

# MYD-C8MMX Product Manual

**Version V1.1**

**2020.07.08**

## Version History

Version	Description	Date
V1.0	Initial version	2019.11.12
V1.1	J11 is a CSI of 24 PIN	2020.07.08

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# 1. Product Abstract

In recent years, with the rapid development of embedded and Internet of Things technology, various types of automatic equipment, intelligent sales, ticket sales and automatic service facilities, have gradually emerged in streets and office buildings, which are expected to lead the trend of modern shopping.

Based on Linux/Android system, high-definition video support, multiple wireless communication modes, multi-channel display support, high-performance computing embedded board has become the basic hardware platform of this kind of intelligent products.

In response to industry applications and customer needs, MYIR launched MYD-C8MMX development board, a development platform based on NXP company's i.MX 8M Mini chips, to meet the board requirements of this kind of high-performance products. The development board adopts the form of core board (MYC-C8MMX) and bottom board (MYB-C8MMX), and provides peripheral interfaces such as LVDS (or MIPI), camera input (CSI), 4G module expansion (with SIM card holder), WIFI/BT module, USB, serial port, etc. It also provides the complete software package of Linux and Android 8 as well as the supporting documentation. In order to help customers reduce the difficulty of development, accelerate product development, shorten the time to market products.

i.MX 8M Mini series application processors are based on ARM Cortex-A53 and Cortex-M4 cores. They have industry-leading audio, voice and video processing functions. They are suitable for wide applications ranging from consumer home audio to industrial building automation and mobile computers.

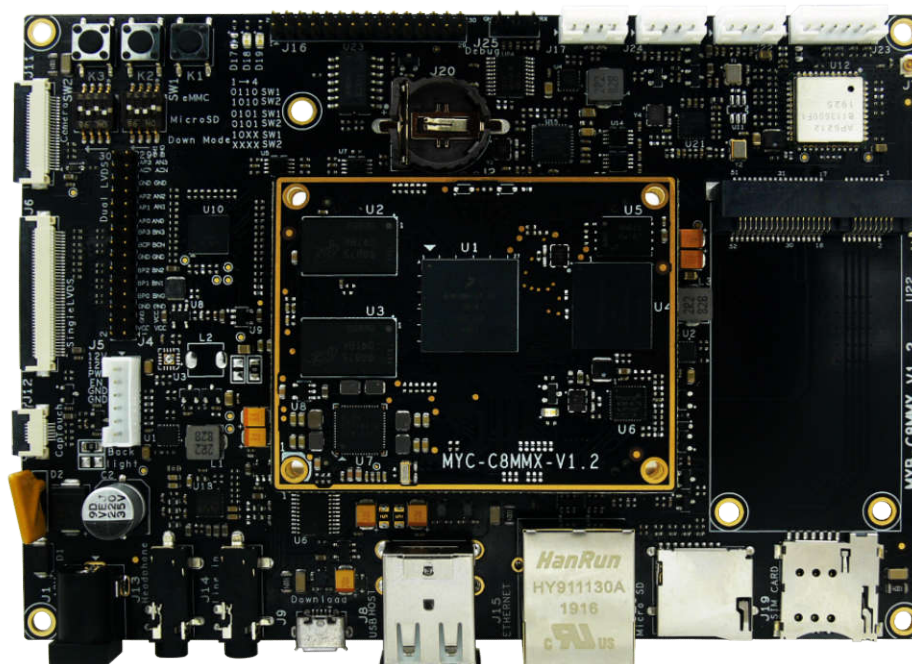


Figure 1-1 MYD-C8MMX Development Kit

The processor on MYC-C8MMX board is in FCPBGA486, which can be compatible with various models of i.MX 8M Mini Dual/8M Mini QuadLite/8M Mini Quad subsystem. There are some differences in resources between different types of processors. The standard version provides the following two configurations for users to choose

Product Model	MYC-C8MMQ6-8E2D-160-I	MYC-C8MMQ6-8E2D-180-C
Main Chip	MIMX8MM6CVTKZAA	MIMX8MM6DVTLZAA
Work temperature	-40°C - +85°C	0°C - 70°C
DDR	2GB DDR4	2GB DDR4
Memory	8GB eMMC	8GB eMMC

Table 1-1 MYC-C8MMX Ordering information

For volume production, MYiR provides selection and customization services such as main chips and memory.

Following is an introduction to the main functions of i.MX 8M Mini Dual/8M Mini Quad/QuadLite chips:

Feature	i.MX 8M Mini Quad/QuadLite i.MX 8M Mini Dual
Main CPU	2x or 4x Cortex-A53 @ 1.8GHz, 512kB L2
Microcontroller	Cortex-M4 400MHz
DDR	x16/x32 LPDDR4/DDR4/DDR3L

<b>GPU</b>	GC NanoUltra 3D (1 shader) + GC320 2 OpenGL ES 2.0
<b>Display Features</b>	LCDIF
<b>Display Interfaces</b>	1x MIPI-DSI
<b>Video Decode</b>	1080p60 HEVC H.265, VP8, H.264, VP9
<b>Video Encode</b>	1080p60 H.264 VP8
<b>Audio Interface</b>	5x SAI (12Tx + 16Rx external I2S lanes) Each lane up to 24.576MHz BCLK (32-bit, 2-ch 384KHz, up to 32-ch TDM); 4Tx + 4Rx support 49.152MHz BCLK for 768KHz
<b>Digital Mic Input</b>	8ch PDM DMIC input
<b>Camera Interface</b>	1x MIPI-CSI (4-lanes each)
<b>USB</b>	2x USB2.0
<b>PCIe</b>	1x PCIe 2.0
<b>Ethernet</b>	1x GbE
<b>SDIO/eMMC</b>	3x SDIO/eMMC
<b>I2C</b>	4
<b>Process</b>	Samsung 14LPC FinFET
<b>Packages</b>	14x14mm, 0.5p
<b>Temperature</b>	-40°C to 105°C (Tj)

Table 1-1 MYC-C8MMX Processor Resources

## 2. Hardware Characteristics

### 2.1 CPU Characteristics

#### 2.1.1 i.MX 8M Mini Series Processors

i.MX 8M Mini series processors are based on high performance, 2x or 4x Cortex-A53 + Cortex-M4 core processors. The processor runs at 1.8GHz and supports 16/32bit LPDDR4/DDR4/DDR3L. It integrates power management, security unit and abundant interconnection interface. It has high performance, low power consumption, flexible memory options, high-speed interface and industry-leading audio and video functions. It provides a secure and high performance solution for the application of the Internet of Things.

The structure diagram of i.MX 8M Mini is as follows:

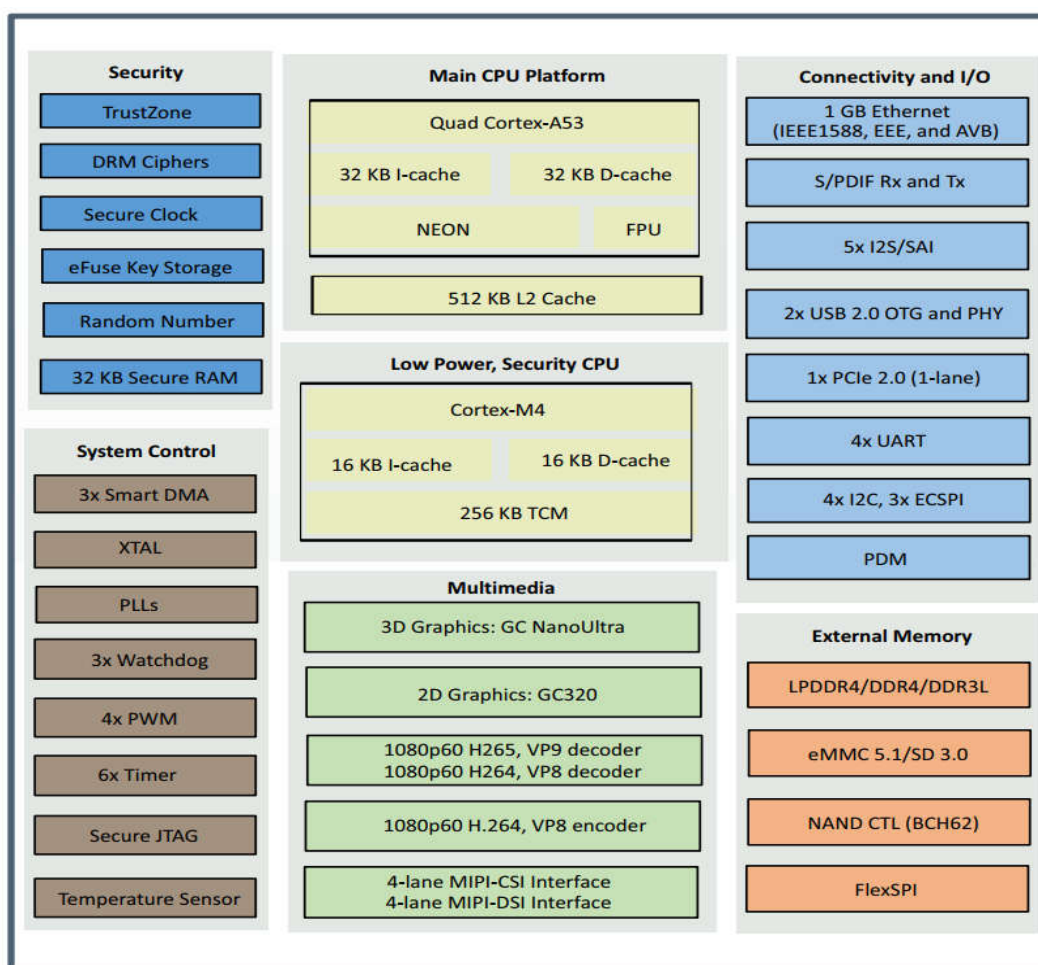


Figure 2-1 i.MX 8M Mini Functional Structural Diagram



For more information on i.MX 8M Mini, please visit the following website:

[www.nxp.com/products/processors-and-microcontrollers/arm-based-processors-and-mcu/s/i.mx-applications-processors/i.mx-8-processors/i.mx-8m-mini-arm-cortex-a53-cortex-m4-audio-voice-video:i.MX8MMINI](http://www.nxp.com/products/processors-and-microcontrollers/arm-based-processors-and-mcu/s/i.mx-applications-processors/i.mx-8-processors/i.mx-8m-mini-arm-cortex-a53-cortex-m4-audio-voice-video:i.MX8MMINI)

## 2.2 Board Hardware Resources

MYC-C8MMX CPU Module is designed with high-density and high-speed circuit board and compatible with i.MX 8M Mini Dual/8M Mini QuadLite/8M Mini Quad series. Processor, DDR4, eMMC, Ethernet, QSPI and PMU power management circuits are integrated on board of 49x60mm size. CPU Module and base board are connected by 2\*100PIN connectors, which are convenient to operate, stable and reliable, and have higher cost performance.

The structure is shown in Figure 2-2.

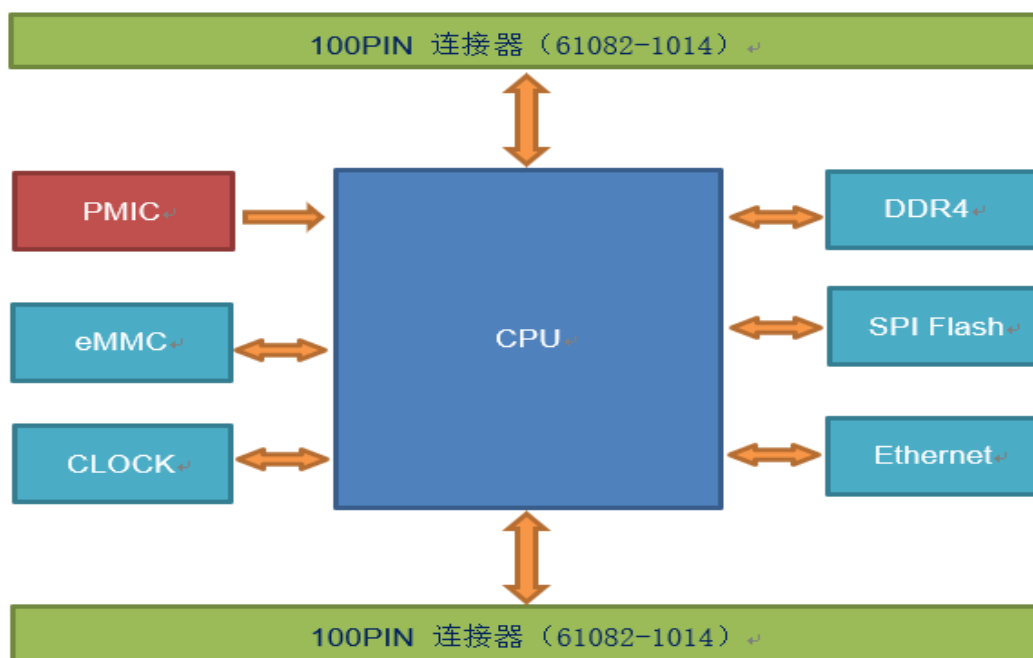


Figure 2-2 MYC-C8MMX CPU Module Structure

Function	Parameter	Configure
CPU	MIMX8MM6CVTKZAA MIMX8MM6DVTLZAA	Option
DDR4	Standard 2GB (MT40A512M16LY-062E)	Option
Qspi Flash	256Mb(MT25QU256ABA1EW9-0SIT)	Option
eMMC	Standard 8G	Option
Ethernet	10M/100M /1000M PHY	Standard
Expand IO Connector	GPIO x 103	Standard

Table 2-1 On-board resource

## 2.3 Expansion Board Resources

MYB-C8MMX is an extended baseboard matched with MYC-C8MMX core board, powered by 12V and 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), single-channel camera, USB2.0 interface, Ethernet, WIFI+BT, 4G module, audio, TF card, three-way serial port, ESPI interface, M.2 interface, IO expansion and other functions.

The composition and function list are as follows:

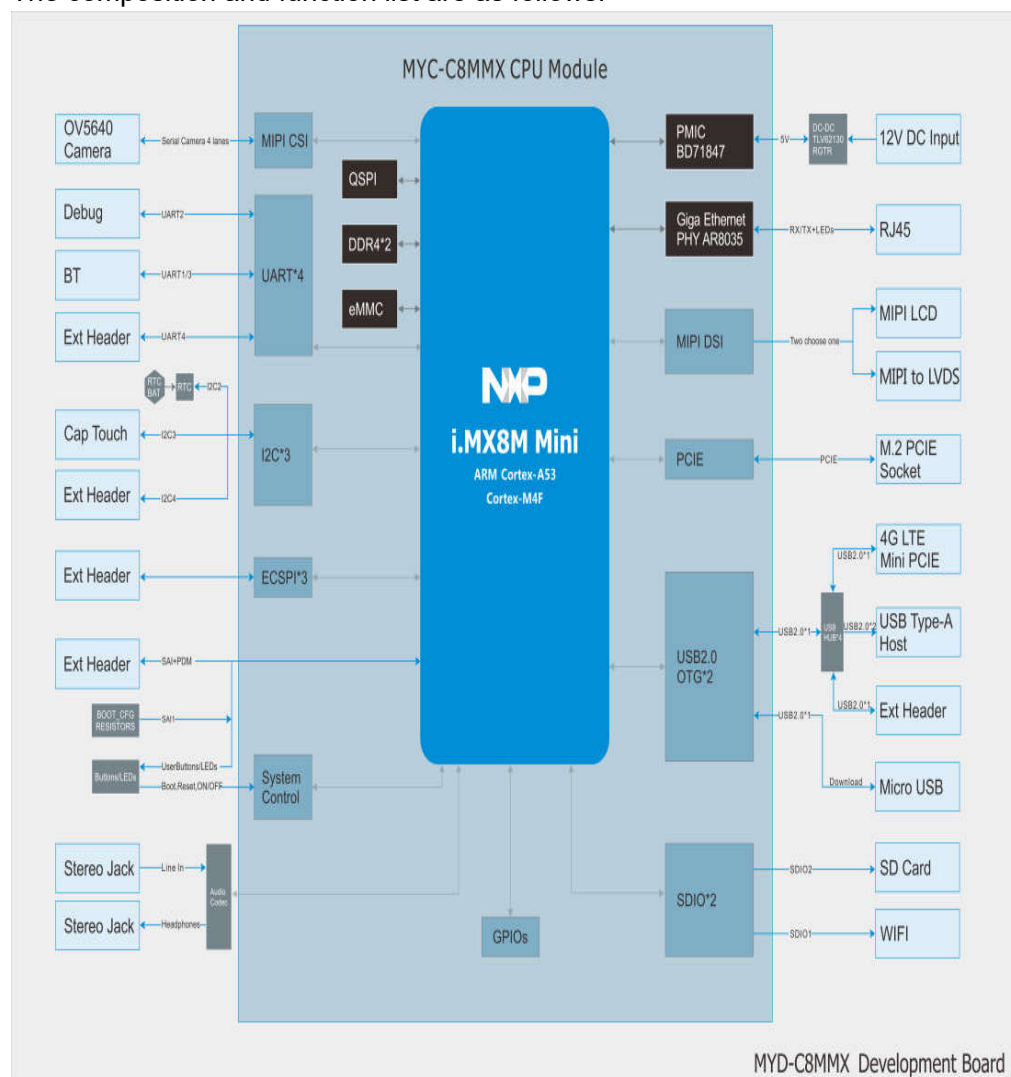


Figure 2-3 MYD-C8MMX Resource

## 3. Interfaces

### 3.1 Expansion Connector (2\*100PIN Connector)

MYC-C8MMX CPU Module and base board are connected by 2\*100PIN connectors. The part equipped on MYC-C8MMX is 61082-1014 from FCI.

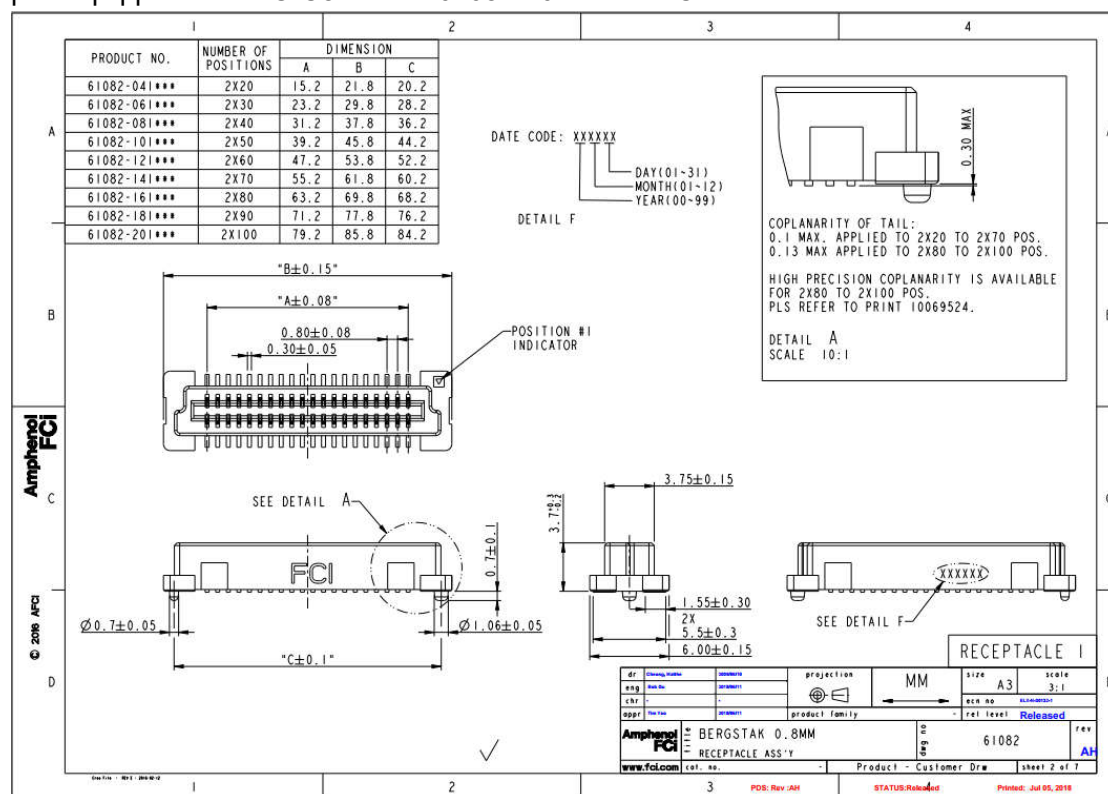


Figure 3-1 Connector of CPU Module 61082-1014

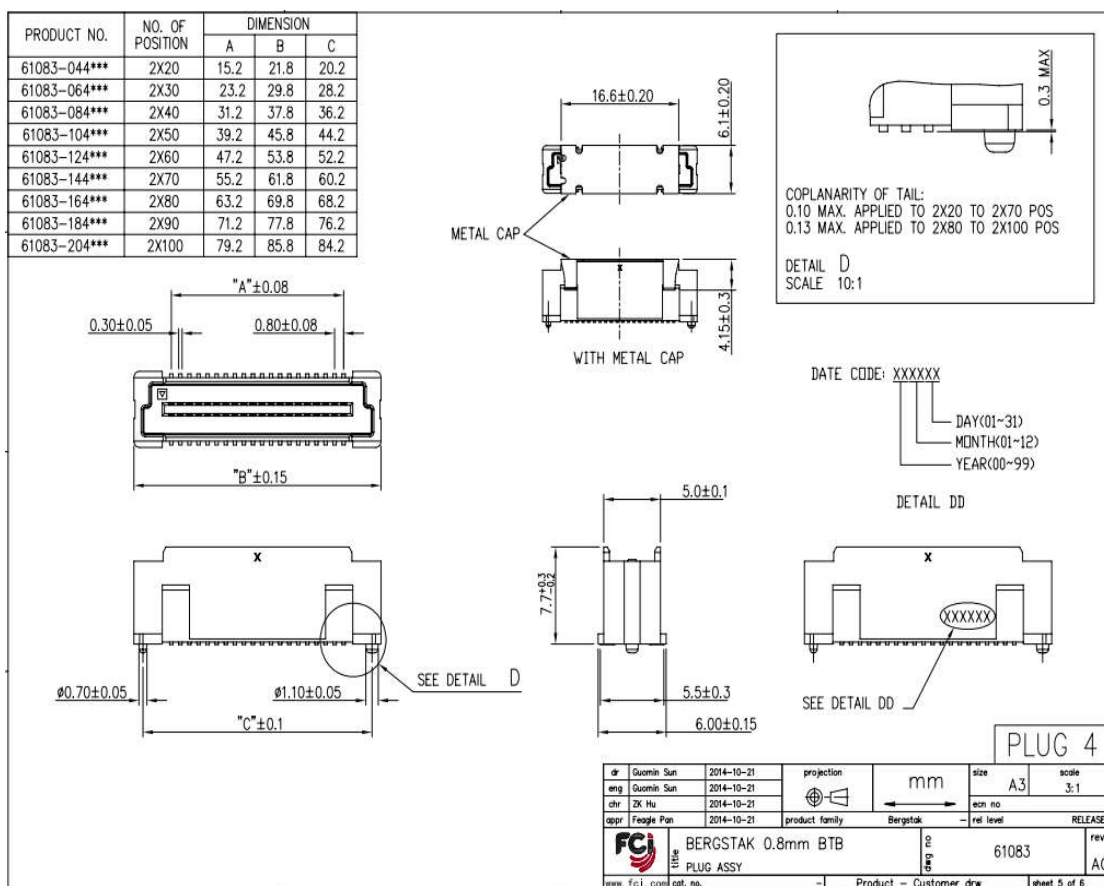


Figure 3-1 Specification and model of myb-c8mmx base plate seat 61083-1014

## 3.2 Pin Description Table

MYC-C8MMX core board socket pin description refers to the attached information  
<MYC-C8MMX Pin Description Table>

### 3.3 Peripheral Interfaces of Expansion Board

MYB-C8MMX has abundant interface resources.

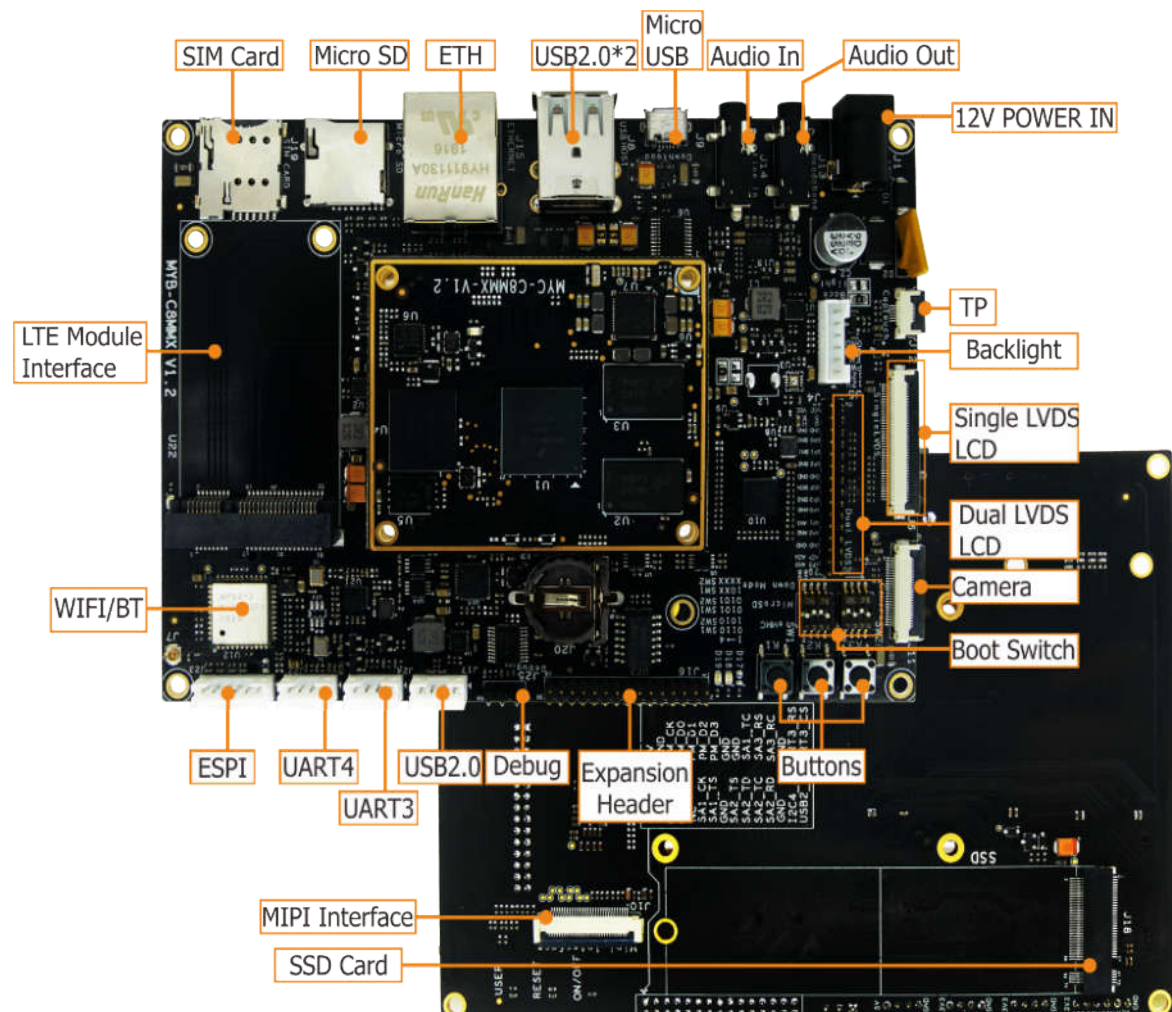


Figure 3-2 MYD-C8MMX Interface Diagram

Detailed description is as follows:

Function	Lable	Description
Core Board Interface	J2,J3	MYC-C8MMX CPU Module
Input power	J1	12V DC Power input, 2.1 DC Jack
Camera1	J11	MIPI interface camera input, 24PIN 0.5MM space under FPC connector
Ethernet	J15	10/100/1000Mbps Ethernet
Debug	J25	Debug, 3.3V TTL Level
Micro USB	J9	Micro USB,Software Down-loading
USB Host	J8	Dual USB Host Interface with Type A Connector
TF Card	J21	Micro TF Card
TP	J12	Capacitance Touch Screen Interface, 6 PIN 0.5MM Spacing FPC
RTC	J20	CR1225 Size Backup Battery Interface
LCD	J6	Single LVDS interface, default 1280x800 resolution (10.1 inch screen) 40PIN 0.5MM FPC connector
	J4	Dual LVDS interface, default 1920x1080 resolution (21.5 inch screen) 30PIN 2.0MM connector
Audio	J13	3.5mm Headphone Output Interface
	J14	3.5mm Line in
Buttons	K2	Reset
	K3	User
	K1	ON/OFF
LED	D18	Run
	D19	User LED
	D25	LTE LED
4G module	U22	Mini PCI-E USB LTE module Interface
Micro SIM	J19	Micro SIM
WIFI/BT Ant	J7	SMA WIFI/BT Connect
Expansion Header	J16	30pin 2.0MM GPIO Connector
	J23	6Pin 2.0MM Spacing Seat External ESPI Interface
	J22	4Pin 2.0MM Spacing Seat External UART4 Interface
	J24	4Pin 2.0MM Spacing Seat External UART3 Interface
	J17	4Pin 2.0MM Spacing Seat External USB Interface
	J5	Backlight Interface of 6pin 2.0MM Spacing Seat External Panel
	J12	6 pin 0.5 MM spacing FPC layout external capacitive screen interface
DSI	J10	Contact seat under 30PIN 0.5MM spacing FPC
M.2	J18	M.2 Interface 2280 for SSD of PCIE-NVME Protocol

Table 3-1 MYB-C8MMX

## 4. Hardware Design

### 4.1 Hardware Design of CPU Module board

Please refer to MYC-C8MMX ProductManual for Hardware Circuit Instructions of CPU Module.

### 4.2 Hardware Design of MYB-C8MMC

#### 4.2.1 Power

The MYB-C8MMX floor is powered by 12V, and the whole circuit includes 5V, VDD\_LTE, VDD\_M2 and 3 voltage thresholds. The power supply topology is as follows:

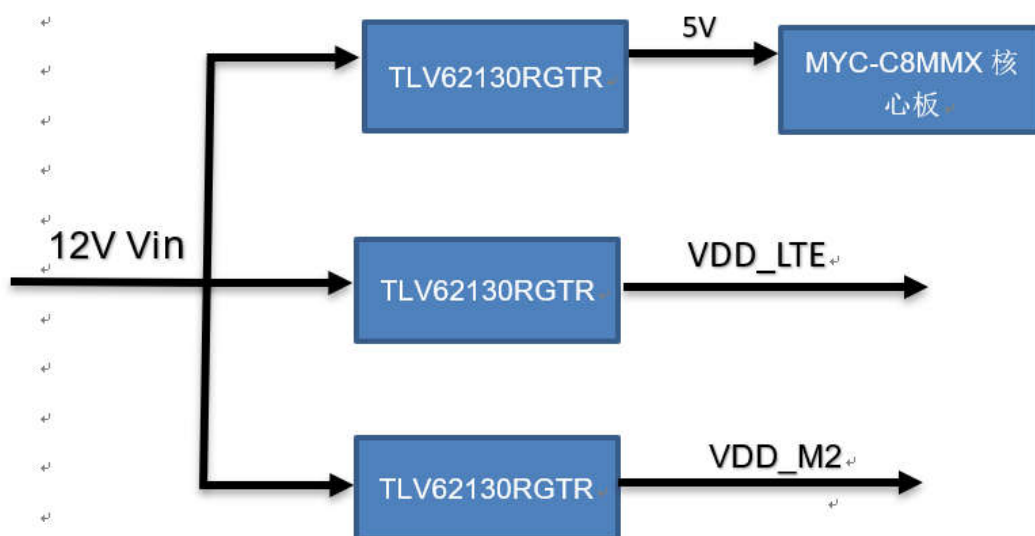


Figure 4-1 Power supply topology

The DCDC chip TLV62130 with maximum output current of 3A is selected for 12V to 5V, VDD\_LTE and VDD\_M2. DCDC can provide relatively high power conversion efficiency and reduce the power consumption of the whole board. The RTC battery input is an optional power input. When the system is powered off, the RTC does not need to work, so it can not provide this power.



### 4.2.2 Start position configuration switch

When I.MX 8M Mini series processors start up, it will execute the Boot ROM inside the chip. Boot ROM will decide the next action according to the state of BOOT\_MODE register, Fuses, start the relevant GPIO, etc. The value of the BOOT\_MODE register is obtained from the rising of the reset pin on the system along the BOOT\_MODE0 and BOOT\_MODE1 pins of the CPU sampled. This register determines the CPU startup mode, which corresponds to the following:

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 Startup mode configuration

- Boot From Fuses Model: Read startup information from internal Fuses, NXP recommends shipment in this way during mass production
- Serial Down-loader Model: 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 downloader 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 Model: Read 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 startup mode, many users are directly used for mass production.

The CPU is usually set to internal Boot mode in the development state. In this mode, the CPU reads the processor when it is powered on and reset. When designing the MYB-C8MMX base board, the pins need to be processed accordingly.



Startup Bit Configuration from eMMC of CPU Module:

Device Start bit	eMMC(SDIO3)Start
SAI1_TXD1	1
SAI1_TXD2	0
SAI1_TXD3	1
SAI1_TXD4	0
SAI1_TXD5	1
SAI1_TXD6	0

Table 4-2 Core board eMMC startup configuration

Startup Bit Configuration from SD Card of CPU Module:

Device Start bit	SD Card(SDIO2)Start
SAI1_TXD1	0
SAI1_TXD2	1
SAI1_TXD3	0
SAI1_TXD4	1
SAI1_TXD5	0
SAI1_TXD6	1

Table 4-3 Core Board SD Startup Configuration

- CPU supports SD card start-up. It is recommended to reserve SD card interface when designing. Through SD start program, to update EMMC program, offline programming can be achieved. This method is recommended for volume production..

### 4.2.3 Ethernet

MYB-C8MMX CPU Module carries a 10M/100M/1000M Ethernet PHY, using standard RJ45 network port seat. The chip uses Qualcomm's AR8035-AL1B-R, which is connected to the processor's ETH1 controller through RGMII mode.

The connection diagram of ETH1 is as follows. U19 and U20 are ESD protection devices.

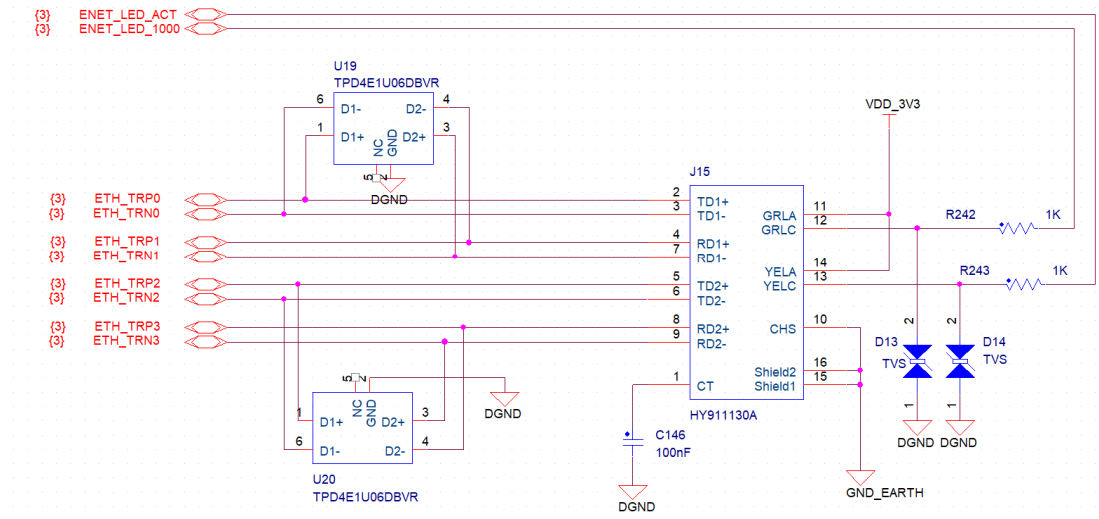


Figure 4-2 Ethernet

### 4.2.4 USB 2.0

i.MX 8M Mini chip has two USB 2.0 controllers. MYB-C8MMX can be used to download software by switching one of them directly to the Micro USB seat, while the other uses SMSC's USB2514BI-AEZ chip to extend four USB Host ports. Two of them are directly drawn through the double-layer USB Type A connector, the third is used to connect LTE socket, and the fourth is connected to 4PIN 2.0MM space seat.

The micro USB interface is designed as follows. With the patch-type micro USB connector, the power state can be automatically switched according to the access device.



The schematic diagram illustrates the internal circuitry of the USB2514 module, which is a USB-to-serial bridge. The central component is the **USB2514** IC, shown in a pinout view with pins numbered 1 through 37.

**Power and Ground Connections:**

- VDD33\_USB:** Connected to pins 10, 15, 23, 29, and 36. It is supplied by a 3.3V source (VDD33\_3V3) through a 220R resistor (R152) and a 10K resistor (R153). A 100nF capacitor (C99) is connected to ground (DNP).
- VDD33\_3V3:** A 3.3V supply source connected to the module's power input.
- VDD33\_1V8:** Connected to pins 5, 10, 15, 23, 29, and 36. It is supplied by a 1.8V source (VDD33\_1V8) through a 10K resistor (R154) and a 10K resistor (R155). A 100nF capacitor (C107) is connected to ground.
- VSS\_PAD:** Connected to pin 37, which is grounded.

**Signal Connections:**

- Host Side (Left):**
  - USB\_OTG2\_DM / USB\_OTG2\_DP:** Connected to pins 27 (VBUS\_DET) and 30 (DM\_UP / DP\_UP).
  - RESET\_N:** Connected to pin 26.
  - 4G\_USB\_DM / 4G\_USB\_DP:** Connected to pins 6 (DN1 / DP1) and 7 (DN2 / DP2).
  - XH\_USB\_DM / XH\_USB\_DP:** Connected to pins 8 (NC/DN3 / NC/DP3) and 9 (NC/DN4 / NC/DP4).
- Target Side (Right):**
  - TEST\_BIAS:** Connected to pin 11.
  - OCsn1 / OCsn2 / NO/OCsn3 / NO/OCsn4:** Connected to pins 13, 17, 19, and 21.
  - PRTWPWR1/BC\_EN1 / PRTWPWR2/BC\_EN2 / NC/NC/PRTWPWR3/BC\_EN3 / NC/PRTWPWR4/BC\_EN4:** Connected to pins 12, 18, 20, and 22.
  - XTALOUT:** Connected to pin 32.
  - XTALIN/CLKIN:** Connected to pin 33.

**Internal Components:**

- Resistors:** R152 (10K), R153 (10K), R154 (10K), R155 (10K), R156 (10K), R157 (10K), R158 (12K), R159 (1M).
- Capacitors:** C99 (100nF), C100 (100nF), C101 (100nF), C102 (100nF), C103 (100nF), C104 (100nF), C105 (100nF), C106 (10uF), C107 (1uF), C108 (100nF), C109 (1uF), C110 (100nF), C111 (22pF), C112 (22pF).
- Inductor:** L7 (220R).
- Crystal:** Y3 (24M).

Figure 4-4 USB Hub

**USB Host** The related circuit design is as follows:

## USB HOST

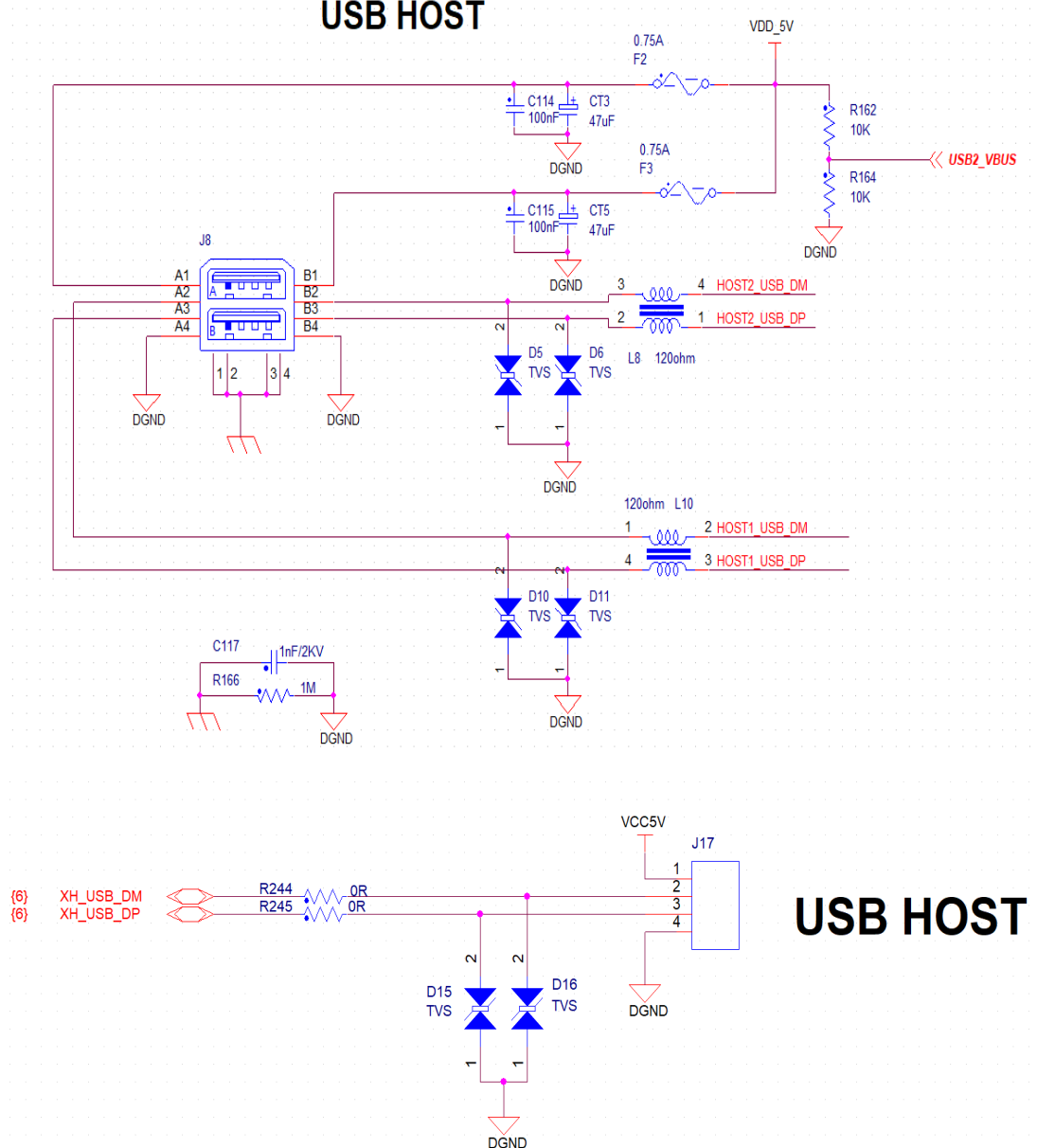


Figure 4-5 USB Host

#### 4.2.5 LTE

MYB-C8MMX reserves an LTE module interface to support general Mini PCI-E modules. MYB-C8MMX development board provides Linux driver support and code samples based on EC20 LTE module from Quectel. Mini PCIE connector is from LOTES company model AAA-PCI-047 PCI-E connector. Modules and PCB 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. Specific connections



## 4.2.6 Audio

MYB-C8MMX uses audio encoding chip WM8904CGEFL/V to expand the output of a 3.5mm headset and an audio linear input. The I2S terminal of WM8904CGEFL/V is connected to the SAI2 controller of the processor, and the I2C terminal is connected to the I2C2 interface.

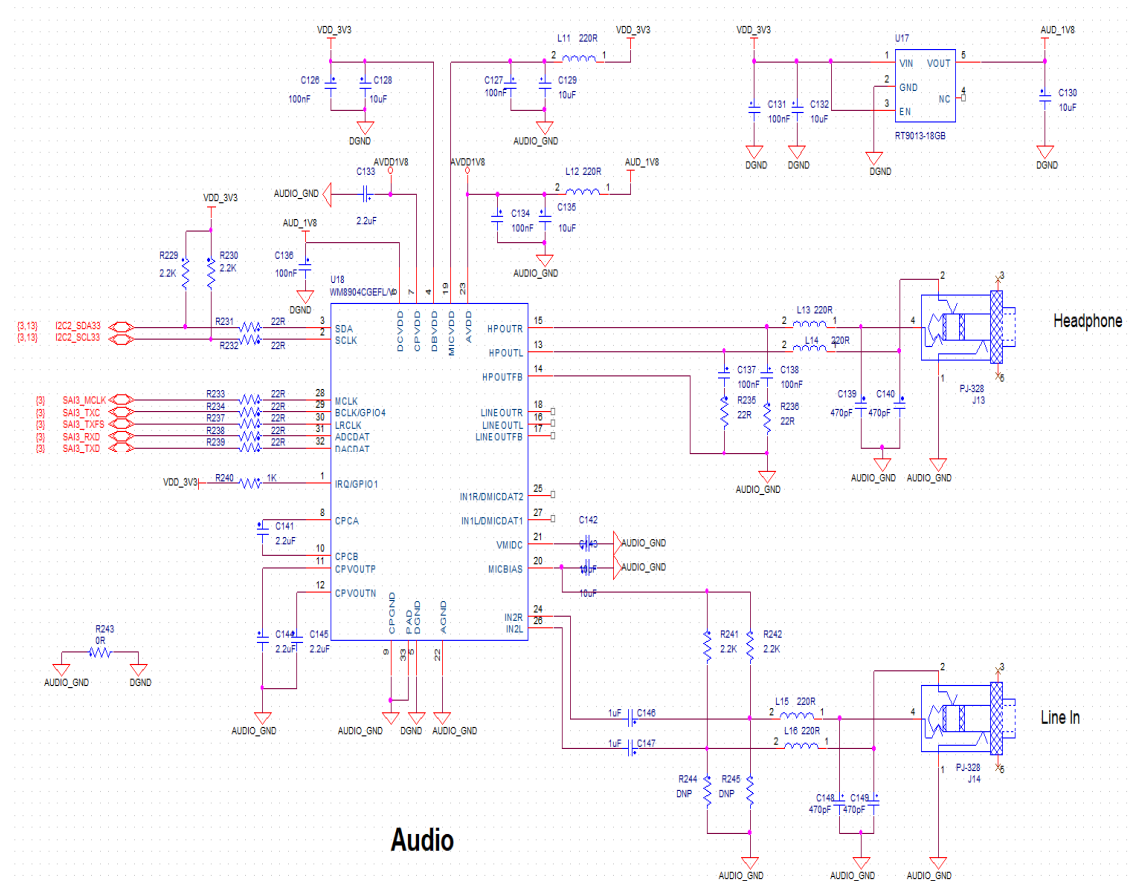


Figure 4-8 Audio

## 4.2.7 WIFI/BT

The MYB-C8MMX board contains a WiFi+Bluetooth 4.1 module of AP6212 from AMPAK. The module processor interface is SDIO V2.0 and UART, supporting 802.11b/g/n. The standard SMA antenna interface is reserved on the board, which can be used with the attached WIFI antenna.

Refer specifically to the design of the following figure:

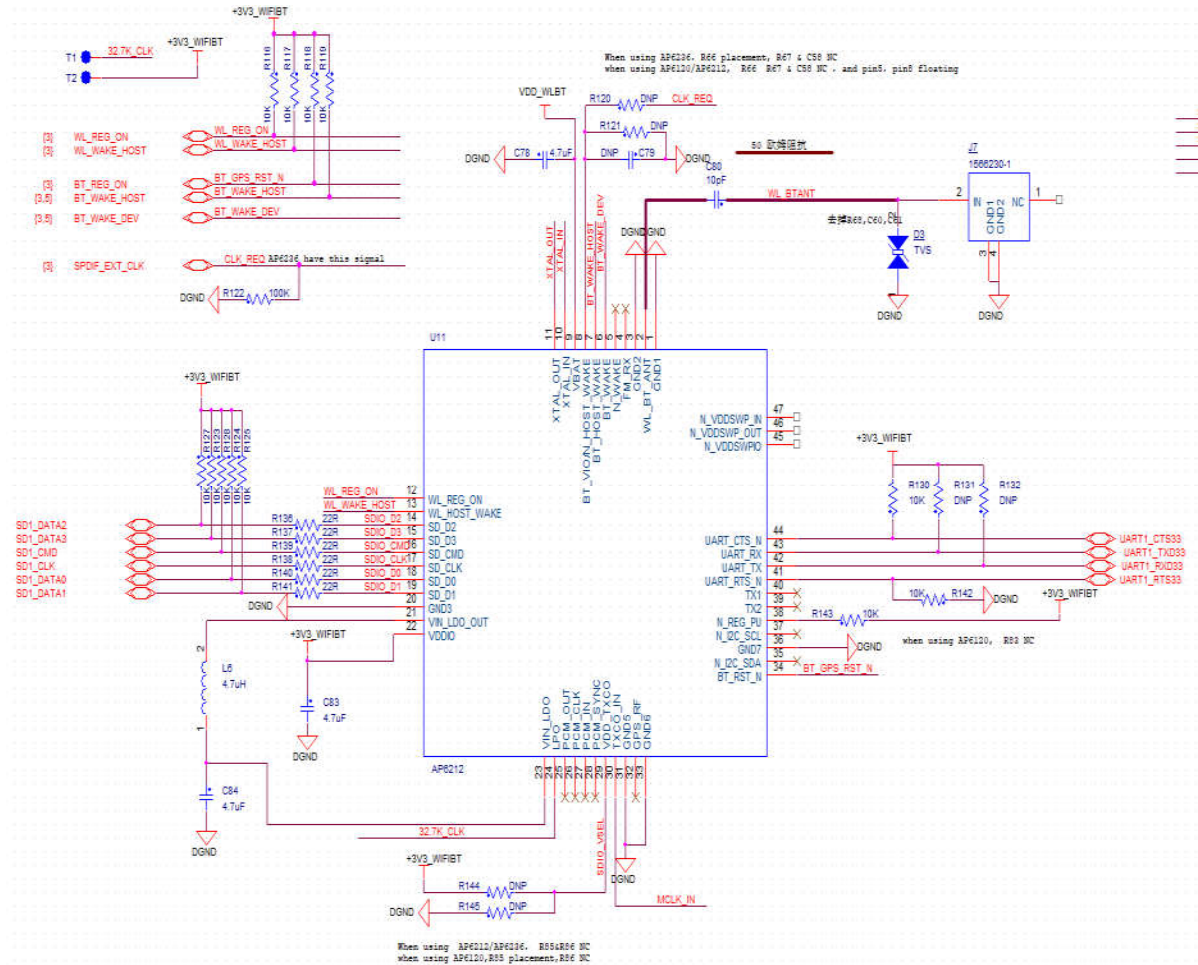


Figure 4-9 WIF/BT

## 4.2.8 Camera

The i.MX 8M Mini processor supports a MIPI interface camera. The camera interface is 0.5MM FPC connector. Users can choose MY-CAM003M camera module of MYIR Technology. Detailed information about the MY-CAM003M camera module can be accessed at <http://www.myirtech.com/list.asp?id=611>.

The camera interface pin is defined as follows:

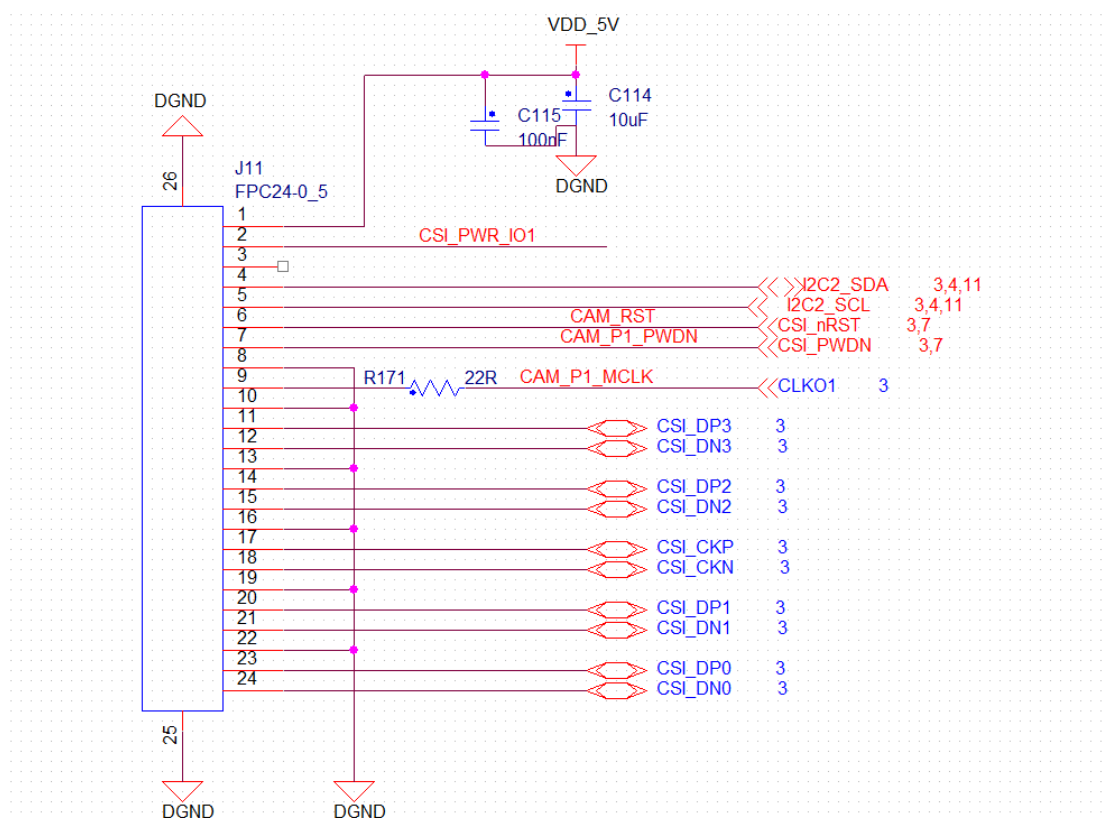


Figure 4-10 Camera

## 4.2.9 LCD

The display of i.MX 8M Mini processor is DSI interface, but MYB-C8MMX base board converts DSI signal to LVDS signal through Toshiba TC358775XBG chip. The bottom board has two interfaces, J4 and J6. Note that the two interfaces can not be connected at the same time. Because J4 interface is a Dual-Lane LVDS signal, J6 interface is a single LVDS signal. The two interfaces are different and the software is different. Customers can choose according to their own needs. J4 interface supports 1920x1080 resolution (21.5 inch screen) by default, and J6 interface supports 1280x800 resolution (10.1 inch capacitive screen) drive by default. 10.1 inch single LVDS interface screen and capacitor screen, the interface circuit design is as follows.



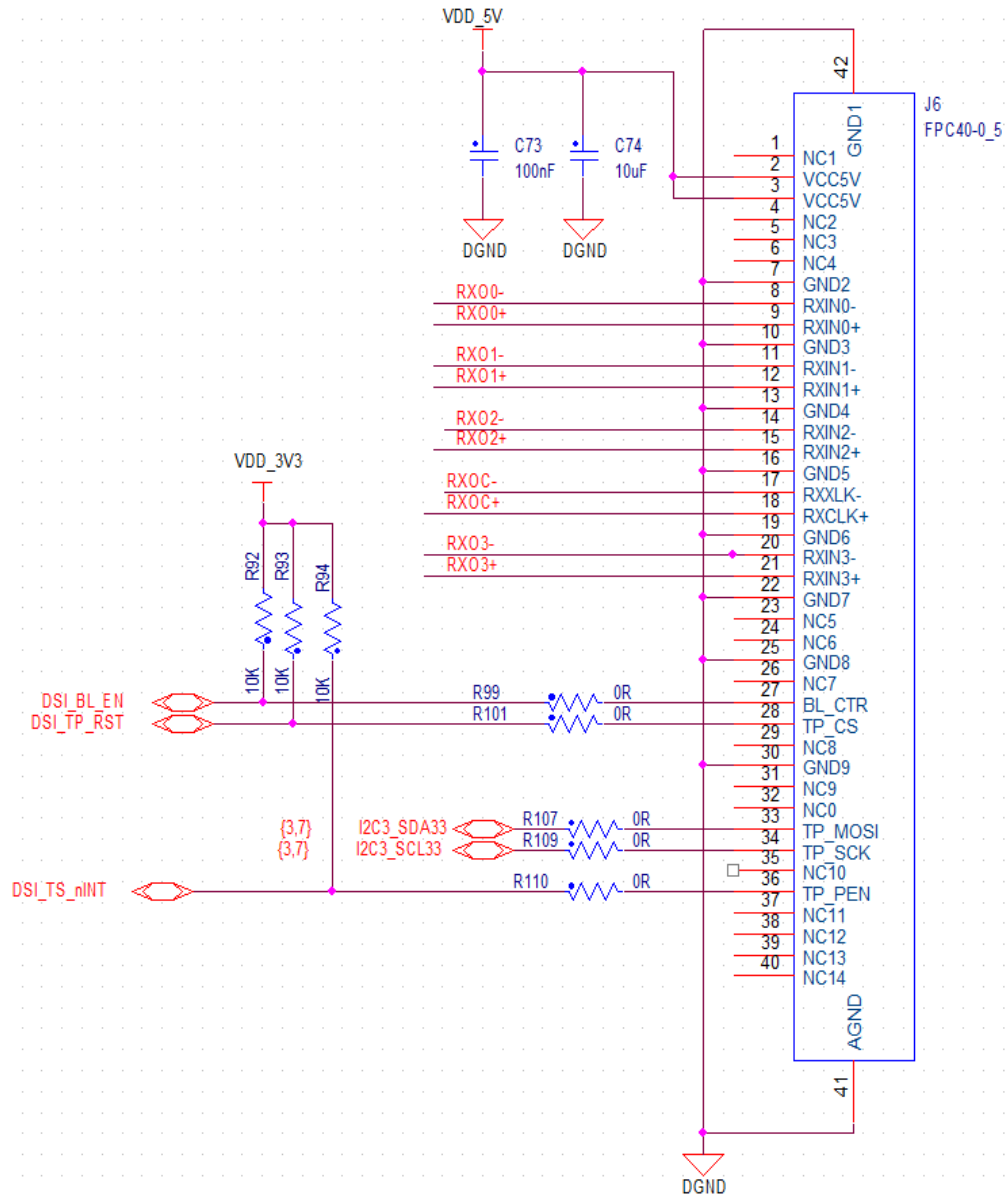
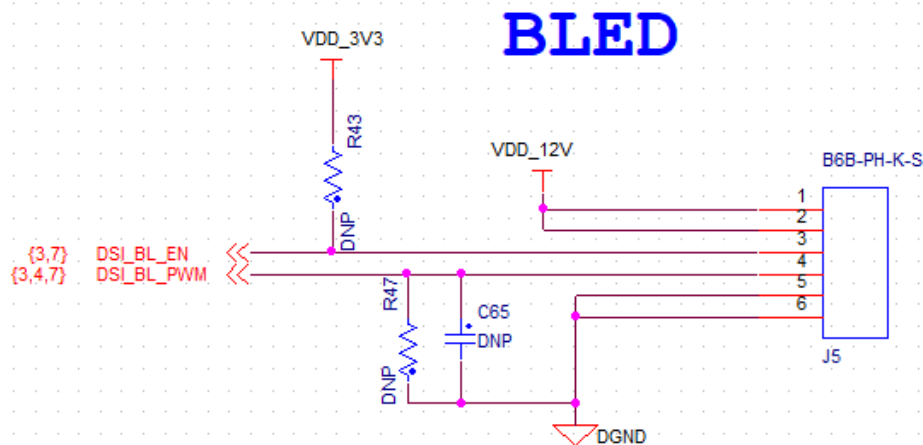


Figure 4-11

10.1 inch single channel LVDS interface screen and capacitive touch screen



## LVDS Connector

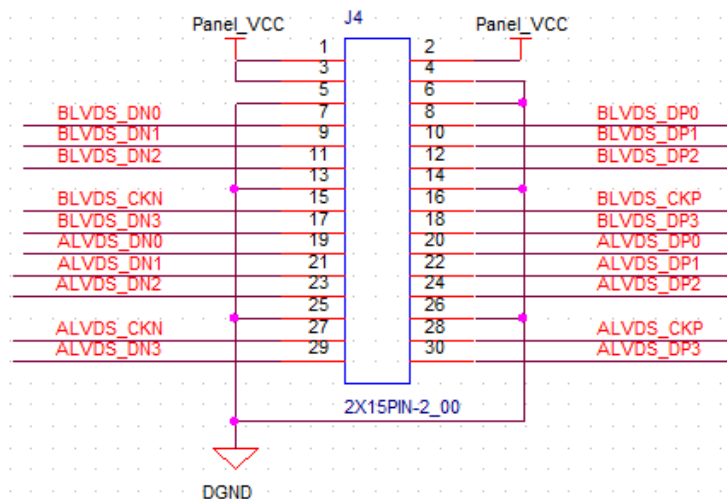


Figure 4-12 21.5 inch screen dual LVDS interface screen and backlight interface

### 4.2.10 UART

i.MX 8M Mini series processors can reach up to 4 asynchronous serial ports. Due to the pin multiplexing of the chip, the MYB-C8MMX base board only extends three TTL levels, one of which is a 3-way debugging serial port (non-isolation); the other two uses a 4 Pin 2.0 mm pin-header connector.

#### 4.2.10.1 Debug

MYB-C8MMX provides a debugging serial port for Linux and Android. The debugging serial port adopts 3 Pins with 2.54 mm spacing. The standard level is 3.3V LVTTTL. Users

can use it with USB to UART. MY-UART012U is an optional model provided by MYIR Technologies. For more information, please visit the following website.

<http://www.myirtech.com/list.asp?id=537>

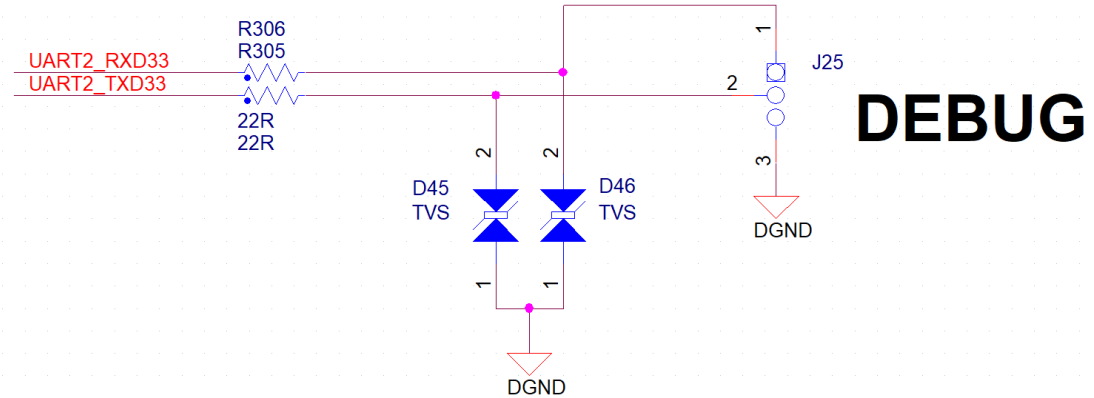


Figure 4-13 Debug

#### 4.2.10.2 Other External Two-way Serial Port

MYB-C8MMX 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 2.0mm pin-header. Level standard is 3.3V TTL.

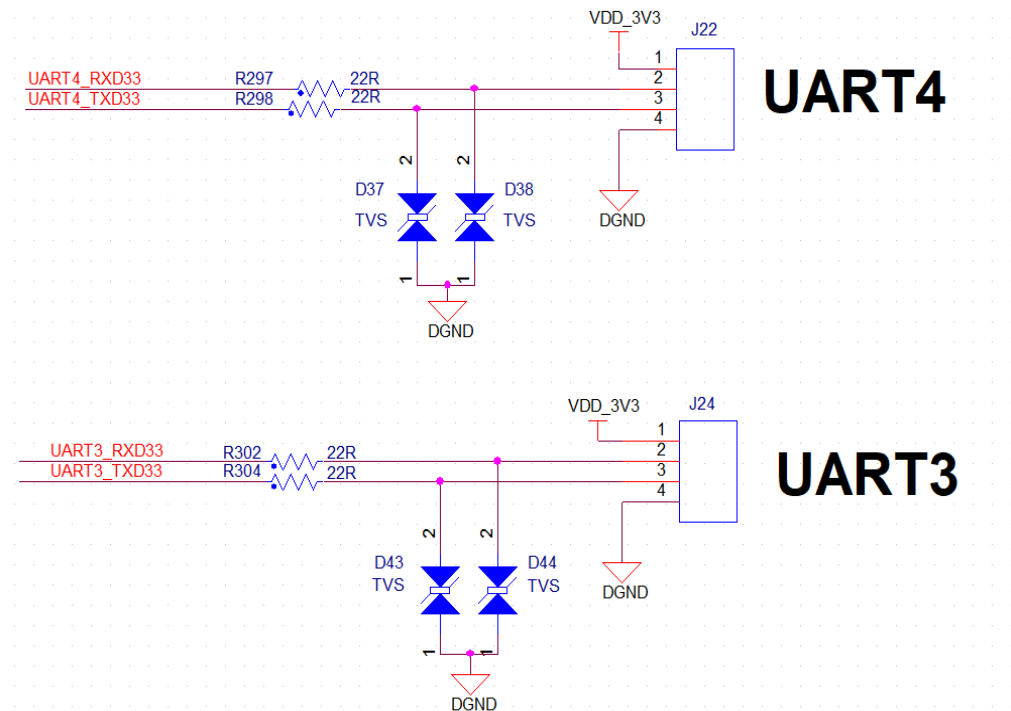


Figure 4-14 External two-way serial port

## 4.2.11 M.2

MYB-C8MMX carries a PCIE-NVME protocol SSD M.2 interface 2280. Solid-state hard disk capacity customer selection. Its circuit structure is shown in the following figure:

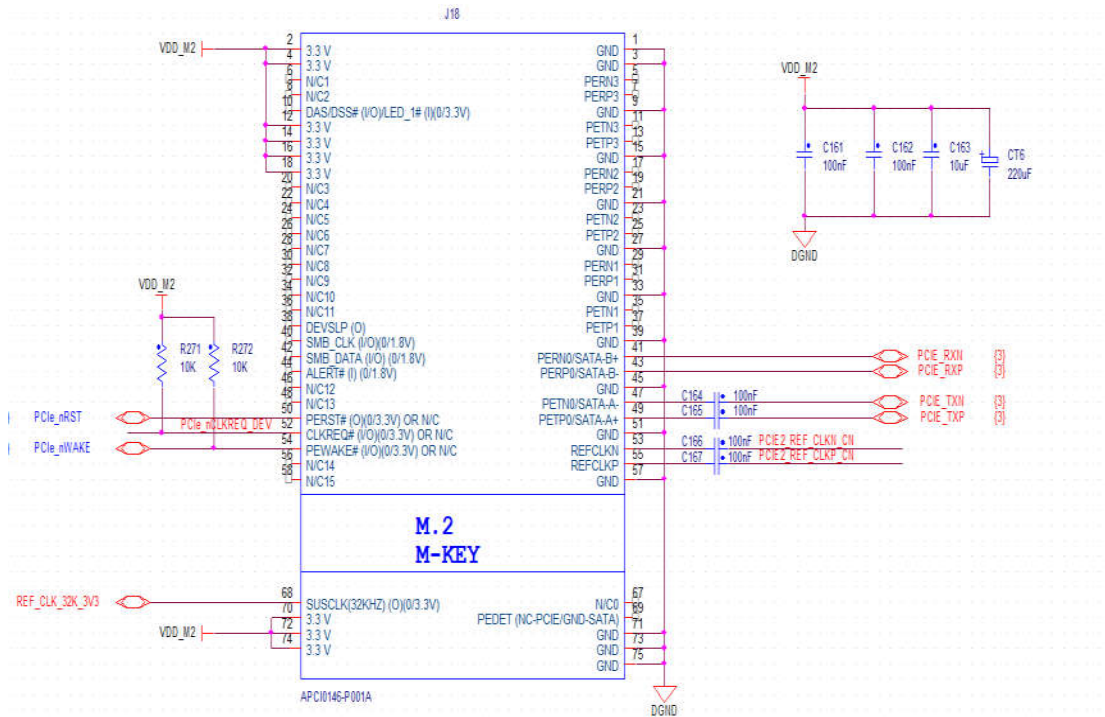


Figure 4-15 M.2

## 4.2.12 RTC Backup battery

MYB-C8MMX is equipped with a backup battery holder that can accept CR1225 button batteries. When the system is powered down, it can be used to maintain the operation of RTC. Its circuit structure is shown as follows:

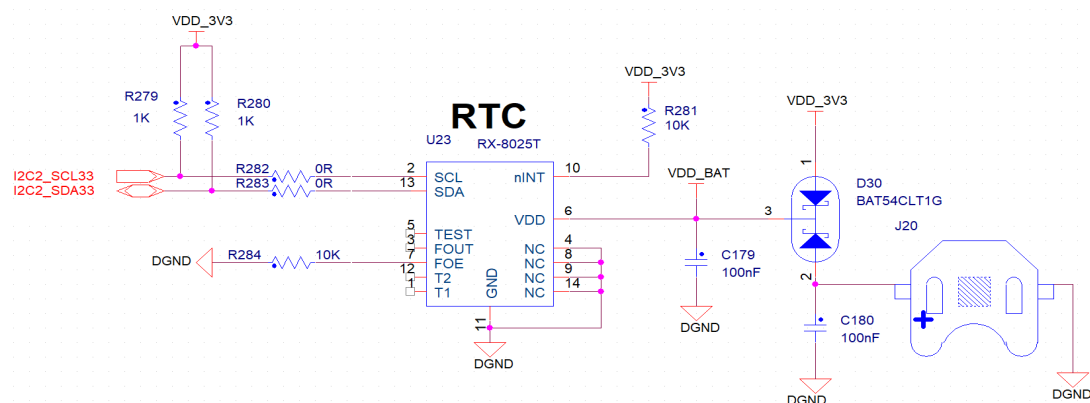


Figure 4-16 RTC Backup Battery

### 4.2.13 Micro SD

i.MX 8M Mini silicon has three SD card controllers. SD2 is extended on board through standard Micro SD card holder, which can store startup information and start directly from TF card. On the core of eMMC version, SD3 is used to connect eMMC chip, and the level standard is 3.3V. The specific design is shown in the following figure:

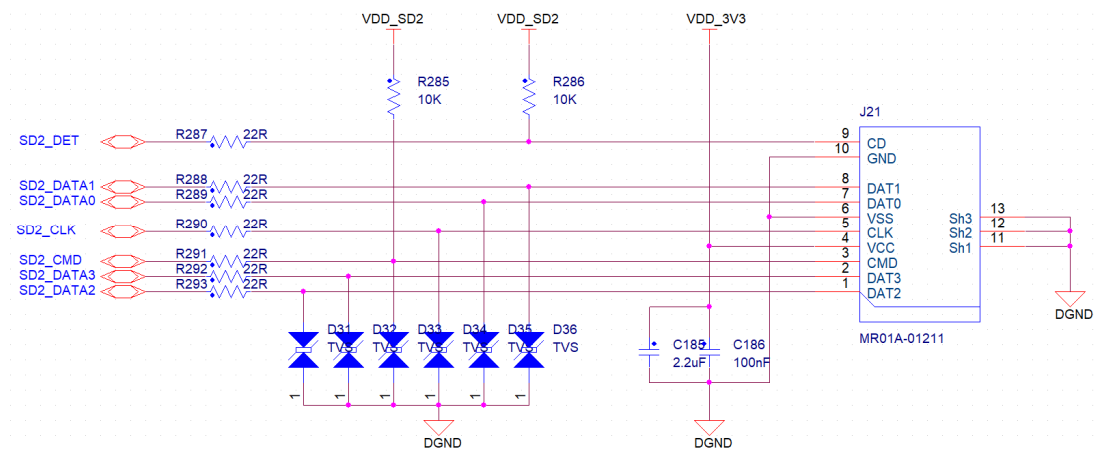


Figure 4-17 Micro SD Card

### 4.2.14 Key and LED

MYB-C8MMX provides three keys. A user-defined button, users can adjust the button function according to their own application needs; a system reset button, press the system will power off and restart, and reset. The last one is the ONOFF button, which can realize the function of the power switch of the system. Please read the Handbook of the processor specifically.

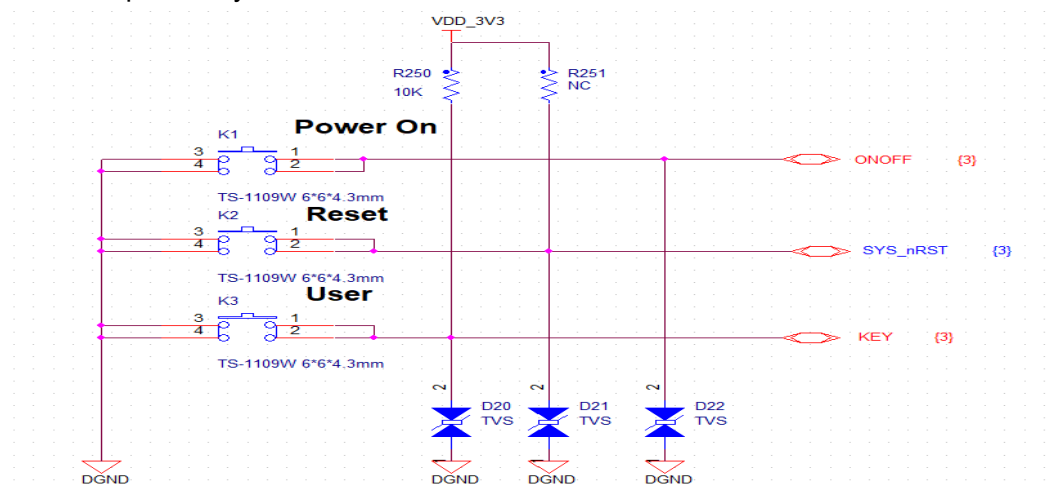


Figure 4-18 Keys

MYB-C8MMX provides a user to set up an LED lamp. Users can display system status information according to their needs. The schematic diagram is as follows:

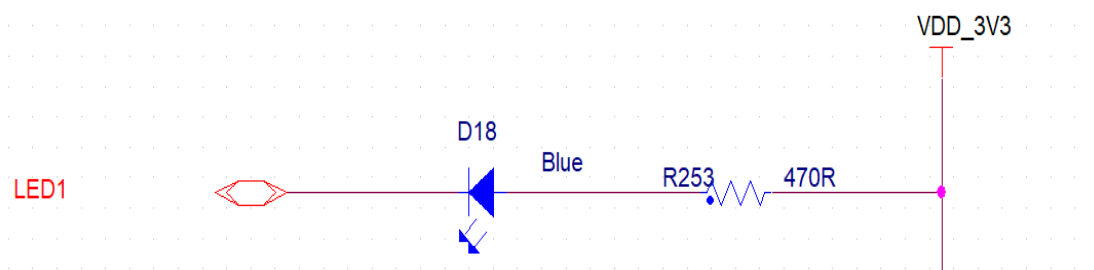


Figure 4-19 LED

## 4.2.15 Extended interface

MYB-C8MMX provides a 2.0 mm distance of 30 pin pin-header expansions, all the free GPIO has been introduced, convenient for users and other equipment interconnection. Specific pin definitions and schematic diagrams are as follows.

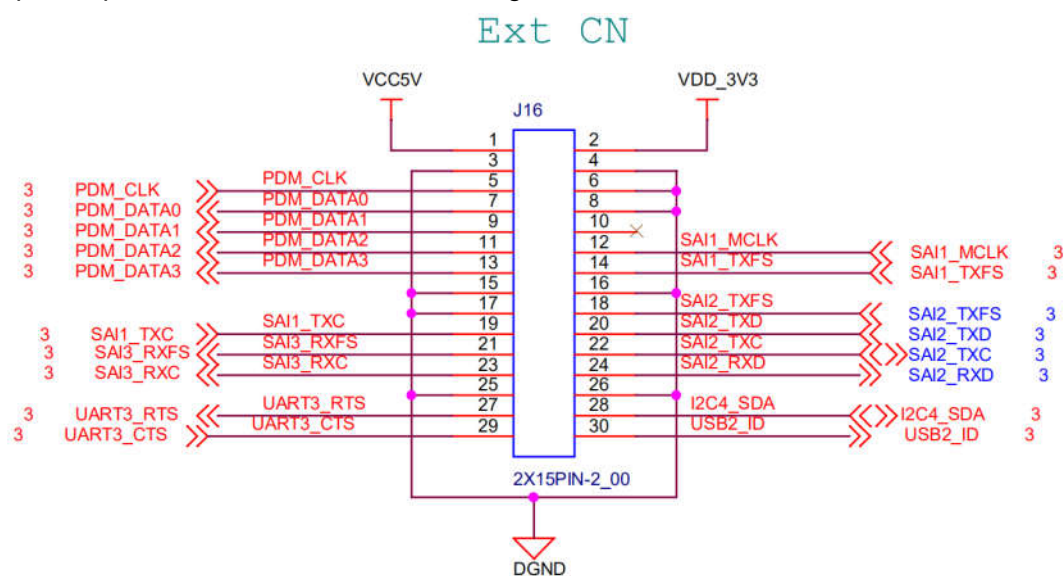


Figure 4-20 Extended interface

## 5. Electronic Characteristics

### 5.1 Operating Temperature

Application Scenarios	Parameter				Des.
	Min	Nor	Max	Unit	
Commercial Grade	0	--	+70	°C	--
Industrial grade	-40	--	+85	°C	

Table 5-1 Operating Temperature

### 5.2 GPIO DC Characteristics

Parameter	Lable	Parameter				Des.
		Min	Nor	Max	Unit	
Input High Voltage	V <sub>IH</sub>	2.3	--	3.3	V	--
Input Low Voltage	V <sub>IL</sub>	0	--	0.99	V	--
Output High Voltage	V <sub>OH</sub>	3.15	---	--	V	--
Output Low Voltage	V <sub>OL</sub>	--	--	0.15	V	--

Table 5-2 GPIO DC Characteristics

### 5.3 Power Supply Characteristics

Parameter	Lable	Parameter				Des.
		Min	Nor	Max	Unit	
12V Voltage	+12V	8	12	15	V	--
12V Current	I <sub>V12</sub>	---	0.11	---	A	--
RTC Voltage	VDD_BAT	2.4	--	3.6	V	--
RTC Current	I <sub>VDD_BAT</sub>	---	10	---	uA	--

Table 5-3 Power Supply Characteristics





MYB-C8MMX Dimension:

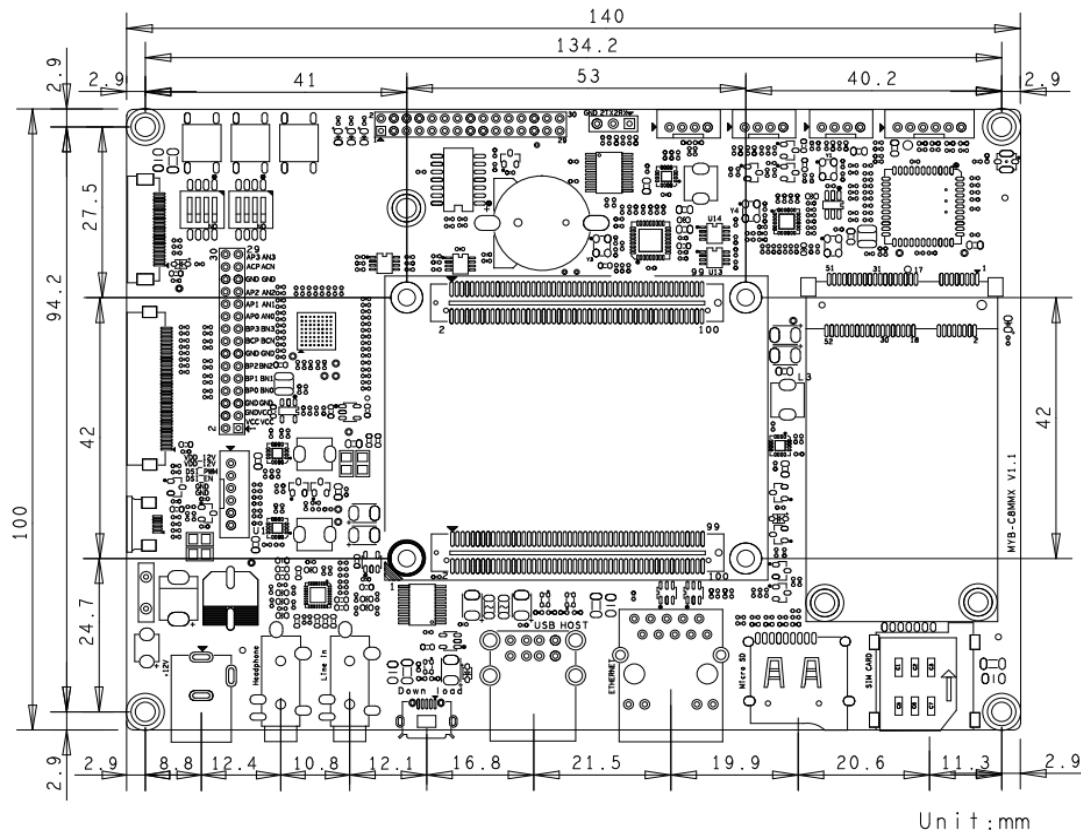


Figure 6-2 MYB-C8MMX

Note: For more detailed size information, please refer to MYB-C8MMX 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](mailto: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.



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