MYC-JX8MX

Product Manual

Version V1.0

Version History

Version	Des.	Date
V1.0	Initial version	2019.03.28

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. 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.

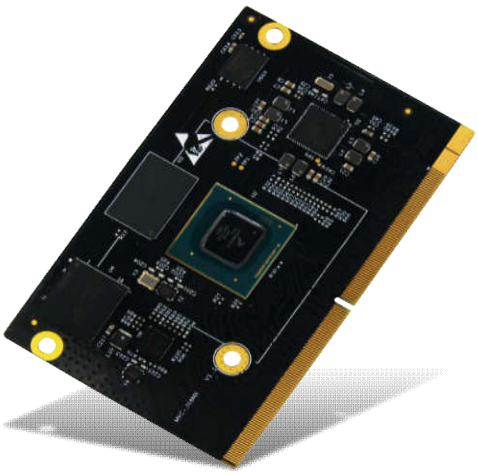

Figure 1.1 MYC-JX8MX

The MYC-JX8MX board provides multiple compatible options of i.MX 8M Dual/8M QuadLite/8M Quad sub families. MYIR provides the following two part number by default.

Product Model	MYD-JX8MQ6-8E1D-130-E	MYD-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 MYC-JX8MX (default configurations)

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

The main functions of the i.MX 8M Quad/QuadLite i.MX 8M Dual chip are introduced.

Feature	i.MX 8M Quad/QuadLite i.MX 8M Dual
Main CPU	2x or 4x Cortex-A53 @ 1.3 GHz, 1MB L2
Microcontroller	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 MYC-JX8MX Processor Resource Comparison

2. Hardware Characteristics

2.1 CPU Characteristics

2.1.1 i.MX 8M Overview

The i.MX 8M family of applications processors (i.MX 8M Dual / 8M QuadLite / 8M Quad) represent NXP's latest market of connected streaming audio/video devices, scanning/imaging devices, and various devices requiring high-performance, low-power processors. The i.MX 8M processors feature advanced implementation of 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. The DRAM controller supports 32-bit/16-bit LPDDR4, DDR4, and DDR3L memory. There are a number of other interfaces for connecting peripherals, such as WLAN, Bluetooth, GPS, displays, and camera sensors. The i.MX 8M Quad and i.MX 8M Dual processors have hardware acceleration for video playback up to 4K, and can drive the video outputs up to 60 fps. Although the i.MX 8M QuadLite processor does not have hardware acceleration for video decode, it allows for video playback with software decoders if needed.

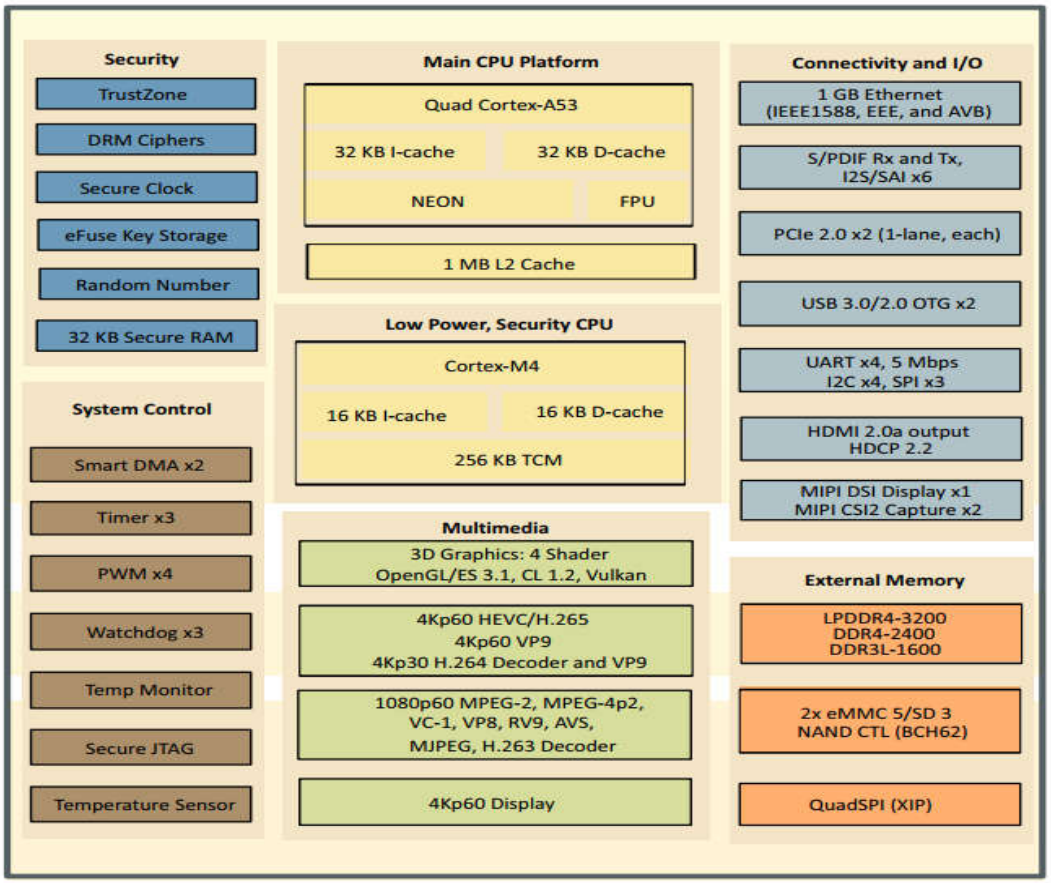

Figure 1-5 i.MX 8M System Block Diagram

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.

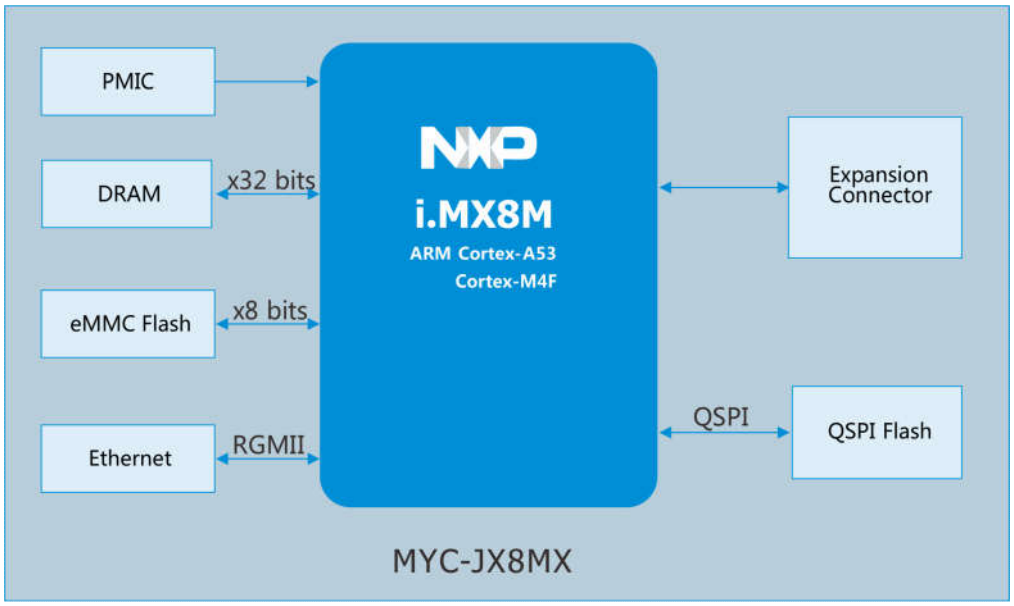

Figure 2-2 MYC-JX8MX CPU Module Function Block

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 Expansion Connector Resource

The expansion connector of MYC-JX8MX has 212 pins, which contain rich peripheral resources.

Please refer to below for expansion connector resource.

Project	Parameter
Ethernet	1X10M/100 M/1000M PHY
GPIO	Up to 108 x GPIO
UART	Up to 3XUart
I2C	Up to 3X I2C bus
SPI	Up to 2XSpi
USB3.0	2XUSB3.0
PCIE	2XPCIE
PWM	4XPWM
I2S/SAI	6XI2S/SAI
Camera	2X Camera
HDMI	1XHDMI2.0a Output
DSI	1XMIPI Output
JTAG	1XJTAG

Table 2-2 Expansion Connector Resource list

The list is showing the maximum number of the specific interface possible, but due to the reused pin definition, customer will need to refer the pin definition for signal configuration.

3. Interfaces

3.1 Expansion Connector（314Pin Connector）

MYC-JX8MX Core board and bottom board are connected by 314 PIN seat. Seat package design refers to the following figure：

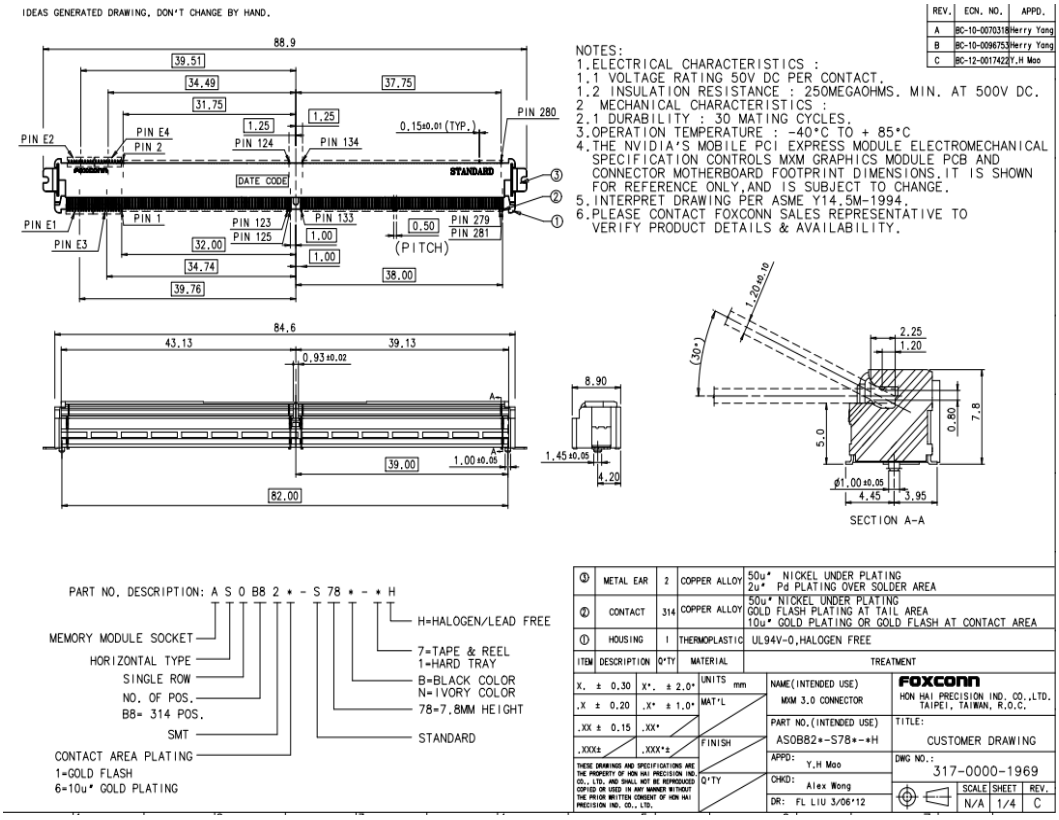

Figure 3-1 Specification type of connector :AS0B821-S78B-7H

3.2 Pin description table

The description of golden finger pin of MYC-JX8MX core plate can be referred to the attached information <MYC-JX8MX card golden finger pin description table>

4. Hardware Design

4.1 Power Supply

i.MX 8M series processors have built-in power management unit, which greatly simplifies the design of chip power supply. According to the data manual of the processor, the power supply of the chip is divided into five power domains, which are as follows：

Item	Voltage	Power Rail	
1	3.3V	VDD_3V3, Iomax=3000mA	VDD_PHY_3V3, Iomax=150mA
2	0.9V	VDD_SOC_0V9 Iomax=3600mA VDD_ARM_0V9 Iomax=4000mA VDD_GPU_0V9 Iomax=2000mA VDD_VPU_0V9 Iomax=2000mA VDD_DRAM_0V9 Iomax=2500mA	VDD_SNVS_0V9 Iomax=10mA VDDA_0V9 Iomax=250mA VDD_PHY_0V9 Iomax=300mA
3	1.1V	NVCC_DRAM_1V1 Iomax=3000mA	
4	1.8V	VDD_1V8 Iomax=1500mA	VDD_PHY_1V8 Iomax=300mA VDDA_1V8 Iomax=300mA
5	5V	USB1_VBUS，USB2_VBUS	

Table 4-1 CPU Power rail

YC-JX8MX adopts integrated PMU power supply mode and BD71837MWV of ROHM company. The power supply structure is shown in the following figure：

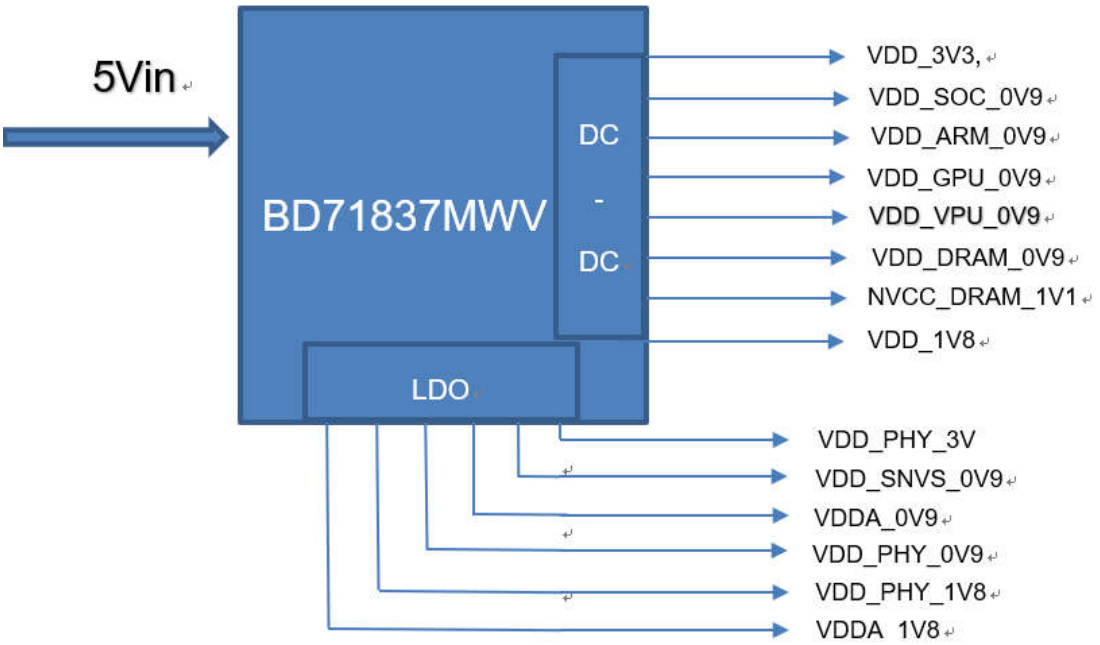

Figure 4-1 MYC-JX8MX Power Tree

4.2 Clock Resources

The MYC-JX8MX according to the application requirements, it contains two clock sources：

- 25Mhz CPU Clock（Y2）
- 27Mhz CPU Clock（Y3）

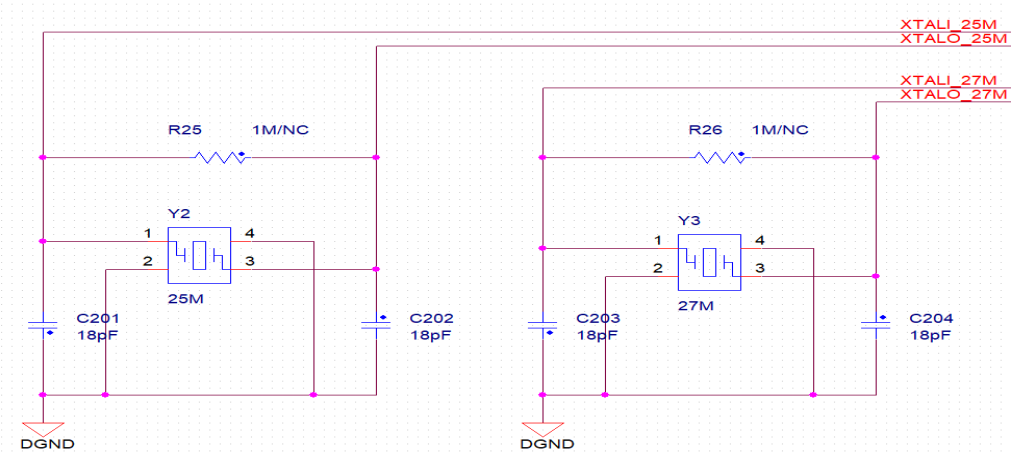

Figure 4-2 Clock resources

4.3 LPDDR4

The MYC-JX8MX connects a memory chip on the main chip MMDC bus. I.MX 8M series processors can support LPDDR4, DDR4, DDR3L. MYC-JX8MX core board supports LPDDR4, with capacity of 1GB, 2GB, 3GB, etc.

- MYC-JX8MQ6-8E1D-130-E

  Model: MT53D256M32D2DS 053 Brand: Micron

- MYC-JX8MQ6-8E2D-130-E

  Model: MT53D512M32D2DS 053 Brand: Micron

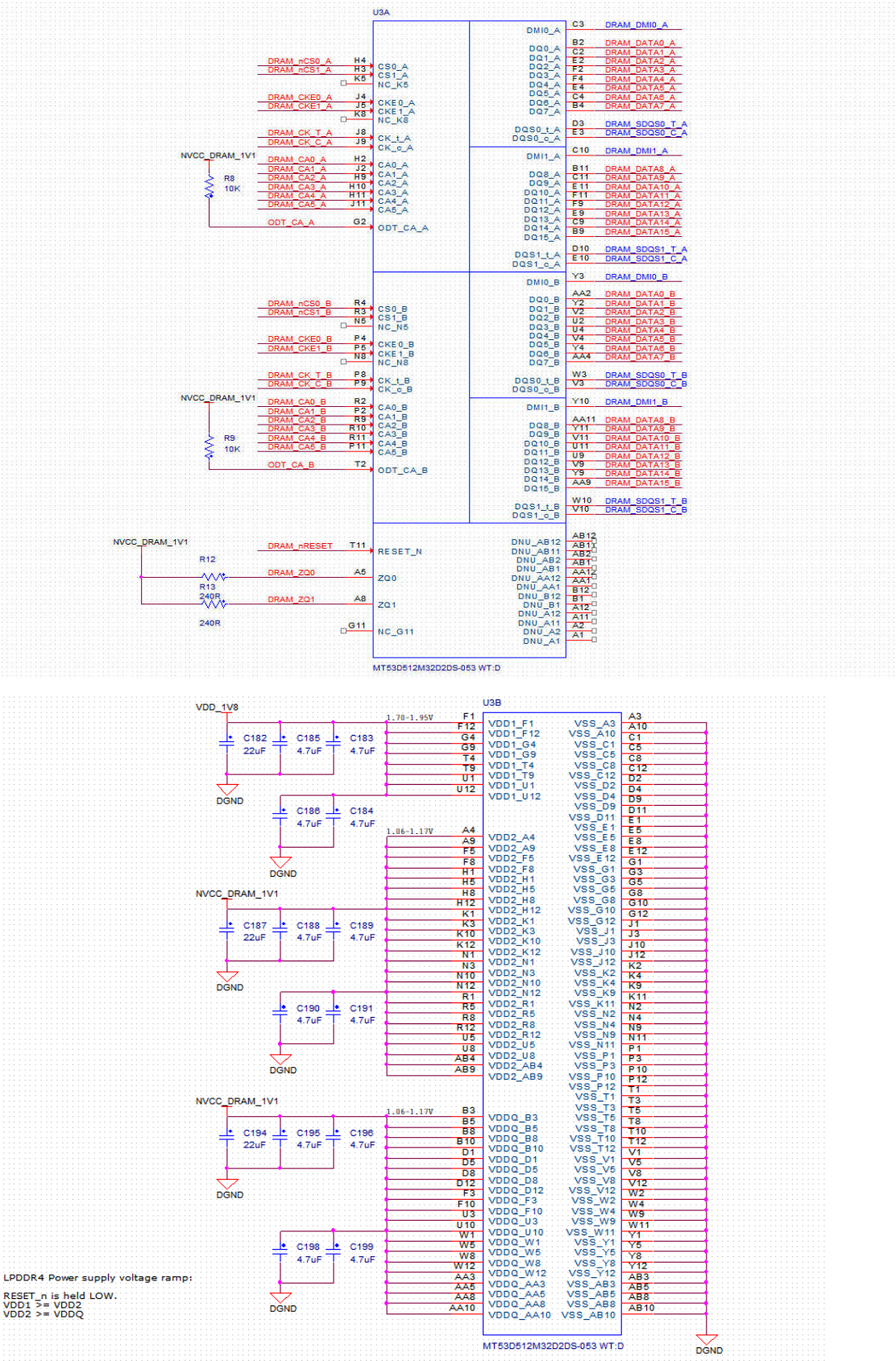
U3A
MT53D512M32D2DS-053 WT:D
NVCC_DRAM_1V1
R8
10K
R9
10K
R12
R13
240R
240R
DRAM_nCS0_A
DRAM_nCS1_A
DRAM_CKE0_A
DRAM_CKE1_A
DRAM_CK_T_A
DRAM_CK_C_A
DRAM_CA0_A
DRAM_CA1_A
DRAM_CA2_A
DRAM_CA3_A
DRAM_CA4_A
DRAM_CA5_A
ODT_CA_A
DRAM_nCS0_B
DRAM_nCS1_B
DRAM_CKE0_B
DRAM_CKE1_B
DRAM_CK_T_B
DRAM_CK_C_B
DRAM_CA0_B
DRAM_CA1_B
DRAM_CA2_B
DRAM_CA3_B
DRAM_CA4_B
DRAM_CA5_B
ODT_CA_B
DRAM_nRESET
DRAM_ZQ0
DRAM_ZQ1
CS0_A
CS1_A
NC_K5
CKE0_A
CKE1_A
NC_K8
CK_t_A
CK_c_A
CA0_A
CA1_A
CA2_A
CA3_A
CA4_A
CA5_A
ODT_CA_A
CS0_B
CS1_B
NC_N5
CKE0_B
CKE1_B
NC_N8
CK_t_B
CK_c_B
CA0_B
CA1_B
CA2_B
CA3_B
CA4_B
CA5_B
ODT_CA_B
RESET_N
ZQ0
ZQ1
NC_G11
DMI0_A
DQ0_A
DQ1_A
DQ2_A
DQ3_A
DQ4_A
DQ5_A
DQ6_A
DQ7_A
DQS0_t_A
DQS0_c_A
DMI1_A
DQ8_A
DQ9_A
DQ10_A
DQ11_A
DQ12_A
DQ13_A
DQ14_A
DQ15_A
DQS1_t_A
DQS1_c_A
DMI0_B
DQ0_B
DQ1_B
DQ2_B
DQ3_B
DQ4_B
DQ5_B
DQ6_B
DQ7_B
DQS0_t_B
DQS0_c_B
DMI1_B
DQ8_B
DQ9_B
DQ10_B
DQ11_B
DQ12_B
DQ13_B
DQ14_B
DQ15_B
DQS1_t_B
DQS1_c_B
DNU_AB12
DNU_AB11
DNU_AB2
DNU_AB1
DNU_AA12
DNU_AA1
DNU_B12
DNU_B1
DNU_A12
DNU_A11
DNU_A2
DNU_A1
U3B
VDD_1V8
1.70-1.95V
1.06-1.17V
1.06-1.17V
C182 22uF
C185 4.7uF
C183 4.7uF
C186 4.7uF
C184 4.7uF
C187 22uF
C188 4.7uF
C189 4.7uF
C190 4.7uF
C191 4.7uF
C194 22uF
C195 4.7uF
C196 4.7uF
C198 4.7uF
C199 4.7uF
DGND
VDD1_F1
VDD1_F12
VDD1_G4
VDD1_G9
VDD1_T4
VDD1_T9
VDD1_U1
VDD1_U12
VDD2_A4
VDD2_A9
VDD2_F5
VDD2_F8
VDD2_H1
VDD2_H5
VDD2_H8
VDD2_H12
VDD2_K1
VDD2_K3
VDD2_K10
VDD2_K12
VDD2_N1
VDD2_N3
VDD2_N10
VDD2_N12
VDD2_R1
VDD2_R5
VDD2_R8
VDD2_R12
VDD2_U5
VDD2_U8
VDD2_AB4
VDD2_AB9
VDDQ_B3
VDDQ_B5
VDDQ_B8
VDDQ_B10
VDDQ_D1
VDDQ_D5
VDDQ_D8
VDDQ_D12
VDDQ_F3
VDDQ_F10
VDDQ_U3
VDDQ_U10
VDDQ_W1
VDDQ_W5
VDDQ_W8
VDDQ_W12
VDDQ_AA3
VDDQ_AA5
VDDQ_AA8
VDDQ_AA10
VSS_A3
VSS_A10
VSS_C1
VSS_C5
VSS_C8
VSS_C12
VSS_D2
VSS_D4
VSS_D9
VSS_D11
VSS_E1
VSS_E5
VSS_E8
VSS_E12
VSS_G1
VSS_G3
VSS_G5
VSS_G8
VSS_G10
VSS_G12
VSS_J1
VSS_J3
VSS_J10
VSS_J12
VSS_K2
VSS_K4
VSS_K9
VSS_K11
VSS_N2
VSS_N4
VSS_N9
VSS_N11
VSS_P1
VSS_P3
VSS_P10
VSS_P12
VSS_T1
VSS_T3
VSS_T5
VSS_T8
VSS_T10
VSS_T12
VSS_V1
VSS_V5
VSS_V8
VSS_V12
VSS_W2
VSS_W4
VSS_W9
VSS_W11
VSS_Y1
VSS_Y5
VSS_Y8
VSS_Y12
VSS_AB3
VSS_AB5
VSS_AB8
VSS_AB10
LPDDR4 Power supply voltage ramp:
RESET_n is held LOW.
VDD1 >= VDD2
VDD2 >= VDDQ

图 4-3 LPDDR4

4.4 eMMC Memory

The eMMC is an embedded Flash chip solution with standardized interfaces. It simplifies the interface design and solves the problem of driver compatibility caused by different standards among Flash manufacturers. The eMMC on the MYC-JX8MX board is connected to the processor's MCM2 controller with 8-bit MMC data line width. The default carrying capacity of eMMC version core board is 8GB, and the specific model is MTFC8GAKAJCN-4M IT:

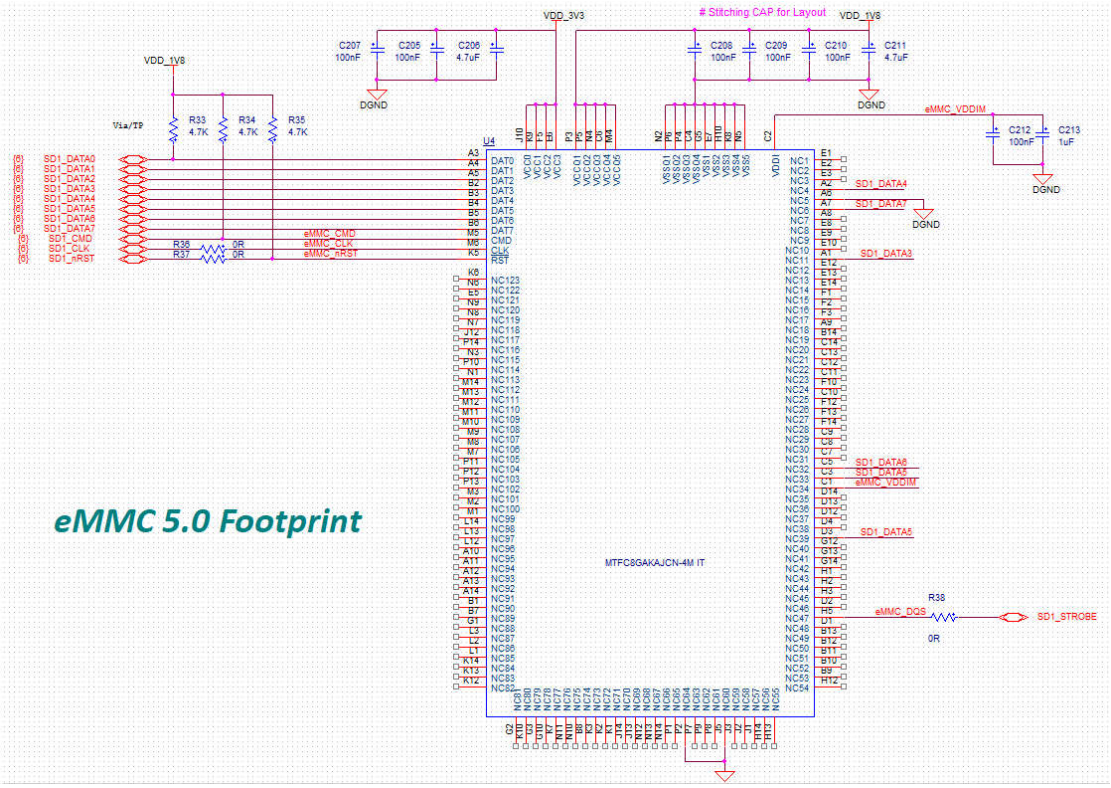

Figure 4-4 eMMC Memory

4.5 Ethernet

The MYC-JX8MX core board carries a 10M/100M/1000M Ethernet PHY. The chip uses AR8035-AL1B-R of Qualcomm Company, which is connected to the processor's ETH1 controller through RGMII mode. The specific connection mode is as follows：

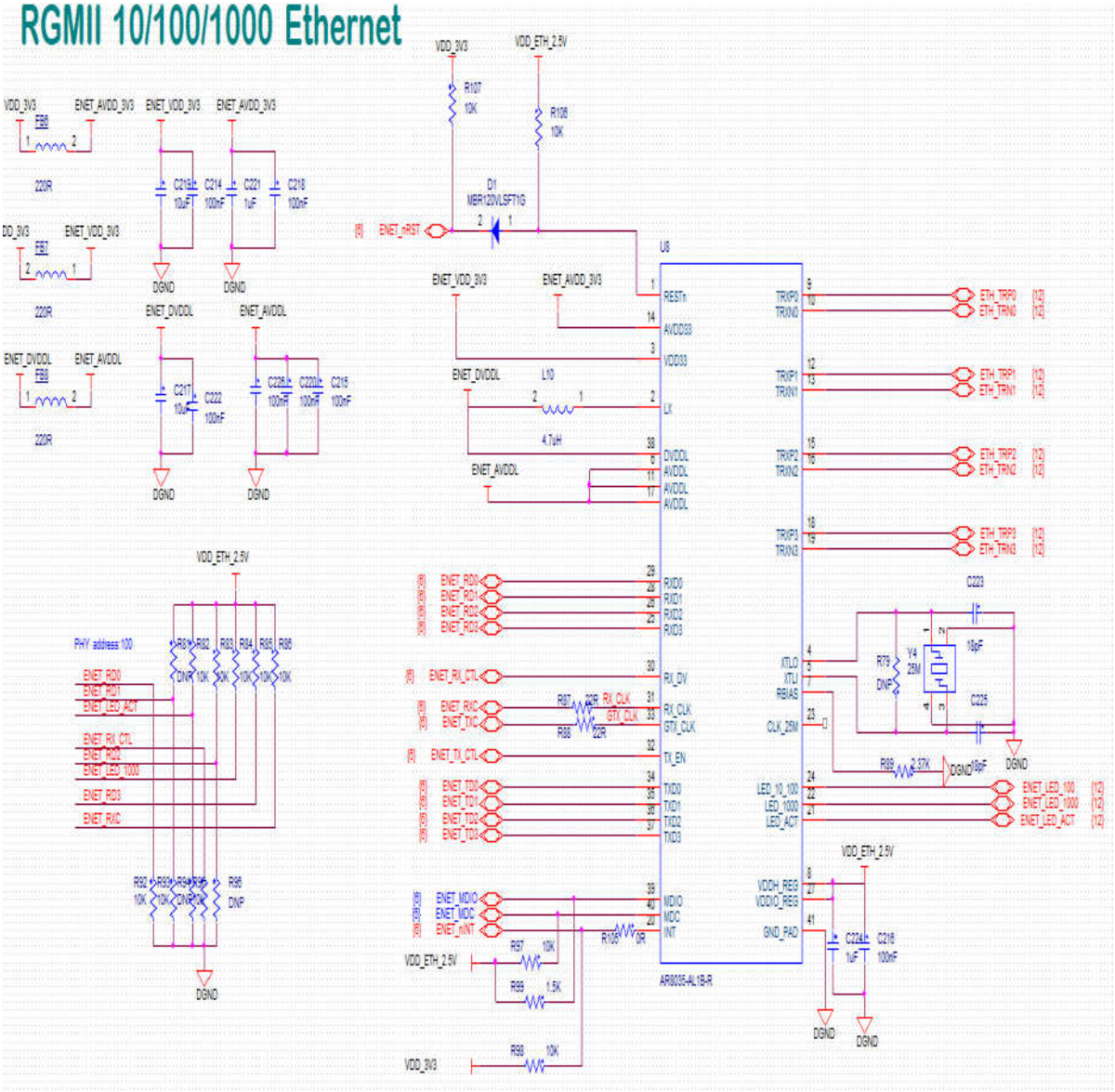

Figure 4-5 Ethernet

4.6 QSPI Flash Memory

The MYC-JX8MX core board carries a memory with SPI interface. The chip uses W25Q256JVEIQ of Huabang Company, a high-speed, full-duplex serial communication bus. Clock Line (CLK), Chip Selection (CS), Data Output (DO), Data Input (DI), respectively. They are connected to the ESPI interface of the processor.

The specific connection mode is as follows:

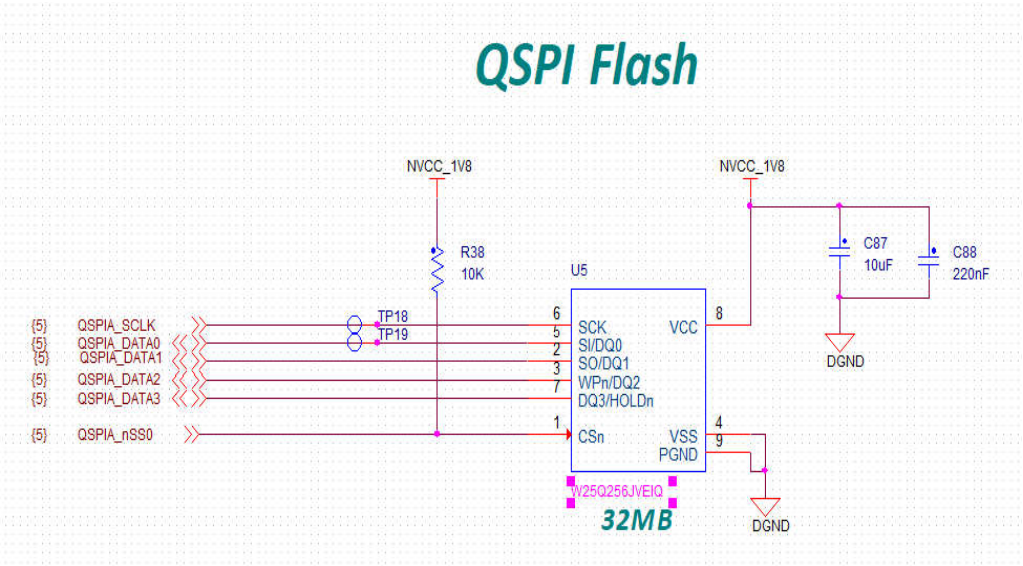

Figure 4-6 QSPI Flash

5 Electronic Characteristics

5.1 work temperature

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

Table 5-1 work temperature

5.2 GPIO DC Characteristics

Item	Lable	Parameter				Des.
		Min	Nor	Max	Unit	
Input High Voltage	VIH	2	--	VDD	V	--
Input Low Voltage	VIL	0	--	0.8	V	--
Output High Voltage	VOH	2.4	---	--	V	--
Output low Voltage	VOL	--	--	0.2	V	--

Table 5-2-1 DC Characteristics of 3.3V GPIO

Item	Lable	Parameter				Des.
		Min	Nor	Max	Unit	
Input High Voltage	V_{IH}	0.7xVDD	--	VDD	V	--
Input low Voltage	V_{IL}	0	--	0.2xVDD	V	--
Output High Voltage	V_{OH}	V_{DD} - 0.2	---	--	V	--
Output low Voltage	V_{OL}	--	--	0.2	V	--

Table 5-2-2 DC Characteristics of 1.8V GPIO

5.3 Power Supply Characteristics

Item	Lable	Parameter				Des.
		Min	Nor	Max	Unit	
System Voltage	VSYS	4.0	5	5.5	V	Input main power
System Current	I_{vsys}	---	0.6	---	A	Power current
RTC Voltage	VDD_BAT	2.4	--	3.6	V	Input RTC
RTC Current	I_{VDD_BAT}	---	2.4	---	uA	RTC current

Table 5-3 Power Supply Characteristics

6. Mechanical Characteristics

6.1 Mechanical Data

- Size：50 x 82 mm
- PCB parameter：10-layer design, gold sinking process, independent and complete grounding layer
- Interface type：Golden finger.（Unit：mm）：

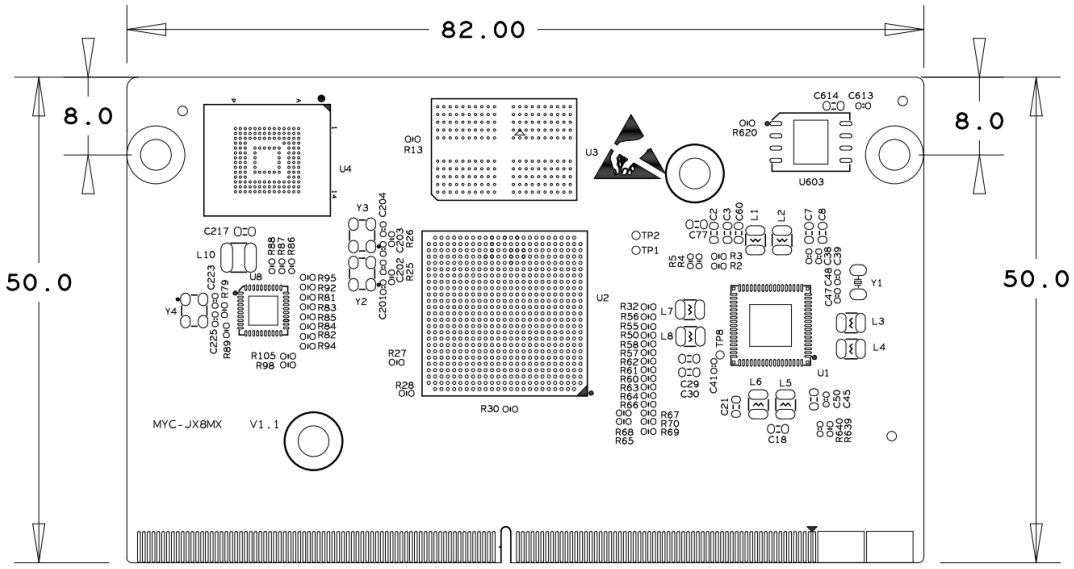

Figure 6-1 MYC-JX8MX Size

7. Development Kits

MYD-JX8MX development board is an evaluation kit for MYC-JX8MX core board. It uses 12V/2A DC power supply and carries LCD (10.1-inch single-channel LVDS interface screen or 21.5-inch double-channel LVDS interface screen), dual cameras, four-way USB3.0 interface, ethernet, WIFI+BT, 4G module, audio, TF card, HDMI, three-way serial port, ESPI interface, M2 (PCIE interface), SSD card, IO and other functions. It also provides driver support for Linux 4.9.88 operating system. Along with the development board, it provides relevant information including user manual, PDF schematic diagram of the bottom board, peripheral driver, BSP source package, development tools and so on. It provides stable design reference and perfect software development environment for developers, which can effectively help developers improve development efficiency, shorten development cycle, optimize design quality, and accelerate product development and marketin time.

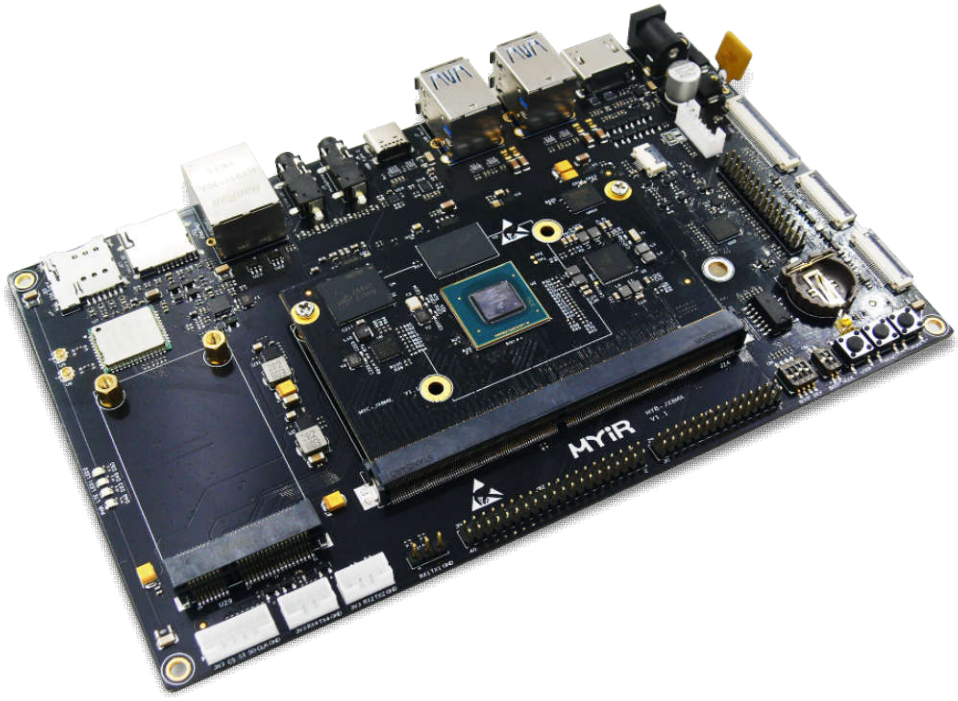

Figure 7-1 MYD-JX8MX development board

For more details, please refer to the web link： http://www.myir-tech.com

8. Schematic design information

8.1 Boot information

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 startup 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 8-1 Boot Mode Pin setting

- Boot From Fuses Mode：The Boot information is readed from internal Fuses, NXP recommends the use of this mode in mass production.
- Serial Downloader 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 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 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 startup 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.

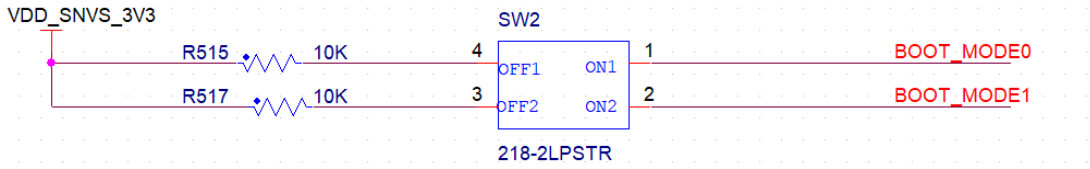

Figure 8-1 Startup mode configuration

Usually the CPU is set to internal Boot mode in the development state. In this mode, the CPU reads the level state of the processors SAI1_TXD2, SAI1_TXD4, SAI1_TXD5, SAI1_TXD6 pins to decide the device to start. SAI1_TXD2, SAI1_TXD4, SAI1_TXD5, SAI1_TXD6 pins have been processed within the MYC-JX8MX core board, and only four pins have been designed accordingly. Processing。

Boot device configure for eMMC core board：

Device / Pin	eMMC(SDIO2)Boot
SAI1_TXD2	0
SAI1_TXD4	0
SAI1_TXD5	1
SAI1_TXD6	0

Table 8-2 Boot device configure for EMMC version

Boot device configure for SD core board：

Device / Pin	SDIO1 Boot
SAI1_TXD2	1
SAI1_TXD4	1
SAI1_TXD5	0
SAI1_TXD6	0

Table 8-3 Boot device configure for SD version

8.2 Design advice

- SAI1_TXD2,SAI1_TXD4,SAI1_TXD5,SAI1_TXD6 are the boot configuration pins, which has been handled properly within the module. It is not recommended that pull these pins to gound or power, so as not to affect the boot of the module.
- Start bit configuration CPU supports SD card startup. It is recommended to reserve SD card interface when designing. Through the program started by SD to update eMMC program, offline burning can be achieved. This method is recommended for batch burning.

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.

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