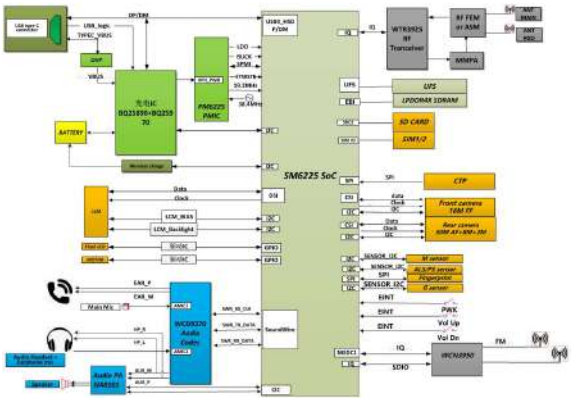
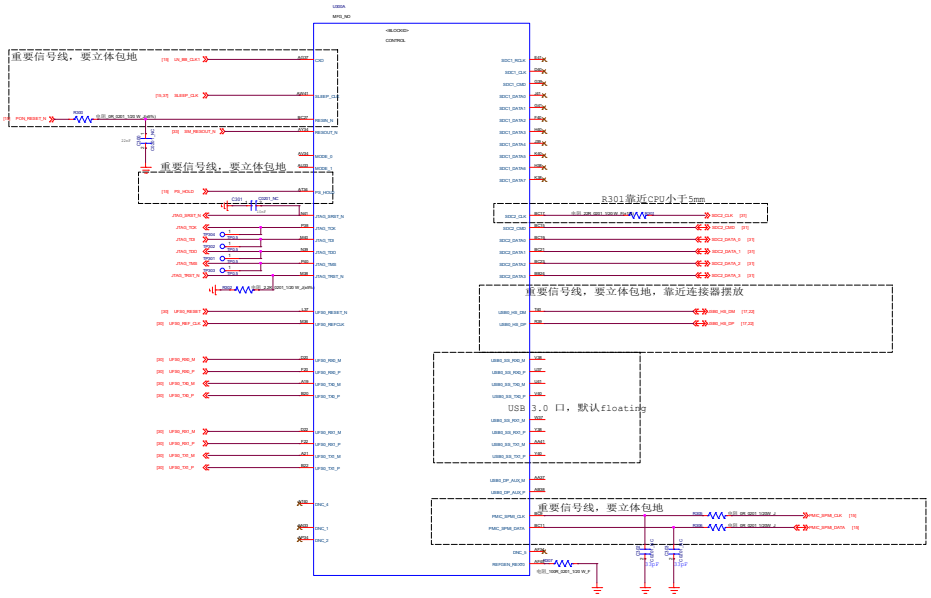


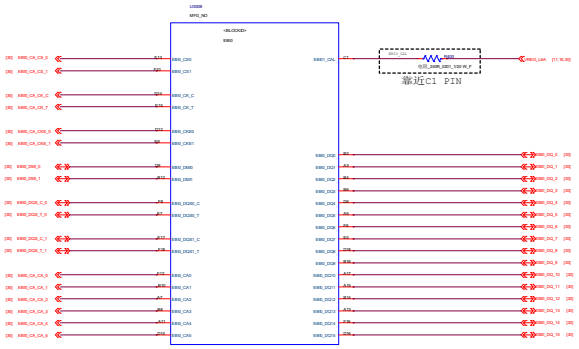
华勤通讯 Huaqin Telecom Technology Com.,Ltd			
Title	Block Diagram		
Size D	Project QL6151_MB		Rev V1
Date: Monday, December 20, 2021		Sheet 1 of 46	

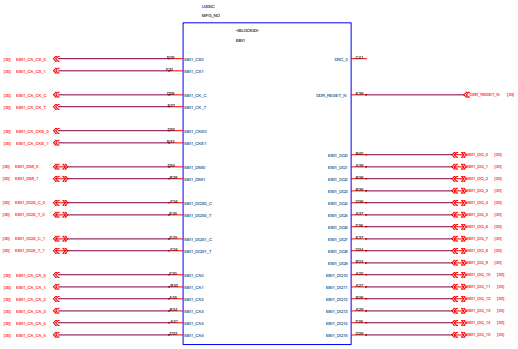
华勤通讯 Huaqin Telecom Technology Com.,Ltd			
Title	SM6225_ DECAPS		
Size D	Project QL6151_MB		Rev V1
Date: Monday, December 20, 2021		Sheet 2 of 46	



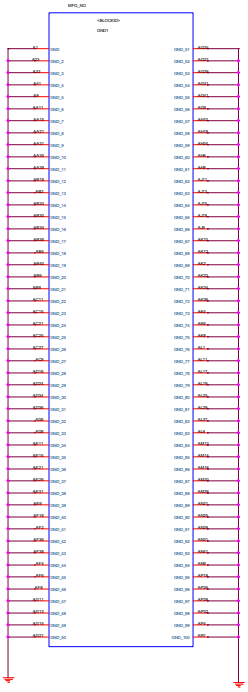
华勤通讯 Huaqin Telecom Technology Com.,Ltd		
Title: SM6225_CONTROL		
Size: D	Project: QL6151_MB	Rev: V1
Date: Monday, December 20, 2021	Sheet 3 of 46	

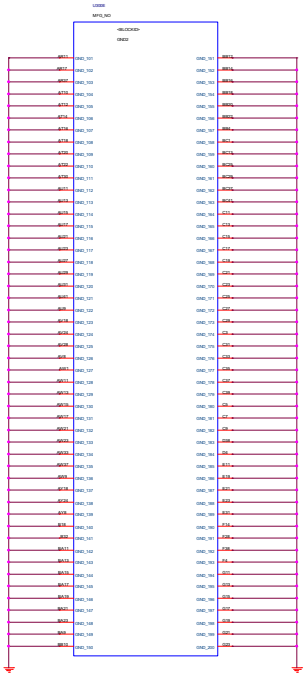
SM6225_EBI0_1

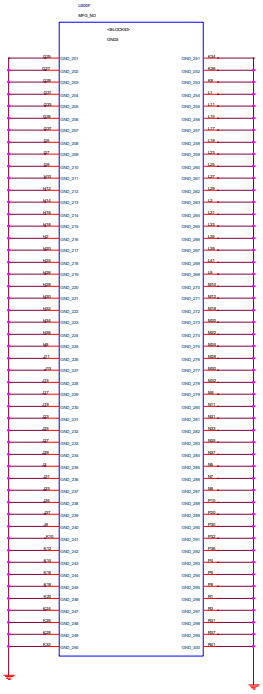


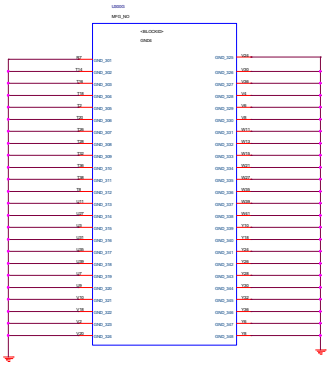


华勤通讯 Huaqin Telecom Technology Com.,Ltd		
Title	SM6225_EBI0_1	
Size D	Project QL6151_MB	Rev V1
Date: Monday, December 20, 2021	Sheet 4 of 46	









华勤通讯 Huaqin Telecom Technology Com.,Ltd		
Title: SM6225_GND		
Size: D	Project: QL6151_MB	Rev: V1
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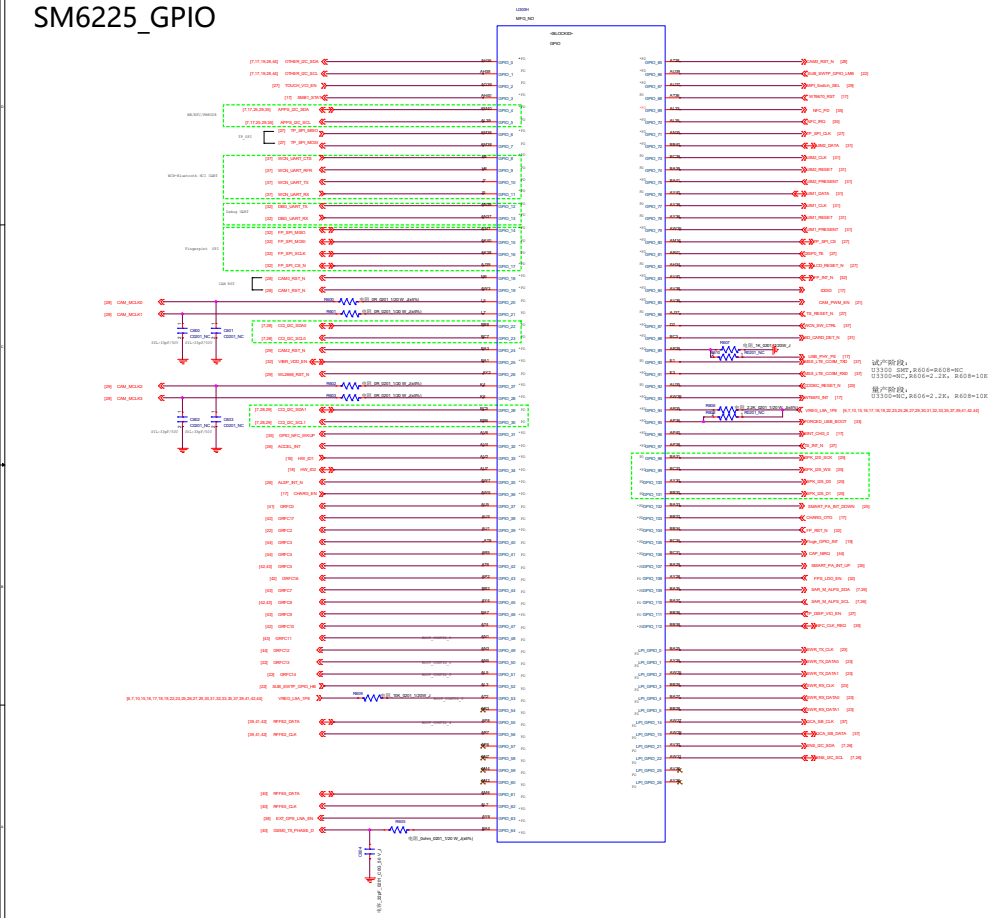
SM6225_GPIO



BOOT CONFIG GPIOs		FUNCTIONALITY
GPIO_95		FORCED_USB_BOOT
BOOT_CONFIG[0]:	GPIO_48	WDOG_DISABLE
BOOT_CONFIG[1]:	GPIO_50	FASTBOOT_SEL[0]
BOOT_CONFIG[2]:	GPIO_51	FASTBOOT_SEL[1]
BOOT_CONFIG[3]:	GPIO_53	FASTBOOT_SEL[2]
BOOT_CONFIG[4]:	GPIO_55	FASTBOOT_SEL[3]
GPIO_94		FORCED_USB_BOOT_POL_SEL

FASTBOOT_SEL[3:0]	BOOT OPTIONS
0b0000	0:Default (eMMC ->SD->eDL(eDL path -USB only))
0b0001	1:SD->eMMC ->eDL(eDL path -USB only)
0b0010	2:SD->eDL(eDL path -USB only)
0b0011	3:USB->eDL(eDL path -SD-then USB)
0b0100	5:UFS HS G1->SD->eDL(eDL path -USB only)
0b0101	4:SD->UFS HS G1->eDL(eDL path -USB only)
0b1100	6:UFS HS G1->eDL(eDL path -USB only)
0b0111	7:eMMC->SD->DL(eDL path -USB only)
0b1000	8:7:eMMC->DL(eDL path -USB only)

华勤通讯 Huaqin Telecom Technology Com.,Ltd		
Title	SM6225_GPIO	
Size D	Project PA4171_MB	Rev V1
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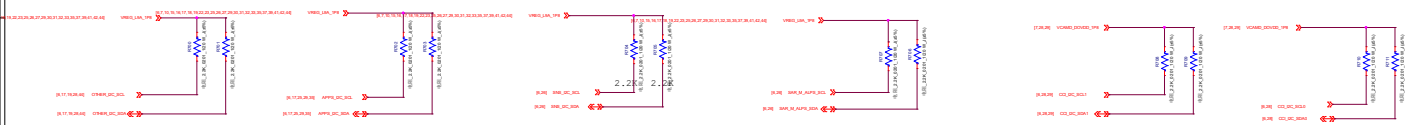
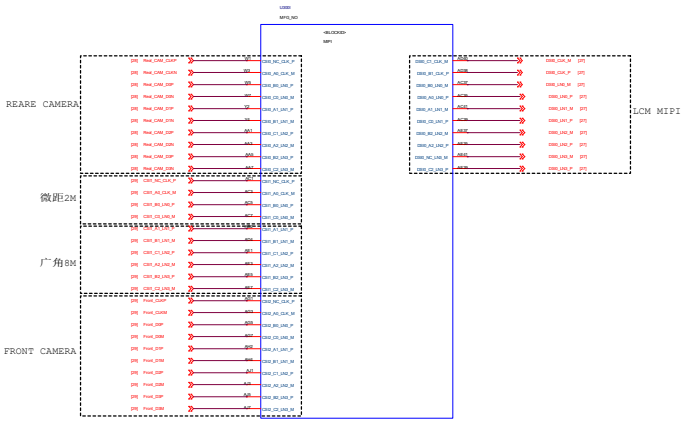
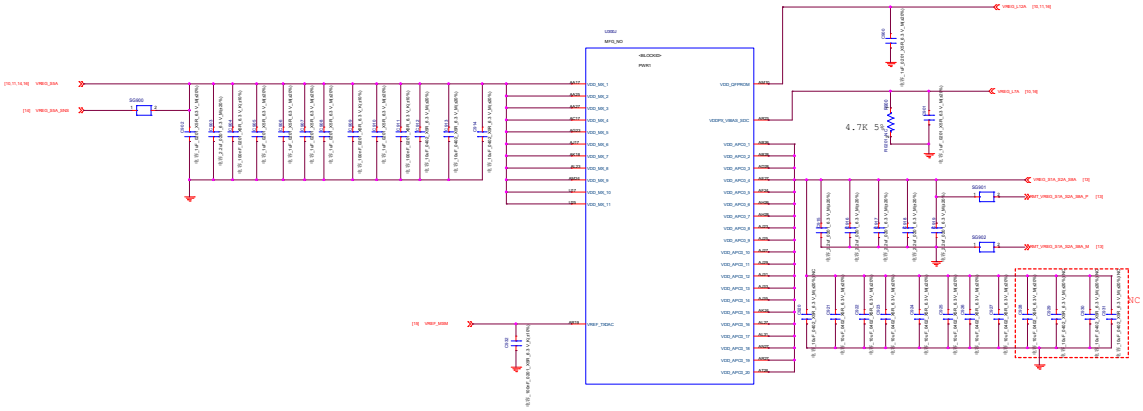


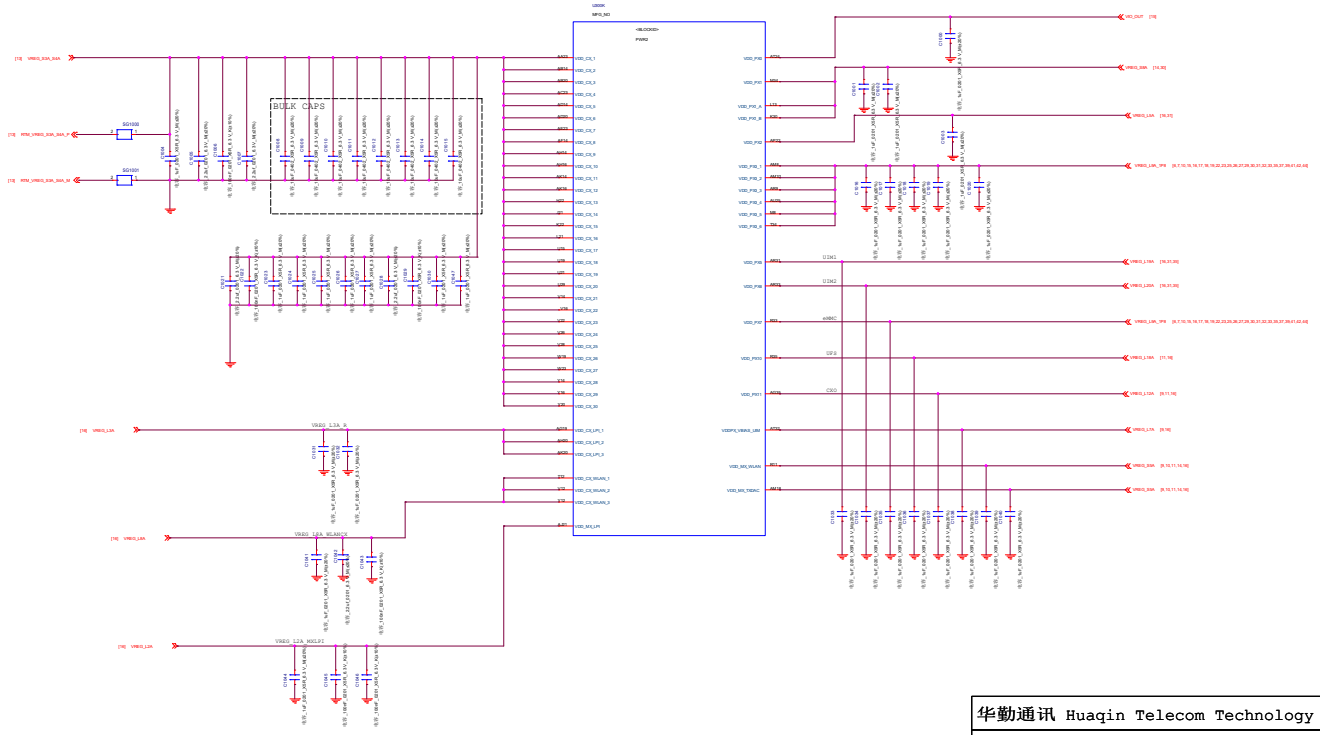
华勤通讯 Huaqin Telecom Technology Com.,Ltd			
Title	SM6225_I2C BUS		
Size D	Project QL6151_MB		Rev V1
Date: Monday, December 20, 2021		Sheet 7 of 46	



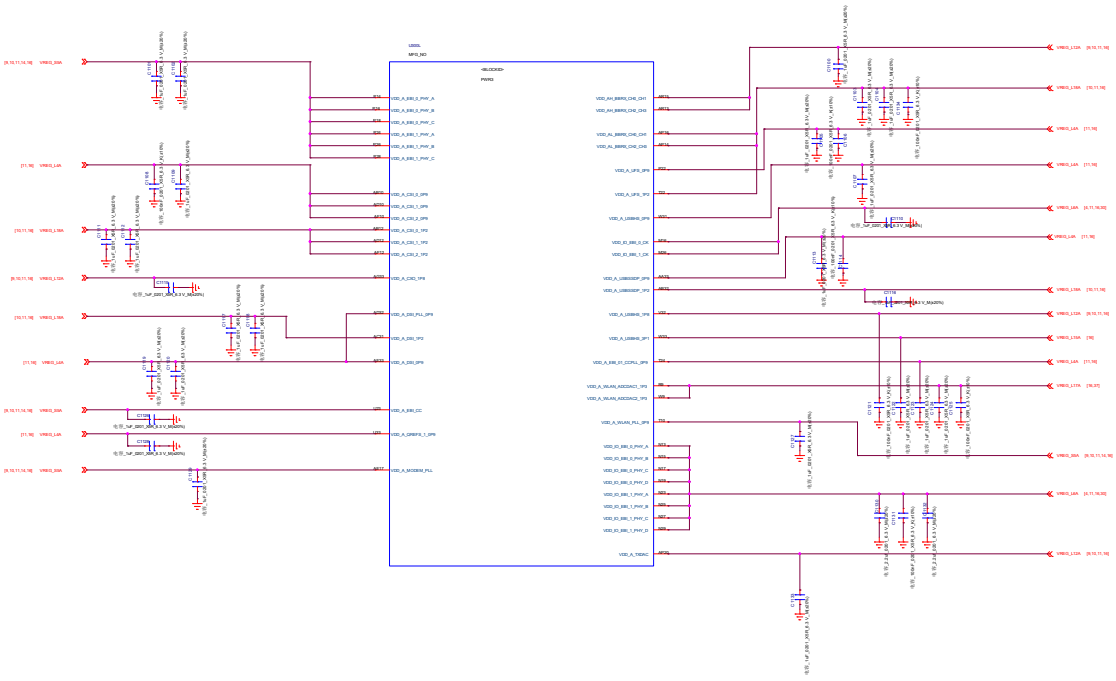
华勤通讯 Huaqin Telecom Technology Com.,Ltd		
Title	SM6225_MIPI-CSI_DSI	
Size D	Project QL6151_MB	Rev V1
Date: Monday, December 20, 2021	Sheet 8 of 46	



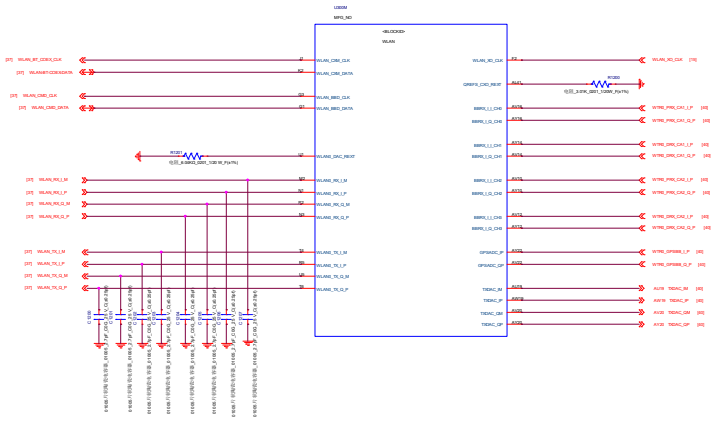
华勤通讯 Huaqin Telecom Technology Com.,Ltd		
Title	SM6225_PWR_1	
Size D	Project QL6151_MB	Rev V1
Date: Monday, December 20, 2021	Sheet 9 of 46	



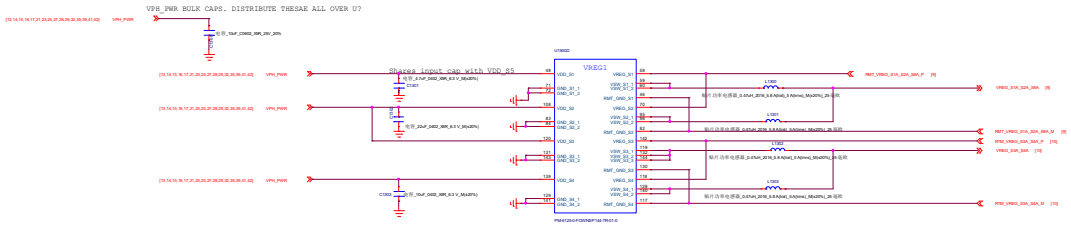
华勤通讯 Huaqin Telecom Technology Com.,Ltd		
Title	SM6225_PWR_2	
Size D	Project QL6151_MB	Rev V1
Date: Monday, December 20, 2021	Sheet 10 of 46	



华勤通讯 Huaqin Telecom Technology Com.,Ltd		
Title	SM6225_PWR_3	
Size D	Project QL6151_MB	Rev V1
Date: Monday, December 20, 2021	Sheet 11 of 46	



华勤通讯 Huaqin Telecom Technology Com.,Ltd			
Title	PM6350_CTRL/AMUX/GPIO/GND		
Size D	Project QL6151_MB		Rev V1
Date: Monday, December 20, 2021		Sheet 12 of 46	



S1A--S2A :	PTS510	0.8V default 8000mA	Ipeak 8110.00mA APC
S3A--S4A :	PTS510	0.8V default 8000mA	Ipeak 84802.00mA CX,MODEM
S5A :	PTS510	0.912V default 4000mA	Ipeak 3620.00mA EBI,MX,nLDO
S6A :	PTS510	1.352V default 4000mA	Ipeak 1560mA LDO
S7A :	PTS510	2.04V default 2500mA	Ipeak 2350mA LDO
S8A :	PTS510	1.128V default 4000mA	Ipeak 1790mA LDO,LPDDR4x(Divar) APC(Divar future)

华勤通讯 Huaqin Telecom Technology Com.,Ltd			
Title	PM6225_BUCKS		
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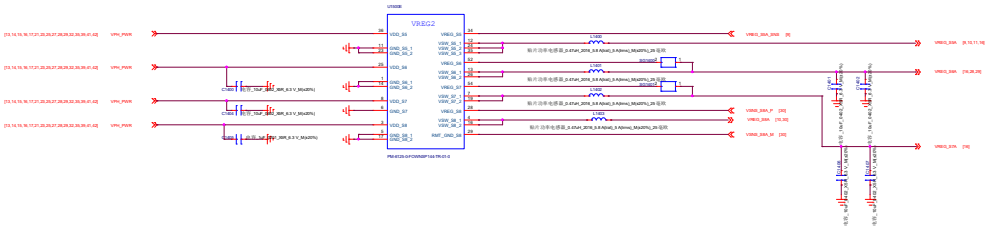
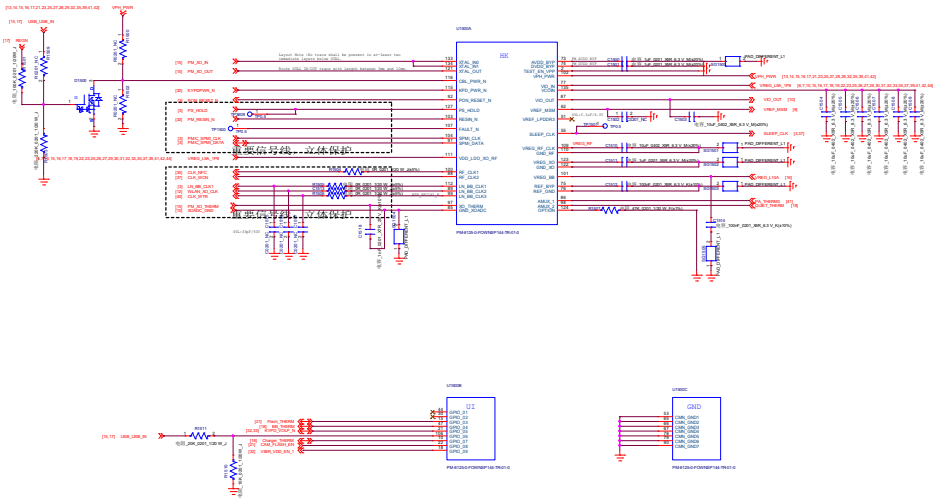
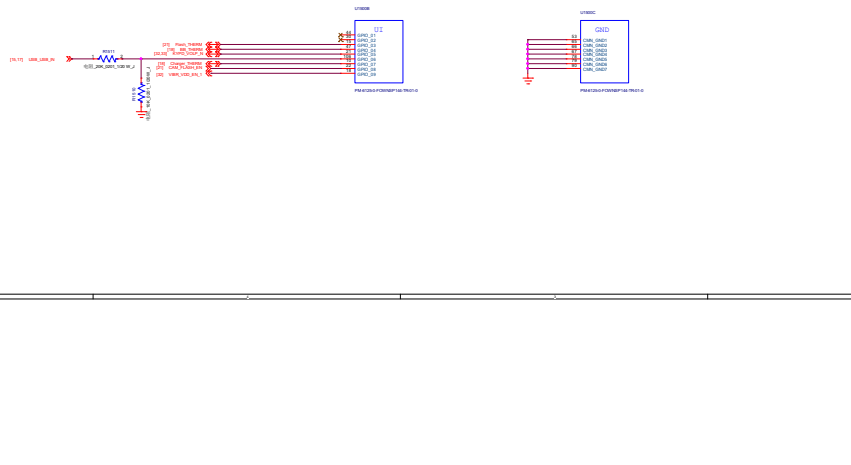
OPTION	BUCK	RAIL
DIVAR	S1A_S2A	APC
	S8A	VDD2H
DIVAR_FUTURE	S1A_2A_8A	APC
	S1F	VDD2H



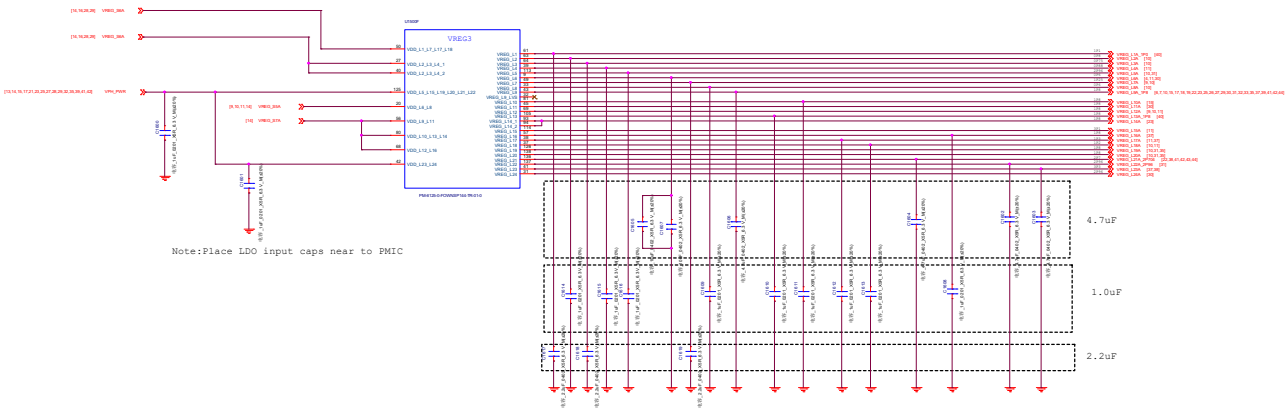
华勤通讯 Huaqin Telecom Technology Com.,Ltd		
Title	PM6225_BUCKS	
Size D	Project QL6151_MB	Rev V1
Date: Monday, December 20, 2021	Sheet 14 of 46	



R1306	FUNCTIONALITY
5.6K	PON_CPGO--SDCARD BOOT,LPDDR4x (2PH)
22K	PON_CPGO--SDCARD BOOT,LPDDR4x (3PH)
47K	PON_CPGO--SDCARD NO BOOT,LPDDR4x (2PH)
75K	PON_CPGO--SDCARD NO BOOT,LPDDR4x (3PH)



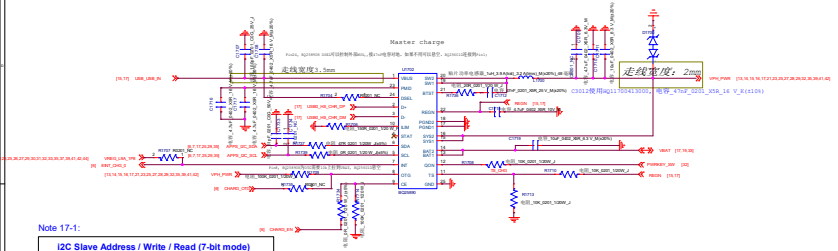
华勤通讯 Huaqin Telecom Technology Com.,Ltd		
Title: PM6225_KO_IO		
Size: D	Project: QL6151_MB	Rev: V1
Date: Monday, December 20, 2021	Sheet 15 of 46	



2.2uF

华勤通讯 Huaqin Telecom Technology Com.,Ltd		
Title: PM6225_LDOS		
Size: D	Project: QL6151_MB	Rev: V1
Date: Monday, December 20, 2021	Sheet 16 of 46	

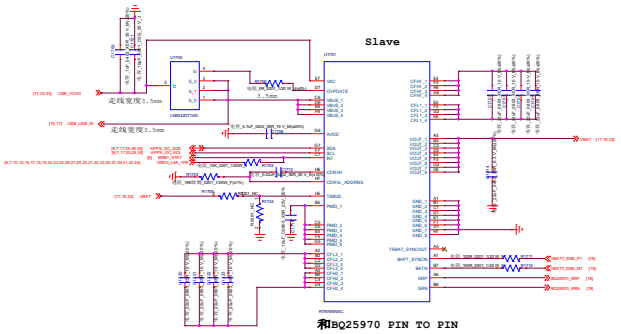
主充



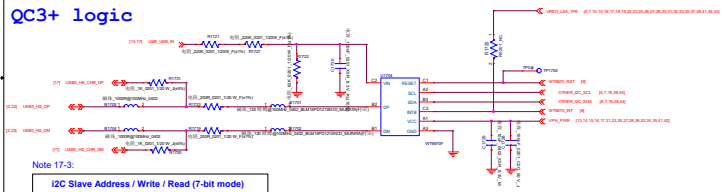
Note 17-1:

I2C Slave Address / Write / Read (7-bit mode)		
SGM41542	0x6B	Read:0xC8 / Write:0xC9
BQ25890H	0x6A	Read:0xC4 / Write:0xC5

辅充



QC3+ logic



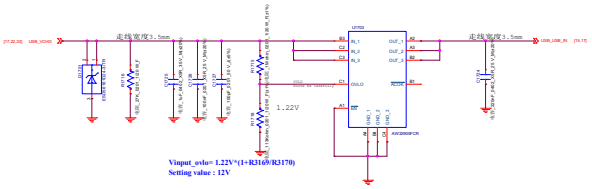
Note 17-2:

I2C Slave Address / Write / Read (7-bit mode)		
SC8551	0x66	Read:0xBB / Write:0xBC
NU2105	0x65	Read:0xBA / Write:0xBB
BQ25970	0x	Read:0x / Write:0x

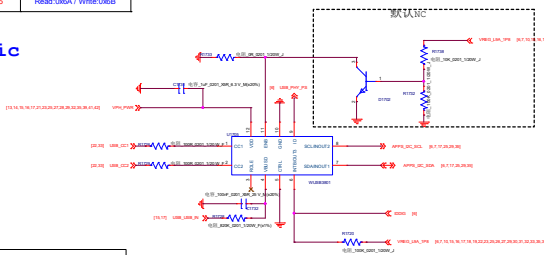
Note 17-3:

I2C Slave Address / Write / Read (7-bit mode)		
WT6670F		Read:0xBA / Write:0xBB
Z350	0x35	Read:0x6A / Write:0x6B

OVP



CC logic



Note 17-4:

I2C Slave Address / Write / Read (7-bit mode)		
SGM7220	0x47	Read:0x8F / Write:0x8E
FUSB301ATMX	0x21	Read:0x43 / Write:0x42

华勤通讯 Huaqin Telecom Technology Com.,Ltd		
Title: PM6150L_LDOS		
Size: D	Project: QL6151_MB	Rev: V1
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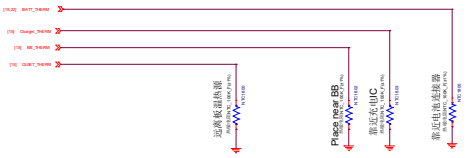
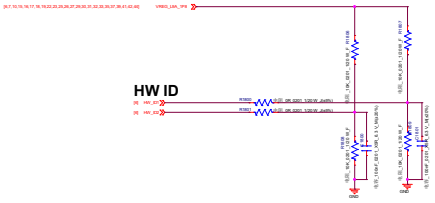
NTC

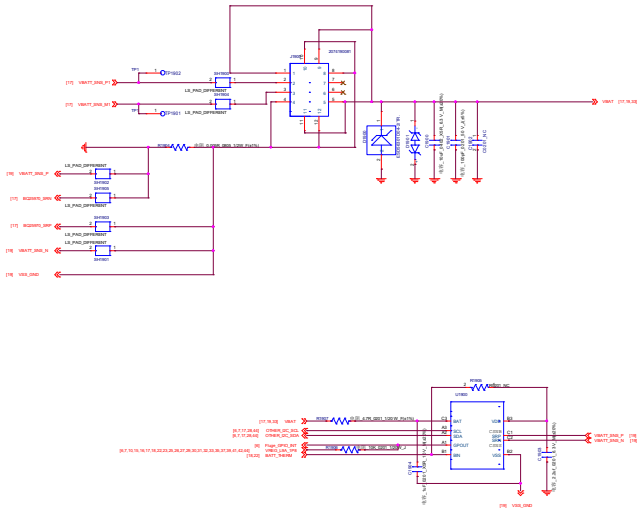


HW ID



		HW_ID1 GPIO33				HW_ID2 GPIO34			
RF_SKU	Board Revision	R1800	R1807	R1809	C1801	R1801	R1806	R1808	C1800
	EVB	0 ohm	NC	10K ohm	NC	NC	NC	NC	NC
EU（SKU1）	EVT（A200）	0 ohm	NC	10K ohm	NC	0 ohm	NC	10K ohm	NC
LATAM（SKU2）	EVT（A200）	0 ohm	NC	10K ohm	NC	0 ohm	10K ohm	NC	NC
EU（SKU1）	DVT1（B100）	0 ohm	NC	10K ohm	NC	0 ohm	NC	NC	0.1uF
LATAM（SKU2）	DVT1（B100）	0 ohm	NC	10K ohm	NC	0 ohm	NC	1.8K ohm	0.1uF
EU（SKU1）	DVT2（B200）	0 ohm	NC	10K ohm	NC	0 ohm	NC	7.5K ohm	0.1uF
LATAM（SKU2）	DVT2（B200）	0 ohm	NC	10K ohm	NC	0 ohm	NC	27K ohm	0.1uF

华勤通讯 Huaqin Telecom Technology Com.,Ltd			
Title	PM6150L_DISPLAY		
Size D	Project QL6151_MB		Rev V1
Date: Monday, December 20, 2021		Sheet 18 of 46	



SN274088 I2C address:66H

华勤通讯 Huaqin Telecom Technology Com.,Ltd			
Title	BB_LDO_CAM_Power		
Size D	Project QL6151_MB		Rev V1
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WPC

华勤通讯 Huaqin Telecom Technology Com.,Ltd			
Title: Wireless Charge			
Size: D	Project: QL6151_MB		Rev: V1
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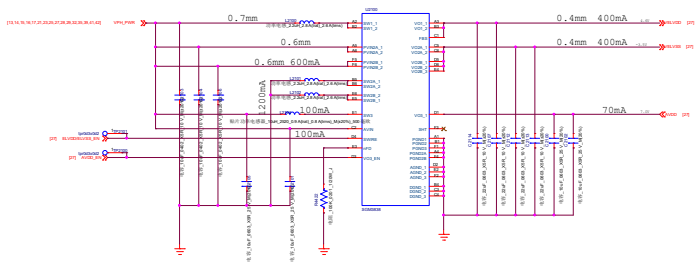
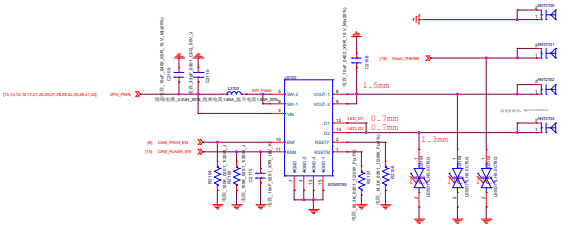


Rear Camera Flash



OCP8135B
Iflash=8625/14.3*2=1206mA
Imovie=7100/95.3*2=149mA

SGM3785
Iflash=8556/14.3*2=1196mA
Imovie=7063/95.3*2=148.2mA

AS6585BDRNC
Iflash=9000/14.3*2=1258mA
Imovie=7500/95.3*2=157mA

华勤通讯 Huaqin Telecom Technology Com.,Ltd		
Title	PM7250B_MISC/GPIO/GND	
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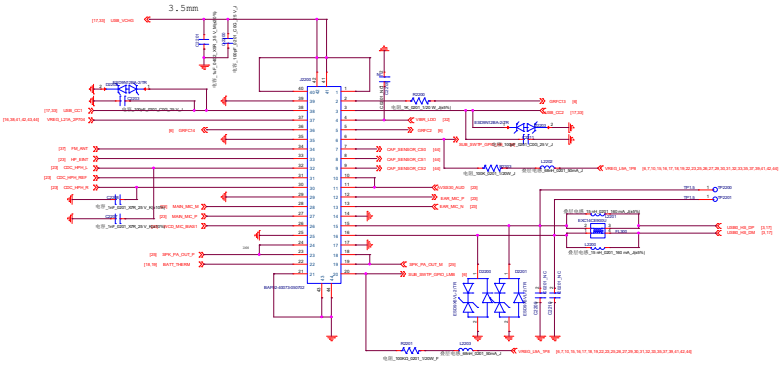
Link Connector



华勤通讯 Huaqin Telecom Technology Com.,Ltd			
Title	BB_LINK		
Size D	Project QL6151_MB		Rev V1
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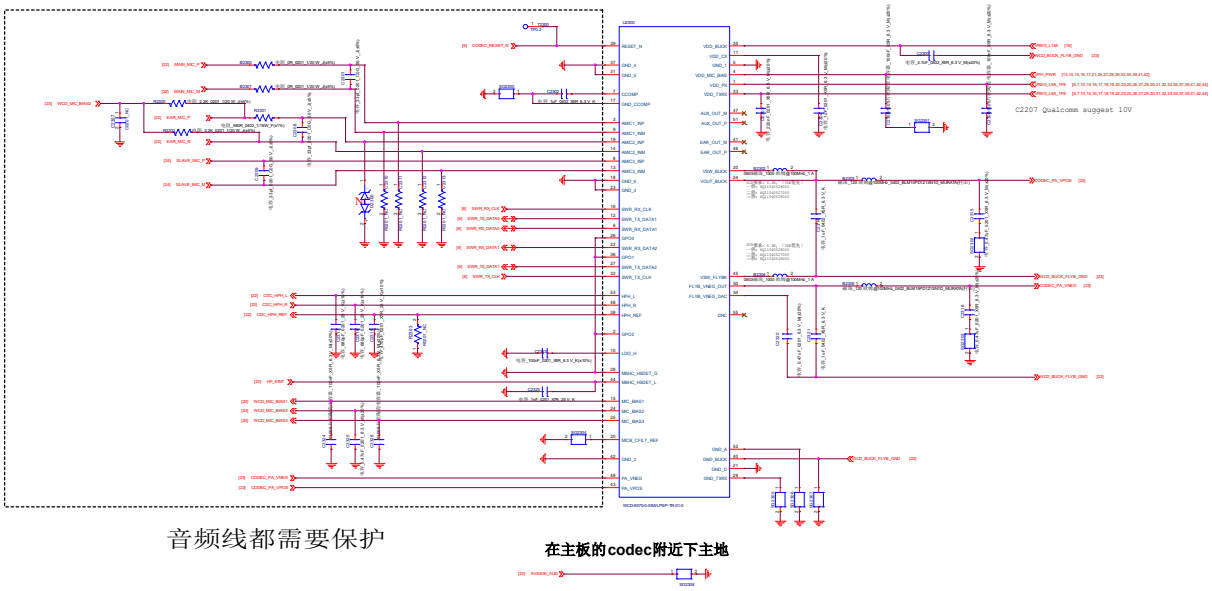

音频线都需要保护

在主板的codec附近下主地

华勤通讯 Huaqin Telecom Technology Com.,Ltd		
Title: BB_AUDIO_CODEC_WCD9370		
Size: D	Project: QL6151_MB	Rev: V1
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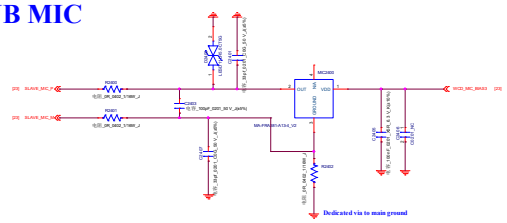
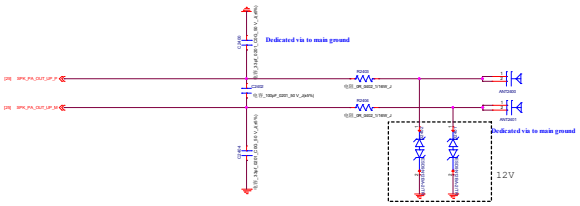
SUB MIC



RECIVER



华勤通讯 Huaqin Telecom Technology Com.,Ltd		
Title: BB_MIC/RCV/SPK		
Size: D	Project: QL6151_MB	Rev: V1
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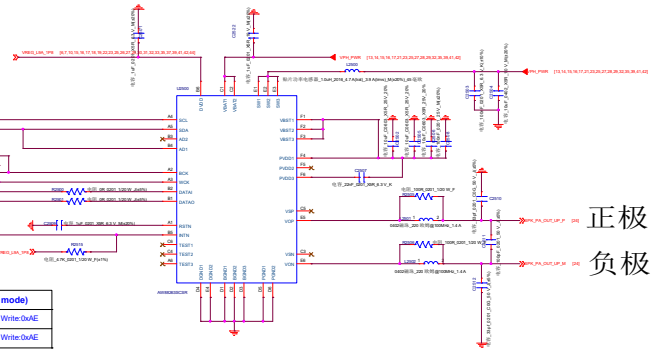
上喇叭_听筒

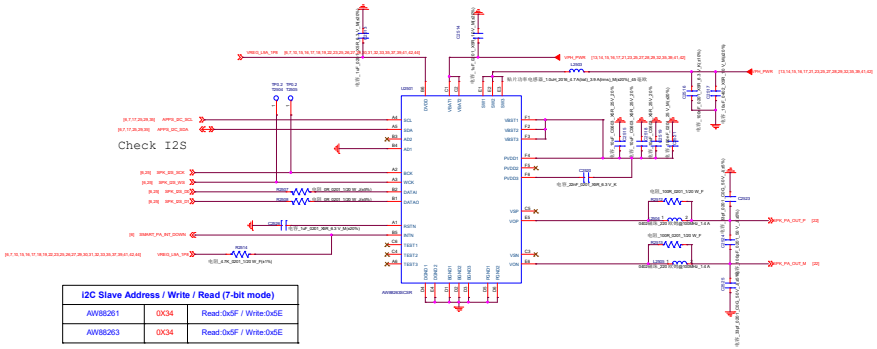


正极

负极

I2C Slave Address / Write / Read (7-bit mode)		
AW88261	0X37	Read:0xAD / Write:0xAE
AW88263	0X37	Read:0xAD / Write:0xAE

下喇叭_speaker



I2C Slave Address / Write / Read (7-bit mode)		
AW88261	0X34	Read:0x5F / Write:0x5E
AW88263	0X34	Read:0x5F / Write:0x5E

华勤通讯 Huaqin Telecom Technology Com.,Ltd		
Title: 53.Cap_sensor		
Size: D	Project: QL6151_MB	Rev: V1
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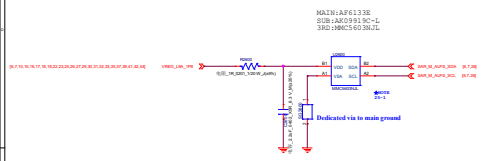
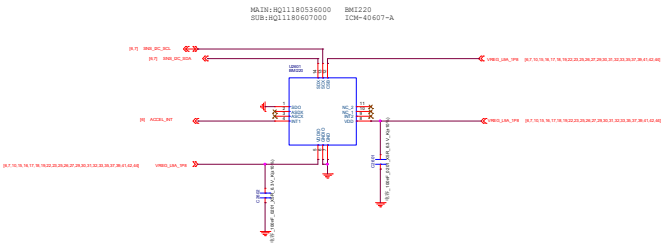
E-Compass



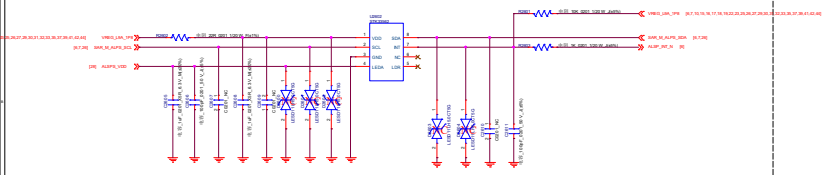
Note 25-1:

I2C Slave Address / Write / Read (7-bit mode)		
AF6133E	0X0E	Write:0x1C / Read:0x1D
MMC5603NJL	0x30	Write:0x60 / Read:0x61

A+G



ALS+PS



Note 25-2:

I2C Slave Address / Write / Read (7-bit mode)		
MN78911D		Write:0x82/ Read:0x83

华勤通讯 Huaqin Telecom Technology Com.,Ltd		
Title: BB_SENSOR		
Size: D	Project: QL6151_MB	Rev: V1
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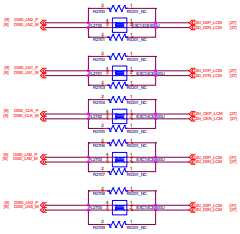
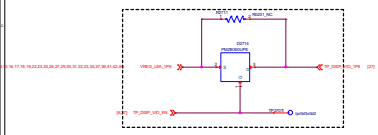
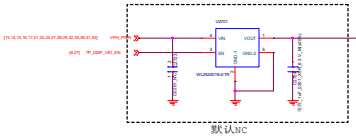
LCD_CTP+LINK

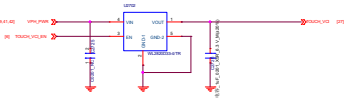


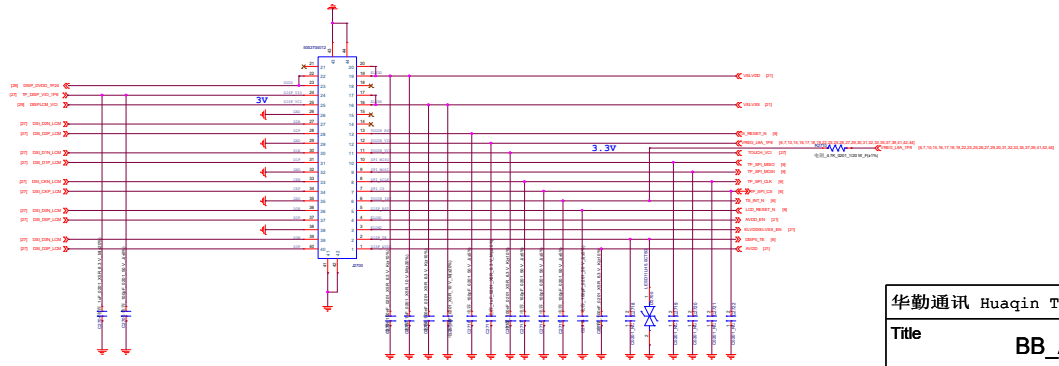


TP_DISP_VIO_EN默认拉低导通，休眠时拉高关断



默认NC





华勤通讯 Huaqin Telecom Technology Com.,Ltd		
Title	BB_AMLED/TP/FPS/KEYPAD	
Size D	Project QL6151_MB	Rev V1
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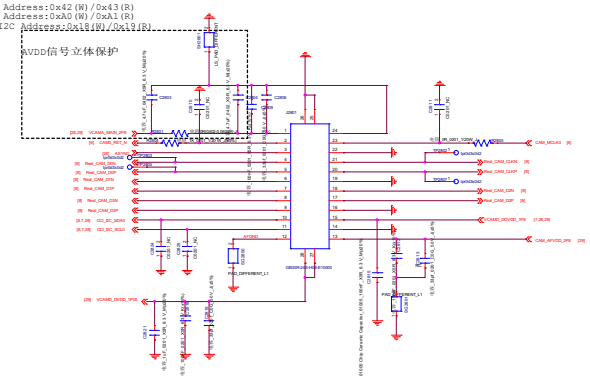
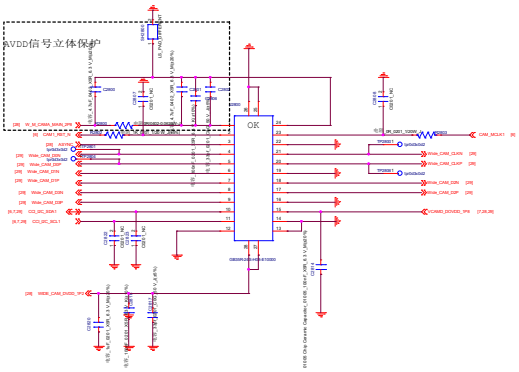
Main Camera 50M

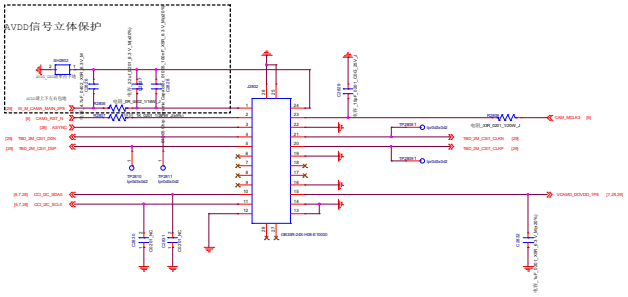
1st-TXD
Sensor :HI-1336
DVDD:1.2V
AVDD:2.8V
IOVDD:1.8V
AFVDD:2.8V
SENSOR I2C Address:0x42(W)/0x43(R)
EEPROM I2C Address:0xA0(W)/0xA1(R)
Driver IC I2C Address:0x18(W)/0x19(R)

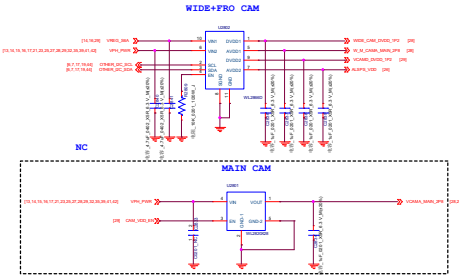


Wide Camera 8M



Micro Camera 2M





华勤通讯 Huaqin Telecom Technology Com.,Ltd		
Title: BB_REAR_CAM		
Size: D	Project: QL6151_MB	Rev: V1
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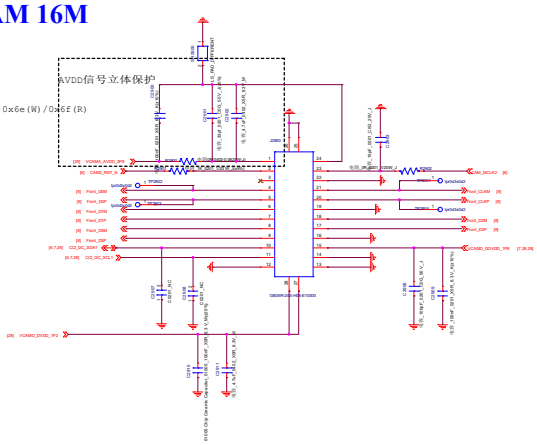
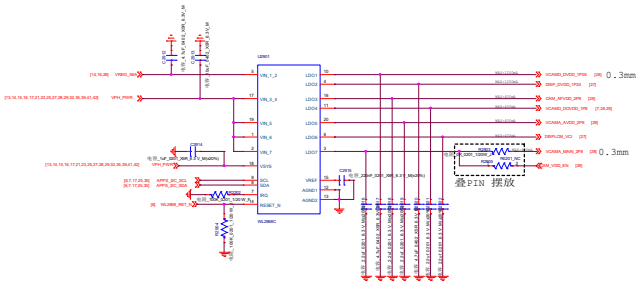
Front CAM 16M

1st-GALAXYCORE
Sensor: GC5035 COB
DVDD:1.2V
AVDD:2.8V
IOVDD:1.8V
SENSOR I2C Address:0x6e(W)/0x6f(R)

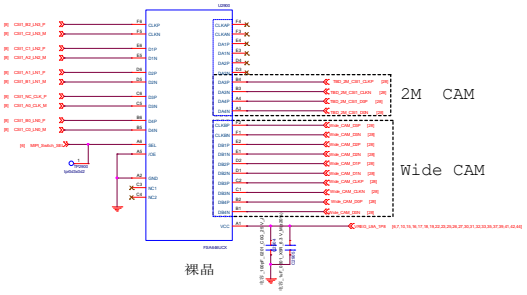


7 Channel LDO



I2C Slave Address / Write / Read (7-bit mode)		
WL2868C	0X2F	Read:0x5F / Write:0x5E
FAN53870UC00X	0x35	Read:0x6A / Write:0x6B
ET5907MV	0x35	Read:0x6A / Write:0x6B

裸晶



主供：HQ11151900000
二供DIO1646

华勤通讯 Huaqin Telecom Technology Com.,Ltd		
Title: BB_FRONT_CAM		
Size: D	Project: QL6151_MB	Rev: V1
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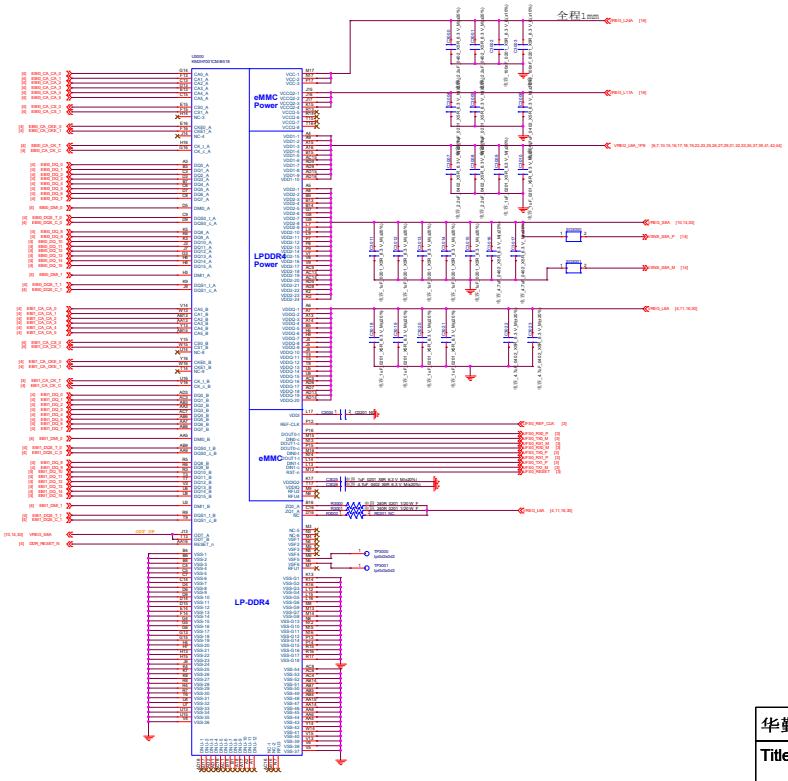
UFS+LPDDR4x



华勤通讯 Huaqin Telecom Technology Com.,Ltd		
Title: BB_UFS/LPDDR4x		
Size: D	Project: QL6151_MB	Rev: V1
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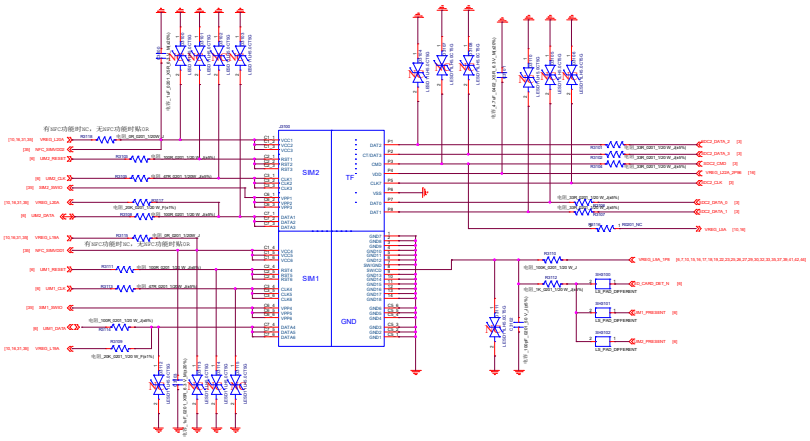
3IN2 SIM1&SIM2&SD



华勤通讯 Huaqin Telecom Technology Com.,Ltd		
Title: BB_SIM/BATT		
Size: D	Project: QL6151_MB	Rev: V1
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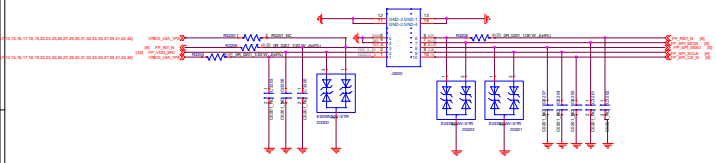
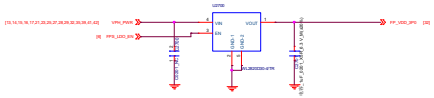
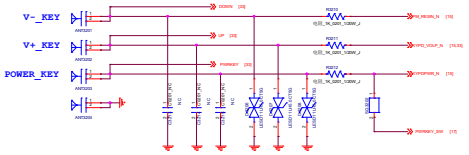
Finger Print & Side Key

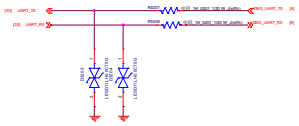


FPS_3.0V

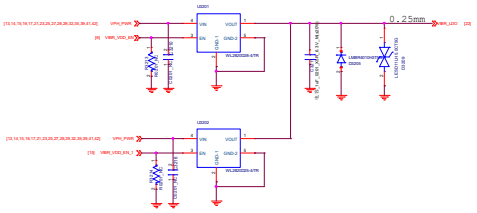




USB&UART



VIB DIRVE



华勤通讯 Huaqin Telecom Technology Com.,Ltd		
Title: BB_LINK/OVP		
Size: D	Project: QL6151_MB	Rev: V1
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Debug I/O

UART

Factory I/O

VBAT

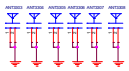
VCHG

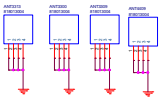
KEYPAD

JTAG CONNECTOR

Grounding shrapnel

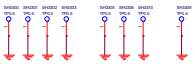
螺丝垫片





同轴线夹

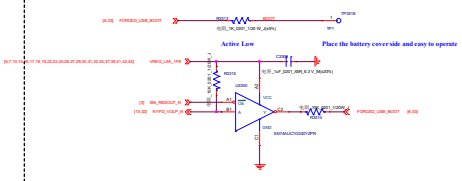
Shielding GND



MARK

光学定位孔

Force USB boot



华勤通讯 Huaqin Telecom Technology Com.,Ltd		
Title: BB_TEST_POINT/SHIELD		
Size: D	Project: QL6151_MB	Rev: V1
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华勤通讯 Huaqin Telecom Technology Com.,Ltd			
Title: FM			
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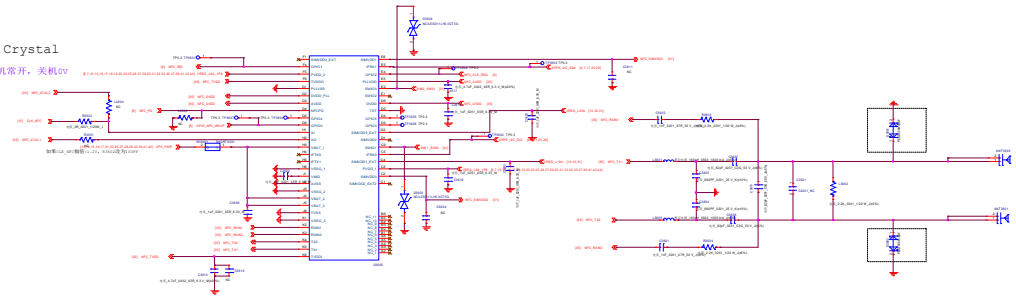
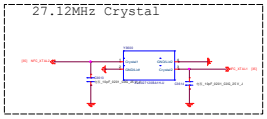
NFC

27.12MHz Crystal

PVDD，开机常开，关机0V





华勤通讯 Huaqin Telecom Technology Com.,Ltd		
Title: 36_RF_NFC		
Size: E	Project: PA4171_MB	Rev: V1
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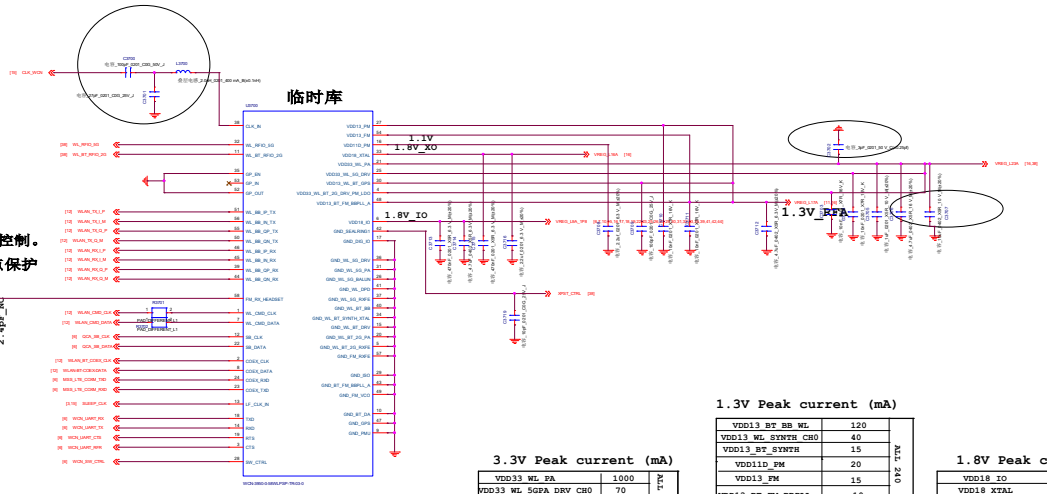

I和Q走线需要60dB的隔离，阻抗70-100欧姆控制。

WL_CMD_CLK/DATA layout需要重点保护

3.3V Peak current (mA)

VDD33_WL_PA	1000	ALL 595
VDD33_WL_5GPA_DRV_CH0	70	
VDD33_WL_BT_2G_DRV_PM_LDO	65	

1.3V Peak current (mA)

VDD13_BT_BB_WL	120	ALL 240
VDD13_WL_SYNTH_CH0	40	
VDD13_BT_SYNTH	15	
VDD11D_PM	20	
VDD13_FM	15	
VDD13_BT_FM_BBPLL	10	
VDD13_BT_PM	20	

1.8V Peak current (mA)

VDD18_IO	15	ALL75
VDD18_XTAL	60	

华勤通讯 Huaqin Telecom Technology Com.,Ltd		
Title: 37_RF_WCN3950		
Size: D	Project: QL6151_MB	Rev: V1
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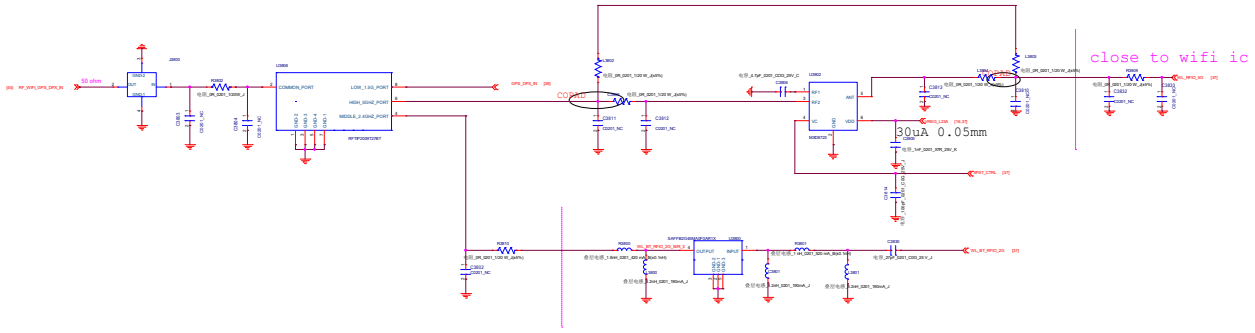
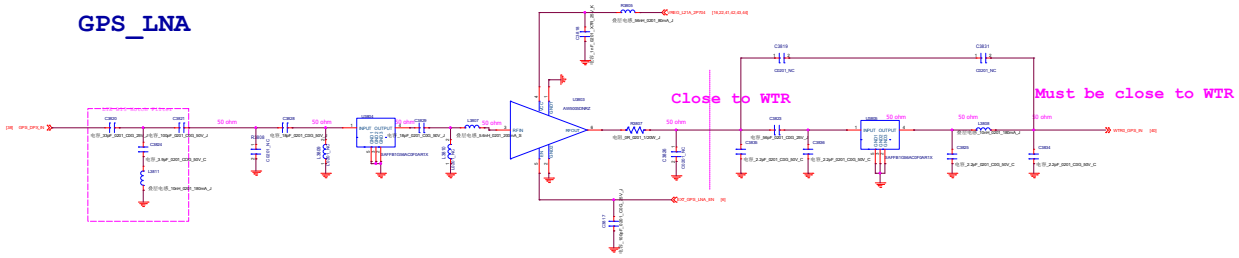
DIP_For_2.4G_5G_WLAN_and_GPS



GPS_LNA



华勤通讯 Huaqin Telecom Technology Com.,Ltd		
Title: 38_RF_WLAN/GPS_FEM		
Size: D	Project: QL6151_MB	Rev: V1
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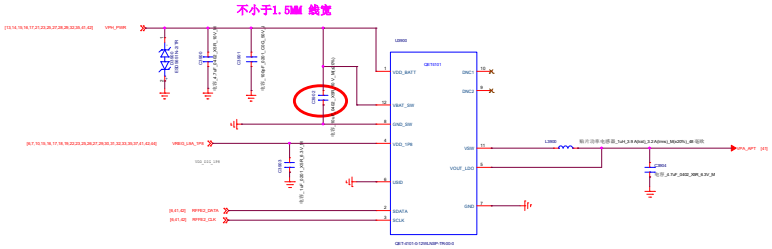
QFE4101



华勤通讯 Huaqin Telecom Technology Com.,Ltd		
Title	QL6151_MB	
Size D	Project Rhode_MB_V1	Rev V1
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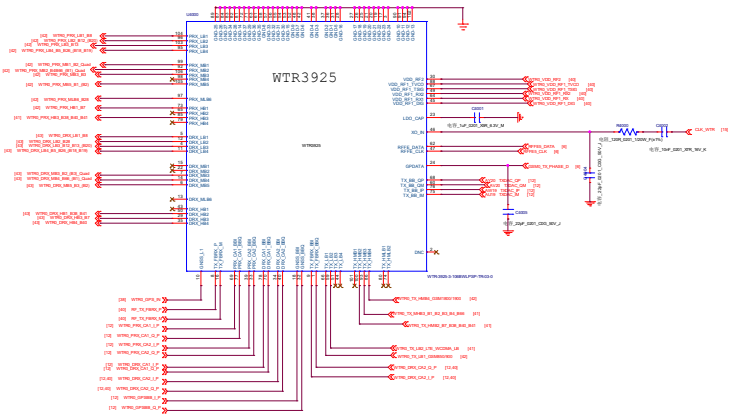
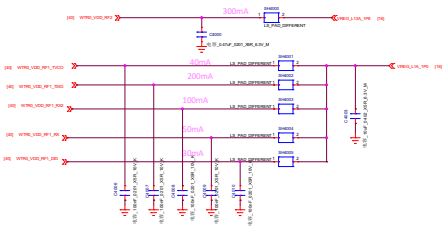
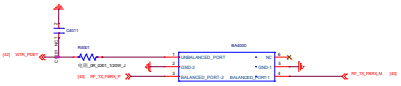
WTR3925

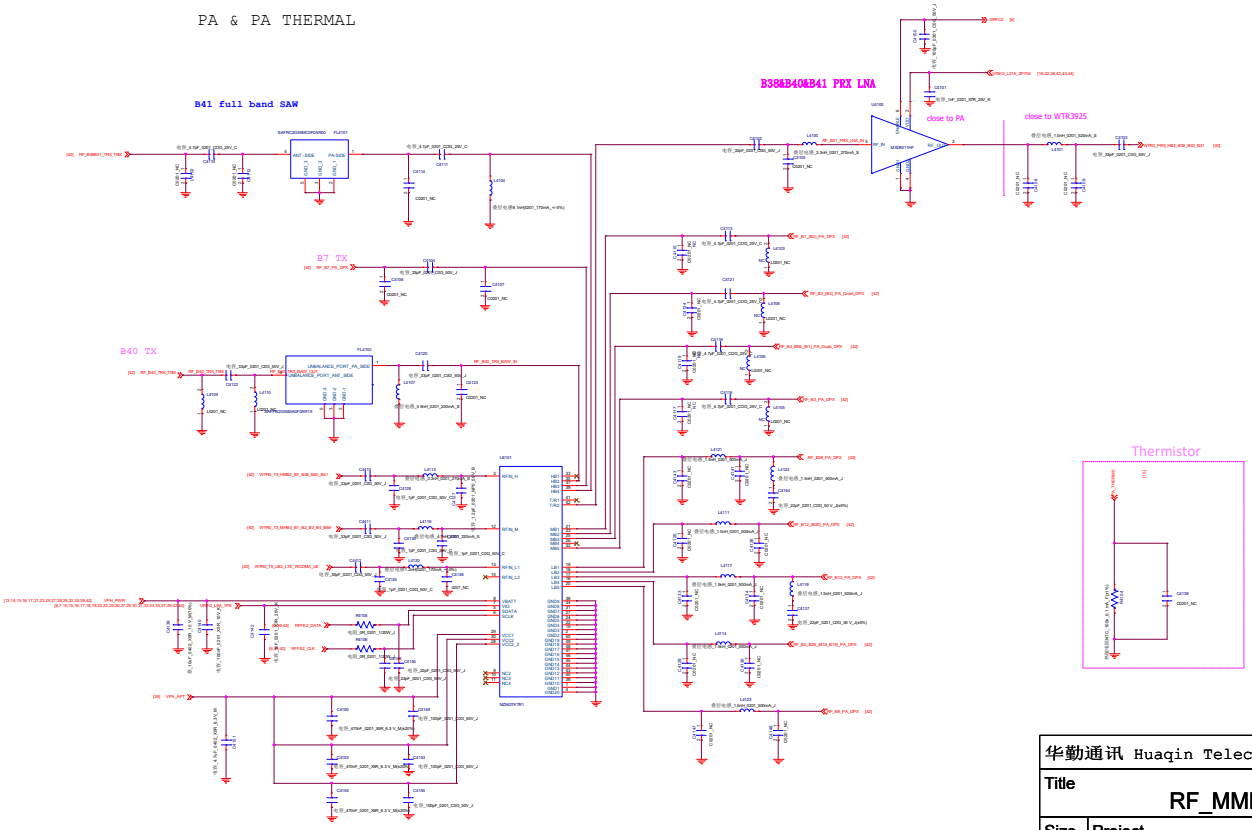






华勤通讯 Huaqin Telecom Technology Com.,Ltd		
Title		
Size	Project	Rev
Date:	Sheet	of

PA & PA THERMAL



华勤通讯 Huaqin Telecom Technology Com.,Ltd		
Title: RF_MMBPA_TX		
Size: D	Project: QL6151_MB	Rev: V1
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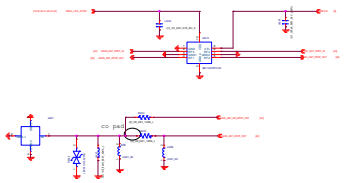
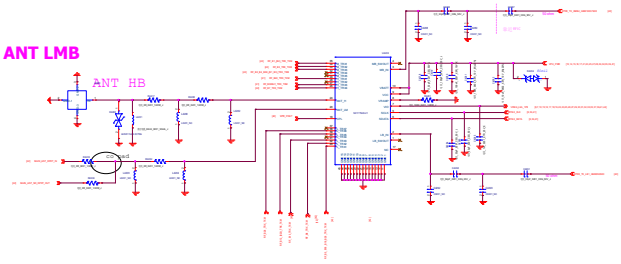
LMB DPDT

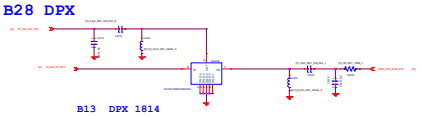


ANT LMB



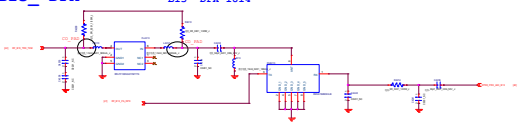
LB TRX

B28 DPX

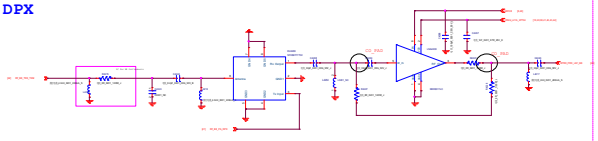


B13_ DPX

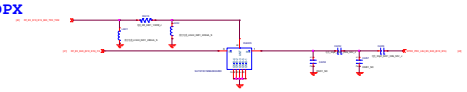
B13 DPX 1814



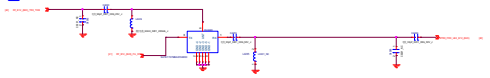
B8 DPX



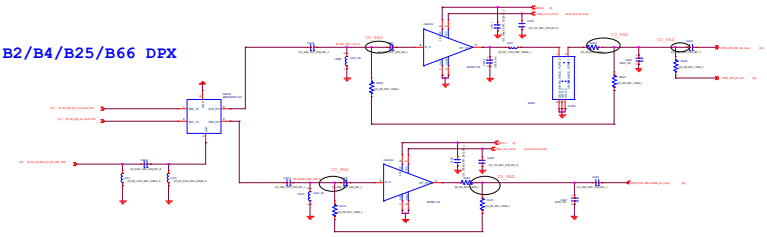
B5 DPX



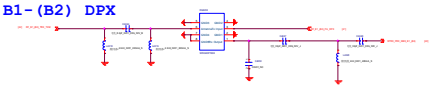
B12_(B20) DPX



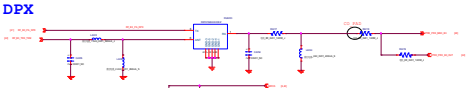
B2/B4/B25/B66 DPX



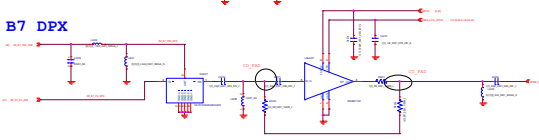
B1-(B2) DPX



B3 DPX



B7 DPX



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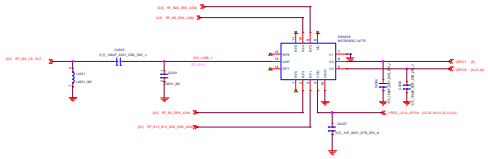
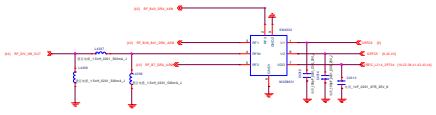
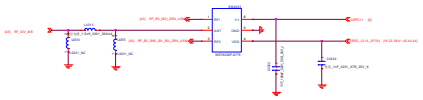
DRX_LB_SP8T_GPIO



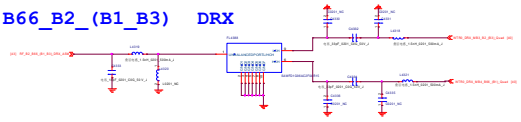
DRX_HB_SP3T_GPIO



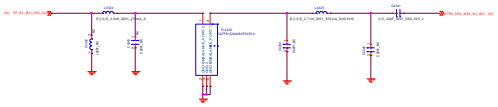
DRX_MB_SP2T_GPIO



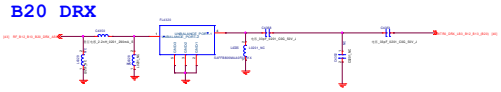
B66_B2_(B1_B3) DRX

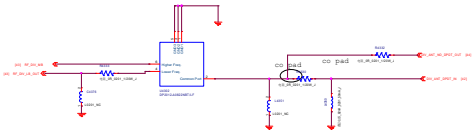


B3_(B2) DRX

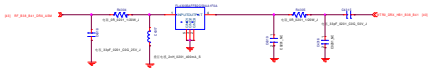


B20 DRX

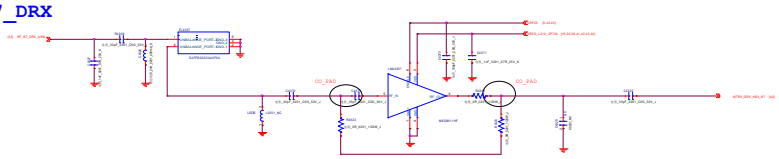




B41_B38_DRX

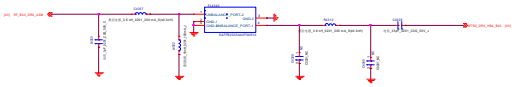


B7_DRX

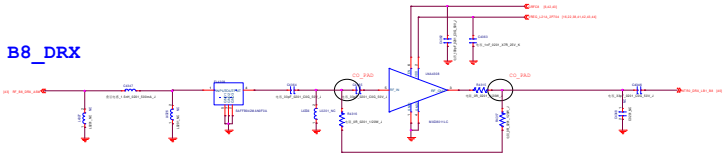


B40 DRX

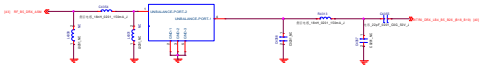
Close to WTR



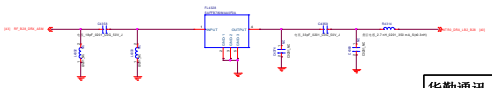
B8_DRX



B5 DRX



B28_DRX



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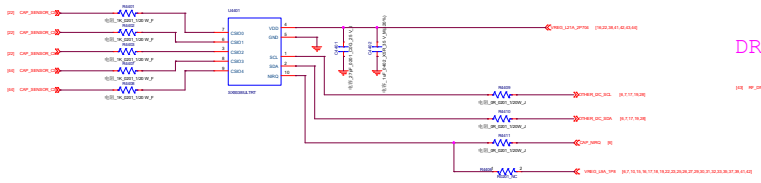
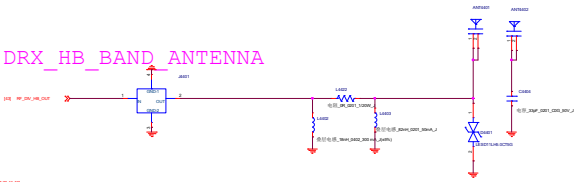
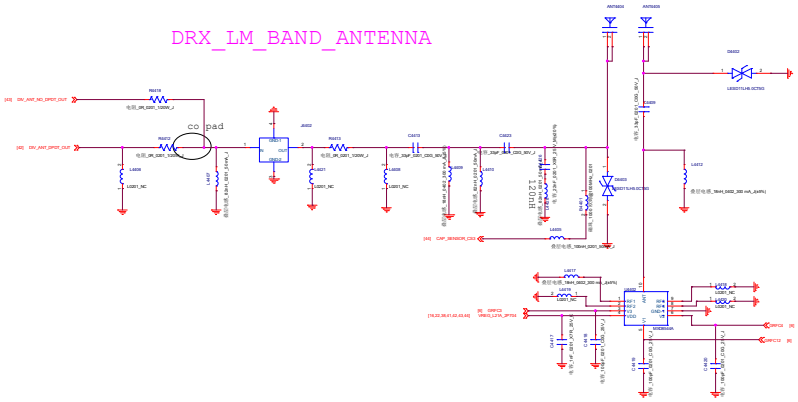


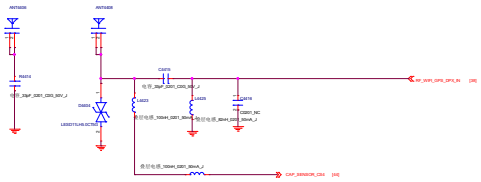
DRX_HB_BAND_ANTENNA



DRX_LM_BAND_ANTENNA



WIFI_BT_GPS_ANTENNA



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EVT
GPIO_33 由IDDIG变更为HW_ID1
GPIO_34 由CAP_NIRQ变更为HW_ID2
GPIO_36 由NFC_EN变更为CHARG_EN
GPIO_54 由TP_VCI_EN变更为NC
GPIO_57 由CAM_PWM_EN变更为NC
GPIO_58 由HW_ID2变更为NC
GPIO_59 由HW_ID1变更为NC
GPIO_60 由CAM_FLASH_EN变更为NC
GPIO_66 由Fluge_GPIO_INT变更为SUB_SWTP_GPIO_LMB
GPIO_68 由TP_DISP_VIO_EN变更为WT6670_RST
GPIO_69 由TS_INT_N变更为NFC_PD
GPIO_84 由WT6670_RST变更为IDDIG
GPIO_85 由SMART_PA_INT_DOWN变更为CAM_PWM_EN
GPIO_93 由SUB_SWTP_GPIO_HB变更为WT6670_INT
GPIO_96 由SUB_SWTP_GPIO_LMB变更为EINT_CHG_O
GPIO_97 由SHT变更为TS_INT_N
GPIO_102 由ERR_FG_INT变更为SMART_PA_INT_DOWN
GPIO_103 由WT6670_INT变更为CHARG_OTG
GPIO_104 由SMBUS_STAT变更为FP_RST_N
GPIO_105 由EINT_CHG_O变更为Fluge_GPIO_INT
GPIO_106 由SMART_PA_INT_UP变更为CAP_NIRQ
GPIO_107 由SMART_PA_RESET变更为SMART_PA_INT_UP
GPIO_108 由ALSPS_VDD_EN变更为FPS_LDO_EN
GPIO_111 由OLED_FD_EN变更为TP_DISP_VIO_EN
GPIO_4由Charger_THERM变更为BB_THERM
GPIO_7由USB_THERM变更为Charger_THERM
GPIO_9由TP_DISP_LDO_VIO_EN变更为SUB_SWTP_GPIO_HB

增加4路LDO：WL2866D/ET5904
删除单路LDO：WL2820D12、WL2820D33

V3版本：
1,L2460由0402更换成0201
2,CAMERA IIC更换，50M和2M公用IICO，16M和8M共用IIC1
3,主充芯片IIC信号增加R1739,C1734
4，天线要求，MIC信号预留0402 0R电阻
5，闪光灯和手电筒EN PIN互换

V4版本：
1,增加R1511，R1510位号
2,预留R1512位号为NC

V5改板需求：
1，闪光灯使能PIN 增加0201电容位置
2，删除指纹1.8V预留的开关（R1512，D3210）
3，删除34贝，内置FM（还有44贝的L4427）
4，增加QC logic REST 测试点 TP1700
5，删除JTAG信号，JTAG信号线增加测试点
6，C1904电容下地方式修改为电池负极
7，删除R2504
8，LINK 连接器增加电池NTC检测PIN

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12/15 Page22 增加两路1.8V GPIO，天线空口检测电路使用。 （Hydra）

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