

CONTENT INDEXING

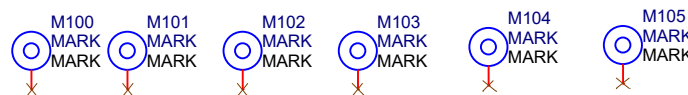
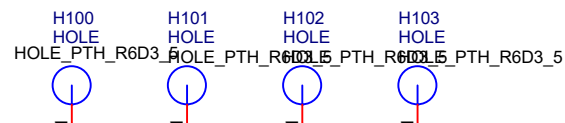
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Note:

器件参数说明

1:如果 Value 为 **DR**, 说明暂时不贴。


2:如果 Option 有 **DR**, 说明暂先不贴。



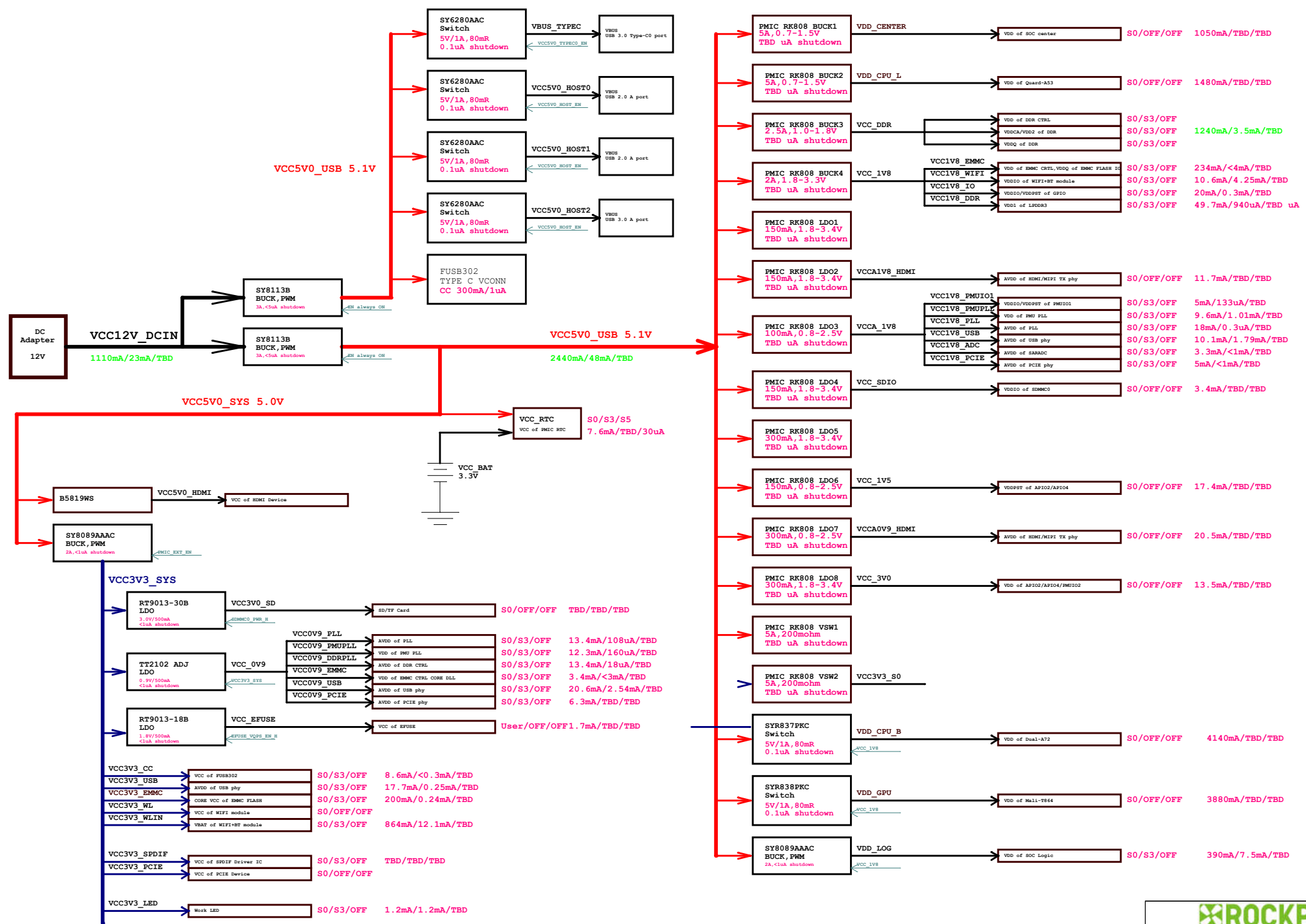
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Change List

Version	Date	Author	Change Note	Approved
V1.0	201708	Charlie	First edition	


		
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RK3399 POWER DIAGRAM



I2C MAP

Port	Pin name	Domain	Bus name	Pull-up voltage	Slave Device	Slave Addr (MS 7Bits)	Note	Slave Bus Capability
I2C0	GPIO1_B7/SPI3_RXD/I2C0_SDA GPIO1_C0/SPI3_TXD/I2C0_SCL	PMUIO2	I2C_SDA_PMIC I2C_SCL_PMIC	VCC_1V8	Rockchip RK808	0x1b	PMIC	100kHz, 400KHz
					SYR837PKC	0x40	DC-DC BUCK	100kHz, 400KHz, 3.4MHz
					SYR838PKC	0x41	DC-DC BUCK	100kHz, 400KHz, 3.4MHz
I2C1	GPIO4_A1/I2C1_SDA GPIO4_A2/I2C1_SCL	APIO5		VCC_1V8			Low Speed CONNECTOR	
I2C2	GPIO2_A0/VOP_D0/CIF_D0/I2C2_SDA GPIO2_A1/VOP_D1/CIF_D1/I2C2_SCL	APIO2		VCC_1V8			High Speed CONNECTOR	
I2C3	GPIO4_C0/I2C3_SDA/UART2B_RX GPIO4_C1/I2C3_SCL/UART2B_TX	APIO4	I2C_SDA_HDMI I2C_SCL_HDMI	VCC_3V0				
I2C4	GPIO1_B3/I2C4_SDA GPIO1_B4/I2C4_SCL	PMUIO2	I2C_SDA_MEMS I2C_SCL_MEMS	VCC_1V8	Fairchild FUSB302B	0x44, 0x46	USB-TypeC Mux	100kHz, 400KHz, 1MHz
I2C5	GPIO3_B2/MAC_RXER/I2C5_SDA GPIO3_B3/MAC_CLK/I2C5_SCL	APIO1	Other pin function					
I2C6	GPIO2_B1/SPI2_RXD/CIF_HREF/I2C6_SDA GPIO2_B2/SPI2_TXD/CIF_CLKIN/I2C6_SCL	APIO2		VCC_1V8			Low Speed CONNECTOR	
I2C7	GPIO2_A7/VOP_D7/CIF_D7/I2C7_SDA GPIO2_B0/VOP_CLK/CIF_VSYNC/I2C7_SCL	APIO2		VCC_1V8			High Speed CONNECTOR	



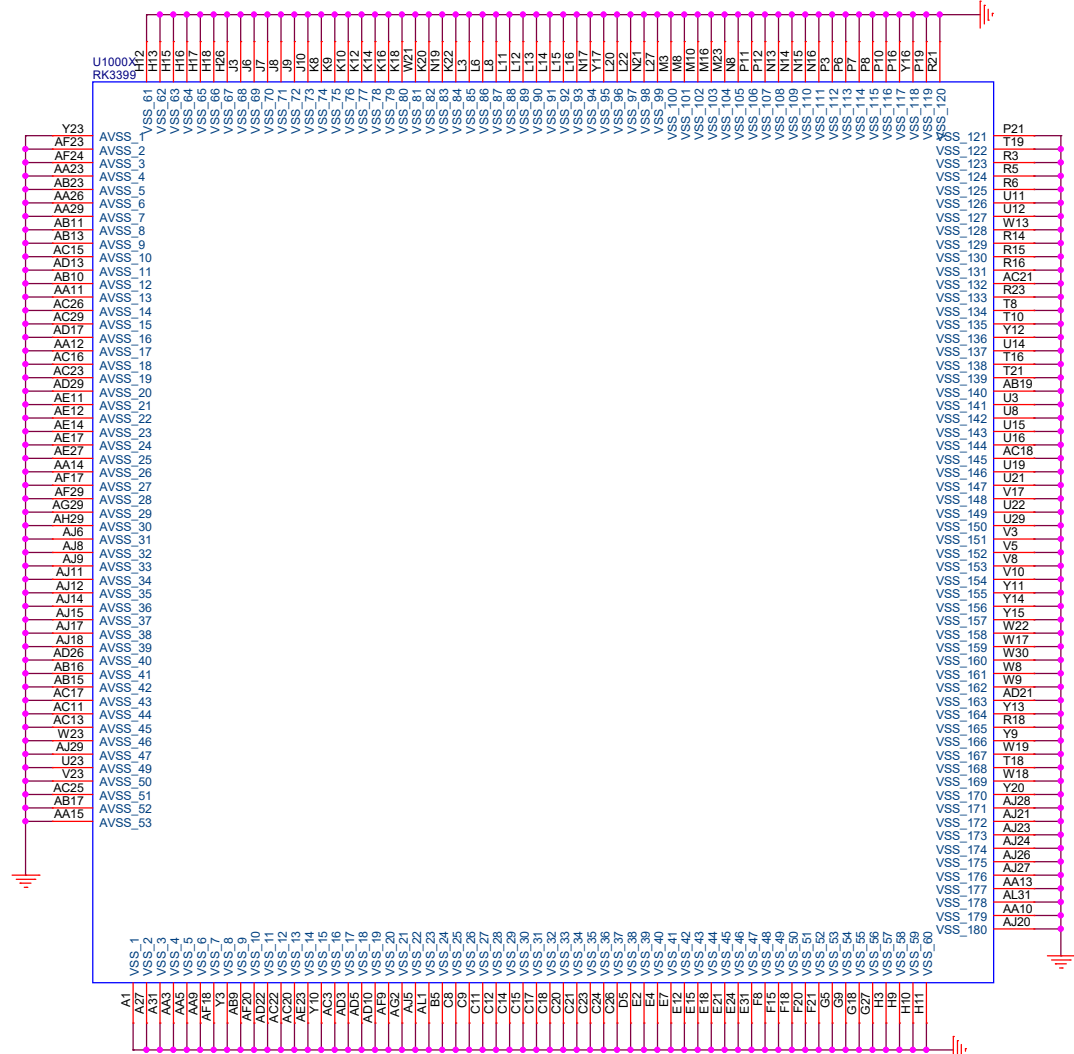
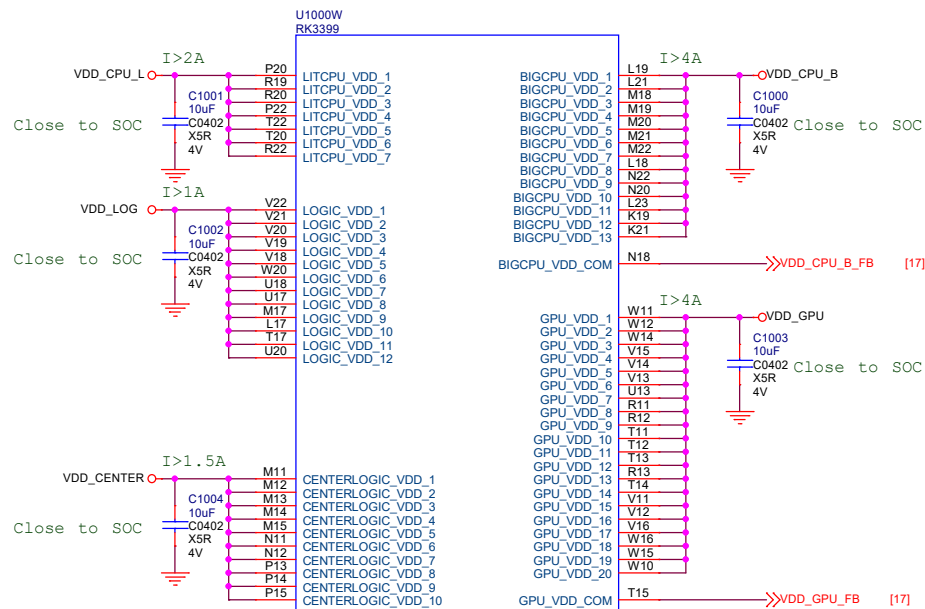
Size A4	Title ROCK_PI_4C		REV
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Power Domain Map

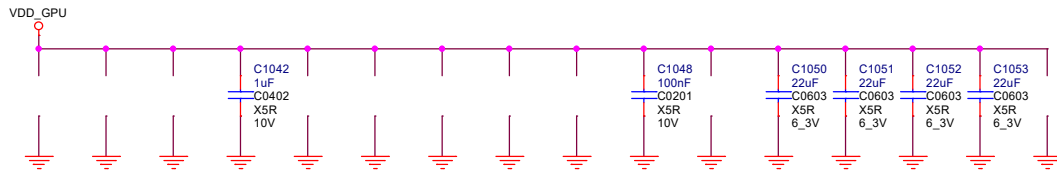
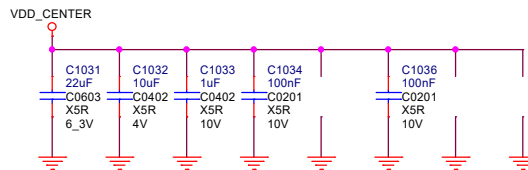
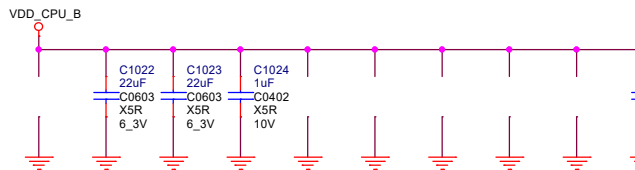
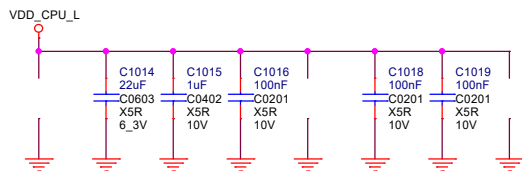
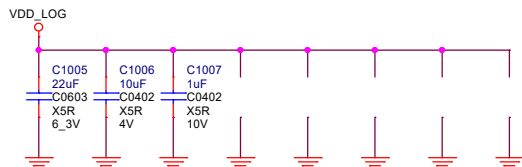
Part Port	Domain	Pin name in datasheet	I/O type	Power supply	Power source
Part C	PMUIO1	pmuiol_gpio0ab	1.8V only	VCCA_1V8	RK808-D VLDO3
Part E	PMUIO2	pmu1830_gpio1abcd	1.8V (Default) 3.0V	VCC_1V8	RK808-D Buck4
Part I	APIO1	gmac_gpio3abc	3.3V only	VCC_1V8 VCC3V3_SYS	RK808-D Buck4
Part L	APIO2	bt656_gpio2ab	1.8V (Default) 3.0V	VCC_1V8	RK808-D VLDO3
Part G	APIO3	wifi/bt_gpio2cd	1.8V only	VCC_1V8	RK808-D Buck4
Part K	APIO4	gpio1830_gpio4cd	1.8V 3.0V (Default)	VCC_1V5 VCC_3V0	RK808-D VLDO6 RK808-D VLDO8
Part J	APIO5	audio_gpio3d_gpio4a	1.8V (Default) 3.0V	VCC_1V8	RK808-D Buck4
Part F	SDMMC0	sdmmc_gpio4b	1.8V 3.0V (Default)	VCC_SDIO	RK808-D VLDO4



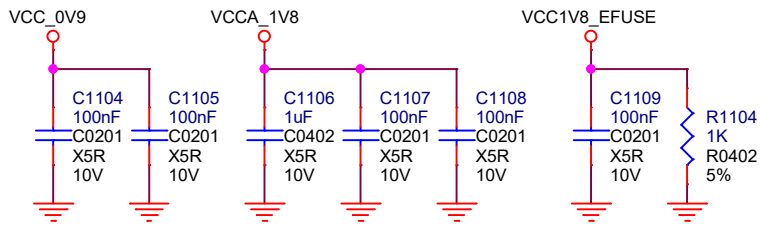
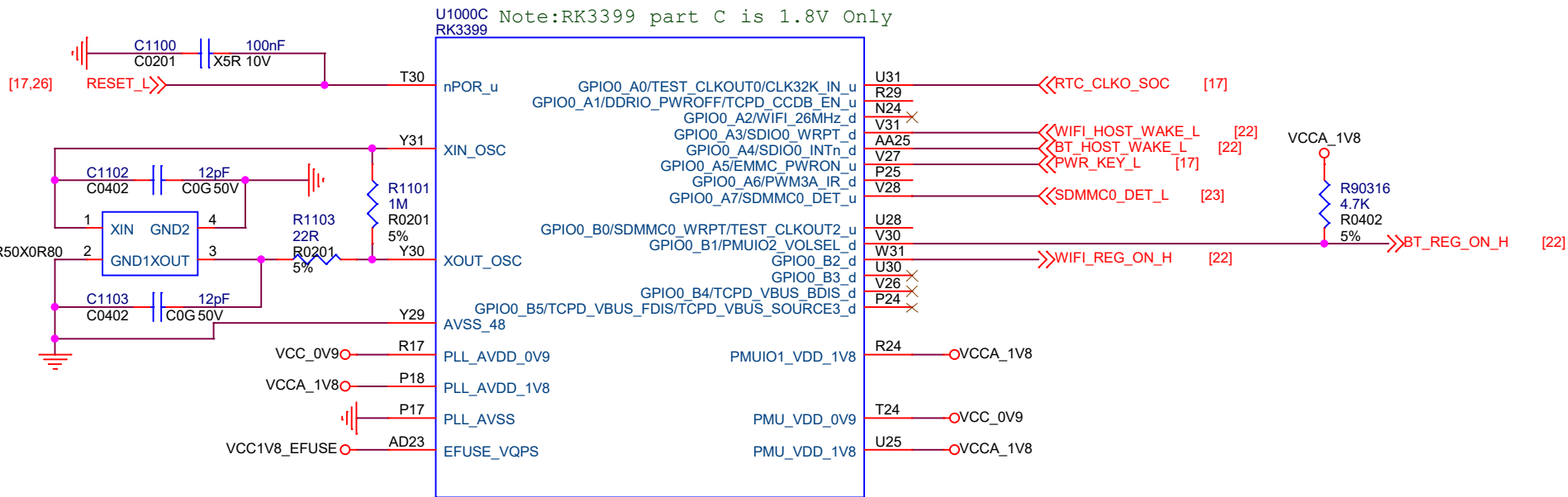
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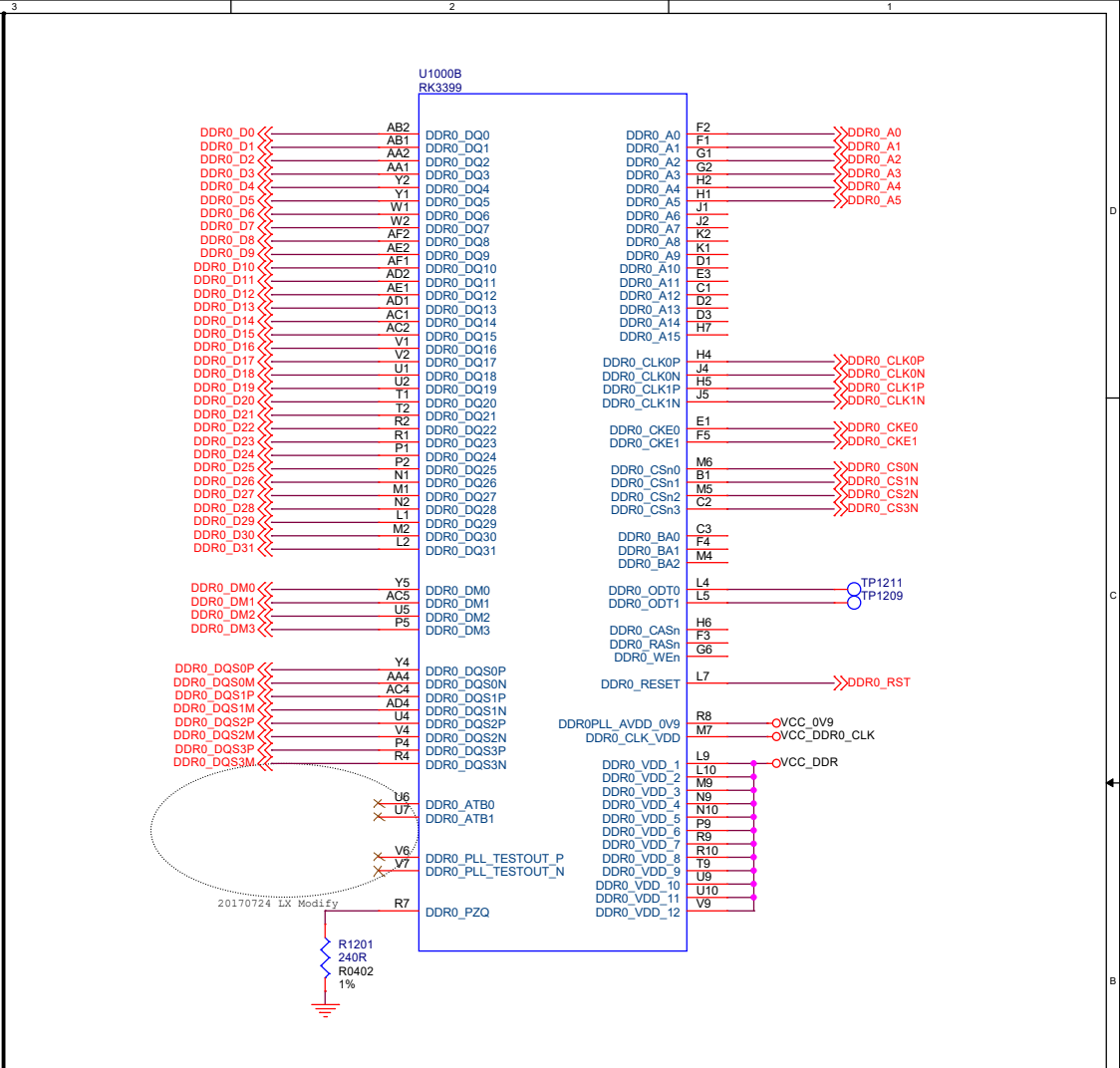
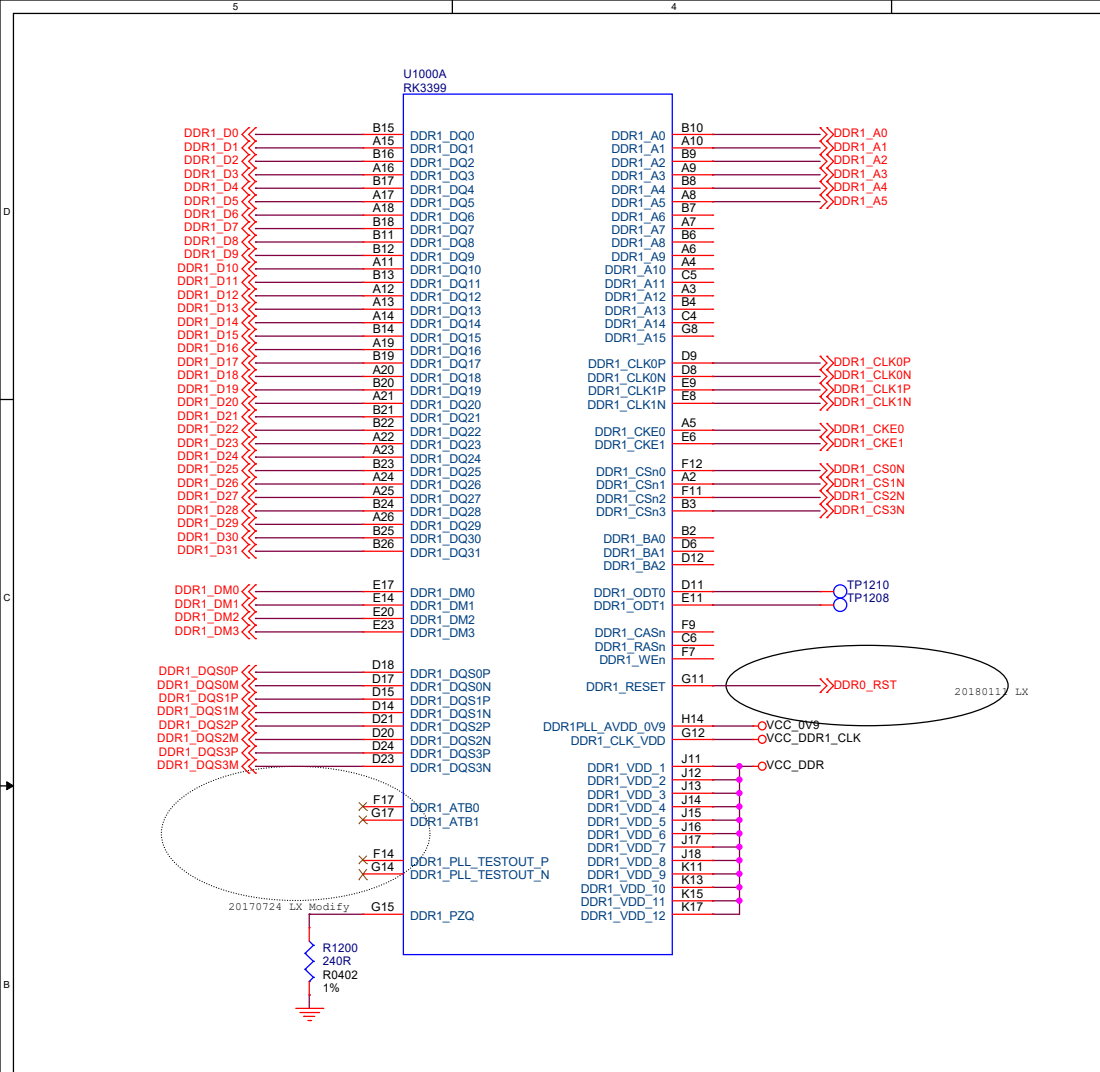
Note: Power filter CAP please place back of SOC or close to SOC



Size	Title	ROCK_PI_4C	REV
A3	Document Number	RK3399 POWER	V1.2
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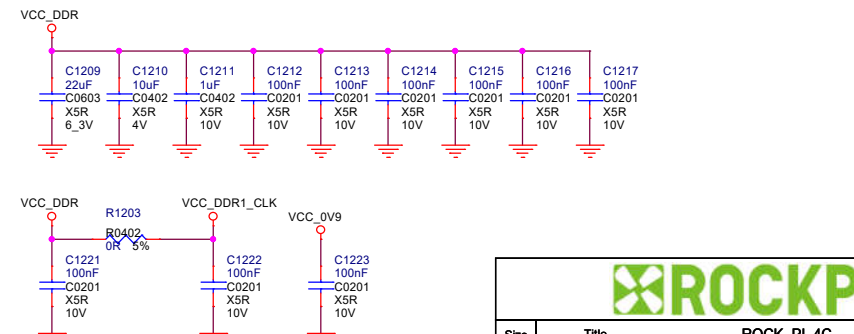
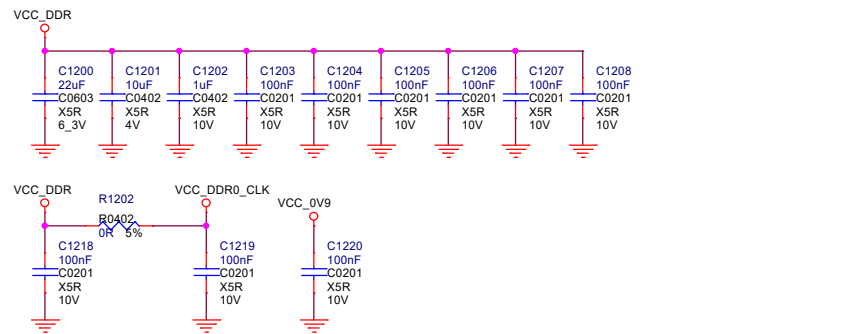


Size	Title	ROCK_PI_4C	REV
A4	Document Number	RK3399 PMU Controller	V1.2
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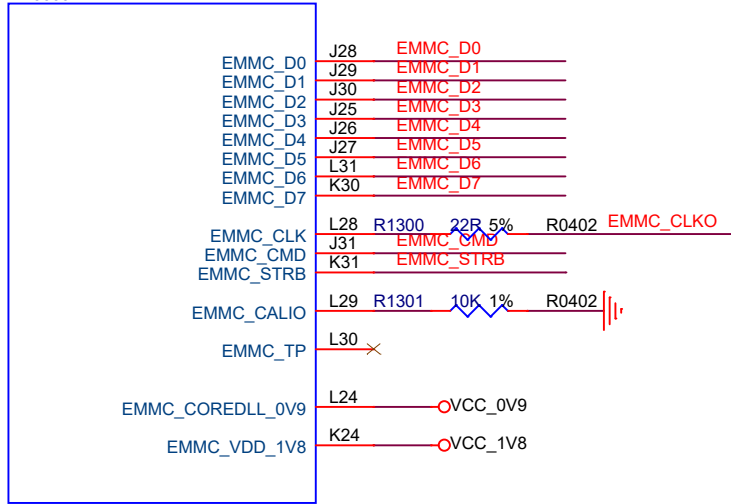
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DDR FILTER Note:R1203 cannot be deleted



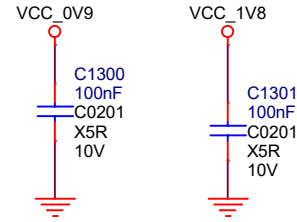
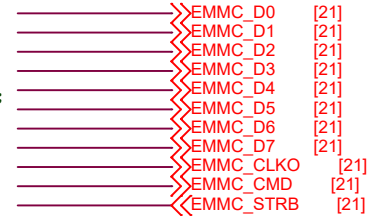
Size	Title	ROCK_PI_4C	REV
A3	Document Number	RK3399 DDR Controller	V1.2
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U1000H
RK3399

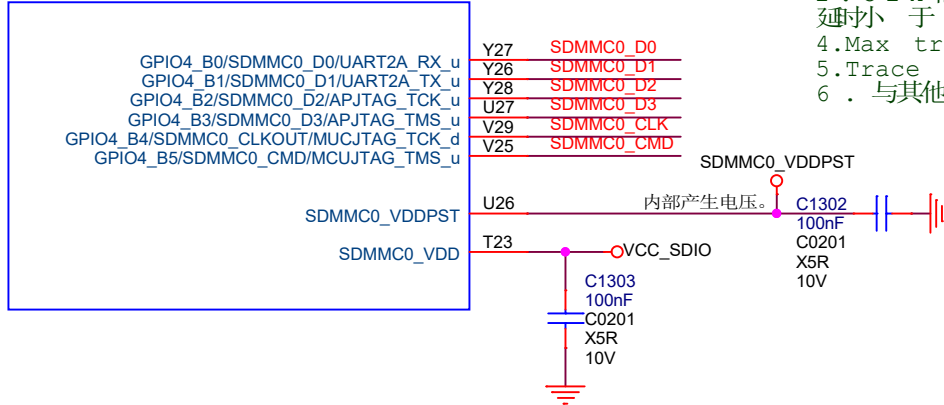


EMMC design rule:

1. Data[0:7], cmd strobe 为一组, 并行走线并包地, 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 $< 3.93\text{ inches}$;
4. Trace impedance $50\text{ohm} \pm 10\%$;
5. 与其他信号间距遵循 $3W$ 原则
6. R1300 靠近 S 放置



U1000F
RK3399

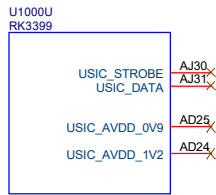


SDMMC design rule:

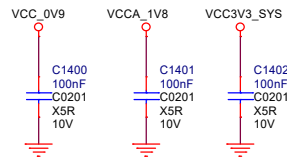
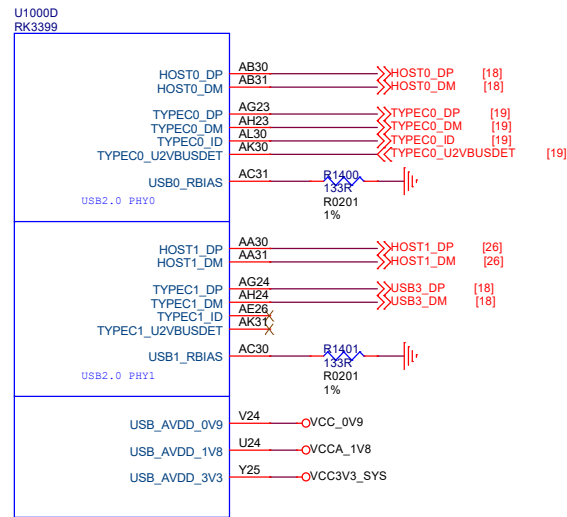
1. Data[0:3], cmd 为一组, 并行走线并包地, 组内等长要求为 $\pm 100\text{mil}$;
2. Clk 需要单独走线并包地处理, 与 data 间的延时小于 20ps ;
3. Max trace length $< 3.93\text{ inches}$;
4. Trace impedance $50\text{ohm} \pm 10\%$;
5. 与其他信号间距遵循 $3W$ 原则



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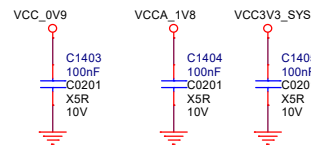
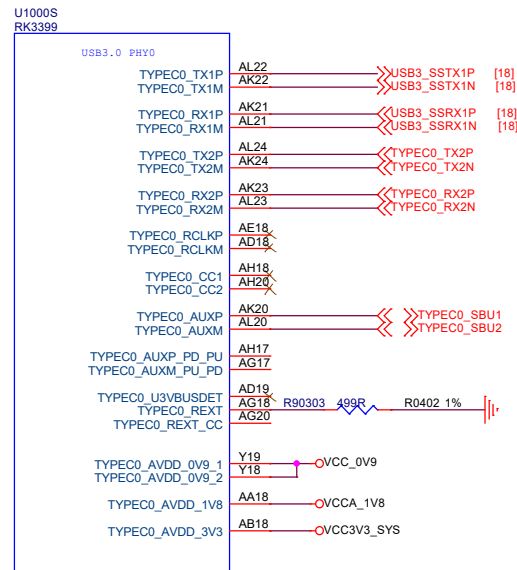


USB2.0

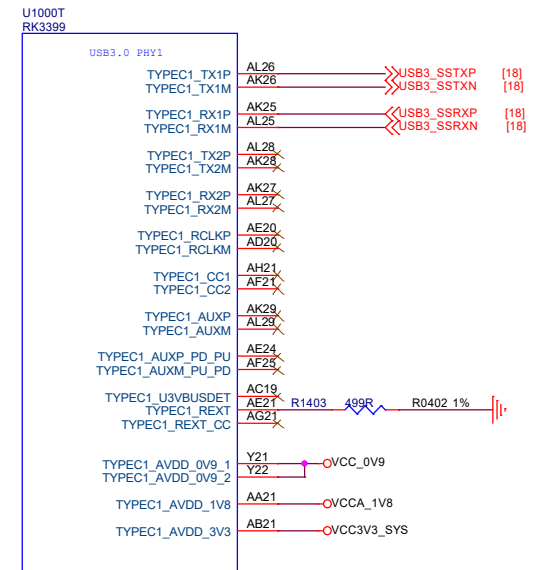


USB2.0 design rule:
 1.Max intra-pair skew < 4 ps;
 2.Max trace length < 6 inchs;
 3.Max allowed via < 6;
 4.Trace impedance 90ohm+/-10%;
 5. 与其他信号间 距遵循3W 原则

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 inchs;
 4.Max allowed via < 4;
 5.Trace impedance 90ohm+/-10%;
 6. 与其他信号间 距遵循3W 原则

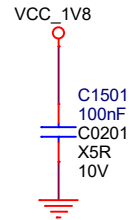
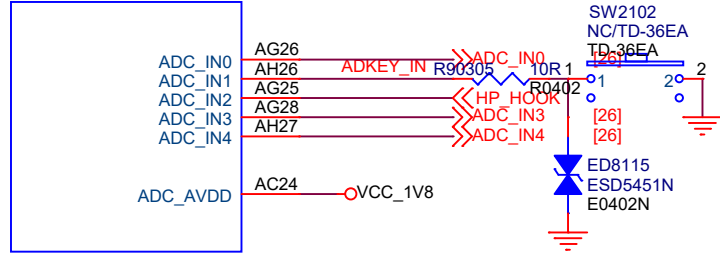


DP design rule:
 1.Max intra-pair skew < 4 ps;
 2.Max trace length < 6 inchs;
 3.Max allowed via < 4;
 4.Trace impedance 90ohm+/-10%;
 5. 与其他信号间 距遵循3W 原则



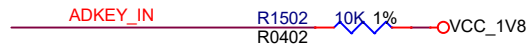
Size	Title	ROCK_PI_4C	REV
A3	Document Number	RK3399 USB/USIC Controller	V1.2
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U1000V
RK3399



KEY BAORD

Note:
 系统上电时，如果 ADKEY_IN 电压为 0V，
 则 RK3399 进入 Recovery 模式；
 量时 R1503, SW1500, ED1 均不用贴片



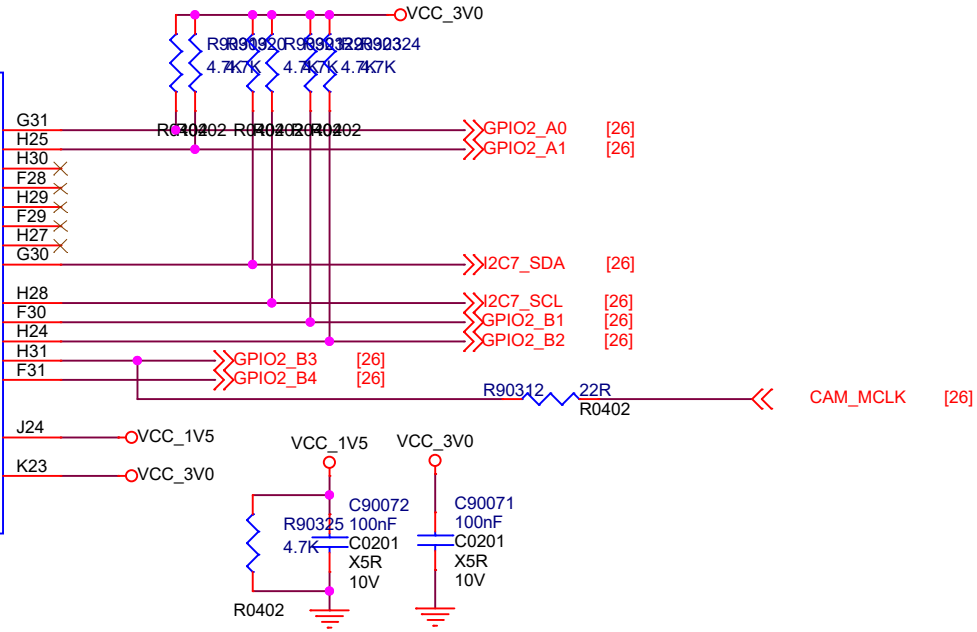
Size	Title	ROCK_PI_4C	REV
A4	Document Number	RK3399 SARADC/Key	V1.2
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U1000L
RK3399

GPIO2_A0/VOP_D0/CIF_D0/I2C2_SDA_u
GPIO2_A1/VOP_D1/CIF_D1/I2C2_SCL_u
GPIO2_A2/VOP_D2/CIF_D2_d
GPIO2_A3/VOP_D3/CIF_D3_d
GPIO2_A4/VOP_D4/CIF_D4_d
GPIO2_A5/VOP_D5/CIF_D5_d
GPIO2_A6/VOP_D6/CIF_D6_d
GPIO2_A7/VOP_D7/CIF_D7/I2C7_SDA_u

GPIO2_B0/VOP_CLK/CIF_VSYNC/I2C7_SCL_u
GPIO2_B1/SPI2_RXD/CIF_HREF/I2C6_SDA_u
GPIO2_B2/SPI2_TXD/CIF_CLKIN/I2C6_SCL_u
GPIO2_B3/SPI2_CLK/VOP_DEN/CIF_CLKOUTA_u
GPIO2_B4/SPI2_CSn0_u

APIO2_VDDPST
APIO2_VDD



U1000R
RK3399

MIPI_RX0_D0P AK15
MIPI_RX0_D0N AL15

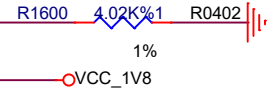
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MIPI_RX0_D1N AL14

MIPI_RX0_CLKP AK13
MIPI_RX0_CLKN AL13

MIPI_RX0_D2P AK12
MIPI_RX0_D2N AL12

MIPI_RX0_D3P AK11
MIPI_RX0_D3N AL11

MIPI_RX0_REXT AF14
MIPI_RX0_AVDD_1V8 AB14



U1000P
RK3399

MIPI_TX1/RX1_D0P AK6
MIPI_TX1/RX1_D0N AL6

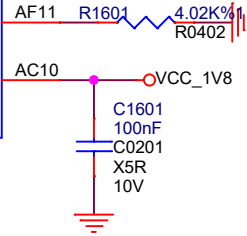
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MIPI_TX1/RX1_D1N AL7

MIPI_TX1/RX1_CLKP AK8
MIPI_TX1/RX1_CLKN AL8

MIPI_TX1/RX1_D2P AK9
MIPI_TX1/RX1_D2N AL9

MIPI_TX1/RX1_D3P AK10
MIPI_TX1/RX1_D3N AL10

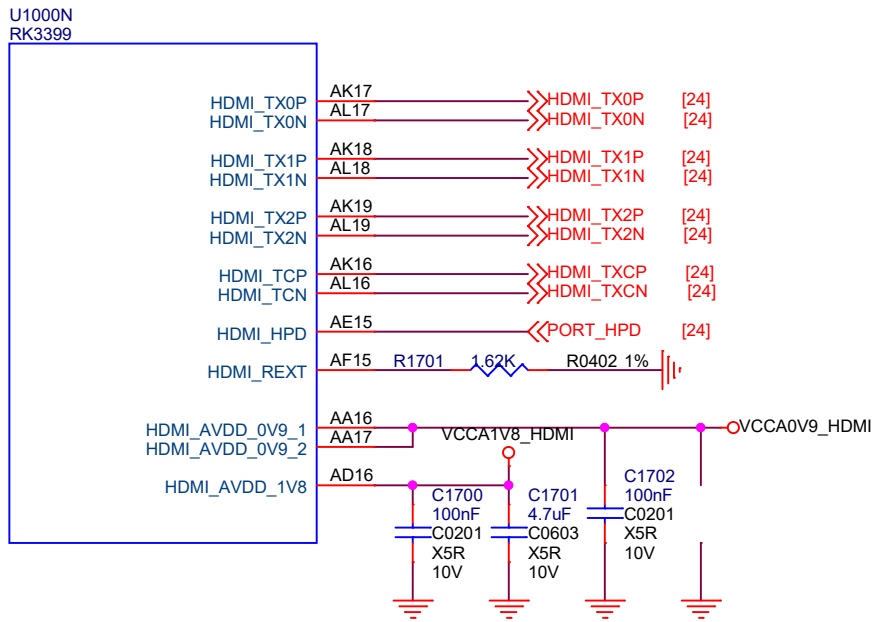
MIPI_TX1/RX1_REXT AF11
MIPI_TX1/RX1_AVDD_1V8 AC10



Dual
MIPI
Right

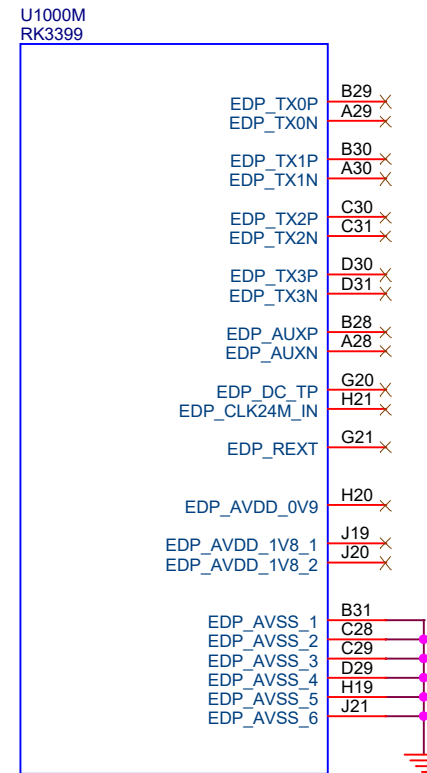


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HDMI design rule:

- 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

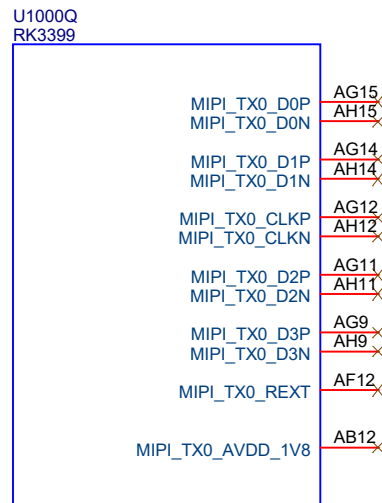


eDP design rule:

- 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

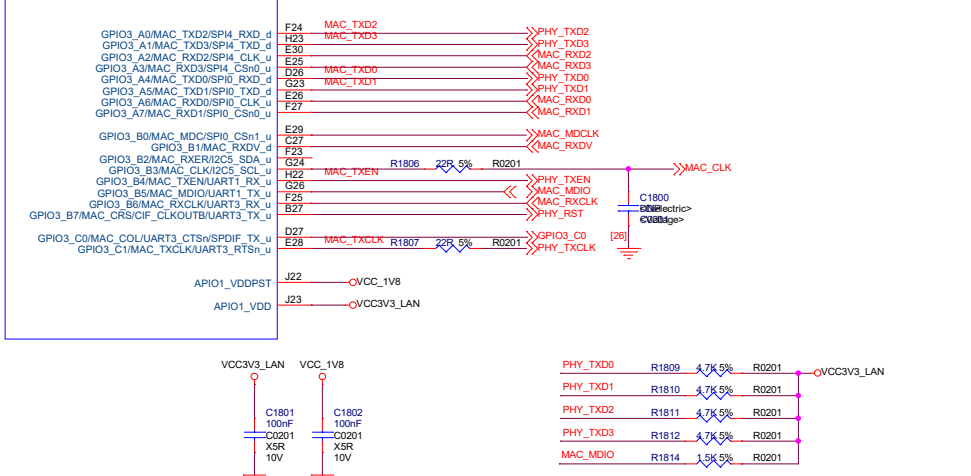
MIPI design rule:

- 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

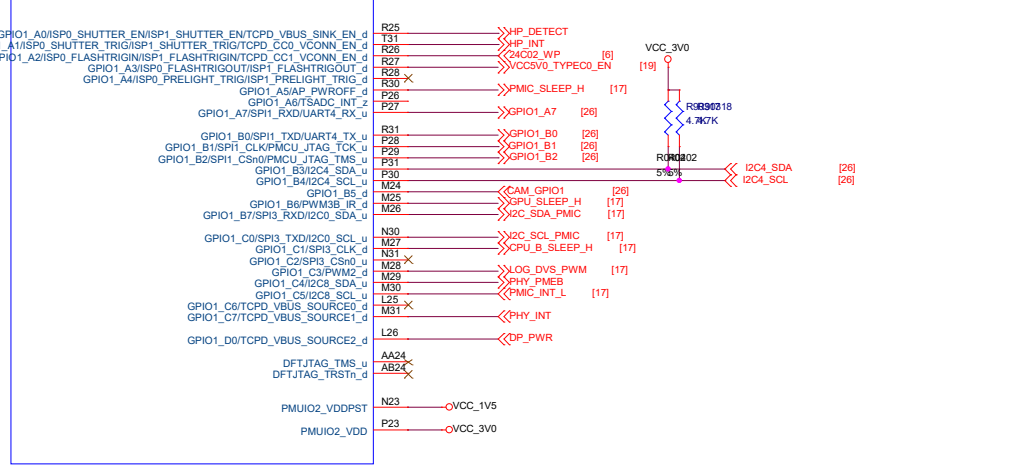


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A4	Document Number	RK3399 Display Interface
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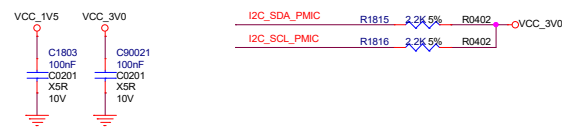
U1000I Note:RK3399 part I is 3.3V only



U1000E Note:RK3399 part E is 1.8V/3.0V mode



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

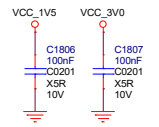
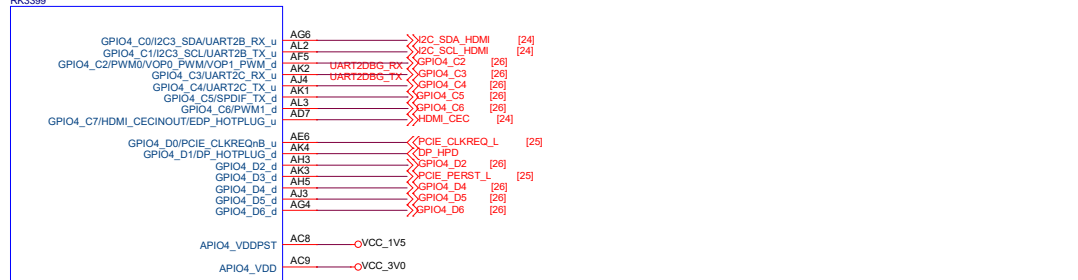


U1000G Note:RK3399 part G is 1.8V only

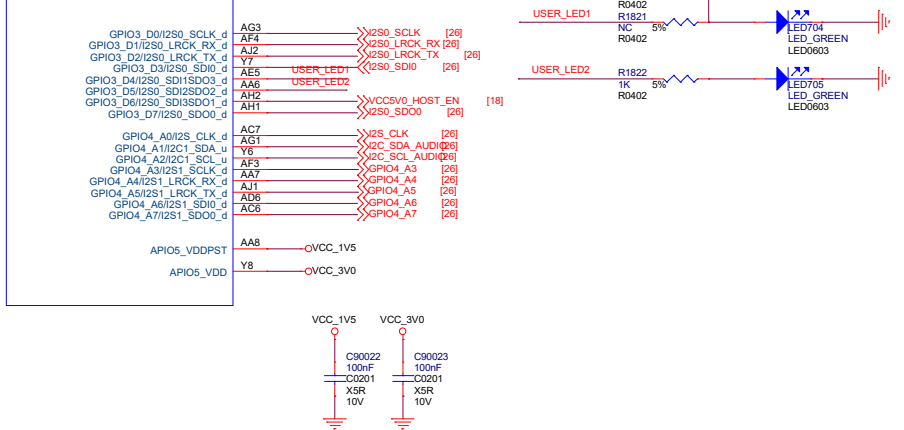


SDIO design rule:
 1. Data[0:3], cmd 组为组, 并行传输, 组内等长要求为 +/-10mil;
 2. CLK 需单独包地处理, 与 data 的延时小于 20ps;
 4. Max trace length < 3.93 inches;
 5. Trace impedance 50ohm +/- 10%;
 6. 与其他信号间距遵循原则

U1000K Note:RK3399 part J is 1.8V/3.0V mode

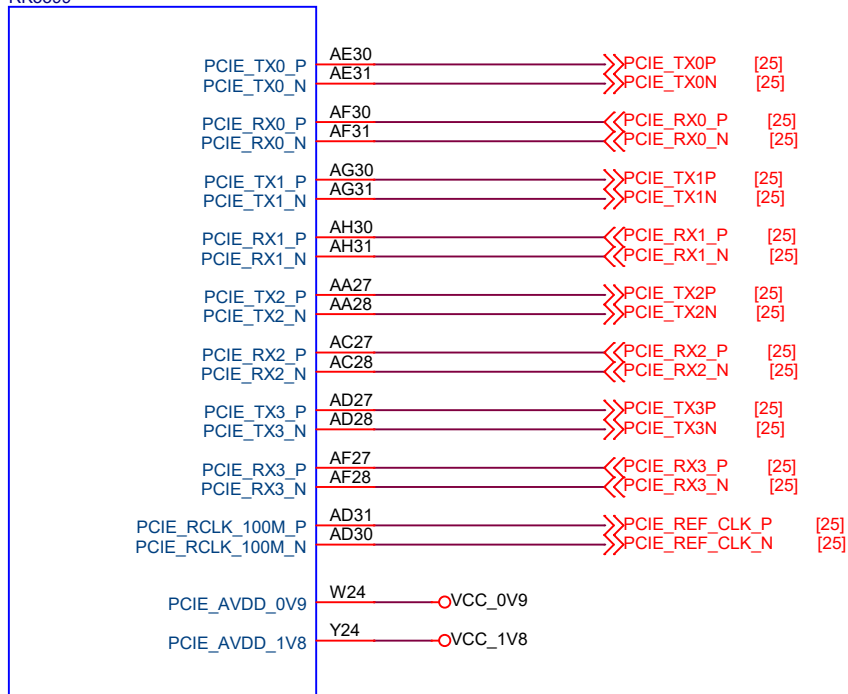


U1000J Note:RK3399 part J is 1.8V/3.0V mode



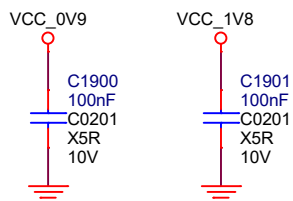
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U10000
RK3399

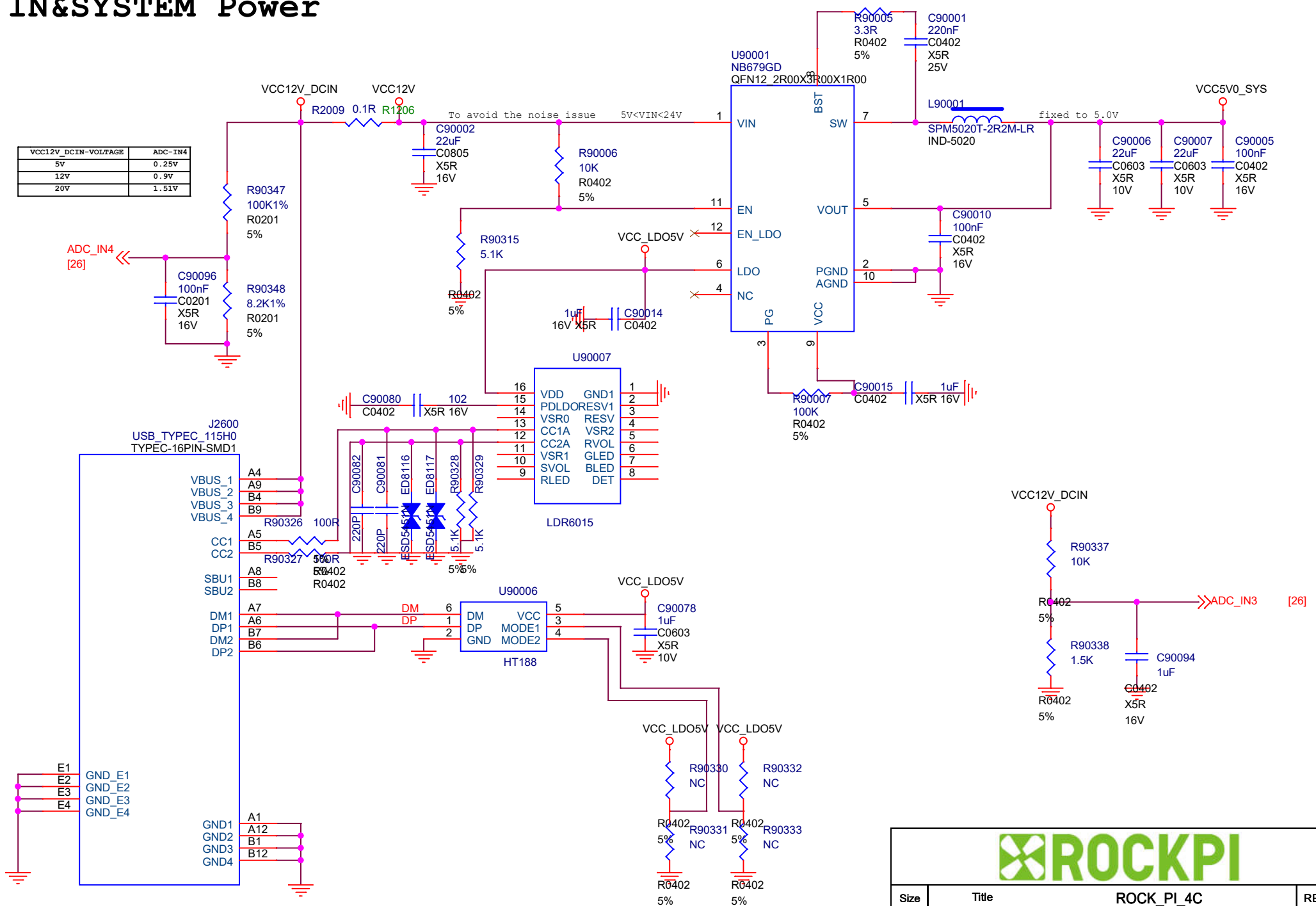


PCIE design rule:

1. Max intra-pair skew < 4ps;
2. Max inter-pair skew < 1.6 ns;
3. Max trace length < 14 inches;
4. Max allowed via < 4;
5. Trace impedance 100ohm+/-10%;
6. 与其他信号间距遵循3w原则



DC IN&SYSTEM Power

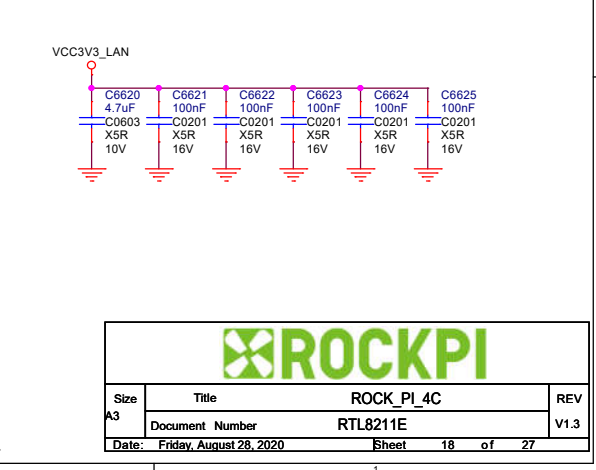
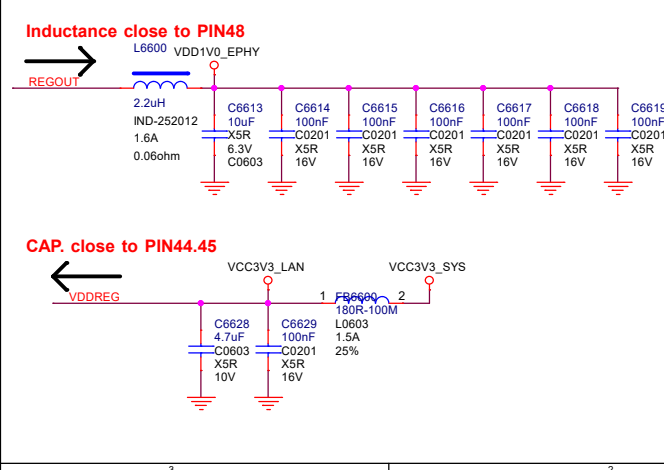
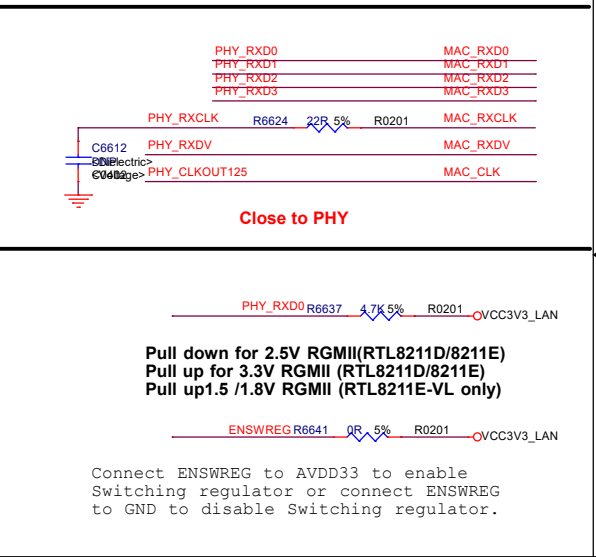
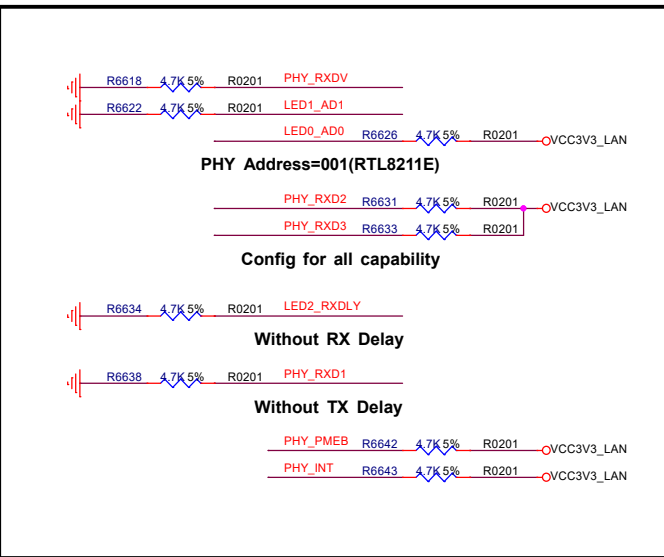
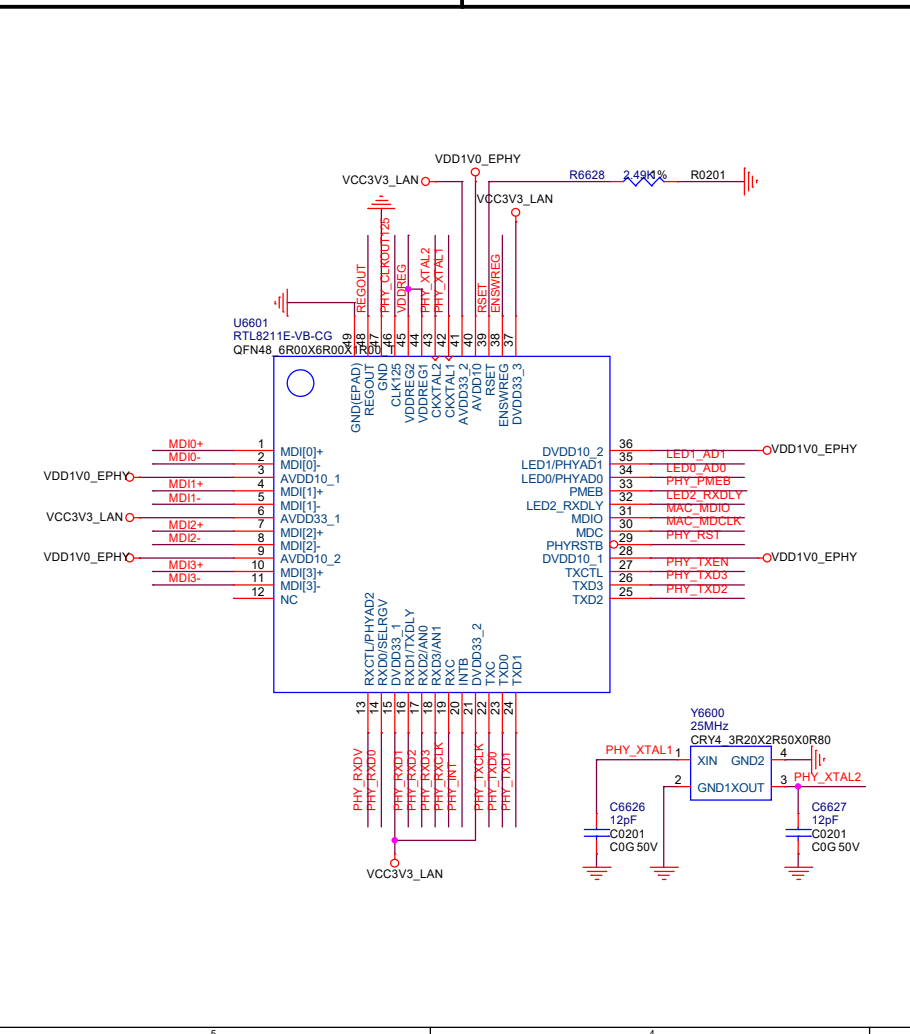
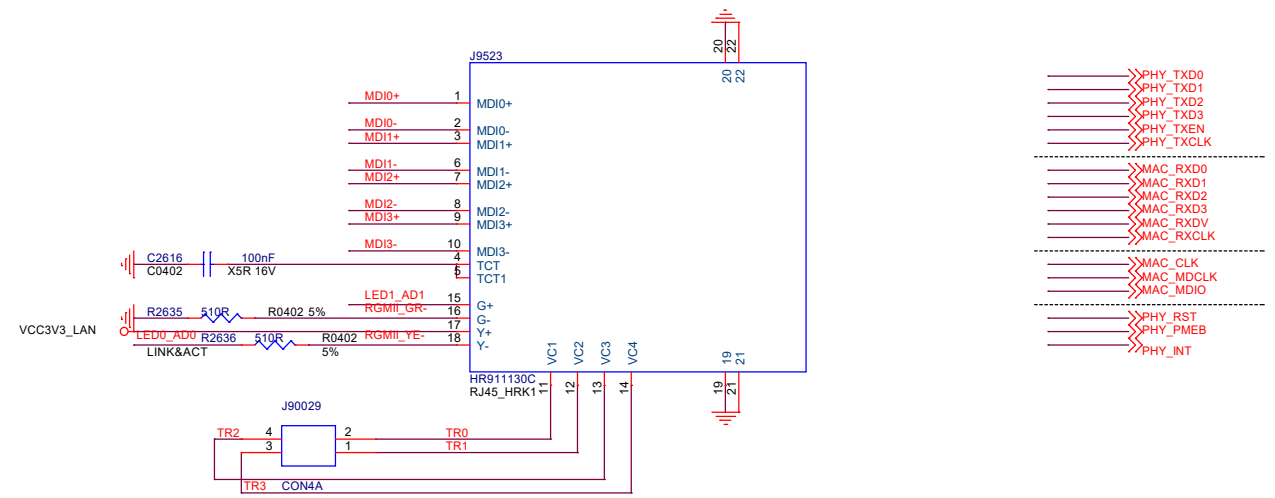


VCC12V_DCIN-VOLTAGE	ADC-IN4
5v	0.25V
12v	0.9V
20v	1.51V

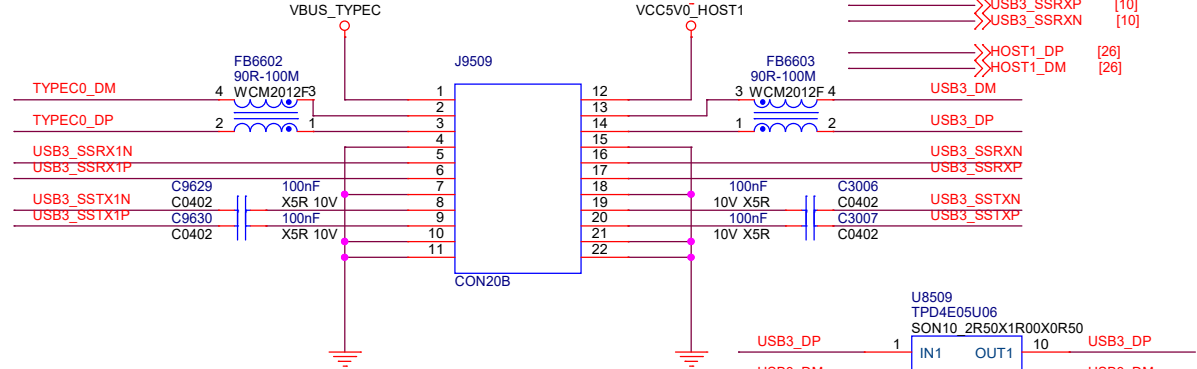
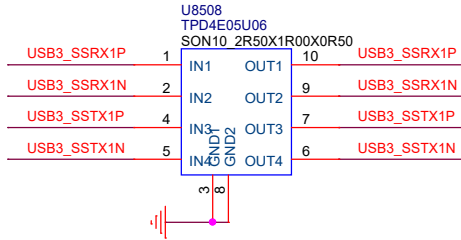
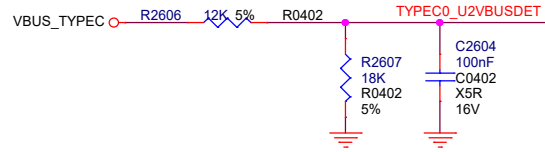


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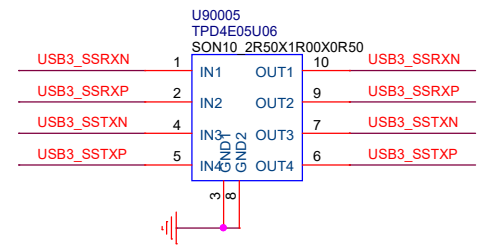
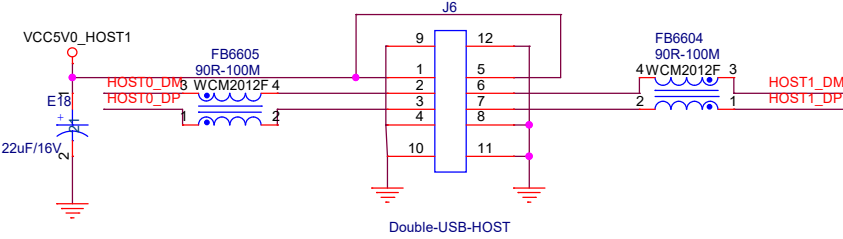
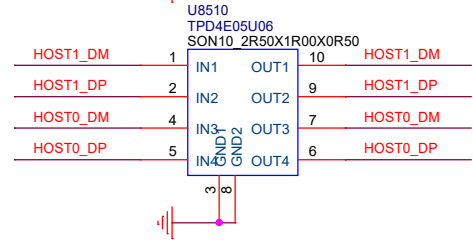
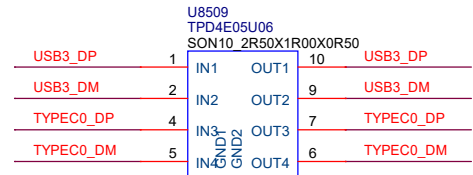
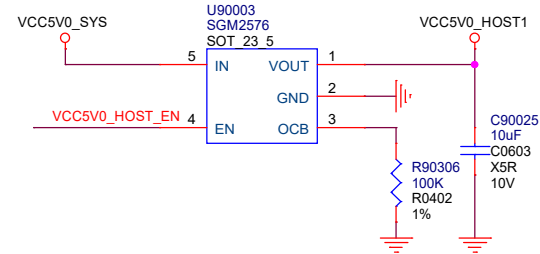
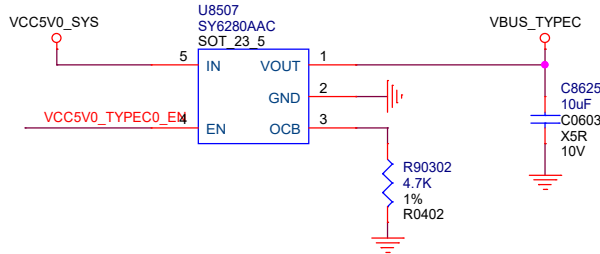
GMAC 10/100/1000 RGMII Ethernet PHY



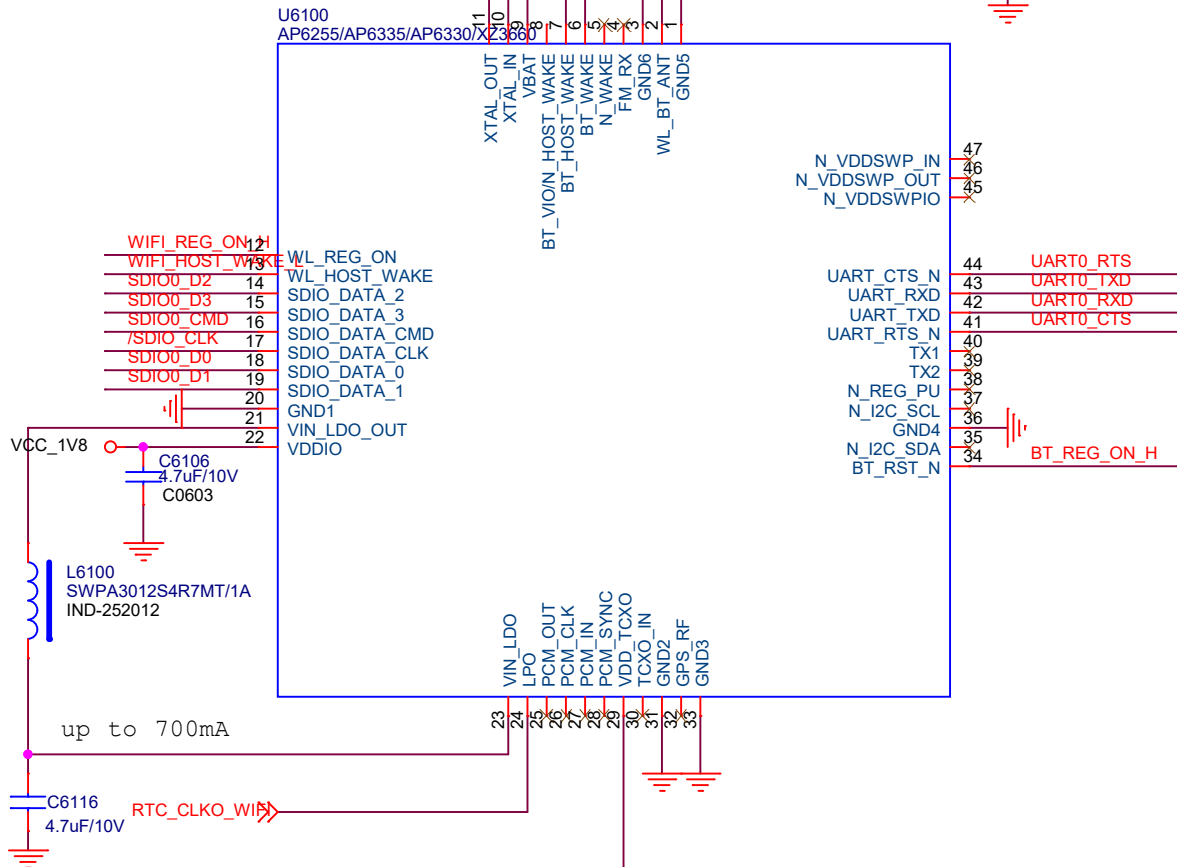
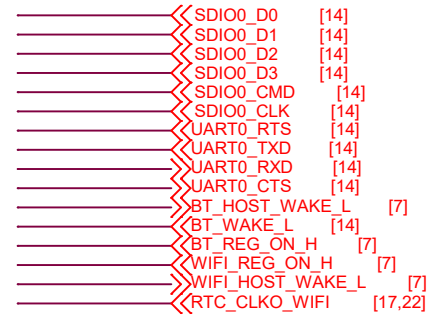
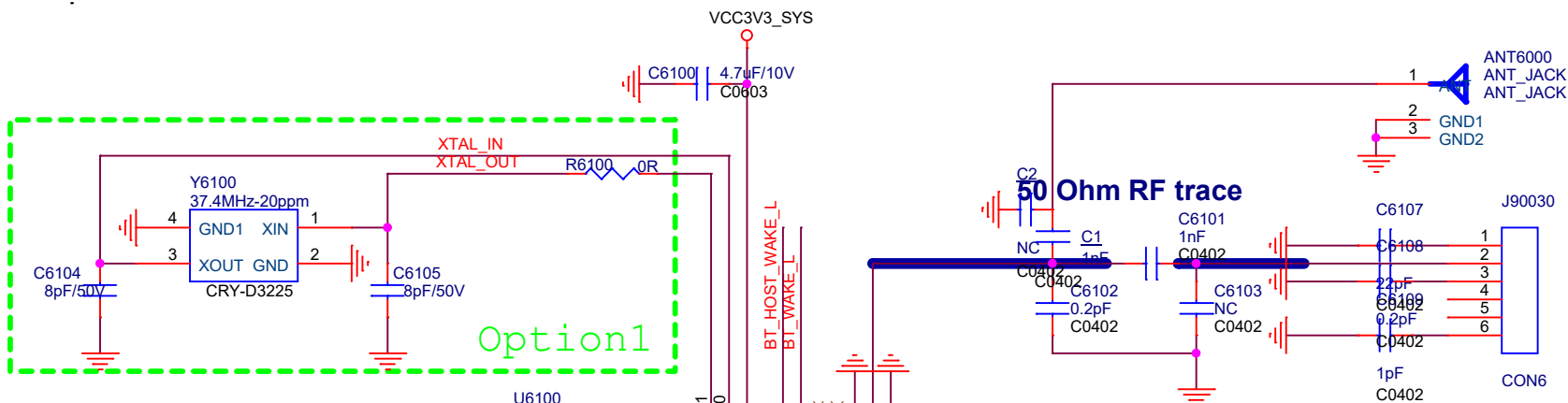
USB3.0 OTG port



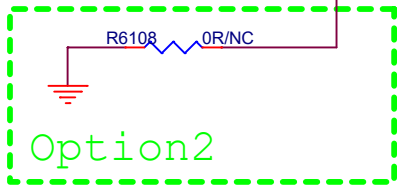
- >>TYPEC0_ID [10]
- >>TYPEC0_DP [10]
- >>TYPEC0_DM [10]
- >>VCC5V0_TYPEC0_EN [14]
- >>TYPEC0_U2VBUSET [10]
- >>USB3_SSTX1P [18]
- >>USB3_SSTX1N [18]
- >>USB3_SSRX1P [18]
- >>USB3_SSRX1N [18]
- >>HOST0_DP [10]
- >>HOST0_DM [10]
- >>VCC5V0_HOST_EN [14]
- >>USB3_DP [10]
- >>USB3_DM [10]
- >>USB3_SSTXP [10]
- >>USB3_SSTXN [10]
- >>USB3_SSRXP [10]
- >>USB3_SSRXN [10]
- >>HOST1_DP [26]
- >>HOST1_DM [26]



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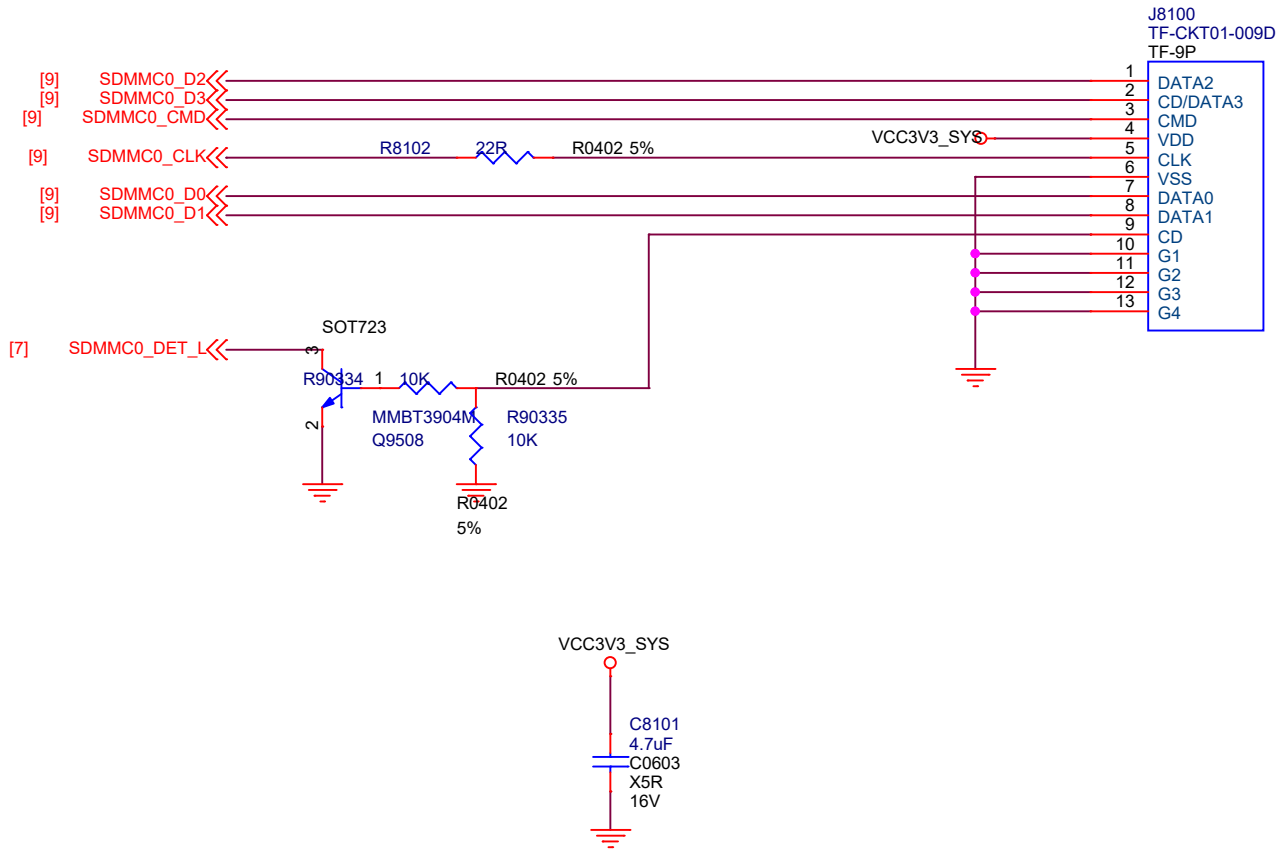


/SDIO_CLK R6306 33R 5% R0402 SDIO0_CLK



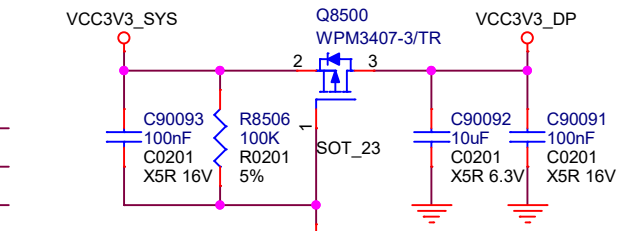
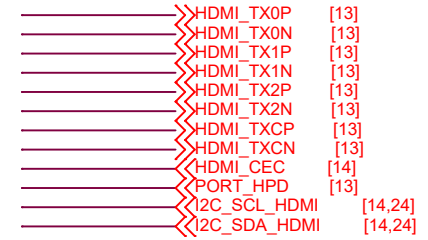
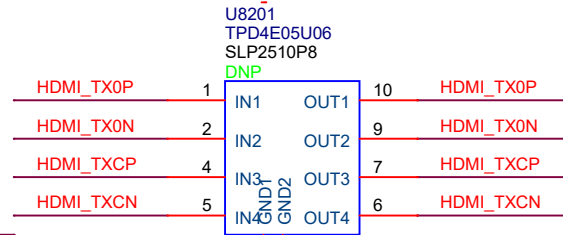
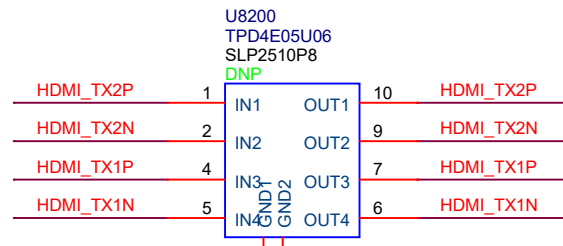
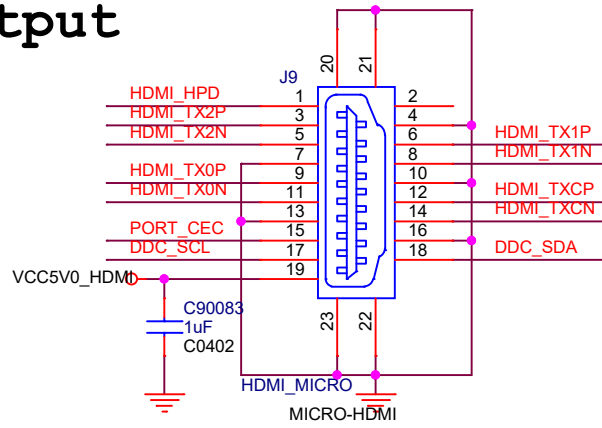
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TF CARD

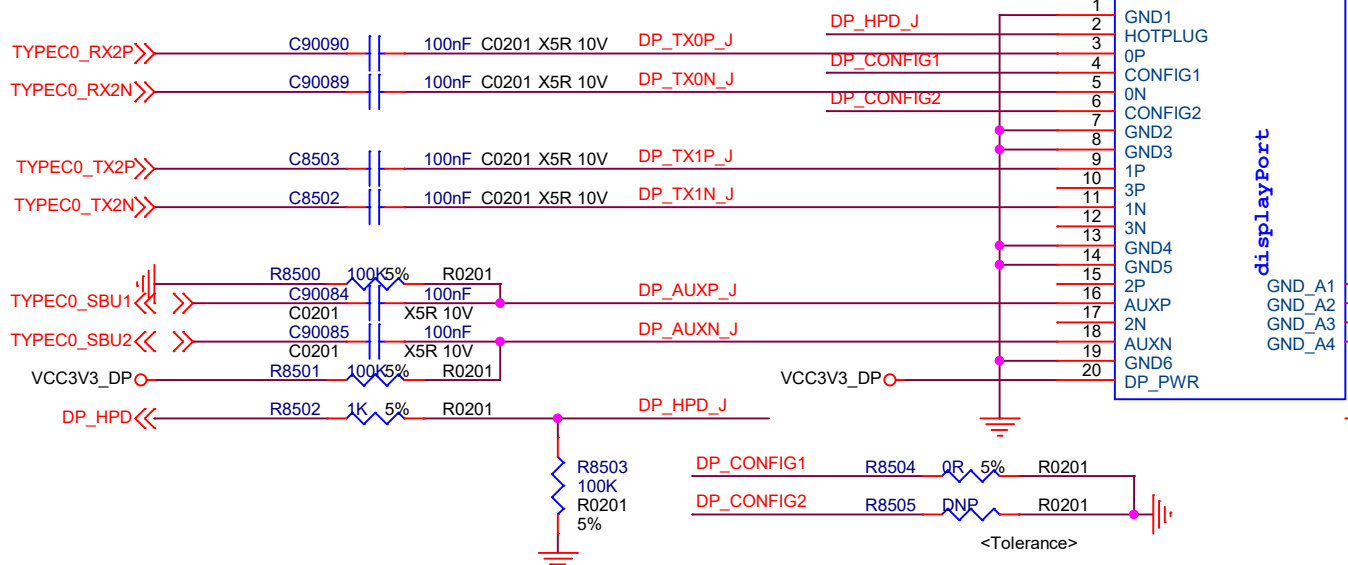
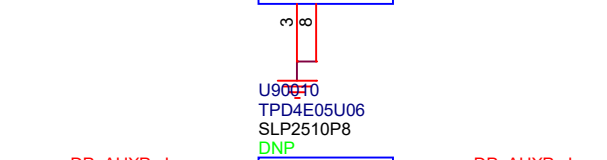
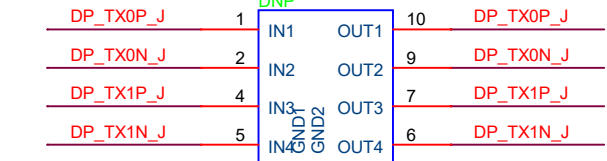
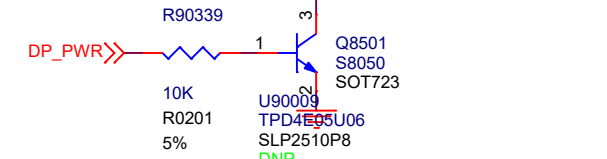
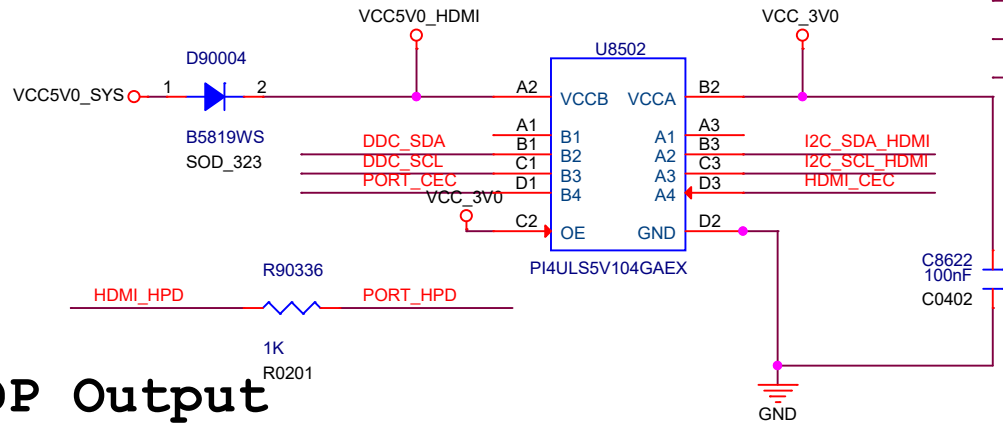



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HDMI Output



DP Output

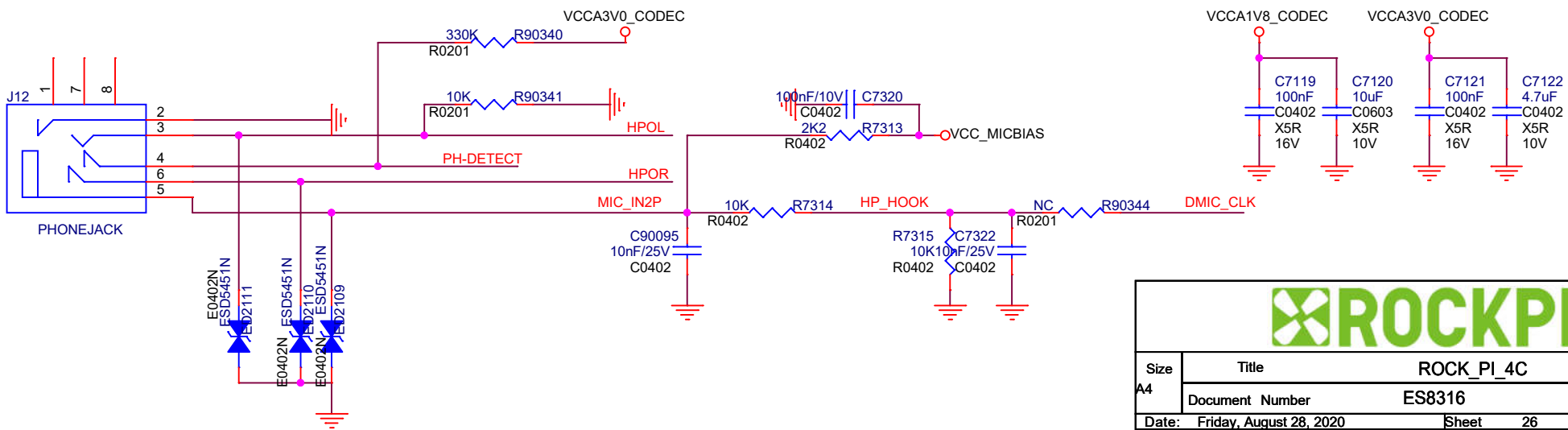
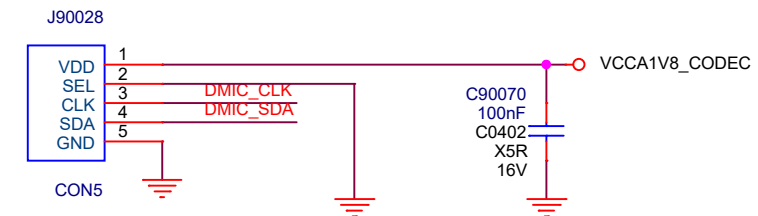
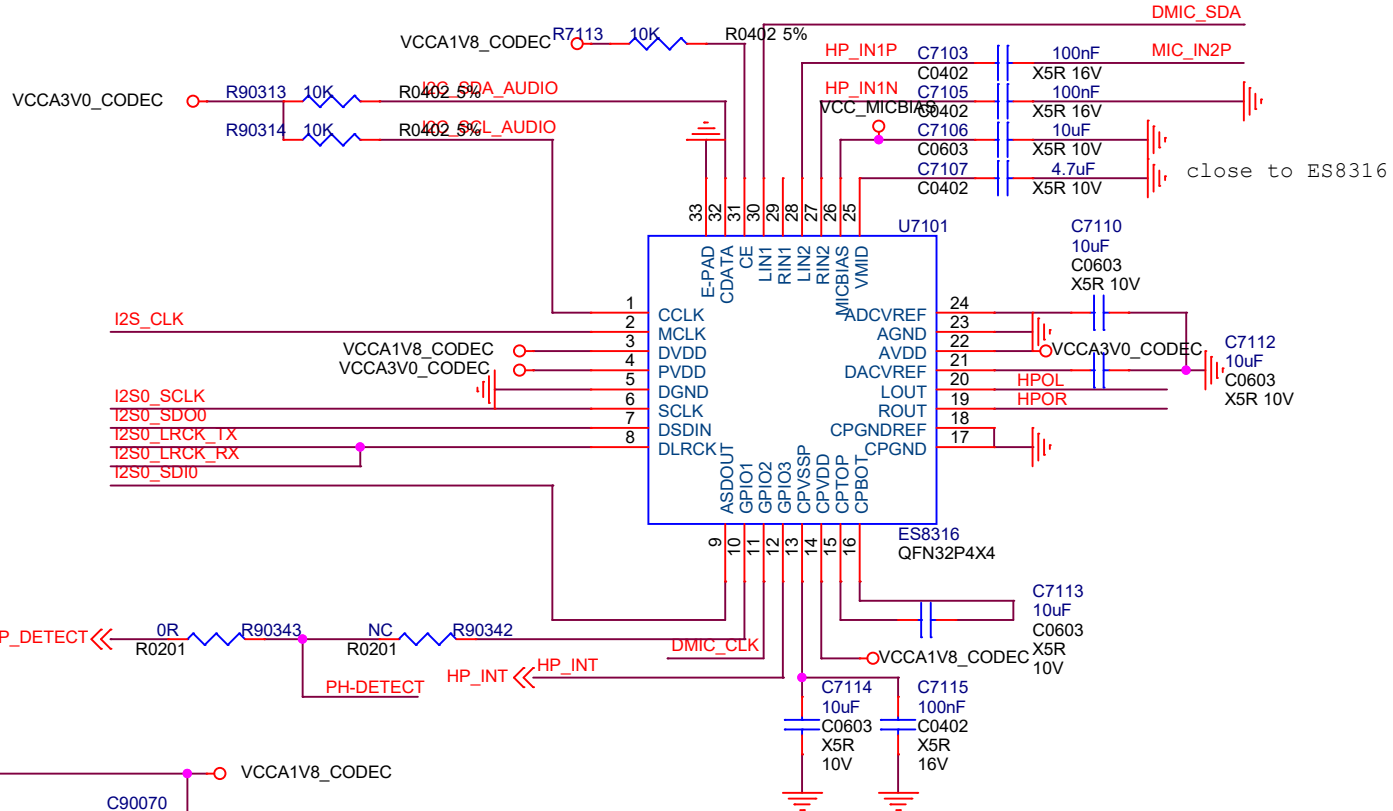




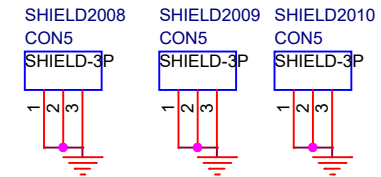
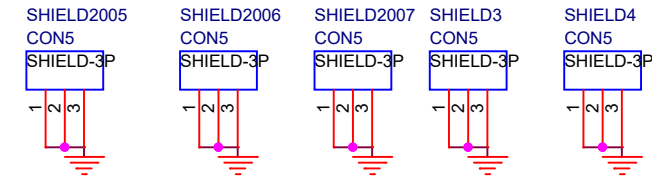
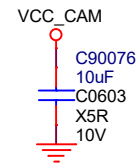
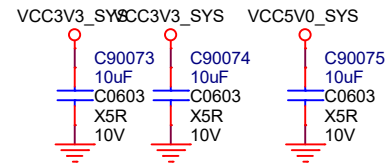
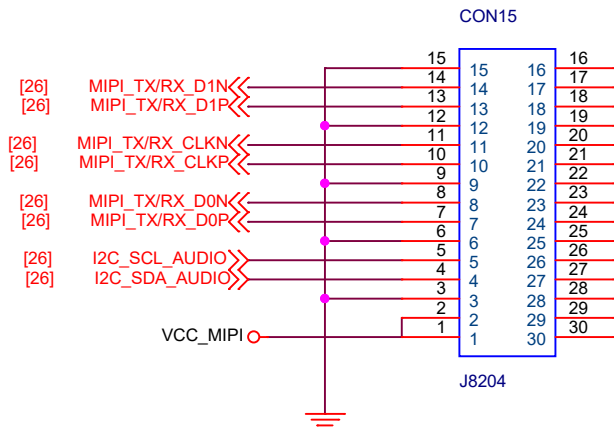
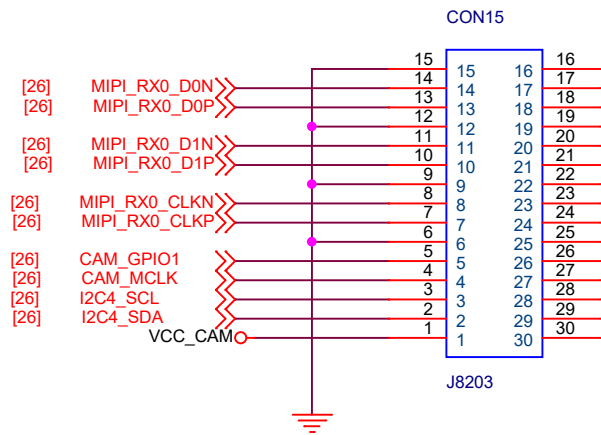
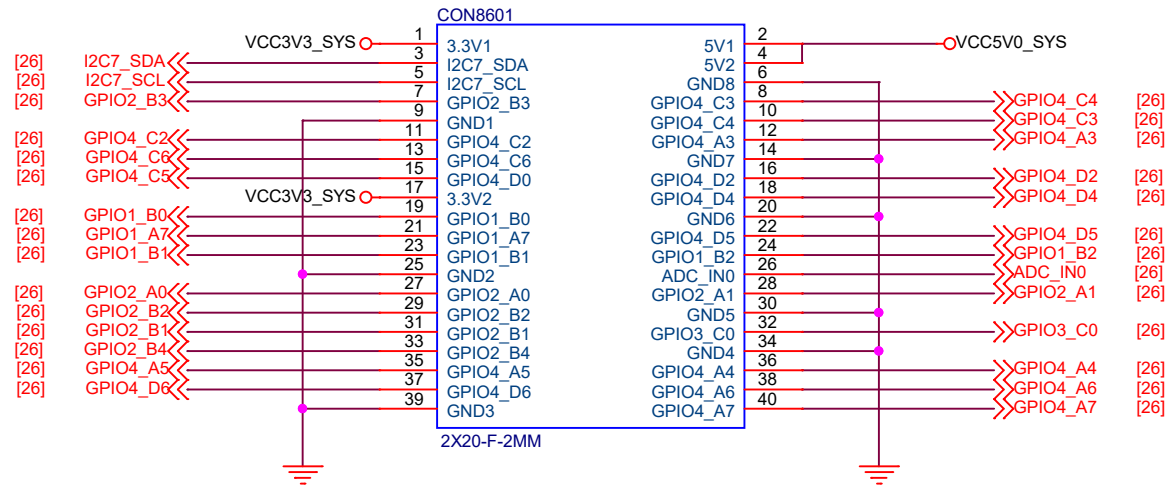
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I2C_SCL_AUDIO
 I2C_SDA_AUDIO
 I2S_CLK
 I2S0_SCLK
 I2S0_LRCK_RX
 I2S0_LRCK_TX
 I2S0_SDI0
 I2S0_SDO0

HP_HOOK



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