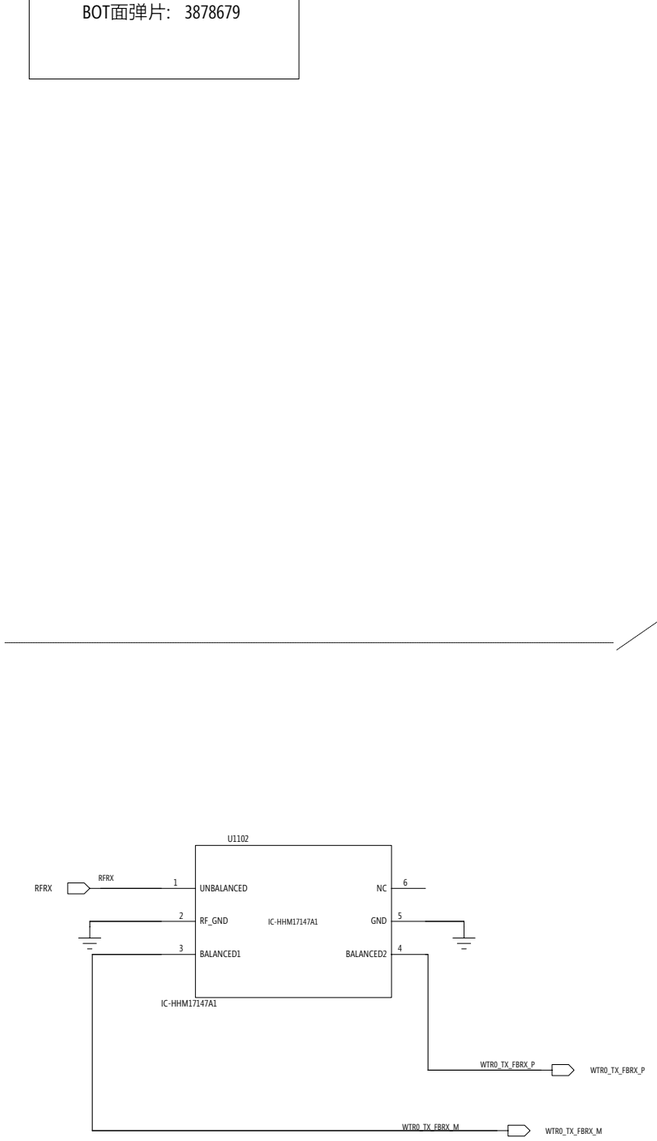
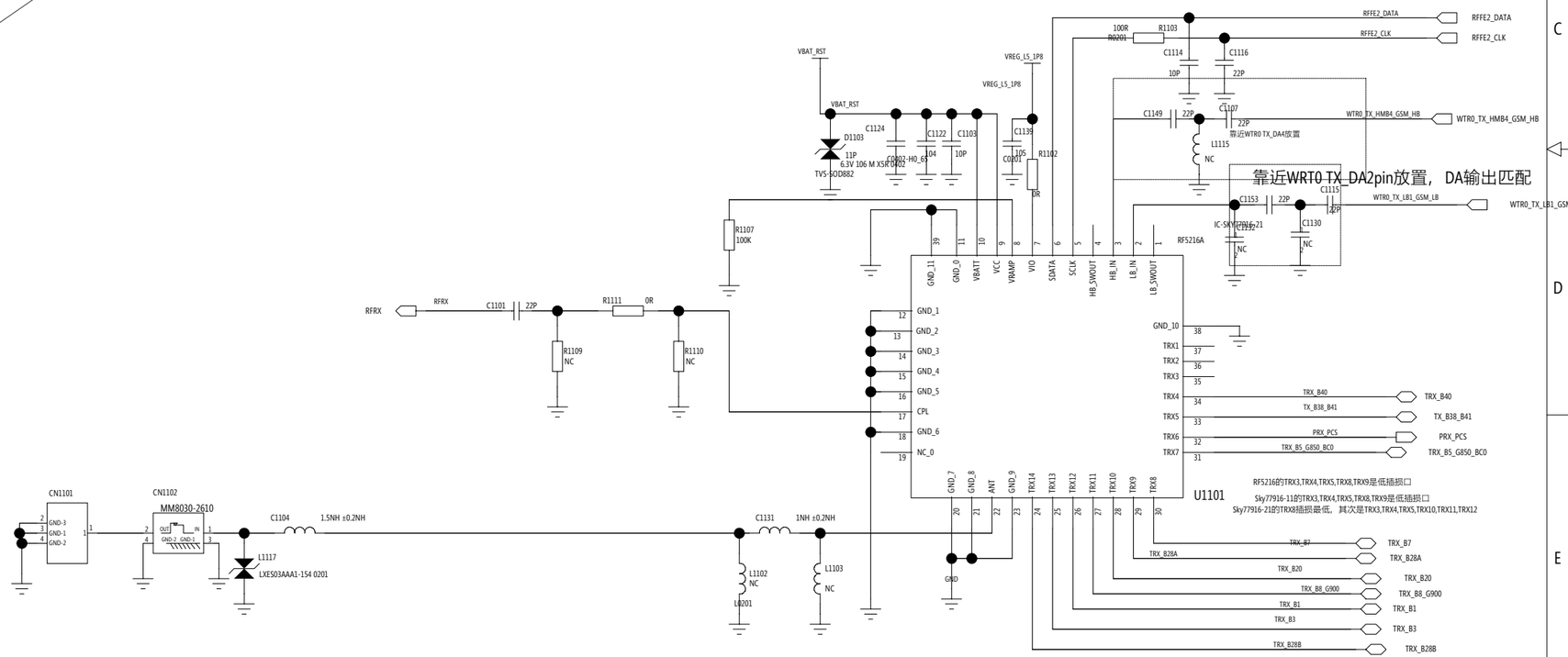
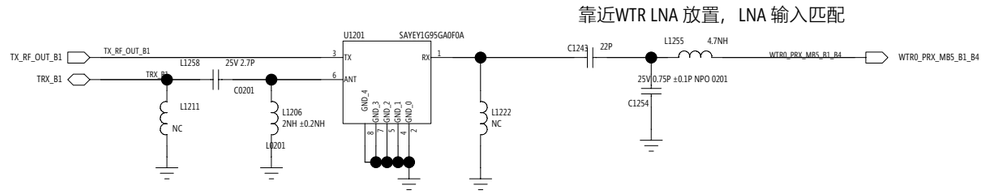
ANT

TOP面弹片: 3878806
BOT面弹片: 3878679

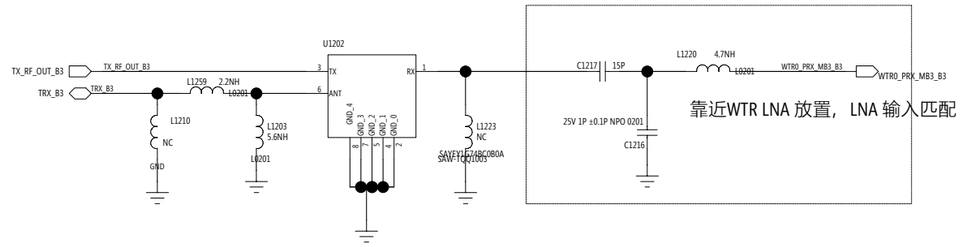




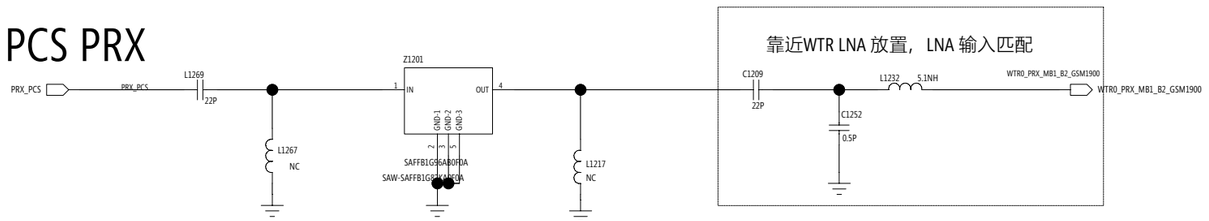
B1 TRX



B3 TRX



PCS PRX



使用3878959

ANT1301
AN0091 钛铜

ANT-600-4569-01

R1303 0R R0201

L1303 3NH

L0201

L1301 NC

GPS

D1301 0.4P

TVS-SOD882

C1322 22P

L0201 9.1NH L1323

U1308 SAW-SAFFB1G56KB0F0A

C1308 22P

L0201 9.1NH L1315

L1318 4.7NH L0201

U1304 BGU8009

GND

C1309 22P

VREG_L4_1P8

L1316 NC

R1305 0R VREG_L4_1P8

C1311 223

GPS_EXT_LNA_EN

C1312 101

U1305 SAW-SAFFB942MAN0F0A

SAW-F6QA1G582H2JM

L1313 NC

R1302 0R GPS_IN

GPS_IN

GPS_EXT_LNA_EN

B5 TRX

TX_RF_OUT_B5_BC0

TRX_B5_G850_BC0

C1301 1.8NH

L0201

6.2NH L1302

U1301 SAYEY836MBA0F0A

L1306 NC

SAW-SAYEY1G74BC0B0A

C1303 22P

L1324 18NH L0201

NC C1304

C0201

WTR0_PRX_LB4_B5

WTR0_PRX_LB4_B5

B28A TRX

TX_OUT_B28A

C1326 10NH ±5%

L0201

L1322 C0201 5.6P

L1321 NC

GND

TRX_B28A

L1311 33P

C0201

L1320 NC

L0201

C1325 10NH ±5%

L0201

U1309 D5PF773M0M3Y6

SAW-SAYRF1G95GC0F0A

C1307 22P

L1327 27NH L0201

0.5P C1310

C0201

WTR0_PRX_LB3_B28A

WTR0_PRX_LB3_B28A

靠近MMPA放置，Pa输出匹配

L1304靠近双工器放

TX_RF_OUT_B8

B8 TRX

TRX_B8_G900

C1302 1.2NH ±0.2NH

L0201

5.6NH L1312

U1302 D5DA942M5K2S2

SAW-TQQ1003

L1308 22NH L0201

C1315 22P

NC C1305

L1319 18NH

WTR0_PRX_LB1_B8

WTR0_PRX_LB1_B8

靠近WTR LNA 放置，LNA 输入匹配

B20 TRX

TX_OUT_B20

TRX_B20

1.2NH ±0.2NH L1332

C1324 NC

L1331 8.2NH L0201

U1307 SAYEY806MBA0F0A

L0201 6.8NH L1333

C1318 33P

NC C1313

L1317 18NH

WTR0_PRX_LB2_B20

WTR0_PRX_LB2_B20

B28B TRX

TX_OUT_B28B

C1327 10P

C0201

L1328 9.1NH L0201

L1326 NC

TRX_B28B

L1314 22P

L1329 NC

L1330 7.5NH L0201

U1310 D5PF788M0M3Y9

SAW-SAYRF1G95GC0F0A

C1306 22P

L1336 22NH L0201

0.5P C1314

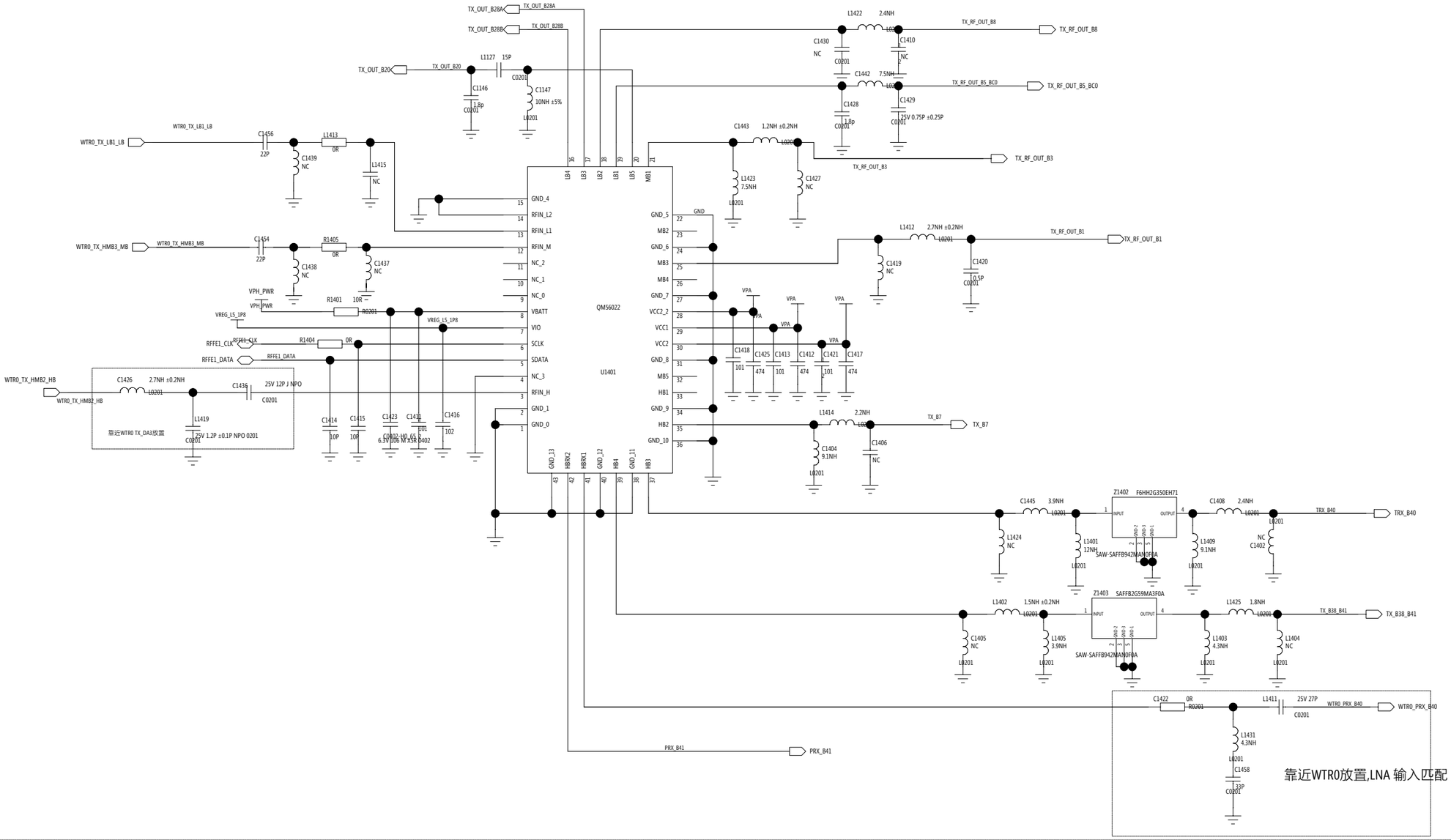
C0201

WTR0_PRX_MLB6_B28B

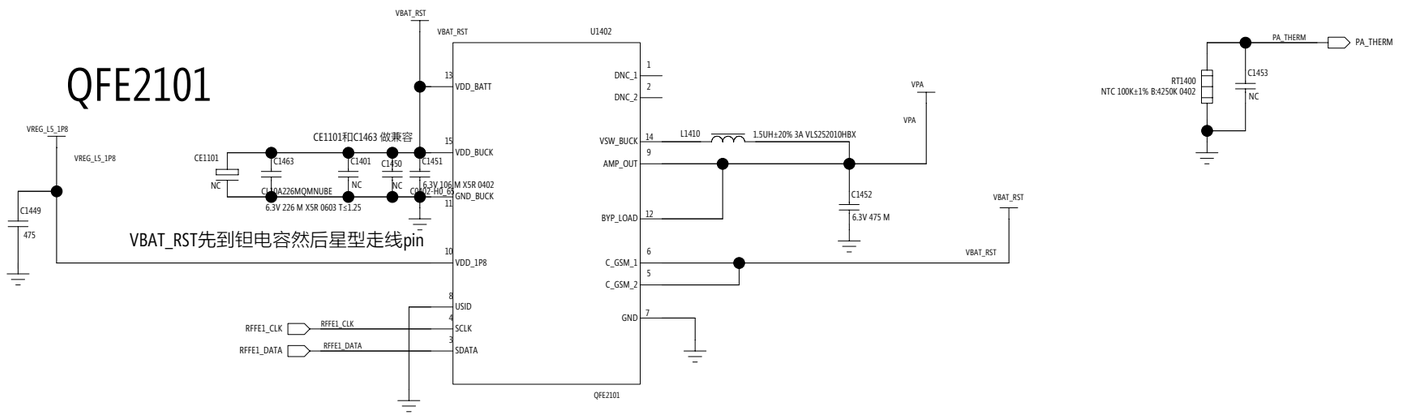
WTR0_PRX_MLB6_B28B

靠近WTR LNA 放置，LNA 输入匹配

MMMPA



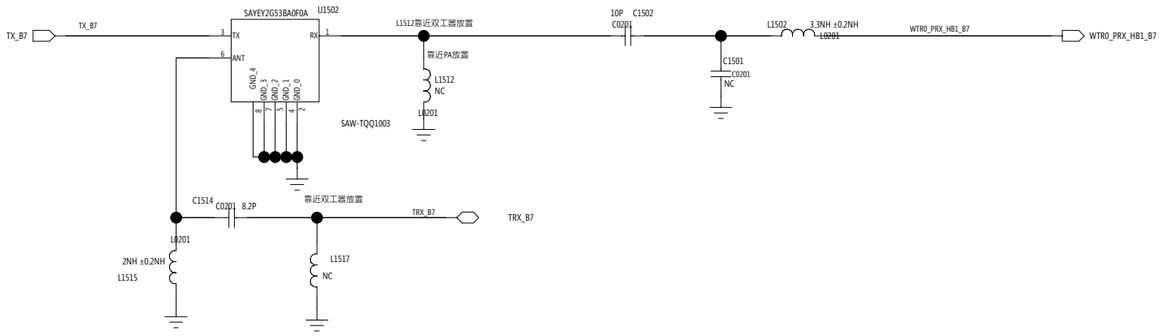
QFE2101

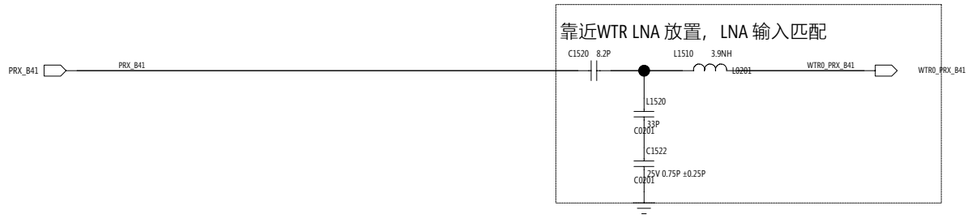


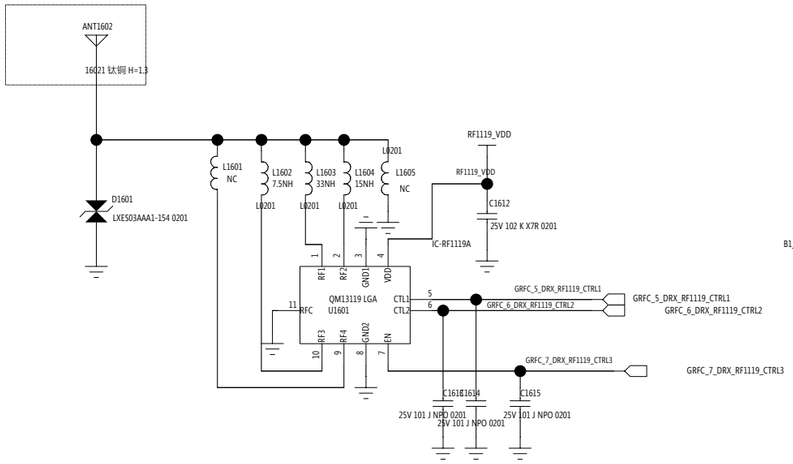
B7 双工器

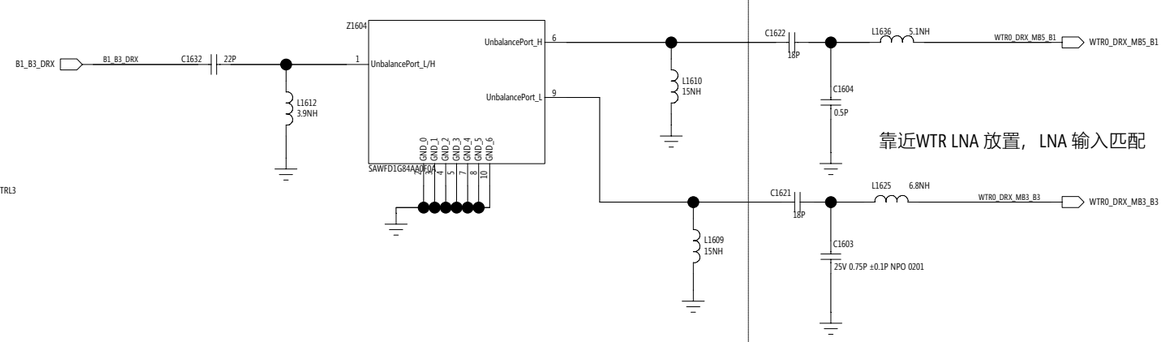
B7与B41 PRX

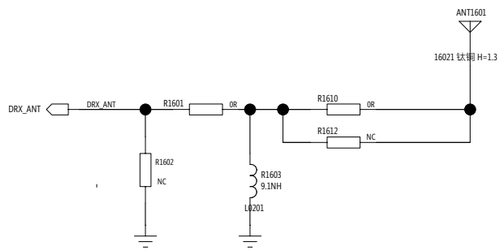
靠近tranciver放置

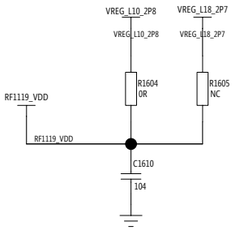


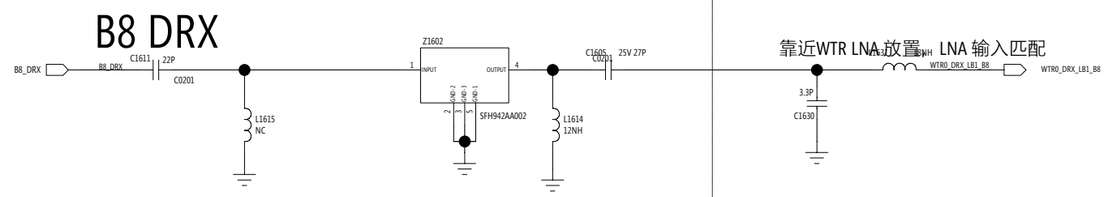


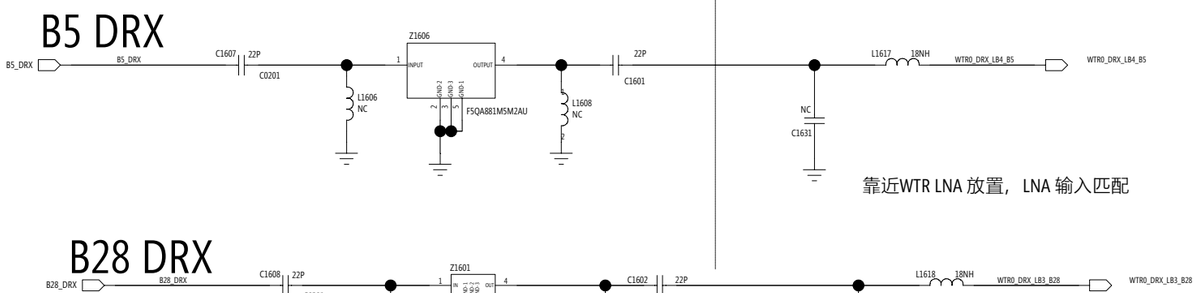

ANT1602
16021 钛铜 H=1.3
D1601
LXES03AAA1-154 0201
L1601
NC
L1602
7.5NH
L1603
33NH
L1604
15NH
L1605
NC
L0201
RF1119_VDD
C1612
25V 102 K X7R 0201
IC-RF1119A
QM13119 LGA
U1601
RFC
RF1
RF2
GND1
VDD
RF3
RF4
GND2
EN
CTL1
CTL2
GRFC_5_DRX_RF1119_CTRL1
GRFC_6_DRX_RF1119_CTRL2
GRFC_5_DRX_RF1119_CTRL1
GRFC_6_DRX_RF1119_CTRL2
GRFC_7_DRX_RF1119_CTRL3
GRFC_7_DRX_RF1119_CTRL3
C1613
C1614
C1615
25V 101 J NPO 0201
25V 101 J NPO 0201
25V 101 J NPO 0201

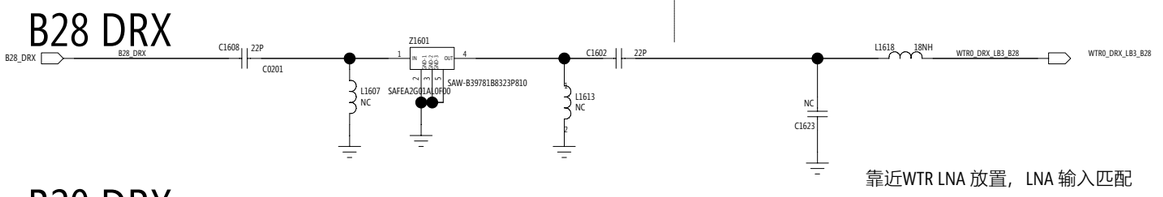

B1_B3 DRX
B1_B3_DRX
C1632
22P
L1612
3.9NH
Z1604
UnbalancePort_H
UnbalancePort_L/H
UnbalancePort_L
SAWFD1G84AA0F0A
L1610
15NH
L1609
15NH
C1622
18P
L1636
5.1NH
WTR0_DRX_MB5_B1
C1604
0.5P
靠近WTR LNA 放置，LNA 输入匹配
C1621
18P
L1625
6.8NH
WTR0_DRX_MB3_B3
C1603
25V 0.75P ±0.1P NPO 0201

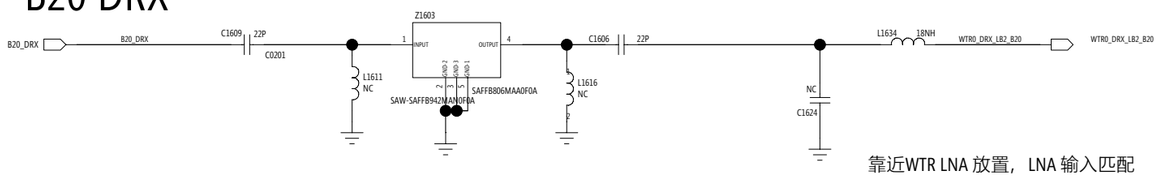

ANT1601
16021 钛铜 H=1.3
DRX_ANT
R1601
0R
R1610
0R
R1612
NC
R1602
NC
R1603
9.1NH
L0201


VREG_L10_2P8
VREG_L18_2P7
R1604
0R
R1605
NC
RF1119_VDD
C1610
104

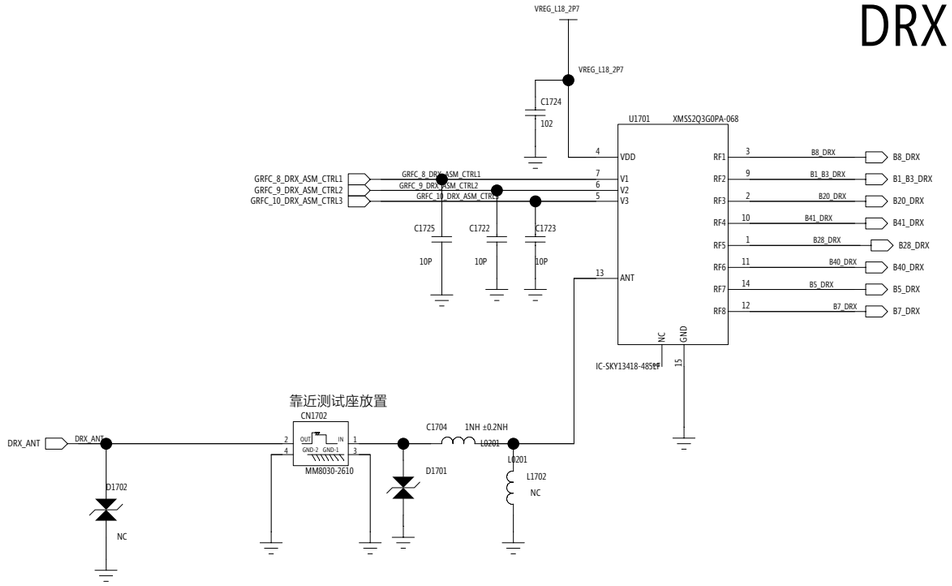

B8 DRX
B8_DRX
C1611
22P
C0201
L1615
NC
Z1602
SFH942AA002
L1614
12NH
C1605
C0201
25V 27P
靠近WTR LNA 放置，LNA 输入匹配
L1635
3.9NH
WTR0_DRX_LB1_B8
3.3P
C1630


B5 DRX
B5_DRX
C1607
22P
C0201
L1606
NC
Z1606
F5QA881M5M2AU
L1608
NC
22P
C1601
L1617
18NH
WTR0_DRX_LB4_B5
NC
C1631
靠近WTR LNA 放置，LNA 输入匹配


B28 DRX
B28_DRX
C1608
22P
C0201
L1607
NC
Z1601
SAFEA2G01A1OF00
SAW-B39781B8323P810
C1602
22P
L1613
NC
L1618
18NH
WTR0_DRX_LB3_B28
NC
C1623
靠近WTR LNA 放置，LNA 输入匹配


B20 DRX
B20_DRX
C1609
22P
C0201
L1611
NC
Z1603
SAFFB806MAA0F0A
SAW-SAFFB942MAA0F0A
L1616
NC
C1606
22P
L1634
18NH
WTR0_DRX_LB2_B20
NC
C1624
靠近WTR LNA 放置，LNA 输入匹配

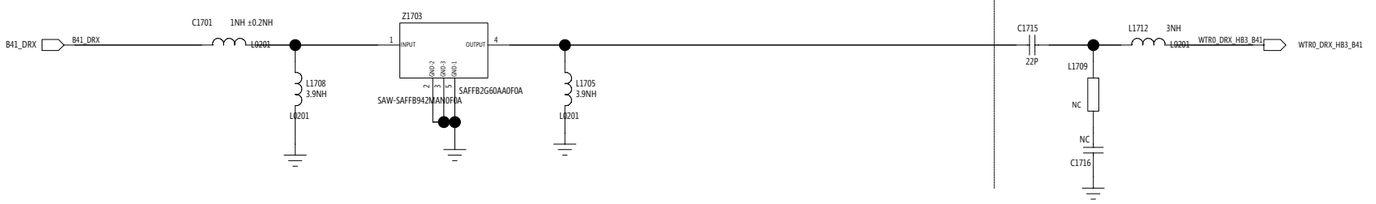
DRX



B7 DRX

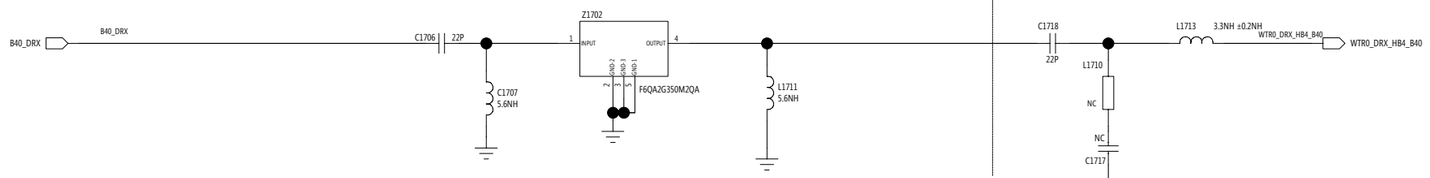
靠近WTR LNA 放置，LNA 输入匹配

B41 DRX



靠近WTR LNA 放置，LNA 输入匹配

B40 DRX

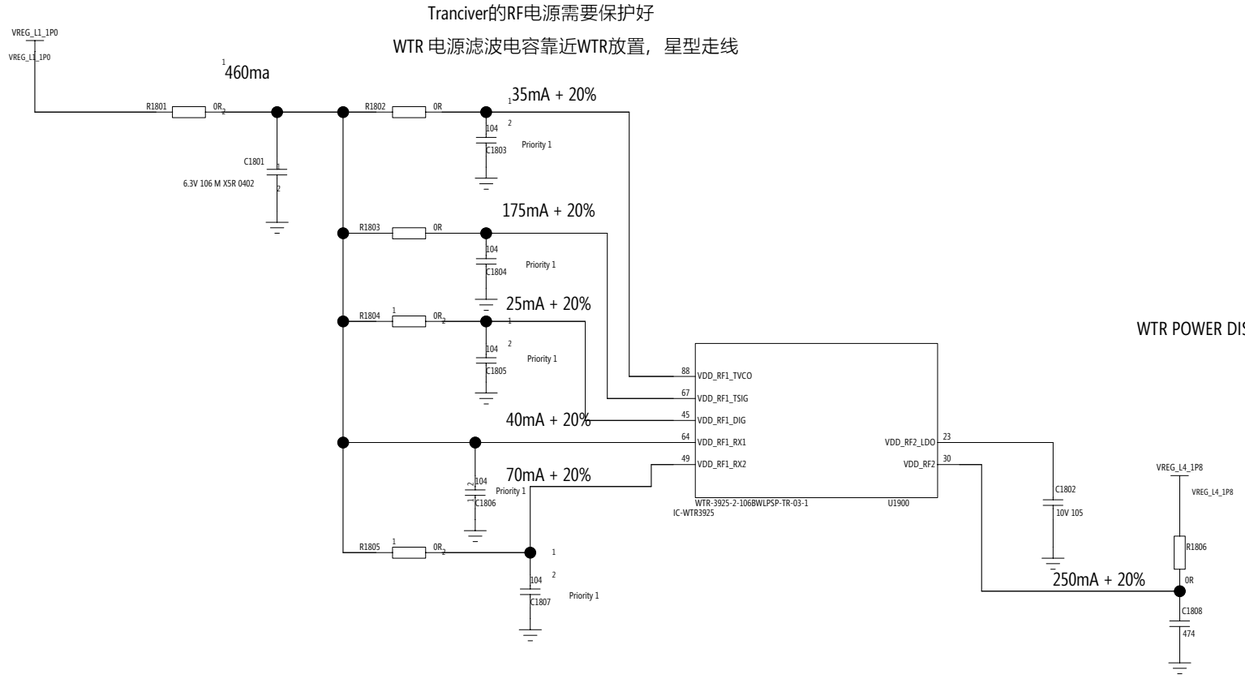


靠近WTR LNA 放置，LNA 输入匹配

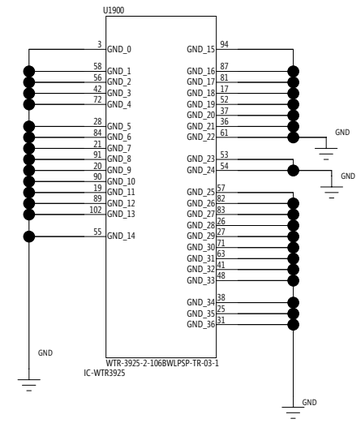
WTR POWER DISTRIBUTION 1.0V

Tranciver的RF电源需要保护好

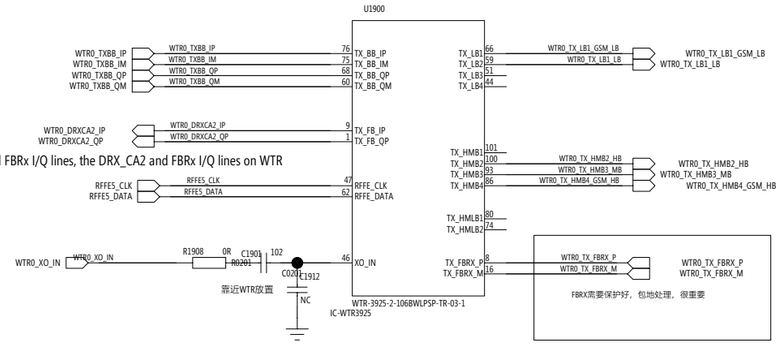
WTR 电源滤波电容靠近WTR放置，星型走线

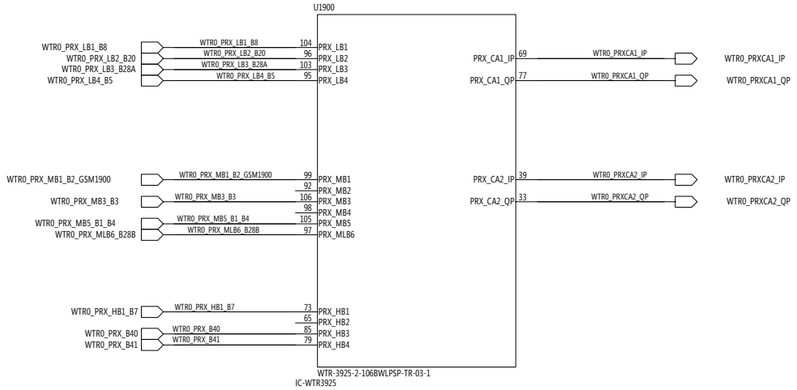


WTR POWER DISTRIBUTION 1.8V(Rev.B)



For MSM devices with no dedicated FBRx I/Q lines, the DRX_CA2 and FBRx I/Q lines on WTR





I and Q line isolation :

Rx and Tx: 100 dB

PRx_CA1 and PRx_CA2: 100 dB

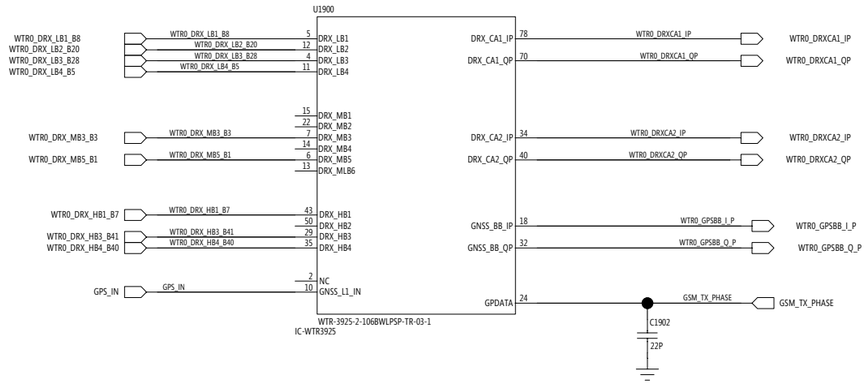
DRx_CA1 and DRx_CA2: 100 dB

PRx_CA1/2 and DRx_CA1/2: 60 dB

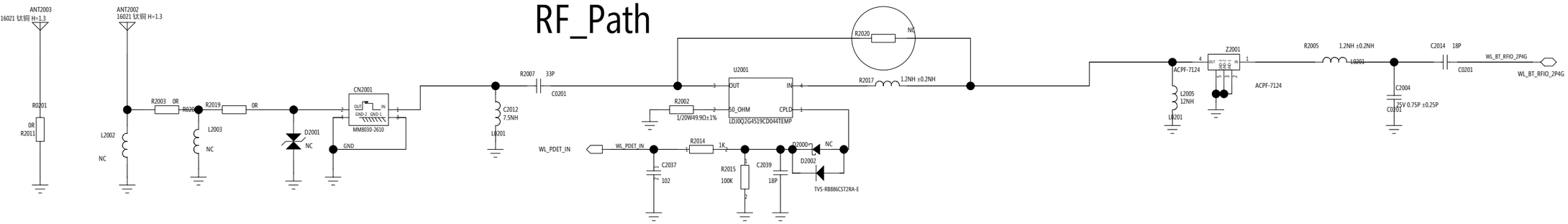
Between the same I and Q: 60 dB

Between I and Q and the RFFE: 100 dB

BBI to BBQ spacing should be at least three times the width of the trace



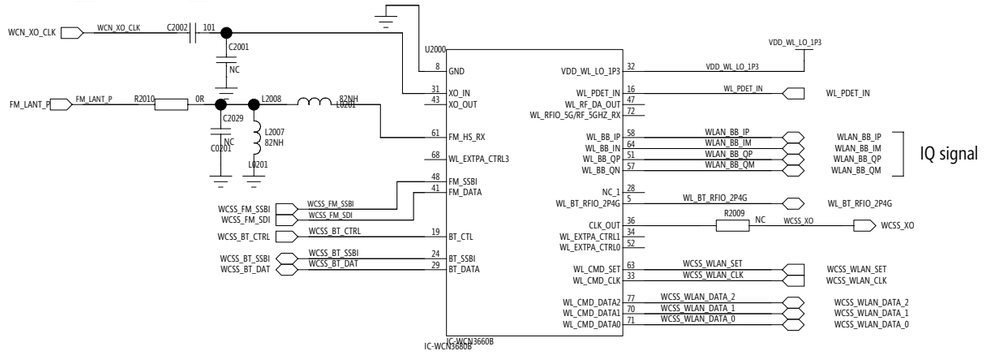
WIFI+BT



RF_Path

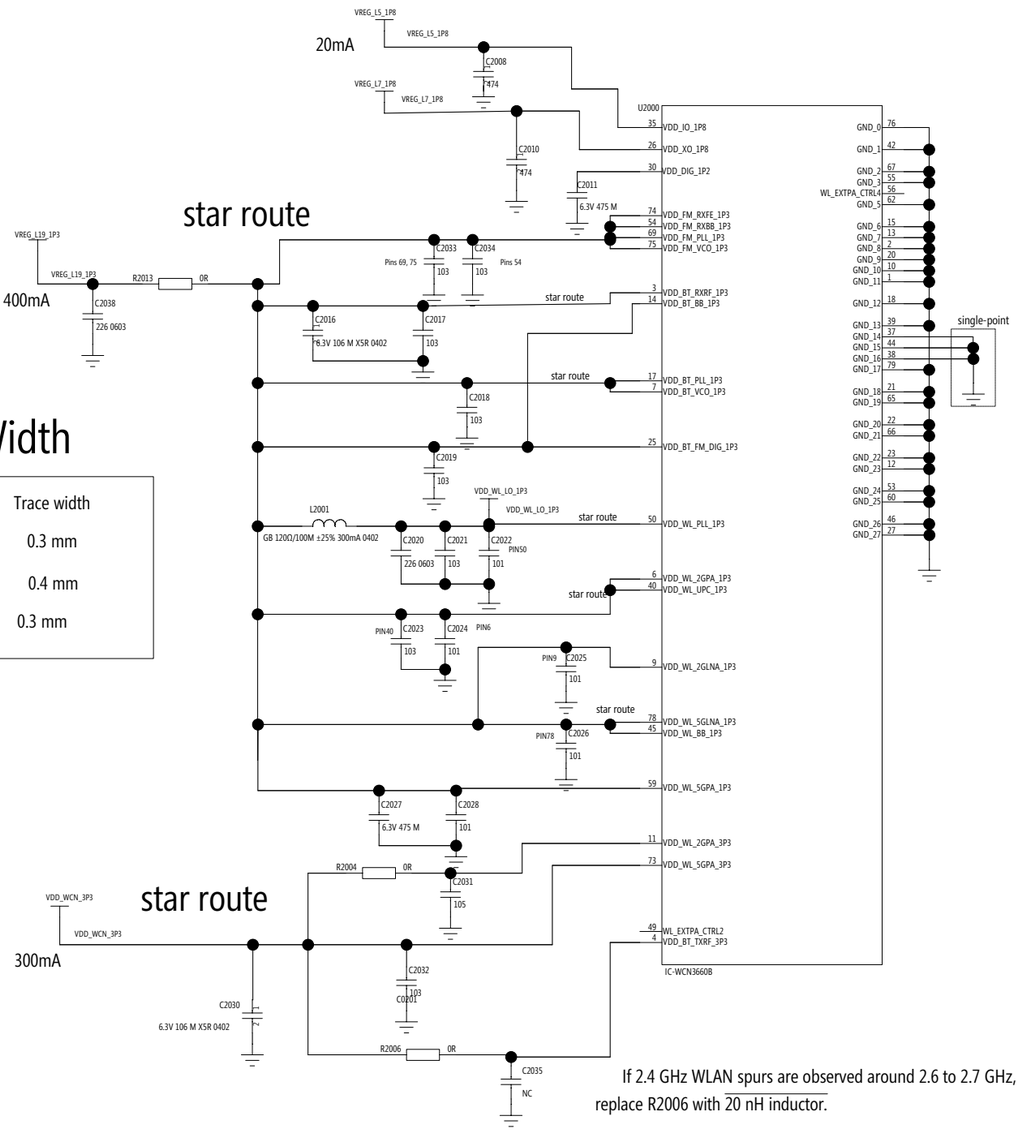
5G FEM

WIFI_HOST_PORT/TCXO



Power_Path_Width

Power Trace name	Trace width
VDD_WCN_3P3	0.3 mm
VREG_L19_1P3	0.4 mm
VBATT to 5G PA	0.3 mm

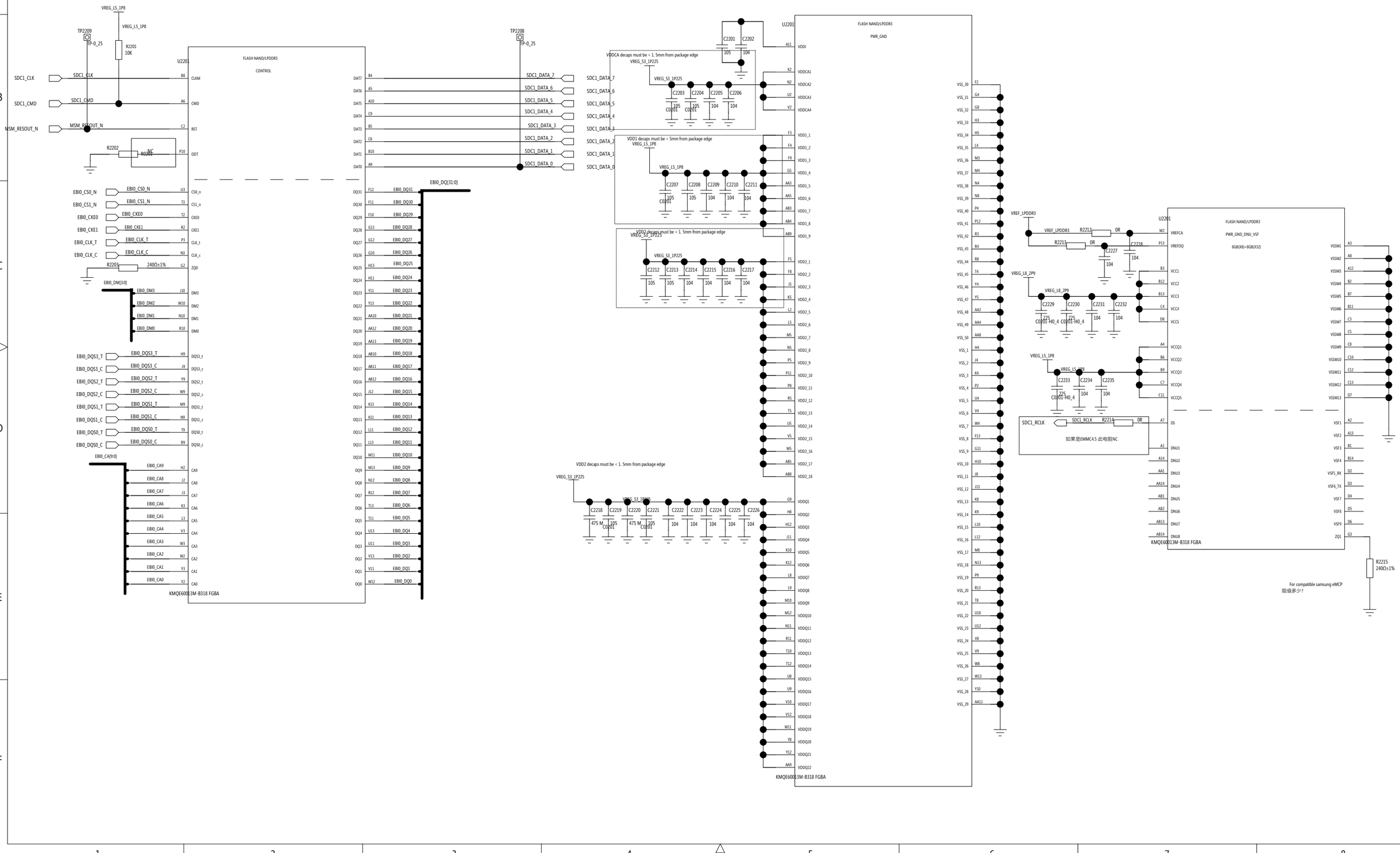


If 2.4 GHz WLAN spurs are observed around 2.6 to 2.7 GHz, replace R2006 with 20 nH inductor.

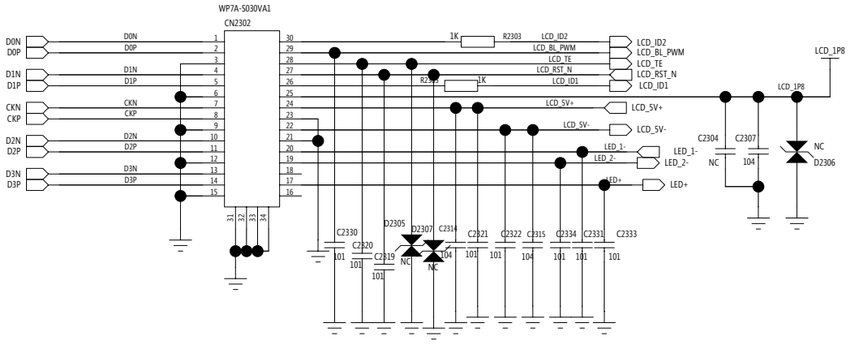
L2001: Qualcomm use BLM03AX241SN1B

240Ohm@100MHz 0.35A DCR<0.38Ohm

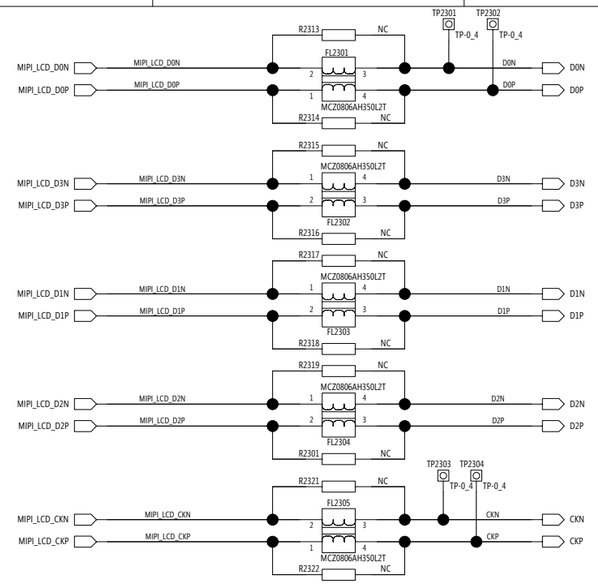
R2015: For "B" version devices do not connect pin 49 to the 3.3V rail


VREG_L5_1P8
TP2209
TP-0_25
R2201
10K
U2201
FLASH NAND/LPDDR3
CONTROL
SDC1_CLK
SDC1_CMD
MSM_RESOUT_N
R2202
NC
R0201
EBI0_CS0_N
EBI0_CS1_N
EBI0_CKE0
EBI0_CKE1
EBI0_CLK_T
EBI0_CLK_C
R2203
240Ω±1%
EBI0_DM[3:0]
EBI0_DM3
EBI0_DM2
EBI0_DM1
EBI0_DM0
EBI0_DQS3_T
EBI0_DQS3_C
EBI0_DQS2_T
EBI0_DQS2_C
EBI0_DQS1_T
EBI0_DQS1_C
EBI0_DQS0_T
EBI0_DQS0_C
EBI0_CA[9:0]
EBI0_CA9
EBI0_CA8
EBI0_CA7
EBI0_CA6
EBI0_CA5
EBI0_CA4
EBI0_CA3
EBI0_CA2
EBI0_CA1
EBI0_CA0
KMQE60013M-B318 FBGA
TP2208
TP-0_25
SDC1_DATA_7
SDC1_DATA_6
SDC1_DATA_5
SDC1_DATA_4
SDC1_DATA_3
SDC1_DATA_2
SDC1_DATA_1
SDC1_DATA_0
EBI0_DQ[31:0]
EBI0_DQ31
EBI0_DQ30
EBI0_DQ29
EBI0_DQ28
EBI0_DQ27
EBI0_DQ26
EBI0_DQ25
EBI0_DQ24
EBI0_DQ23
EBI0_DQ22
EBI0_DQ21
EBI0_DQ20
EBI0_DQ19
EBI0_DQ18
EBI0_DQ17
EBI0_DQ16
EBI0_DQ15
EBI0_DQ14
EBI0_DQ13
EBI0_DQ12
EBI0_DQ11
EBI0_DQ10
EBI0_DQ9
EBI0_DQ8
EBI0_DQ7
EBI0_DQ6
EBI0_DQ5
EBI0_DQ4
EBI0_DQ3
EBI0_DQ2
EBI0_DQ1
EBI0_DQ0
U2201
FLASH NAND/LPDDR3
PWR_GND
VDDCA decaps must be < 1. 5mm from package edge
VREG_S3_1P225
C2201
C2202
C2203
C2204
C2205
C2206
VDD1 decaps must be < 5mm from package edge
VREG_L5_1P8
C2207
C2208
C2209
C2210
C2211
VDD2 decaps must be < 1. 5mm from package edge
C2212
C2213
C2214
C2215
C2216
C2217
VDD2 decaps must be < 1. 5mm from package edge
C2218
C2219
C2220
C2221
C2222
C2223
C2224
C2225
C2226
KMQE60013M-B318 FBGA
VREF_LPDDR3
R2212
R2213
0R
C2227
VREG_L8_2P9
C2229
C2230
C2231
C2232
C0201-H0_4
VREG_L5_1P8
C2233
C2234
C2235
SDC1_RCLK
R2214
0R
如果是EMMC4.5 此电阻NC
U2201
FLASH NAND/LPDDR3
PWR_GND_DNU_VSF
8GB(8B)+8GB(X32)
KMQE60013M-B318 FBGA
R2215
240Ω±1%
For compatible samsung eMCP
阻值多少？

LCM Connector

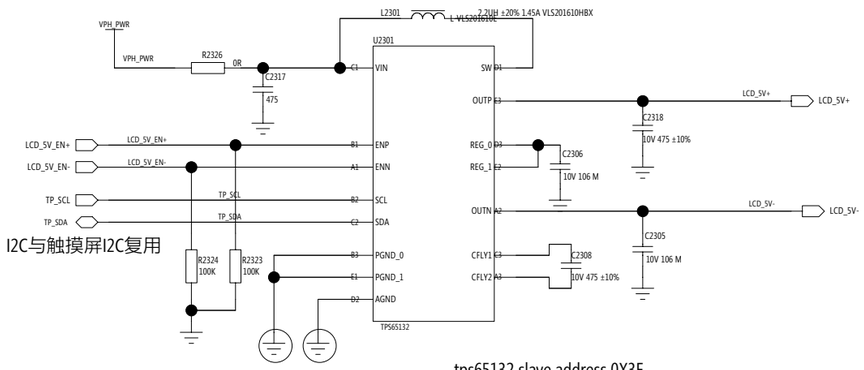


DSI CMF



LCD ±5V Driver

裸晶IC，注意布局位置应力

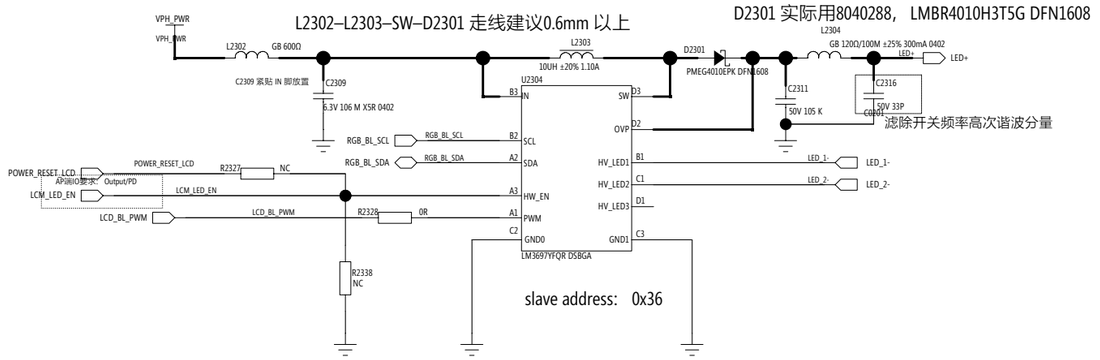


I2C与触摸屏I2C复用

电源地模拟地分开下主地

tps65132 slave address 0X3E

LCD BL

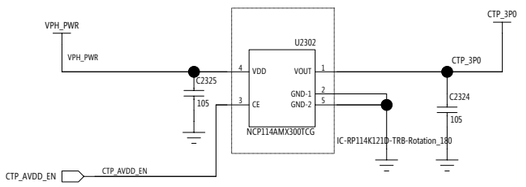


L2302–L2303–SW–D2301 走线建议0.6mm 以上

D2301 实际用8040288，LMBR4010H3T5G DFN1608

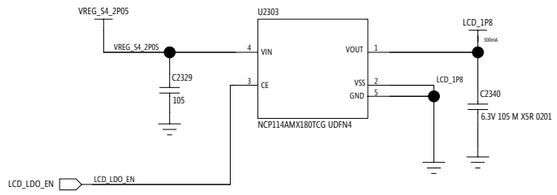
slave address: 0x36

CTP AVDD 3.0V

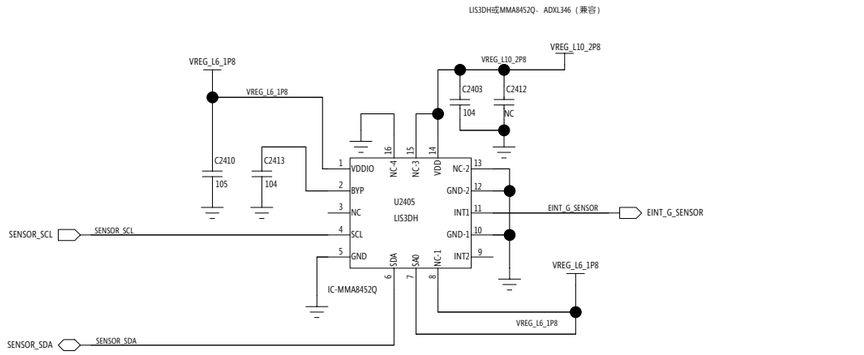


与BTB座的105挨比较近，共用输出电容

LCD/TP IO LDO



G Sensor

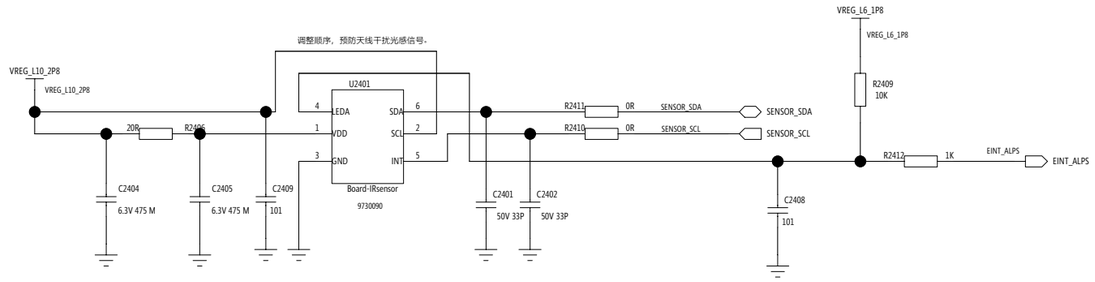


使用MMA8452Q时C1004使用104电容，使用LIS3DH或者ADXL346时C2413 NC

SA0可用来设置IIC地址，接高电平时，MMA8452Q和ADXL346的7位地址均为0x1D，LIS3DH的7位地址为0x19

SA0接低电平时，MMA8452Q和ADXL346的7位地址均为0x1C，LIS3DH的7位地址为0x18

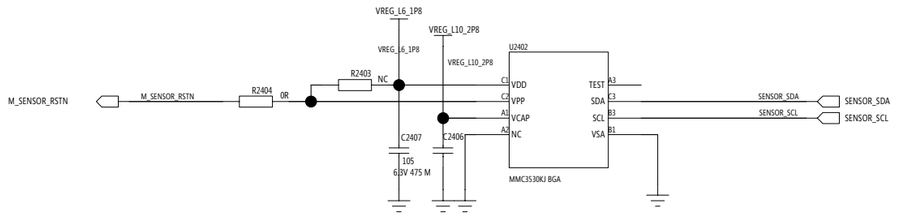
A.L.S.+P.S sensor module BTB



I2C地址，读0xA7，写0xA6

APDS-9922/9921

M Sensor



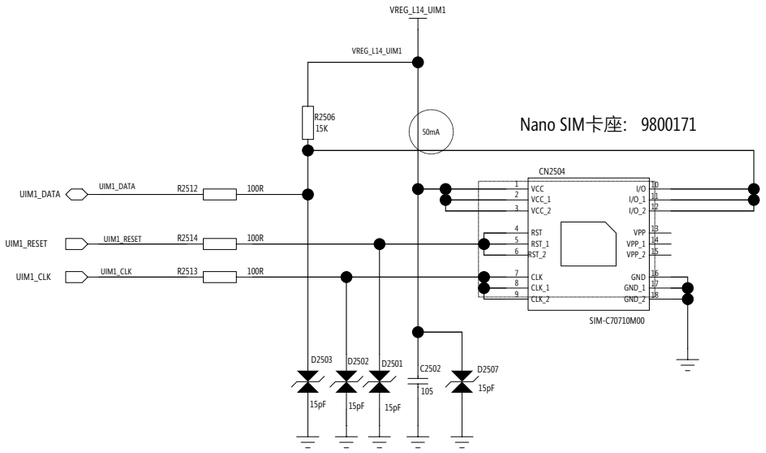
AK09911 slave Address is 0x0C when A2pin tied to GND

AK09911 slave Address is 0x0C when A2pin tied to VDD

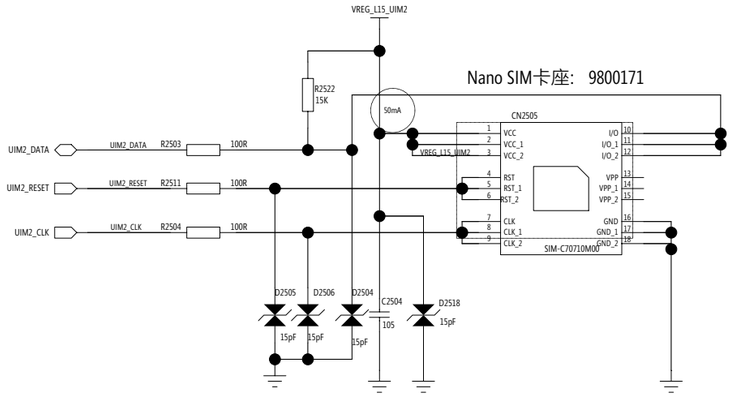
I2C地址，读0x19，写0x18, when A2pin tied to GND

MMC3530KJ : 1.4*1.4　　AK09911: 1.2*1.2

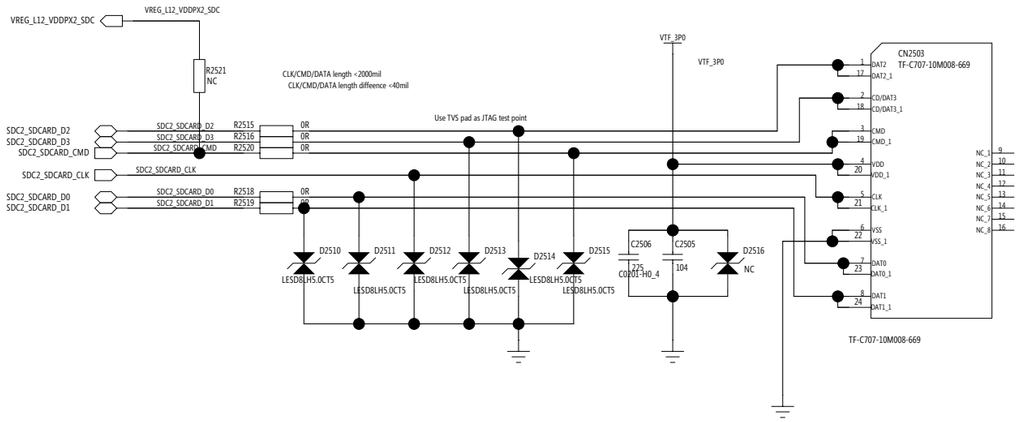
SIM1 Card



SIM2 Card

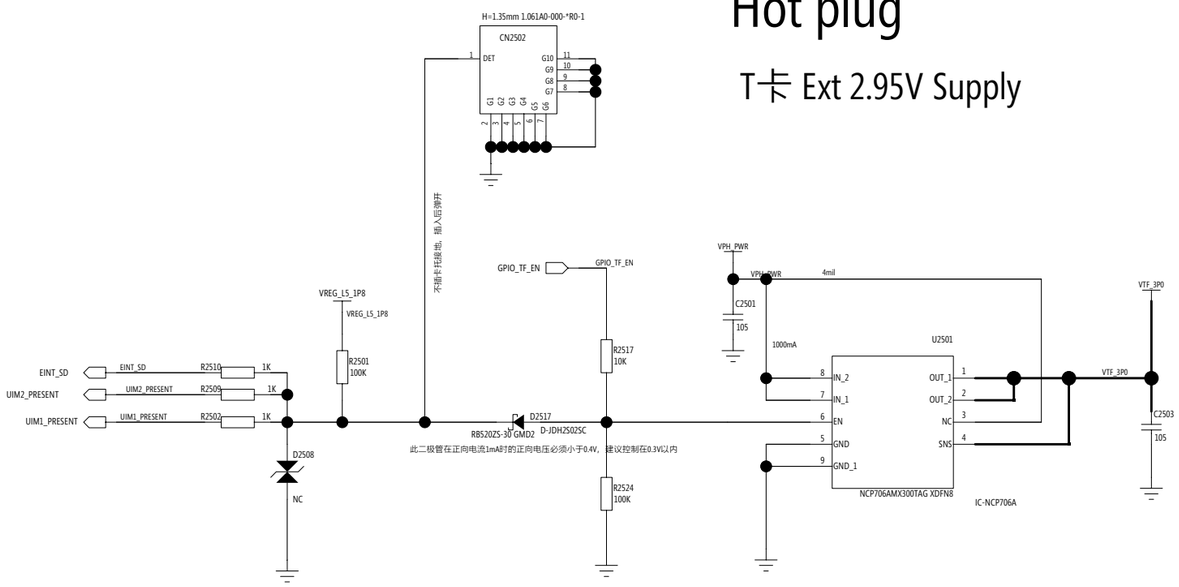


MicroSD_CARD

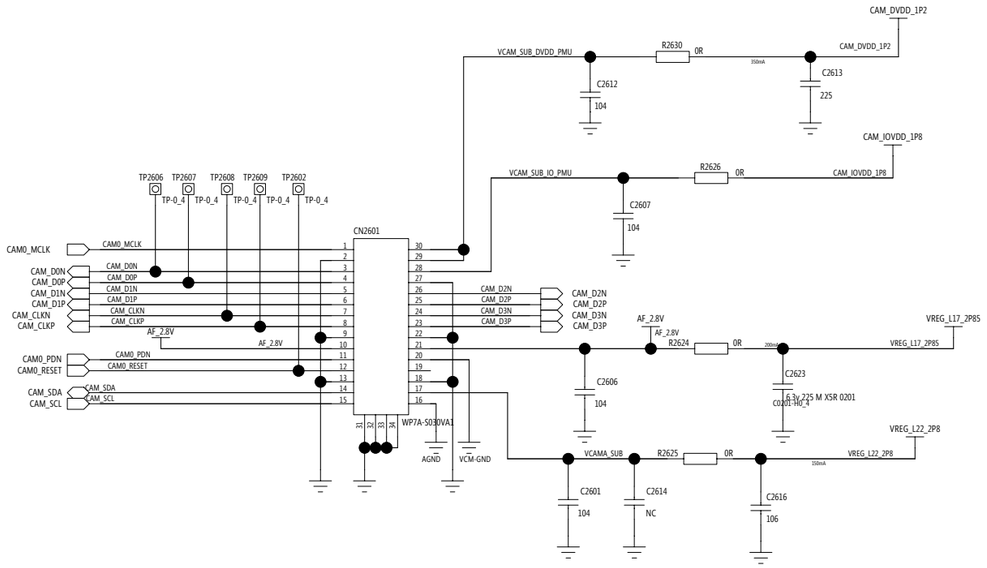


Hot plug

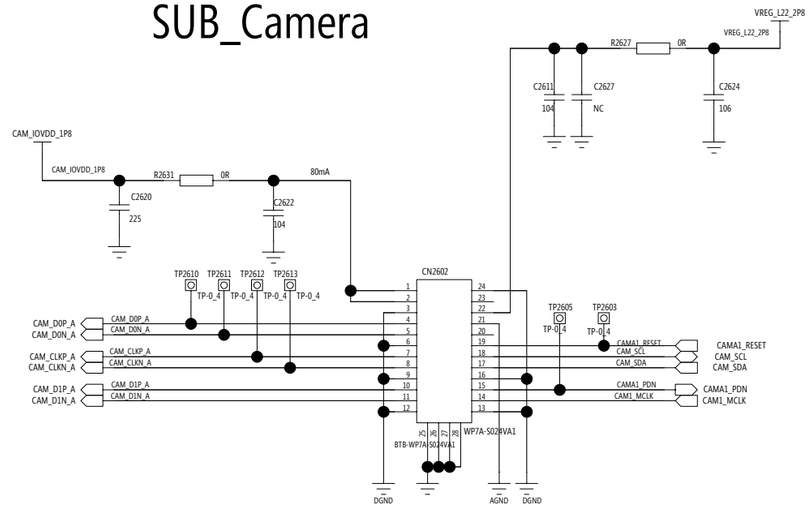
T卡 Ext 2.95V Supply



Main CAMERA

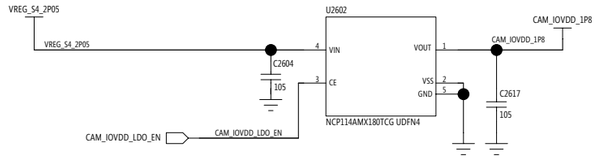


SUB_Camera



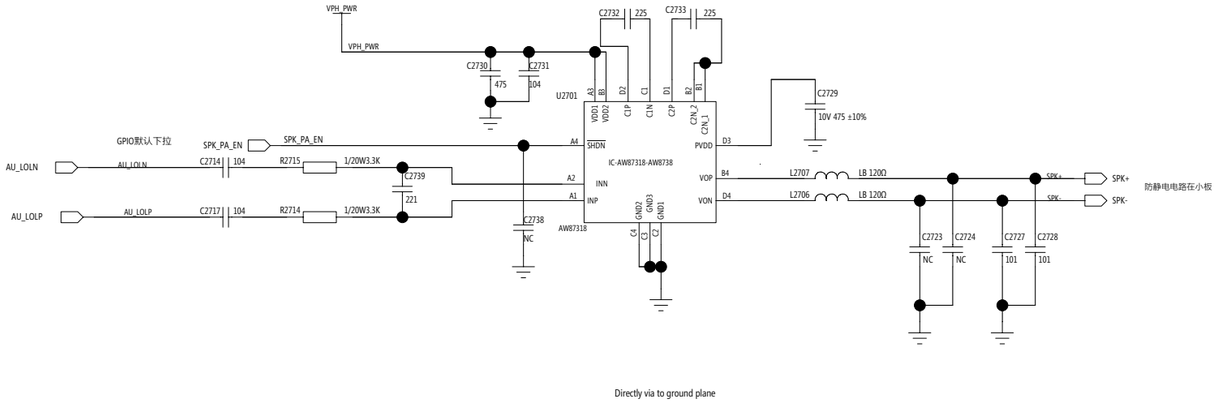
OV5695 slave address 0X36;SID=0

Main Camera IOVDD(1.8V)

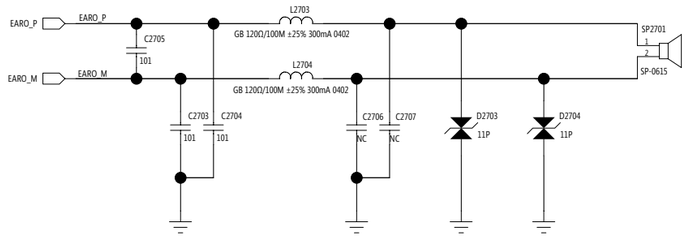


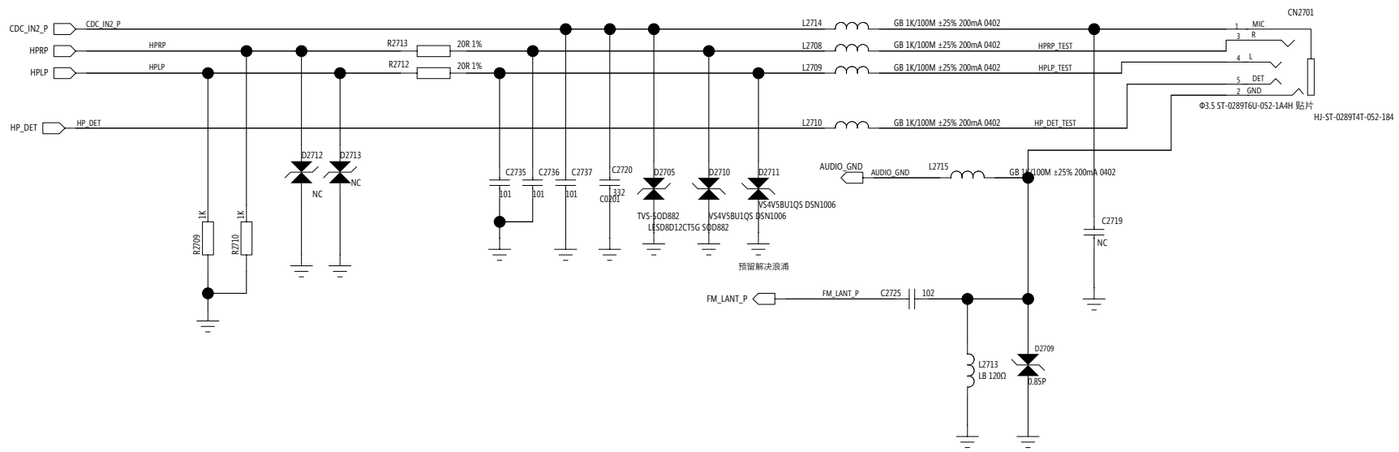
Audio Switch

Speaker PA

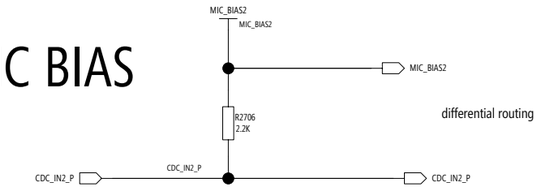


Receiver

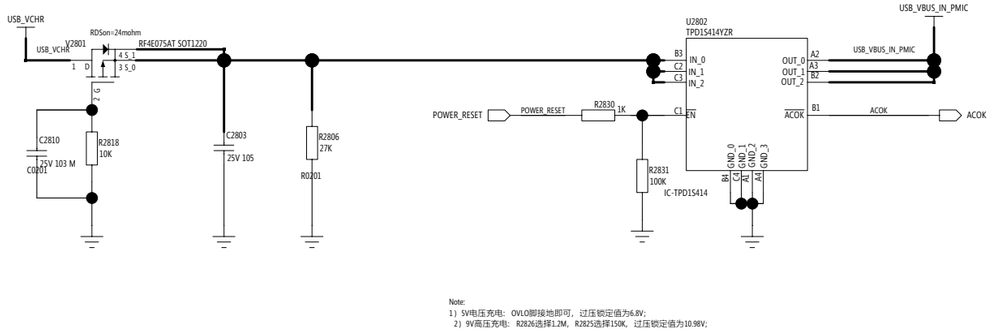




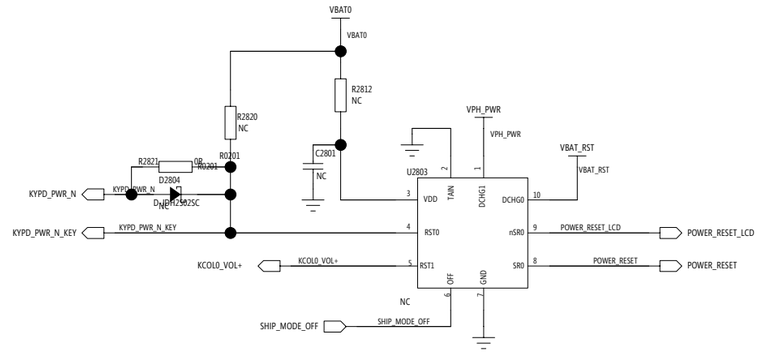
HP MIC BIAS



NVP&OVP



Note:
1）5V电压充电：OVLO脚接地即可，过压锁定值为6.8V;
2）9V高压充电：R2826选择1.2M，R2825选择150K，过压锁定值为10.98V;

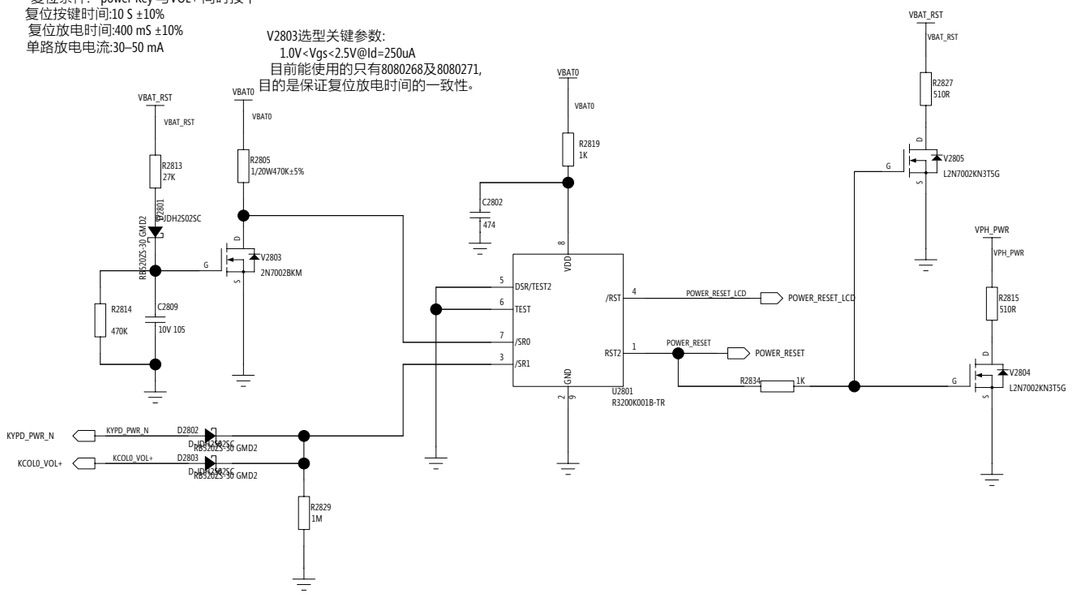


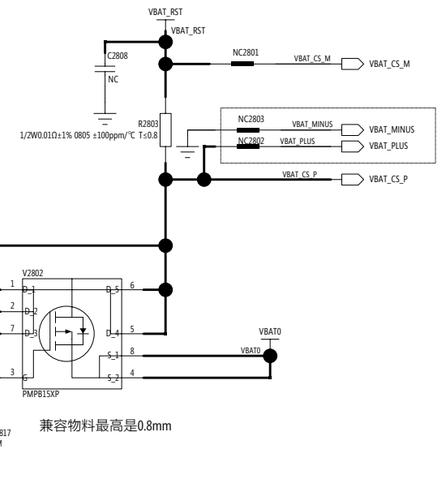
HW RESET

VPH_PWR是从充电IC的系统供电输出端取电
VBAT0是直接从电池取电
VBAT_RST是从复位MOS管输出端取电

复位条件： power Key 与VOL+ 同时按下
复位按键时间:10 S ±10%
复位放电时间:400 mS ±10%
单路放电电流:30–50 mA

V2803选型关键参数:
1.0V<Vgs<2.5V@Id=250uA
目前能使用的只有8080268及8080271,
目的是保证复位放电时间的一致性。

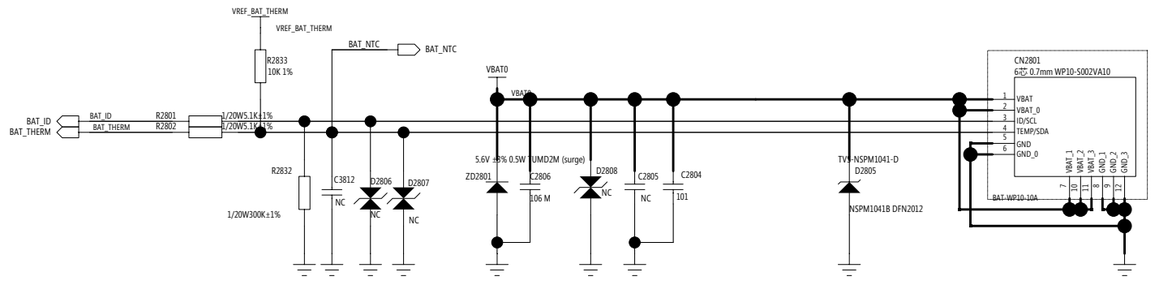




兼容物料最高是0.8mm

BAT

D2005靠近测试点摆放， D2804靠近电池连接器摆放
如果测试点离电池连接器比较近，可以只用D2804来防静电
C2806靠近ZD2801摆放



USB开关

VBUS	ACOK	VREG_L5_1P8	EN
X	X	H	L
<Uuvlo or >Uovlo	H	L	H
>Uuvlo and <Uovlo	L	L	L

插入适配器后USB Switch打到CPU的USB D+D-接口进行适配器类型识别。
识别完成后USB_ON电平被拉高，USB Switch打到UART串口，CPU读取Charger_ID的电压。
读取完成后USB_ON电平被拉低，USB Switch打到CPU的USB D+D-接口。

MAX14743	R1207/R1208/R1210/V1203 NC R1211贴0R
TS5USBC401	R1207/R1208/R1210/V1203按 原理图贴片，R1211 NC

OPPO适配器识别流程:

VREG_L5_1P8
R2921 1/20W470K±1%
R2922 1K Charger_ID
VPH_PWR
R1210 220K
ACOK
R1211 NC
R2920 100K
R1208 470K
R1207 10K
V2901 2N7002BKM
V1203 RV2C010UN SOT883
USB_VBUS_IN_PMIC
R2919 10K
连接OVP IC的ACK(B1)脚
只能使用FPF2280或TPD1S414，不能使用KTS1681

D2910 CTS05540 SOD882
R2905 1K
C2901 104

U3001 TS5USBC401
B1 VCC
A4 /FLAG/
B4 /EN/
A1 CSA
B2 CSB
C4 PA1
C3 PB1
C2 PA2
C1 PB2
A3 COMA
A2 COMB
B3 GND
IC-MAX14743IC-MAX14743-WLCSP

MTK可NC串口测试点的ESD器件
串口测试点用于软件调试以及高通电流测试,MTK可通过USB进行电流测试

AP LOG
UTXD0 R2902 1K
URXD0 R2910 1K
TP2904 TP-0_8
TP2903 TP-0_8
USB_DM_P0
USB_DP_P0
dl件 0R
R2932 300R
R2931 300R
USB_HS_DP_DET
USB_HS_DM_DET
TO PMI
should be placed at the junction where the trace branches off to the PMI8952. Keep the stub as short as possible

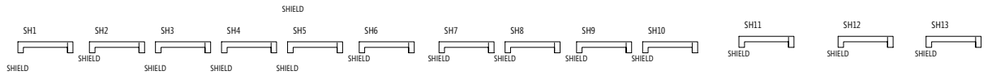
USB_VBUS_IN_PMIC
R2903 100K
USB_VBUS_IN_PMIC（经过OVP后）控制

Q2901 LBC847AN3T5G SOT883
R2904 100K
R2918 100K
USB_SW_CTRL
USB_ON选择默认下拉的GPIO控制端口，否则充电类型识别异常
Q2901实际物料：8060421 LBC847AN3T5G SOT883

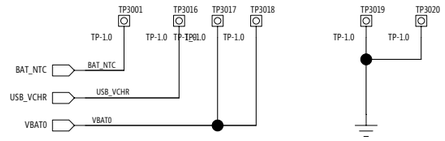
高通/MTK生产用电流串口测试点复用USB测试点
TP2901 TP-1.0
TP2902 TP-1.0
生产用测试点，需根据治具顶针大小选择合适封装；
测试点位置调整，放在ESD器件前面，增强ESD静电防护能力
生产用测试点，需根据治具顶针大小选择合适封装；
R2929 15NH
R2930 15NH
根据静电测试结果选择0R或者15nH
USB_D+
USB_D-
D2903 0.85P
D2904 0.85P
此ESD测试点和USB公用，走线时需要注意
8660107

Select	CSA/CSB
UART(default) & MCU（SW）	00
USB	11

VIH: >1.4V
VIL: <0.4V

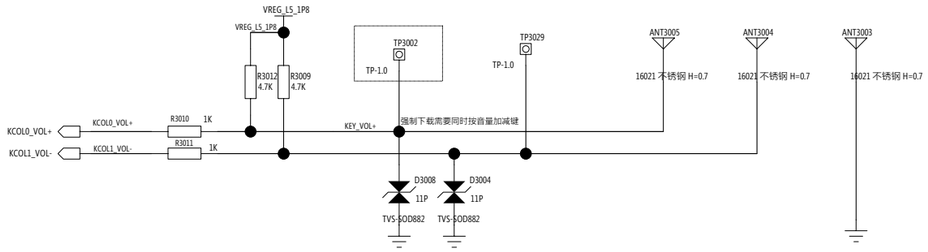


TEST POINT



KEY PAD

对应V板

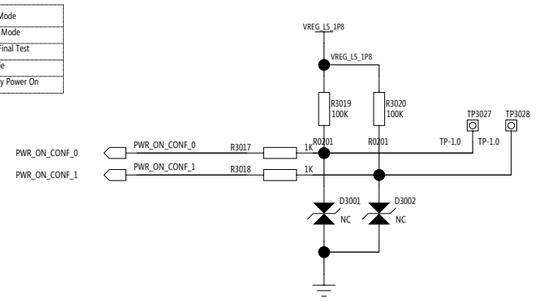


Test Confige

综测校准测试点

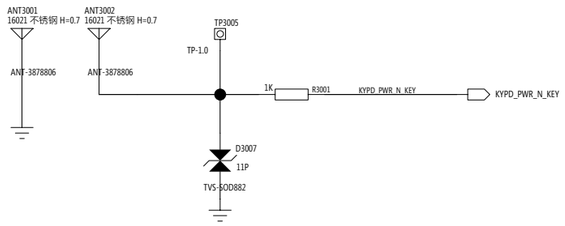
BOOT MODE

CONF_0	CONF_1	Mode
0	0	Factory Mode
0	1	WLAN Final Test
1	0	RF mode
1	1	Ordinary Power On

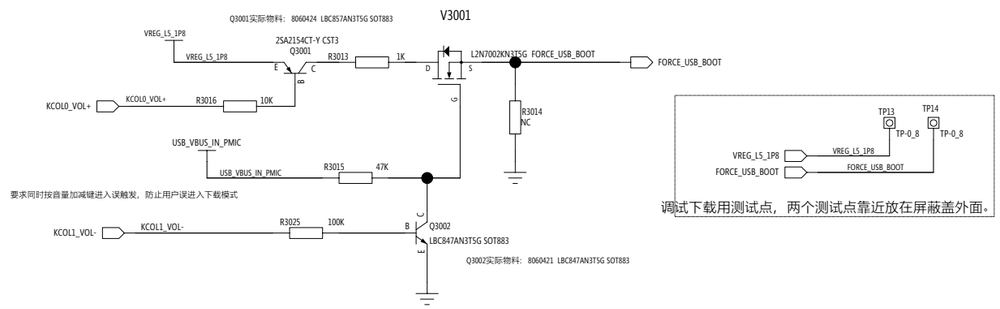


POWERKEY

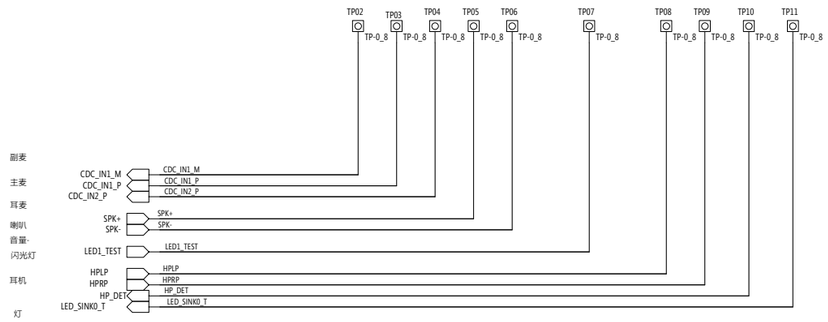
对应P板



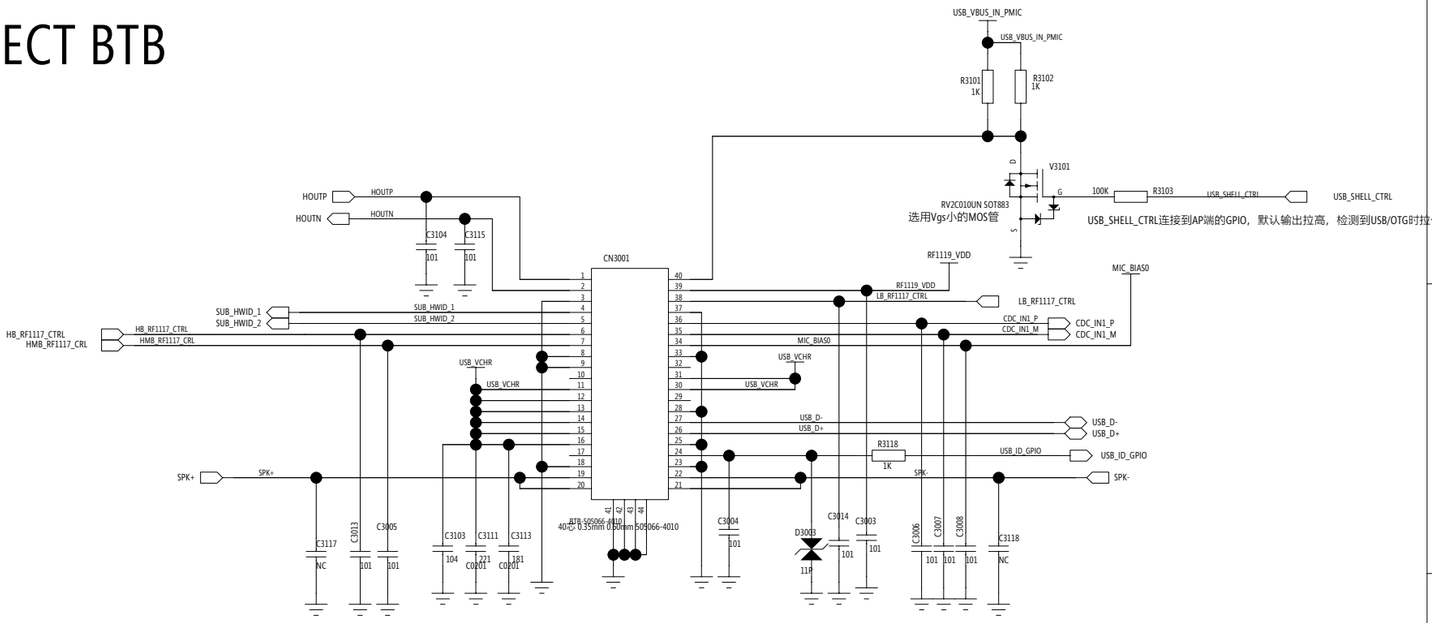
FORCED USB BOOT CTL



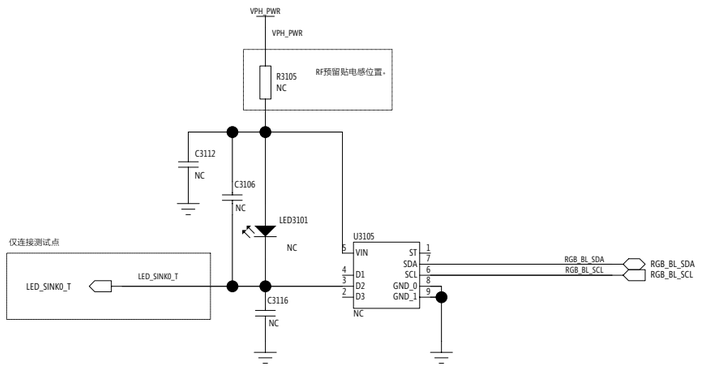
单板全功能测试测试点



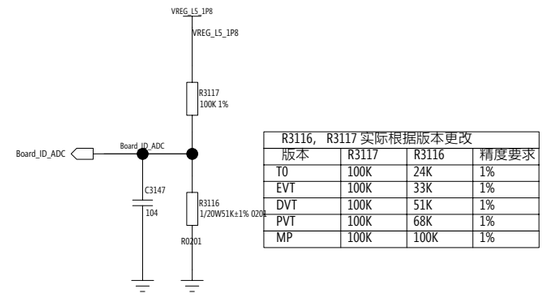
FPC CONNECT BTB



RGB LED DRIVER

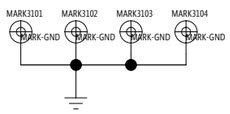


ADC FOR BOARD HW ID

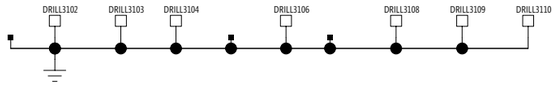


R3116，R3117 实际根据版本更改			
版本	R3117	R3116	精度要求
T0	100K	24K	1%
EVT	100K	33K	1%
DVT	100K	51K	1%
PVT	100K	68K	1%
MP	100K	100K	1%

MARK POINT

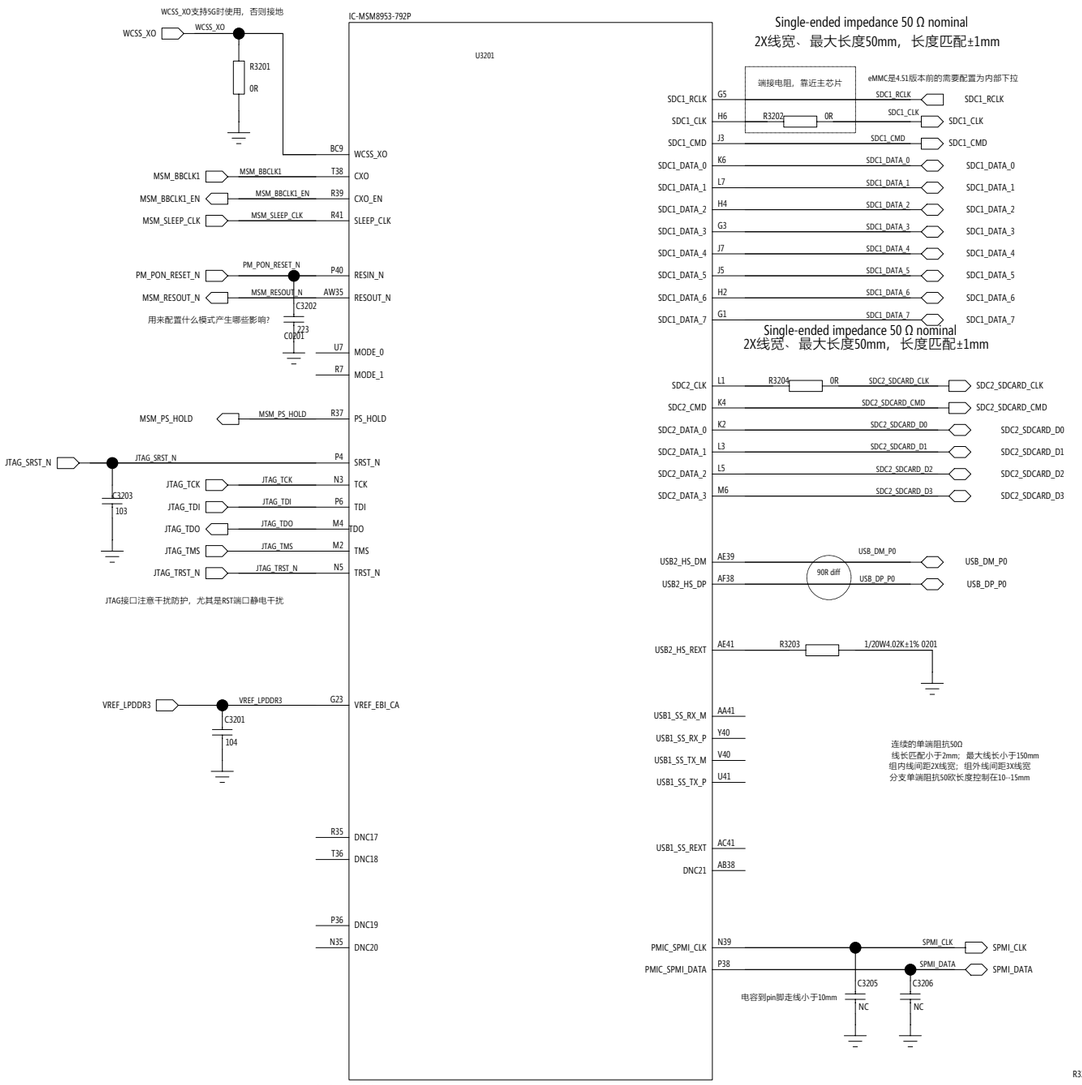


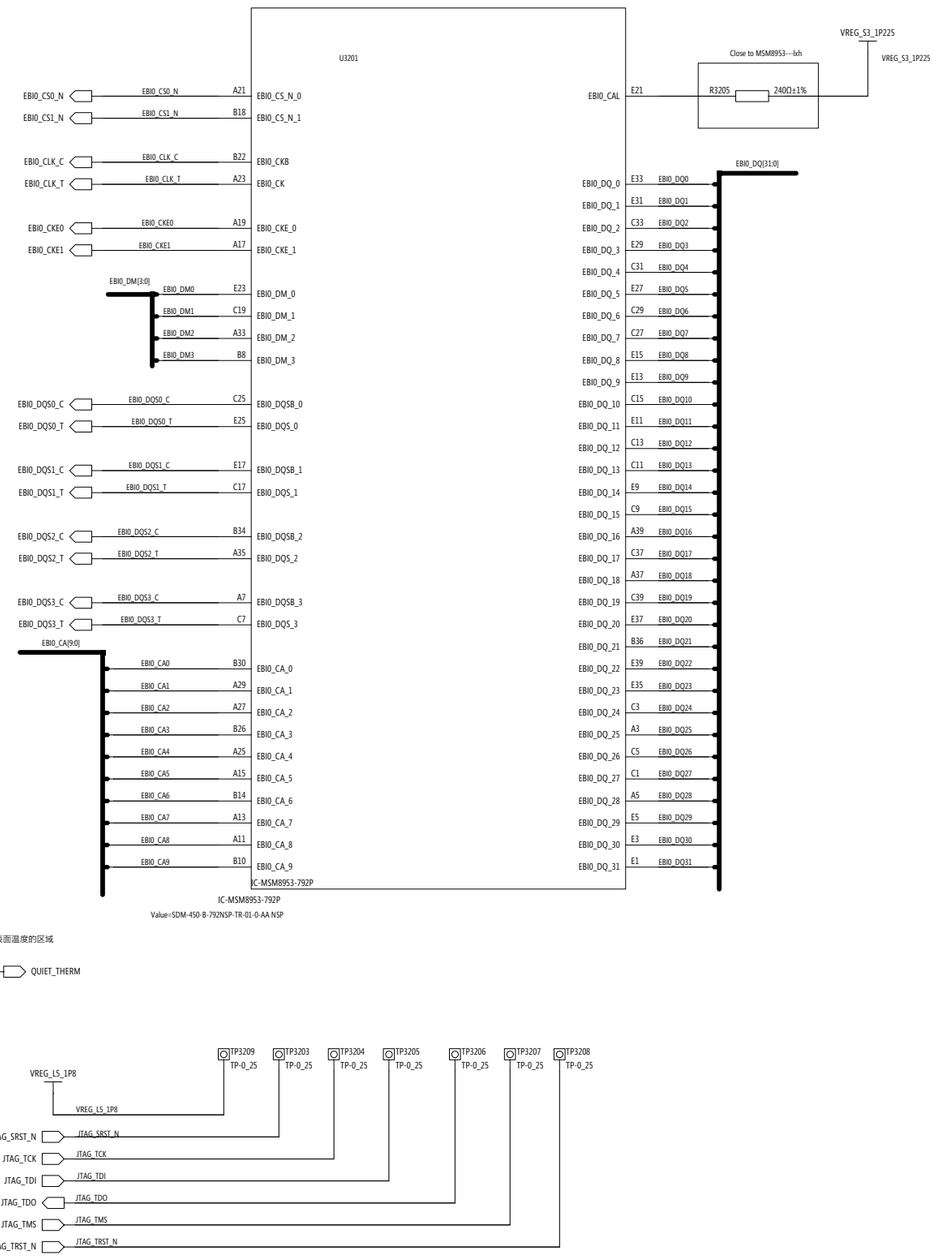
GND DRILL



MSM8953_RF interface

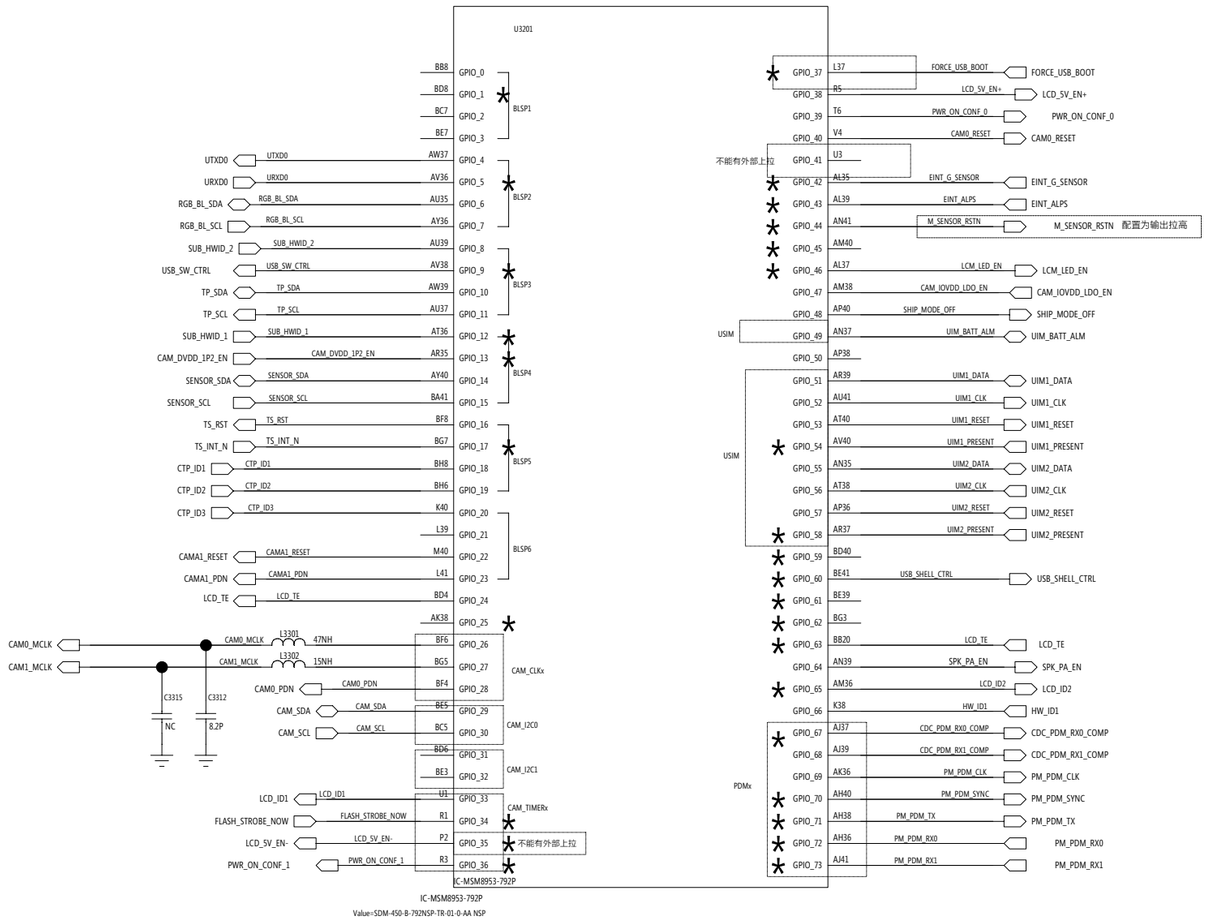
已重新整理03.09.17.16

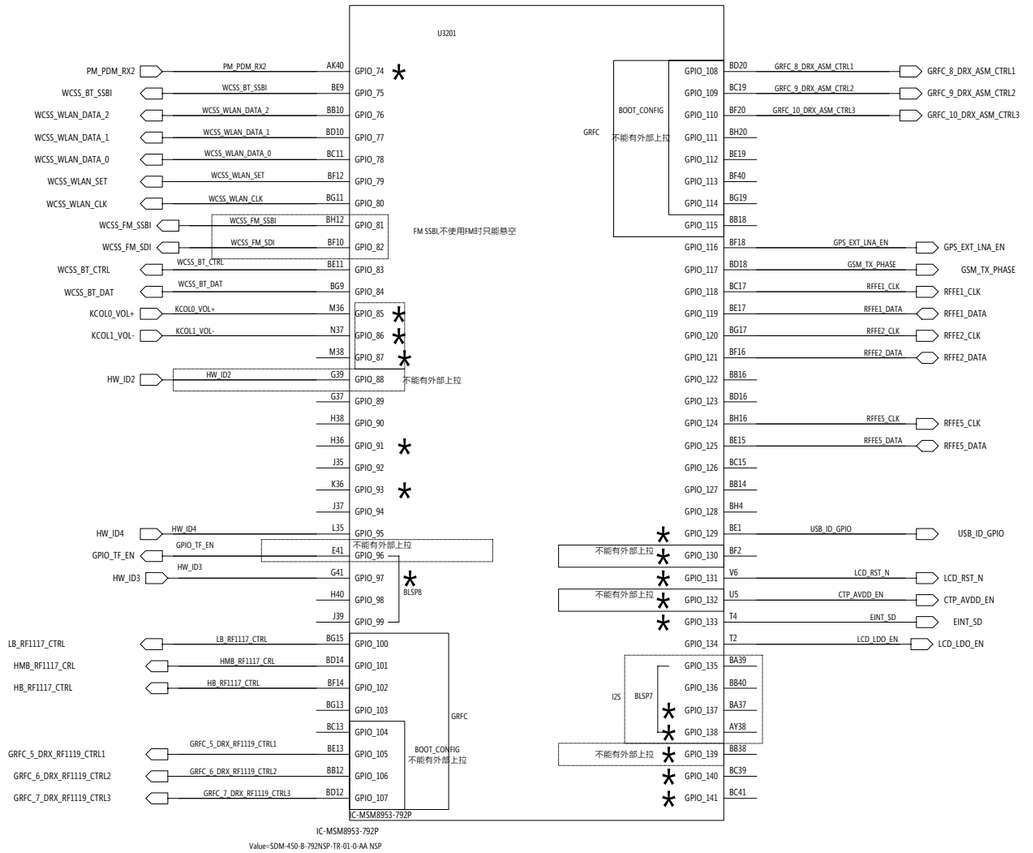


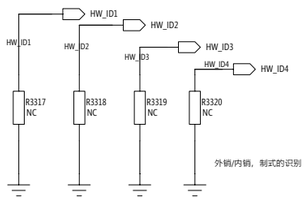


MSM8953_GPIO

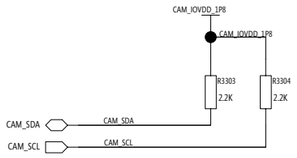
Ensure that there are no external pull-up on these GPIOs (35, 37, 41, 96, 104, 105, 106,107, 108, 109, 110, 111, 112, 113, 114, 130, 132, and 139) if secure boot is not required.



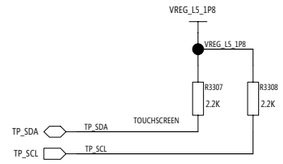




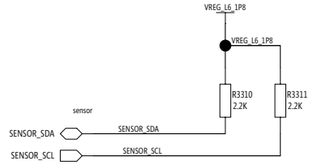
硬件版本	HW_ID[4:1]	R3317	R3318	R3319	R3320
全频段版	1111	NC	NC	NC	NC
亚太版	1110	2.2K	NC	NC	NC
印度版	1101	NC	2.2K	NC	NC



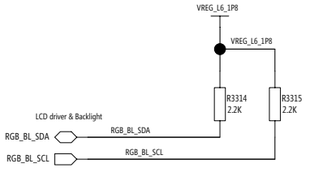
I2C设备 IIC2	读地址	写地址
MAIN CAMERA	0X35	0X34
Sub Camera	0X21	0X20



I2C设备(I2C0 MT6755序号)	读地址	写地址
TP	0x41	
RGB LED	0x61	
+/-5V DriVer		
Backlight Driver		

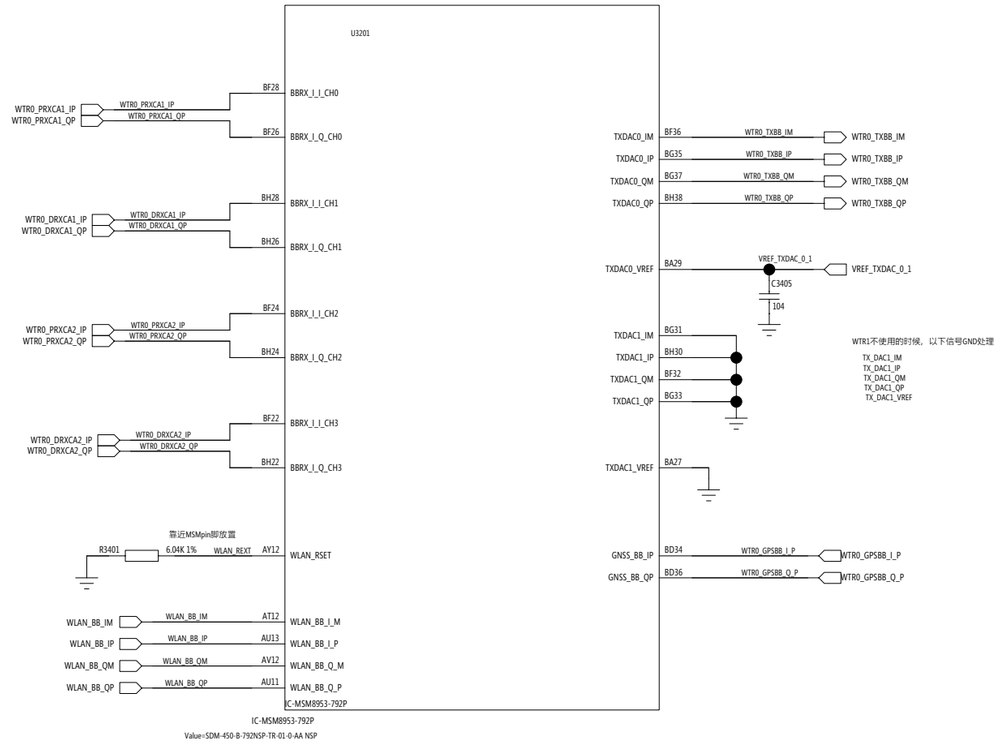


I2C设备	读地址	写地址
G-sensor/Gyro	0xD5	0xD4
ALS+PS	0XA7	
M-sensor	0x61	

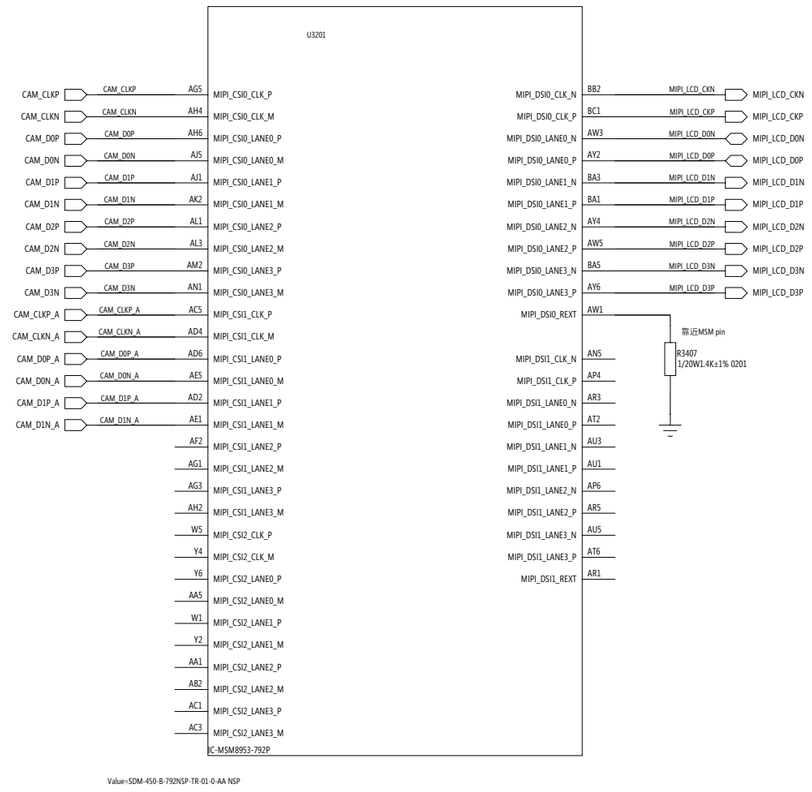


I2C设备	读地址	写地址
Smart PA	0x6D	

MSM8953_RF interface

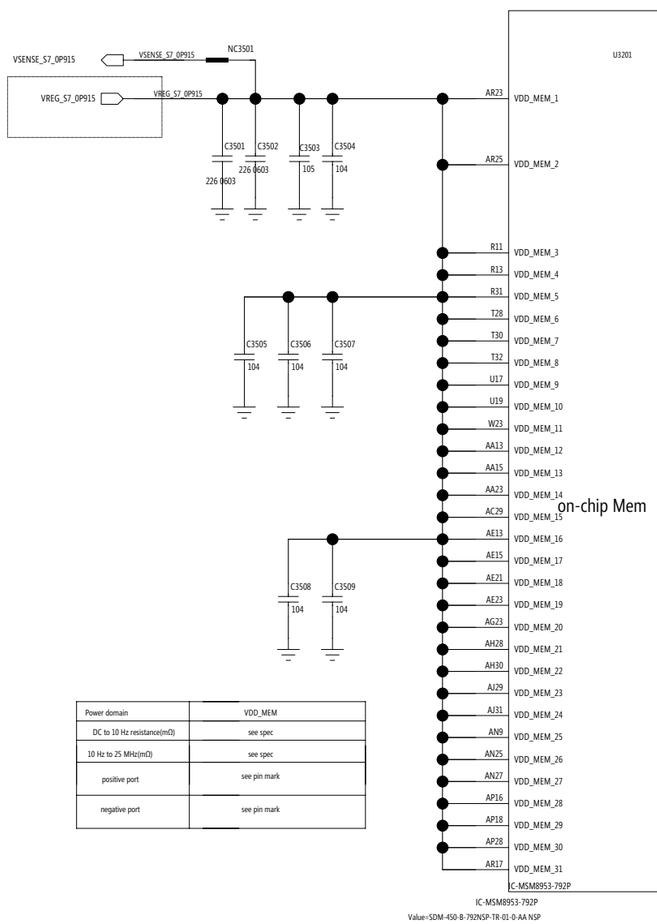


MSM8953_CSI&DSI

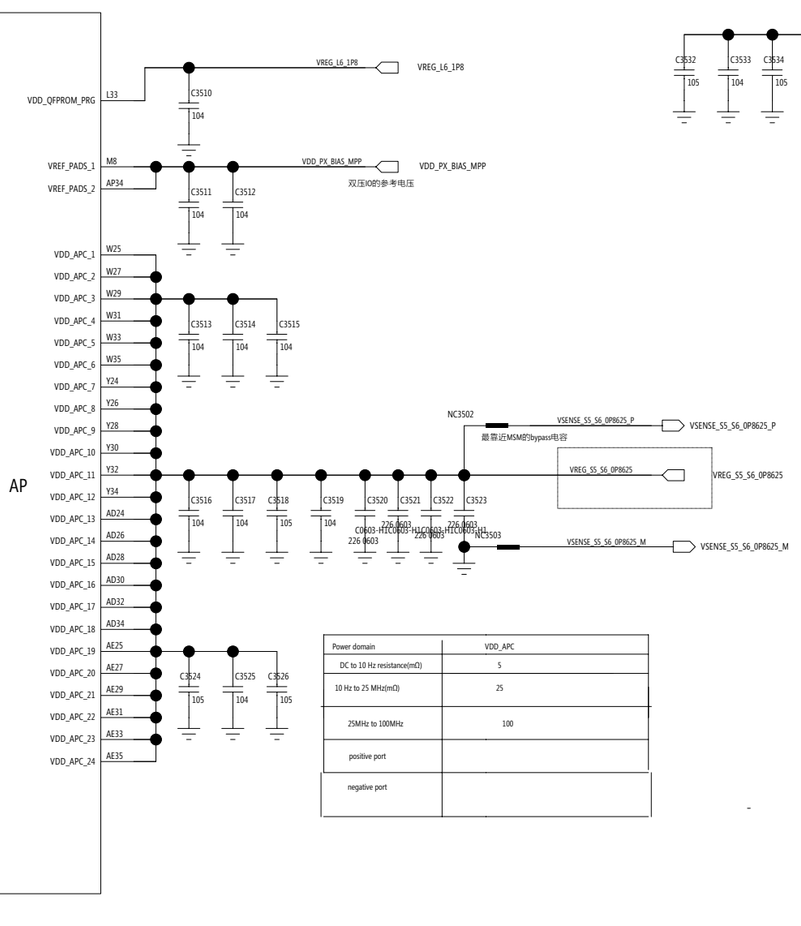


已更新03.10.10.22

MSM8953_PWR1



Power domain	VDD_MEM
DC to 10 Hz resistance(mΩ)	see spec
10 Hz to 25 MHz(mΩ)	see spec
positive port	see pin mark
negative port	see pin mark



Power domain	VDD_APC
DC to 10 Hz resistance(mΩ)	5
10 Hz to 25 MHz(mΩ)	25
25MHz to 100MHz	100
positive port	
negative port	

IC-MSM8953-792P
Value=SDM-450-B-792NSP-TR-01-0-AA NSP

MSM8953_PWR2

Power domain	VDD_CORE
DC to 10 Hz resistance(mΩ)	see spec
10 Hz to 25 MHz(mΩ)	see spec
positive port	see pin mark
negative port	see pin mark

Power domain	VDD_P1
DC to 10 Hz resistance(mΩ)	see spec
10 Hz to 25 MHz(mΩ)	see spec
positive port	see pin mark
negative port	see pin mark

IC-MSM8953-792P
Value=SDM-450-B-792NSP-TR-01-0-AA NSP

MSM8953_PWR3

此处的连接方式涉及到MIPI CSI DSI的连接方式

Note: Respective Camera pins can be left open if not used.
Float AC7 pin if CAM0 not used
Float AA7 pin if CAM1 not used
Float W7 pin if CAM2 not used

Note: Connect MSM pins (AG7, AH10 and AE7) to GND if DSI1 is not used
Note: Connect MSM pin number AU25 to GND if TXDAC1 is not used.

Graphics circuits

U3201

VREG_L3_0P925 — C3601 105

VREG_S3_1P225 — C3602 105, C3603 104, C3604 104

AJ7 VDD_DSI_LV_PLL_1
AG7 VDD_DSI_LV_PLL_2
AJ9 VDD_DSI_CSI_1
AL7 VDD_DSI_HV_PLL_1
AH10 VDD_DSI_CSI_2
AE7 VDD_DSI_HV_PLL_2
AC7 VDD_DSI_CSI_3
AA7 VDD_DSI_CSI_4
CSI2 not using, floating VDD_DSI_CSI_5(pin W7)
W7 VDD_DSI_CSI_5

VREG_L7_1P8 — C3605 104
VDDA_TXDAC_1 shoulde be GND if don't use TXDAC1
AU27 VDD_A2_1
AU25 VDD_A2_2

VREG_L19_1P3 — R3606 0R
AU9 VDD_WLAN

VREG_L7_1P8 — C3606 104, C3607 104
AU19 VDD_A2_3
AU21 VDD_A2_4
AU23 VDD_A2_5
BBRX

VREG_S3_1P225 — C3608 104, C3609 104
BA19 VDD_A1_1
BA21 VDD_A1_2
BA23 VDD_A1_3

VSENSE_S1_0P8625 — NC3601
VREG_S1_0P8625 — C3610 226 0603, C3611 226 0603, C3612 104, C3613 104, C3614 105, C3615 104, C3616 105
(VDD_MSS)
AJ13 VDD_MODEM_1
AJ15 VDD_MODEM_2
AJ17 VDD_MODEM_3
AJ19 VDD_MODEM_4
AJ21 VDD_MODEM_5
AJ23 VDD_MODEM_6
AJ25 VDD_MODEM_7
AJ27 VDD_MODEM_8
AK14 VDD_MODEM_9
AK28 VDD_MODEM_10
AL29 VDD_MODEM_11
AM14 VDD_MODEM_12
AN21 VDD_MODEM_13
AN23 VDD_MODEM_14
AN29 VDD_MODEM_15

C3617 104, C3618 104, C3619 105, C3620 105, C3621 105

IC-MSM8953-792P
Value=SDM-450-B-792NSP-TR-01-0-AA NSP

Power domain	VDD_MODEM
DC to 10 Hz resistance(mΩ)	
10 Hz to 25 MHz(mΩ)	
positive port	
negative port	

Note: Following MSM pins can be connected to GND if USB2_HS interface is not used
VDD_USB_HS1_1P8 (AD36) =GND
VDD_USB_HS1_3P1 (AD38)=GND
and MSM pin AC31 =GND

HS_USB
VDD_USB_HS1_1P8 AD36
VDD_USB_HS1_3P1 AD38 — VREG_L13_3P075
VDD_USB_CORE_1 AC31 — VREG_L3_0P925

SS_USB
VDD_USB_SS_1P8 AC35

VREG_L7_1P8 — C3622 105

VDD_USB_CORE_2 AB34
VDD_USB_CORE_3 AB36
VDD_USB_CORE_4 AC33 — VREG_L3_0P925, C3625 105

VDD_PLL2_1 AR27 — VREG_L7_1P8, C3626 104
VDD_PLL2_2 AN13
VDD_PLL2_3 W21
VDD_PLL2_4 AA21

VDD_PLL1 AB28 — VREG_S7_0P915

VDD_CDC_SDC1 R9 — VREG_S2_0P8625

VDD_GNSS BA31 — Star route from PMIC output Cap — VREG_S3_1P225, C3627 104, C3628 104

VDD_EBI_1 R19
VDD_EBI_2 R23
VDD_EBI_3 R25
VDD_EBI_4 R27
VDD_EBI_5 R29
VDD_EBI_6 R15
VDD_EBI_7 R17
VDD_EBI_8 T22

VREG_S7_ISO — NC3602 — VREG_S7_0P915
Star route from PMIC output Cap
C3629 105, C3630 105, C3631 105, C3632 105, C3633 105, C3634 6.3V 475 M COM2Z-H0_65

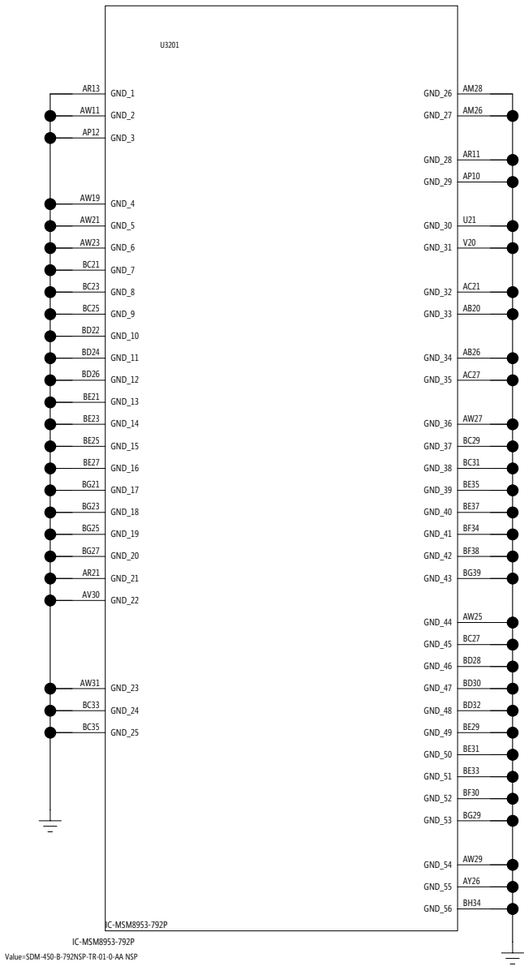
VDD_EBI_HV_PLL L21 — Star route from PMIC output Cap — VREG_S3_1P225
VDD_EBI_LV_PLL N21 — VREG_L3_0P925
C3635 104, C3636 104

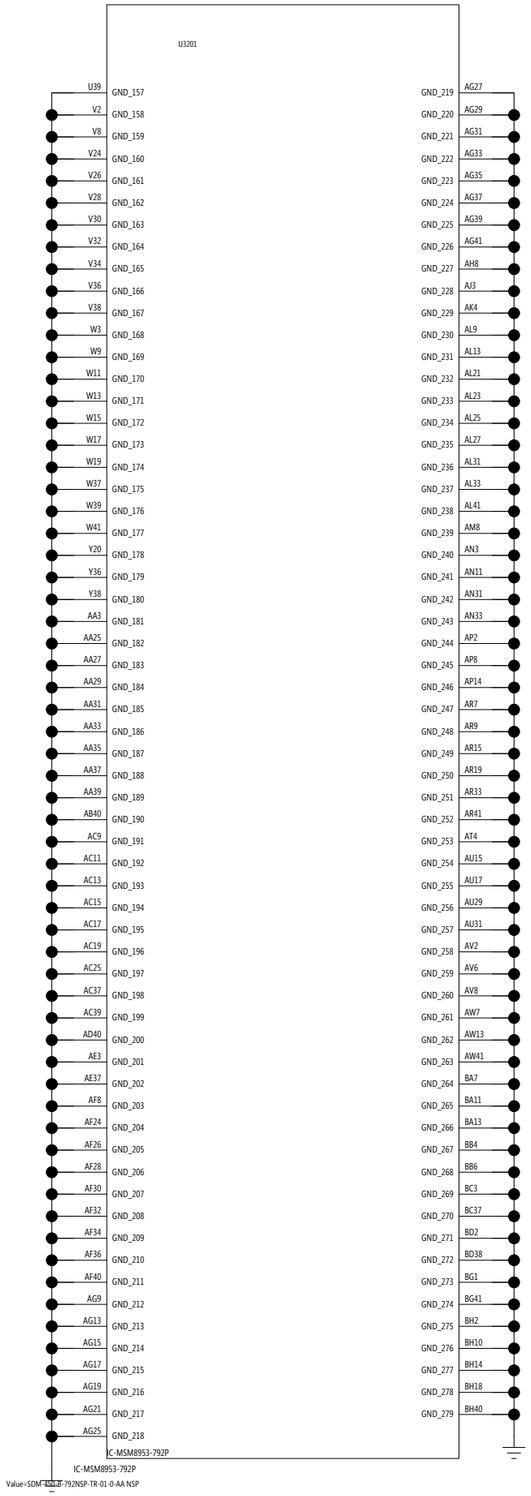
Power domain	VDD_EMI
DC to 10 Hz resistance(mΩ)	
10 Hz to 25 MHz(mΩ)	
positive port	
negative port	

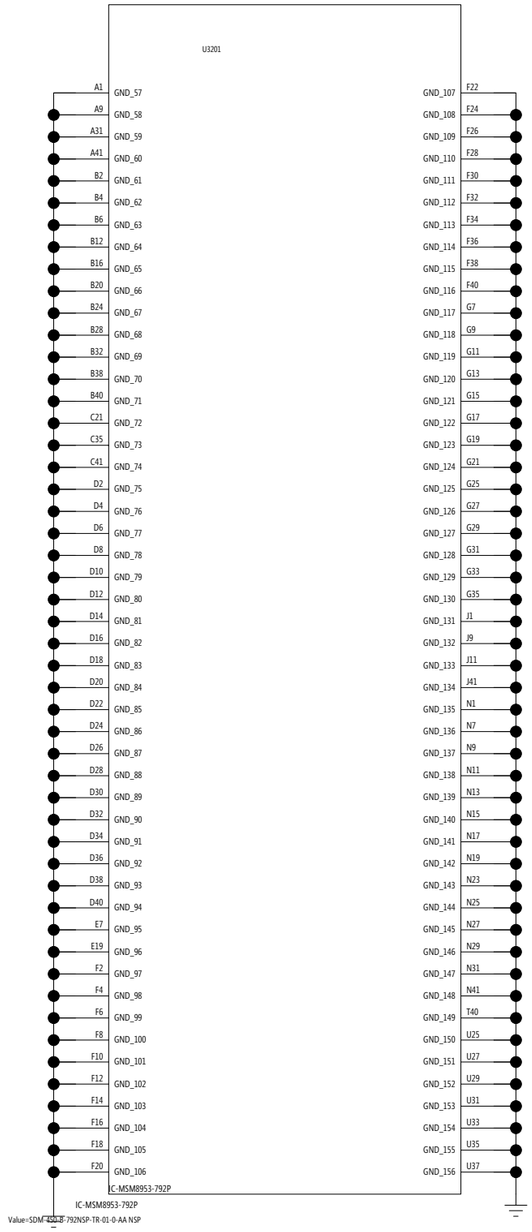
Schematic

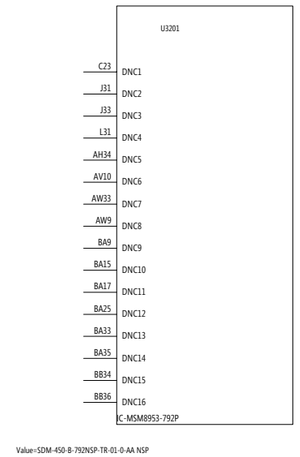
MSM8976-H

MSM8953_GND & DNC

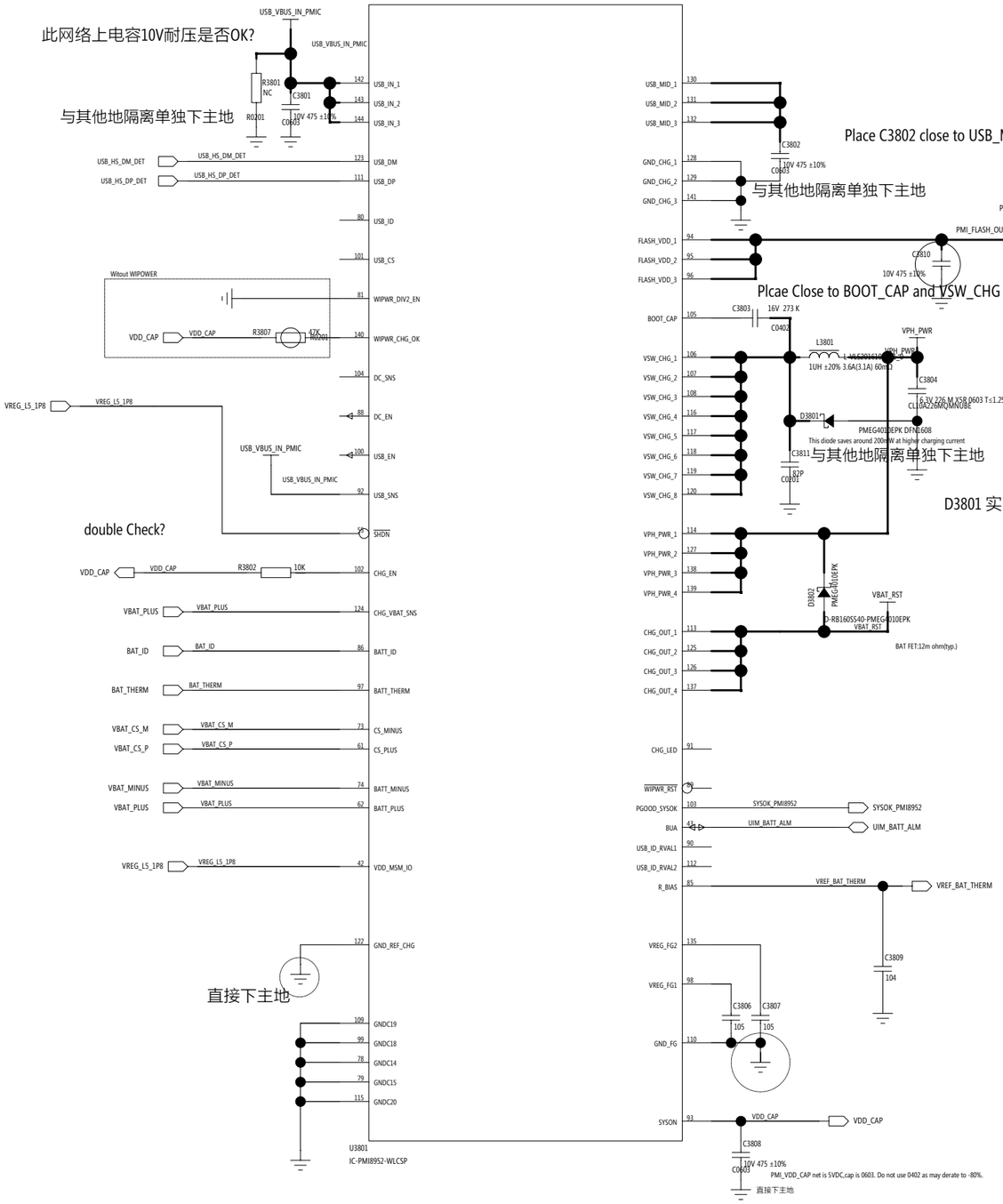




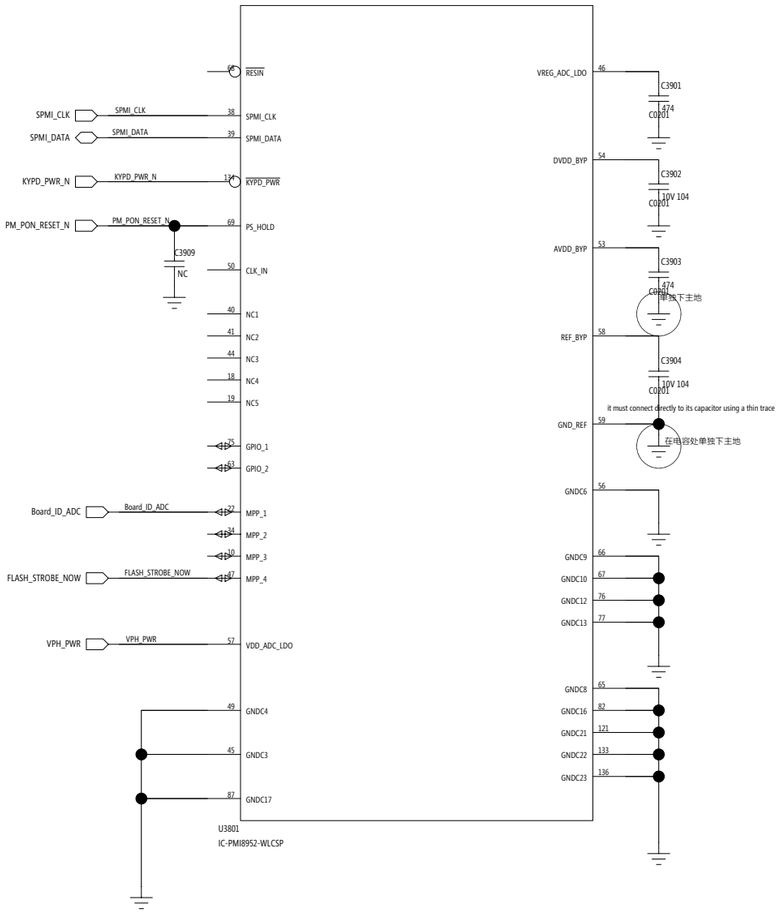




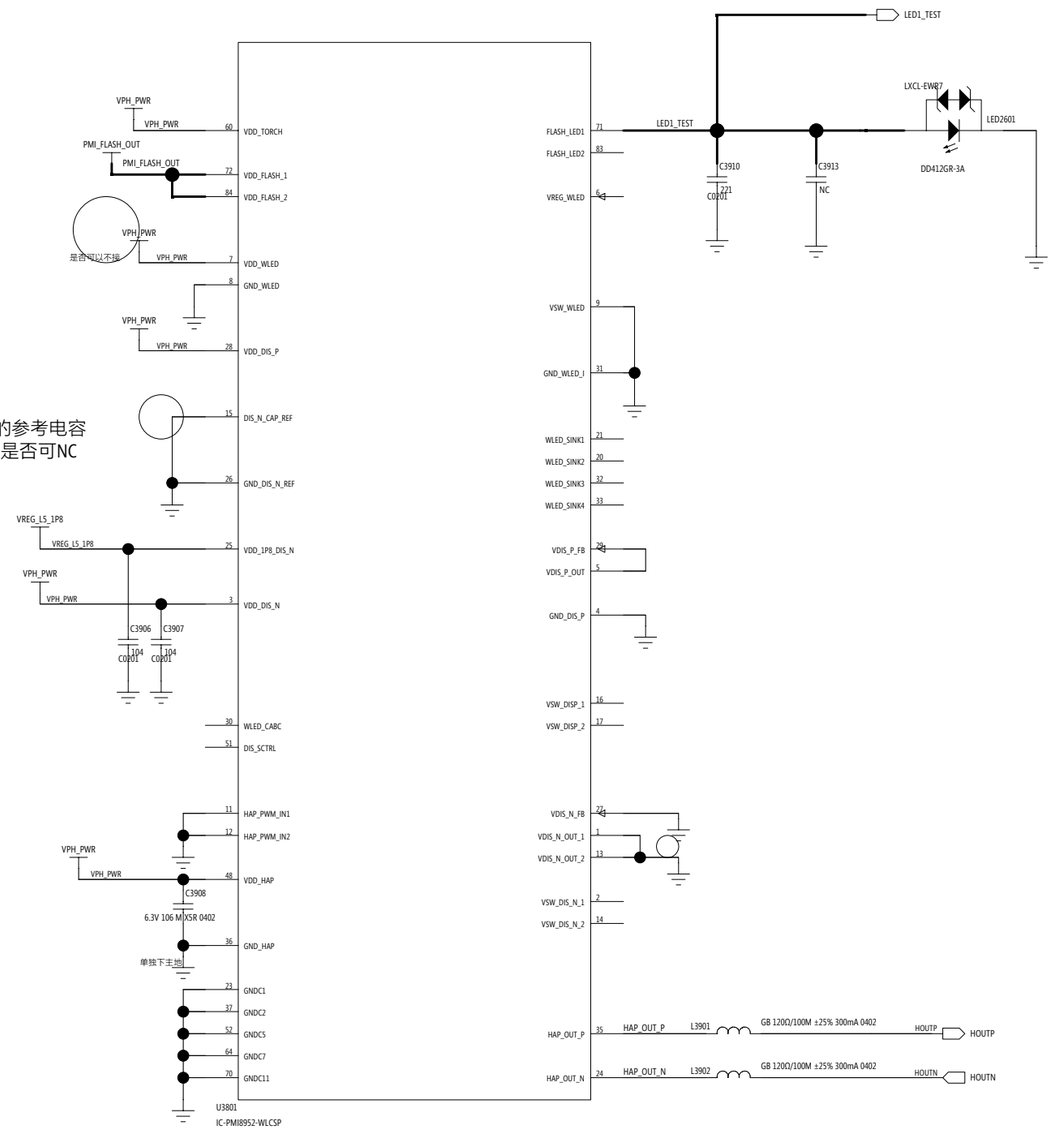
PMI8952-A


此网络上电容10V耐压是否OK?
USB_VBUS_IN_PMIC
R3801 NC
C3801 10V 475 ±10%
C0603
R0201
与其他地隔离单独下主地
USB_IN_1
USB_IN_2
USB_IN_3
USB_HS_DM_DET
USB_HS_DP_DET
USB_DM
USB_DP
USB_ID
USB_CS
Witout WIPOWER
WIPWR_DIV2_EN
VDD_CAP
R3807 47K
WIPWR_CHG_OK
DC_SNS
VREG_L5_1P8
DC_EN
USB_EN
USB_SNS
double Check?
SHDN
R3802 10K
CHG_EN
VBAT_PLUS
CHG_VBAT_SNS
BAT_ID
BATT_ID
BAT_THERM
BATT_THERM
VBAT_CS_M
VBAT_CS_P
CS_MINUS
CS_PLUS
VBAT_MINUS
BATT_MINUS
BATT_PLUS
VDD_MSM_IO
GND_REF_CHG
直接下主地
GNDC19
GNDC18
GNDC14
GNDC15
GNDC20
U3801
IC-PMI8952-WLCSP
USB_MID_1
USB_MID_2
USB_MID_3
Place C3802 close to USB_MID
C3802 10V 475 ±10%
C0603
GND_CHG_1
GND_CHG_2
GND_CHG_3
与其他地隔离单独下主地
PMI_FLASH_OUT
FLASH_VDD_1
FLASH_VDD_2
FLASH_VDD_3
C2810 10V 475 ±10%
Plcae Close to BOOT_CAP and VSW_CHG
BOOT_CAP
C3803 16V 273 K
C0402
L3801 1UH ±20% 3.6A(3.1A) 60mΩ
VPH_PWR
VSW_CHG_1
VSW_CHG_2
VSW_CHG_3
VSW_CHG_4
VSW_CHG_5
VSW_CHG_6
VSW_CHG_7
VSW_CHG_8
C3804 6.3V 226 M X5R 0603 T≤1.25 CL10A226MQ8NNNE
D3801
PMEG4010EPK DFN1608
This diode saves around 200mW at higher charging current
C3811 82P C0201
与其他地隔离单独下主地
D3801 实际用8040288， LMBR4010H3T5G DFN1608
VPH_PWR_1
VPH_PWR_2
VPH_PWR_3
VPH_PWR_4
D3802 D-RB160SS40-PMEG4010EPK
VBAT_RST
CHG_OUT_1
CHG_OUT_2
CHG_OUT_3
CHG_OUT_4
BAT FET:12m ohm(typ.)
CHG_LED
WIPWR_RST
PGOOD_SYSOK
SYSOK_PMI8952
BUA
UIM_BATT_ALM
USB_ID_RVAL1
USB_ID_RVAL2
R_BIAS
VREF_BAT_THERM
C3809 104
VREG_FG2
VREG_FG1
C3806 105
C3807 105
GND_FG
SYSON
VDD_CAP
C3808 10V 475 ±10%
C0603
PMI_VDD_CAP net is 5VDC,cap is 0603. Do not use 0402 as may derate to -80%.
直接下主地

PMI8952-B

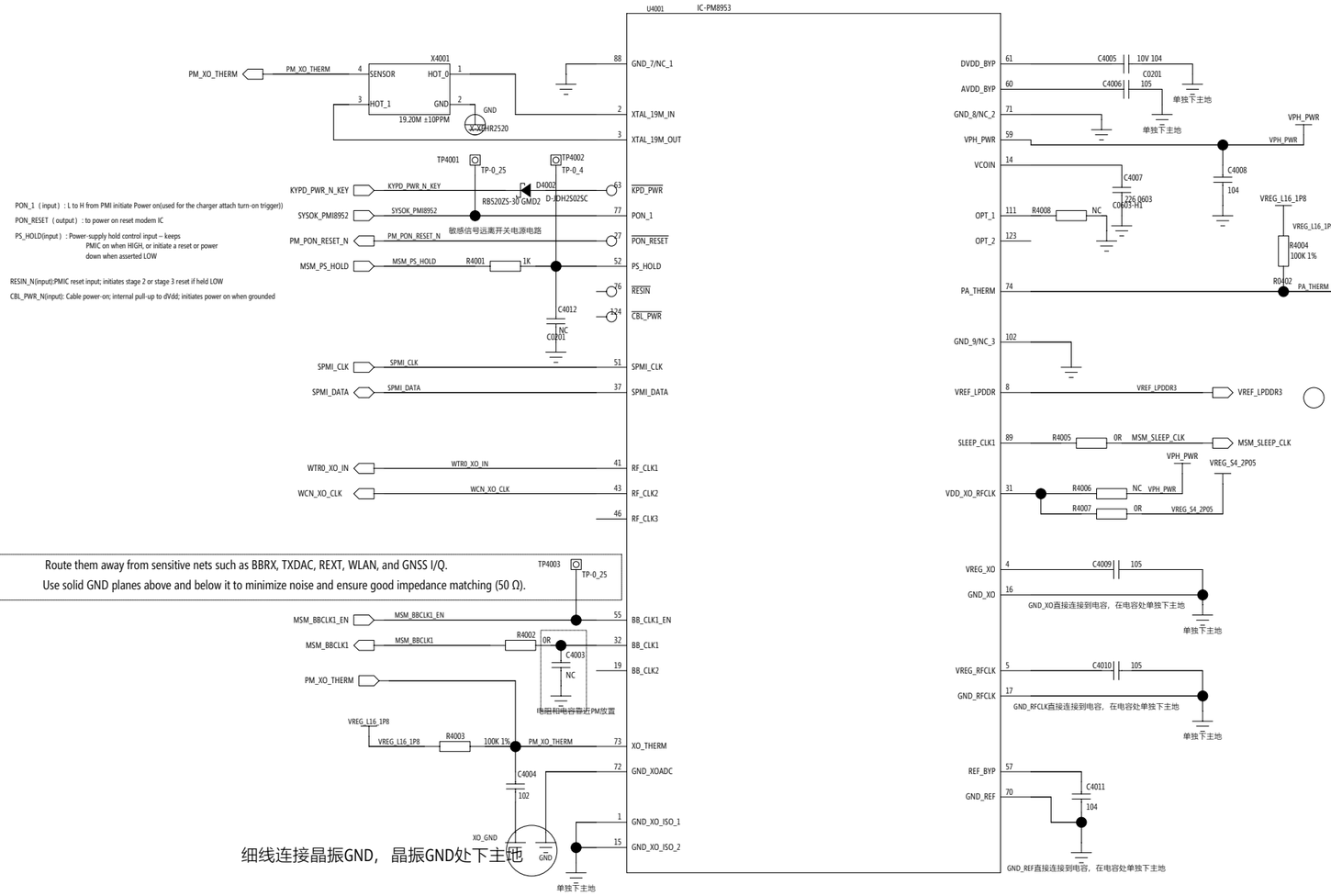


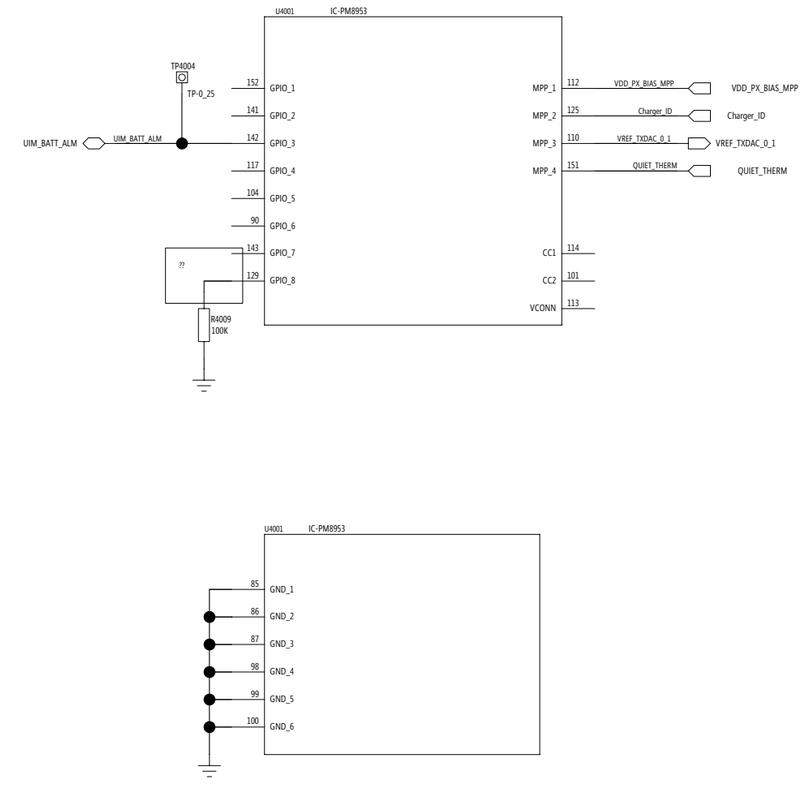
PMI8952-C



内部集成LCD/AMOLED DCDC的参考电容
LCD-472，AMOLED-151，不用是否可NC

PM8953





3000MA

PM8953

U4001 IC-PM8953

VPH_PWR

C4101 C4102 6.3V 226 M X5R 0603 T≤1.25 CL10A226MQ8NRNC 226 0603

C4103 6.3V 475 M C0402-H0_65 是否要换成10V的475

C4104 6.3V 475 M C0402-H0_65

C4105 6.3V 475 M C0402-H0_65

C4106 6.3V 475 M C0402-H0_65

C4107 6.3V 475 M C0402-H0_65

C4108 6.3V 475 M C0402-H0_65

C4109 6.3V 475 M C0402-H0_65

64	VDD_S1_1	
65	VDD_S1_2	
39	GND_S1_1	单独下主地
40	GND_S1_2	
105	VDD_S2_1	
106	VDD_S2_2	
78	GND_S2_1	单独下主地
79	GND_S2_2	
165	VDD_S3_1	
179	VDD_S3_2	
167	GND_S3_1	单独下主地
181	GND_S3_2	
12	VDD_S4_1	
13	VDD_S4_2	
26	VDD_S4_3	
10	GND_S4_1	单独下主地
24	GND_S4_2	
157	VDD_S5_1	
171	VDD_S5_2	
185	VDD_S5_3	
159	GND_S5_1	
173	GND_S5_2	
187	GND_S5_3	单独下主地
154	VDD_S6_1	
168	VDDS6_2	
182	VDD_S6_3	
156	GND_S6_1	
170	GND_S6_2	
184	GND_S6_3	单独下主地
144	VDD_S7_1	
145	VDD_S7_2	
118	GND_S7_1	
119	GND_S7_2	单独下主地

Modem

VREG_S1 62 VSENSE_S1_0P8625 → VSENSE_S1_0P8625

VREG_S1_0P8625 3000mA

VSW_S1_1 53 / VSW_S1_2 54 — L4101 L VLS201610E H1_0 1UH ±20% 3.6A(3.1A) 60mΩ → VREG_S1_0P8625

VREG_S2 75 VSENSE_S2_0P8625 → VSENSE_S2_0P8625

Core and Graphics

VREG_S2_0P8625 4000mA

ON

VSW_S2_1 91 / VSW_S2_2 92 — L4102 1.0UH ±20% L PSE252018 1R0M5 需要提报1uH 4A的新物料 CIGT201610EH1R0MNE → VREG_S2_0P8625

VREG_S3 137

ON

VSW_S3_1 166 / VSW_S3_2 180 — L4103 L VLS201610E H1_0 2.2UH ±20% 2.4A(1.8A) 152mΩ 是否需要加大温升电流 → VREG_S3_1P225

VREG_S3_1P225 近端反馈? 连接网络核对 2000mA

C4110 C4111 226 0603 226 0603

LPDDR3、 DSI/CSI/Analog
Sub_REG（L1,2,3,23)

VREG_S4 38

VREG_S4_2P05 近端反馈? 连接网络核对 2000mA

ON

VSW_S4_1 11 / VSW_S4_2 25 — L4104 L VLS201610E H1_0 2.2UH ±20% 2.4A(1.9A) 150mΩ MEKK2016T

C4112 C4113 226 0603 226 0603

HighVoltageLDOs（L4,5,6,7,16,19)

VREG_S5 115

VSENSE_S5_S6_0P8625_P → VSENSE_S5_S6_0P8625_P

VREG_S5_S6_0P8625 S5 3250mA+S6 3250mA

ON

VSW_S5_1 158 / VSW_S5_2 172 / VSW_S5_3 186 — L4105 L VLS201610E H1_0 0.47UH ±20% 4.7A(3.9A) 41mΩ → VREG_S5_S6_0P8625

VREG_S6 127

ON

VSW_S6_1 155 / VSW_S6_2 169 / VSW_S6_3 183 — L4106 L VLS201610E H1_0 0.47UH ±20% 4.7A(3.9A) 41mΩ

VREG_S7 103 VSENSE_S7_0P915 → VSENSE_S7_0P915

VREG_S7_0P915 2000mA

ON

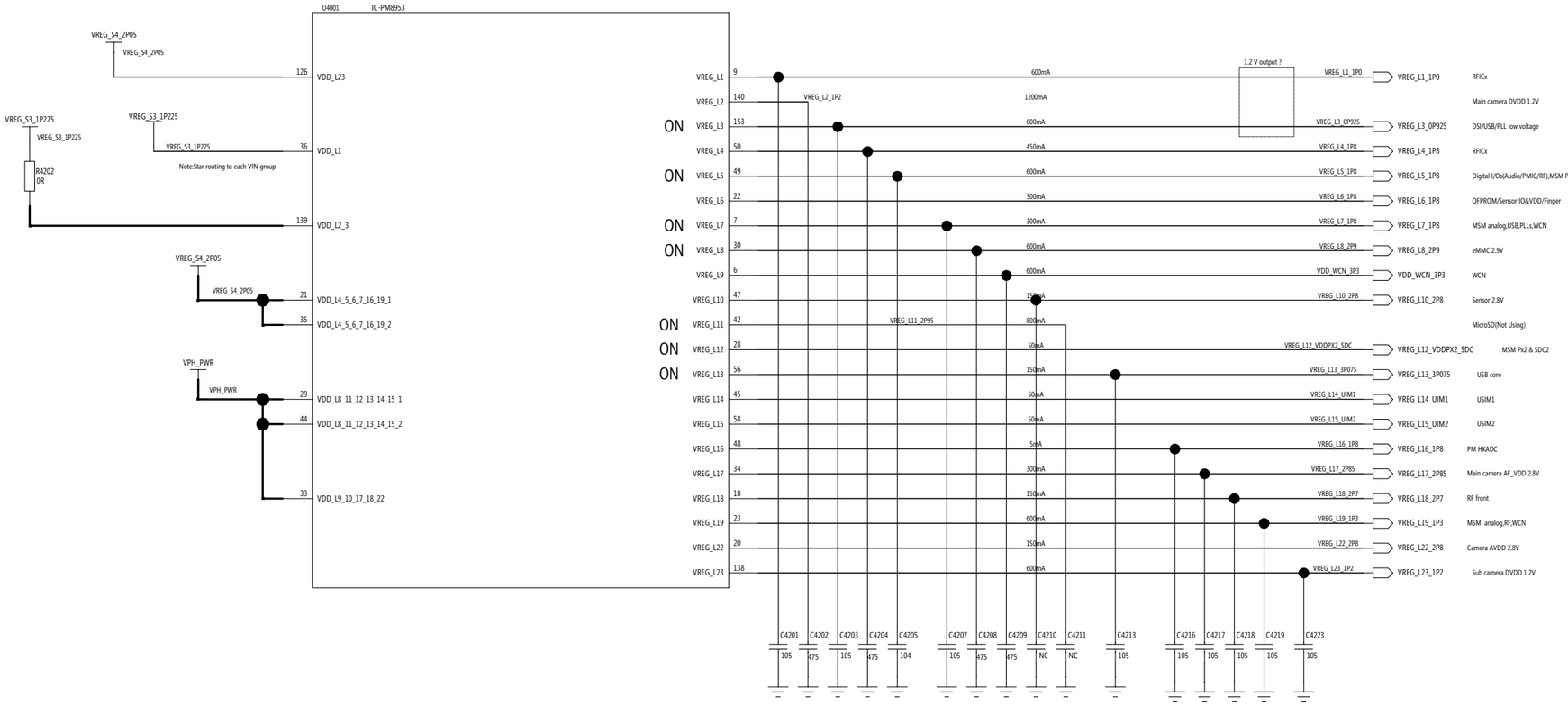
VSW_S7_1 130 / VSW_S7_2 131 — L4107 2.2UH ±20% 2.4A(1.8A) 152mΩ 是否需要加大温升电流 → VREG_S7_0P915

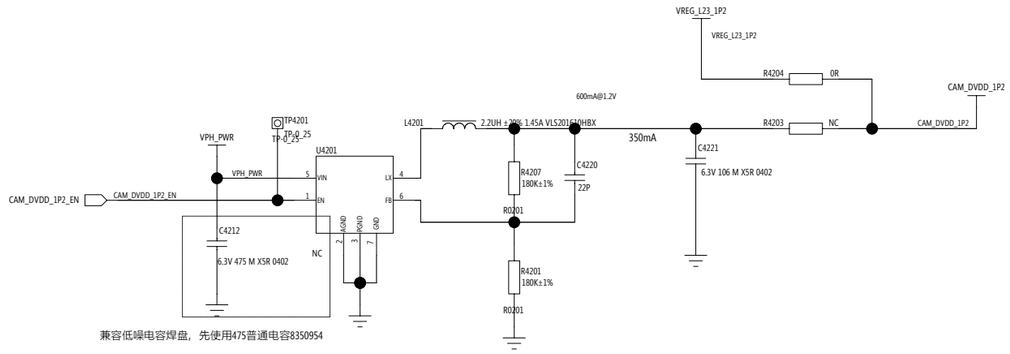
VDD_MEM

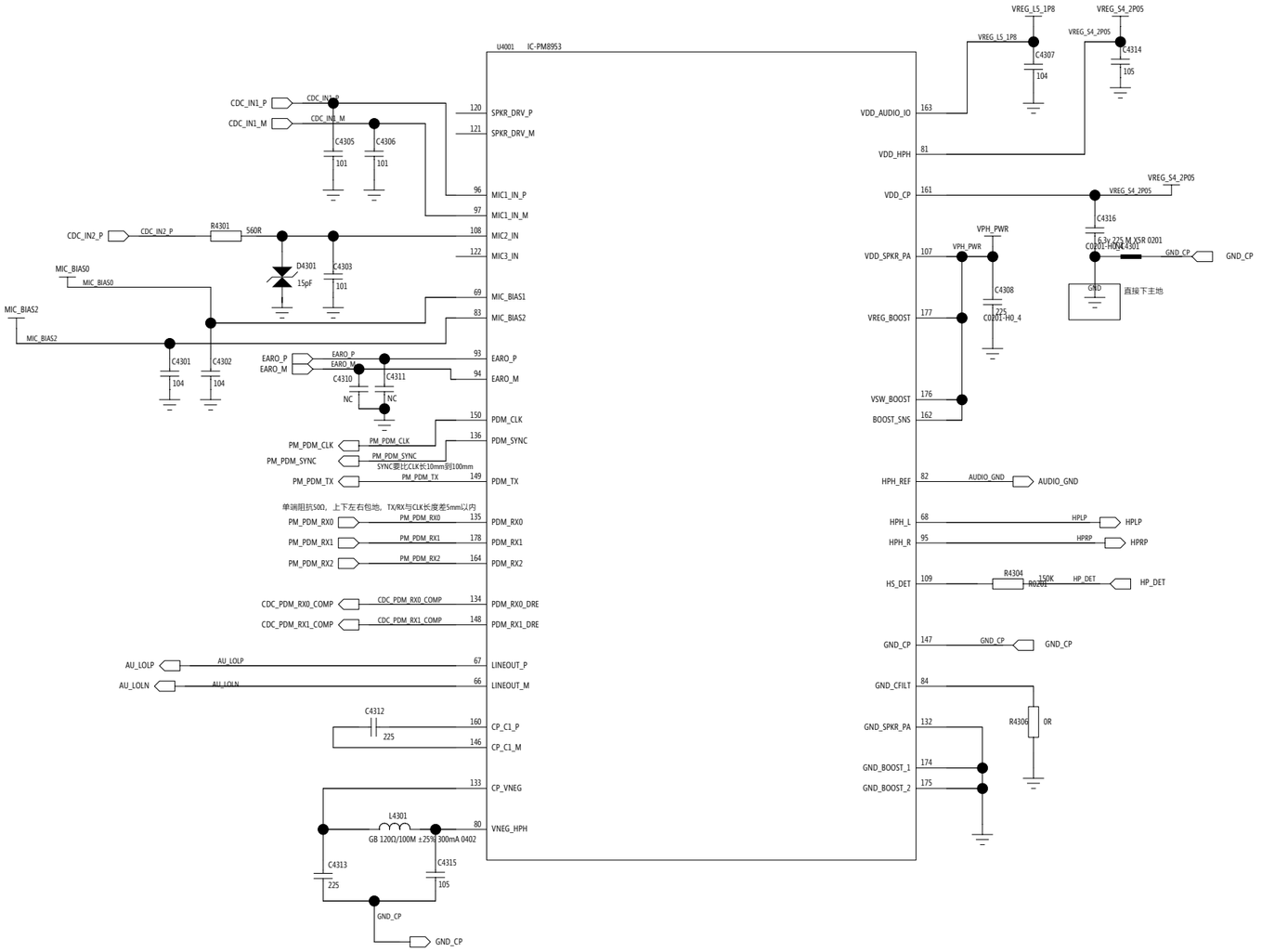
VREG_NEG_S5 116 VSENSE_S5_S6_0P8625_M → VSENSE_S5_S6_0P8625_M

VREG_NEG_S6 128

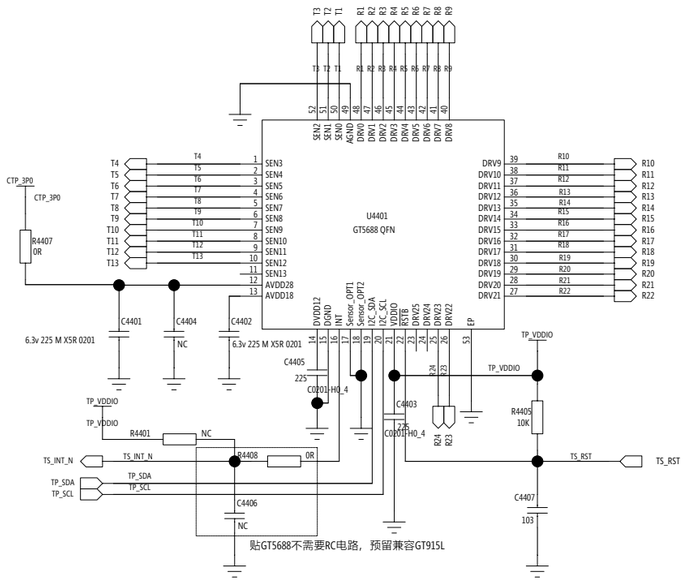
PM8953-LDO


U4001
IC-PM8953
VREG_S4_2P05
VREG_S4_2P05
126
VDD_L23
VREG_S3_1P225
VREG_S3_1P225
VREG_S3_1P225
VREG_S3_1P225
36
VDD_L1
Note:Star routing to each VIN group
R4202
0R
139
VDD_L2_3
VREG_S4_2P05
VREG_S4_2P05
21
VDD_L4_5_6_7_16_19_1
35
VDD_L4_5_6_7_16_19_2
VPH_PWR
VPH_PWR
29
VDD_L8_11_12_13_14_15_1
44
VDD_L8_11_12_13_14_15_2
33
VDD_L9_10_17_18_22
VREG_L1 9 ON
VREG_L2 140
VREG_L3 153 ON
VREG_L4 50
VREG_L5 49 ON
VREG_L6 22
VREG_L7 7 ON
VREG_L8 30 ON
VREG_L9 6
VREG_L10 47
VREG_L11 42 ON
VREG_L12 28 ON
VREG_L13 56 ON
VREG_L14 45
VREG_L15 58
VREG_L16 48
VREG_L17 34
VREG_L18 18
VREG_L19 23
VREG_L22 20
VREG_L23 138
VREG_L2_1P2
VREG_L11_2P95
600mA
1200mA
600mA
450mA
600mA
300mA
300mA
600mA
600mA
150mA
800mA
50mA
150mA
50mA
50mA
5mA
300mA
150mA
600mA
150mA
600mA
1.2 V output ?
VREG_L1_1P0
VREG_L3_0P925
VREG_L4_1P8
VREG_L5_1P8
VREG_L6_1P8
VREG_L7_1P8
VREG_L8_2P9
VDD_WCN_3P3
VREG_L10_2P8
VREG_L12_VDDPX2_SDC
VREG_L13_3P075
VREG_L14_UIM1
VREG_L15_UIM2
VREG_L16_1P8
VREG_L17_2P85
VREG_L18_2P7
VREG_L19_1P3
VREG_L22_2P8
VREG_L23_1P2
VREG_L1_1P0 RFICx
Main camera DVDD 1.2V
VREG_L3_0P925 DSI/USB/PLL low voltage
VREG_L4_1P8 RFICx
VREG_L5_1P8 Digital I/Os(Audio/PMIC/RF),MSM Px3,Px7, LPDDR3,eMMC
VREG_L6_1P8 QFPROM/Sensor IO&VDD/Finger
VREG_L7_1P8 MSM analog,USB,PLLs,WCN
VREG_L8_2P9 eMMC 2.9V
VDD_WCN_3P3 WCN
VREG_L10_2P8 Sensor 2.8V
MicroSD(Not Using)
VREG_L12_VDDPX2_SDC MSM Px2 & SDC2
VREG_L13_3P075 USB core
VREG_L14_UIM1 USIM1
VREG_L15_UIM2 USIM2
VREG_L16_1P8 PM HKADC
VREG_L17_2P85 Main camera AF_VDD 2.8V
VREG_L18_2P7 RF front
VREG_L19_1P3 MSM analog,RF,WCN
VREG_L22_2P8 Camera AVDD 2.8V
VREG_L23_1P2 Sub camera DVDD 1.2V
C4201 105
C4202 475
C4203 105
C4204 475
C4205 104
C4207 105
C4208 475
C4209 475
C4210 NC
C4211 NC
C4213 105
C4216 105
C4217 105
C4218 105
C4219 105
C4223 105

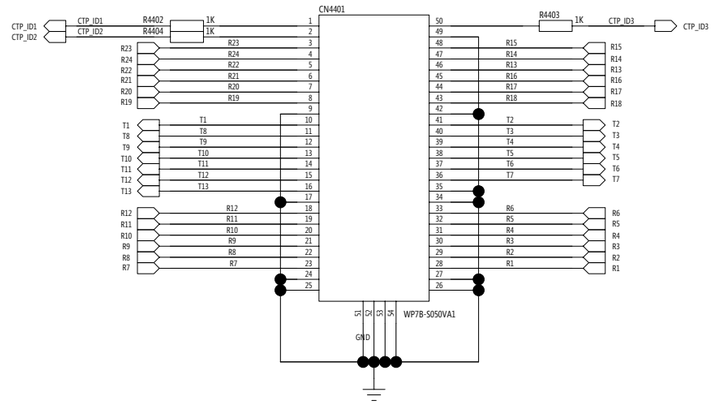

VREG_L23_1P2
VREG_L23_1P2
R4204 0R
CAM_DVDD_1P2
600mA@1.2V
TP4201
TP_0.25
VPH_PWR
VPH_PWR
U4201
L4201
2.2UH ±20% 1.45A VLS2016ADHBX
350mA
R4203 NC
CAM_DVDD_1P2
C4221
6.3V 106 M X5R 0402
R4207
180K±1%
C4220
22P
R0201
CAM_DVDD_1P2_EN
CAM_DVDD_1P2_EN
VIN
EN
LX
FB
AGND
PGND
GND
C4212
6.3V 475 M X5R 0402
NC
R4201
180K±1%
R0201
兼容低噪电容焊盘，先使用475普通电容8350954


U4001 IC-PM8953
CDC_IN1_P
CDC_IN1_M
C4305 101
C4306 101
120 SPKR_DRV_P
121 SPKR_DRV_M
96 MIC1_IN_P
97 MIC1_IN_M
CDC_IN2_P
R4301 560R
108 MIC2_IN
122 MIC3_IN
D4301 15pF
C4303 101
MIC_BIAS0
69 MIC_BIAS1
MIC_BIAS2
83 MIC_BIAS2
C4301 104
C4302 104
EARO_P
EARO_M
C4310 NC
C4311 NC
93 EARO_P
94 EARO_M
150 PDM_CLK
PM_PDM_CLK
136 PDM_SYNC
PM_PDM_SYNC
SYNC要比CLK长10mm到100mm
PM_PDM_TX
149 PDM_TX
单端阻抗50Ω，上下左右包地。TX/RX与CLK长度差5mm以内
PM_PDM_RX0
135 PDM_RX0
PM_PDM_RX1
178 PDM_RX1
PM_PDM_RX2
164 PDM_RX2
CDC_PDM_RX0_COMP
134 PDM_RX0_DRE
CDC_PDM_RX1_COMP
148 PDM_RX1_DRE
AU_LOLP
67 LINEOUT_P
AU_LOLN
66 LINEOUT_M
C4312 225
160 CP_C1_P
146 CP_C1_M
133 CP_VNEG
L4301 GB 120Ω/100M ±25% 300mA 0402
80 VNEG_HPH
C4313 225
C4315 105
GND_CP
VREG_L5_1P8
C4307 104
VREG_S4_2P05
C4314 105
163 VDD_AUDIO_IO
81 VDD_HPH
161 VDD_CP
C4316 6.3v 225 M X5R 0201
107 VDD_SPKR_PA
VPH_PWR
C4308 225
177 VREG_BOOST
C0201-H0_4
176 VSW_BOOST
162 BOOST_SNS
C0201-H04 4301
GND
直接下主地
82 HPH_REF
AUDIO_GND
68 HPH_L
HPLP
95 HPH_R
HPRP
109 HS_DET
R4304 150K
R0201
HP_DET
147 GND_CP
84 GND_CFILT
R4306 0R
132 GND_SPKR_PA
174 GND_BOOST_1
175 GND_BOOST_2

COB TP&GT5688



slave address: 0x14



TX与TX之间、RX与RX之间可任意调整方便走线

MAIN ANT
SKY77916-21
TRX_B40
TRX_B38_B41
TRX_B5_G850_BC0
TRX_B7
TRX_B28A
TRX_B20
TRX_B8_G900
TRX_B1
TRX_B3
TRX_B28B
PRX_PCS
SAW
Duplexer
PRX_B40
PRX_B41
PRX_B5_G850
PRX_B7
PRX_B28A
PRX_B20
PRX_B8_G900
PRX_B1
PRX_B3
PRX_B28B
PRX_PCS
TX_GSM_HB
TX_GSM_LB
GSM_HB
GSM_LB
MSM8953
RFFE2_DAT
RFFE2_CLK
QM56022
MMPA
MSM8953
RFFE1_CLK
RFFE1_DAT
TX_HMB4
TX_HMB3
TX_HMB2
TX_LB2
TX_LB1
TRX_B40
TRX_B38_B41
TX_B5
TX_B7
TX_B28A
TX_B20
TX_B8
TX_B1
TX_B3
TX_B28B
WTR_3925
PRXCA1
DRXCA1
GSM/TDD-LTE RX
DRXCA2
PRXCA2
PRXCA1_I_CH0
PRXCA1_Q_CH0
DRXCA1_I_CH1
DRXCA1_Q_CH1
DRXCA1_I_CH1
DRXCA1_Q_CH1
PRXCA2_I_CH2
PRXCA2_Q_CH2
IQ_CH0
IQ_CH1
IQ_CH3
IQ_CH2
Applications Processor
SDM450
DIV ANT
XMSS2Q3G0PA
DRX_B1_B3
DRX_B8
DRX_B20
DRX_B41
DRX_B28
DRX_B40
DRX_B5
DRX_B7
mixer
SAW
DRX_B1
DRX_B3
DRX_B8
DRX_B20
DRX_B41
DRX_B28
DRX_B40
DRX_B5
DRX_B7
GPS_RX
GSM / TDD-LTE TX
TX_DAC0_IP
TX_DAC0_IM
TX_DAC0_QP
TX_DAC0_QM
IQ_TX
GNSS_IQ
GPS_I
GPS_Q
TRANSCEIVER
GPS ANT
GPS RX SAW
GPS LNA
GPS RX SAW
GFEC_CTRL1
GFEC_CTRL2
GFEC_CTRL3
MSM8953
2GB LPDDR3
eMCP
16GB EMMC 5.1
EBI0
SDC1
EBI_IF
SDC1
TF_CARD
SIM_CARD1
SIM_CARD2
SDC2
UIM1
UIM2
SDC2
SIM1
SIM2
MMC3530KJ
LIS3DH
APDS-9922
sensor I2C
I2C
HEADSET: FM ANT
WIFI_2G4_BT ANT
Coupler
SAW
WIFI_BT_RFIO_2G4
PM8953
WCN_XO_CLK
WCN3660B
XO_IN
WLAN
FM
BT
WLAN command bus Interface
WLAN_IQ
FM_SDI
FM_SSBI
BT_DATA
BT_SSBI
BT_CTL
WLAN_CMD
WLAN_IQ
GPIO_USB_ID
UART
USB2.0
USB_ID
UART_TX/RX
USB_D-/D+
USB SWITCH
TS5USBC401
D-/D+
USB 5pin
OTG
VBUS
NVP
RF4E075AT
OVP
TPD1S414YZR
CHARGE
MOS
SSM6J501NU
RESET IC
R3200K001B-TR
Battery
USB_IN
CHG_OUT
VSENSE
VSW_OUT
SYSTEM POWER
VPH_PWR
USB_D-/D+
PMI8952
FlashLED
LAB
IBB
VIBR_P
VIBR_N
Motor
PM8953 SMPS
PM8953 LDOs
BBCLK
SPMI
PSHOLD
PON_RST
PDM
Output Voltage
SMPS
7
LDOs
23
RFCLK1
To WTR3925
RFCLK2
To WCN3660B
19.2MHz XO
IC Interfaces
KPD_PWR_N
PMIC
PM8953
CODEC
Power_On
HEADSET
MIC1_M
MIC1_P
MAIN MIC
MIC2_P
HEAD MIC
EAR_M
EAR_P
Receicer
LINEOUTP
LINEOUTM
AW87318
SPEAKER
MIPI_DSI0
I2C
MIPI_CSI0
I2C
MIPI_CSI1
MIPI _DSI0 4 Lanes
HX8394-F
TP I2C
GT5688
5.2" 720P TTF LCD
BL
BIAS
LM3697
TPS65132
MIPI_CSI0 4Lanes
MAIN CAMERA
13M
camera I2C
MIPI_CSI1 2Lanes
SUB CAMERA
5M