

01_Product Description

Y3 Product Description

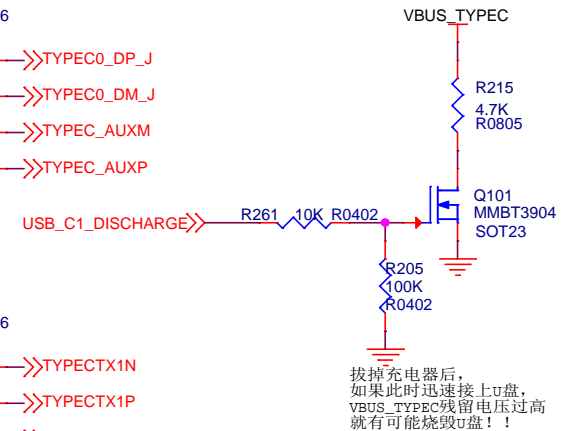
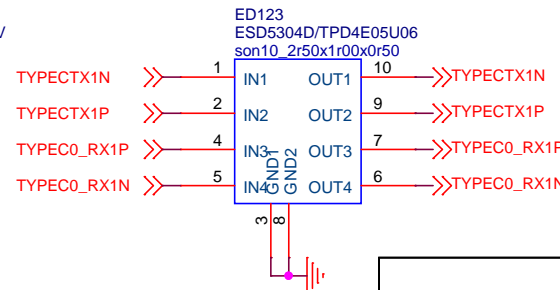
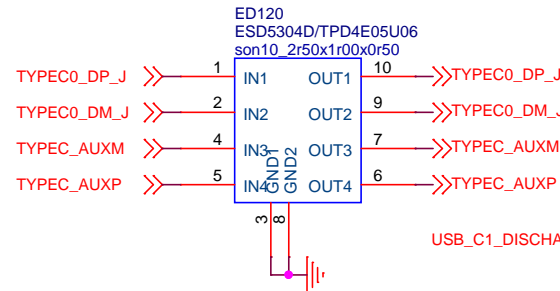
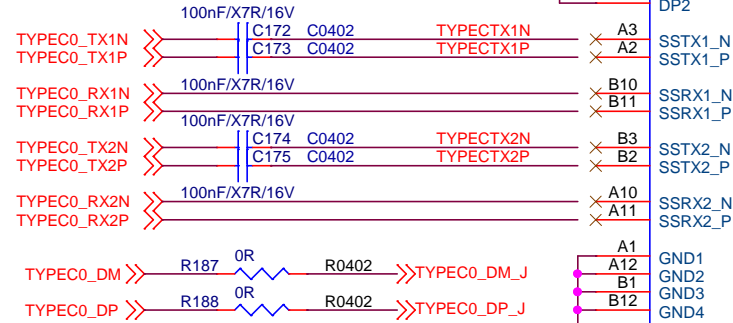
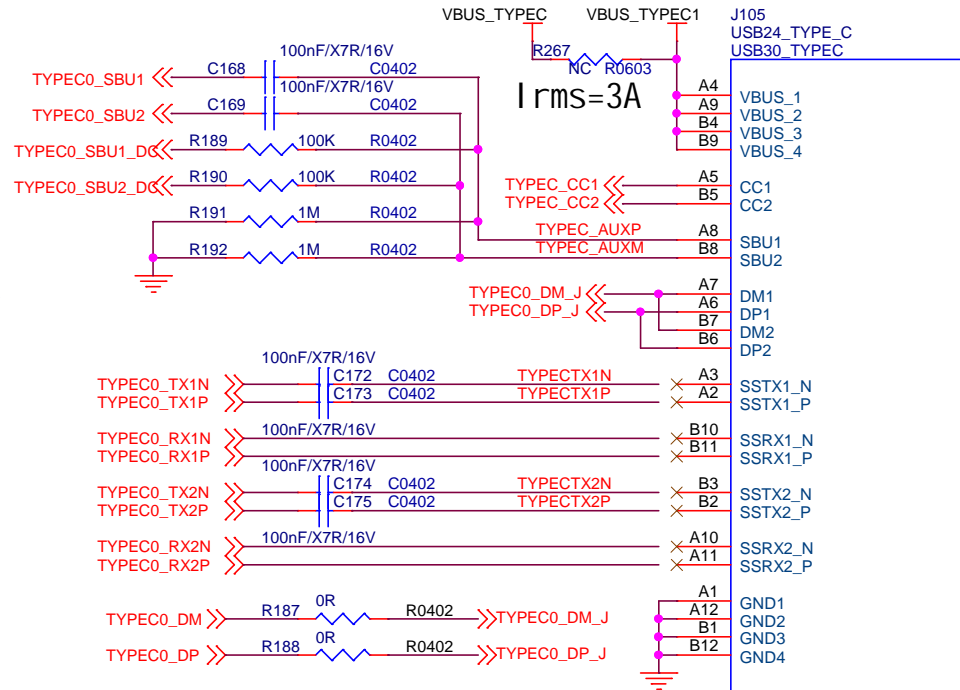
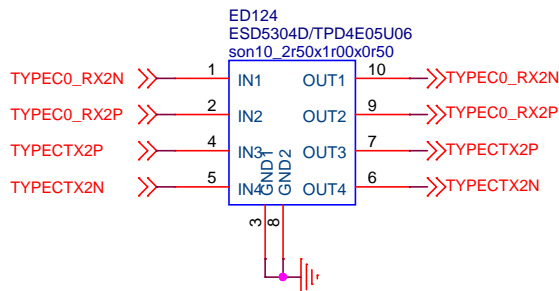
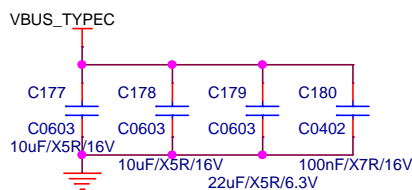
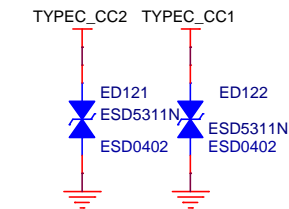
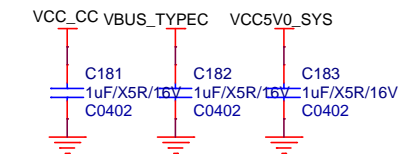
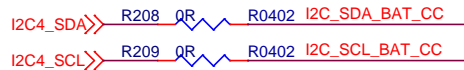
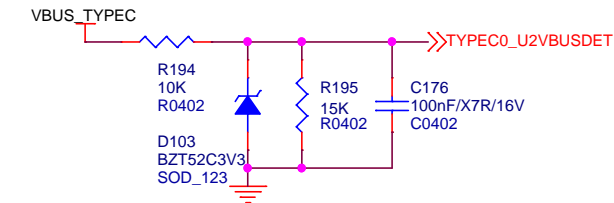
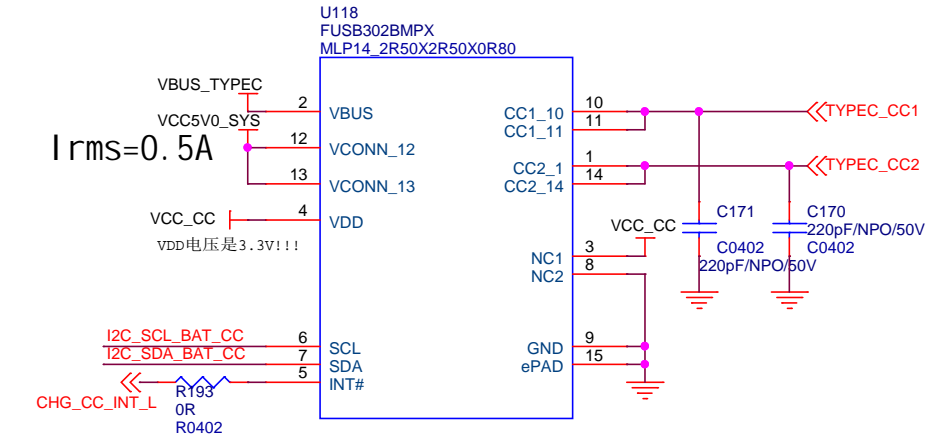
- 1, 此项目是一个类似于平板的产品, 4GB LPDDR3+?GB eMMC。
- 2, 产品有3.7V锂电池、双MIPI高清显示屏、Type-C、TF卡、G-Senser、Light-Senser、Key、麦克风矩阵、音频I2S输出至无线发射模块。
- 3, 无USB(不包括Type-C)、摄像头、HDMI。
- 4, PMIC因考虑需要5V-24V输入, 暂不考虑使用RK818方案。
- 5, SCH设计问题详细见DOC文档。

Kevin.Luo
luozhiliang@kugou.net

2018.01.30

Title		
Y3_RK3399_Main		
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A4	ProductDescription	1.0
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02_Type-C

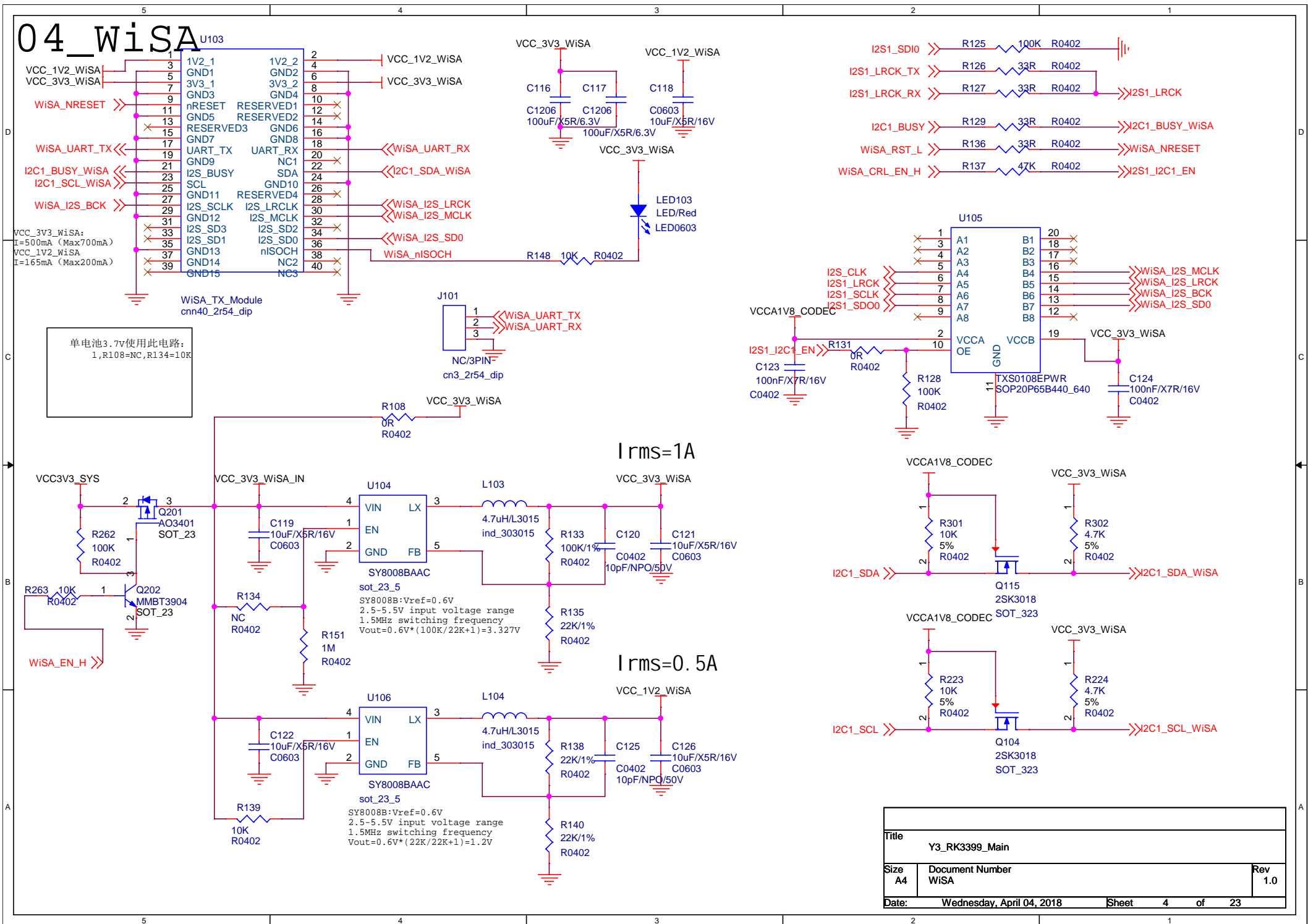


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Y3_RK3399_Main		
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A4	Type-C	1.0
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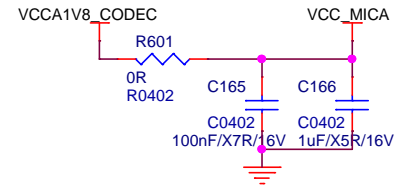
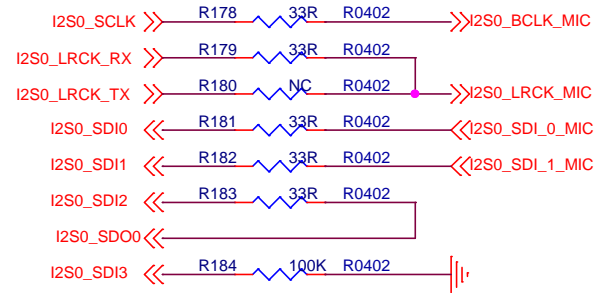
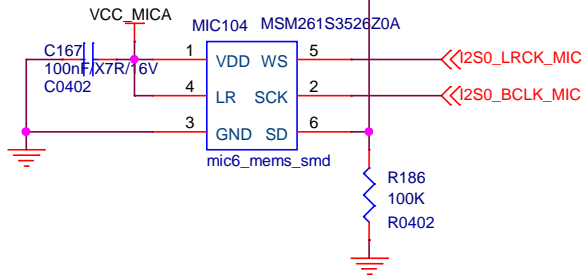
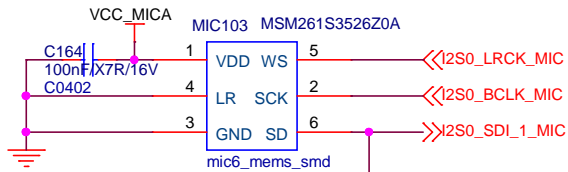
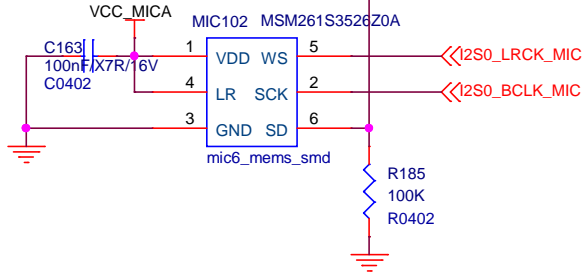
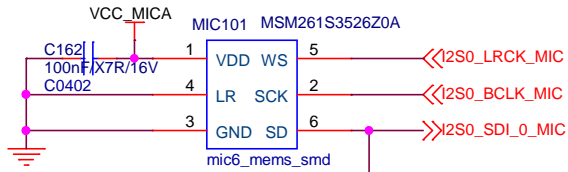
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Y3_RK3399_Main				
Size	Document Number			Rev
A3	WiFi			1.
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04 WiSA U103



Title Y3_RK3399_Main			
Size A4	Document Number WISA		Rev 1.0
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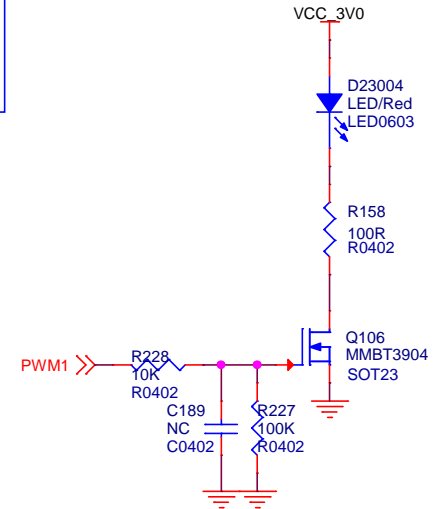
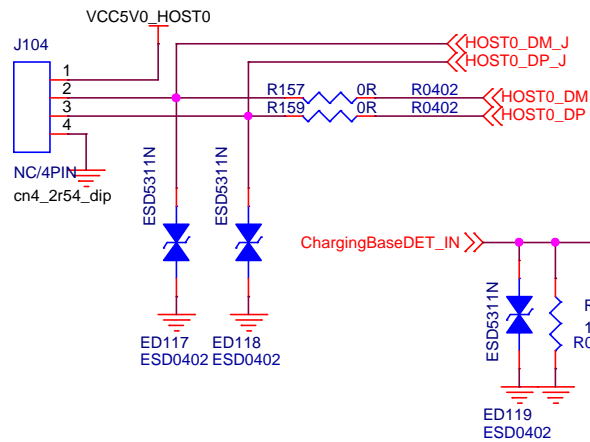
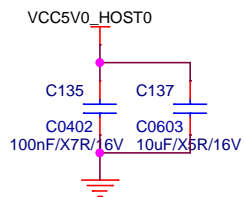
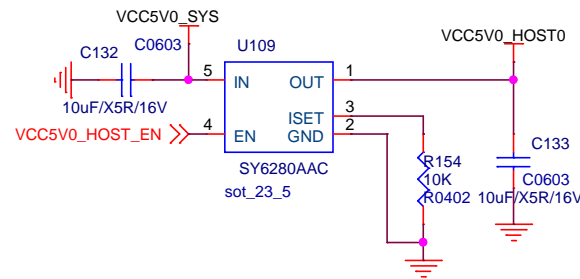
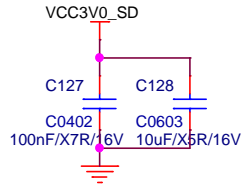
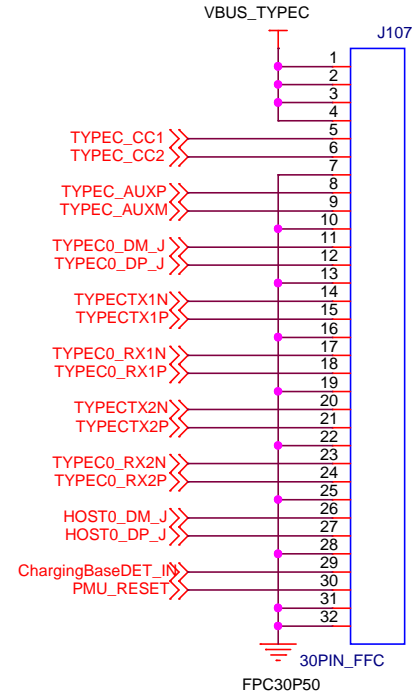
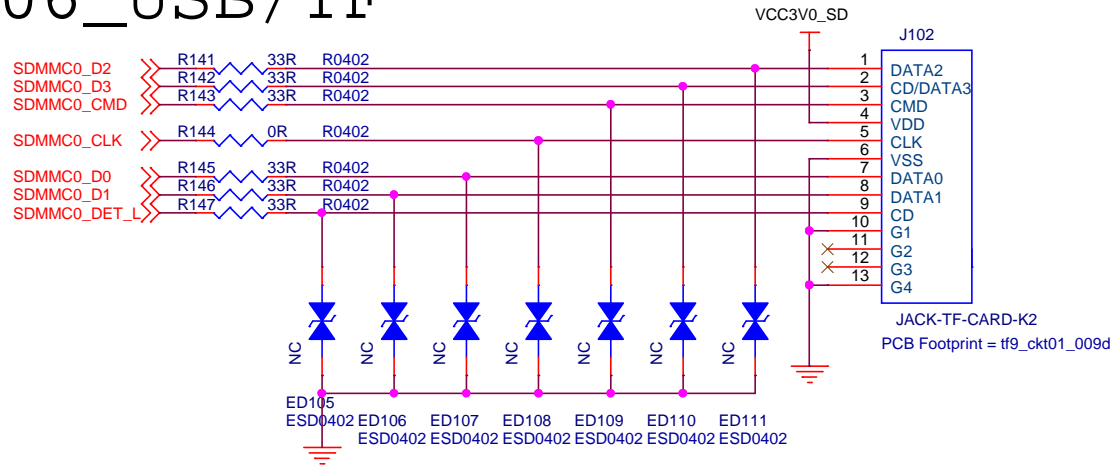
05_MIC



	MIC1	MIC2	MIC3	MIC4
L/R	低	高	低	高

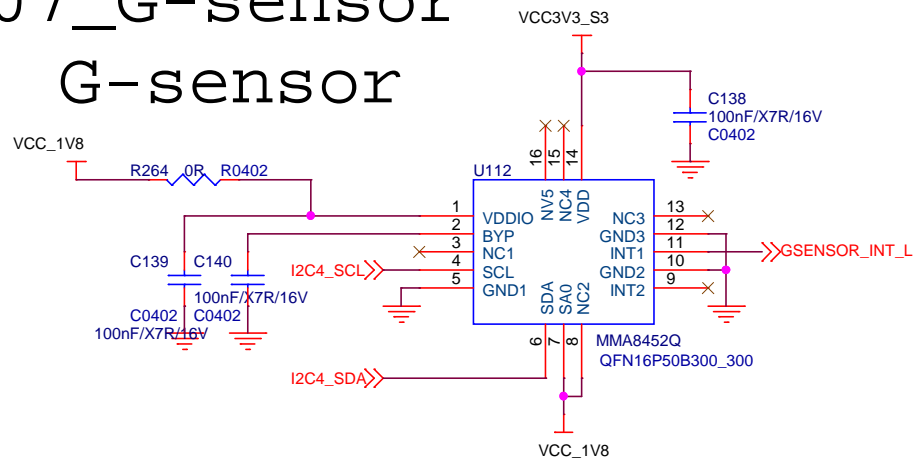
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Y3_RK3399_Main		
Size	Document Number	Rev
A4	MIC	1.0
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06_USB/TF

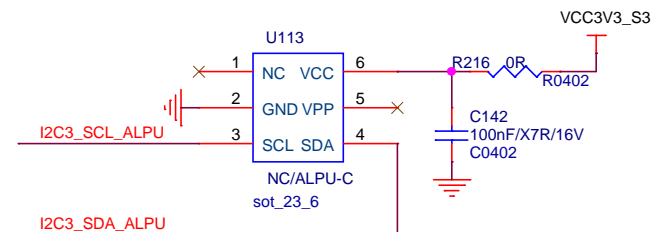
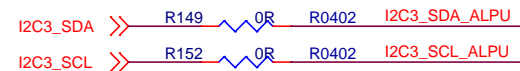
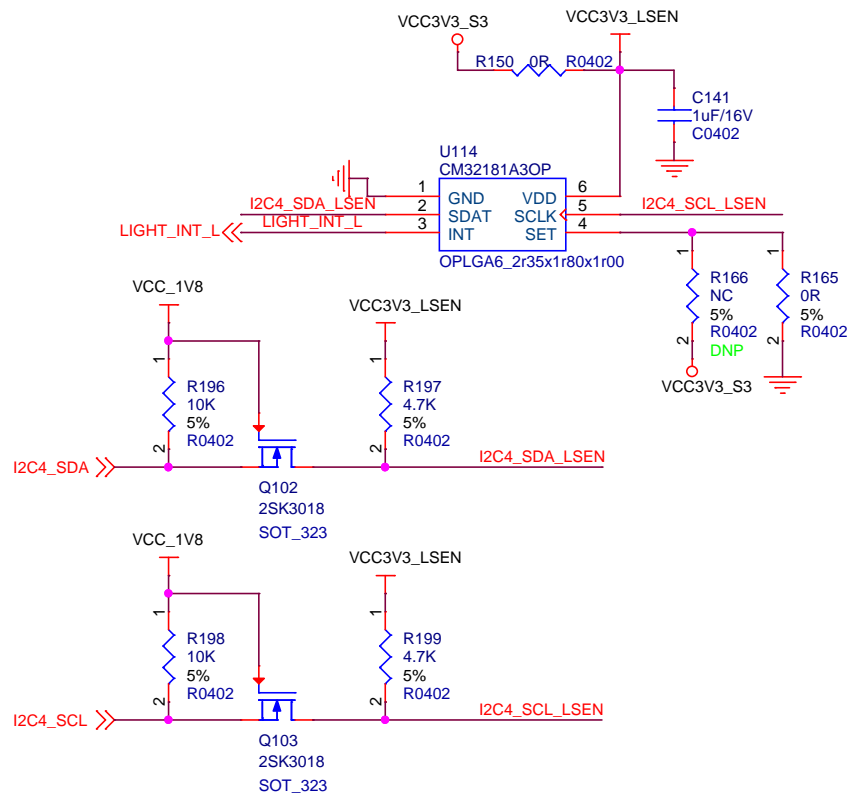


Title		
Y3_RK3399_Main		
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A4	USB_TF	1.0
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07_G-sensor
G-sensor

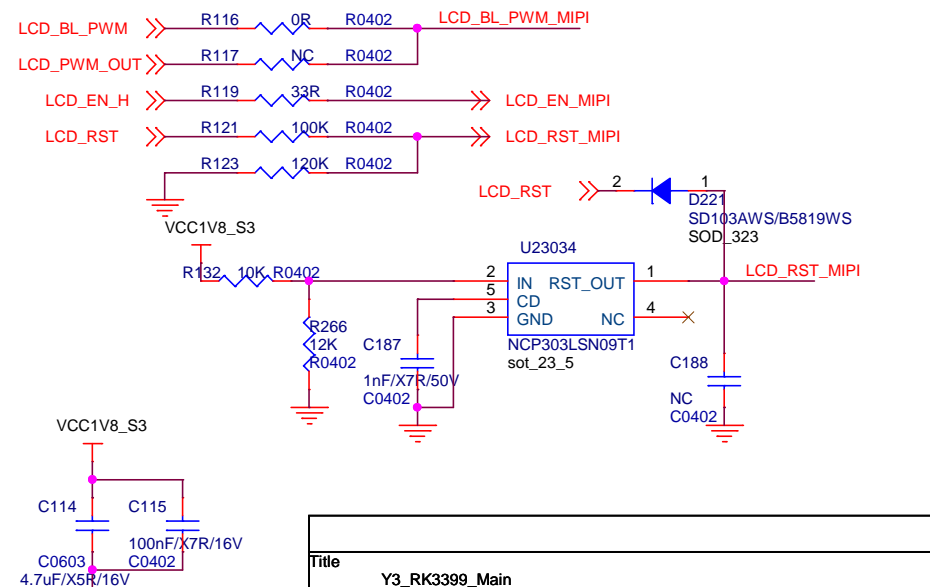
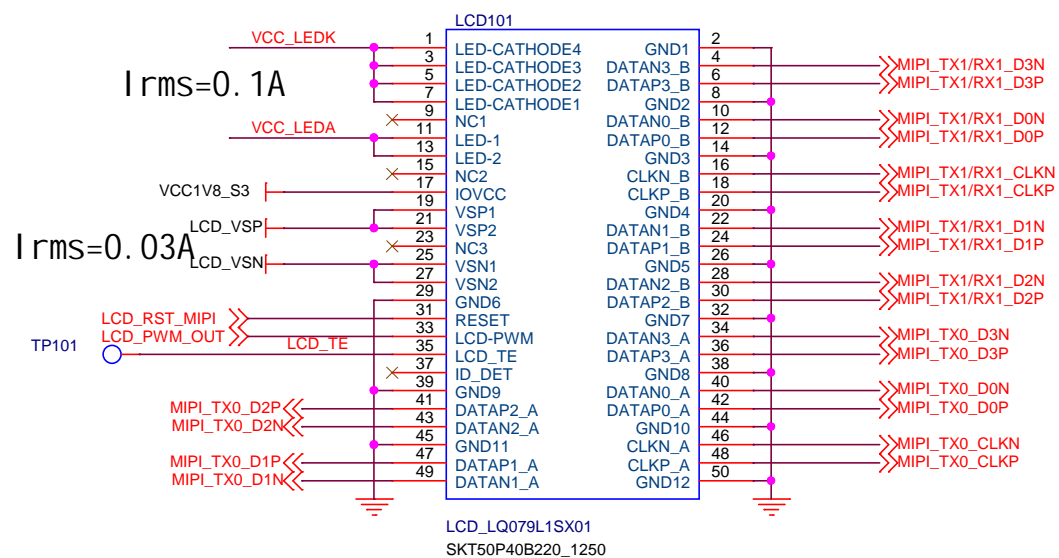
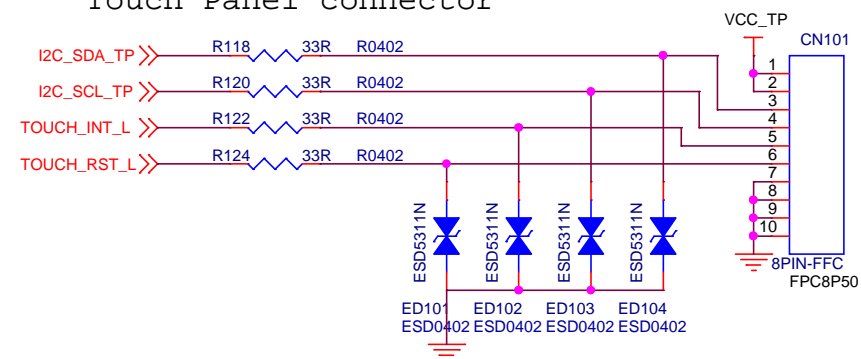
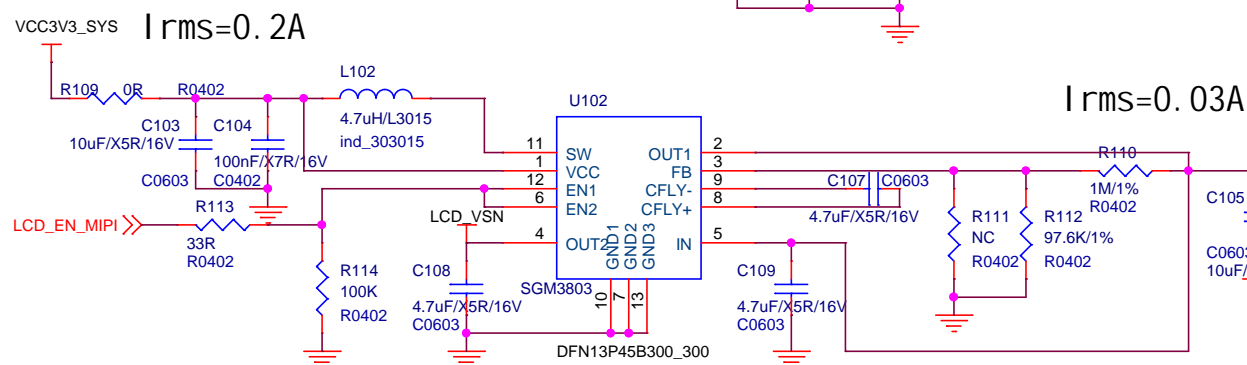
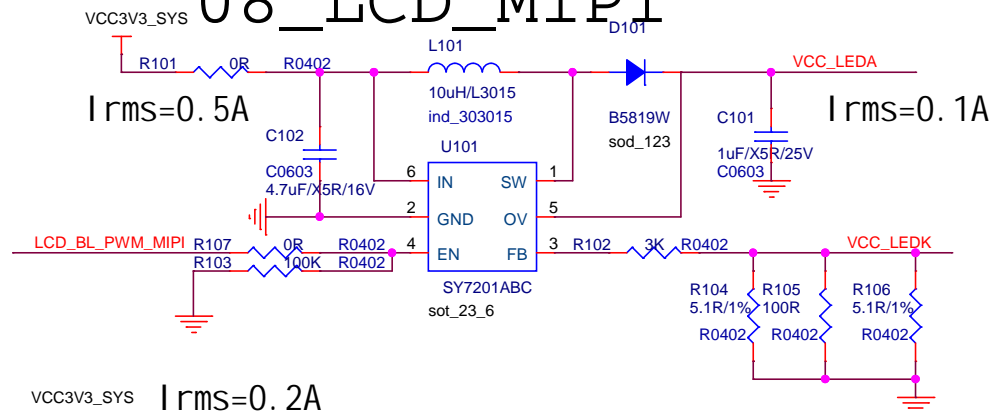


LIGHT-Sensor

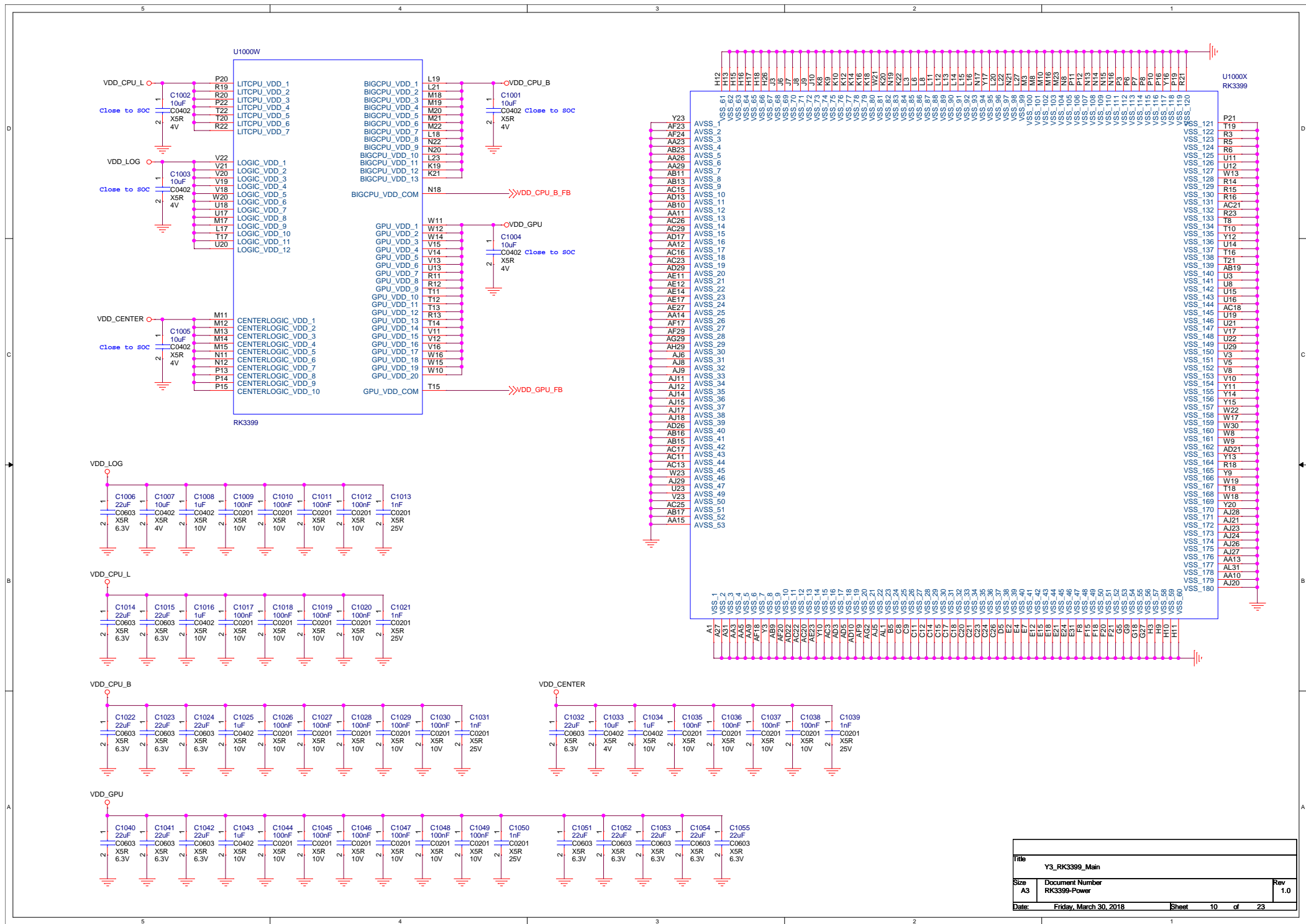


Title Y3_RK3399_Main				
Size A4	Document Number G-Sensor			Rev 1.0
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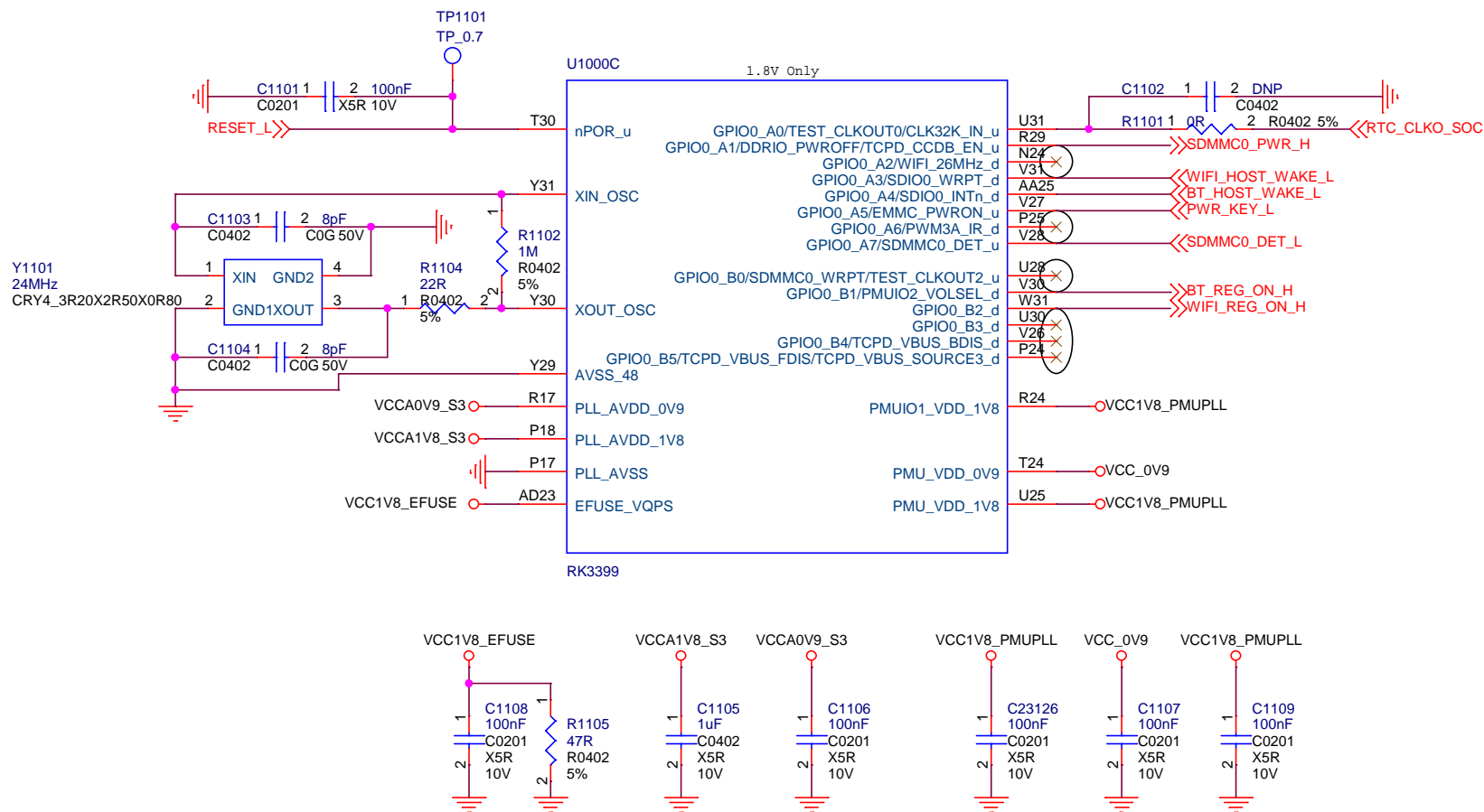
08 LCD MIPI



Title Y3_RK3399_Main			
Size A4	Document Number LCD_MIPI		Rev 1.0
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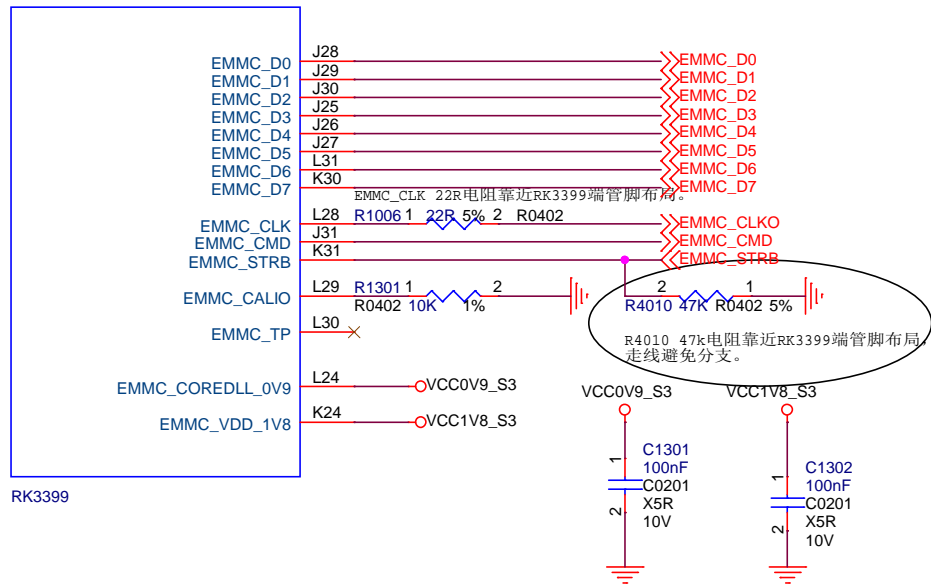


Title		
Y3_RK3399_Main		
Size	Document Number	Rev
A3	RK3399-Power	1.0
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Title		
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A4	RK3399-PMU-Controller	1.0
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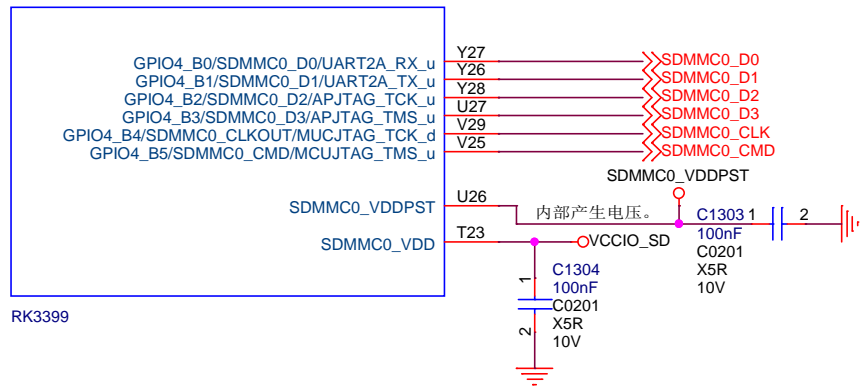
U1000H



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.Clk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;

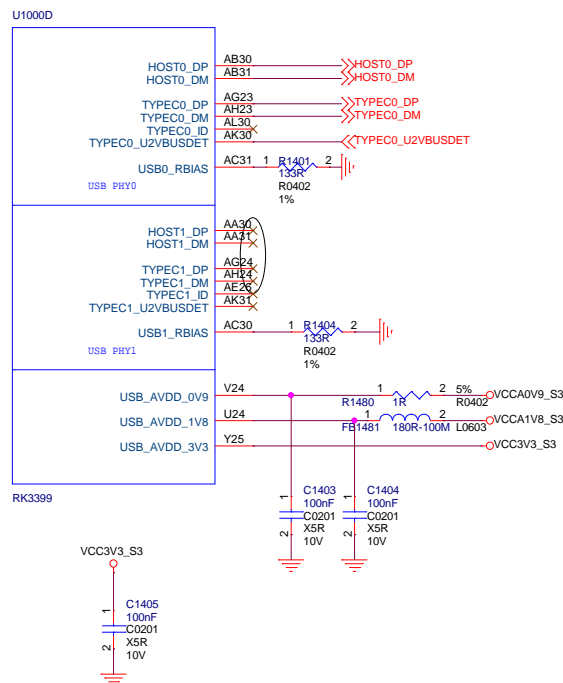
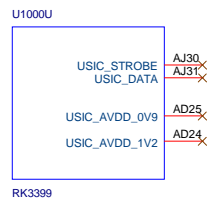
U1000F



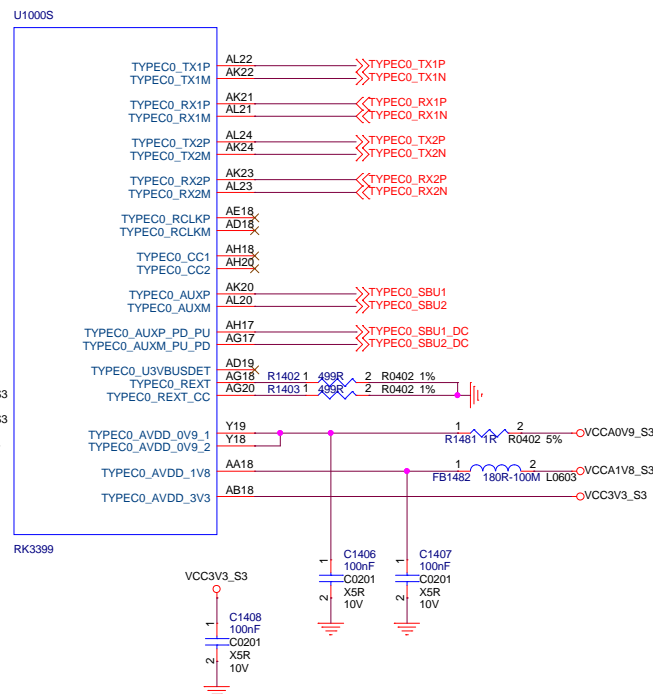
SDMMC design rule:

- 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.Clk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;

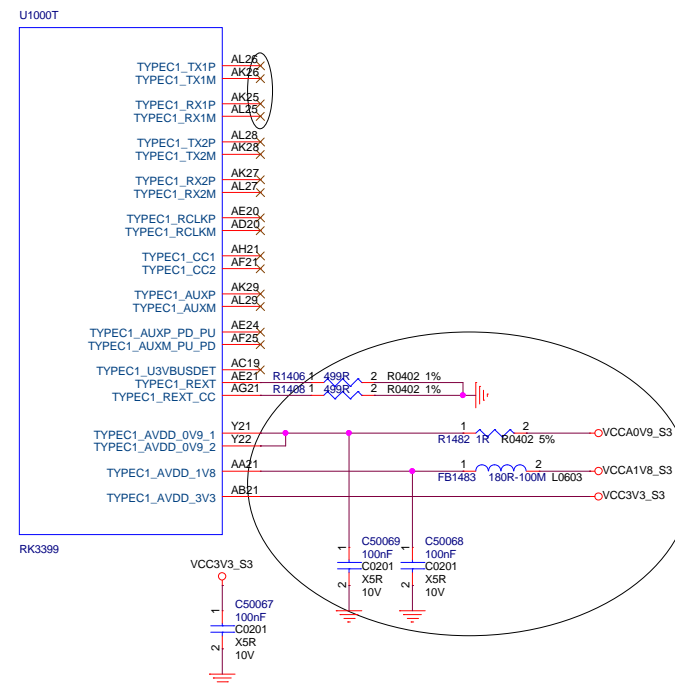
Title		
Y3_RK3399_Main		
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USB2.0 design rule:
 1.Max intra-pair skew < 4 ps;
 2.Max trace length < 6 inches;
 3.Max allowed via < 6;
 4.Trace impedance 90ohm+/-10%;
 5.与其他信号间距遵循3W原则;



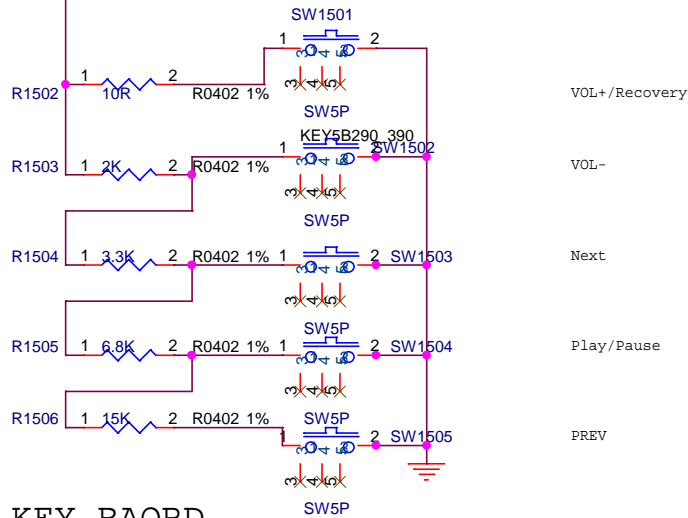
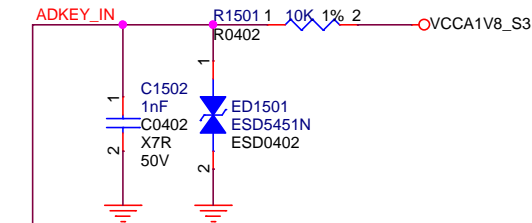
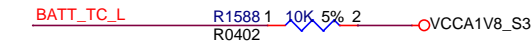
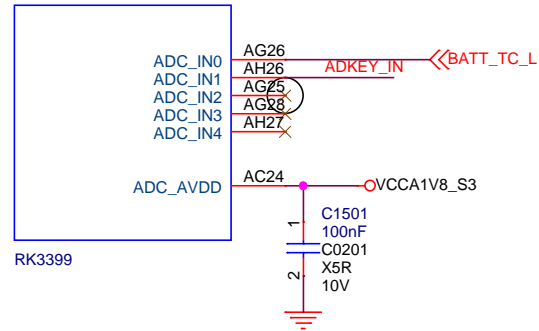
USB3.0 design rule:
 1.Max intra-pair skew < 4 ps;
 2.Max length skew between TX and RX < 1.6 ns;
 3.Max trace length < 6 inches;
 4.Max allowed via < 4;
 5.Trace impedance 90ohm+/-10%;
 6.与其他信号间距遵循3W原则;



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;

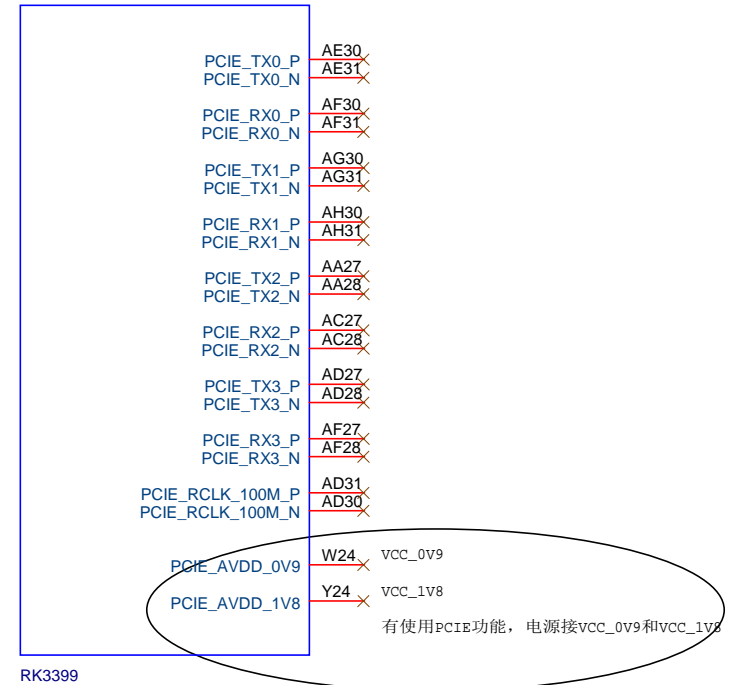
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U1000V

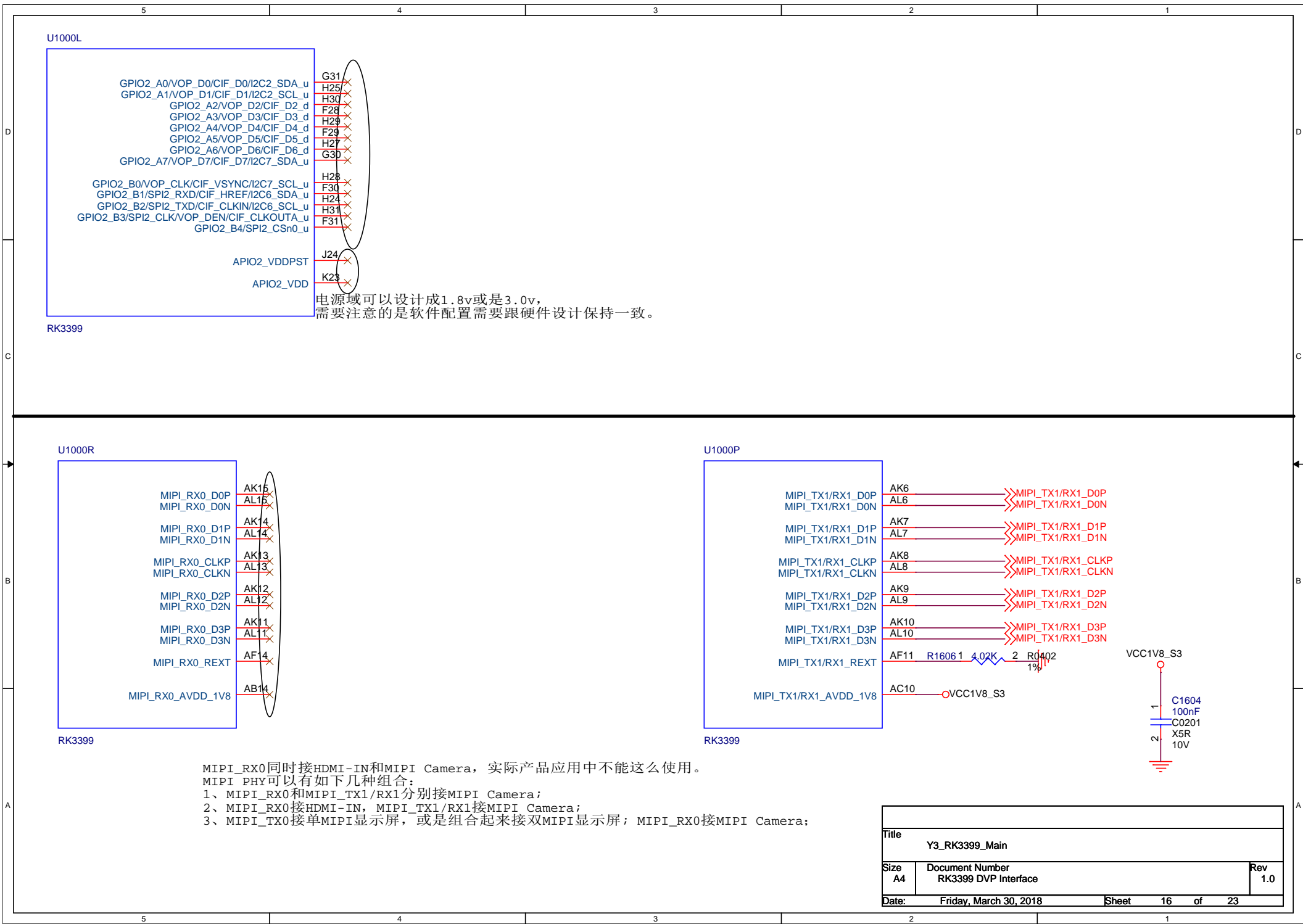


KEY BAORD

U1000O



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A4	.RK3399 SARADC/keyBoard	1.0
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U1000N

HDMI_TX0P AK17
HDMI_TX0N AL17
HDMI_TX1P AK18
HDMI_TX1N AL18
HDMI_TX2P AK19
HDMI_TX2N AL19
HDMI_TCP AK16
HDMI_TCN AL16
HDMI_HPD AE15
HDMI_REXT AF15
HDMI_AVDD_0V9_1 AA16
HDMI_AVDD_0V9_2 AA17
HDMI_AVDD_1V8 AD16

RK3399

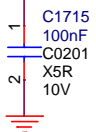
HDMI design rule:

- 1.Max intra-pair skew < 4 ps;
- 2.Max length skew between clk and data < 80 ps;
- 3.Max trace length < 9.8 inches;
- 4.Max allowed via < 4;
- 5.Trace impedance 100ohm+/-10%;
- 6.与其他信号间距遵循3w原则;

U1000Q

MIPI_TX0_D0P AG15
MIPI_TX0_D0N AH15
MIPI_TX0_D1P AG14
MIPI_TX0_D1N AH14
MIPI_TX0_CLKP AG12
MIPI_TX0_CLKN AH12
MIPI_TX0_D2P AG11
MIPI_TX0_D2N AH11
MIPI_TX0_D3P AG9
MIPI_TX0_D3N AH9
MIPI_TX0_REXT AF12R1704 1 4.02K 2 R0402 1%
MIPI_TX0_AVDD_1V8 AB12

RK3399



产品定义是单MIPI_DSI显示屏，
请一定选择MIPI_TX0通道。
不要选择MIPI_TX1/RX1通道。

U1000M

EDP_TX0P B29
EDP_TX0N A29
EDP_TX1P B30
EDP_TX1N A30
EDP_TX2P C30
EDP_TX2N C31
EDP_TX3P D30
EDP_TX3N D31
EDP_AUXP B28
EDP_AUXN A28
EDP_DC_TP G20
EDP_CLK24M_IN H21
EDP_REXT G21
EDP_AVDD_0V9 H20
EDP_AVDD_1V8_1 J19
EDP_AVDD_1V8_2 J20
EDP_AVSS_1 B31
EDP_AVSS_2 C28
EDP_AVSS_3 C29
EDP_AVSS_4 D29
EDP_AVSS_5 H19
EDP_AVSS_6 J21

RK3399

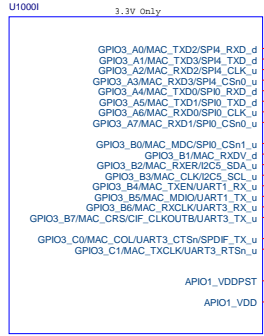
eDP design rule:

- 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;

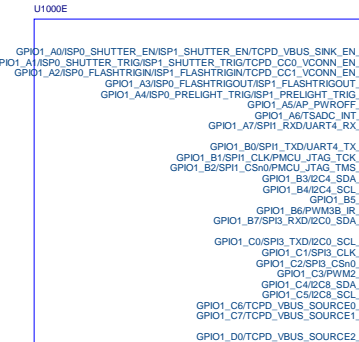
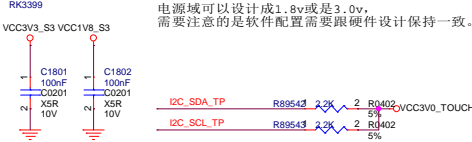
MIPI design rule:

- 1.Max intra-pair skew < 4 ps;
- 2.Max length skew between clk and data < 7ps;
- 3.Max trace length < 7.2 inches;
- 4.Max allowed via < 4;
- 5.Trace impedance 100ohm+/-10%;
- 6.与其他信号间距遵循3w原则;

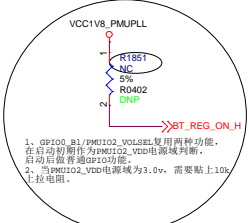
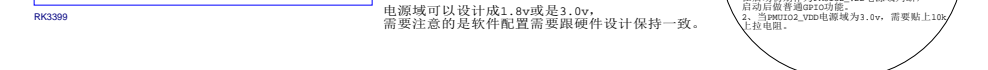
Title		
Y3_RK3399_Main		
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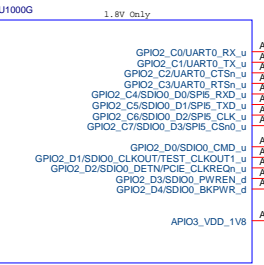
电源域可以设计成1.8v或是3.0v，
需要注意的是软件配置需要跟硬件设计保持一致。



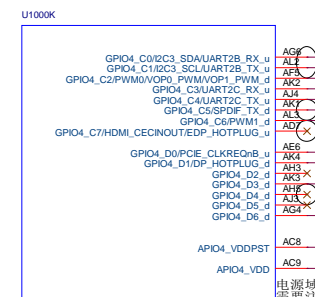
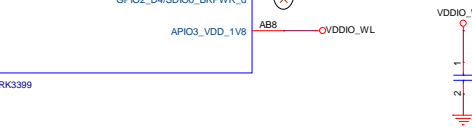
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需要注意的是软件配置需要跟硬件设计保持一致。



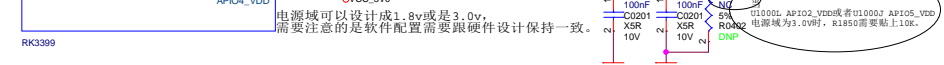
1. GPIO0_81/PMU02_VOLSEL复用两种功能，
在启动初期作为PMU02_VDD电源域判断，
启动后做普通GPIO功能。
2. 当PMU02_VDD电源域为3.0v，需要贴上10k上拉电阻。



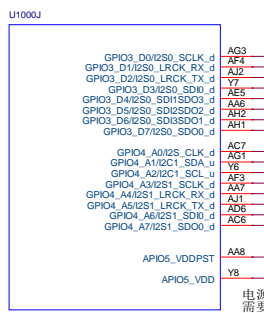
SDIO design rule:
1.Data[0:3], cmd走线做为一组，
并行走线并整组包地，组内等长要求为+/-100mil；
2.Clk需要单独走线并包地处理，与data间的
延时小于20ps；
4.Max trace length < 3.93 inches；
5.Trace impedance 50ohm+/-10%；
6.与其他信号间距遵循3W原则；



电源域可以设计成1.8v或是3.0v，
需要注意的是软件配置需要跟硬件设计保持一致。



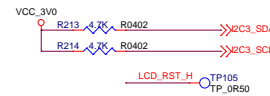
U1000L AP102_VDD或U1000J AP105_VDD
电源域为3.0v时，R1850需要贴上10k。



电源域可以设计成1.8v或是3.0v，
需要注意的是软件配置需要跟硬件设计保持一致。

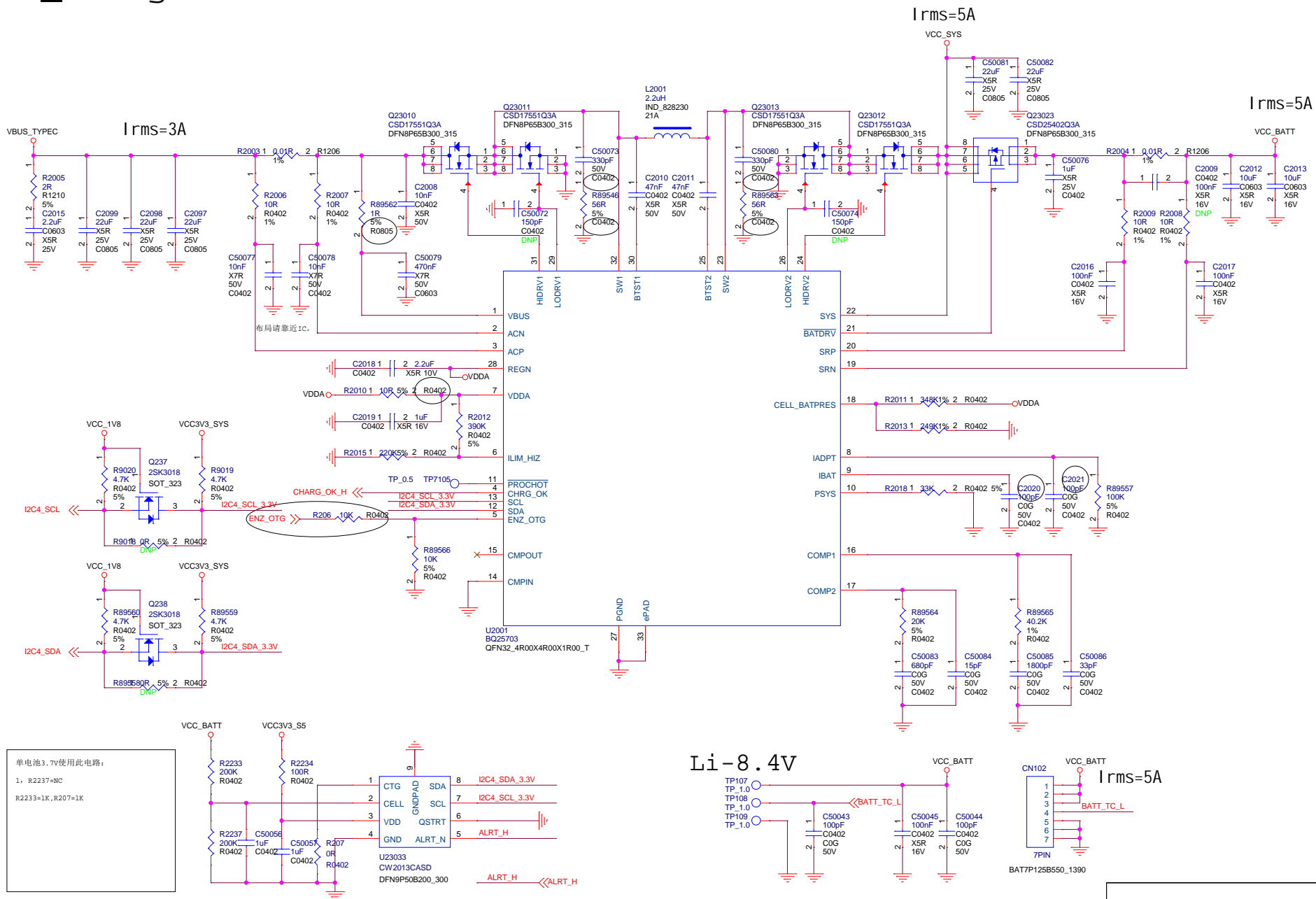


1.8V Only	VDDPST=VDDIO=1.8V
3.3V Only	VDDPST=1.8V, VDDIO=3.3V
other	3.0V mode:VDDPST=1.5V, VDDIO=3.0V 1.8V mode:VDDPST=1.8V, VDDIO=1.8V



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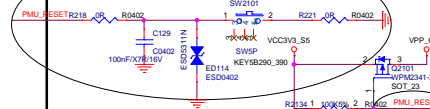
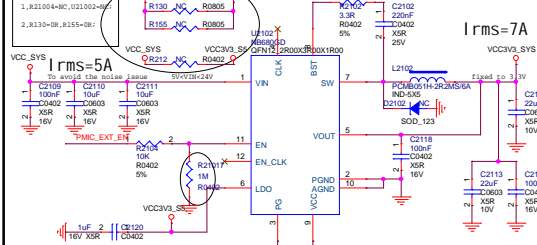
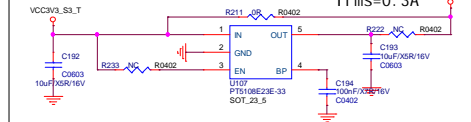
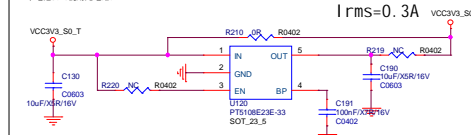
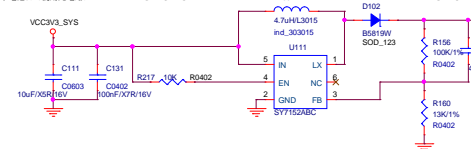
20_Charge-RK808-D



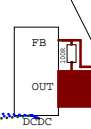
1, R2237=NC
R2233=1K,R207=1K

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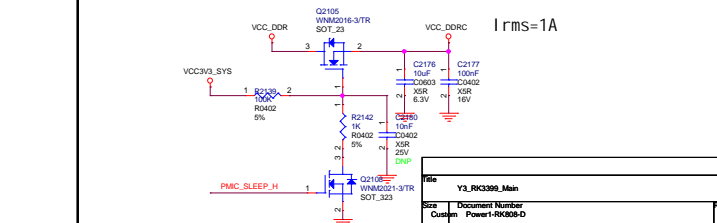
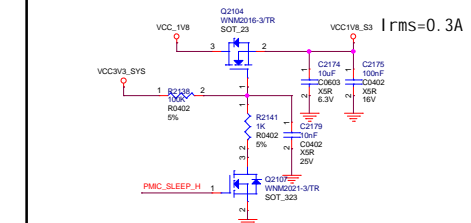
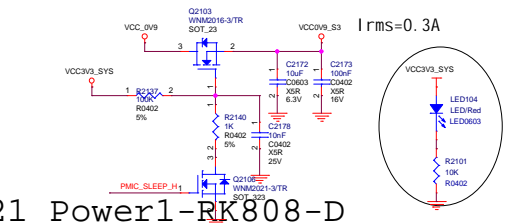
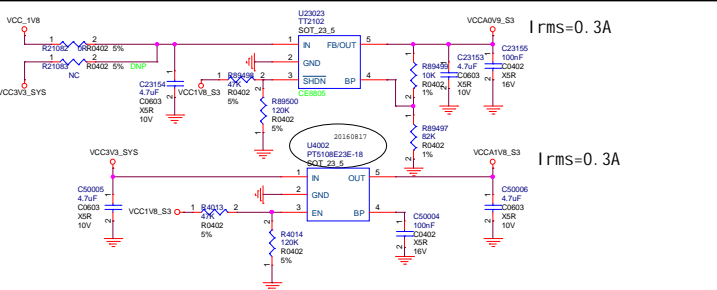
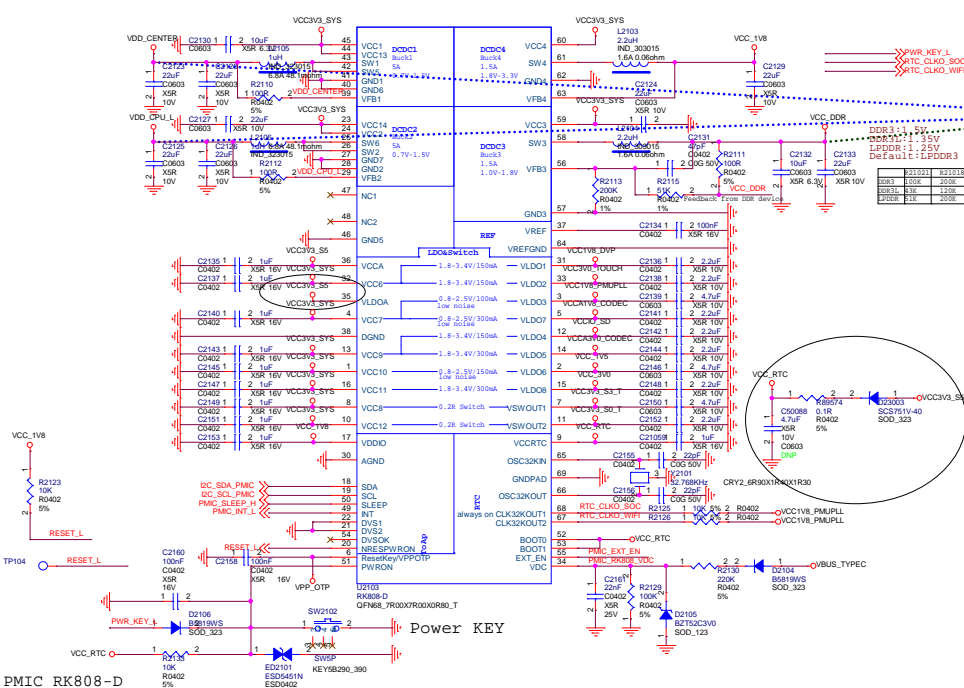
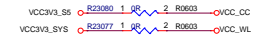
The diagram shows the power-up sequence for various voltage regulators. The signals are: VCC_S18, VCC3V3_S5, PMIC_EXT_EN, VCC3V3_S12, VDD_GPU, VCC_SV9, LDO3: VCC1V8_P80PLL, BUCK4: VCC1V8, LDO6: VCC1V5, VDD_L00, BUCK3: VCC_BDR, BUCK2: VDD_CPU_L, BUCK1: VDD_CENTER, VDD_CPU_B, LDO8: VCC_3V0, SWITCH1: VCC3V3_S3, and LDO4: VCC10_SP. The signals are shown as digital waveforms with different rise and fall times, indicating the timing of the power-up sequence.



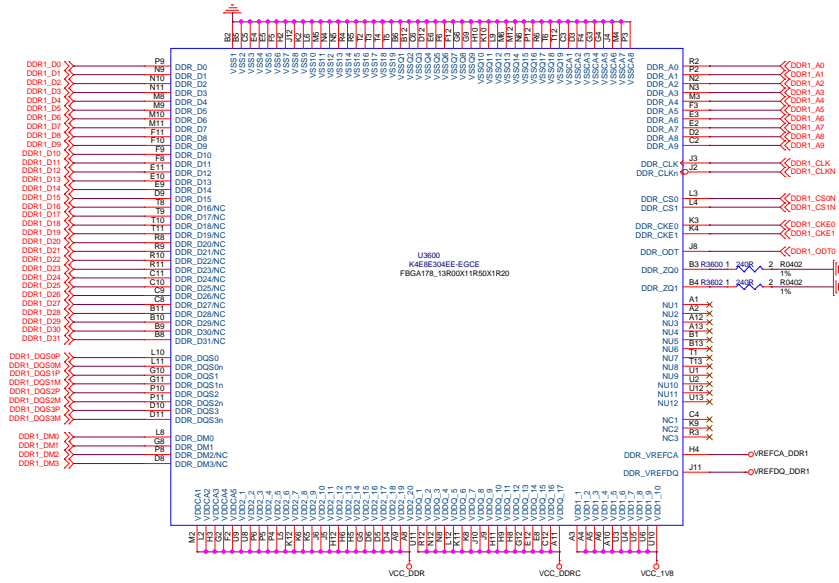
1、VDD_CPU_L
2、VDD_CENTER
3、VCC_DDR
4、VDD_CPU_B



Over-temperature
Protection

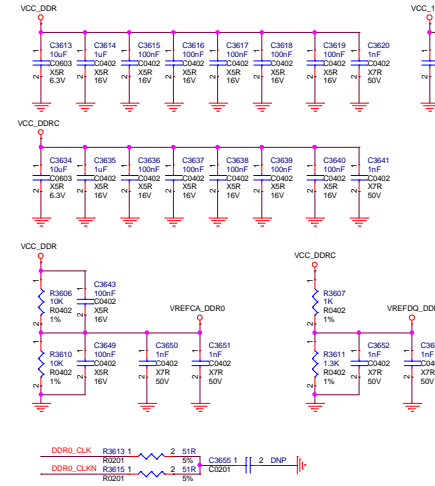
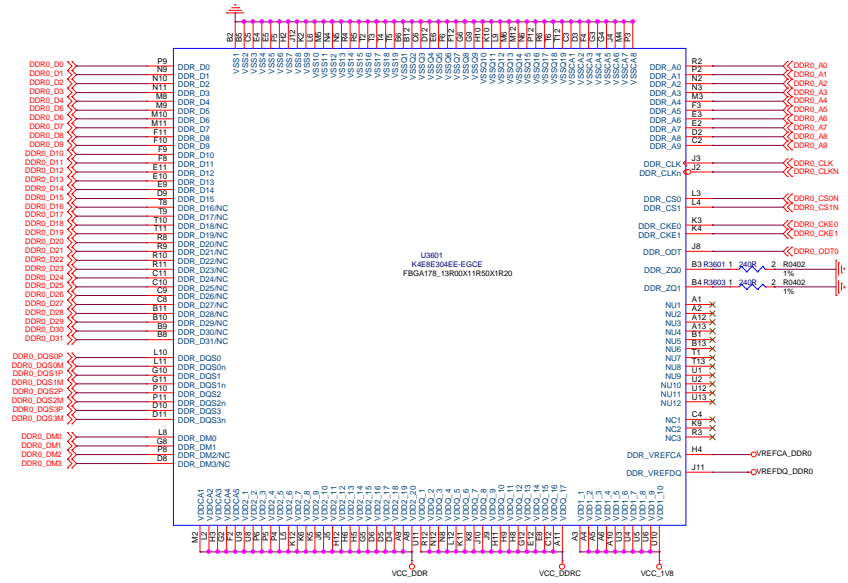
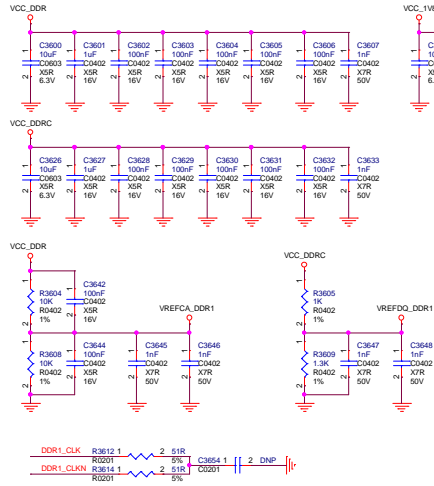


LPDDR3 36_RAM_LPDDR3(178P)

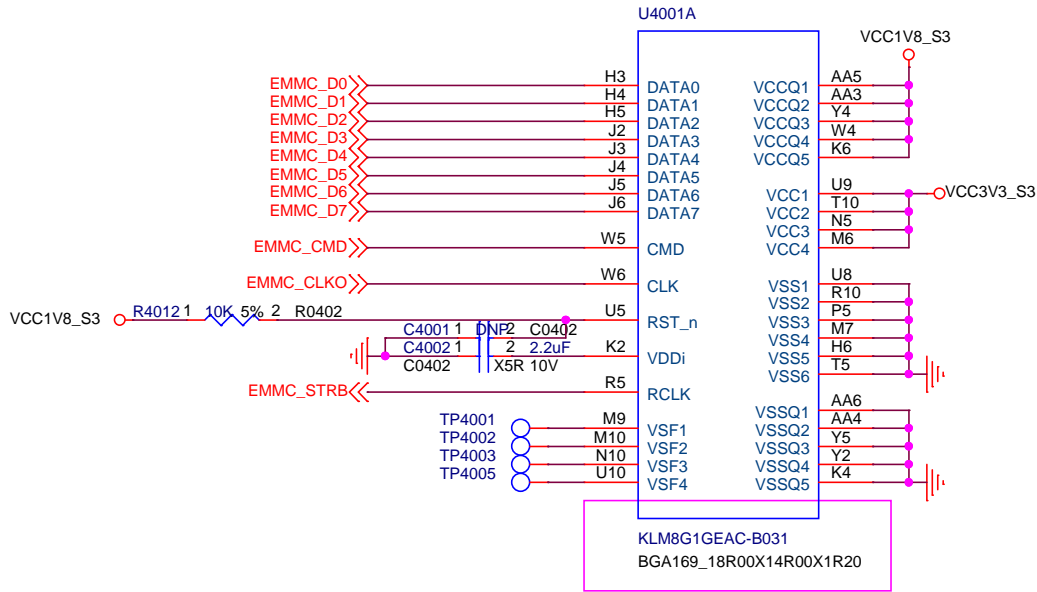


使用2顆2GB LPDDR3

K4E6E304EE-EGCE:LPDDR3,16Gb DDP, 256Mx32x2, 2CS, 2CKE, Samsung
K4E6E304EE-EGCE:LPDDR3,8Gb DDP, 128Mx32x2, 2CS, 2CKE, Samsung

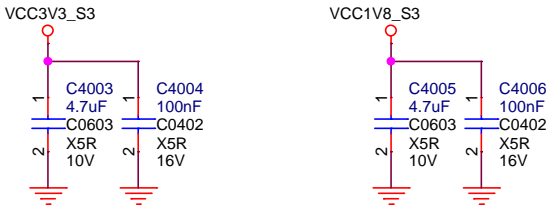


eMMC FLASH 40_Memory-eMMC

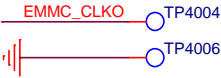


KLMBG2JENB-B041:128Gb MLCx2, 32GB, EMMC5.1, 14nm, 5.1, 11.5 x 13

使用32GB eMMC



Note:
Reserve PAD for Update.



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