	NC	
	B8	NC	NC	
	A1	GND	GND	
	A12	GND	GND	
	B12	GND	GND	
	B1	GND	GND	

Table 4 - 8 USB OTG Pin Description



Ref	Pin	Function	signal	Comments
J11	A1	USB 5V Power	VDD_5V	
	A2	USB HOST Data-	USBA0_DM	
	A3	USB HOST Data+	USBA0_DP	
	A4	GND	GND	
	B1	USB 5V Power	VDD_5V	
	B2	USB HOST Data-	USBA1_DM	
	B3	USB HOST Data+	USBA1_DP	
	B4	GND	GND	
	1	Metal ground	GND_EARTH	
	2	Metal ground	GND_EARTH	
	3	Metal ground	GND_EARTH	
	4	Metal ground	GND_EARTH	

Table 4 - 9 USB HOST Pin Description



4.8. Ethernet

Evaluation board has built-in two EMAC interface for connecting external Ethernet PHY.

RGMII and RMII interfaces are supported by Evaluation board.

The EVK board use YT8531 which supports RGMII interface to implement gigabit network.

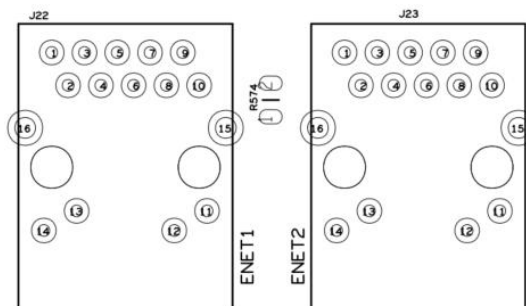


Figure 4 - 12 Ethernet Interface

4.8.1. Pin Description

Ref	Pin	Function	signal	Comments
J22/J23	1	ET1/ET2 Differential signal 0+	ET1/ET2_TRP0	
	2	ET1/ET2 Differential signal 0-	ET1/ET2_TRN0	
	3	ET1/ET2 Differential signal 1+	ET1/ET2_TRP1	
	4	ET1/ET2 Differential signal 1-	ET1/ET2_TRN1	
	5	GND	GND	
	6	GND	GND	
	7	ET1/ET2 Differential signal 2+	ET1/ET2_TRP2	
	8	ET1/ET2 Differential signal 2-	ET1/ET2_TRN2	
	9	ET1/ET2 Differential signal 3+	ET1/ET2_TRP3	
	10	ET1/ET2 Differential signal 3-	ET1/ET2_TRN3	
	11	ET1/ET2 LED LINK	ET1/ET2_LED1	
	12	GND	GND	
	13	ET1/ET2 Activity LED	ET1/ET2_LED2	
	14	GND	GND	
	15	Metal ground	GND_EARTH	
	16	Metal ground	GND_EARTH	
	17	Metal ground	GND_EARTH	

Table 4 - 10 Ethernet Interface Pin Description



4.9. HDMI

The evaluation board core board supports 1 channel LCD, from RGB to HDMI output video.

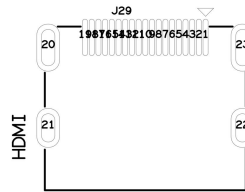


Figure 4 - 13 HDMI Interface

4.9.1. Pin Description

Ref	Pin	Function	signal	Comments
J21	1	TX2R+	TX2R_DP	
	2	GND	DGND	
	3	TX2R-	TX2R_DN	
	4	TX1R+	TX1R_DP	
	5	GND	DGND	
	6	TX1R-	TX1R_DN	
	7	TX0R+	TX0R_DP	
	8	GND	DGND	
	9	TX0R-	TX0R_DN	
	10	TXR+	TXR_CKP	
	11	GND	DGND	
	12	TX2R-	TXR_CKN	
	13	CEC	CEC	
	14	NC	NC	
	15	I2C CLK	SCL	
	16	I2C DATA	SDA	
	17	GND	DGND	
	18	DC 5V	5V	DC 5V
	19	HPD	HDMI_HPD	

Table 4 - 11 HDMI Pin Description



4.10. AUDIO Out

The evaluation board core board contains analog audio, which is connected to the other side through the chip SGTL5000XNAA3 code, and the bottom board J14 leads out.

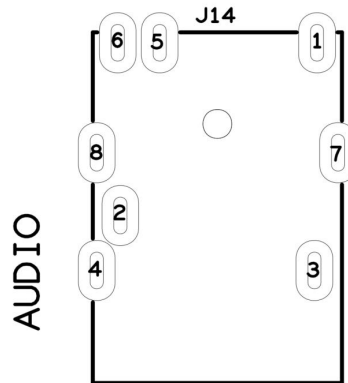


Figure 4 - 14 Audio Out Interface

4.10.1. Pin Description

Ref	Pin	Function	signal	Comments
J14	1	AUDIO_LOUT_L	left channel	
	2	AUDIO_LOUT_R	right channel	
	3	AUDIO_GND	Audio Gnd	
	4	AUD_MIC	Microphone	
	5	NC		
	6	NC		
	7	NC		
	8	NC		

Table 4 - 12 Audio Out Pin Description



4.11. LVDS

The evaluation board is designed with two 40 Pin FPC ports supporting dual channel LVDS and one 2x15 dual row pin supporting dual channel HD LVDS display interface. The 40 Pin FPC LVDS interface can be matched with the MYIR 7-inch LVDS cap active touch LCD screen module. The 2x15 dual row port can support 19-inch or even larger HD LVDS displays in the market.

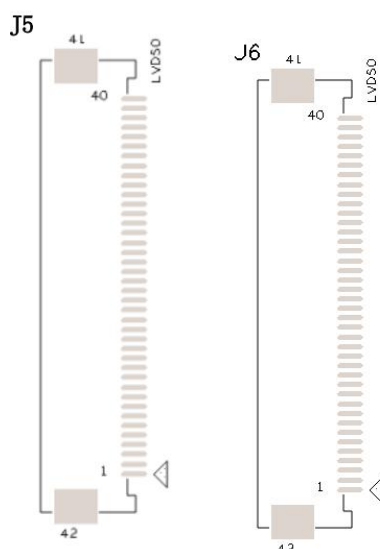


Figure 4 - 15 DUAL Link LVDS Interface



Figure 4 - 16 Dual Link LVDS Interface



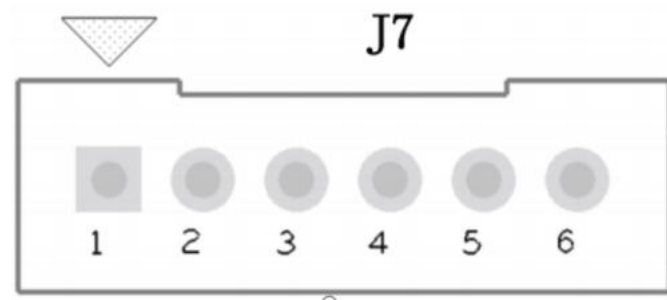


Figure 4 - 17 Power and Backlight Interface

4.11.1. Pin Description

Ref	Pin	Function	signal	Comments
J5/J6	1	NC	NC	
	2	Power 5V	VDD_5V	
	3	Power 5V	VDD_5V	
	4	NC	NC	
	5	NC	NC	
	6	NC	NC	
	7	GND	GND	
	8	LVDS0 Data lane0 -	LVDS0-D0N-R	
	9	LVDS0 Data lane0 +	LVDS0-D0P-R	
	10	GND	GND	
	11	LVDS0 Data lane1 -	LVDS0-D1N-R	
	12	LVDS0 Data lane1 +	LVDS0-D1P-R	
	13	GND	GND	
	14	LVDS0 Data lane2 -	LVDS0-D2N-R	
	15	LVDS0 Data lane2 +	LVDS0-D2P-R	
	16	GND	GND	
	17	LVDS0 Clock -	LVDS0-CLKN-R	
	18	LVDS0 Clock +	LVDS0-CLKP-R	
	19	GND	GND	
	20	LVDS0 Data lane3 -	LVDS0-D3N-R	



Ref	Pin	Function	signal	Comments
J8	1	Power 5V by default	VDD_Panel	
	2	Power 5V by default	VDD_Panel	
	3	Power 5V by default	VDD_Panel	
	4	GND	GND	
	5	GND	GND	
	6	GND	GND	
	7	LVDS1 Data lane0 -	LVDS1-D0N-R	
	8	LVDS1 Data lane0 +	LVDS1-D0P-R	
	9	LVDS1 Data lane1 -	LVDS1-D1N-R	
	10	LVDS1 Data lane1 +	LVDS1-D1P-R	
	11	LVDS1 Data lane2 -	LVDS1-D2N-R	
	12	LVDS1 Data lane2 +	LVDS1-D2P-R	
	13	GND	GND	
	14	GND	GND	
	15	LVDS0 Clock -	LVDS1-CLKN-R	
	16	LVDS0 Clock +	LVDS1-CLKP-R	
	17	LVDS1 Data lane3 -	LVDS1-D3N-R	
	18	LVDS1 Data lane3 +	LVDS1-D3P-R	
	19	LVDS0 Data lane0 -	LVDS0-D0N-R	
	20	LVDS0 Data lane0 +	LVDS0-D0P-R	
	21	LVDS0 Data lane1 -	LVDS0-D1N-R	
	22	LVDS0 Data lane1 +	LVDS0-D1P-R	
	23	LVDS0 Data lane2 -	LVDS0-D2N-R	
	24	LVDS0 Data lane2 +	LVDS0-D2P-R	
	25	GND	GND	
	26	GND	GND	
	27	LVDS0 Clock -	LVDS0-CLKN-R	
	28	LVDS0 Clock +	LVDS0-CLKP-R	
	29	LVDS0 Data lane3 -	LVDS0-D3N-R	
	30	LVDS0 Data lane3 +	LVDS0-D3P-R	

Table 4 - 13 Signal Link LVDS Pin Description



Ref	Pin	Function	signal	Comments
J6	1	GND	GND	
	2	GND	GND	
	3	IO	A14	
	4	To adjust backlight	PWM	
	5	Power 12V	VDD_12V	
	6	Power 12V	VDD_12V	

Table 4 - 14 Power and Backlight Pin Description



4.12. CSI

The evaluation board supports 1 channel CSI. Support for virtual channels (up to 16), Support 1,2,3 or 4 data channel modes, up to 2.5 Gbps.

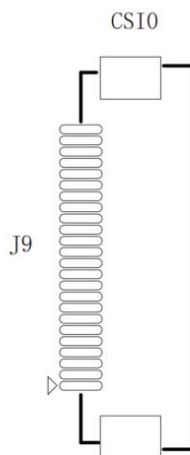


Figure 4 - 18 CSI Interface

4.12.1. Pin Description

Ref	Pin	Function	signal	Comments
J9	46	SOC_CSI0_RXCLKP	CSI0+	
	47	SOC_CSI0_RXCLKN	CSI0-	
	49	SOC_CSI0_RXP0	CSI0+	
	50	SOC_CSI0_RXN0	CSI0-	
	52	SOC_CSI0_RXP1	CSI0+	
	53	SOC_CSI0_RXN1	CSI0 -	
	55	SOC_CSI0_RXP2	CSI0+	
	56	SOC_CSI0_RXN2	CSI0-	
	58	SOC_CSI0_RXP3	CSI0+	
	59	SOC_CSI0_RXN3	CSI0 -	
	L5	SOC_UART1_DCDN	UART Clear to Send	
	L6	SOC_UART1_DSRN	UART Data Set Ready	

Table 4 - 16 CSI Pin Description



4.13. RTC

The evaluation board designed the RTC standby interface circuit, using the real-time clock module RX-8025 with I2C bus, the J25 needs to be connected to the external voltage of 3.0V in use. It can be used to maintain the operation of the RTC circuit in case of a power failure.

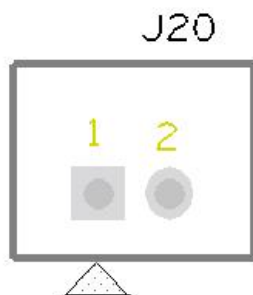


Figure 4 - 18 RTC battery Interface

4.13.1. Pin Description

Ref	Pin	Function	signal	Comments
J25	1	Power 3V	VDD_BAT	
	2	GND	GND	

Table 4 - 15 RTC Pin Description



5. Module description

5.1. 4G / 5G Module

The evaluation board reserves one M.2 Key-B circuit, which can be connected to 4G / 5G module. The evaluation board supports the EM05 and RM500Q 4G / 5G modules, and provides Linux drivers and code samples.

The M.2 connector is an APCI0105-P001A connector from Lotes. The default power supply voltage of the module is 3.9V. The control signal is the USB signal extended by the USB HUB chip.

The carried board also provides two SIM card slots, which can be used together with 5G modules.

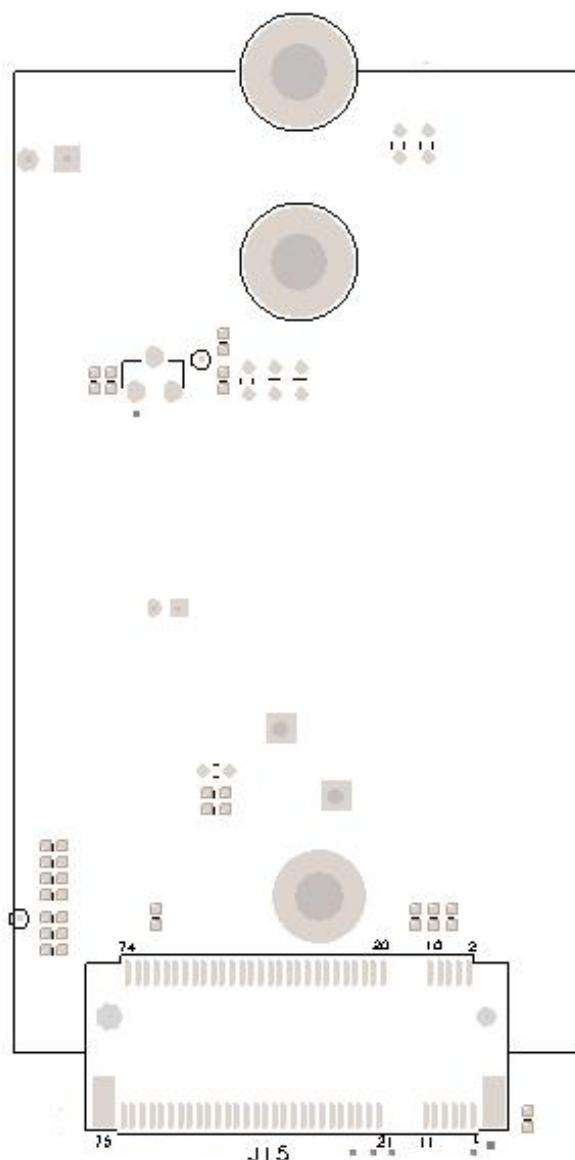


Figure 5 - 1 M.2 interface



5.1.1. Pin Description

Ref	Pin	Function	signal	Comments
J15	1	NC	config3	
	2	Power 3.9V	VDD_3V9	
	3	GND	GND	
	4	Power 3.9V	VDD_3V9	
	5	GND	GND	
	6	PULL_CARD_POWR_OFF	PULL_CARD_POWR_OFF	L:Module power off H:Module power on
	7	USB 2.0 Differential data +	5G_USB_DP	
	8	Power 3.9V	VDD_3V9	
	9	USB 2.0 Differential data -	5G_USB_DN	
	10	NC	NC	
	11	GND	GND	
	20	NC	NC	
	21	NC	config0	
	22	NC	NC	
	23	NC	WAKE_ON_WWAN	
	24	NC	NC	
	25	NC	DRP	
	26	NC	NC	
	27	GND	GND	
	28	NC	NC	
	29	NC	NC	
	30	SIM1 Reset	USIM1_RST	
	31	NC	NC	
	32	SIM1 Clock	USIM1_CLK	
	33	GND	GND	
	34	SIM1 data	USIM1_DATA	
	35	NC	NC	
	36	SIM1 Power	USIM1_VCC	
	37	NC	NC	
	38	I2C CLK	I2C_SCL_GPIO19	
	39	GND	GND	
	40	SIM2 detection	USIM2_DET	
	41	NC	NC	



Ref	Pin	Function	signal	Comments
	42	SIM2 data	USIM2_DATA	
	43	NC	NC	
	44	SIM2 Clock	USIM2_CLK	
	45	GND	GND	
	46	SIM2 Reset	USIM2_RST	
	47	NC	NC	
	48	SIM2 Power	USIM2_VCC	
	49	NC	NC	
	50	NC	NC	
	51	GND	GND	
	52	NC	NC	
	53	NC	NC	
	54	NC	NC	
	55	NC	NC	
	56	NC	NC	
	57	GND	GND	
	58	NC	NC	
	59	NC	NC	
	60	NC	NC	
	61	NC	RF	
	62	NC	NC	
	63	NC	NC	
	64	NC	NC	
	65	NC	NC	
	66	SIM1 detection	USIM1_DET	
	67	Reset signal	Module_RESET_N	
	68	I2C bus data	I2C_SDA_GPIO18	
	69	NC	config1	
	70	Power 3.9V	VDD_3V9	
	71	GND	GND	
	72	Power 3.9V	VDD_3V9	
	73	GND	GND	
	74	Power 3.9V	VDD_3V9	
	75	NC	Config2	

Table 5 -1 M.2 Pin Description



5.2. WIFI and Bluetooth module

The evaluation board uses FGL297BSRX-00 module to drive Bluetooth and WIFI signal, and the communication adopts MMC2 to UART.

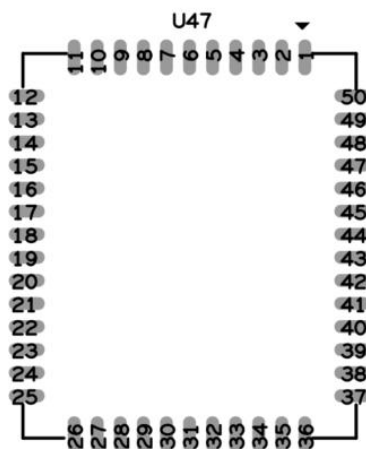


Figure 5 -2 WIFI/Bluetooth module interface

5.2.1. Pin Description

Ref	Pin	Function	signal	Comments
U47	1	GND	Ground connections	
	2	RF0	WIFI_RF0	
	3~8	GND	Ground connections	
	9	RF1	WIFI_RF1/BT_RF	
	10	GND	Ground connections	
	11	GND	Ground connections	
	12~ 14	NC	Floating (NC)	
	15	WL_REG_ON	When the host reboot, this pin should	
	16	WL_WAKE_HOST	WLAN to wake up HOST	
	17	SD_CMD	SDIO command line	
	18	SD_CLK	SDIO clock line	
	19	SD_D3	SDIO data line 3	
	20	SD_D2	SDIO data line 2	
	21	SD_D0	SDIO data line 0	
	22	SD_D1	SDIO data line 1	
	23	GND	Ground connections	
	24	NC	Floating (NC)	
	25	LX_OUT	to pin26 (2.2V)	
	26	2.2VIN	DCDC_IN (2.2V)	



Ref	Pin	Function	signal	Comments
U47	27	PCM_SYNC	PCM Sync	
	28	PCM_IN	PCM Input	
	29	PCM_OUT	PCM Output	
	30	PCM_CLK	PCM Clock	
	31	LPO	Crystals of up to 32.768 K	
	32	GND	Ground connections	
	33	NC	Floating (NC)	
	34	VDDIO	1.8V OR 3.3V	
	35	NC	Floating (NC)	
	36	VBAT	VDD3.3V	
	37	NC	Floating (NC)	
	38	NC	Floating (NC)	
	39	GND	Ground connections	
	40	UART_Tx	UART_Tx	
	41	UART_Rx	UART_Rx	
	42	UART_RTS	UART_RTS	
	43	UART_CTS	UART_CTS	
	44	NC	Floating (NC)	
	45	NC	Floating (NC)	
	46	NC	Floating (NC)	
	47	NC	Floating (NC)	
	48	NC	Floating (NC)	
	49	HOST_WAKE_BT	Host device to wake up Bluetooth	
	50	BT_WAKE_HOST	Bluetooth device to wake up host	

Table 5 - 2 WIFI Pin Description



6. Mechanical Size

module: size 43mm*45mm, using 10 layers of high density PCB design, gold plating process, no lead.

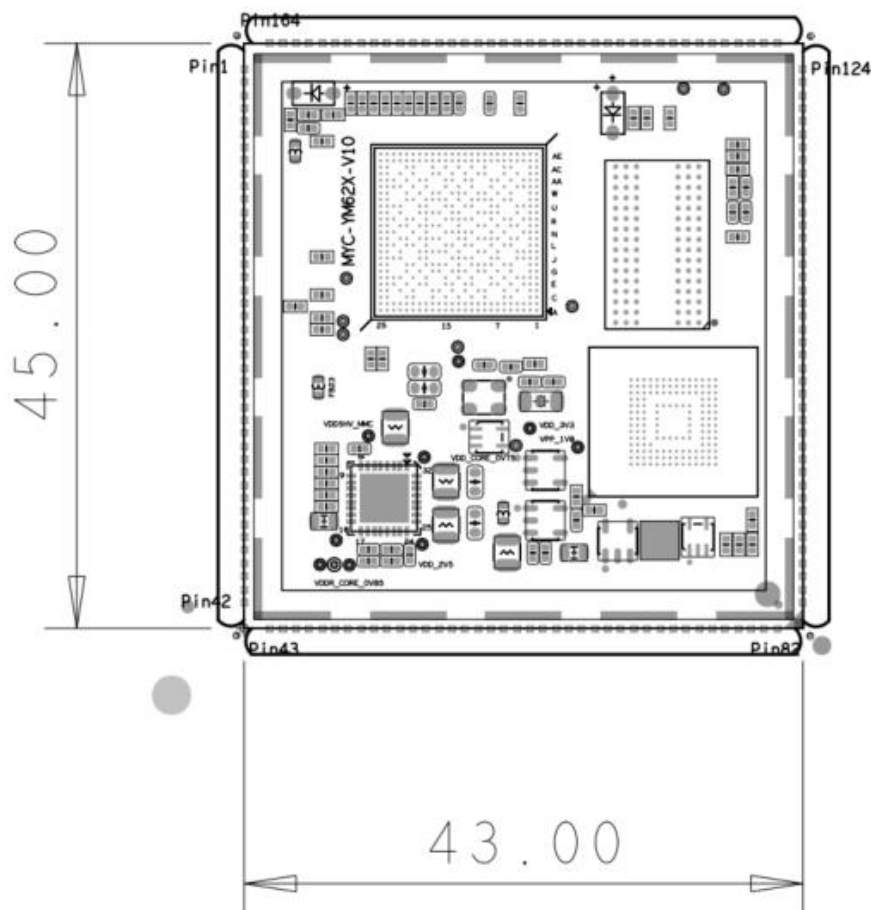


Figure 6 -1 Module Size



Evaluation board base board: Size 125mm x 170 mm, 6 layer, gold sinking process, lead free.

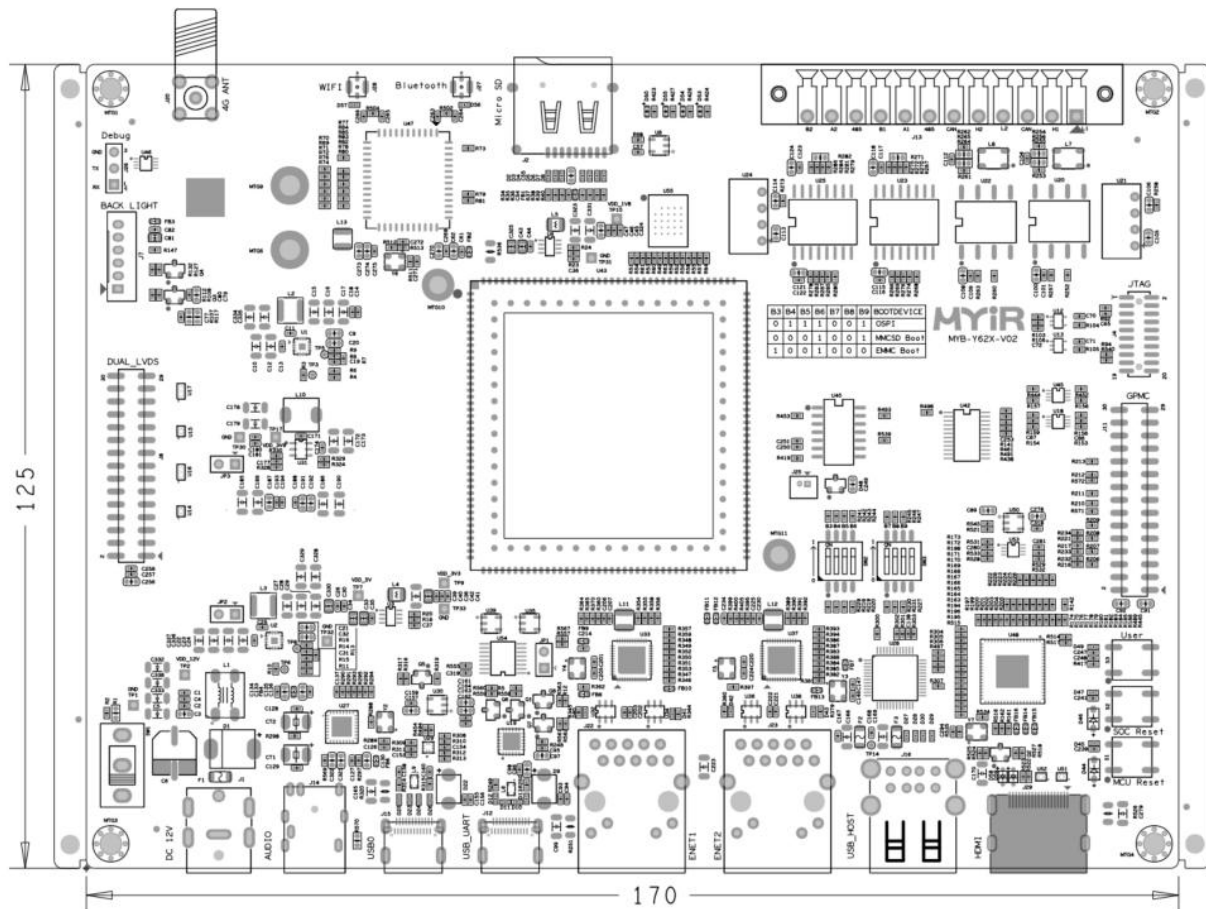


Figure 6 -2 Evaluation Board Size



7. EVK Ordering Information

7.1. EVK Part Number

Item	MYD-YM6254-8E2D-140-I
CPU	AM6254ATCGGAALW
Operate Temperature	-40°C ~ +85°C
DDR	2GB
EMMC	Standard 8GB eMMC

Table 7 - 1 Ordering Information 1

Item	MYD-YM6252-8E1D-140-I
CPU	AM6252ATCGGAALW
Operate Temperature	-40°C ~ +85°C
DDR	1GB
EMMC	Standard 8GB eMMC

Table 7 - 2 Ordering Information 2

Item	MYD-YM6231-8E1D-100-I
CPU	AM6231ASGGGAALW
Operate Temperature	-40°C ~ +85°C
DDR	1GB
EMMC	Standard 8GB eMMC

Table 7 - 3 Ordering Information 2



7.2. Package List

Item	Description
Board	x1 EVK board
QSG	x1 quick start guide
Cables & Accessories	x1 Debug cable (USB To Type-c) x1 12V power adapter x1 1.7mm to 2.1mm DC Jack converter

Table 7 - 4 Packing List

7.3. Modules supported by EVK

Part Number	Description	Link
MY-LVDS070C	7 "LVDS LCD screen	https://www.myirtech.com/list.asp?id=634
MY-CAM003M	A camera module used for image acquisition or video acquisition	https://www.myirtech.com/list.asp?id=611

Table 7 - 5 Supported Modules



8. Part Number of Connectors on EVK

Part Number	Manufacturer	Part Number	Description
Power Input	738-03220009	SongCheng	J1
Micro SD	MR01A-01211	ATOM	J2
JTAG	1325-1210G0M087CR01	Wcon	J4
LVDS Interface	FPC05040-17205	Atom	J5,J6
LVDS Interface	B6B-PH-K-S	JST	J7
DUAL LVDS Interface	13201215CNG4M80T01	GDZ	J8
Camera Interface	FPC05024-17205	Atom	J9
GPMC Interface	13201215CNG4M80T01	GDZ	J11
USB Type-C DEBUG	UT12111-B1609-7F	Foxconn	J12
CAN&RS485	ULO-TB13-15RM/3.81-12P-4000A	ULO	J13
AudioInterface	JA41131-34BCB-7H	Foxconn	J14
USB-TYPE-C OTG	UT12111-B1609-7F	Foxconn	J15
Dual Ports USB-A	UB11121-8FDE-4F	Foxconn	J16
SIM	SI62C-01200	Atom	J17,J18
M.2	APCI0105-P001A	Lotes	J19
4G/5G ANT	FC-SMA271	FingXin	J20
RF	1566230-1	TE	J21
ETH	S11-ZZ-0319	UDE	J22,J23
Batter	530470210	Molex	J25
R5 DEBUG UART	1125-1103G0S116C001	Wcon	J26
WIFI ANT	ANB02001-125	FLY_Core	J27,J28
HDMI	QJ51191-LFB4-7F	Foxconn	J29
Jump	12251102CNG4S115001	GDZ	JP1,JP2,JP3

Table 8 - 1 Part Number of Connectors on EVK



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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