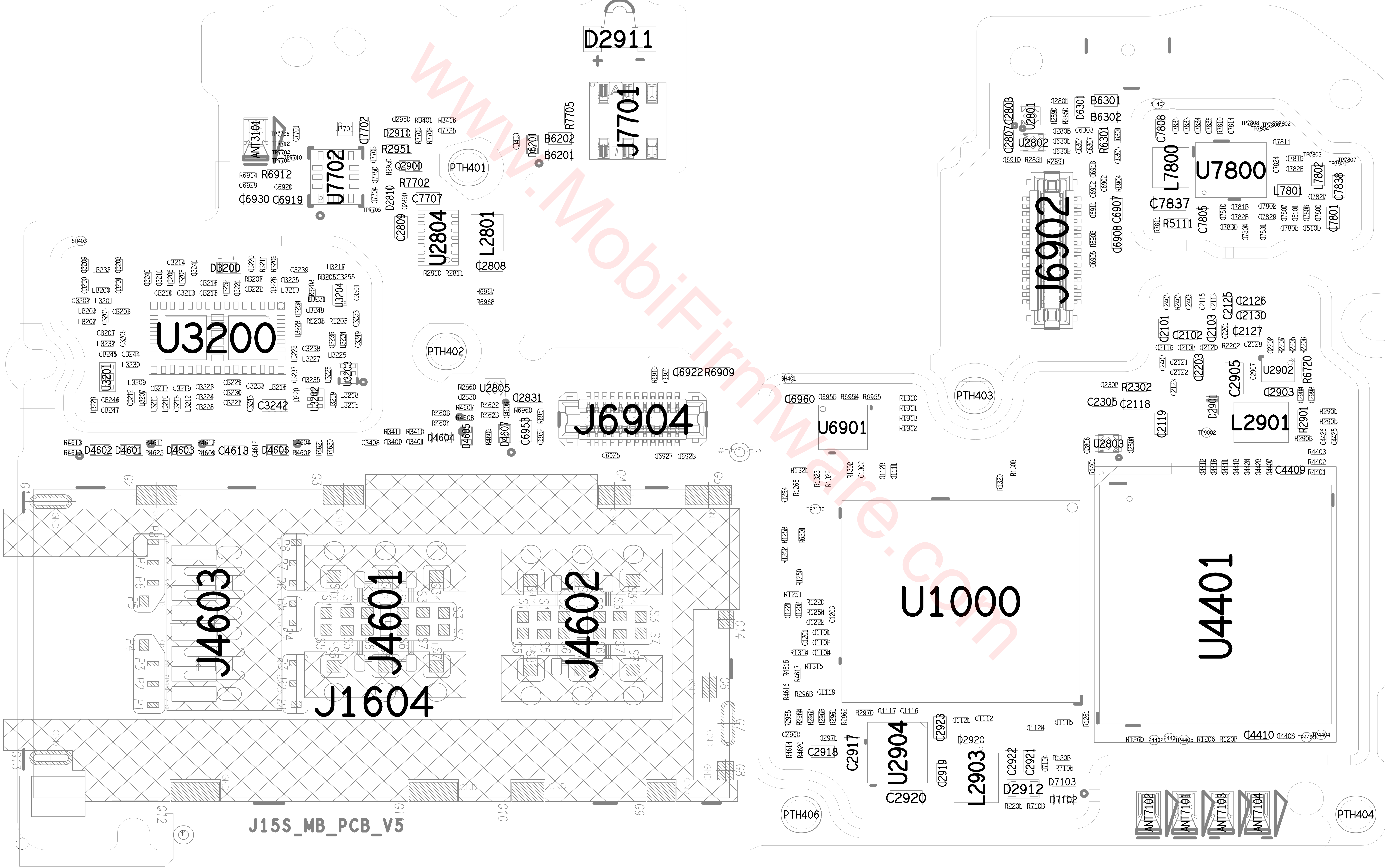


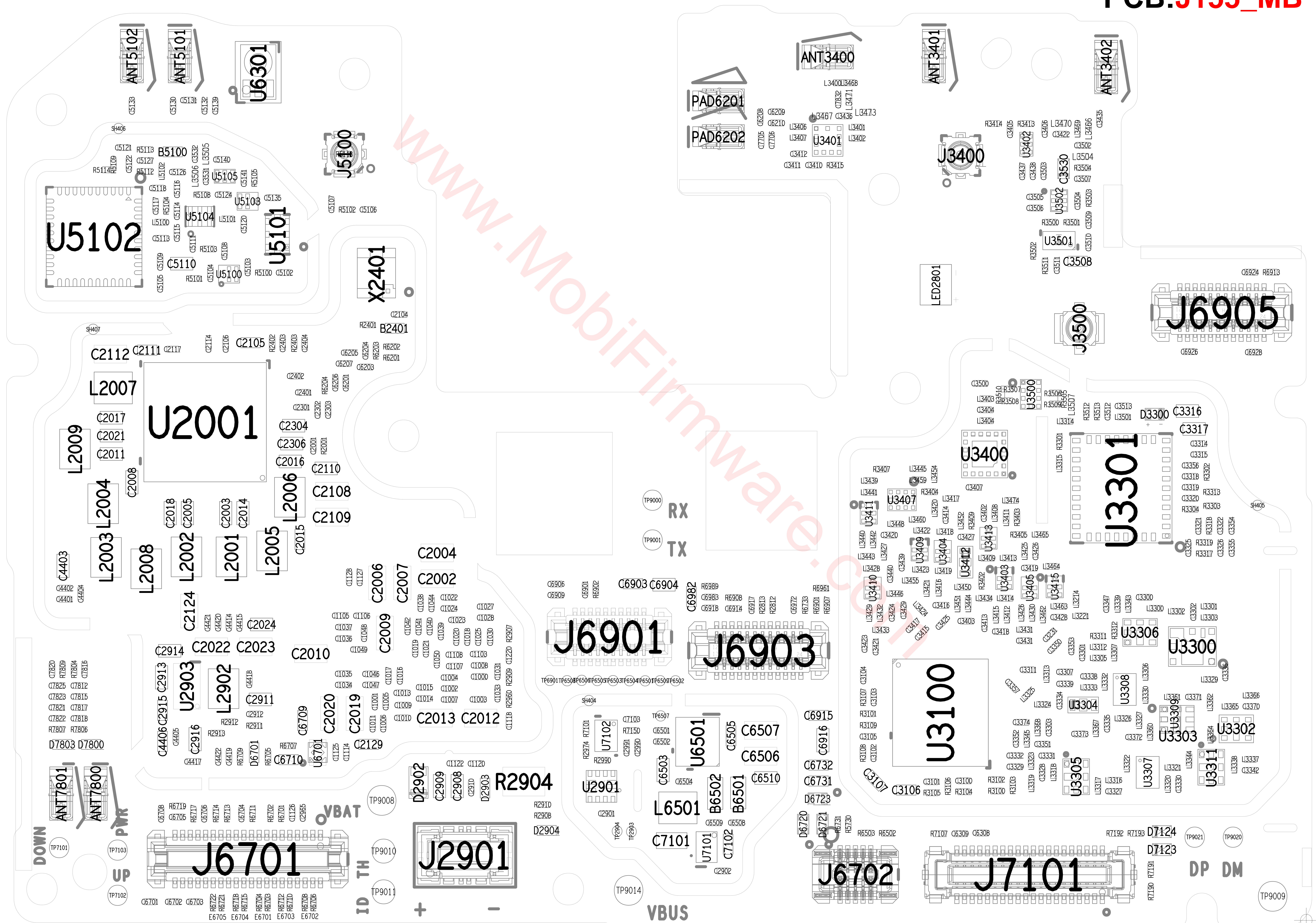
Xiaomi Redmi 10X 4G PCB Layout

PCB: J155_MB



Xiaomi Redmi 10X 4G PCB Layout

PCB: J155_MB



I2C	Sub SYS	Function	Part Number	I2C Spec.	Budget Timing	I2C Slave Address / Write / Read (7-bit mode)	
I2C-0	AP	Cap Touch controller	GT1151	400 Kbps	Yes.	0x5D	Write:0xBA / Read:0xBB
		LCM Gate Drive	RT4801HWSC	400 Kbps	Yes.		
I2C-1 (I3C)	AP Sensor Hub	Magnetic Sensor	AK09918C	400 Kbps	Yes.	0x0C	Write:0x18 / Read:0x19
		Ambient Light Sensor	CM36558	400 Kbps	Yes.	0x51	Write:0xA2 / Read:0xA3
		Proximity Sensor					
		Pressure Sensor	BMP280	400 Kbps	Yes.	0x77	Write:0xEE / Read:0xEF
I2C-2 (I3C)	AP	Rear Camera	IMX519	400 Kbps		0x1A	Write:0x34 / Read:0x35
			EEPROM	400 Kbps		0x50	Write:0xA0 / Read:0xA1
			AF driver	400 Kbps		0x0C	Write:0x18 / Read:0x19
			SK2P7	400 Kbps		0x2D	Write:0x5A / Read:0x5B
		Dual cam (B+b) - Main1	EEPROM	400 Kbps		0x50	Write:0xA0 / Read:0xA1
			AF driver	400 Kbps		0x0C	Write:0x18 / Read:0x19
I2C-3	AP	NFC	ST21NFCD	400 Kbps	Yes.	0x08	Write:0x10 / Read:0x11
		Dual cam (B+b) - Main2	OV8856	400 Kbps		0x10	Write:0x20 / Read:0x21
			EEPROM=NA				
			AF driver=NA				
I2C-4 (I3C)	AP	Front Camera	SK2T7	400 Kbps		0x2D	Write:0x5A / Read:0x5B
			EEPROM	400 Kbps		0x52	Write:0xA4 / Read:0xA5
			AF driver=NA				
I2C-5	AP	Reserved					
I2C-6	AP SSPM	Reserved					
I2C-7	AP	Audio Smart PA	MT6660	400 Kbps	Yes.	0x34	Write:0x68 / Read:0x69
		SW Charger	SW Charger	400 Kbps	Yes.		
		CC Detect	RT1715WSC	400 Kbps	Yes.		
		Flash LED 5V Boost	RT4505	400 Kbps	Yes.		

Note : I2C Spec. : Standard mode (100 kbps) and Fast mode (400 kbps), Fast mode Plus (1 Mbps) and High-speed mode (3.4 Mbps)

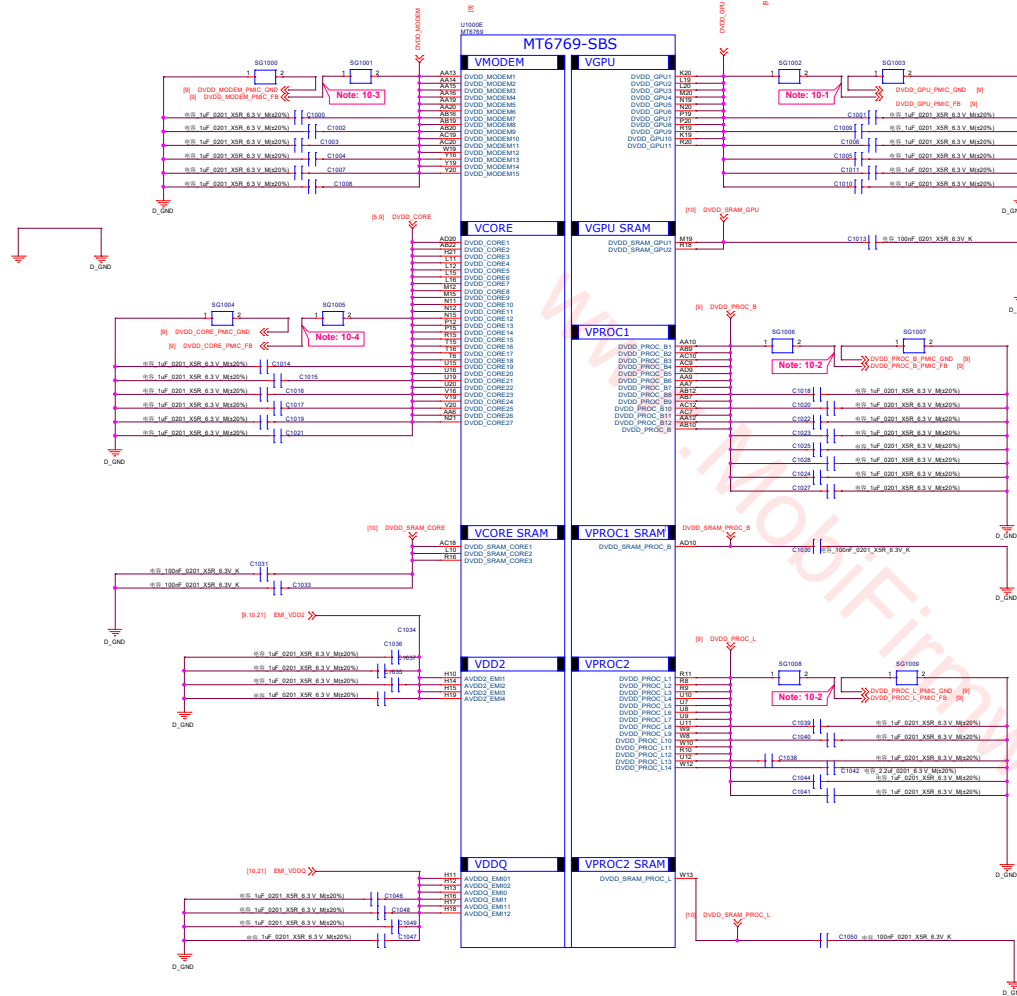
华勤通讯 Huaqin Telecom Technology Com.,Ltd		
Title 01_Block_Diagram		
Size D	Project J15_MB_V1	Rev V1
Date: Monday, May 25, 2020		Sheet 2 of 31

Date	Category	Item
2018.12.14 (V0.1)	Page 04	V0.1 Release
2019.01.11 (V0.2)	Page 12	Add CAM_PDN3(GPIO110) HW pin for Note 12-4: HW pin for DDR type feature in bootstrap Delete R1007 and R1012 ext. pull for LP4X eMCP
	Page 13	Add CAM_PDN3(GPIO110)'s Note : No ext. pull for DDR type feature in bootstrap
	Page 69	Add CAM_PDN3(GPIO110)'s Note : No ext. pull for DDR type feature in bootstrap
	Page 21	Add C2106 for VBIF28 cap
	Page 22	Delete R2202

www.MobiFirmware.com

华勤通讯 Huaqin Telecom Technology Com.,Ltd		
Title 01_Block_Diagram		
Size C	Project J15_MB_V1	Rev V1
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Schematic design notice of "10_BB_POWER_PDN" page:

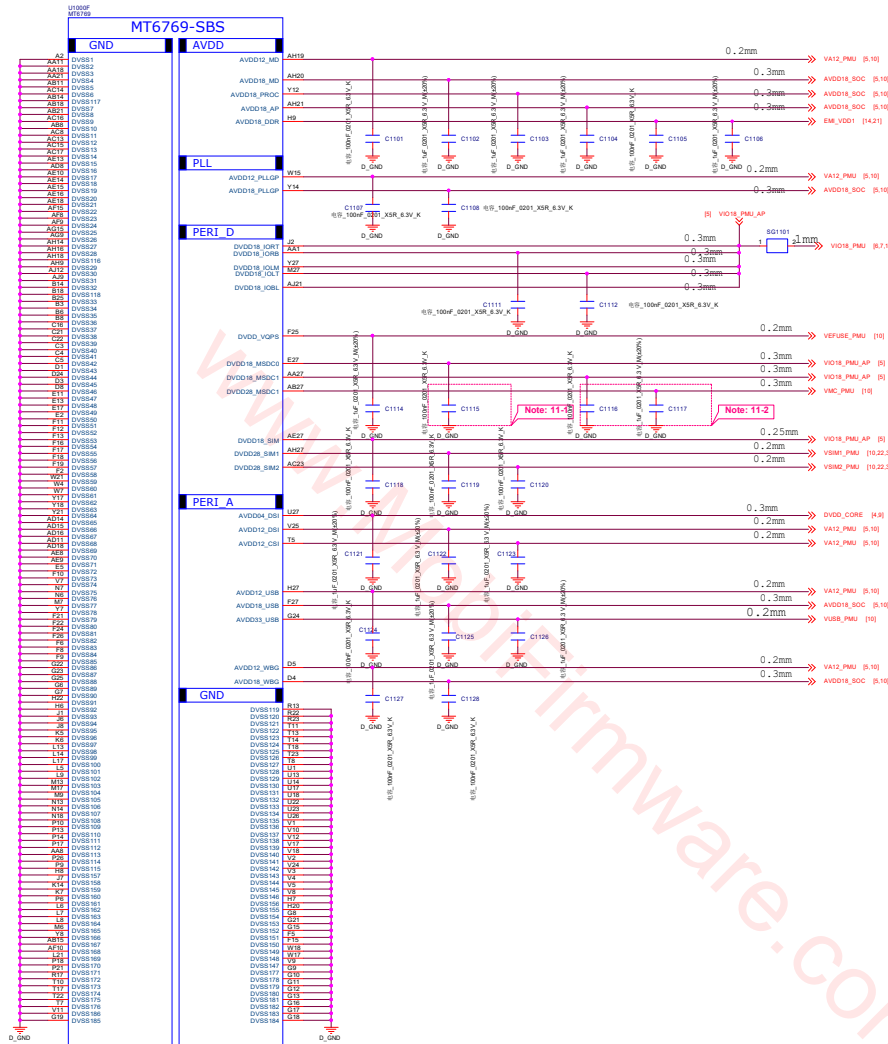


Note 10-1: Differential pair of DVDD_GPU remote sense must be close to BB's ball.
Remote sense trace with GND shielding to PMIC (Differential)

Note 10-2: Differential pair of DVDD_PROC remote sense must be close to BB's ball
Remote sense trace with GND shielding to PMIC (Differential)

Note 10-3: Differential pair of DVDD_MODEM remote sense must be close to BB's ball.
Remote sense trace with GND shielding to PMIC (Differential)

Note 10-4: Differential pair of DVDD_CORE remote sense must be close to BB's ball.
Remote sense trace with GND shielding to PMIC (Differential)



Schematic design notice of "11_BB_POWER_IO" page:

Note 11-1: C1115 closed DVDD18_MSDC1 150mil

Note 11-2: C1116 closed DVDD18_MSDC1 150mil
C1117 closed DVDD28_MSDC1 150mil

AVDD12 : 单个点走8mil, 两路分支各16mil, 总路径20mil

VIO18_FMU_AP: 总路径40mil

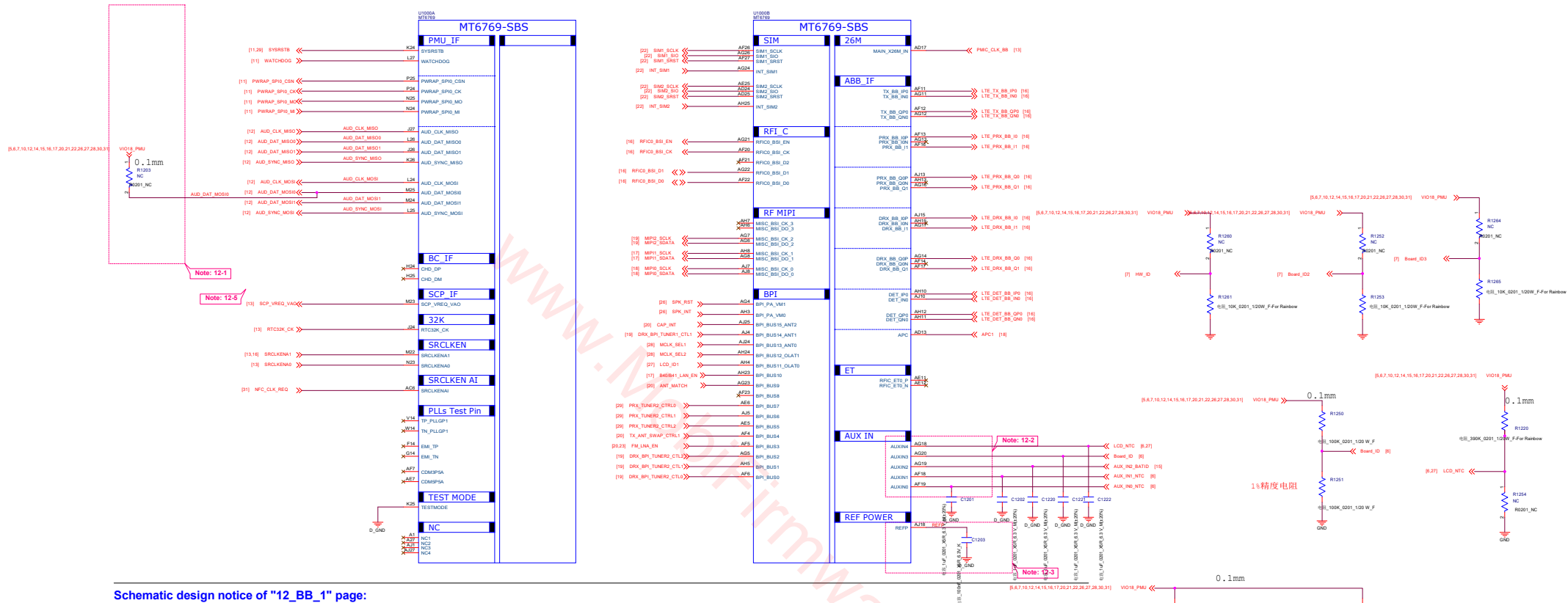
AVDD18_SOC: 总路径20mil

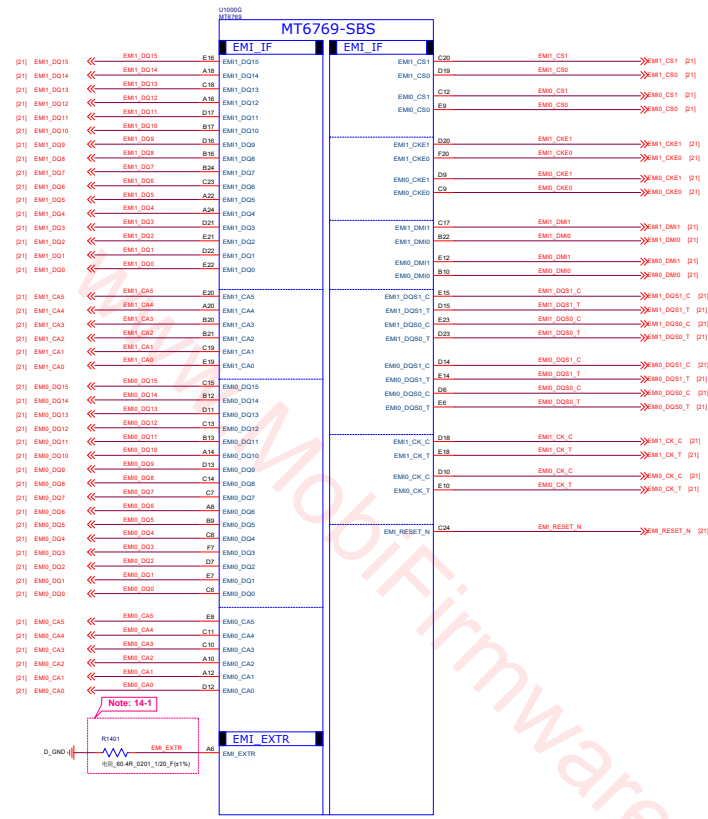
华勤通讯 Huaqin Telecom Technology Com., Ltd

Title 01_Block_Diagram

Size D	Project J15_MB_V1	Rev v1
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Date: Monday, May 25, 2020	Sheet 5 of 31
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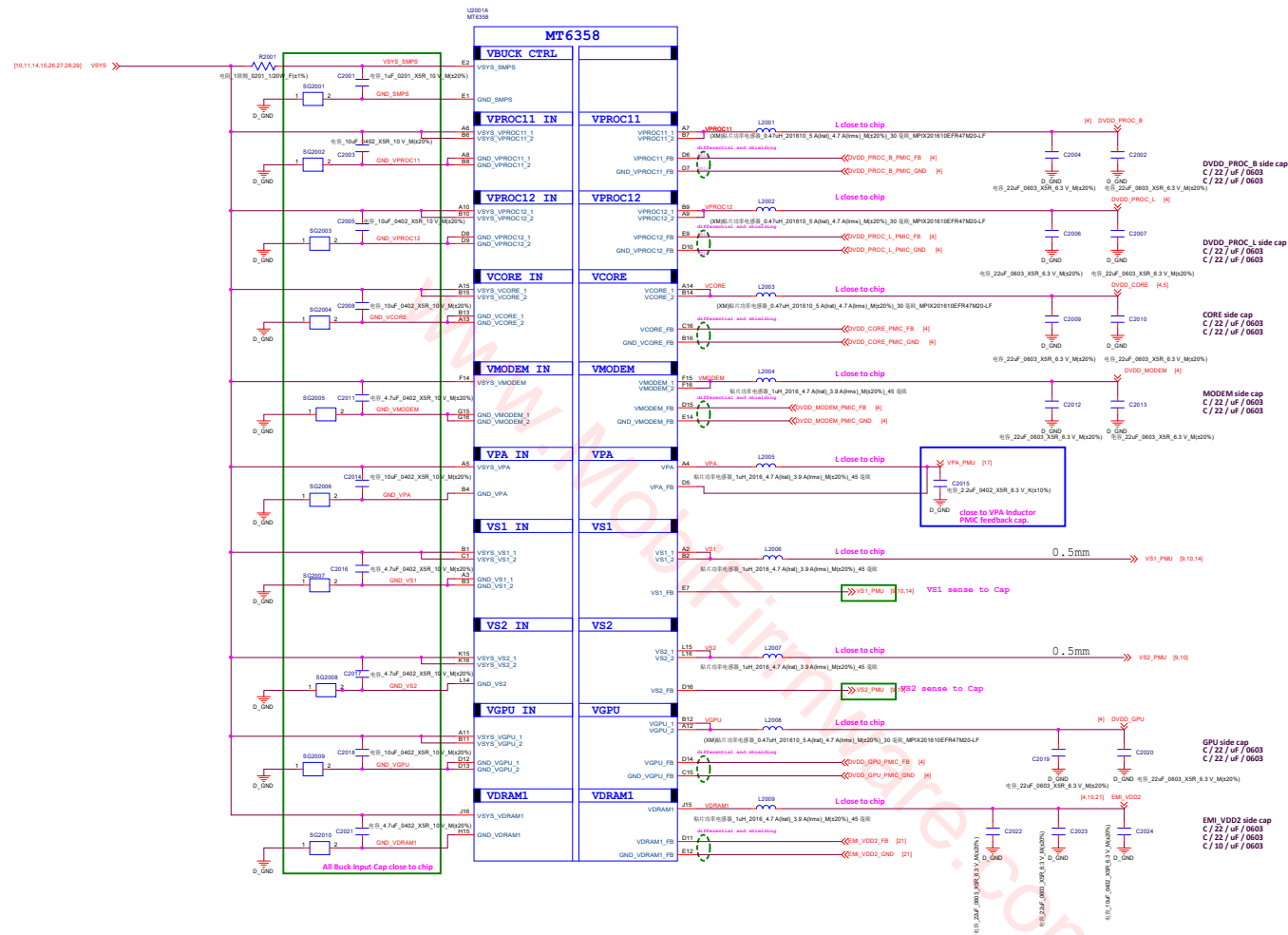




Schematic design notice of "14_BB_3" page.

Note 14-1: R1401 please select 60.4 ohm (1%) resistor

华勤通讯 Huaqin Telecom Technology Com., Ltd		
Title 01_Block_Diagram		
Size D	Project J15_MB_V1	Rev V1
Date: Monday, May 25, 2020	Sheet 8 of 31	

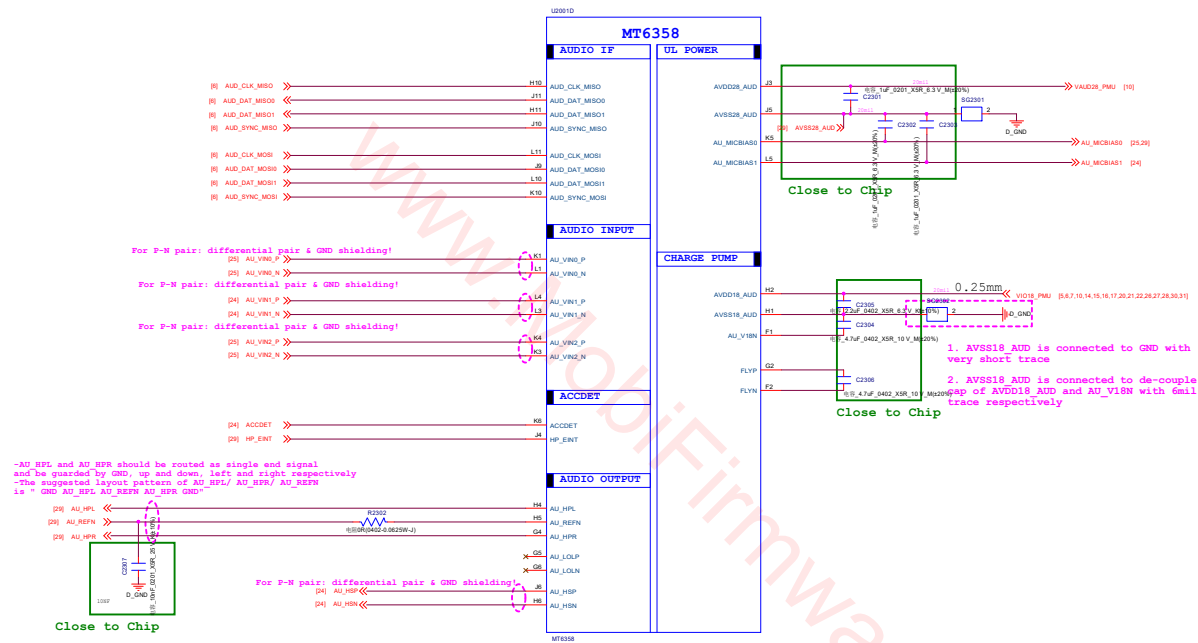


华勤通讯 Huaqin Telecom Technology Com.,Ltd

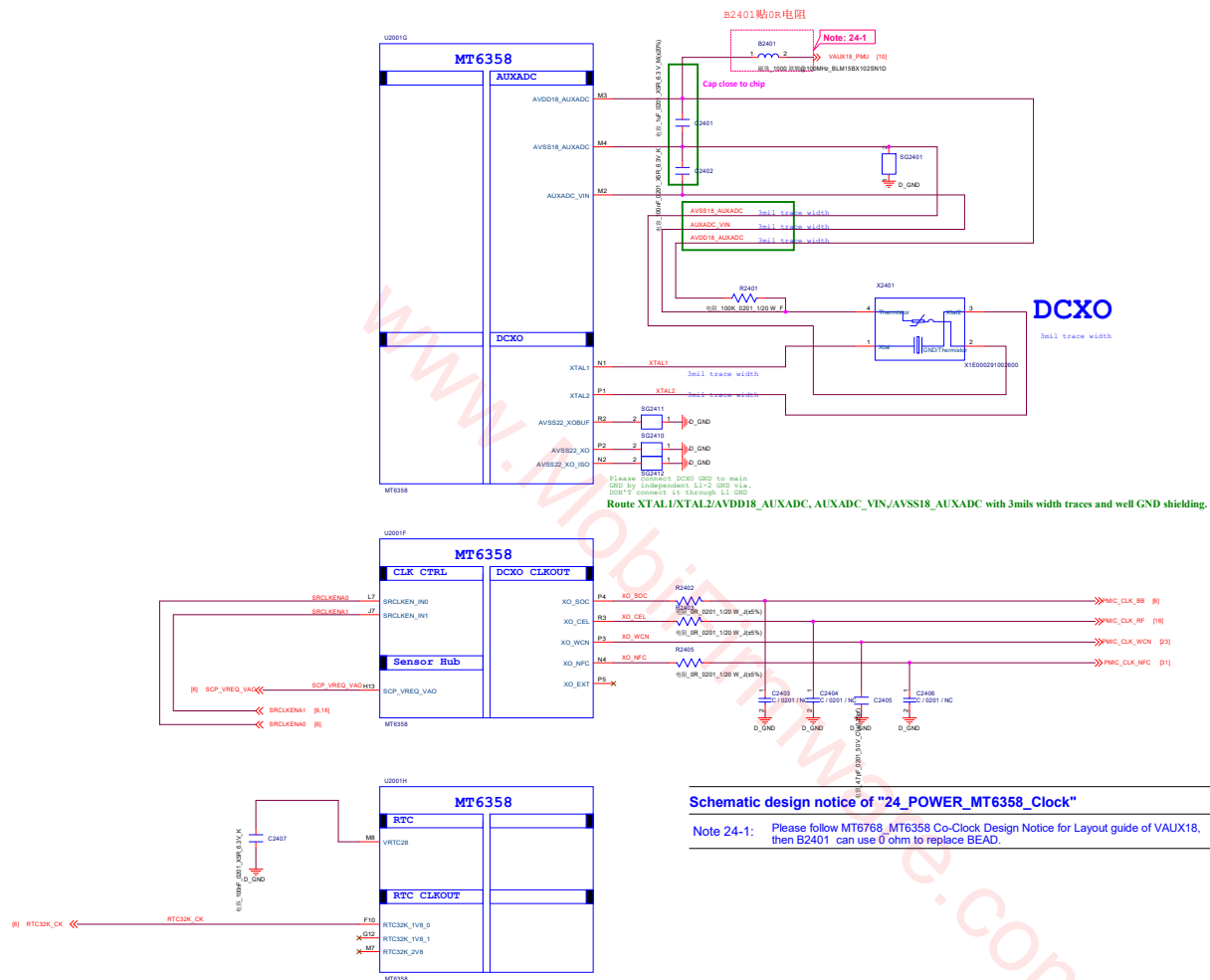
Title 01_Block_Diagram

Size D	Project J15_MB_V1	Rev v1
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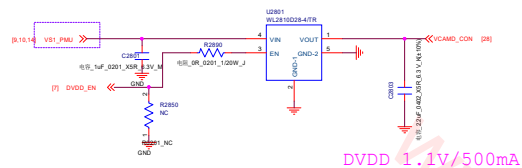


华勤通讯 Huaqin Telecom Technology Com.,Ltd		
Title 01_Block_Diagram		
Size D	Project J15_MB_V1	Rev V1
Date: Monday, May 25, 2020	Sheet 12 of 31	



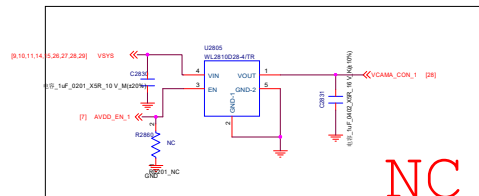
华勤通讯 Huaqin Telecom Technology Com., Ltd		
Title 01_Block_Diagram		
Size D	Project J15_MB_V1	Rev V1
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LDO for Rear Camera (VCAMD_EXT1) 1.06V



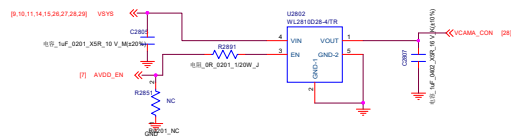
DVDD 1.1V/500mA

LDO for Dual Camera (VCAMA_EXT) 2.8V

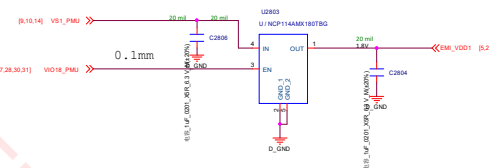


NC

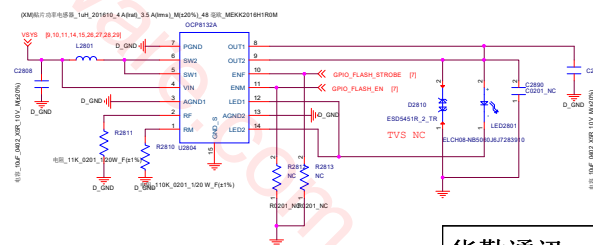
LDO for Dual Camera (VCAMA_EXT) 2.8V



Ext. EMI_VDD1 for LPDDR4X VDD1



Flash LED 5V Boost

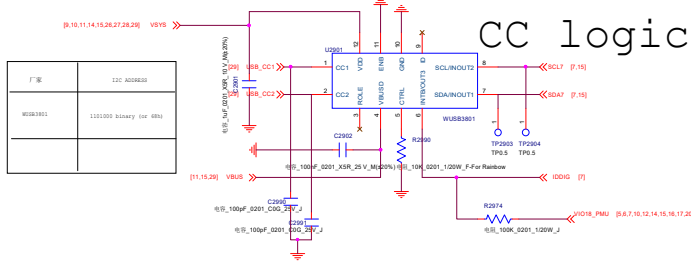


华勤通讯 Huaqin Telecom Technology Com.,Ltd

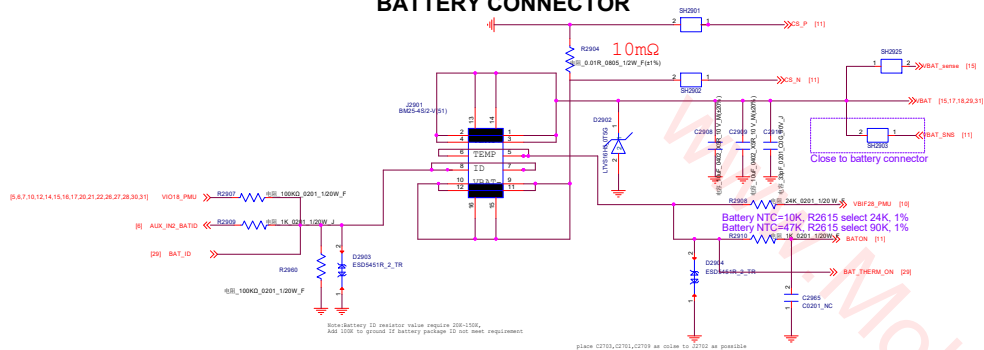
Title 01_Block_Diagram

Size D	Project J15_MB_V1	Rev V1
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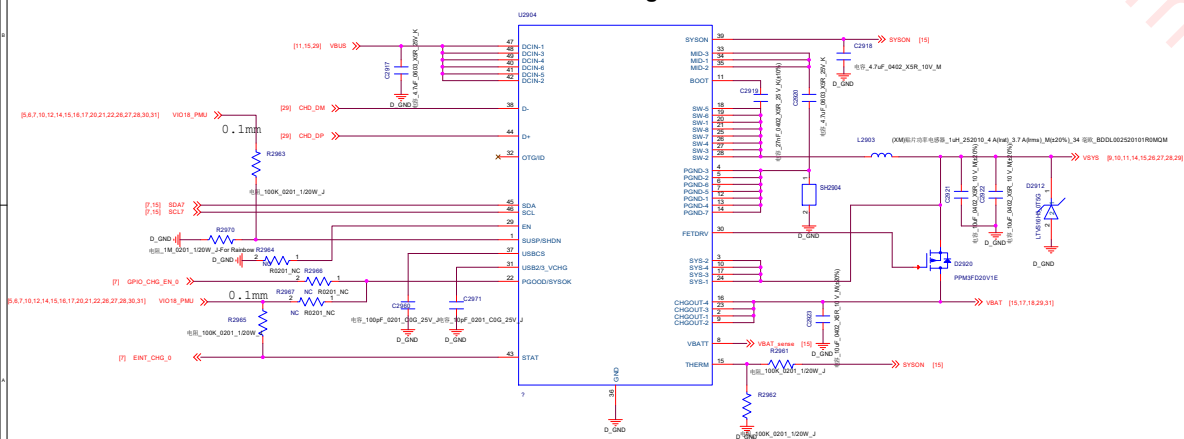
BATTERY CONNECTOR



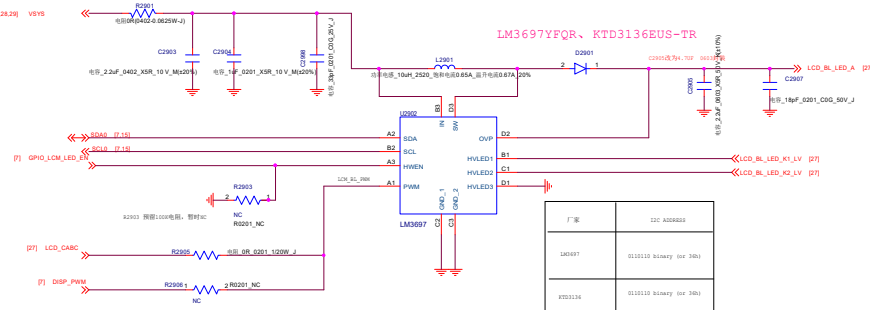
Schematic design notice of "29_EXT_WLED+DB+FL+CHG+PD" page.

Note 29-1: For better ESD or surge performance we need choose suitable device for system protection. Please refer to [Surge device selection guide V2.0] provide by MTK.

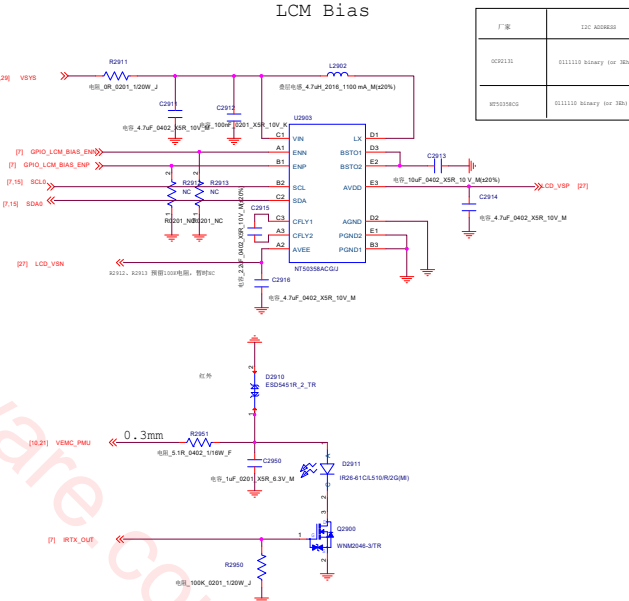
SW Charger



LCM Backlight LED Driver



LCM Bias



华勤通讯 Huaqin Telecom Technology Com.,Ltd

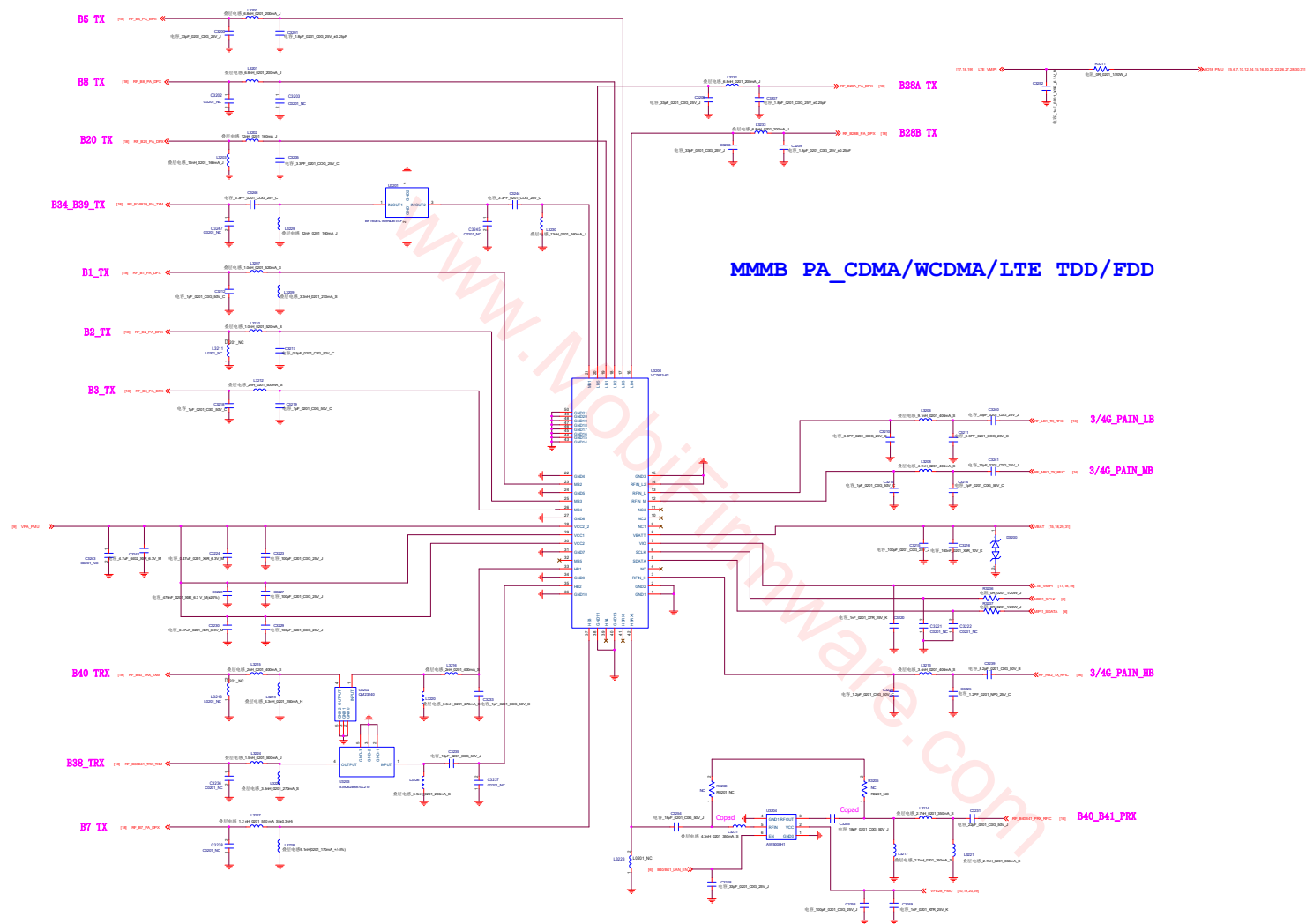
Title 01_Block_Diagram

Size D Project J15_MB_V1

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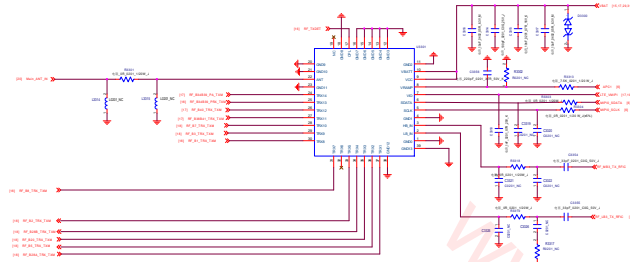
Title 32_RF_MT6177_RF_TX

Size E Project F9_MB_V1

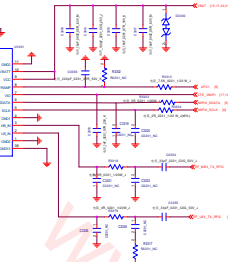
Rev v1

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MAIN_ANT

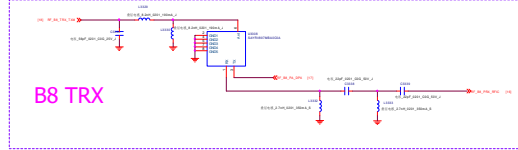
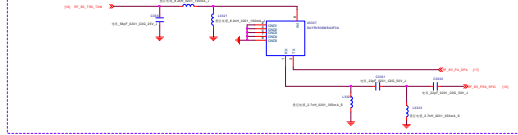


TXM_GSM

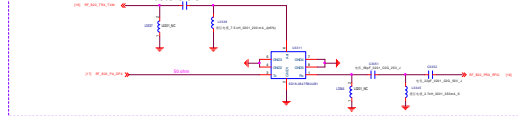


TRX_LB

B5 TRX



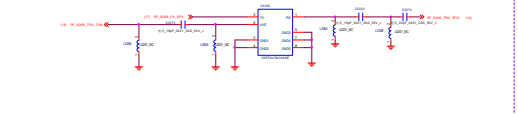
B20 TRX



B28A TRX

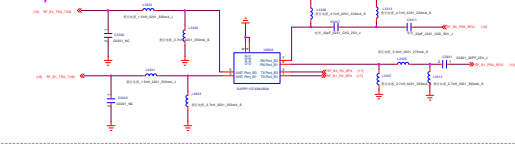


B28B TRX

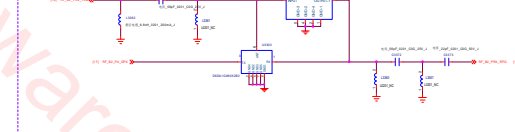


TRX_MB

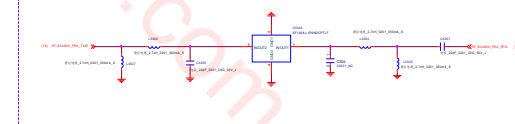
B1/3 TRX



B2 TRX

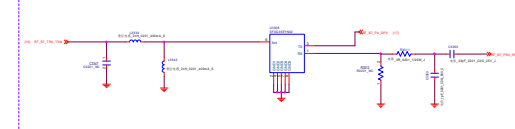


B34 B39 TRX



TRX_HB

B7 TRX



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Title 33_RF_MT6177_RF_PRX

Size Project F9_MB_V1
Custom

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[illegible][illegible][illegible][illegible][illegible]

B38/B41_DRX

1.8V

10k

100nF

3.3V

74VHC04

10k

100nF

3.3V

B38/B41_DRX

同轴座

空口检测

TAS

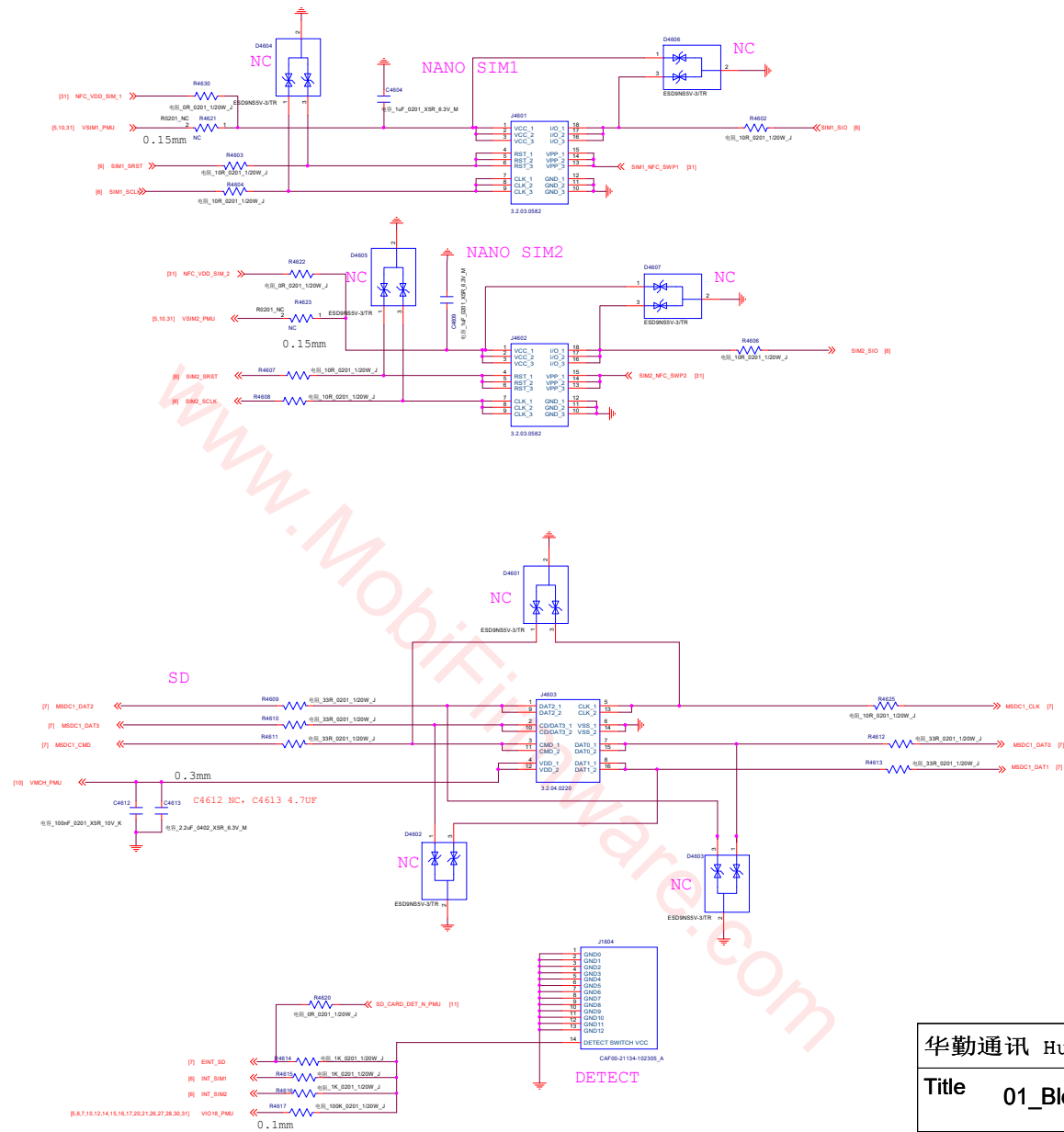
MAIN DPDT SWITCH

SAR Sensor

FM

华勤通讯 Huaqin Telecom Technology Com.,Ltd			
Title 35_DPDT			
Size A0	Project F9_MB_V1	Rev v1	
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Note 46-1:

Schematic design notice of "46_MEMORY_SD Card" page.

For better ESD performance, please select suitable components for system protection.

华勤通讯 Huaqin Telecom Technology Com.,Ltd

Title 01_Block_Diagram

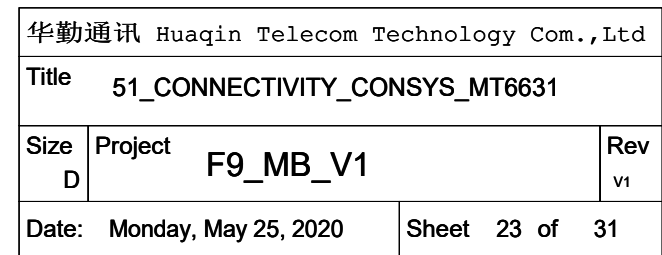
Size D

Project J15_MB_V1

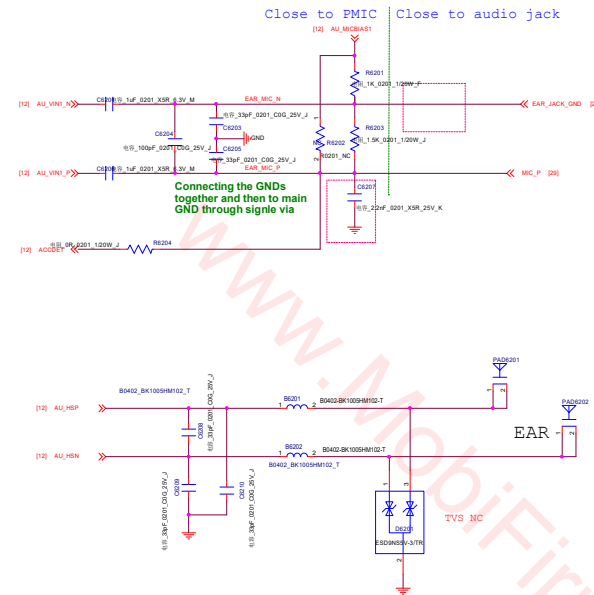
Rev V1

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Earphone Microphone



Schematic design notice of "62_PERI_AUDIO_IO" page.

Note 62-1: Part # of BEAD6202, BEAD6203, BEAD6204 and BEAD6205 needs changed to "BLM18BD102SN1" for high THD performance (~90dB) but this BOM change will results in FM RSSI 10dB degraded .

Note 62-2: Reserved Cap for CS/RS test, please double check multi-key function when used

Note 62-3:

Earphone Jack	Earphone Jack
0 ohm	100nF

华勤通讯 Huaqin Telecom Technology Com.,Ltd

Title 01_Block_Diagram

Size D Project J15_MB_V1

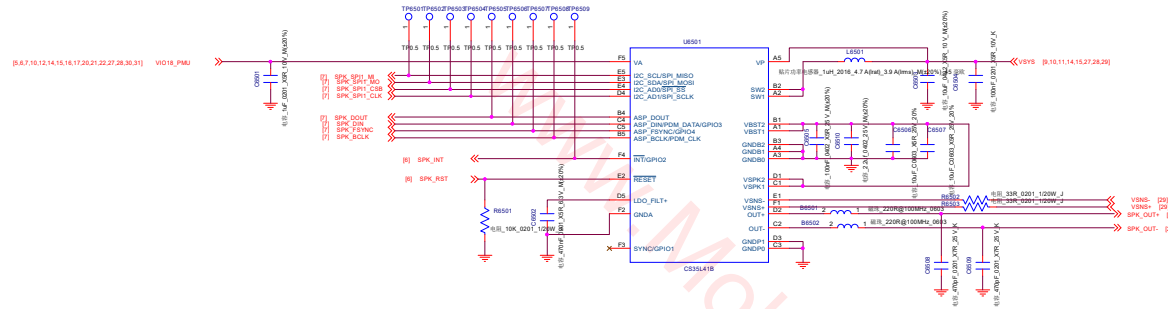
Rev V1

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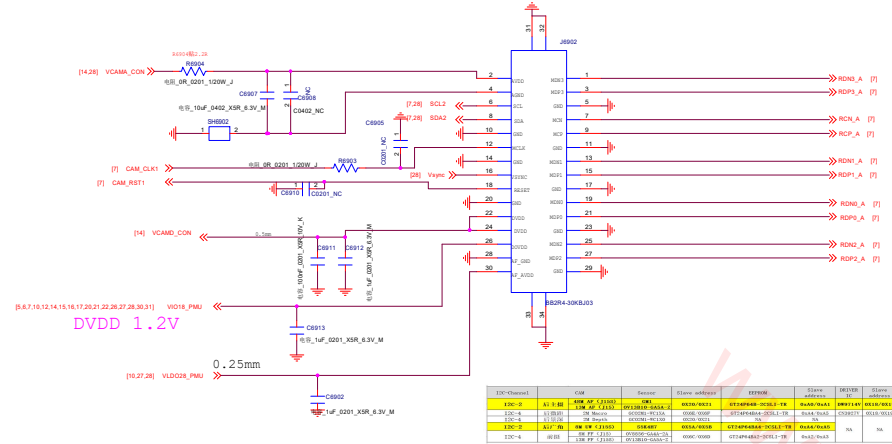
Speaker Amplifier

MT6660 Speaker AMP I2C Address: 0x34 (Write:0x68, Read:0x69) when AD81 = GND; AD82 = GND.

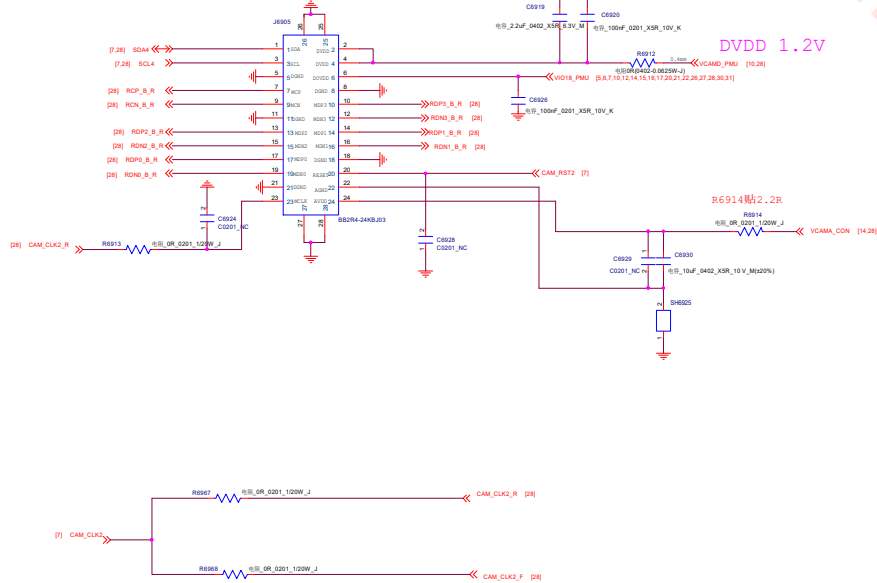


华勤通讯 Huaqin Telecom Technology Com.,Ltd		
Title 01_Block_Diagram		
Size D	Project J15_MB_V1	Rev V1
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Main MONO Camera 48M



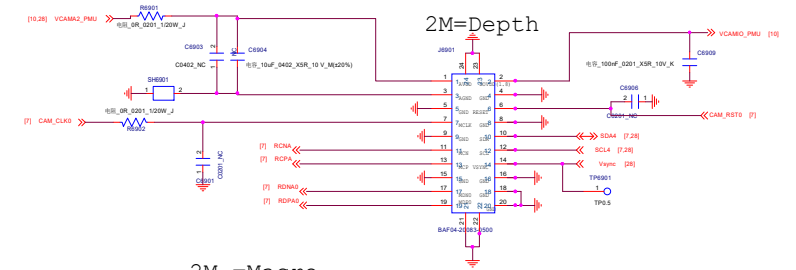
Front Camera - 13M



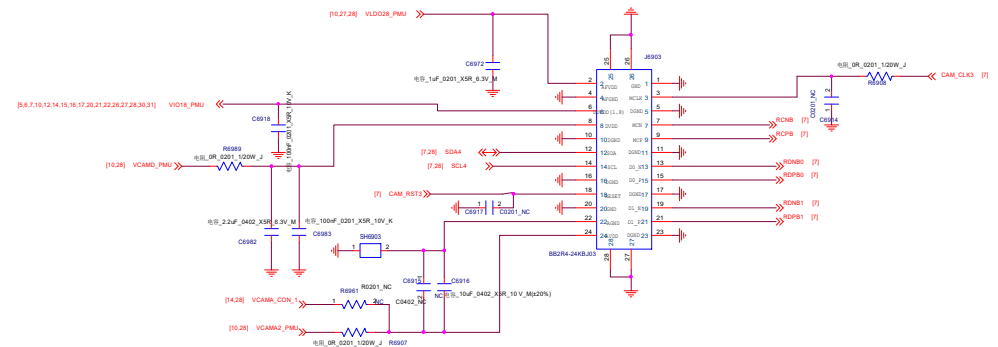
贴R6967、R6968，其他器件NC

Table 1. Function Table		
OE	SEL	Function
L	X	IO pin High impedance
L	X	CLKIN (CLKIN = CLKAPIN)
L	H	CLKIN (CLKIN = CLKAPIN)

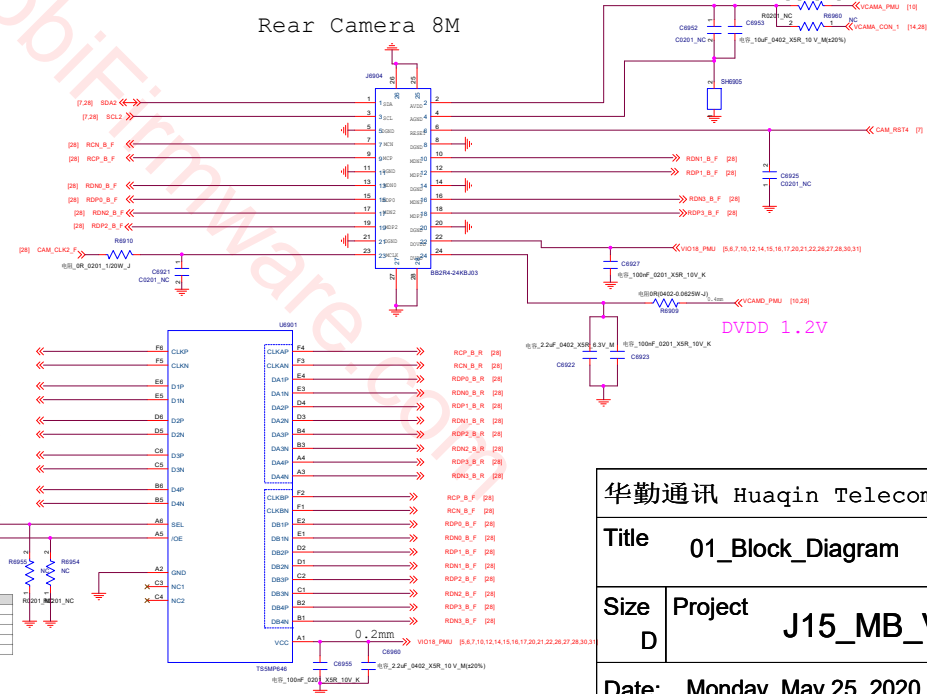
2M=Depth



2M =Macro



Rear Camera 8M



华勤通讯 Huaqin Telecom Technology Com.,Ltd

Title 01_Block_Diagram

Size D Project J15_MB_V1

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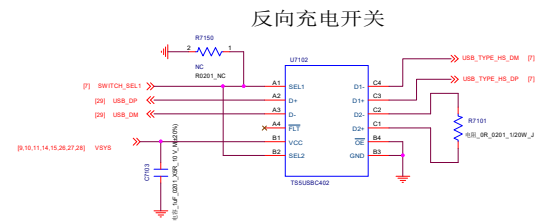
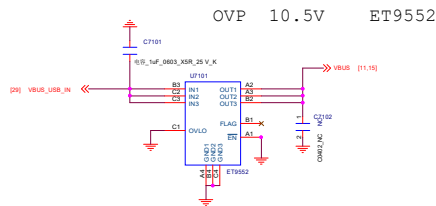
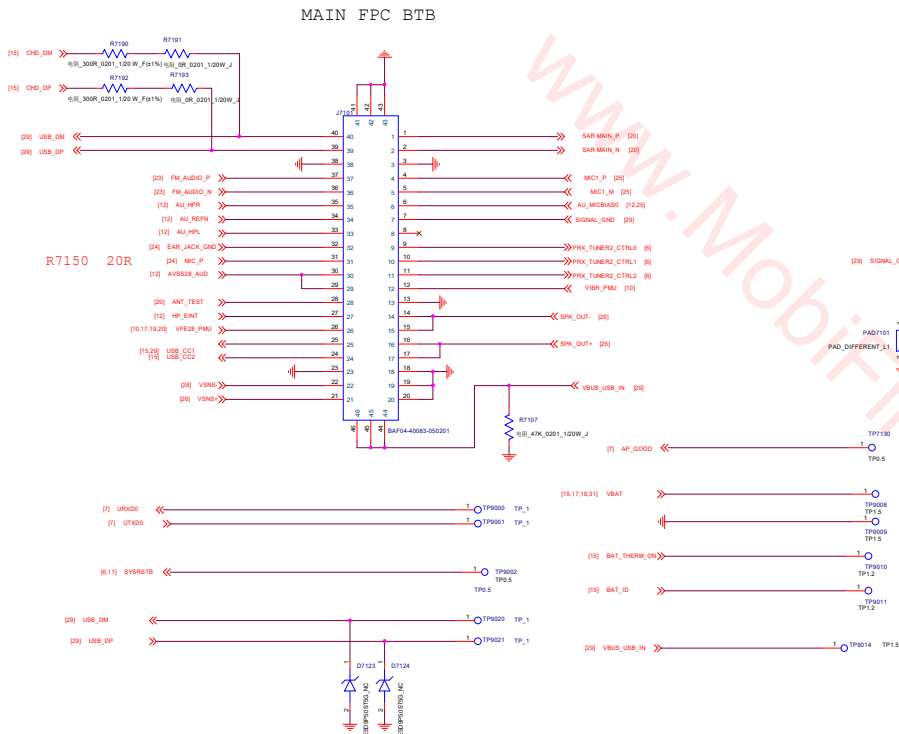
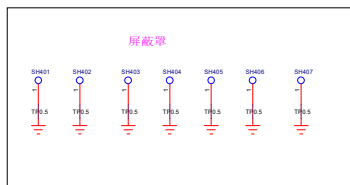
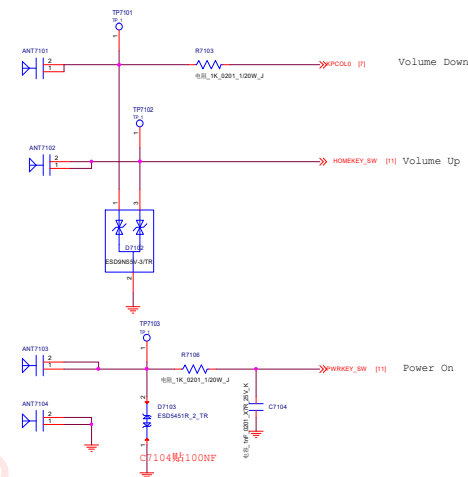


Table 1. Function Table

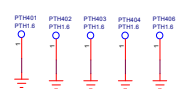
OE	SEL1	SEL2	D- Connection	D+ Connection
H	X	X	High-Z	High-Z
L	L	L	D- to D1-	D+ to D1+
L	L	H	D- to D1-	D+ to D2+
L	H	L	D- to D2-	D+ to D1+
L	H	H	D- to D2-	D+ to D2+



KEY BTB



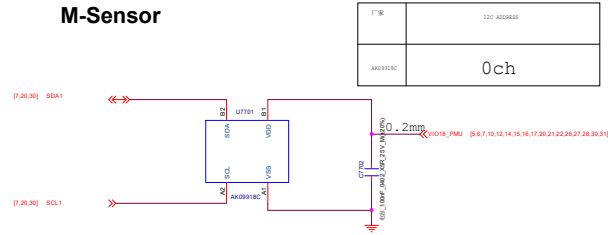
螺絲孔



USB

华勤通讯 Huaqin Telecom Technology Com.,Ltd		
Title 01_Block_Diagram		
Size D	Project J15_MB_V1	Rev V1
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M-Sensor

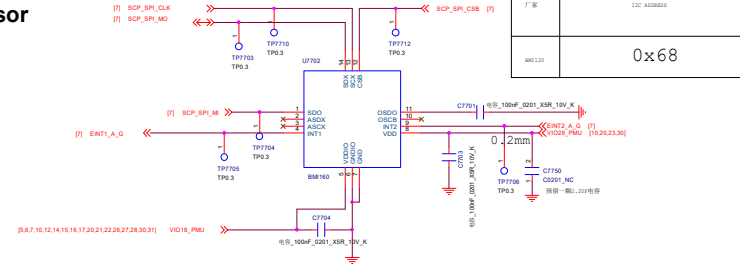


厂家	12C AK8963
地址/IC	0ch

Accerometer + Gyro Sensor

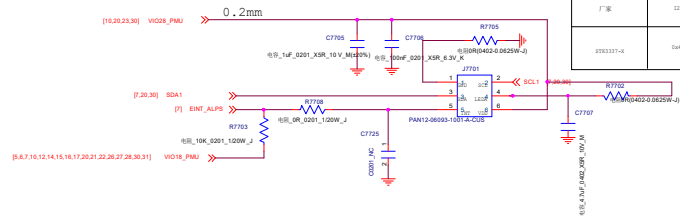
default SPI (if sensor hub support)

Gyro+A sensor



厂家	12C ADXL345
地址/IC	0x68

ALS PS STK3337-X



厂家	12C ADXL345
地址/IC	0x68

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Title 01_Block_Diagram

Size D Project J15_MB_V1

Rev v1

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