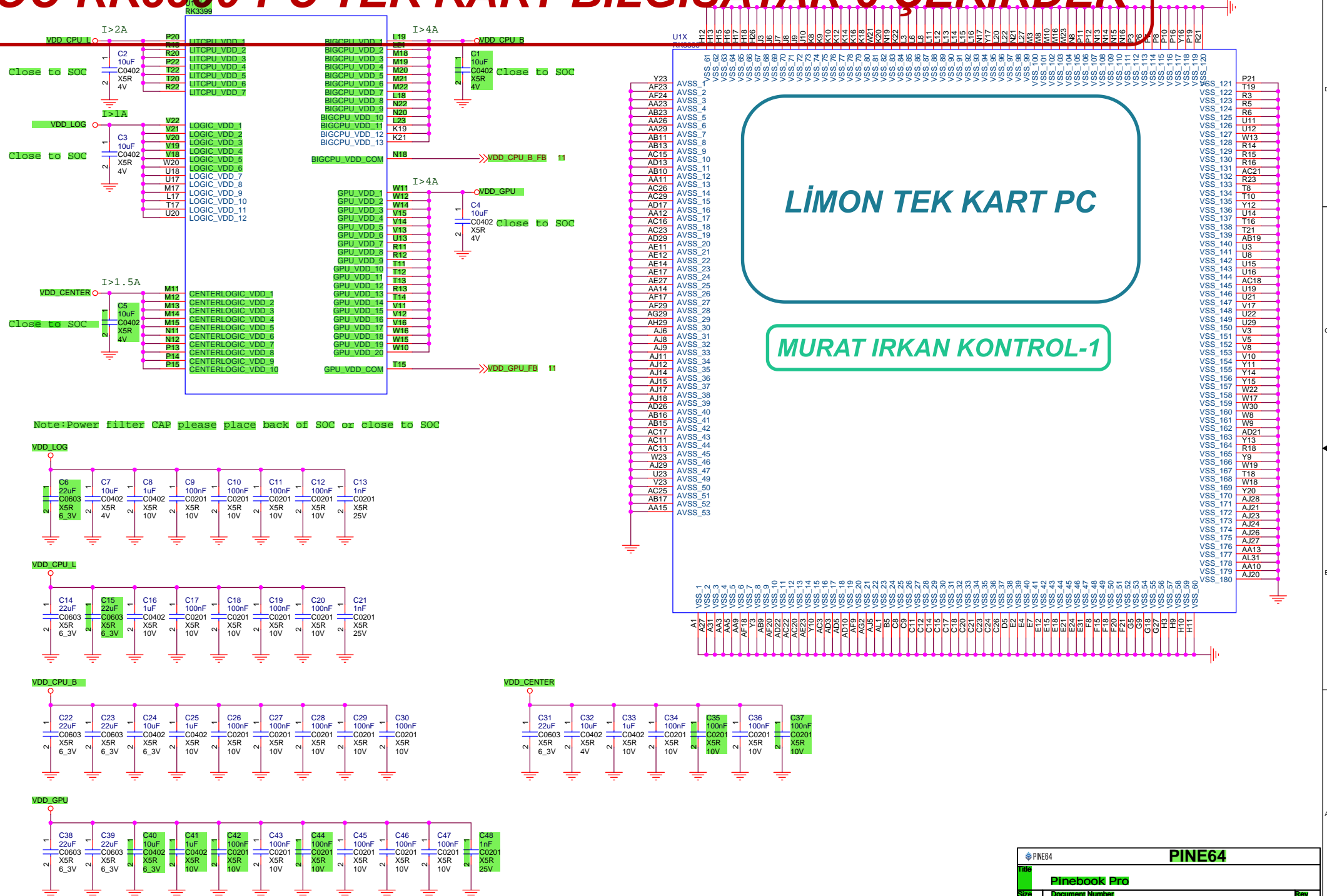
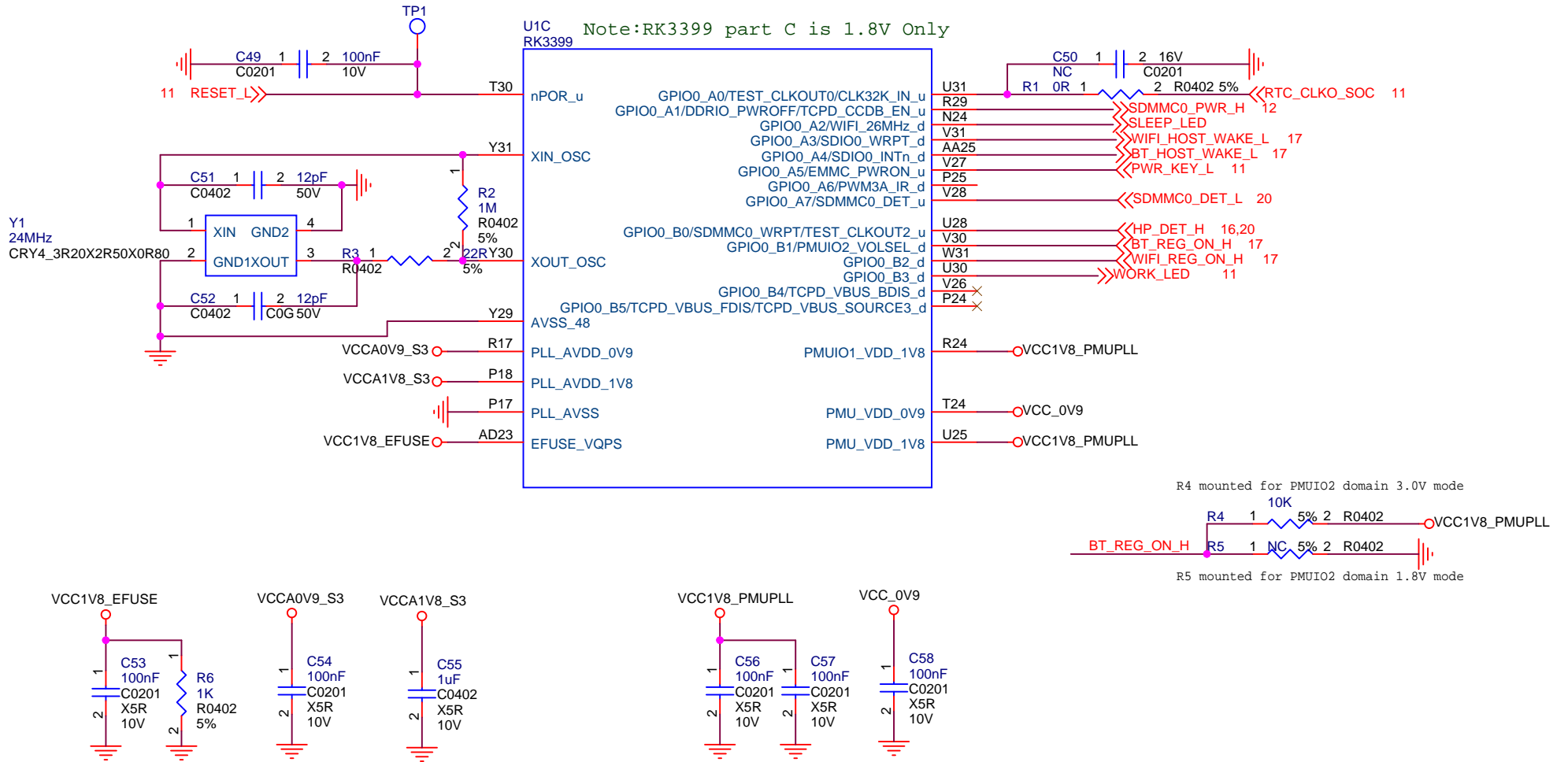


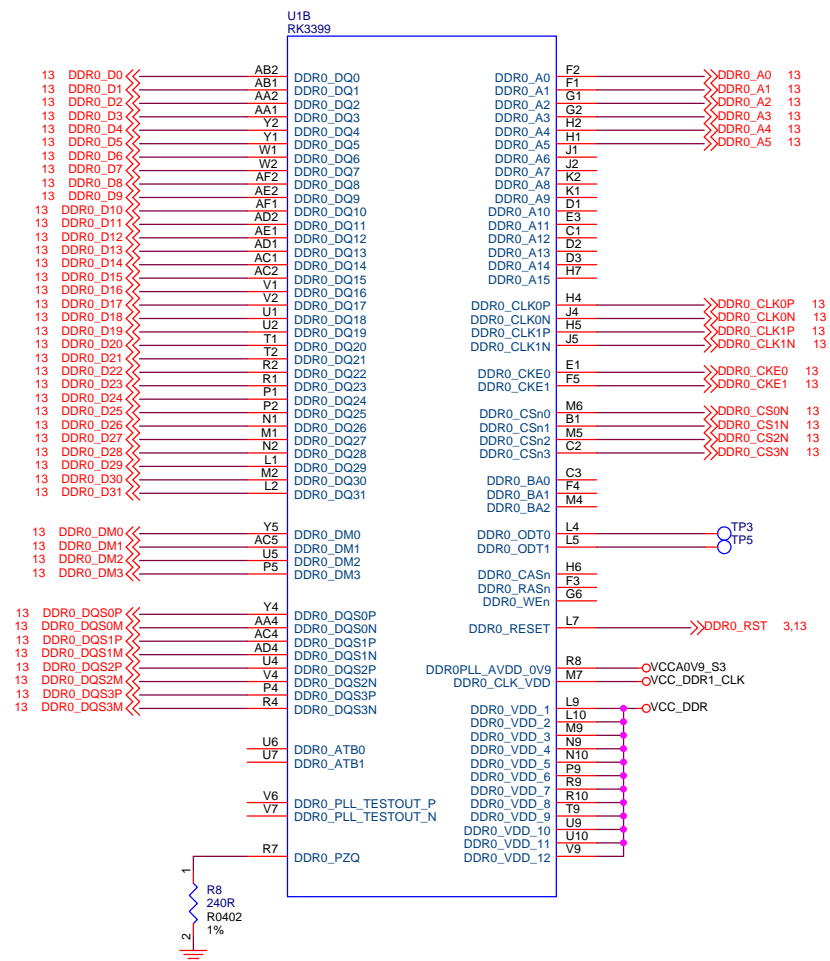
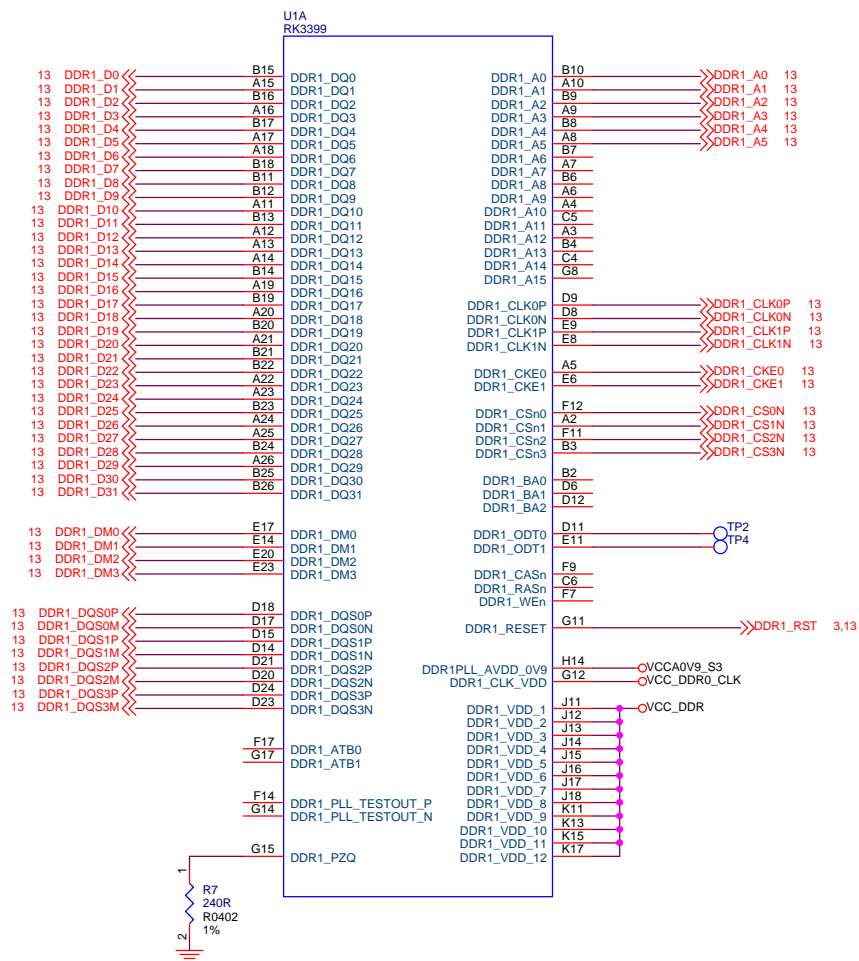
5	4	3	2	1
D				
C				
B				
A				
5	4	3	2	1

Version	Date	Author	Change Note	Approved
V21	20180708	XieXiaoMin	见附件：PinebookPro_V21项目修改评审记录.docx 充电电流参数更改，PD充电电路优化 键盘控制Io加密功能修改：初始化为高阻，启用时为低电平 1.增加Q15，R151 实现高电平通，低电平断。控制麦克风的电源 2.增加D13.实现高电平不干扰WIFI功能，低电平使WIFI无法打开 3.增加D14.实现高电平不干扰USB摄像头的工作，低电平使摄像头的电源打不开 增加U7005 EEPROM 保存键盘状态 增加工作状态灯Io使能控制，Standby LED：GPIO0_A2，Work LED：GPIO0_B3 LCD电源增加MOS管控制，控制Io口为GPIO1_C6，初始化状态为高，休眠时拉低	WenXue
V21	20181107	XieXiaoMin	低电闪屏现象，增加钽电容，位号CP1，规格TAJB226K020RNJ，详细见18页 针对辐射认证，摄像头USB差分信号兼容共模电感，位号FB3，规格SDCW2012-2-900TF	
V21	20211207	XieXiaoMin	由LPDDR4-366球更改为LPDDR4-200球           13页 USB HUB芯片由SSOP28更改为QFN28封装       22页 EMMC进MASKROM由7脚波动开关更改为2脚拨码开关       14页	

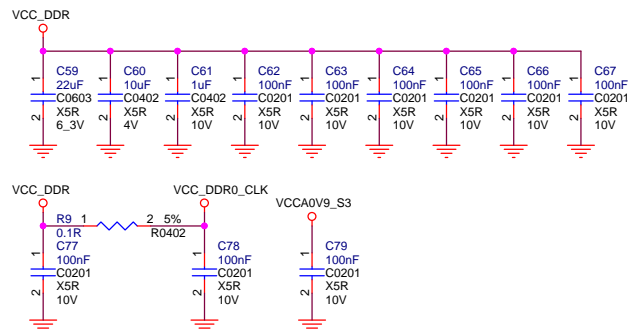
# ROC-RK3399-PC TEK KART BİLGİSAYAR 6 ÇEKİRDEK



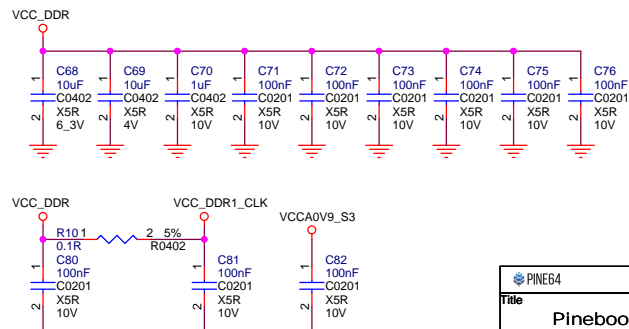




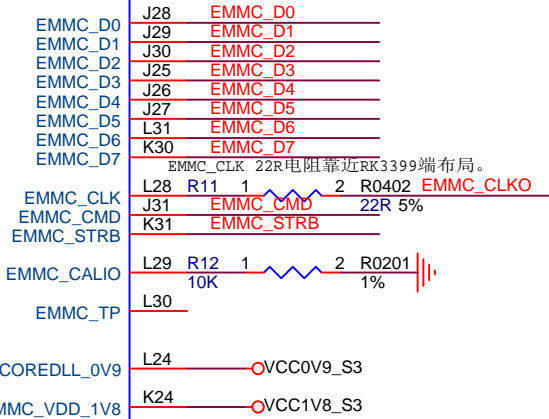
## DDR FILTER



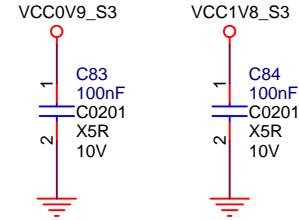
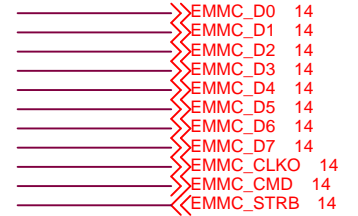
## DDR FILTER



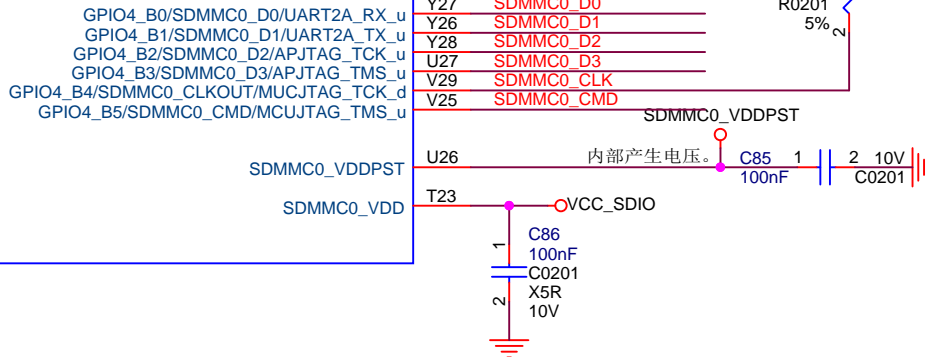
U1H  
RK3399



EMMC design rule:  
1.Data[0:7]、cmd、strobe走线做为 一组，  
并行走线并整组包地，组内等长要求为 $\pm 100\text{mil}$ ；  
2.Cl k需要单独走线并包地处理，与data间的  
延时小于20ps；  
3.Max trace length < 3.93 inches；  
4.Trace impedance 50ohm $\pm 10\%$ ；  
5.与其他信号间距遵循3w原则；  
6.R1300靠近SOC放置；




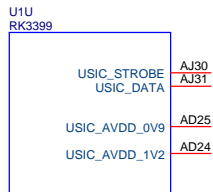
U1F  
RK3399



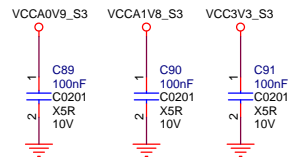
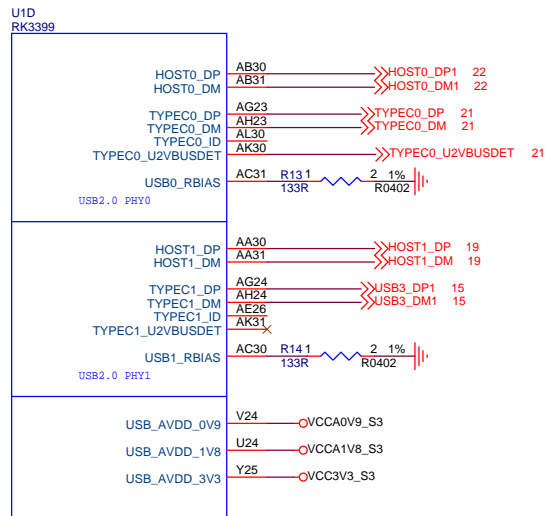
SDMMC design rule:  
1.Data[0:3]、cmd走线做为 一组，  
并行走线并整组包地，组内等长要求为 $\pm 100\text{mil}$ ；  
2.Cl k需要单独走线并包地处理，与data间的  
延时小于20ps；  
4.Max trace length < 3.93 inches；  
5.Trace impedance 50ohm $\pm 10\%$ ；  
6.与其他信号间距遵循3w原则；



 PINE64		PINE64	
Title			
Pinebook Pro			
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A4	FLASH&SDMMC controller	V2.1	
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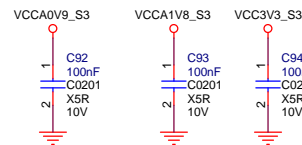
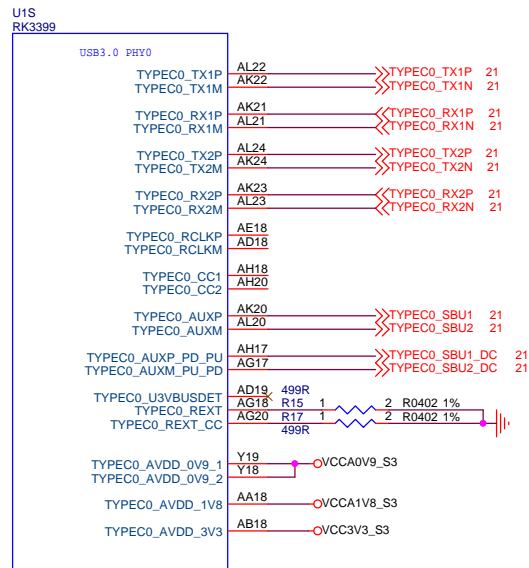


## USB2.0

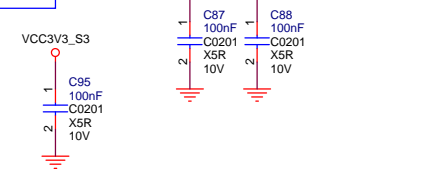
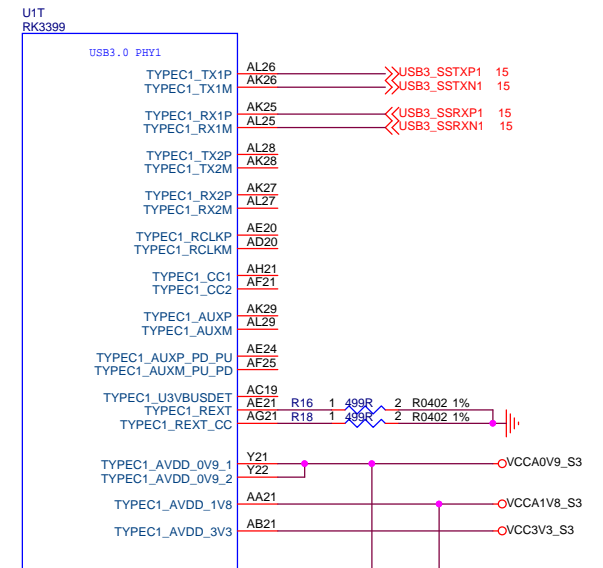


USB2.0 design rule:  
1.Max intra-pair skew < 4 ps;  
2.Max trace length < 6 inches;  
3.Max allowed via < 6;  
4.Trace impedance 90ohm+/-10%;  
5.与其他信号间距遵循3W原则;

## USB3.0



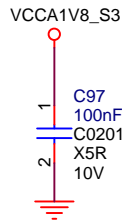
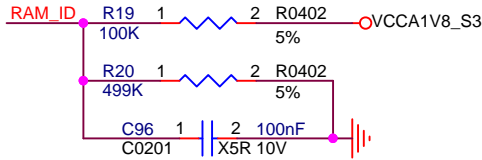
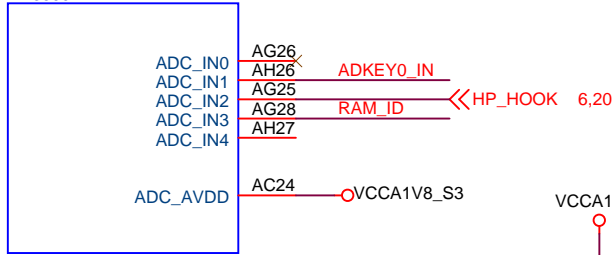
USB3.0 design rule:  
1.Max intra-pair skew < 4 ps;  
2.Max length skew between TX and RX < 1.6 ns;  
3.Max trace length < 6 inches;  
4.Max allowed via < 4;  
5.Trace impedance 90ohm+/-10%;  
6.与其他信号间距遵循3W原则;



DP design rule:  
1.Max intra-pair skew < 4 ps;  
2.Max trace length < 6 inches;  
3.Max allowed via < 4;  
4.Trace impedance 90ohm+/-10%;  
5.与其他信号间距遵循3W原则;

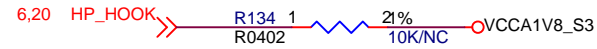
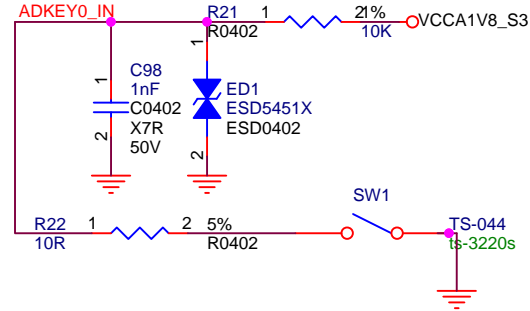
PINE64		
Pinebook Pro		
Size	Document Number	Rev
A3	USB CONTROLLER	V2.1
Date:	Sheet 5 of 23	

U1V  
RK3399

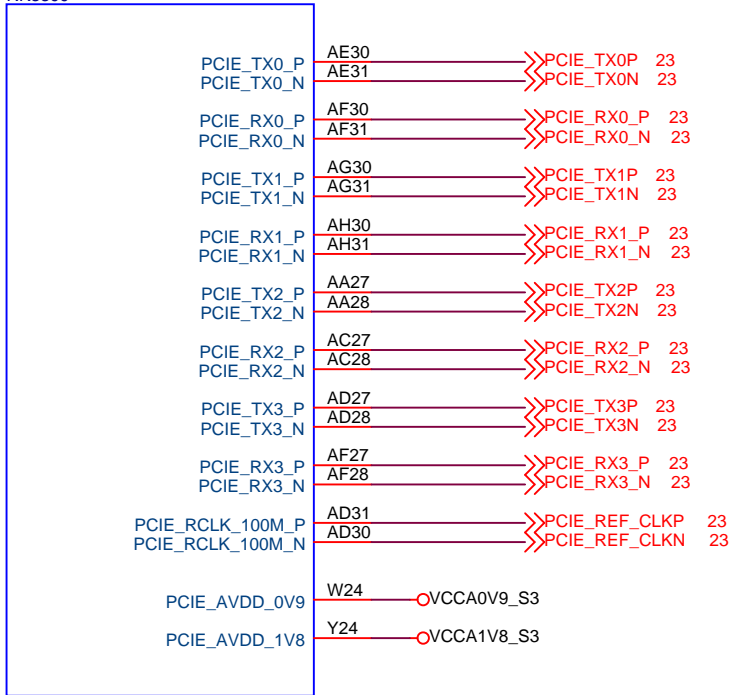


	RAM ID	R23 PU	R24 PD
DDR3 /DDR3L	0.6V	200K	100K
LPDDR3	0.112V	150K	10K
LPDDR4	1.5V	100K	499K

Note:  
系统上电时，如果ADKEY\_IN电平为0V，  
则RK3399进入Recovery模式；  
量产时R1503,SW1500,ED1500可以不用贴片。

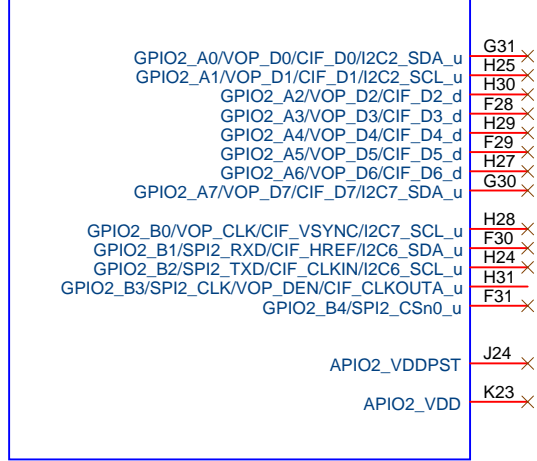


U1O  
RK3399

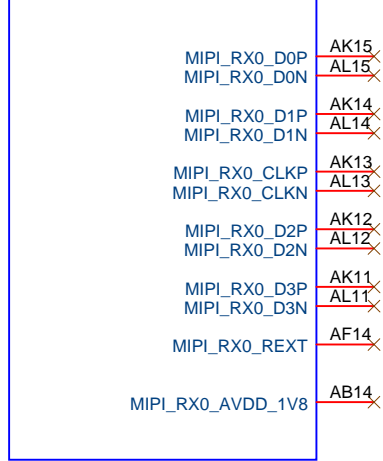


PINE64		
Pinebook Pro		
Size A4	Document Number SARADC/KEY	Rev V2.1
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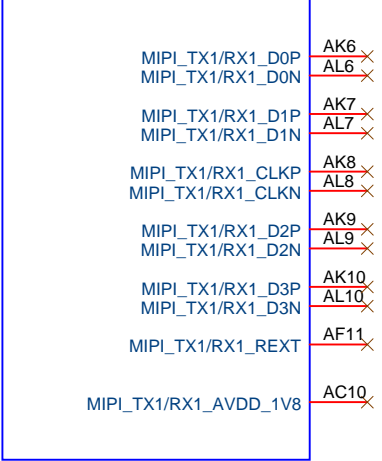
U1L  
RK3399



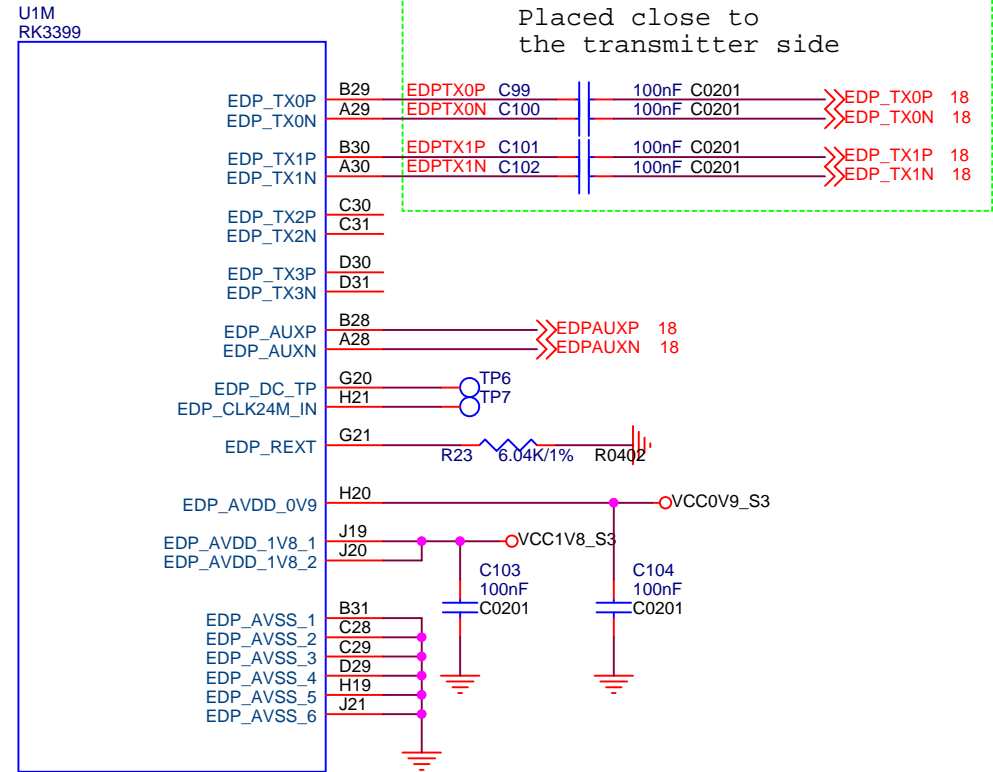
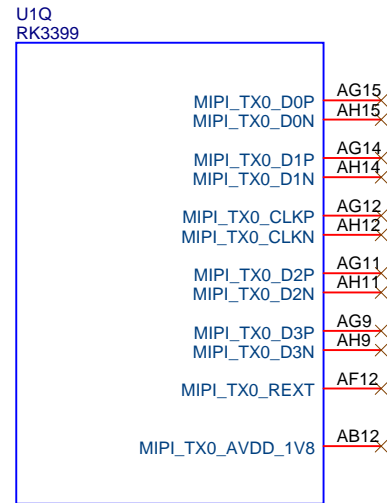
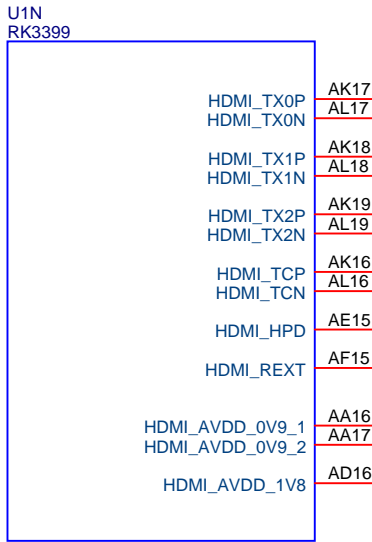
U1R  
RK3399



U1P  
RK3399








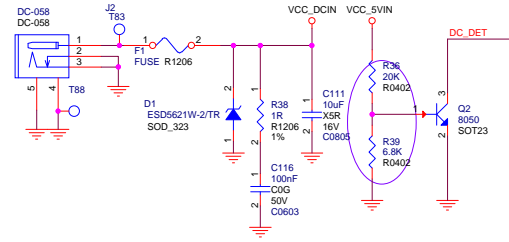
eDP design rule:

- 1.Max intra-pair skew < 4 ps;
- 2.Max trace length < 6 inches;
- 3.Max allowed via < 4;
- 4.Trace impedance 90ohm+/-10%;
- 5.与其他信号间距遵循3W原则;

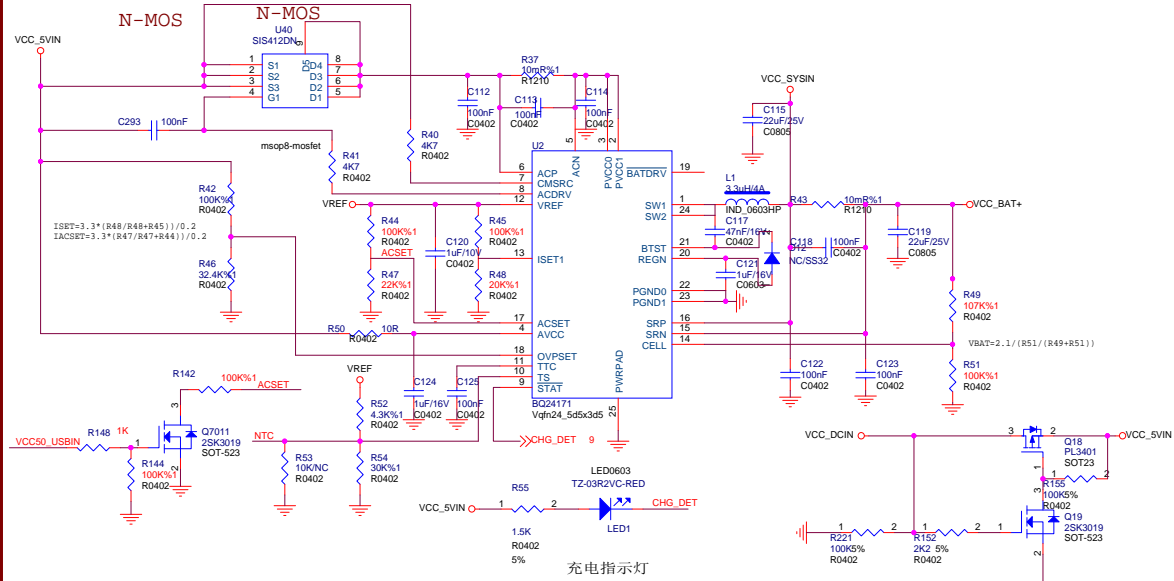
 PINE64		<b>PINE64</b>	
Title			
Pinebook Pro			
Size	Document Number		Rev
A4	Display interface		V2.1
Date:	Sheet	8	of 23



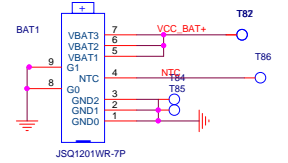
DC IN 5V 3A



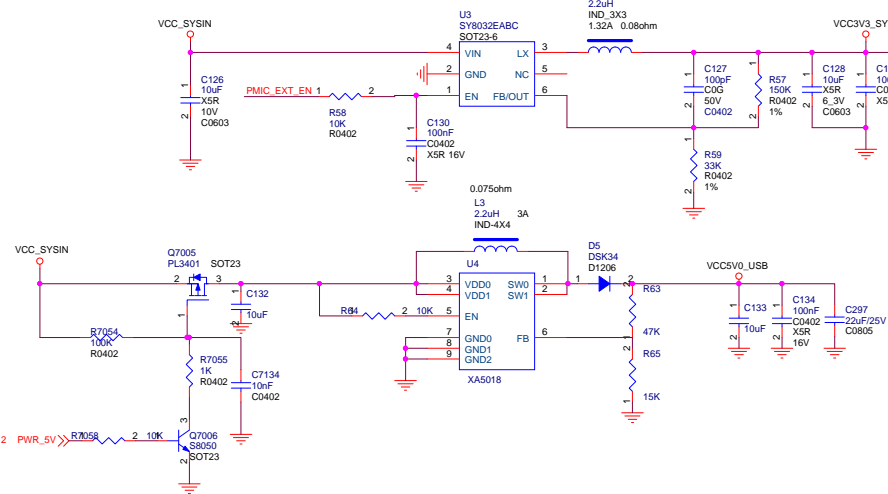
## CHARGE and Power Path



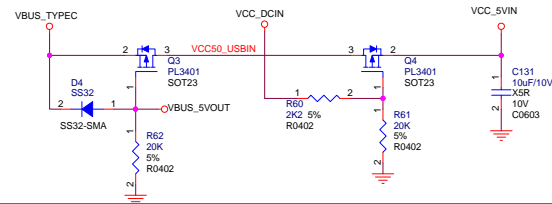
BATTAR 单节3.8V 9000mA



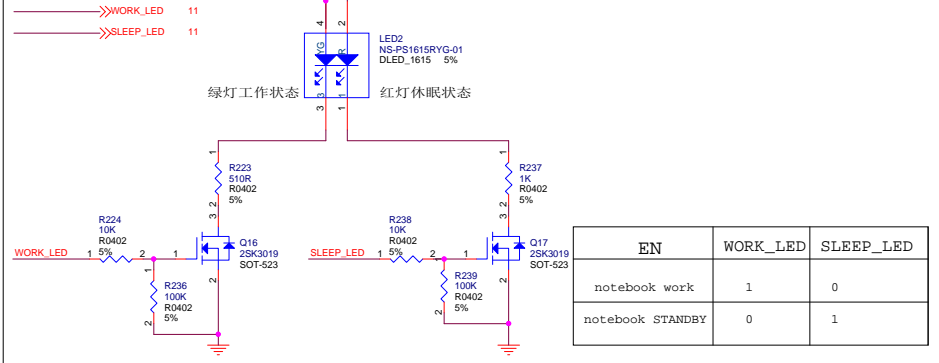
## 3.3V SYSTEM



## Power Path Management

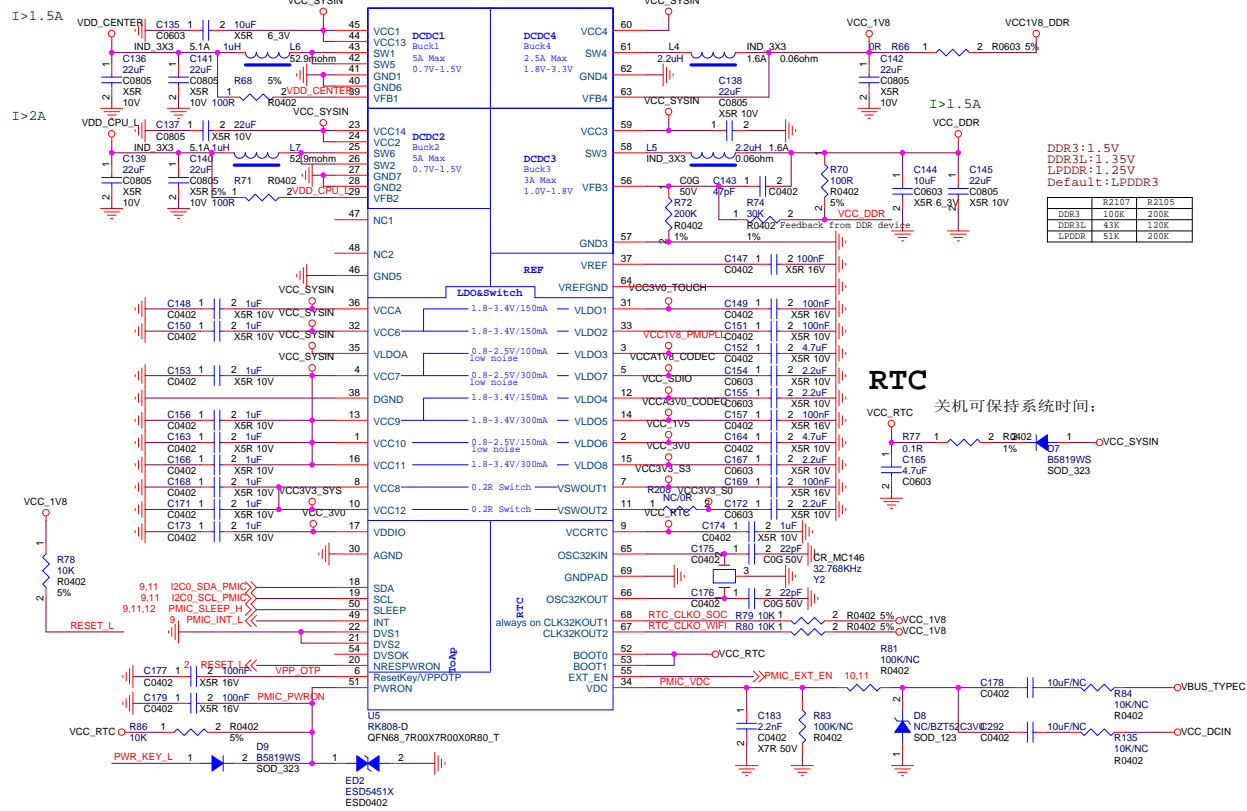


## LED

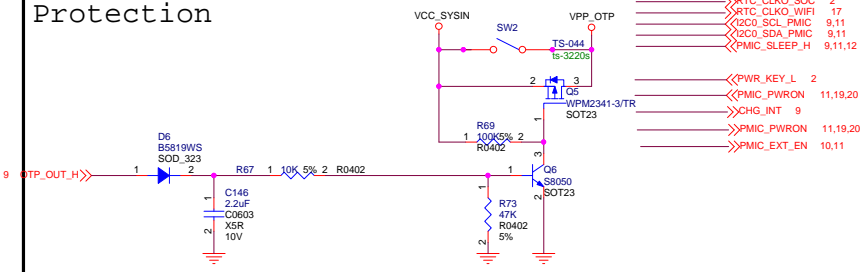


EN	WORK_LED	SLEEP_LED
notebook work	1	0
notebook STANDBY	0	1

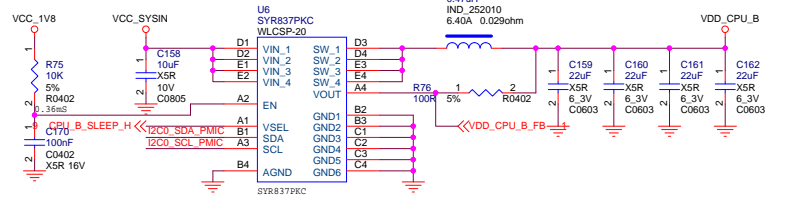
PMIC



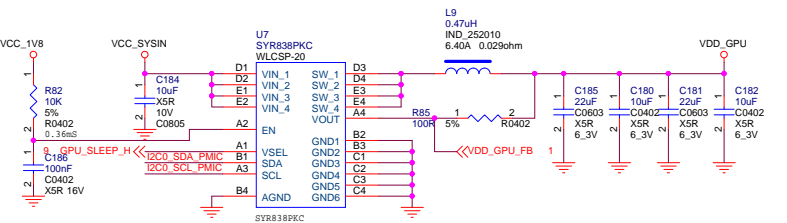
Over-temperature Protection



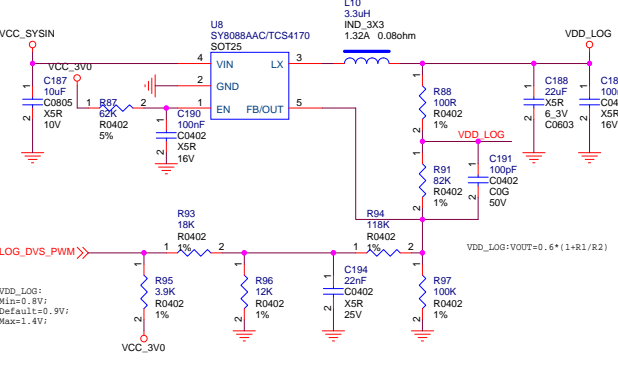
VDD\_CPU\_B power



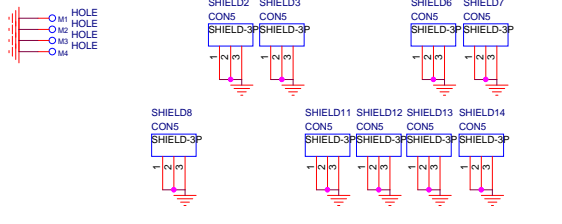
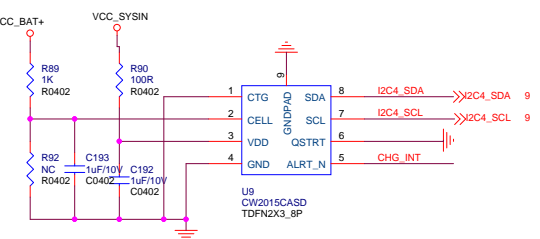
VDD\_GPU power



VDD\_LOG power

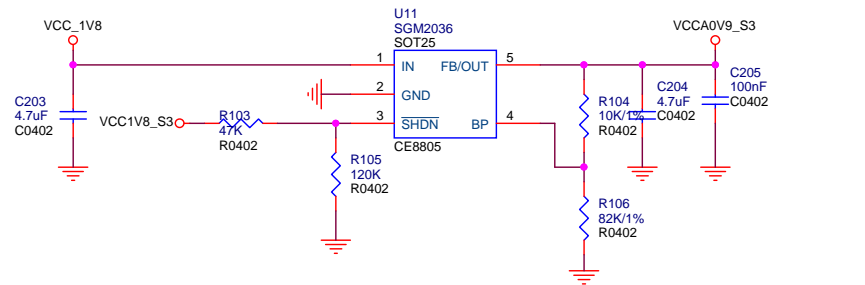
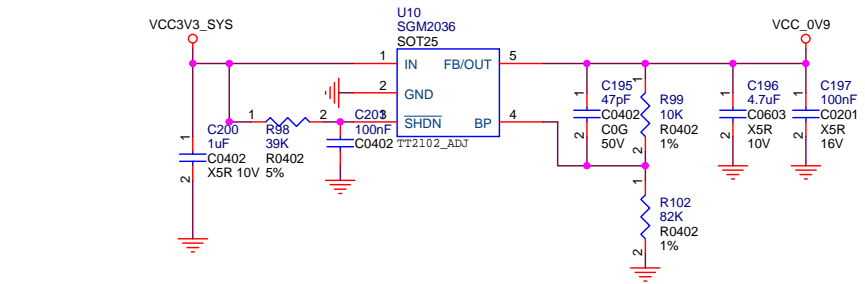


Gas Gauge

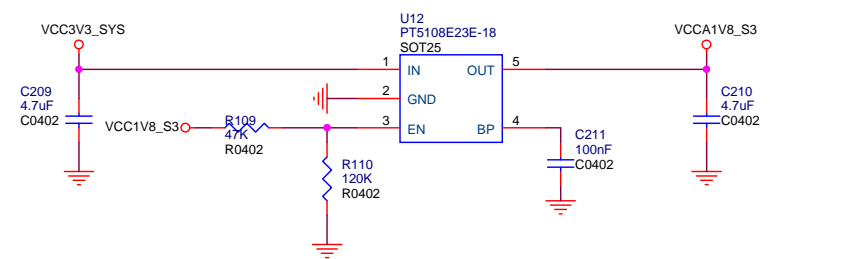


PINE64		
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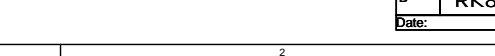
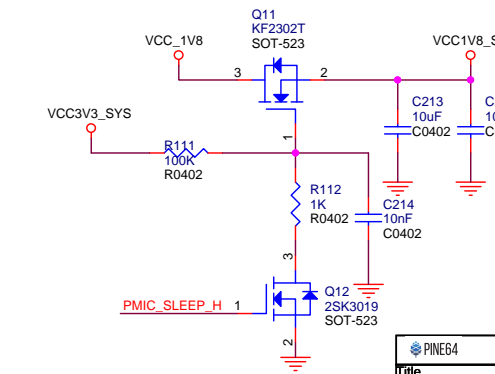
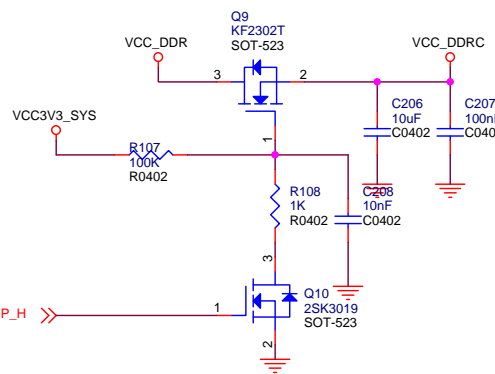
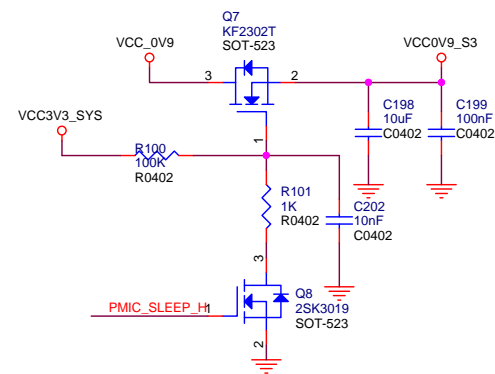
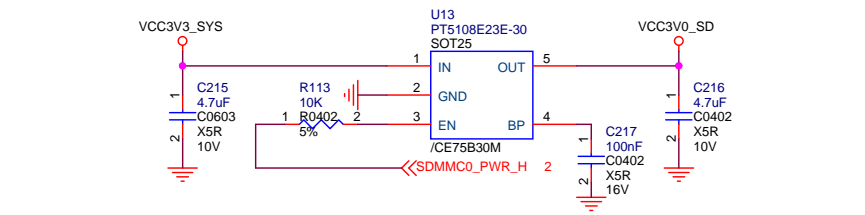
VCC\_0V9 power




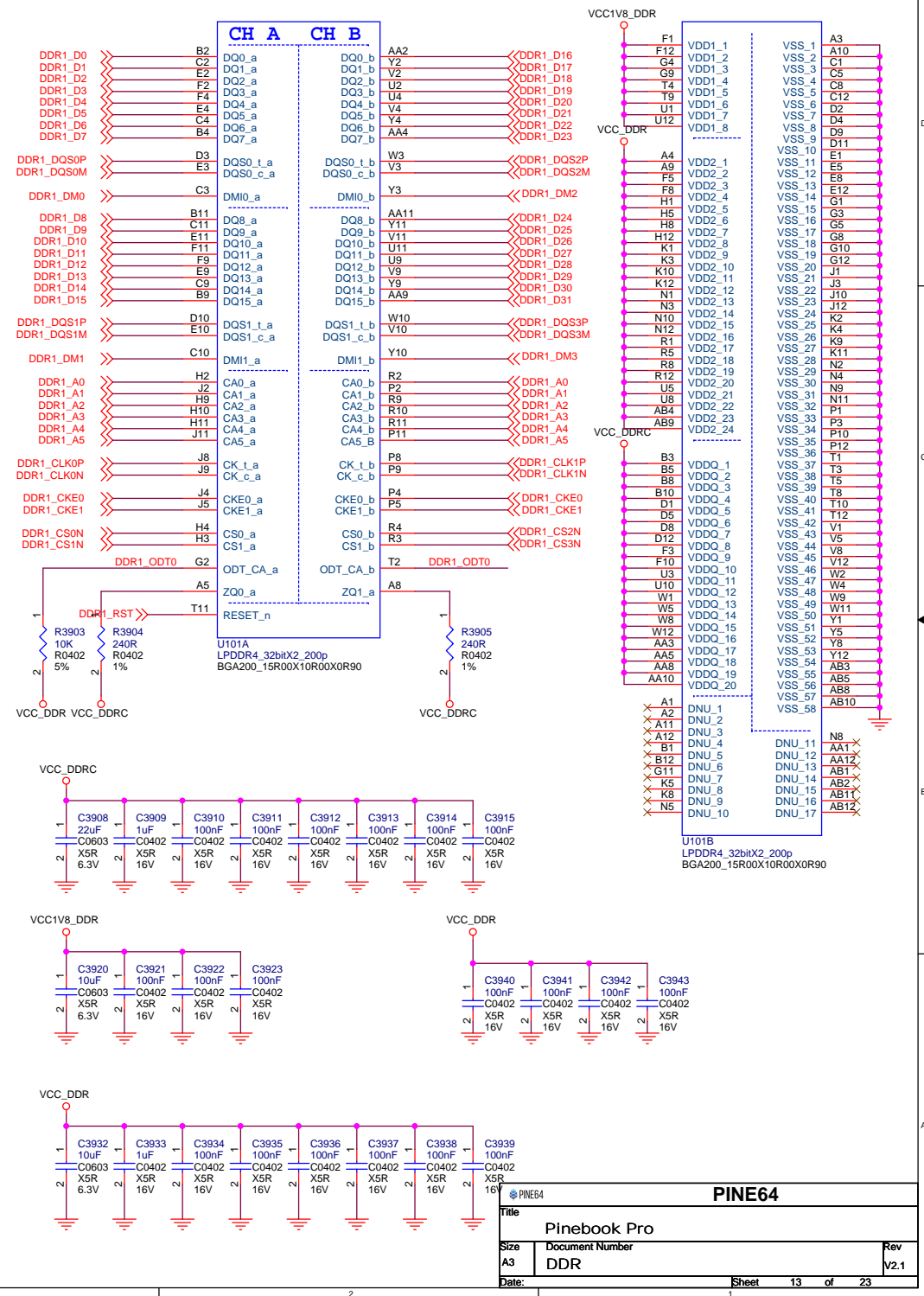
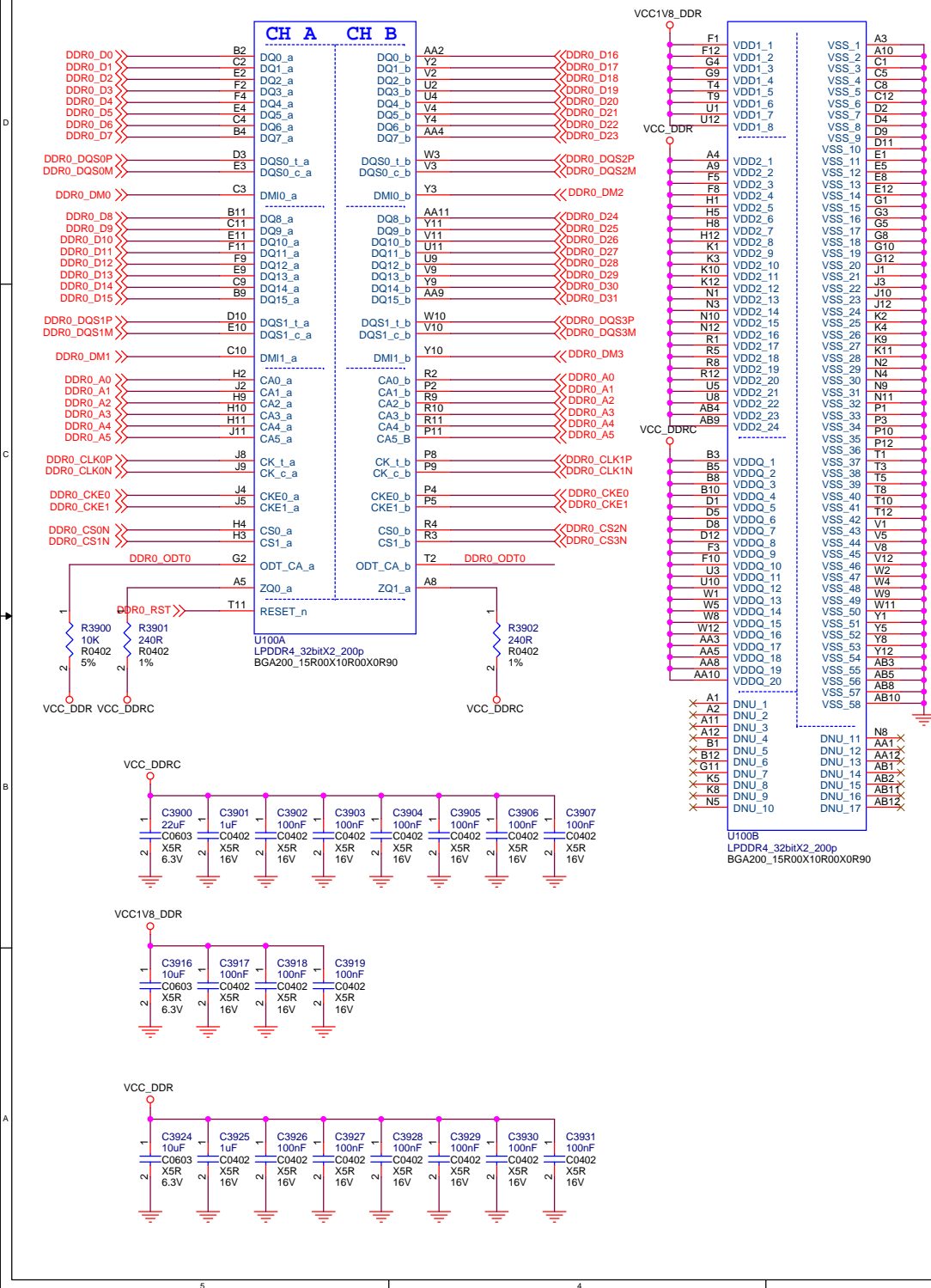
VCCA1V8\_S3 power



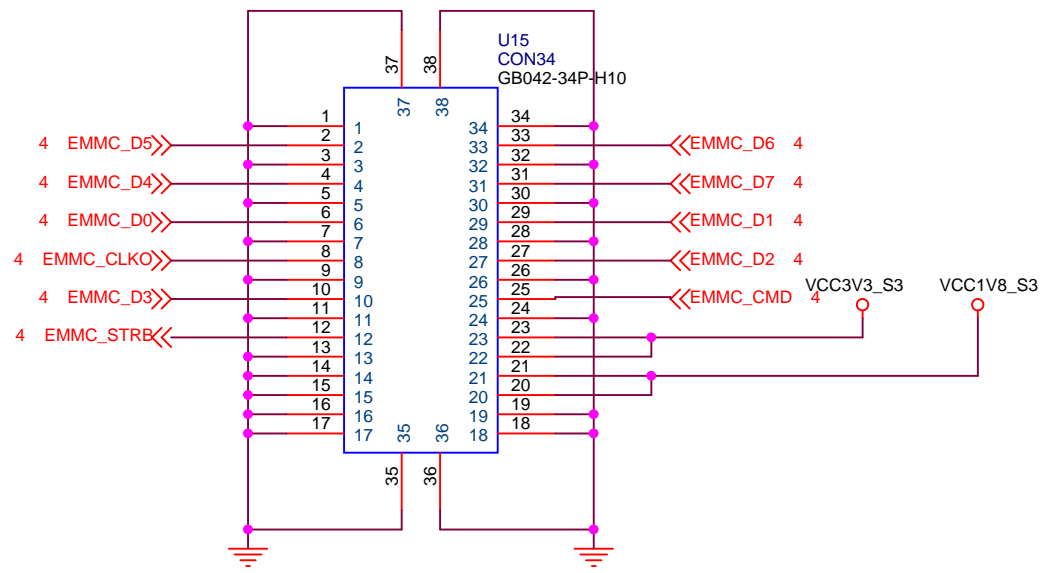
VCC3V0\_SD power



 PINE64		<b>PINE64</b>	
Title			
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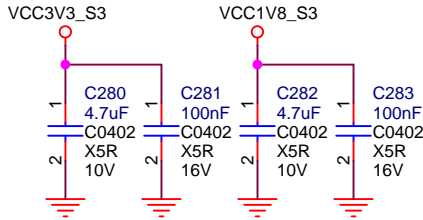


eMMC Port

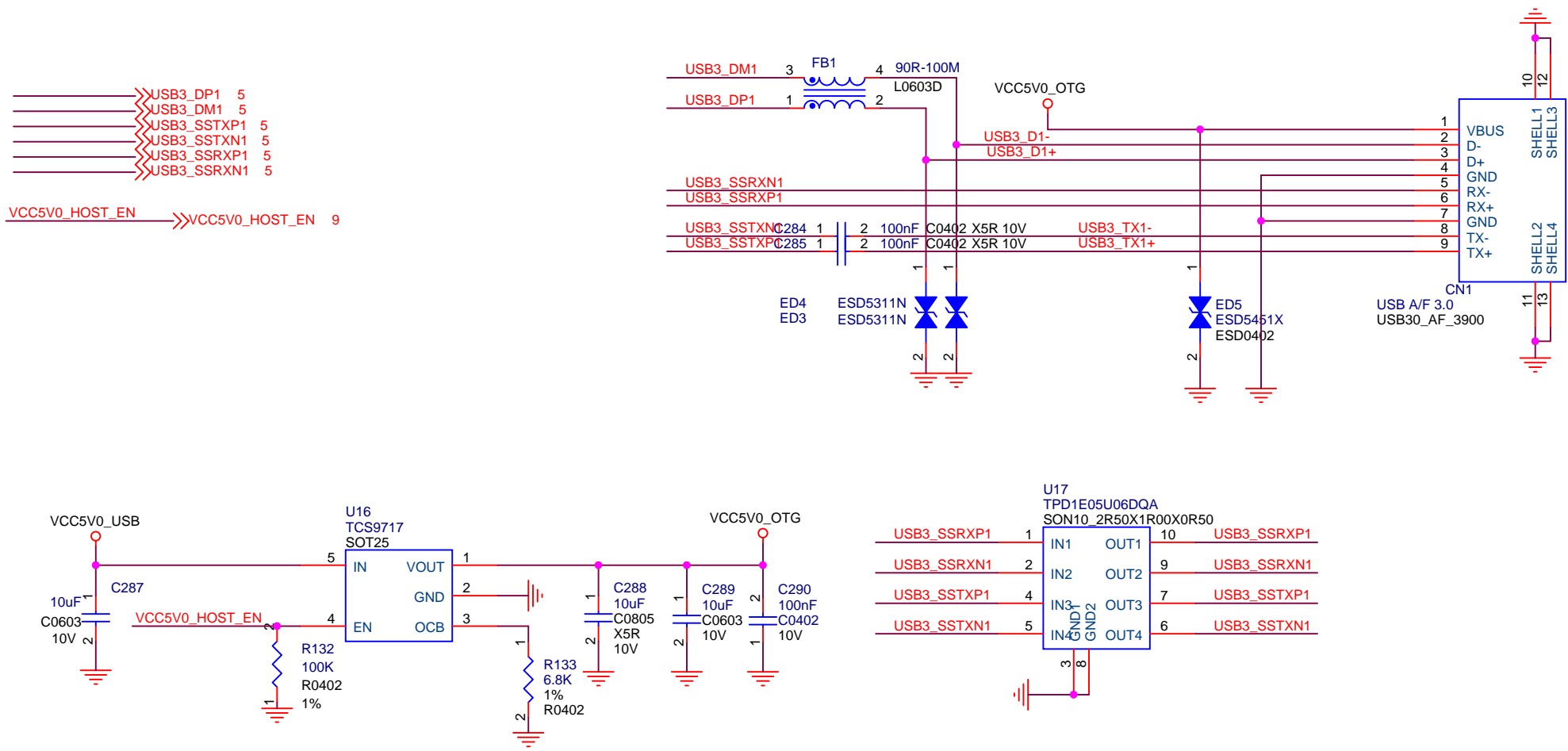


Note:  
Reserve SW for Update.

	SEL	Shunt Status	Function
	1	OFF	eMMC
	ON	ON	MASKROM

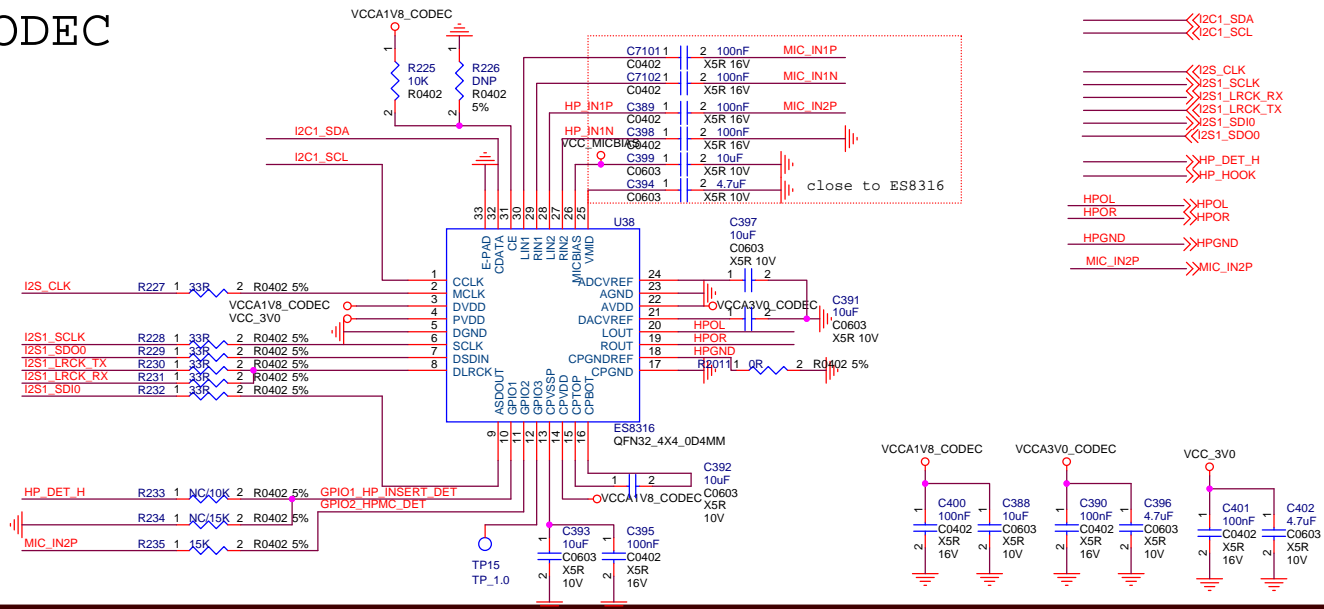


# USB3.0 OTG port

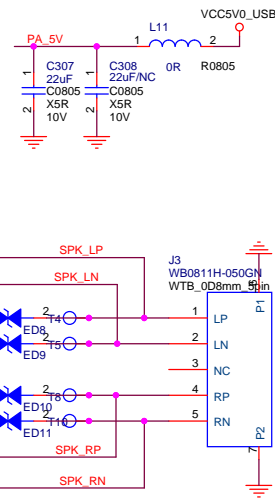
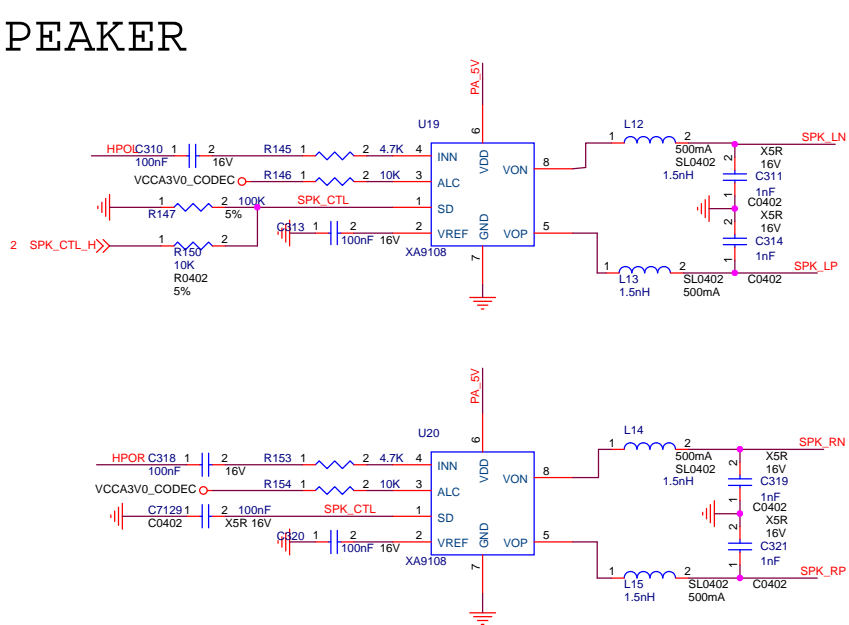




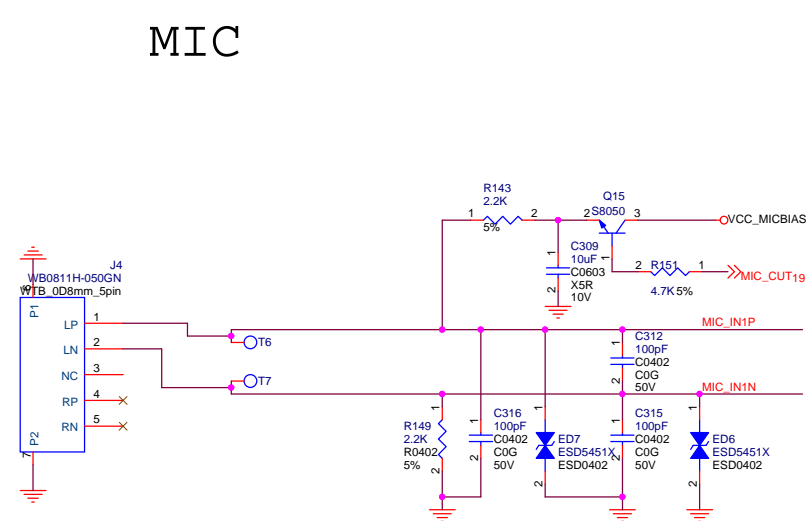
## CODEC



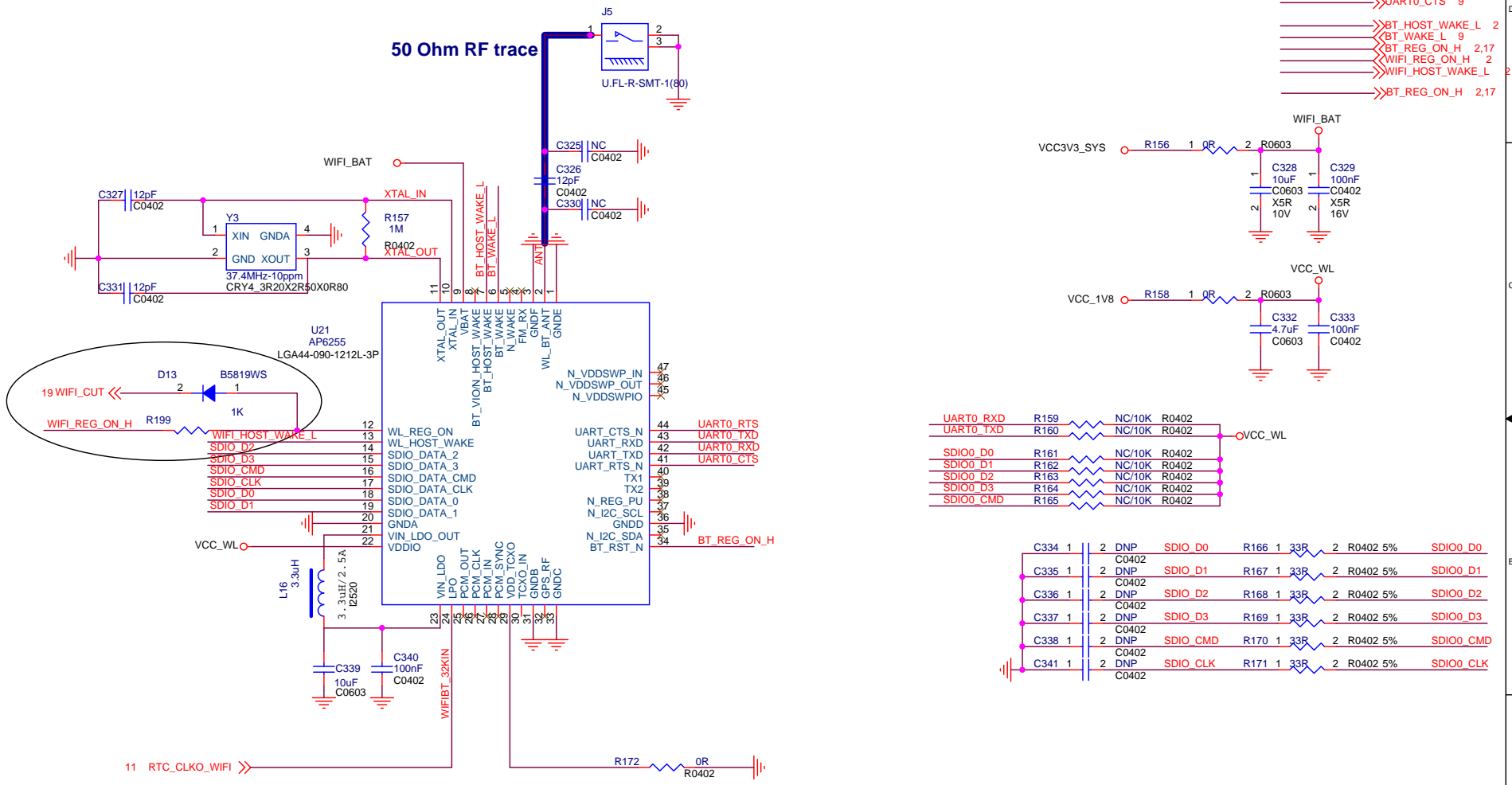
SPEAKER



## MIC

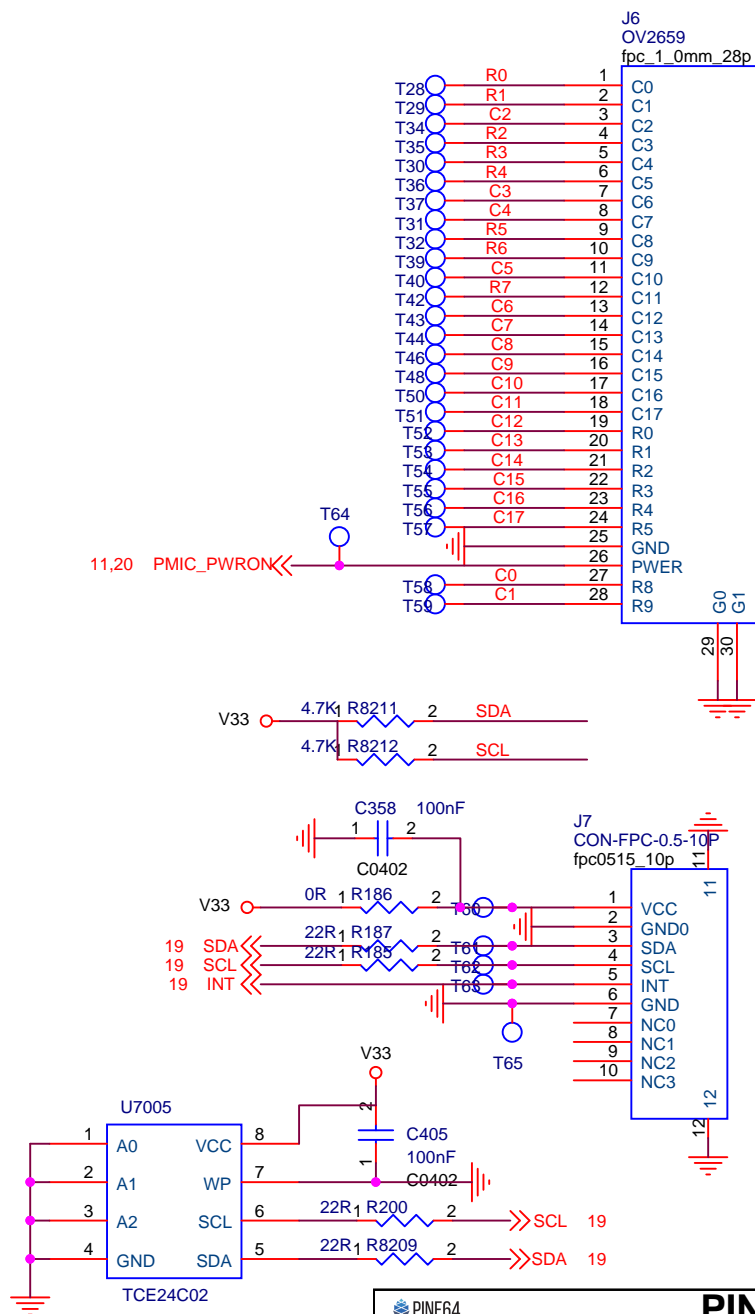
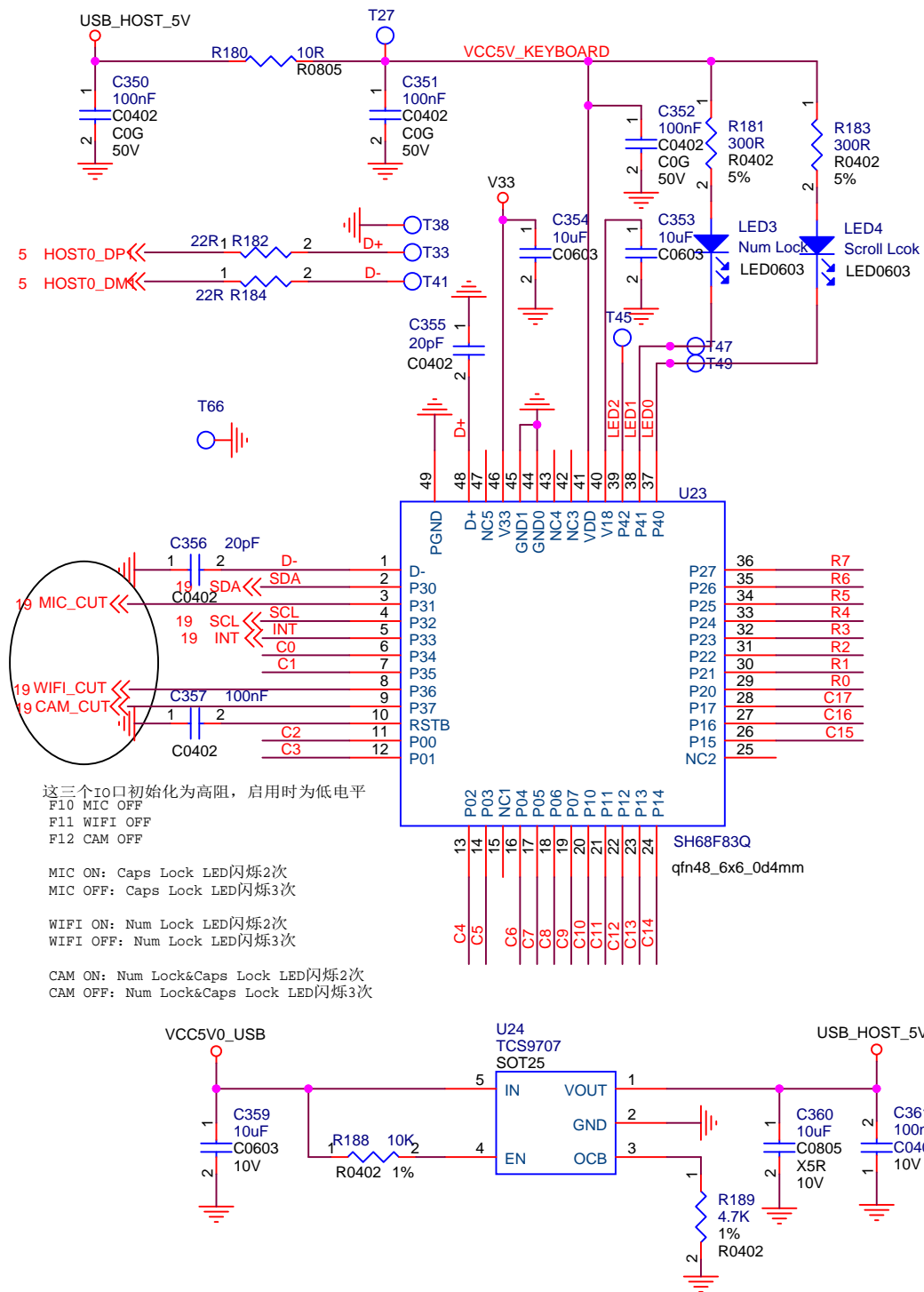


WIFI/BT MODULE

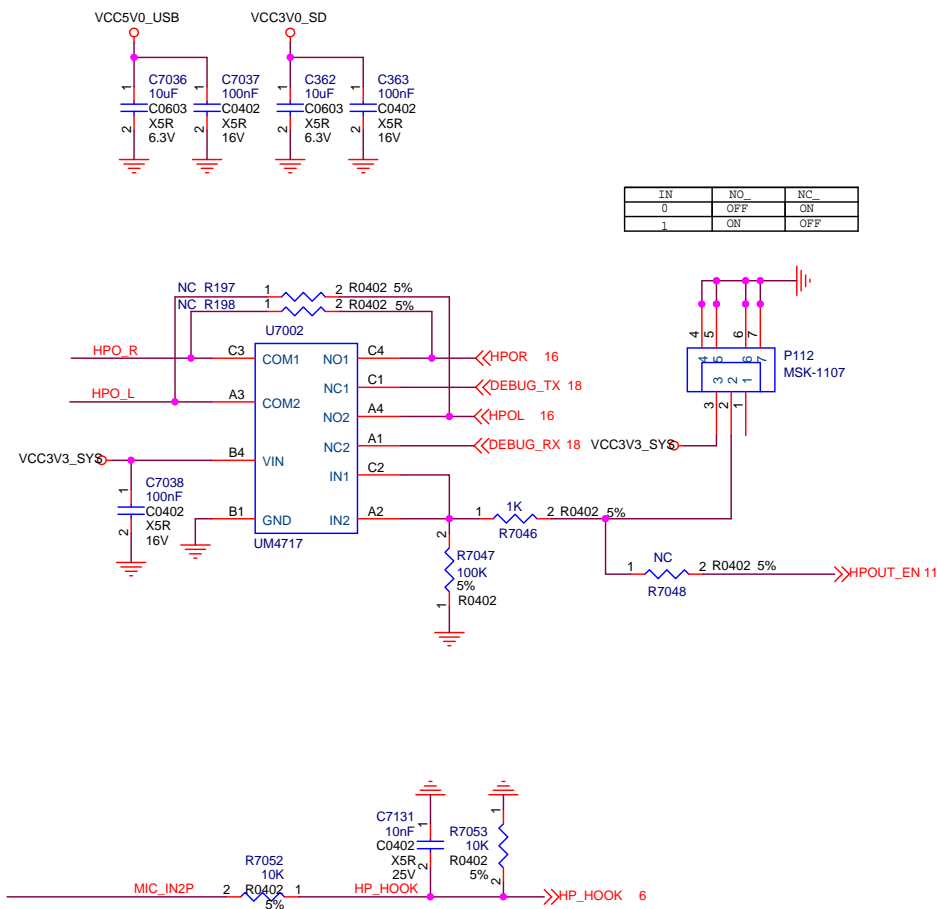
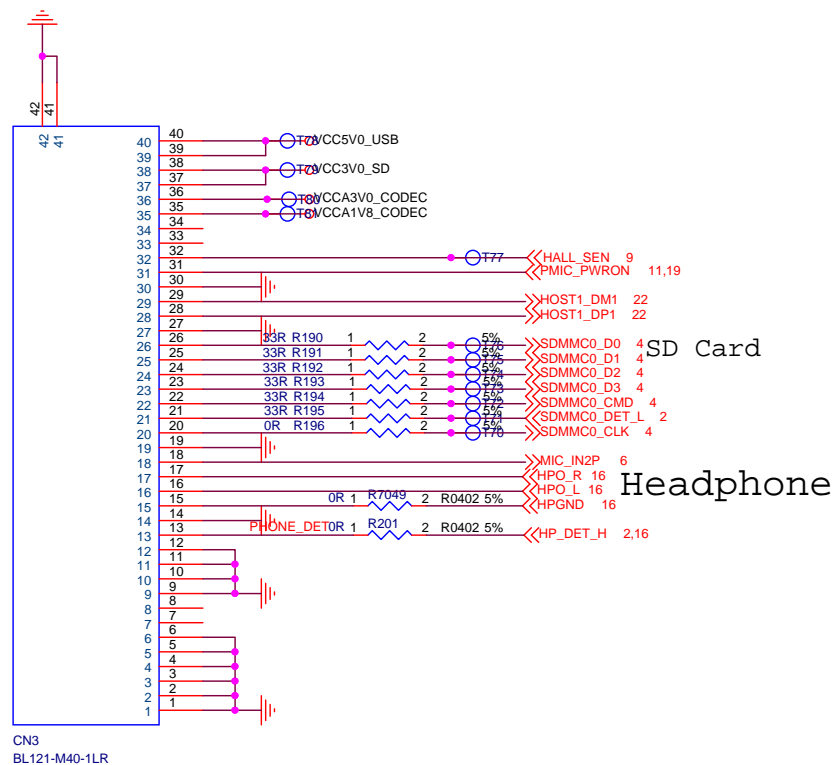




KEY Board      Click Pad

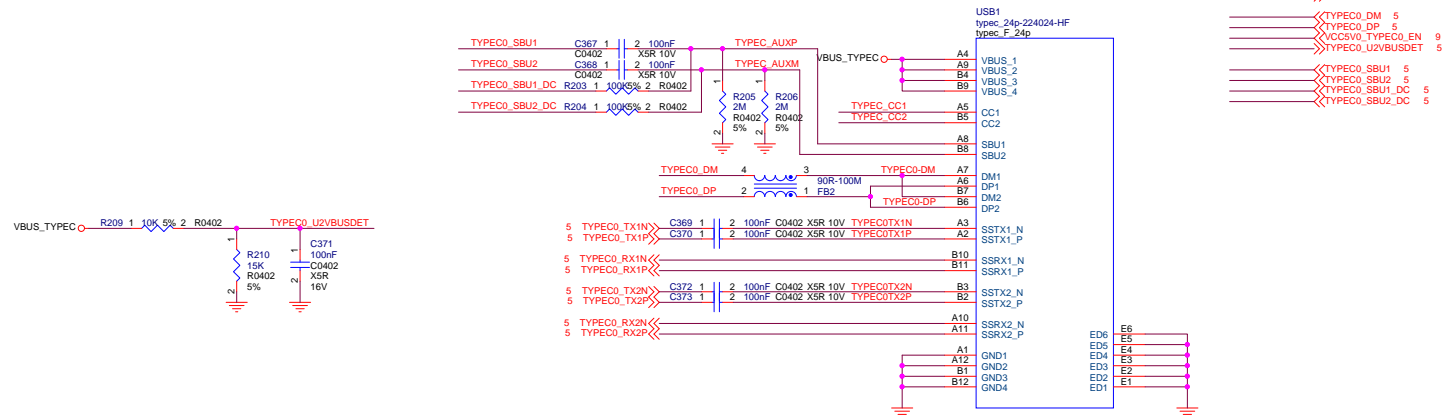


小板连接器：耳机、SD卡、USB

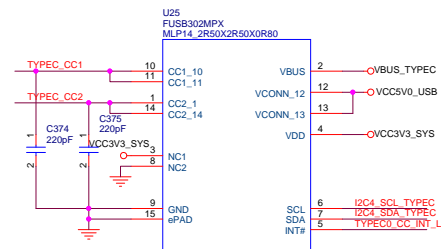


IN	NO__	NC__
0	OFF	ON
1	ON	OFF

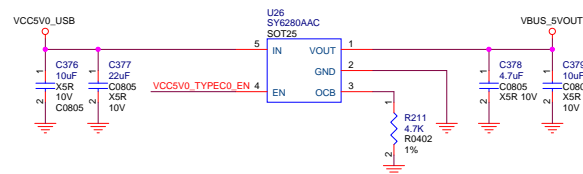
USB Type-C port



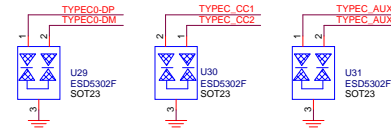
## CC CTRL



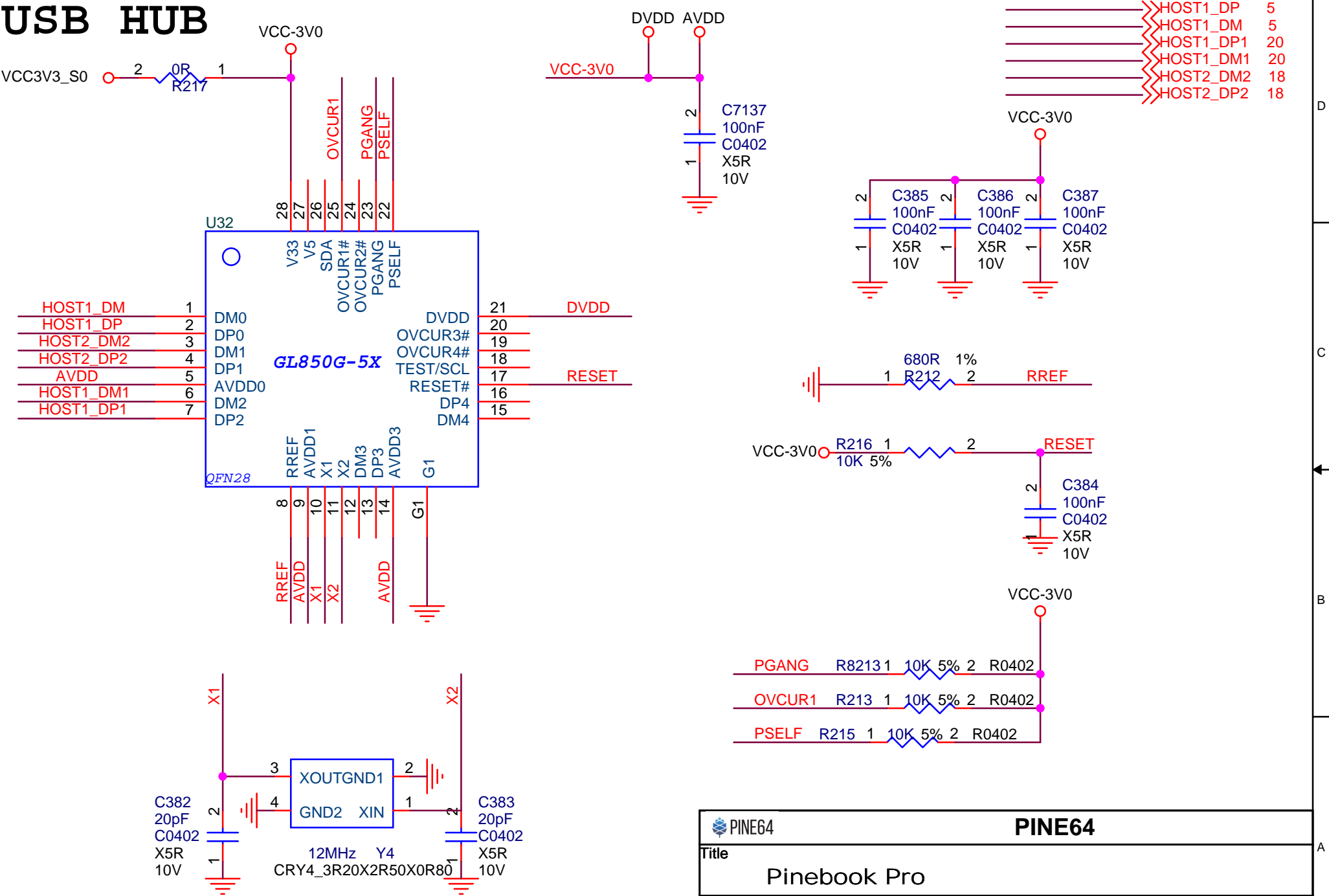
Limit switch




## ESD

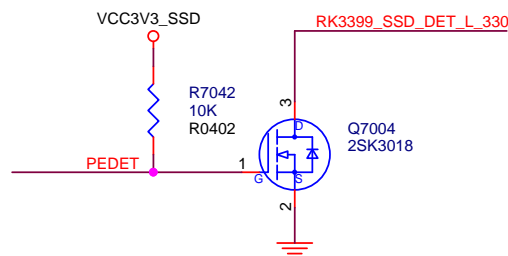
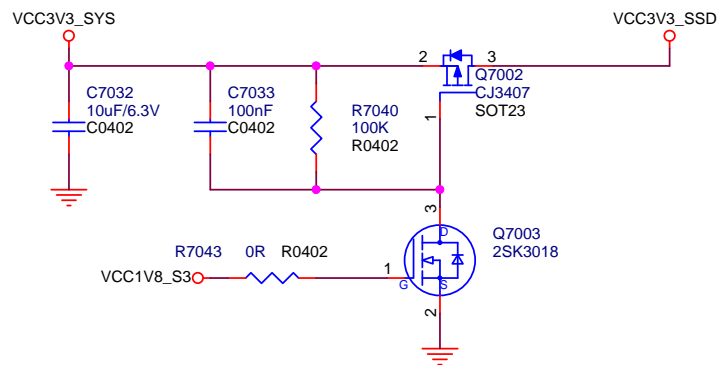
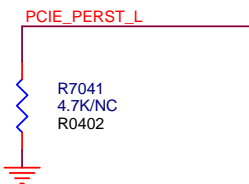
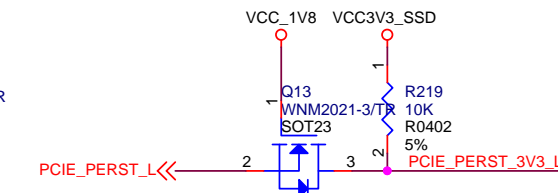
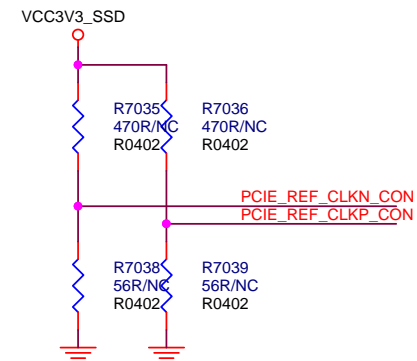
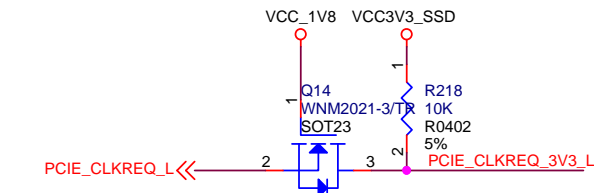
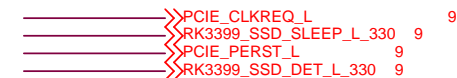
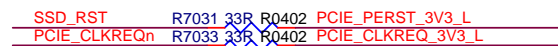
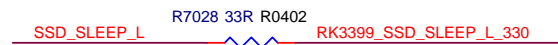
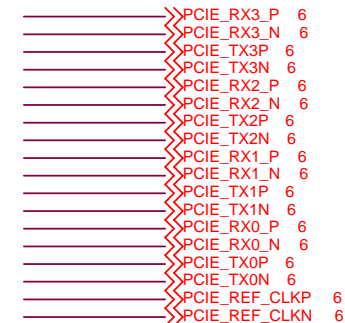
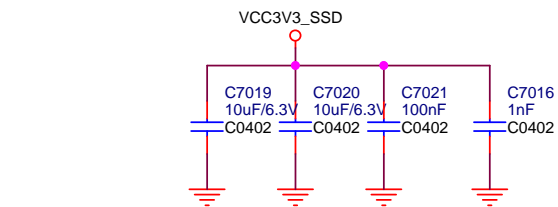
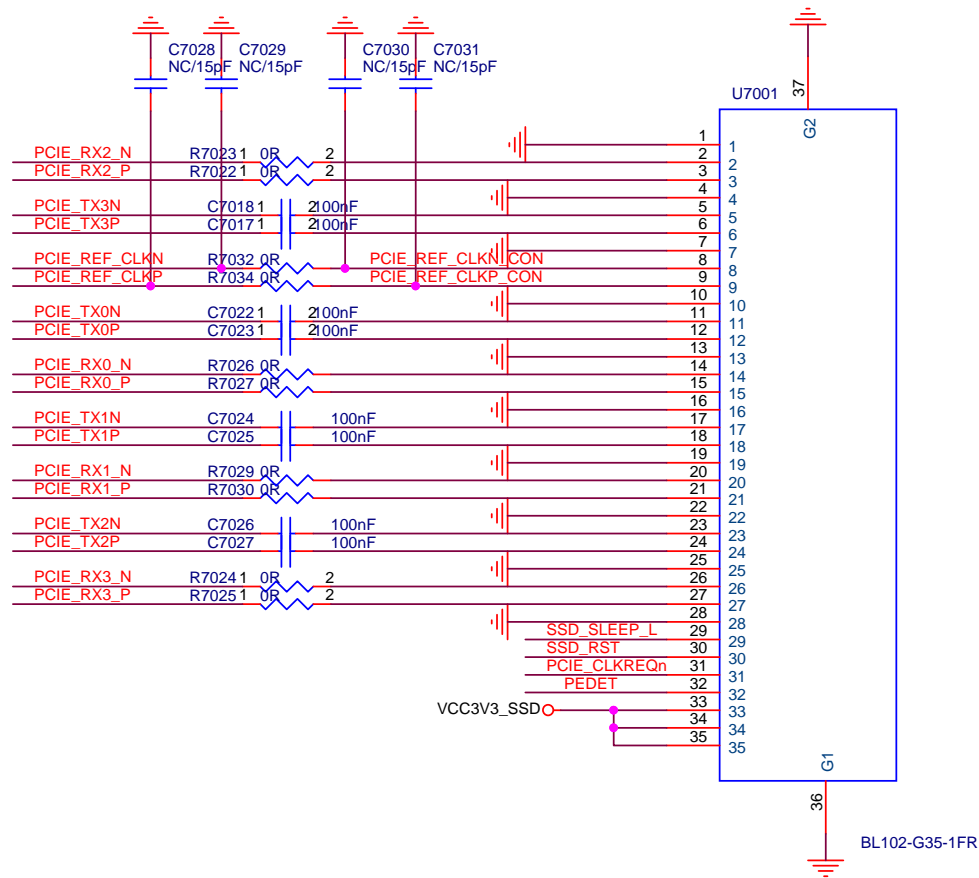


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