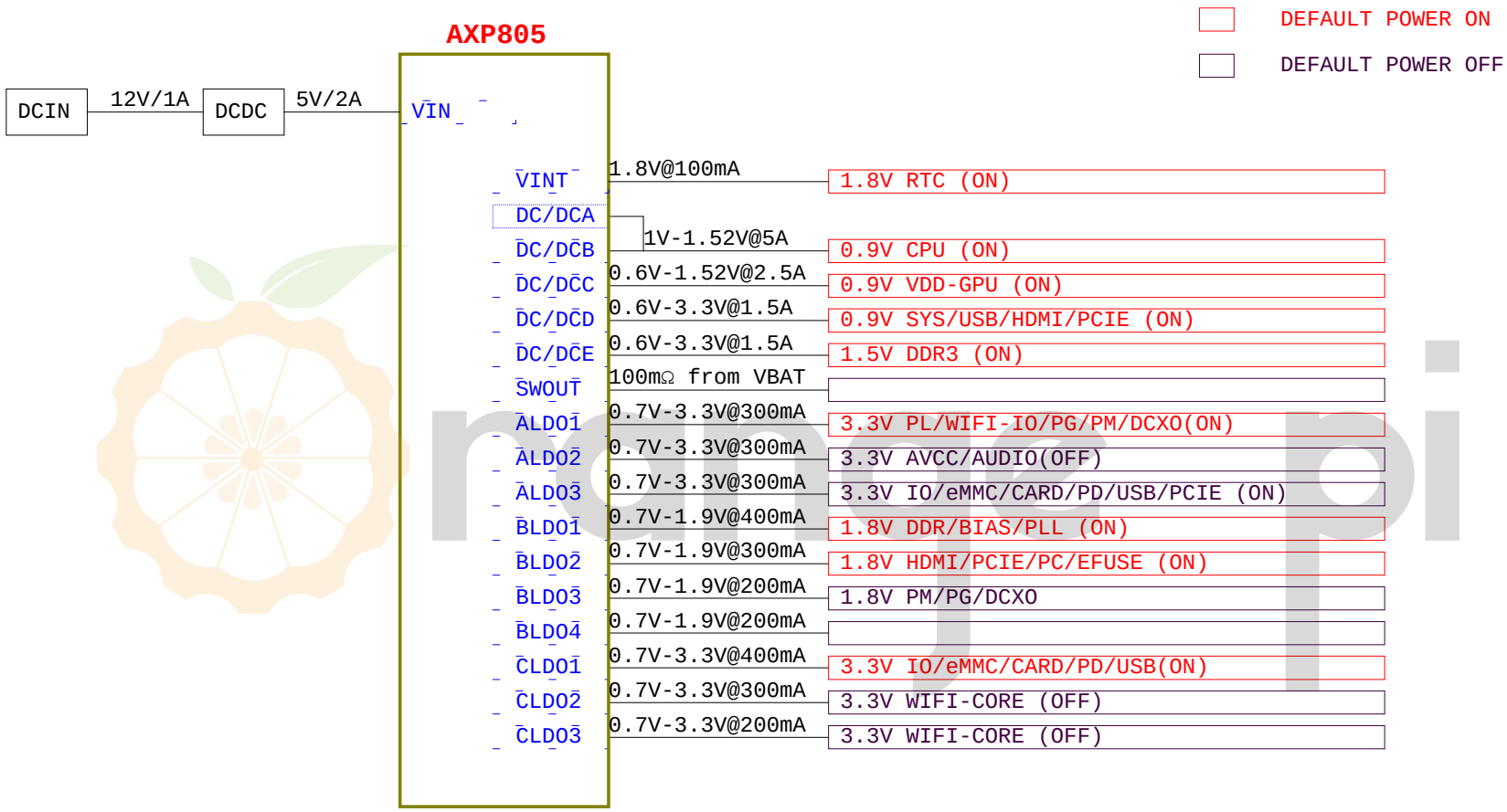
REVISION HISTORY

Schematics Index:

Revision	Description	Date	Drawn	Checked
Ver 0.5	Initial Version	2016-12-26	HJ	
Ver 0.8		2017-02-23	HJ	
Ver 0.9		2017-03-22	HJ	
Ver 1.0	1.增加电阻，连通VCC18-RTC 和 VDD18-LPDDR 2.将HDMI和CAMERA处的SDA SCK网络进行调整，H6分两组来控制HDMI和CAMERA. 3.将H6 的PG14脚悬空。 4.主控处的电压改接成BLDO1,之前是与DDR3共用。 5.将CAMERA与HDMI IN处复用的网络用0R电阻分开接出，PCB中绕线更短。 6.将之前40PIN座子修改成26PIN 7.新增USB3.0_HUB功能 8.新增千兆网口模块	2018-03-20		
Ver 1.1	9. 12页去掉AUDIO部分的放大电路模块，左右声道各加一个电阻和电容 10.13页 USB3.0去掉EERPOM模块 11.13页 USB3.0接口处的OR电阻去掉，修改TX->RX网络，ESD器件预留0402的封装，VCC18-RTC与VDD18-LPDDR网络通过OR电阻连接			

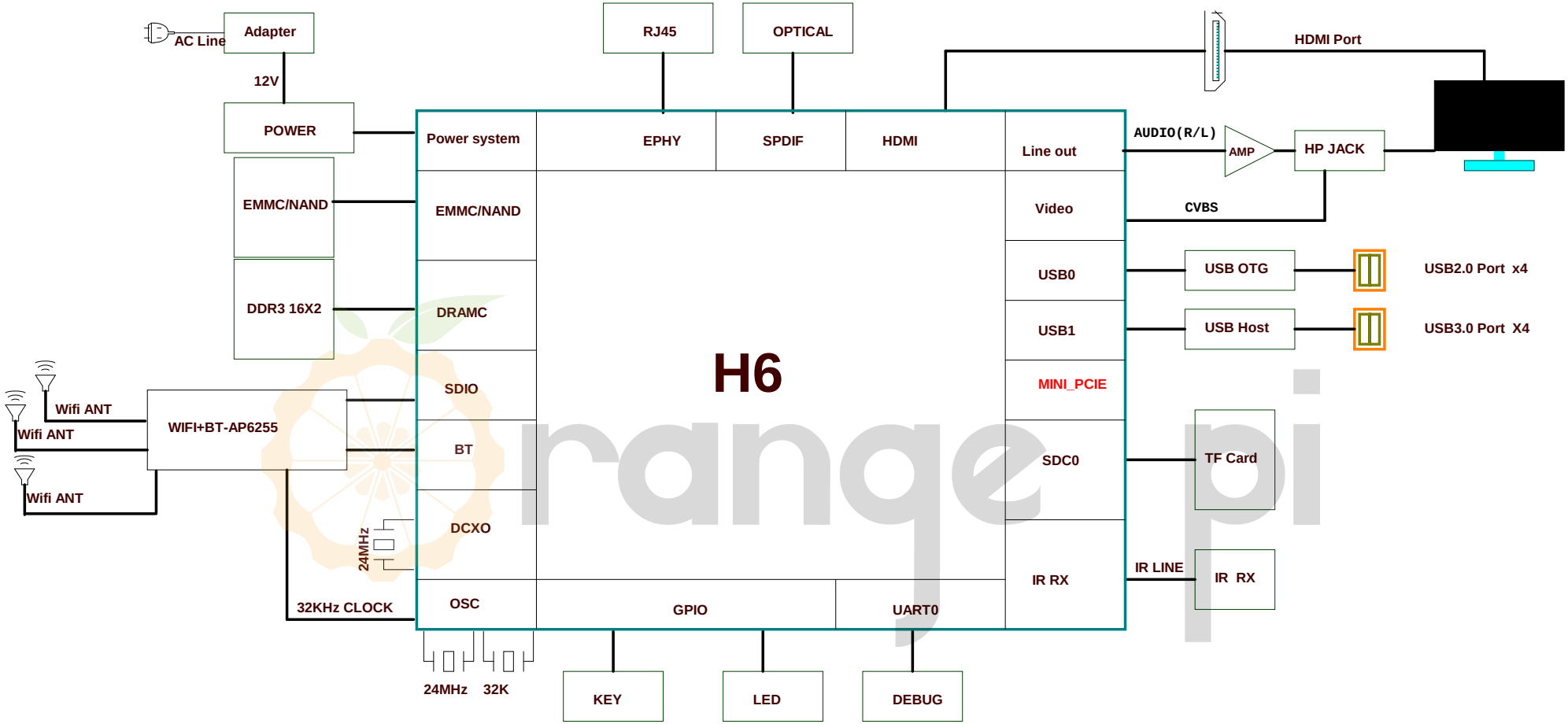
Xunlong Software Co.,Limited	
Design Name	ORANGE_PI-3
Size A3 / Page Name	REVISION HISTORY
Rev	1.5
Date:	Monday, November 26, 2018
Sheet	1 of 17

POWER TREE



Xunlong Software Co.,Limited		
Design Name: ORANGE_PI-3		
Size: A3	Page Name: POWER TREE	Rev: 1.5
Date: Monday, November 26, 2018	Sheet 2 of 17	

BLOCK



Xunlong Software Co.,Limited	
Design Name	ORANGE_PI-3
Size A3 / Page Name	BLOCK
Rev	1.5
Date: Monday, November 26, 2018	Sheet 2 of 17

GPIO ASSIGNMENT

PIN	Define	CFG	Function
PC0	NAND_WE	2	NAND/eMMC
PC1	NAND_ALE/SDC2_DS	2/3	
PC2	NAND_CLE	2	
PC3	NAND_CE0	2	
PC4	NAND_RE/SDC2_CLK	2/3	
PC5	NAND_RB0/SDC2_CMD	2/3	
PC6	NAND_DQ0/SDC2_D0	2/3	
PC7	NAND_DQ1/SDC2_D1	2/3	
PC8	NAND_DQ2/SDC2_D2	2/3	
PC9	NAND_DQ3/SDC2_D3	2/3	
PC10	NAND_DQ4/SDC2_D4	2/3	
PC11	NAND_DQ5/SDC2_D5	2/3	
PC12	NAND_DQ6/SDC2_D6	2/3	
PC13	NAND_DQ7/SDC2_D7	2/3	
PC14	NAND_DQS/SDC2_RST	2/3	
PC15	NAND_CE1	2	
PC16	NAND_RB1	2	

PIN	Define	CFG	Function
PD0			
PD1			
PD2			
PD3			
PD4			
PD5			
PD6			
PD7			
PD8			
PD9			
PD10			
PD11			
PD12			
PD13			
PD14			

PIN	Define	CFG	Function
PD15			
PD16			
PD17			
PD18			
PD19			
PD20			
PD21			
PD22			
PD23			
PD24			
PD25			
PD26			

PIN	Define	CFG	Function
PG0	SDC1_CLK	2	WIFI+BT
PG1	SDC1_CMD	2	
PG2	SDC1_D0	2	
PG3	SDC1_D1	2	
PG4	SDC1_D2	2	
PG5	SDC1_D3	2	
PG6	UART1_TX	2	
PG7	UART1_RX	2	
PG8	UART1_RTS	2	
PG9	UART1_CTS	2	
PG10	PCM2_SYNC	2	
PG11	PCM2_CLK	2	
PG12	PCM2_DOUT	2	
PG13	PCM2_DIN	2	
PG14			

PIN	Define	CFG	Function
PF0	SDC0_D1	2	CARD0
PF1	SDC0_D0	2	
PF2	SDC0_CLK/UART0_TX	2/3	
PF3	SDC0_CMD	2	
PF4	SDC0_D3/UART0_RX	2/3	
PF5	SDC0_D2	2	
PF6	SDC0-DET	2	

PIN	Define	CFG	Function
PH0	CPUX-UTX	2	
PH1	CPUX-URX	2	
PH2			
PH3			
PH4			
PH5			
PH6			
PH7	SPDIF_OUT	3	
PH8	HSCL	2	HDMI
PH9	HSDA	2	
PH10	HCEC	2	

PIN	Define	CFG	Function
PL0	PMU-SCK	3	
PL1	PMU-SDA	3	
PL2	RECOVERY	2	
PL3	LINK-LED	1	
PL4	PWR-LED	1	
PL5	USB0-DRVVBUS	1	
PL6	MUTE	1	
PL7	STATUS-LED	1	
PL8			
PL9	IR-RX	2	
PL10	BT-WIFI-ON	1	
PM0	WL-WAKE-AP	0	WIFI+BT
PM1	BT-WAKE-AP	0	
PM2	AP-WAKE-BT	1	
PM3	WL-REG-ON	1	
PM4	BT-REG-ON	1	

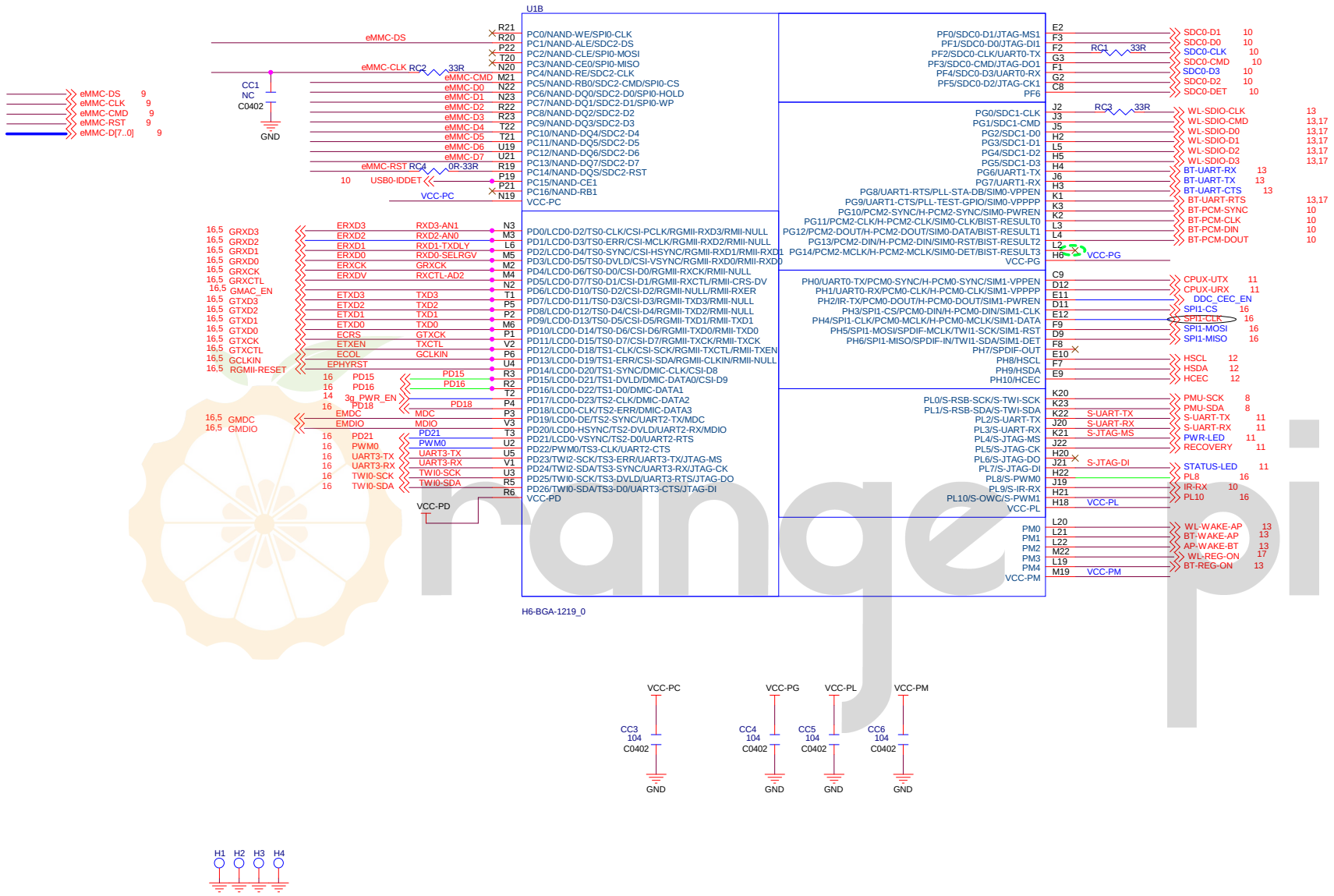
Xunlong Software Co.,Limited

Design Name: ORANGE_PI-3

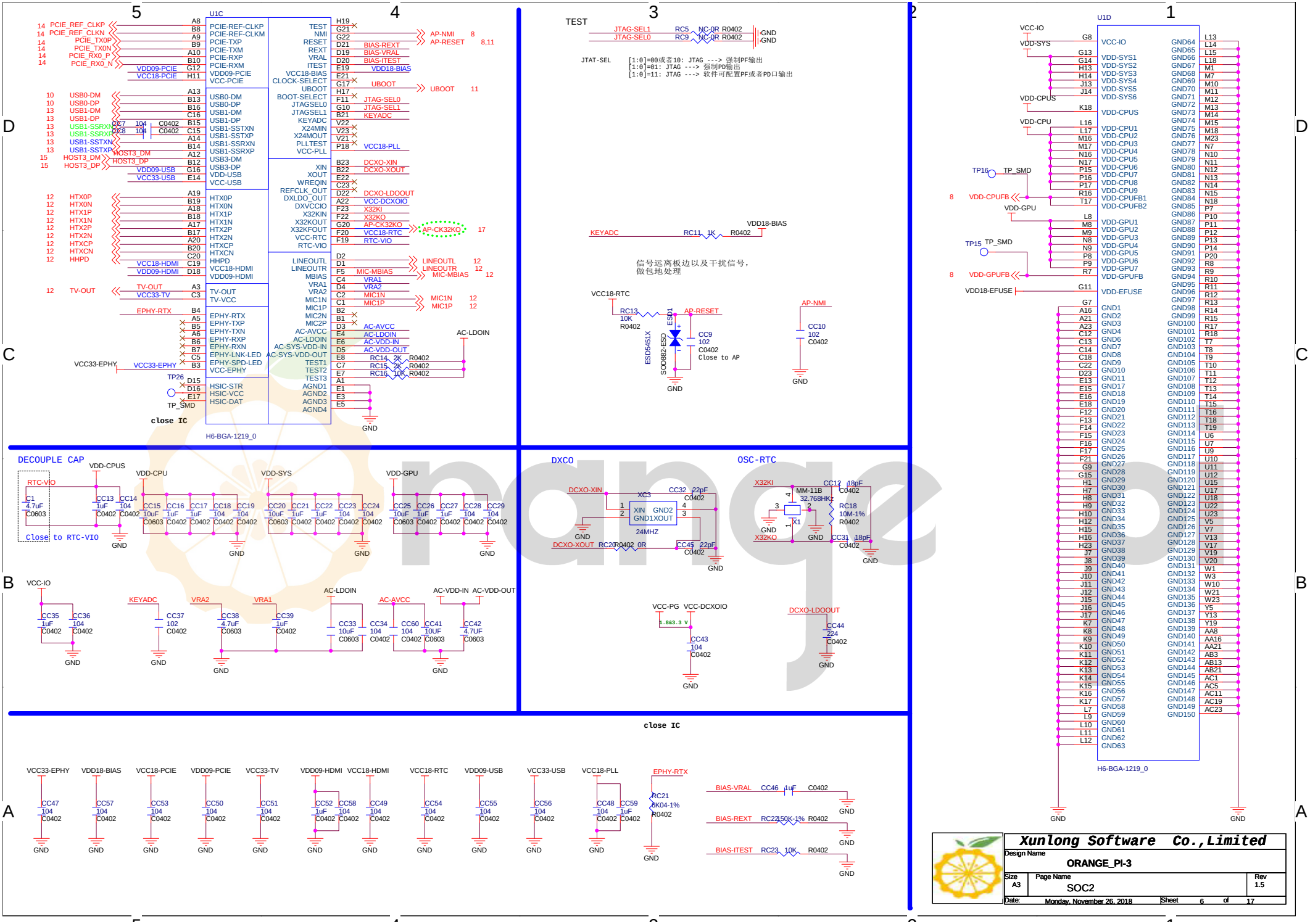
Size: A3 | Page Name: GPIO | Rev: 1.5

Date: Monday, November 26, 2018 | Sheet 4 of 17

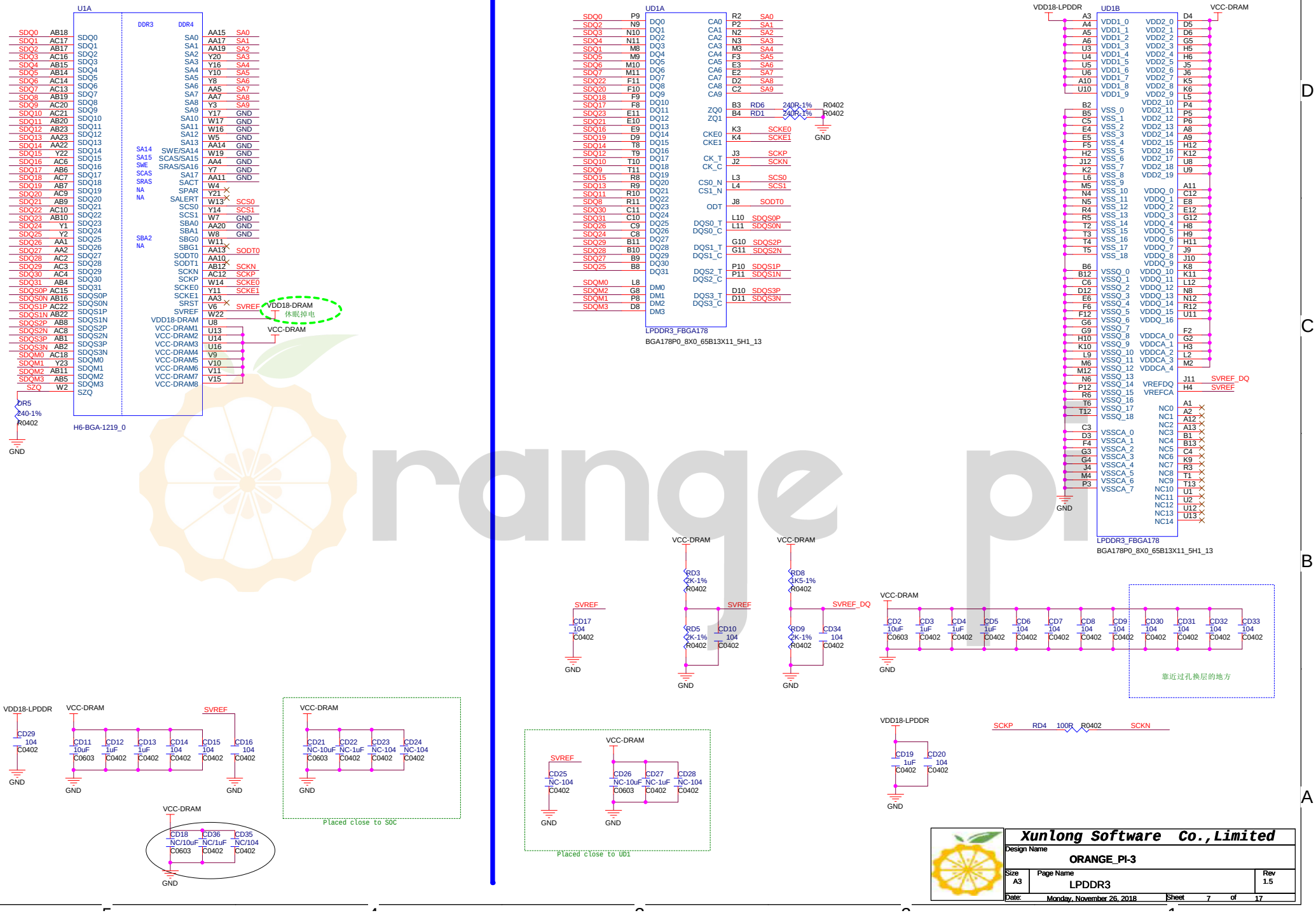
PC,PD, 部分IO口不具备中断功能
PF,PG,PH,PL,PM，部分IO口有中断功能



Xunlong Software Co.,Limited	
Design Name	ORANGE_PI-3
Size A3	Page Name SOC1
Rev	1.5
Date:	Monday, November 26, 2018
Sheet	5 of 17

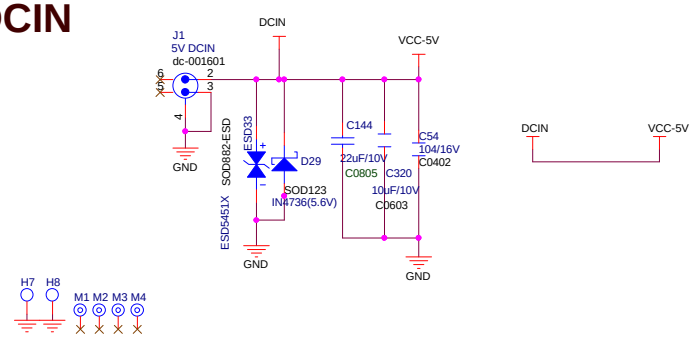

U1C
H6-BGA-1219_0
close IC
TEST
JTAT-SEL
[1:0]=00或者10: JTAG ---> 强制PF输出
[1:0]=01: JTAG ---> 强制PD输出
[1:0]=11: JTAG ---> 软件可配置PF或者PD口输出
信号远离板边以及干扰信号，
做包地处理
U1D
DECOUPLE CAP
DXCO
OSC-RTC
close IC
Xunlong Software Co.,Limited
Design Name
ORANGE_PI-3
Size
A3
Page Name
SOC2
Rev
1.5
Date:
Monday, November 26, 2018
Sheet
6
of
17

LPDDR3

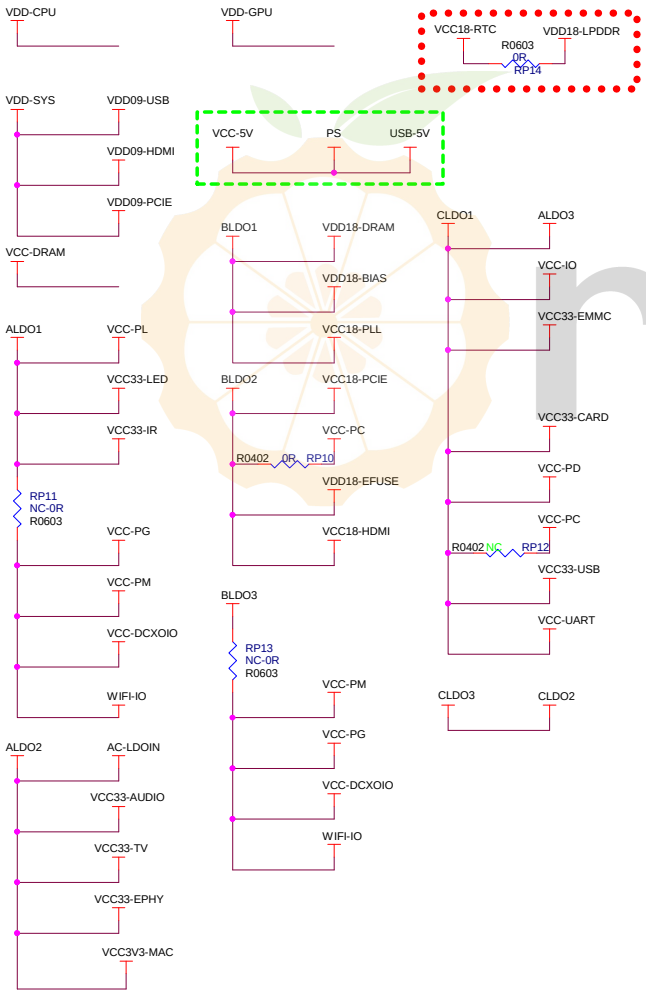


Xunlong Software Co.,Limited	
Design Name	ORANGE_PI-3
Size A3	Page Name LPDDR3
Rev	1.5
Date:	Monday, November 26, 2018
Sheet	7 of 17

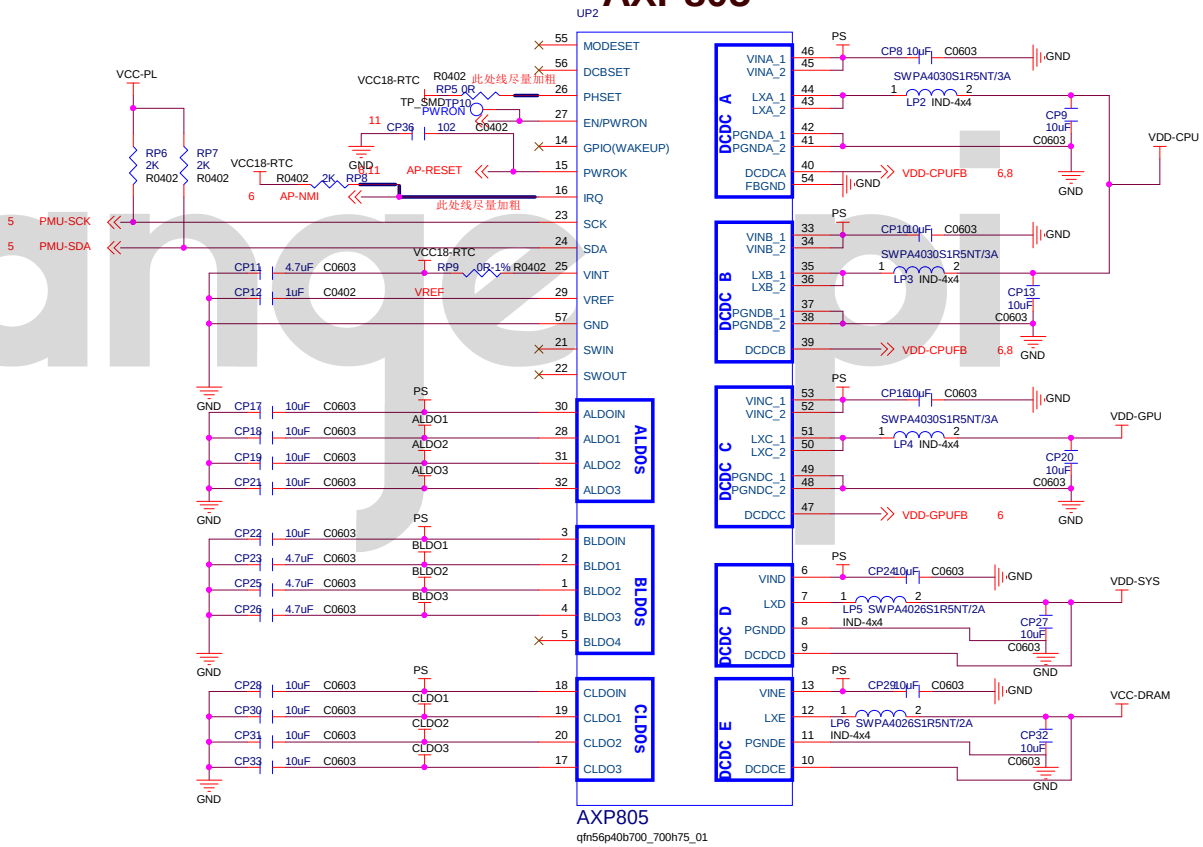
DCIN



PMIC

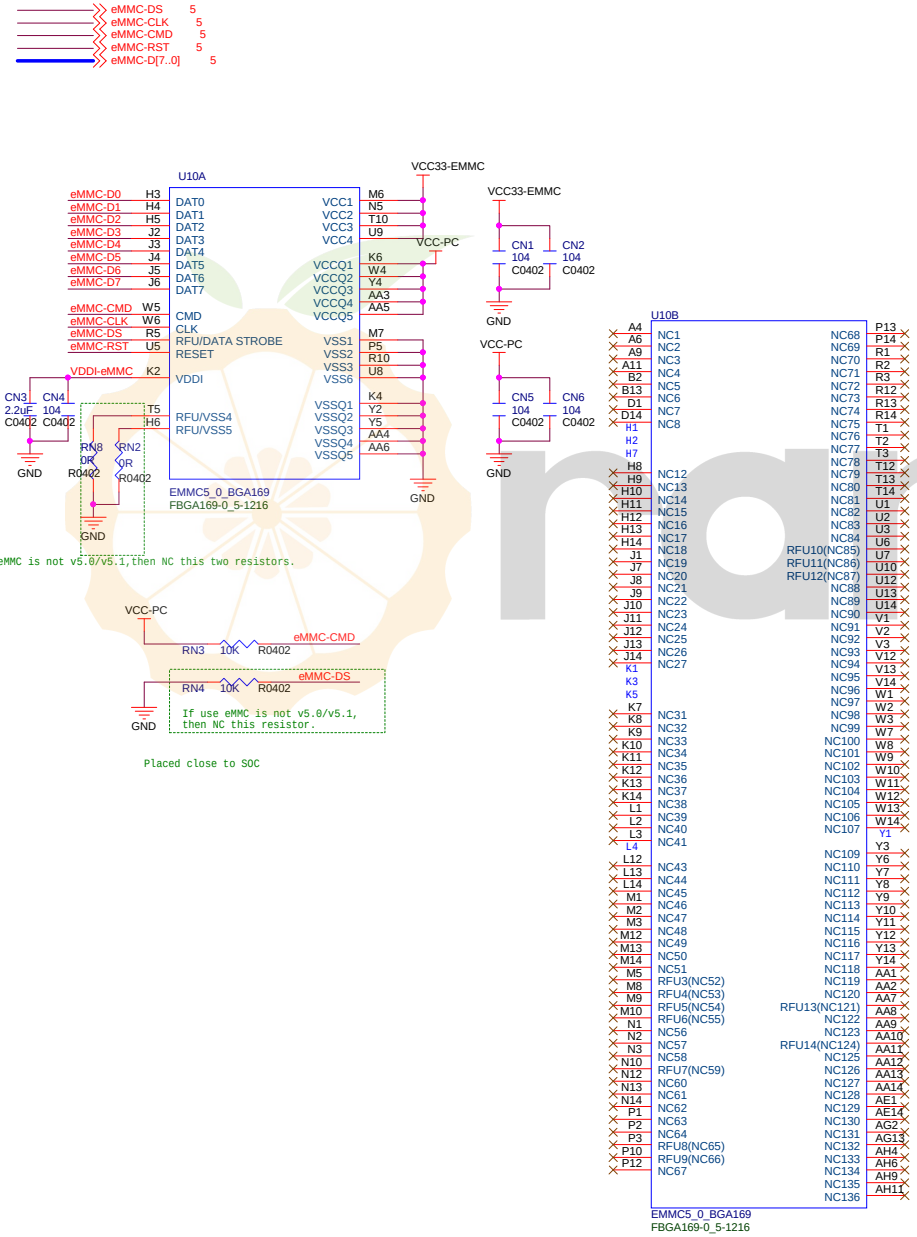


AXP805



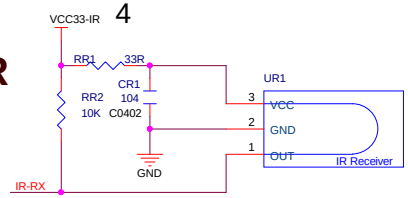
Xunlong Software Co.,Limited		
Design Name: ORANGE_PI-3		
Size: A3	Page Name: POWER	Rev: 1.5
Date: Monday, November 26, 2018	Sheet 8 of 17	

eMMC



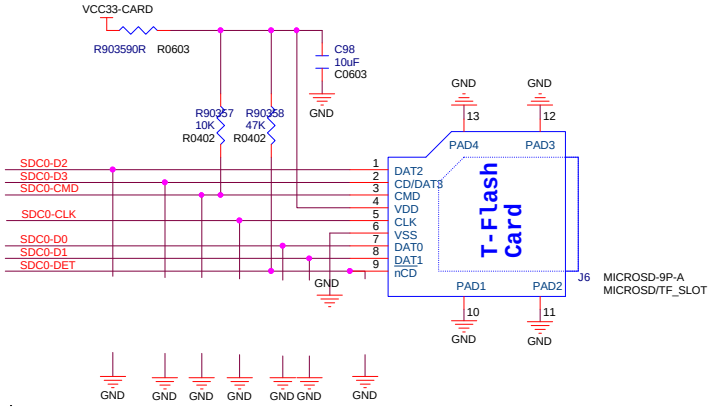
Xunlong Software Co.,Limited	
Design Name	ORANGE_PI-3
Size A3	Page Name eMMC-NAND
Rev	1.5
Date: Monday, November 26, 2018	Sheet 9 of 17

IR



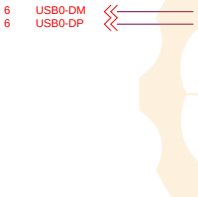
SPDIF

CARD

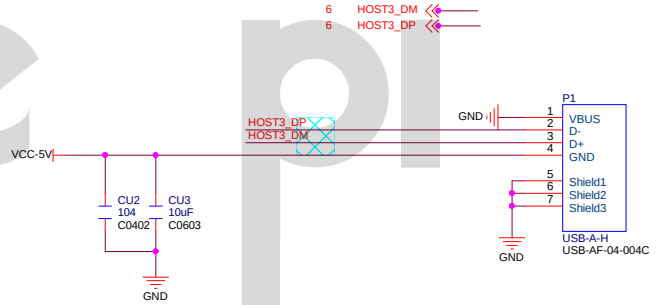


USB

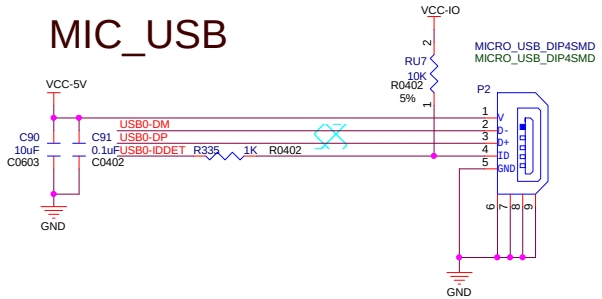
Differential pairs
Z0= 90 ohm



USB Current limiting function



MIC_USB

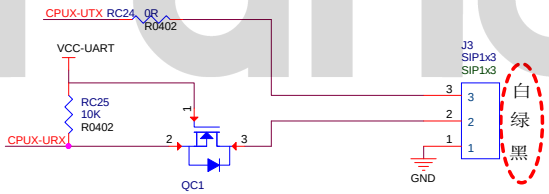


Xunlong Software Co.,Limited		
Design Name: ORANGE_PI-3		
Size: A3	Page Name: CARD-USB-IR-SPDIF	Rev: 1.5
Date: Monday, November 26, 2018	Sheet 10 of 17	

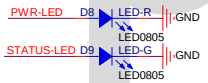
5 CPUX-UTX
5 CPUX-URX
5 PWR-LED
5 STATUS-LED

6 UBOOT
5 RECOVERY
8 PWRON

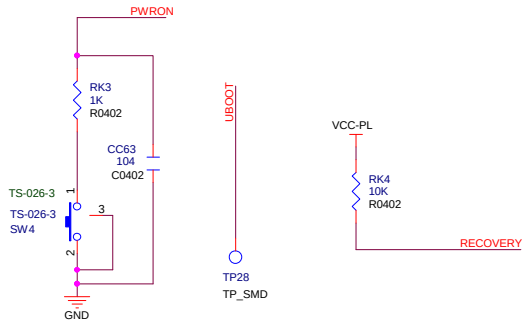
DEBUG



LED

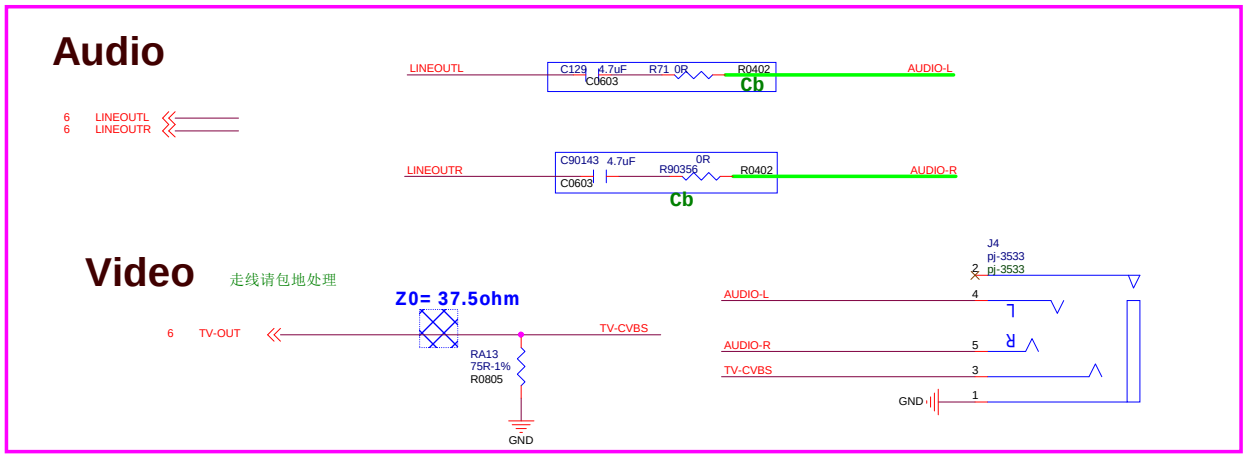


KEY



Xunlong Software Co.,Limited		
Design Name: ORANGE_PI-3		
Size: A3	Page Name: KEY-LED-DEBUG	Rev: 1.5
Date: Monday, November 26, 2018	Sheet 11 of 17	

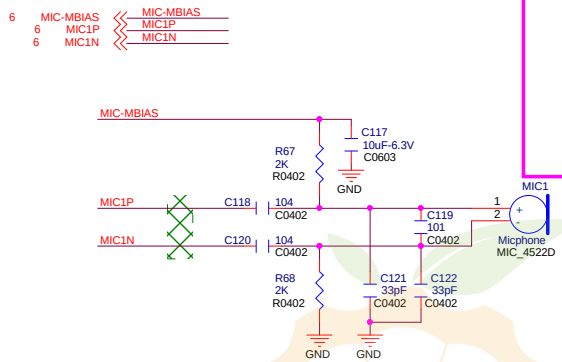
Audio



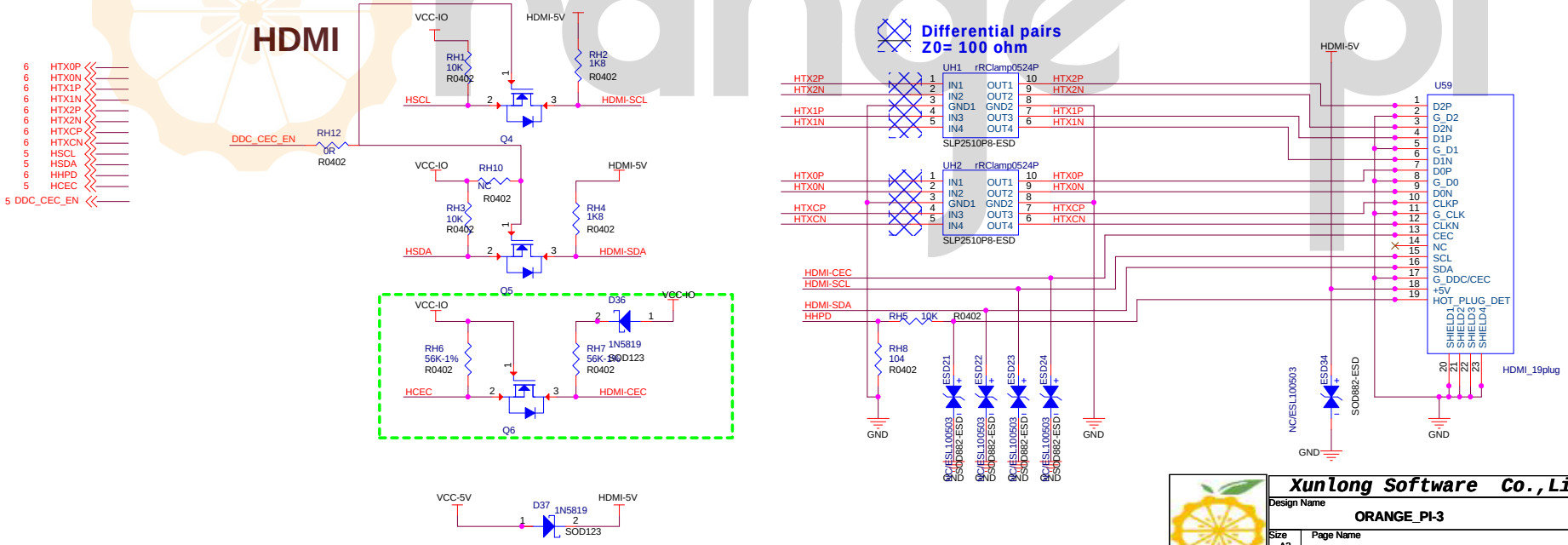
Video

走线请包地处理

Mic



HDMI



Differential pairs
Z0= 100 ohm

Xunlong Software Co.,Limited		
Design Name: ORANGE_PI-3		
Size: A3	Page Name: AV-HDMI	Rev: 1.5
Date: Monday, November 26, 2018	Sheet 12 of 17	

Differential trace, space, trace is 8, 7, 8 (mil).
Ground gap > 20mil. Impedance is 90ohm.
Differential pair mismatch < 5mil.

Discharge resistance (R67&R68&R69&R70) is not needed while
Hub's upstream port is not removable.(embedded applications)

FN_A Pull High: NO Strapping
FN_A Floating : Set Port3 as Non_Removable

FN_B Pull High: NO Strapping
FN_B Pull Low : Port Disabled for Port4
FN_B Floating : Set Port4 as Non_Removable

GL3510-QFN64

SW CIRCUIT

Option: SPI Flash

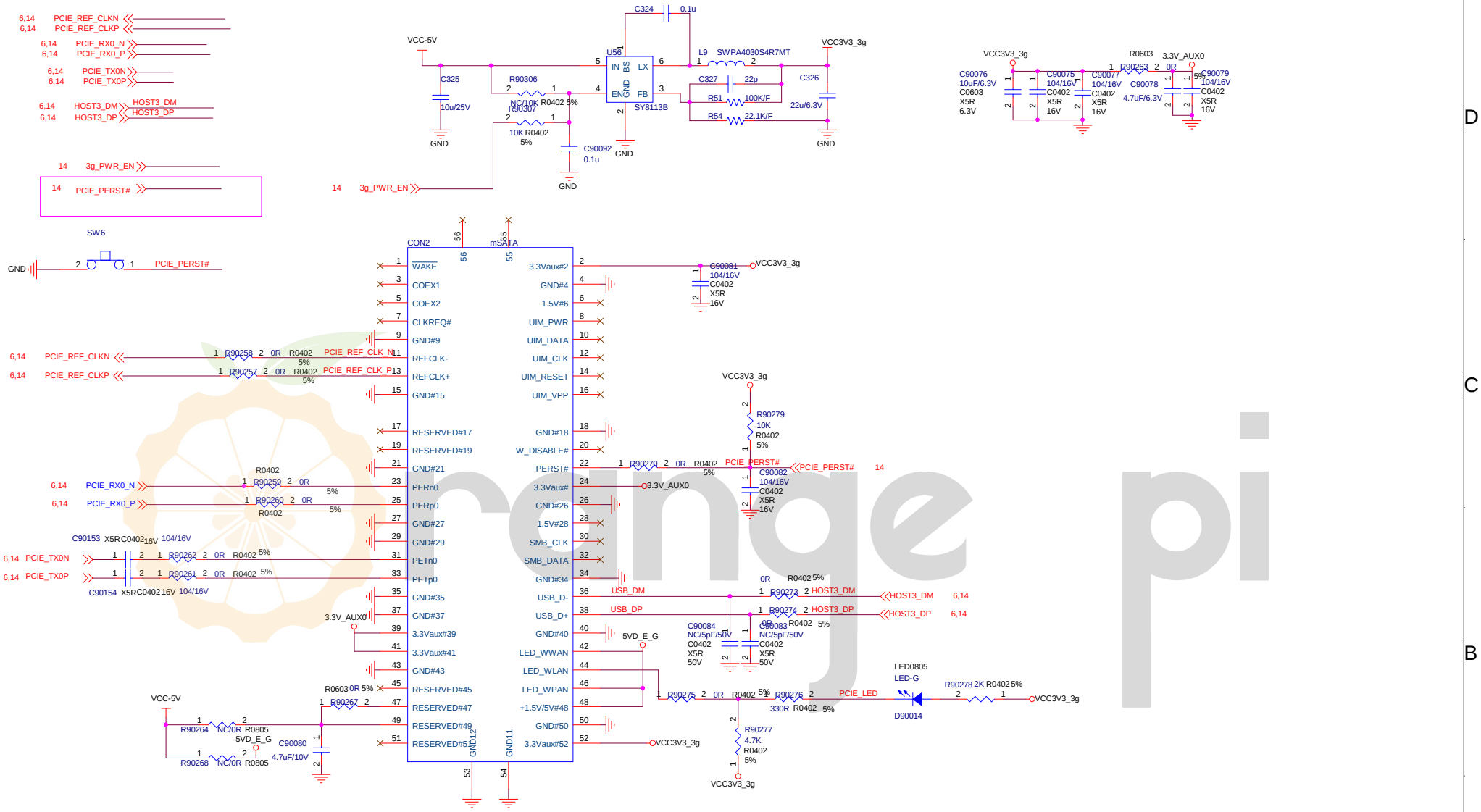
Option:POLY-FUSE CIRCUIT

Charger Enabled

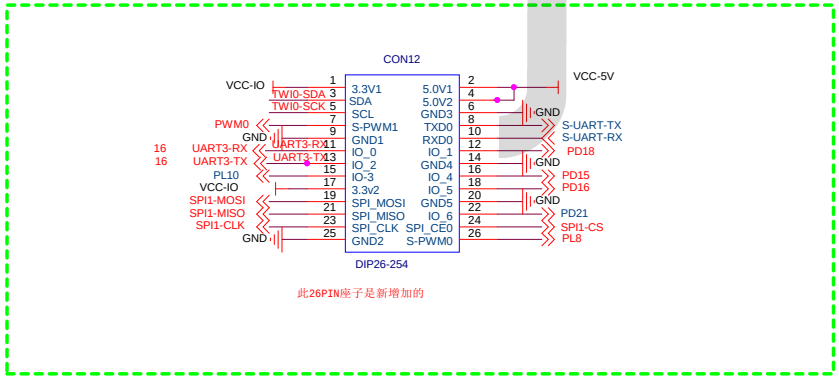
主控的18PIN与C81的GND单点连接再到GND

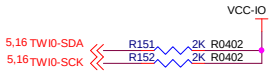
靠近对应的PIN摆放

Xunlong Software Co.,Limited	
Design Name	ORANGE_PI-3
Size A2	Page Name: USB3.0 4-Port Hub
Rev	1.5
Date: Monday, November 26, 2018	Sheet 13 of 17



Xunlong Software Co.,Limited		
Design Name: ORANGE_PI-3		
Size: A3	Page Name: MINI PCIe	Rev: 1.5
Date: Monday, November 26, 2018	Sheet 14 of 17	



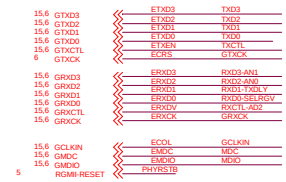


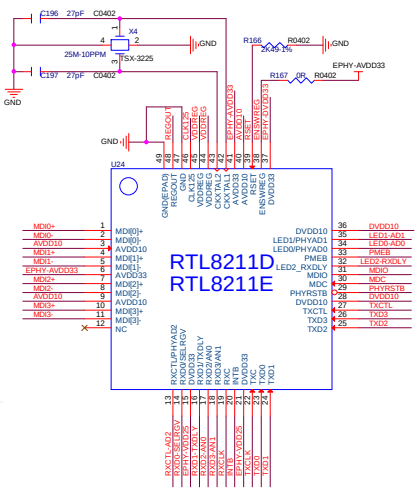
Xunlong Software Co.,Limited		
Design Name: ORANGE_PI-3		
Size: A3	Page Name: CSI-EXPORT	Rev: 1.5
Date: Monday, November 26, 2018	Sheet 15 of 17	

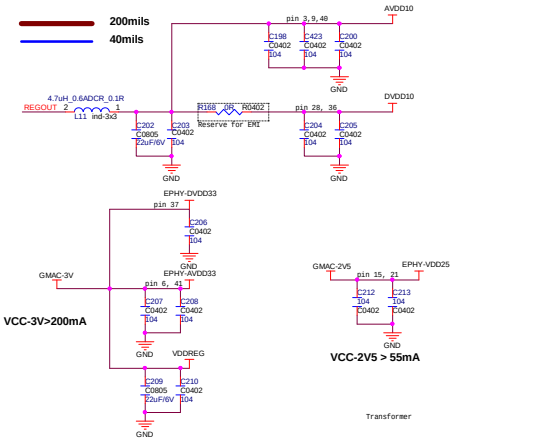
GMAC

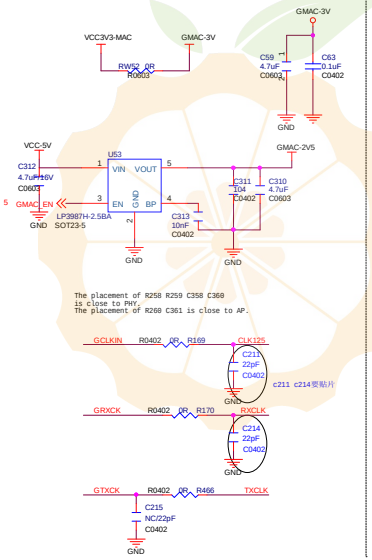
10/100/1000 MII Ethernet PHY

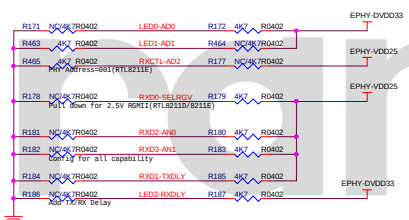
EMAC-MII

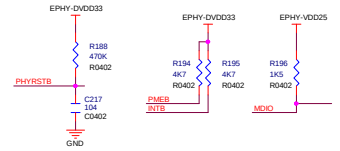


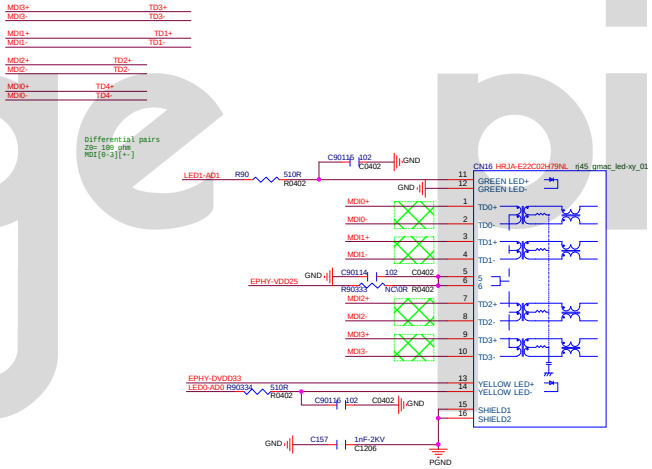








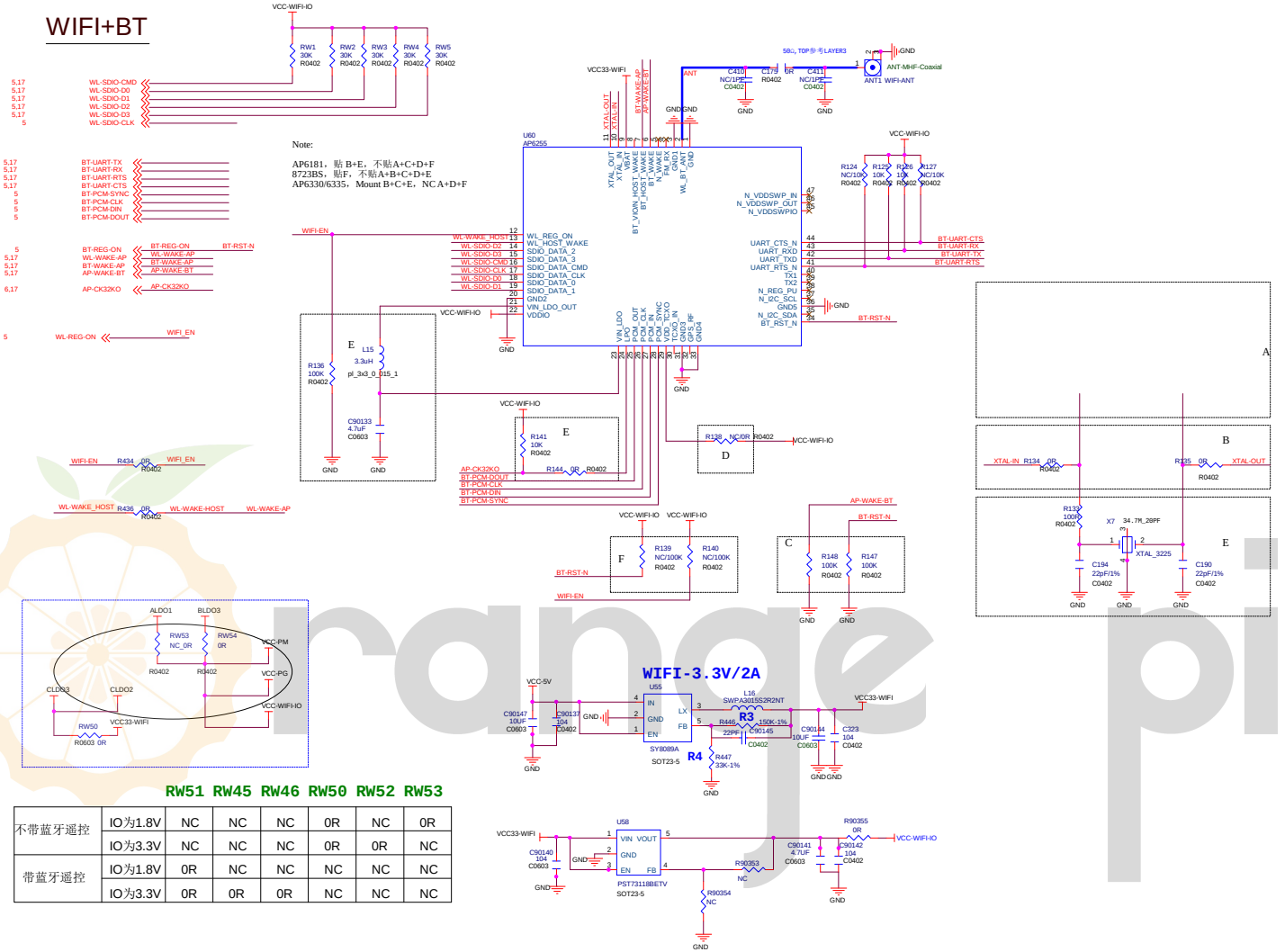




LED0:Blinking=Transmitting or Receiving.
LED1:Link Up/Down

Xunlong Software Co.,Limited		
Design Name: ORANGE_PI-3		
Size: A2	Page Name: LAN_1000M	Rev: 1.5
Date: Monday, November 26, 2018	Sheet 16 of 17	

WIFI+BT



RW51 RW45 RW46 RW50 RW52 RW53

不带蓝牙遥控	IO为1.8V	NC	NC	NC	0R	NC	0R
	IO为3.3V	NC	NC	NC	0R	0R	NC
带蓝牙遥控	IO为1.8V	0R	NC	NC	NC	NC	NC
	IO为3.3V	0R	0R	0R	NC	NC	NC

Xunlong Software Co.,Limited		
Design Name: ORANGE_PI-3		
Size: A2	Page Name: WIFI-BT 1T1R	Rev: 1.5
Date: Monday, November 26, 2018	Sheet 17 of 17	