

# REVISION HISTORY

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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BLD01,之前是与DDR3共用。 5.将CAMERA与HDMI IN处复用的网络用OR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EEPOM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			
Ver 1.2	12. 删除USB HUB芯片; USB端口更改为1个USB3.0, 2个USB2.0; 供电口更改为Type-C端口; 删除Mini-PCIE接口			
Ver 1.3	13. 删除TP15、TP16、TP26、RC5、RC9; 更改CC7、CC8, 由0420封装更改为0201封装			
Ver 1.4	14. 解决PHY芯片更改为YT8531C后, 部分芯片导致AV无输出问题。			

# BLOCK

5 4 3 2 1

D

D

C

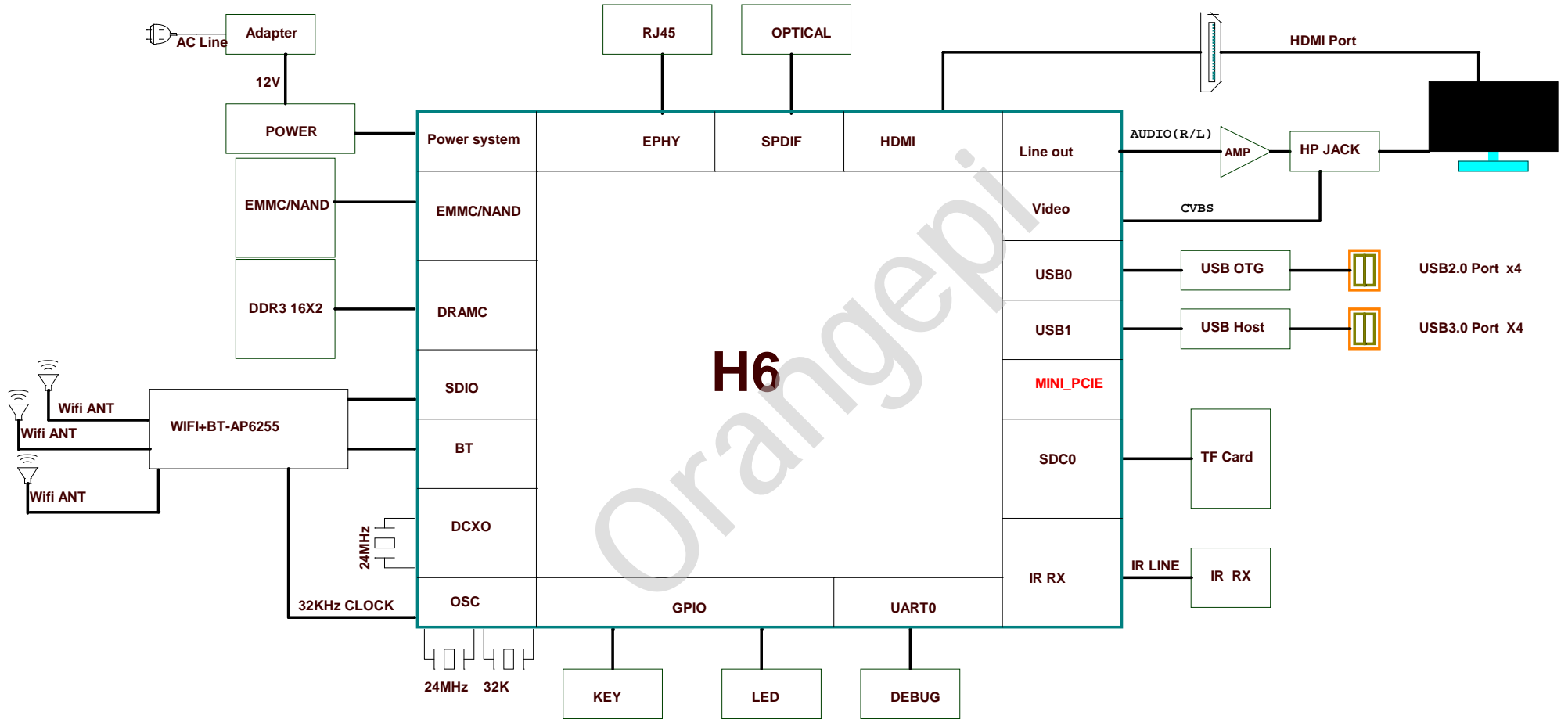
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B

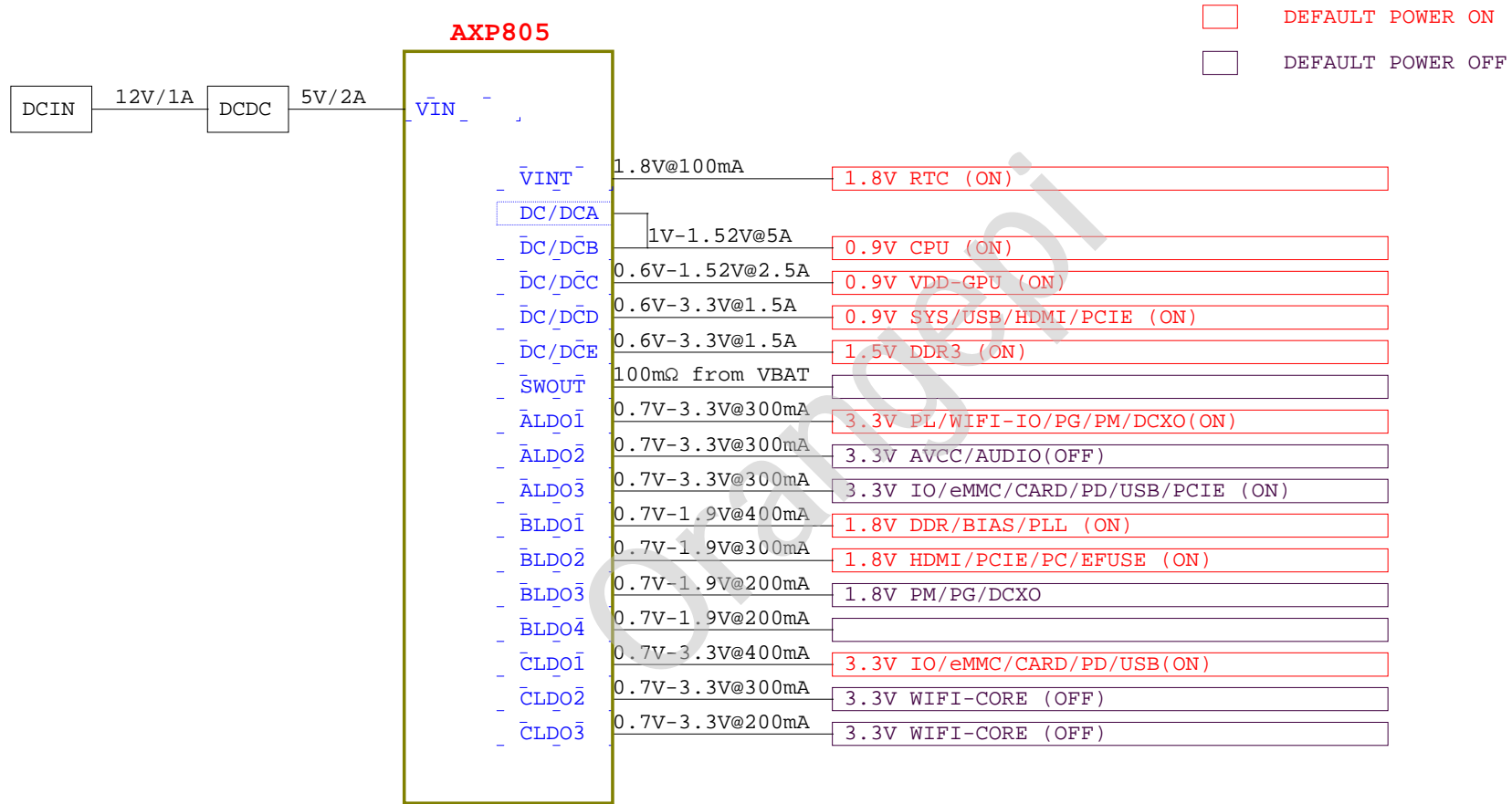
B

A

A



# POWER TREE



# 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_CEO	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_CEO	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			

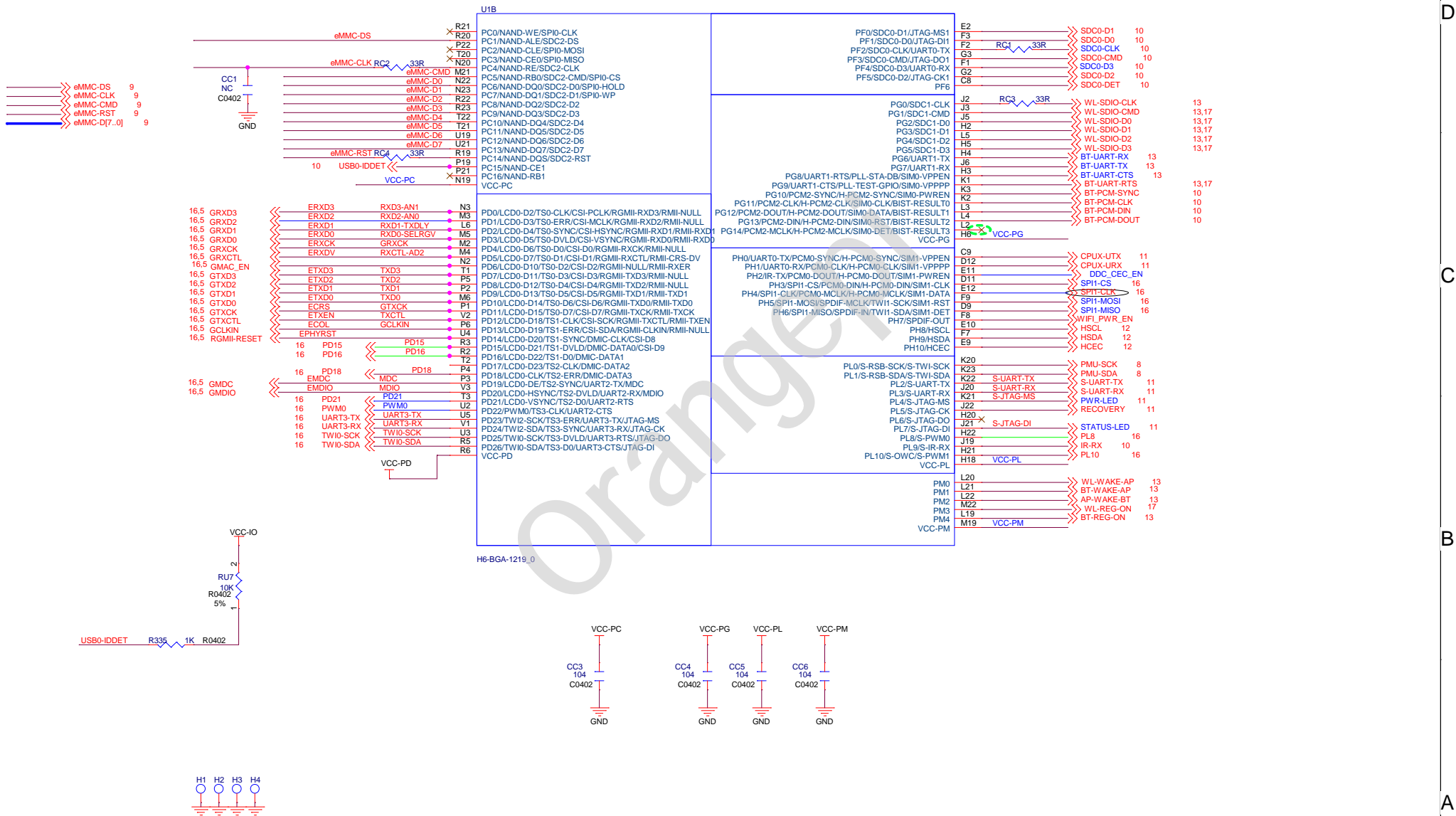
PIN	Define	CFG	Function
PG0	SDC1_CLK	2	WIFI+BT
PG1	SDC1_CMD	2	
PG2	SDC1_D0	2	
PG3	SDC1_D1	2	
PG4	SDC1_D2	2	
PG5	SDC1_D3	2	
PG6	UART1_TX	2	
PG7	UART1_RX	2	
PG8	UART1_RTS	2	
PG9	UART1_CTS	2	
PG10	PCM2_SYNC	2	
PG11	PCM2_CLK	2	
PG12	PCM2_DOUT	2	
PG13	PCM2_DIN	2	
PG14			

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	

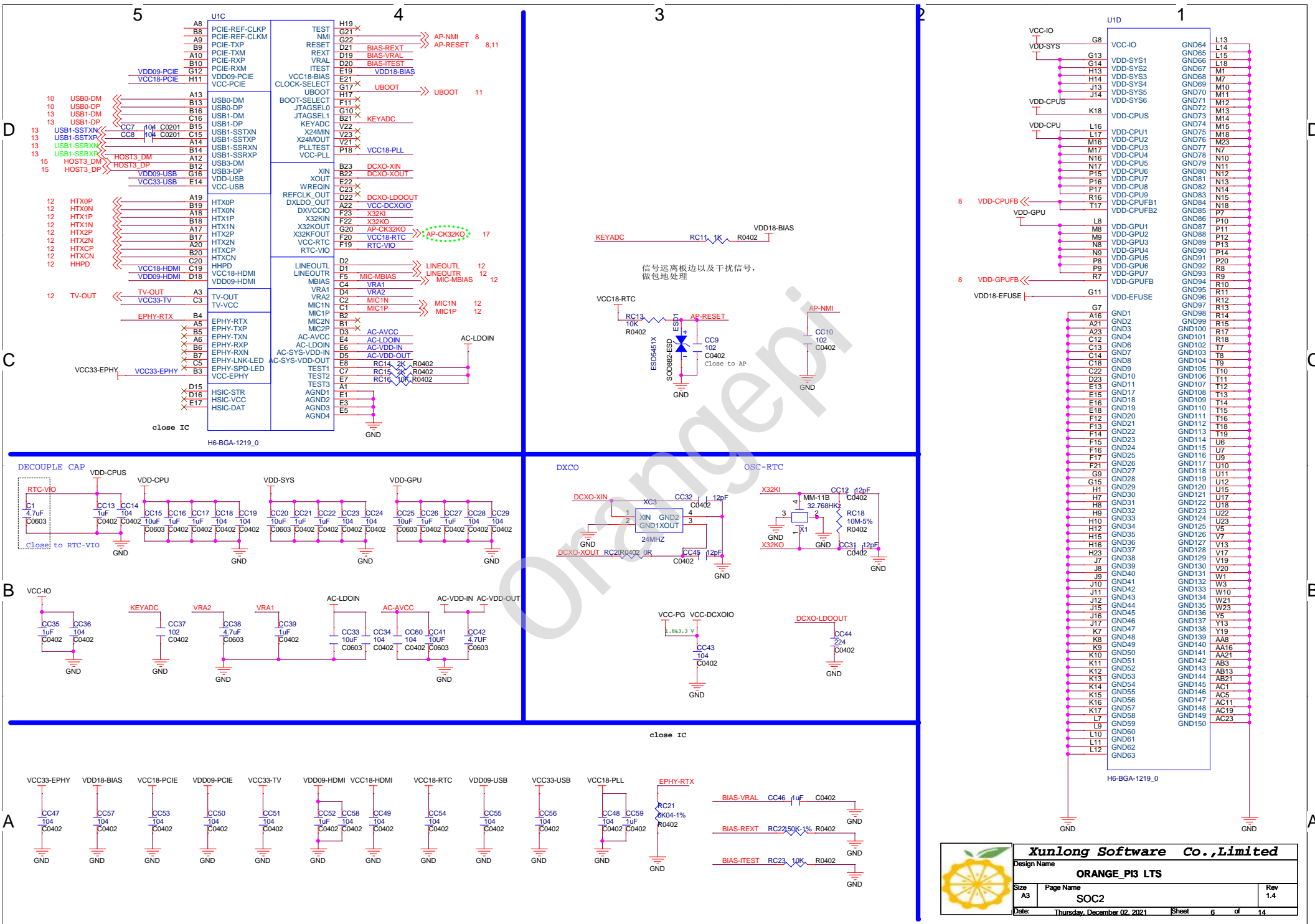
PIN	Define	CFG	Function
PH0	CPUX-UTX	2	HDMI
PH1	CPUX-URX	2	
PH2			
PH3			
PH4			
PH5			
PH6			
PH7	SPDIF_OUT	3	
PH8	HSCL	2	
PH9	HSDA	2	
PH10	HCEC	2	

PIN	Define	CFG	Function
PL0	PMU-SCK	3	WIFI+BT
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	
PM1	BT-WAKE-AP	0	
PM2	AP-WAKE-BT	1	
PM3	WL-REG-ON	1	
PM4	BT-REG-ON	1	

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



H6-BGA-1219\_0



# LPDDR3

5

4

3

2

1

D

D

C

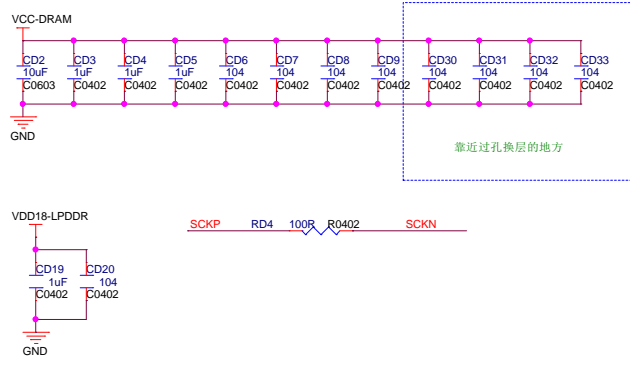
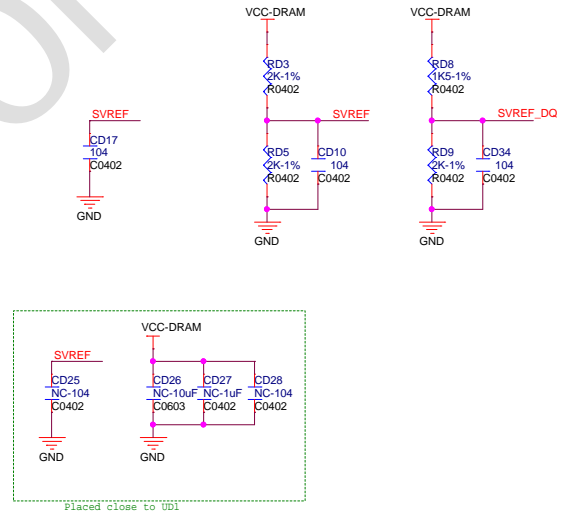
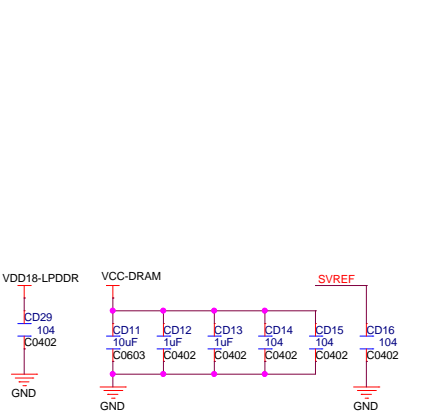
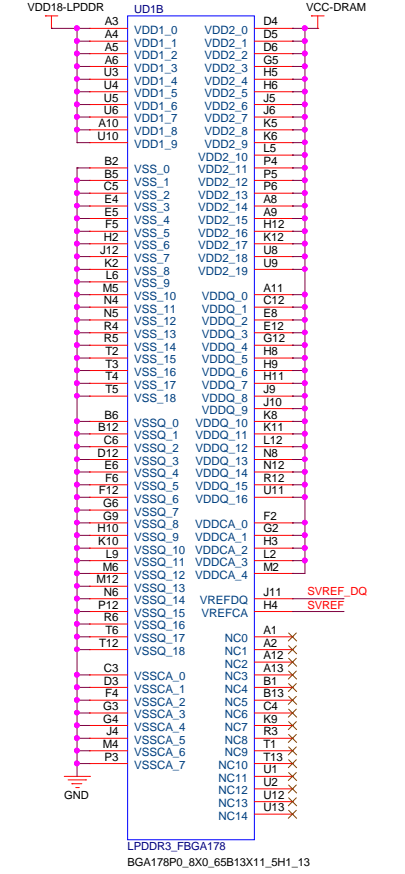
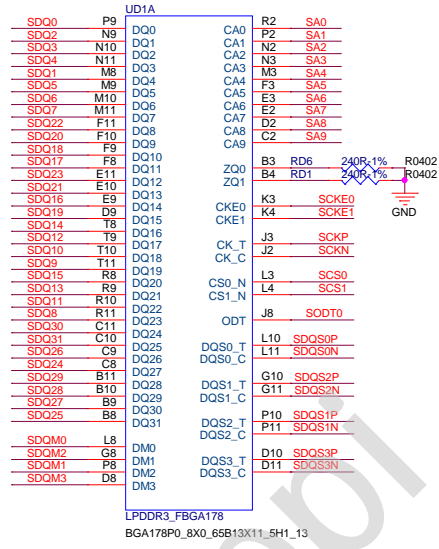
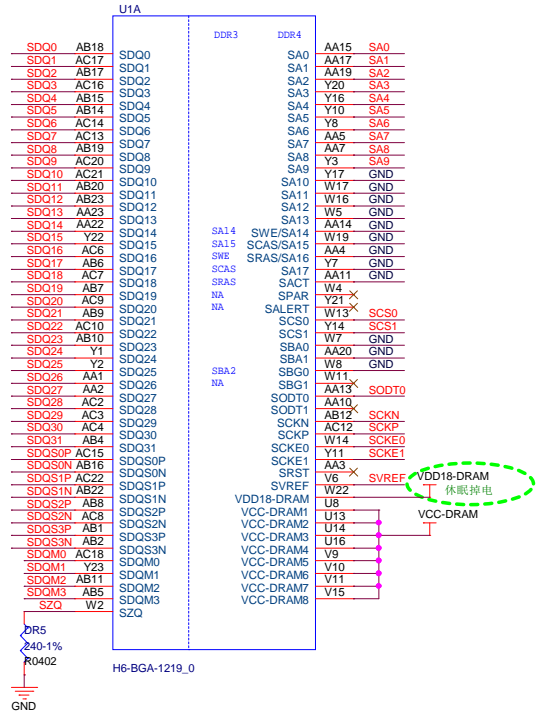
C

B

B

A

A



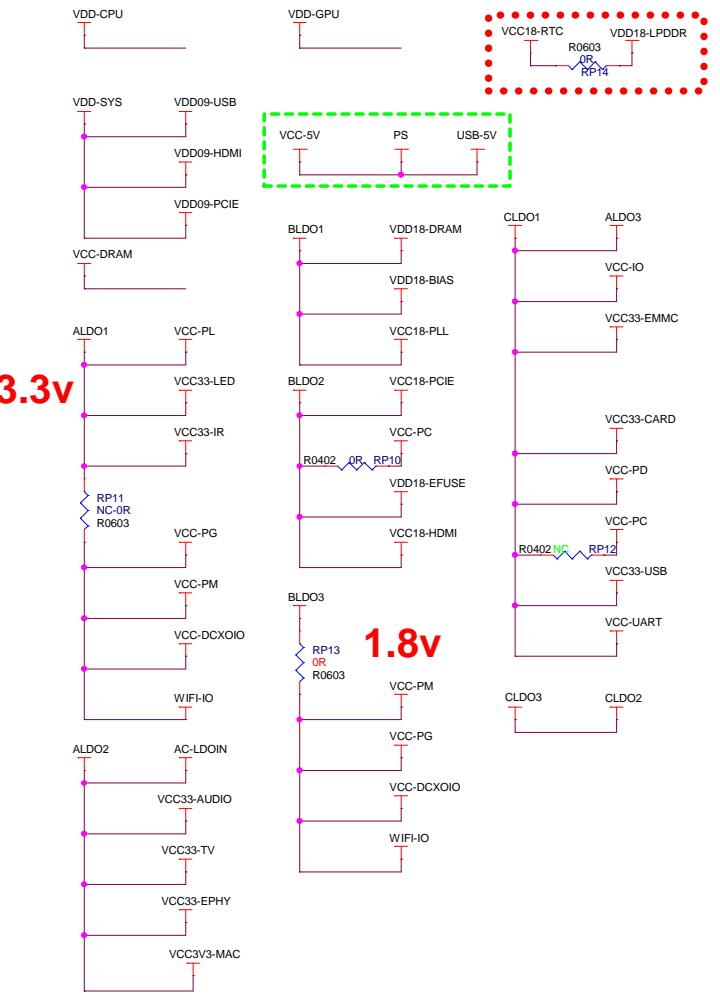
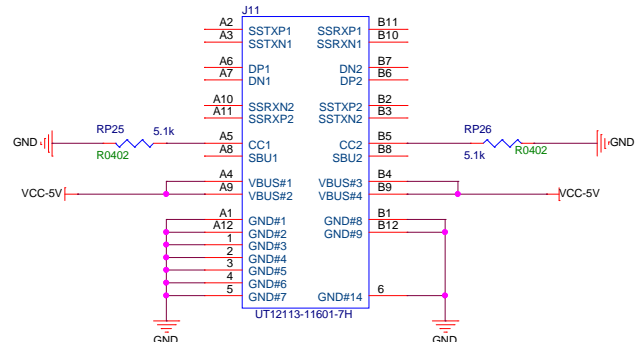
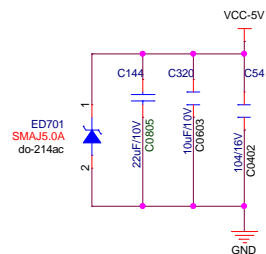
**Xunlong Software Co., Limited**

Design Name: **ORANGE\_P13 LTS**

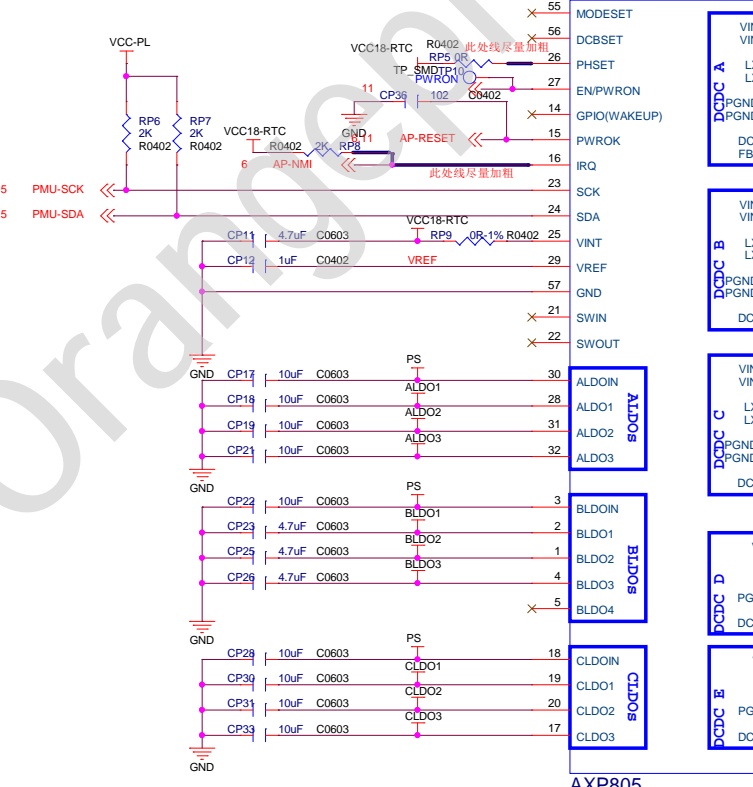
Size: A3 Page Name: LPDDR3 Rev: 1.4

Date: Thursday, December 02, 2021 Sheet: 7 of 14

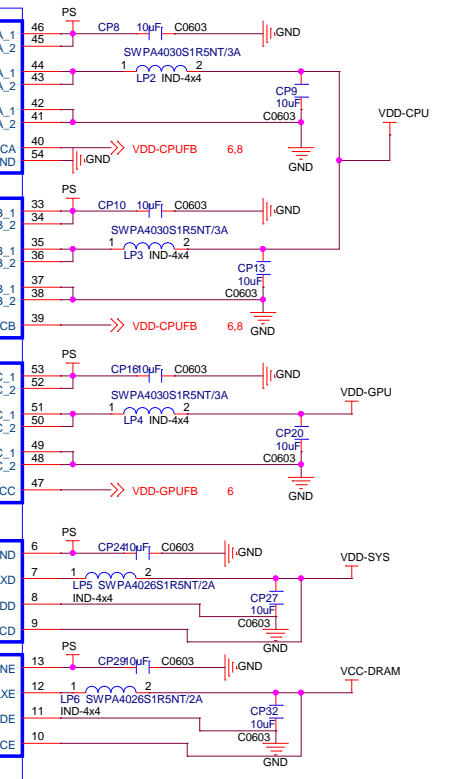
# DCIN



# PMIC



# AXP805

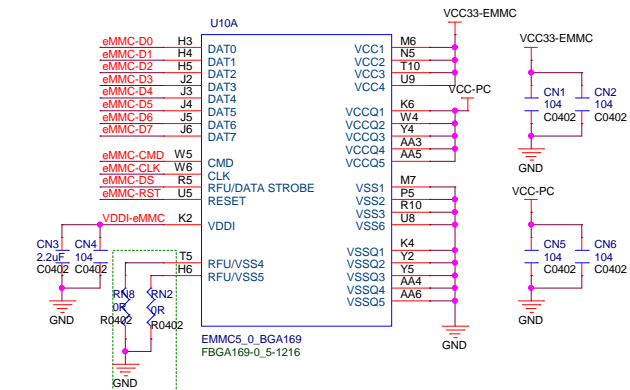


Xunlong Software Co., Limited		
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Size	Page Name	Rev
A3	POWER	1.4
Date:	Thursday, December 02, 2021	Sheet 8 of 14

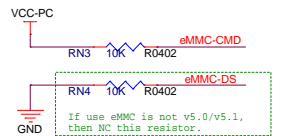


# eMMC

- eMMC-DS 5
- eMMC-CLK 5
- eMMC-CMD 5
- eMMC-RST 5
- eMMC-D[7..0] 5



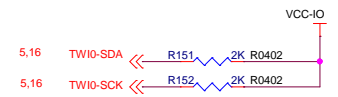
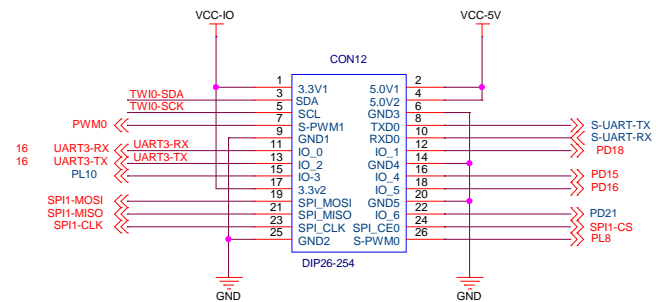
If eMMC is not v5.0/v5.1, then NC this two resistors.

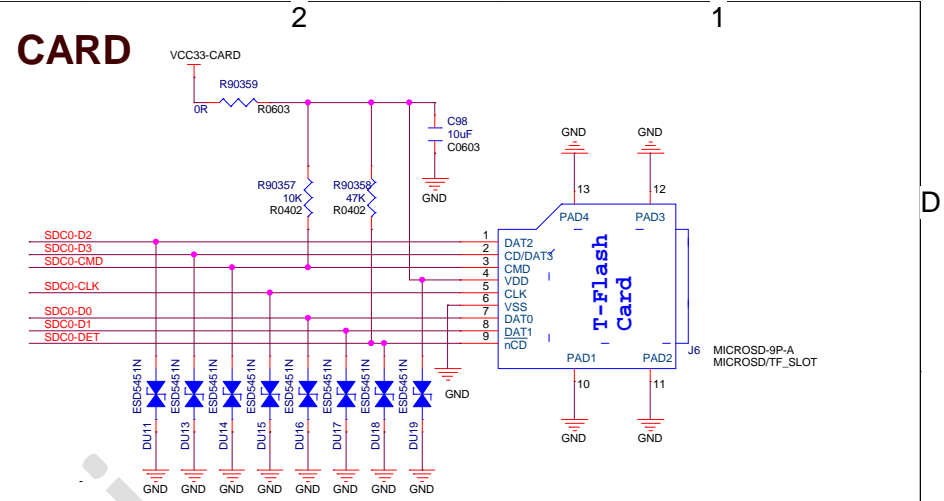
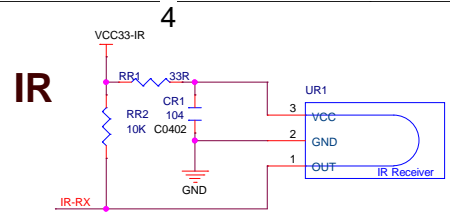
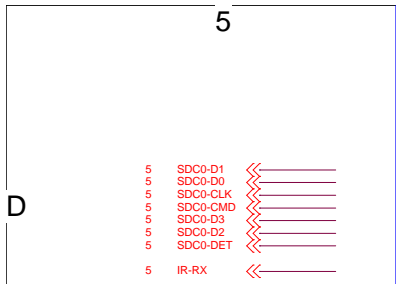


Placed close to SOC

A4	NC1	NC68	P13
A6	NC2	NC69	P14
A9	NC3	NC70	R1
A11	NC4	NC71	R2
B2	NC5	NC72	R3
B13	NC6	NC73	R12
D1	NC7	NC74	R13
D14	NC8	NC75	R14
H1	NC9	NC76	T1
H2	NC10	NC77	T2
H7	NC11	NC78	T3
H8	NC12	NC79	T12
H9	NC13	NC80	T13
H10	NC14	NC81	T14
H11	NC15	NC82	U1
H12	NC16	NC83	U2
H13	NC17	NC84	U3
H14	NC18	RFU10(NC85)	U6
J1	NC19	RFU11(NC86)	U7
J7	NC20	RFU12(NC87)	U12
J8	NC21	NC88	U13
J9	NC22	NC89	U14
J10	NC23	NC90	V1
J11	NC24	NC91	V2
J12	NC25	NC92	V3
J13	NC26	NC93	V12
J14	NC27	NC94	V13
K1	K3	NC95	V14
K7	K8	NC96	W1
K8	K9	NC97	W2
K9	K10	NC98	W3
K10	K11	NC99	W7
K11	K12	NC100	W8
K12	K13	NC101	W9
K13	K14	NC102	W10
K14	L1	NC103	W11
L1	L2	NC104	W12
L2	L3	NC105	W13
L3	L4	NC106	W14
L4	L12	NC107	X1
L12	L13	NC109	Y3
L13	L14	NC110	Y6
L14	M1	NC111	Y7
M1	M2	NC112	Y8
M2	M3	NC113	Y9
M3	M4	NC114	Y10
M4	M5	NC115	Y11
M5	M6	NC116	Y12
M6	M7	NC117	Y14
M7	M8	NC118	AA1
M8	M9	NC119	AA2
M9	M10	NC120	AA7
M10	N1	RFU13(NC121)	AA7
N1	N2	RFU6(NC55)	NC122
N2	N3	NC56	NC123
N3	N4	NC57	NC124
N4	N5	NC58	NC125
N5	N6	RFU7(NC59)	NC126
N6	N7	NC60	NC127
N7	N8	NC61	NC128
N8	N9	NC62	NC129
N9	N10	NC63	NC130
N10	N11	NC64	NC131
N11	N12	RFU8(NC65)	NC132
N12	N13	RFU9(NC66)	NC133
N13	N14	NC67	NC134
N14	P1		NC135
P1	P2		NC136
P2	P3		
P3	P4		
P4	P5		
P5	P6		
P6	P7		
P7	P8		
P8	P9		
P9	P10		
P10	P11		
P11	P12		
P12			

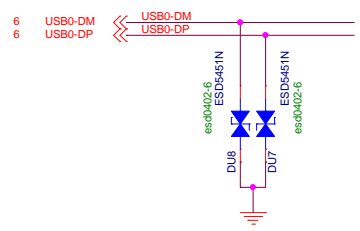
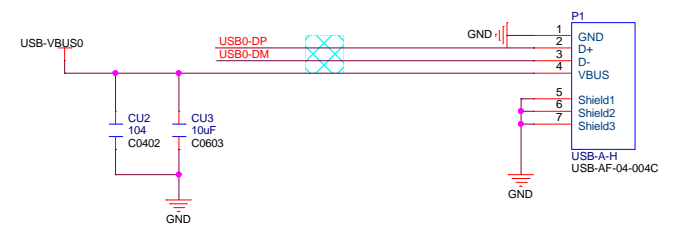
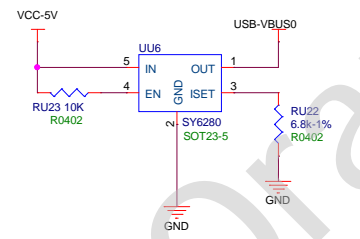
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FBGA169-0\_5-1216

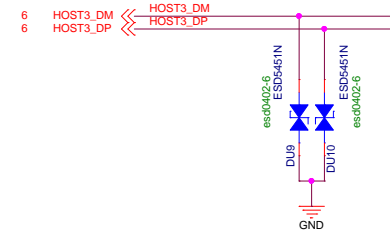
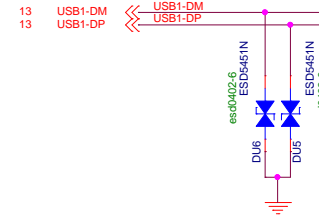
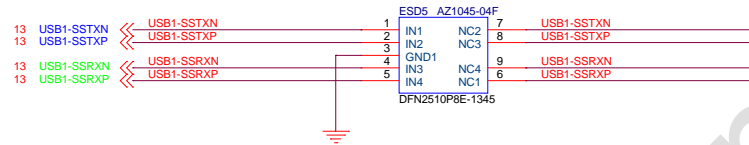
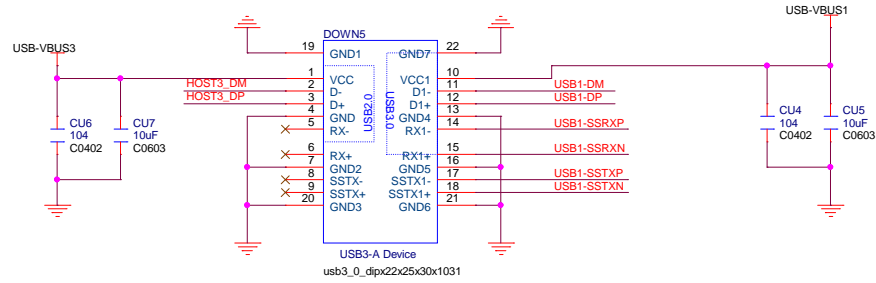




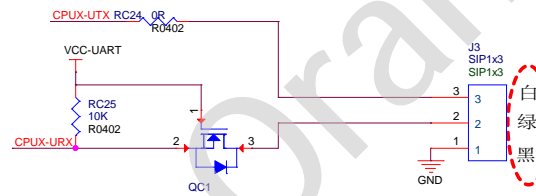
## USB Differential pairs Z0= 90 ohm

## USB Current limiting function

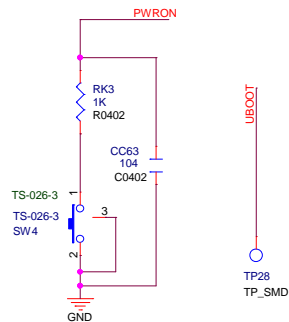




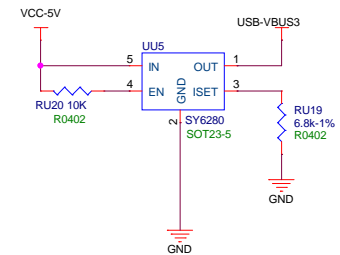
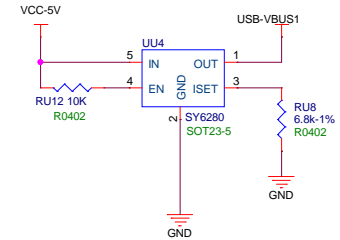
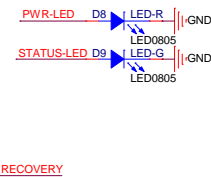
## DEBUG



## KEY



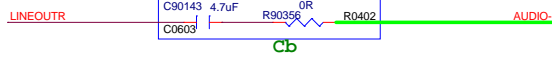
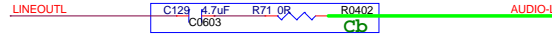
## LED



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Design Name	ORANGE_P13 LTS	
Size	Page Name	Rev
A3	USB-KEY-LED-DEBUG	1.4
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# Audio

6 LINEOUTL  
6 LINEOUTR

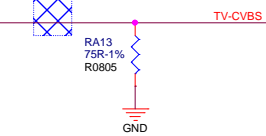


# Video

走线请包地处理

Z0 = 37.5ohm

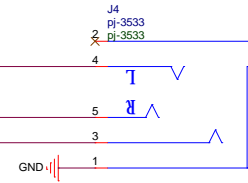
6 TV-OUT



AUDIO-L

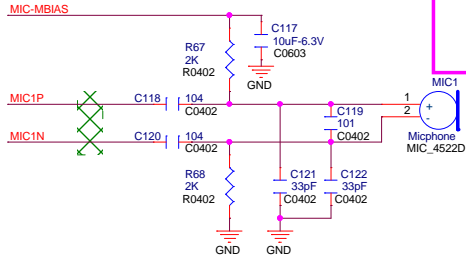
AUDIO-R

TV-CVBS



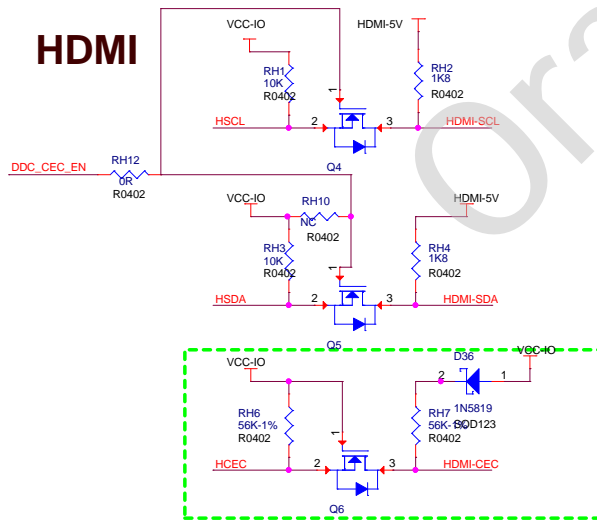
# Mic

6 MIC-MBIAS  
6 MIC1P  
6 MIC1N

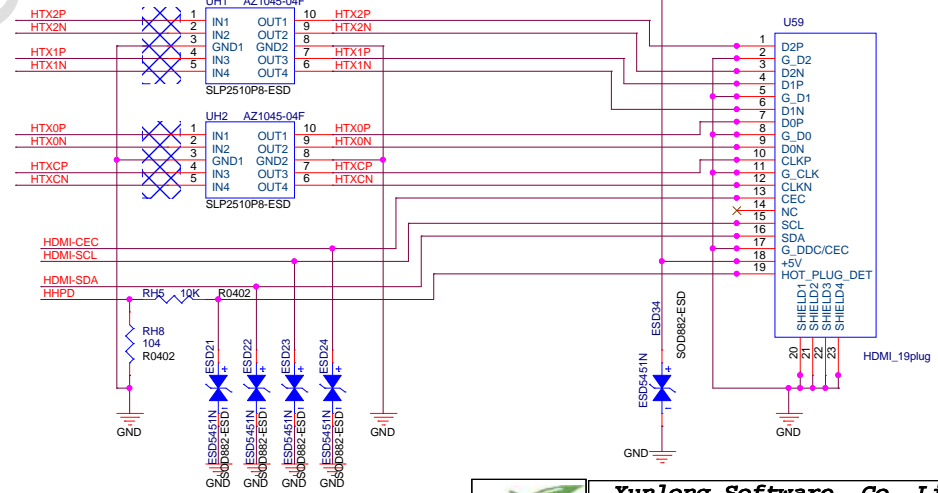


# HDMI

6 HTXOP  
6 HTXON  
6 HTX1P  
6 HTX1N  
6 HTX2P  
6 HTX2N  
6 HTXCP  
6 HTXCN  
5 HSCL  
5 HSDA  
5 HHPD  
5 HCEC

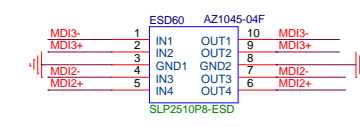
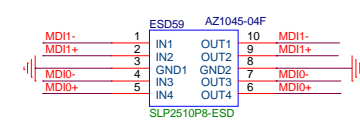
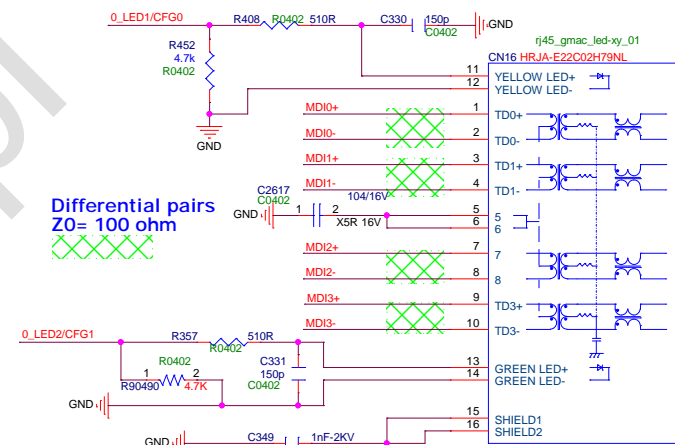
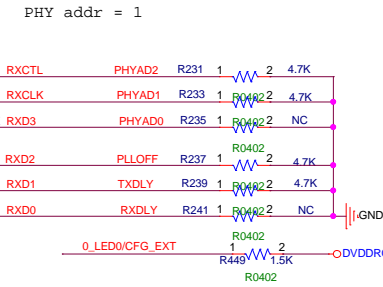
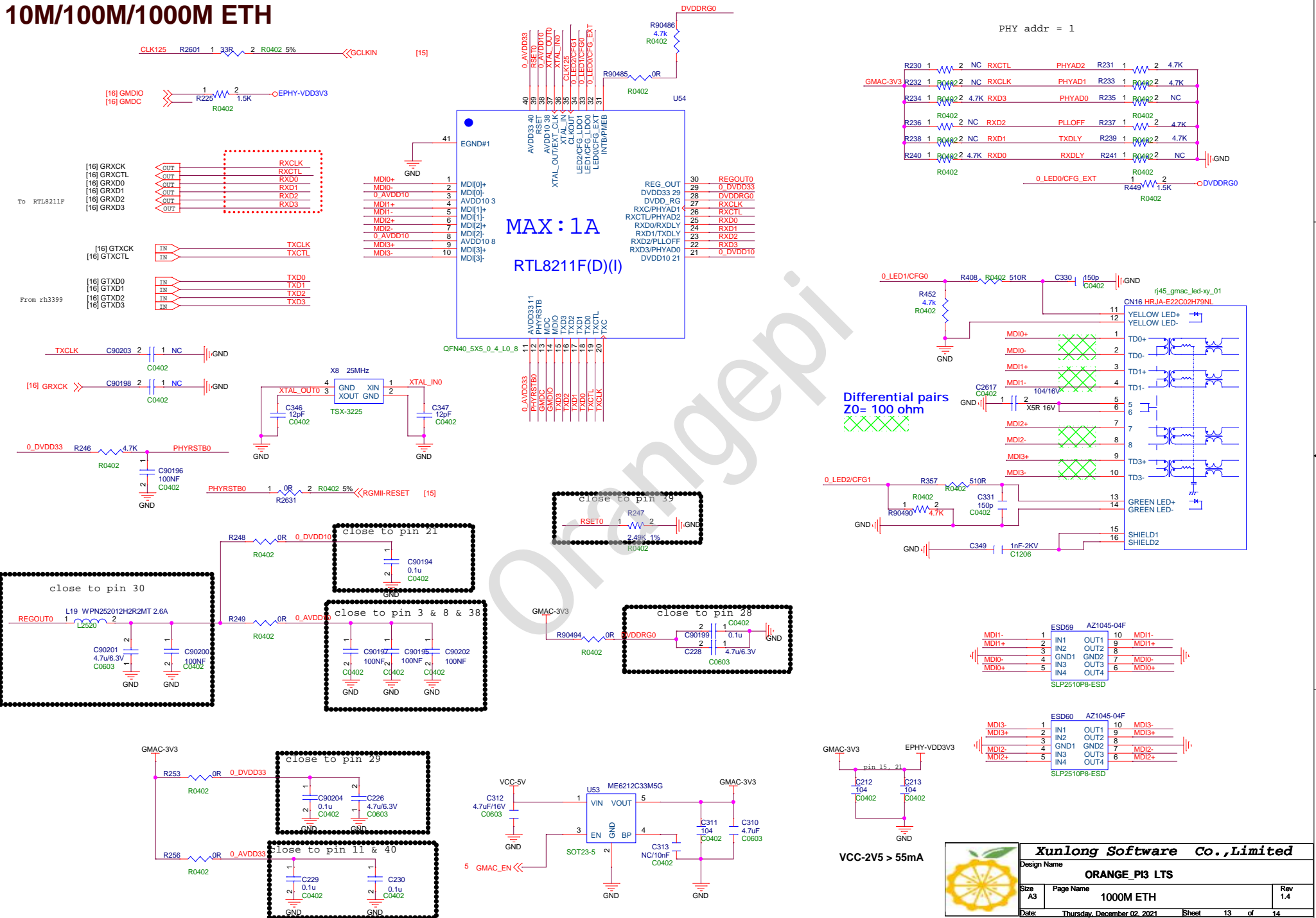


Differential pairs  
Z0 = 100 ohm




Xunlong Software Co., Limited		
Design Name		
ORANGE_P13 LTS		
Size	Page Name	Rev
A3	AV-HDMI	1.4
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# 10M/100M/1000M ETH



VCC-2V5 > 55mA



**Xunlong Software Co., Limited**

Design Name		
<b>ORANGE_PI3 LTS</b>		
Size	Page Name	Rev
A3	1000M ETH	1.4
Date:	Thursday, December 02, 2021	Sheet 13 of 14

# WIFI+BT

5.17  
5.17  
5.17  
5.17  
5.17  
5

WL\_SDO\_CMD  
WL\_SDO\_D0  
WL\_SDO\_D1  
WL\_SDO\_D2  
WL\_SDO\_D3  
WL\_SDO\_CLK

5.17  
5.17  
5.17  
5  
5  
5  
5

BT\_UART\_TX  
BT\_UART\_RX  
BT\_UART\_RTS  
BT\_UART\_CTS  
BT\_PCM\_SYNC  
BT\_PCM\_CLK  
BT\_PCM\_DIN  
BT\_PCM\_DOUT

5  
5.17  
5.17  
6.17

BT\_REG\_ON  
WL\_WAKE\_AP  
BT\_WAKE\_AP  
AP\_WAKE\_BT  
AP-CK32K0  
AP-CK32K0

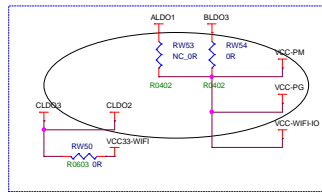
5

WL\_REG\_ON

WIFIEN

WL\_WAKE\_HOST

WL\_WAKE\_HOST

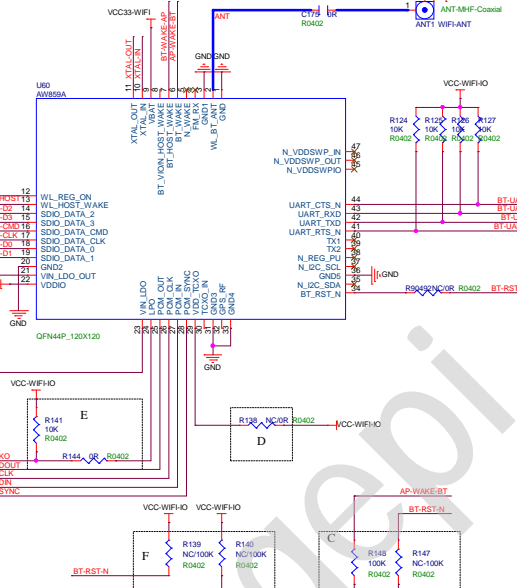
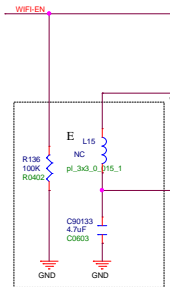


RW51 RW45 RW46 RW50 RW52 RW53

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

Note:

AP6181: 贴 B+E, 不贴 A+C+D+F  
S7238S: 贴 F, 不贴 A+B+C+D+E  
AP6330/6355: Mount B+C+E, NCA+D+F



## WIFI-3.3V/2A

