MYD-JX8MX
Product Manual

Version V1.1

08th June 2019

Version History

Version	Description	Date
V1.0	Initial version	2019.03.30
V1.1	Increase compatible WIFI/BT module (model: 6222B-PRB)	2019.06.08

Table of Contents

1.Product Abstract

The MYC-JX8MX is a high-performance low-cost CPU module designed by MYIR.It is based on NXP i.MX 8M processor family which features the most efficient a dual/quad Arm® Cortex®-A53 core, which operates at speeds of up to 1.3 GHz. A general-purpose Cortex®-M4 core processor is for low-power processing., including 16/32-bit LPDDR4, DDR4, DDR3L, 8-bit NAND FLASH , SPI NOR flash, eMMC, Quad SPI and a wide range of other interfaces for connecting peripherals.

The MYD-JX8MX is the development board which is consists of the MYC-JX8MX CPU module and the MYB-JX8MX base board. The MYD-JX8MX offers a rich resources for evaluation and development,which are:

- Multimedia Interface
    - 1*HDMI interface (4K),1*LVDS interface
    - 1*Audio input and output
    - 2*MIPI CSI for Cameras
- Communication Interfaces
    - Mini PCI-E connector for 4G LTE modules
    - WIFI and Bluetooth Module
    - 1 Giga Ethernet interface
    - USB 3.0 in Type-C connector
    - Uarts and other communication interfaces

In the meantime, MYIR provides rich software resources and detailed documents with the board including user manuals, schematic of the base board, peripheral drivers, BSP source packages, development tools and other related information.
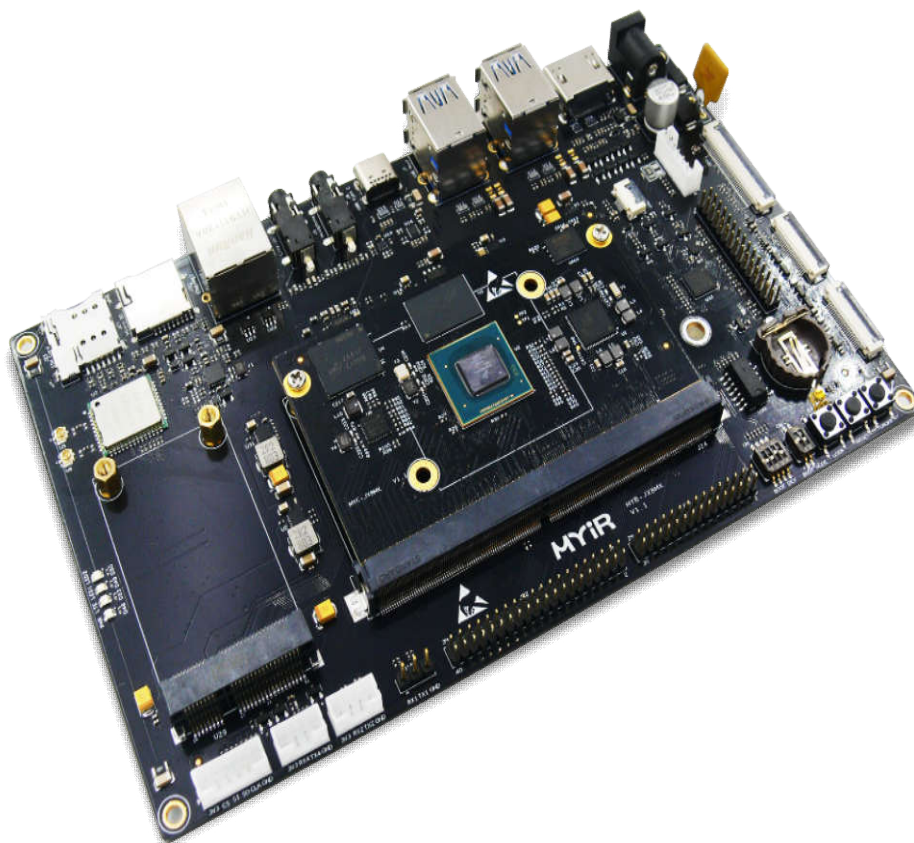
Figure 1-1   MYD-JX8MX Development Board

Currently ,MYIR offers two standard versions of the MYD-JX8MX for evaluation.The main differences is the size of the LPDDR4 in the CPU module.

For the customer who is planning to use Android system ,MYD-JX8MQ6-8E2D-130-E is suggested as the Android 8/9 requires 2GB DDR as the minimal DDR requirement.

Please refer to below table 1-1 for the detail.

Product Model	MYD-JX8MQ6-8E1D-130-E	MYD-JX8MQ6-8E2D-130-E
CPU Module on Board	MYC-JX8MQ6-8E1D-130-E	MYC-JX8MQ6-8E2D-130-E
Main Chip	MIMX8MQ6CVAHZAB	MIMX8MQ6CVAHZAB
Work temperature	-30℃ - +80℃	-30℃ - +80℃
DDR	1GB LPDDR4	2GB LPDDR4
Memory	8GB eMMC	8GB eMMC

Table 1-1   MYD-JX8MX (default configurations)

MYIR offers customization on optional CPU and memory size configuration in bulk orders.

Please refer to below table 1-2 for NXP i.MX8M MPU key features.The features may various and different from different part number of i.MX8M series MPU.Please refer to the data-sheets for detail.

Feature	i.MX 8M Quad/Quad Lite i.MX 8M Dual
Main CPU	2x or 4x Cortex-A53 @ 1.3 GHz, 1MB L2
Micro-controller	Cortex-M4 266MHz
DDR	x16/x32 LPDDR4/DDR4/DDR3L
GPU	GC7000Lite (4 shaders)OpenGL ES 2.0/3.0/3.1, Vulkan, OpenCL 1.2
Display Features	4K HDR, DCSS, LCDIF
Display Interfaces	1x MIPI-DSI, HDMI 2.0a Tx (ARC) t
HDR	HDR10, HLG, Dolby Vision
Video Decode	4Kp60 HEVC H.265, VP9, H.264
Video Encode	[S/W 1080p30 H.264 uses 3x A53]
Audio Interface	6x SAI (10Tx + 14Rx external I2S lanes): Each lane up to 24.576MHz BCLK (32-bit, 2-ch 384KHz, up to 32-ch TDM); DSD512
Camera Interface	2x MIPI-CSI (4-lanes each)
USB	2x USB3.0 Type C
PCIe	2x PCIe 2.0
Ethernet	1x GbE
SDIO/eMMC	2x SDIO/eMMC
I2C	4
SPI	3
SPDIF	2
Process	TSMC 28HPC
Packages	17x17mm, 0.65p
Temperature	-40°C to 105°C (Tj)

Table 1-2 NXP i.MX8M MPU Key Features

2.Hardware Characteristics

2.1 CPU Characteristics

2.1.1 i.MX 8M Overview

The i.MX 8M family of applications processors based on Arm® Cortex®-A53 and Cortex-M4 cores provide industry-leading audio, voice, and video processing for applications that scale from consumer home audio to industrial building automation and mobile computers.

- Video quality with full 4K UltraHD resolution and HDR (Dolby Vision, HDR10, and HLG)
- Highest levels of pro audio fidelity with more than 20 audio channels each @384KHz
- DSD512 audio capability
- Optimized for fan-less operation, low thermal system cost, and long battery life
- Flexible memory options
- The newest high-speed interfaces for flexible connectivity
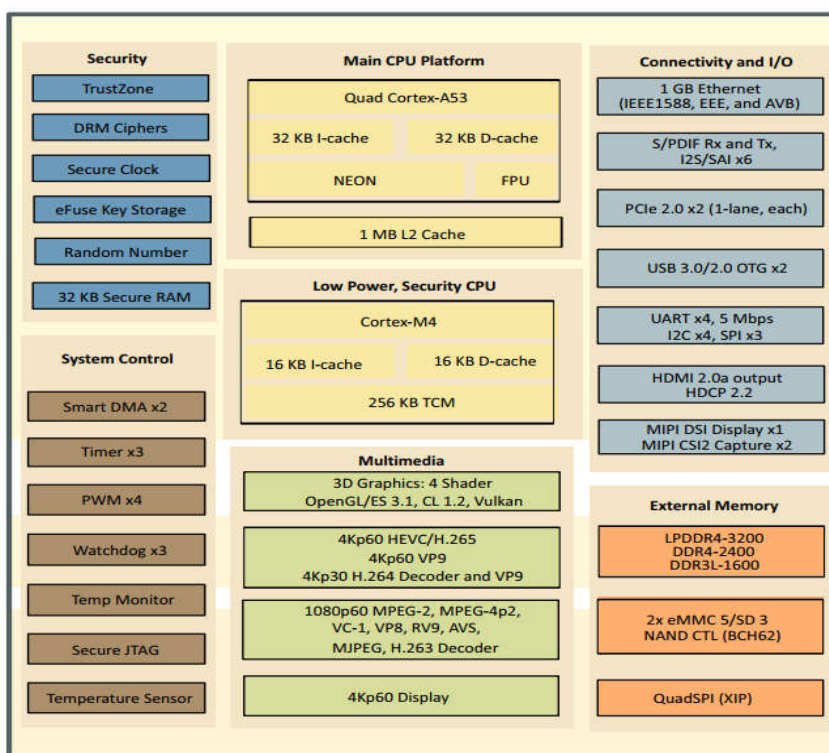- Fully supported on NXP's 10 and 15-year Longevity Program

Figure 2-1 i.MX8M System Block Diagram

For more information on i.MX8M, please visit the following website：

https://www.nxp.com/products/processors-and-microcontrollers/arm-based-processors-and-mcus/i.mx-applications-processors/i.mx-8-processors/i.mx-8m-family-armcortex-a53-cortex-m4-audio-voice-video:i.MX8M?lang=en&lang_cd=en&

2.2 Board Resource

The MYC-JX8MX is based on NXP i.MX8M Quad processor featuring 1.3GHz quad ARM Cortex-A53 cores and a real-time ARM Cortex-M4 co-processor. It is a minimum system integrated with CPU, LPDDR4, eMMC, QSPI Flash, GigE PHY and PMIC. All controller signals are brought out through one 0.5mm pitch 314 Pin MXM 3.0 Expansion Connector. It is a Linux-ready ARM SoM ideal for your next embedded design.
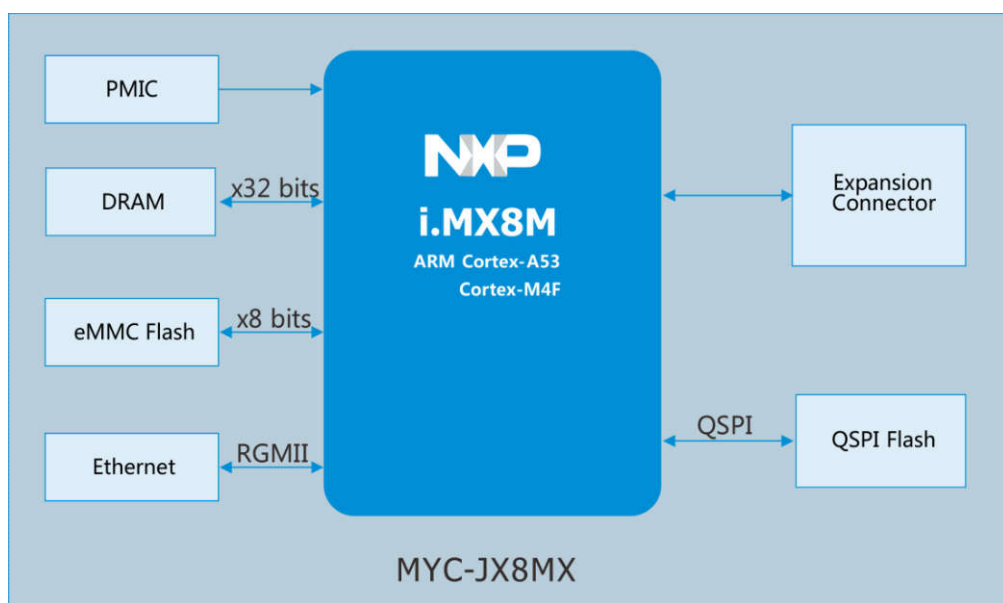

Figure 2-2 MYC-JX8MX CPU Module Function Block

Function	Parameter	Configure
CPU	Standard MIMX8MQ6CVAHZAB, Other follow-up options	Optional
LPDDR4	Standard 1 1GB(MT53D256M32D2DS) Standard 2 2GB(MT53D512M32D2DS)	Optional
Qspi Flash	Standard 256Mb (W25Q256JVEIQ)	Optional
eMMC	Standard 8G，capacity optional	Optional
Ethernet	10M/100M /1000M PHY	Standard
Expand IO Connector	GPIO x 108	Standard

Table 2-1 Board Resource

2.3 Hardware Design of MYB-JX8MX

MYB-JX8MX is an extended baseboard matched with MYC-JX8MX core board, powered by 12V/2A DC, equipped with LCD (10.1-inch single-channel LVDS interface screen or 21.5-inch double-channel LVDS interface screen or MIPI-DSI interface screen), dual cameras, four-way USB 3.0 interface, Ethernet, WIFI+BT, 4G module, audio, TF card, HDMI, three-way serial port, ESPI interface, M.2 interface, IO expansion and other functions.：
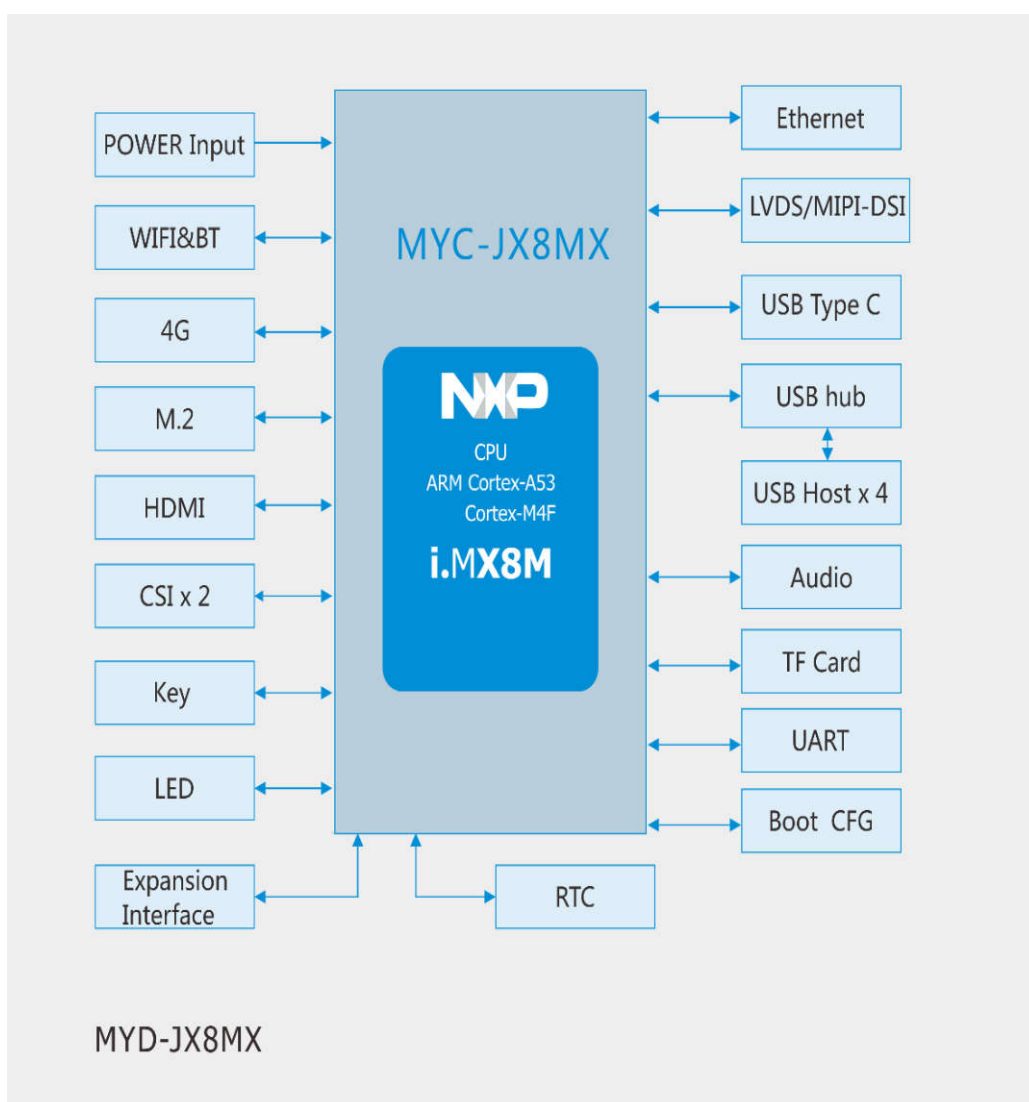

Figure 2-3 MYD-JX8MX Resource peripherals

3. Interfaces

3.1 Board to Board Connector（314 Pin Connector）

MYC-JX8MX Core board and bottom board are connected by 314 Pin Connector. AS0B821-S78B-7H from Foxconn is used in our base board MYB-JX8MX board for reference. And please refer to the data-sheet for details.
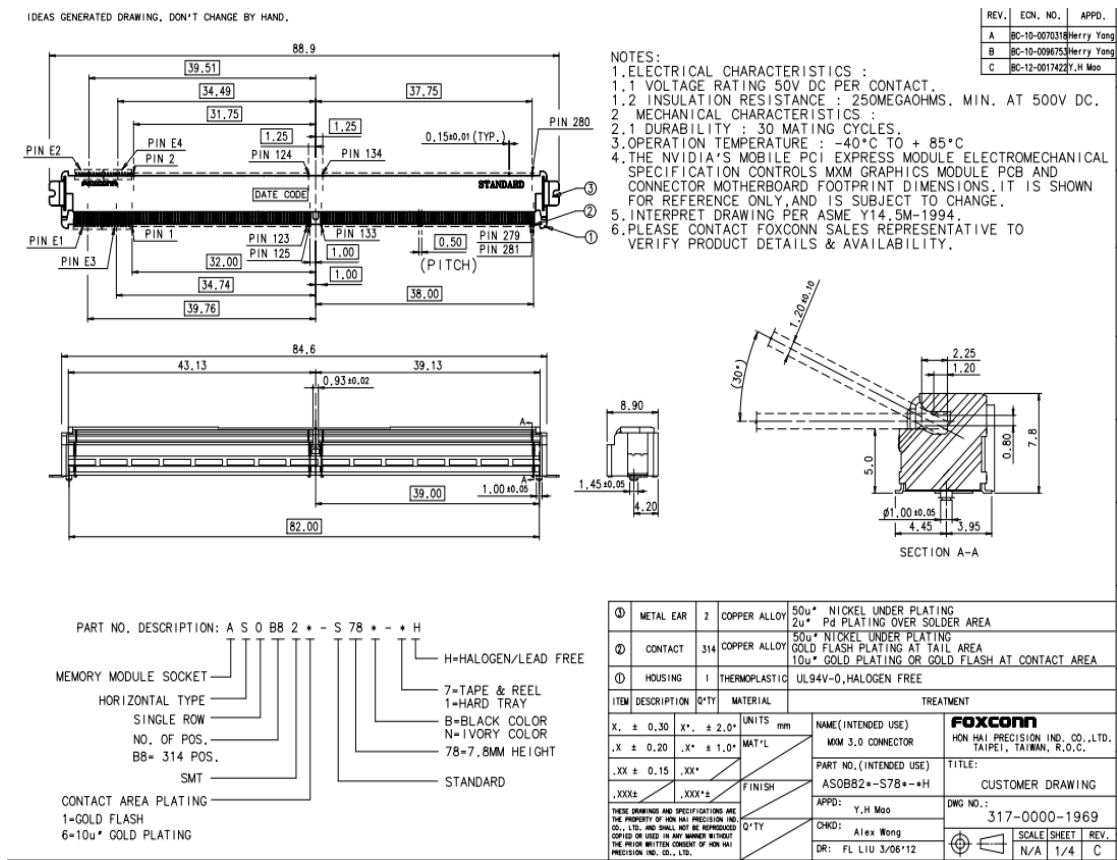

Figure 3-1 Specification of AS0B821-S78B-7H

3.2 Pin Definition Table

The description of the pin definition of MYC-JX8MX can be found on the attached *<MYC-JX8MX CPU Module Pin Definition Table>*.

3.3 Peripheral Interfaces of Expansion Board

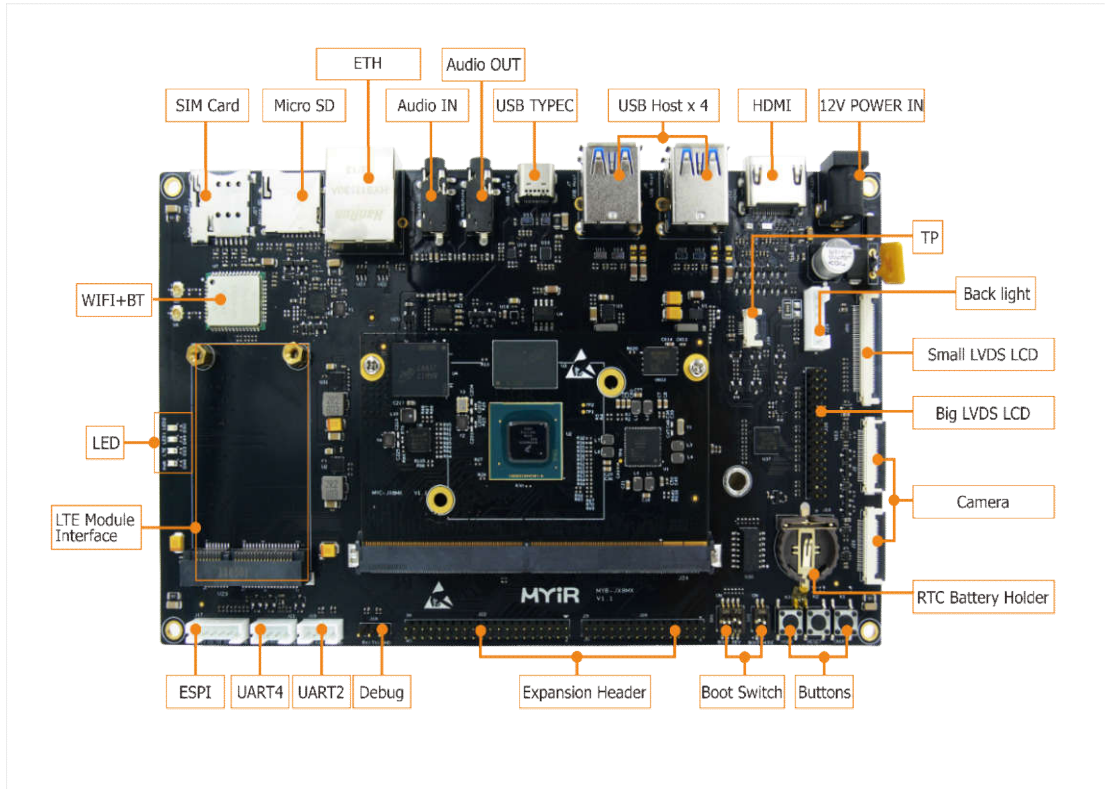The MYB-JX8MX has abundant interface resources, which are distributed as follows：
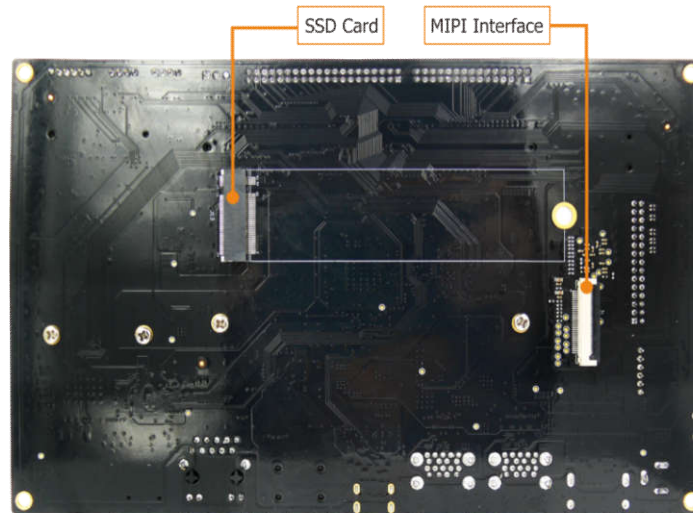

Figure 3-2 Top View of MYD-JX8MX

Figure 3-3 MYD-JX8MX Backside Interface

Detailed description is as follows：

Function	Designator	Description
Board to Board	J24	Connector for MYC-JX8MX and MYB-JX8MX
Power input	J1	12V DC input，2.1mm Head
Camera1	J2	MIPI interface input，24Pin 0.5mm FPC Lower contact seat
Camera2	J26	MIPI interface input，24Pin 0.5mm FPC Lower contact seat
Ethernet	J11	10/100/1000Mbps PHY
Debug UART	J18	Debug UART 3.3V level
USB TYPE C	J8	USB Type C Host or Device
USB Host	J6	Dual USB Host，Type A Connector
	J7	Dual USB Host，Type A Connector
TF Card	J27	4 bit Micro SD card interface
TP	J38	Capacitance Touch Interface，6Pin 0.5mm FPC Lower contact
RTC	J16	CR1225 Backup battery
LCD	J20	Single LVDS，default 1280x800 resolution ratio（10.1 inch screen）40Pin 0.5mm FPC Lower contact seat
	J30	Dual LVDS，default 1920x1080 resolution ratio（21.5 inch screen）30PIN 2.0MM Double-row headrest
Audio	J9	3.5mm phone output
	J10	3.5mm line in
Buttons	K1	ON/OFF key
	K2	Reset key
	K3	User key
LED	D48	Power LED
	D50	Run LED
	D49	User LED
	D23	LTE LED
4G module	U29	Mini PCI-E USB LTE module
SIM card	J25	SIM card
BT antenna	U5	SMA BT antenna
WIFI antenna	U6	SMA WIFI antenna
Expansion Header	J28	30pin 2.0MM Needle seat, including SPDIF,I2C,JTAG etc.signal
	J22	40pin 2.0MM Needle seat，including GPIO
	J17	6pin 2.0MM header External connection ESPI
	J21	4pin 2.0MM header External connection UART4
	J19	4pin 2.0MM header External connection UART2
	J29	6pin 2.0MM header External backlight
	J38	6pin 0.5MM header External touch screen
DSI	J3	30PIN 0.5MM FPC Lower contact
M.2	J13	M.2 Interface 2280 for SSD of PCIE-NVME Protocol

Table 3-1 MYB-JX8MX Interface

4. Hardware Design

4.1 Hardware Design of CPU Module board

Please refer to product manual of MYC-JX8MX for hardware details of MYC-JX8MX CPU module.

4.2 Hardware Design of MYB-JX8MX

4.2.1 Power

The MYB-JX8MX is powered by 12V. The whole circuit includes seven voltage thresholds: 12V, 5V, VDD_3V3, VDD_LTE, VDD_M2, VDD_1V8 and 3V (RTC) power supply. The power supply topology is as follows：
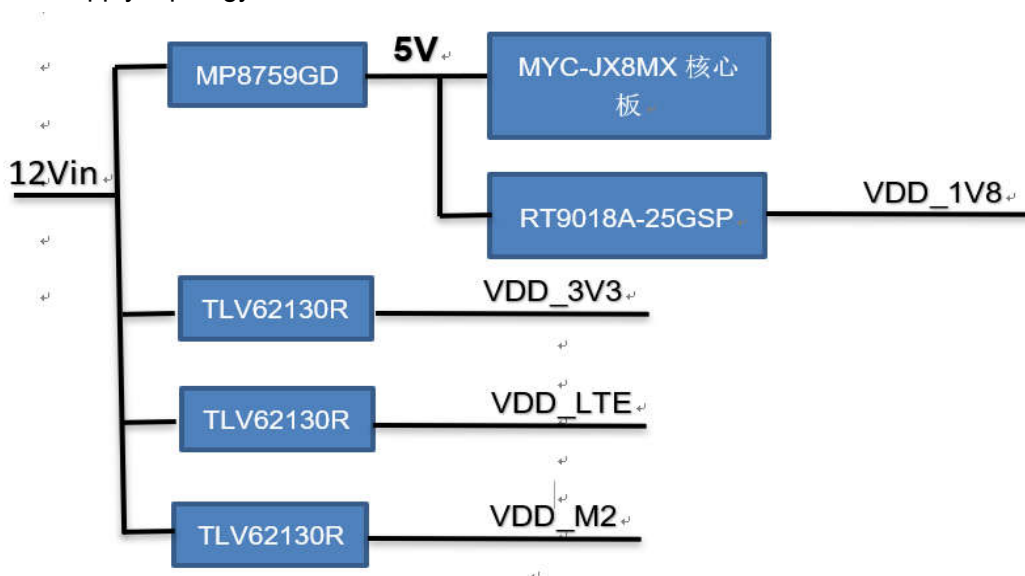

Figure 4-1 power supply tree

The DCDC chip MP8759GD with maximum output current of 8A is selected for 12V to 5V. The DCDC chip TLV62130 with maximum output current of 3A is selected for 12V to VDD_3V3, 12V to VDD_LTE and 12V to VDD_M2. DCDC can provide relatively high power conversion efficiency and reduce the power consumption of the whole board. LDO is chosen for 5V to 3.3V. LDO can provide smaller ripple. RTC battery input is an optional power input.

4.2.2 Boot device configure switch

The boot process begins at Power On Reset (POR) where the hardware reset logic forces the ARM core to begin execution starting from the on-chip boot ROM. Boot ROM code uses the state of the internal register BOOT_MODE[1:0] as well as the state of various eFUSEs and/or GPIO settings to determine the boot flow behavior of the device.

BOOT_MODE is initialized by sampling the BOOT_MODE0 and BOOT_MODE1 inputs on the rising edge of POR_B, These values decide the start up mode of the CPU.Please refer the boot mode as bellow：

Table 8-1. Boot MODE Pin Settings

BOOT_MODE[1:0]	Boot Type
00	Boot From Fuses
01	Serial Downloader
10	Internal Boot
11	Reserved

Table 4-1 Boot Mode Pin setting

- Boot From Fuses mode：The Boot information is read from internal Fuses, NXP recommends the use of this mode in mass production.

- Serial Down-loader mode：It supports downloading programs from USB_OTG1 port to Flash. It should be noted that UART1 and UART2 have higher priority than USB_OTG ports in this mode. If the serial Down-loader module checks that the data will not enter the USB burning mode, the computer can not detect the device, and Mfgtools can not be used.

- Internal Boot mode：Boot configuration bits from GPIO, and NXP is recommended for development mode. But in this mode, there is no need to write Fuse (one-time programming, not erasable), it is convenient to modify the start up mode, many users are directly used for mass production.

BOOT_MODE0 and BOOT_MODE1 pins have been pulled up through 10K resistance inside the core board.
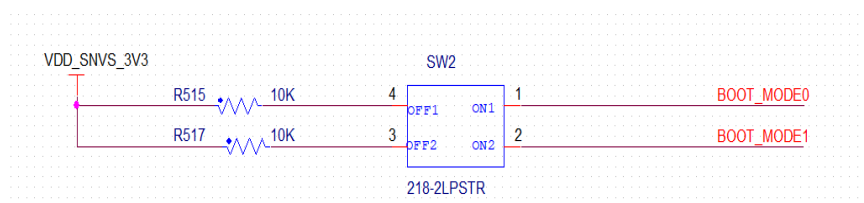

Figure 4-2 start up mode configuration

The CPU is usually set to internal Boot mode in the development stage. In this mode, the CPU detects the level state of the processors SAI1_TXD2, SAI1_TXD4, SAI1_TXD5, SAI1_TXD6 pins to decide the starting device when it is powered on and reset.

Booting configuration from eMMC:

Device / Pin	eMMC(SDIO2) Boot
SAI1_TXD2	OFF
SAI1_TXD4	OFF
SAI1_TXD5	ON
SAI1_TXD6	OFF

Table 4-2 Booting from eMMC

Booting configuration from SD card：

Device / Pin	SD Card(SDIO1)Boot
SAI1_TXD2	ON
SAI1_TXD4	ON
SAI1_TXD5	OFF
SAI1_TXD6	OFF

Table 4-3 Booting from SD Card

4.2.3 Ethernet

There is an Ethernet PHY circuit be equipped in the CPU module MYC-JX8MX,it simplifies the Ethernet circuit design in the base board.AR8035-AL1B-R from Qualcomm is used in the CPU module.

The connection diagram of ETH1 is as follows. U22 and U23 are ESD protection devices.
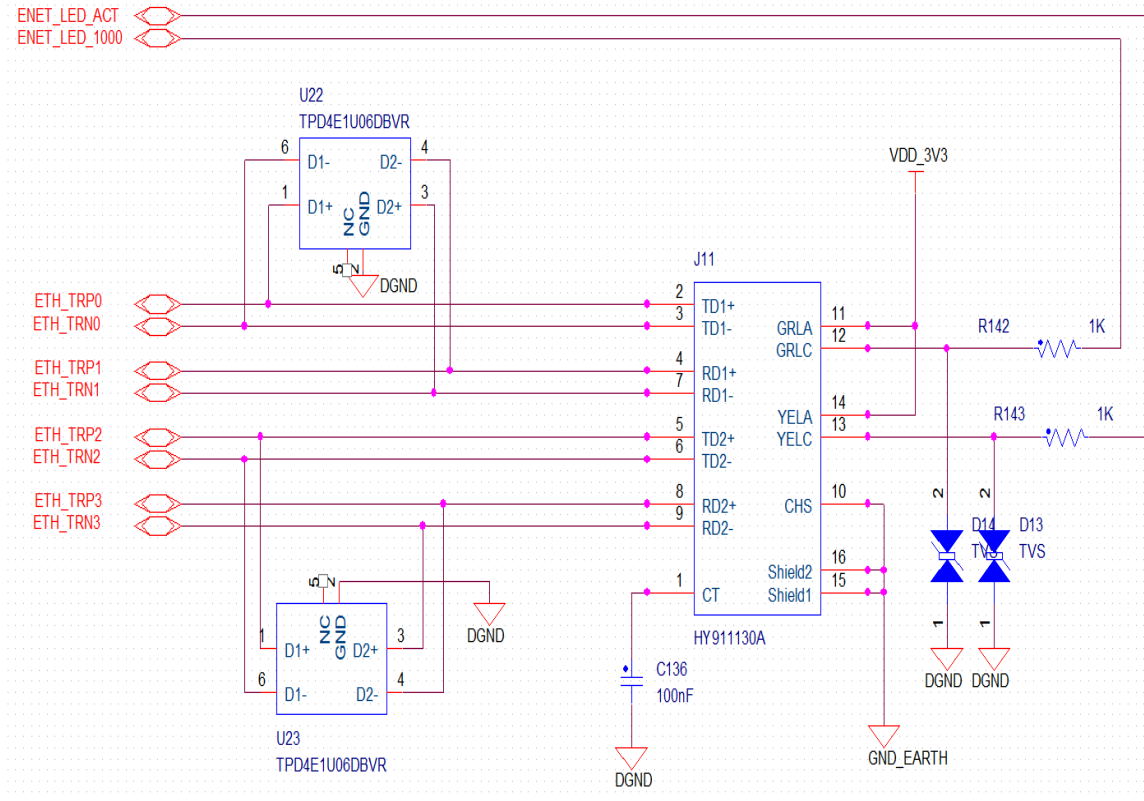
Figure 4-3   Ethernet

4.2.4 USB 3.0

The i.MX8M CPU are equipped with two USB 3.0 controllers. MYB-JX8MX can be used as a device or a Host by switching one of them directly to the USB Type-C connector. The other uses Microchip's USB5806-I/KD USB Hub chip to extend five USB Host ports. Four of them are directly linked to the USB Type A connector and the other is linked to the USB signal in the Mini PCIE connector for 4G LTE connection.

The USB Type-C interface is designed as follows. With the USB Type-C connector, the power state can be automatically switched according to the connected device.
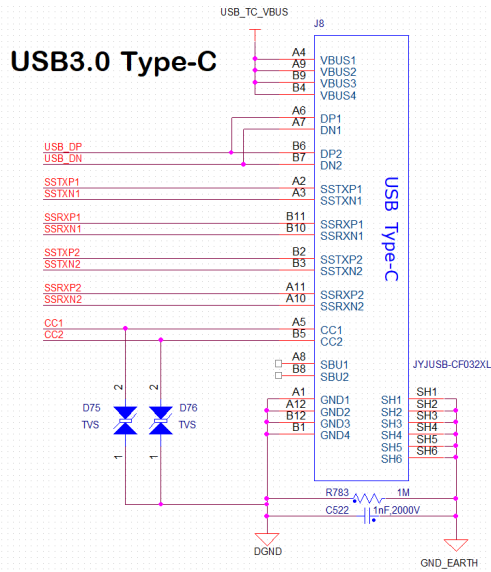
Figure 4-4　USB Type-C

The USB Hub circuits are designed as follows：
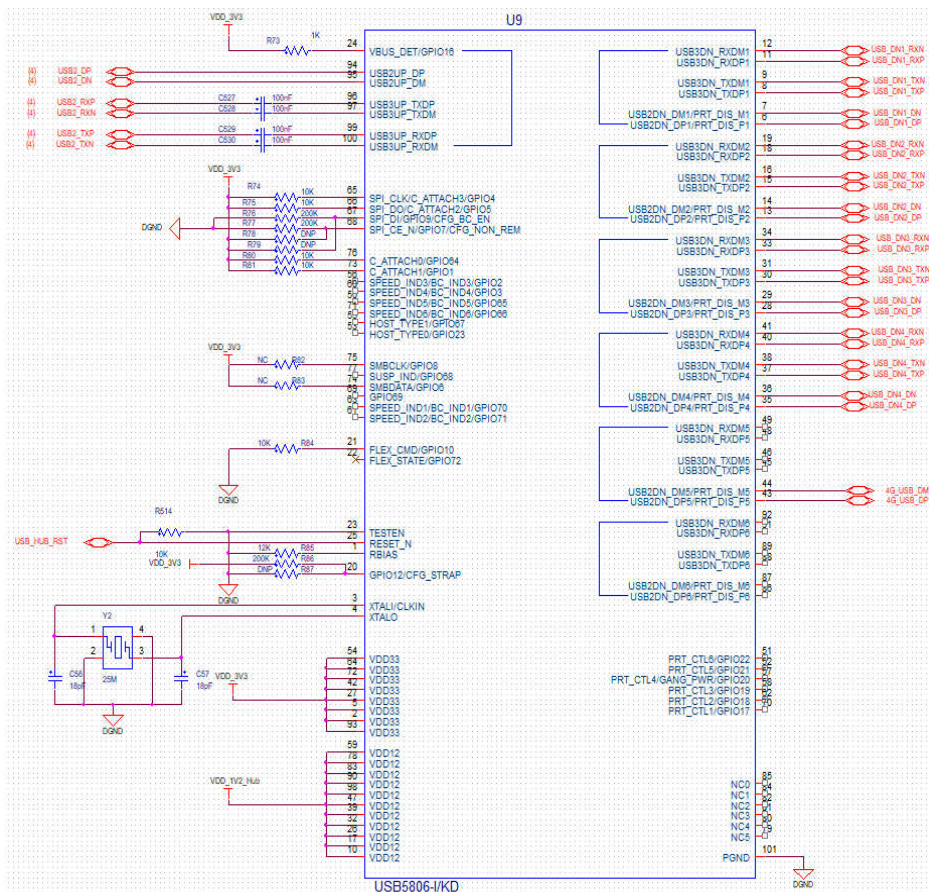
Figure 4-5 USB Hub circuits

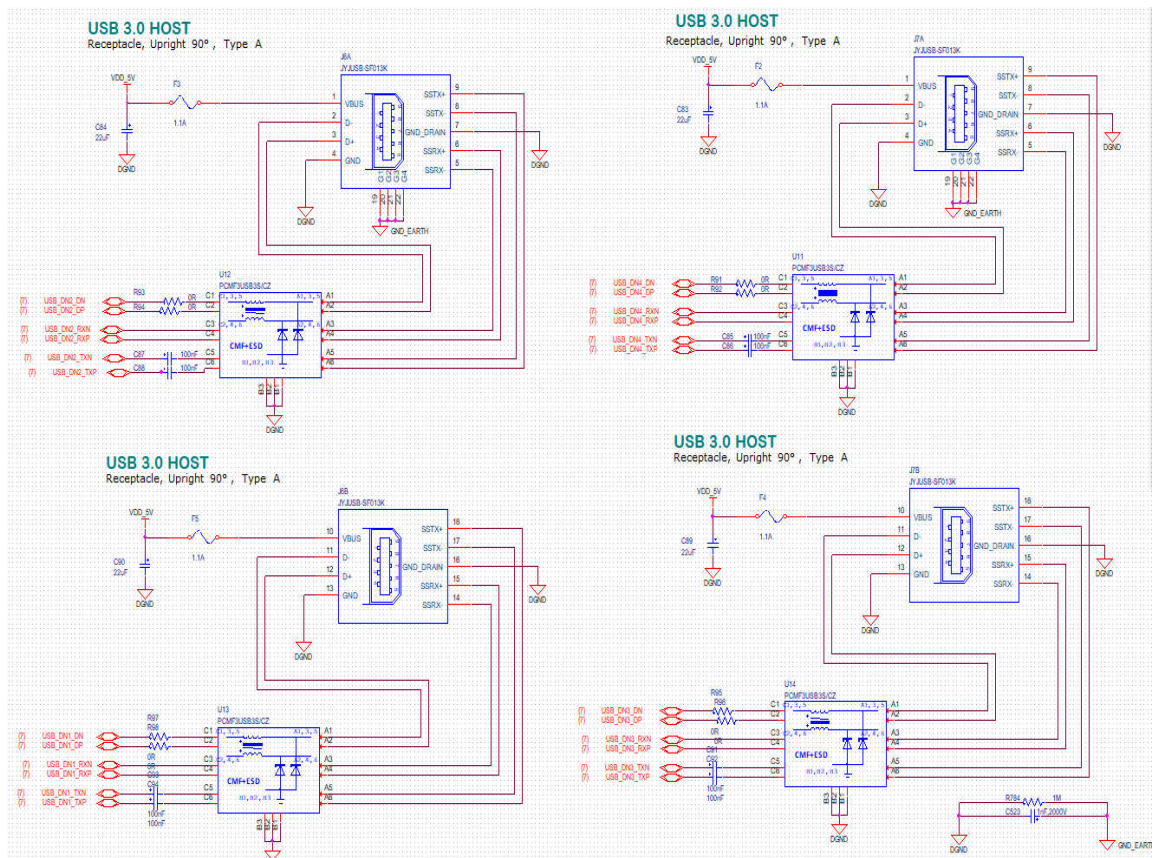USB Host circuit design is as follows：

Figure 4-6   USB Host

4.2.5 LTE module

MYB-JX8MX reserved a LTE module interface to support general 4G LTE Mini PCI-E modules. MYB-JX8MX development board provides Linux driver support and code samples based on EC20 LTE module of Shanghai Telecommunication. AAA-PCI-047 Mini PCI-E connector from LOTES is used in our base board design.

Modules and plates are fixed with copper pillars and have good seismic resistance. The module is powered by 3.8V power supply. The USB terminal of LTE module on board is connected to the third port of USB Hub. Detailed connections are as follows:
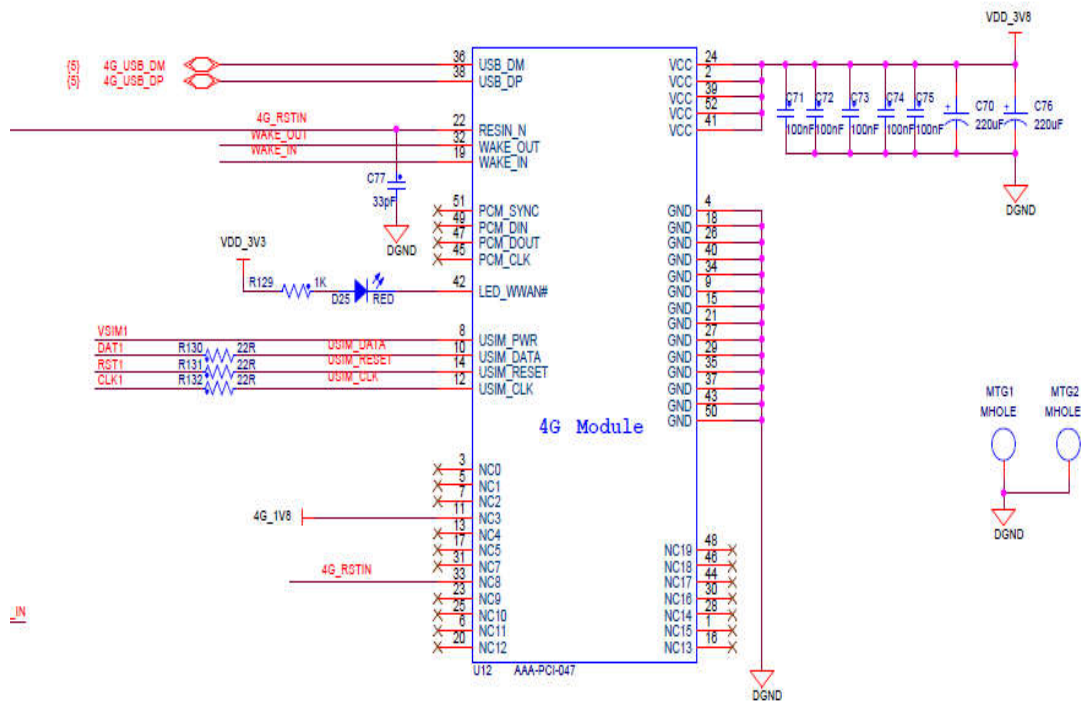
Figure 4-7 LTE module

To accompany with the LTE module, MYB-JX8MX is equipped with a flip-able SIM card.

The schematic diagram is as follows：
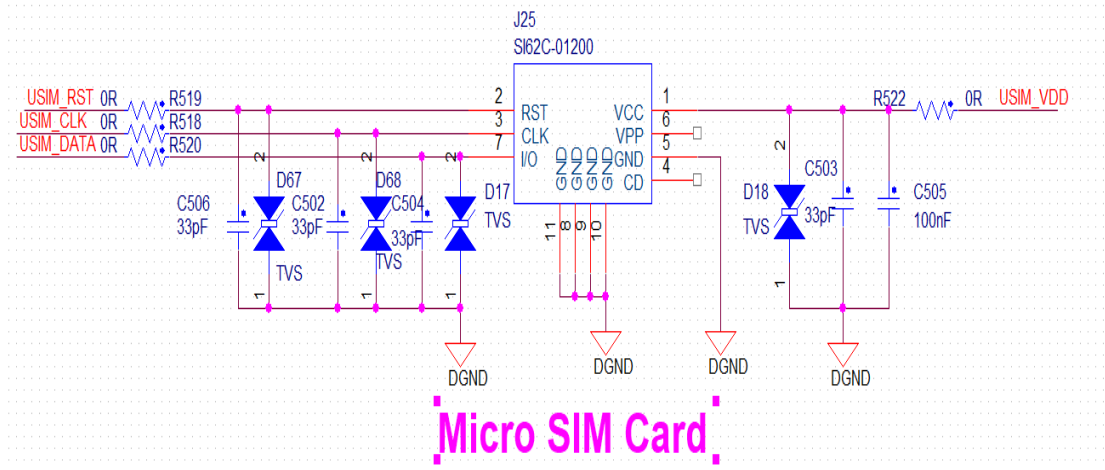

Figure 4-8 SIM Card

4G antenna can be connected to the antenna interface of LTE module through I-PEX, and then extend out of board.

4.2.6 Audio

MYB-JX8MX uses audio chip WM8904CGEFL/V to expand a 3.5mm headset output and an audio linear input. The I2S signal of WM8904CGEFL/V is connected to the SAI2 controller of the processor, and the I2C terminal is connected to the I2C2 interface. The circuit structure is shown in Figure 4-9:
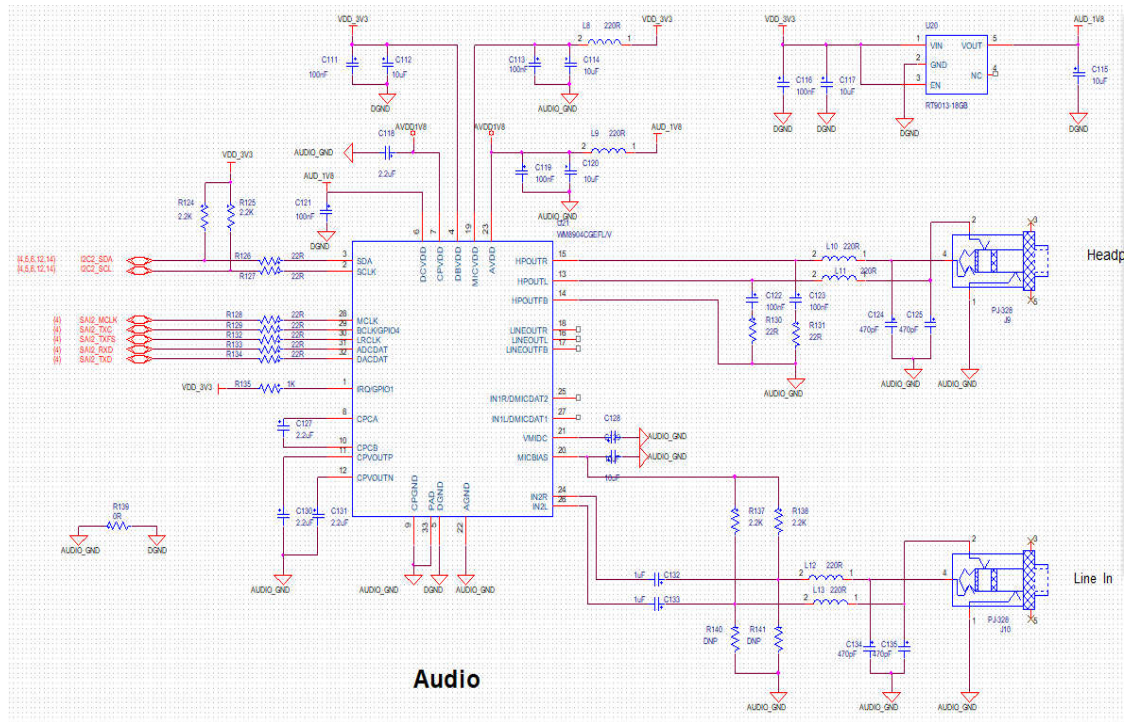

Figure 4-9 Audio Circuit

4.2.7 WIFI/BT

At present, owing to the shortage of WIFI/BT module 8274B-PR in the market, the model of WIFI/BT module on MYB-JX8MX board is the second choice. 8274B-PR can be replaced by 6222B-PRB. The hardware of the two modules is compatible (Pin to Pin). The peripheral circuit does not need to be adjusted. The difference is that the working temperature is different:

    Model: 6222B-PRB   working temperature is 0 C to 70 C.

    Model: 8274B-PR   working temperature is - 30 C to 85 C.

You choose different models according to your needs. The precondition is that the 8274B-PR market is in good supply.

MYB-JX8MX board contains a 2.4G/5G WIFI/BT module made by FN-LINK company based on RTL8822BEH chipset of Ruiyu company. The module processor interface is PCIE and serial port, supporting 802.11b/g/n. The standard SMA antenna interface is reserved on the board, which can be used with the attached WIFI antenna.

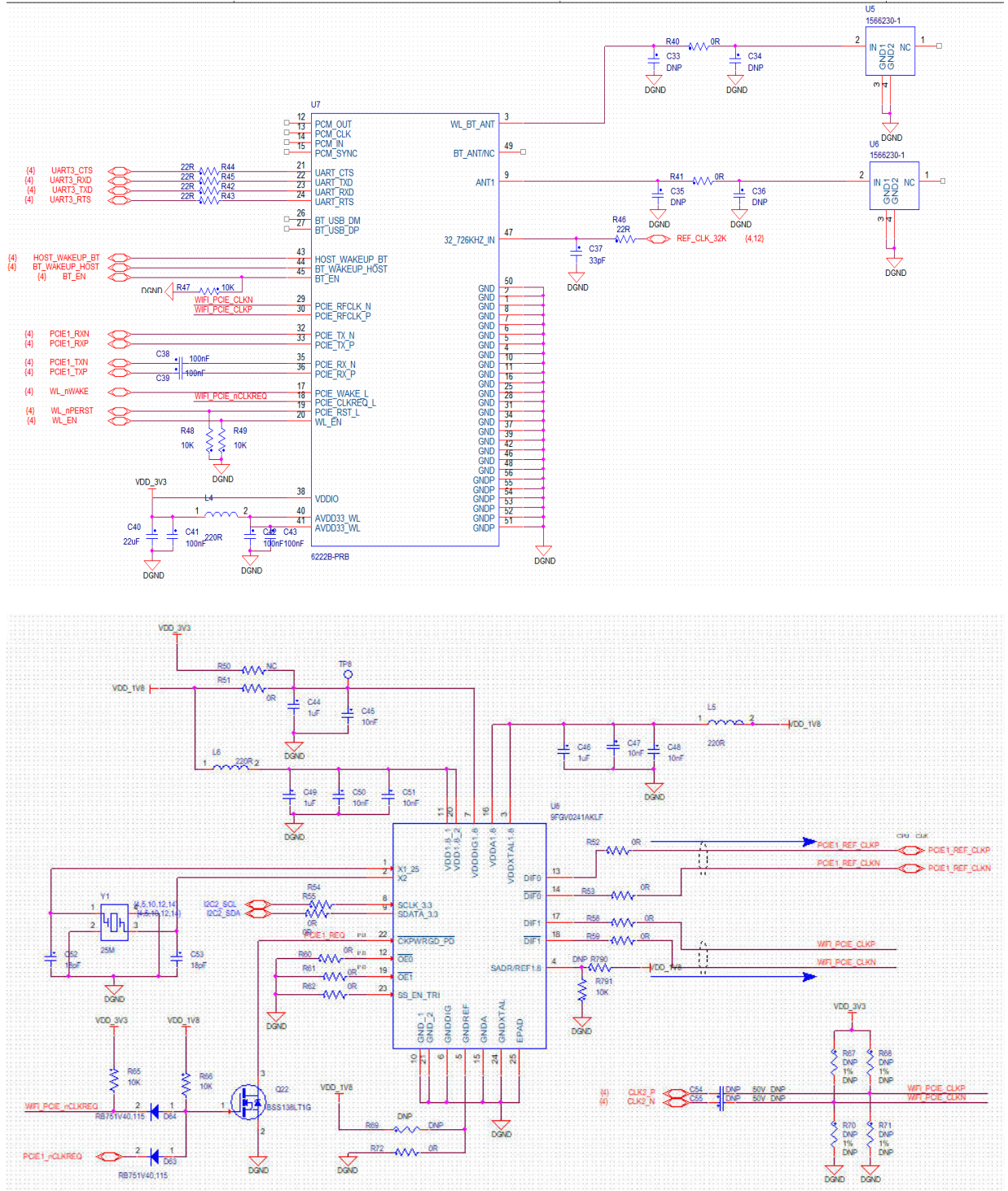See the design in the following figure for details：

Figure 4-10-1   WIFI/BT circuit

MYB-JX8MX board is equipped with a 2.4G/5G WIFI/BT module made with part number of 8274B-PR from FN-LINK. The module processor interface is PCIE and serial port, supporting 802.11b/g/n. The standard SMA antenna interface is reserved on the board, which can be used with the attached WIFI antenna.
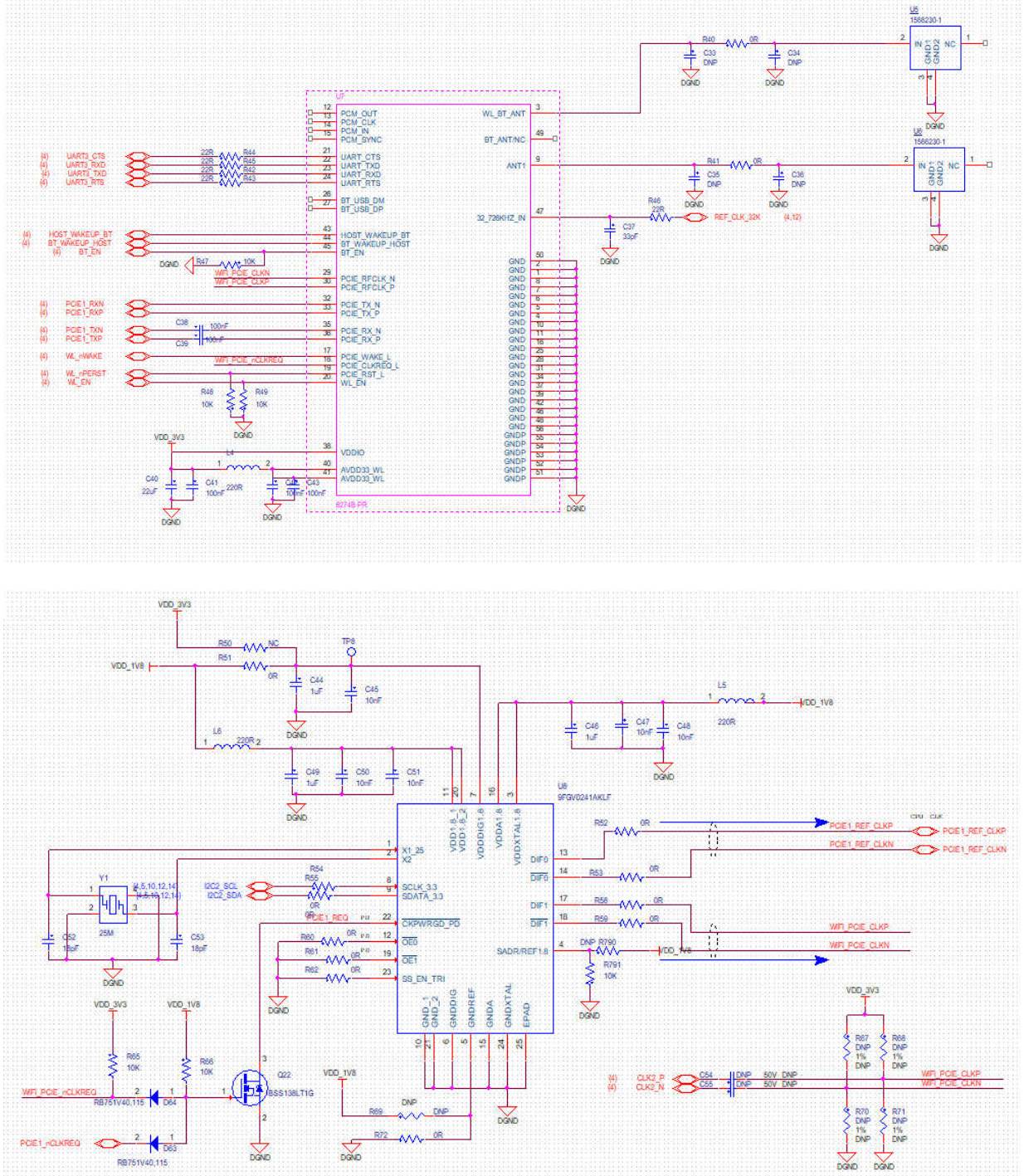
See the design in the following figure for details：

Figure 4-10-2　WIFI/BT circuit

4.2.8 Camera

The i.MX 8M processor supports two MIPI CSI interface cameras. The MIPI CIS is linked to 0.5MM FPC connector. Users can choose MY-CAM003M camera module of MYIR. Detailed information about MY-CAM003M camera module is accessible http://www.myirtech.com/list.asp?id=611 .

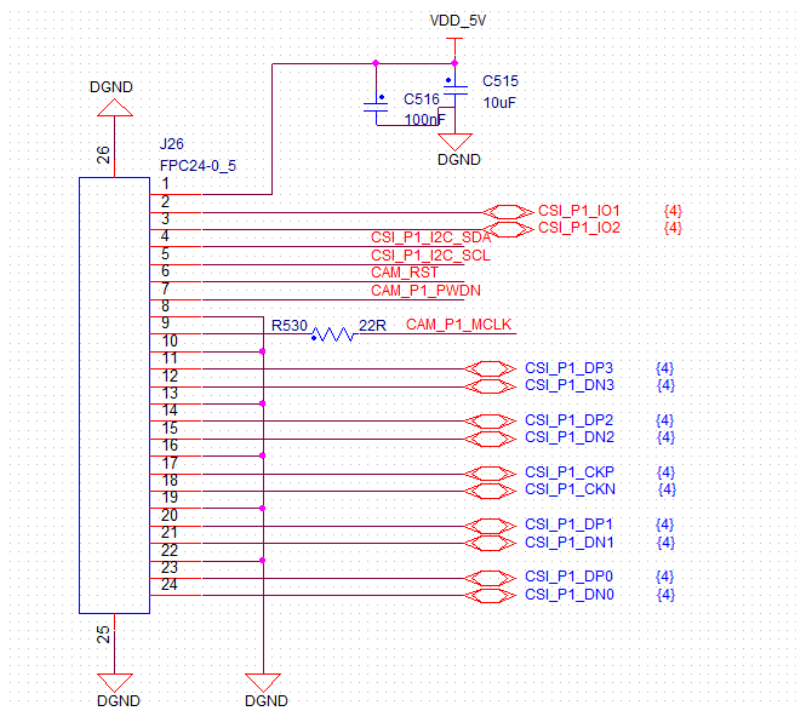The camera interface pin is defined as follows：
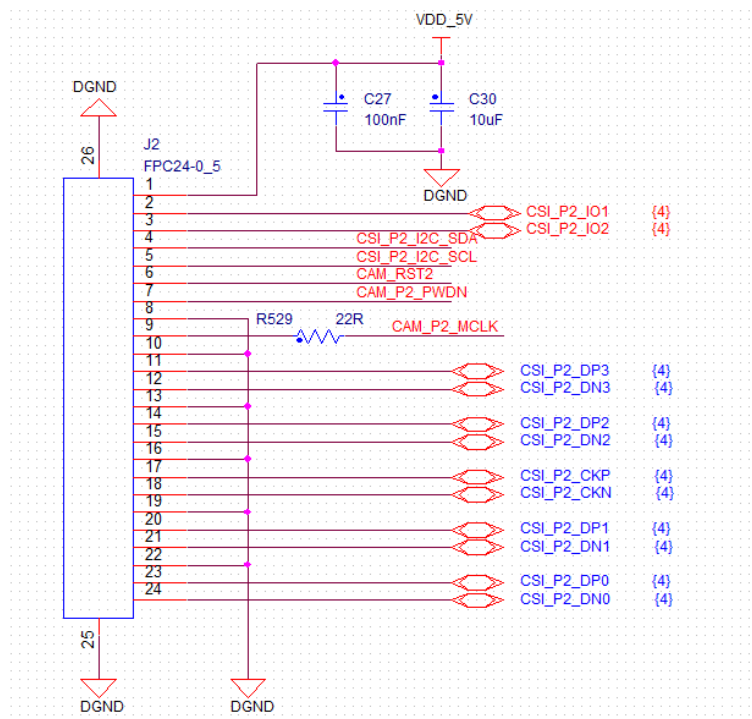

Figure 4-11　Camera interface 1

Figure 4-12　Camera interface 2

4.2.9 LVDS LCD Interface

The display of i.MX 8M processor is MIPI DSI interface, but MYB-JX8MX base board converts DSI signal to LVDS signal through Toshiba TC358775XBG silicon. The base board has two interfaces, J30 and J20. Note that the two interfaces can not be connected at the same time. J30 interface is a dual-lane LVDS signal, J20 interface is a single LVDS signal. The two interfaces are different and the software is different. Customers can choose according to their own needs.

MYIR has provided reference code as below :

- J30 interface supports 1920x1080 resolution (21.5 inch screen) by default,

- J20 interface supports 1280x800 resolution (10.1 inch capacity screen) driver by default. 10.1 inch single LVDS interface screen supports capacity touch screen, the interface circuit design is as follows.

Important Notice for J29(LVDS Back Lights Interface):

The J29 is the LVDS back-lights which provides 12V DC power. As the different LVDS screen supplier may has different definition on PIN order.It is very important that you look into the PIN order to make the LVDS back cable has the right connection.Otherwise ,it may damage the board or the LVDS screen in incorrect connection.
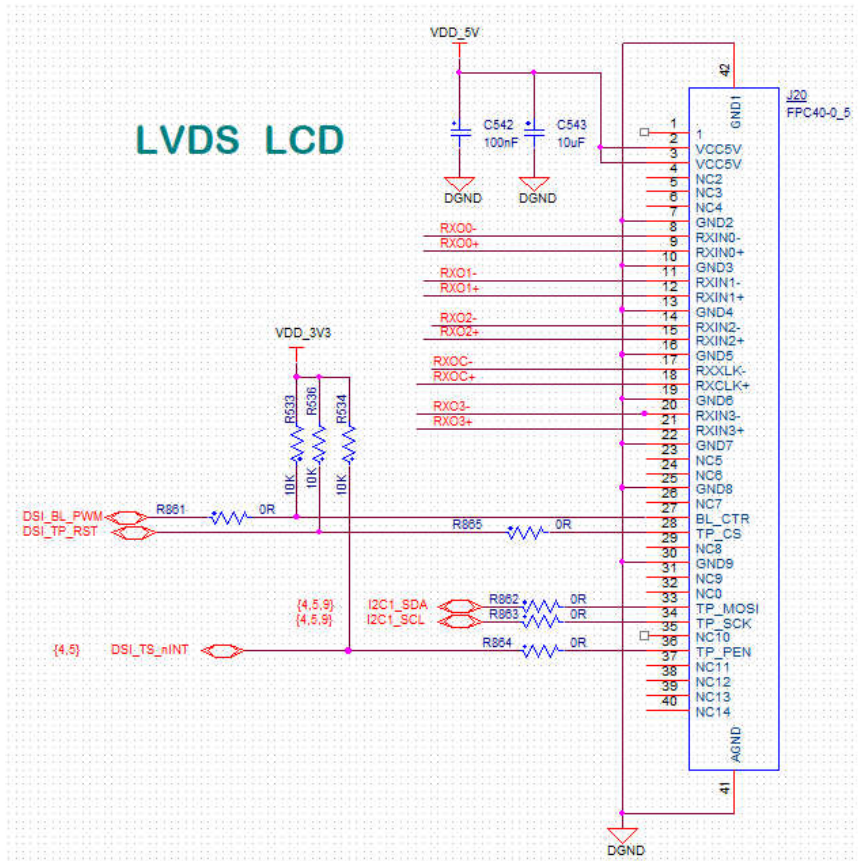

●

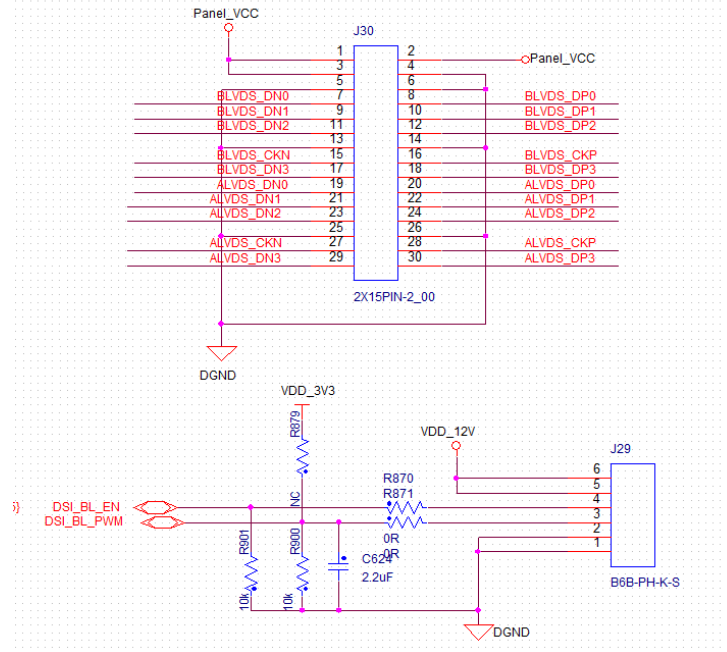Figure 4-13   Single LVDS Interface Screen and Capacitance Screen

Figure 4-14　Dual LVDS Interface Screen and Backlight Interface

4.2.10 UARTs

The i.MX 8M series processors provides up to 4 asynchronous serial ports. Due to the pin multiplexing of the silicon, the MYB-JX8MX CPU module offers three TTL levels, one of which is the three-line debugging serial port (J18,non-isolation); the other two are the 4Pin 2.0mm PIN-Header connector(J19&J21).

4.2.10.1 Debug Uart

MYB-JX8MX provides a debugging serial port for Linux and Android terminal debugging system. The debugging serial port adopts 3 Pins with 2.54 mm spacing. The standard level is 3.3V LVTTL. Users can use it with USB to UART. MILL TECHNOLOGY offers MY-UART012U. For more information, please visit the following website:

http://www.myir-tech.com/product/my_uart012u.htm
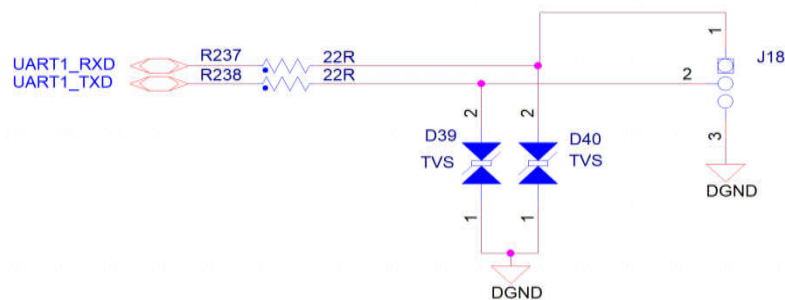
Figure 4-15   Debug Uart

4.2.10.2 External Two-way Serial Port

MYB-JX8MX provides two serial ports, which can be used as client peripheral module or MCU circuit to communicate and test serial ports using 4 Pins with 2.0 mm cables.

Figure 4-16 External Two-way Serial Port

4.2.11 M.2 interface

MYB-JX8MX carries a PCIE-NVME protocol SSD M.2 interface for 2280 SSD disk. SSD disk capacity is according to customer selection. Its circuit structure is shown in the following figure：
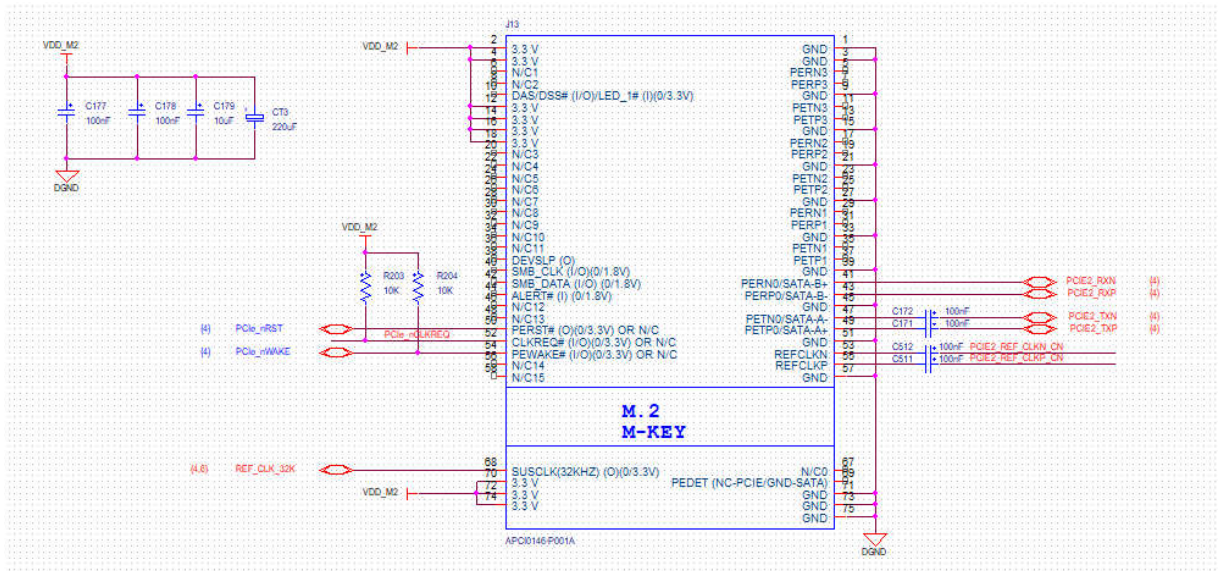
Figure 4-17   M.2 interface

4.2.12 RTC Backup battery
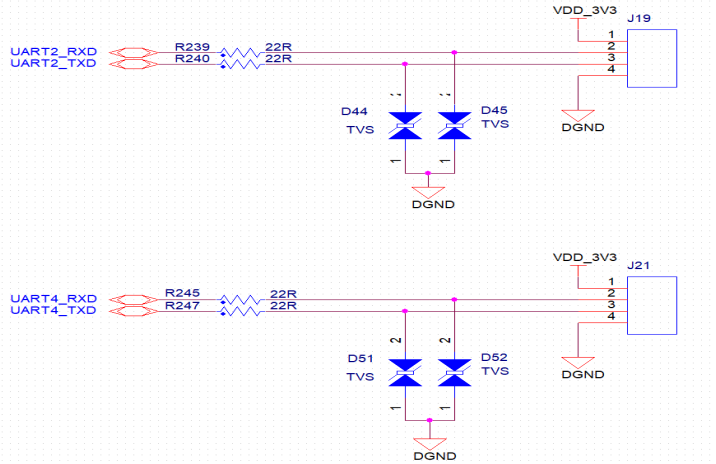
MYB-JX8MX is equipped with a backup battery holder that can work with CR1225 batteries . When the system is powered down, it can be used to supply the power of the operation of RTC. Its circuit   is shown as follow:
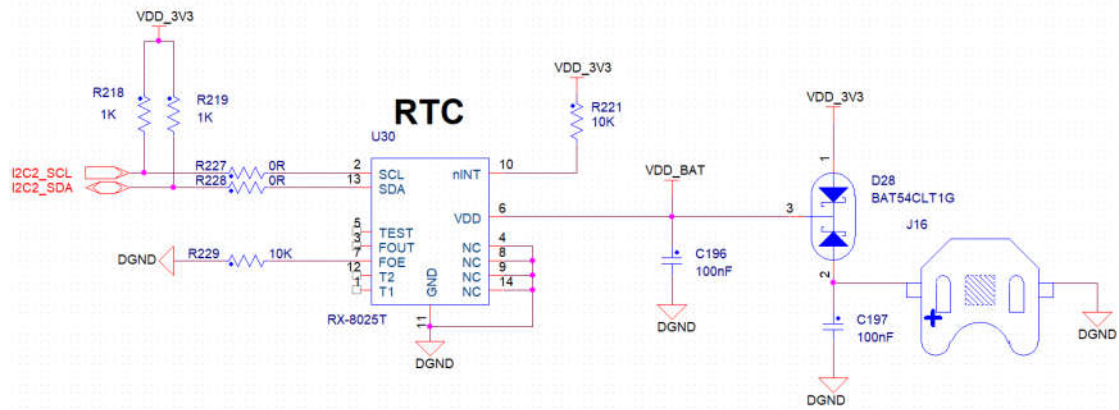
Figure 4-18 RTC Backup battery

4.2.13 Micro SD

The i.MX8M silicon is designed with two SD card controllers.

● SD2 is extended on board through standard Micro SD card holder, which can store start up information and start directly from TF card.

● SD1 is used to connect eMMC chips on the core board of eMMC. SD2 adopts 4Bit mode and the level standard is 3.3V.

The specific design is shown in the following figure:

Figure 4-19   Micro SD Card

4.2.14 Key and LED
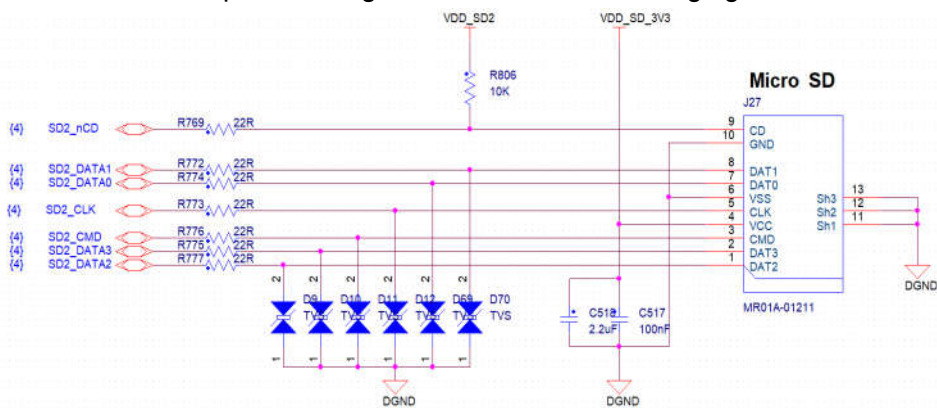
MYB-JX8MX provides three keys.

- K1 : The ON/OFF button, which can realize the function of the power switch of the system.
- K2: The system reset button, system will power off and restart, and reset.
- K3: The user-defined button, users can adjust the button function according to their own application needs.
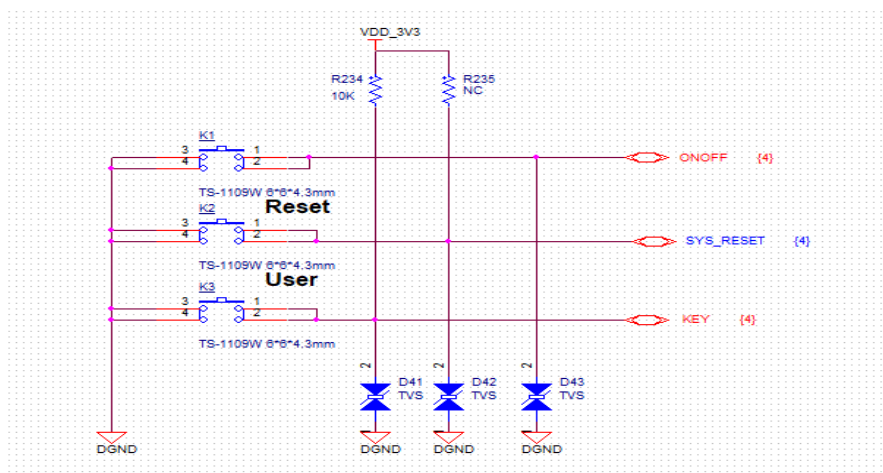
Figure 4-20 KEY

The MYB-JX8MX provides a user-set LED , which can be used to display system status

information according to their own needs. The schematic diagram is as follows:
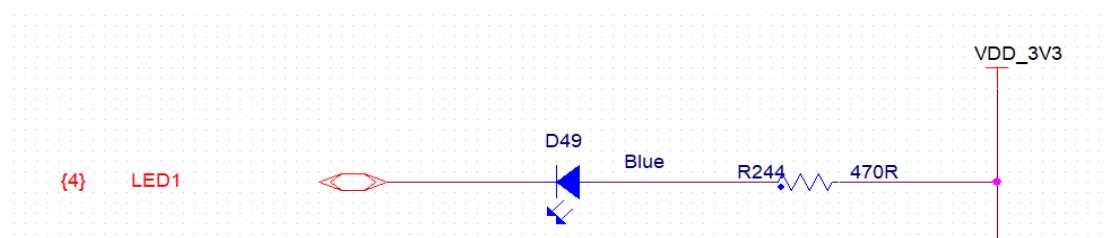
Figure 4-21   LED

4.2.15 Extended interface

The MYB-JX8MX provides a 2.0 mm of 40 pin row needle and a 2.0 mm distance of 30 pin row needle, all free GPIO has been drawn out, in addition, these GPIO can also be used to provide SPDIF, I2S, I2C and other general resources. It is convenient for users to connect with other devices. Specific pin definitions and schematic diagrams are as follows.
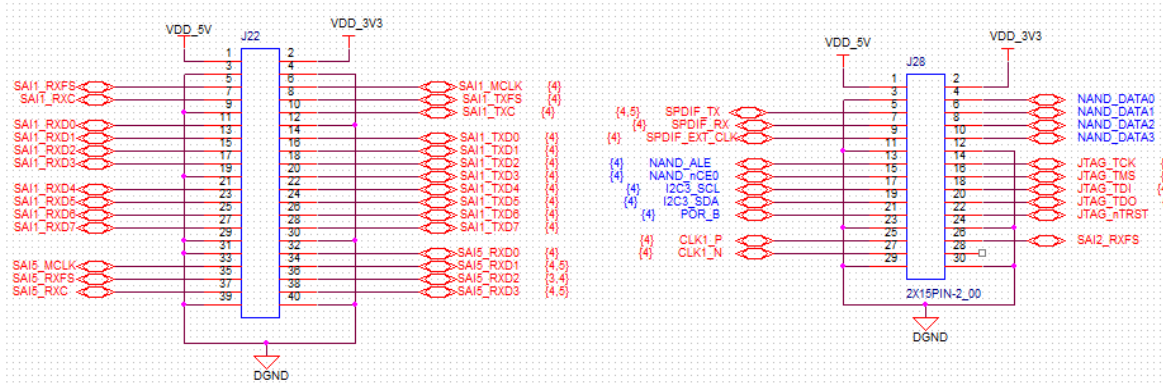
Figure 4-22   Extended interface

4.2.16 HDMI output

The i.MX8M processor outputs audio and video files directly through the HDMI seat (J12). Video playback: 4Kp60 high dynamic range (h.265, VP9), 4Kp30 (h.264), 1080p60 (MPEG2, MPEG4p2, VC1, VP8, RV9, AVS/AVS+, H.263 and DiVX) and MJPEG-8x8. D53, D72, D73 and D74 are ESD protection devices
 The specific design is shown in the following figure:
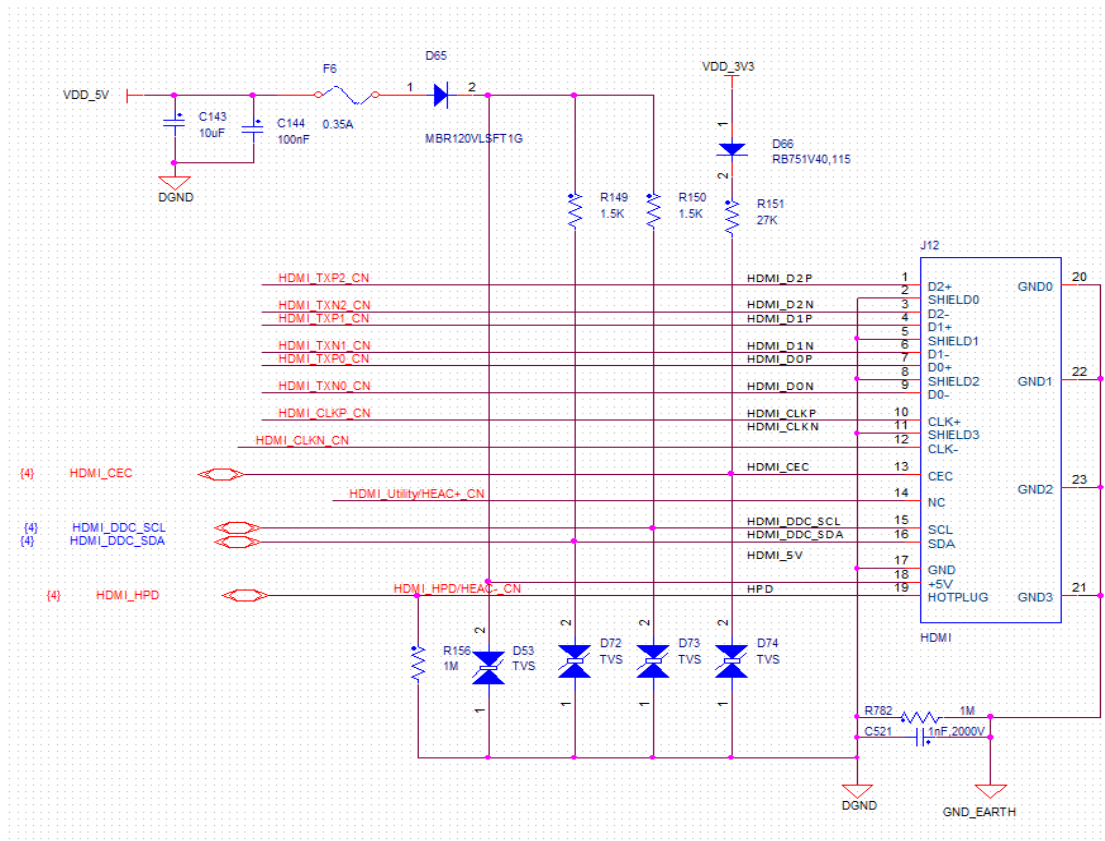
Figure 4-23 HDMI output

5. Electrical Parameters

5.1 Working Temperature

| Application Scenarios	Parameter				Des.
	Min	Nor	Max	Unit	
Commercial Grade	0	--	+70	℃	--
Extended Temperature Grade	-30	--	+80	℃	According to IC performance

Table 5-1 work temperature

5.2 GPIO DC Characteristics

Item	Lable	Parameter				Des.
		Min	Nor	Max	Unit	
Input High Voltage	V_{IH}	2.3	--	3.3	V	--
Input Low Voltage	V_{IL}	0	--	0.99	V	--
Output High Voltage	V_{OH}	3.15	---	--	V	--
Output Low Voltage	V_{OL}	--	--	0.15	V	--

Table 5-2 GPIO DC Characteristics

5.3 Power Supply Characteristics

Item	Lable	Parameter				Des.
		Min	Nor	Max	Unit	
12V Voltage	+12V	8	12	18	V	Main power input
12V Current	Iv12	---	0.5	---	A	---
RTC Voltage	VDD_BAT	2.4	--	3.6	V	---
RTC Current	IVDD_BAT	---	2.4	---	uA	---

Table 5-3 Power Supply Characteristics

6. Mechanical Data

- Interface type：314 Pin Connector（AS0B821-S78B-7H）

- Dimession:

  ◆ MYC-JX8MX：50 x82 mm

  ◆ MYB-JX8MX：110x 180mm

- PCB parameter：

  ◆ MYC-JX8MX：10-layer design, gold sinking process

  ◆ MYB-JX8MX： 6-layer design, gold sinking process
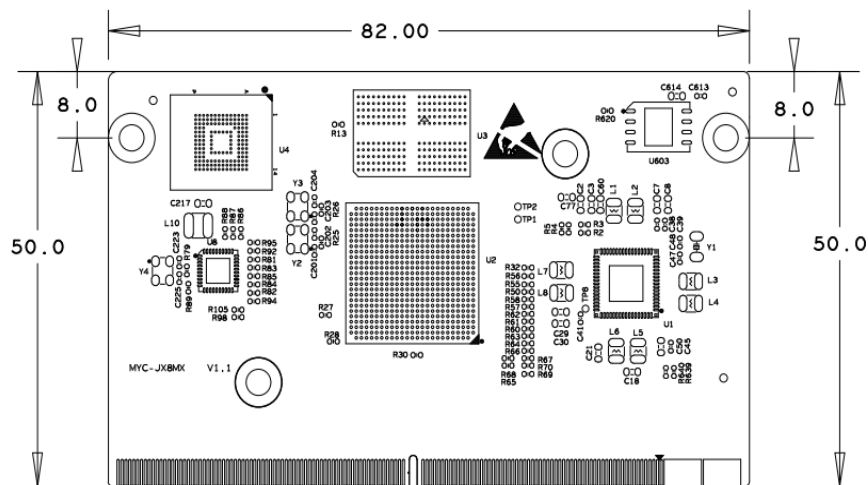
MYC-JX8MX Dimension (Unit:mm)：

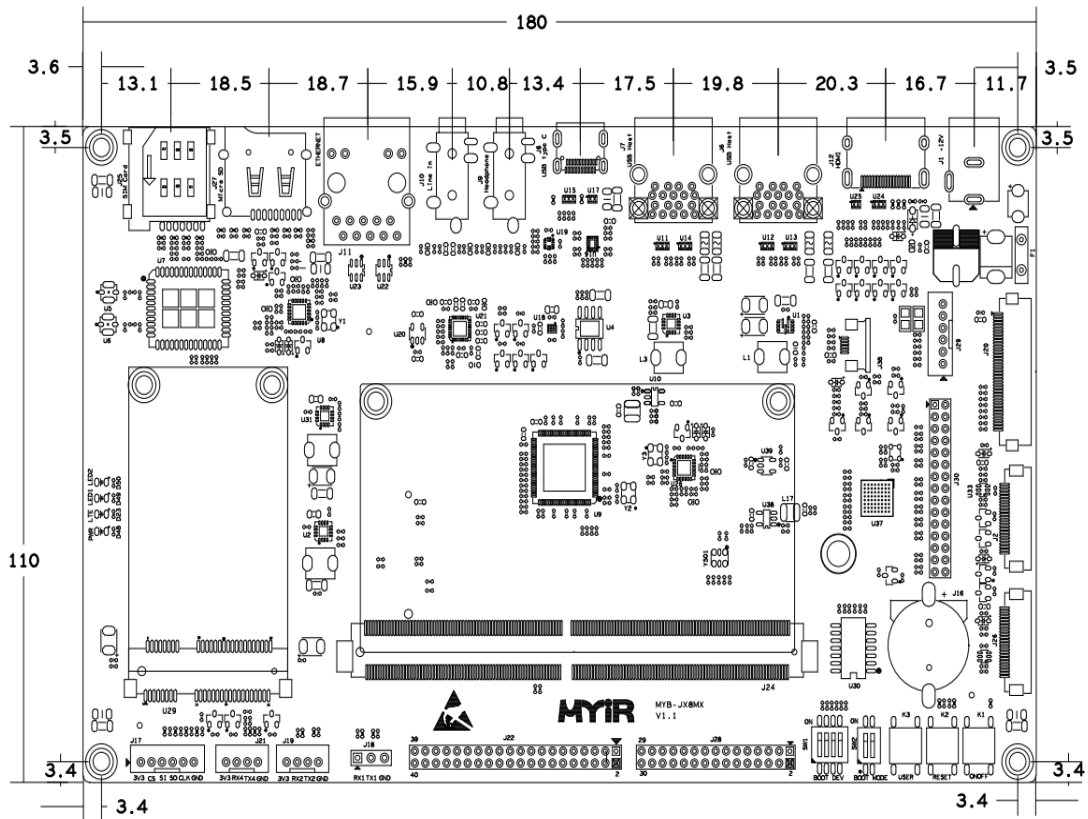Figure 6-1 MYC-JX8MX Size

MYB-JX8MX Dimension：

Figure 6-2 MYB-JX8MX Size

Note: For more detailed size information, please refer to MYB-JX8MX CAD mechanical file.

Appendix 1 Warranty & Technical Support Services

MYIR Tech 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 core board 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:
1. Technical support service

a)   MYIR offers technical support for the hardware and software materials which have provided to customers;
b)   To help customers compile and run the source code we offer;
c)   To help customers solve problems occurred during operations if users follow the user manual documents;
d)   To judge whether the failure exists;
e)   To provide free software upgrading service.

However, the following situations are not included in the scope of our free technical support service:
a)   Hardware or software problems occurred during customers' own development;
b)   Problems occurred when customers compile or run the OS which is tailored by themselves;
c)   Problems occurred during customers' own applications development;
d)   Problems occurred during the modification of MYIR's software source code.

2. 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:
a)   The warranty period is expired;
b)   The customer cannot provide proof-of-purchase or the product has no serial number;
c)   The customer has not followed the instruction of the manual which has caused the damage the product;
d)   Due to the natural disasters (unexpected matters), or natural attrition of the components, or unexpected matters leads the defects of appearance/function;

e) 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;

f) Due to unauthorized weld or dismantle parts or repair the products which has caused the damage of the products or defects of appearance;

g) Due to unauthorized installation of the software, system or incorrect configuration or computer virus which has caused the damage of products.

Warm tips:

1) 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.

2) Please do not use finger nails or hard sharp object to touch the surface of the LCD.

3) 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.

4) Do not clean the surface of the screen with chemicals.

5) Please read through the product user manual before you using MYIR's products.

6) 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.

3. Maintenance period and charges

a) 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.

b) 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.

4. 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.

5. 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

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

MYIR Tech Limited

Room 04, 6th Floor, Building No.2, Fada Road,

Yunli Intelligent Park, Bantian, Longgang District,

Shenzhen, Guangdong, China 518129

Support Email: support@myirtech.com

Sales Email: sales@myirtech.com

Phone: +86-755-22984836

Fax:+86-755-25532724

Website: www.myirtech.com