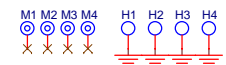
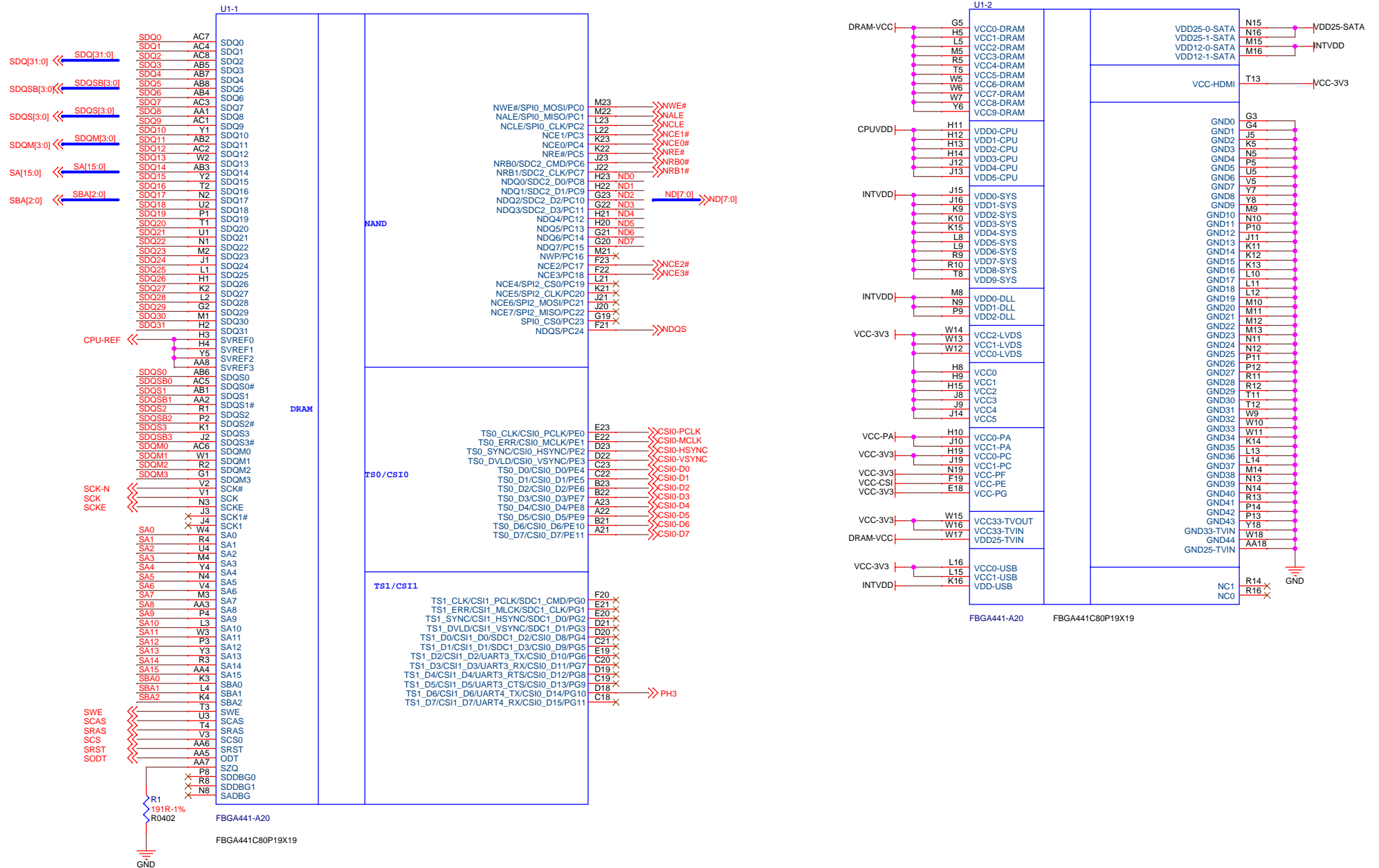
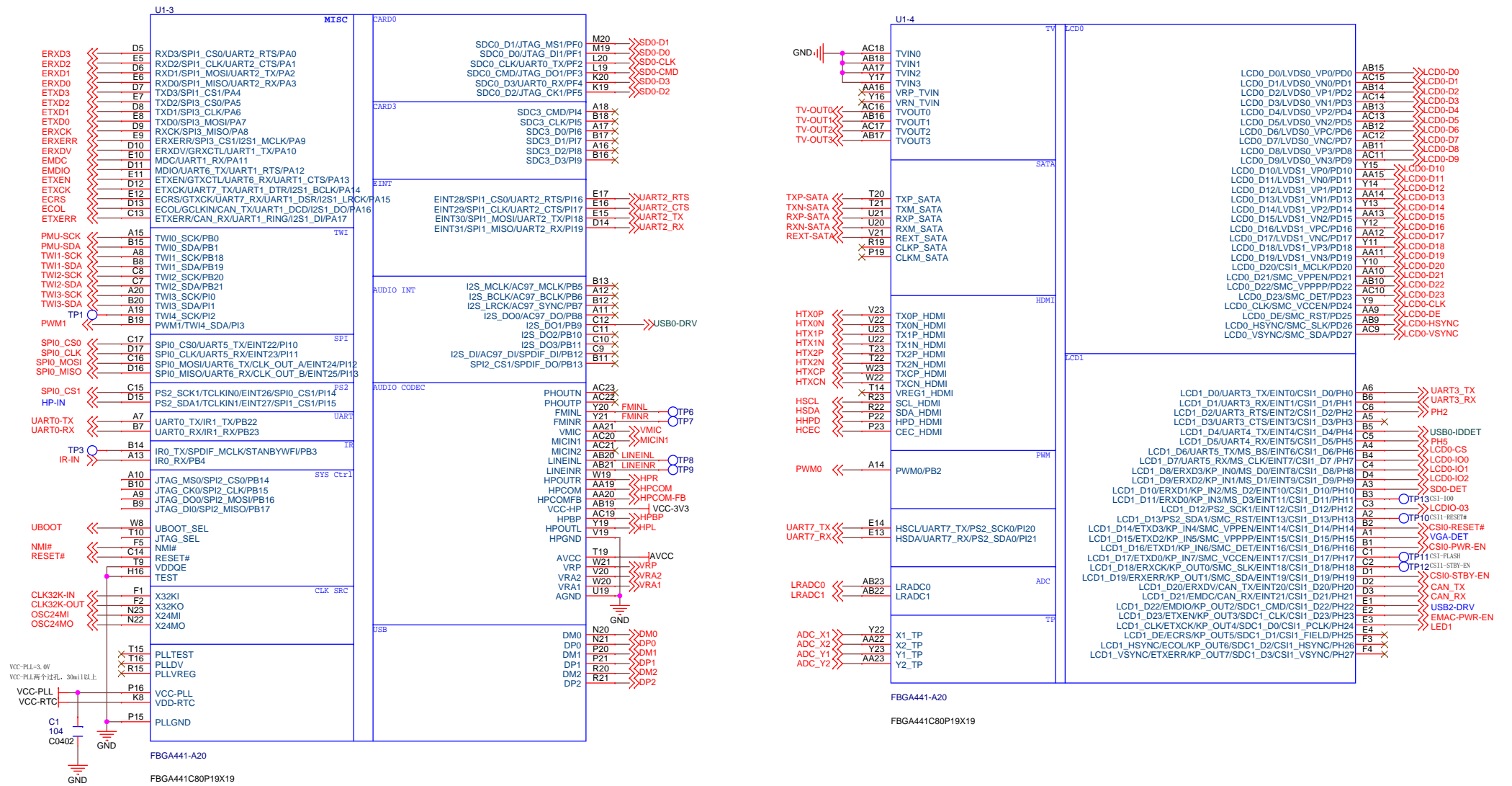


# CPU1

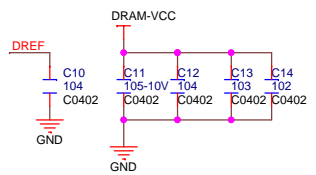
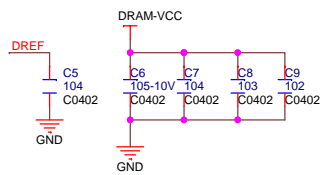
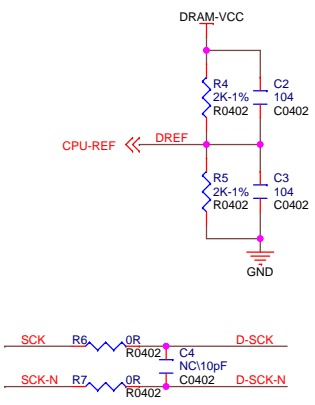
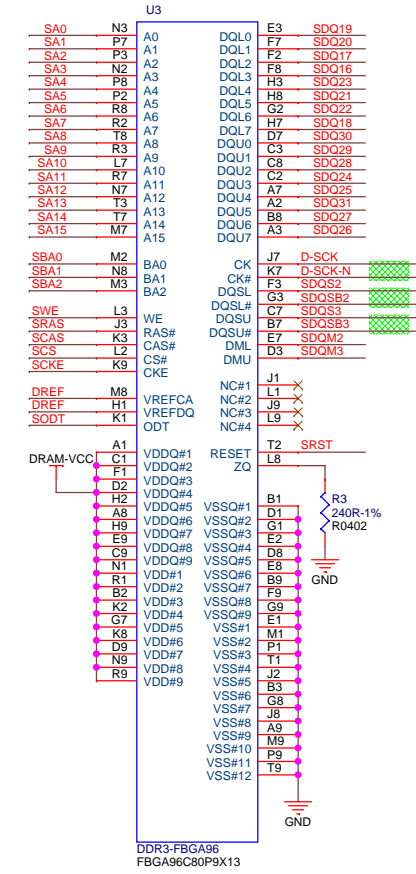
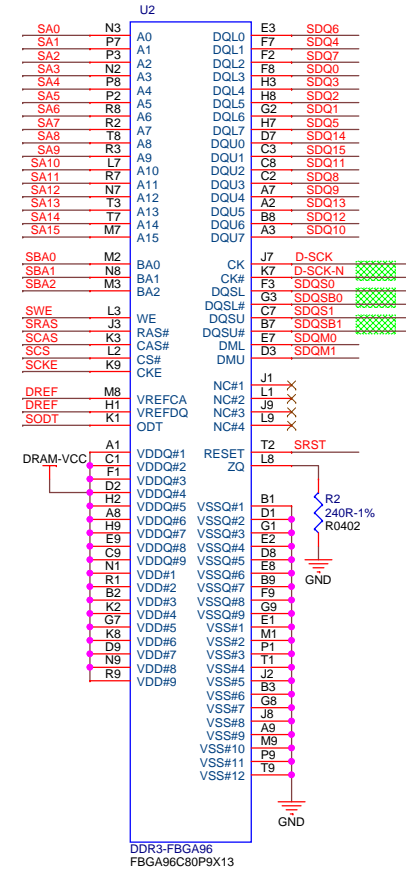
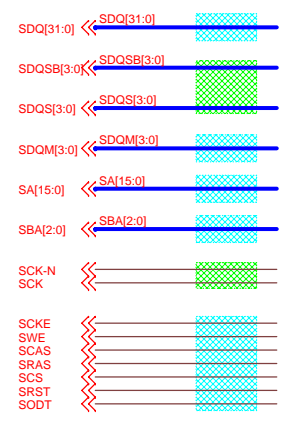


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Design Name <b>OrangePi-A20</b>		
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# CPU2

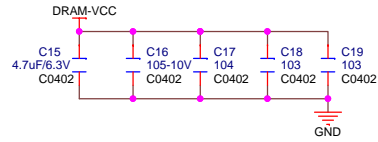


# DDR3-16BITX2

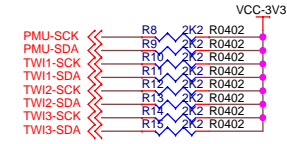


# BESIDE CPU

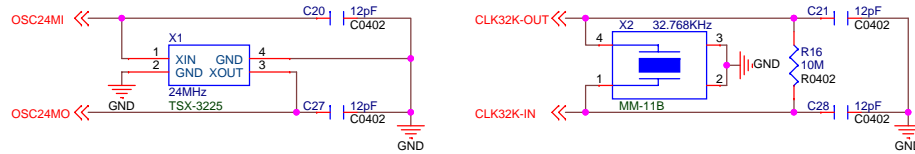
## DRAM



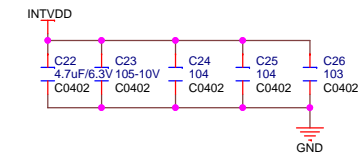
## TWI-PULLUP



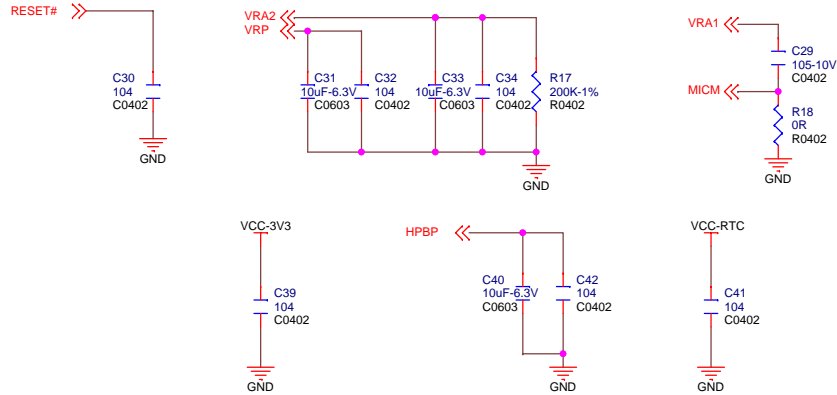
## Crystal



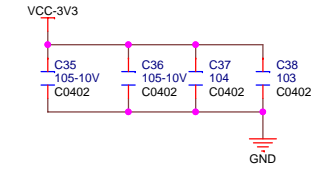
## CORE



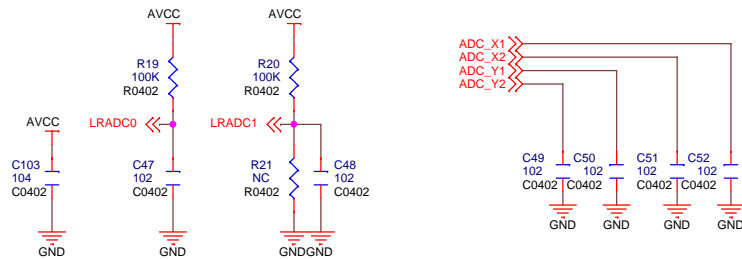
## AUDIO&SYS



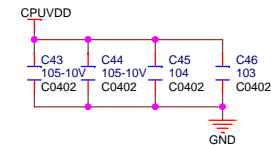
## PIO-INTERFACE



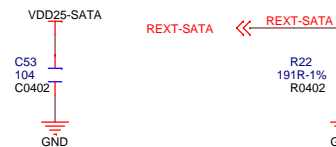
## ADC



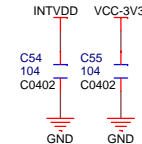
## CPU&TV



## SATA



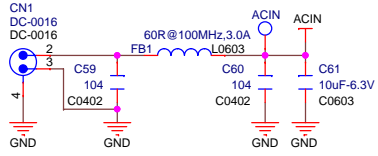
## USB



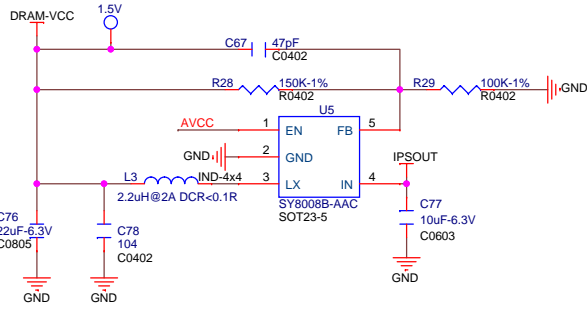
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# Power

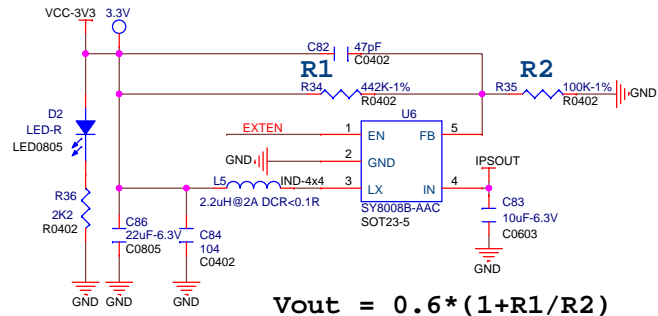
## DC-IN



## DRAM-VCC



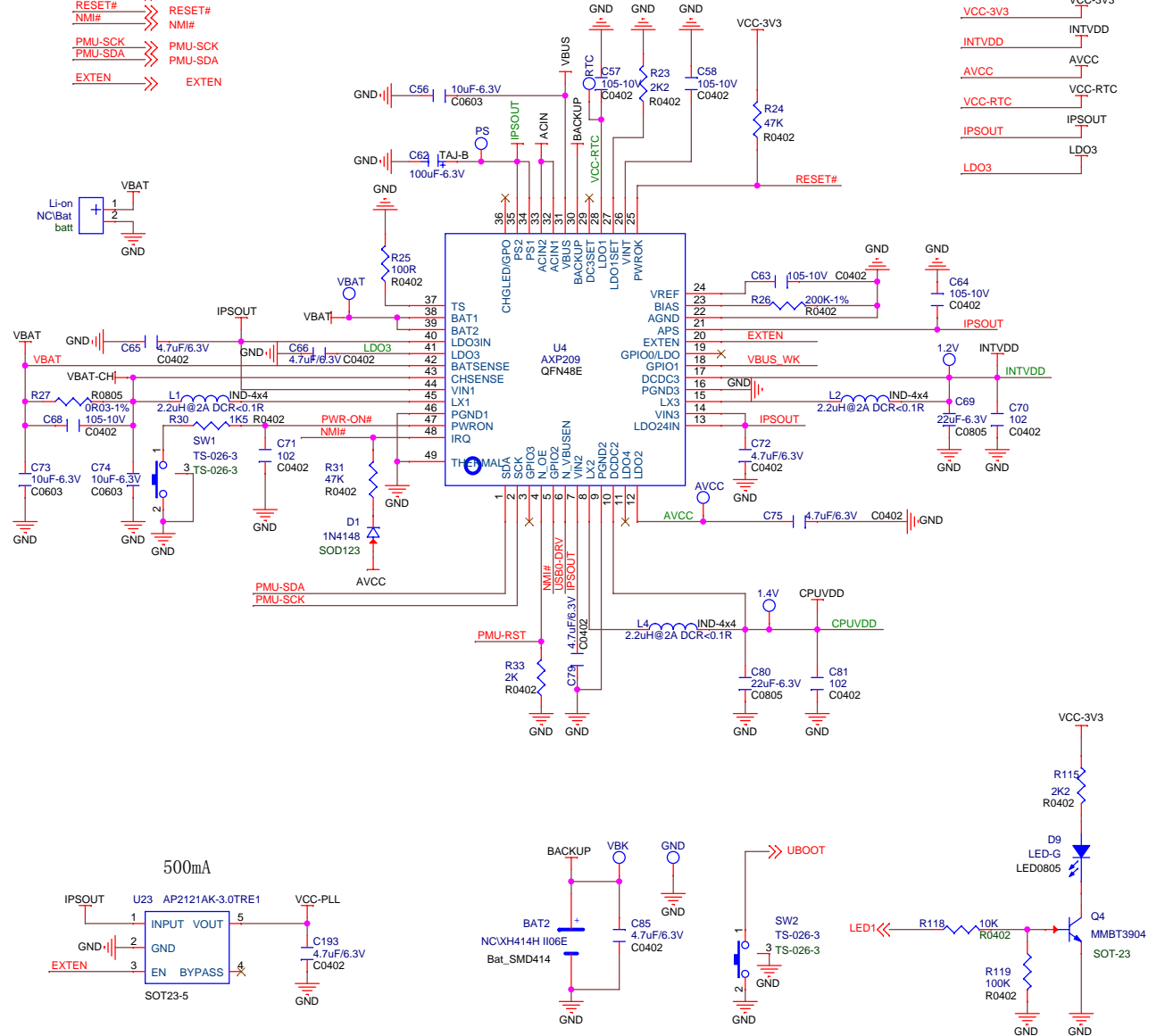
## VCC-3V3



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

## PMU-AXP209

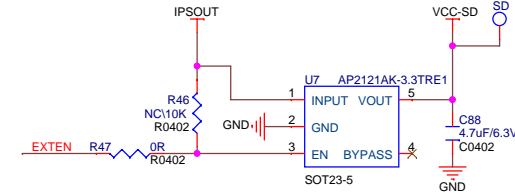
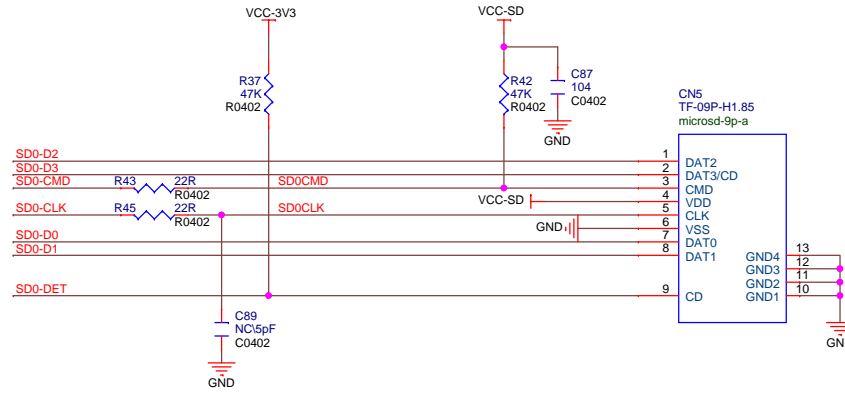
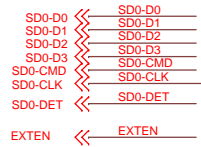
- VBUS\_WK >> VBUS\_WK
- USB0-DRV >> USB0-DRV
- RESET# >> RESET#
- NMI# >> NMI#
- PMU-SCK >> PMU-SCK
- PMU-SDA >> PMU-SDA
- EXTEN >> EXTEN



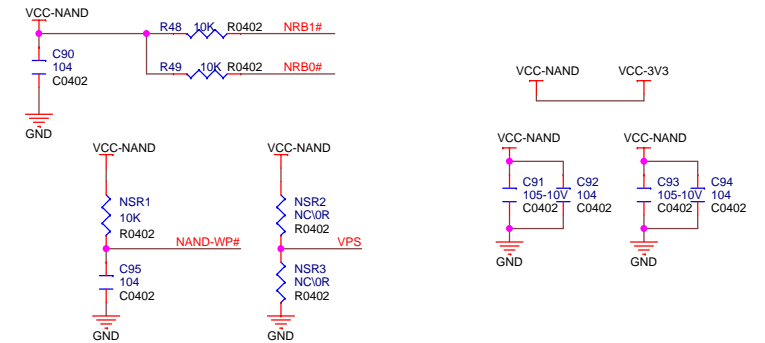
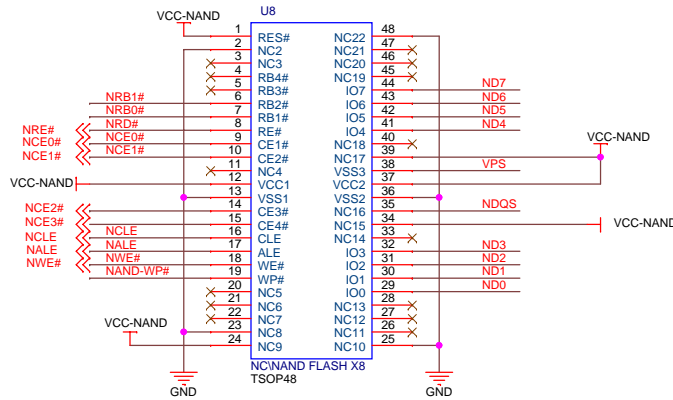
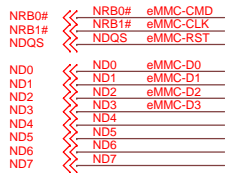
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# TF-NandFlash-SATA

## MicroSD

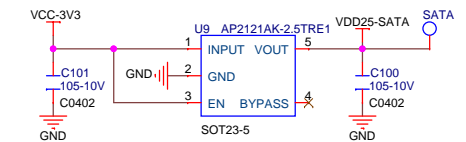
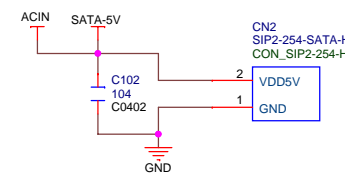
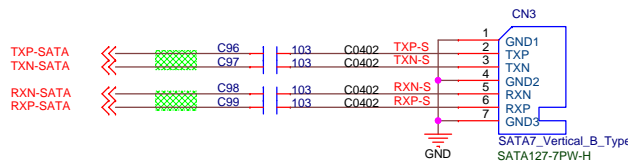


## NANDFLASH



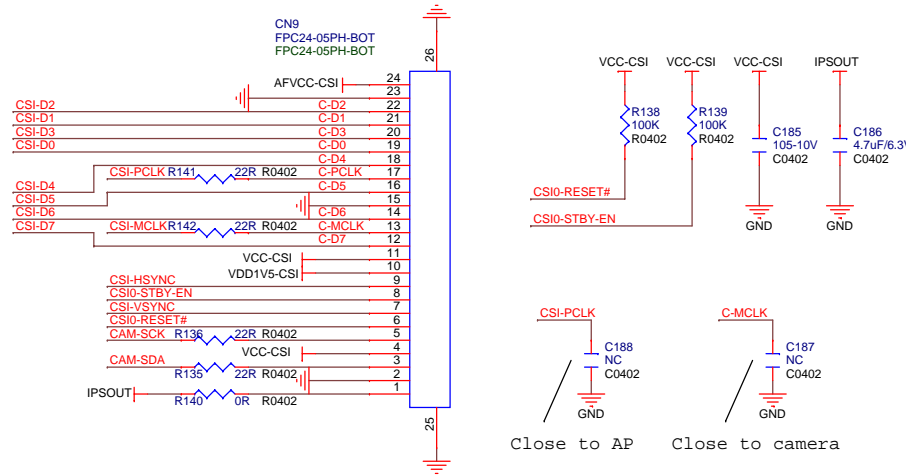
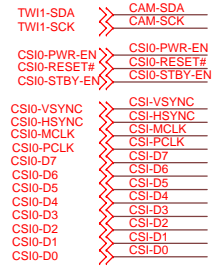
If paste Intel, Toshiba, Samsung 2xnm TSOP Nand, NSR2=0R, NSR3=NC; Other NSR2=NC, NSR3=0R.

## SATA

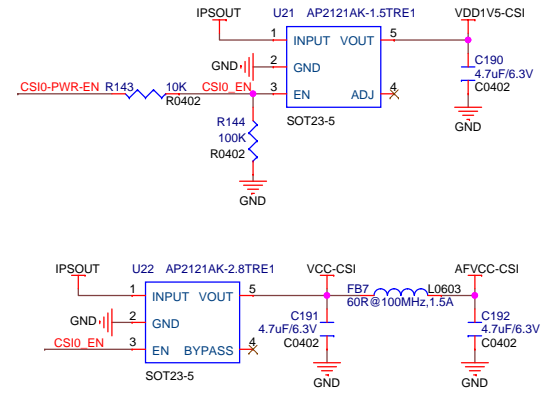


# CSI-HDMI

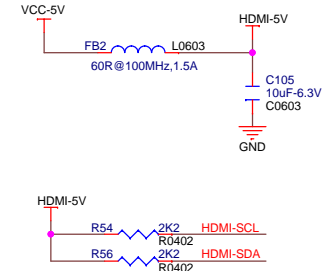
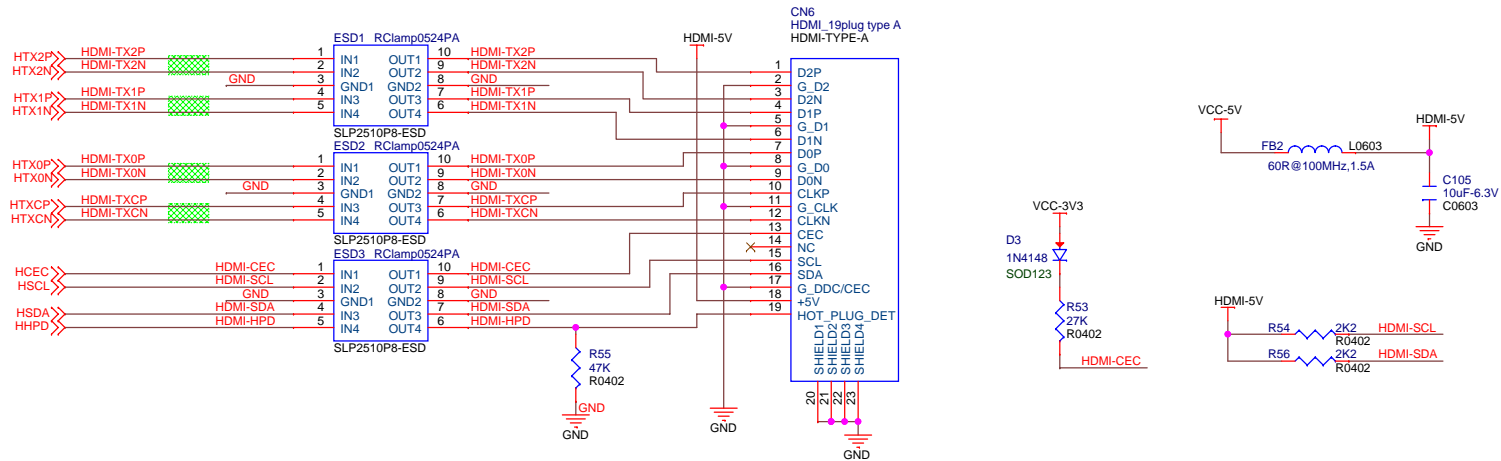
## CSI



Close to AP      Close to camera



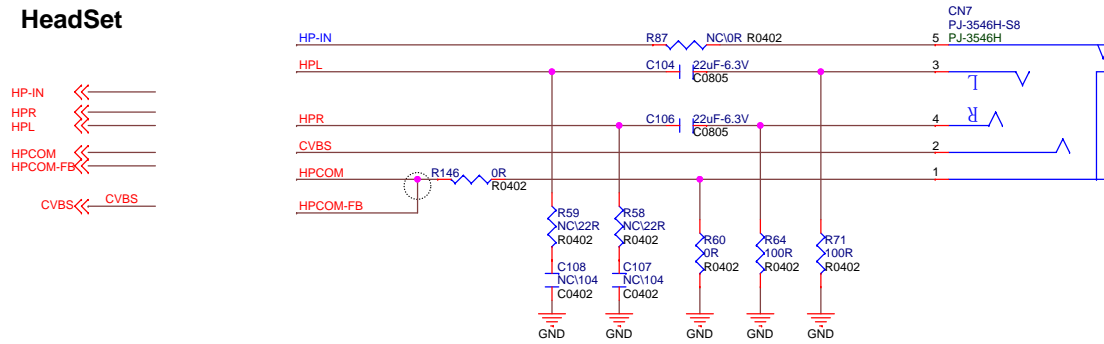
## HDMI



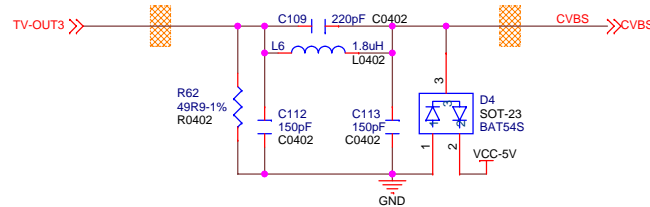
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# AUDIO-CVBS-LCD

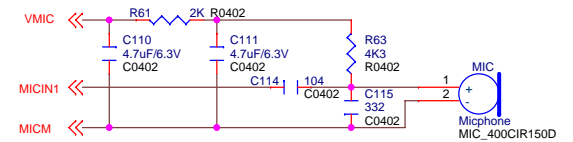
## HeadSet



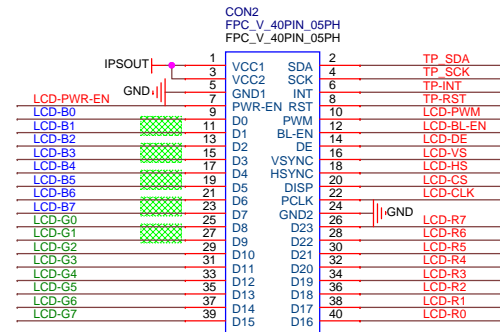
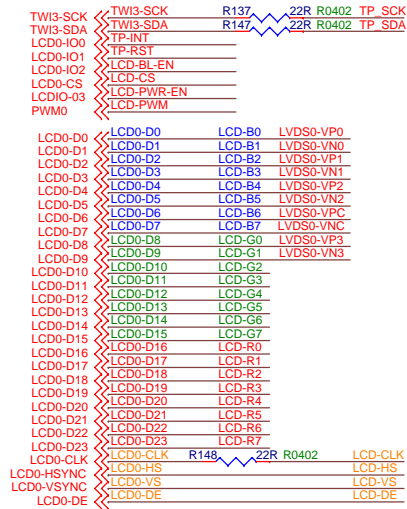
## CVBS



## Microphone



## LCD

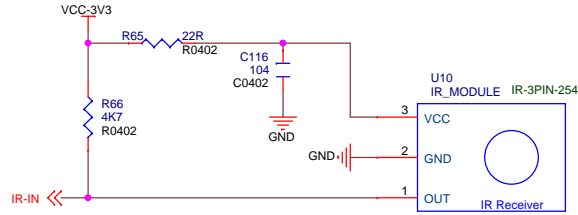


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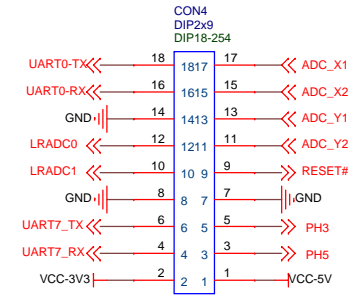
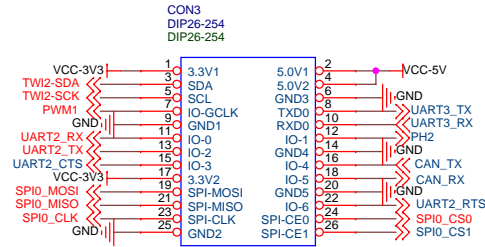


# IR-ExtPort-VGA

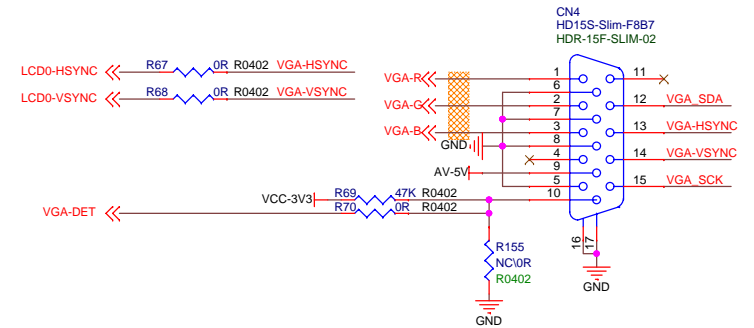
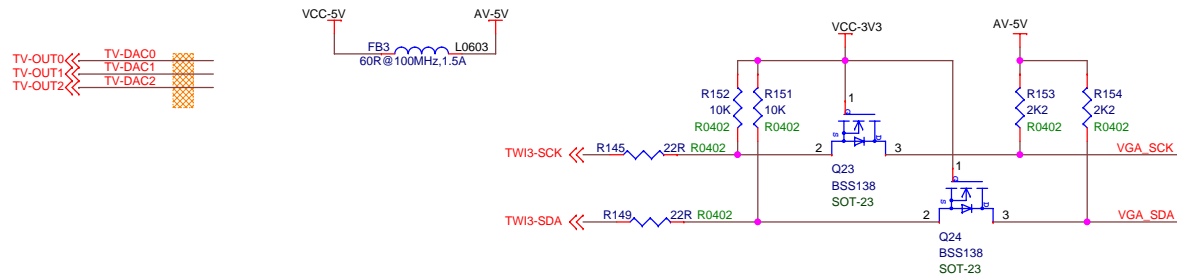
## IR MODULE



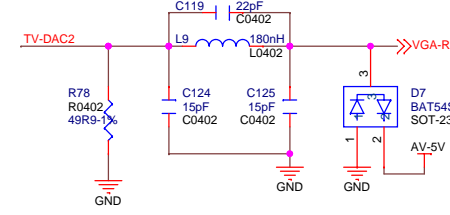
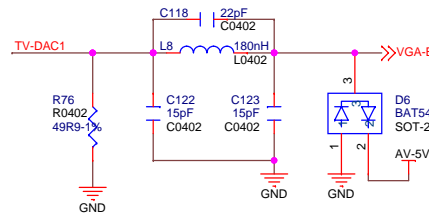
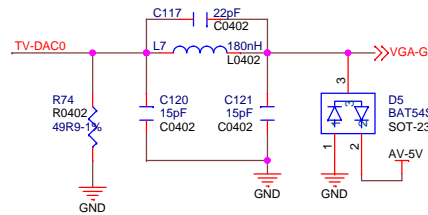
## Ext Port



## VGA



## VGA CONN.



**Xlongtech Co.Ltd**

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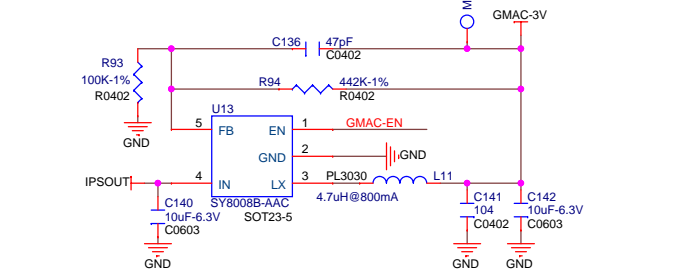
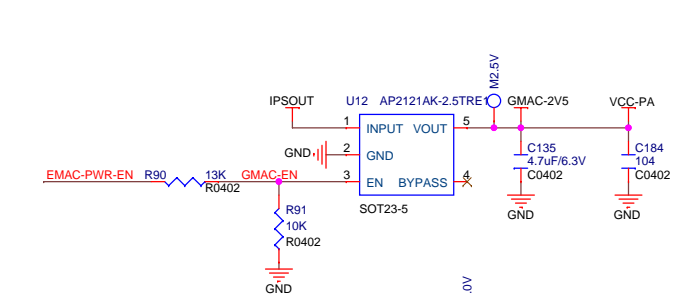
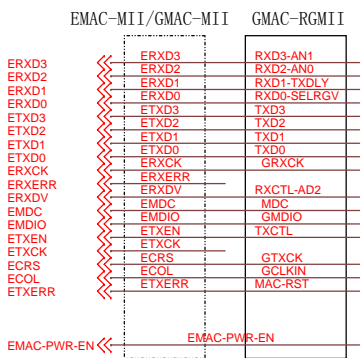
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of

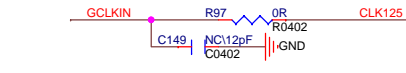
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# GMAC

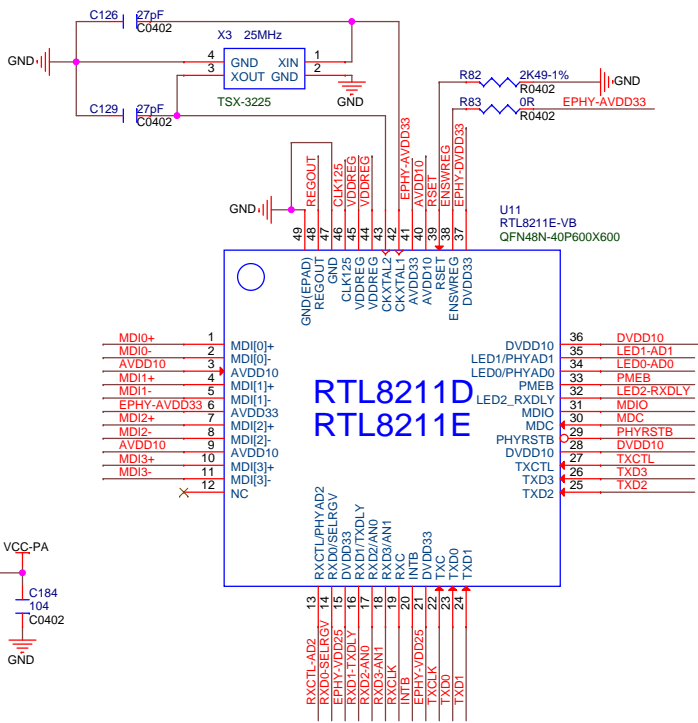
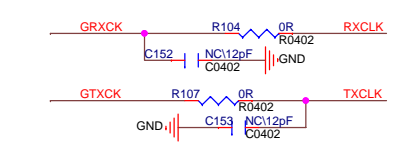
## 10/100/1000 RGMII Ethernet PHY



Place filter network close to CLK125. Reserved for EMI



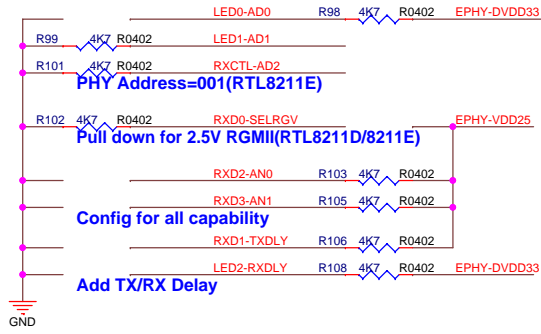
Place filter network close to RX\_CLK. Reserved for EMI



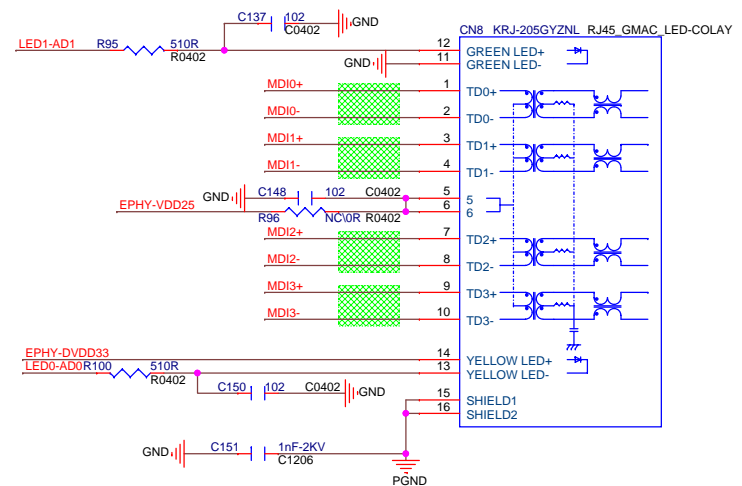
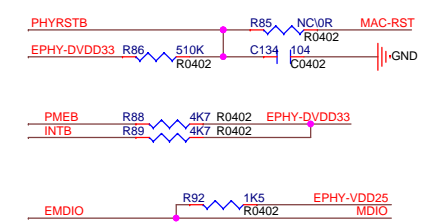
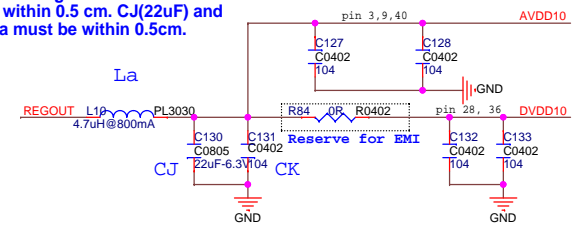
VCC-2V5 > 55mA

VCC-3V > 200mA

Note 2: The Trace length from CA(22uF),CB(0.1uF) to Pin 44,45(VDDREG) must be within 0.5 cm. The trace width from AVDD33 to Pin 44,45 should >40mils.



Note 1: The Trace length between La and PHY's Pin48 must be within 0.5 cm. CJ(22uF) and CK(0.1uF) to La must be within 0.5cm.

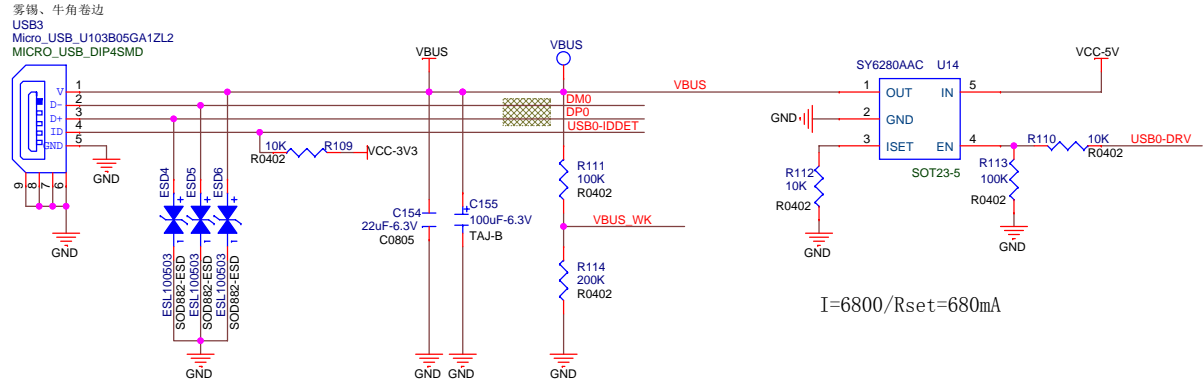
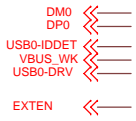


LED0: Blinking = Transmitting or Receiving. LED1: Link Up/Down

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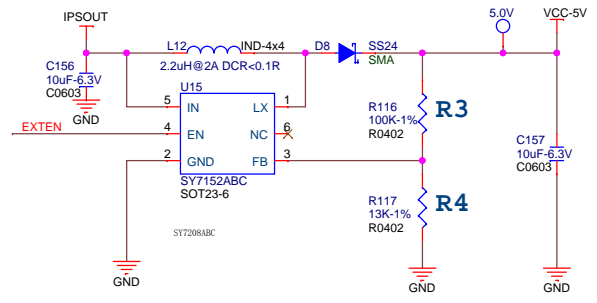
# USB\_OTG-WIFI

## USB-OTG



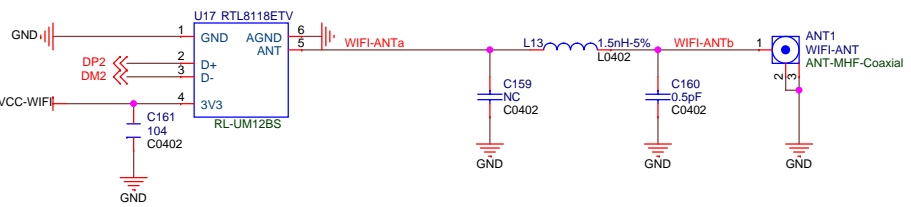
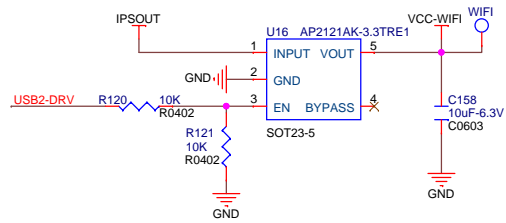
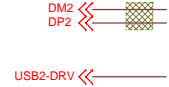
$$I = 6800 / R_{set} = 680\text{mA}$$

## VCC-5V



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

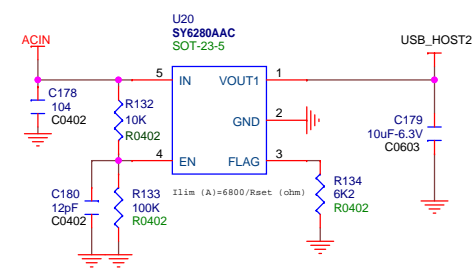
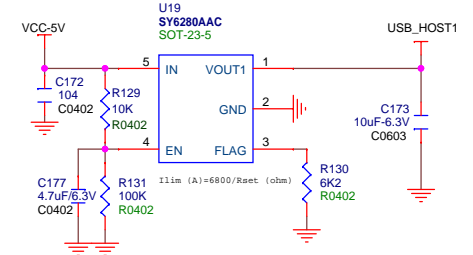
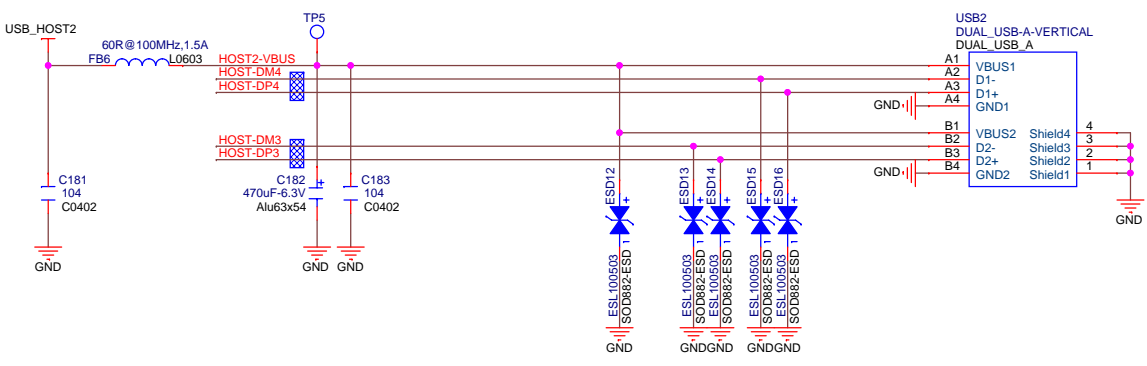
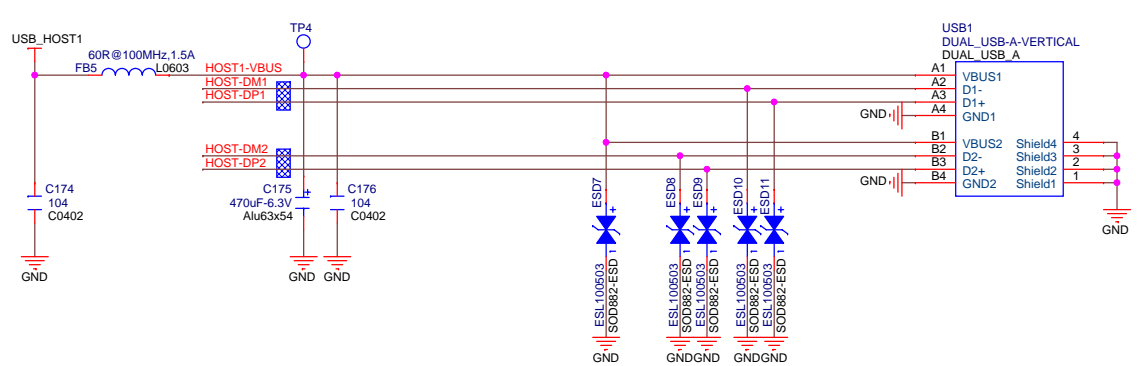
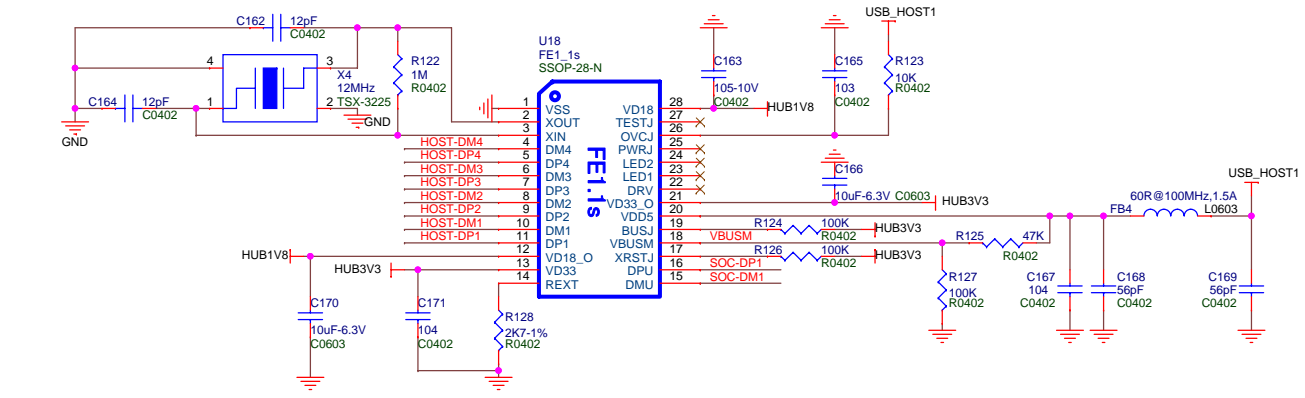
## USB WIFI



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# USB HOST

DM1 SOC-DM1  
DP1 SOC-DP1



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V1.00

1. 第一版

V1.1

1. 增加电容C104、C106
2. U19供电修正为VCC-5V
3. 增加电阻R146
4. L7、L8、L9改为180nH
5. NC R58、R59, C107, C108  
增加R64, R71

A20	PIN	使用	不使用
HDMI	T13	VCC-3V3	VCC-3V3
SATA 2.5V	N15, N16	2.5V	DRAM-VCC(1.5V)
CSIO	F19 (VCC-PE)	VCC-2.8	VCC-2.8
CSI1	E18 (VCC-PG)	VCC-2.8	VCC-3V3
TVIN 2.5V	W17	2.5V	DRAM-VCC(1.5V)
TVIN 3.3V	W16	VCC-3V3	VCC-3V3
TVOUT 3.3V	W15	VCC-3V3	VCC-3V3
LVDS IO	W12, W13, W14	VCC-3V3	VCC-3V3
MAC IO	J10, H10 (VCC-PA)	3.0V/2.5V	VCC-3V3
NAND IO	J19, H19 (VCC-PC)	VCC-3V3	VCC-3V3
SD IO	N19 (VCC-PF)	VCC-3V3	VCC-3V3
USB VDD	K16	INTVDD(1.2V)	VCC-3V3
USB VCC	L15, L16	VCC-3V3	VCC-3V3

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