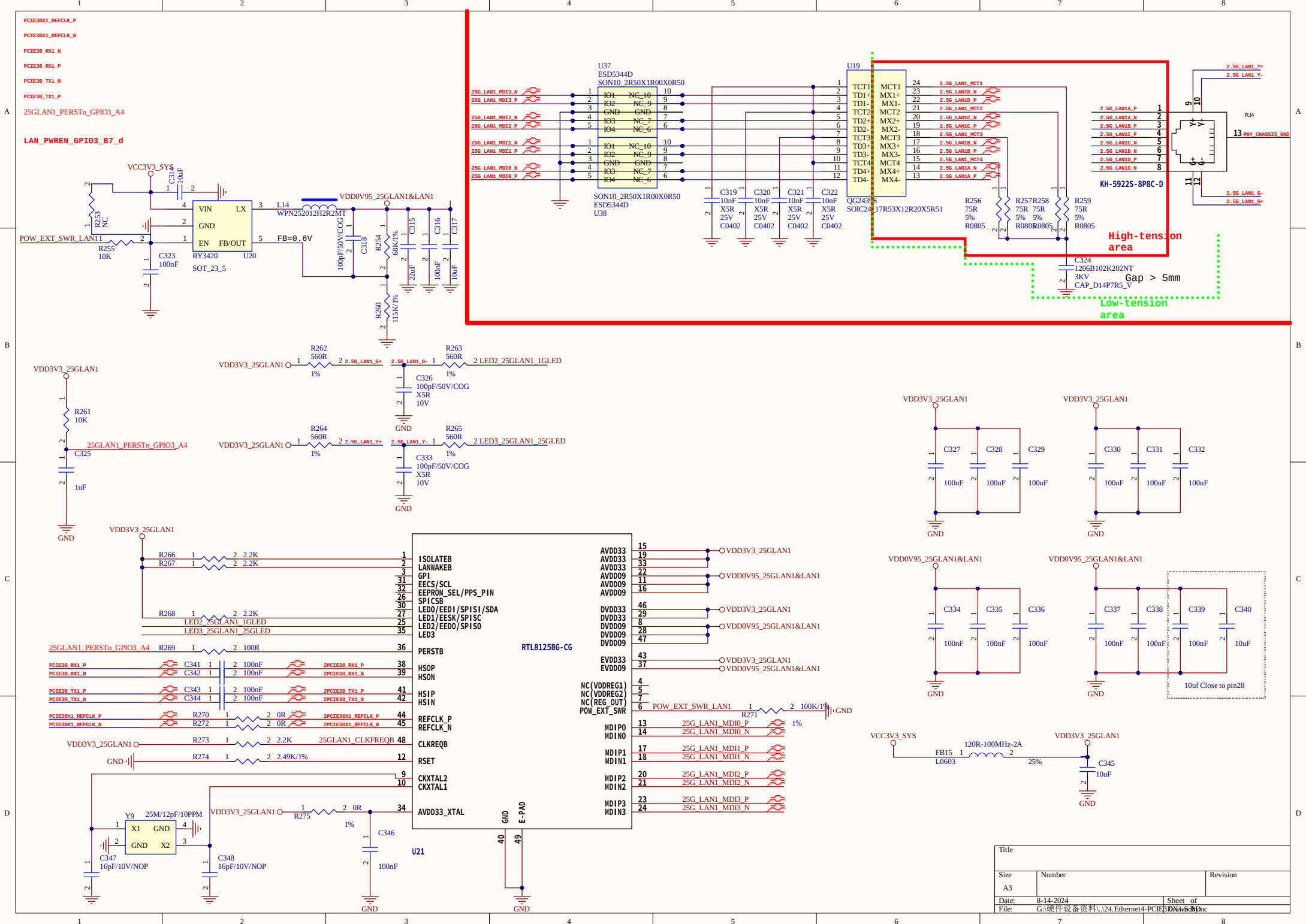
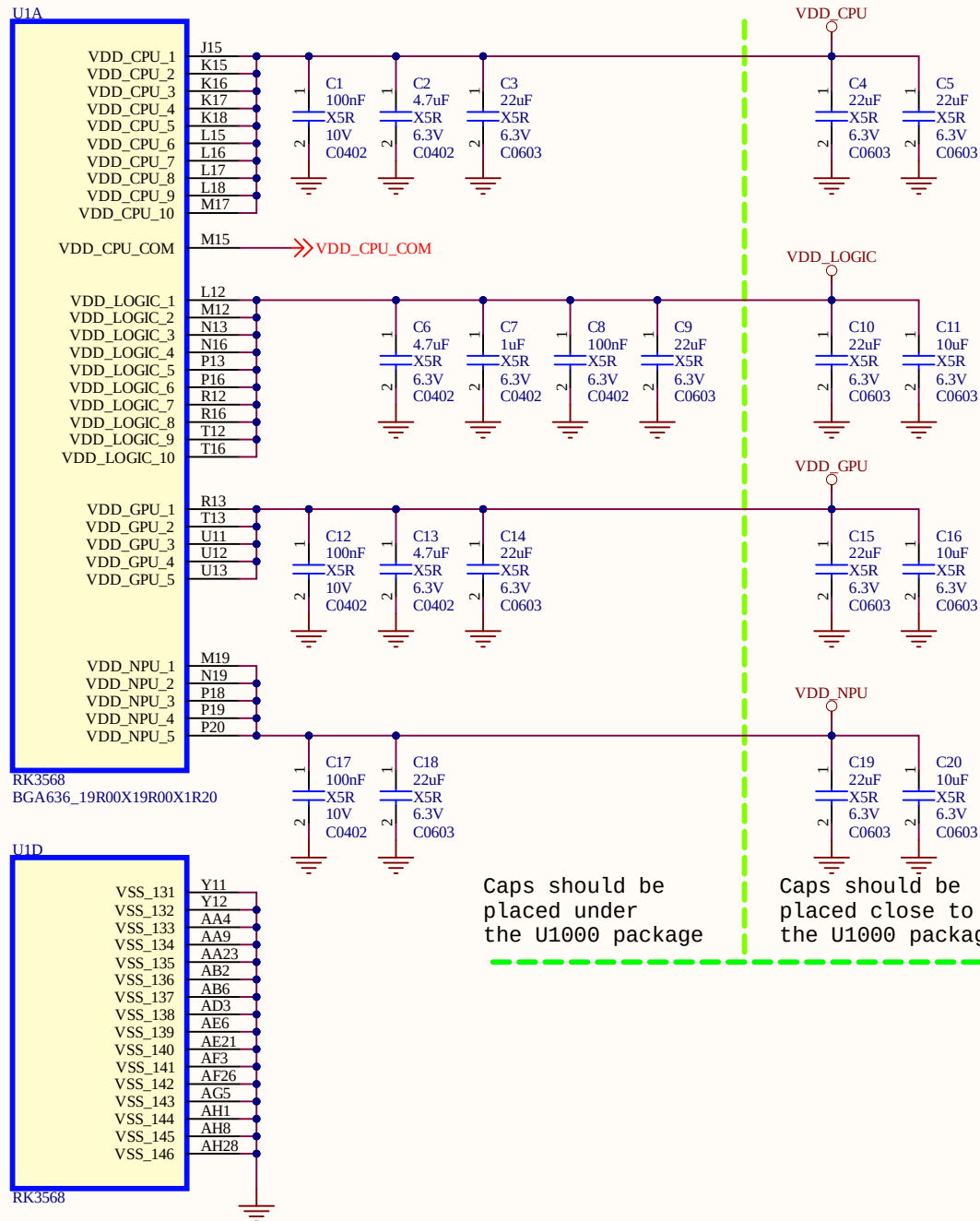




Title		
Size	Number	Revision
A3		
Date:	8-14-2024	Sheet of
File:	G:\硬件设备资料\124.Ethernet-4-PCIe Bridge.Dwg	

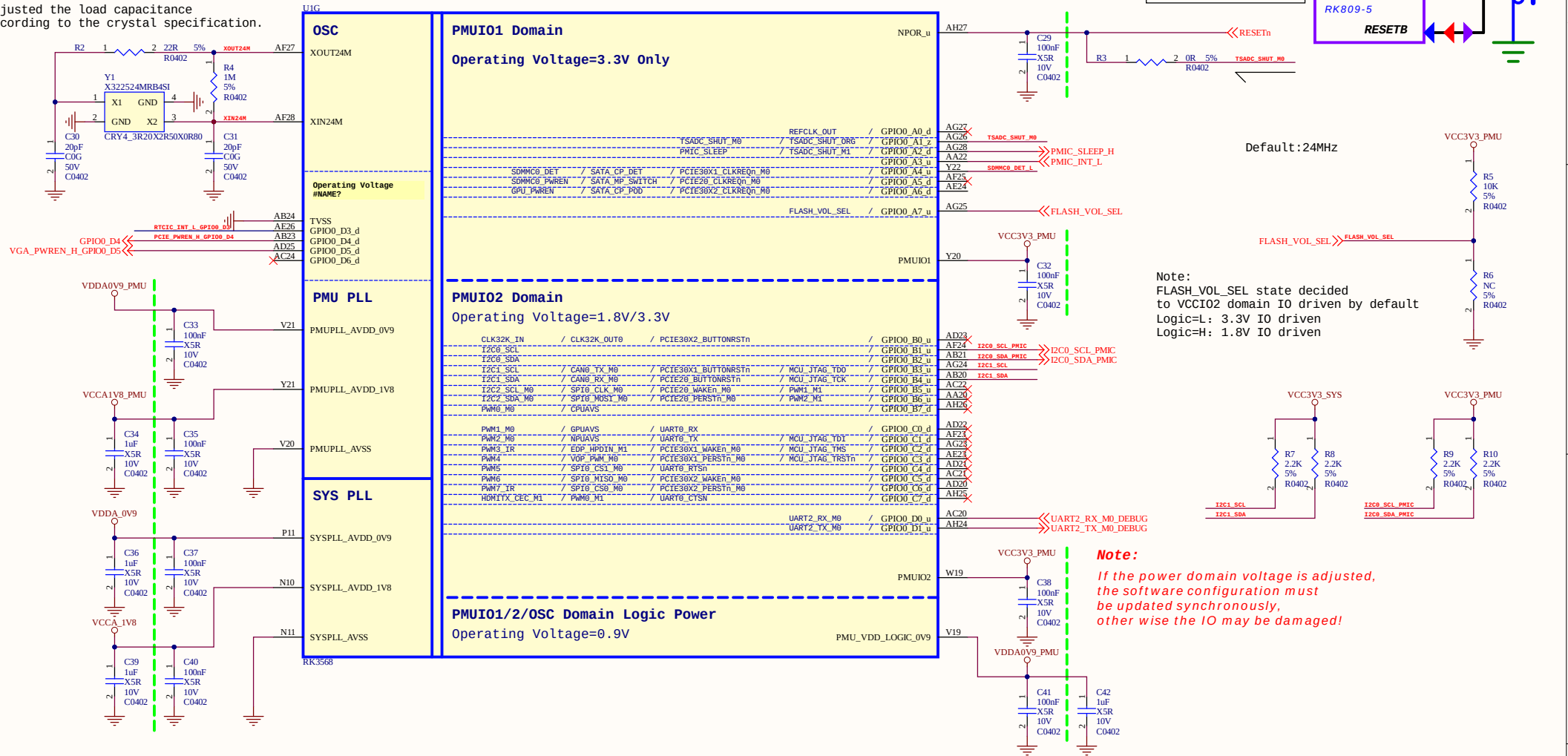
RK3568_ABCDE (Power&Gnd)



RK3568_G(OSC/PLL/PMUI01/2)

Note:

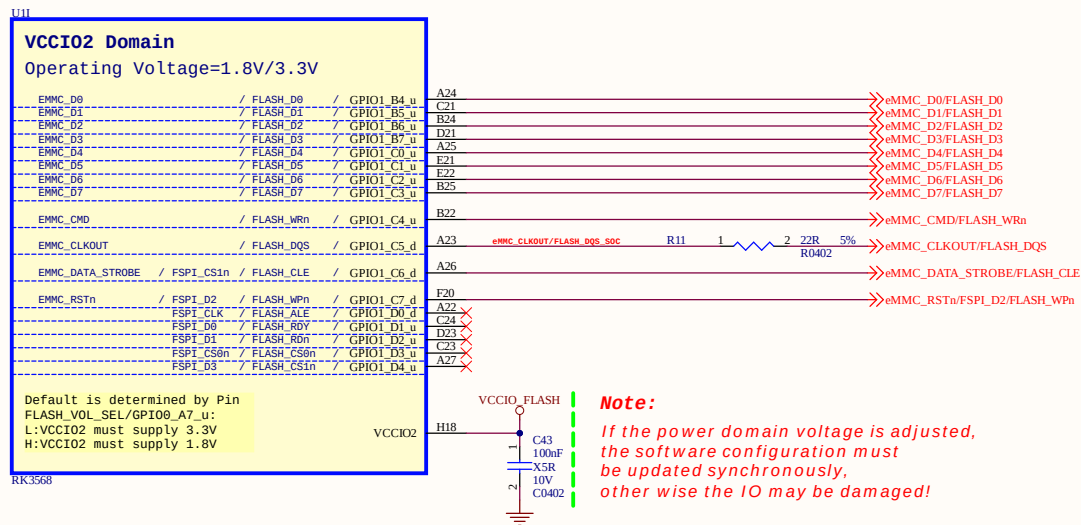
Adjusted the load capacitance according to the crystal specification.



Note:

Caps of between dashed green lines and U1000 should be placed under the U1000 package. Other caps should be placed close to the U1000 package

RK3568_I(VCCIO2 Domain)



Layout note:

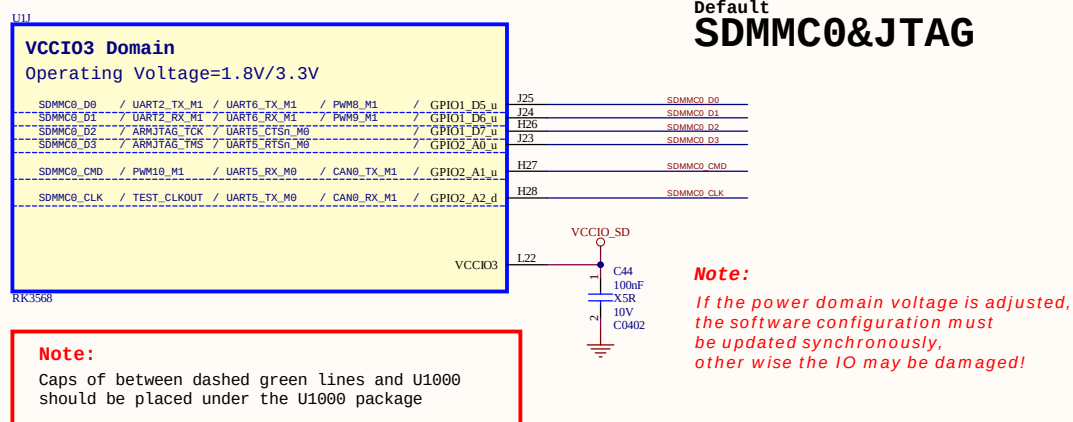
Test point must be placed on the line, and no branch can be added

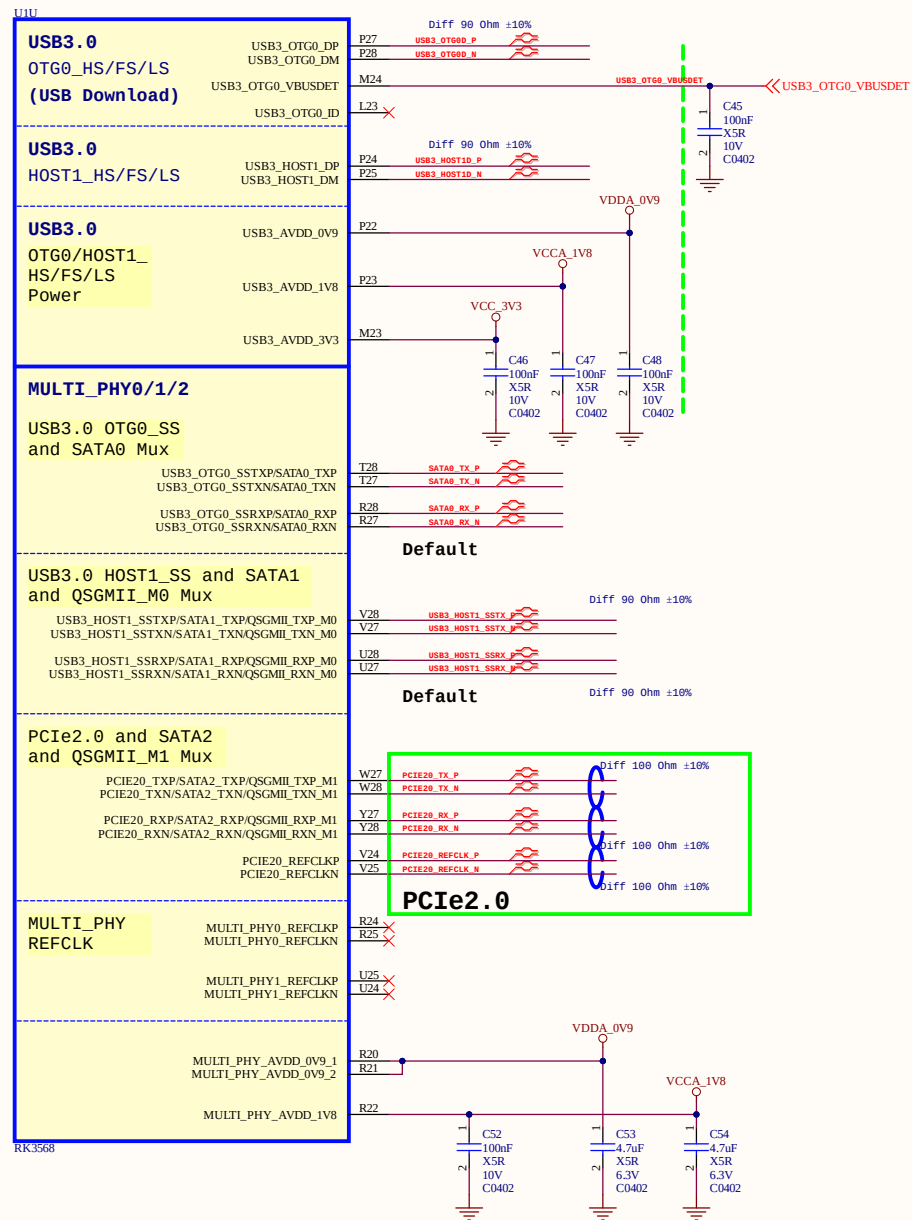
Note:

Reserve TestPoint for put the system into Maskrom mode to update the firmware
When writing mismatched firmware or other conditions result in boot failure, use this test point

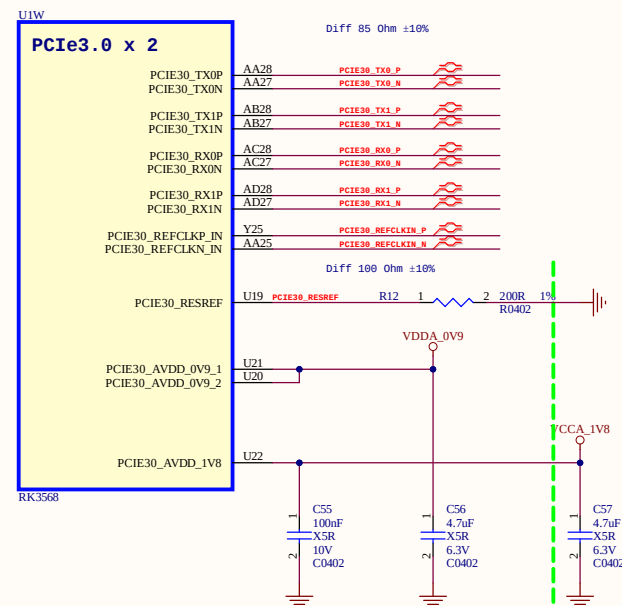
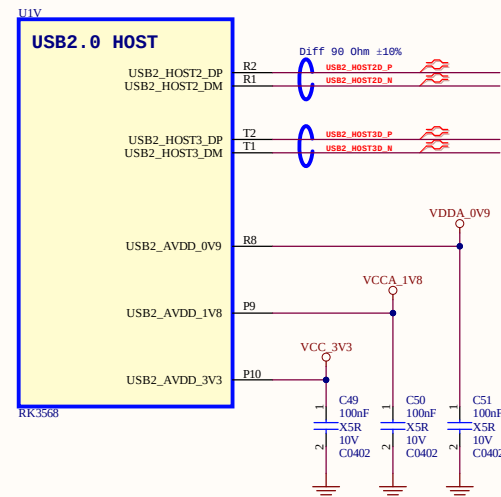
Except in this case, please use Recovery Key
Put the system into loader mode to update the firmware

RK3568_J(VCCIO3 Domain)

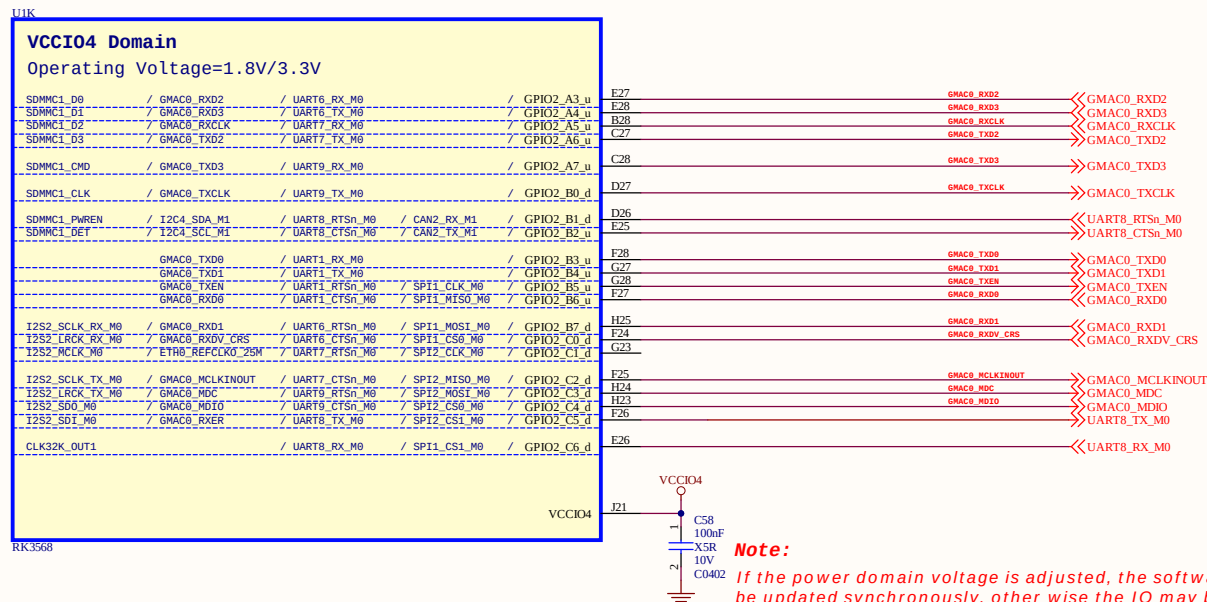




Note:
Caps of between dashed green lines and U1000
should be placed under the U1000 package.
Other caps should be placed close to the U1000 package



RK3568_K(VCCIO4 Domain)



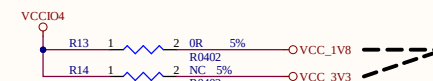
RGMII0+UART8

Note:
If Ethernet PHY uses other models, please note whether the default pull-up and pull-down of GPIO affect Ethernet PHY function

At present, TXEN will be affected if it defaults to high level need to add a 4.7K resistance to ground

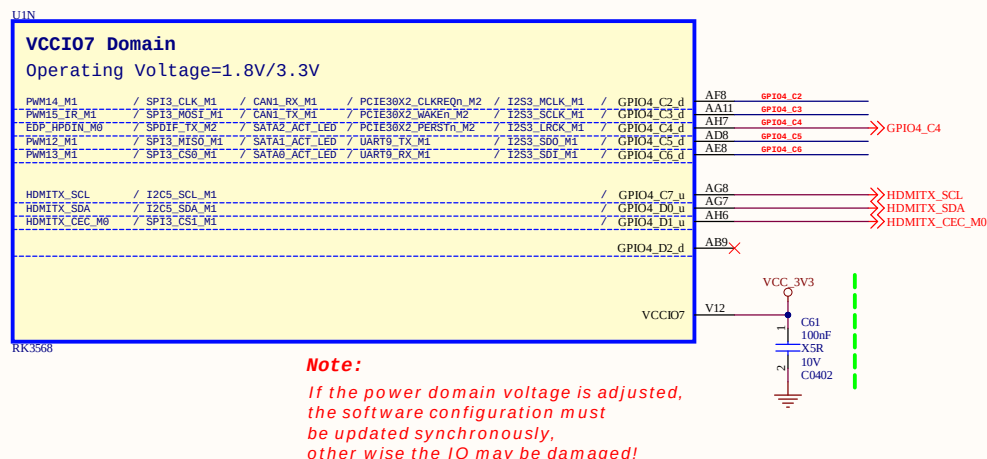
If Ethernet PHY uses other models, please note whether the default pull-up and pull-down of GPIO affect Ethernet PHY function

At present, TXEN will be affected if it defaults to high level need to add a 4.7K resistance to ground



Note:
According to the actual choice of mounted Cannot be mounted at the same time
Default:1.8V
Select the voltage according to the application

RK3568_N(VCCIO7 Domain)

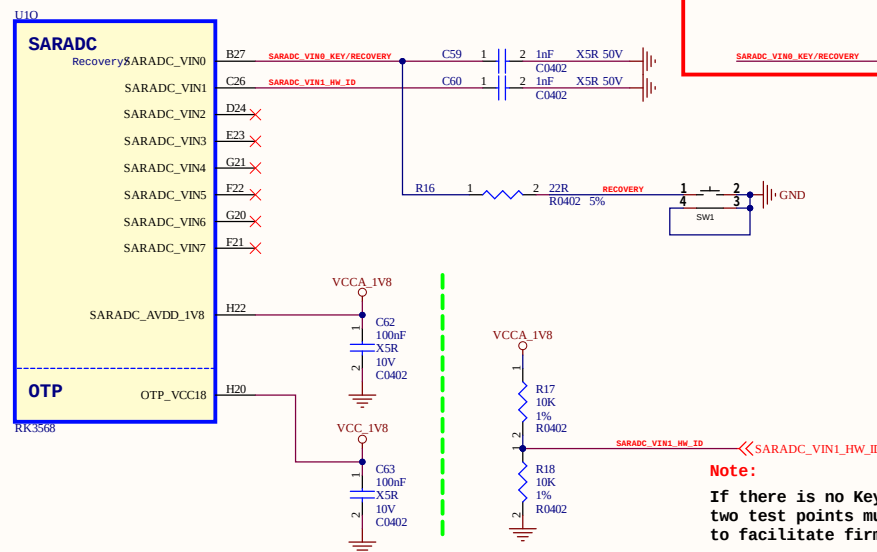


Default



Option

RK3568_O(SARADC/OTP)



Note:
Must be mounted

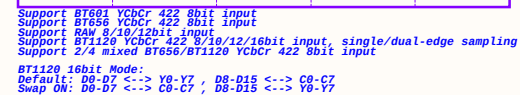
Note:
If there is no Key requirement, two test points must be reserved to facilitate firmware update
It is suggested to reserve a Key to facilitate the development debug

Note:
Caps of between dashed green lines and U1000 should be placed under the U1000 package

If SARADC_VIN0=0V at after power on and reset, then system will enter into loader mode.

MIPI CSI RX		
MIPI_CSI_RX_D0P	AG21	
MIPI_CSI_RX_D0N	AH12	
MIPI_CSI_RX_D1P	AG21	
MIPI_CSI_RX_D1N	AH11	
MIPI_CSI_RX_D2P	AE11	
MIPI_CSI_RX_D2N	AD11	
MIPI_CSI_RX_D3P	AD9	
MIPI_CSI_RX_D3N	AE9	
MIPI_CSI_RX_CLK0P	AG10	
MIPI_CSI_RX_CLK0N	AH10	
MIPI_CSI_RX_CLK1P	AG9	
MIPI_CSI_RX_CLK1N	AH9	
MIPI_CSI_RX_AVDDIO_0V9	W14	
MIPI_CSI_RX_AVDDIO_1V8	Y14	

RK3568_M(VCCIO6 Domain)

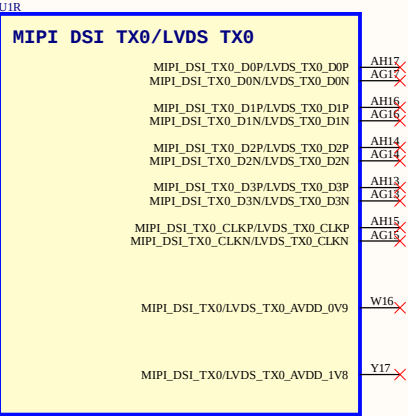


GMAC	Direction	GEPHY	GMAC	Direction	FEPHY
GMACx_TXD0	----->	PHYx_TXD0	GMACx_TXD0	----->	PHYx_TXD0
GMACx_TXD1	----->	PHYx_TXD1	GMACx_TXD1	----->	PHYx_TXD1
GMACx_TXD2	----->	PHYx_TXD2			
GMACx_TXD3	----->	PHYx_TXD3			
GMACx_TXEN	----->	PHYx_TXEN	GMACx_TXEN	----->	PHYx_TXEN
GMACx_TXCLK	----->	PHYx_TXCLK			
GMACx_RXD0	<-----	PHYx_RXD0	GMACx_RXD0	<-----	PHYx_RXD0
GMACx_RXD1	<-----	PHYx_RXD1	GMACx_RXD1	<-----	PHYx_RXD1
GMACx_RXD2	<-----	PHYx_RXD2			
GMACx_RXD3	<-----	PHYx_RXD3			
GMACx_RXDV	<-----	PHYx_RXDV	GMACx_RXDV	<-----	PHYx_RXDV
GMACx_RXCLK	<-----	PHYx_RXCLK			
GMACx_RXER	<-----		GMACx_RXER	<-----	PHYx_RXER
GMACx_MDC	----->	PHYx_MDC	GMACx_MDC	----->	PHYx_MDC
GMACx_MDIO	----->	PHYx_MDIO	GMACx_MDIO	----->	PHYx_MDIO
ETHx_REFCLK0_25M	----->	PHYx_XTALIN			
GMACx_MCLKINOUT	<-----	PHYx_CLKOUT125(option)	GMACx_MCLKINOUT	----->	PHYx_XTALIN/REFCLK
GPIO	----->	PHYx_RSTn	GPIO	----->	PHYx_RSTn
GPIO	<-----	PHYx_INT/PMBE	GPIO	<-----	PHYx_INT/PMBE

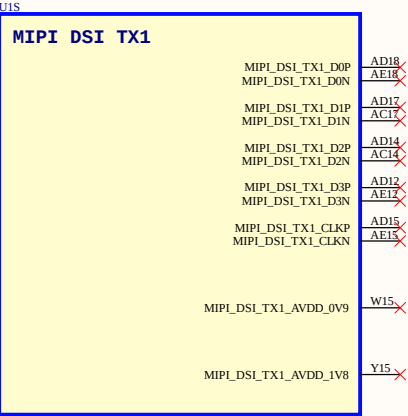
Note:
Camera MCLK can select the following clock:
1: CAM_CLKOUT0
2: CAM_CLKOUT1
3: CIF_CLKOUT
4: REFCLK_OUT

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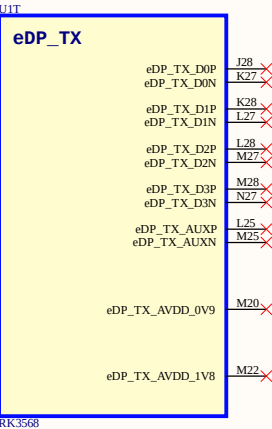
RK3568_R(MIPI_DSI_TX0/LVDS_TX0)



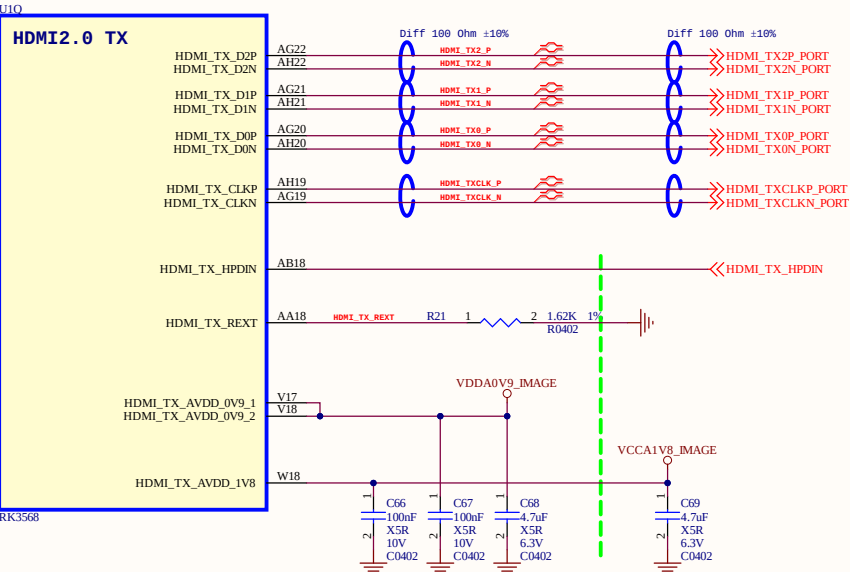
RK3568_S(MIPI_DSI_TX1)



RK3568_T(eDP TX)



RK3568_Q(HDMI2.0 TX)



Note:
Caps of between dashed green lines and U1000 should be placed under the U1000 package.
Other caps should be placed close to the U1000 package

RK3568_L(VCCIO5 Domain)

U10

VCCIO5 Domain

Operating Voltage=1.8V/3.3V

LCDC_D0	/ VOP_BT656_D0_M0	/ SPI0_MISO_M1	/ PCIE20_CLKREQn_M1	/ I2S1_MCLK_M2	/ GPIO2_D0_d
LCDC_D1	/ VOP_BT656_D1_M0	/ SPI0_MOSI_M1	/ PCIE20_WAKEn_M1	/ I2S1_SCLK_TX_M2	/ GPIO2_D1_d
LCDC_D2	/ VOP_BT656_D2_M0	/ SPI0_CS0_M1	/ PCIE30X1_CLKREQn_M1	/ I2S1_LRCK_TX_M2	/ GPIO2_D2_d
LCDC_D3	/ VOP_BT656_D3_M0	/ SPI0_CLK_M1	/ PCIE30X1_WAKEn_M1	/ I2S1_SDI0_M2	/ GPIO2_D3_d
LCDC_D4	/ VOP_BT656_D4_M0	/ SPI2_CSI_M1	/ PCIE30X2_CLKREQn_M1	/ I2S1_SDI1_M2	/ GPIO2_D4_d
LCDC_D5	/ VOP_BT656_D5_M0	/ SPI2_CS0_M1	/ PCIE30X2_WAKEn_M1	/ I2S1_SDI2_M2	/ GPIO2_D5_d
LCDC_D6	/ VOP_BT656_D6_M0	/ SPI2_MOSI_M1	/ PCIE30X2_PERSTn_M1	/ I2S1_SDI3_M2	/ GPIO2_D6_d
LCDC_D7	/ VOP_BT656_D7_M0	/ SPI2_MISO_M1	/ UART8_TX_M1	/ I2S1_SD00_M2	/ GPIO2_D7_d
LCDC_CLK	/ VOP_BT656_CLK_M0	/ SPI2_CLK_M1	/ UART8_RX_M1	/ I2S1_SD01_M2	/ GPIO3_A0_d
LCDC_D8	/ VOP_BT1120_D0	/ SPI1_CS0_M1	/ PCIE30X1_PERSTn_M1	/ SDMMC2_D0_M1	/ GPIO3_A1_d
LCDC_D9	/ VOP_BT1120_D1	/ GMAC1_TXD0_M0	/ I2S3_MCLK_M0	/ SDMMC2_D1_M1	/ GPIO3_A2_d
LCDC_D10	/ VOP_BT1120_D2	/ GMAC1_TXD3_M0	/ I2S3_SCLK_M0	/ SDMMC2_D2_M1	/ GPIO3_A3_d
LCDC_D11	/ VOP_BT1120_D3	/ GMAC1_RXD0_M0	/ I2S3_LRCK_M0	/ SDMMC2_D3_M1	/ GPIO3_A4_d
LCDC_D12	/ VOP_BT1120_D4	/ GMAC1_RXD3_M0	/ I2S3_SD0_M0	/ SDMMC2_CMD_M1	/ GPIO3_A5_d
LCDC_D13	/ VOP_BT1120_CLK	/ GMAC1_TXCLK_M0	/ I2S3_SDI_M0	/ SDMMC2_CLK_M1	/ GPIO3_A6_d
LCDC_D14	/ VOP_BT1120_D5	/ GMAC1_RXCLK_M0	/ I2S3_SDI0_M0	/ SDMMC2_DET_M1	/ GPIO3_A7_d
LCDC_D15	/ VOP_BT1120_D6	/ ETH1_REFCLK0_25M_M0	/ SDMMC2_PWREN_M1	/ GPIO3_B0_d	
LCDC_D16	/ VOP_BT1120_D7	/ GMAC1_RXD0_M0	/ UART4_RX_M1	/ PWM8_M0	/ GPIO3_B1_d
LCDC_D17	/ VOP_BT1120_D8	/ GMAC1_RXD1_M0	/ UART4_TX_M1	/ PWM9_M0	/ GPIO3_B2_d
LCDC_D18	/ VOP_BT1120_D9	/ GMAC1_RXDV_CRS_M0	/ I2C5_SCL_M0	/ PDM_SDI0_M2	/ GPIO3_B3_d
LCDC_D19	/ VOP_BT1120_D10	/ GMAC1_RXER_M0	/ I2C5_SDA_M0	/ PDM_SDI1_M2	/ GPIO3_B4_d
LCDC_D20	/ VOP_BT1120_D11	/ GMAC1_TXD0_M0	/ I2C3_SCL_M1	/ PWM10_M0	/ GPIO3_B5_d
LCDC_D21	/ VOP_BT1120_D12	/ GMAC1_TXD1_M0	/ I2C3_SDA_M1	/ PWM11_IR_M0	/ GPIO3_B6_d
LCDC_D22	/ PWM12_M0	/ GMAC1_TXEN_M0	/ UART3_TX_M1	/ PDM_SDI2_M2	/ GPIO3_B7_d
LCDC_D23	/ PWM13_M0	/ GMAC1_MCLKINOUT_M0	/ UART3_RX_M1	/ PDM_SDI3_M2	/ GPIO3_C0_d
LCDC_HSYNC	/ VOP_BT1120_D13	/ SPI1_MOSI_M1	/ PCIE20_PERSTn_M1	/ I2S1_SD02_M2	/ GPIO3_C1_d
LCDC_VSYNC	/ VOP_BT1120_D14	/ SPI1_MISO_M1	/ UART5_TX_M1	/ I2S1_SD03_M2	/ GPIO3_C2_d
LCDC_DEN	/ VOP_BT1120_D15	/ SPI1_CLK_M1	/ UART5_RX_M1	/ I2S1_SCLK_RX_M2	/ GPIO3_C3_d
PWM14_M0	/ VOP_PWM_M1	/ GMAC1_MDC_M0	/ UART7_TX_M1	/ PDM_CLK1_M2	/ GPIO3_C4_d
PWM15_IR_M0	/ SPDIF_TX_M1	/ GMAC1_MDIO_M0	/ UART7_RX_M1	/ I2S1_LRCK_RX_M2	/ GPIO3_C5_d

RK3568

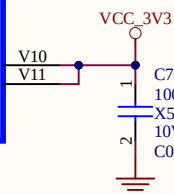
VCCIO5_1
VCCIO5_2

AG6 PCIE20_CLKREQn_M1
AD7 PCIE20_WAKEn_M1
AC8 GMAC0_INT/PMEB_GPIO2_D2
AC7 GMAC0_RSTN_GPIO2_D3
AF5 GMAC1_INT/PMEB_GPIO2_D4
AF6 GMAC1_RSTN_GPIO2_D5
AD6
AH5 GPIO2_D7

AH4
AB8
AE5
AC4 25GLAN0_PERSTn_GPIO3_A3
AF4 25GLAN1_PERSTn_GPIO3_A4
AH3 25GLAN2_PERSTn_GPIO3_A5
AC3
AH2
AC2

AG1
AF2
AF1 I2C5_SCL_M0
AE1 I2C5_SDA_M0
AE2 I2C3_SCL_M1
AE3 I2C3_SDA_M1
AD4 LAN_PWREN_GPIO3_B7_d
AD2

AD1 PCIE20_PERSTn_M1
AA7 UART5_TX_M1
AC4 UART5_RX_M1
AC3 UART7_TX_M1
AC2 UART7_RX_M1



Note:

If the power domain voltage is adjusted, the software configuration must be updated synchronously, otherwise the IO may be damaged!

Note:

Caps of between dashed green lines and U1000 should be placed under the U1000 package

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RK3568_H(VCCIO1 Domain)

U1H

VCCIO1 Domain

Operating Voltage=1.8V/3.3V

I2C3_SDA_M0	/ UART3_RX_M0	/ CAN1_RX_M0	/ AUDIOPWM_LOUT_P	/ ACODEC_ADC_DATA	/ GPIO1_A0_u
I2C3_SCL_M0	/ UART3_TX_M0	/ CAN1_TX_M0	/ AUDIOPWM_LOUT_N	/ ACODEC_ADC_CLK	/ GPIO1_A1_u
I2S1_MCLK_M0	/ UART3_RTSn_M0	/ SCR_CLK	/ PCIE30X1_PERSTn_M2		/ GPIO1_A2_d
I2S1_SCLK_TX_M0	/ UART3_CTSn_M0	/ SCR_IO	/ PCIE30X1_WAKEn_M2	/ ACODEC_DAC_CLK	/ GPIO1_A3_d
I2S1_SCLK_RX_M0	/ UART4_RX_M0	/ PDM_CLK1_M0	/ SPDIF_TX_M0		/ GPIO1_A4_d
I2S1_LRCK_TX_M0	/ UART4_RTSn_M0	/ SCR_RST	/ PCIE30X1_CLKREQn_M2	/ ACODEC_DAC_SYNC	/ GPIO1_A5_d
I2S1_LRCK_RX_M0	/ UART4_TX_M0	/ PDM_CLK0_M0	/ AUDIOPWM_ROUT_P		/ GPIO1_A6_d
I2S1_SDO0_M0	/ UART4_CTSn_M0	/ SCR_DET	/ AUDIOPWM_ROUT_N	/ ACODEC_DAC_DATA1	/ GPIO1_A7_d
I2S1_SDO1_M0	/ I2S1_SDI3_M0	/ PDM_SDI3_M0	/ PCIE20_CLKREQn_M2	/ ACODEC_DAC_DATA0	/ GPIO1_B0_d
I2S1_SDO2_M0	/ I2S1_SDI2_M0	/ PDM_SDI2_M0	/ PCIE20_WAKEn_M2	/ ACODEC_ADC_SYNC	/ GPIO1_B1_d
I2S1_SDO3_M0	/ I2S1_SDI1_M0	/ PDM_SDI1_M0	/ PCIE20_PERSTn_M2		/ GPIO1_B2_d
	I2S1_SDI0_M0	/ PDM_SDI0_M0			/ GPIO1_B3_d

RK3568

VCCIO1

D18
E18

A19

B19

F18

A20

C20

B20

D20

E20

A21

B21

» I2S1_MCLK_M0_RK809

» I2S1_SCLK_TX_M0_RK809

» I2S1_LRCK_TX_M0_RK809

» PDM_CLK0_M0_RK809

» I2S1_SDO0_M0_RK809

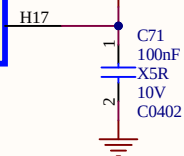
« I2S1_SDI0_M0/PDM_SDI0_M0_RK809

VCCIO_ACODEC

Default 3.3V

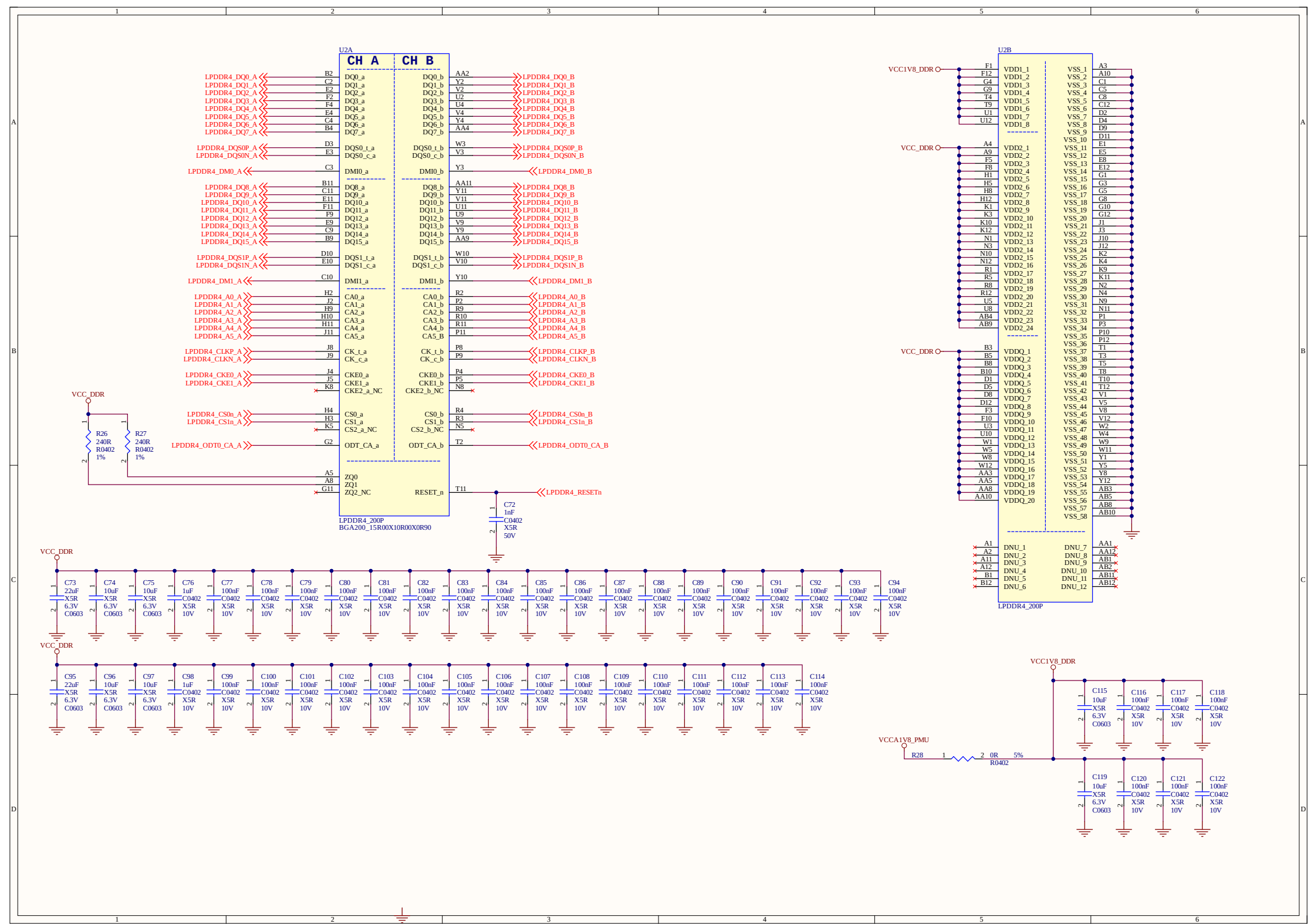
Note:

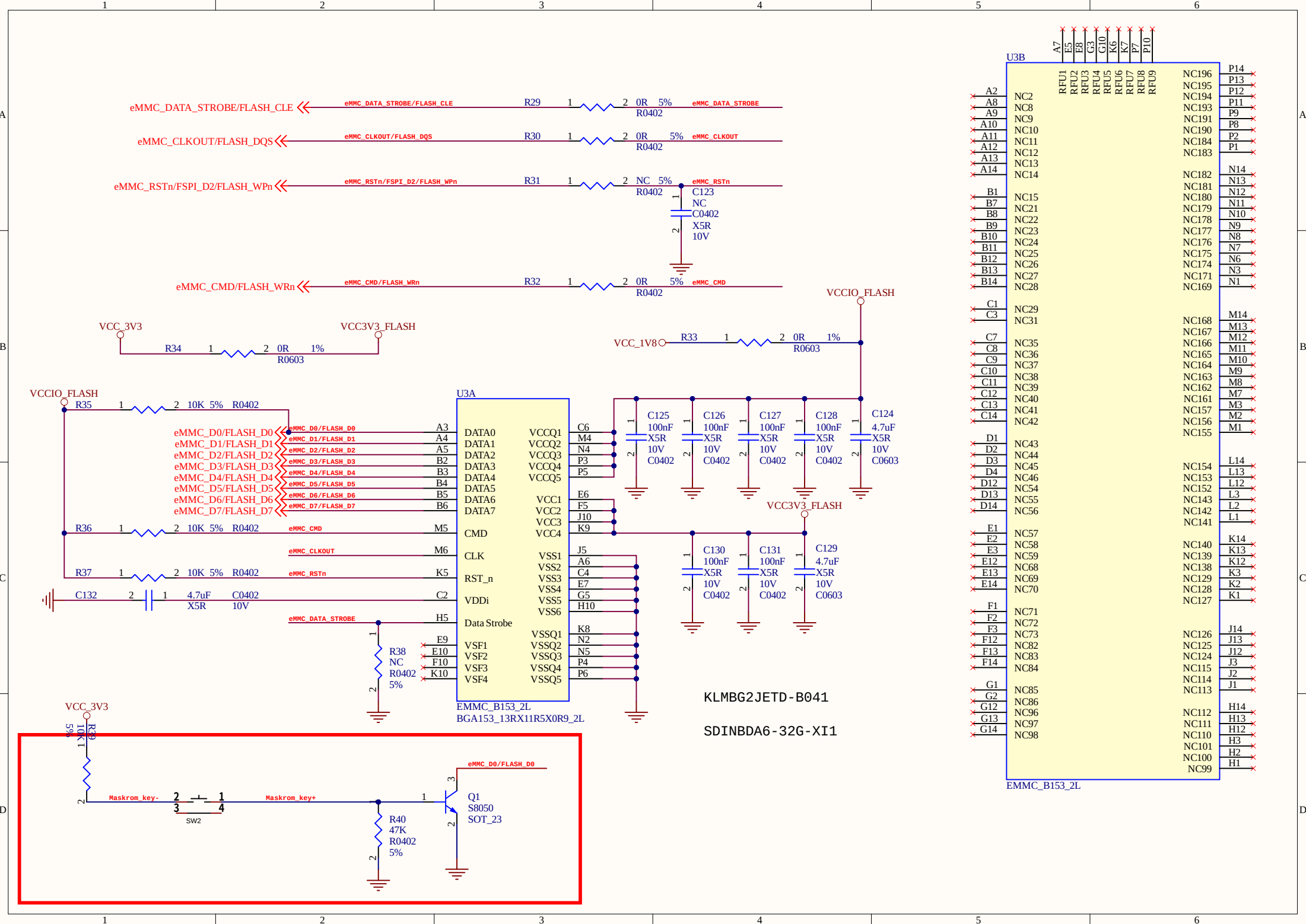
If the power domain voltage is adjusted, the software configuration must be updated synchronously, other wise the IO may be damaged!



Note:

Caps of between dashed green lines and U1000 should be placed under the U1000 package

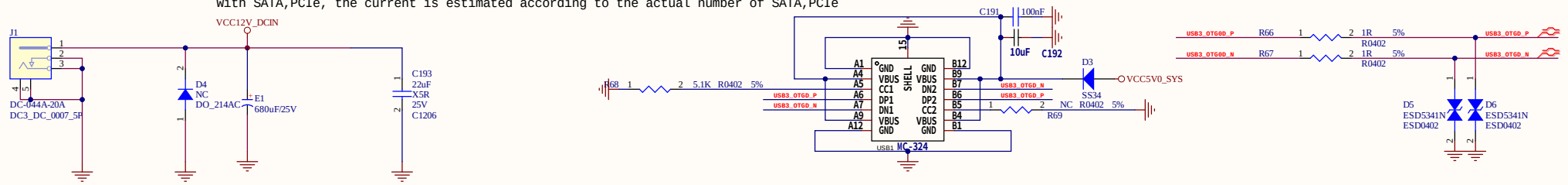




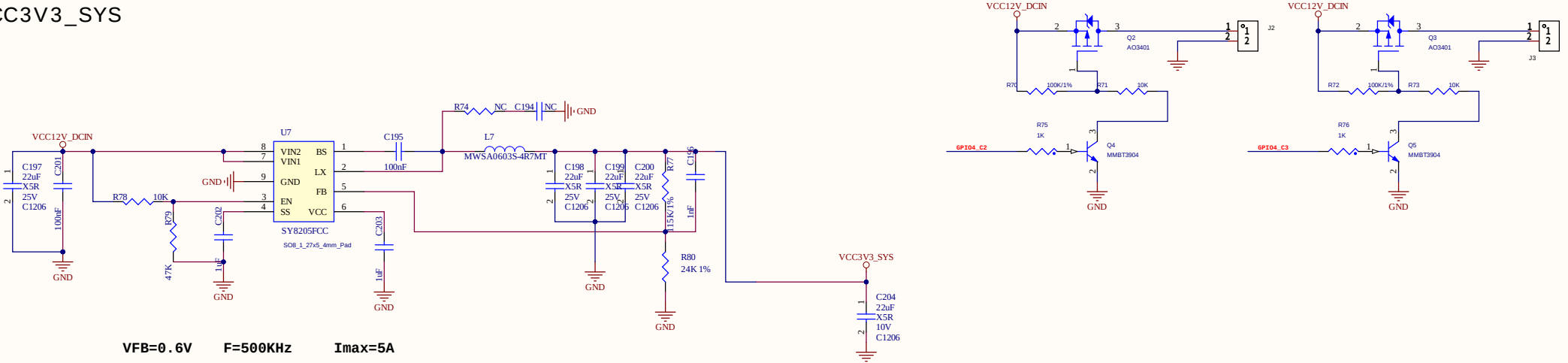
12V / 3A DC IN

Note:

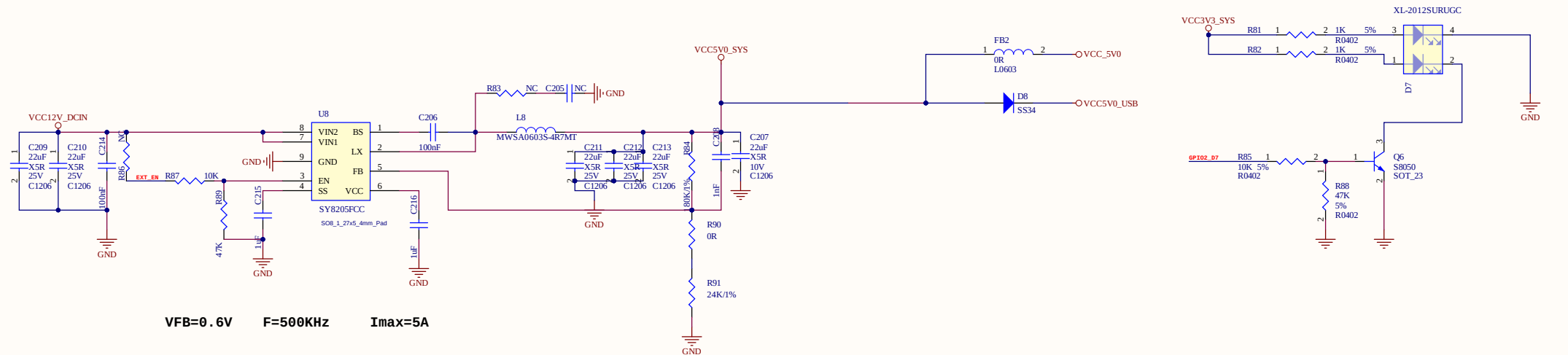
With SATA,PCIe, the current is estimated according to the actual number of SATA,PCIe

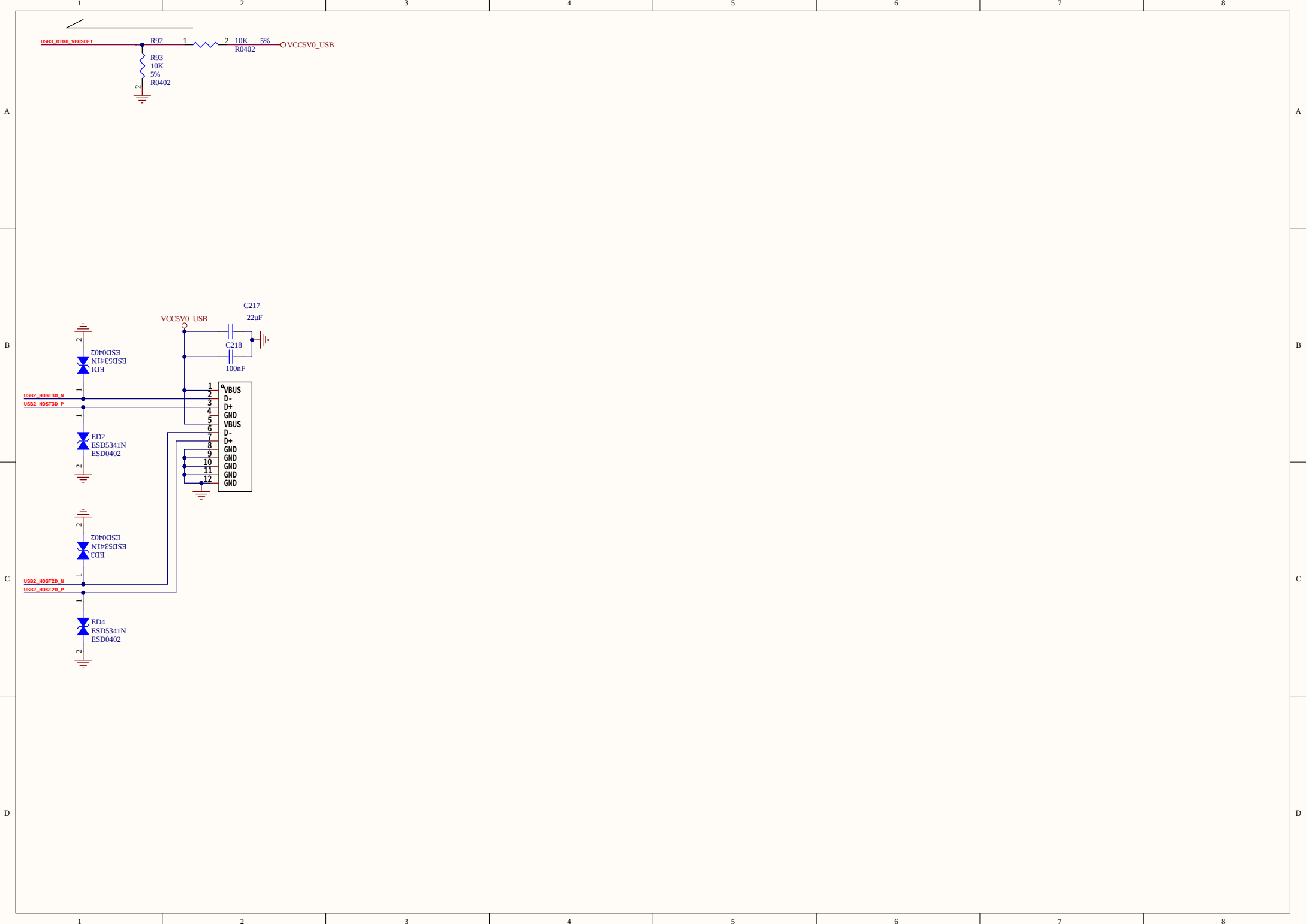


VCC3V3_SYS

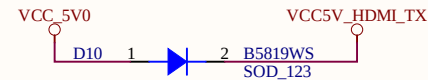
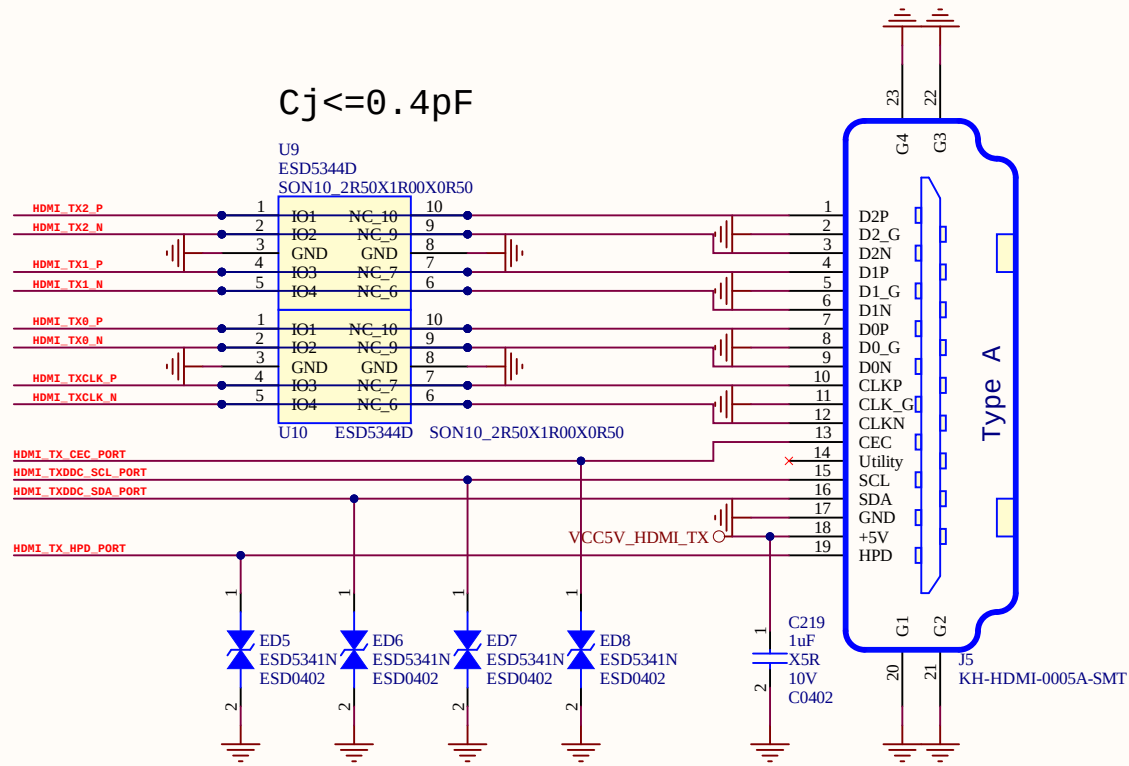
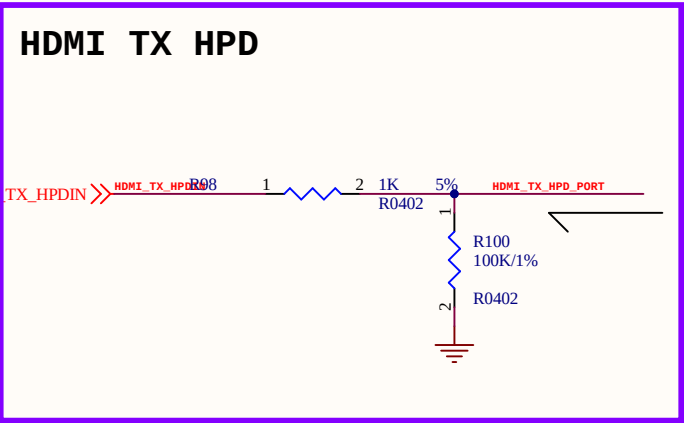
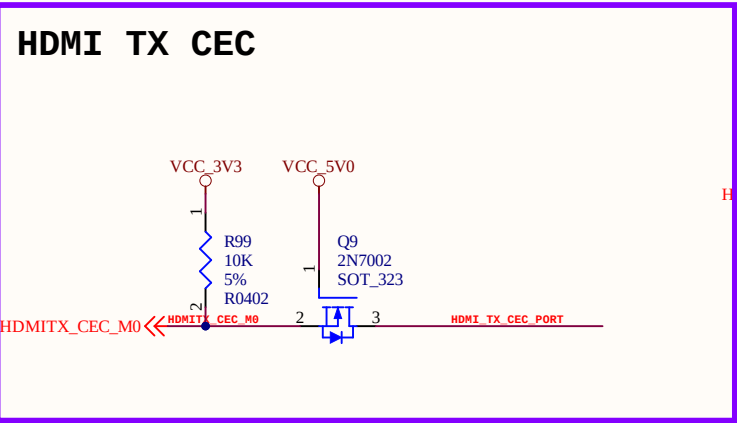
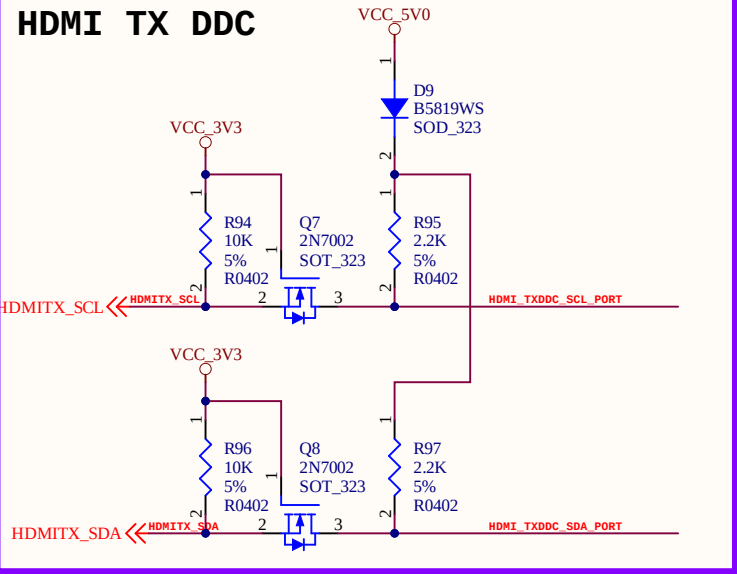


VCC5V0_SYS





HDMI2.0 TX



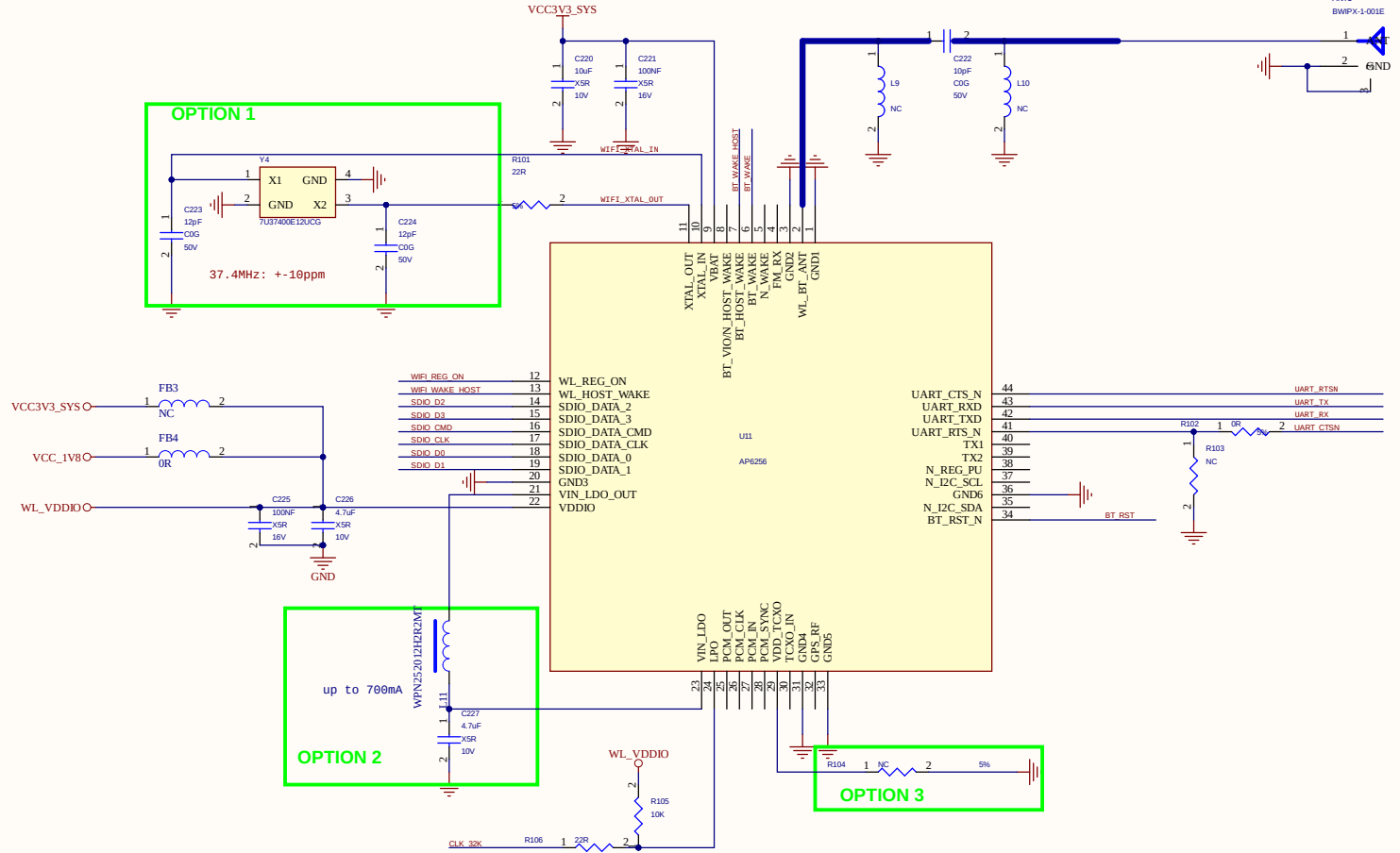
WIFI /BT Module

WIFI_WAKE_HOST << WIFI_WAKE_HOST_H_GPIO3_D4
WIFI_REG_ON << WIFI_REG_ON_H_GPIO3_D5
BT_RST << GPIO4_C4
BT_WAKE << VGA_PWREN_H_GPIO0_D5
BT_WAKE_HOST << GPIO0_D4

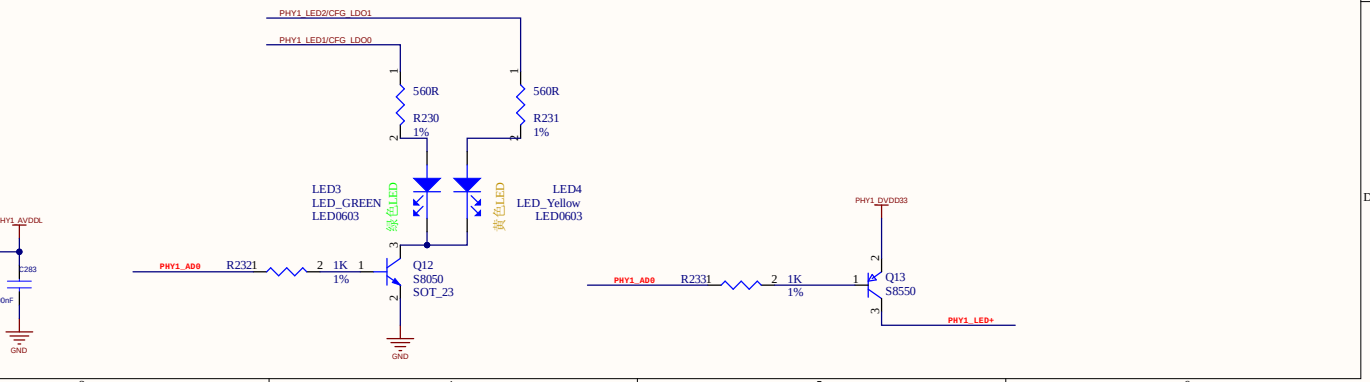
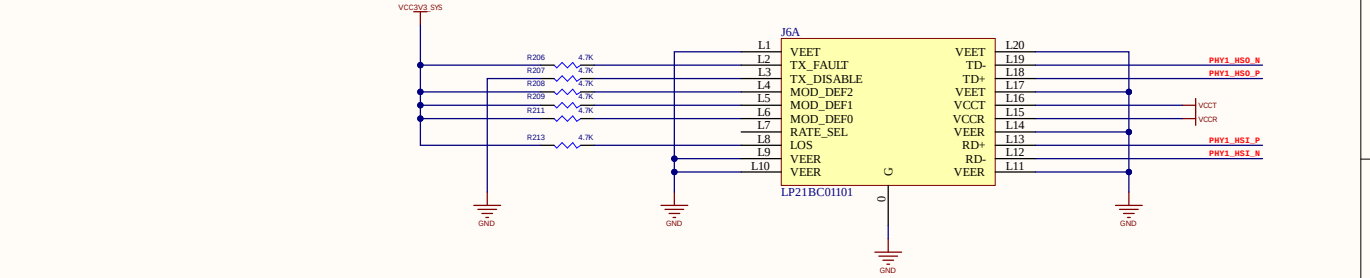
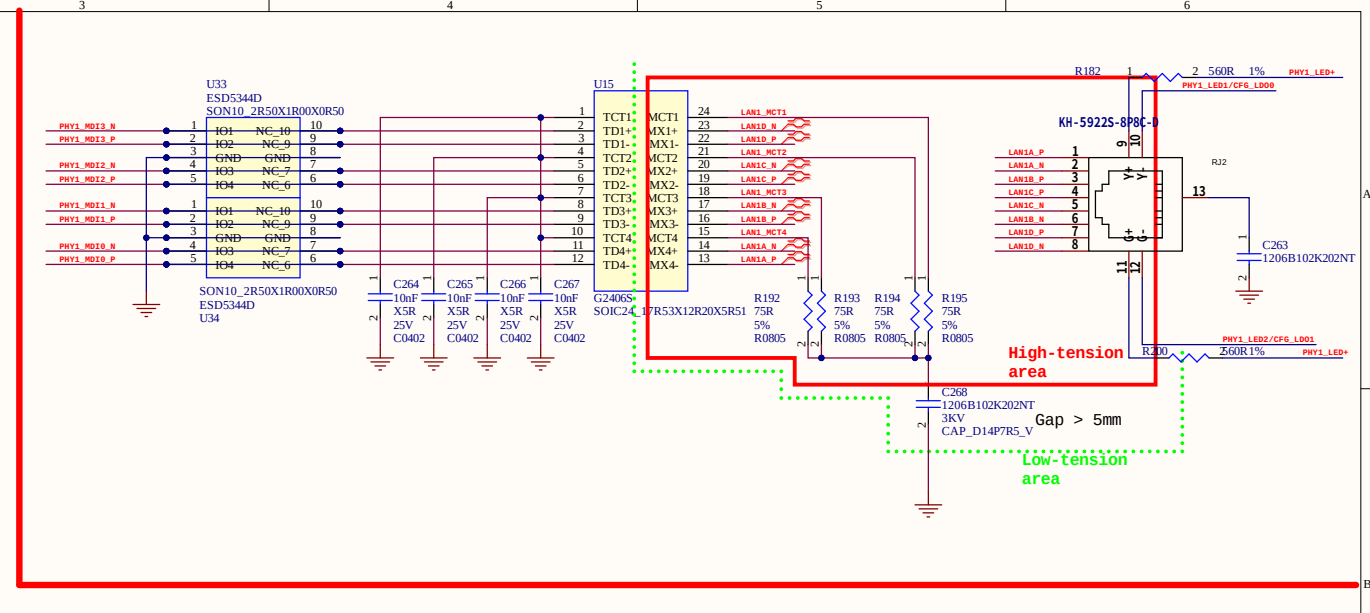
CLK_32K << RK809_CLK32KOUT

UART_RTSN << UART8_RTSn_M0
UART_CTSN << UART8_CTSn_M0
UART_TX << UART8_TX_M0
UART_RX << UART8_RX_M0

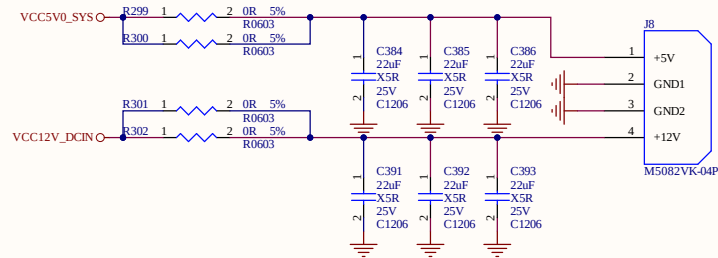
SDIO_D0 << SDMMC2_D0_M0
SDIO_D1 << SDMMC2_D1_M0
SDIO_D2 << SDMMC2_D2_M0
SDIO_D3 << SDMMC2_D3_M0
SDIO_CMD << SDMMC2_CMD_M0
SDIO_CLK << SDMMC2_CLK_M0



OPTION	WIFI				BT	Crystals	VCCIO_SDIO	OPTION1	OPTION2	OPTION3
	a	b/g/n	ac	5GHz						
AW-CM256SM	Yes	Yes	Yes	Yes	4.2	37.4MHz	1.71-3.63V	Yes	Yes	Yes@SDIO2.0 No@SDIO3.0
AP6236/AP6212	No	Yes	No	No	4.2/4.0	26MHz	1.71-3.63V	Yes	Yes	No
AP6256/AP6255	Yes	Yes	Yes	Yes	5.0/4.2	37.4MHz	1.62-3.63V	Yes	Yes	Yes@SDIO2.0 No@SDIO3.0

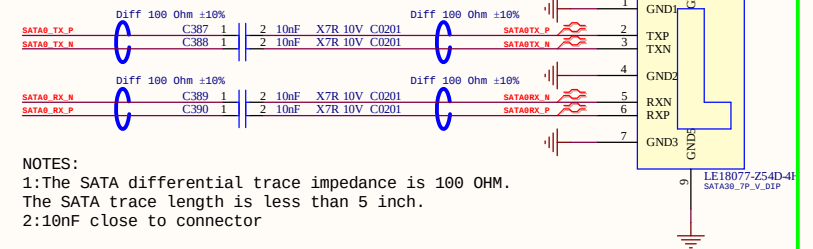


SATA Power



SATA3.0 Port0

And USB3 OTG0 option, Can support SATA0+USB2 OTG0

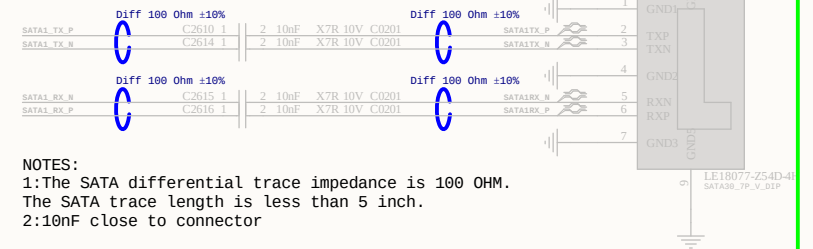


NOTES:

- 1:The SATA differential trace impedance is 100 OHM.
- 2:The SATA trace length is less than 5 inch.
- 2:10nF close to connector

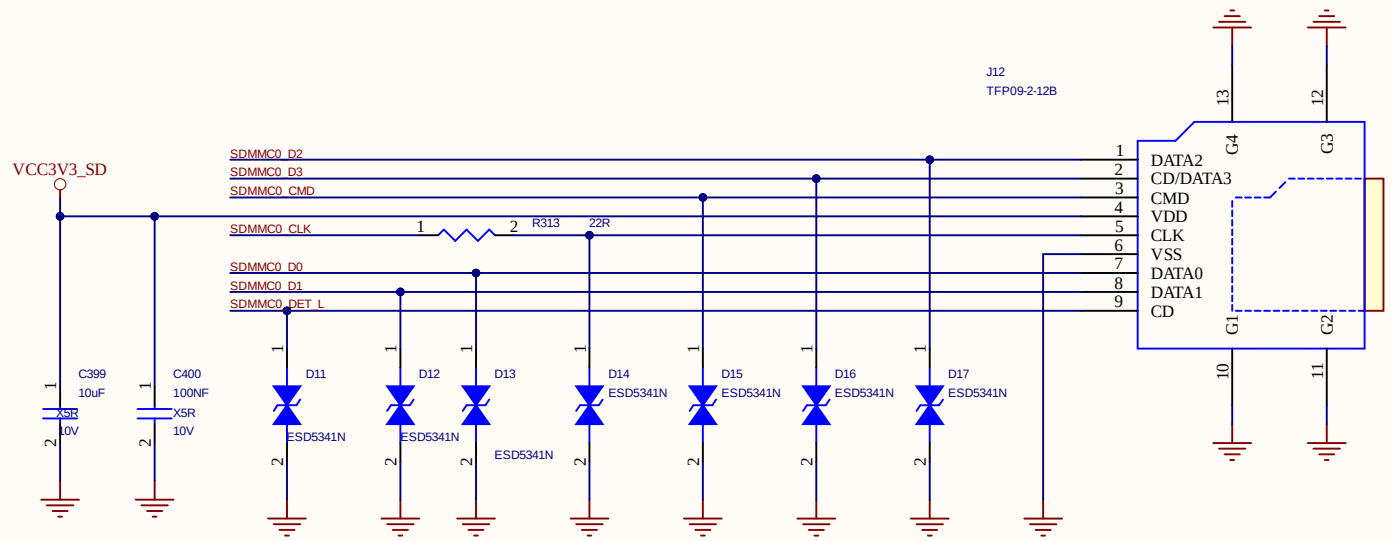
SATA3.0 Port1

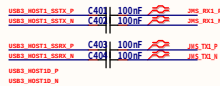
And USB3 OTG0 option, Can support SATA0+USB2 OTG0



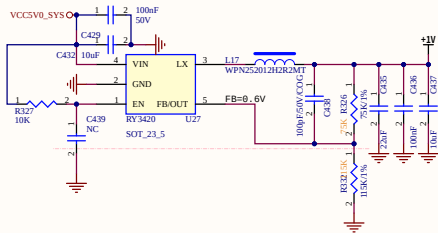
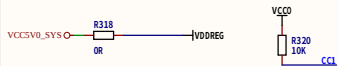
NOTES:

- 1:The SATA differential trace impedance is 100 OHM.
- 2:The SATA trace length is less than 5 inch.
- 2:10nF close to connector





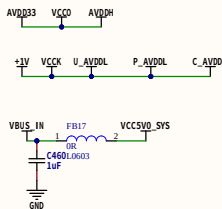
1对1对应是 TX2 RX2 C2
TX2 RX2 C2是一组
TX1 RX1 C1是一组
用的话用 TXQ RX1 C1组



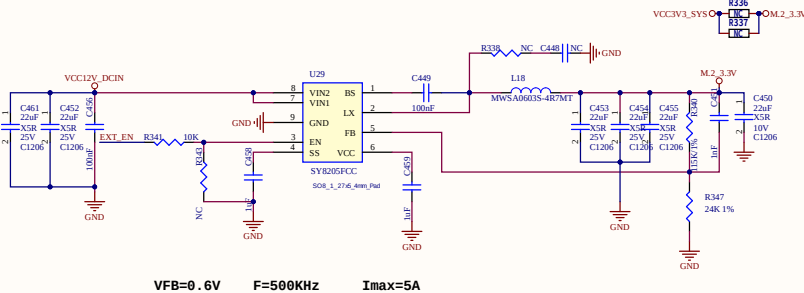
晶振



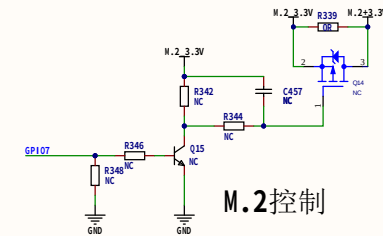
LED



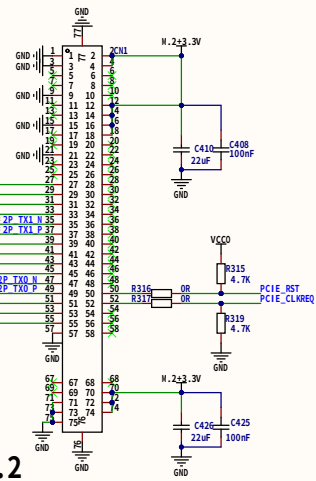
电源



VFB=0.6V F=500KHz I_{max}=5A



M.2控制



FLASH

Title			
Size	Number	Revision	
A2			
Date	B-14-2024	Sheet of	
File	G:\硬件开发资料\jms583 TO NVME\Rev001\	Rev001	

Board Stack Report