Notes: Unless Otherwise Stated

Scheme Spec:

FLASH: MLC, 3.3V
DRAM: DDR2/3 1.8V /1.5V
Key: NEXT,PREV,Vol+, Vol-,UP,DOWN, ENTER,UBOOT
Power: DCIN, 5V, 2A; BAT, 3.7V, 3600mAH
USB0: OTG
USB1: HOST
USB2: HOST
WIFI: SDIO WIFI
Card: TFcard*2
Other: GPS,FM, 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
	1.8V	1000mA	CSI-CORE
	1.5V/1.8V	1000mA	DRAM
	3.3V	1000mA	VCC/LCD/NAND//WIFI
	5V	2000mA	HDMI/USB
	2.8V	300mA	CSI0-AF-VCC
	1.2V	300mA	WIFI
RT9193-33PB	3.3V	300mA	GPS

Schematics Index:

Rev	Description	Date	Drawn	Checked	Approved
PAD_MAINCHIP_STD_V1.13	没有ACIN的时候与USBVBUS短接	2011-06-30	Leo		
PAD_MAINCHIP_STD_V1.14	增加LVDS和CTP的连接方式	2011-07-06	Leo		
PAD_MAINCHIP_STD_V1.15	更改了UBOOT按键电路,WIFI电源电路	2011-07-07	Leo		
PAD_MAINCHIP_STD_V1.15	更改了USB限流电路	2011-07-08	Leo		
PAD_MAINCHIP_STD_V1.15	更改了电源电路	2011-07-12	Leo		

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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	CP-RST
	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	SD1-DET#
	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	LS-INT
	PH21	EINT21	TP-INT
	PH22	SDC1_CMD	SDC1
	PH23	SDC1_CLK	
	PH24	SDC1_D0	
	PH25	SDC1_D1	
	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	CP-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-GPIO0
	PI21	GPIO_OUT	BT-GPIO1

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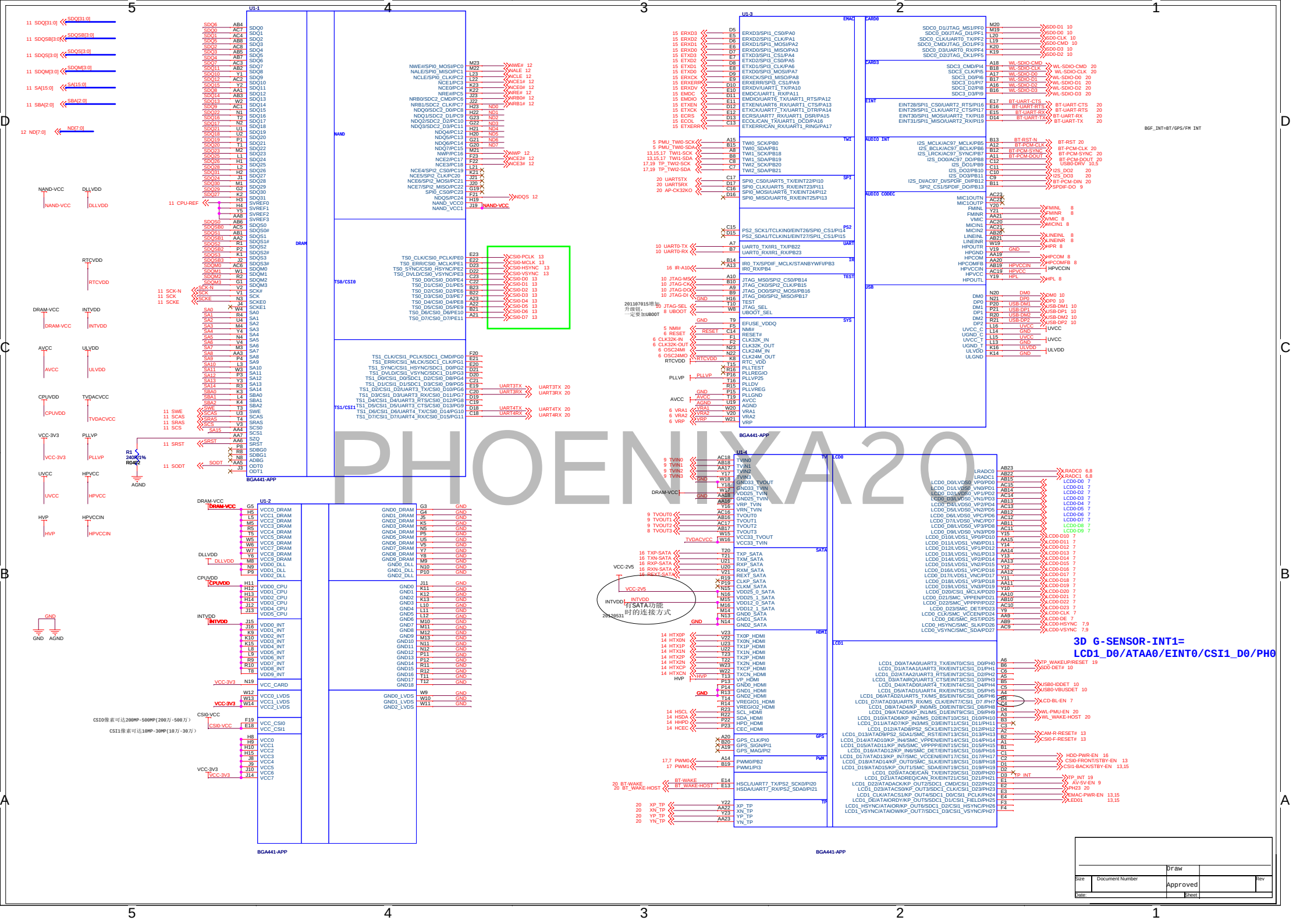
U1-1
U1-2
U1-3
U1-4
NAND
DRAM
TS0/CSI0
TS1/CSI1
BGA441-APP
EMAC
CARD0
CARD3
EINT
AUDIO INT
AUDIO CODEC
USB
TWI
SPI
PS2
UART
IR
TEST
SYS
TV
LCD0
LCD1
SATA
HDMI
GPS
PWM
TP
VCC-2V5
INTVDD
有SATA功能
时的连接方式
3D G-SENSOR-INT1=
LCD1_D0/ATAA0/EINT0/CSI1_D0/PH0
BGF_INT=BT/GPS/FM INT
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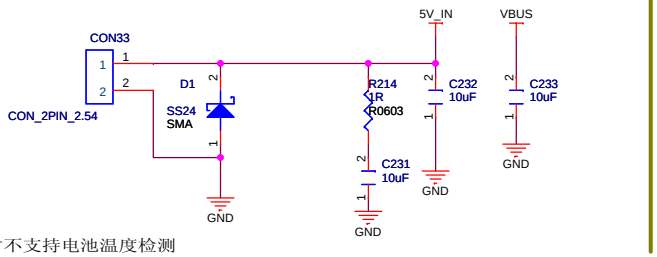
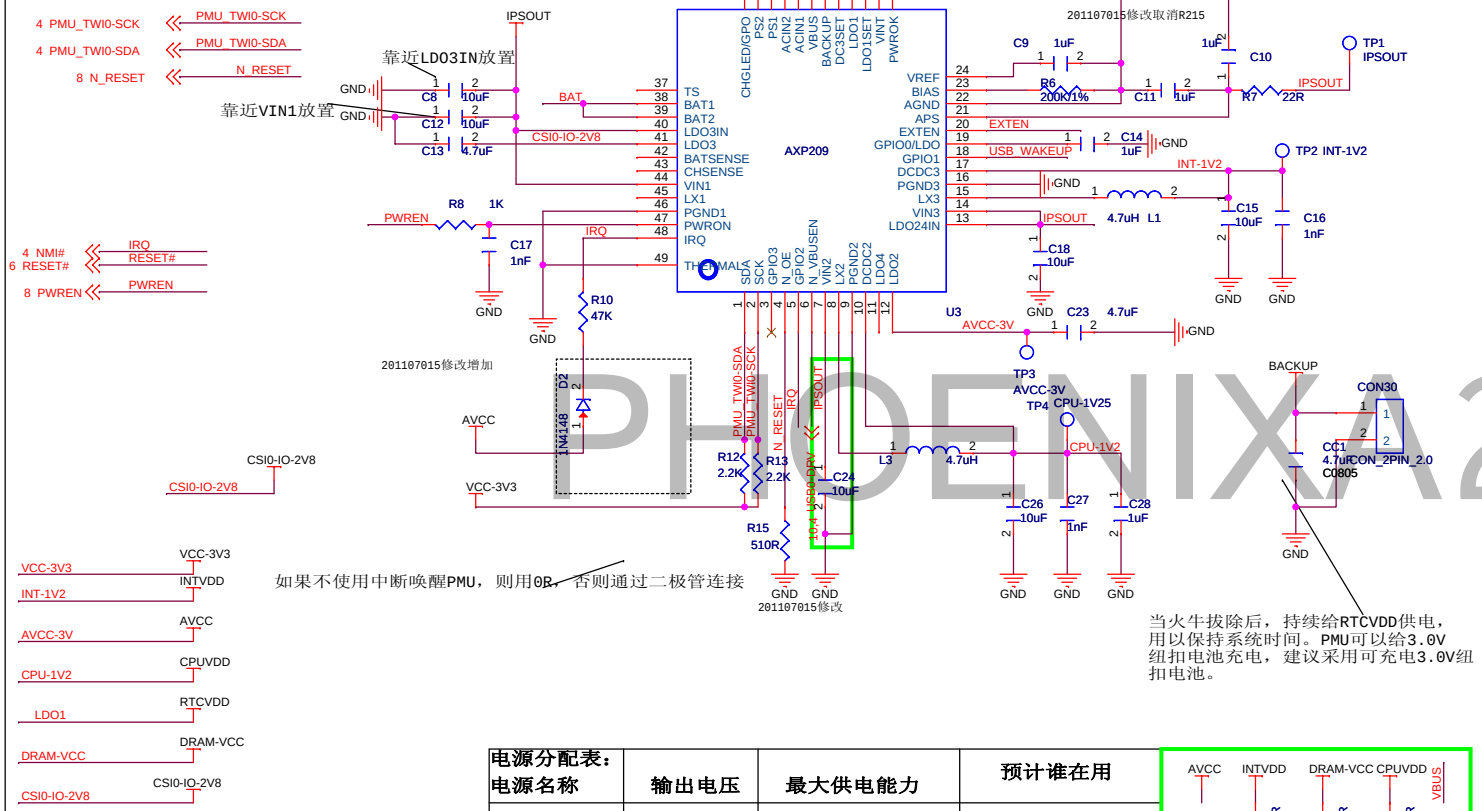
POWER INPUT



此时不支持电池温度检测



如果不使用中断唤醒PMU，则用0R，否则通过二极管连接

当火牛拔除后，持续给RTCVDD供电，用以保持系统时间。PMU可以给3.0V纽扣电池充电，建议采用可充电3.0V纽扣电池。

VCC-3V3
INTVDD
INT-1V2
AVCC
AVCC-3V
CPUVDD
CPU-1V2
RTCVDD
LDO1
DRAM-VCC
DRAM-VCC
CSI0-IO-2V8
CSI0-IO-2V8

AXP209说明:

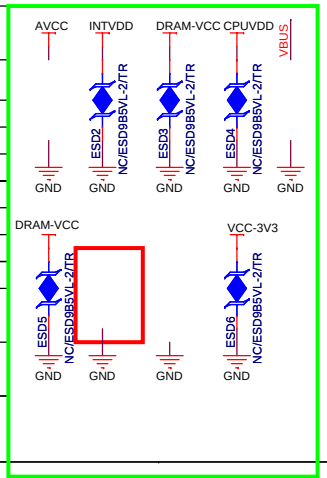
DCDC2 0.7-2.27V 可调/1.6A Max---默认电压可设置
DCDC3 0.7-3.5V 可调/1.2A Max--默认电压可设置
LDO2 1.8-3.3V可调/200mA--默认电压可设置
LDO3 0.7-3.5V可调/400mA Max---默认电压可设置
LDO4 1.8V-3.3V可调/200mA Max--默认电压可设置
GPIO-LDO 1.8-3.5V可调 50mA Max --需开机设置输出电压
DC3SET ---DCDC3输出电压设置PIN
LDO1SET ---LDO1输出电压设置PIN
PWM Charger 1.8A Max

DC3SET\LDO1SET 高电平接VINT

DC3SET	DCDC3 Voltage
HIGH	3.3V
LOW	1.8V
Floating	1.2V

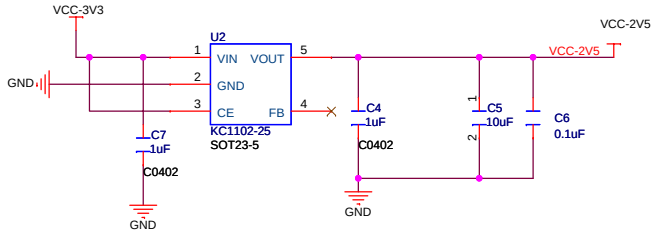
LDO1SET	LDO1 Voltage
HIGH	3.3V
LOW	1.3V

电源分配表: 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	INTERFACE/HDMI
AXP209 LDO1	1.3V	30mA	RTC
AXP209 LDO2	3V	200mA	AVCC
AXP209 LDO3	2.8V	200mA	CSI0-IO
AXP209 LDO4	2.8V	200mA	CSI1-IO
WP8965-18VF05GRR	1.8V	600mA	CSI-CORE
WL3022 DC/DC	1.5V/1.8V	1000mA	DRAM
WL3022 DC/DC	3.3V	1000mA	VCC/LCD/NAND/HDMI/WIFI
WP9266PE DC/DC	5V	1000mA	HDMI/USB
WP8935-28VF05GRR	2.8V	200mA-300MA	CSI0-AF-VCC
WP8965-12VF05GRR	1.2V	200mA-600MA	WIFI



CSI0-AF-2V8 LDO 2V8
CSI0-AF-VCC 200mA

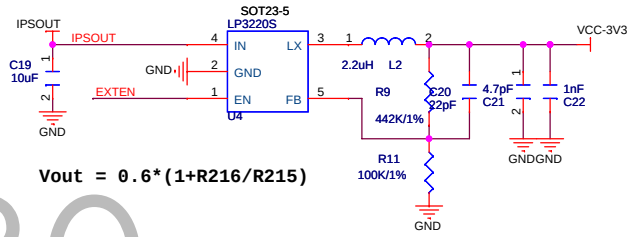
CSI-1V5 DC/DC 1V5
CSI-CORE 600mA



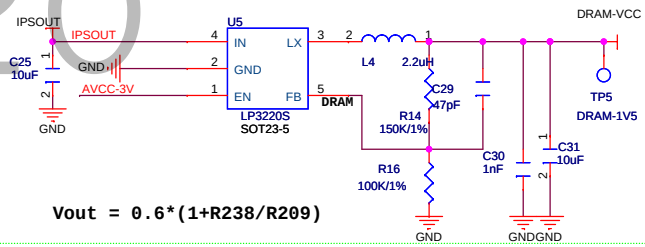
VCC-3V3 DC/DC 3V3

VCC/LCD/NAND/HDMI/WIFI

1000mA



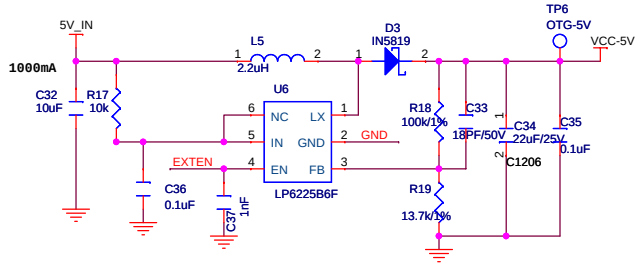
Vout = 0.6*(1+R216/R215)



Vout = 0.6*(1+R238/R209)

HDMI/USB OTG DC/DC 5V
HDMI/USB 1000mA

HDMI/USB OTG DC/DC 5V



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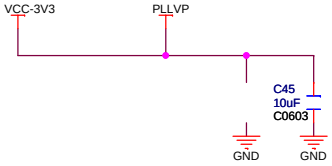
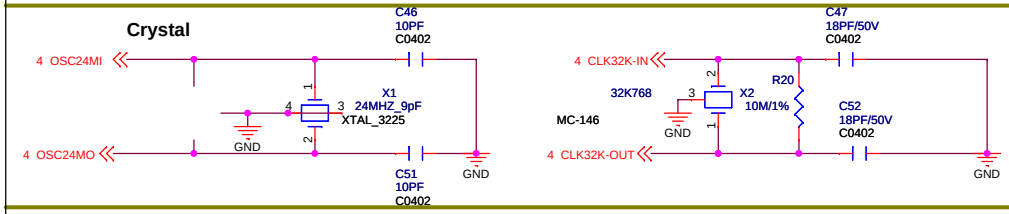
DRAM

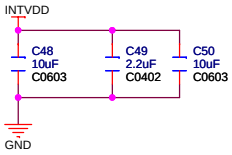
PLL



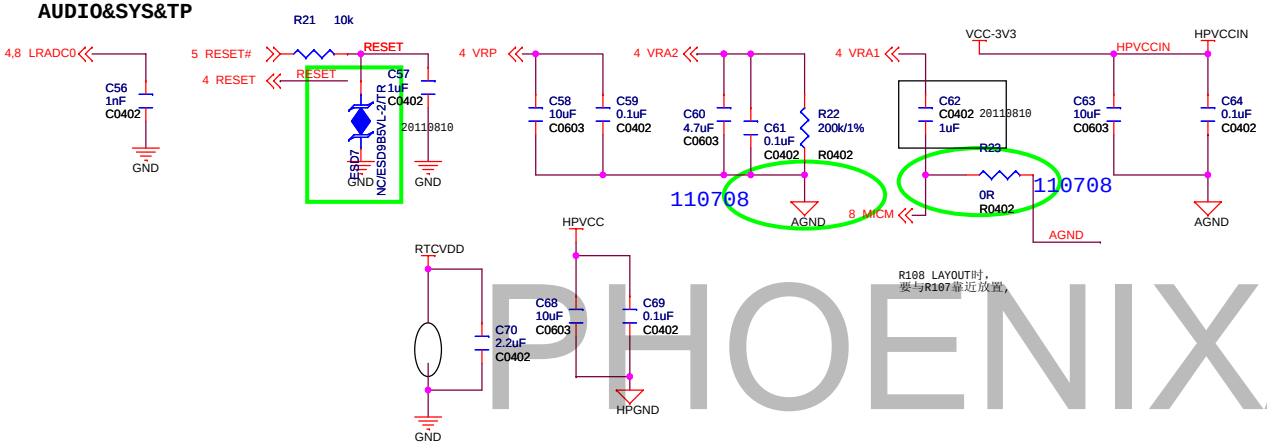
Crystal



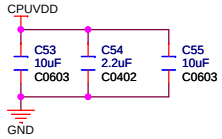
CORE



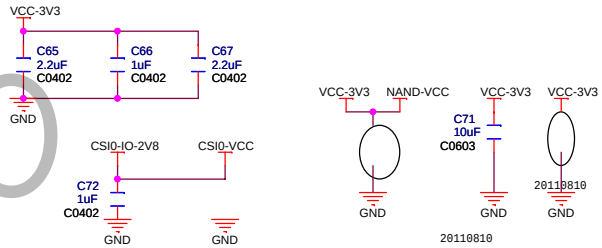
AUDIO&SYS&TP



CPU



PIO-INTFACE



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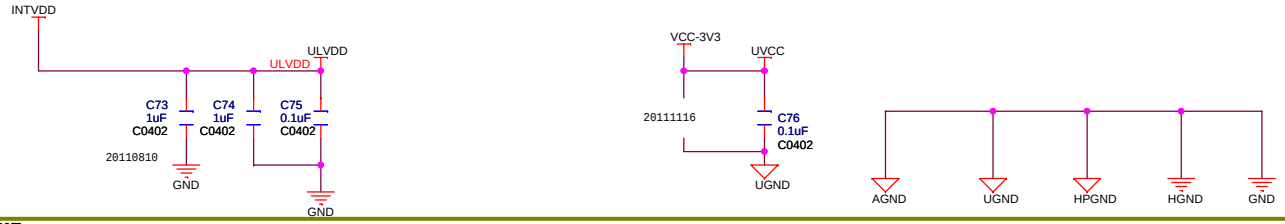

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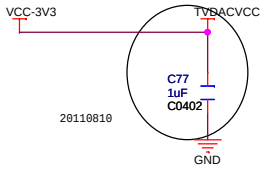

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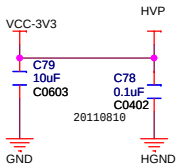

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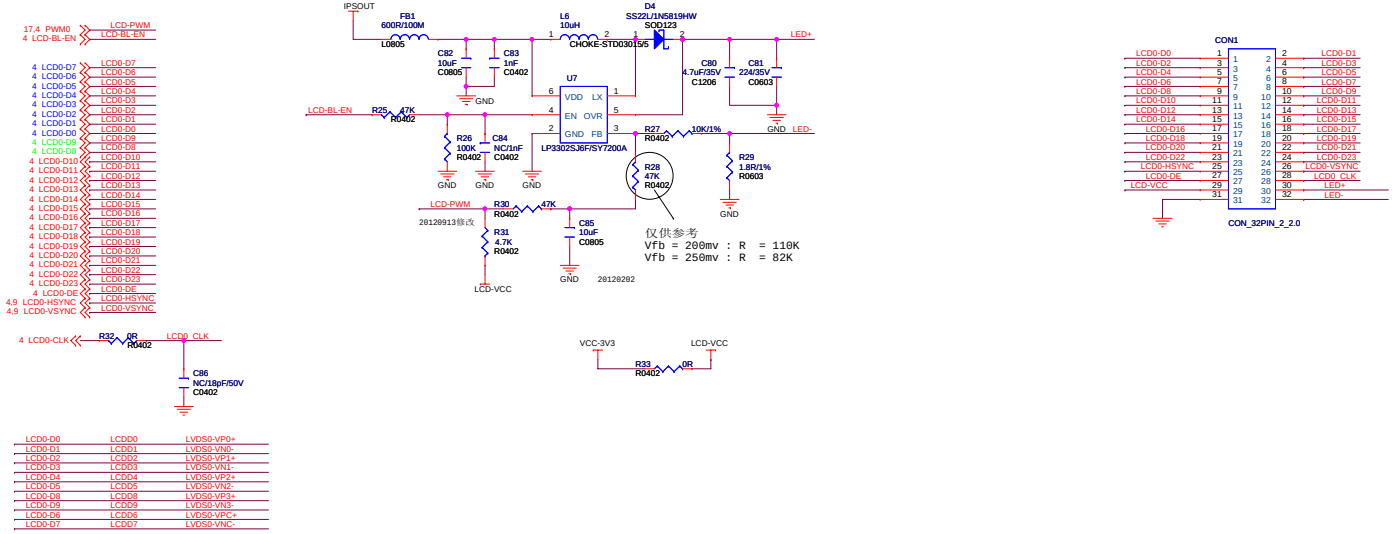
LCD BUFFER



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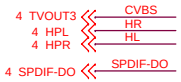
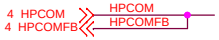
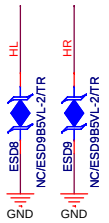
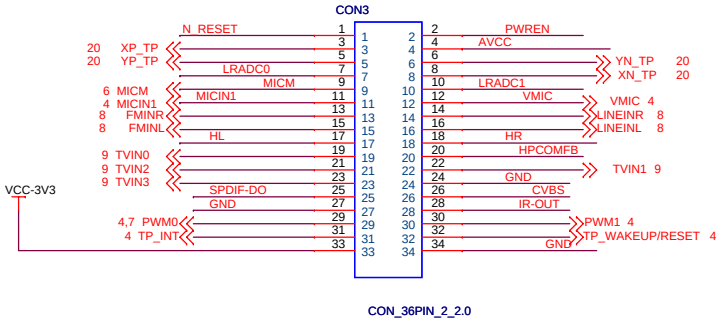
Head Phone & TVOUT

CVBS **SPDIF-DO**

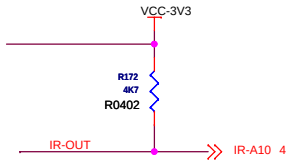








IR MODULE



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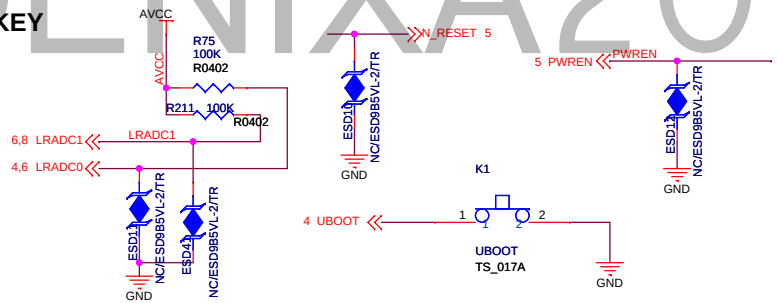

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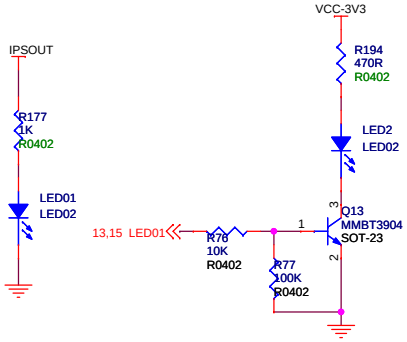

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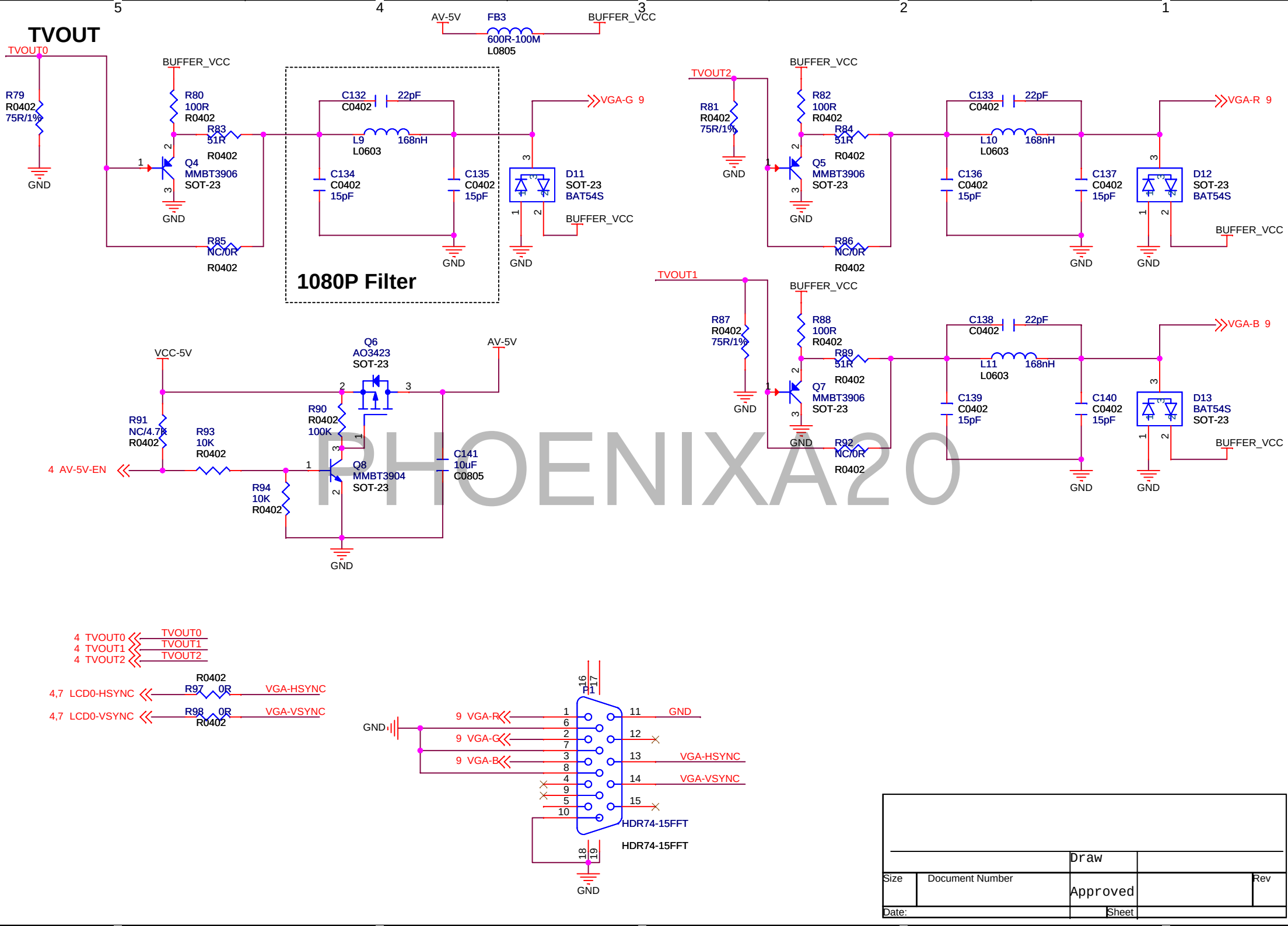
TVOUT



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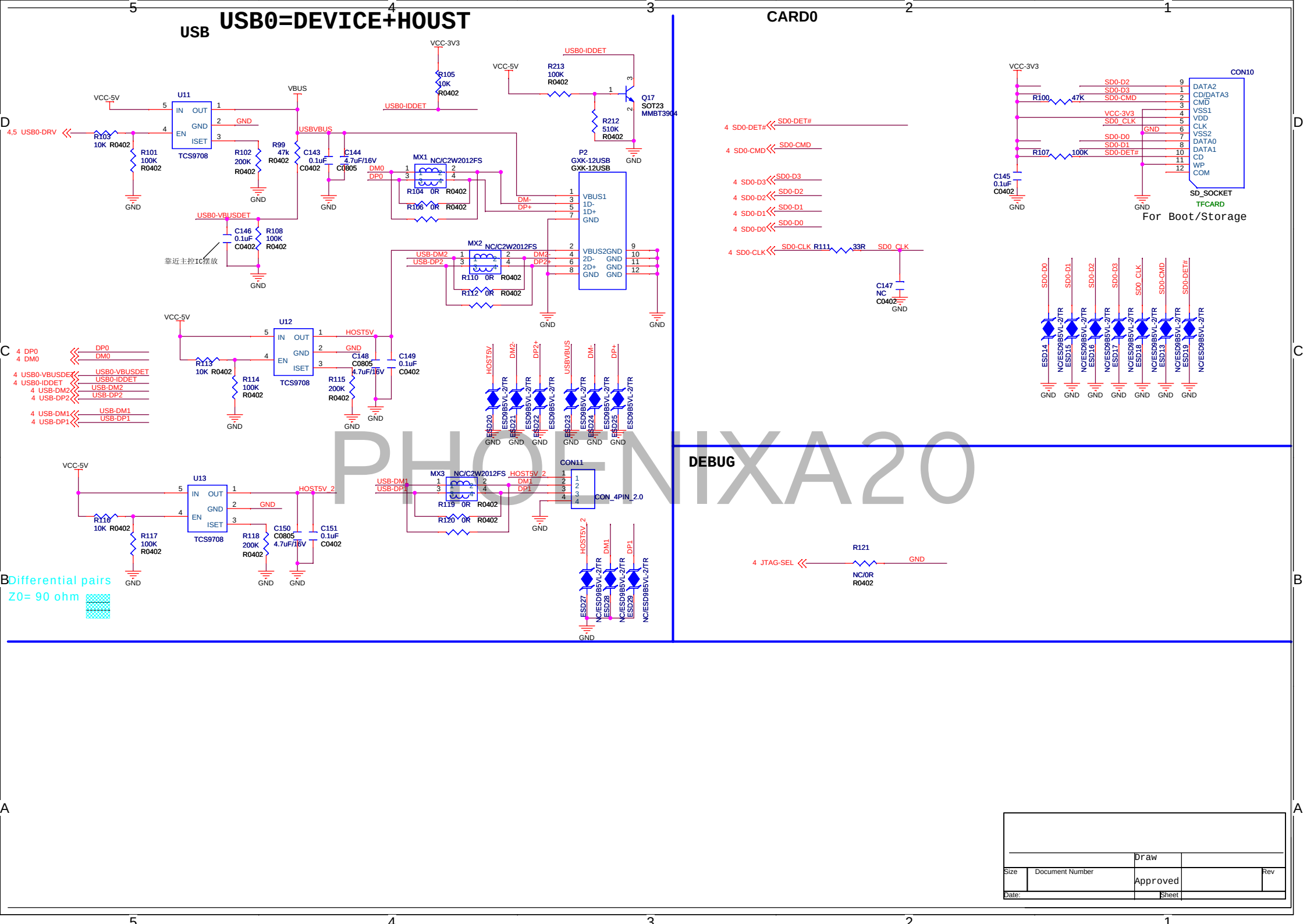
USB
USB0=DEVICE+HOUST
CARD0
DEBUG
U11
TCS9708
U12
TCS9708
U13
TCS9708
Q17
SOT23
MMBT3904
P2
GXK-12USB
MX1
NC/C2W2012FS
MX2
NC/C2W2012FS
MX3
NC/C2W2012FS
CON10
SD_SOCKET
TFCARD
CON11
CON_4PIN_2.0
For Boot/Storage
靠近主控IC摆放
Differential pairs
Z0= 90 ohm
PHOENIXA20
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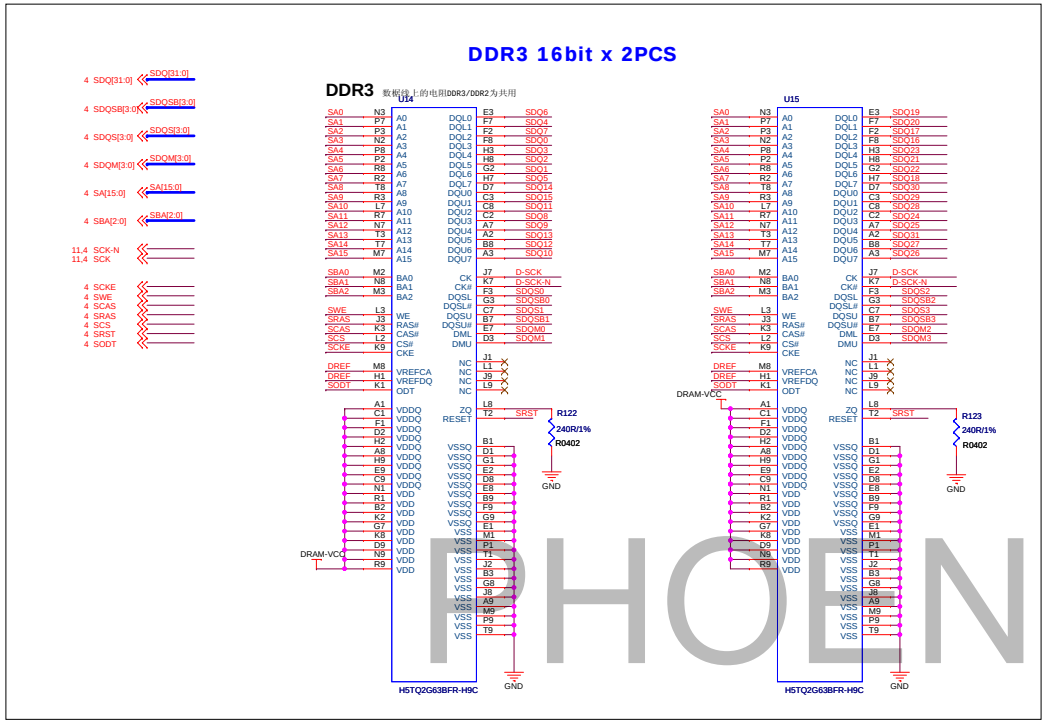

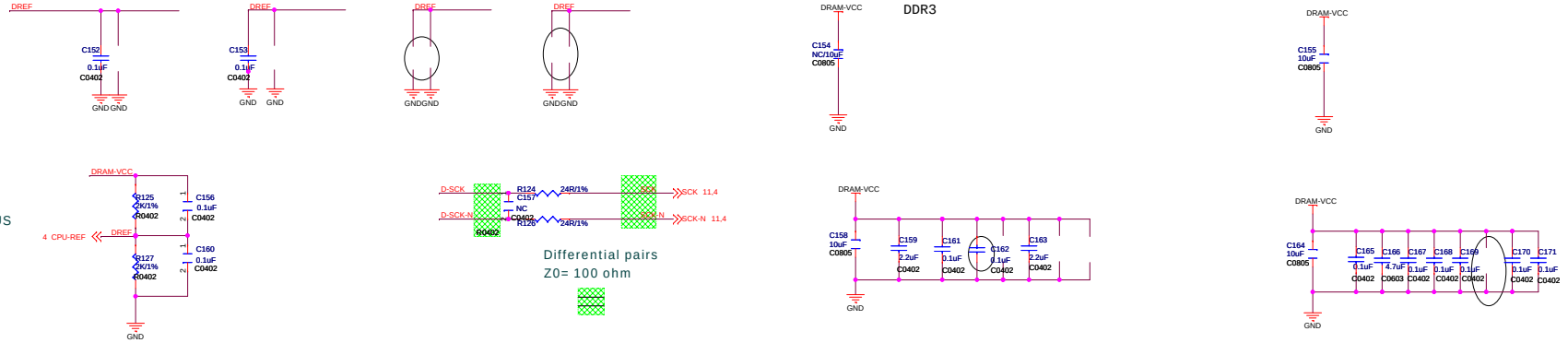

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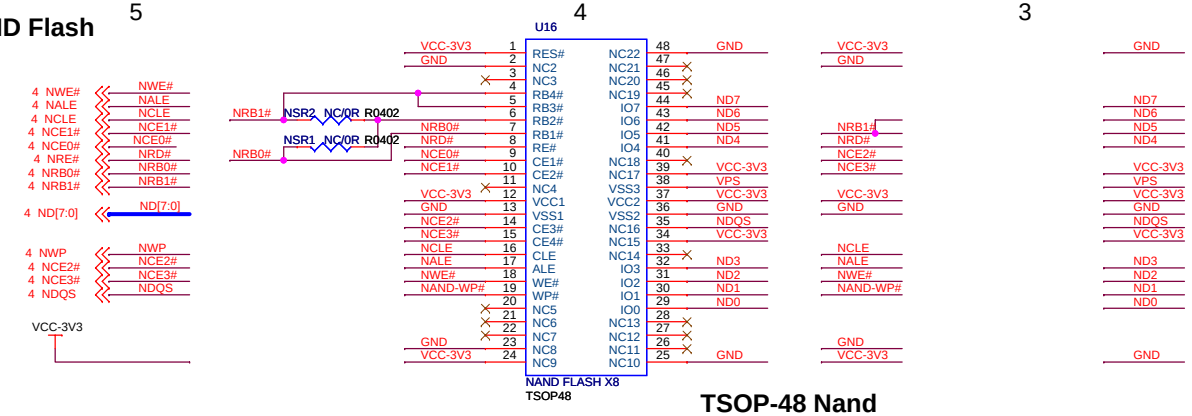
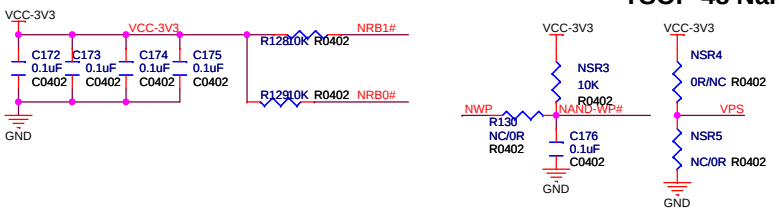
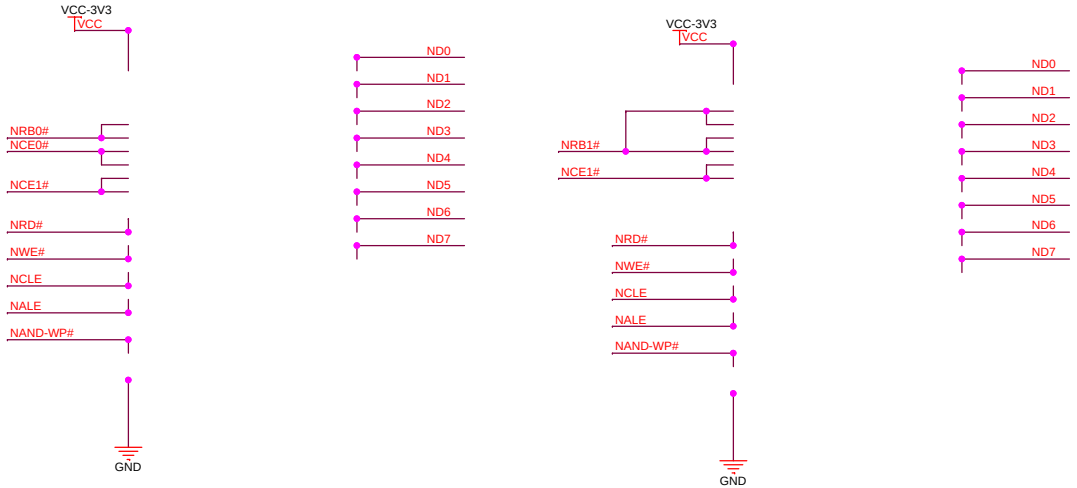
NAND Flash



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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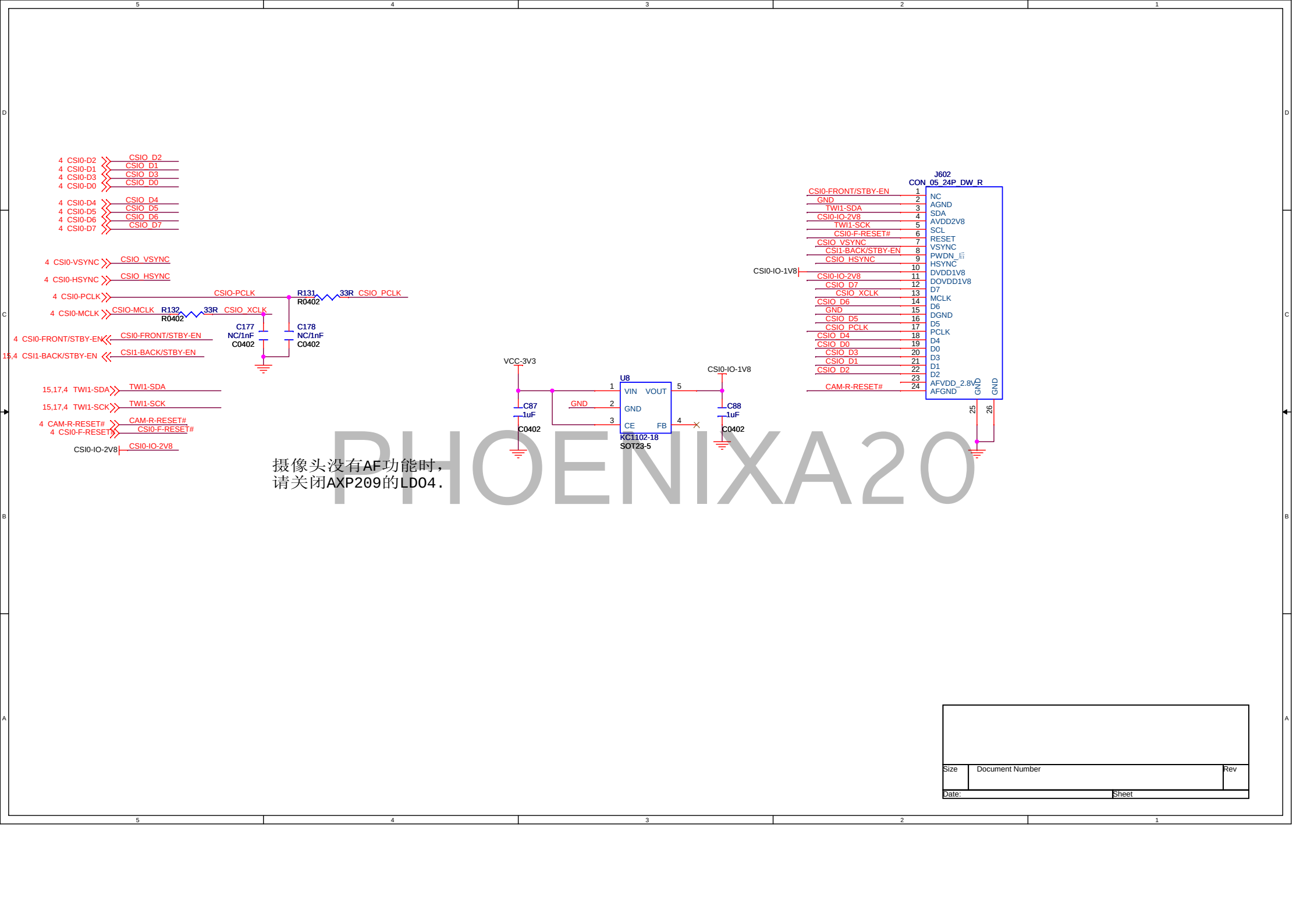

摄像头没有AF功能时，
请关闭AXP209的LDO4.

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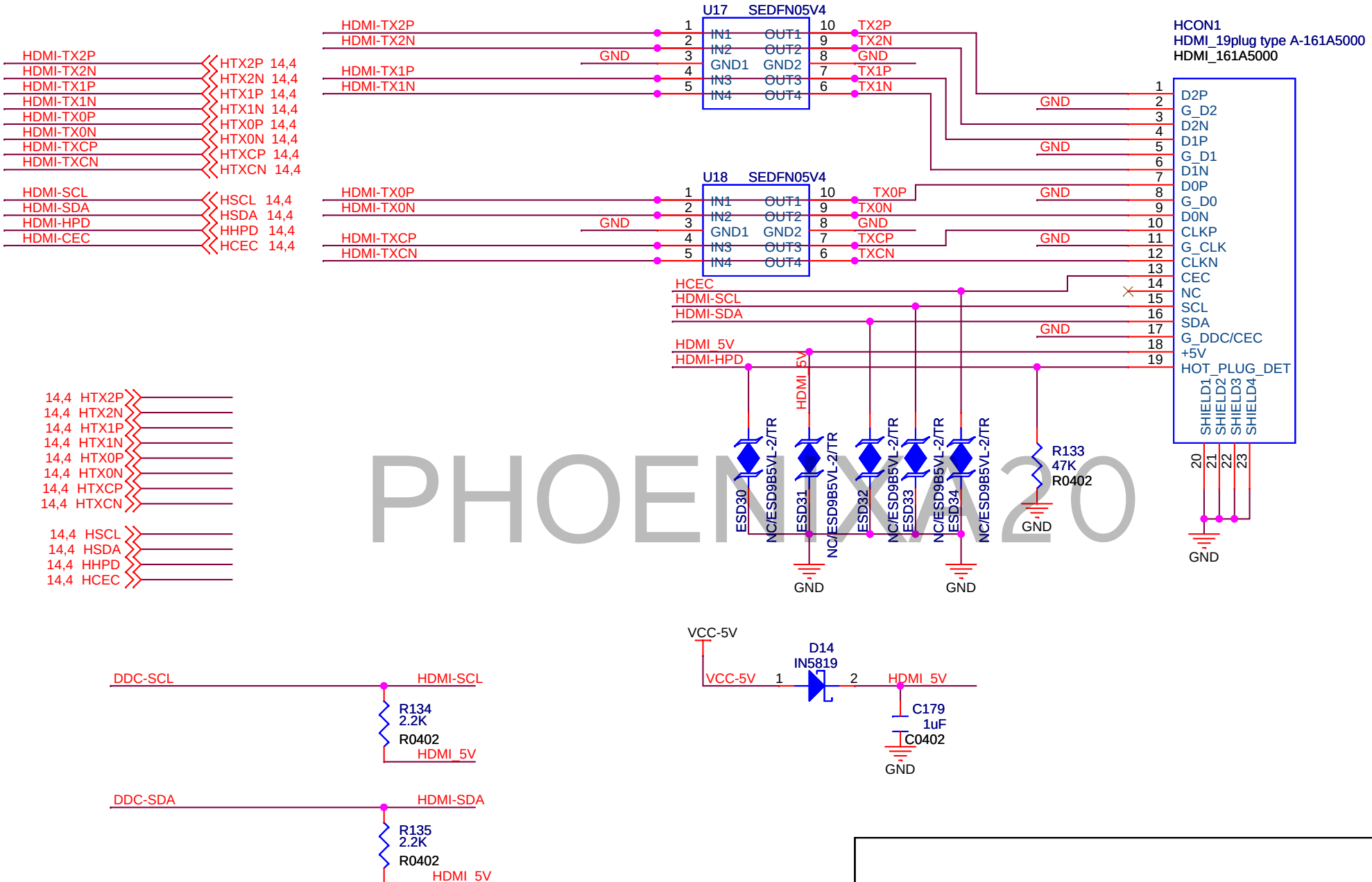
HDMI



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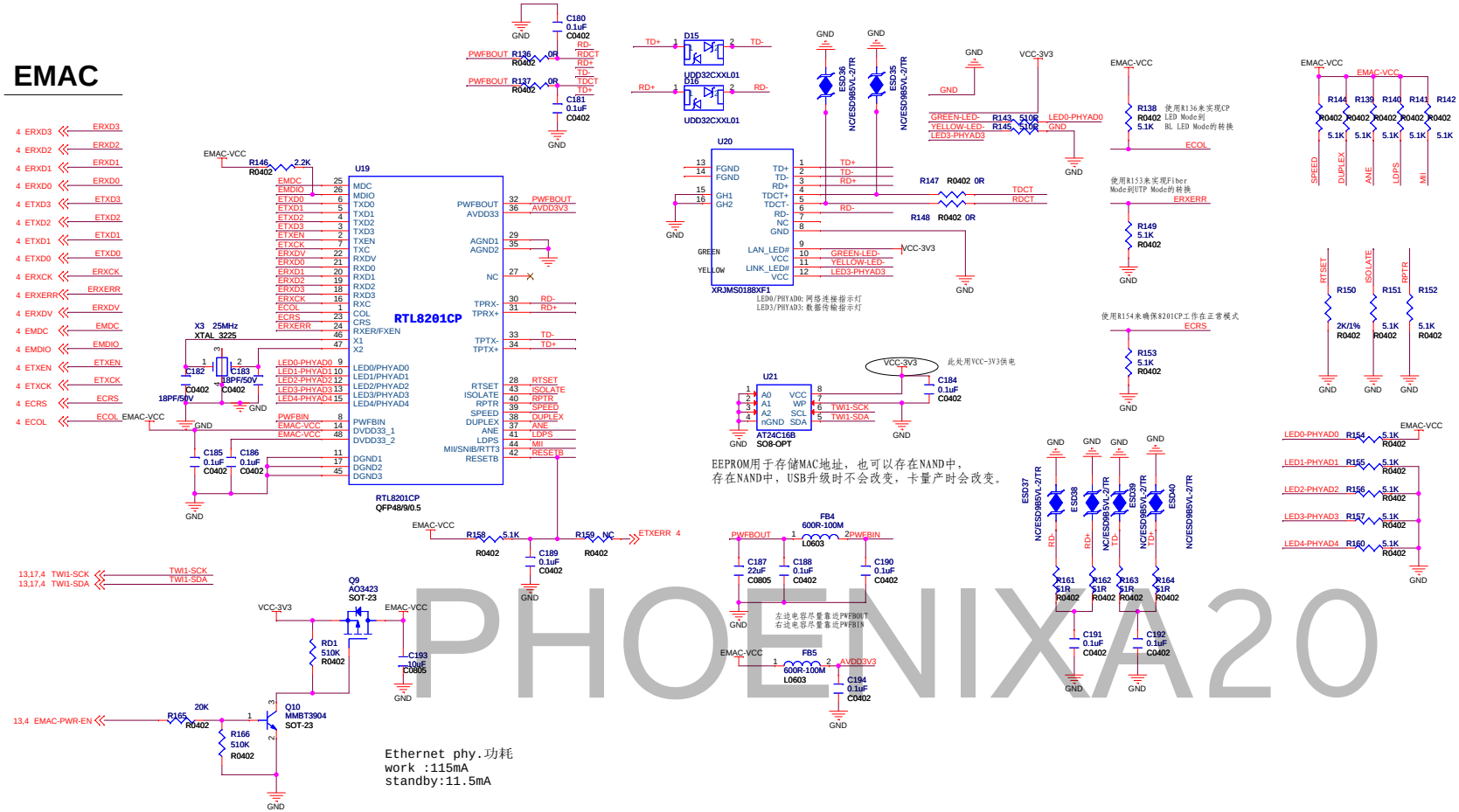
EMAC



注意：此开关主要是为了在系统待机时，关断HPY的电源，减少大概11.5mA的电流，对系统功耗有严格要求的产品才使用。对待机电流无特殊要求的产品，可以直接将VCC-3V3和EMAC-VCC连接起来，并把此部分电路删掉，而且软件不需更改。

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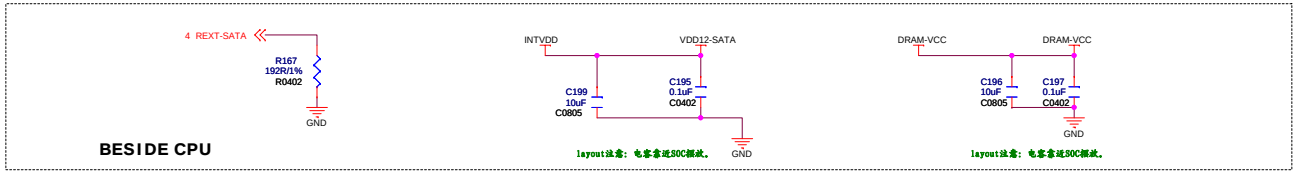
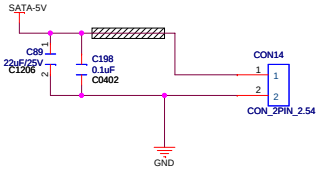
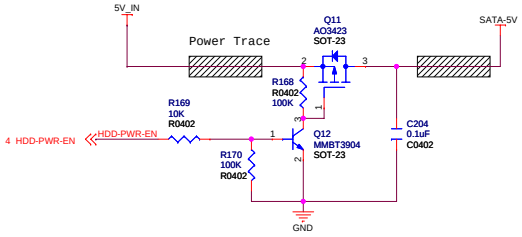
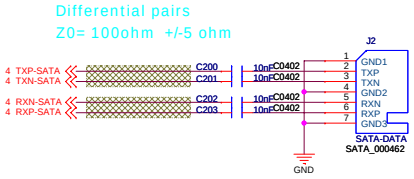
SATA





要求：Vgs >12V，Id>2A
注意此MOS不能简单用AO3423代替。





4、开机操作：当A10处于关机状态时，MCU接收到遥控器的power键值，MCU先判断A10-POWER-DET#，再判断A10-WORK-DET，如果满足A10-POWER-DET#为低，A10-WORK-DET为低，则MCU在PWR-ON#发出一个1.5秒的低电平，PMU接收到之后，开始给A10供电，系统开始上电开机。

5、其他操作：当软件出现异常需要复位系统时，一般采用的拔除火牛的操作。如果在机器面板上定义了POWER机械按键，此键用于开关机的办法与遥控器对PWR-ON的控制相同。机械按键可以定义长按操作，MCU检测到长按时，编程使得MCU发出一个大于6秒的低电平，PMU无条件掉电关机。

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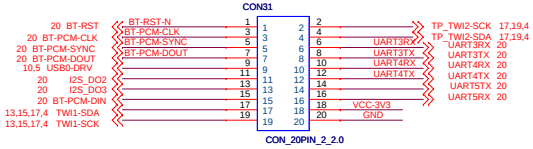

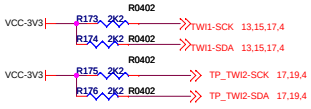

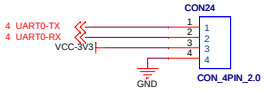

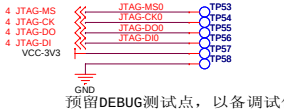

预留DEBUG测试点，以备调试使用

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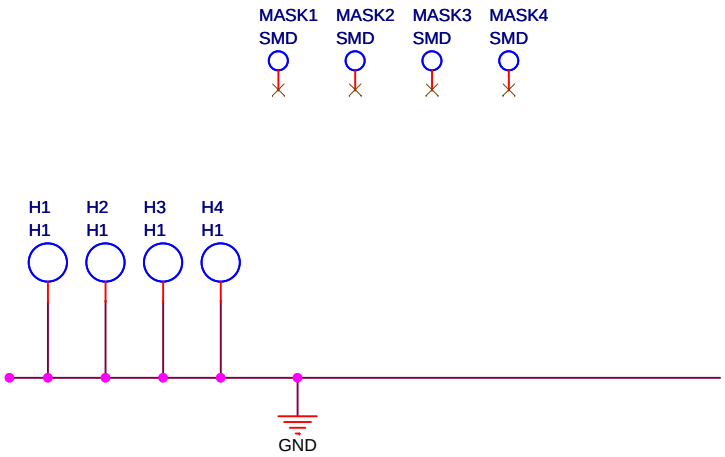
PHOENIXA20



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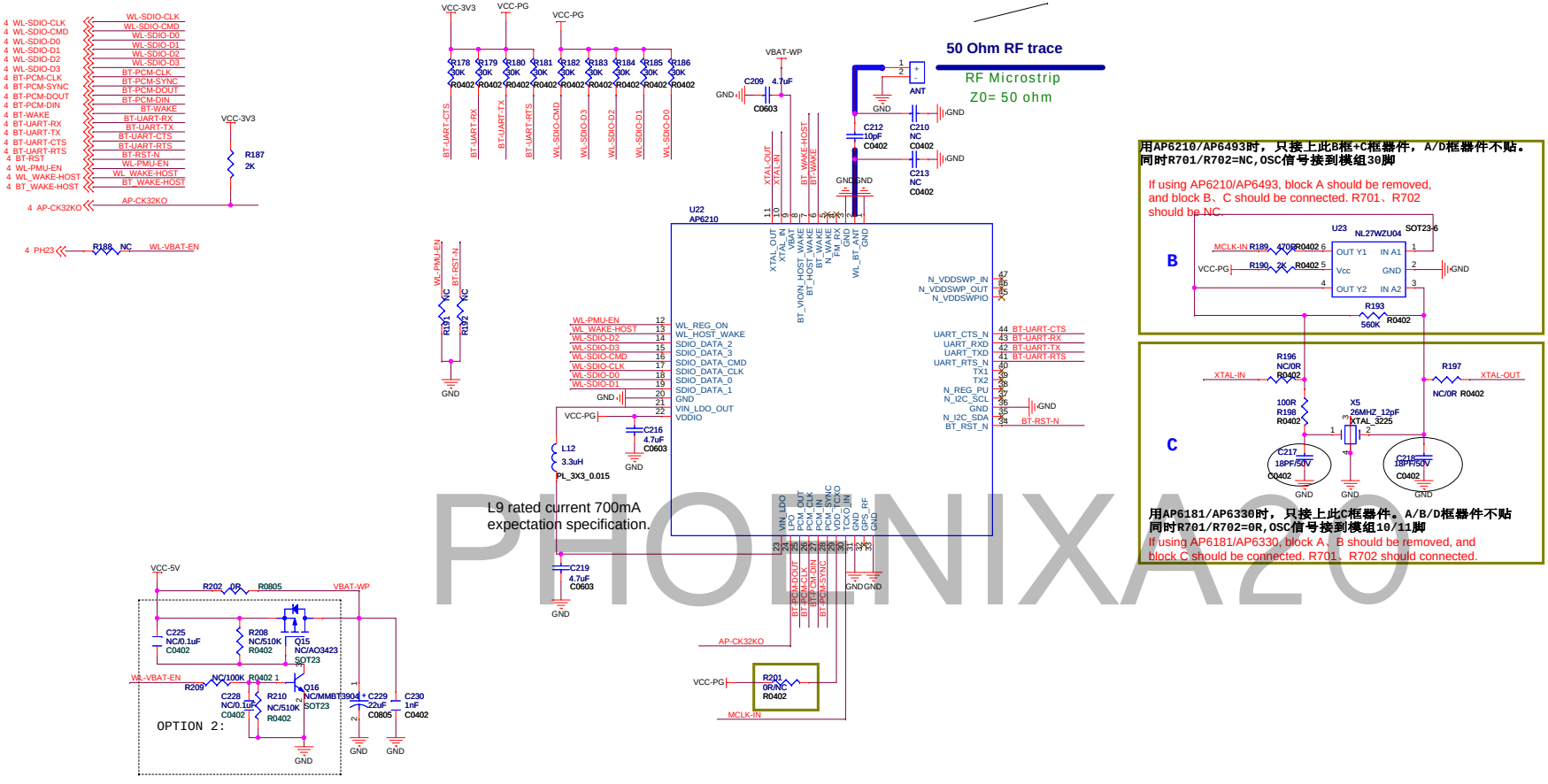
WIFI



用AP6210/AP6476/AP6493时，接上此R705电阻
用AP6181/AP6330时，不用接上此R705电阻

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