

REVISION HISTORY

Schematics Index:

Revision	Description	Date	Drawn	Checked
ORANGE_PI-PC-V1_2	Initial	2015-07-11		
		2016-01-15		
ORANGE_PI-PC-PLUS_V1_0	Initial			
	1、千兆网口改为百兆网口			
	2、增加eMMC			

D

D

C

C

B

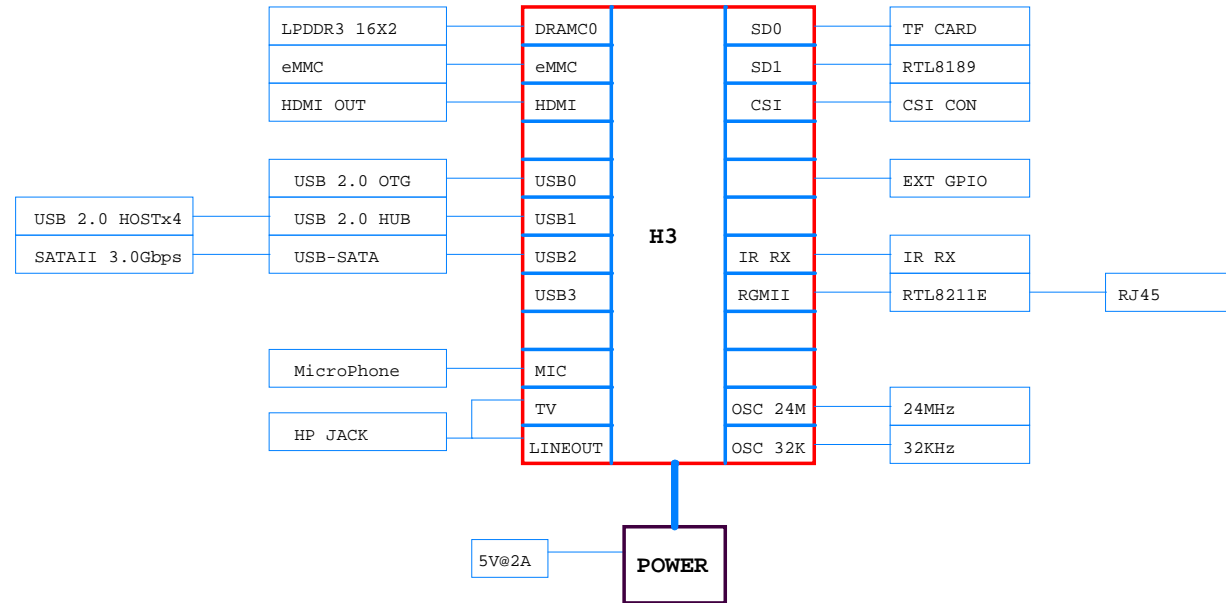
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A

A

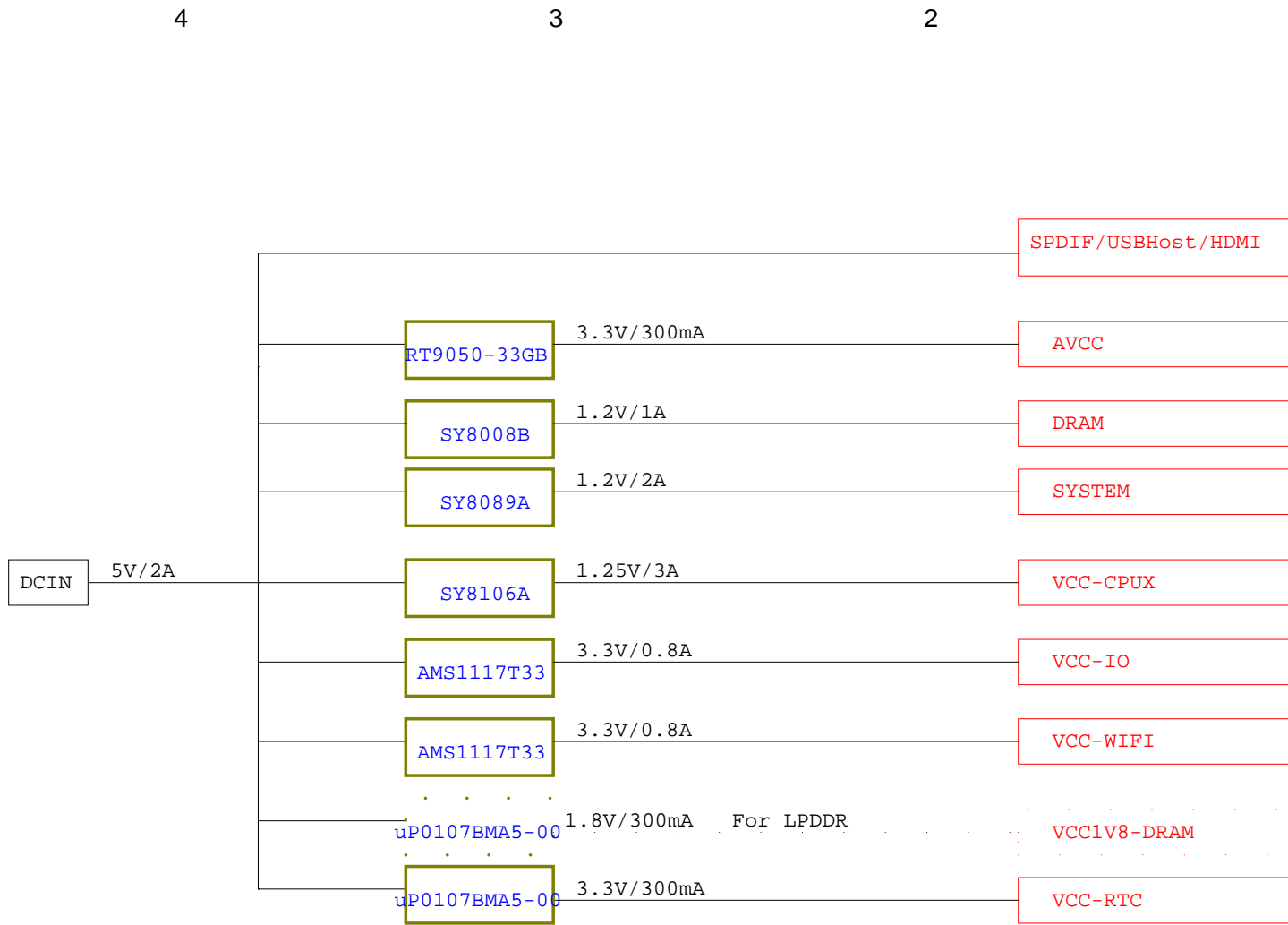
Xunlong Software			
Design Name			
ORANGE_PI-PC-PLUS			
Size	Page Name	Rev	
A3	REVISION HISTORY		
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BLOCK



Xunlong Software		
Design Name		
ORANGE PI-PC-PLUS		
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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	

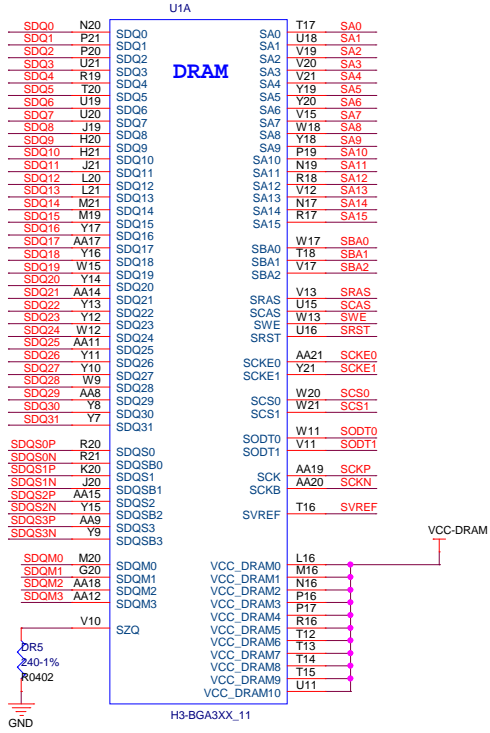
PIN	Define	CFG	Function
PF0	D1	2	CARD0
PF1	D0	2	
PF2	CLK	2	
PF3	CMD	2	
PF4	D3	2	
PF5	D2	2	
PF6	DET	0	

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	

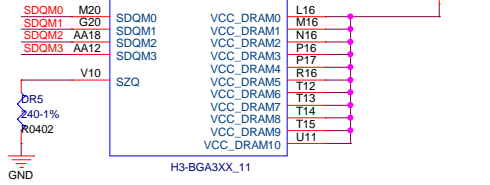
PIN	Define	CFG	Function
PL0	TWI	2	TWI
PL1	TWI	2	
PL2	USB0-DRVVBUS	1	USB
PL3	USB1-DRVVBUS	1	
PL4	RECOVERY	0	KEY
PL5	VCC-IO-EN	1	IO-EN
PL6	NC	7	
PL7	WIFI-EN	7	WIFI-EN
PL8	PWR-STB	1	
PL9	PWR-DRAM	1	
PL10	PWR-LED	1	
PL11	IR-RX	2	

DDR3 16x2

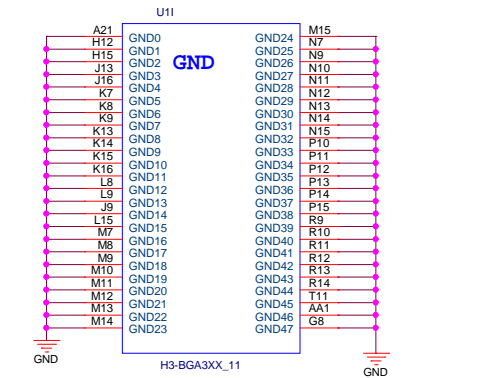
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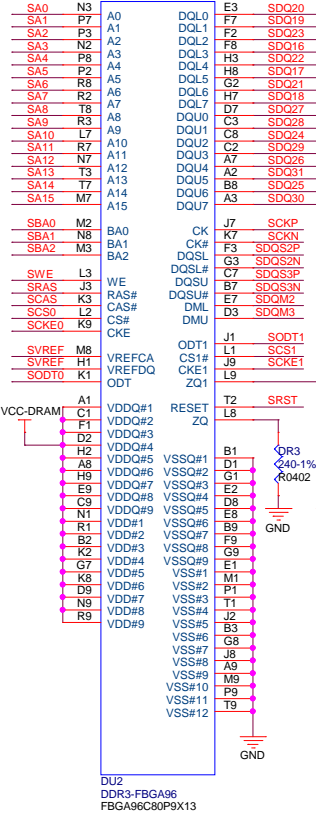
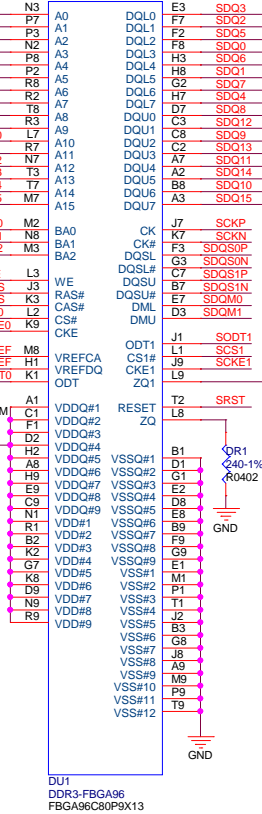
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B



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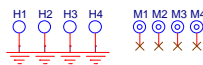
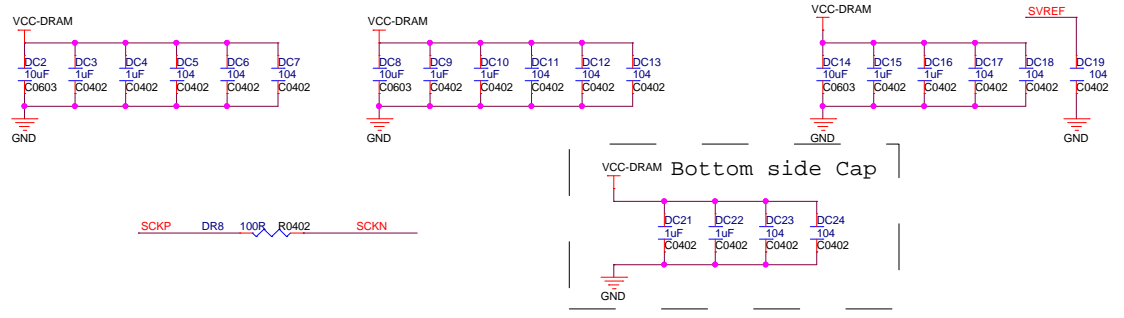


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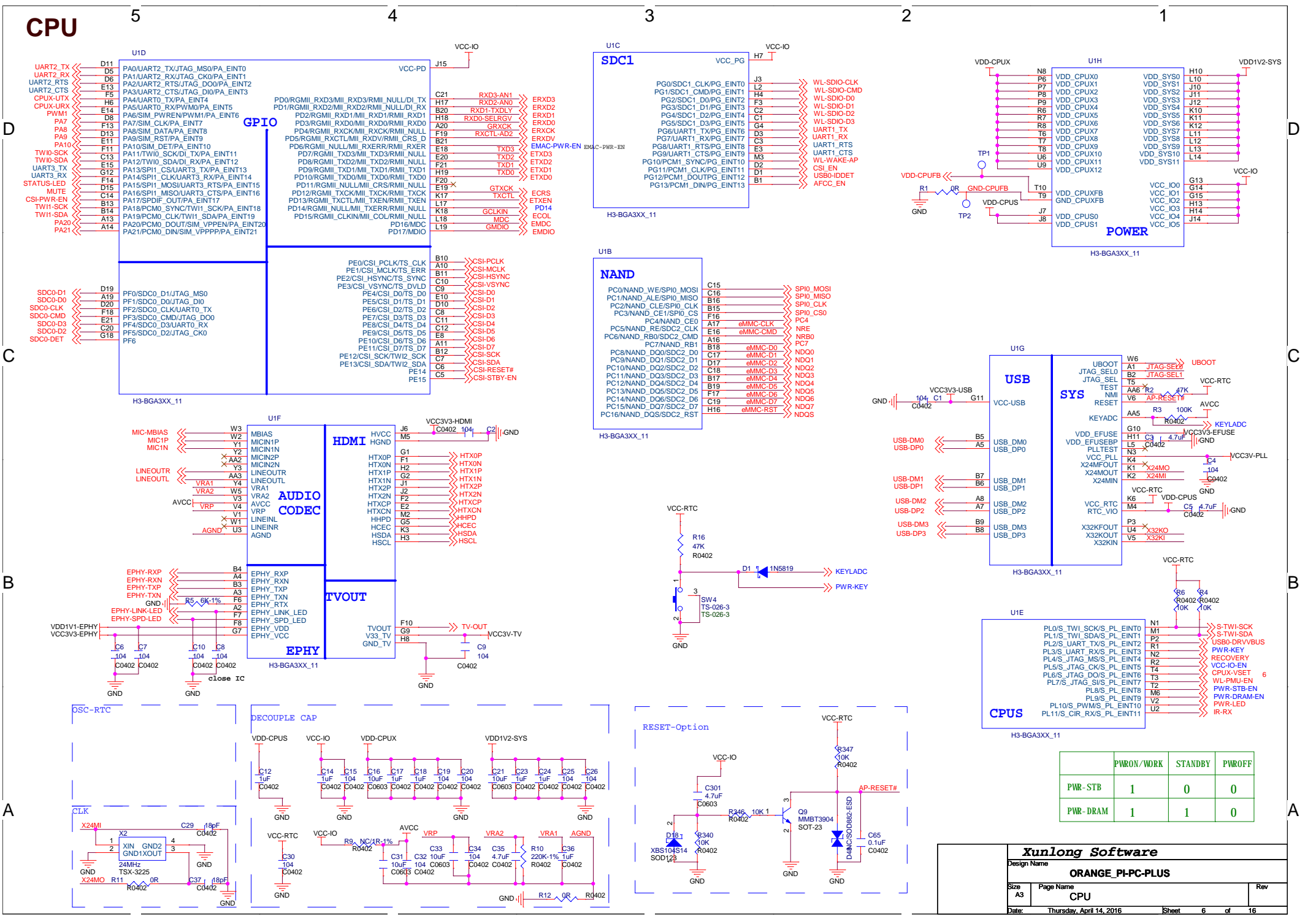
C

B

A



CPU



	PWRON/WORK	STANDBY	PWROFF
PWR-STB	1	0	0
PWR-DRAM	1	1	0

CPUS

H3-BGA3XX_11

PLO/S_TWI_SCK/S_PL_EINT0 N1
 PL1/S_TWI_SDA/S_PL_EINT1 M1
 PL2/S_UART_TX/S_PL_EINT2 R1
 PL3/S_UART_RX/S_PL_EINT3 N2
 PL4/S_JTAG_MS/S_PL_EINT4 R2
 PL5/S_JTAG_CS/S_PL_EINT6 T3
 PL6/S_JTAG_DO/S_PL_EINT6 T3
 PL7/S_JTAG_SIV/S_PL_EINT7 T2
 PL8/S_PL_EINT8 M6
 PL9/S_PL_EINT9 V2
 PL10/S_PWM/S_PL_EINT10 V2
 PL11/S_CIR_RX/S_PL_EINT11 U2

USB

H3-BGA3XX_11

UBOOT W6
 JTAG_SELO A1
 JTAG_SEL0 B2
 JTAG_SEL1 T5
 TEST AA6
 R2 47K
 V6 AP-RESET# R402
 R3 100K
 R0402
 KEYLADC AA5
 R3 100K
 R0402
 VDD_EFUSE G10
 VDD_EFUSEP H11
 C3 4.7uF
 C0402
 PLLTEST N3
 VCC_PLL K4
 X24MIFOUT K1
 X24MOUT K2
 X24MIN
 VCC_RTC M4
 VDD-CPUS C5
 4.7uF
 C0402
 X32KOUT P3
 U4 X32K0
 U5 X32K1
 X32KIN

USB

H3-BGA3XX_11

VCC-USB
 USB_DM0 B5
 USB-DP0 A5
 USB-DM1 B7
 USB-DP1 B6
 USB-DM2 A8
 USB-DP2 A7
 USB-DM3 B9
 USB-DP3 B8

NAND

H3-BGA3XX_11

PC0/NAND_WE/SPI0_MOSI C15
 PC1/NAND_ALE/SPI0_MISO C16
 PC2/NAND_CLE/SPI0_CLK B16
 PC3/NAND_CE1/SPI0_CS F16
 PC4/NAND_CE0 A17
 eMMC-CLK NR6
 PC5/NAND_RE/SDC2_CLK A16
 PC6/NAND_RB0/SDC2_CMD E16
 PC7/NAND_RB1 E16
 PC8/NAND_DQ0/SDC2_D0 C17
 PC9/NAND_DQ1/SDC2_D1 D17
 eMMC-D2 ND01
 PC10/NAND_DQ2/SDC2_D2 C18
 eMMC-D3 ND02
 PC11/NAND_DQ3/SDC2_D3 D19
 eMMC-D6 ND03
 PC12/NAND_DQ4/SDC2_D4 B17
 eMMC-D4 ND04
 PC13/NAND_DQ5/SDC2_D5 F17
 eMMC-D5 ND05
 PC14/NAND_DQ6/SDC2_D6 B19
 eMMC-D6 ND06
 PC15/NAND_DQ7/SDC2_D7 C19
 eMMC-D7 ND07
 PC16/NAND_DQ8/SDC2_RST H16
 eMMC-RST ND08

SDC1

H3-BGA3XX_11

PG0/SDC1_CLK/PG_EINT0 J3
 PG1/SDC1_CMD/PG_EINT1 L2
 PG2/SDC1_D0/PG_EINT2 H4
 PG3/SDC1_D1/PG_EINT3 F5
 PG4/SDC1_D2/PG_EINT4 C2
 PG5/SDC1_D3/PG_EINT5 G4
 PG6/UART1_TX/PG_EINT6 D3
 PG7/UART1_RX/PG_EINT7 C3
 PG8/UART1_RTS/PG_EINT8 E3
 PG9/UART1_CTS/PG_EINT9 M3
 PG10/PCM1_SYNC/PG_EINT10 D2
 PG11/PCM1_CLK/PG_EINT11 D1
 PG12/PCM1_DOUT/PG_EINT12 D1
 PG13/PCM1_DIN/PG_EINT13 B1

OSC-RTC

DECOUPLE CAP

RESET-Option

CLK

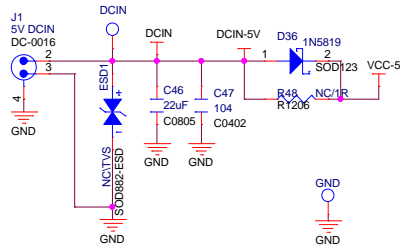
X24M1 X2
 XIN GND2
 GND1XOUT 4
 24MHz TSX-3225
 GND
 X24M0 R11
 R0402
 C29 18pF
 C0402
 C37 18pF
 C0402

VDD-CPUS VDD-IO VDD-CPUX VDD1V2-SYS
 C12 1uF C0402
 C14 1uF C0402
 C15 10uF C0603
 C16 10uF C0603
 C17 1uF C0402
 C18 10uF C0402
 C19 10uF C0402
 C20 10uF C0402
 C21 10uF C0603
 C22 1uF C0402
 C23 1uF C0402
 C24 1uF C0402
 C25 10uF C0402
 C26 10uF C0402

VCC-RTC VCC-IO
 R9 NC/1R-1% R0402
 VRRP C33 10uF C0402
 C32 10uF C0402
 C31 10uF C0603
 AVCC C34 10uF C0402
 VRRP C35 4.7uF R0402
 R10 220K-1% R0402
 VRA2 C36 C0402
 VRA1 C37 C0402
 AGND R12 R0402

VCC-RTC R347 10k R0402
 R340 R0402
 XBS104S14 SOD123
 D18-1
 VCC-IO
 C301 4.7uF C0603
 R345 R0402
 10K 1
 Q9 MMBT3904 SOT-23
 VCC-RTC
 D18-2 SDB6C-ESD
 C65 0.1uF C0402

DCIN

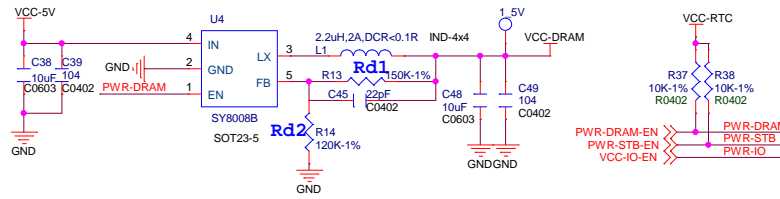


POWER

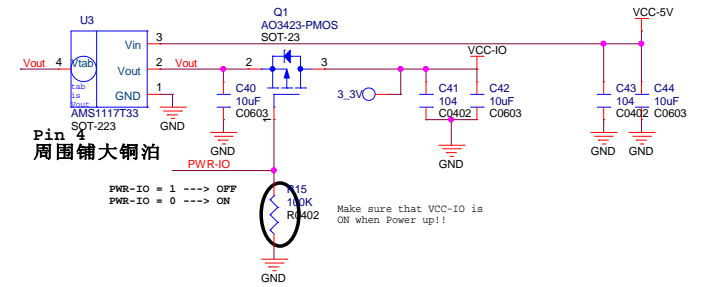
$$V_{out} = 0.6 * (1 + R_{d1} / R_{d2})$$

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

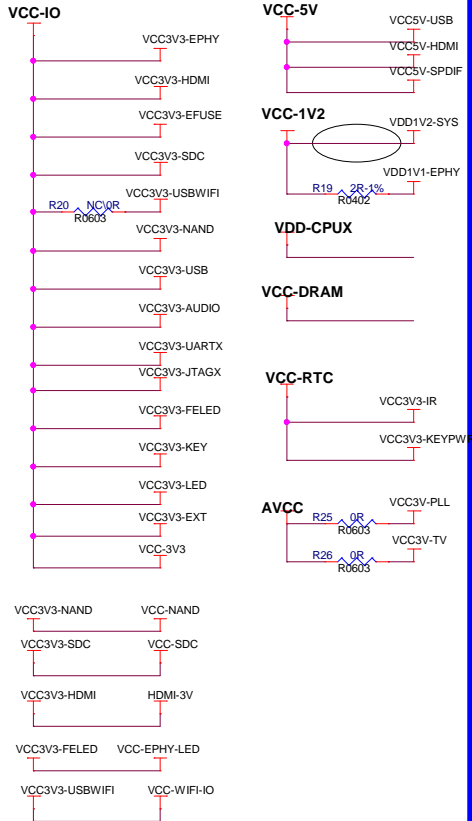
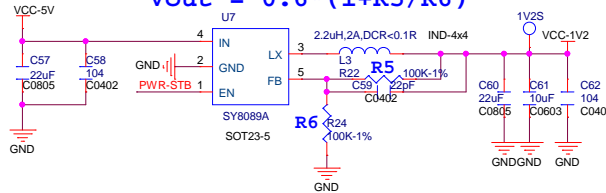
$$V_{DRAM} = 1.35V / 1A, R_2 = 120K-1\%$$



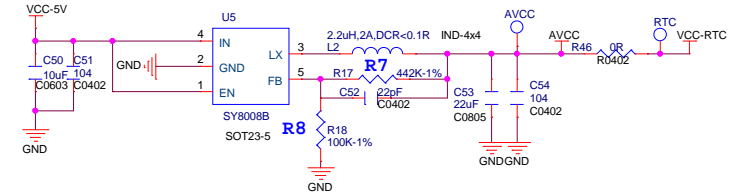
VCCIO 3.3V/1A



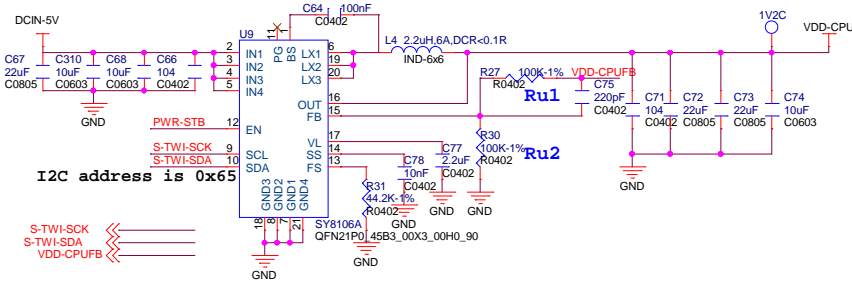
SYSTEM 1.2V/2A

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


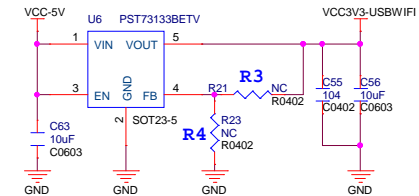
AVCC 3.3V/1A



CPUX 1.2V/6A

$$V_{out} = 0.6 * (1 + R_{u1} / R_{u2})$$


WIFI Power 3.3V/300mA



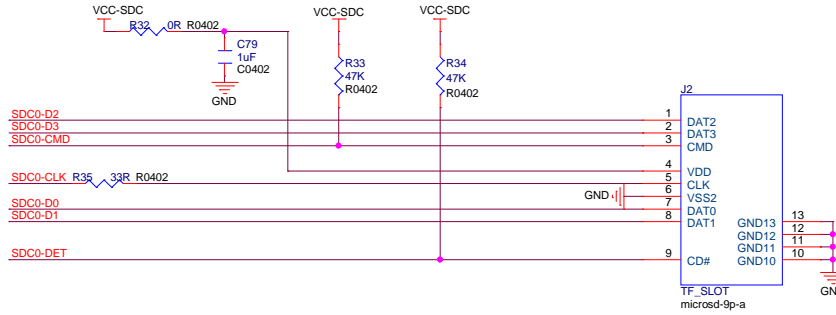
Xunlong Software

Design Name
ORANGE_PI-PC-PLUS

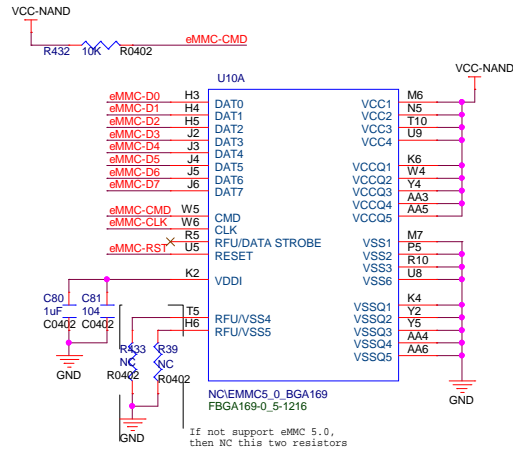
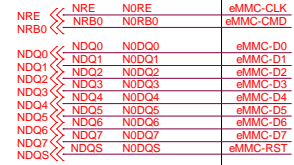
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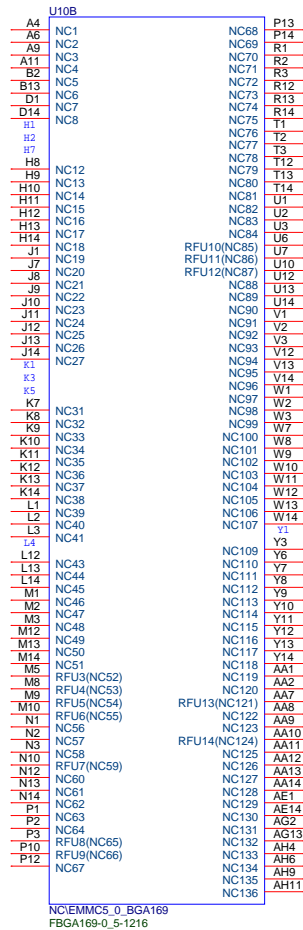
TF-eMMC



增加eMMC



If not support eMMC 5.0, then NC this two resistors



USB

5

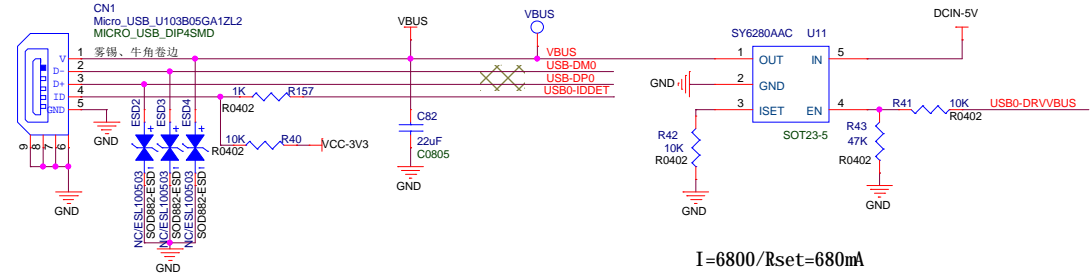
4

3

2

1

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

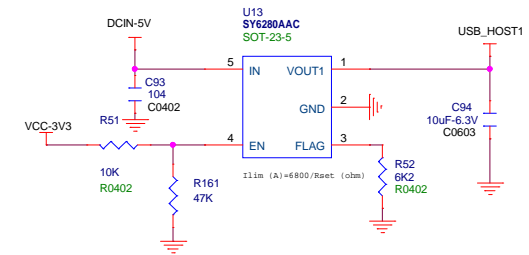
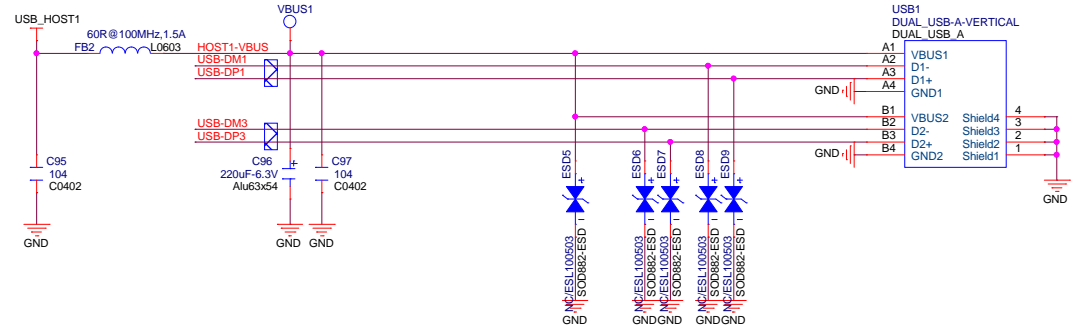
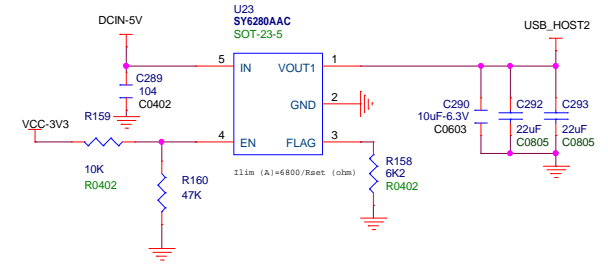
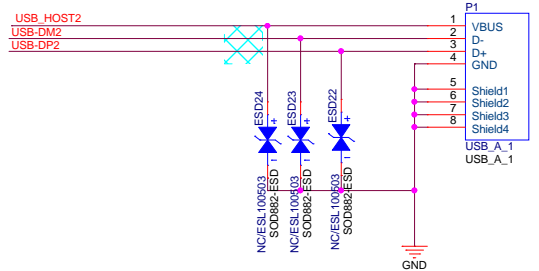


I=6800/Rset=680mA

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

USB-DM1
USB-DP1
USB1-DRVVBUS

USB-DM2
USB-DP2
USB-DM3
USB-DP3



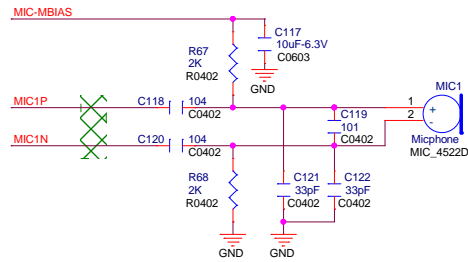
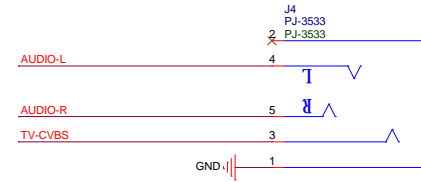
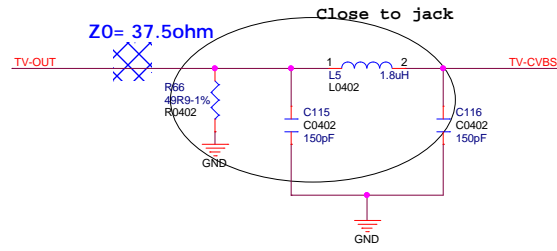
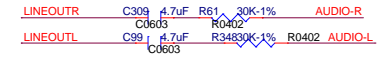
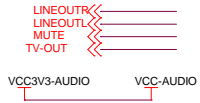
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AV-MIC



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Camera

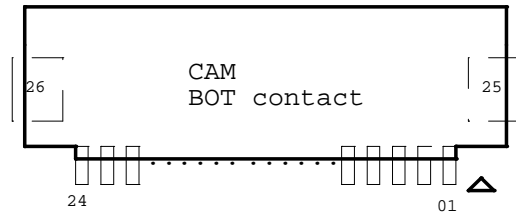
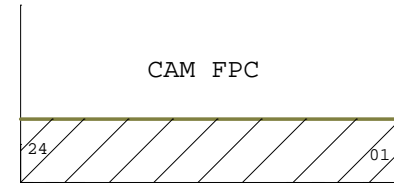
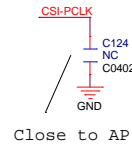
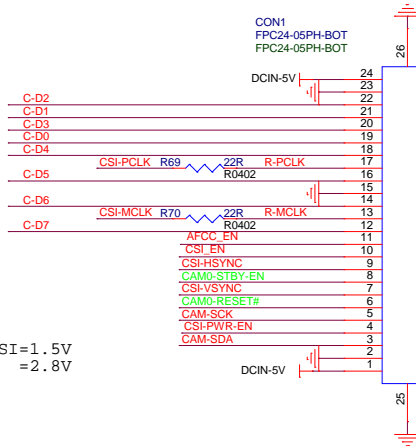
CSI-RESET# << CAM0-RESET#
 CSI-STBY-EN << CAM0-STBY-EN
 CSI-PWR-EN << CSI-PWR-EN

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



Xunlong Software

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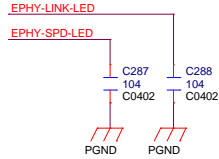
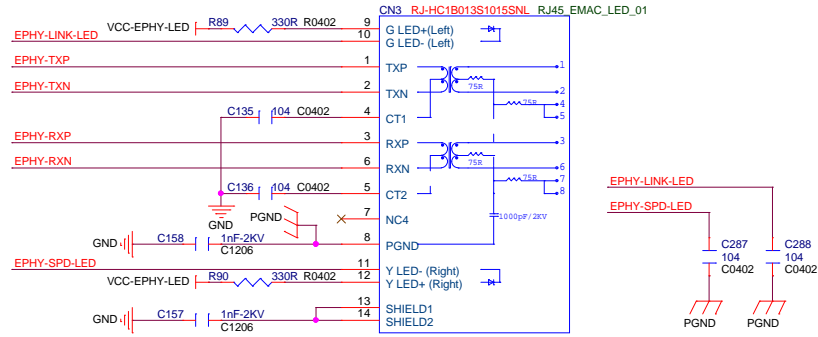
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EMAC

删除千兆网口，增加百兆网口

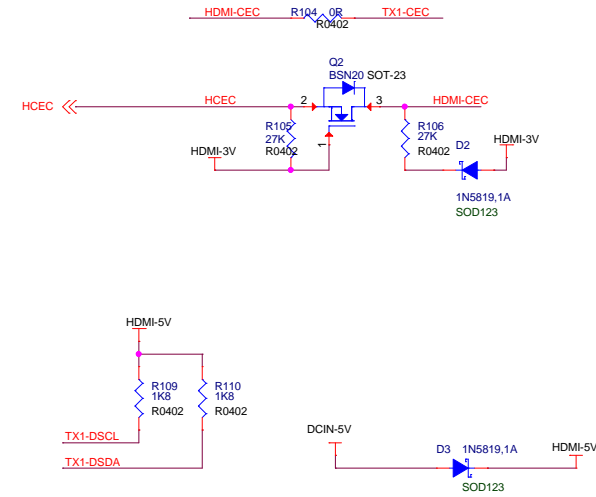
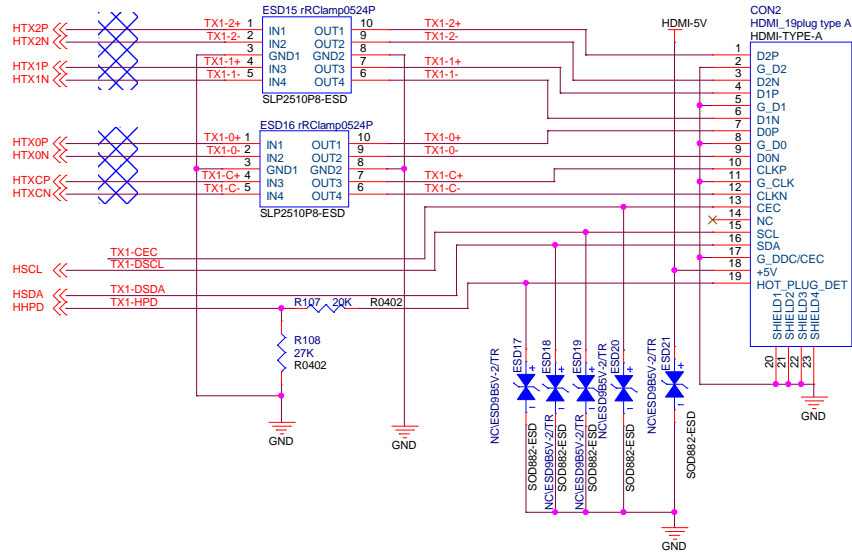
EPHY-RXP
EPHY-RXN
EPHY-TXP
EPHY-TXN

EPHY-LINK-LED
EPHY-SPD-LED
VCC-EPHY-LED



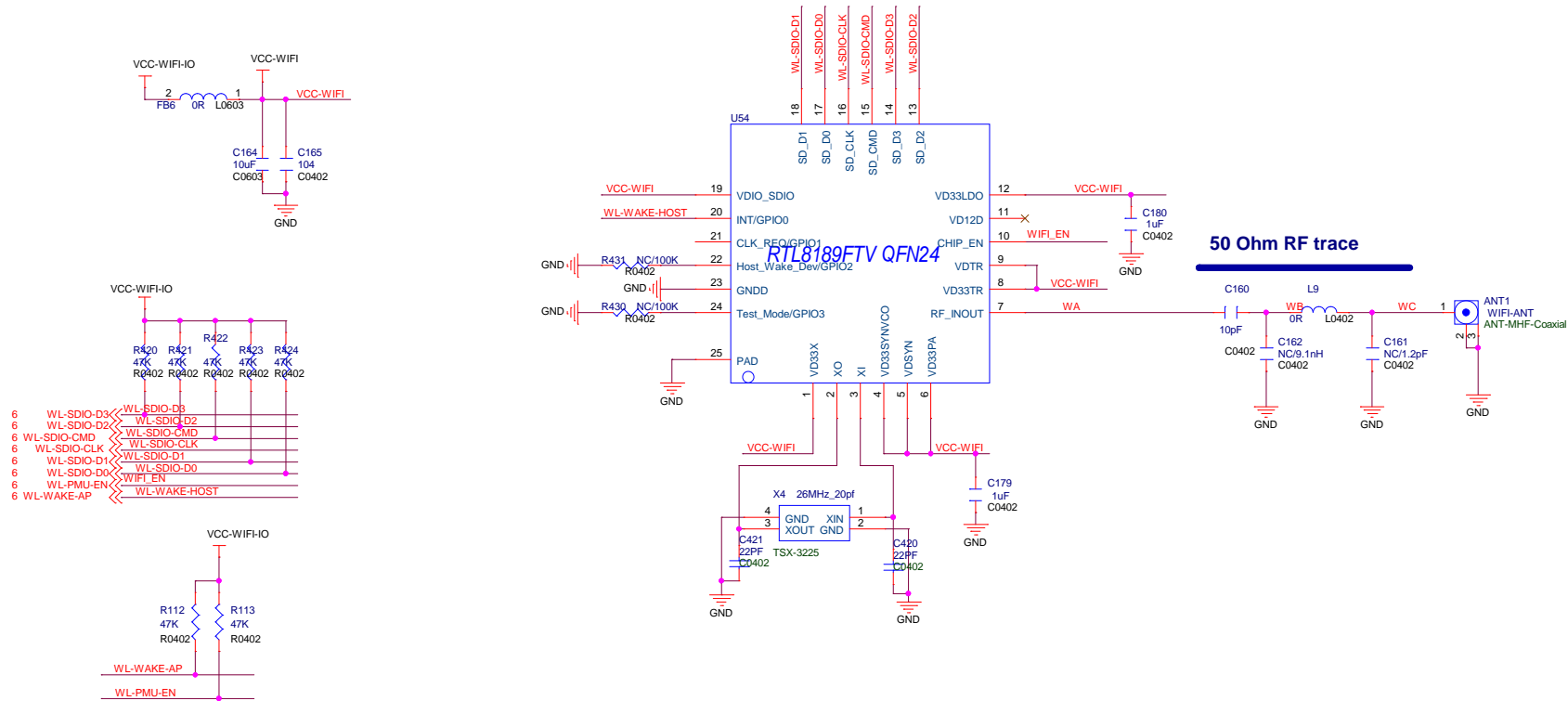
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HDMI



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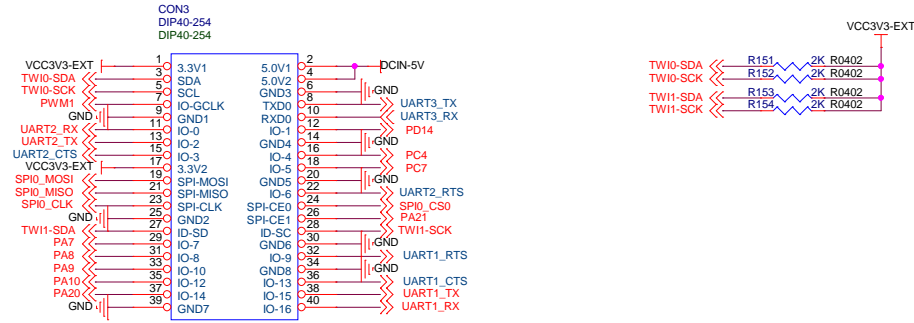
WIFI



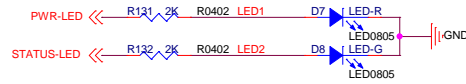
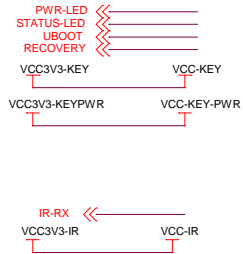
Xunlong Software		
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Ext Port

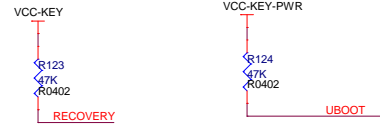
Ext



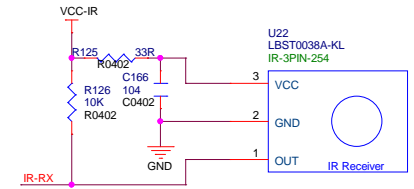
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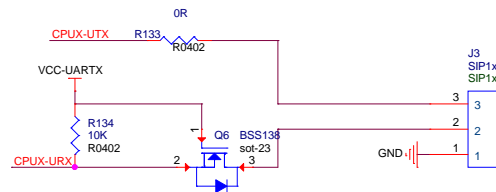
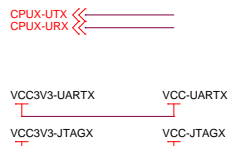
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DEBUG



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