

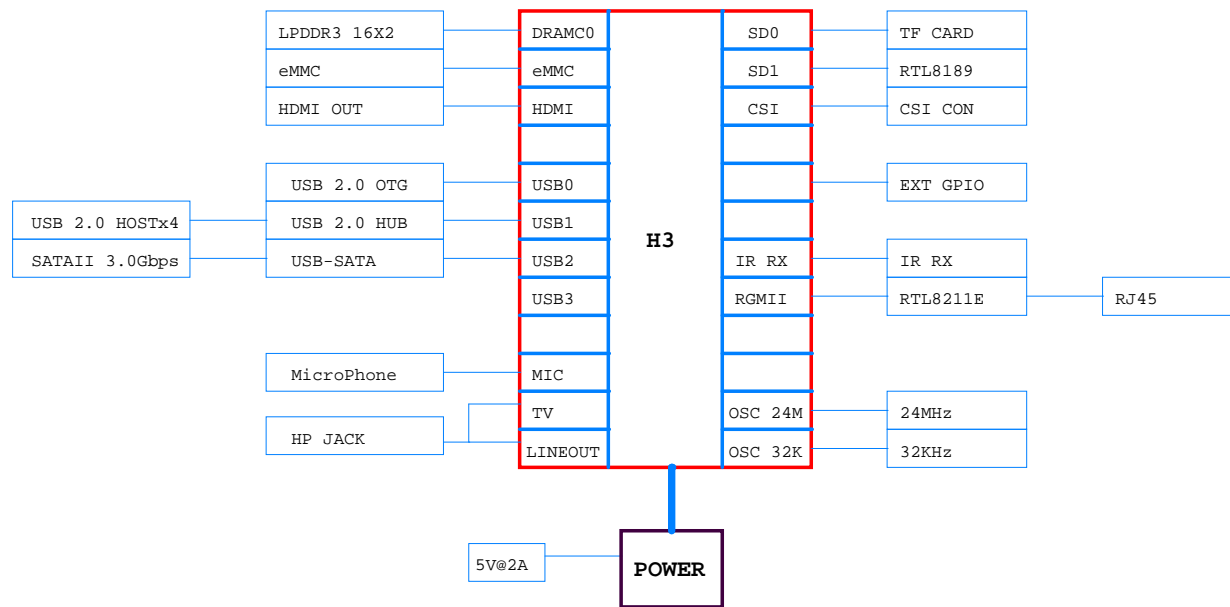
REVISION HISTORY

Schematics Index:

Revision	Description	Date	Drawn	Checked
Ver 1.0	Initial	2015-02-06		
ORANGE_PI_PC_Ver 1.0	Initial	2015-05-29		
ORANGE_PI_PC修改内容: 1、删除WIFI模块及相应电源模块 2、删除U12 (USB HUB)、USB2模块及相应电源模块 3、删除摄像头部分的电源模块 4、删除按键SW2、SW3按键 5、删除部分NC电容电阻 6、添加侧插USB插座P1以及相应电源模块				
ORANGE_PI_PC_Ver 1.1	Initial	2015-06-23		
ORANGE_PI_PC_V1.1修改内容: 1、更改了复位电路 2、更改了电源模块CPUX, RTC电源与AVCC电源模块合并为一路 3、删除SGM89000模块 (CVBS部分) 4、降压前5V: HDMI、CSI、USB、VDD-CPUX、EXT Port; 降压后5V: VCC-DRAM、1.2V、3.3V、AVCC				
ORANGE_PI_PC_Ver 1.2	Initial	2015-07-10		
ORANGE_PI_PC_V1.2修改内容: 1、AVCC电源模块使能脚直接接5V 2、替换了电源模块CPUX (删除: U53(SY8089A), 22uf电容C307、C186; 10uf电容C184、C308; 0.1uf电容C183、C185、C181; 2.2uh电感L4; 10K电阻R233、R239; 11.8K电阻R235; 30.1K电阻R237; 0R电阻R238; 三极管BSN20, Q5) (增加: U9 (SY8106A), 22uf电容C67、C72、C73; 10uf电容C310、C68、C74; 104电容C66、C71; 100nf电容C64; 2.2uh电感L4; 44.2K电阻R31, 10nf电容C78; 2.2uf电容C77, 100K电阻R30、R27, 220pf电容C75) 3、HDMI、USB的ESD器件全部NC 4、DRAM电源改为1.35V, R14使用120K电阻				
ORANGE_PI_One_Ver 1.0	Initial	2015-12-8		
ORANGE_PI_One_V1.0修改内容: 1、删除32晶振 2、整体更换1.2Vc电源模块 3、删除双层USB模块/删除单USB的电源模块, 改用电源5V直接供电, 增加滤波电容C86、C309/单USB信号选用DP1、DM1 4、删除耳机和MIC 5、HDMI增加ESD器件 6、去掉红外				
ORANGE_PI_Lite_Ver 1.0	Initial	2015-12-24		
ORANGE_PI_Lite_V1.0修改内容: 1、增加R20 2、增加P2, USB模块 3、删除EMAC, 增加WIFI, 增加WIFI电源模块				
ORANGE_PI_Lite_Ver 1.1	Initial	2016-04-09		

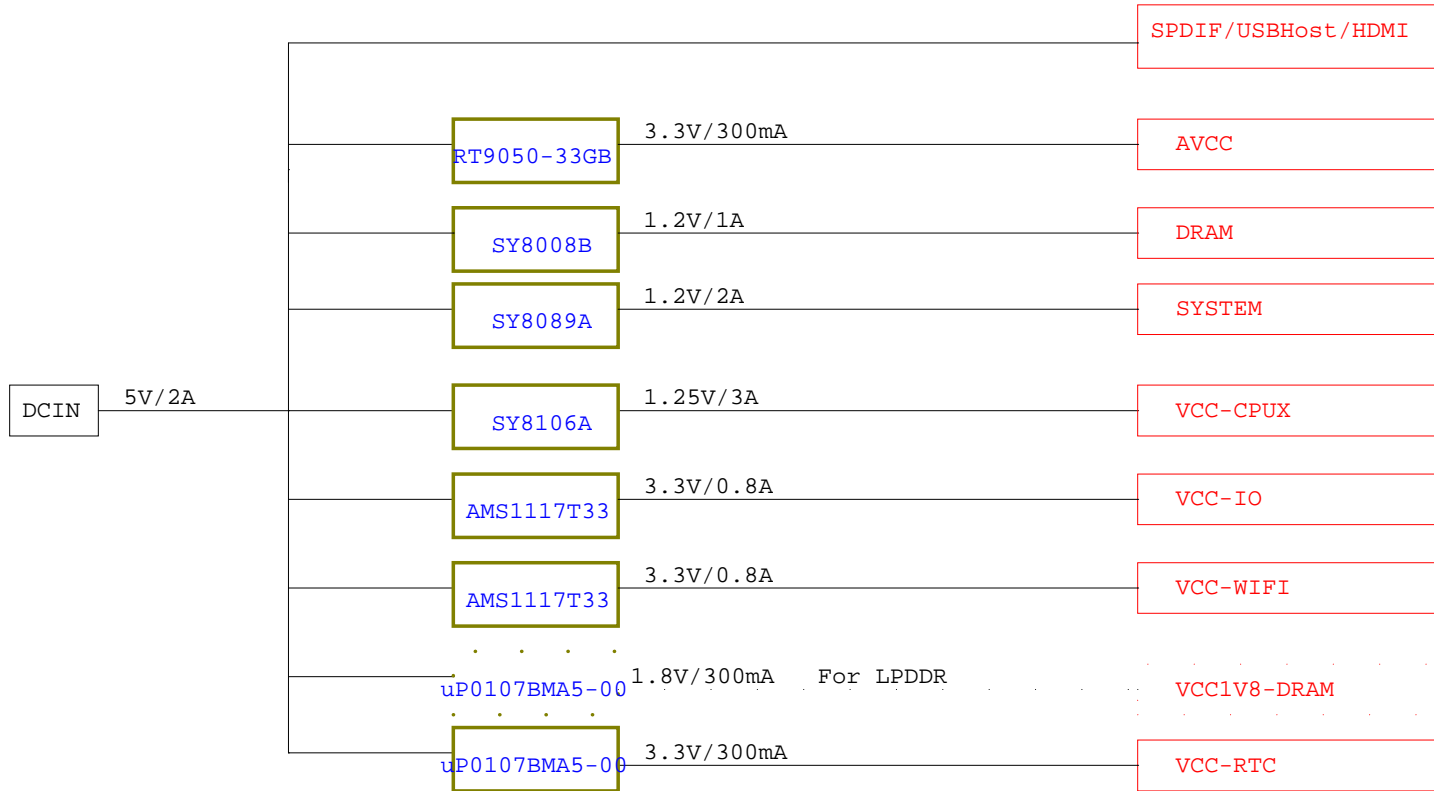
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ORANGE_PI_Lite		
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BLOCK



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POWER TREE



GPIO ASSIGNMENT

PIN	Define	CFG	Function
PA0	DMS/DRVVBUS0	3/1	JTAG /USB
PA1	CK/DRVVBUS1	3/1	
PA2	TDO/WPS	3/1	
PA3	TDI	3	UART
PA4	JART-TX	3	
PA5	JART-RX	3	
PA6	NC	7	
PA7	NC	7	
PA8	NC	7	
PA9	NC	7	
PA10	NC	7	
PA11	NC	7	
PA12	NC	7	
PA13	NC	7	
PA14	NC	7	
PA15	STATUS-LED	1	LED
PA16	MUTE	1	AV
PA17	SPDIF-OUT	2	SPDIF
PA18	NC	7	
PA19	NC	7	
PA20	NC	7	
PA21	NC	7	

PIN	Define	CFG	Function
PC0	NWE	2/3	NAND /eMMC /NOR
PC1	NALE	2/3	
PC2	NCLE	2/3	
PC3	NCE1	2/3	
PC4	NCE0	2	
PC5	NRE	2/3	
PC6	NRB0	2/3	
PC7	NRB1	2	
PC8	NDQ0	2/3	
PC9	NDQ1	2/3	
PC10	NDQ2	2/3	
PC11	NDQ3	2/3	
PC12	NDQ4	2/3	
PC13	NDQ5	2/3	
PC14	NDQ6	2/3	
PC15	NDQ7	2/3	
PC16	NDQS	2/3	

PIN	Define	CFG	Function
PD0	NC	7	
PD1	NC	7	
PD2	NC	7	
PD3	NC	7	
PD4	NC	7	
PD5	NC	7	
PD6	NC	7	
PD7	NC	7	
PD8	NC	7	
PD9	NC	7	
PD10	NC	7	
PD11	NC	7	
PD12	NC	7	
PD13	NC	7	
PD14	NC	7	
PD15	NC	7	
PD16	NC	7	
PD17	NC	7	

PIN	Define	CFG	Function
PE0	NC	7	
PE1	NC	7	
PE2	NC	7	
PE3	NC	7	
PE4	NC	7	
PE5	NC	7	
PE6	NC	7	
PE7	NC	7	
PE8	NC	7	
PE9	NC	7	
PE10	NC	7	
PE11	NC	7	
PE12	NC	7	
PE13	NC	7	
PE14	NC	7	
PE15	NC	7	

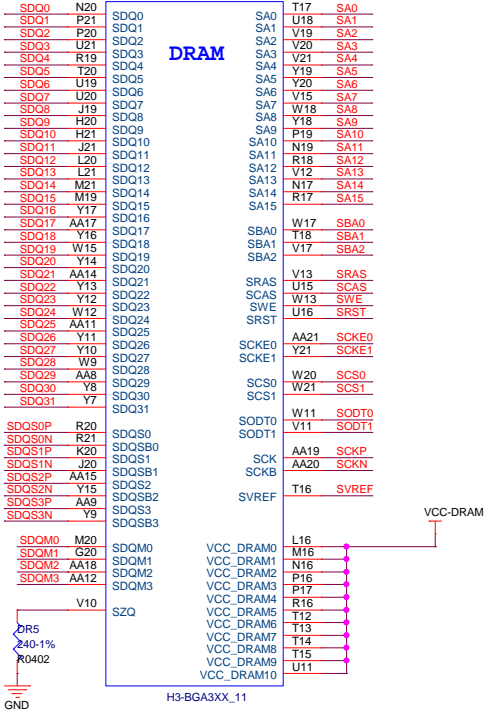
PIN	Define	CFG	Function
PF0	D1	2	CARD0
PF1	D0	2	
PF2	CLK	2	
PF3	CMD	2	
PF4	D3	2	
PF5	D2	2	
PF6	DET	0	

PIN	Define	CFG	Function
PG0	NC	7	
PG1	NC	7	
PG2	NC	7	
PG3	NC	7	
PG4	NC	7	
PG5	NC	7	
PG6	NC	7	
PG7	NC	7	
PG8	NC	7	
PG9	NC	7	
PG10	NC	7	
PG11	NC	7	
PG12	NC	7	
PG13	NC	7	

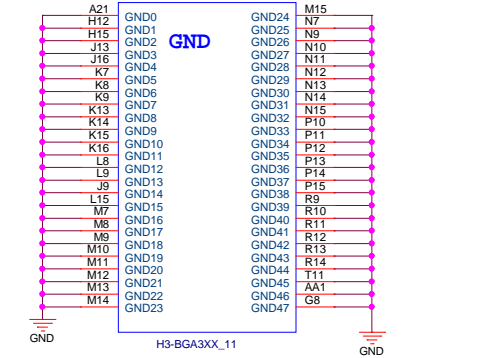
PIN	Define	CFG	Function
PL0	TWI	2	TWI
PL1	TWI	2	
PL2	USB0-DRVVBUS	1	USB
PL3	USB1-DRVVBUS	1	
PL4	RECOVERY	0	KEY
PL5	VCC-IO-EN	1	IO-EN
PL6	NC	7	
PL7	WIFI-EN	7	WIFI-EN
PL8	PWR-STB	1	
PL9	PWR-DRAM	1	
PL10	PWR-LED	1	
PL11	IR-RX	2	

DDR3 16x2

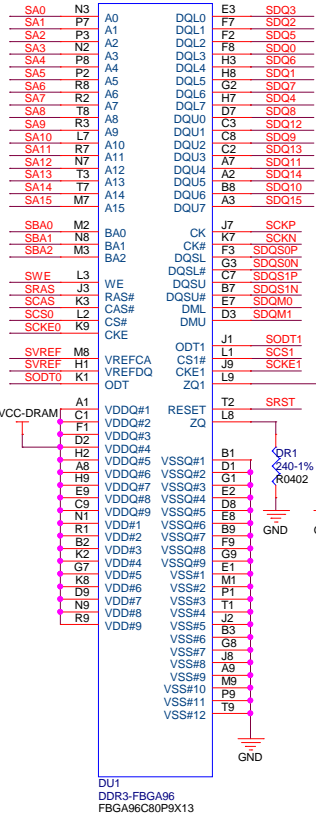
U1A



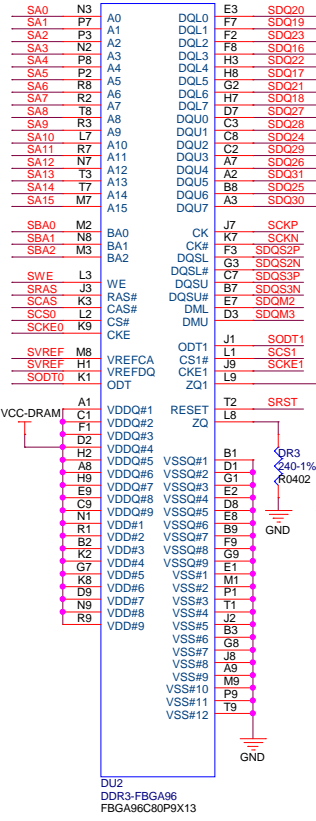
U11



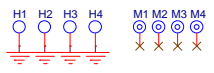
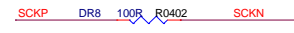
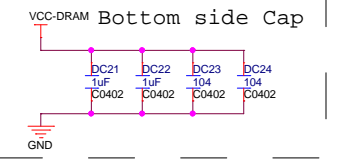
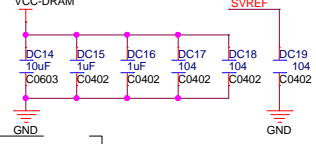
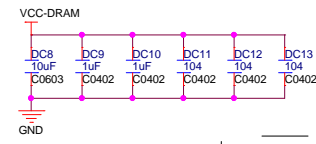
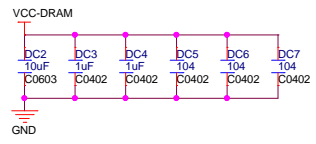
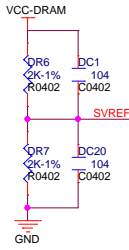
H3-BGA3XX_11



DU1
DDR3-FBGA96
FBGA96C80P9X13

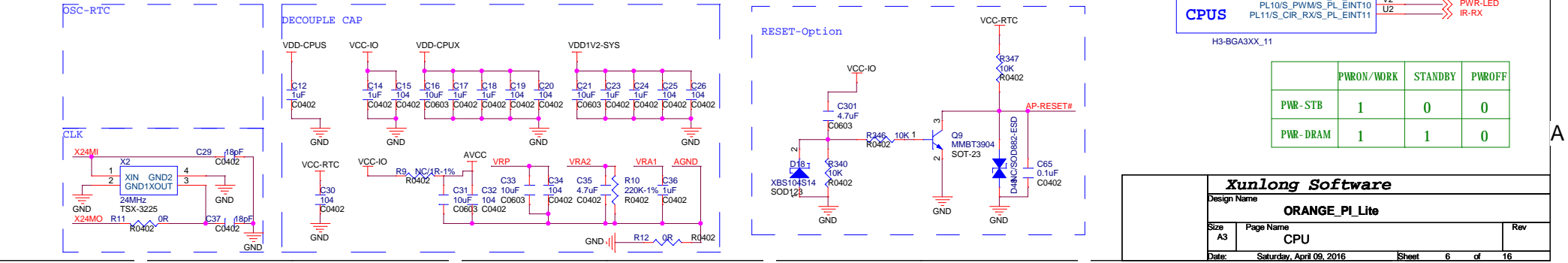
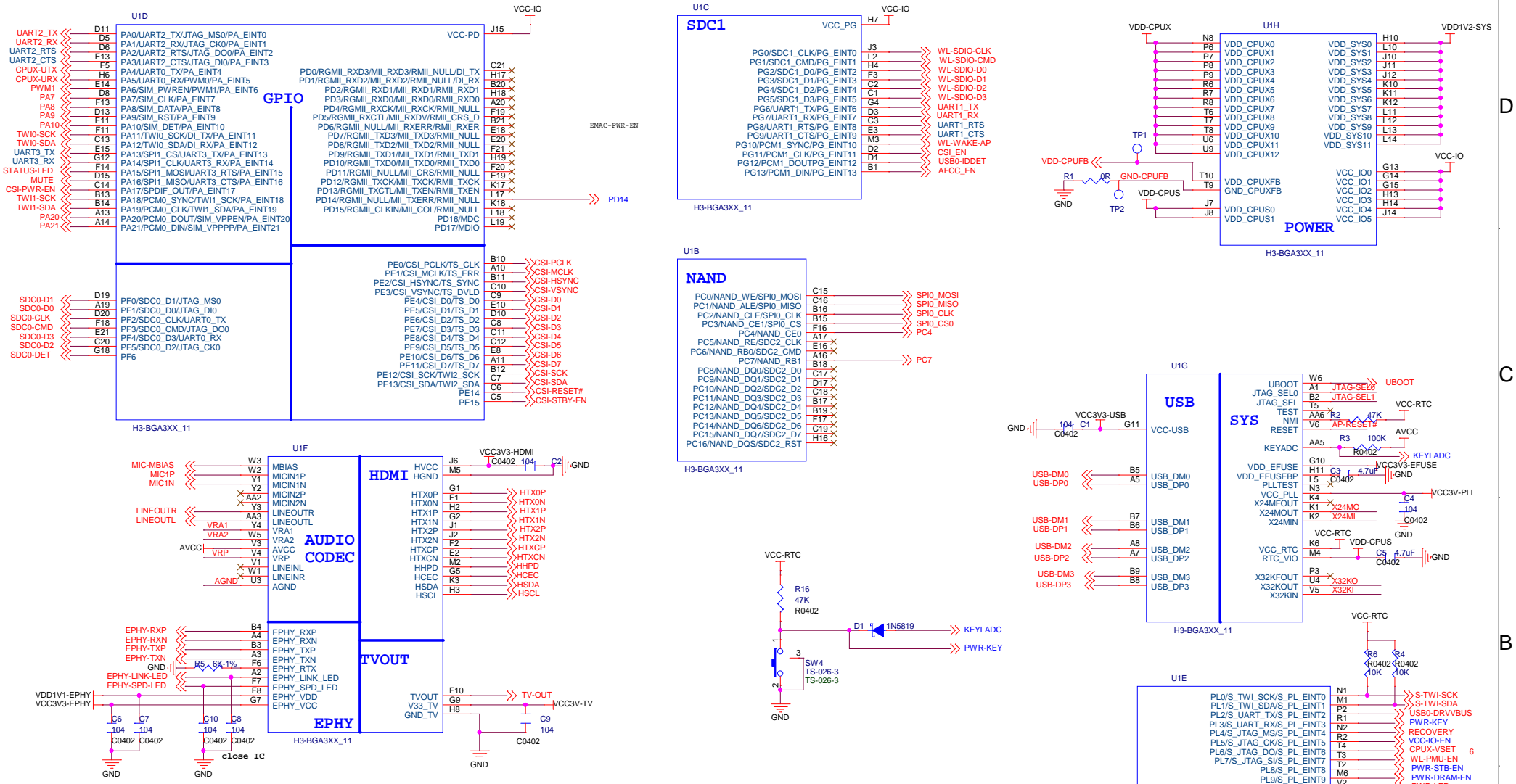


DU2
DDR3-FBGA96
FBGA96C80P9X13

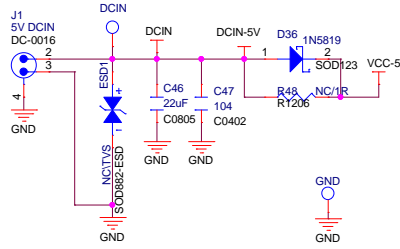


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CPU



DCIN

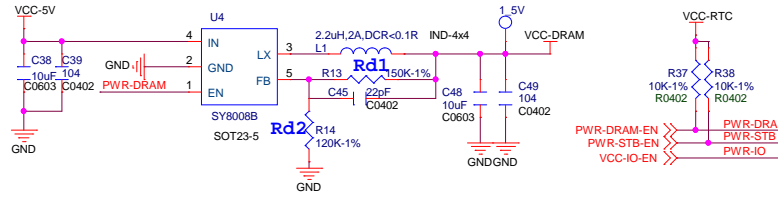


POWER

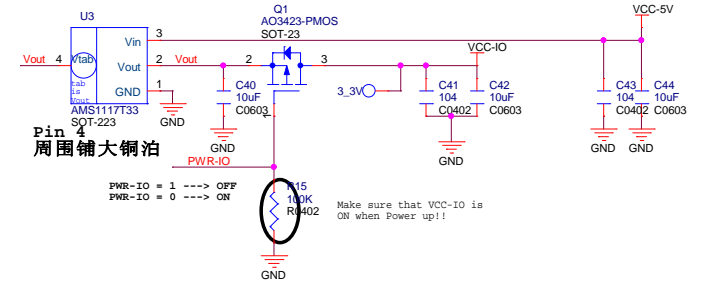
$$V_{out} = 0.6 * (1 + R_{d1} / R_{d2})$$

$$V_{DRAM} = 1.5V / 1A, R_2 = 100K - 1\%$$

$$V_{DRAM} = 1.35V / 1A, R_2 = 120K - 1\%$$

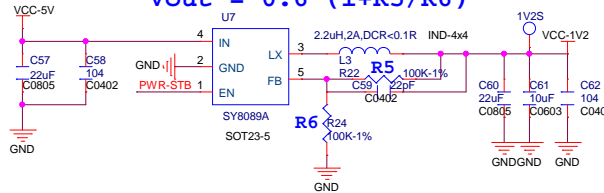


VCCIO 3.3V/1A

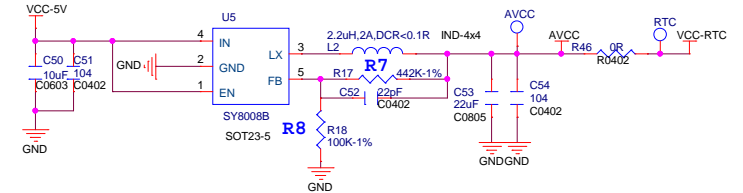


SYSTEM 1.2V/2A

$$V_{out} = 0.6 * (1 + R_5 / R_6)$$

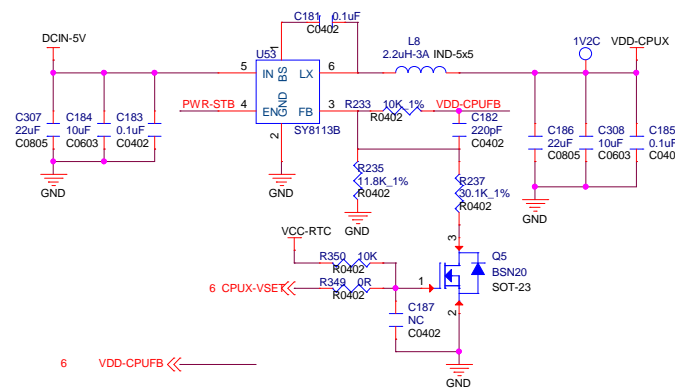


AVCC 3.3V/1A

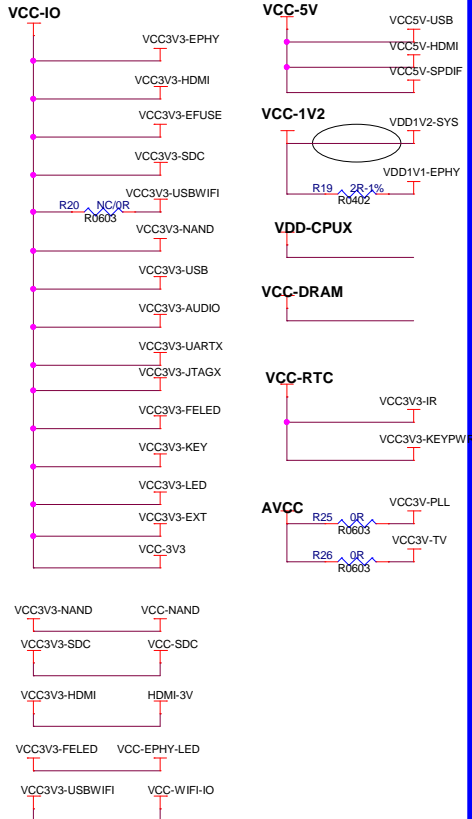
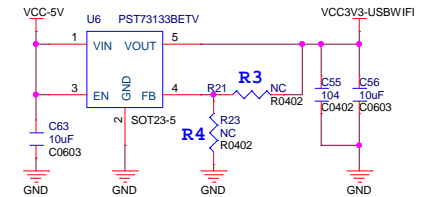


CPUX 1.2V/6A

$$V_{out} = 0.6 * (1 + R_1 / R_2)$$



WIFI Power 3.3V/300mA

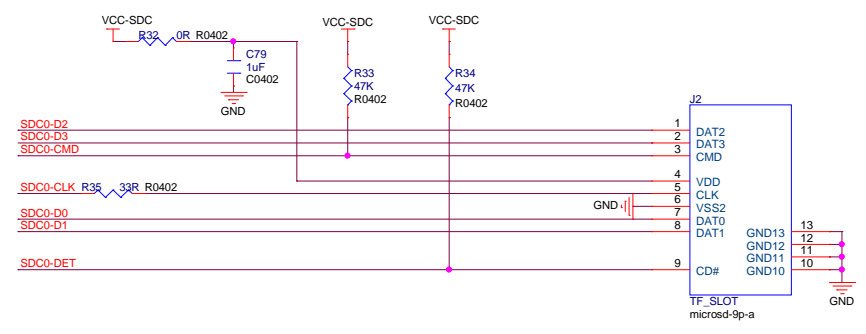


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TF-eMMC

- SDC0-D1
- SDC0-D0
- SDC0-CLK
- SDC0-CMD
- SDC0-D3
- SDC0-D2
- SDC0-DET



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USB

5

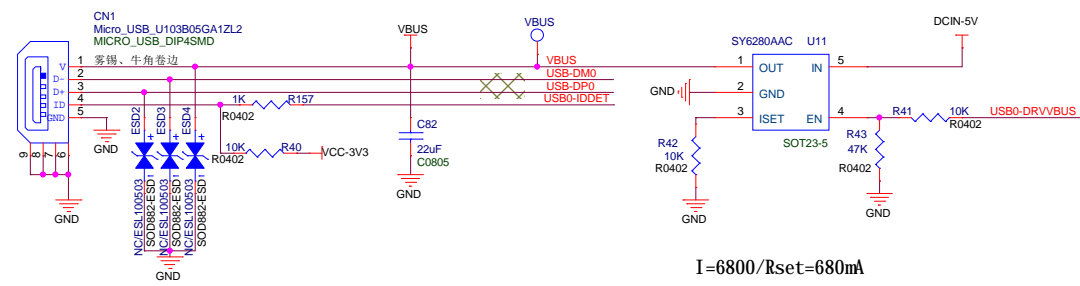
4

3

2

1

USB-DM0
USB-DP0
USB0-IDDET
USB0-DRVVBUS



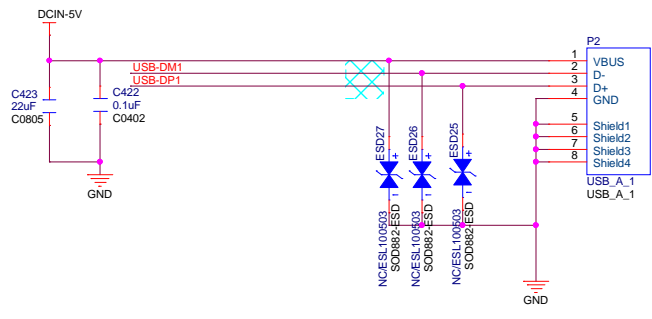
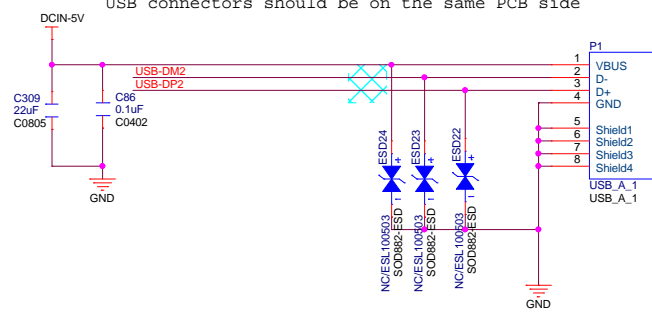
I=6800/Rset=680mA

USB-DM1
USB-DP1

note: Make sure the routing between the ESD and the USB connectors should be on the same PCB side

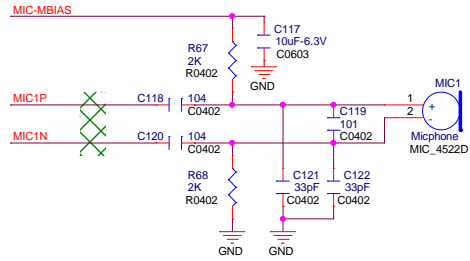
USB-DM2
USB-DP2

USB-DM3
USB-DP3

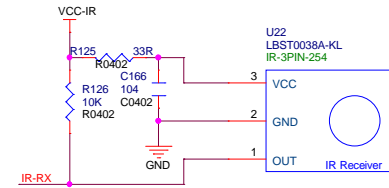


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AV-MIC-IR



IR



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Camera

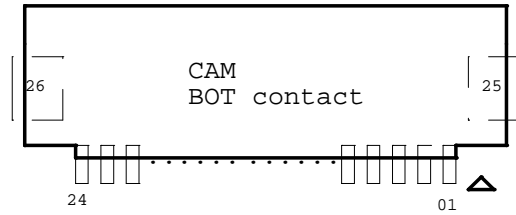
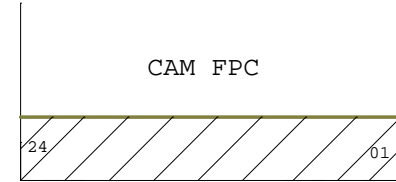
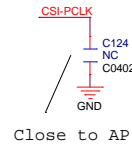
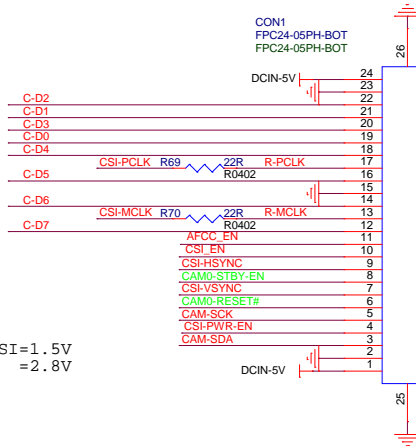
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 CSI-STBY-EN << CAM0-STBY-EN
 CSI-PWR-EN << CSI-PWR-EN

CSI-SCK << CAM-SCK
 CSI-SDA << CAM-SDA
 CSI-PCLK << CSI-PCLK
 CSI-MCLK << CSI-MCLK
 CSI-HSYNC << CSI-HSYNC
 CSI-VSYNC << CSI-VSYNC

CSI-D0 << C-D0
 CSI-D1 << C-D1
 CSI-D2 << C-D2
 CSI-D3 << C-D3
 CSI-D4 << C-D4
 CSI-D5 << C-D5
 CSI-D6 << C-D6
 CSI-D7 << C-D7

AFCC_EN << AFCC_EN
 CSI_EN << CSI_EN

VDD1V5-CSI=1.5V
 VCC-CSI =2.8V



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A3	HDMI-MISC		
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EMAC

D

C

B

A

D

C

B

A

5

4

3

2

1

5

4

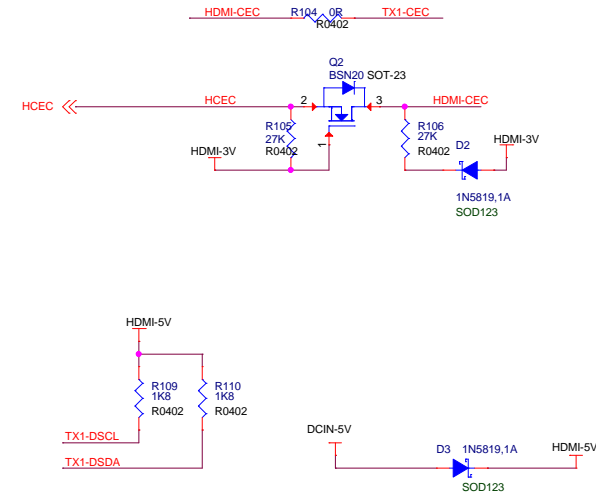
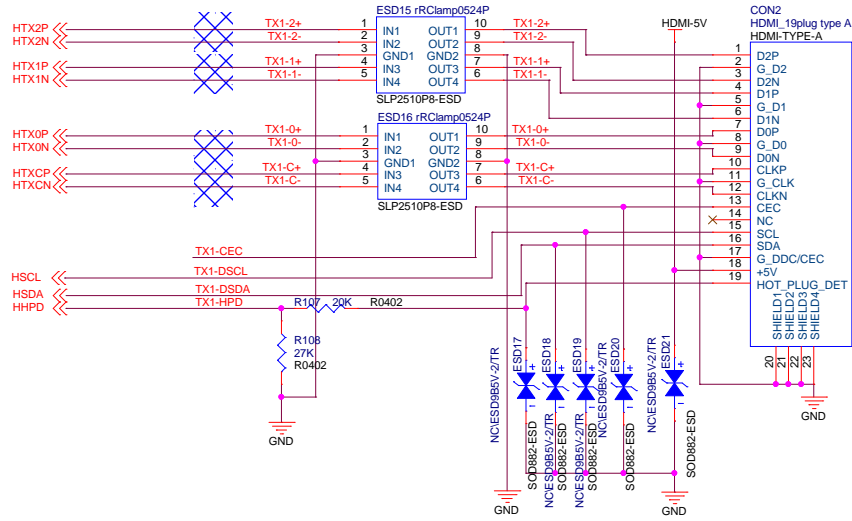
3

2

1

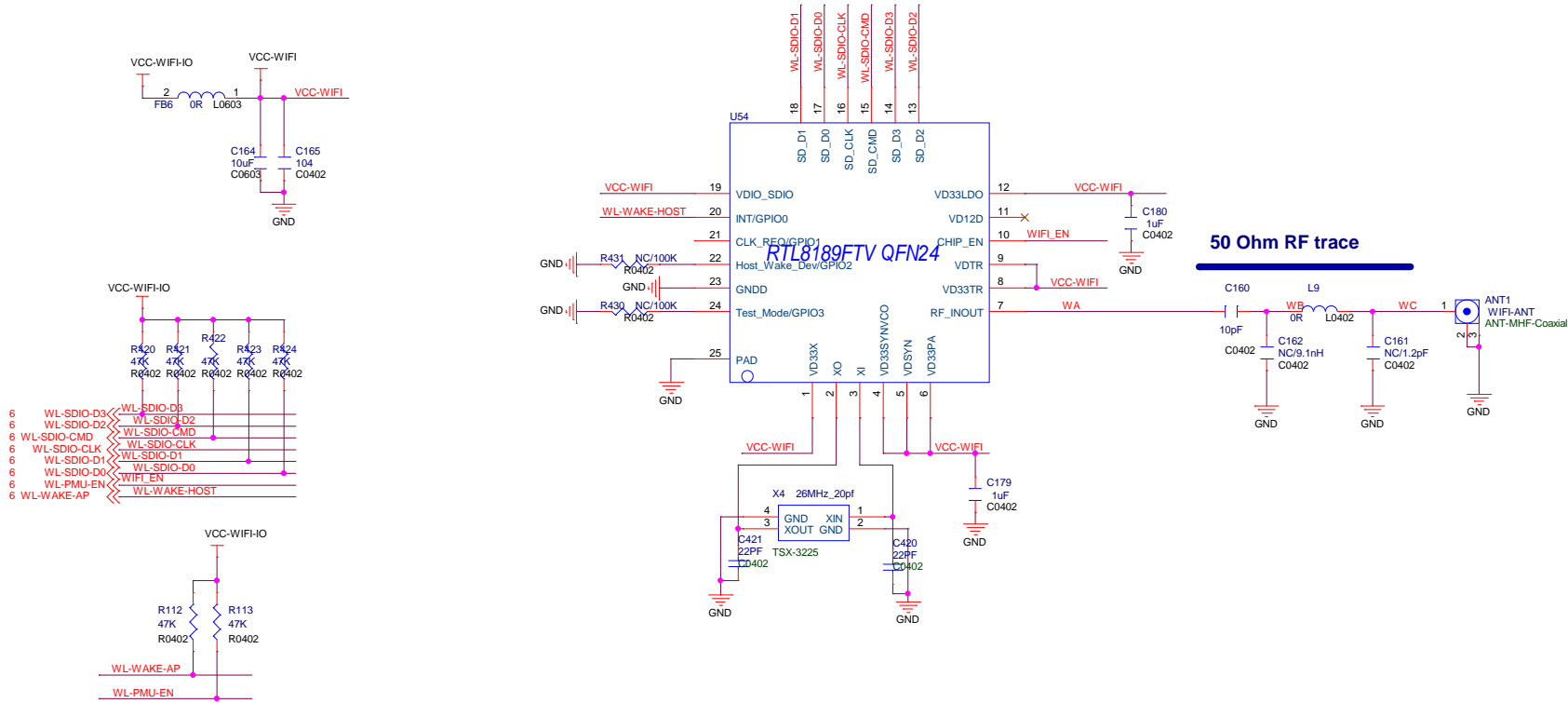
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HDMI



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A3	SiI9612-4K	
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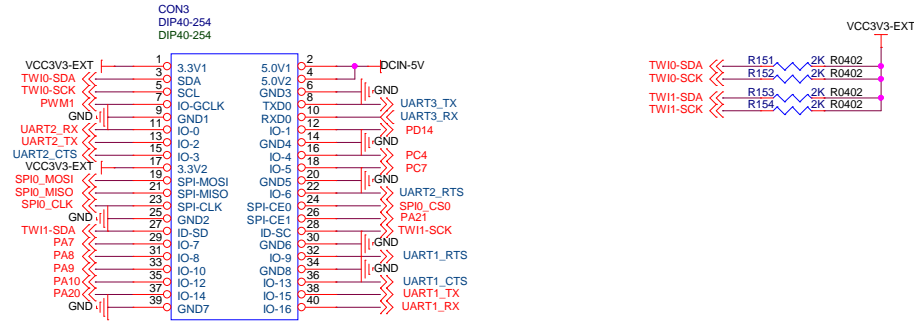
WIFI



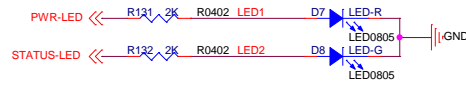
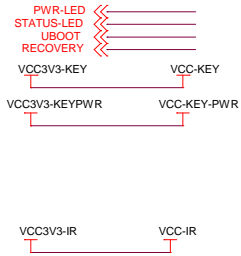
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Ext Port

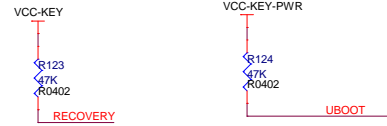
Ext



LED

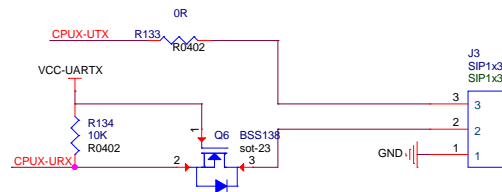
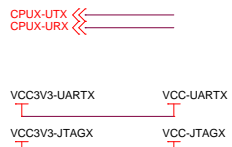


KEY



IR

DEBUG



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