VERSION HISTORY

Revision	Description	Date	Drawn	Checked	Approved
Ver 1.0	Releas version	2015-04-22			

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原理图设计说明V1.0

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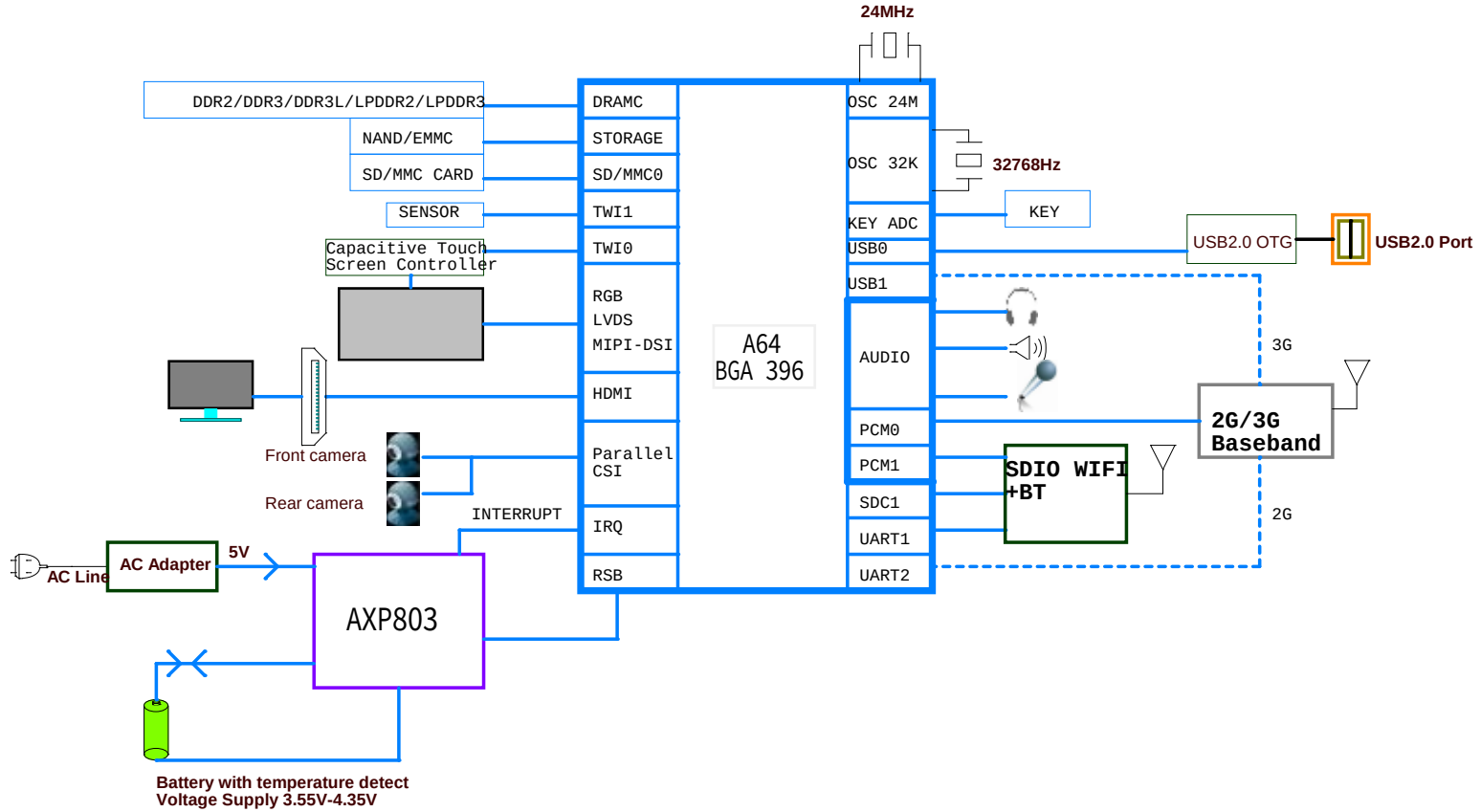
BLOCK DIAGRAM



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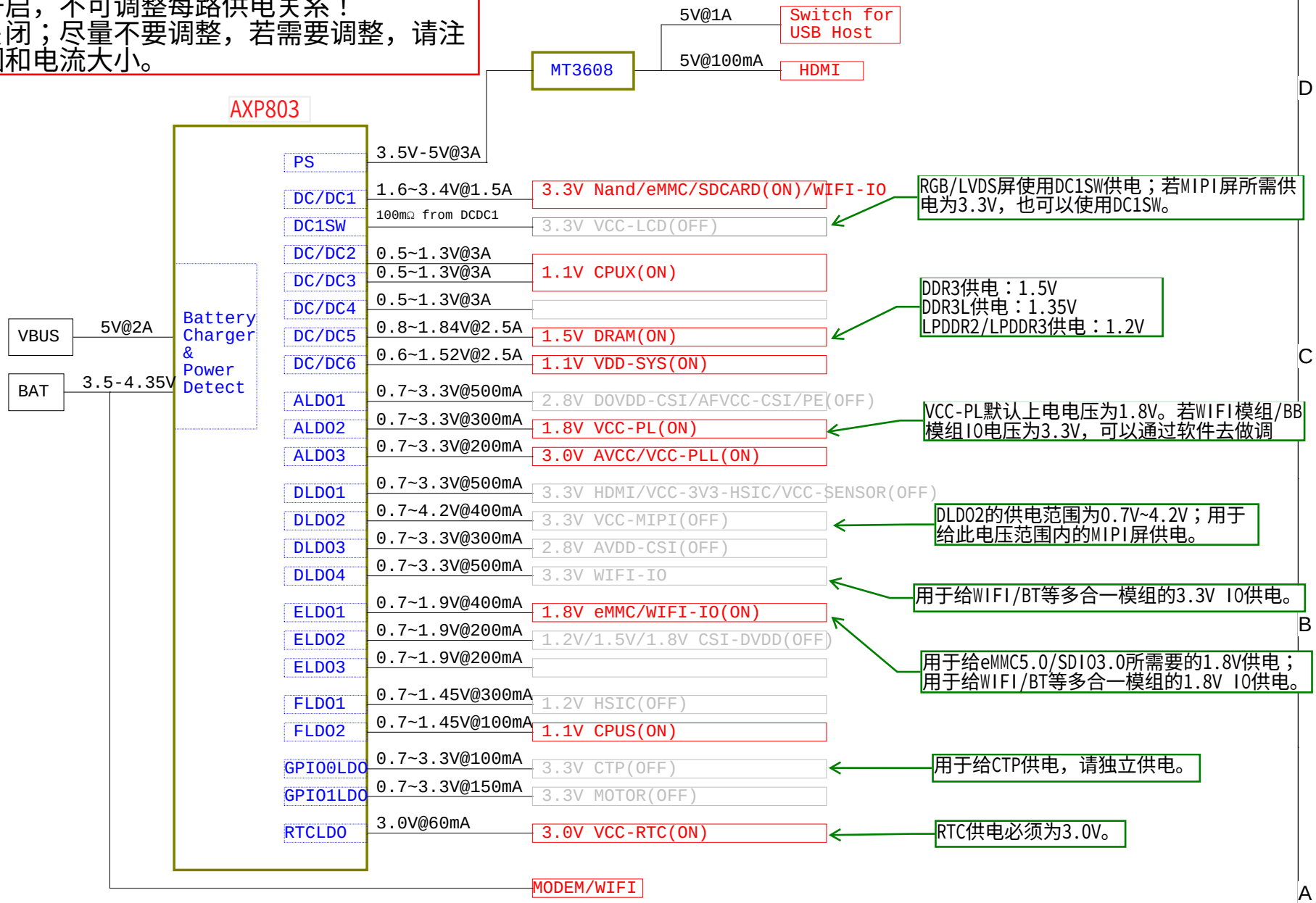
POWER TREE

红色：上电默认开启，不可调整每路供电关系！
灰色：上电默认关闭；尽量不要调整，若需要调整，请注意每一路电压范围和电流大小。



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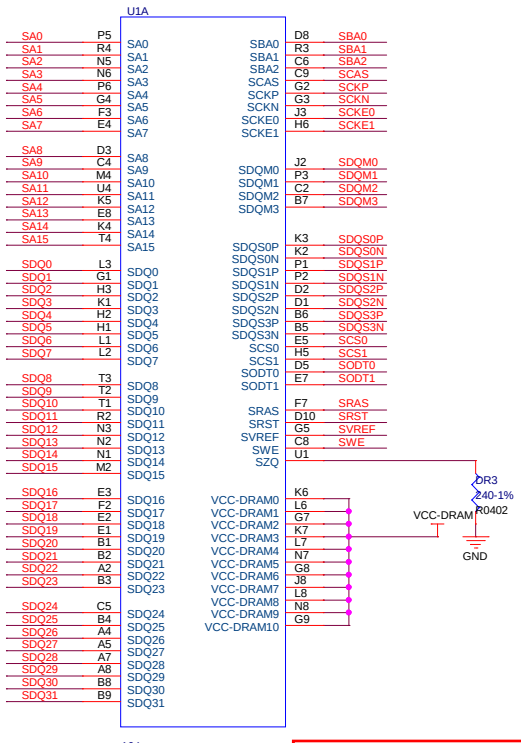
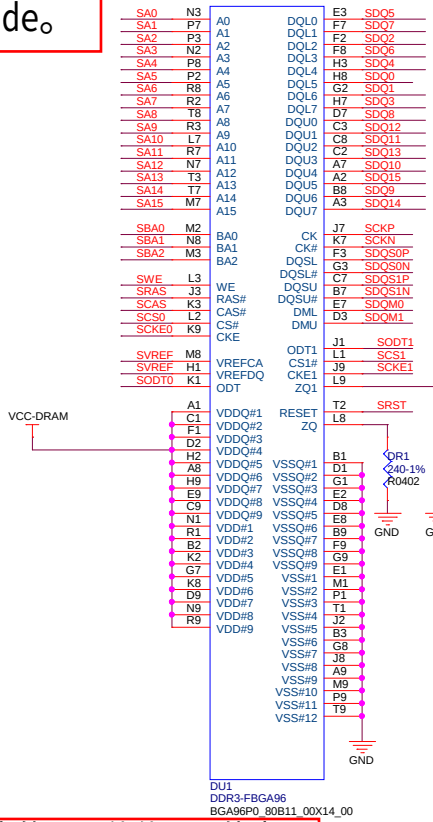
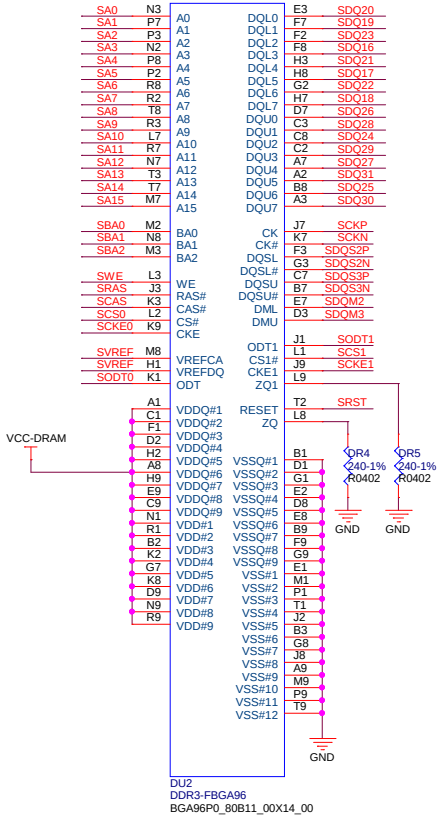
DDR3 16x2

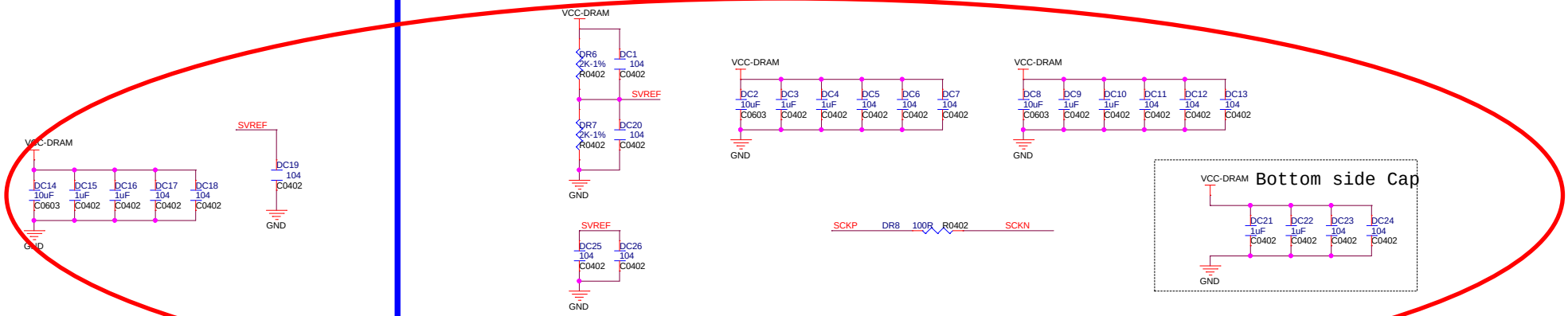
请尽量使用Allwinner提供的DDR Layout参考模板；否则请严格遵守DDR Layout Guide。







采用Allwinner DDR Layout模板，红色框中的元器件位号不能变。



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CPU

VCC-PL的电压根据WIFI模组/BB基带的IO电压进行调整；默认为1.8V，可调整为3.3V。

EFUSE内部LDO输出电容，容值不可调整。

RTC内部LDO输出电容，容值不可调整。

WIFI模组/BB基带的控制信号，控制关系尽量不要调整。

Away from the board outline and senstive signal.
Around GND line.

远离板边及敏感信号，包地处理。

CPVEE、VEE、CPVDD、CPP、CPN
Max 200mA.

CPVEE and VEE were Kelvin connection.
CPVEE与VEE是开尔文连接。

HPOUTL/HPOUTR走线宽度不小于8mil。

≥8mil

远离板边及敏感信号；最好能包地处理；走Power层。

Away from the board outline and senstive signal.
Around GND line.
Routing in Power Layer.

容值可根据晶体负载电容的大小进行调整！

容值可根据晶体负载电容的大小进行调整！

为了保证系统的稳定性，电容的数量和容值大小尽量不要改动！

AGND铺铜走线

AGND与GND单点连接！

R2阻精度为1%，阻值不可调！

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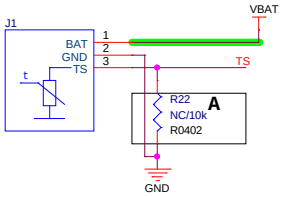
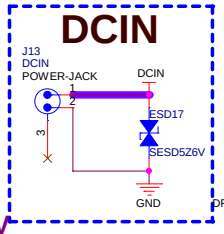
Power

BAT

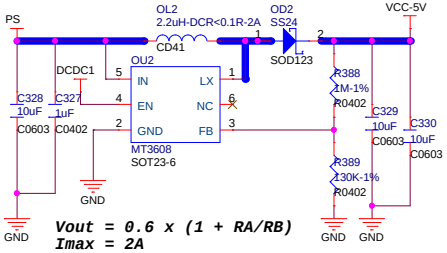
IF use the battery temperature sensor: A=NC
otherwise: A=10k



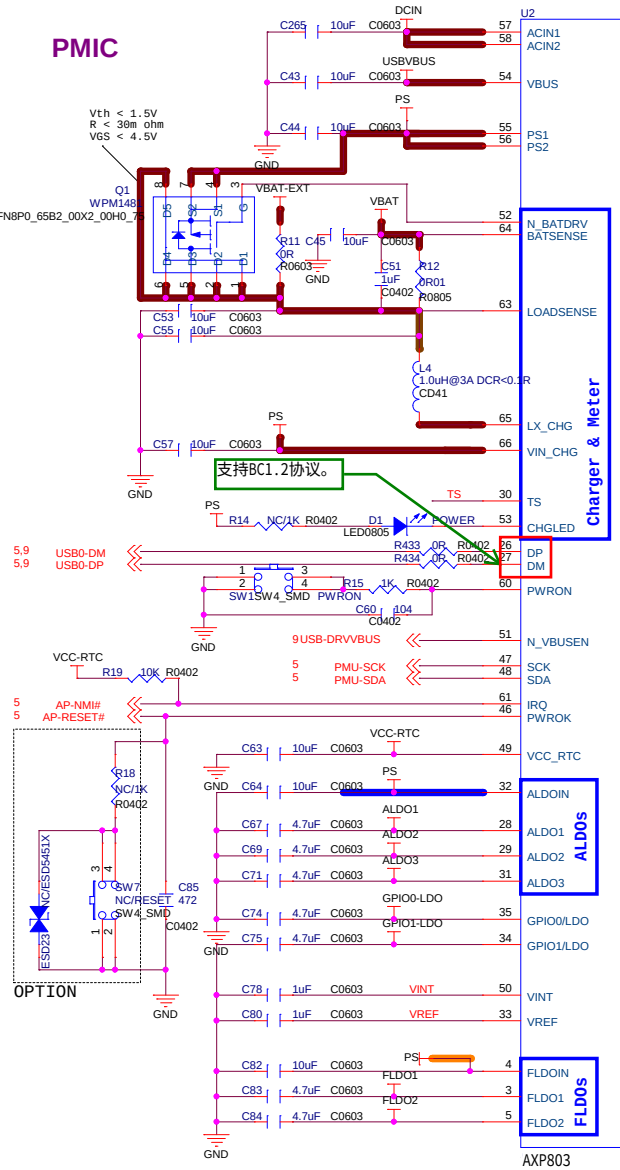
DCIN

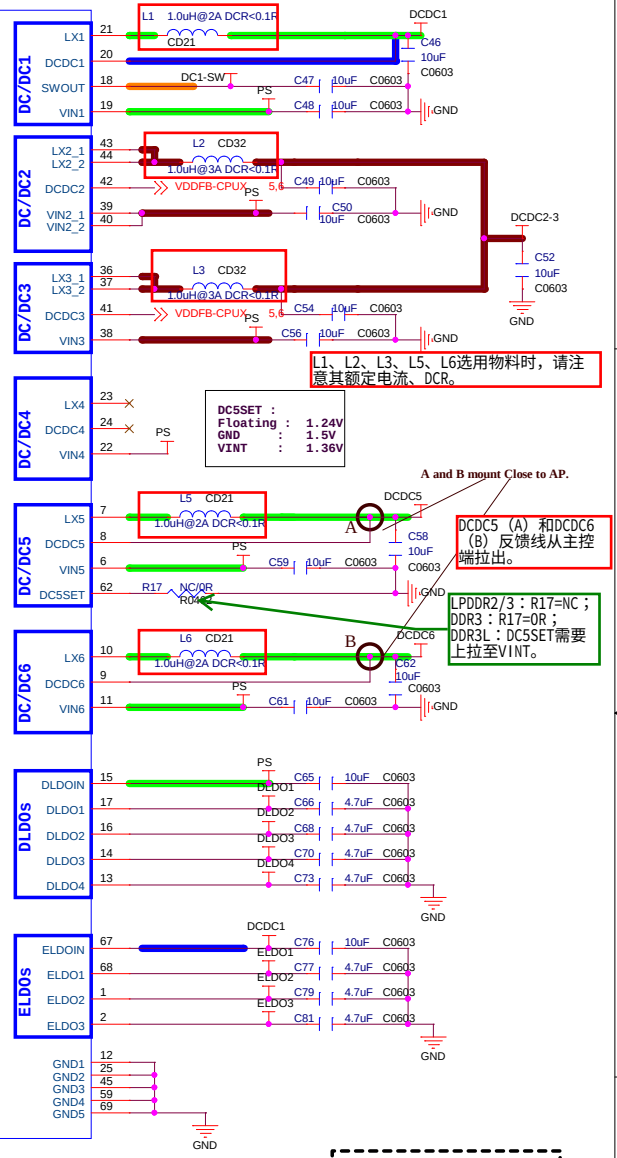


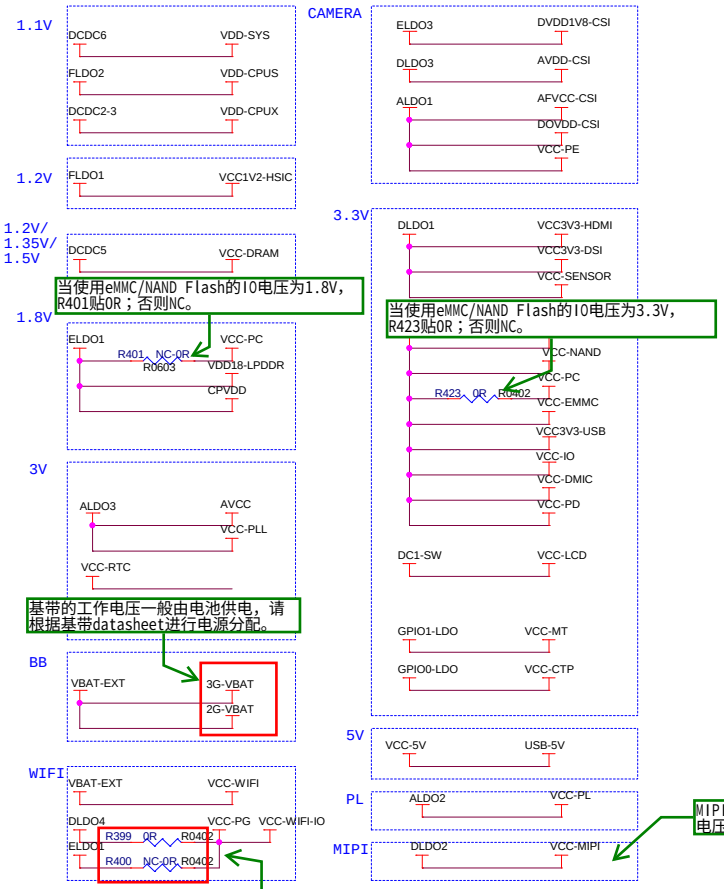
PS-5V

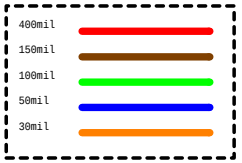


PMIC









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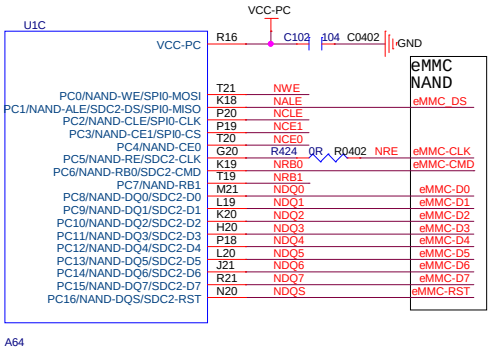
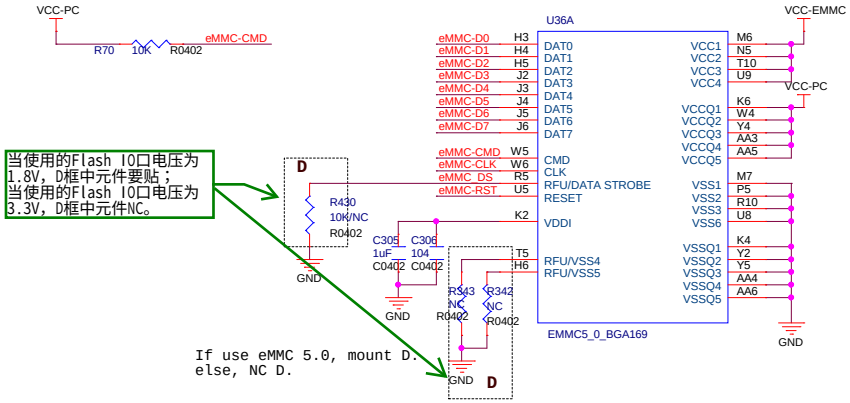
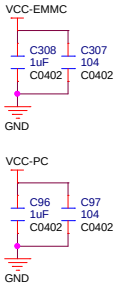
NAND/eMMC



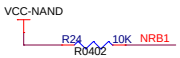




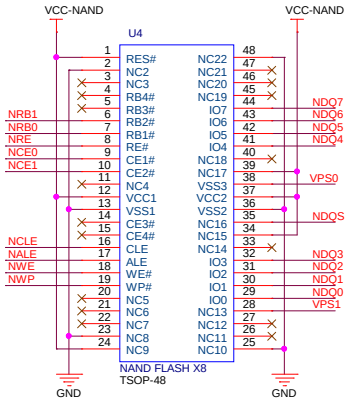
Both eMMC NAND and first TSOP NAND layout together

(1) 1 NAND : [1 CE or 2 CE]
(2) 2 NAND : [1 CE]

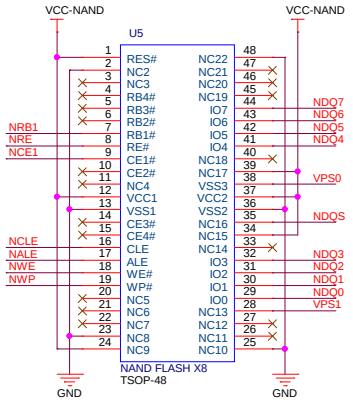
贴一片NAND，可以是1 CE或2 CE；
贴两片NAND，两片都为1 CE。

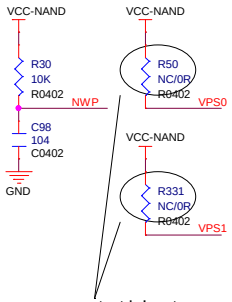


The first NAND FLASH

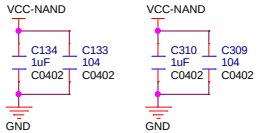


The second NAND FLASH





Please mount this two resistors if use
Sandisk or Toshiba nand flash



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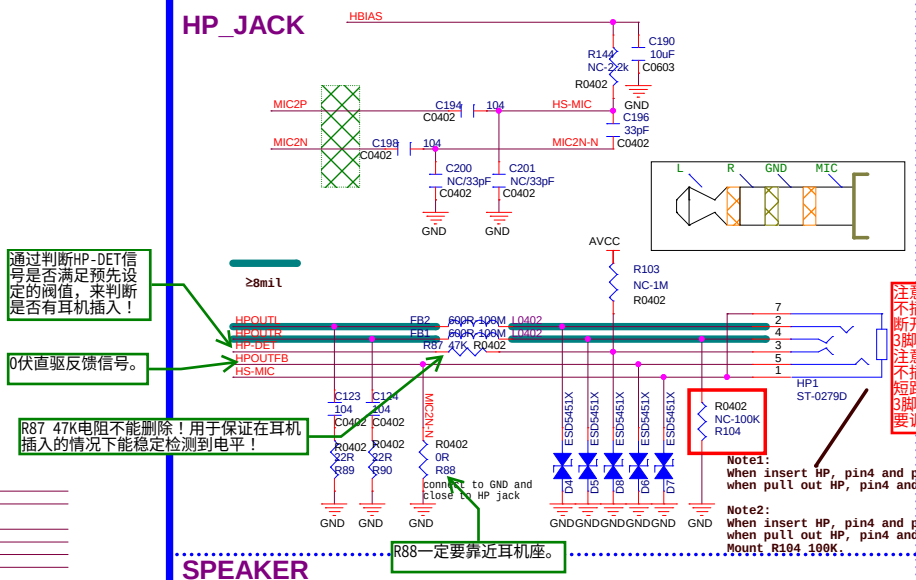
AUDIO

HP_JACK



通过判断HP-DET信号是否满足预先设定的阀值，来判断是否有耳机插入！

0伏直驱反馈信号。

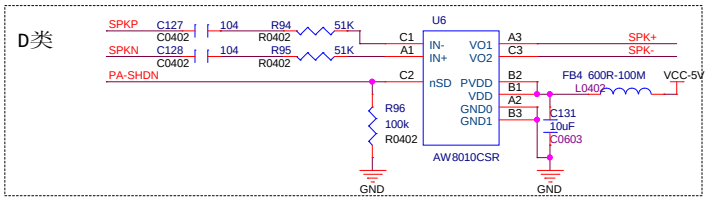
R87 47K电阻不能删除！用于保证在耳机插入的情况下能稳定检测到电平！

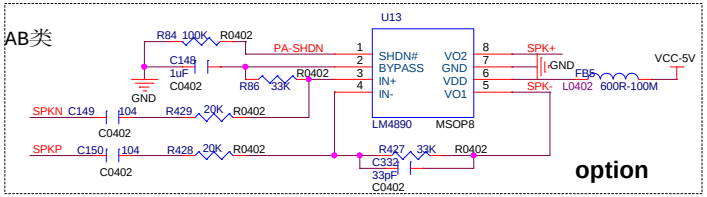
R88一定要靠近耳机座。

注意1：
不插入耳机，耳机座子4脚与3脚断开；插入耳机，耳机座子4脚与3脚短路；R104 NC不贴！
注意2：
不插入耳机，耳机座子4脚与3脚短路；插入耳机，耳机座子4脚与3脚断开；R104 贴100K！软件需要调整。

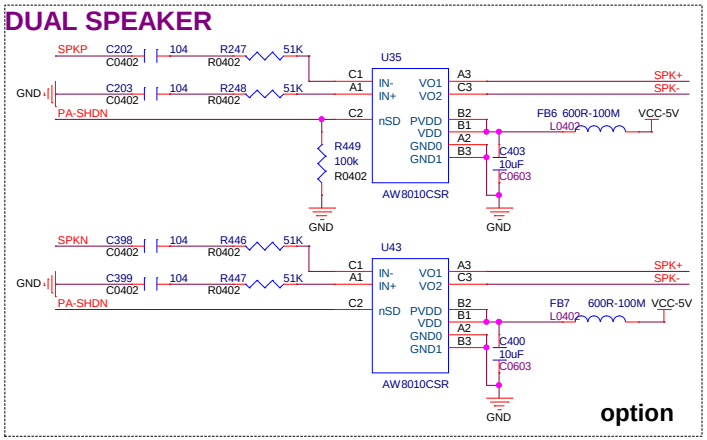
```
Note1:
When insert HP, pin4 and pin3 is connected,
when pull out HP, pin4 and pin3 is disconnected.

Note2:
When insert HP, pin4 and pin3 is disconnected,
when pull out HP, pin4 and pin3 is connected.
Mount R104 100K.
```

SPEAKER

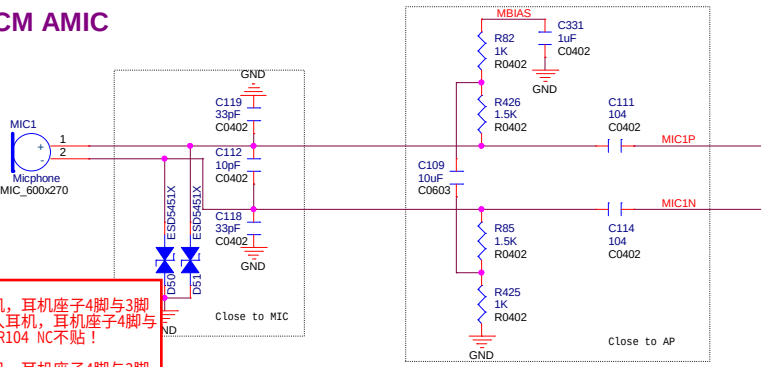




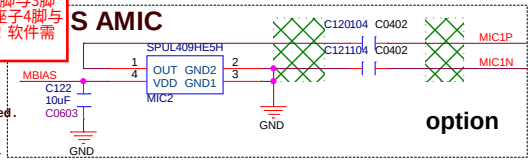
DUAL SPEAKER



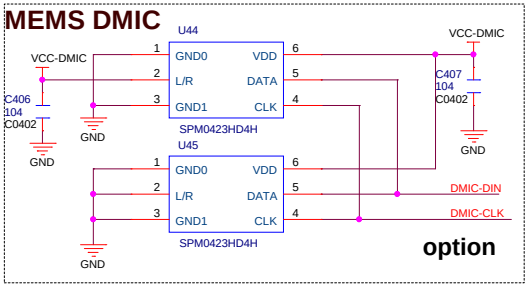
ECM AMIC



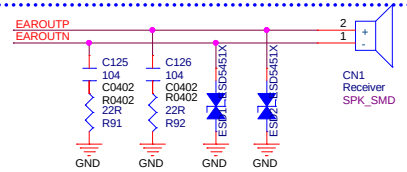
S AMIC

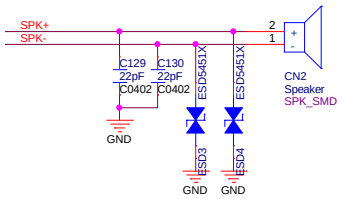


MEMS DMIC



RECEIVER





Signal list

5 MBIAS
5 HBIAS

5 HP-DET
5 HPOUTFB
5 HPOUTL
5 HPOUTR

5 MIC2N
5 MIC2P
5 MIC1N
5 MIC1P
5 HS-MIC

9 DMIC-CLK
9 DMIC-DIN

5 EAROUTP
5 EAROUTN
5 LINEOUTP SPKP
5 LINEOUTN SPKN

9 PA-SHDN PA-SHDN

AVCC
PS
VCC-5V

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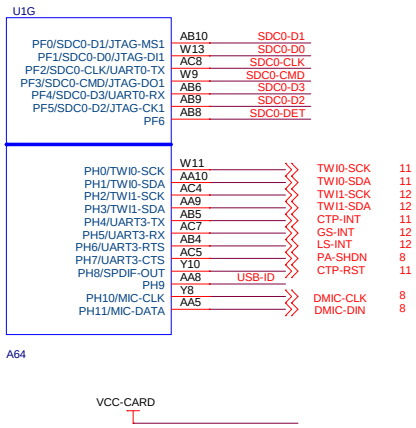
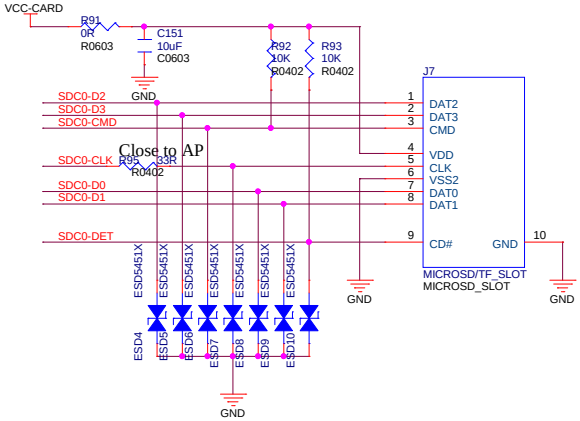
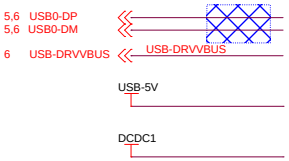
T-CADD/USB



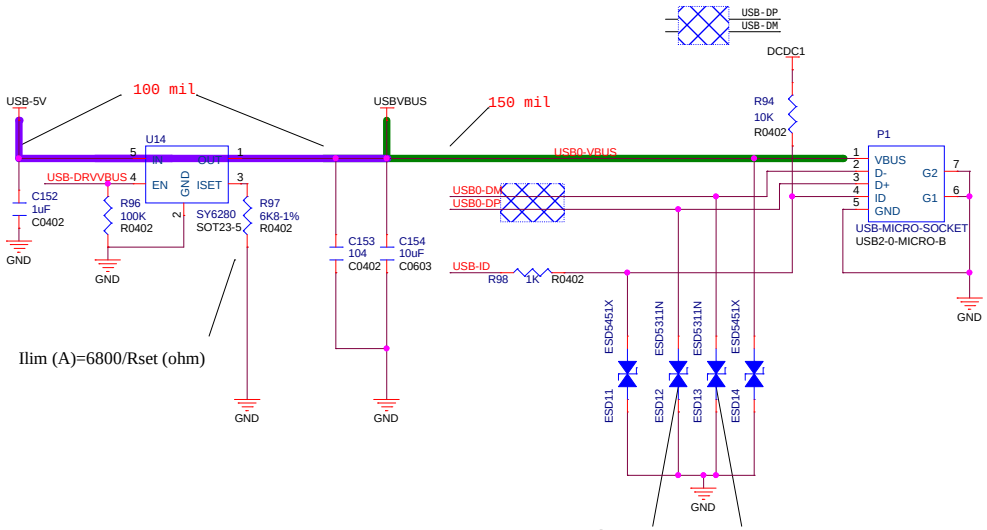
T-CARD





USB

Differential pairs
Z0= 90 ohm



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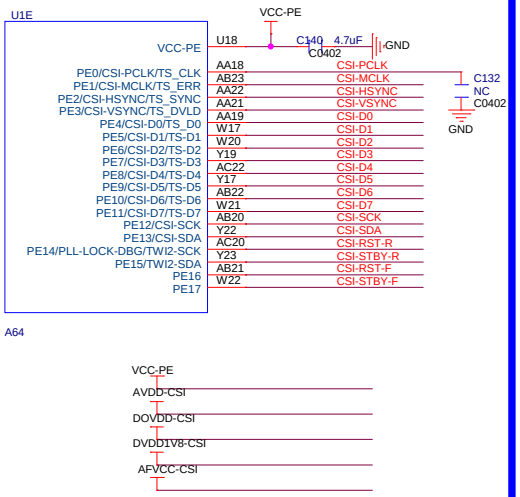
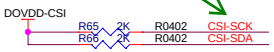
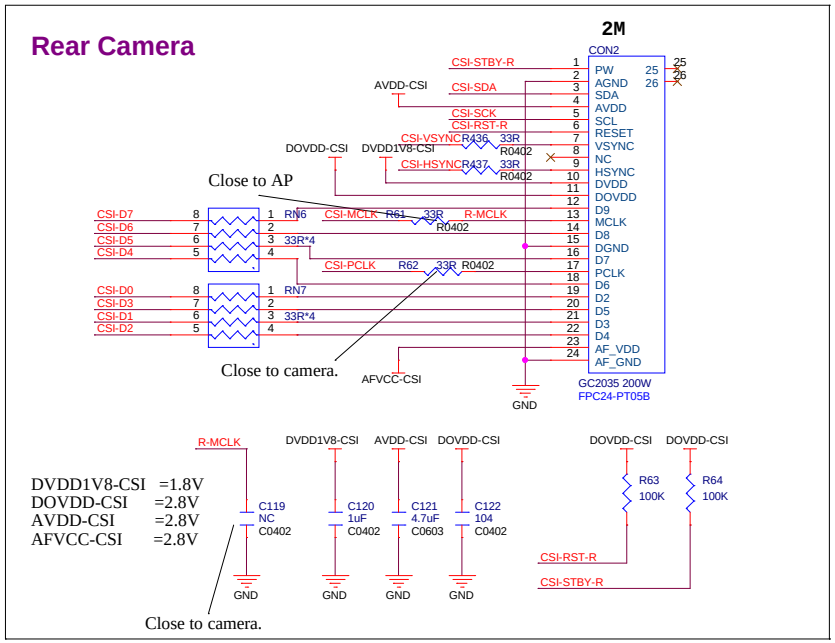
CAMREA



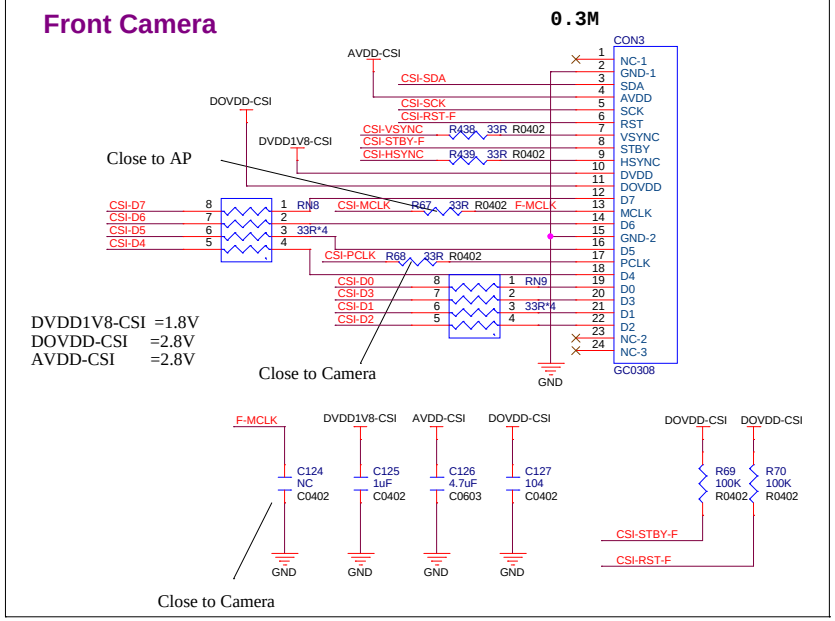
Camera的I2C不要和其它器件复用。



Rear Camera



Front Camera



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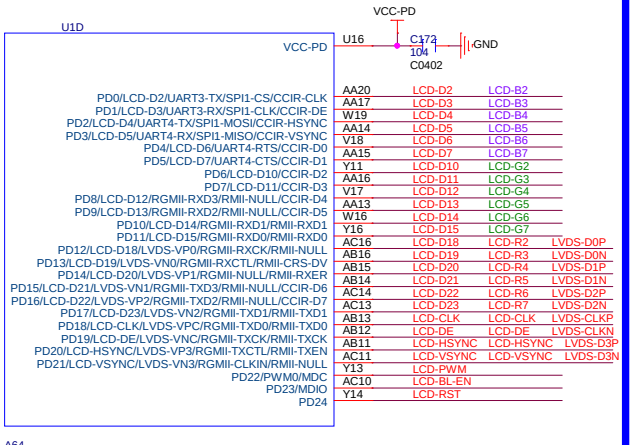
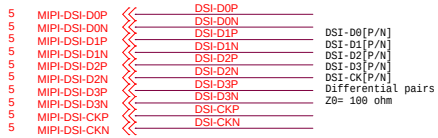
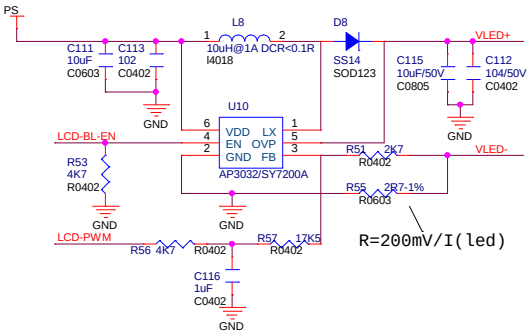
LCM/CTP

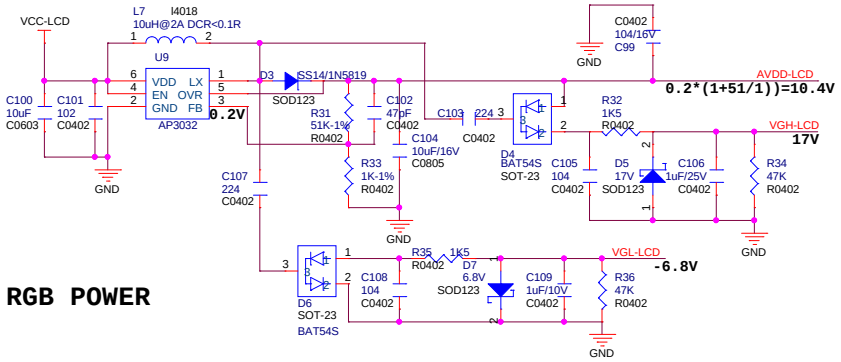




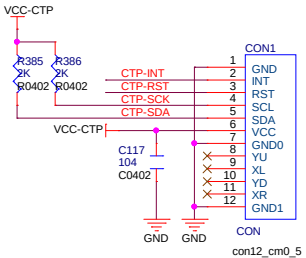
Backlight



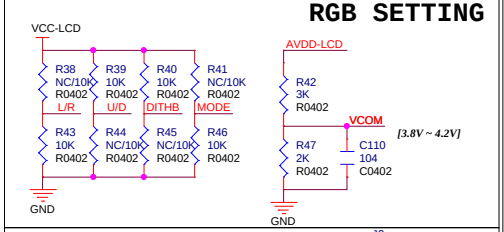
RGB POWER



CTP



RGB SETTING



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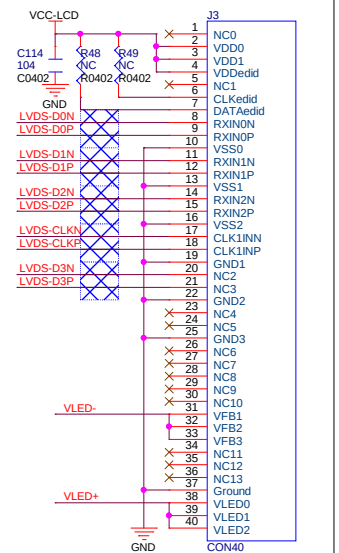
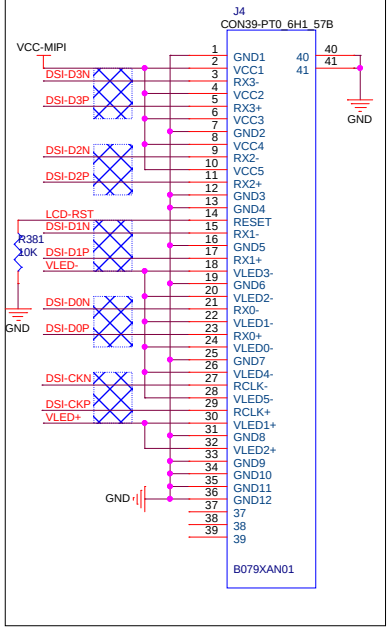


MIPI



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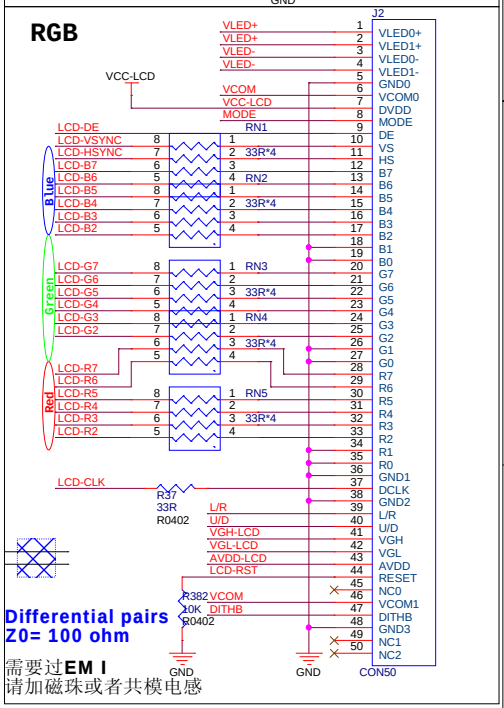

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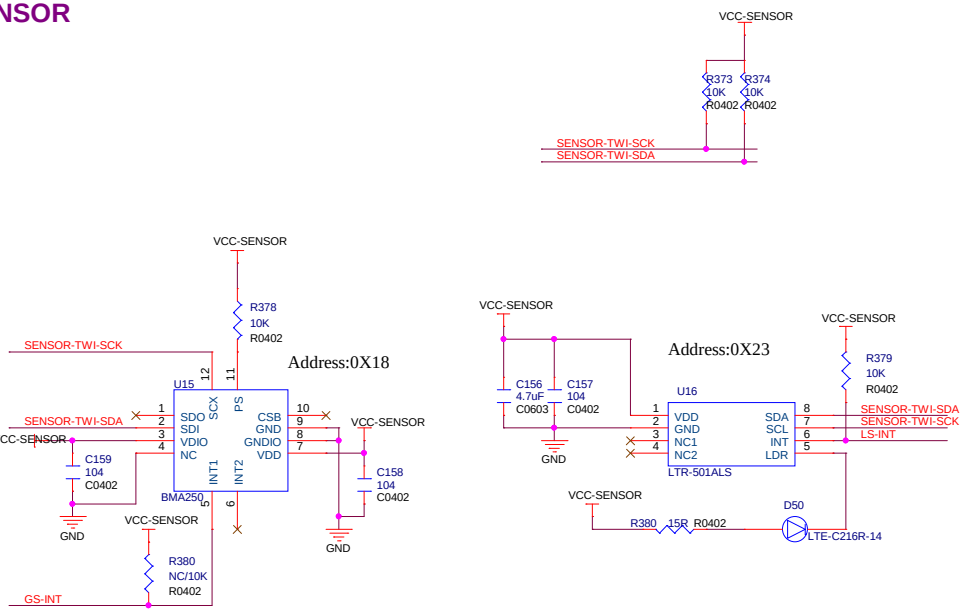
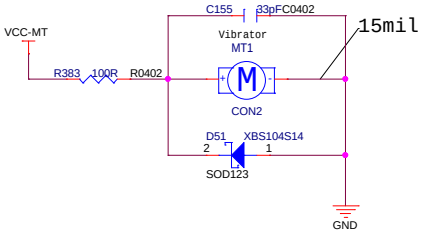
SENSORs/MT/KEY

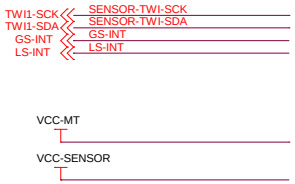
SENSOR



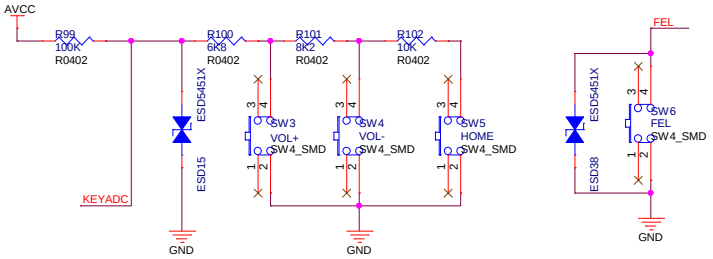
place PIN1 in the top right, parallel to the screen,
and put on the top left of the screen

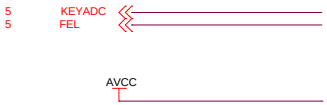
Motor





KEY





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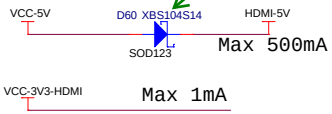
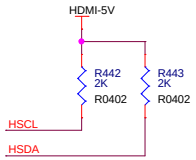
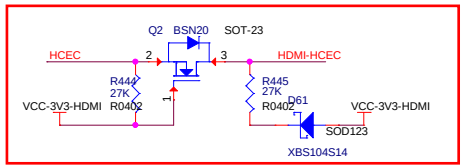
HDMI

防止接入HDMI时，在系统待机状态下向系统倒灌电。



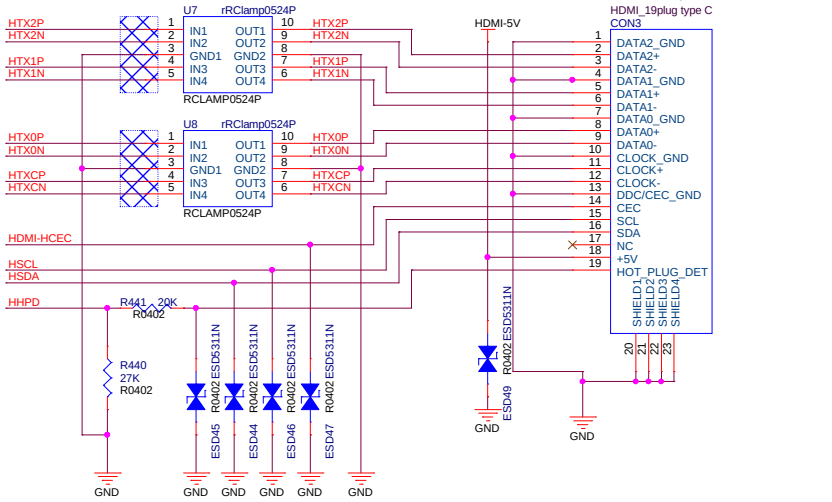
Differential pairs
Z0= 100 ohm





防止接入HDMI时，在系统待机状态下向系统倒灌电；若不需要CEC功能，该电路可不贴，HDMI-HCEC信号悬空。

在做原理图设计时，请注意HDMI座的型号，型号不同，线序不同，请注意！



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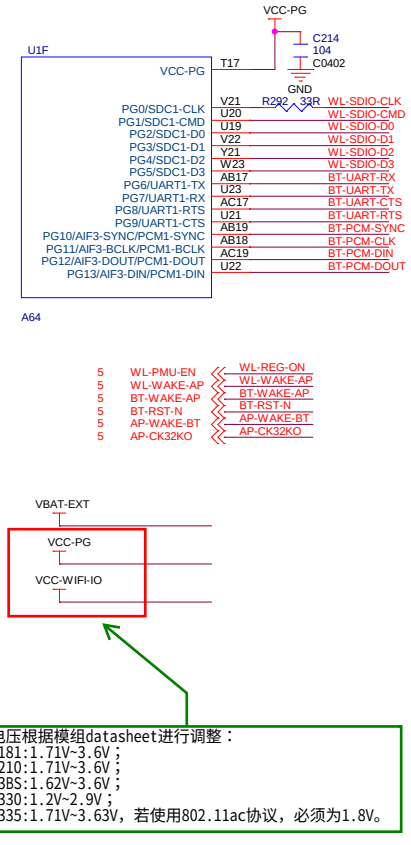
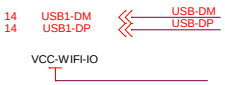
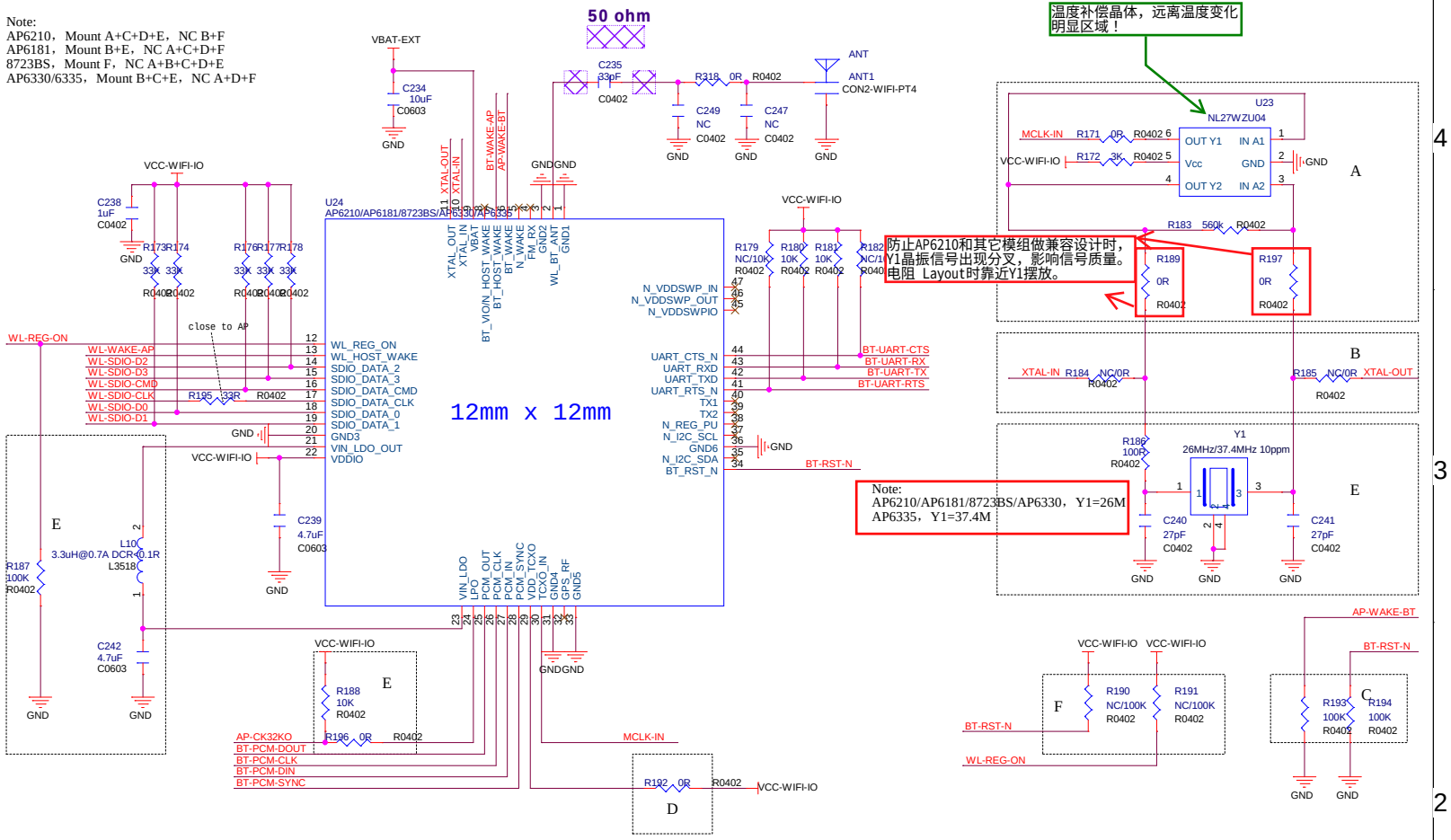
WIFI+BT



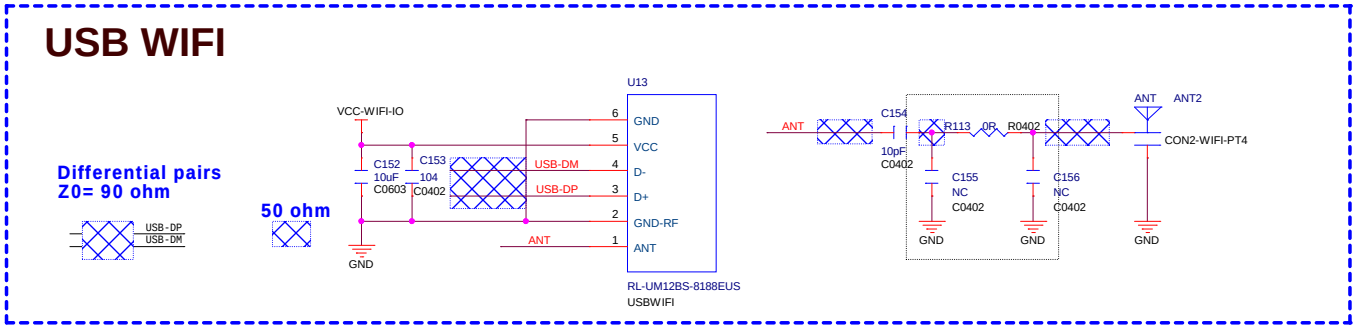
IO电压根据模组datasheet进行调整：
AP6181:1.71V~3.6V；
AP6210:1.71V~3.6V；
8723BS:1.62V~3.6V；
AP6330:1.2V~2.9V；
AP6335:1.71V~3.63V，若使用802.11ac协议，必须为1.8V。



Note:
AP6210，Mount A+C+D+E，NC B+F
AP6181，Mount B+E，NC A+C+D+F
8723BS，Mount F，NC A+B+C+D+E
AP6330/6335，Mount B+C+E，NC A+D+F



USB WIFI



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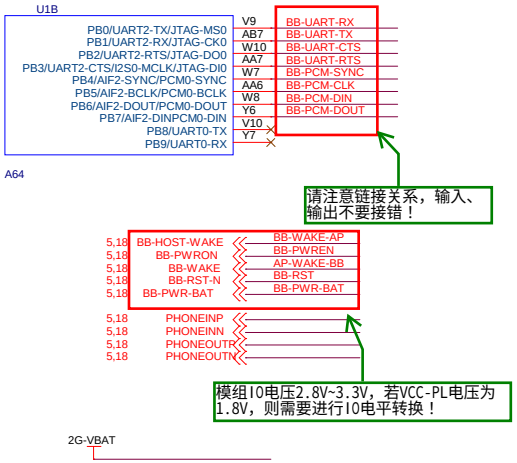
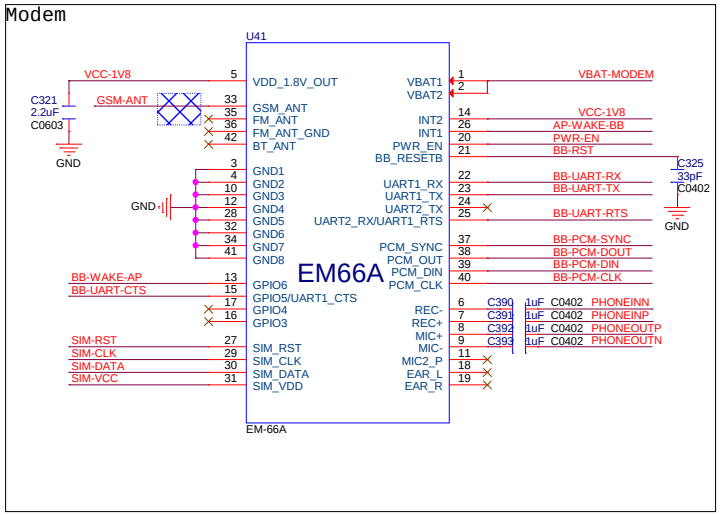
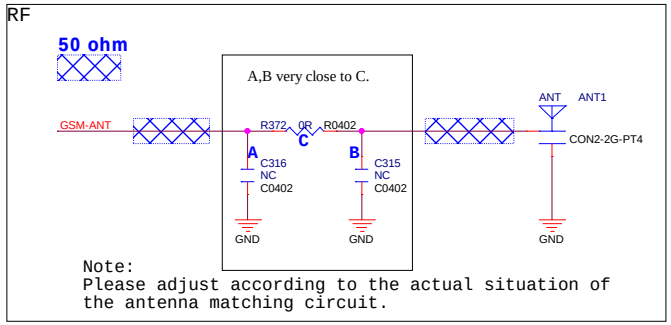
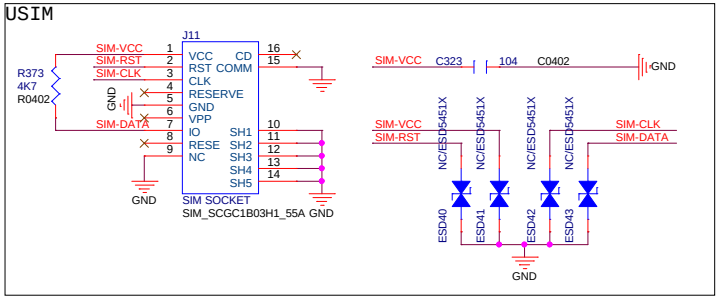
MODEM-2G

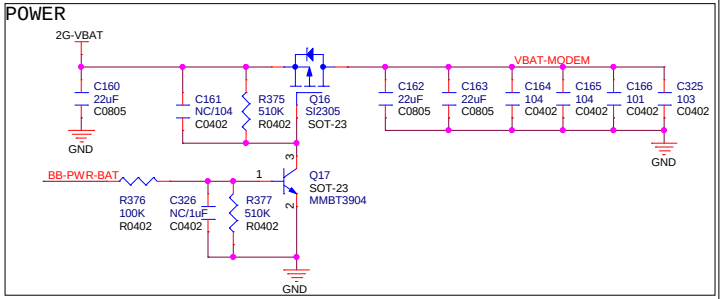


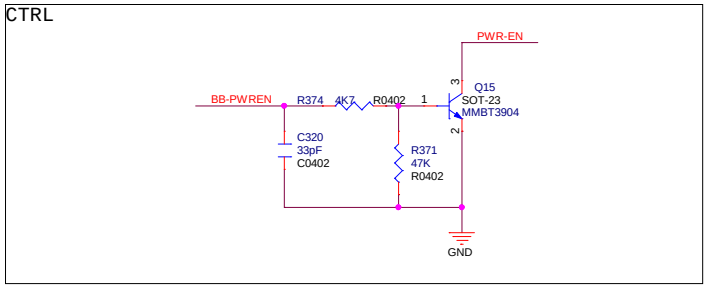




这部分电路根据天线实际情况调整。







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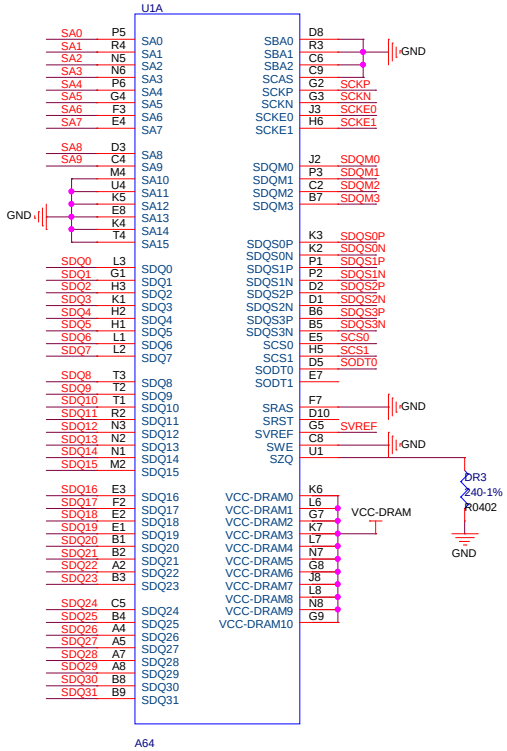
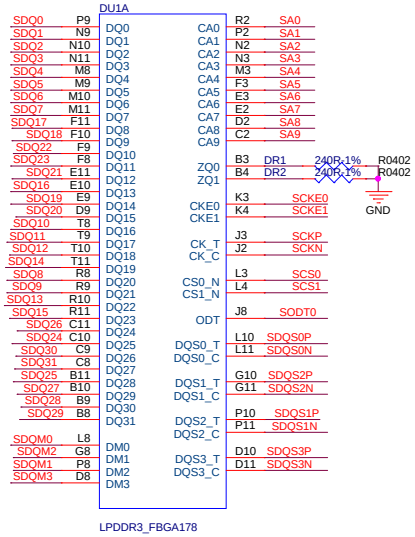
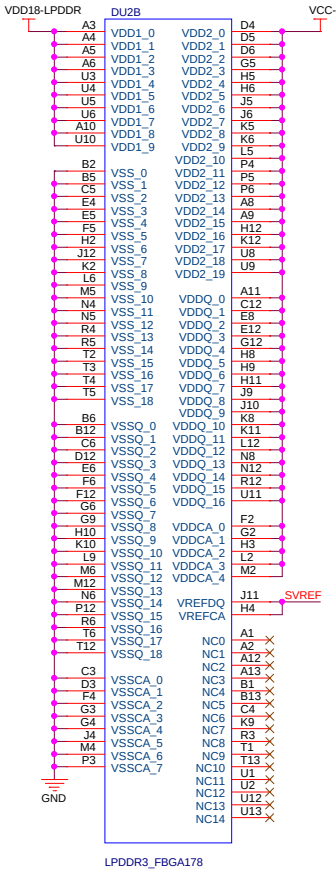
LPDDR3

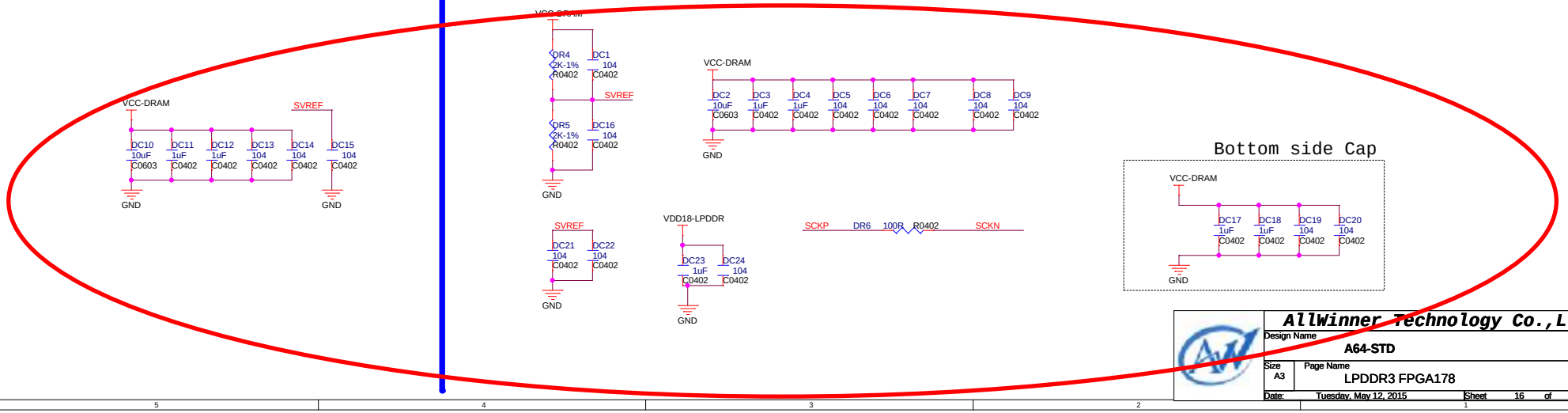
请尽量使用Allwinner提供的DDR Layout参考模板；否则请严格遵守DDR Layout Guide。







采用Allwinner DDR Layout模板，红色框中的元器件位号不能变。



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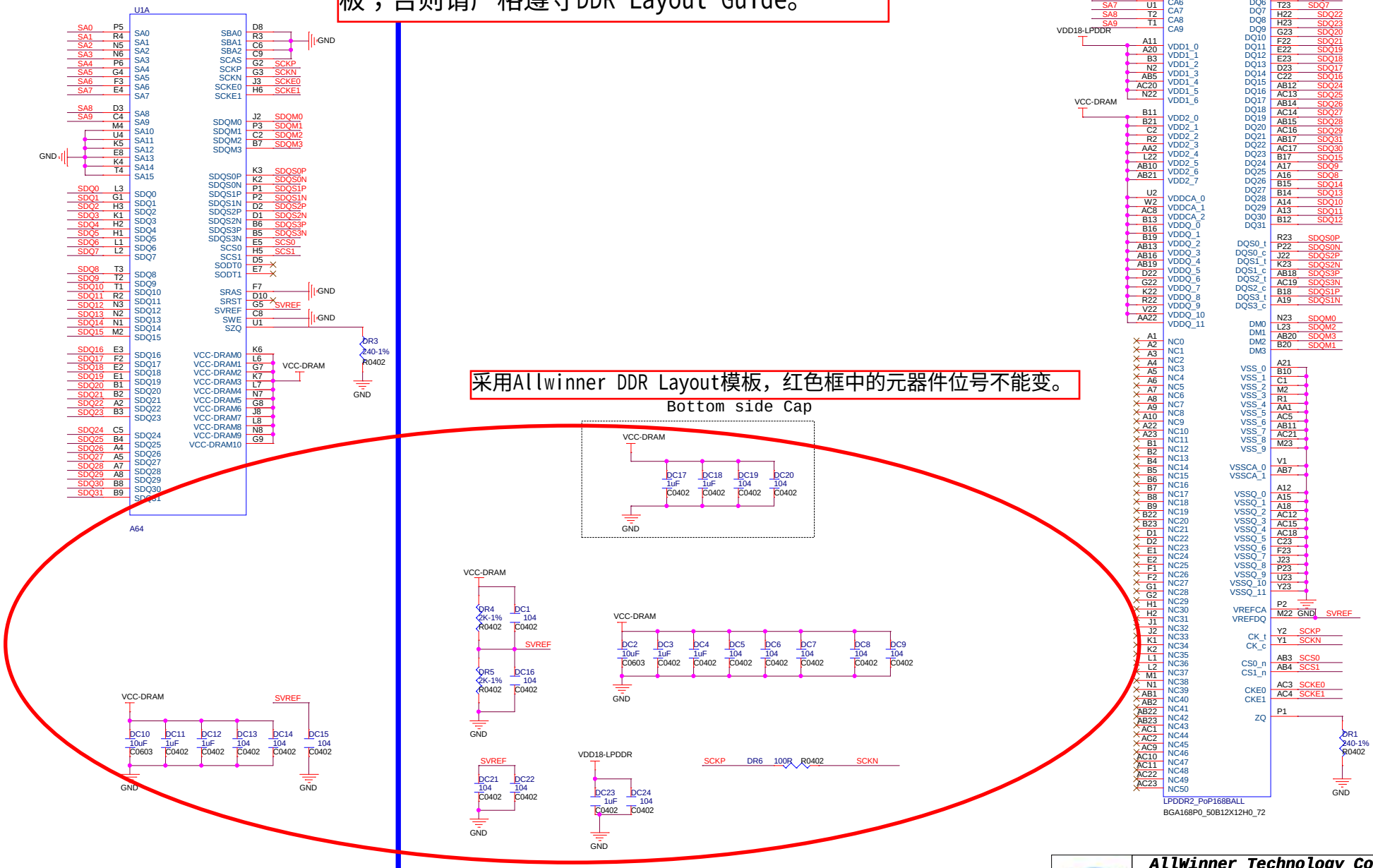
LPDDR3/LPDDR2

请尽量使用Allwinner提供的DDR Layout参考模板；否则请严格遵守DDR Layout Guide。

采用Allwinner DDR Layout模板，红色框中的元器件位号不能变。



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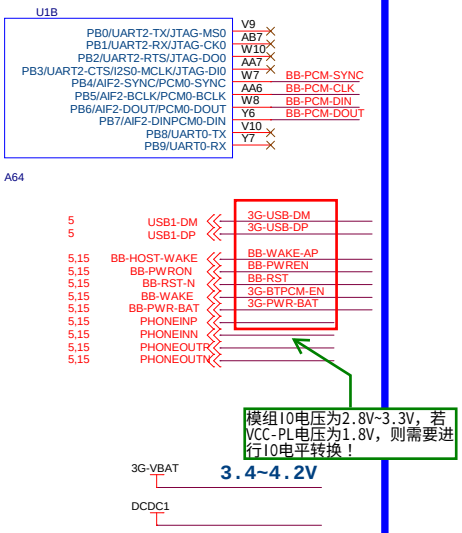
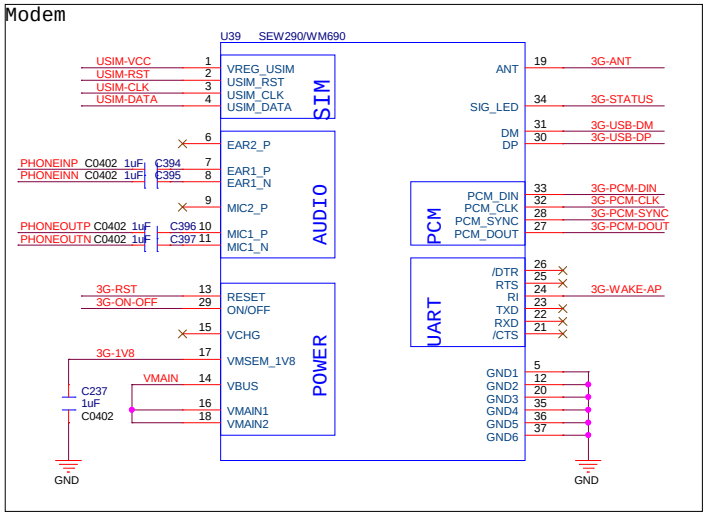
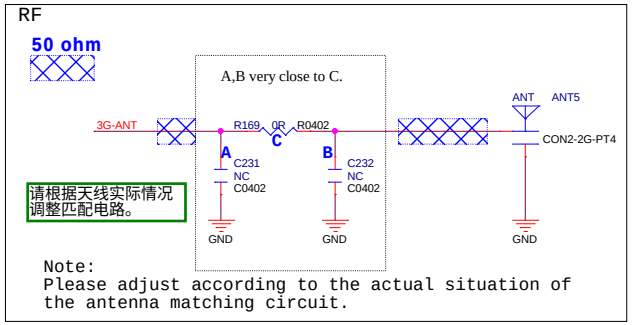
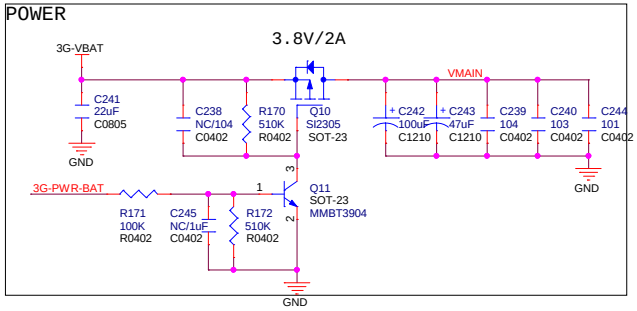
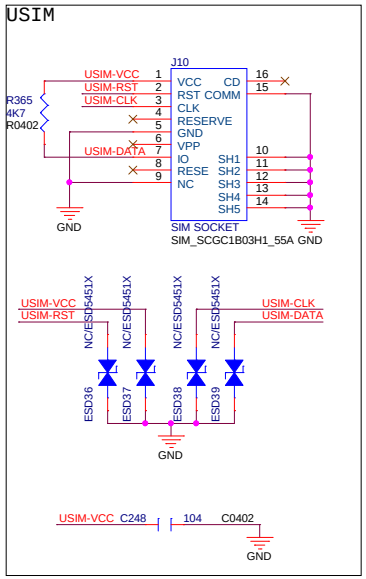
MODEM 3G

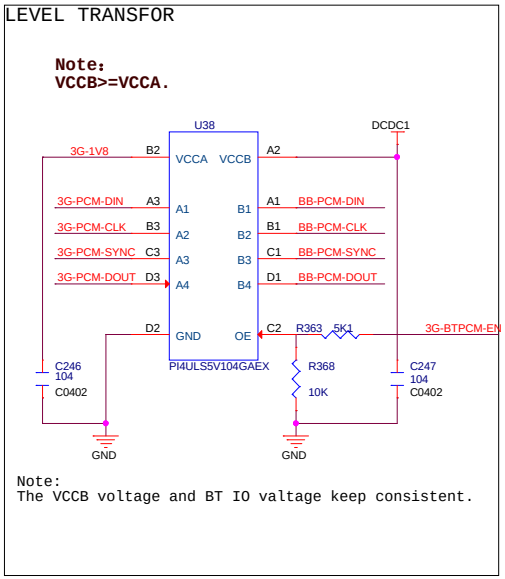


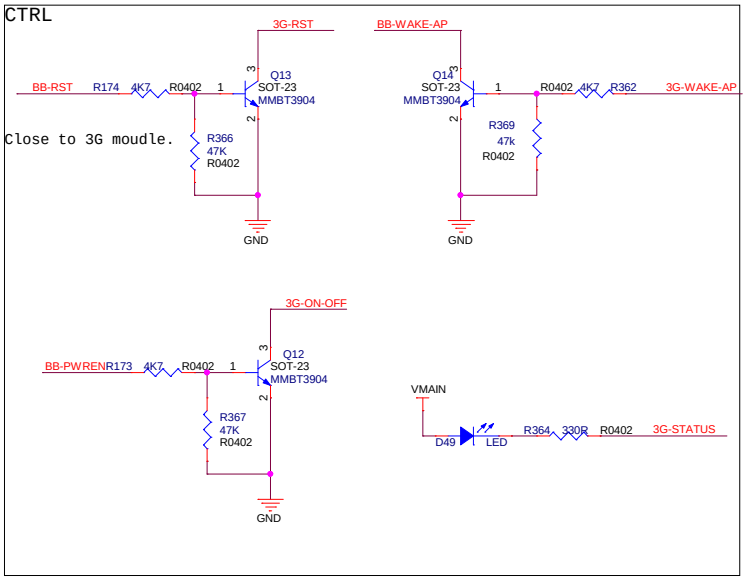












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