Notes: Unless Otherwise Stated

Scheme Spec:

FLASH: MLC, 3.3V
DRAM: DDR3 1.5V
Key: NEXT,PREV,Vol+, Vol-,UP,DOWN, ENTER,UBOOT
Power: DCIN, 5V, 2A; BAT, 3.7V, 3600mAH
USB0: OTG
USB1: HOST
USB2: WIFI
WIFI: SDIO WIFI
Card: TFcard
Other: GPS, Headphone, MIC, G-Sensor,camera

Power Supply:

电源名称	输出电压	最大供电能力	预计谁在用
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	3.3V	200mA	CSI1-IO
SY8008B DCDC	1.8V	1000mA	CSI-CORE
SY8008B DCDC	1.5V/1.8V	1000mA	DRAM
SY8008B DCDC	3.3V	1000mA	VCC/LCD/NAND//WIFI
SY7208	5V	2000mA	HDMI/USB
AP1231B28ZRM	2.8V	300mA	CSI0-AF-VCC
AP1231B12ZRM	1.2V	300mA	WIFI
RT9193-33PB	3.3V	300mA	GPS

Schematics Index:

Rev	Description	Date	Drawn	Checked	Approved
PAD_MAINCHIP_STD_V1.15	更改了电源电路	2011-07-12	Leo		
PAD_MAINCHIP_STD_V1.15	更改了电源滤波电容（PMU）	2011-07-18	Leo		
PAD_MAINCHIP_STD_V1.21	详见CHANGE LIST	2011-09-09	Leo		

MAINCHIP_PAD_DDR3

Title: Notes: Unless Otherwise Stated

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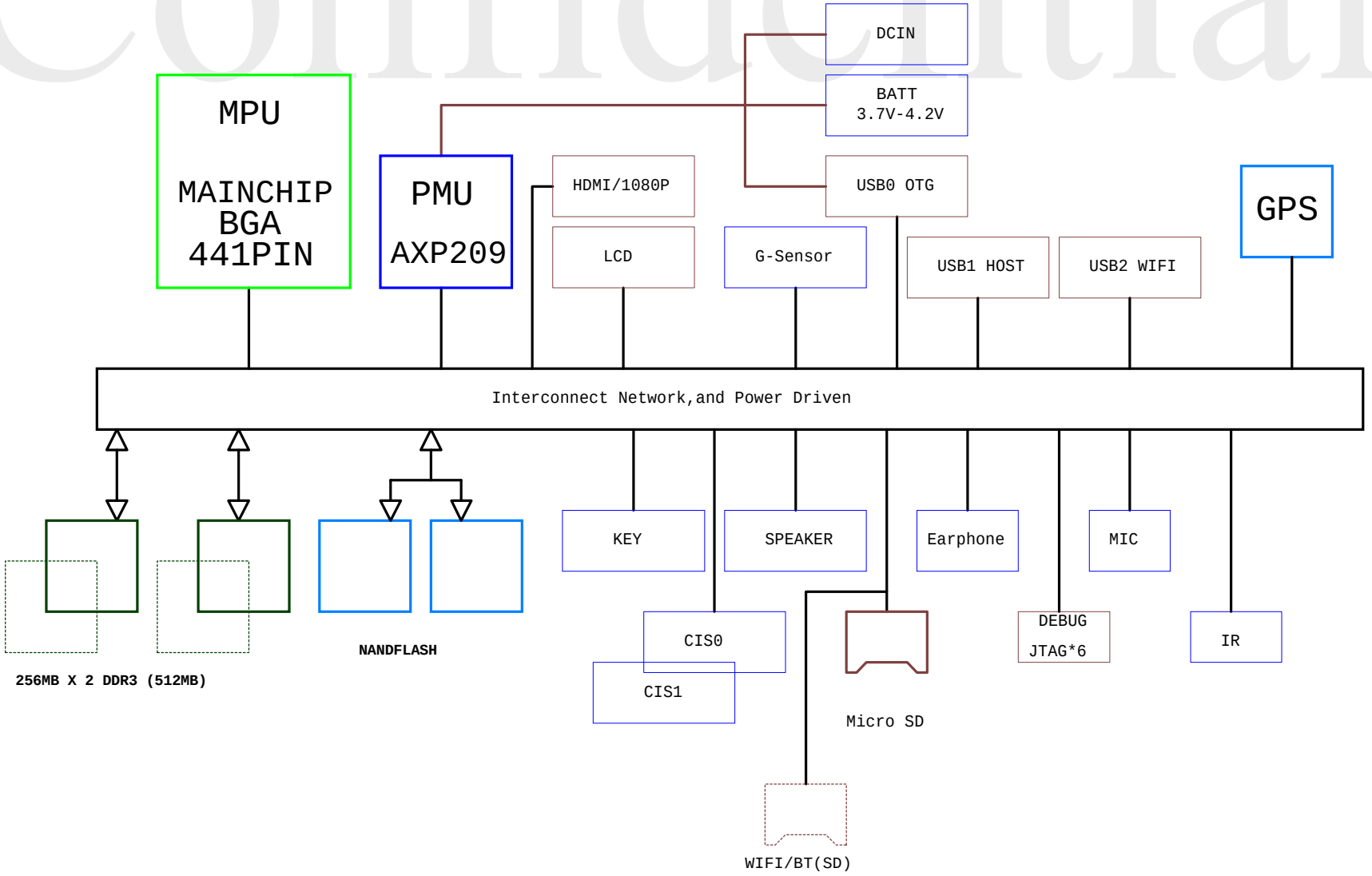
BLOCK



MAINCHIP_PAD_DDR3		
Title: BLOCK		
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PIO ASSIGNMENT

Pin Group	Pin Name	Define	Function
PA(18)	PA0	ERXD3	EMAC
	PA1	ERXD2	
	PA2	ERXD1	
	PA3	ERXD0	
	PA4	ETXD3	
	PA5	ETXD2	
	PA6	ETXD1	
	PA7	ETXD0	
	PA8	ERXCK	
	PA9	ERXERR	
	PA10	ERXDV	
	PA11	EMDC	
	PA12	EMDIO	
	PA13	ETXEN	
	PA14	ETXCK	
	PA15	ECRS	
	PA16	ECOL	
	PA17	GPIO_OUT	E-RST
PB(24)	PB0	TWI0_SCK	PMU
	PB1	TWI0_SDA	
	PB2	PWM0	PWM
	PB3	GPIO_OUT	MT-C
	PB4	IR0_RX	IR
	PB5	GPIO_OUT	BT-RST
	PB6	I2S_BCLK	BT-PCM-CLK
	PB7	I2S_LRCK	BT-PCM-SYNC
	PB8	I2S_DO0	BT-PCM-OUT
	PB9	GPIO_OUT	USB0-DRV
	PB10	GPIO_OUT	LCD0-SCK
	PB11	GPIO_OUT	LCD0-SDA
	PB12	I2S_DI	BT-PCM-IN
	PB13	GPIO_OUT	TP-WAKEUP
	PB14	JTAG_MS0	JTAG
	PB15	JTAG_CK0	
	PB16	JTAG_DO0	
	PB17	JTAG_DI0	
	PB18	TWI1_SCK	TWI1
	PB19	TWI1_SDA	
	PB20	TWI2_SCK	TWI2
	PB21	TWI2_SDA	
	PB22	UART0_TX	UART (DBUG)
	PB23	UART0_RX	

Pin Group	Pin Name	Define	Function
PC(25)	PC0	NWE#	NAND
	PC1	NALE	
	PC2	NCLE	
	PC3	NCE1	
	PC4	NCE0	
	PC5	NRE#	
	PC6	NRB0	
	PC7	NRB1	
	PC8	NDQ0	
	PC9	NDQ1	
	PC10	NDQ2	
	PC11	NDQ3	
	PC12	NDQ4	
	PC13	NDQ5	
	PC14	NDQ6	
	PC15	NDQ7	
	PC16	NWP	
	PC17	NCE2	
	PC18	NCE3	
	PC19	SPI2_CS	GPS-SCS
	PC20	SPI2_SCLK	GPS-SCLK
	PC21	SPI2_MOSI	GPS-MOSI
	PC22	GPIO_OUT	GPS-VCC-EN
	PC23	NC	
	PC24	NDQS	
PD(28)	PD0	LCD0_D0	LCD
	PD1	LCD0_D1	
	PD2	LCD0_D2	
	PD3	LCD0_D3	
	PD4	LCD0_D4	
	PD5	LCD0_D5	
	PD6	LCD0_D6	
	PD7	LCD0_D7	
	PD8	LCD0_D8	
	PD9	LCD0_D9	
	PD10	LCD0_D10	
	PD11	LCD0_D11	
	PD12	LCD0_D12	
	PD13	LCD0_D13	
	PD14	LCD0_D14	
	PD15	LCD0_D15	
	PD16	LCD0_D16	
	PD17	LCD0_D17	

Pin Group	Pin Name	Define	Function
PD(28)	PD18	LCD0_D18	LCD
	PD19	LCD0_D19	
	PD20	LCD0_D20	
	PD21	LCD0_D21	
	PD22	LCD0_D22	
	PD23	LCD0_D23	
	PD24	LCD0_CLK	
	PD25	LCD0_DE	
	PD26	LCD0_HSYNC	
	PD27	LCD0_VSYNC	
PE(12)	PE0	CSI0_PCLK	CSI0
	PE1	CSI0_MCLK	
	PE2	CSI0_HSYNC	
	PE3	CSI0_VSYNC	
	PE4	CSI0_D0	
	PE5	CSI0_D1	
	PE6	CSI0_D2	
	PE7	CSI0_D3	
	PE8	CSI0_D4	
	PE9	CSI0_D5	
	PE10	CSI0_D6	
	PE11	CSI0_D7	
PF(6)	PF0	SDC0_D1	SDC0
	PF1	SDC0_D0	
	PF2	SDC0_CLK	
	PF3	SDC0_CMD	
	PF4	SDC0_D3	
	PF5	SDC0_D2	
PG(12)	PG0	CSI1_PCLK	CSI1
	PG1	CSI1_MLCK	
	PG2	CSI1_HSYNC	
	PG3	CSI1_VSYNC	
	PG4	CSI1_D0	
	PG5	CSI1_D1	
	PG6	CSI1_D2	
	PG7	CSI1_D3	
	PG8	CSI1_D4	
	PG9	CSI1_D5	
	PG10	CSI1_D6	
	PG11	CSI1_D7	

Pin Group	Pin Name	Define	Function
PH(28)	PH0	EINT0	GS-INT1
	PH1	GPIO_IN	SD0-DET#
	PH2	GPIO_IN	BT-HOST-WAKEUP
	PH3	GPIO_OUT	USB2-DRV
	PH4	GPIO_IN	USB0-IDDET
	PH5	GPIO_IN	USB0-VBUSDET
	PH6	GPIO_OUT	USB1-DRV
	PH7	GPIO_OUT	LCD-BL-EN
	PH8	GPIO_OUT	LCD-PWR
	PH9	GPIO_OUT	WIFI-SHDN#
	PH10	GPIO_OUT	WIFI-HOST WAKEUP
	PH11	GPIO_OUT	WIFI-VDD-EN
	PH12	GPIO_OUT	WIFI-VCC-EN
	PH13	GPIO_OUT	CSI0-RESET#
	PH14	GPIO_OUT	CSI1-RESET#
	PH15	GPIO_OUT	PA-SHDN#
	PH16	GPIO_OUT	CSI0-1V8-EN
	PH17	GPIO_OUT	CSI1-1V8-EN
	PH18	EINT18	CSI0-STBY-EN
	PH19	EINT19	CSI1-STBY-EN
	PH20	EINT20	CP-INT
	PH21	EINT21	TP-INT
	PH22	SDC1_CMD	
	PH23	SDC1_CLK	CP-RST
	PH24	SDC1_D0	WIFI-RST
	PH25	SDC1_D1	SDC1
	PH26	SDC1_D2	
	PH27	SDC1_D3	
PI(22)	PI0	GPS_CLK	GPS
	PI1	GPS_SIGN	
	PI2	GPS_MAG	
	PI3	PWM1	
	PI4	SDC3_CMD	WIFI
	PI5	SDC3_CLK	
	PI6	SDC3_D0	
	PI7	SDC3_D1	
	PI8	SDC3_D2	
	PI9	SDC3_D3	
	PI10	SPI0_CS0	GS-INT2
	PI11	SPI0_CLK	CSI0-AF-EN
	PI12	SPI0_MOSI	TV-EN
	PI13	SPI0_MISO	GY-INT
	PI14	GPIO_OUT	GPS-OSC-EN

Pin Group	Pin Name	Define	Function
PI(22)	PI15	GPIO_OUT	GPS-RX-EN
	PI16	UART2_RTS	BT-UART-RTS
	PI17	UART2_CTS	BT-UART-CTS
	PI18	UART2_TX	BT-UART-TX
	PI19	UART2_RX	BT-UART-RX
	PI20	GPIO_OUT	BT-WAKE
	PI21	GPIO_OUT	BT-GPIO1

MAINCHIP_PAD_DDR3

Title: PIO ASSIGNMENT

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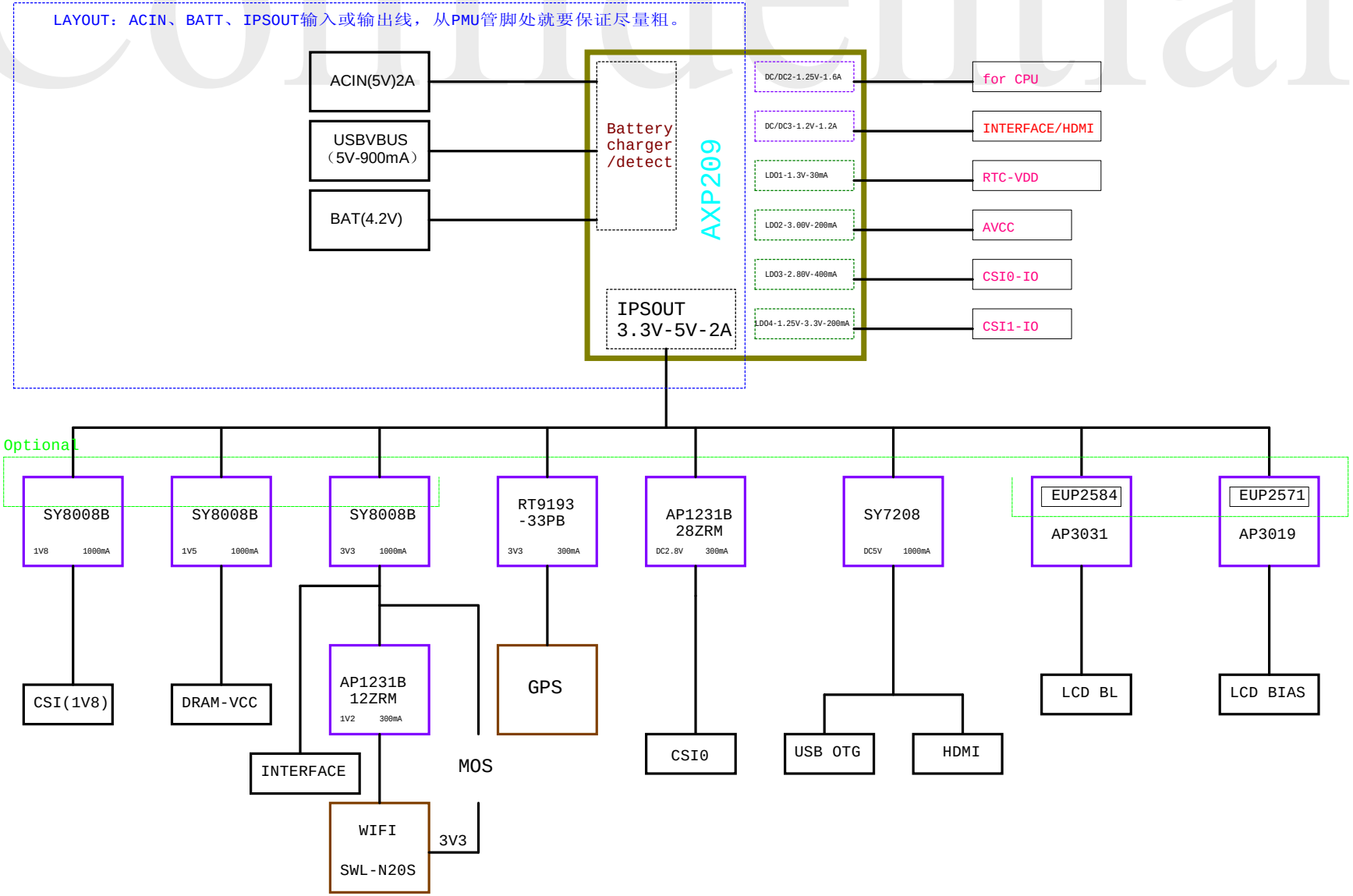
POWER TREE



MAINCHIP_PAD_DDR3			
Title: POWER TREE			
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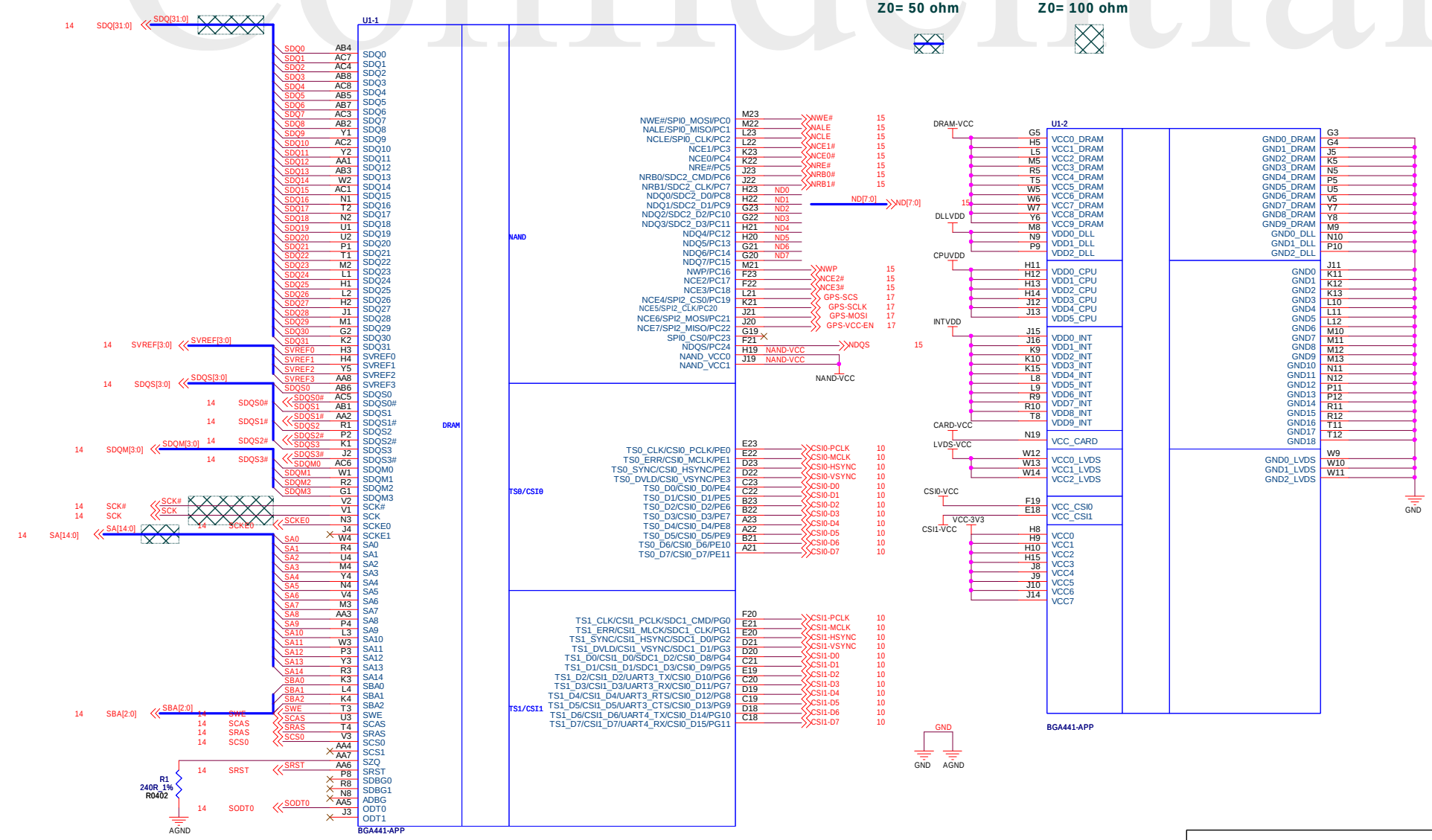
CPU1

Equilong BUS
Z0= 50 ohm

Differential pairs
Z0= 100 ohm



Title	MAINCHIP_PAD_DDR3
	CPU1
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Rev	
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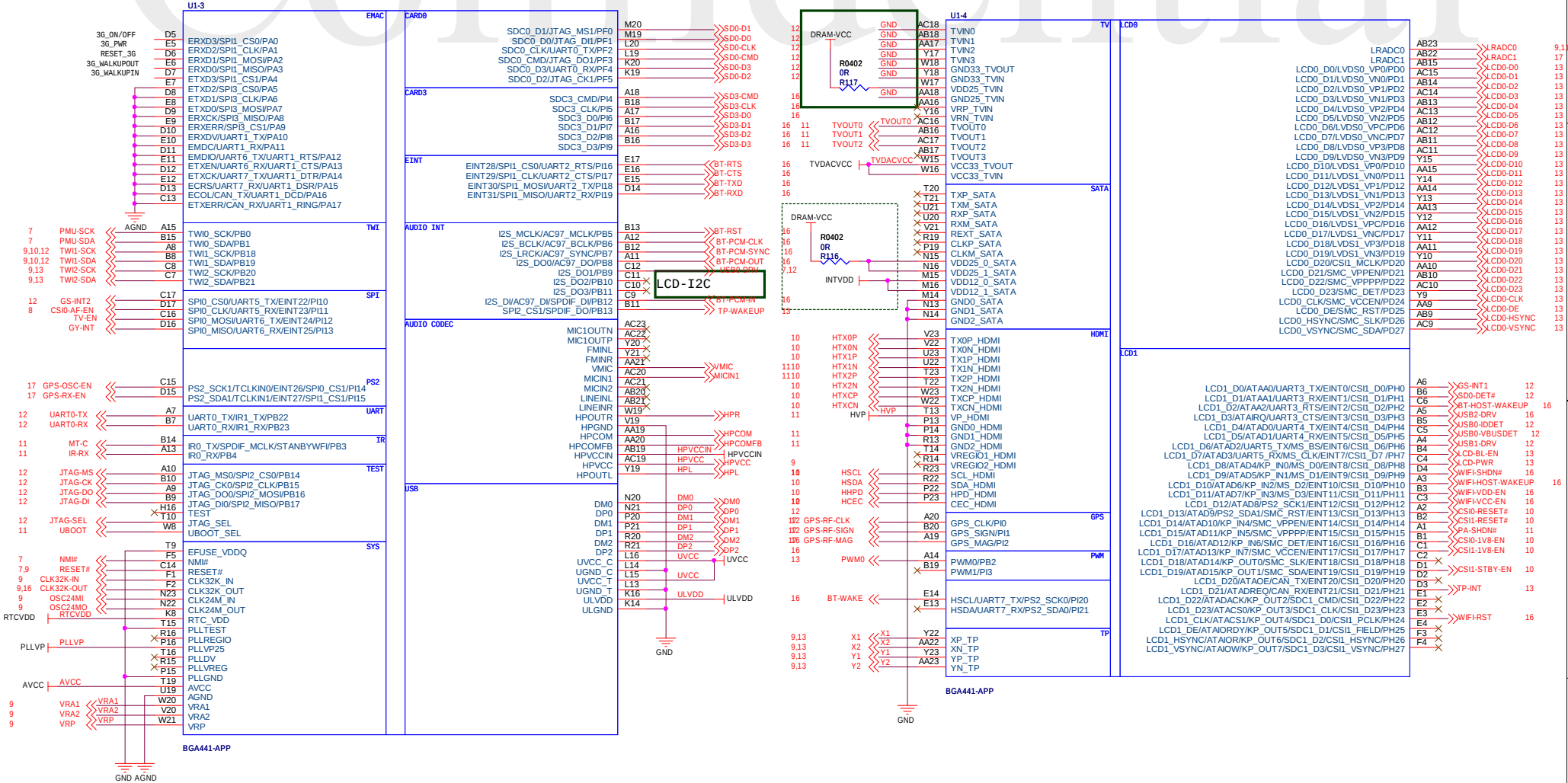
CPU2

PA剩余口全部过孔接地，
用于散热

虚线框内的电路部分，是当没有SATA功能的时的连接方式。



Title	MAINCHIP_PAD_DDR3
	CPU2
Size A3	Document Number <V1.0> Rev
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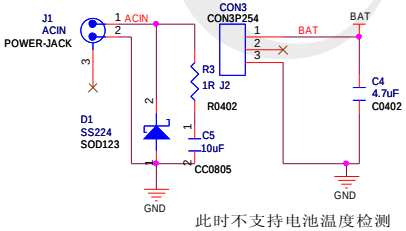
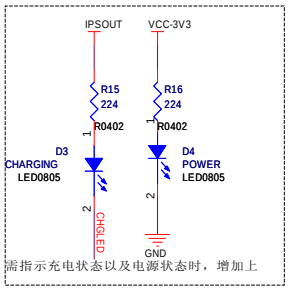
POWER-PMU

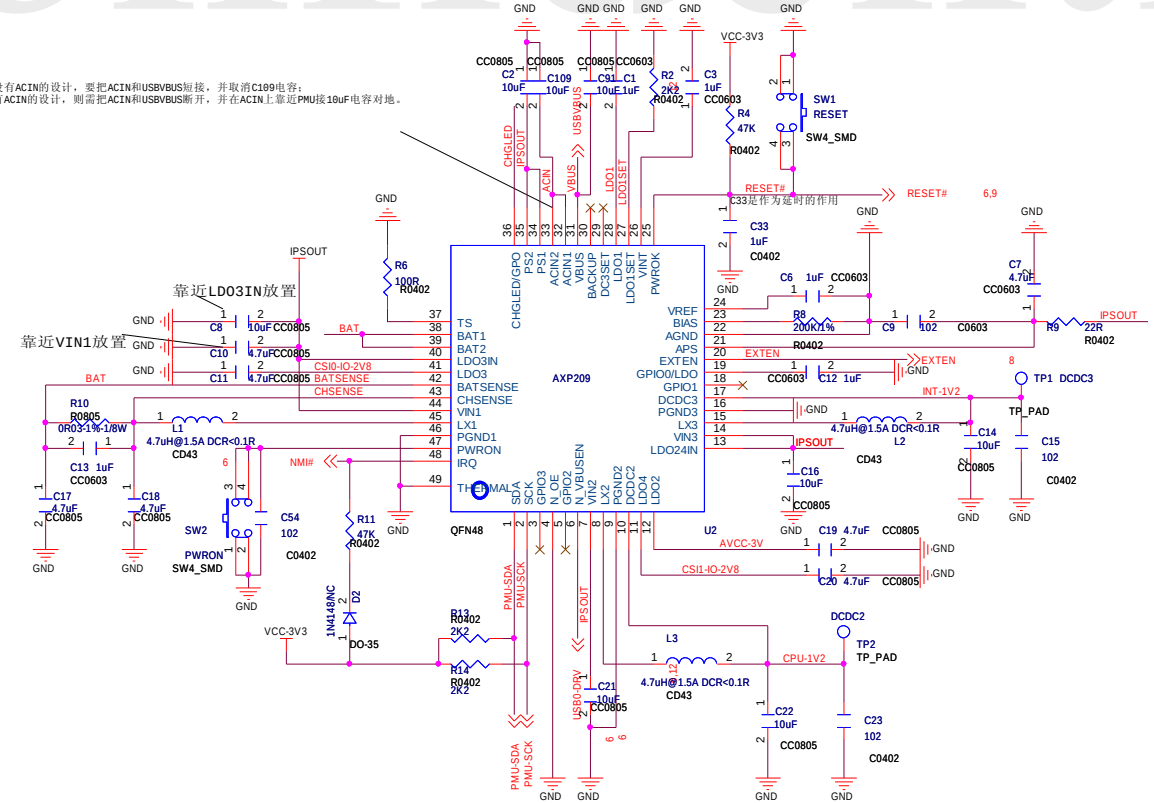


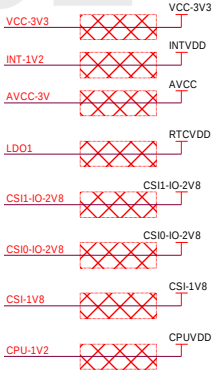
此时不支持电池温度检测

POWER INPUT



需指示充电状态以及电源状态时，增加上





POWER LINE:Width>=60mil

Title	MAINCHIP_PAD_DDR3	
	POWER-PMU	
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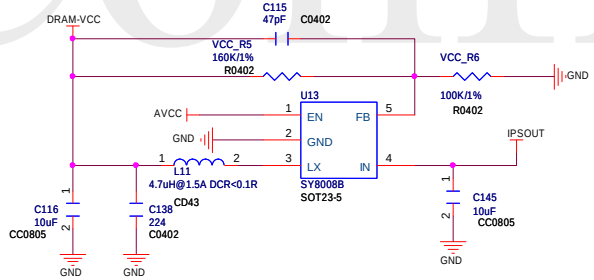
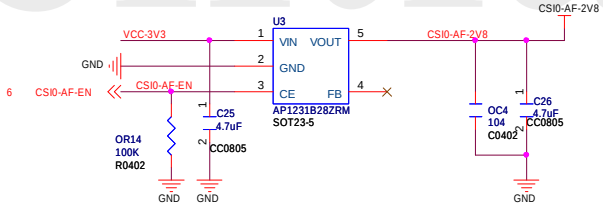
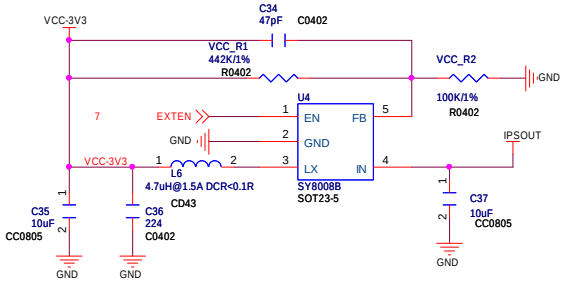
POWER-DC/DC

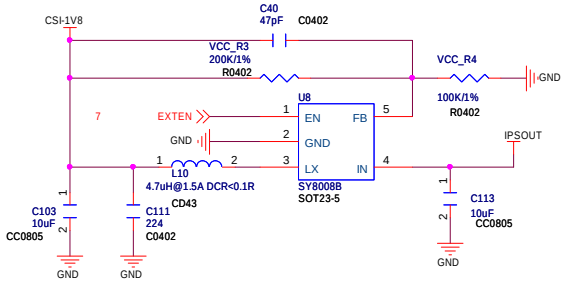


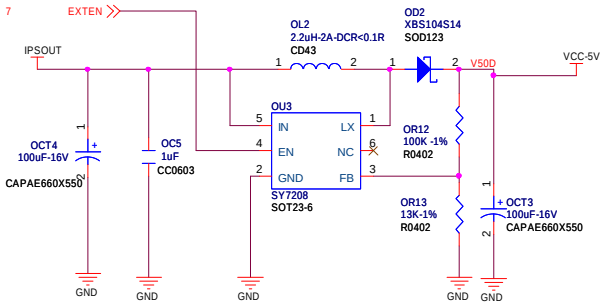
如果摄像头没有自动对焦功能，此电路省略。



Vout = 0.6*(1+R1/R2)







Vout = 0.6*(1+R1/R2)　实际输出控制在5.2V

Title	MAINCHIP_PAD_DDR3		
	POWER-DC/DC		
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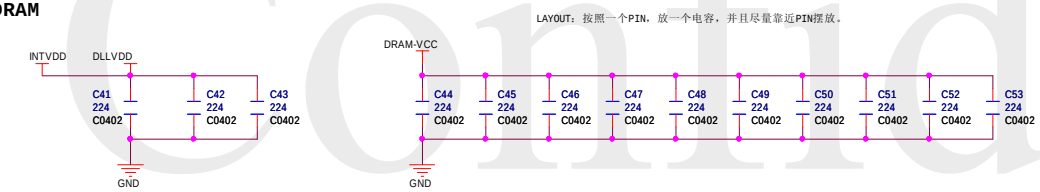
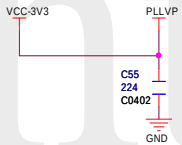
BESIDE CPU

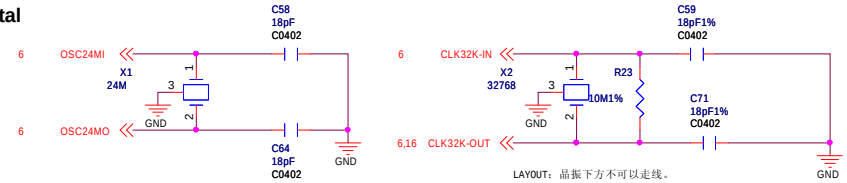
DRAM



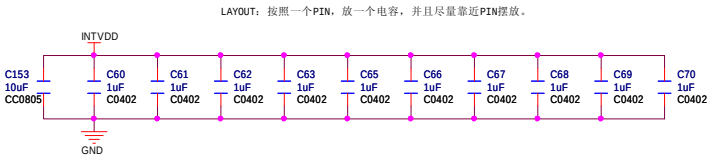
PLL



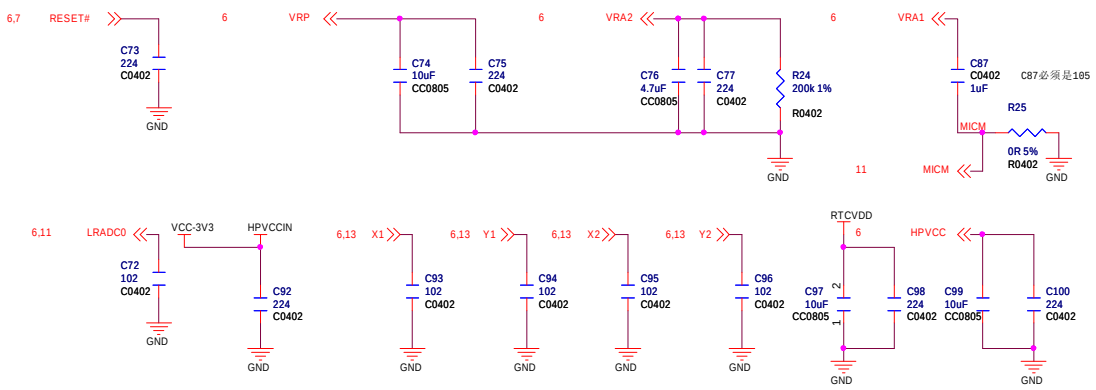
Crystal



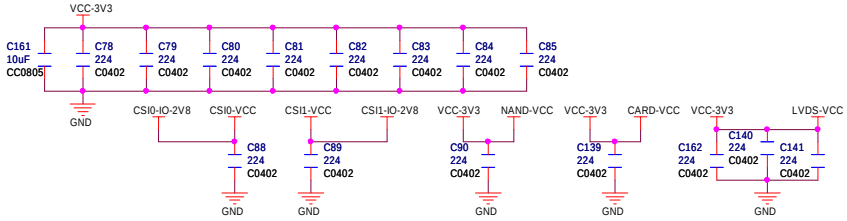
CORE



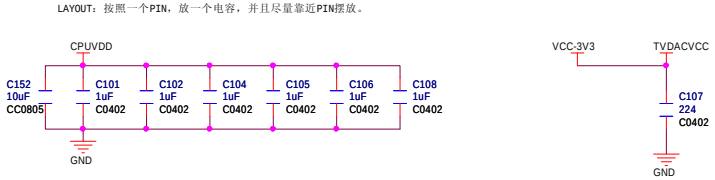
AUDIO&SYS&TP



PIO-INTFACE

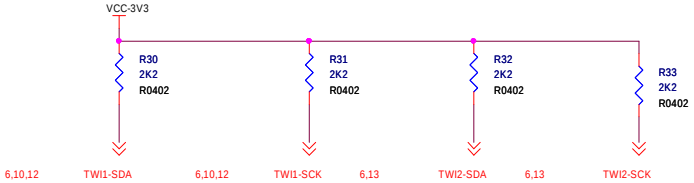


CPU&TV

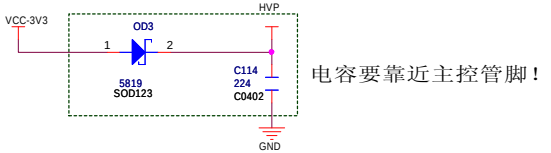


USB

TWI-PULLUP



HDMI



电容要靠近主控管脚！

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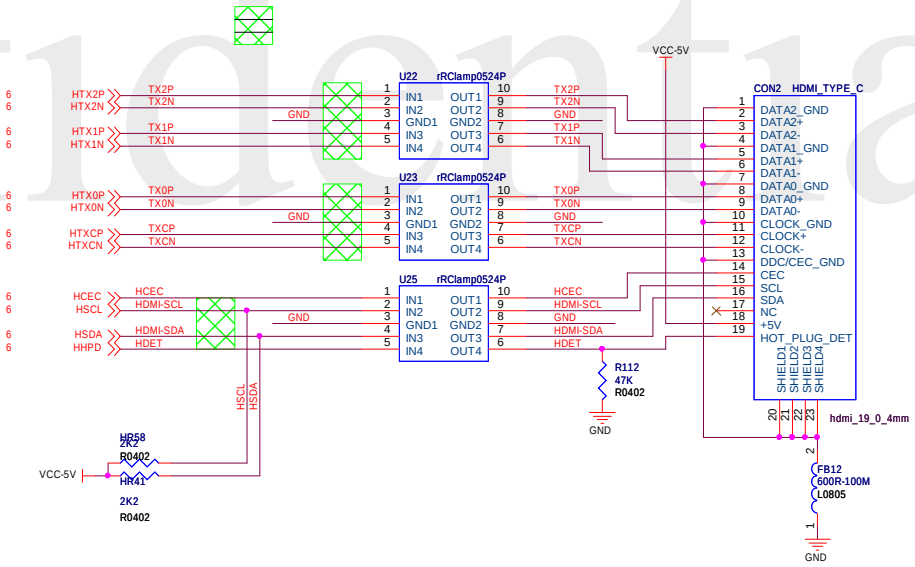
HDMI-CSI0

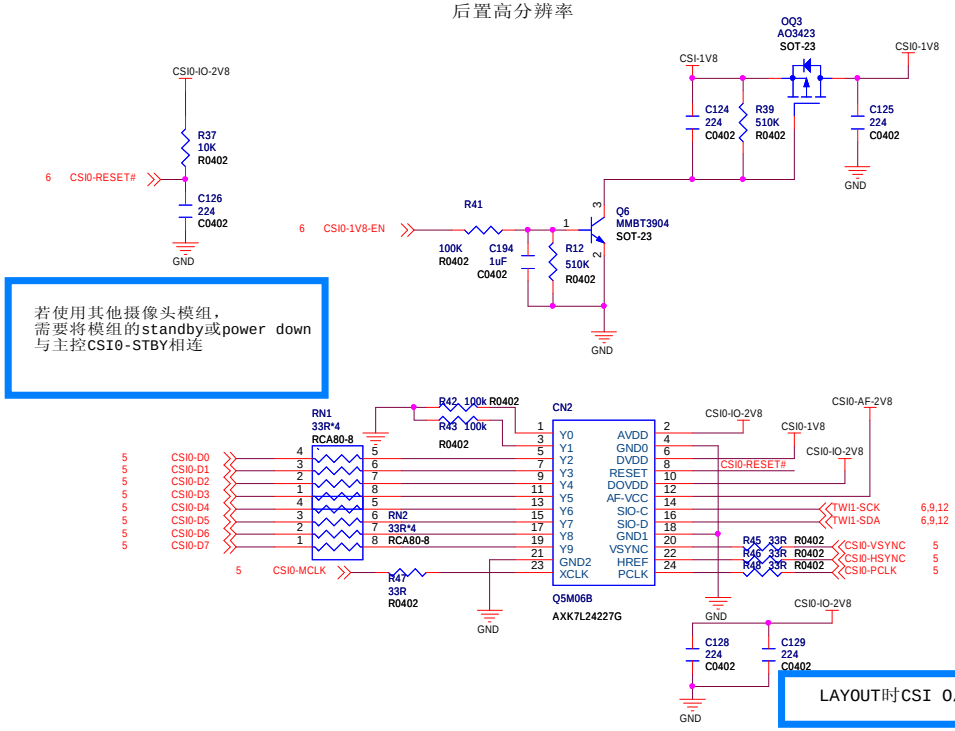
HDMI

Differential pairs
Z0= 100 ohm



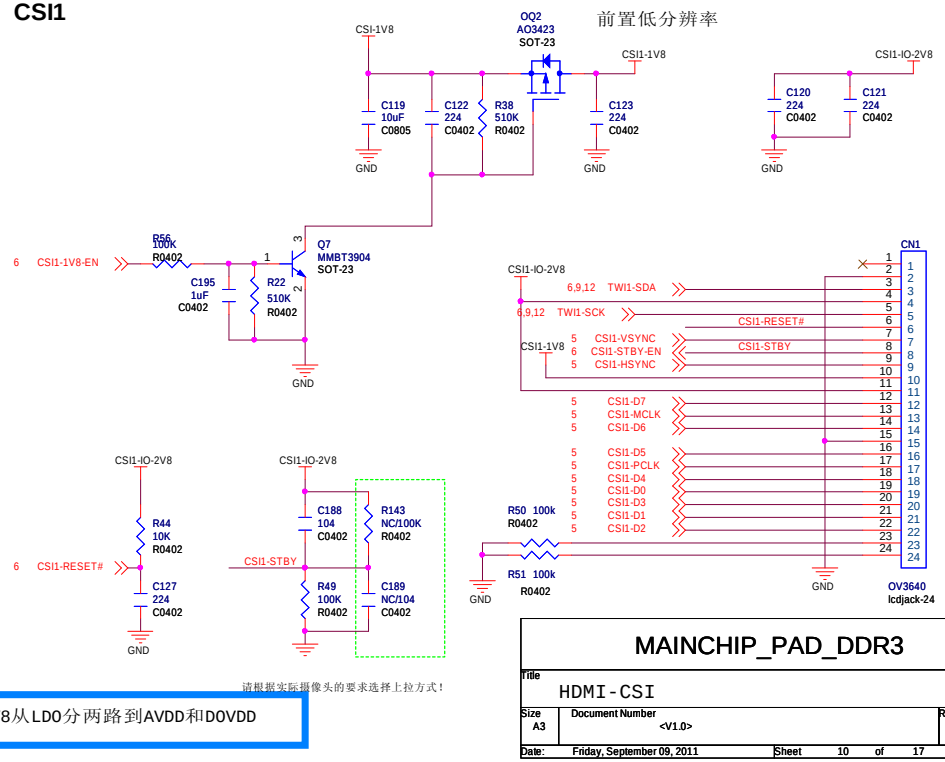
CSI0

后置高分辨率



CSI1

前置低分辨率



LAYOUT时CSI 0/1-IO-2V8从LDO分两路到AVDD和DOVDD

MAINCHIP_PAD_DDR3

Title	HDMI-CSI	
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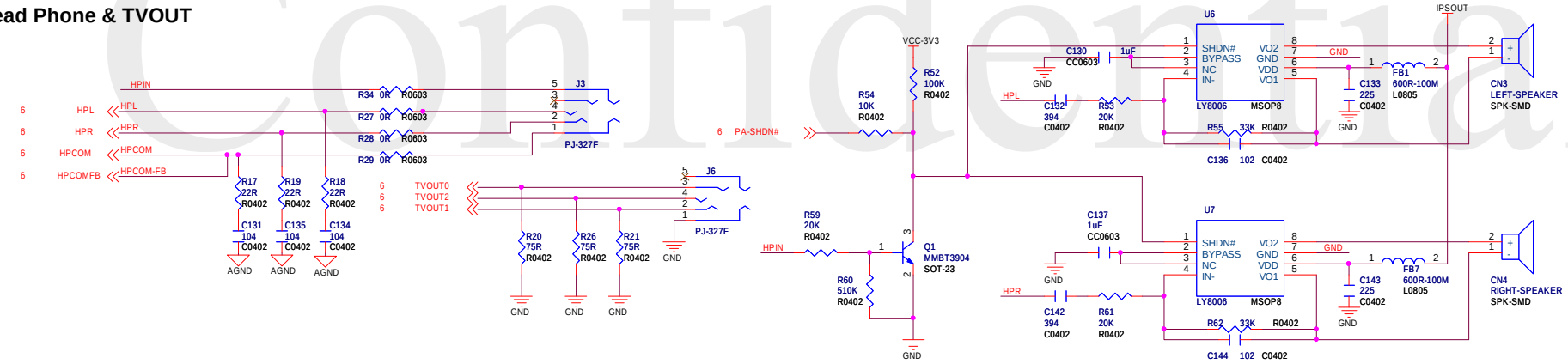
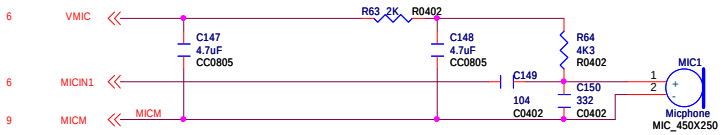
HP-KEY-MIC-IR-TVOUT-MT

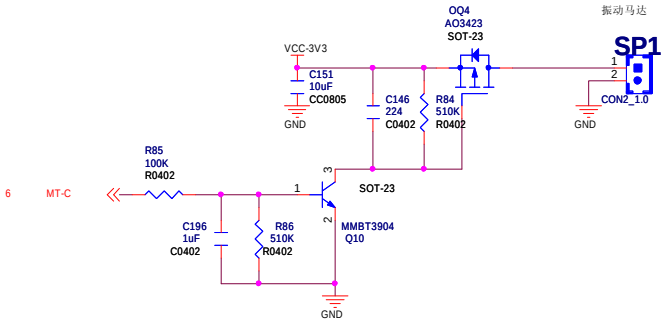
Head Phone & TVOUT



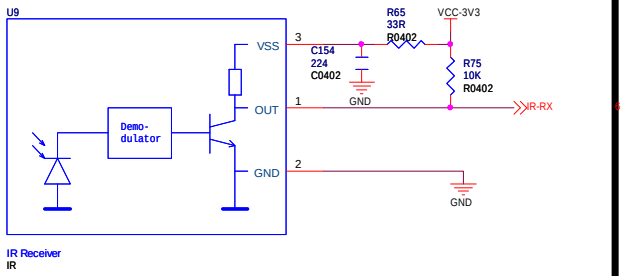
Microphone



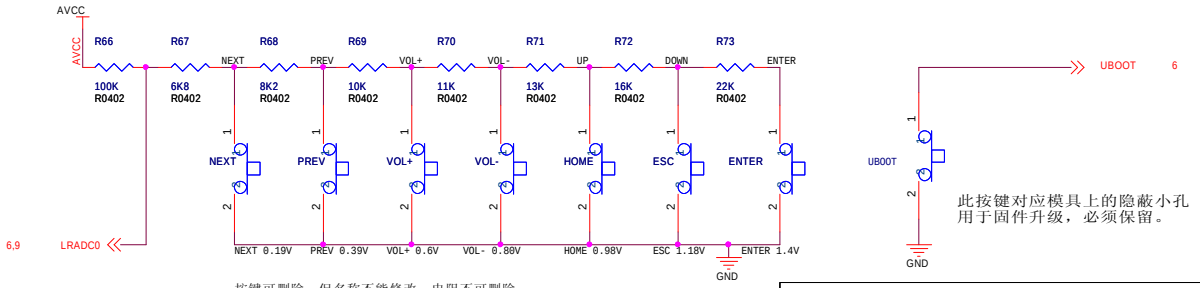
Motor



IR MODULE



KEY



按键可删除，但名称不能修改，电阻不可删除。

此按键对应模具上的隐蔽小孔用于固件升级，必须保留。

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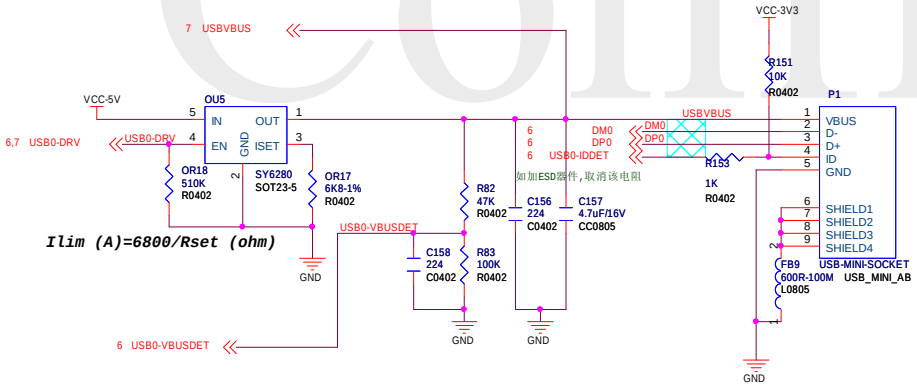
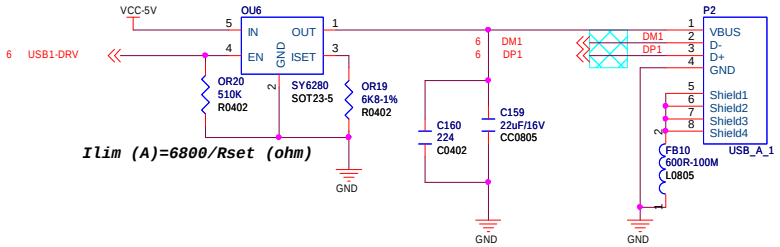
USB-CARD-DEBUG-GS

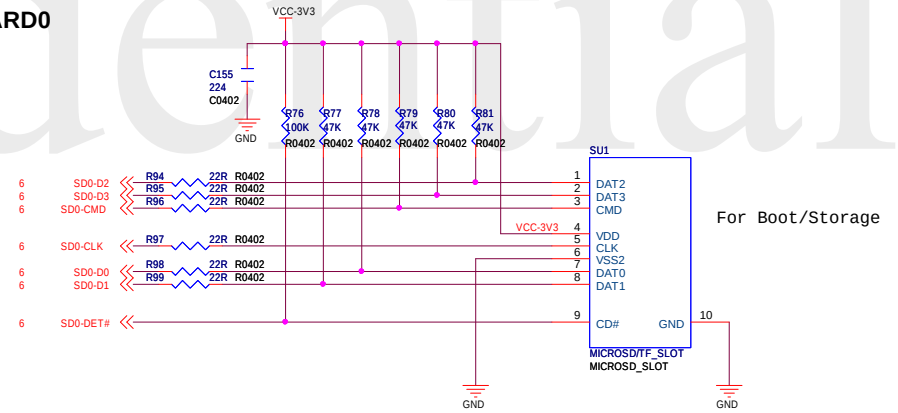
USB





Differential pairs
Z0= 90 ohm

CARD0

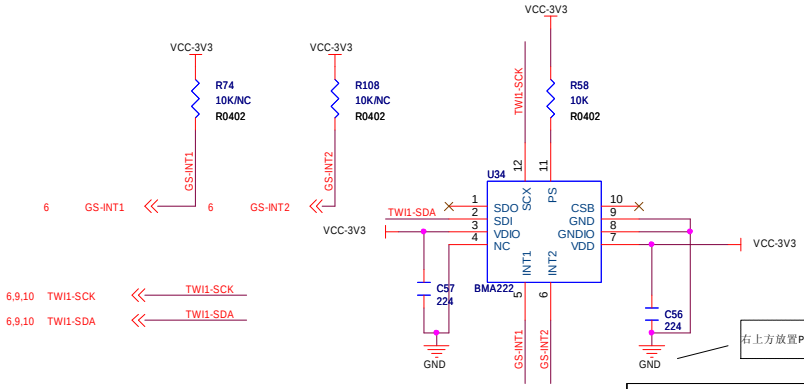


For Boot/Storage

DEBUG

预留DEBUG测试点，以备调试使用

G-SENSOR



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LCD

HR22 = (8.06/Vfb - 6.9) K
Vfb = 100mv : HR22 = 73K
Vfb = 150mv : HR22 = 47K
Vfb = 200mv : HR22 = 33K
Vfb = 250mv : HR22 = 25K
Vfb = 300mv : HR22 = 20K
Vfb = 350mv : HR22 = 16K

确保与触摸板的信号连接一致。

LVDS连接示意图

LCD0-D0	LVDS0-VP0
LCD0-D1	LVDS0-VN0
LCD0-D2	LVDS0-VP1
LCD0-D3	LVDS0-VN1
LCD0-D4	LVDS0-VP2
LCD0-D5	LVDS0-VN2
LCD0-D6	LVDS0-VPC
LCD0-D7	LVDS0-VNC
LCD0-D8	LVDS0-VP3
LCD0-D9	LVDS0-VN3

lcd_hsd070idw_60p_top
AT070TN93
CON50

电容屏信号连接示意图

CON
con12_cm0_5

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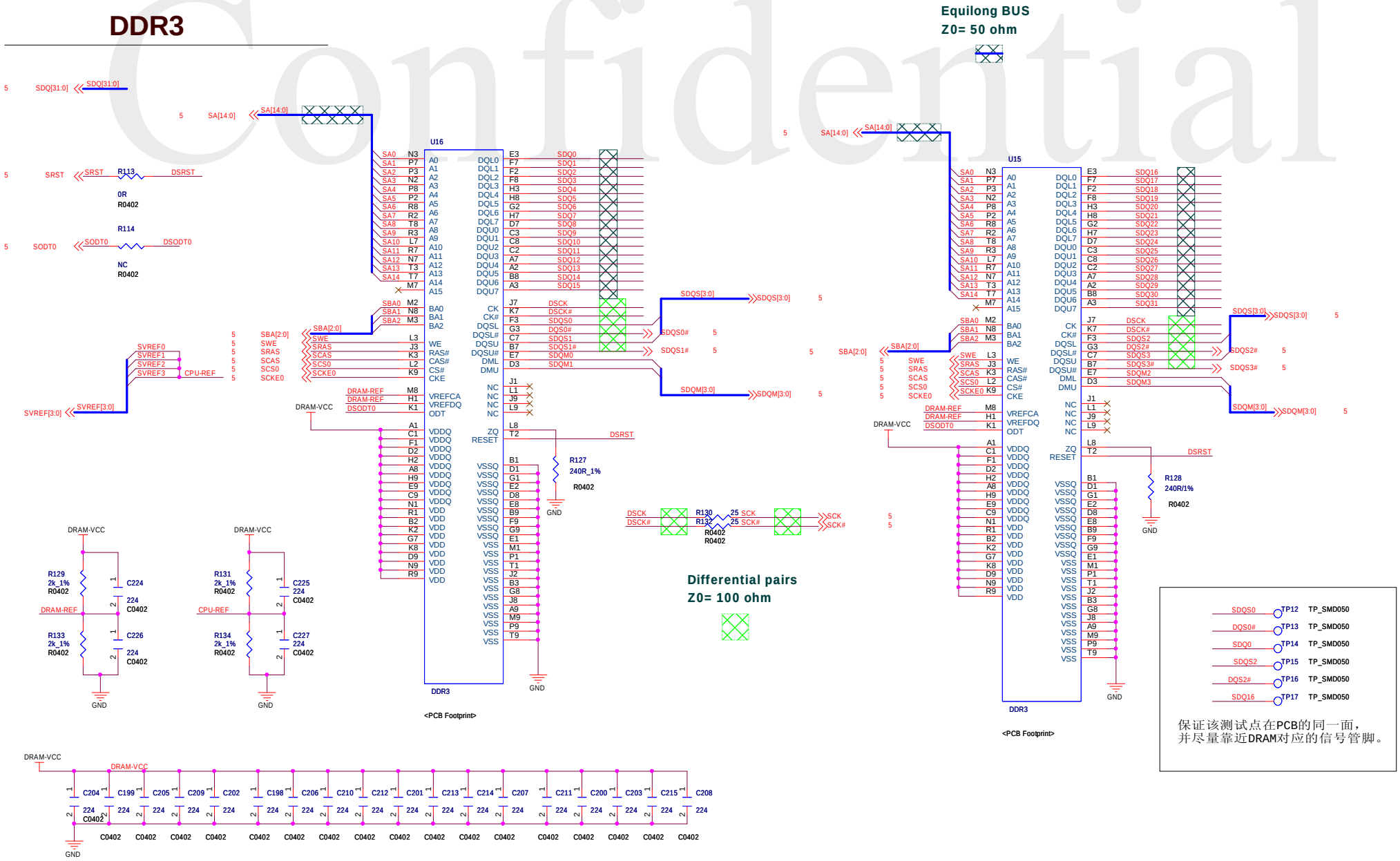
MAINCHIP_PAD_DDR3

DDR3



DQ0-7、DQM0、DQS0 Length matching 100mil
DQ8-15、DQM1、DQS1 Length matching 100mil
DQ16-23、DQM2、DQS2 Length matching 100mil
DQ24-31、DQM3、DQS3 Length matching 100mil
DA、CONTROL、CK Length matching 300mil
DQSn、DQSn# Differential pairs Z0= 100 ohm, Length matching 10mil
CK、CK# Differential pairs Z0= 100 ohm, Length matching 10mil

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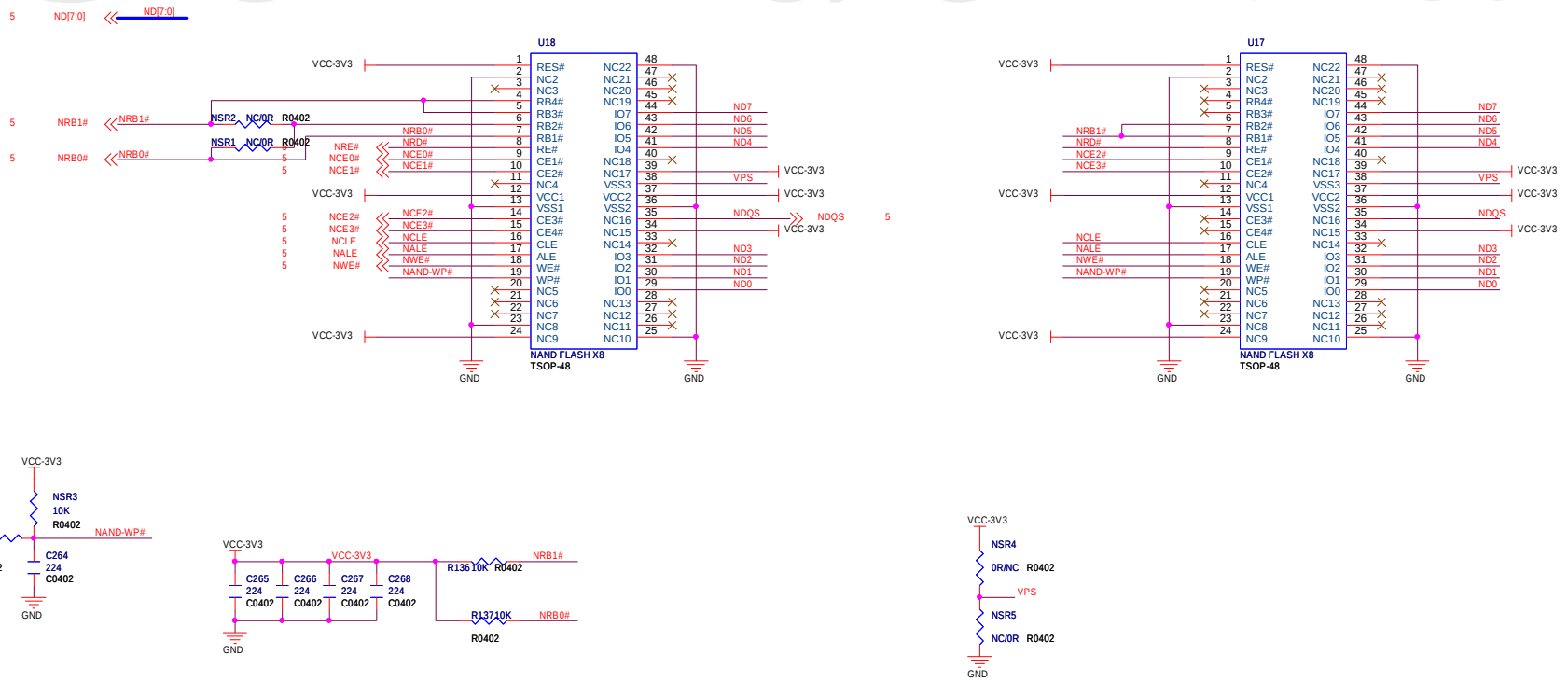
NAND Flash

TSOP-48 Nand



(1) 接1片单片选Nand 时，NSR2、NSR1断开
(2) 接1片双片选Nand 时，连接NSR2，断开NSR1
(3) 接1片四片选Nand 时，连接NSR1，断开NSR2
(4) 接2片单片选或接2片双片选Nand时，连接NSR1，断开NSR2
(5) 接Intel、Toshiba、Samsung 2xnm TSOP Nand时， NSR4连接，NSR5断开；其它的NSR4断开，NSR5连接

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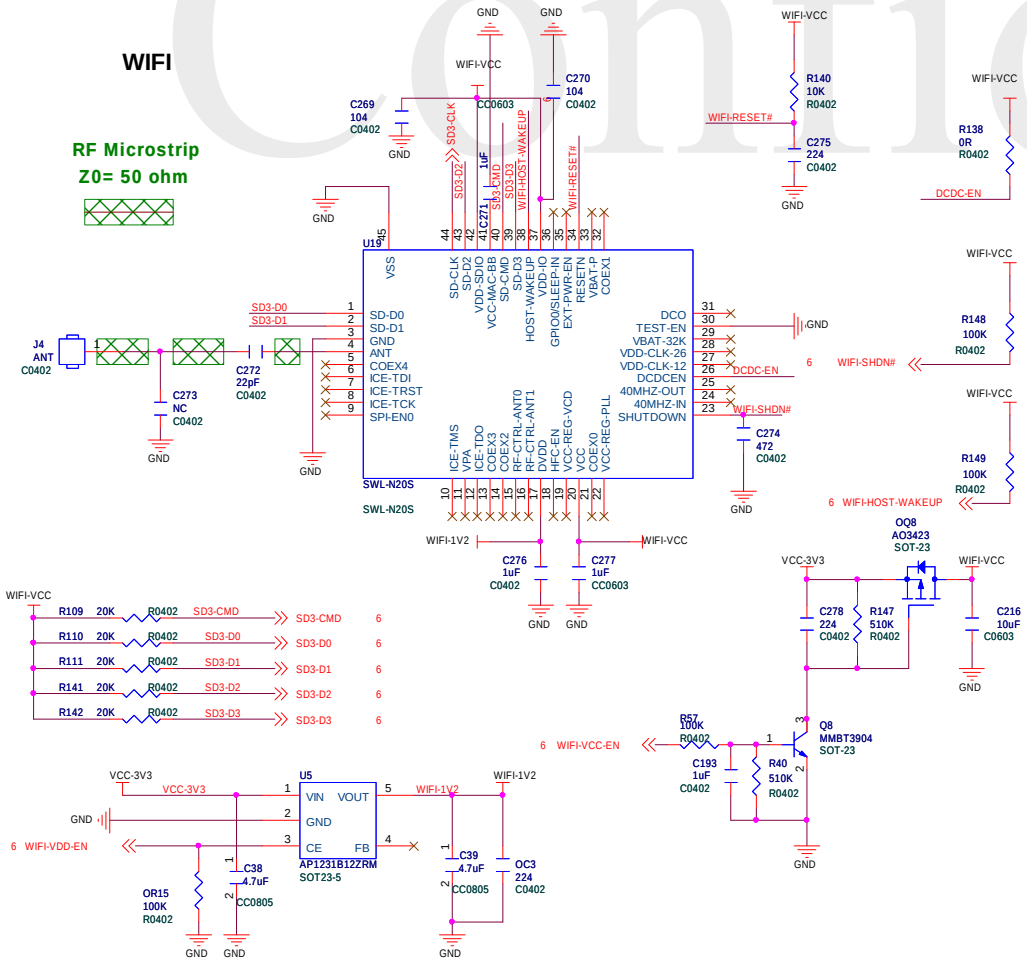
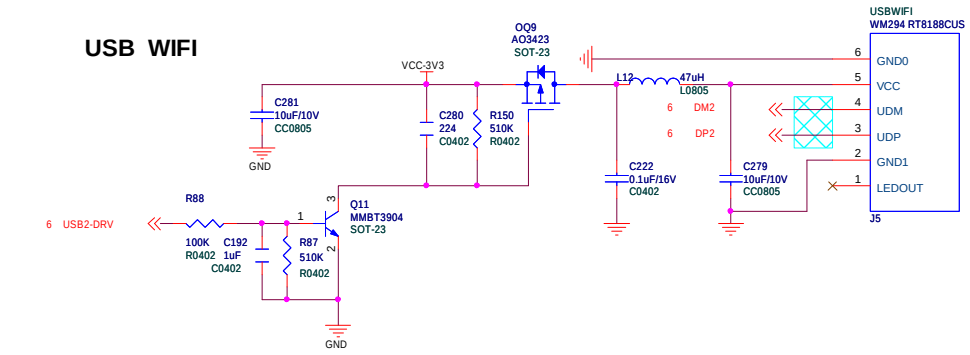
WIFI-BT

WIFI

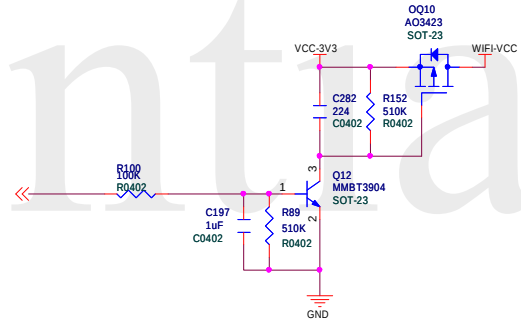
RF Microstrip
Z0= 50 ohm



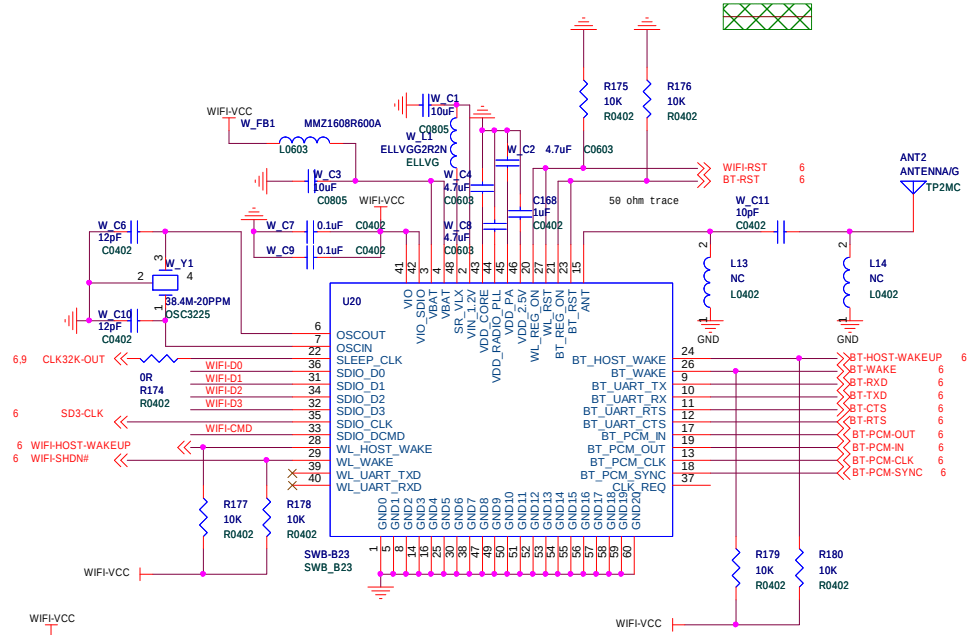
USB WIFI

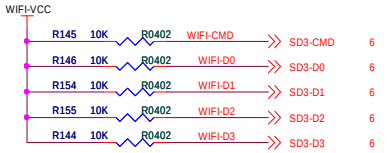


WIFI+BT



RF Microstrip
Z0= 50 ohm





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GPS RF Receiver core

Must be placed into
RF shielding case

RF Microstrip
Z0= 50 ohm

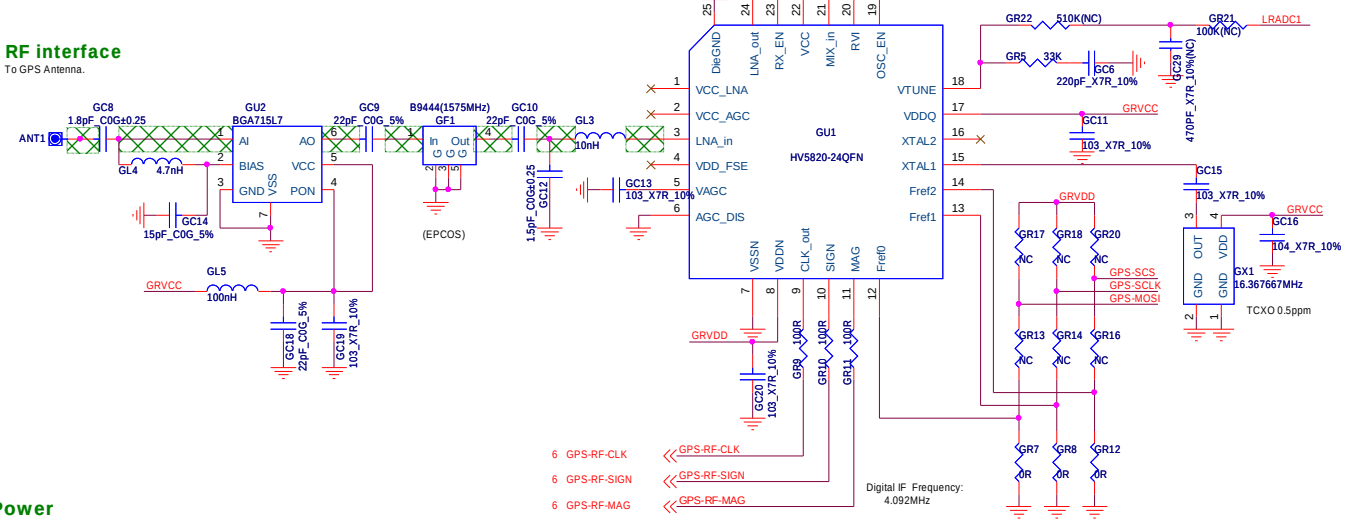
For good grounding, put 9 vias under RF IC die ground pad Pin25.

Opreation Mode Description:

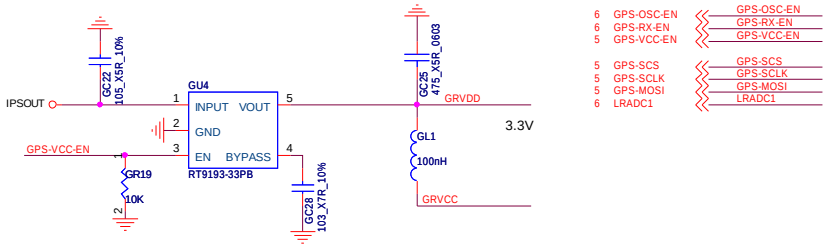
RX_EN	OSC_EN	Mode
0	0	All stand by
0	1	Oscillator only
1	0	Full active (external reference)
1	1	Full active (internal oscillator)

RF interface

To GPS Antenna.



GPS Power



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