

Notes: Unless Otherwise Stated

Scheme Spec:

FLASH: MLC, 3V
 DRAM: DDR3, 1.5V
 Key: Vol+, Vol-, MENU, SEARCH, HOME, ESC, ENTER
 Power: DCIN, 5V, 2A; BAT, 4.2V
 USB0: OTG
 USB2: WIFI
 WIFI: USB WIFI&SDIO WIFI+BT
 Card: TFcard
 Other: Headphone, MIC, G-Sensor, Camera

Power Supply:

Name	Vout	Imax	Use
AXP209 DCDC2	1.25V	1600mA	CPU
AXP209 DCDC3	1.2V	1200mA	CORE
AXP209 LDO1	1.3V	30mA	RTC
AXP209 LDO2	3V	200mA	AVCC
AXP209 LDO3	2.8V	400mA	CSI0-IO
AXP209 LDO4	2.8V	200mA	CSI1-IO
AP2125 LDO	1.8V	300mA	CSI-DVDD
AP3410 DCDC	1.5V	1200mA	DRAM
AP3410 DCDC	3V	1200mA	VCC/LCD/NAND//WIFI
SY7208	5V	1000mA	HDMI/USB
AP2125 LDO	3.3V	300mA	WIFI
AP3032 DCDC		1400mA	LCD
AP3032 DCDC		1400mA	LCD
AP3032 DCDC		1400mA	LCD MIPI

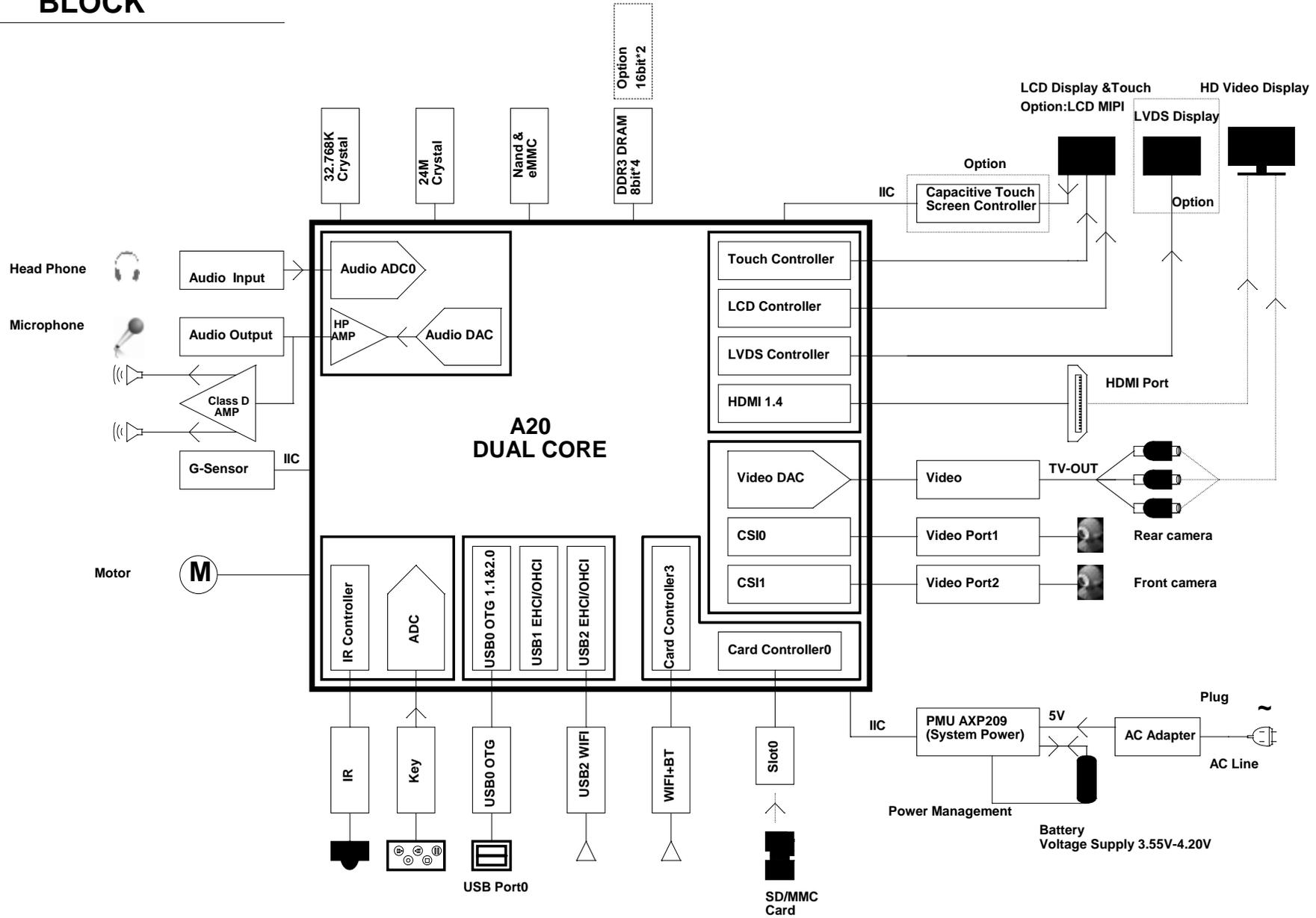
Schematics Index:

P01: COVER
 P02: BLOCK
 P03: PIO ASSIGNMENT
 P04: POWER TREE
 P05: CPU1
 P06: CPU2
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 P08: DDR3 16bit x 2pcs
 P09: BESIDE CPU
 P10: POWER1
 P11: POWER2
 P12: NAND&eMMC
 P13: HDMI-CSI
 P14: KEY-IR-TVOUT-MT
 P15: CARD-DEBUG-GS
 P16: LCD
 P17: WIFI+BT
 P18: USB
 P19: HP-MIC-SPK
 P20: LCD MIPI 7" 85

Rev	Description	Date	Drawn	Checked	Approved
A20_PAD_STD_V1.0		2013-01-30			
A20_PAD_STD_V1.1		2013-04-01	Dennislo		
A20_PAD_STD_V1.2		2013-08-15	Dennislo		

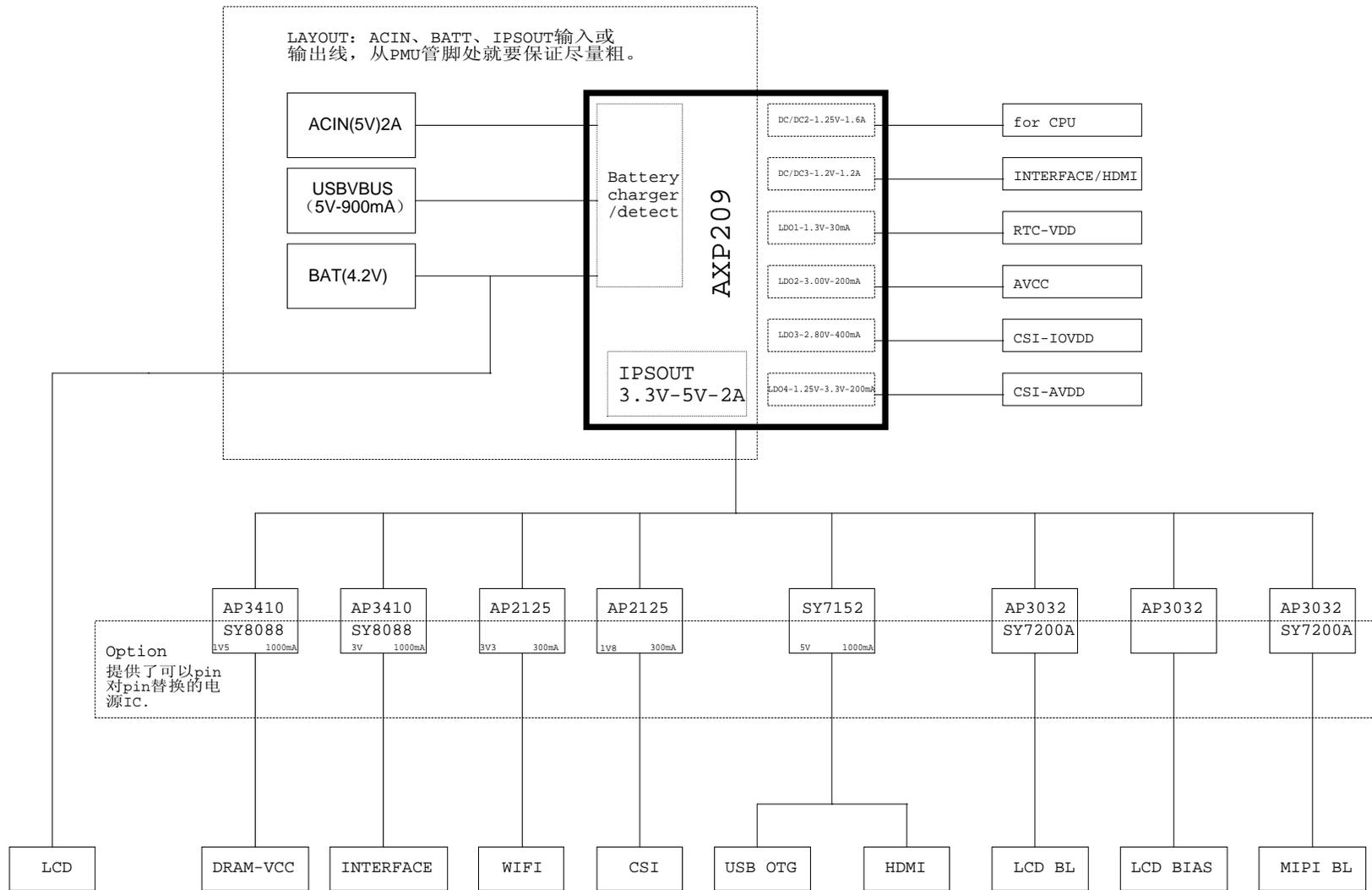
AllWinner Technology Co.,Ltd			
		Design Name	
		A20_PAD_STD	
Size	Page Name	Rev	
A3	COVER	V1.2	
Date:		Wednesday, August 21, 2013	
		Sheet	1 of 21

BLOCK

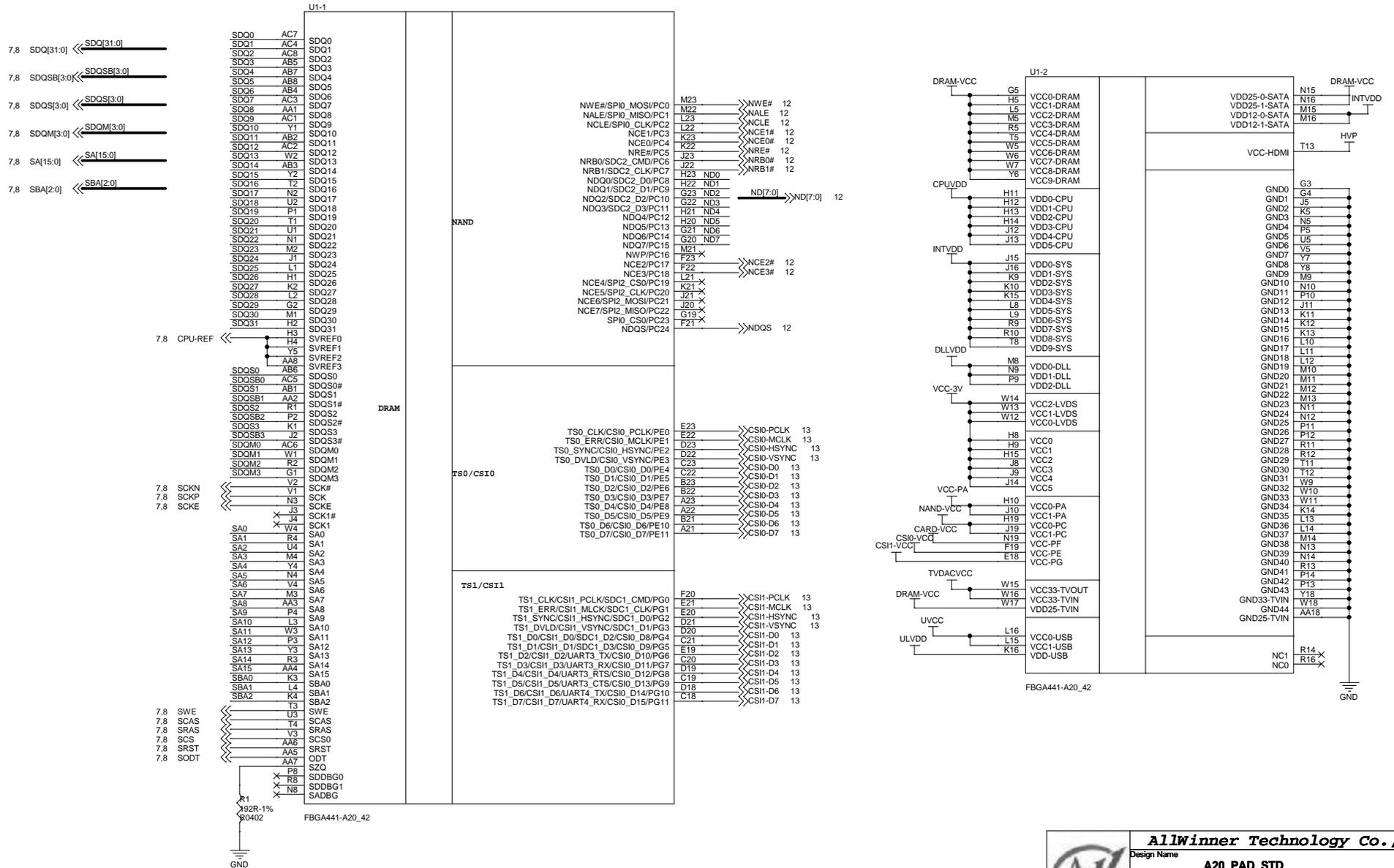


POWER TREE

LAYOUT: ACIN、BATT、IPSOUT输入或输出线，从PMU管脚处就要保证尽量粗。

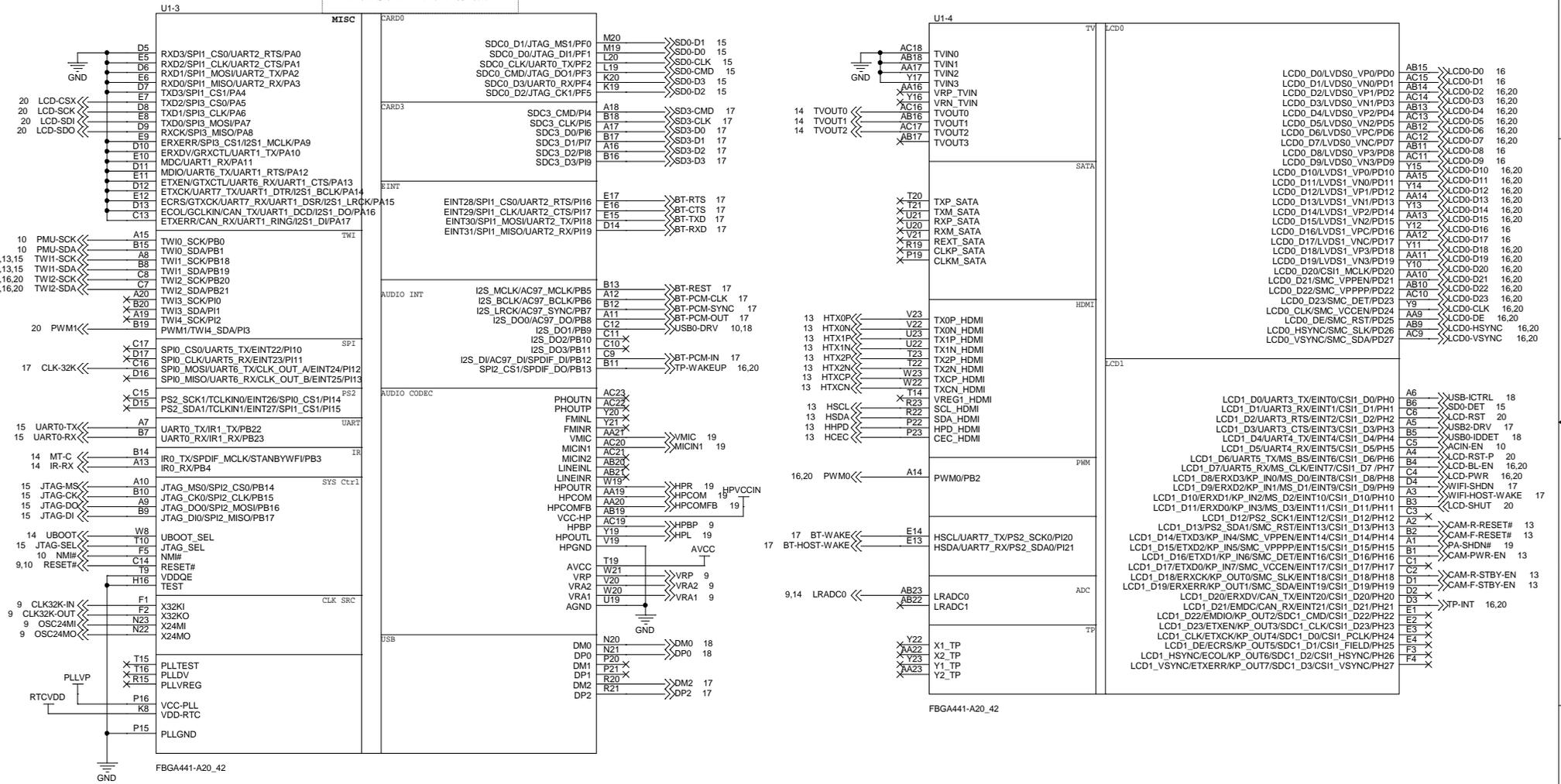


CPU1



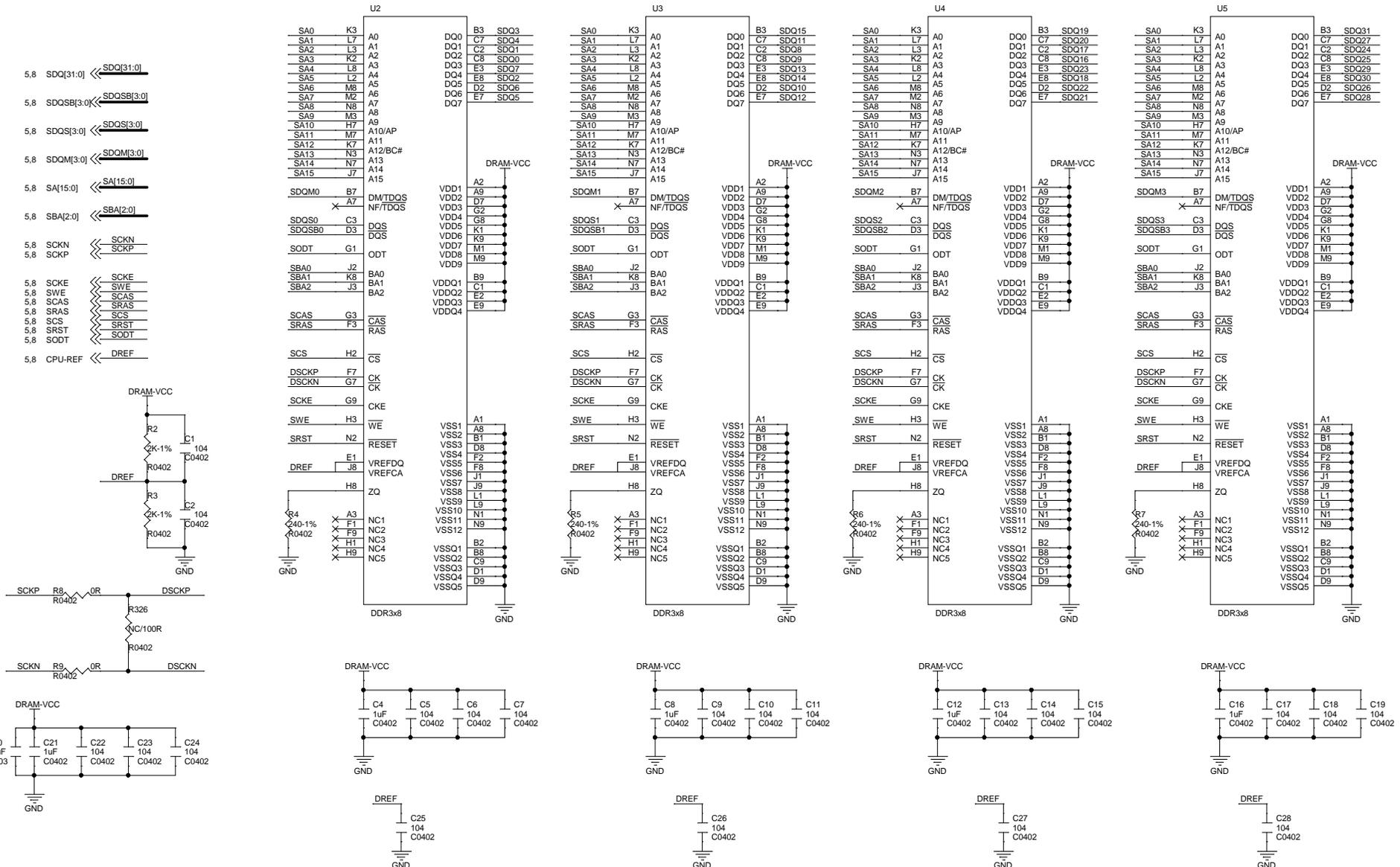
CPU2

注意：PA剩余口全部过孔接地，用于散热。



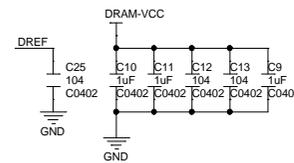
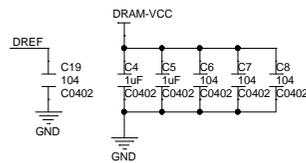
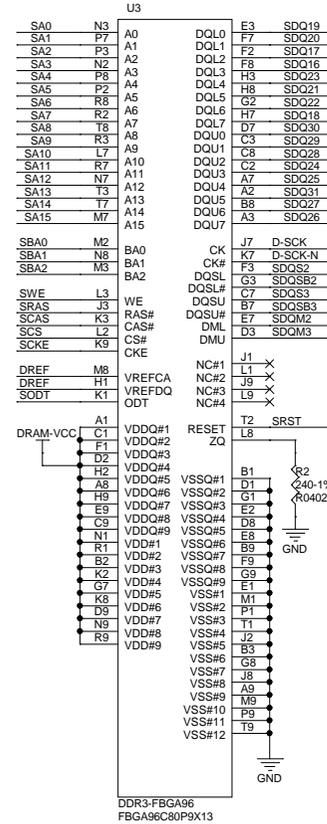
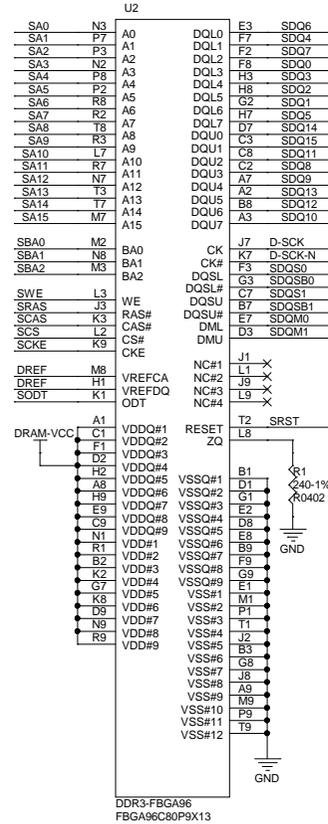
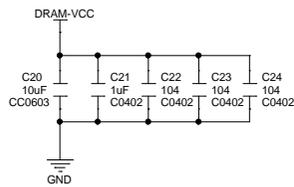
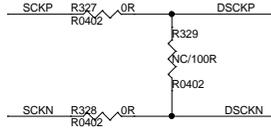
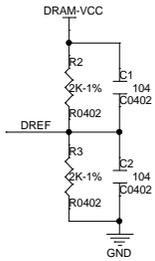
DDR3-8BITX4

Please directly copy the referred DRAM layout and follow the PCB layout guide. This circuit is only for single-side PCB layout.



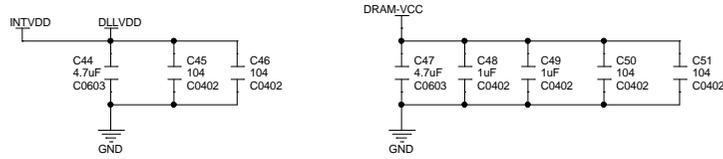
DDR3-16BITX2

- 5,7 SDQ[31:0] << SDQ[31:0]
- 5,7 SDQS[3:0] << SDQS[3:0]
- 5,7 SDQS[3:0] << SDQS[3:0]
- 5,7 SDQM[3:0] << SDQM[3:0]
- 5,7 SA[15:0] << SA[15:0]
- 5,7 SBA[2:0] << SBA[2:0]
- 5,7 SCKN << SCKN
- 5,7 SCKP << SCKP
- 5,7 SCKE << SCKE
- 5,7 SWE << SWE
- 5,7 SCAS << SCAS
- 5,7 SRAS << SRAS
- 5,7 SCS << SCS
- 5,7 SRST << SRST
- 5,7 SODT << SODT
- 5,7 CPU-REF << DREF

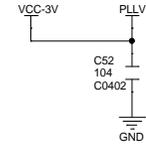


BESIDE CPU

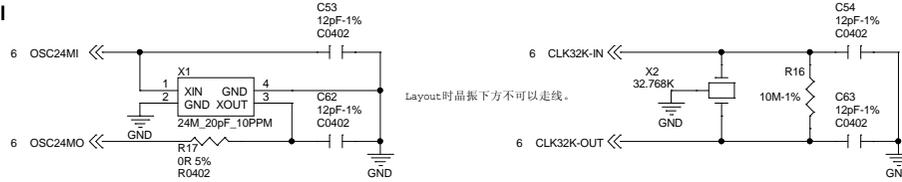
DRAM



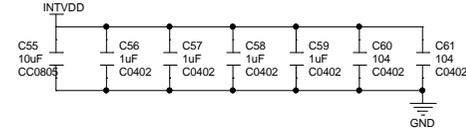
PLL



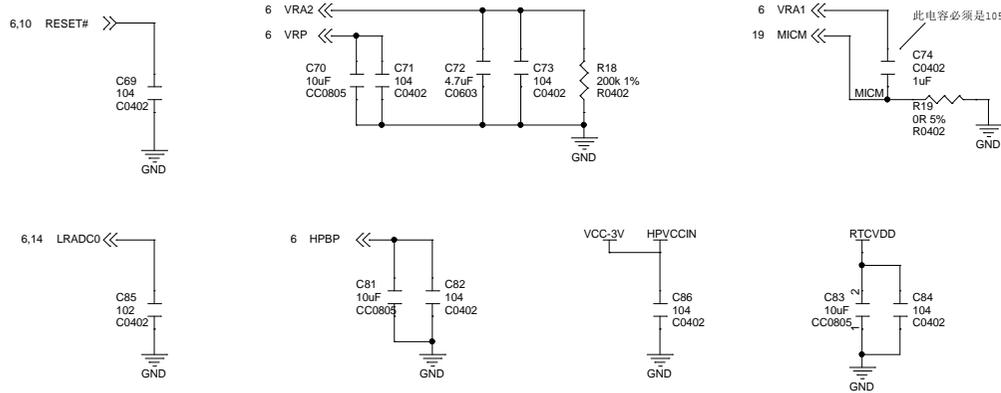
Crystal



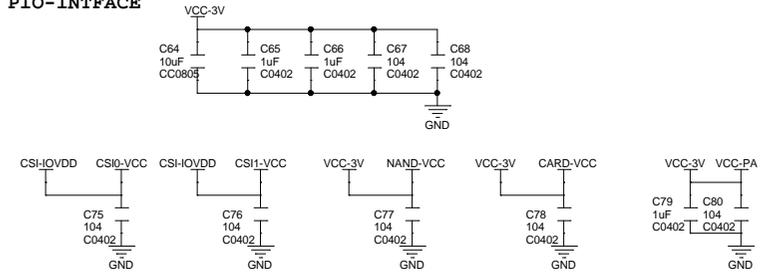
CORE



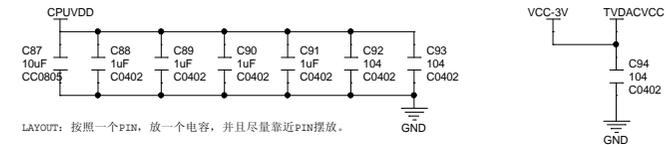
AUDIO&SYS&TP



PIO-INTFACE



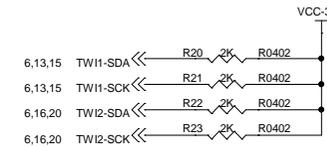
CPU&TV



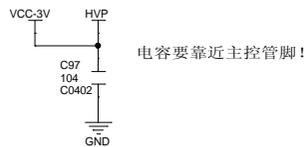
USB



TWI-PULLUP



HDMI



POWER-PMU

- 6 NMI# << NMI#
- 6 PMU-SDA << PMU-SDA
- 6 PMU-SCK << PMU-SCK
- 6,18 USB0-DRV << USB0-DRV
- 11 EXTEN << EXTEN
- 6,9 RESET# << RESET#
- 18 USBVBUS << VBUS

1. ACIN电源网络保留给LCD供电;
2. 在ACIN、VBUS上靠近PMU接10uF电容滤波。

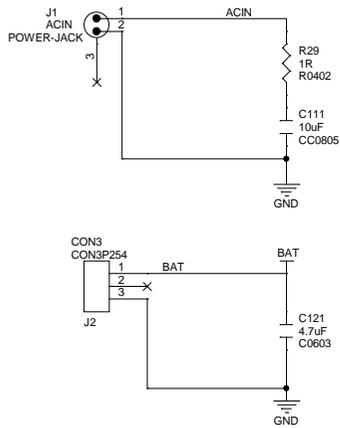
POWER LINE:Width>=80mil



POWER LINE:Width>=40mil

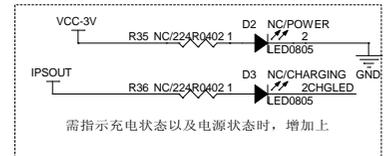
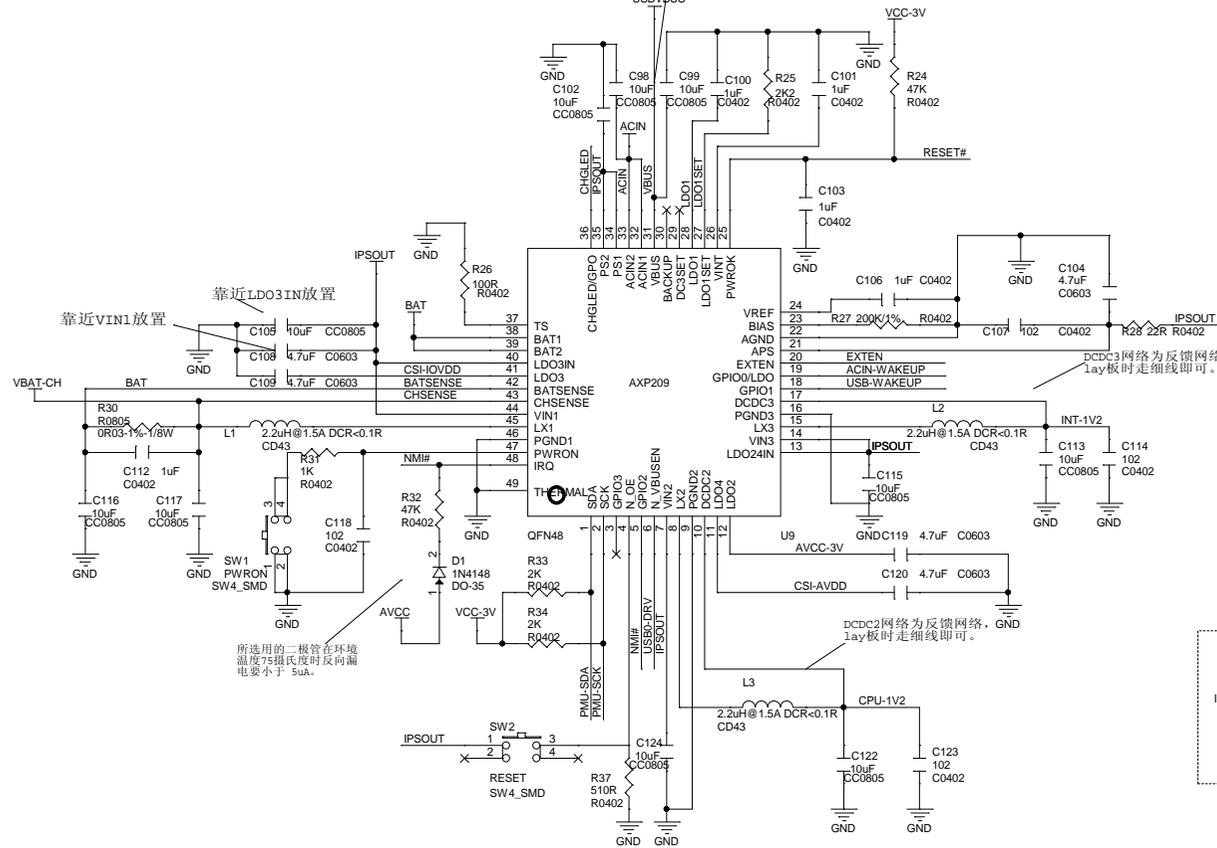
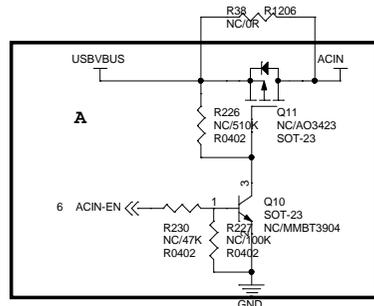


POWER INPUT



此时不支持电池温度检测

- 注意:
- 1、在没有ACIN插座, 只使用USB供电时, 把A部分器件贴上;
 - 2、有ACIN时A部分器件不贴。

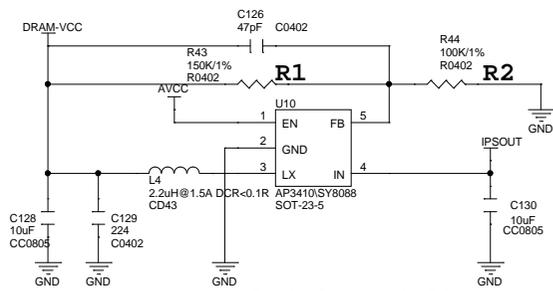


需指示充电状态以及电源状态时, 增加上

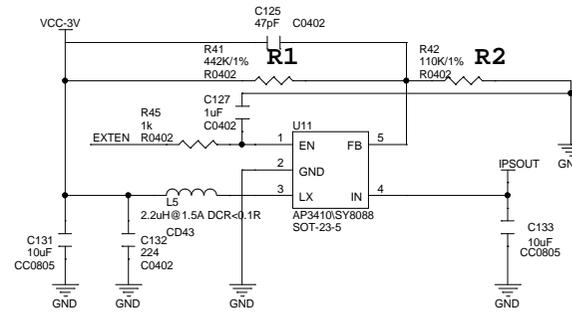
备注:
对于电感尺寸有轻薄要求的, 推荐使用乾坤的PSE250201B-2R2MS, 其体积为2.6x2.1平方毫米, 饱和电流为1.8A, 直流阻抗为85毫欧。

POWER-DC/DC

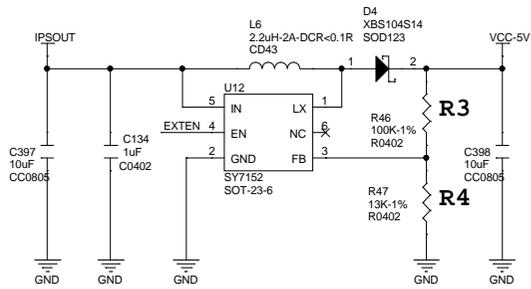
10 EXTEN >> EXTEN



$$V_{out} = 0.6 * (1 + R1/R2)$$



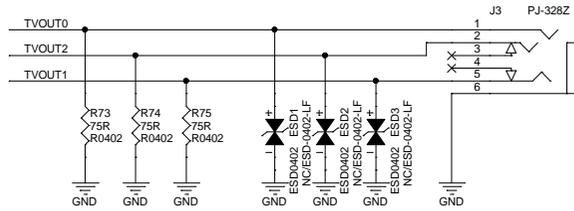
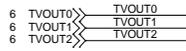
$$V_{out} = 0.6 * (1 + R1/R2)$$



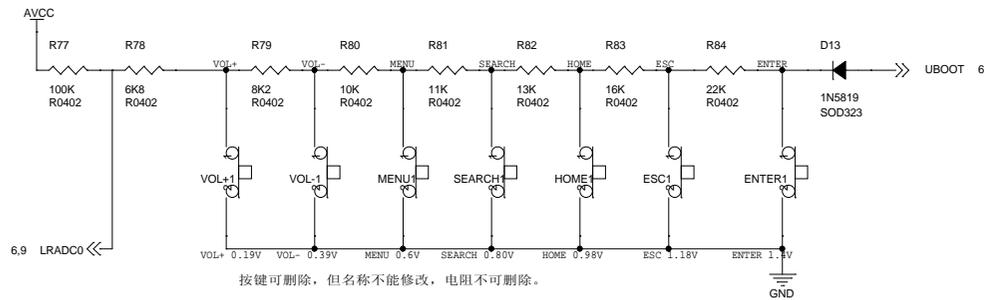
$$V_{out} = 0.6 * (1 + R3/R4)$$

KEY-IR-TVOUT-MT

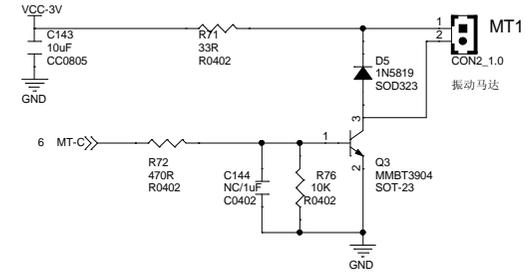
TVOUT



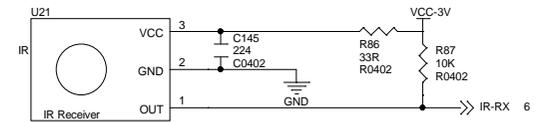
KEY



Motor

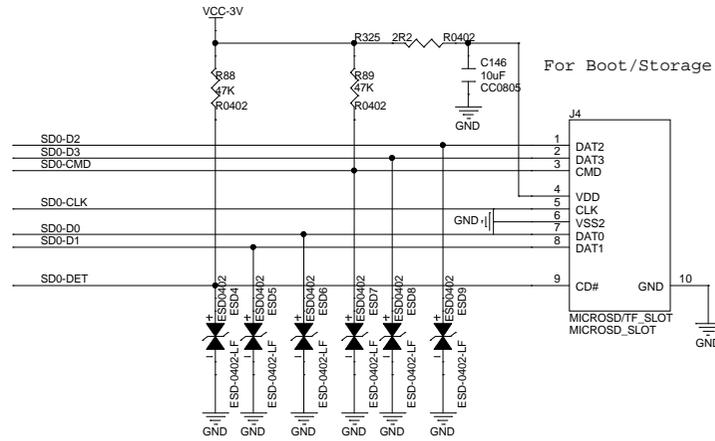


IR MODULE

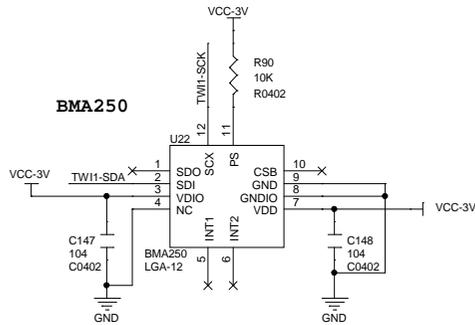
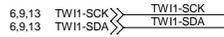


CARD-DEBUG-GS

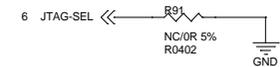
CARD0



G-SENSOR



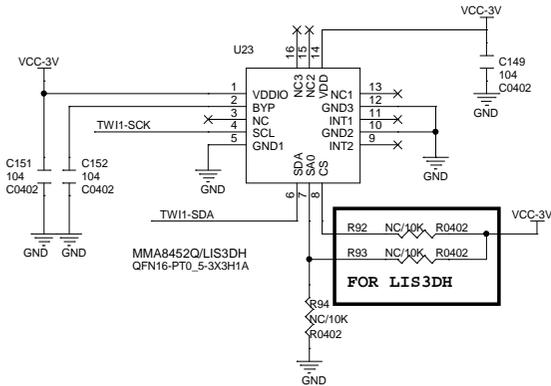
DEBUG



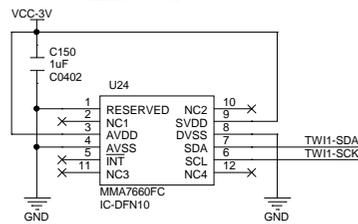
预留JTAG、UART测试点，并要保证测试点方便焊接排列整齐，以备调试使用。

Option

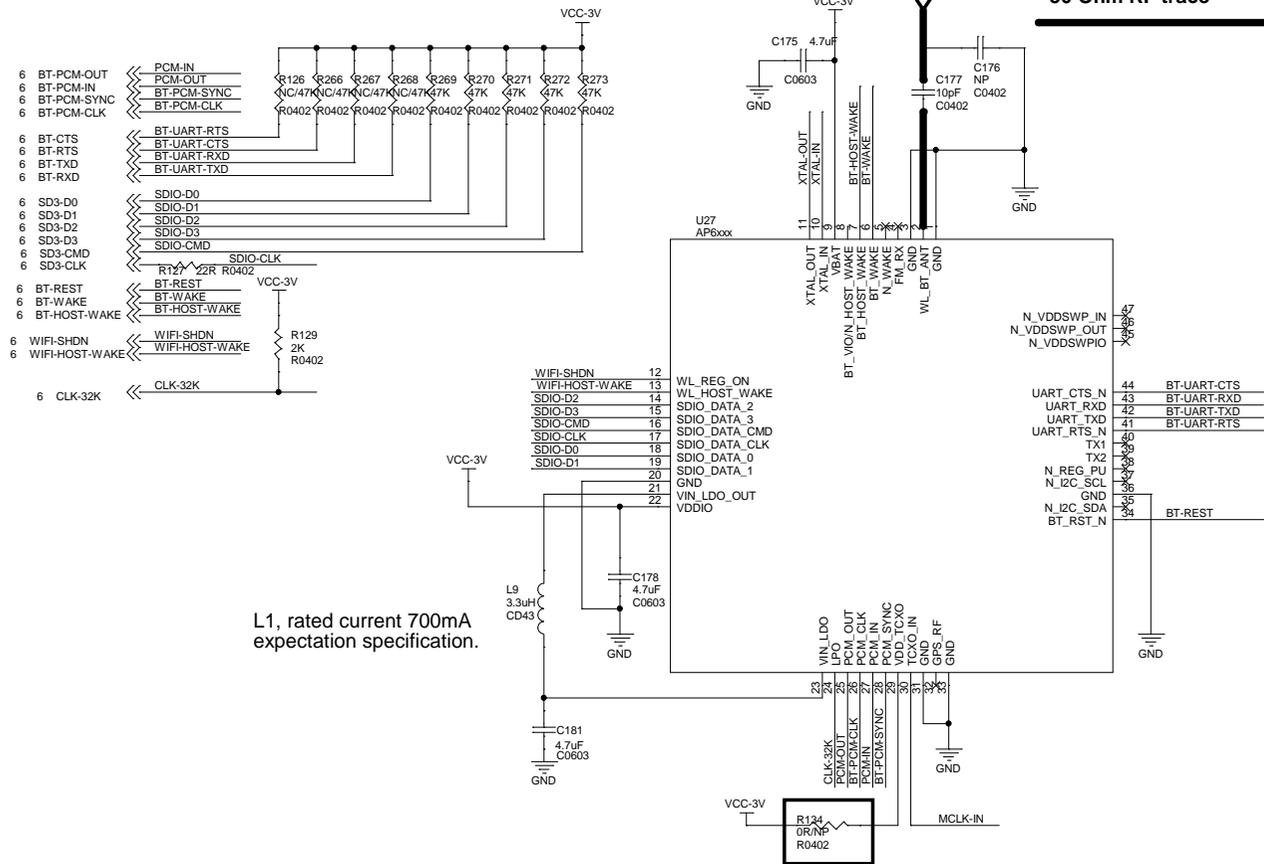
MMA8452Q/LIS3DH



MMA7660FC



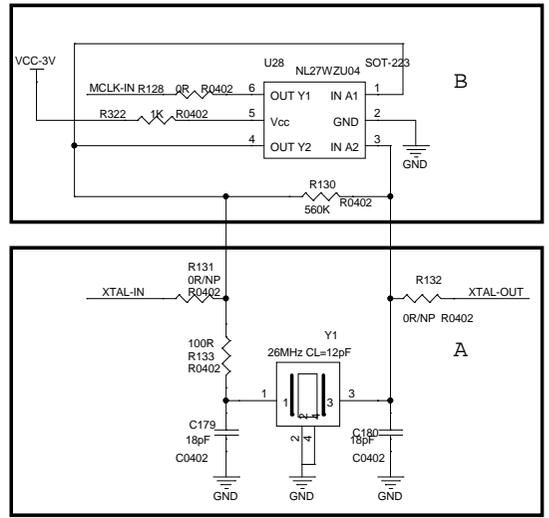
WIFI-BT



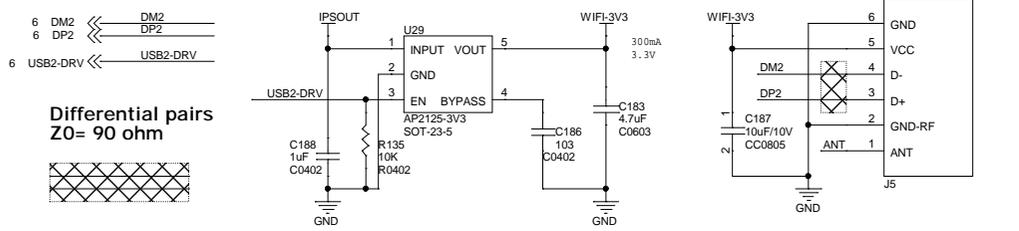
L1, rated current 700mA expectation specification.

AP6210接上此电阻, AP6181不接

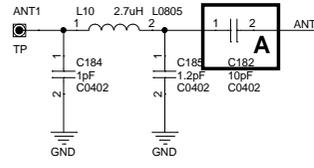
AP6210需要框内A和B部分, R131, R132就NC
AP6181只需要框内A部分



USB WIFI



Differential pairs
Z0= 90 ohm

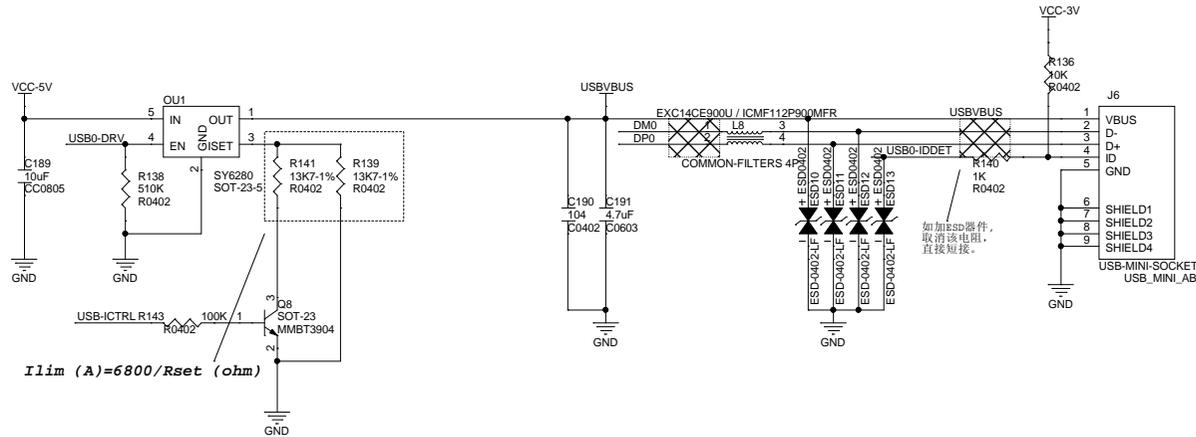


电容A请放在模组距离5mm之内, 电容A位贴0欧电阻也可以

USB-USB OTG

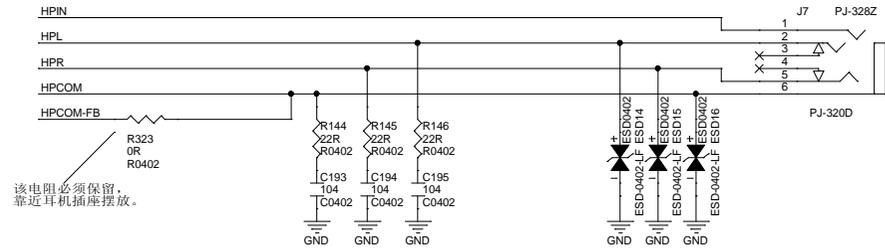
- 6 DM0 << DM0
- 6 DPO << DPO
- 6 USB0-IDDET << USB0-IDDET
- 6,10 USB0-DRV << USB0-DRV
- 10 USBVBUS << USBVBUS
- 6 USB-ICTRL << USB-ICTRL

Differential pairs
Z0= 90 ohm

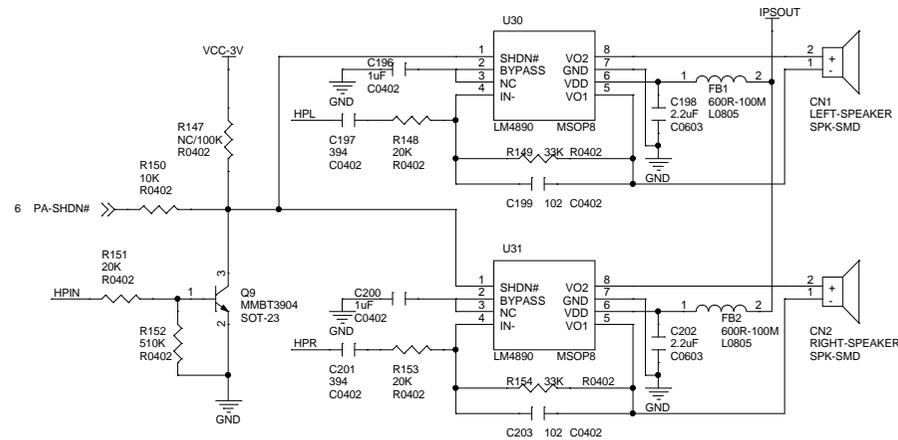


HP-MIC-SPK

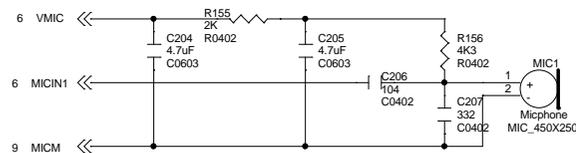
Head Phone



Speaker



Microphone



				AllWinner Technology Co., Ltd	
				Design Name A20_PAD_STD	
Size A3	Page Name HP-MIC-SPK			Rev V1.2	
Date: Monday, August 26, 2013		Sheet 19		of 21	

