



EN: This Datasheet is presented by the manufacturer.

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Radxa ROCK 5B

schematic

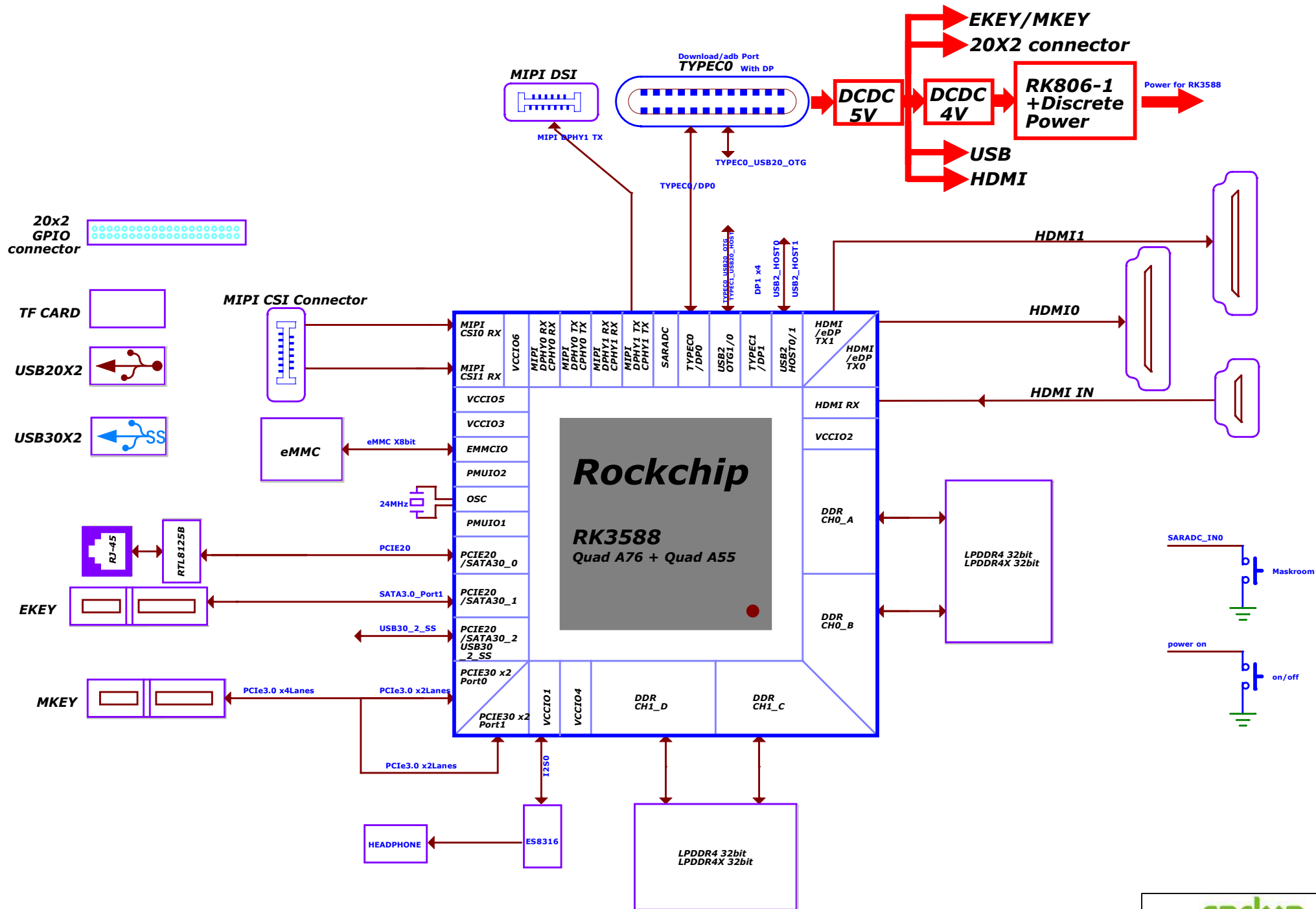
V1.45

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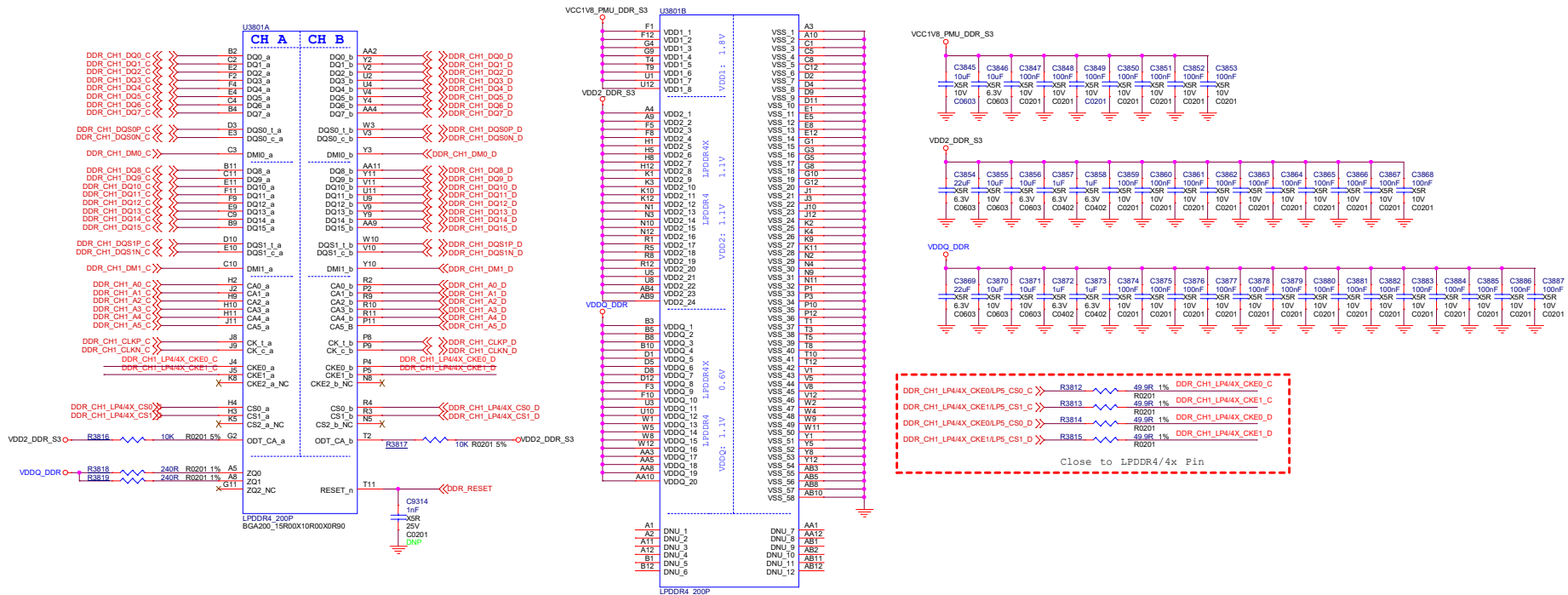
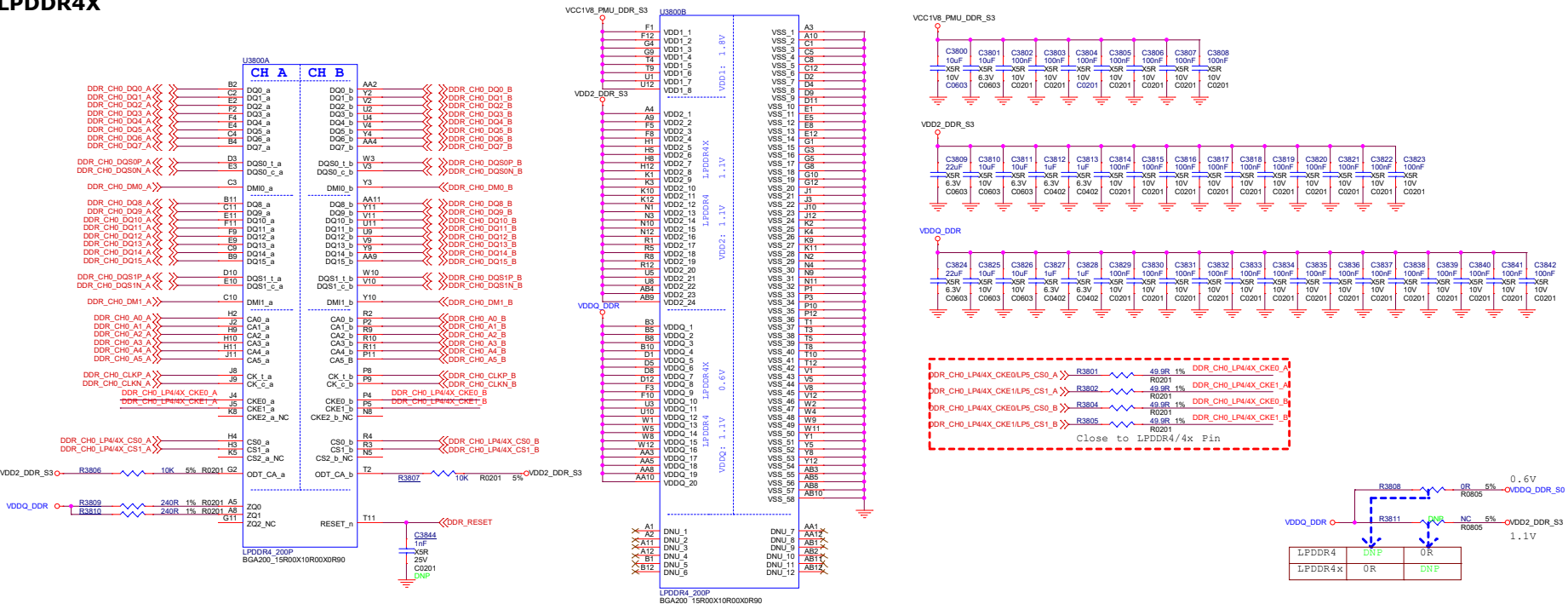
01.	Cover
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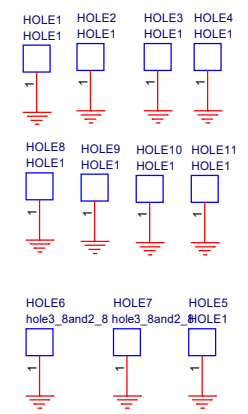
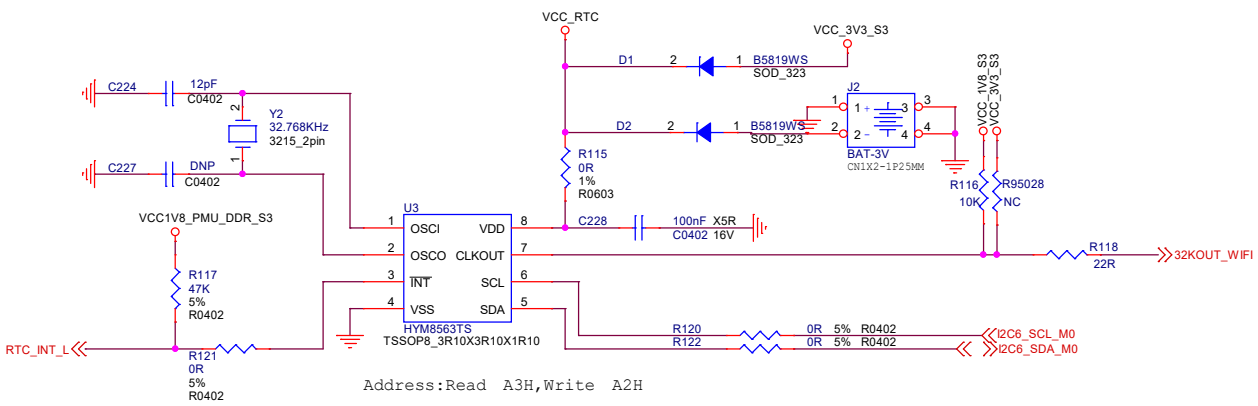
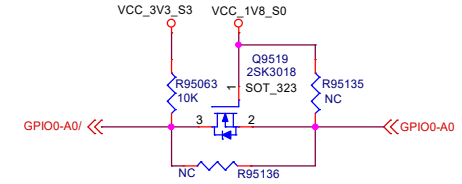
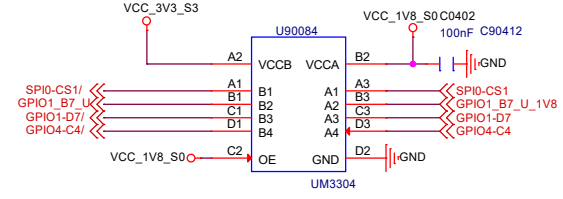
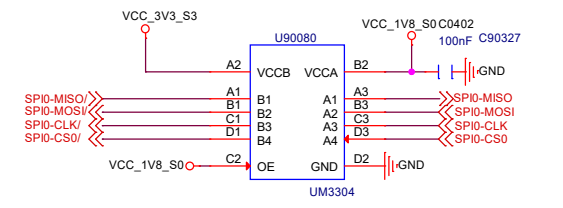
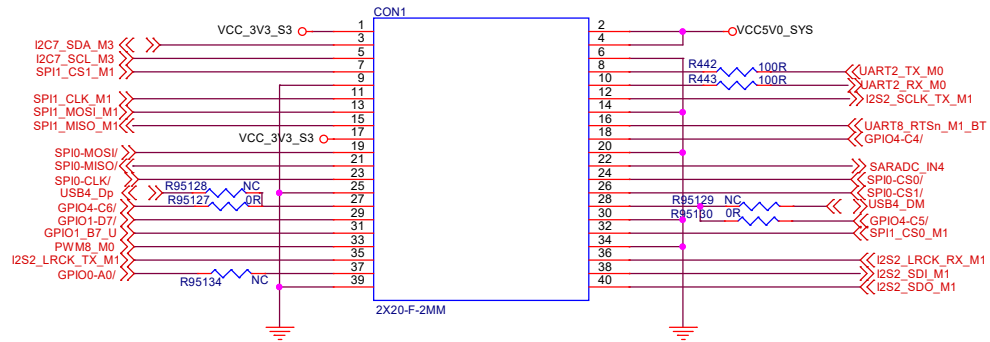
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A3	Page Name: Table of Content	1.45
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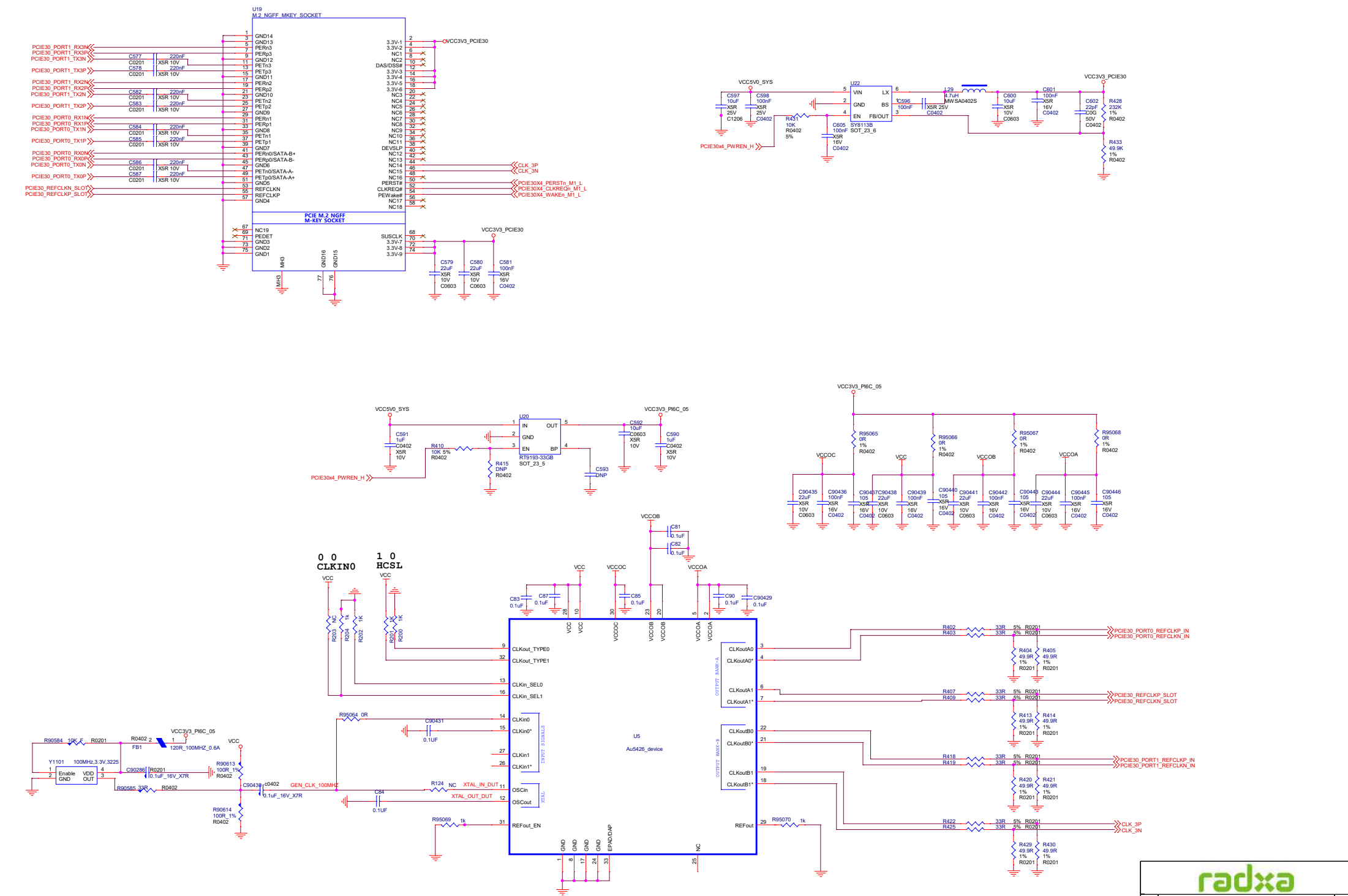
LPDDR4X



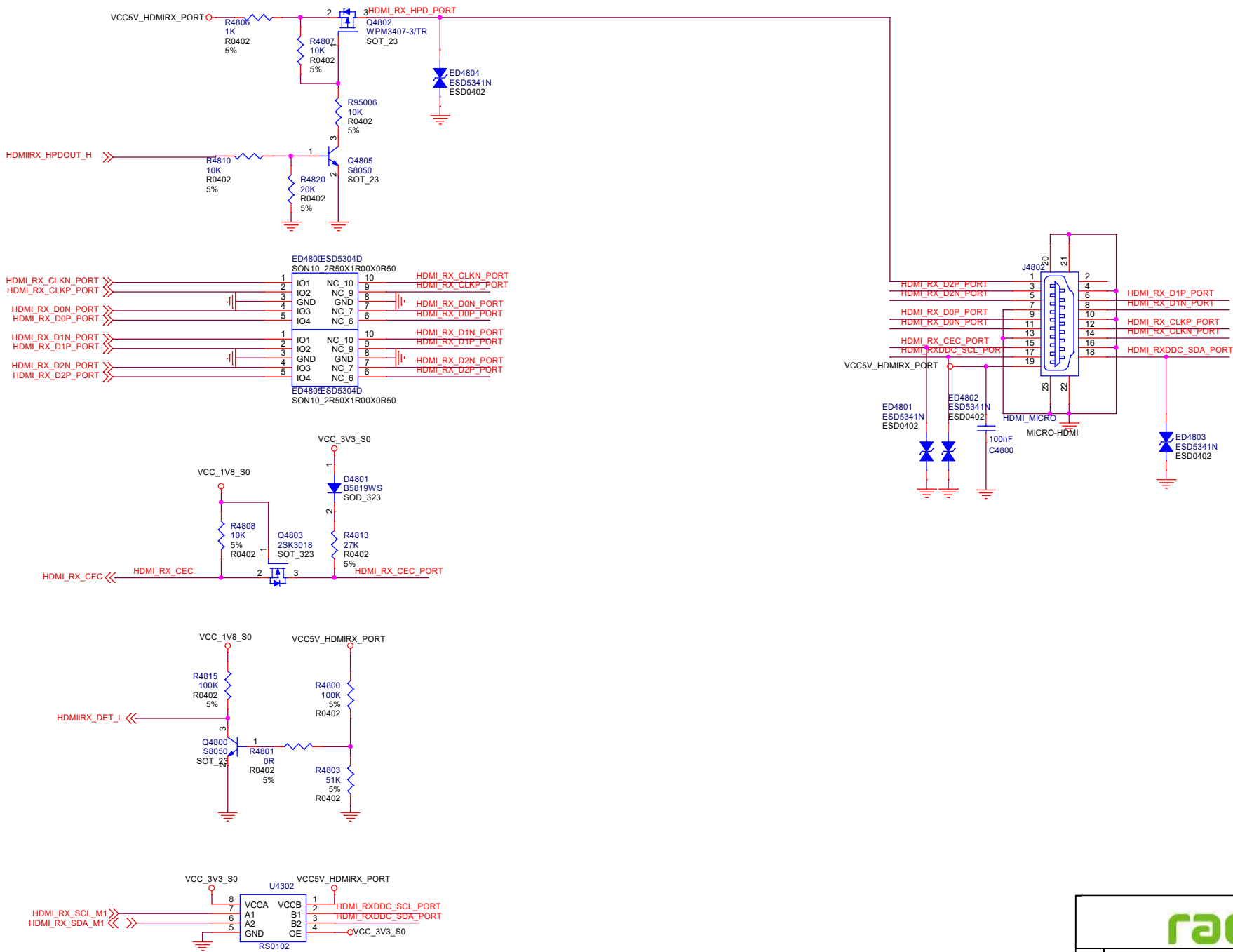
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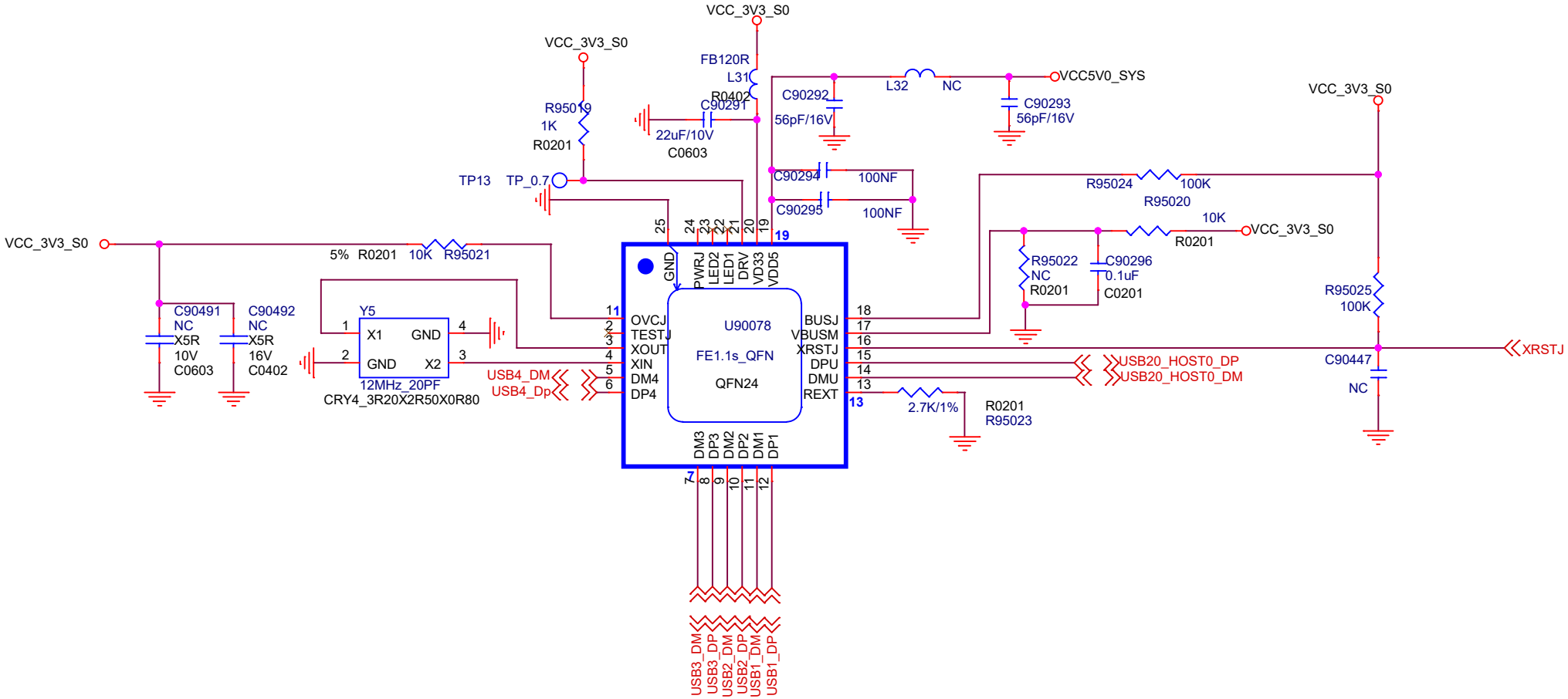
PCIe3.0 x 4 Slot

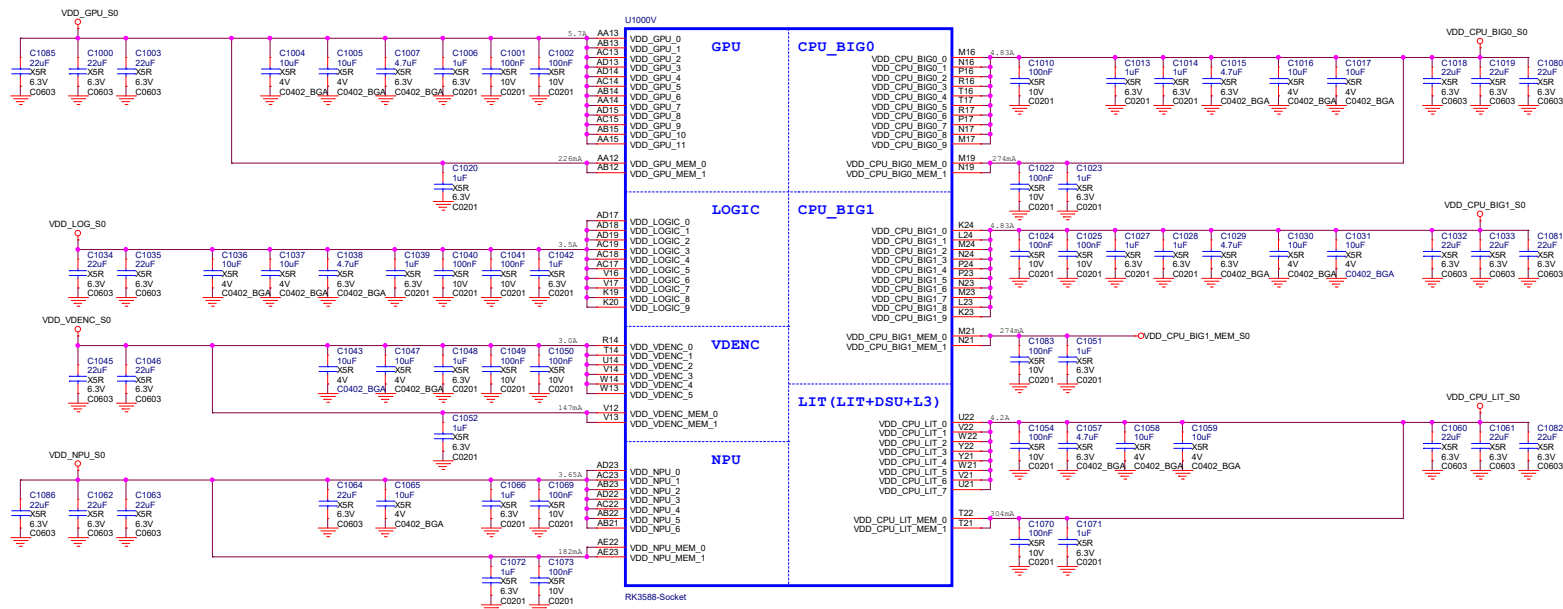


HDMI2.0 RX



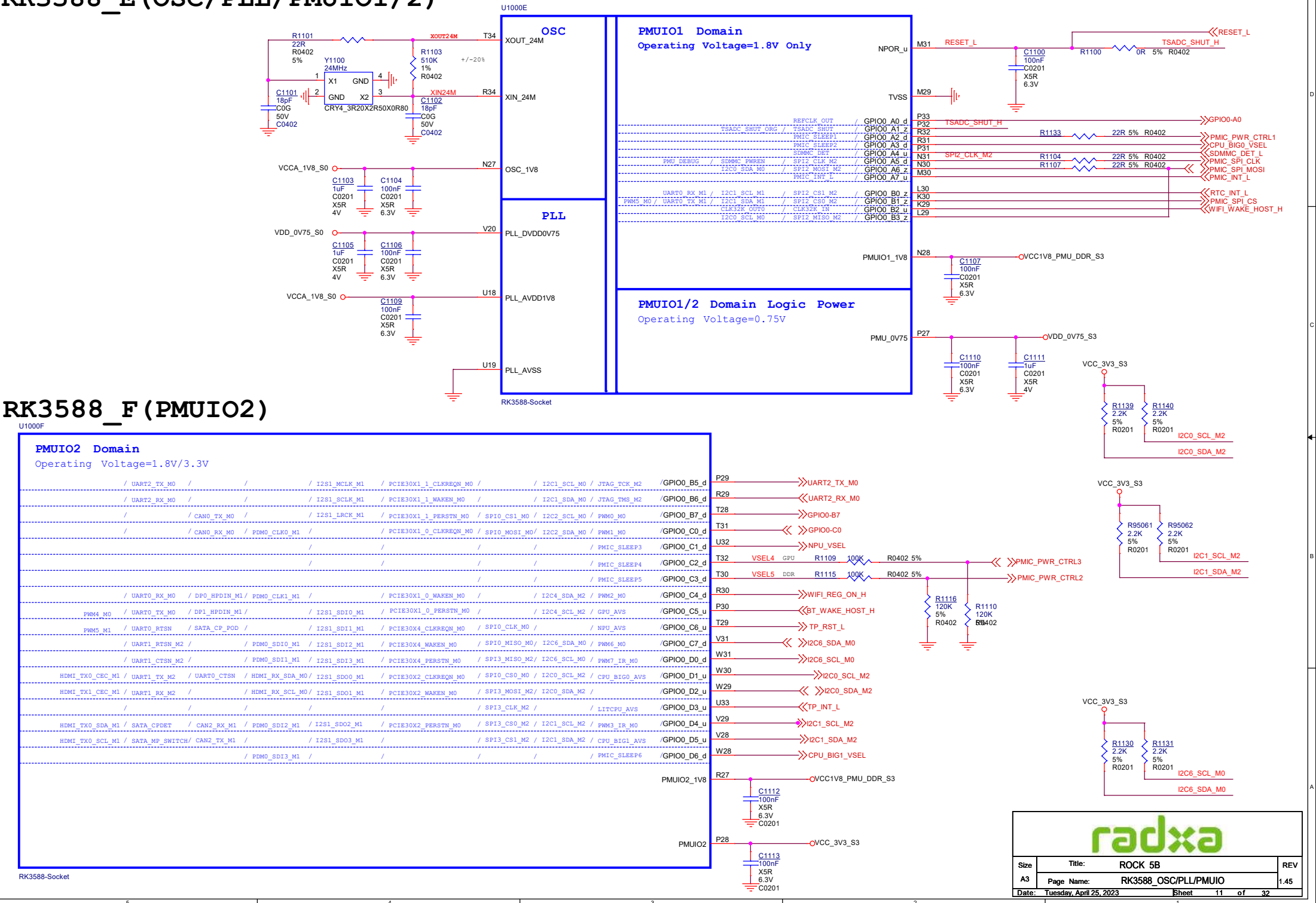
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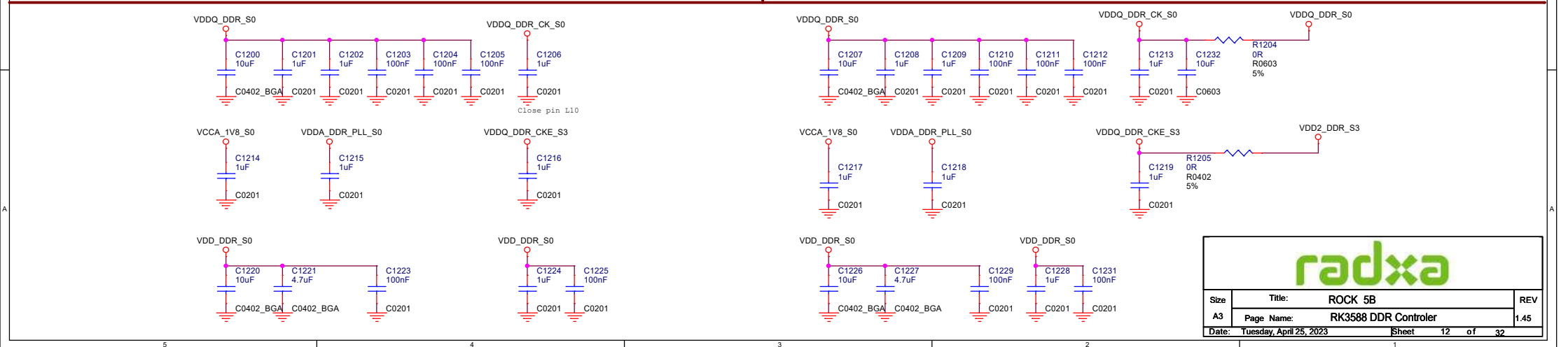
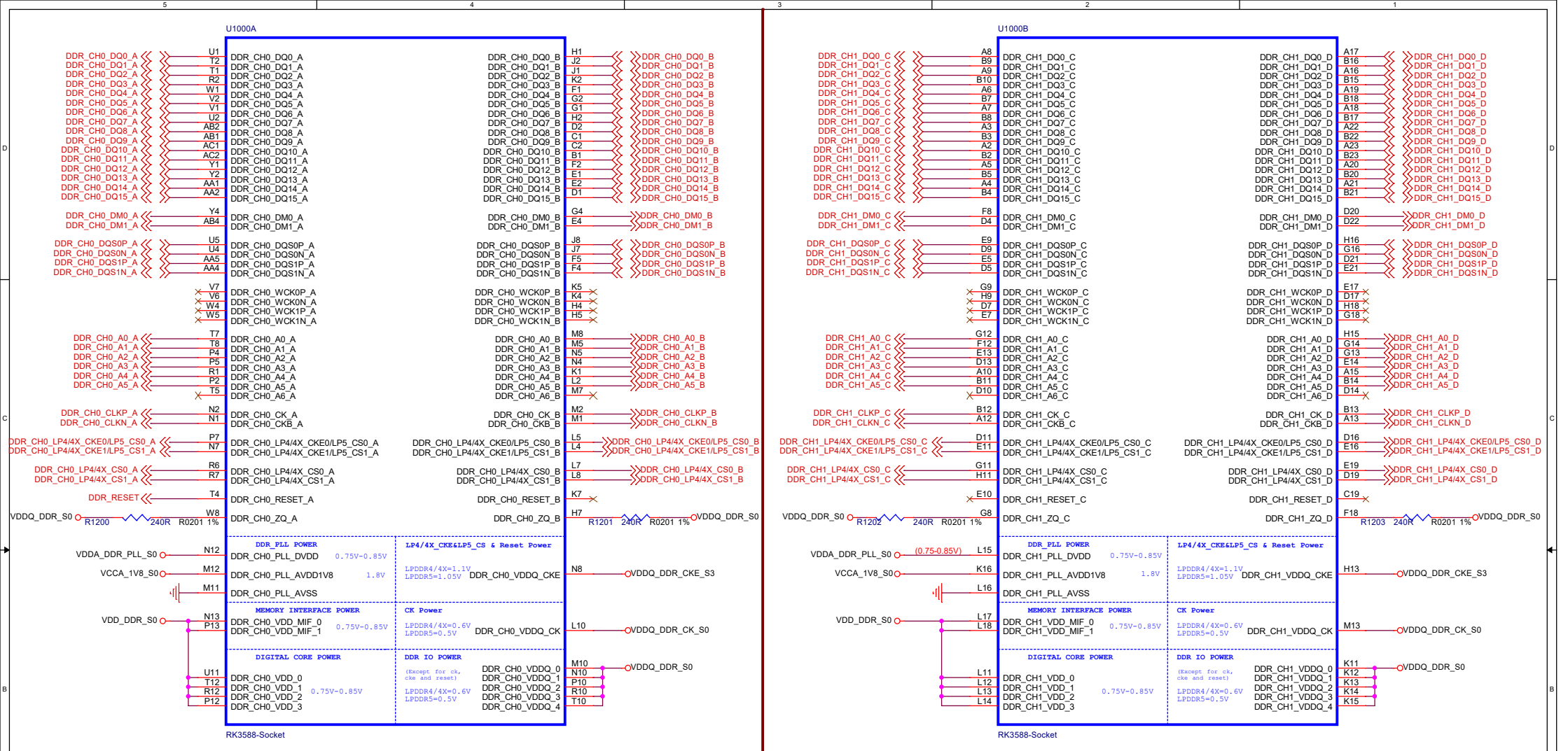




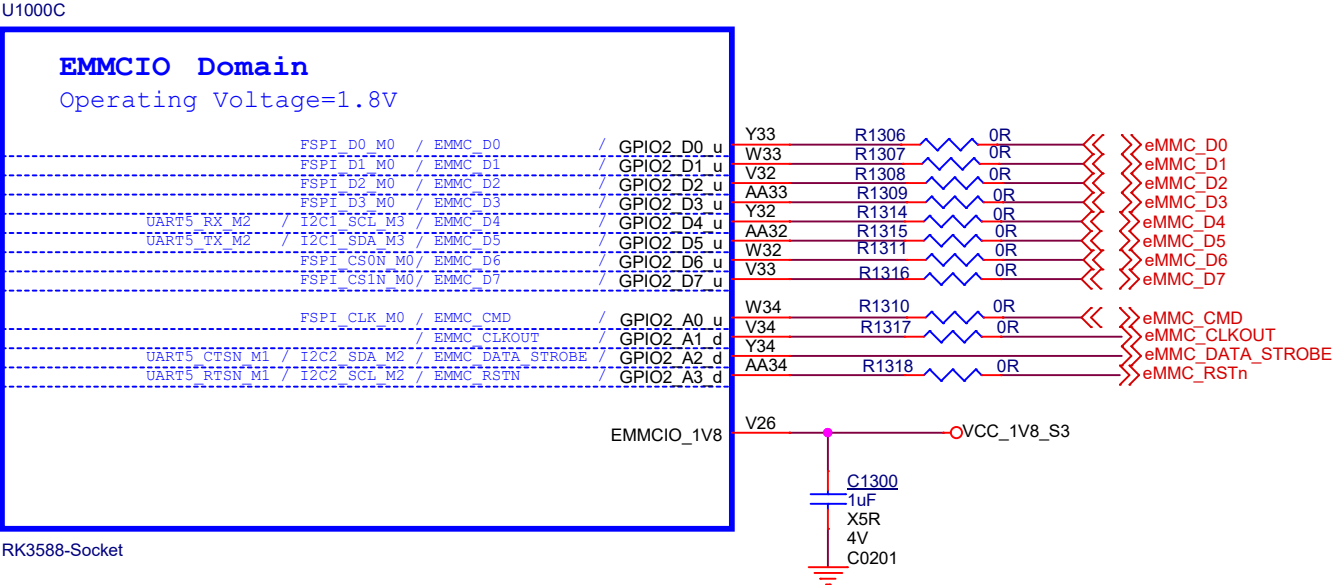
RK3588_E (OSC/PLL/PMUIO1/2)

RK3588_F (PMUIO2)

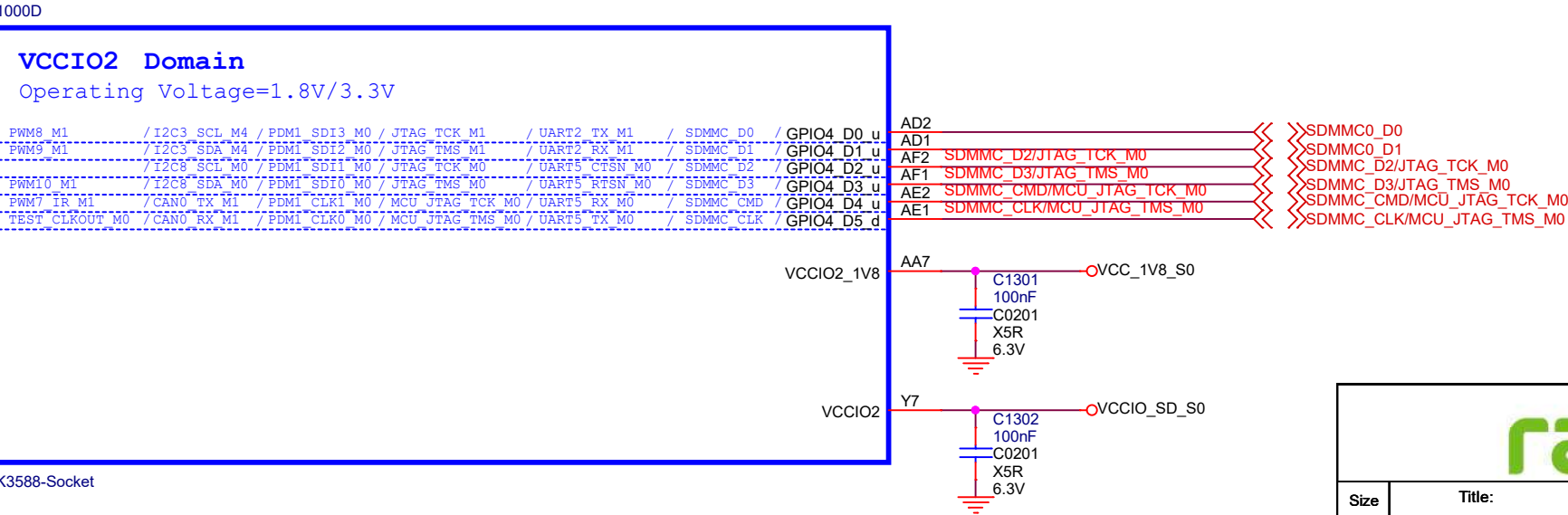




RK3588_C (EMMCIO Domain)

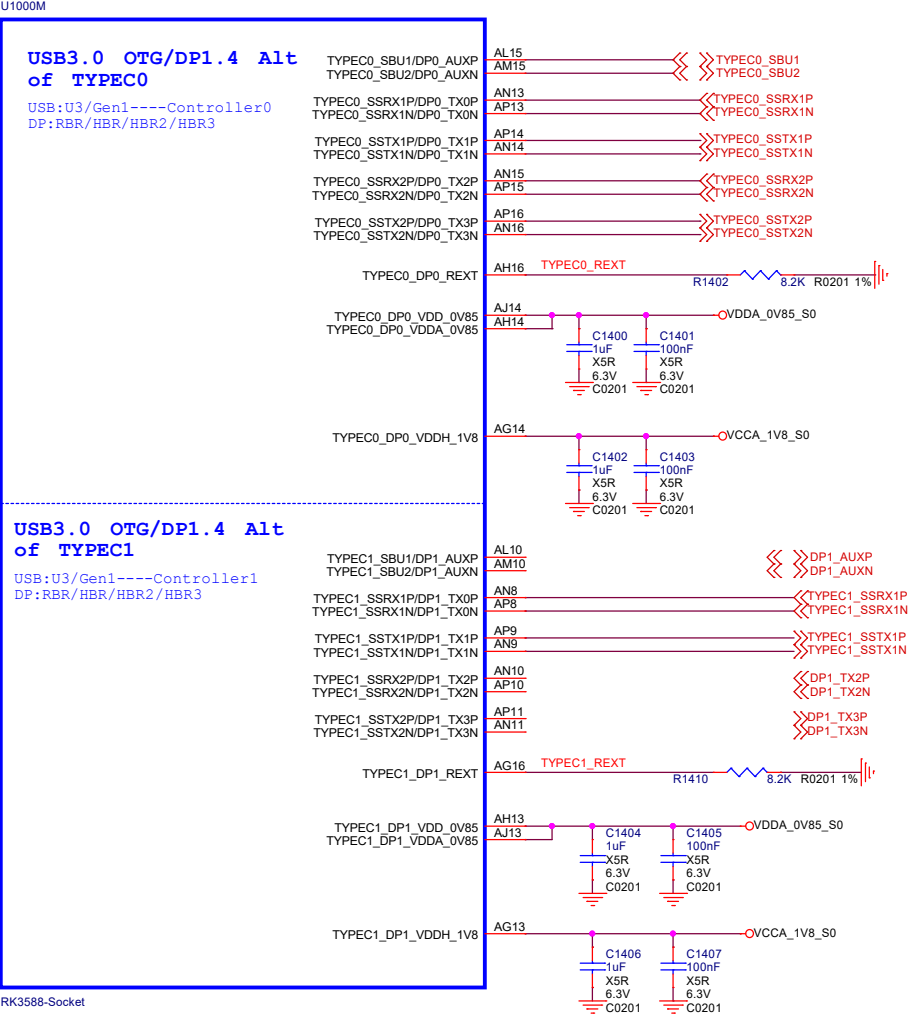


RK3588_D (VCCIO2 Domain)

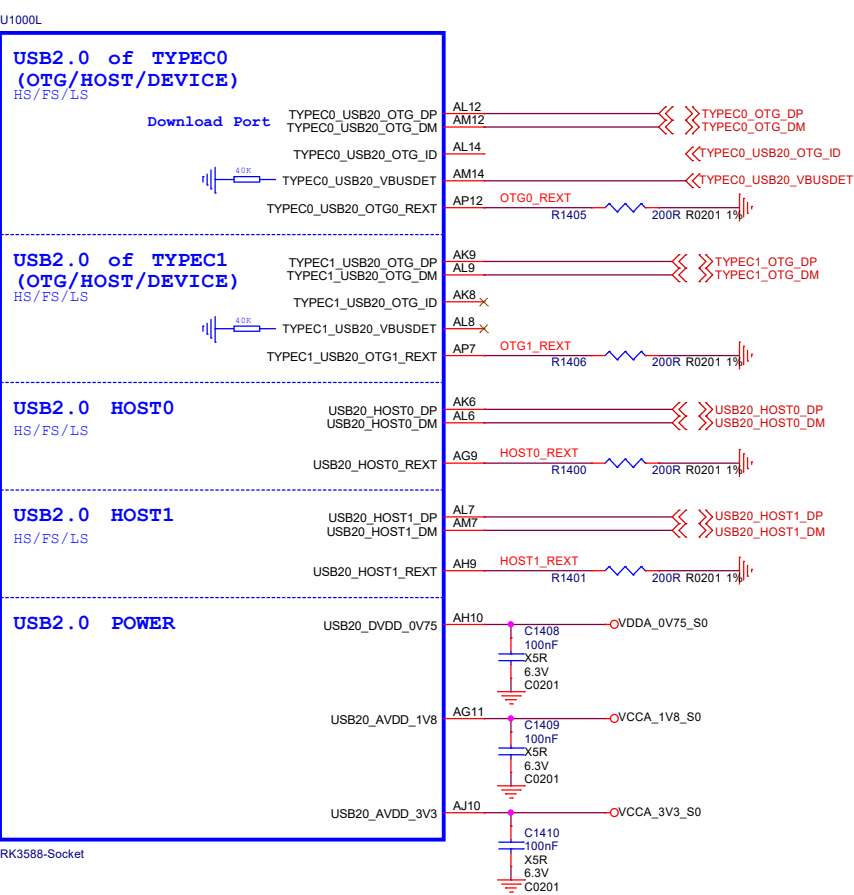


Size	Title: ROCK 5B	REV
A4	Page Name: RK3588_Flash/SD Controller	1.45
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RK3588_M (TYPEC/DP)

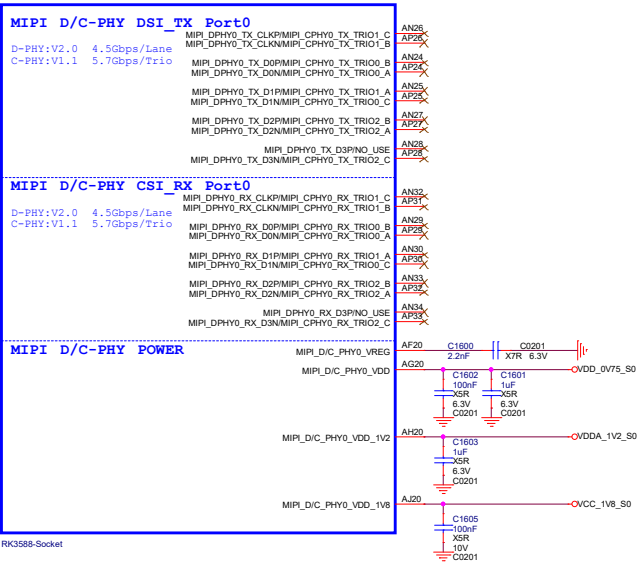


RK3588_L (USB2.0 HOST/OTG)

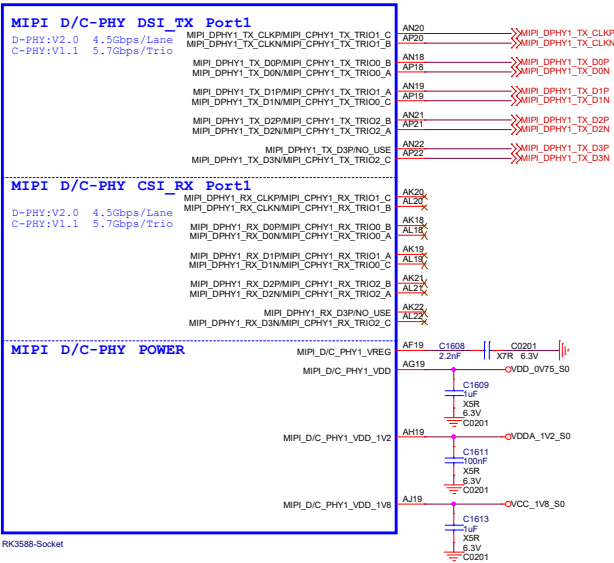


RK3588_Q/R(MIPI_D/C_PHY0/1)

U1000Q

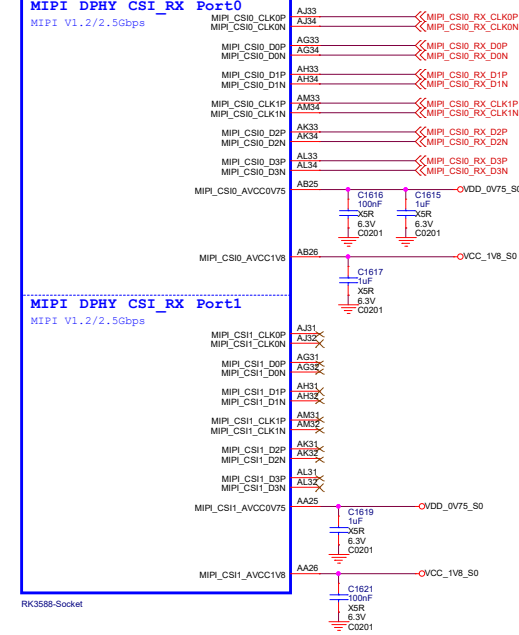


U1000R



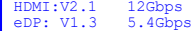
RK3588_P(MIPI_CSI_RX_PHY)

U1000P



U1000\$

HDMI:V2.1	12Gbps
eDP: V1.3	5.4Gbps

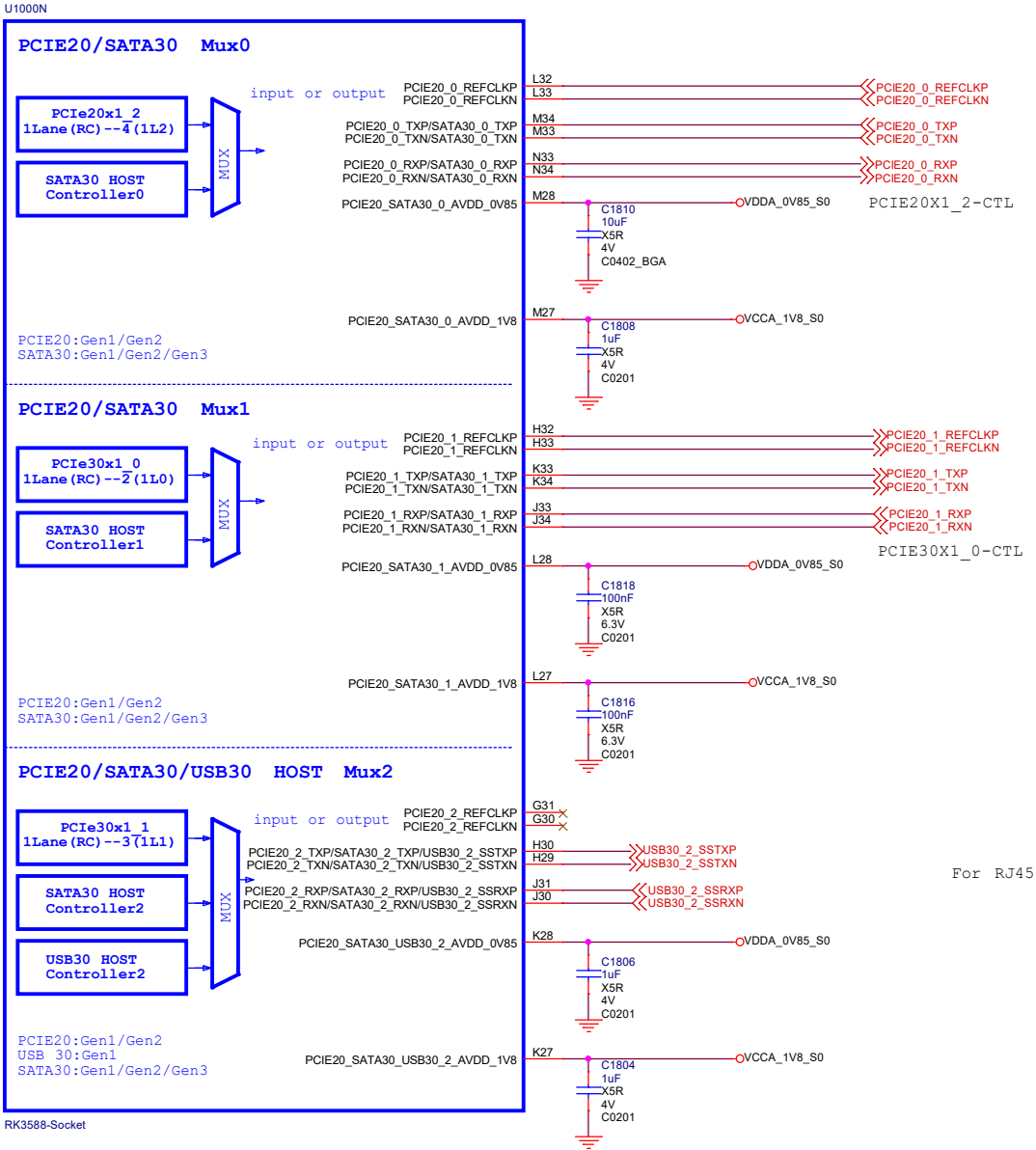


010001

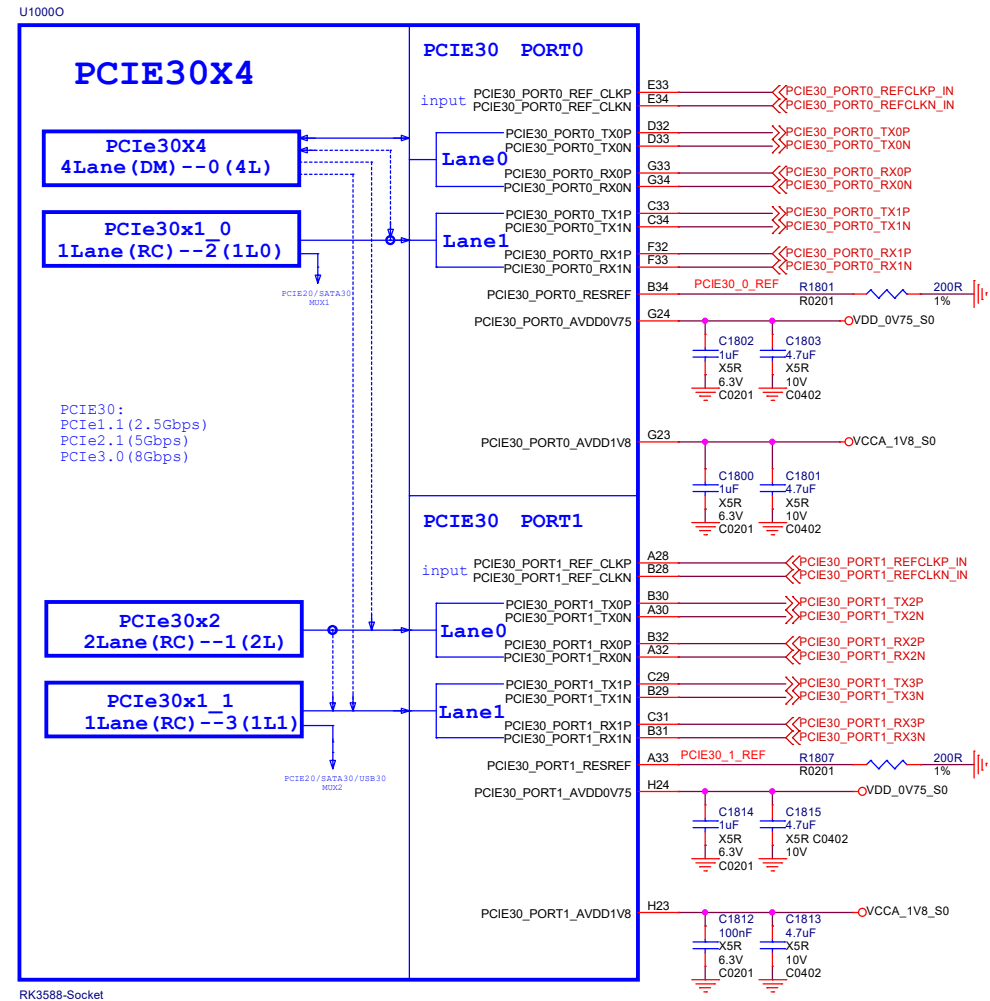
HDMI:V2.0



RK3588_N (PCIE20)



RK3588_O (PCIE30)



VCCIO5 Domain										
Operating Voltage=1.8V/3.3V										
PNM15_M0	/ SPI4_M1D0_M0	/	/ I2C6_SDA_M0	/ FSPI_D0_M0	/ I2D3_M0L0	/ SDD0_D0_M0	/ QNAC1_TWD0			GP103_A0_U
AUDIODM_LN	/ SPI4_M0R1_M0	/ PNM01_TR_M0	/ I2C6_SCL_M0	/ FSPI_D1_M0	/ I2D3_SCL0	/ SDD0_D1_M0	/ QNAC1_TWD3			GP103_A1_U
AUDIODM_LP	/ SPI4_CLK0_M0	/ UART8_TX_M0	/	/ FSPI_D2_M0	/ I2D3_L0CK	/ SDD0_D2_M0	/ QNAC1_R0DD0			GP103_A2_U
AUDIODM_MP	/ SPI4_CSD0_M0	/	/	/ FSPI_D3_M0	/ I2D3_S0D0	/ SDD0_D3_M0	/ QNAC1_R0DD3			GP103_A3_U
AUDIODM_RP	/ SPI4_C81_M0	/ UART8_R0T0N_M0	/	/	/ I2D3_R0D1	/ SDD0_C8D0_M0	/ QNAC1_TWD1R			GP103_A4_U
	/ MIPI_CAMERA0_CLK_M0	/ UART8_TX0N_M0	/ I2C4_SDA_M0	/ FSPI_CLK0_M0	/	/ SDD0_CLK0_M0	/ QNAC1_R0AC1R			GP103_A5_U
	/ MIPI_CAMERA0_CLK_M0	/	/ I2C4_SCL_M0	/	/	/	/ R0T0N_R0PCL0AD_25M			GP103_A6_U
PNM00_M0	/ MIPI_CAMERA0_CLK_M0	/	/	/	/	/	/ QNAC1_R0DD0			GP103_A7_U
PNM01_M0	/ MIPI_CAMERA0_CLK_M0	/ UART2_TX_M0	/	/	/	/	/ QNAC1_R0DDV_C8D0			GP103_B0_U
PNM01_TR_M0	/ MIPI_CAMERA0_CLK_M0	/ UART2_RX_M0	/	/	/ I2D3_R0D1_M0	/	/ QNAC1_TY0R0			GP103_B2_U
	/	/ UART2_R0T0N	/	/	/ I2D3_R0D0_M0	/	/ QNAC1_TWD0			GP103_B3_U
	/	/ UART2_C7D0	/	/	/ I2D3_M0L0_M0	/	/ QNAC1_TYD0			GP103_B4_U
PNM01_M0	/ CAN1_RX_M0	/ UART3_TX_M0	/	/	/ I2D3_SCL0_M0	/	/ QNAC1_TYD0N			GP103_B5_U
PNM01_M0	/ CAN1_TX_M0	/ UART3_RX_M0	/	/	/ I2D3_L0CK0_M0	/	/ QNAC1_M0CL0IN0T0M			GP103_B6_U
	/	/	/ I2C3_SCL_M0	/ SPI1_M0R1_M0	/ HOM1_TX1_WPD_M0	/	/ QNAC1_P0T0_R0P_R0F_C1K			GP103_B7_U
	/	/ UART7_TX_M0	/ I2C3_SDA_M0	/ SPI1_M1D0_M0	/	/	/ QNAC1_P0P0R0T0C			GP103_C0_U
PNM01_M0	/ P0C1D002_R0T0N0N_R0T0N	/ UART7_RX_M0	/	/ SPI1_C81_M0	/	/	/ QNAC1_P0P0R0C			GP103_C1_U
PNM01_TR_M0	/	/ UART7_R0T0N_M0	/ I2C0_SCL_M0	/ SPI1_C8D0_M0	/	/ MIPI_T0D0	/ QNAC1_M0L0			GP103_C2_U
PNM01_RX_M0	/	/ UART7_C7D0_M0	/ I2C0_SDA_M0	/ SPI1_C81_M0	/	/ MIPI_T0R1	/ QNAC1_M0D0			GP103_C3_U
CAN1_RX_M0	/ P0C1D004_C1L0R0D0N_M0	/ UART5_TX_M0	/ FSPI_C7D0N_M0	/ SPI3_C8D0_M0	/ HOM1_TX1_C8C0_M2	/	/ C1P_D8			GP103_C4_U
CAN1_TX_M0	/ P0C1D004_W0R0D0N_M0	/ UART5_RX_M0	/ FSPI_C7R0N_M0	/ SPI3_C81_M0	/ HOM1_TX1_SDA_M0	/	/ C1P_D9			GP103_C5_U
	/ P0C1D004_P0R0T0N_M0	/	/	/ SPI3_M1D0_M0	/ HOM1_TX1_SCL_M0	/	/ C1P_D10			GP103_C6_U
	/ P0C1D001_2_C1L0R0D0N_M0	/	/ I2C3_SCL_M0	/ SPI3_M0R1_M0	/ HOM1_TX0_SCL_M0	/	/ C1P_D11			GP103_C7_U
PNM00_M0	/ P0C1D001_2_W0R0D0N_M0	/ UART4_RX_M0	/ I2C3_SDA_M0	/ SPI3_C1L0_M0	/ HOM1_TX0_SDA_M0	/	/ C1P_D12			GP103_D0_U
PNM00_M0	/ P0C1D001_2_P0R0T0N_M0	/ UART4_TX_M0	/	/	/ SPI0_M1D0_M0	/ HOM1_RX_C8C0_M1	/	/ C1P_D13		GP103_D1_U
	/ P0C1D002_C1L0R0D0N_M0	/ UART8_R0T0N_M0	/ I2C7_SCL_M0	/ SPI0_M0R1_M0	/ HOM1_RX_SCL_M0	/	/ C1P_D14			GP103_D2_U
	/ P0C1D002_P0R0T0N_M0	/ UART8_TX_M0	/	/	/ SPI0_C8D0_M0	/	/ C1P_D15			GP103_D3_U
	/ P0C1D002_P0R0T0N_M0	/ UART9_RX_M0	/	/	/ SPI0_C8D0_M0	/ HOM1_RX_WPD00T0_M0	/ HOM1_TX0_WPD_M0	/ M0D0_TY0AG_TY0R0_M0		GP103_D4_U
PNM01_TR_M0	/ P0C1D004_R0T0N0N_R0T0N	/ UART9_TX_M0	/	/	/ SPI0_C81_M0	/ SPI1_WPD00N_M0	/	/ M0D0_TY0AG_TY0R0_M0		GP103_D5_U

VCCIO5_V18

VCCIO5

U100K									
VCCI06 Domain									
Operating Voltage=1.8V/3.3V									
/ SP10 MISO M1	/ UART9 RTSN M1	/ I2S1 MCLK M0	/ PCIE3X01_1 CLAREQ M1	/ BT1120 D0	/ C1F D0				GP104_A0_d
/ SP10 MISO M1	/ UART9 CTSEN M1	/ I2S1 SCLK M0	/ PCIE3X01_1 WAKEN M1	/ BT1120 D1	/ C1F D1				GP104_A1_d
/ SP10 CLK M1	/	/ I2S1 SCLK M1	/ PCIE3X01_1 PERSTN M1	/ BT1120 D2	/ C1F D2				GP104_A2_d
/ SP10 MISO M1	/ UART9 TX M2	/ I2S3 SCL M2	/ PCIE3X01_0 CLAREQ M1	/ BT1120 D3	/ C1F D3				GP104_A3_d
/ SP12 MISO M1	/ UART9 RX M2	/ I2S3 SCL M2	/ PCIE3X01_0 WAKEN M1	/ BT1120 D4	/ C1F D4				GP104_A4_d
/ SP12 MISO M1	/ UART9 TX M2	/ I2S3 SDA M2	/ PCIE3X01_0 PERSTN M1	/ BT1120 D5	/ C1F D5				GP104_A5_d
/ SP12 CLK M1	/ UART9 RX M2	/ I2S3 SCL M2	/ I2S1 SD11 M0	/ PCIE3X02 CLAREQ M0	/ BT1120 D6	/ C1F D6			GP104_A6_d
/ SP12 CSD M1	/	/ I2S3 SDA M2	/ I2S1 SD12 M0	/ PCIE3X02 WAKEN M1	/ BT1120 D7	/ C1F D7			GP104_A7_d
/ SP12 CSD M1	/ UART9 TX M0	/ I2C4 SDA M2	/ I2S1 SD13 M0	/ PCIE3X02 PERSTN M1	/ BT1120 D8	/ C1F D8			GP104_A8_d
SATA0_ACT_LED M0	/ SPDIF1_TX M1	/ SP10 CSI M1	/ UART9 RX M0	/ I2C4 SCL M3	/ I2S1 SD00 M0	/ PCIE3X01_0 BUTTON_RSTN	/	/ MIPI_CAMERA0_CLK M0	GP104_B1_U
SATA0_ACT_LED M0	/ SPDIF1_TX M1	/ SP10 CSI M1	/ UART9 TX M0	/ I2C4 SCL M3	/ I2S1 SD01 M0	/ PCIE3X01_1 BUTTON_RSTN	/ BT1120 D9	/ C1F BREF	GP104_B2_U
CAN1_RX M1	/ PWRN14 M1	/ SP10 CSD M1	/ UART9 RTSN M0	/ I2C7 SCL M3	/ I2S1 SD02 M0	/			GP104_B3_U
CAN1_TX M1	/ PWRN15 IR M1	/	/ UART9 CTSEN M0	/ I2C7 SDA M3	/ I2S1 SD02 M0	/ PCIE2X01_2 BUTTON_RSTN	/ BT1120 D9	/ C1F VBYNC	GP104_B3_U
SPDIF0_TX M1	/ PWRN13 M1	/ SP0 SPDEN M0	/ UART9 TX M1	/	/ I2S1 SD03 M0	/ PCIE3X04 CLAREQ M0	/ BT1120 D10	/ C1F SDRDY0	GP104_B4_U
BDATA1_ACT_LED M0	/ PWRN13 M1	/ SP13 MISO M1	/ UART9 RX M1	/	/ I2C1 SCL M1	/ PCIE3X04 WAKEN M1	/ BT1120 D11		GP104_B5_d
SATA0_ACT_LED M0	/ PWRN13 M1	/ SP13 MISO M1	/	/ I2C1 SCL M1	/ I2S1 RX_HPOUT M0	/ PCIE3X04 PERSTN M1	/ BT1120 D12		GP104_B6_d
/	/	/	/	/ I2C3 SDA M1	/	/ PCIE2X01_2 CLAREQ M1	/ BT1120 D13		GP104_B7_U
/	/	/	/	/ I2C3 SCL M1	/	/			GP104_B8_U
/	/	/	/	/ I2C8 SCL M3	/ I2S1 TX0 SDA M0	/ PCIE2X01_2 WAKEN M1	/ BT1120 D14		GP104_C0_U
/	/	/	/	/ I2C8 SDA M3	/ I2S1 TX0 CCLK M0	/ PCIE2X01_2 PERSTN M1	/ BT1120 D15		GP104_C1_d

VCCI06_V18

VCCI06

RK3588-Socket

U1000

VCCIO4 Domain
Operating Voltage: 1.8V/3.3V

/SB14_MISO_M2 /PCIE30X2_1_CLKREQ0_M2 /DPO_HPDIN_M2 /I2C2_SDA_M2 /UART5_RX_M1	GPIO1_A0_d	A24	↗
SATA1_ACT_LED_M1 / /SB14_M0ST_M2 /PCIE30X1_1_WAKEN_M2 /DPI_HPDIN_M2 /I2C2_SCL_M1 /UART5_TX_M1	GPIO1_A1_d	A25	↗
/PWR0_M2 /SB14_CLK_M2 /VOP_POST_EMPTY /I2C4_SDA_M3 /UART6_RTSN_M1	GPIO1_A2_d	A26	↗
/SB14_CSD_M2 / /SB12_MISO_M0 /HDMI_TX1_BCL_M2 /I2C4_SCL_M3 /UART6_CTSN_M1	GPIO1_A3_d	A27	↗
/PWR0_M2 / /SB12_MISO_M0 /HDMI_TX1_BCL_M2 /I2C4_SCL_M3 /UART6_CTSN_M1	GPIO1_A4_d	B25	↗
/SB12_M0ST_M0 /HDMI_TX0_HPD_M0 / /SB12_CLK_M2 /HDMI_TX1_HPD_M0 /	GPIO1_A5_d	B26	↗
/PWR0_TR_M3 /SB12_CSD_M2 /PCIE30X1_1_PERRST_M2 /PWR0_B0D1_M1	GPIO1_A6_d	C24	↗
/ /SB12_CBI_M2 /PCIE30X4_CLKREQ0_M2 / /PWR0_B0D1_M1 /	GPIO1_A7_u	C25	↗
/ /SB10_MISO_M2 /PCIE30X4_WAKEN_M3 / /PWR0_B0D1_M1 /	GPIO1_B0_u	C27	↗
/ /SB10_M0ST_M2 /PCIE30X4_PERRST_H3 / /PWR0_B0D1_M1 /UART4_RX_M2	GPIO1_B1_d	D25	↗
SATA2_ACT_LED_M1 / /SB10_CLK_M2 /PCIE30X2_0_WAKEN_M2 /PWR0_CBI_M1	GPIO1_B2_d	D26	↗
/ /SB10_CSD_M2 /PCIE30X2_0_WAKEN_M2 / /PWR0_CBI_M1 /UART4_TX_M2	GPIO1_B3_d	D27	↗
/ /SB10_CLK_M2 /PCIE30X2_0_WAKEN_M2 / /PWR0_CBI_M1 /UART4_TX_M2	GPIO1_B4_u	E24	↗
/SB10_CBI_M2 /PCIE30X1_0_CLKREQ0_M2 / /PWR0_CBI_M1 /UART5_RX_M2	GPIO1_B5_u	E25	↗
HDMI_TX0_HPDOUT_M2 /SB10P0_TX_M0 /PCIE30X2_WAKEN_M3 /Mipi_CAMERA1_CLK_M0 /I2C5_SCL_M3 /UART1_RX_M1	GPIO1_B6_u	E26	↗
SATA2_ACT_LED_M1 /HDMI_TX0_HPD_M1 /PCIE30X2_PERRST_H3 /Mipi_CAMERA1_CLK_M0 /I2C5_SCL_M3 /UART1_RX_M1	GPIO1_B7_u	E27	↗
HDMI_RX_BCL_M2 /PWR01_M2 / /Mipi_CAMERA2_CLK_M0 /I2C5_SCL_M3 /UART1_RTSN_M1	GPIO1_B8_u	F24	↗
HDMI_RX_SDA_M2 /PWR01_TR_M3 /PCIE30X2_CLKREQ0_M3 /Mipi_CAMERA2_CLK_M0 /I2C5_SDA_M2 /UART1_CTSN_M1	GPIO1_D7_u	F25	↗

VCCIO4_1V8

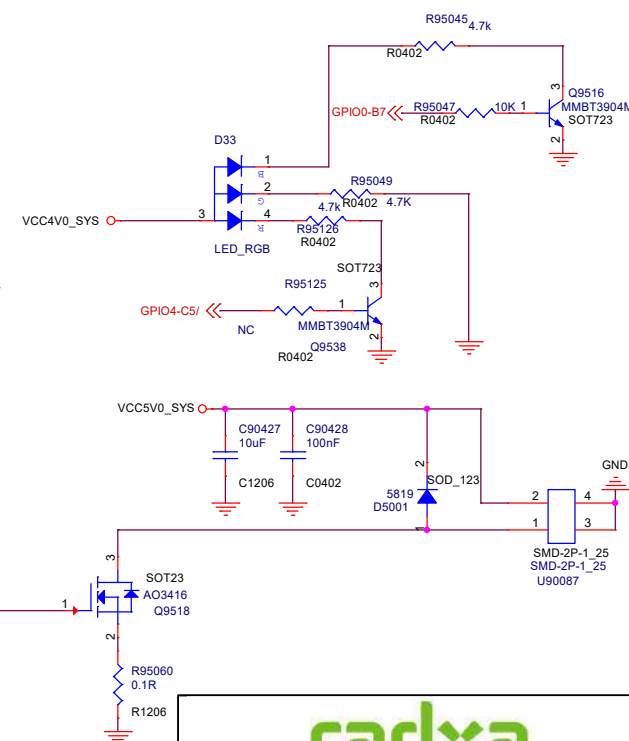
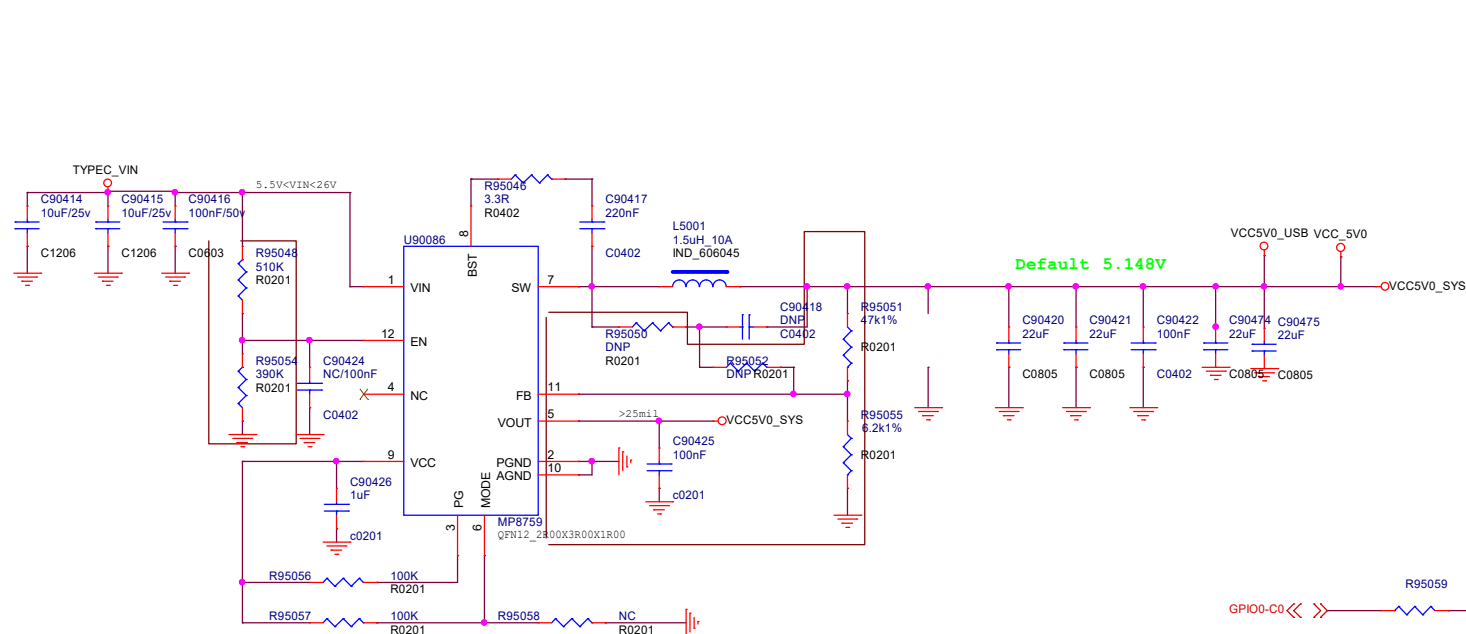
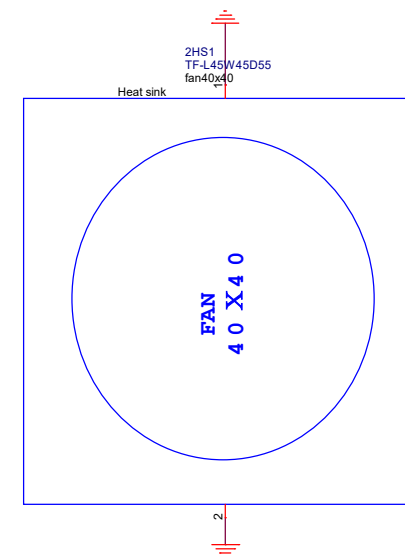
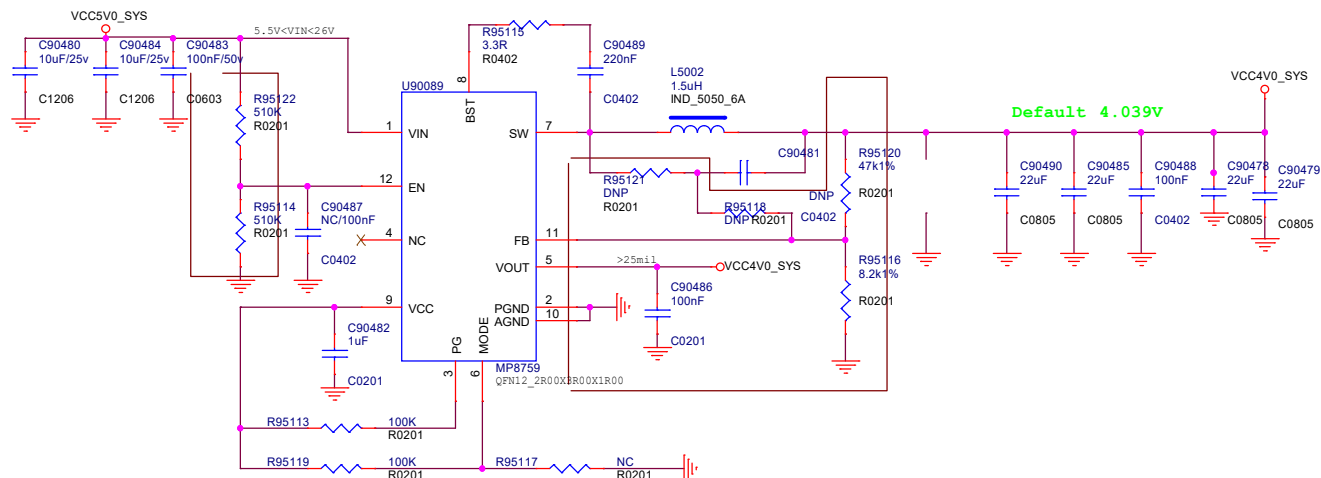
H20

C100P
1000P
XSR
&
V
C0201

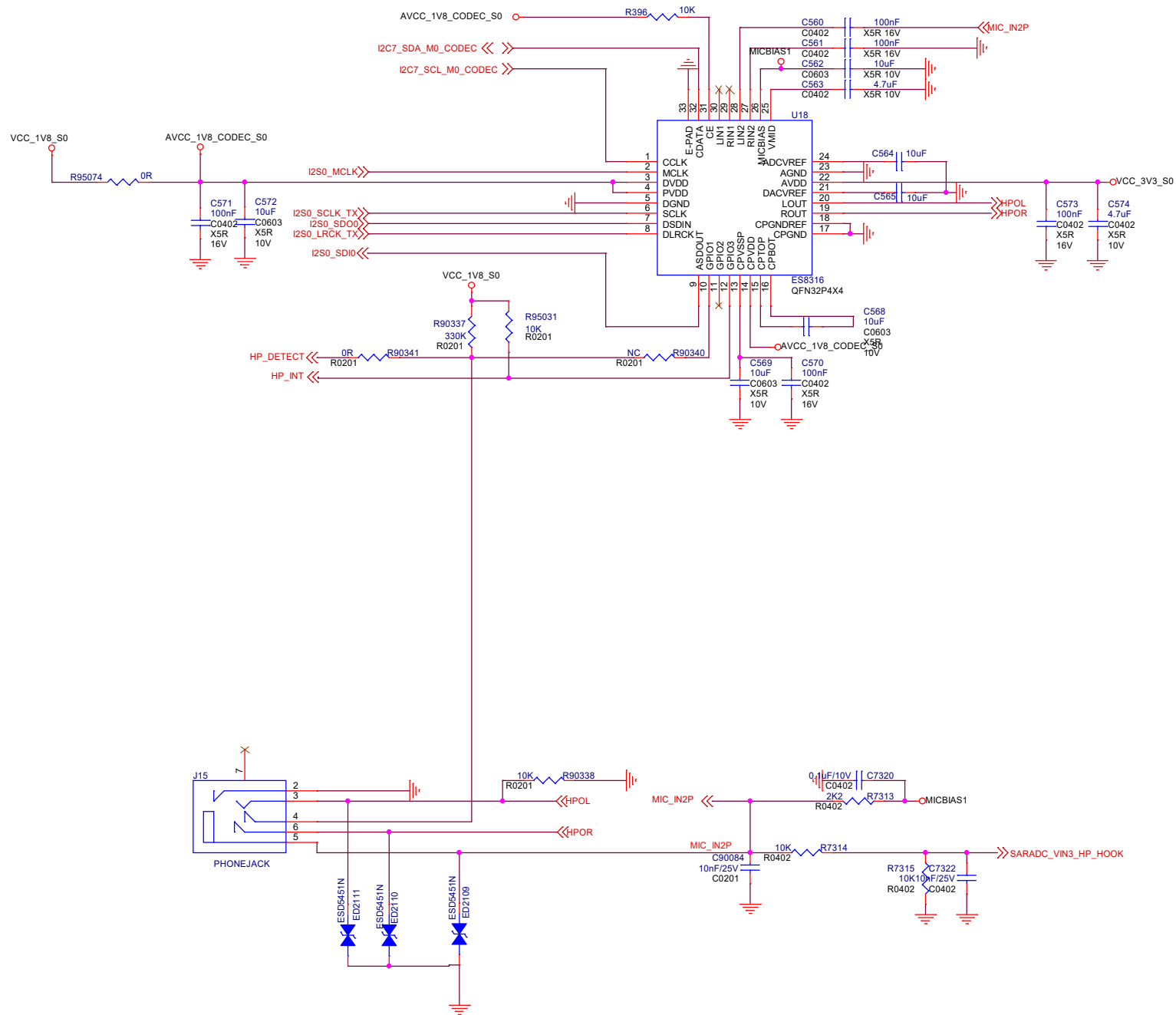
VCCIO4

H21

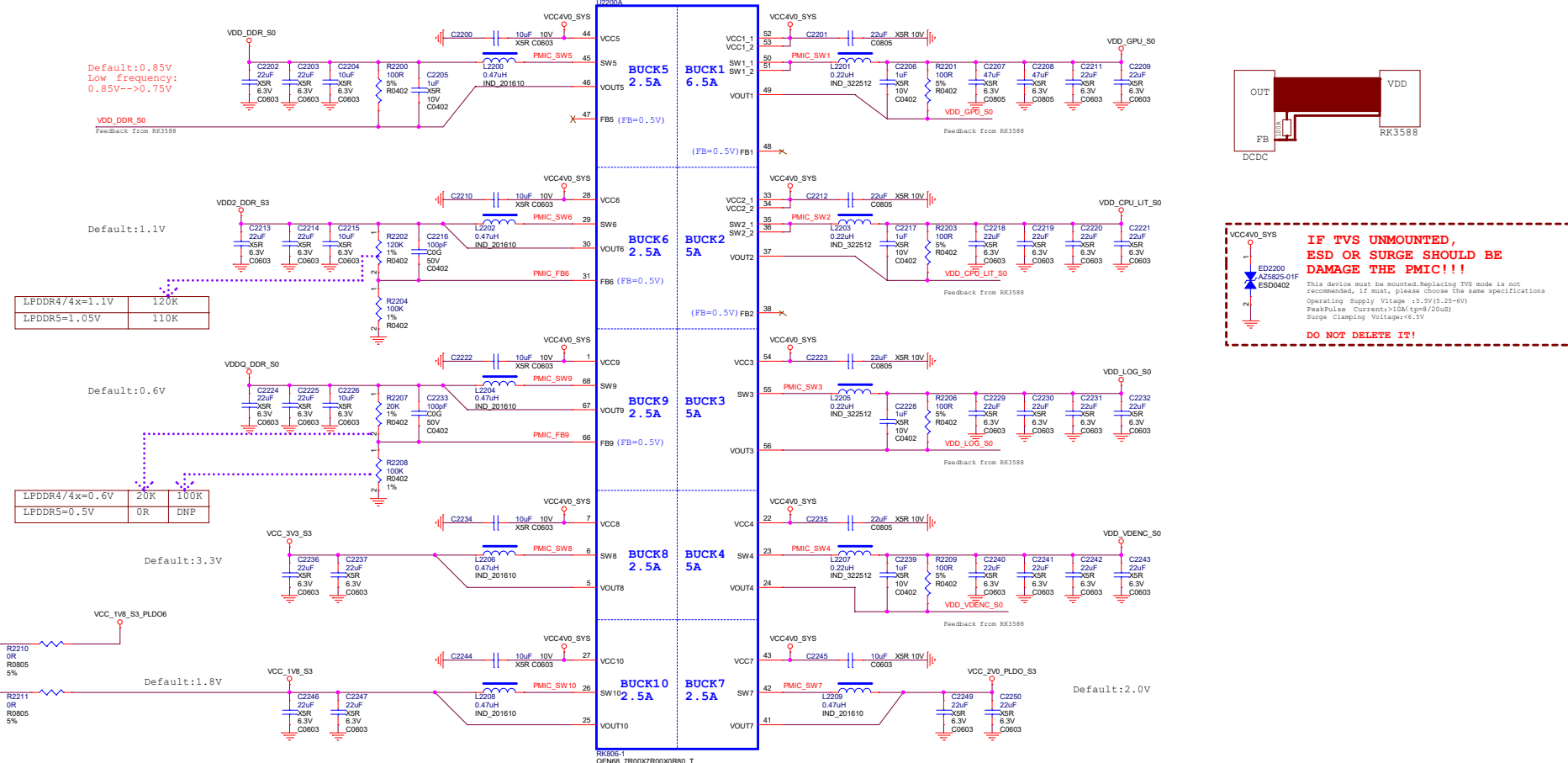
TYPEC-IN ----> **MP8759 DCDC 5.148V** ----> USB
 ----> VCC5V0 ----> **MP8759 DCDC 4.039V** ----> PMU
 ----> 40PIN



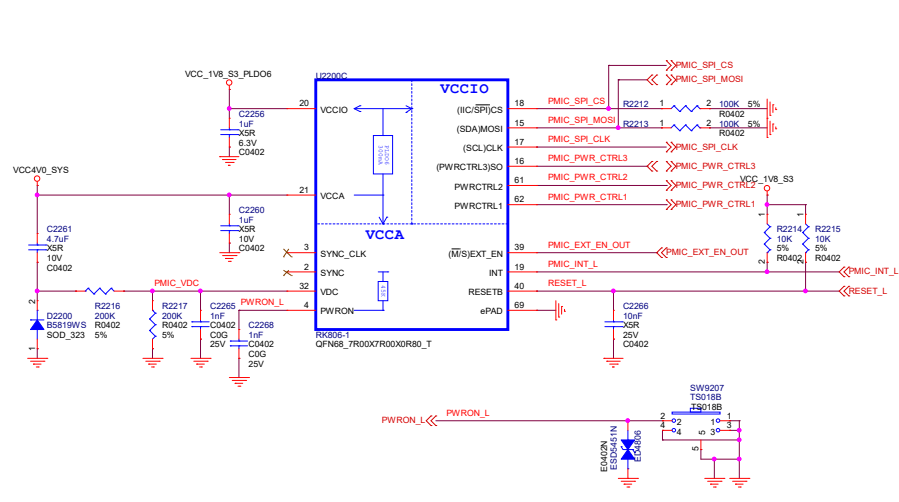
CODEC ES8316



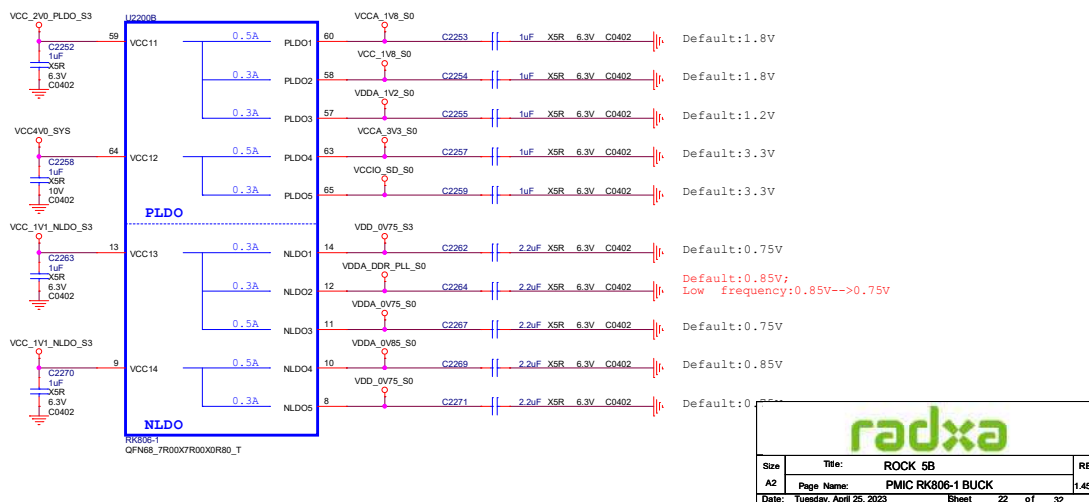
PMIC RK806-1 BUCK



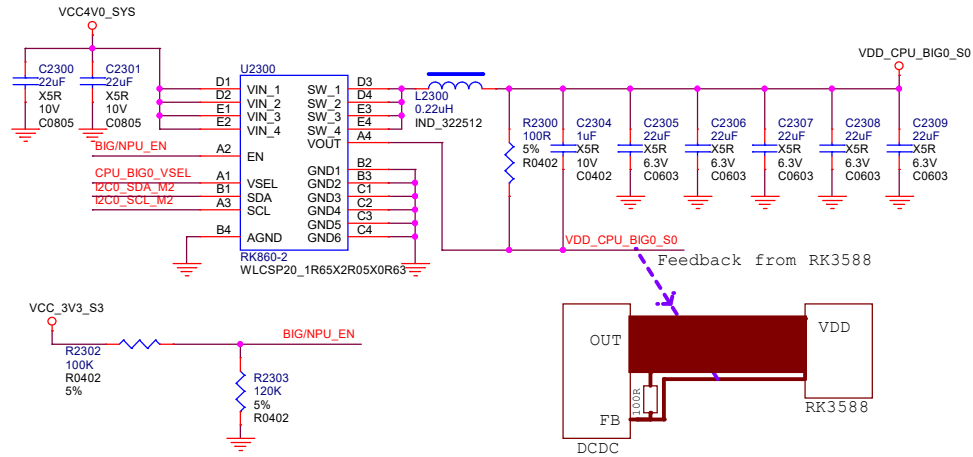
PMIC RK806-1 Managerment



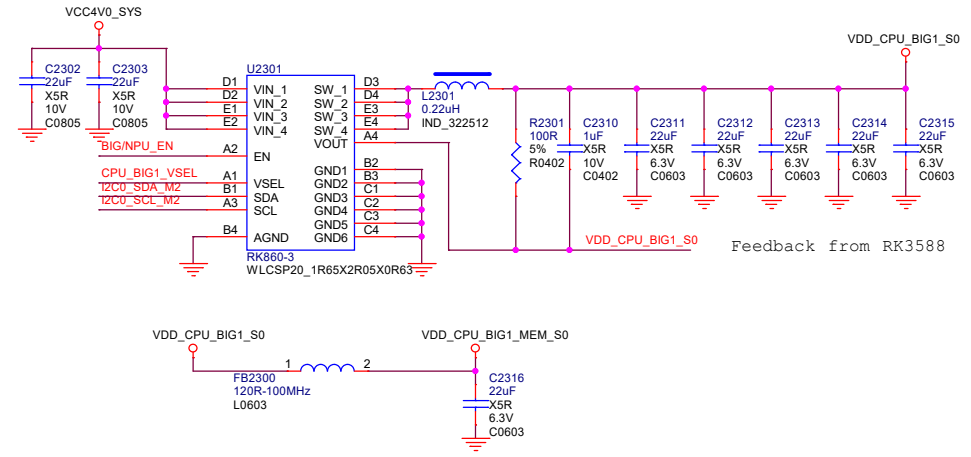
PMIC RK806-1 LDC



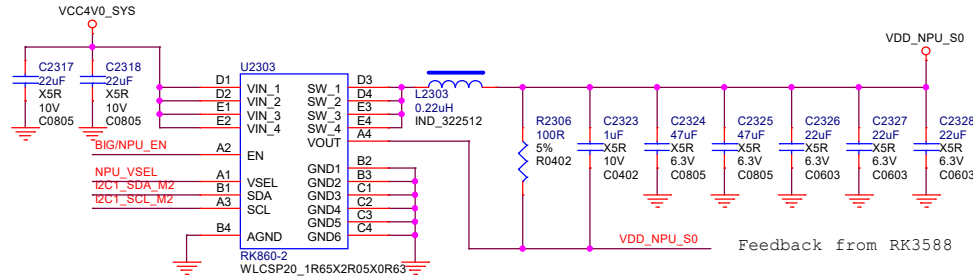
VDD_CPU_BIG0



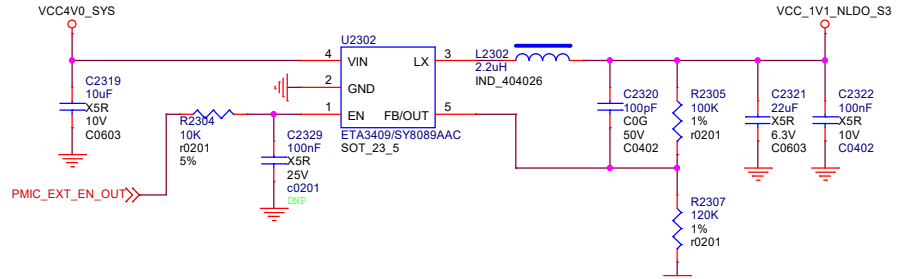
VDD_CPU_BIG1



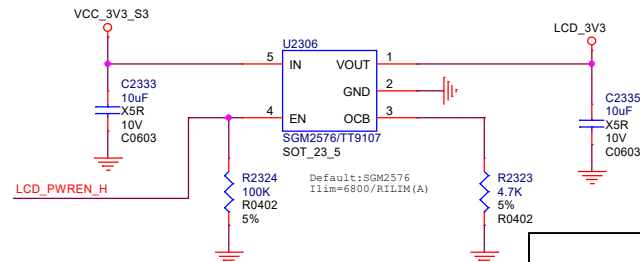
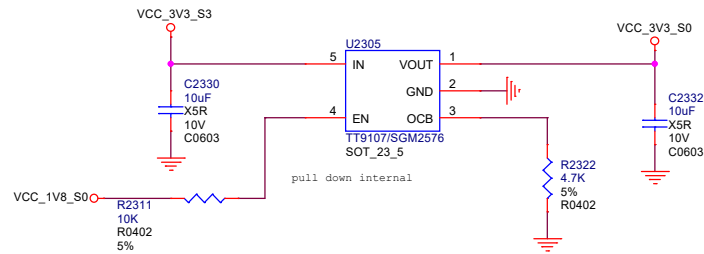
VDD_NPU



VCC_1V1_NLDO_S3

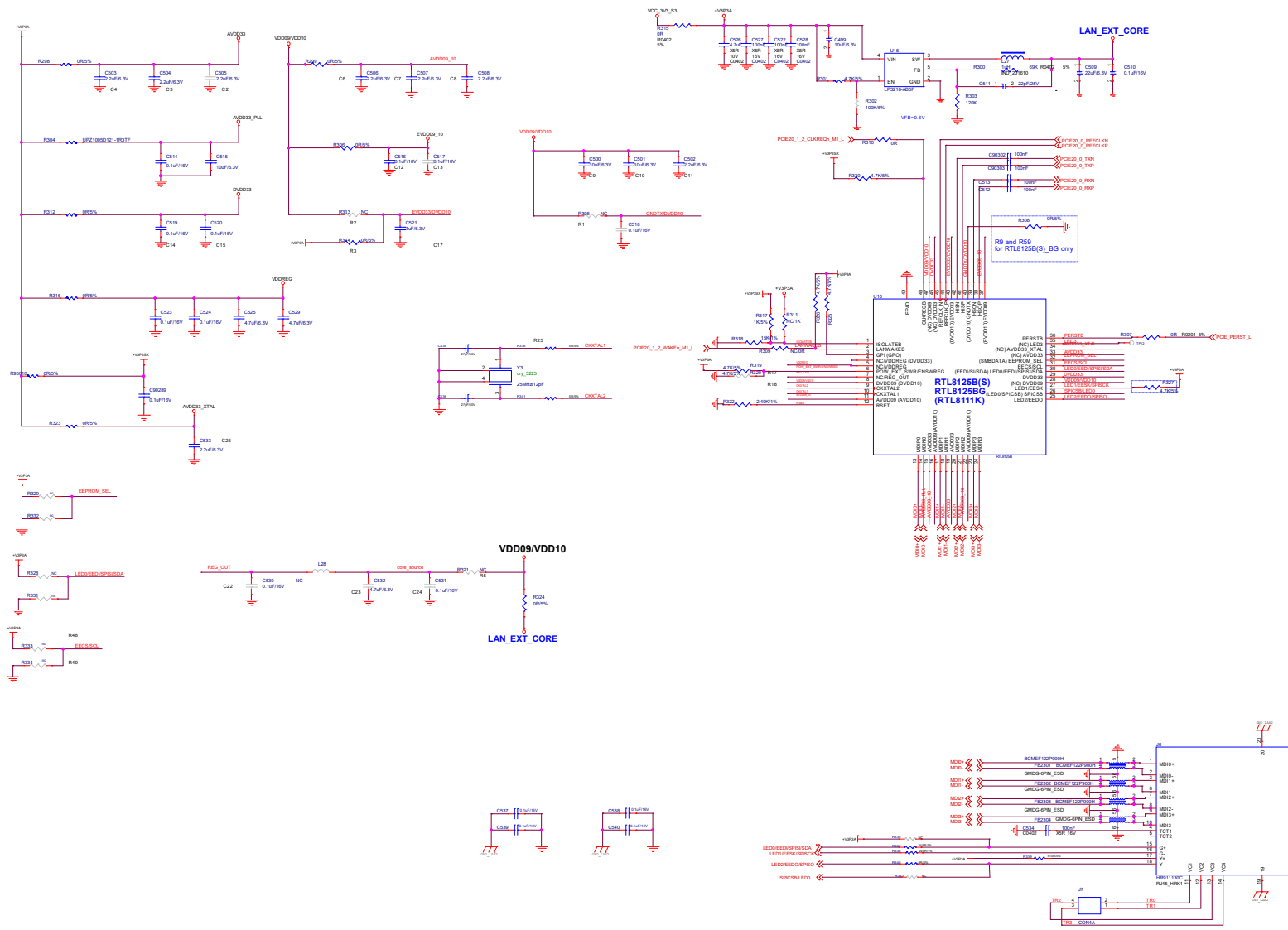


>>> I2C1_SCL_M2
 <<< I2C1_SDA_M2
 >>> I2C0_SCL_M2
 <<< I2C0_SDA_M2
 >>> CPU_BIG0_VSEL
 >>> CPU_BIG1_VSEL
 >>> NPU_VSEL
 >>> LCD_PWREN_H

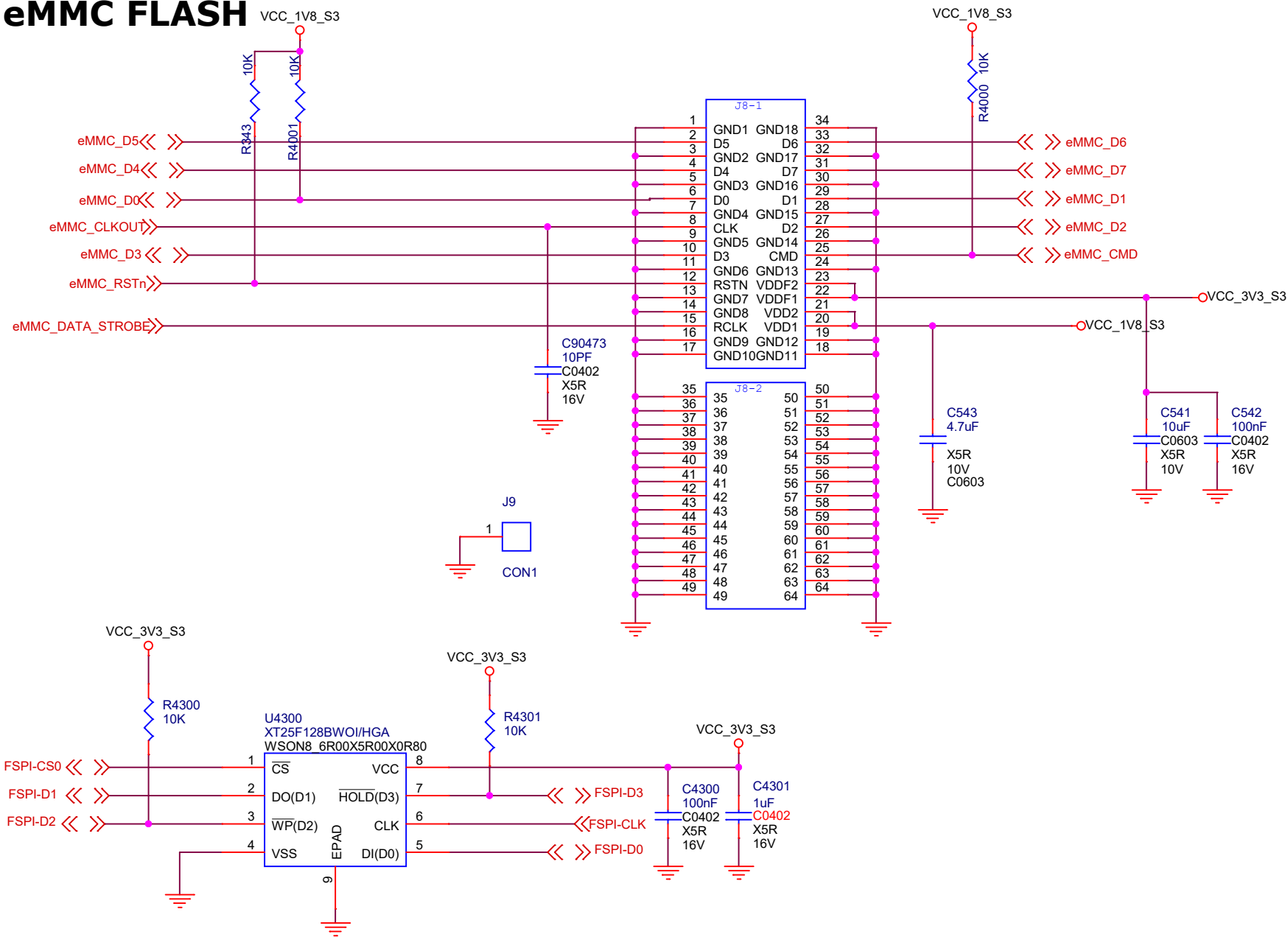


radxa

Size	Title: ROCK 5B	REV
A3	Page Name: Power Ext Discrete	1.45
Date: Tuesday, April 25, 2023	Sheet 23 of 32	

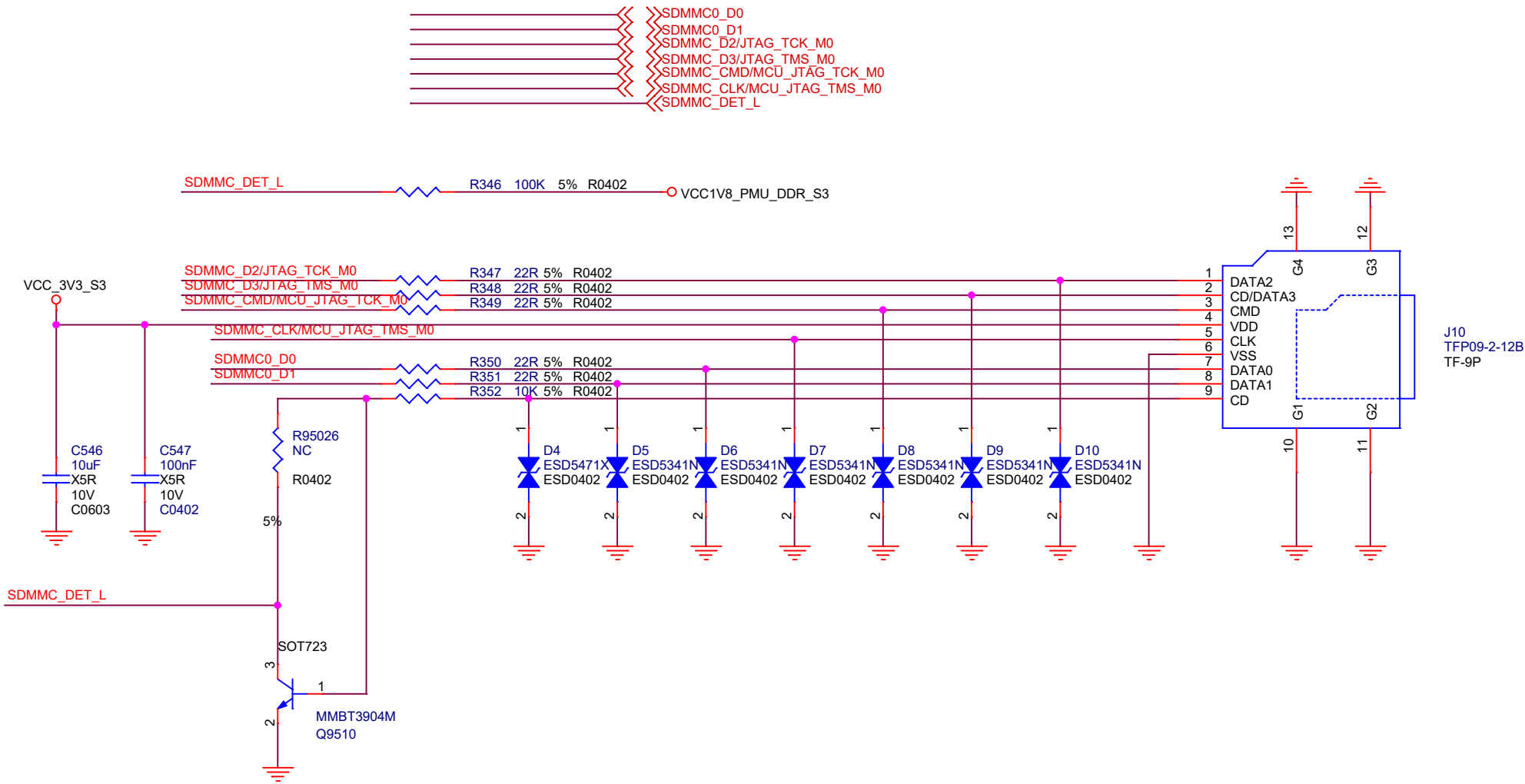


eMMC FLASH

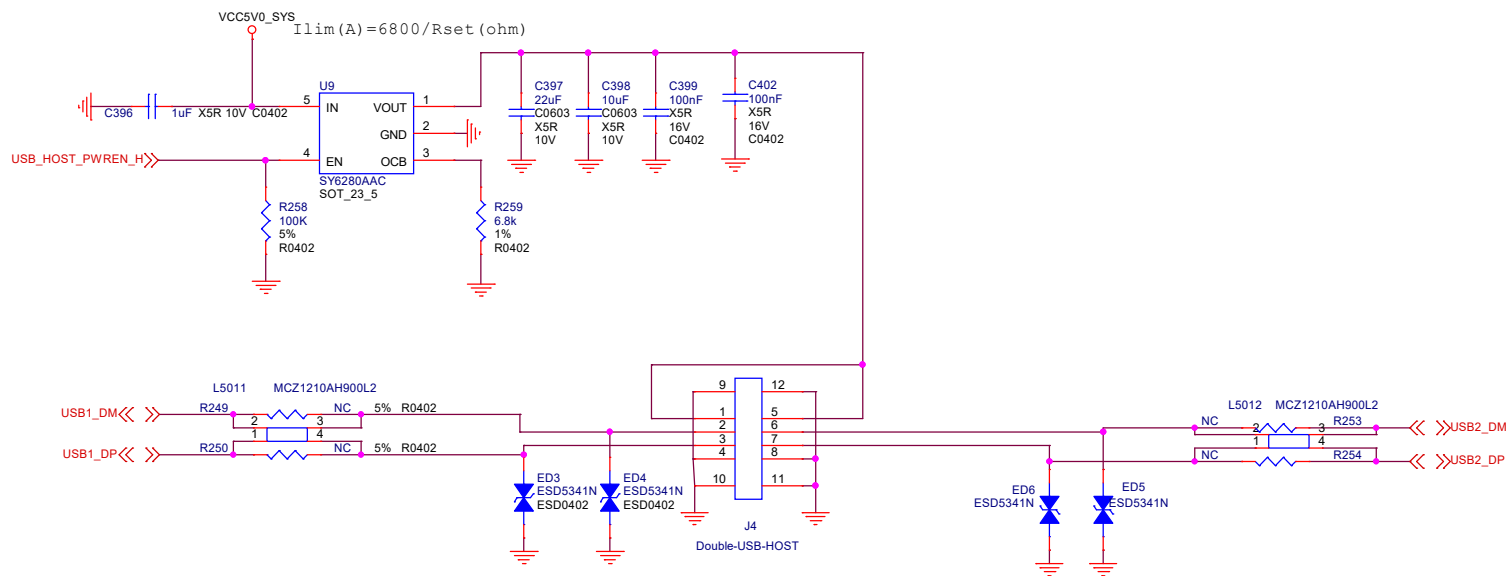


radxa		
Size	Title: ROCK 5B	REV
A4	Page Name: eMMC FLASH	1.45
Date: Tuesday, April 25, 2023 Sheet 25 of 32		

TF CARD



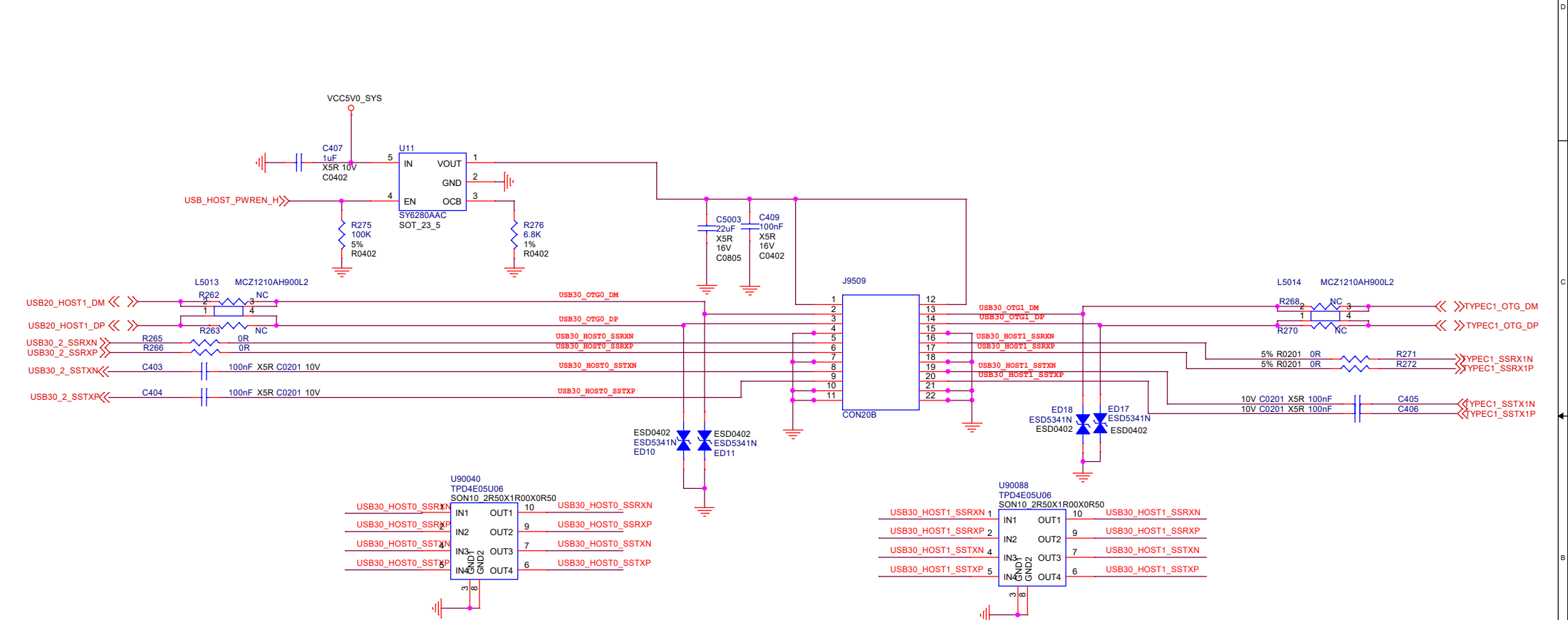
USB2.0



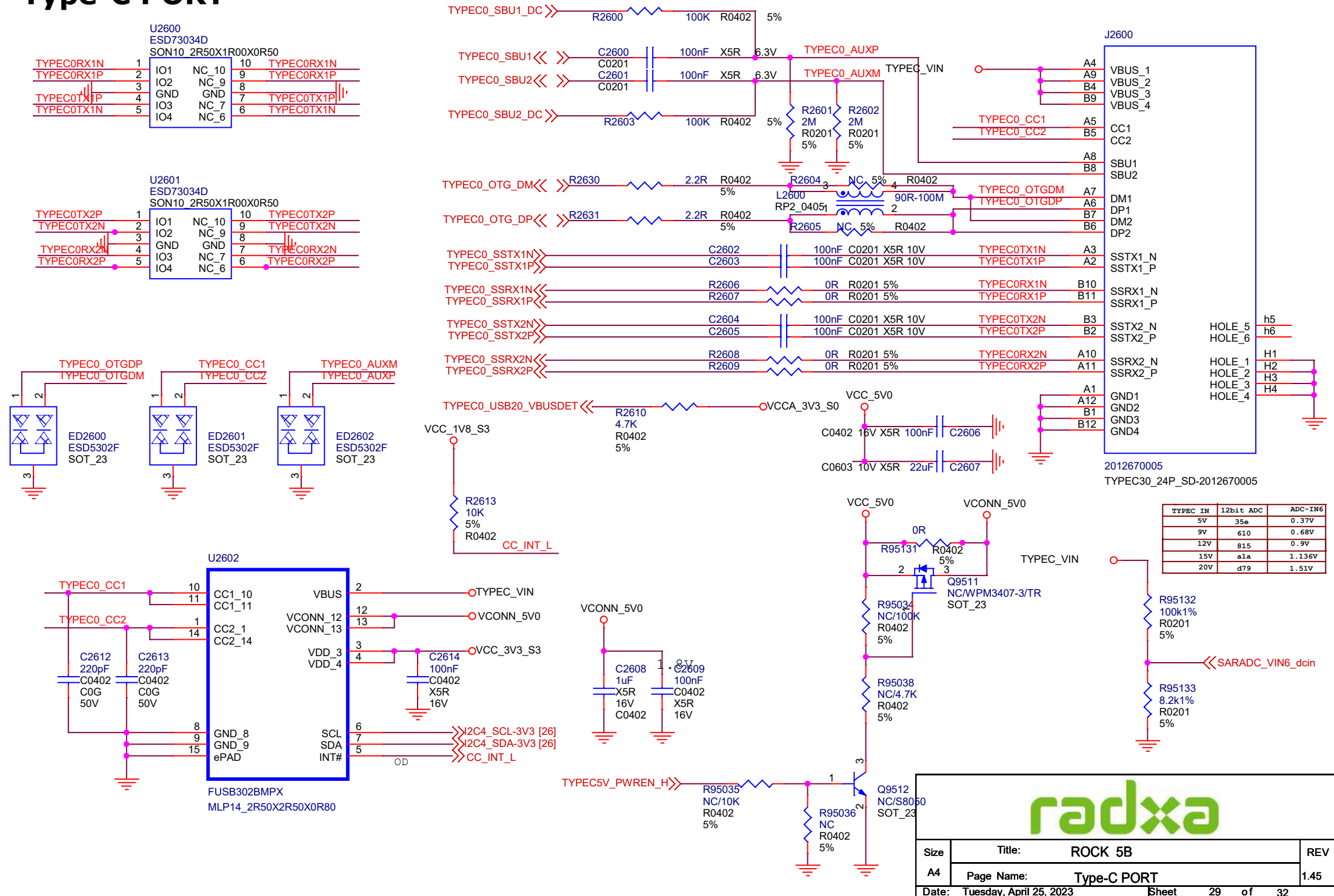
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Date: Tuesday, April 25, 2023	Sheet 27 of 32	

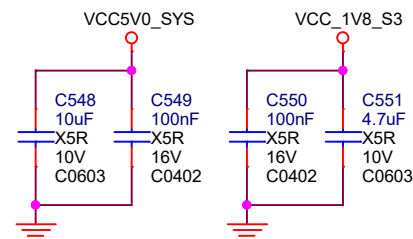
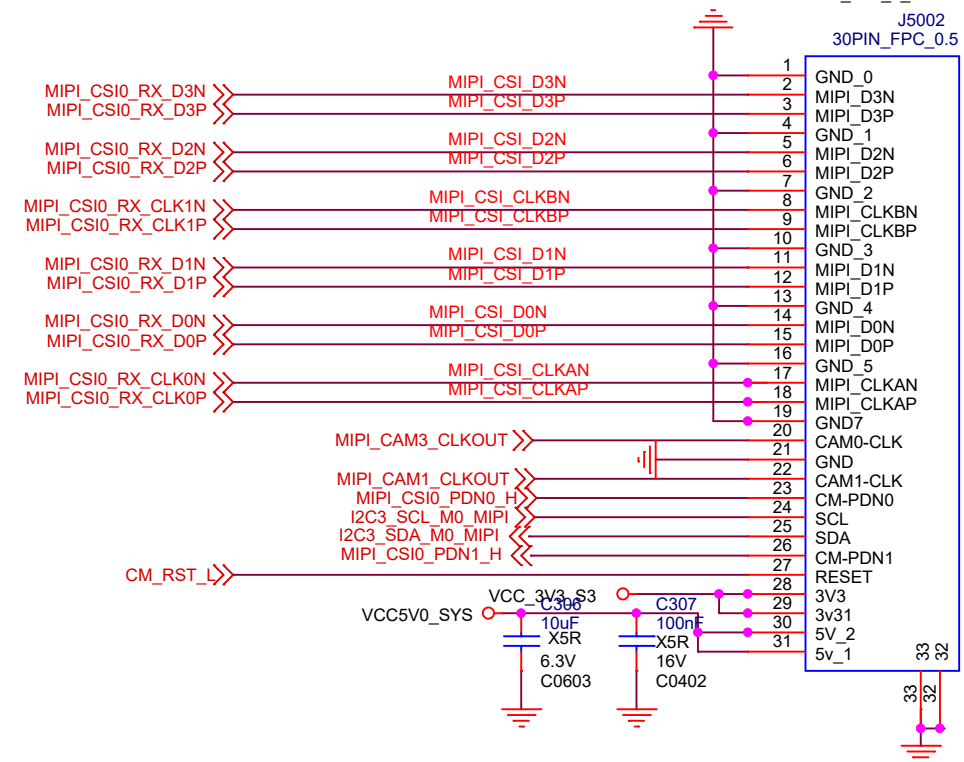
USB3.0 HOST PORT



Type-C PORT

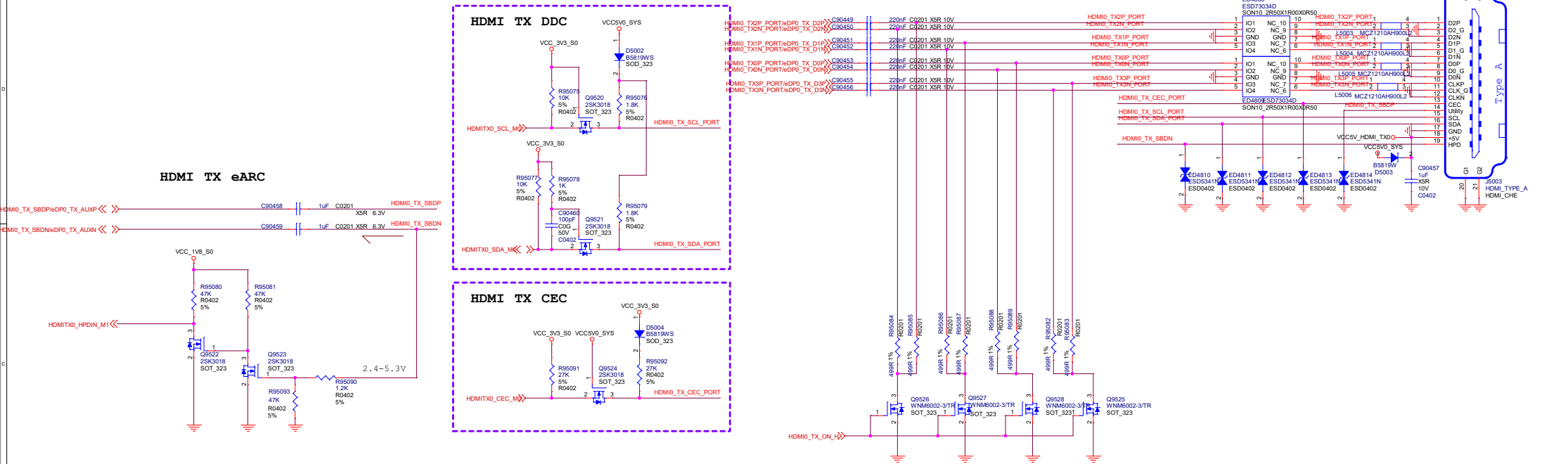


FH35C_31P_0_6SHW
J5002
30PIN_FPC_0.5

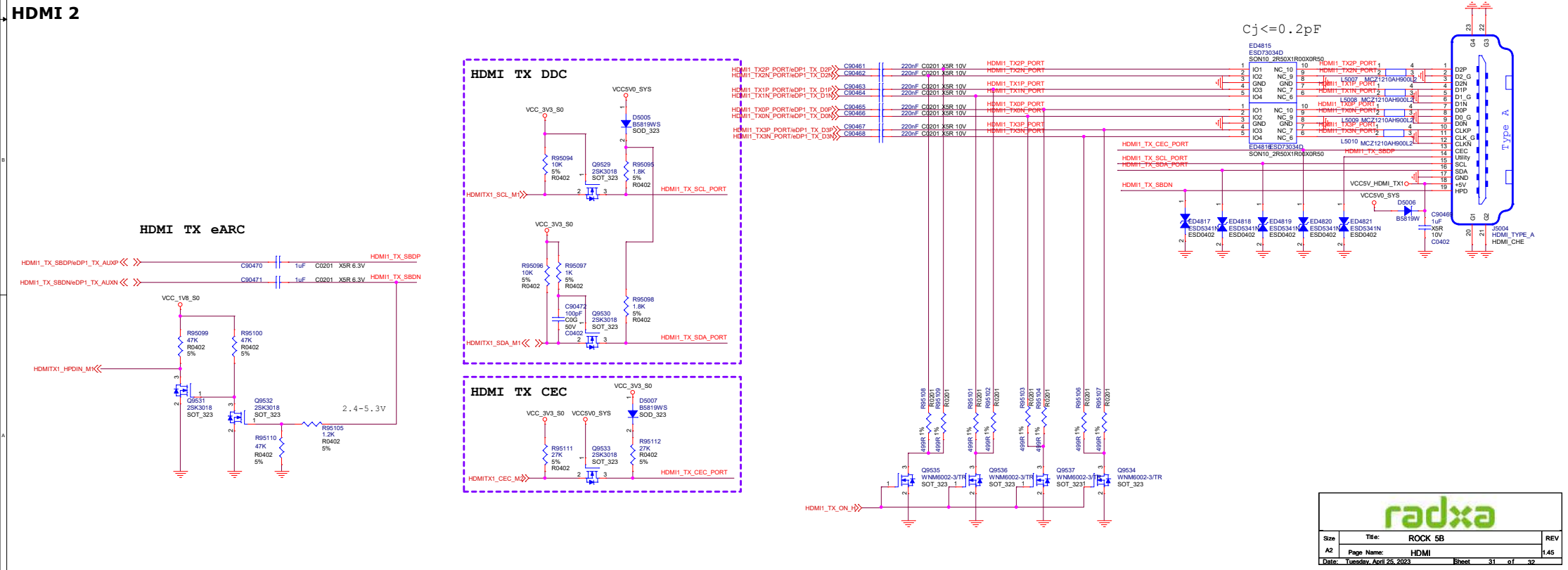


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Date:	Tuesday, April 25, 2023	Sheet 30 of 32

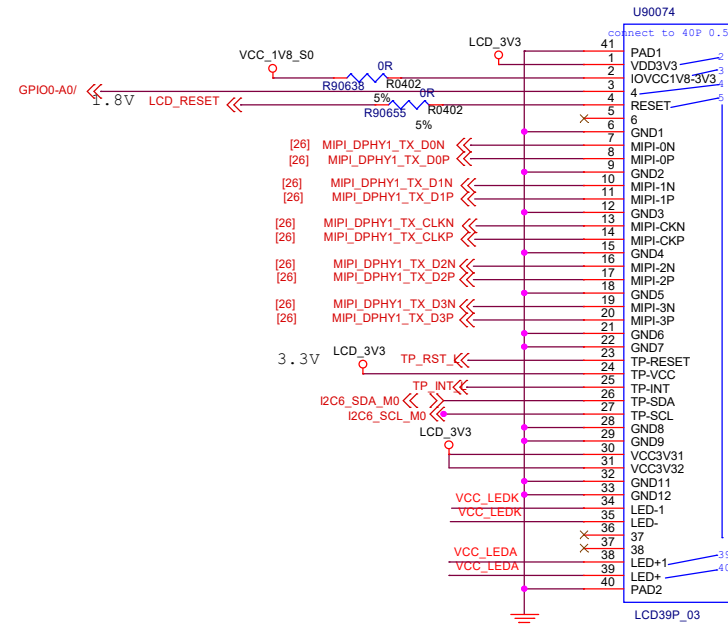
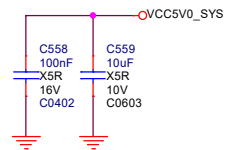
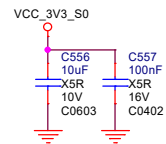
HDMI 1



HDMI 2



MIPI DPHY1 TX



LCD

