

野火RK3576鲁班猫3

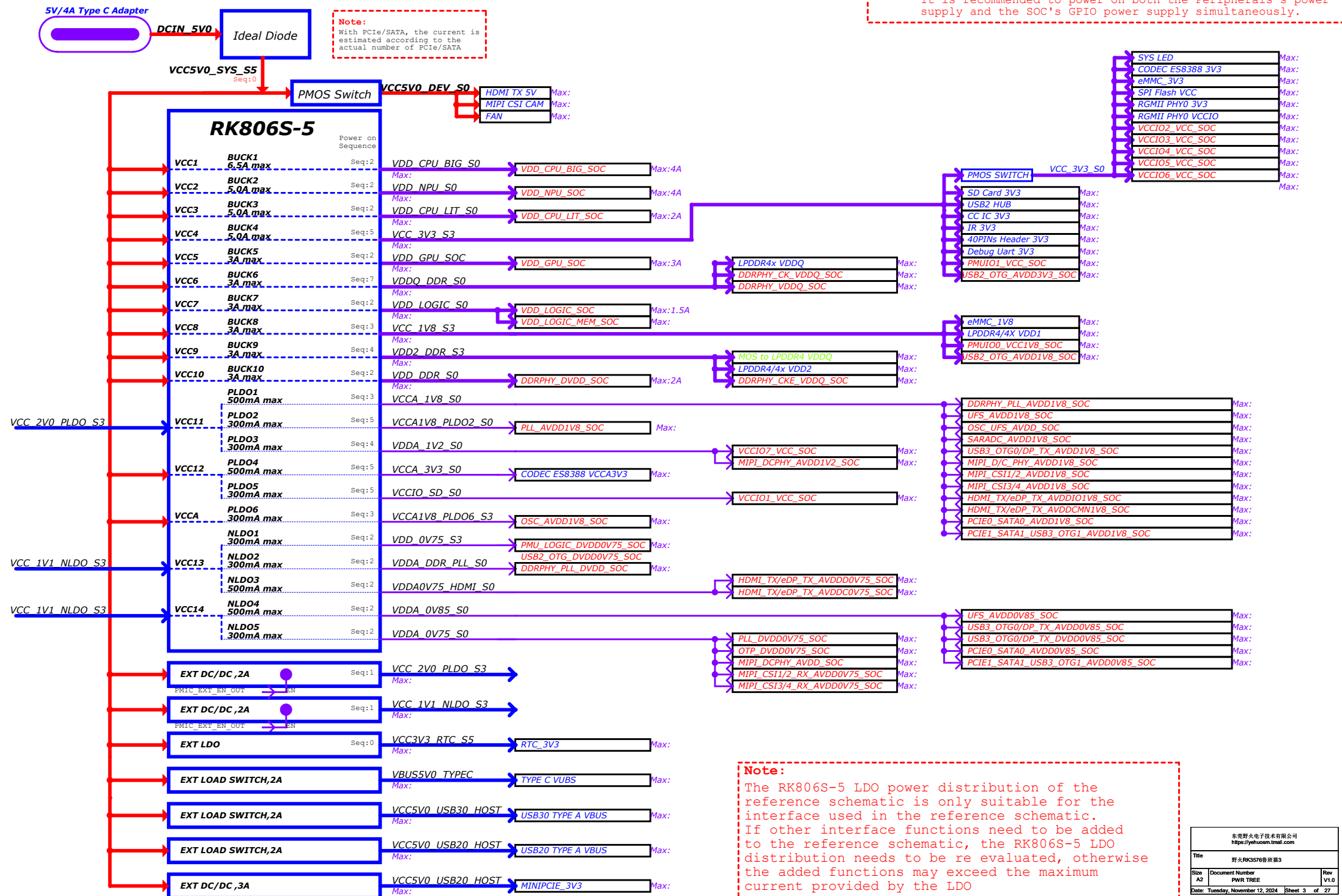
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历史版本

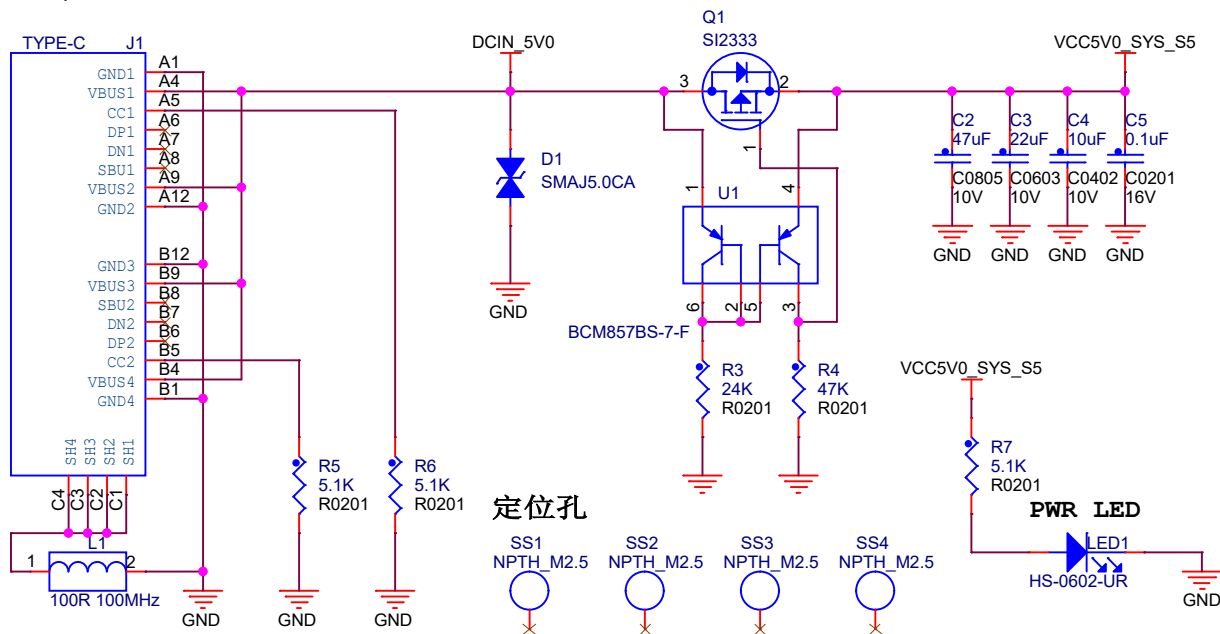
版本号	日期	设计	描述
V0.1	20240518	llm	初始版本, 开发阶段

Default Power Tree

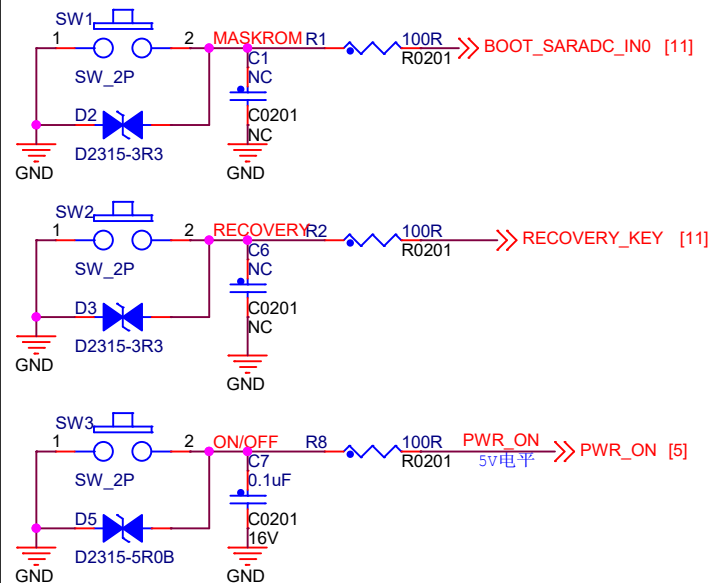
Note: Peripherals connected to the GPIO of SOC need to consider the leakage between the GPIO of SOC and the Peripherals. It is recommended to power on both the Peripherals's power supply and the SOC's GPIO power supply simultaneously.



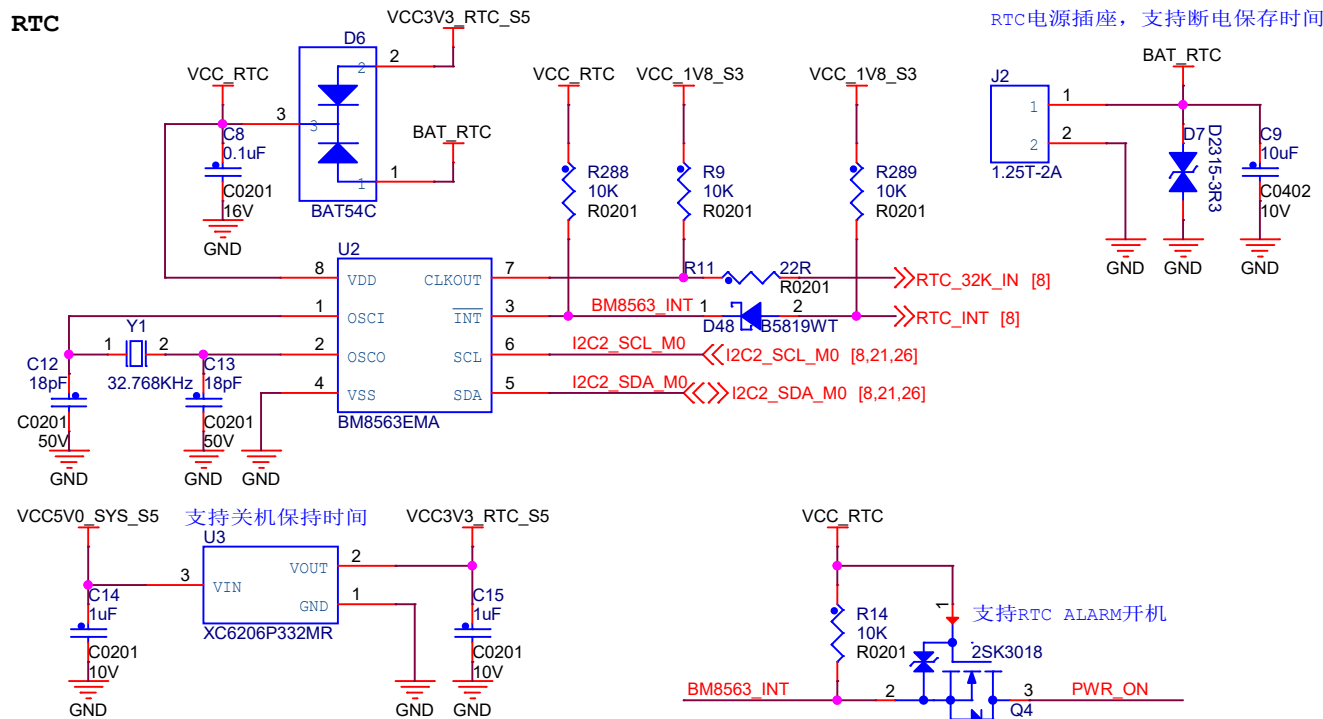
DC IN: 5V/4A



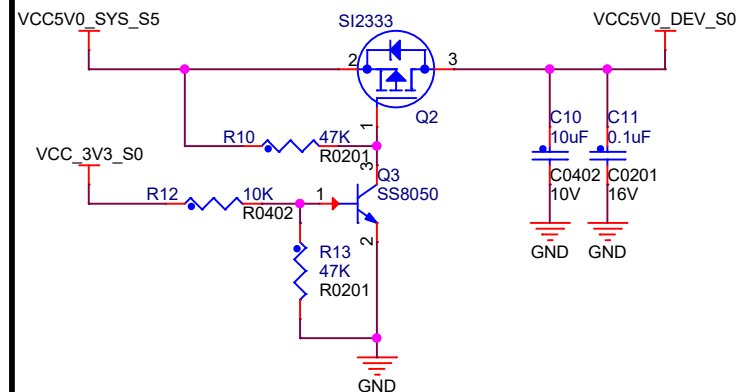
按键



RTC



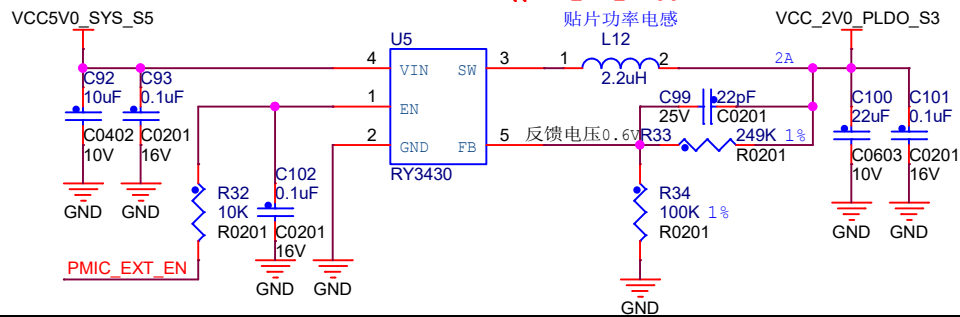
VCC5V0_DEV_S0



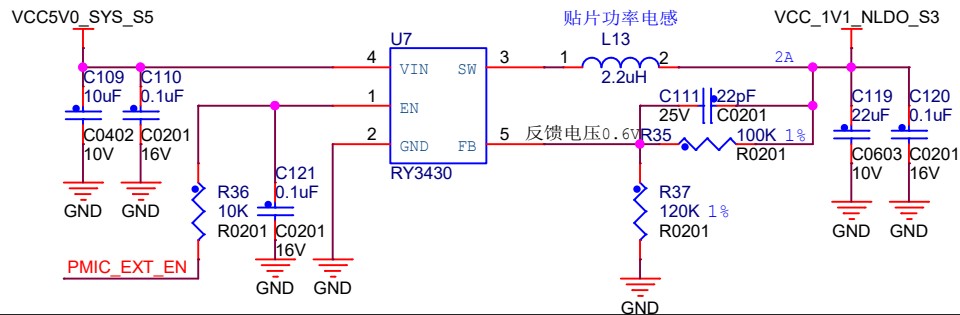
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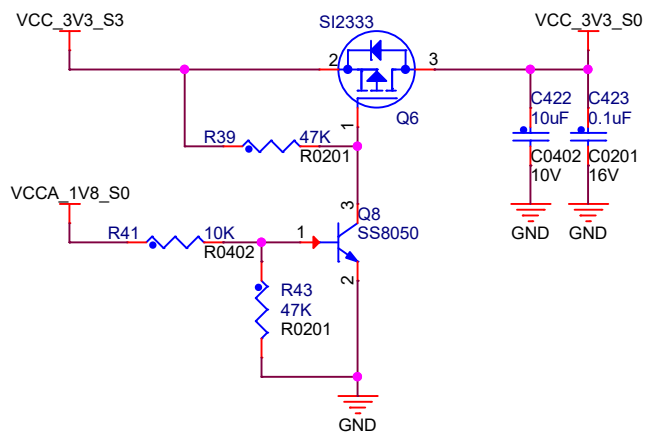
VCC_2V0_PLDO_S3



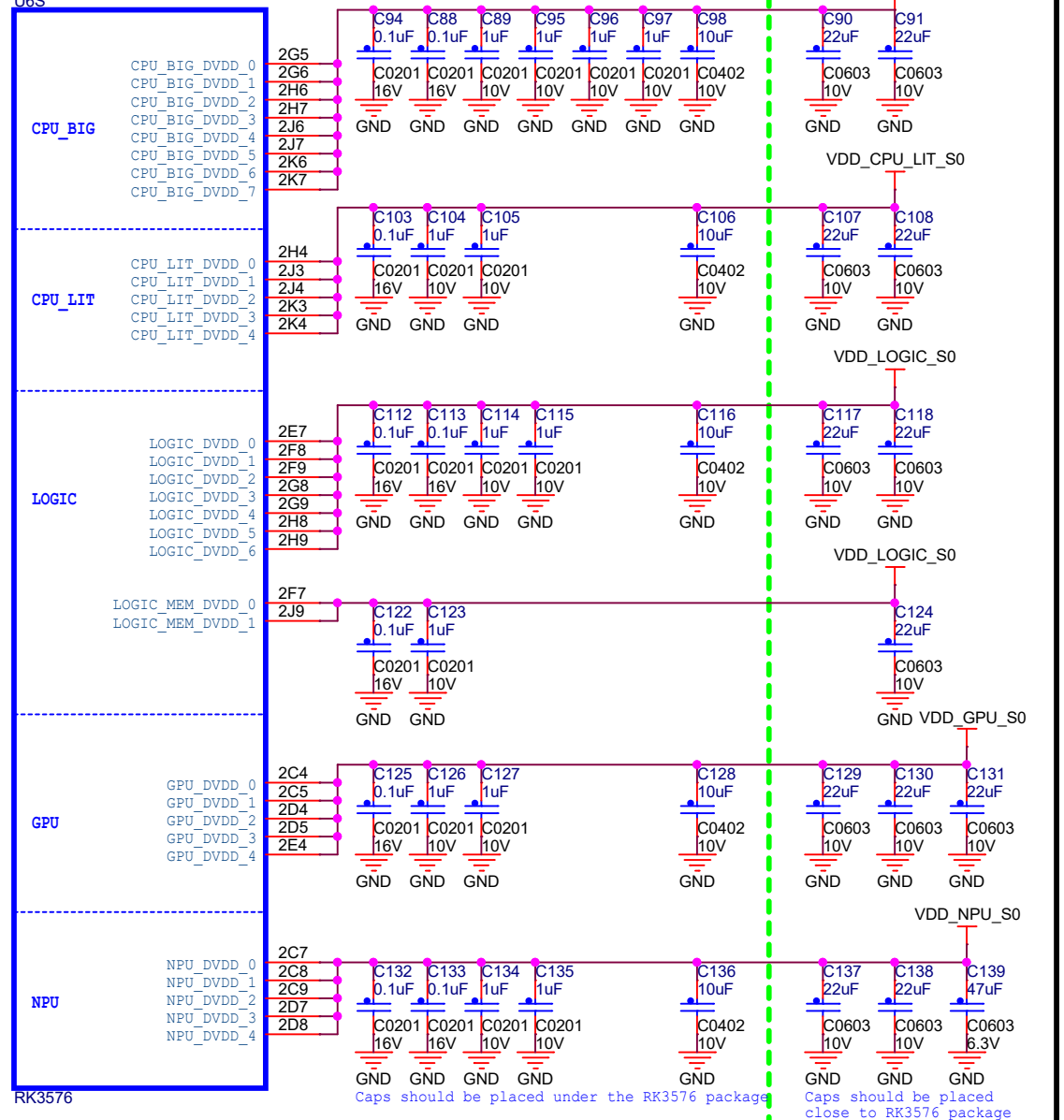
VCC_1V1_NLDO_S3



VCC_3V3_S0



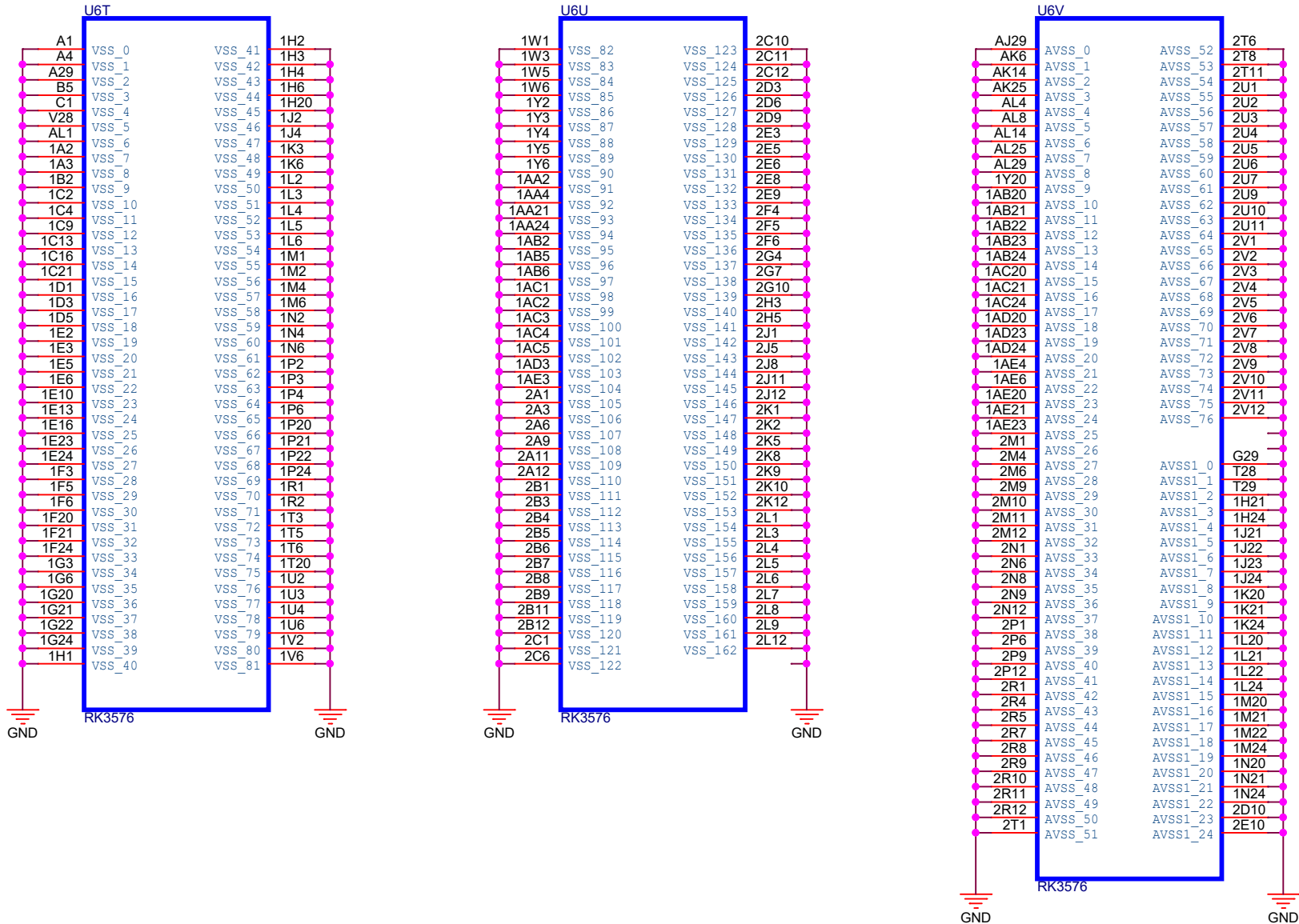
RK3576 POWER



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RK3576 GND



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RK3576 PMUIO0/1

Note:

TSADC_SHUT Control Path

RK806-1 Control Path

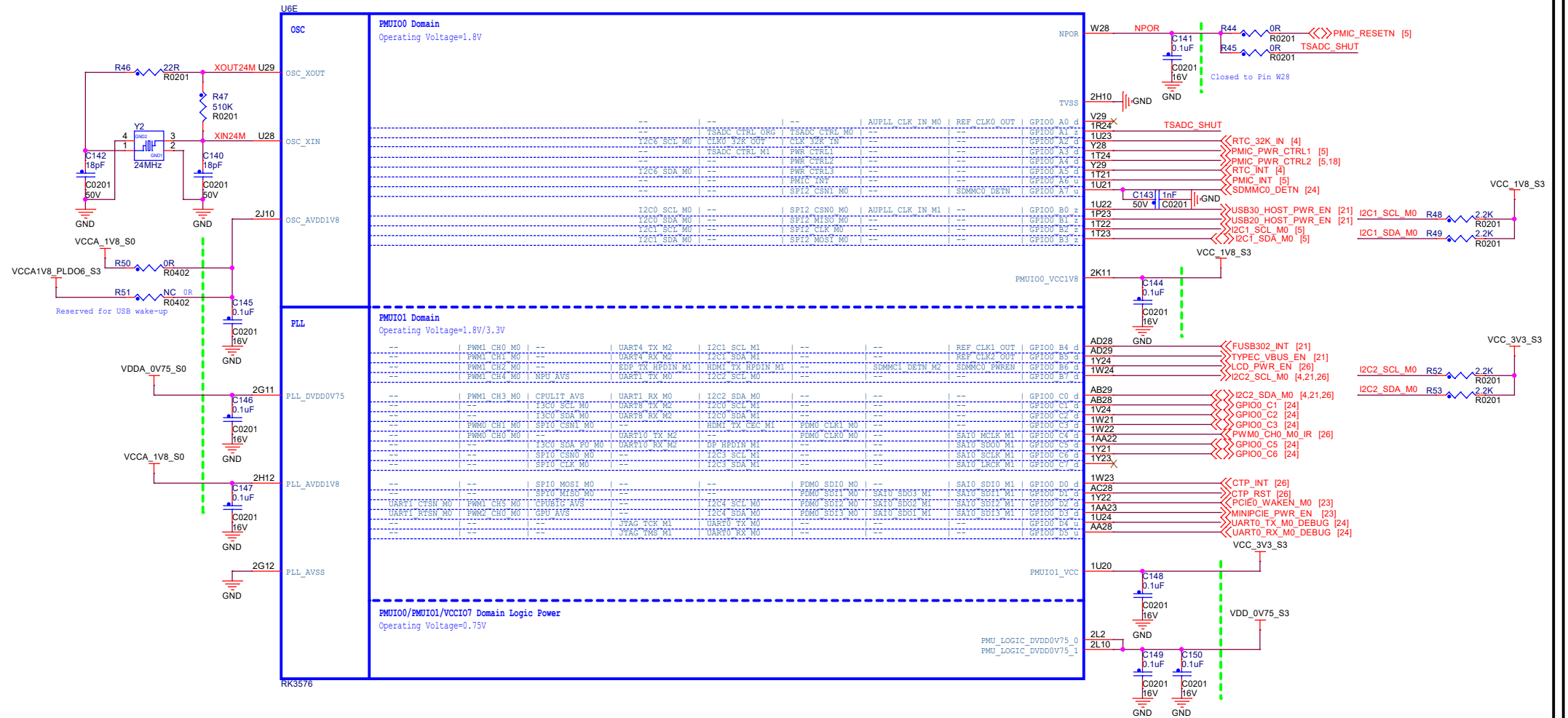
RK3588S

1005

TSADC_SHU

RK806-1

RESET



Note:

NOTE:
The Caps between green line and RK3576 should be placed under the RK3576 package. Other caps should be placed close to the RK3576 package

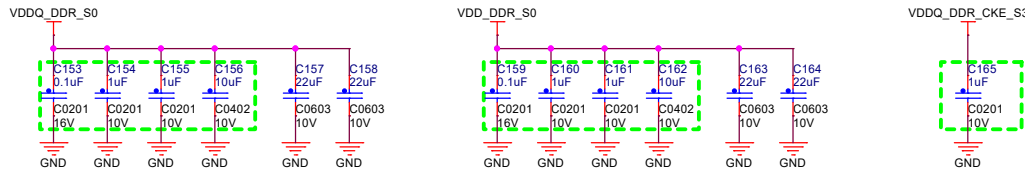
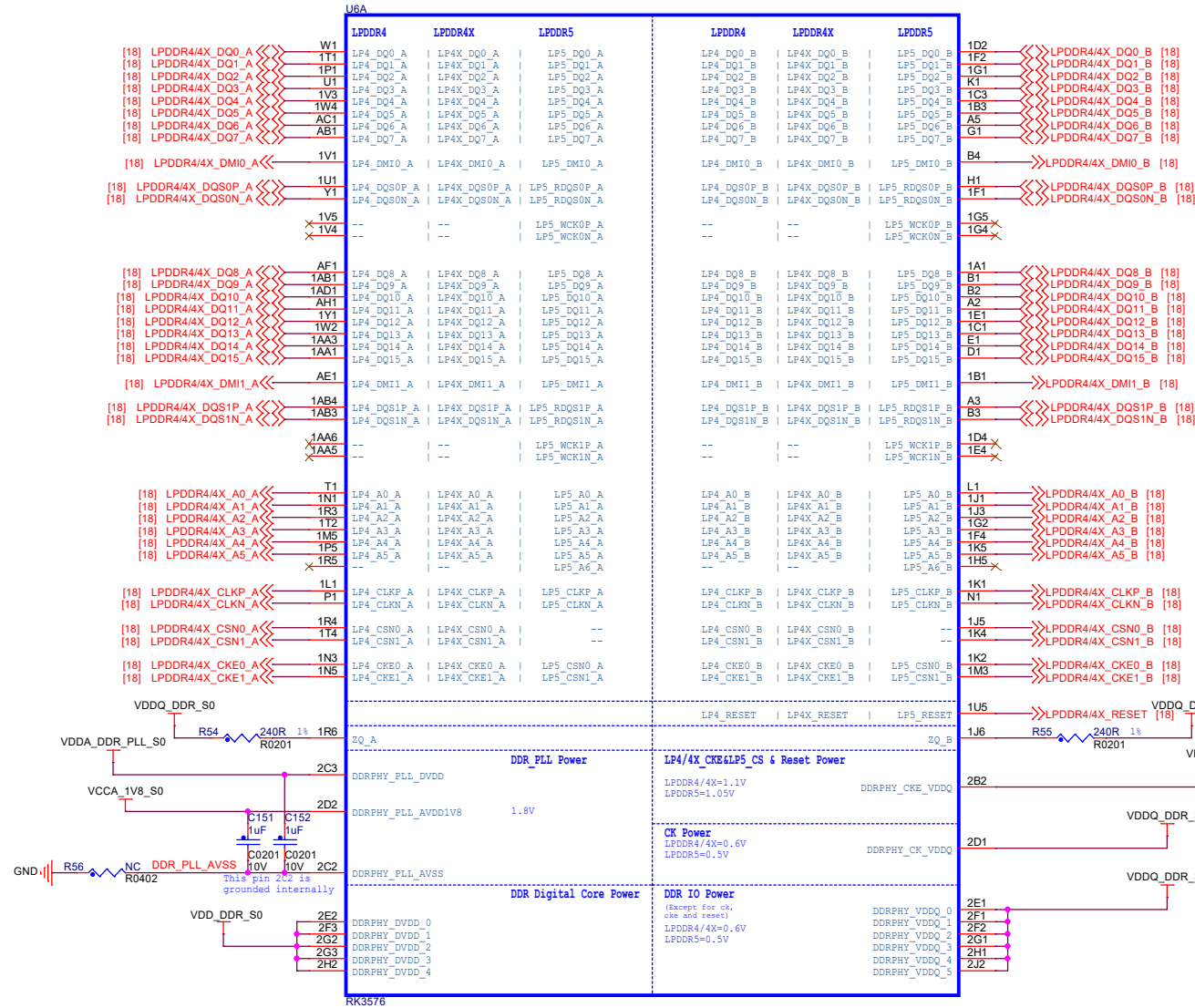
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RK3576 DDR CONTROLLER



Note:
Caps in the green line dotted box should be placed under the RK3576 package

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Title 野火RK3576鲁班猫3		
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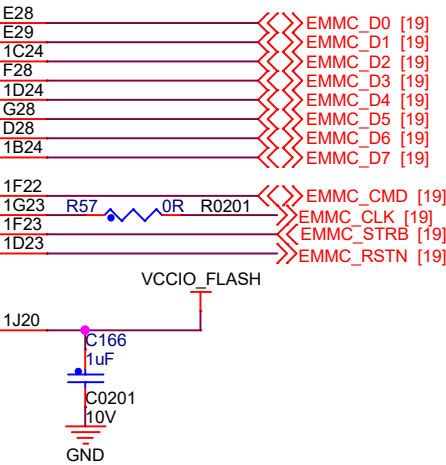
RK3576 VCCIO0

U6C

VCCIO0 Domain									
Operating Voltage=1.8V									
--	--	I2C2_SCL M1	UART7_RTSN M1	--	--	SAI0_SCLK M2	FSPI0_D0	EMMC D0	GPIO1_A0 u
--	--	I2C2_SDA M1	UART7_CTSN M1	--	--	SAI0_LRCK M2	FSPI0_D1	EMMC D1	GPIO1_A1 u
--	--	UART6_RTSN M2	UART7_TX M1	PDM0_SDI3 M1	SAI0_SDI3 M2	SAI0_SDO1 M2	FSPI0_D2	EMMC D2	GPIO1_A2 u
--	--	UART6_CTSN M2	UART7_RX M1	PDM0_SDI1 M1	SAI0_SDI2 M2	SAI0_SDO2 M2	FSPI0_D3	EMMC D3	GPIO1_A3 u
--	--	--	SPI0_CSNO M2	--	SAI3_MCLK M0	SAI0_MCLK M2	--	EMMC D4	GPIO1_A4 u
--	--	I2C9_SCL M0	SPI0_MOSI M2	PDM0_SDI2 M1	SAI3_SCLK M0	--	--	EMMC D5	GPIO1_A5 u
--	--	I2C9_SDA M0	SPI0_MISO M2	PDM0_CLKI M1	SAI3_LRCK M0	--	--	EMMC D6	GPIO1_A6 u
--	--	--	SPI0_CLK M2	--	SAI3_SDI M0	SAI0_SDO0 M2	--	EMMC D7	GPIO1_A7 u
--	--	I2C7_SCL M0	UART6_TX M2	--	--	FSPI0_CSN1	FSPI0_RSTN	EMMC_CMD	GPIO1_B0 u
PWM2_CH7 M1	--	--	--	PDM0_CLKO M1	SAI0_SDI1 M2	SAI0_SDO3 M2	FSPI0_CLK	EMMC_CLK	GPIO1_B1 d
--	--	--	--	SPI0_CSNI M2	PDM0_SDI0 M1	SAI3_SDO M0	SAI0_SDI0 M2	--	EMMC_STRB
PWM2_CH1 M0	MIPI_TE M3	I2C7_SDA M0	UART6_RX M2	--	--	--	FSPI0_CSN0	EMMC_RSTN	GPIO1_B3 u
VCCIO0_VCC1V8									

RK3576

VCCIO0_VCC1V8



RK3576 UFS

U6B

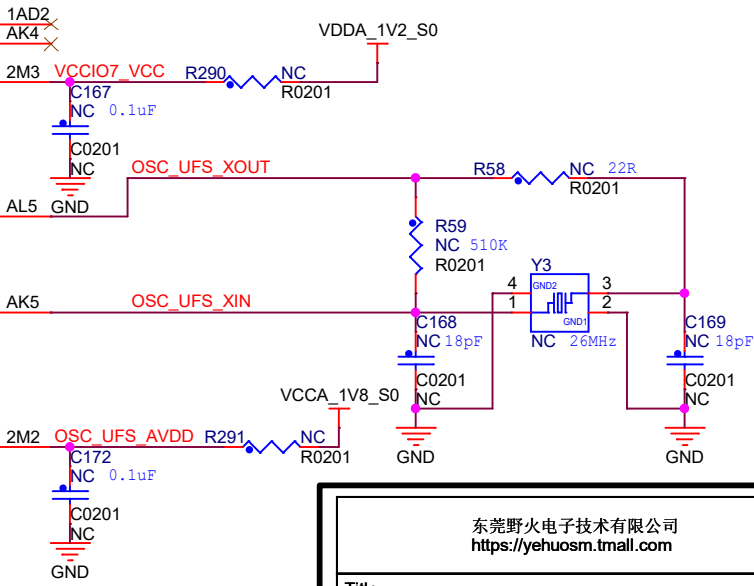
UFS2.0	
PWM-G1/G2/G3/G4	
HS-G1/G2/G3	
UFS_TX_D0P	1AD6
UFS_TX_D0N	1AC6
UFS_TX_D1P	1AD4
UFS_TX_D1N	1AD5
UFS_RX_D0P	AK8
UFS_RX_D0N	AL7
UFS_RX_D1P	AK7
UFS_RX_D1N	AL6
UFS_TX_REXT	2R2
UFS_TX_REXT	R60
UFS_AVDD0V85	2N2
UFS_AVDD0V85	C170
UFS_AVDD0V85	C171
UFS_AVDD1V8	2P2
UFS_AVDD1V8	C173
UFS_AVDD1V8	C174

RK3576

U6K

VCCIO7 Domain	
Operating Voltage=1.2V/1.8V	
UFS_RSTN	GPIO4_D0 d
UFS_REFCLK	GPIO4_D1 d
VCCIO7_VCC	
OSC for UFS	
Operating Voltage=1.2V/1.8V	
OSC_UFS_XOUT	
OSC_UFS_XIN	
OSC_UFS_AVDD	

RK3576



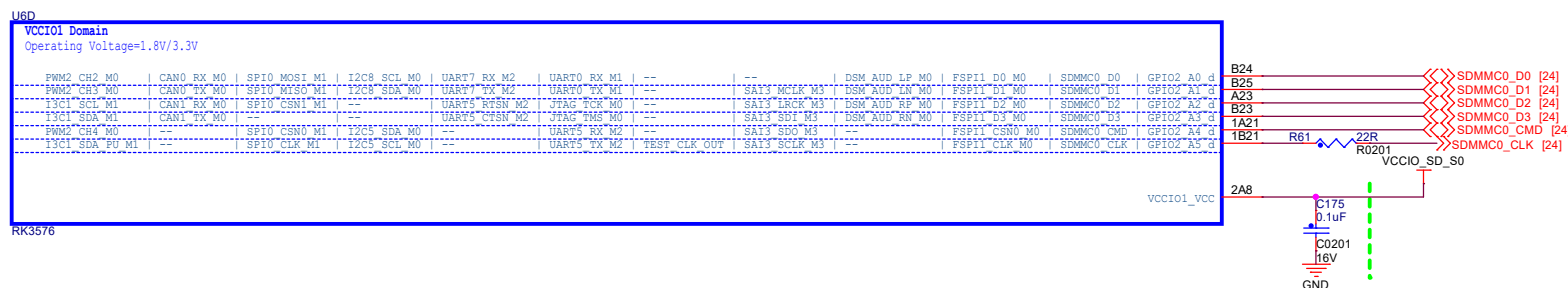
Note:

The Caps between green line and RK3576 should be placed under the RK3576 package. Other caps should be placed close to the RK3576 package

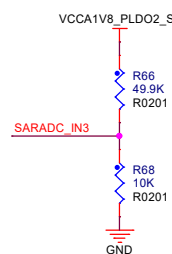
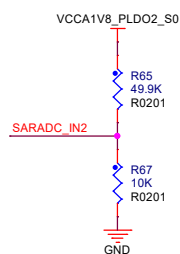
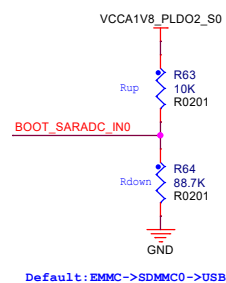
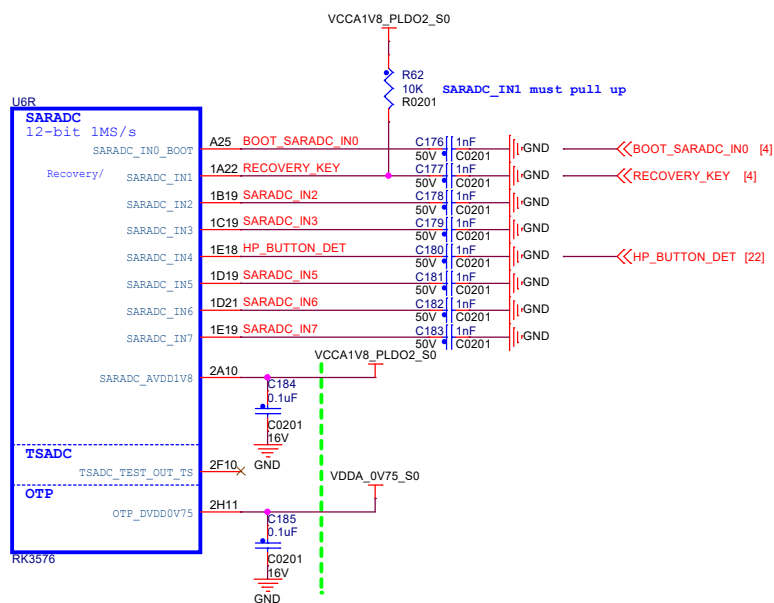
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Title		
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Size	Document Number	Rev
A4	RK3576 VCCIO0/UFS	V1.0
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RK3576 VCCI01



RK3576 SARADC



Board ID:0x0000 电压值: VIN2:0.3V VIN3:0.3V ADC值:VIN2:682 VIN3:682

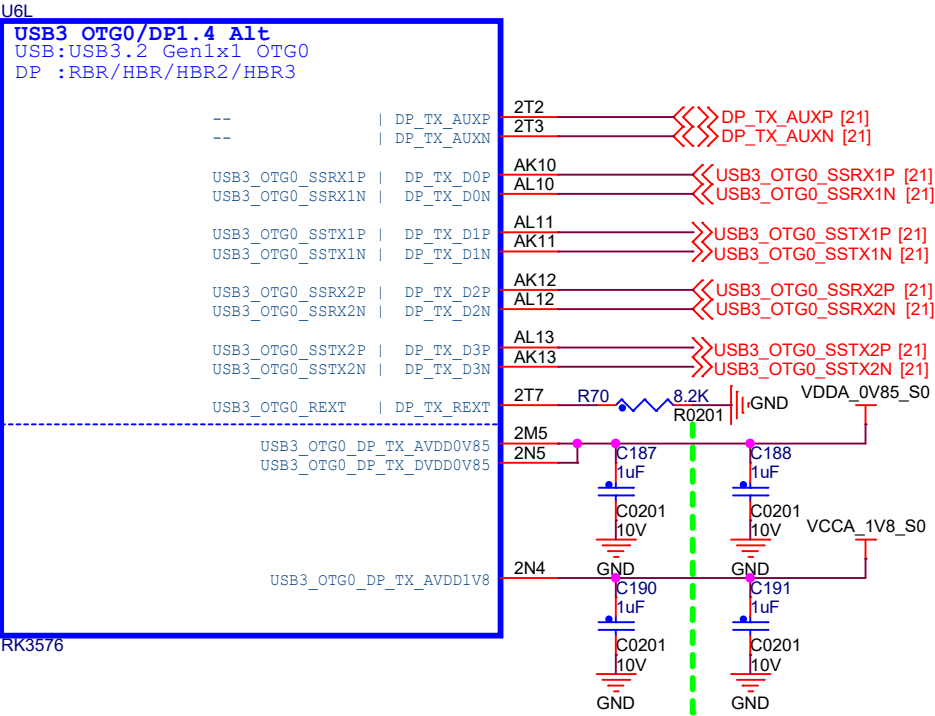
BOOT MODE CONFIG

Config Table for SARADC_VIN0_BOOT

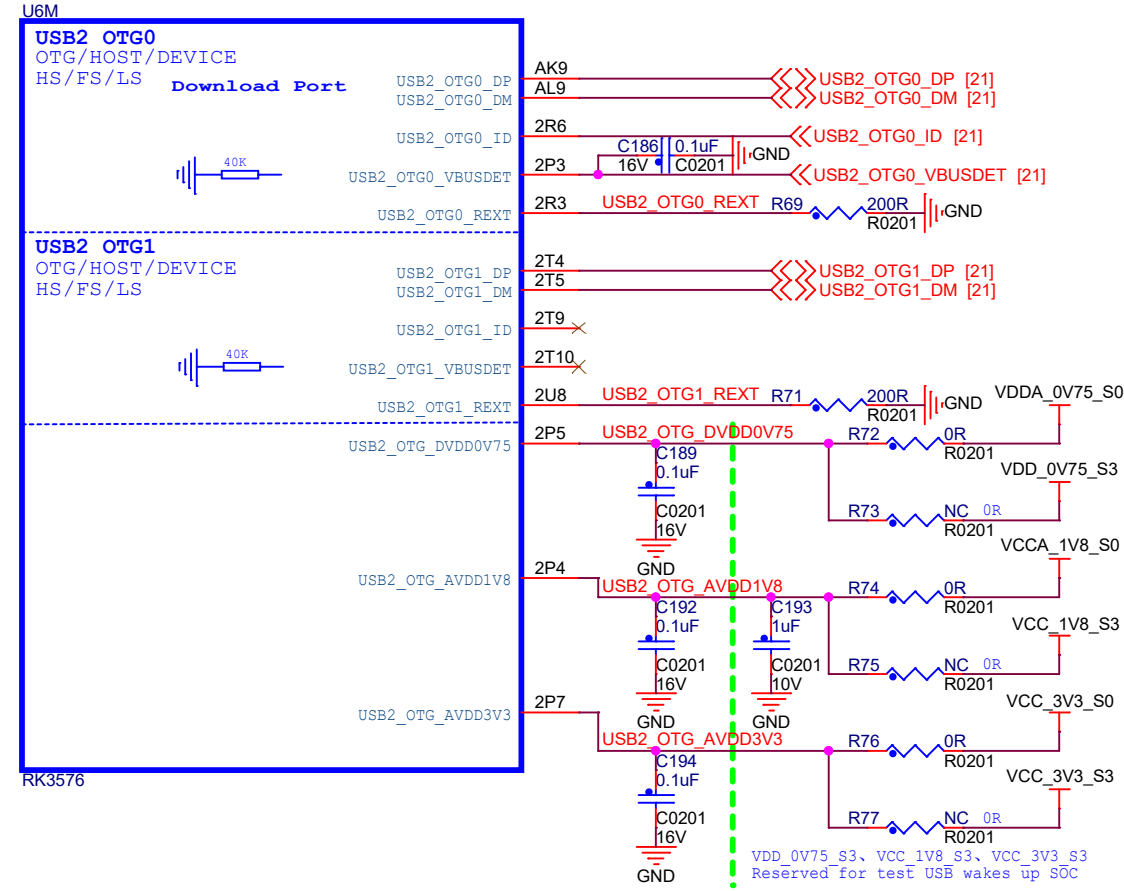
Item	Rup	Rdown	ADC	VOL	BOOT MODE
CONFIG1	NC	10K	0	0V	USB (Maskrom mode)
CONFIG2	10K	1.13K	416	0.18V	FSPIO->USB
CONFIG3	10K	2.49K	816	0.36V	FSPI1_M0->EMMC->USB
CONFIG4	10K	4.3K	1231	0.54V	FSPI1_M1->EMMC->USB
CONFIG5	10K	6.8K	1658	0.73V	FSPIO->USF->USB
CONFIG6	10K	10K	2048	0.90V	FSPI1_M0->UFS->USB
CONFIG7	10K	14.7K	2437	1.07V	UFS->USB
CONFIG8	10K	23.2K	2862	1.27V	UFS->SDMMC0->USB
CONFIG9	10K	40.2K	3279	1.44V	RFU
CONFIG10	10K	88.7K	3680	1.62V	EMMC->SDMMC0->USB
CONFIG11	10K	NC	4095	1.80V	EMMC->USB

Note:
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RK3576 USB3/DP

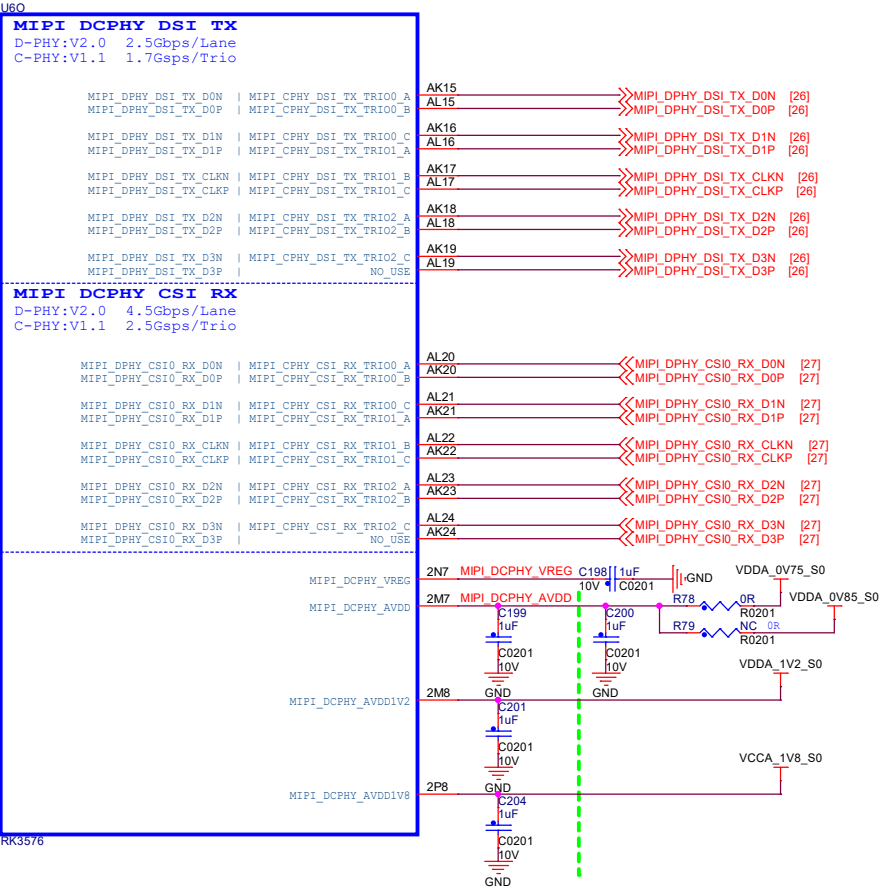


RK3576 USB2

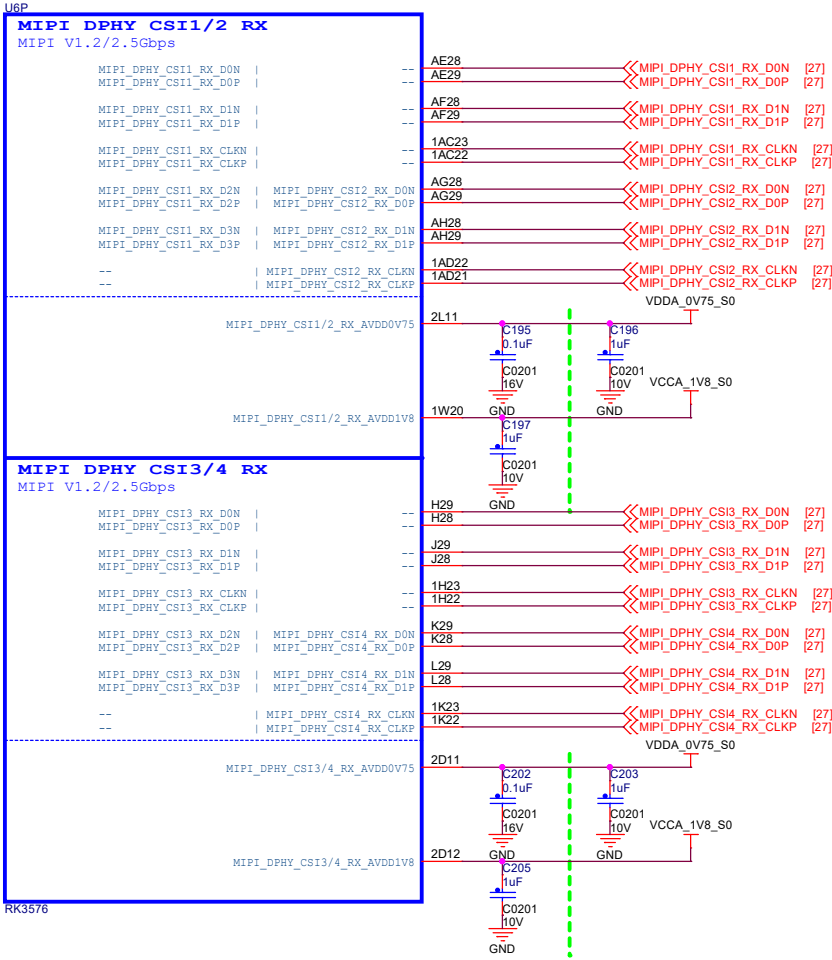


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Title 野火RK3576鲁班猫3		
Size A4	Document Number RK3576 USB3/DP/USB2	Rev V1.0
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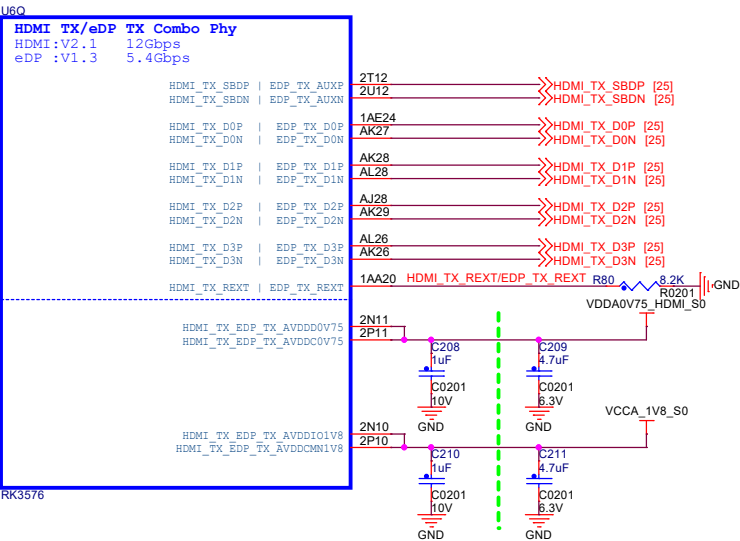
RK3576 MIPI DCPHY



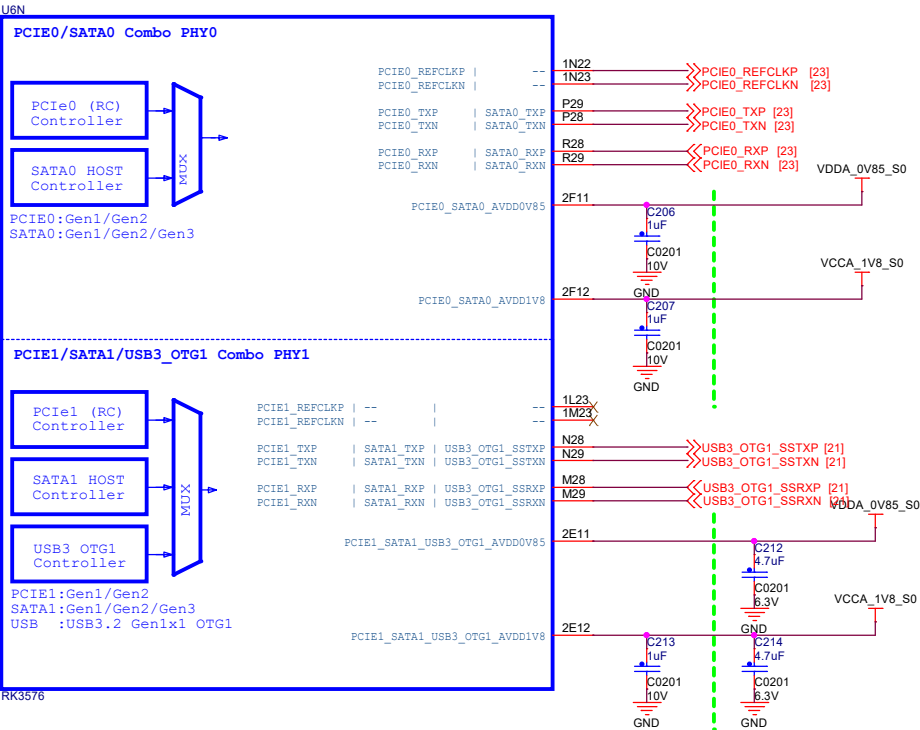
RK3576 MIPI DPHY CSI RX



RK3576 HDMI TX/EDP



RK3576 PCIE/SATA



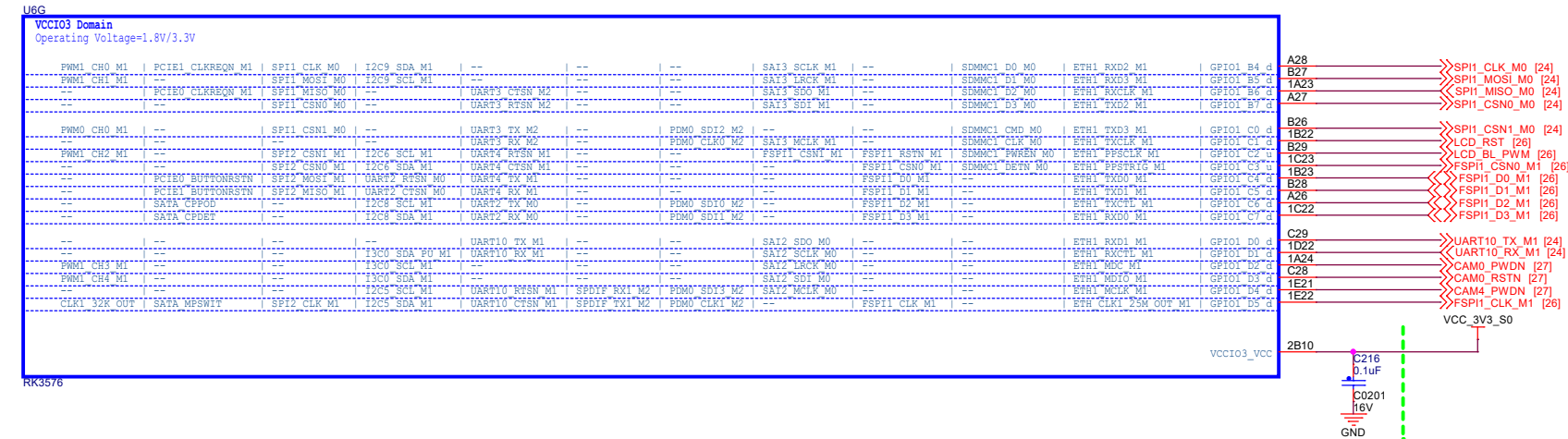
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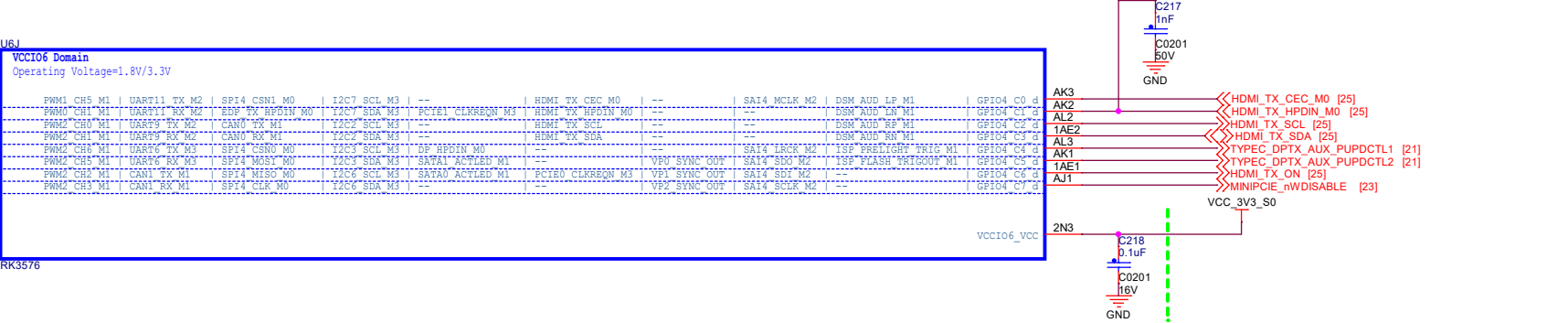
Size	Document Number	Rev
A3	RK3576 HDM/EDP/PCIE/SATA	V1.0

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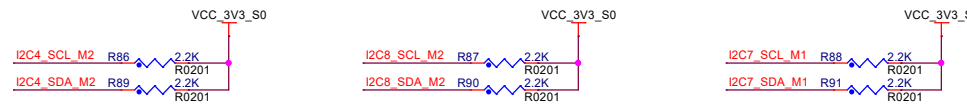
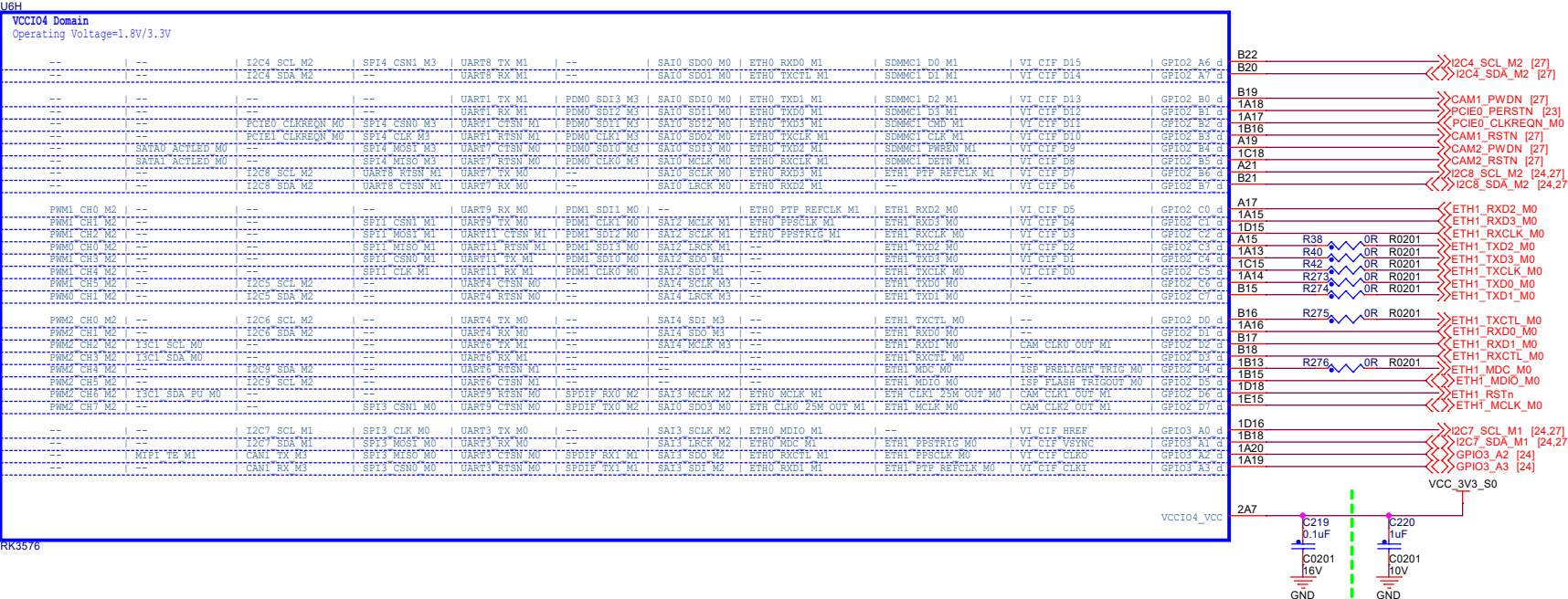
RK3576 VCCI03



RK3576 VCCIO6



RK3576 VCCIO4



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RK3576 VCCIO5

U61

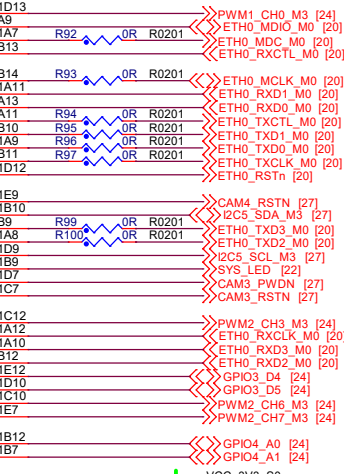
VCCIO5 Domain

Operating Voltage=1.8V/3.3V

PWM1_CH0_M3	--	SPI2_CLK_M2	UART1_CTSN_M2	FLEXBUS0_CSN_M0	--	FLEXBUS1_D11	DSMC_R0VW	SAI4_SDI_M1	ETH_CLK0_25M_OUT_M0	VO_EBC_SDSHR	VO_LCDC_D23	GPIO3_A4_d
PWM1_CH1_M3	--	SPI2_CSNT_M2	UART1_RTSN_M2	--	FLEXBUS0_D1	DSMC_D0VW1	DSMC_D0VW1	PWM1_SDI1_M2	ETH_RXD0_M0	VO_EBC_SDSF	VO_LCDC_D22	GPIO3_A5_d
PWM1_CH2_M3	--	UART10_R0VW_M0	UART1_RX_M2	--	FLEXBUS0_D4	DSMC_D0VW14	DSMC_D0VW14	PWM1_SDI2_M2	ETH_RXD1_M0	VO_EBC_SDSM	VO_LCDC_D21	GPIO3_A6_d
--	--	UART10_R0VW_M0	UART1_RX_M2	--	FLEXBUS0_D5	DSMC_D0VW13	DSMC_D0VW13	PWM1_SDI3_M2	ETH_RXCTL_M0	VO_EBC_VDSM	VO_LCDC_D20	GPIO3_A7_d
PWM0_CH0_M3	--	SPI2_MOSI_M2	UART10_RX_M0	--	FLEXBUS0_D8	DSMC_CSN1	SAI4_MCLK_M1	ETH0_MCLK_M0	VO_EBC_SDCE3	VO_LCDC_D19	GPIO3_B0_d	
PWM1_CH3_M3	--	SPI4_CSN0_M1	UART10_TX_M0	--	FLEXBUS0_D4	DSMC_D0VW12	PWM1_CLK0_M2	ETH0_RX01_M0	VO_EBC_SDCE1	VO_LCDC_D18	GPIO3_B1_d	
I2C5_SDA_M3	--	--	UART5_RX_M1	--	FLEXBUS0_D3	DSMC_D0VW11	PWM1_SDI1_M2	ETH0_RX00_M0	VO_EBC_SDCE1	VO_LCDC_D17	GPIO3_B2_d	
I2C5_SCL_M3	--	--	UART5_RX_M1	--	FLEXBUS0_D2	DSMC_D0VW10	PWM1_SDI0_M2	ETH0_RX00_M0	VO_EBC_SDCE1	VO_LCDC_D16	GPIO3_B3_d	
PWM1_CH4_M3	--	--	UART5_RTSN_M1	--	FLEXBUS0_D1	DSMC_D0VW9	SPDIF_RX1_M0	ETH0_RX01_M0	VO_EBC_SDD015	VO_LCDC_D15	GPIO3_B4_d	
PWM1_CH5_M3	--	--	UART5_CTSN_M1	--	FLEXBUS0_D0	DSMC_D0VW8	SPDIF_RX1_M0	ETH0_RX00_M0	VO_EBC_SDD014	VO_LCDC_D14	GPIO3_B5_d	
PWM0_CH1_M3	--	SPI3_CSN0_M1	--	--	FLEXBUS0_CLK	DSMC_D0S1	--	ETH0_RX01_M0	VO_EBC_SDD013	VO_LCDC_D13	GPIO3_B6_d	
I2C4_SDA_M3	--	UART3_CTSN_M1	UART2_RX_M2	FLEXBUS1_CSN_M0	--	FLEXBUS1_D10	DSMC_D0S0	SAI1_SDI0_M1	ETH0_PPSTRIG_M0	VO_EBC_SDD012	VO_LCDC_D12	GPIO3_B7_d
--	--	I2C4_SCL_M3	UART3_RTSN_M1	UART2_TX_M2	--	FLEXBUS1_D9	DSMC_DATA7	SAI1_SDI03_M1	ETH0_PPSTRIG_M0	VO_EBC_SDD011	VO_LCDC_D11	GPIO3_C0_d
CAN0_RX_M3	--	SPI2_MISO_M2	UART1_RX_M0	--	FLEXBUS1_D8	DSMC_D0VW7	SAI1_SDI03_M1	ETH0_PPSTRIG_M0	VO_EBC_SDD010	VO_LCDC_D10	GPIO3_C1_d	
PWM2_CH0_M3	--	SPI4_MISO_M1	UART11_RTSN_M0	--	FLEXBUS0_D9	DSMC_D0VW6	SAI2_SDI02_M2	ETH0_RX03_M0	VO_EBC_SDD09	VO_LCDC_D9	GPIO3_C2_d	
PWM2_CH1_M3	--	SPI4_MISO_M1	UART11_CSN_M0	FLEXBUS0_CSN_M2	--	FLEXBUS0_D10	DSMC_D0VW5	SAI2_SDI02_M2	ETH0_RX02_M0	VO_EBC_SDD08	VO_LCDC_D8	GPIO3_C3_d
CAN0_TX_M3	--	SPI2_CSN0_M2	UART11_TX_M0	--	FLEXBUS1_D1	DSMC_D0VW4	SAI1_SDI01_M1	--	VO_EBC_SDD07	VO_LCDC_D7	GPIO3_C4_d	
PWM2_CH2_M3	--	SPI1_MISO_M2	UART5_RX_M0	--	FLEXBUS1_D6	DSMC_D0VW3	SAI1_SDI00_M1	--	VO_EBC_SDD06	VO_LCDC_D6	GPIO3_C5_d	
--	--	SPI1_MISO_M2	UART5_RX_M0	--	FLEXBUS1_D5	DSMC_D0VW2	SAI1_SDI00_M1	--	VO_EBC_SDD05	VO_LCDC_D5	GPIO3_C6_d	
--	--	SPI1_CLK_M2	UART5_RTSN_M0	--	FLEXBUS1_D4	DSMC_D0VW1	SAI1_SDI00_M1	--	VO_EBC_SDD04	VO_LCDC_D4	GPIO3_C7_d	
PWM2_CH3_M3	--	SPI1_CSN0_M2	UART5_CTSN_M0	--	FLEXBUS1_D3	DSMC_DATA1	SAI1_MCLK_M1	--	VO_EBC_SDD03	VO_LCDC_D3	GPIO3_D0_d	
--	--	SPI4_CLK_M1	--	FLEXBUS1_CSN_M2	--	FLEXBUS0_D11	DSMC_CSN2	SAI2_MCLK_M2	ETH0_RX01_M0	VO_EBC_SDD02	VO_LCDC_D2	GPIO3_D1_d
PWM2_CH4_M3	--	SPI4_CSN1_M1	UART5_RTSN_M2	FLEXBUS0_CSN_M3	FLEXBUS1_D15_M0	FLEXBUS0_D12	DSMC_CSN3	SAI2_SDI1_M2	ETH0_RX03_M0	VO_EBC_SDD01	VO_LCDC_D1	GPIO3_D2_d
PWM2_CH5_M3	--	SPI4_SCL_M2	UART5_CTSN_M2	--	--	FLEXBUS1_D2	DSMC_CSN3	SAI2_SDI0_M2	ETH0_RX02_M0	VO_EBC_SDD00	VO_LCDC_D0	GPIO3_D3_d
I2C5_SCL_M2	--	SPI3_CLK_M1	UART5_RX_M0	--	--	FLEXBUS1_D1	DSMC_D0VW0	SAI1_SDI01_M1	--	VO_EBC_SDD0E	VO_LCDC_DEN	GPIO3_D4_d
I2C5_SDA_M2	--	SPI3_MISO_M1	UART5_TX_M0	--	--	FLEXBUS1_D0	DSMC_D0VW0	SAI1_SDI01_M1	--	VO_EBC_SDD0E	VO_LCDC_DEN	GPIO3_D5_d
PWM2_CH6_M3	--	SPI3_MISO_M1	UART5_CSN_M0	--	FLEXBUS1_CLK	DSMC_CLKM	SAI1_SDI01_M1	--	VO_EBC_SDD0E	VO_LCDC_DEN	GPIO3_D6_d	
PWM2_CH7_M3	--	SPI3_CSN1_M1	UART5_RTSN_M0	FLEXBUS1_CSN_M1	FLEXBUS1_D12_M0	FLEXBUS0_D13_M0	DSMC_CLKM	SAI1_SDI01_M1	CAM_CLK0_OUT_M0	VO_EBC_SDD0E	VO_LCDC_DEN	GPIO3_D7_d
MIPI_TE_M2	I2C7_SCL_M2	SPI1_CSN1_M2	UART3_TX_M1	FLEXBUS1_CSN_M3	FLEXBUS1_D14_M0	FLEXBUS0_D13_M0	DSMC_INT0	SAI4_LRCK_M1	CAM_CLK1_OUT_M0	SPDIF_RX0_M1	--	GPIO4_A0_d
--	I2C7_SDA_M2	--	UART3_RX_M1	FLEXBUS0_CSN_M1	FLEXBUS1_D13_M0	FLEXBUS0_D14_M0	DSMC_INT2	SAI4_SDI0_M1	CAM_CLK2_OUT_M0	SPDIF_RX0_M1	VO_POST_EMPTY	GPIO4_A1_d

VCCIO5_VCC_0

VCCIO5_VCC_1



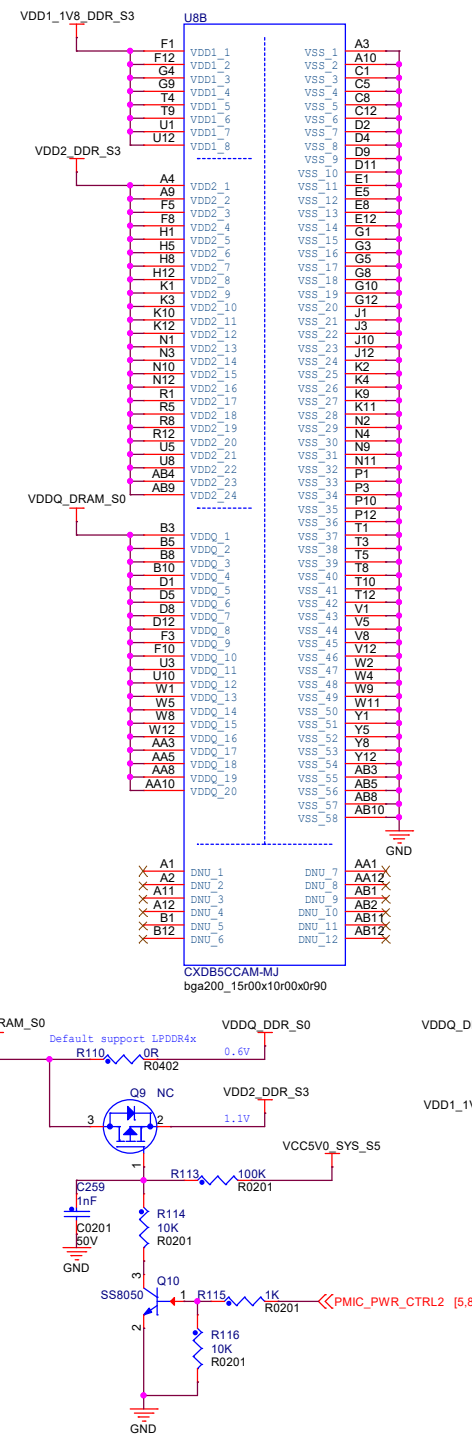
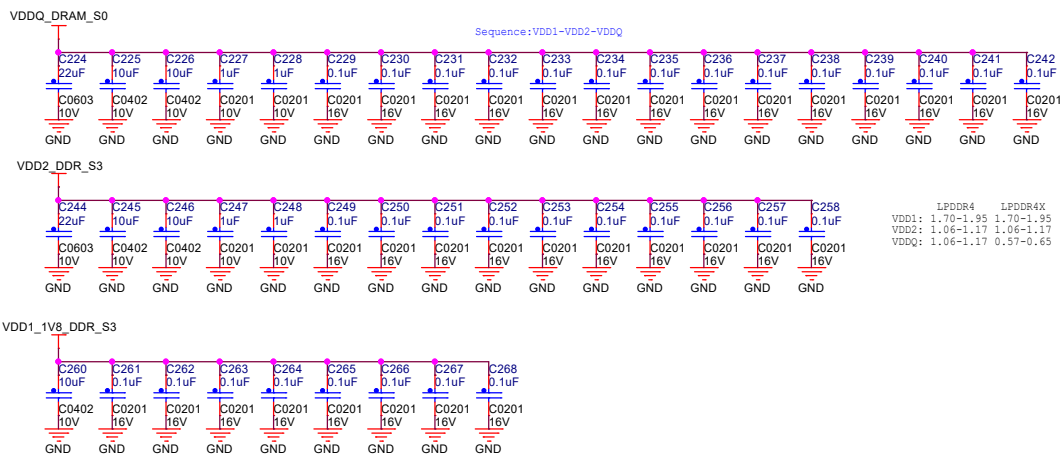
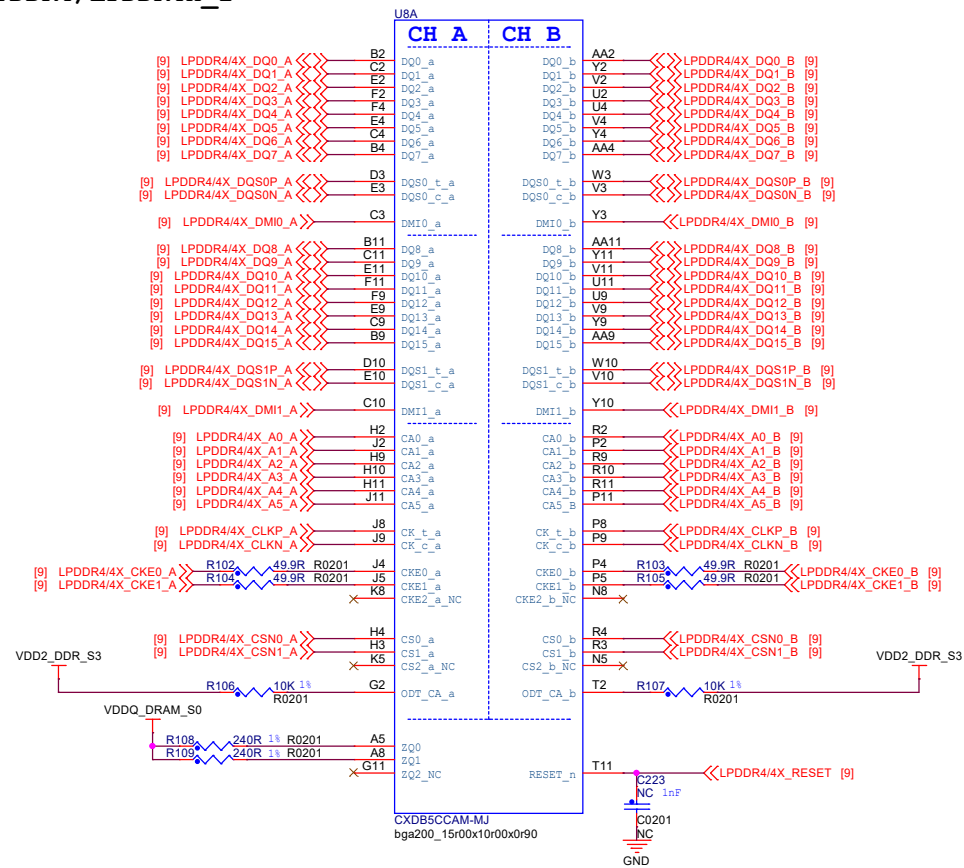
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LPDDR4/LPDDR4x_1



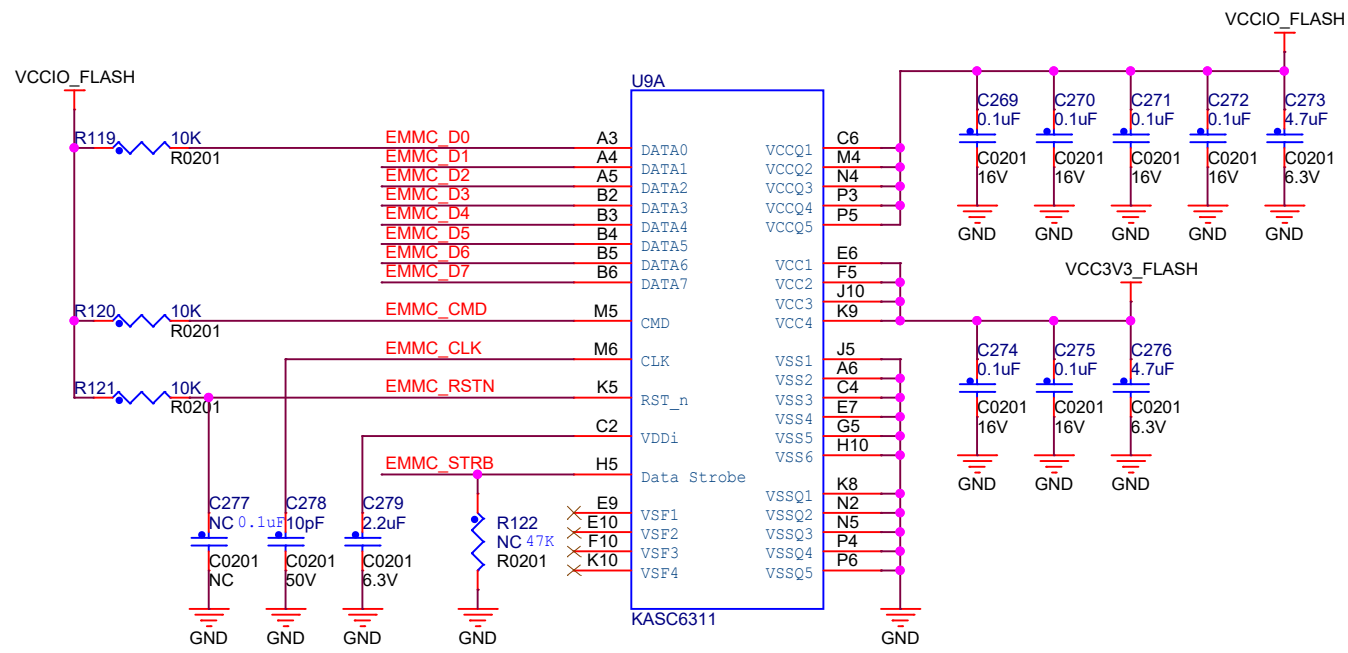
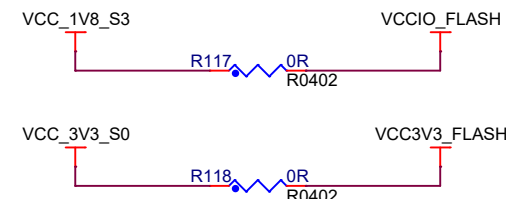
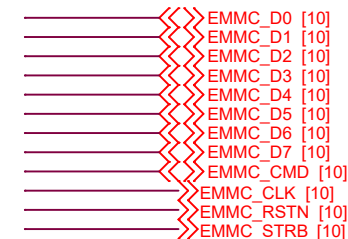
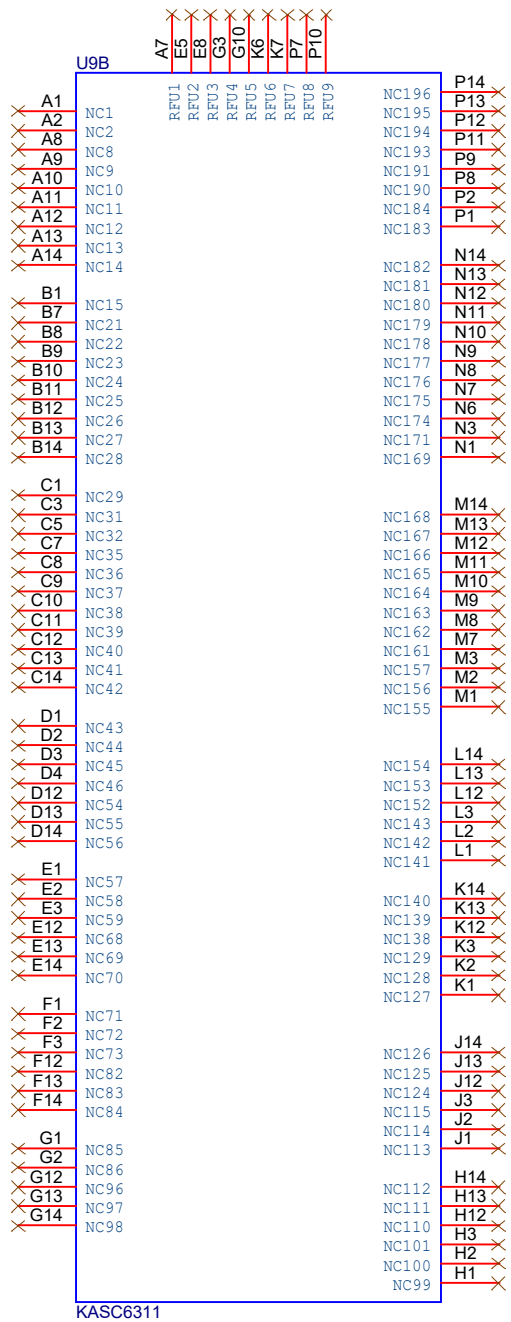
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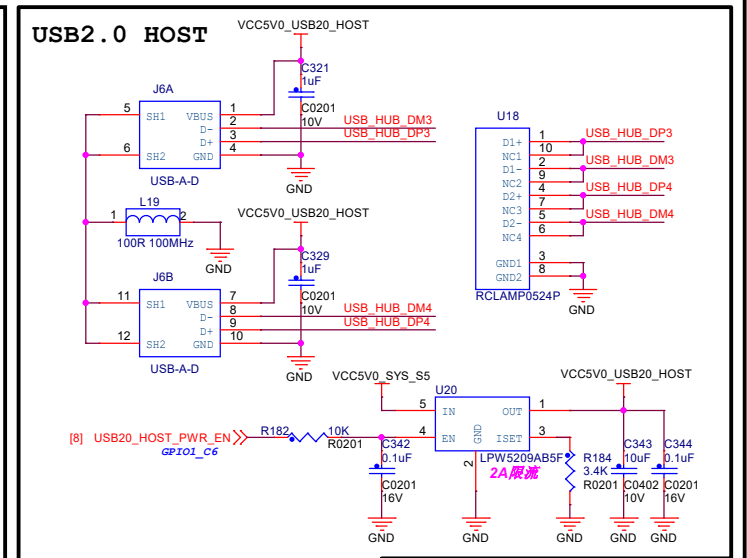
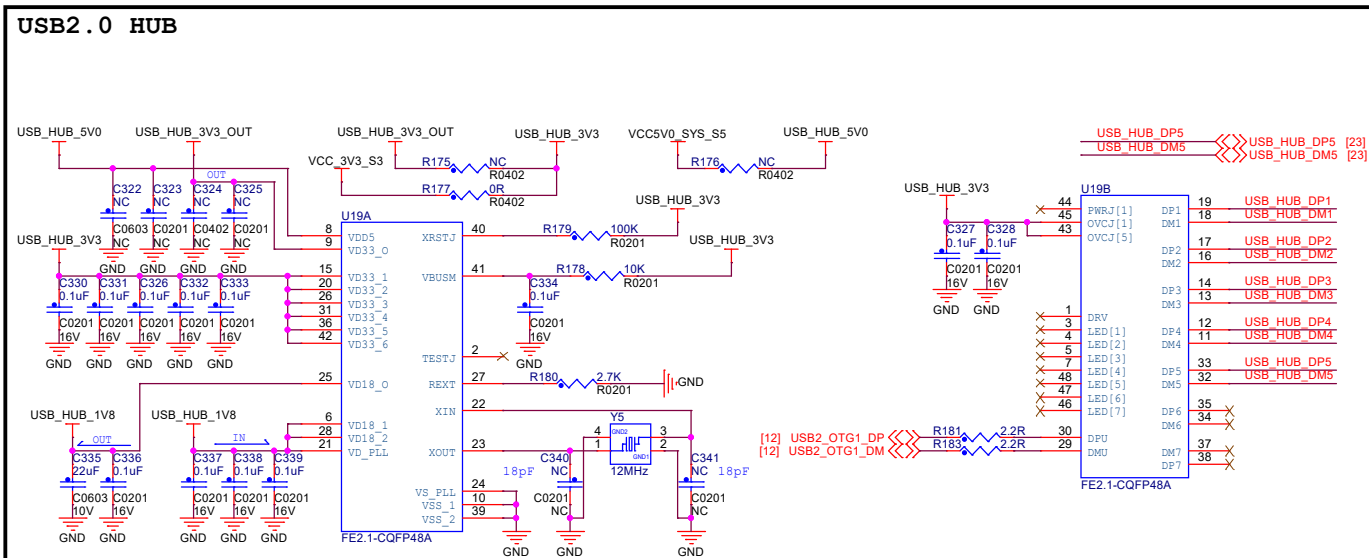
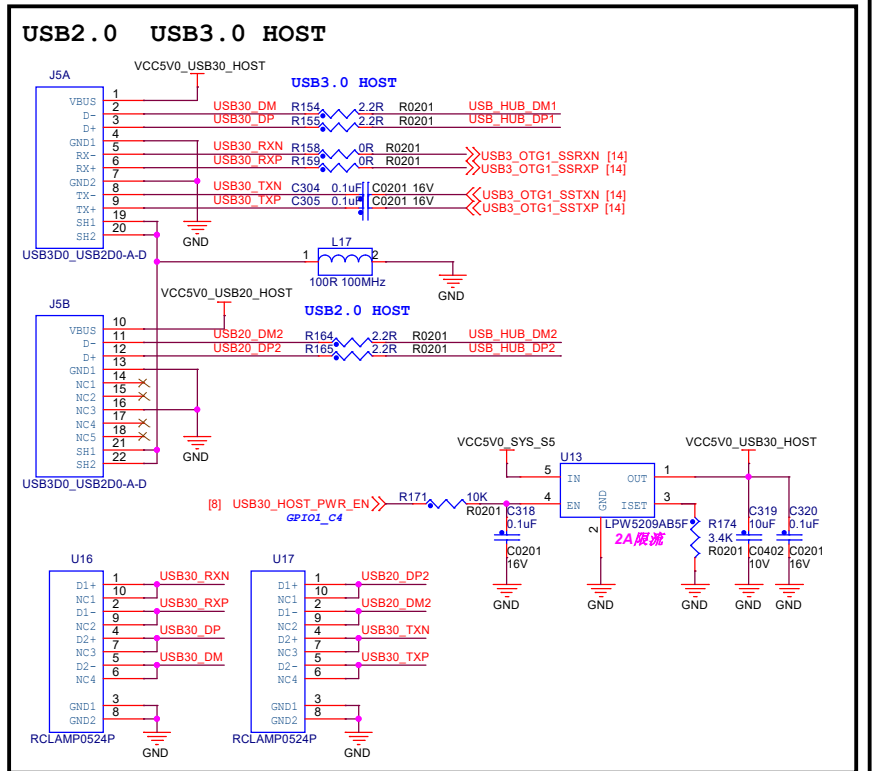
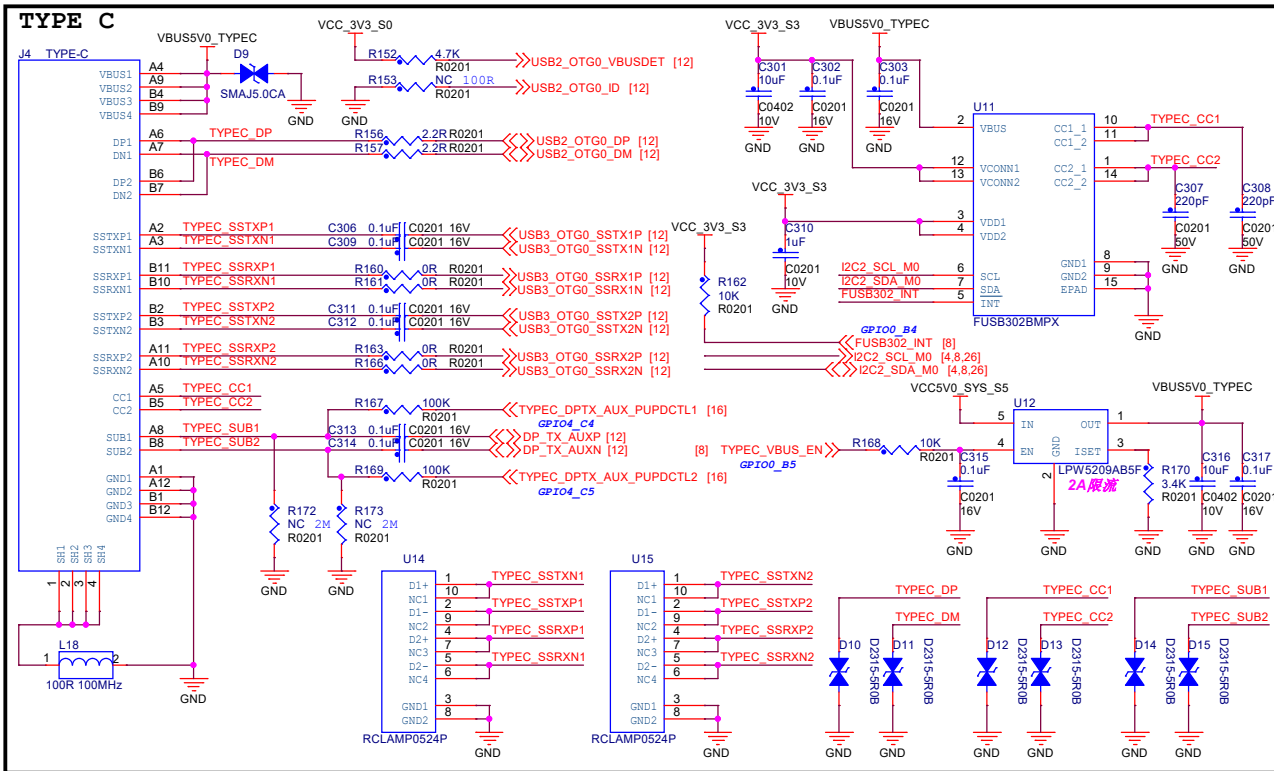
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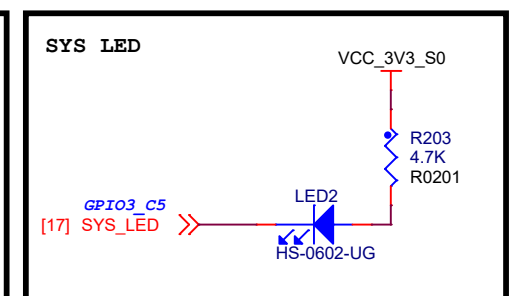
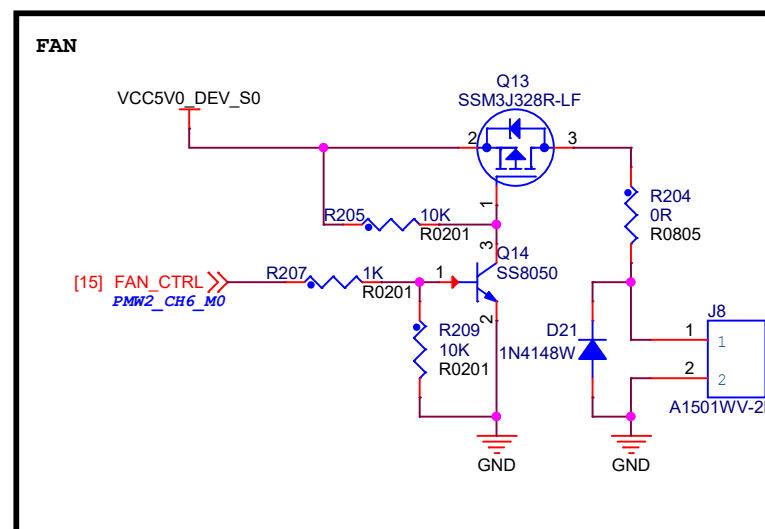
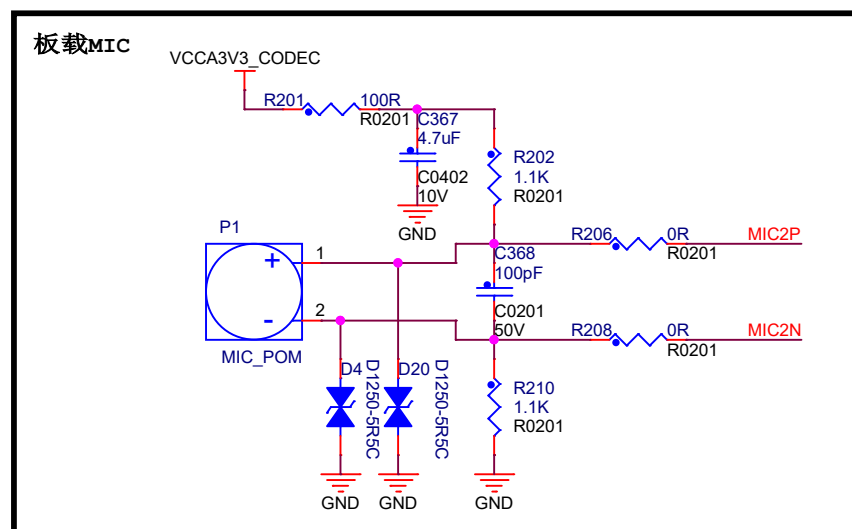
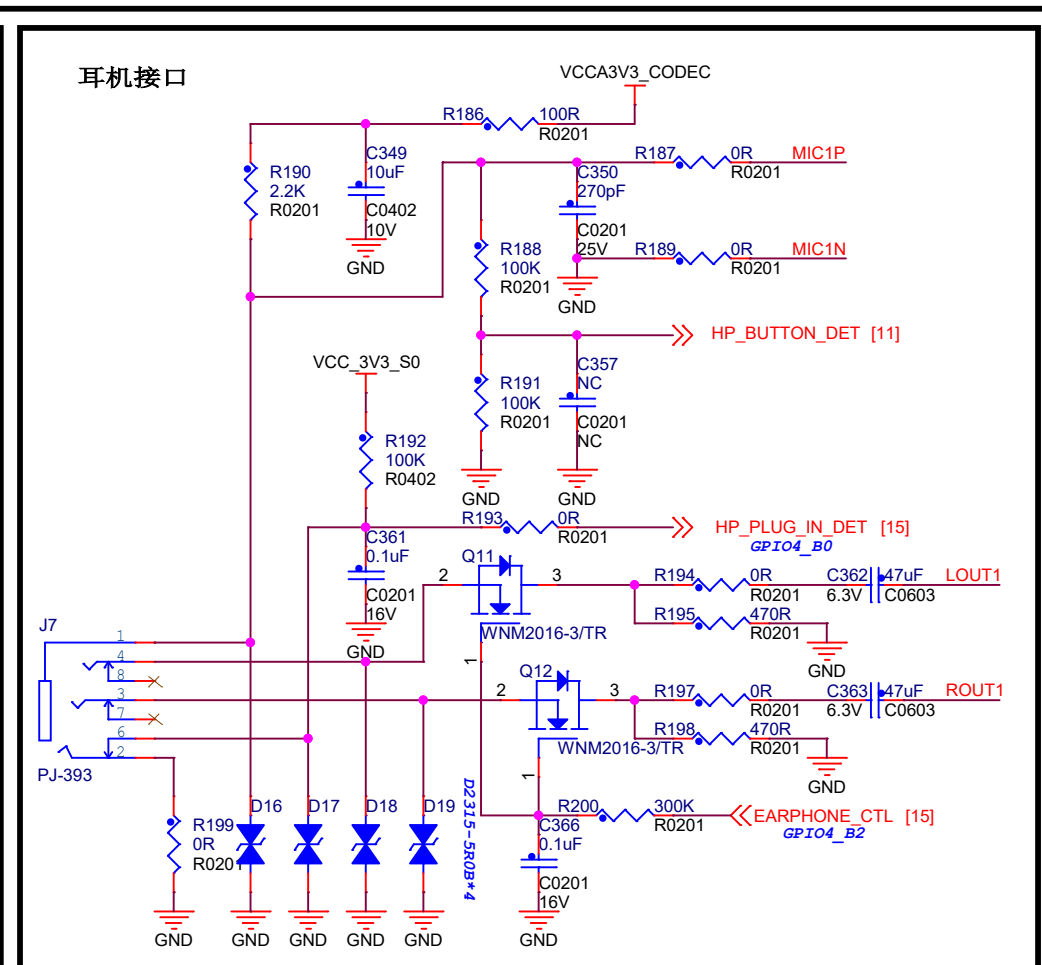
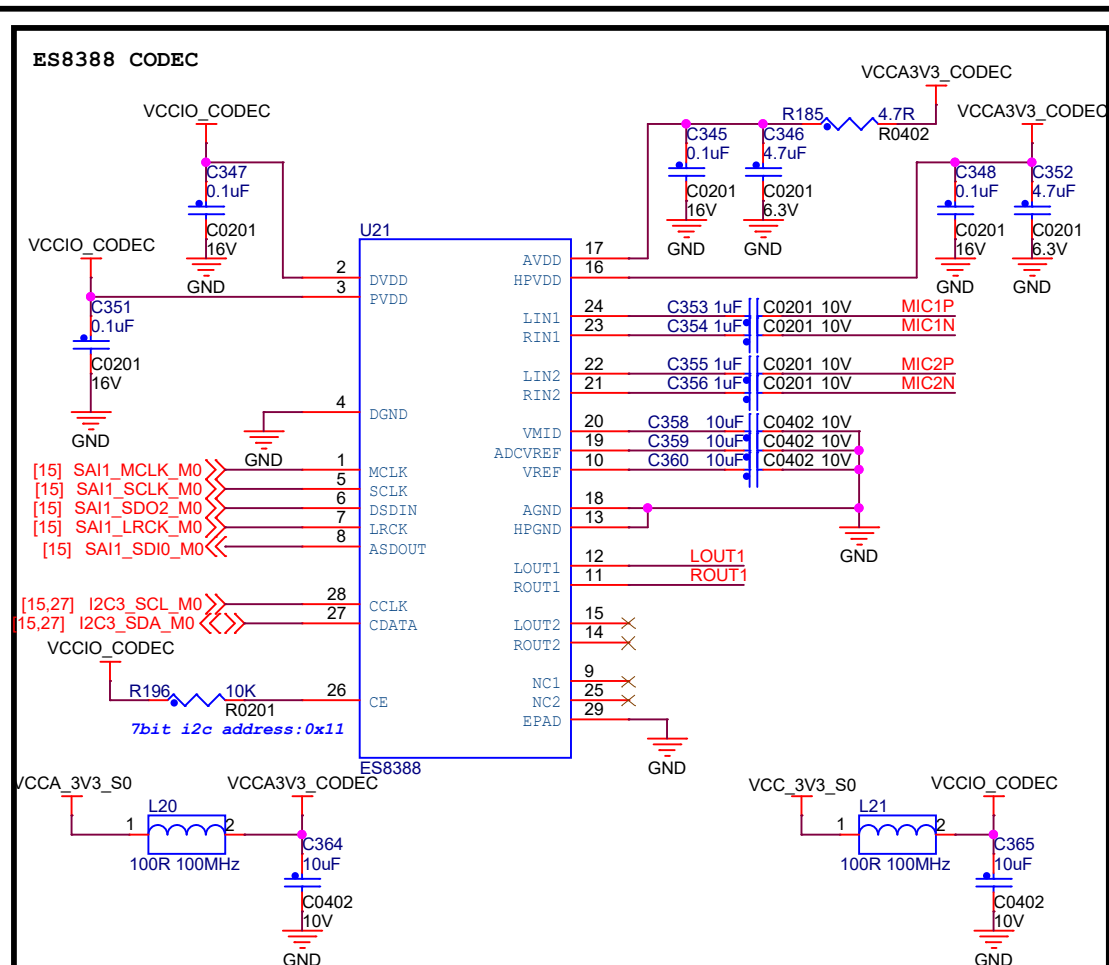
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EMMC FLASH



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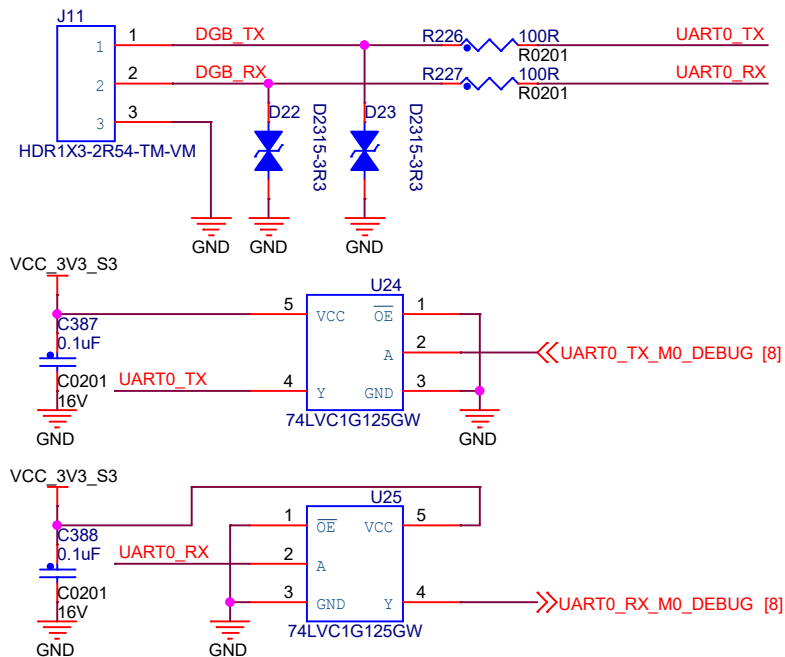
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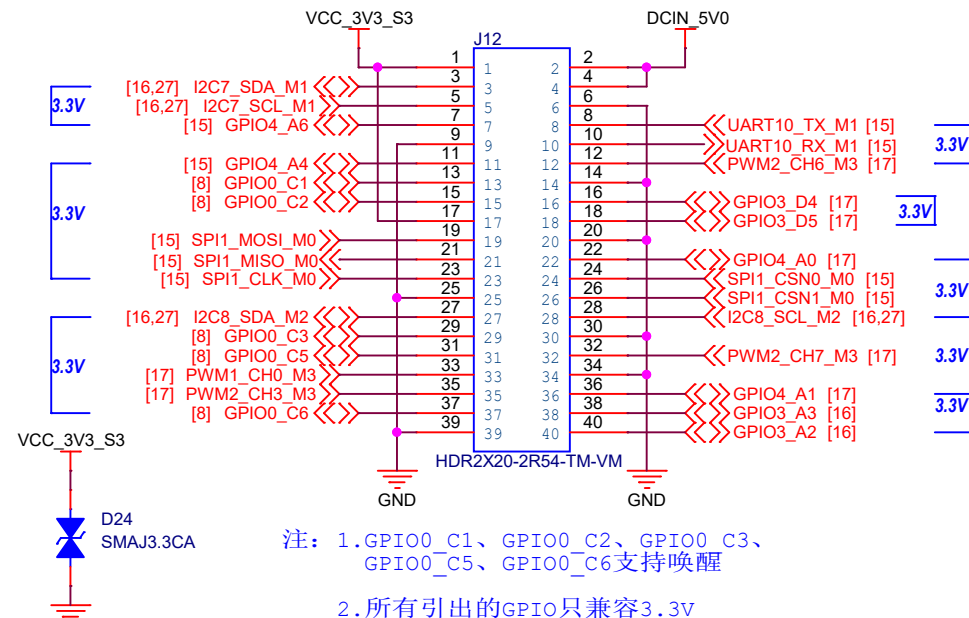
Document Number 音频/FAN/LED	Rev V1.0
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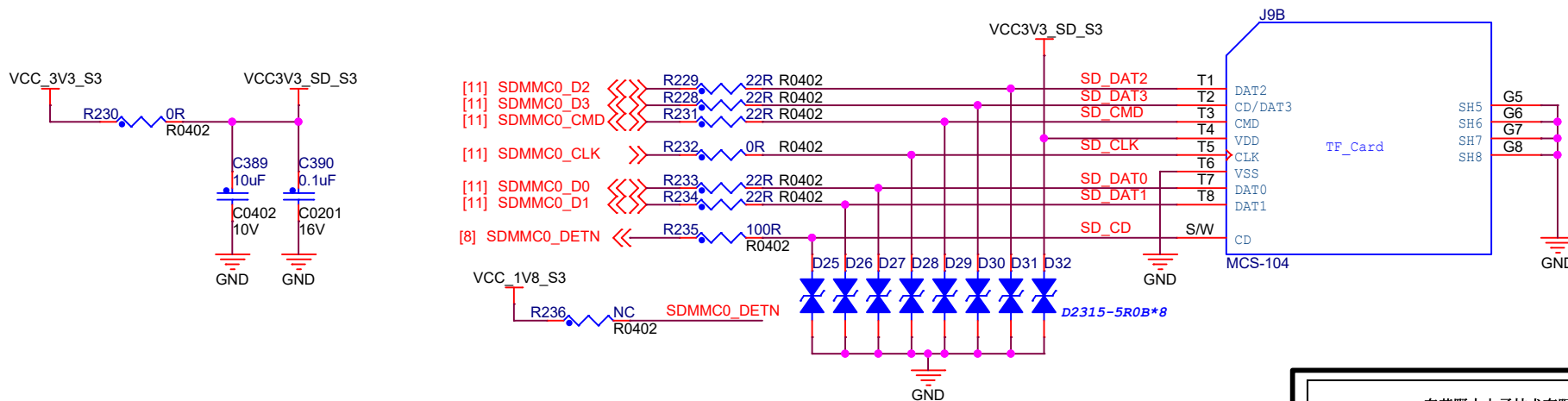
Debug接口



IO 引出



SD Card



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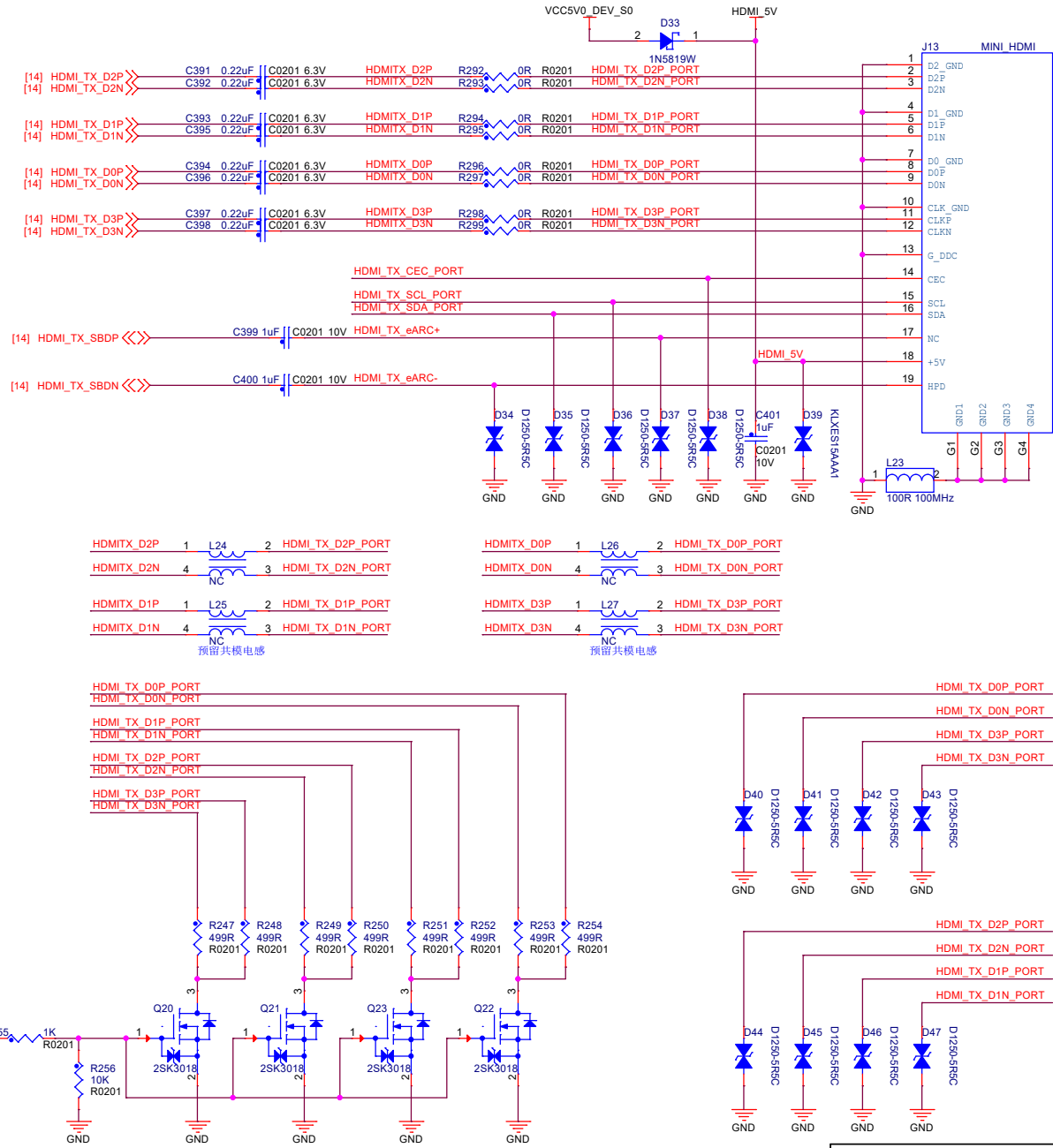
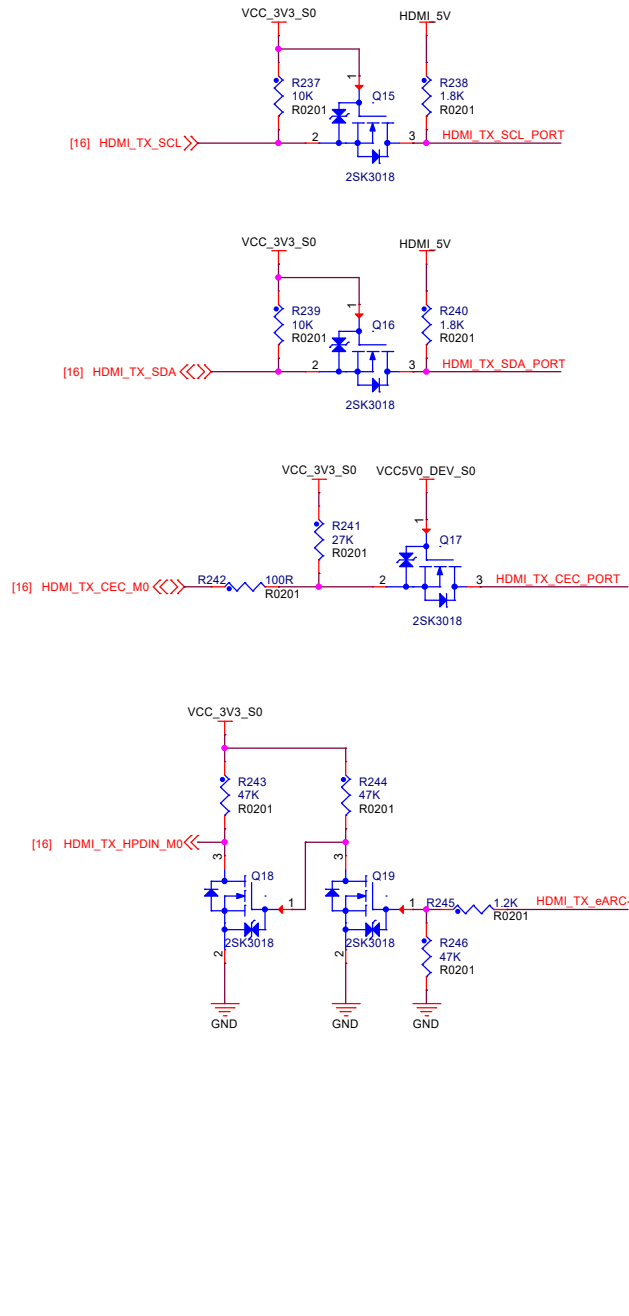
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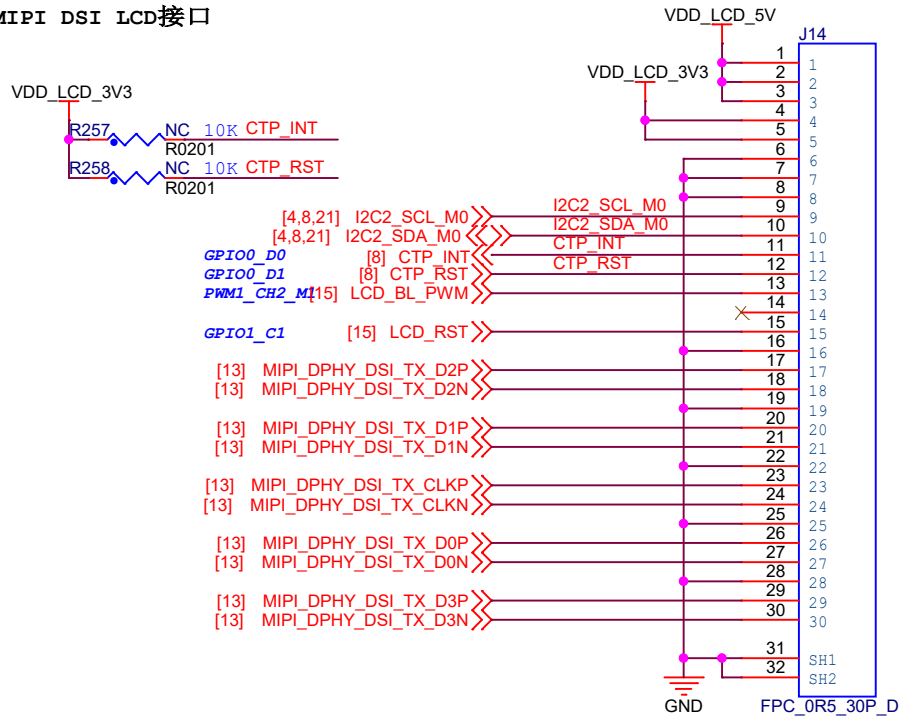
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HDMI2.1接口

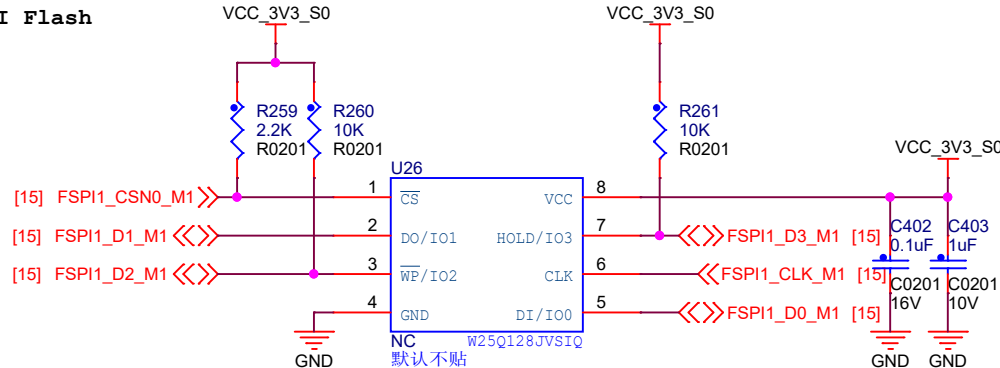


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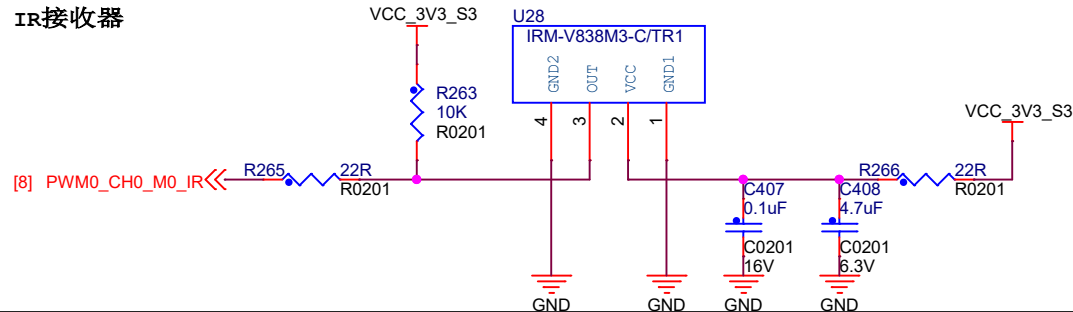
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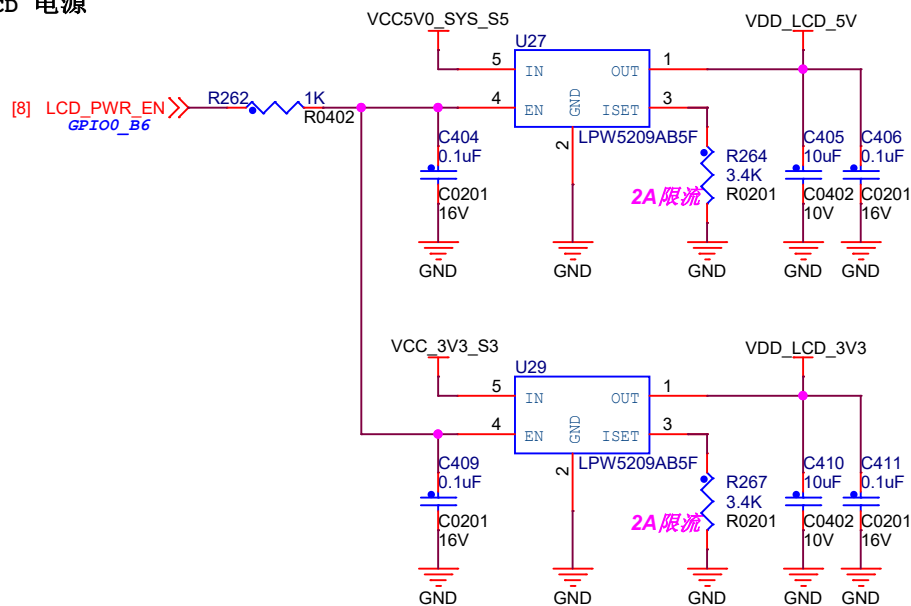
SPI Flash



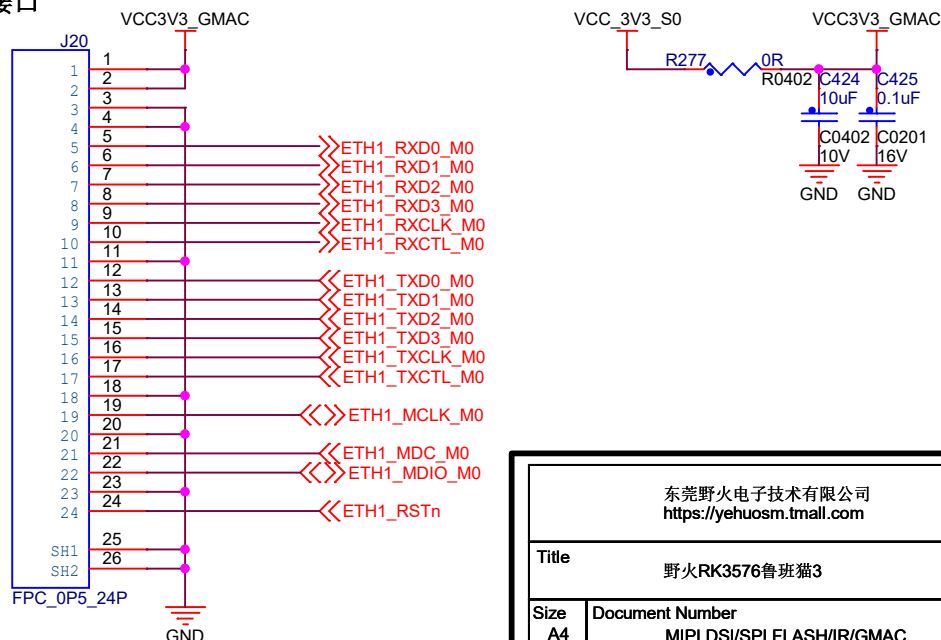
IR接收器



LCD 电源



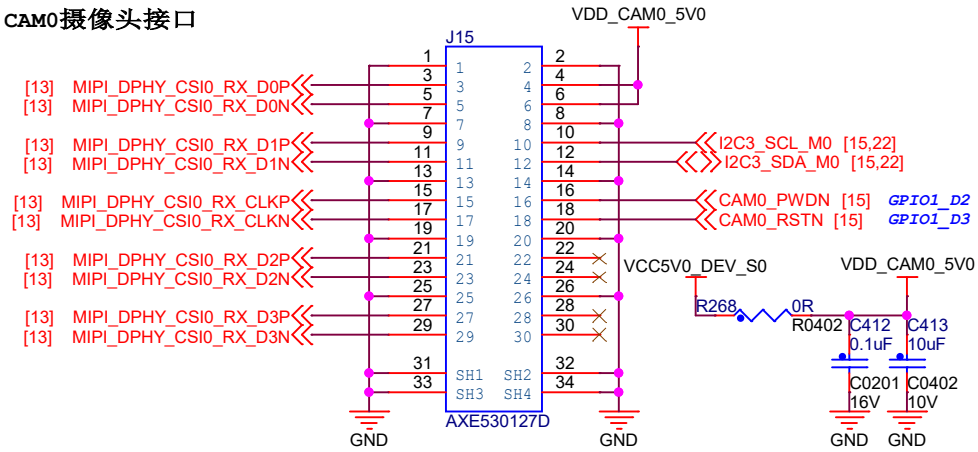
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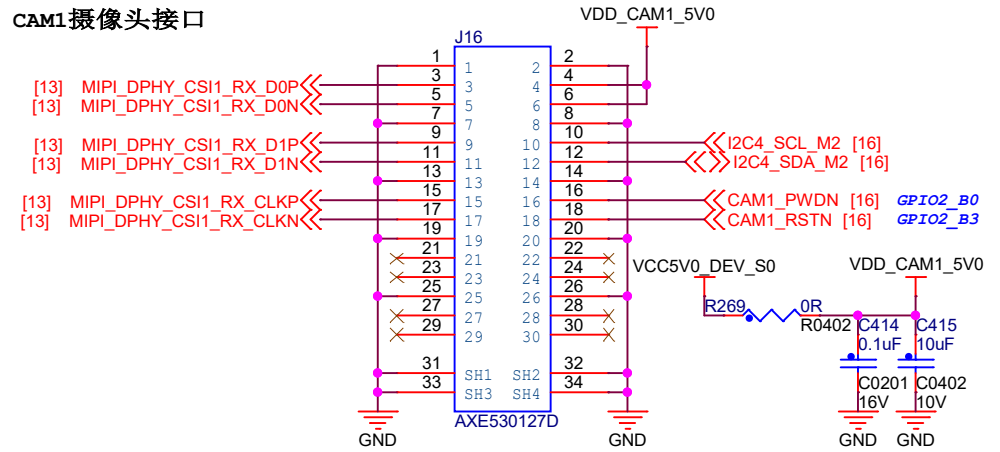
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Size	Document Number	Rev
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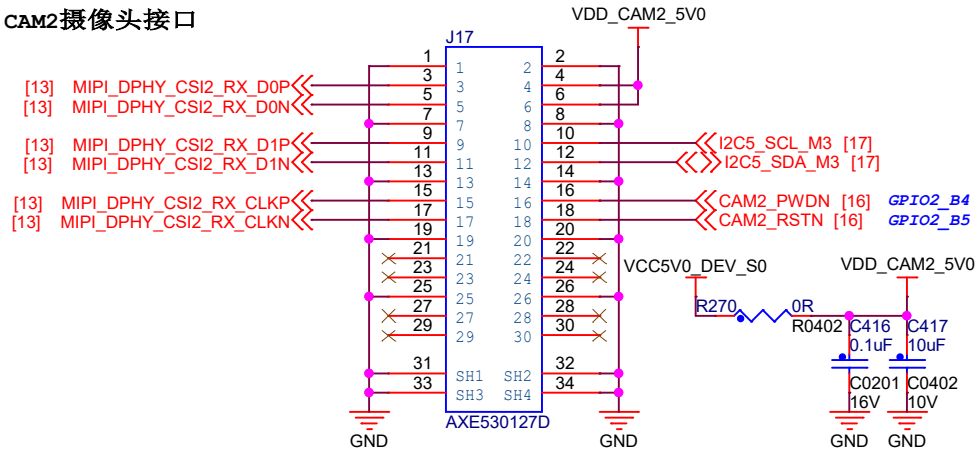
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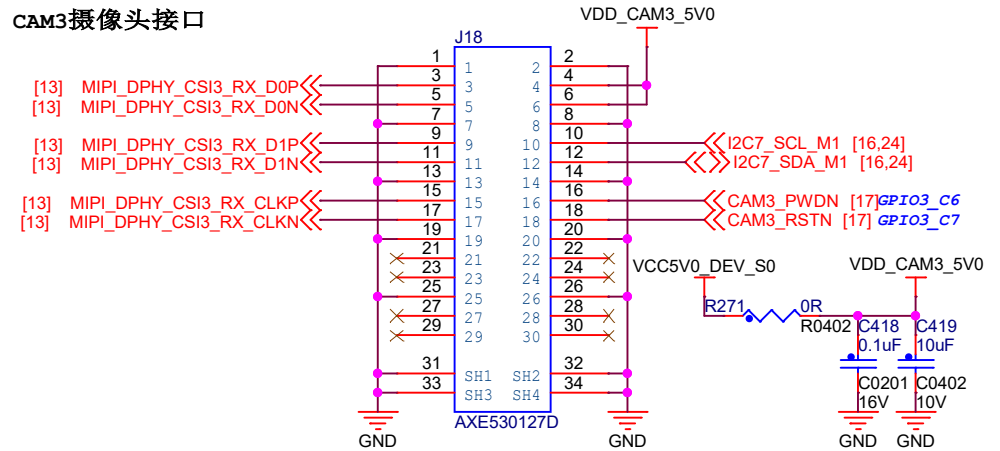
CAM1摄像头接口



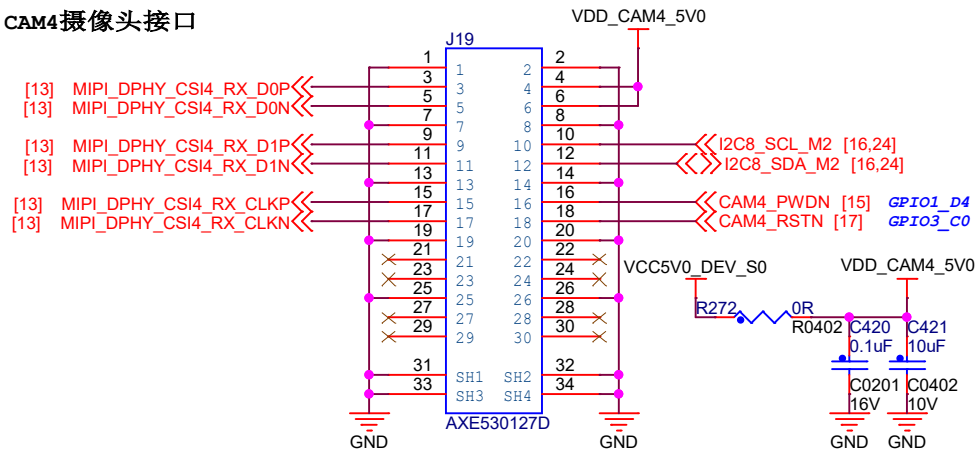
CAM2摄像头接口



CAM3摄像头接口



CAM4摄像头接口



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