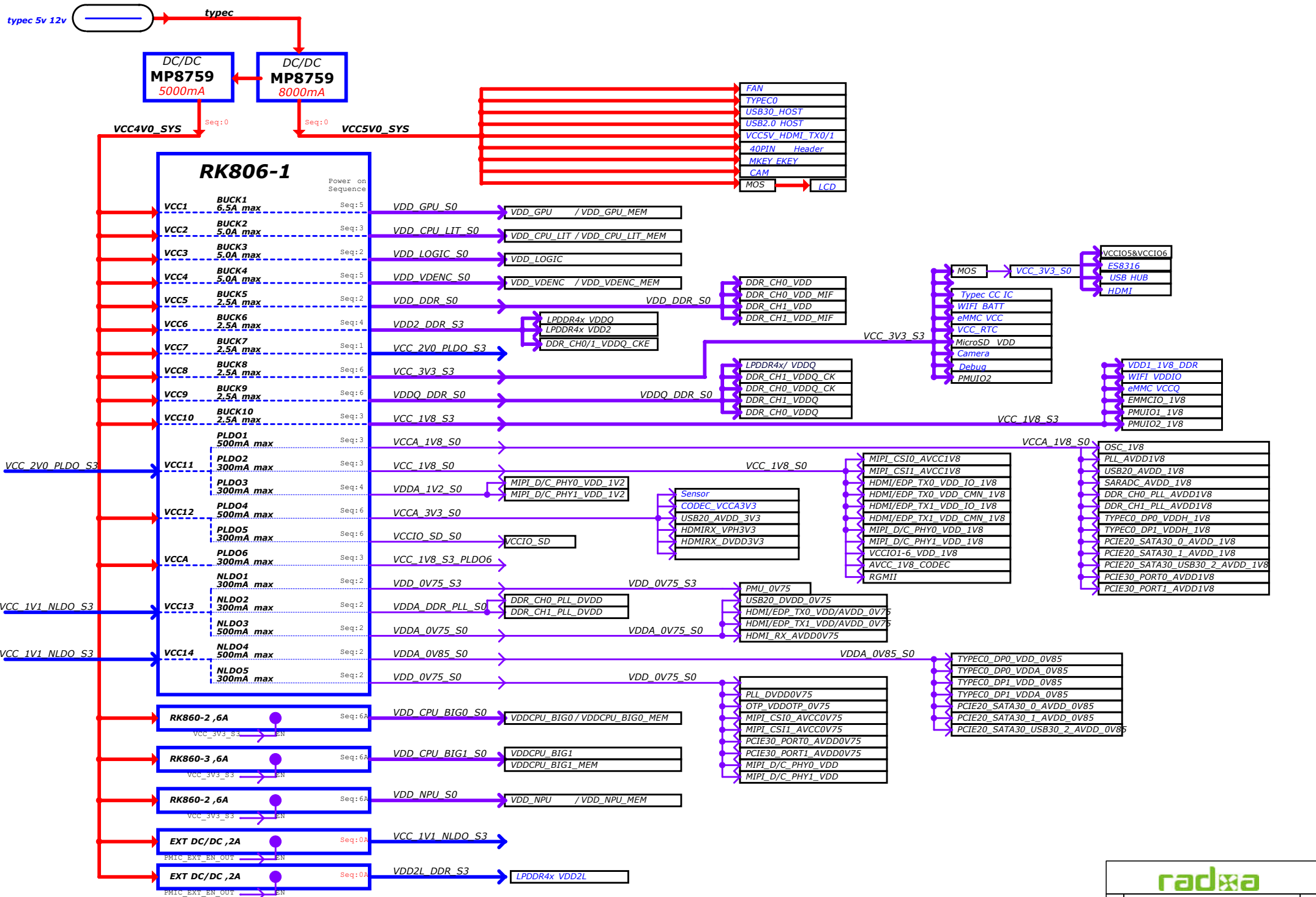


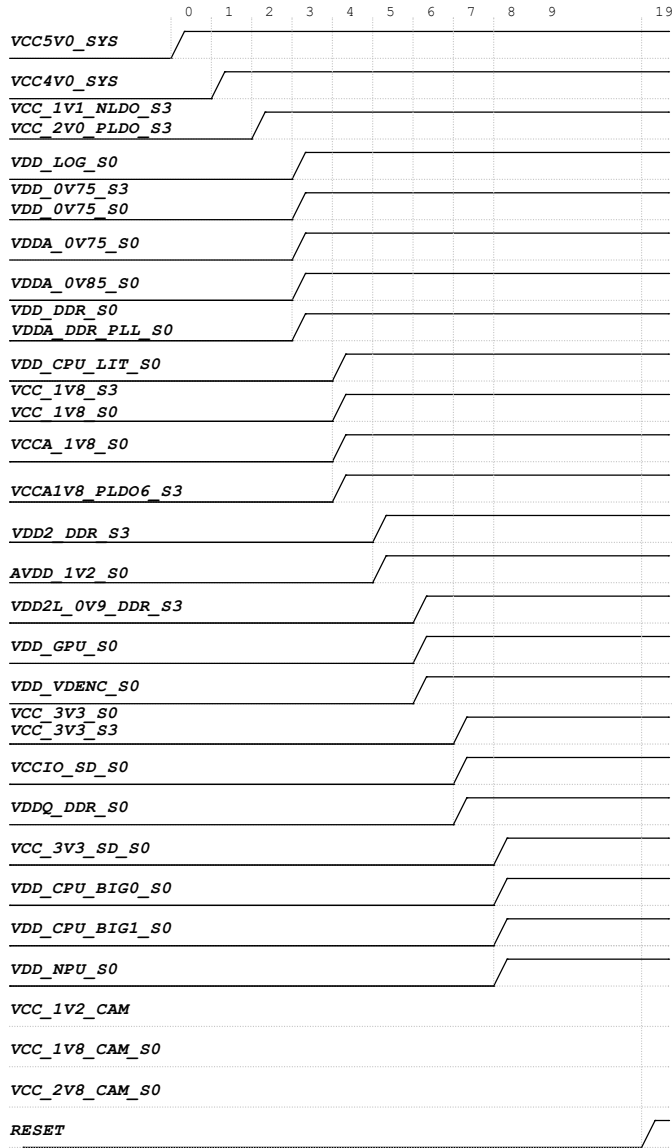
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Page 30	30.VI-Camera_MIPi-CSI
Page 31	31.VO-HDMI2.1_TX
Page 32	32.VO-LCM_MIPi

Power Tree



Power Sequence

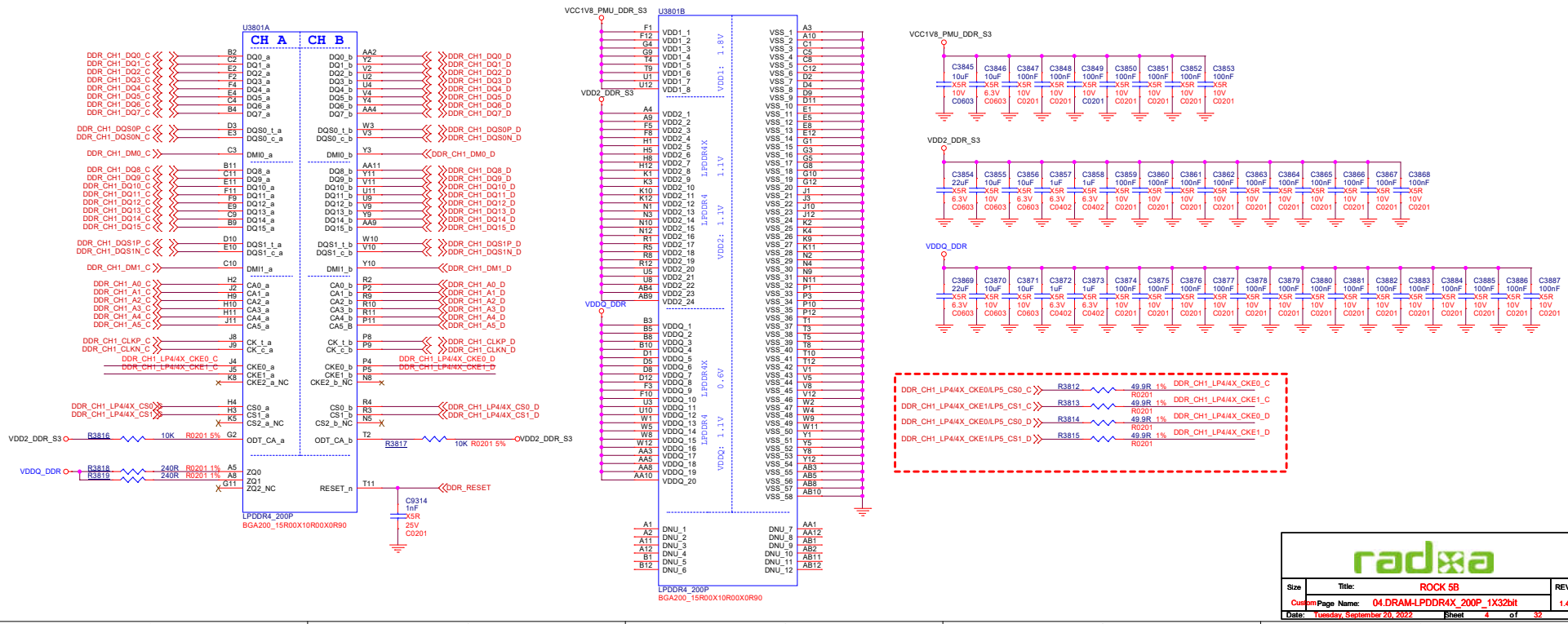
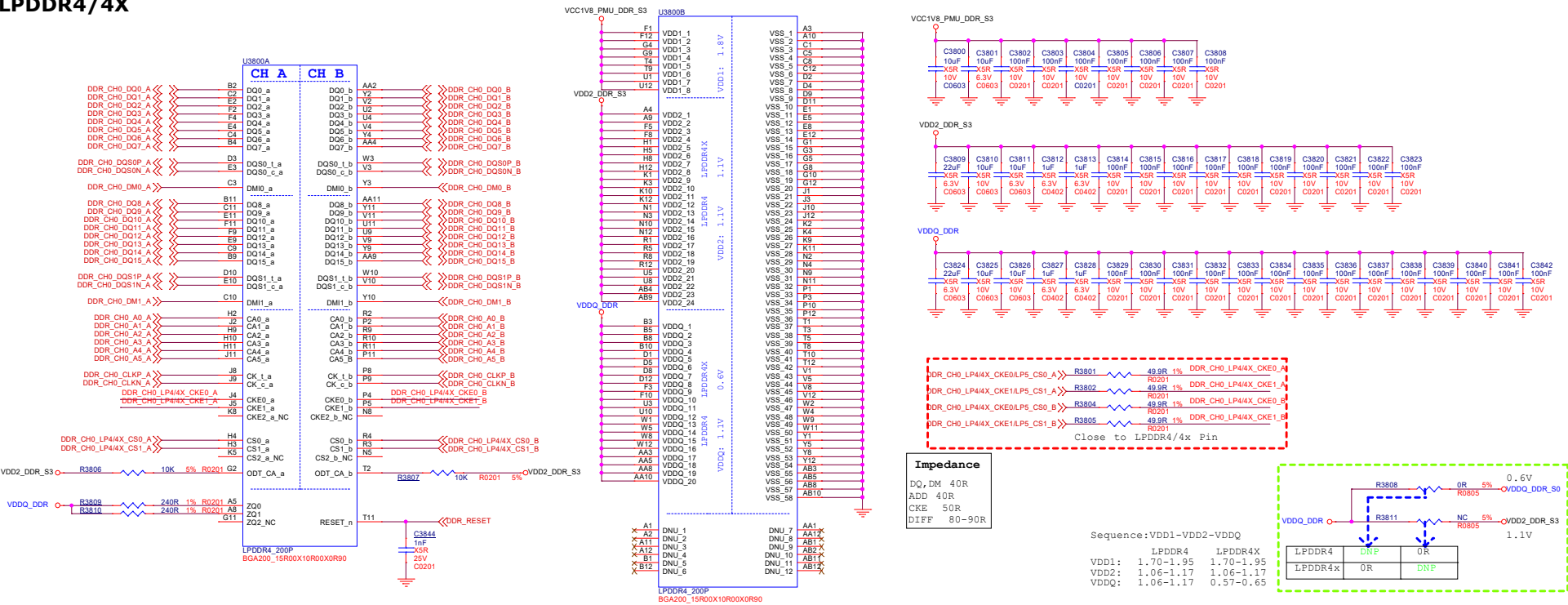


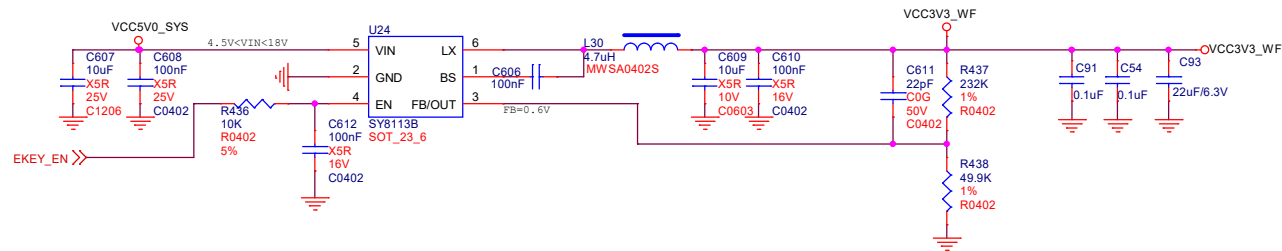
Power Supply	PMIC Channel	Supply Limit	Power Name	Time Slot	Default Voltage	Default ON/OFF	Sleep ON/OFF		
VCC4V0_SYS	RK806-1_BUCK1	6.5A	VDD_GPU_S0	Slot:5	0.75V	ON	OFF		
VCC4V0_SYS	RK806-1_BUCK2	5A	VDD_CPU_LIT_S0	Slot:3	0.75V	ON	OFF		
VCC4V0_SYS	RK806-1_BUCK3	5A	VDD_LOG_S0	Slot:2	0.75V	ON	OFF		
VCC4V0_SYS	RK806-1_BUCK4	3A	VDD_VDENC_S0	Slot:5	0.75V	ON	OFF		
VCC4V0_SYS	RK806-1_BUCK5	2.5A	VDD_DDR_S0	Slot:2	0.85V	ON	OFF		
VCC4V0_SYS	RK806-1_BUCK6	2.5A	VDD2_DDR_S3	Slot:4	ADJ FB=0.5V	ON	ON		
VCC4V0_SYS	RK806-1_BUCK7	2.5A	VCC_2V0_PLDO_S3	Slot:1	2.0V	ON	ON		
VCC4V0_SYS	RK806-1_BUCK8	2.5A	VCC_3V3_S3	Slot:6	3.3V	ON	ON		
VCC4V0_SYS	RK806-1_BUCK9	2.5A	VDDQ_DDR_S0	Slot:6	ADJ FB=0.5V	ON	OFF		
VCC4V0_SYS	RK806-1_BUCK10	2.5A	VCC_1V8_S3	Slot:3	1.8V	ON	ON		
VCC_2V0_PLDO	RK806-1_PLDO1	0.5A	VCCA_1V8_S0	Slot:3	1.8V	ON	OFF		
	RK806-1_PLDO2	0.3A	VCC_1V8_S0	Slot:3	1.8V	ON	OFF		
	RK806-1_PLDO3	0.3A	VDDA_1V2_S0	Slot:4	1.2V	ON	OFF		
VCC4V0_SYS	RK806-1_PLDO4	0.5A	VCCA_3V3_S0	Slot:6	3.3V	ON	OFF		
	RK806-1_PLDO5	0.3A	VCCIO_SD_S0	Slot:6	3.3V	ON	OFF		
	RK806-1_PLDO6	0.3A	VCCA1V8_PLDO6_S3	Slot:3	1.8V	ON	ON		
VCC_1V1_NLDO	RK806-1_NLDO1	0.3A	VDD_0V75_S3	Slot:2	0.75V	ON	ON		
	RK806-1_NLDO2	0.3A	VDDA_DDR_PLL_S0	Slot:2	0.85V	ON	OFF		
	RK806-1_NLDO3	0.5A	VDDA_0V75_S0	Slot:2	0.75V	ON	OFF		
VCC_1V1_NLDO	RK806-1_NLDO4	0.5A	VDDA_0V85_S0	Slot:2	0.85V	ON	OFF		
	RK806-1_NLDO5	0.3A	VDD_0V75_S0	Slot:2	0.75V	ON	OFF		
VCC4V0_SYS	BUCK_RK860-2	6A	VDD_CPU_BIG0_S0	Slot:6A	0.75V	ON	OFF		
VCC4V0_SYS	BUCK_RK860-3	6A	VDD_CPU_BIG1_S0	Slot:6A	0.75V	ON	OFF		
VCC4V0_SYS	BUCK_RK860-2	6A	VDD_NPU_S0	Slot:6A	0.75V	ON	OFF		
VCC4V0_SYS	EXT_BUCK	2A	VCC_1V1_NLDO_S3	Slot:1	1.1V	ON	ON		
VCC4V0_SYS	EXT_BUCK	2A	VDD2L_0V9_DDR_S3	Slot:5	0.9V	ON	ON		
VCC4V0_SYS	EXT_BUCK	2.5A	VCC_3V3_SD_S0	Slot:6A	3.3V	ON	OFF		
VCC_3V3_S3	EXT_BUCK	2A	VCC_1V2_CAM_S0	OFF	1.2V	OFF	OFF		
VCC_3V3_S3	LDO_PT5108	0.5A	VCC_1V8_CAM_S0	OFF	1.8V	OFF	OFF		
VCC_3V3_S3	LDO_PT5108	0.5A	VCC_2V8_CAM_S0	OFF	2.8V	OFF	OFF		

IO Power Domain Map

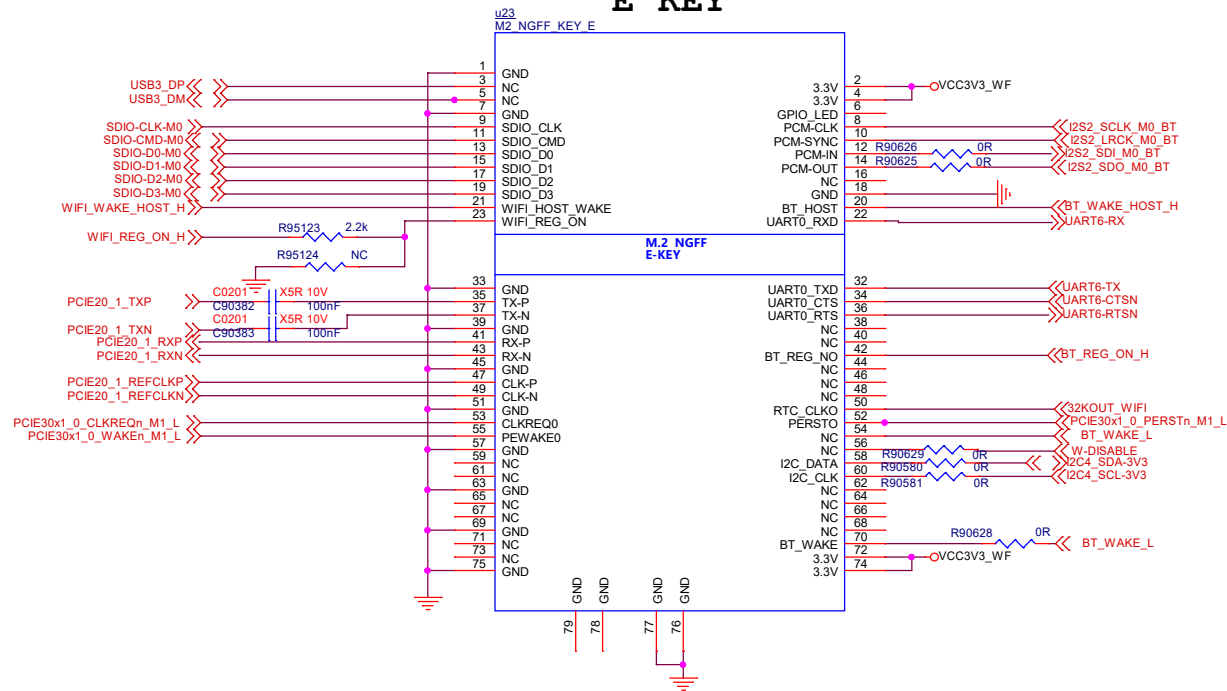
IO Domain	Pin Num	Support IO Voltage	Supply Power Pin Name	Power Source	IO Operating Voltage
PMUIO1	Pin N28	1.8V Only	PMUIO1_1V8	VCC_1V8_S3	1.8V
PMUIO2	Pin R27 Pin P28	1.8V or 3.3V	PMUIO2_1V8 PMUIO2	VCC_1V8_S3	1.8V
EMMCIO	Pin V26	1.8V Only	EMMCIO_1V8	VCC_1V8_S0	1.8V
VCCIO1	Pin G20	1.8V Only	VCCIO1_1V8	VCC_1V8_S0	1.8V
VCCIO2	Pin AA7 Pin Y7	1.8V or 3.3V	VCCIO2_1V8 VCCIO2	VCC_1V8_S0 VCCIO_SD_S0	1.8V 1.8V/3.3V
VCCIO3	Pin Y26	1.8V Only	VCCIO3_1V8	VCC_1V8_S0	1.8V
VCCIO4	Pin H20 Pin H21	1.8V or 3.3V	VCCIO4_1V8 VCCIO4	VCC_1V8_S0 VCC_1V8_S0	1.8V
VCCIO5	Pin W25 Pin W26	1.8V or 3.3V	VCCIO5_1V8 VCCIO5	VCC_1V8_S0 VCC_3V3_S0	1.8V 3.3V
VCCIO6	Pin AC25 Pin AC26	1.8V or 3.3V	VCCIO6_1V8 VCCIO6	VCC_1V8_S0 VCC_3V3_S0	1.8V 3.3V

LPDDR4/4X





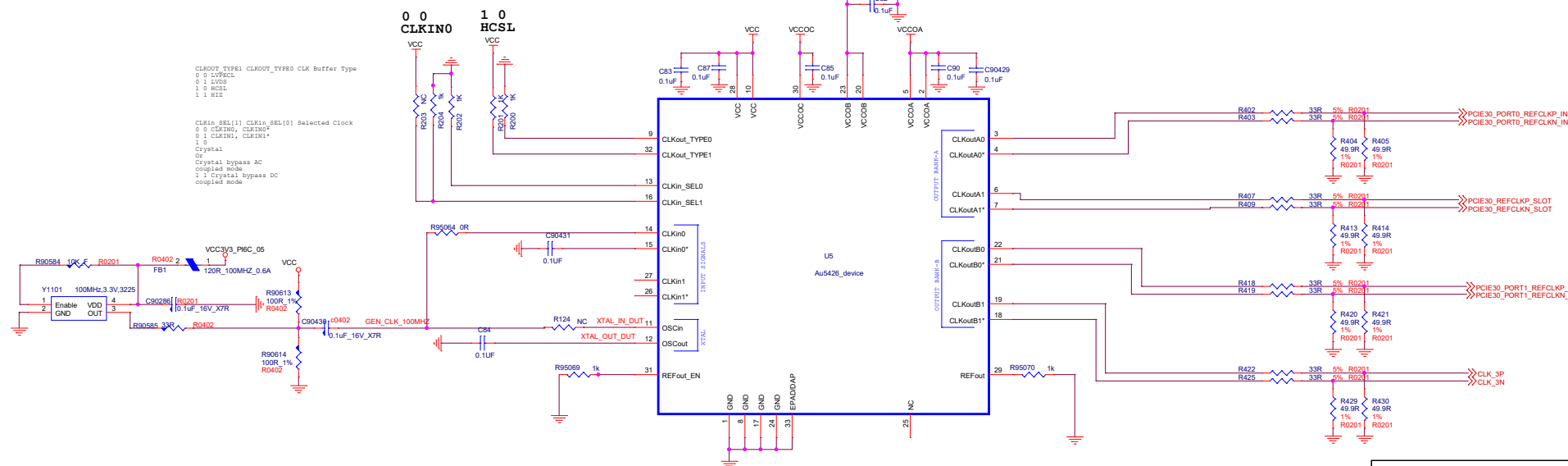
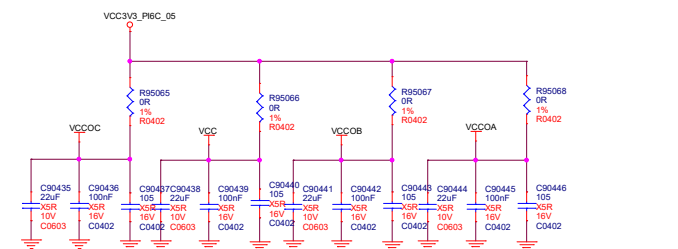
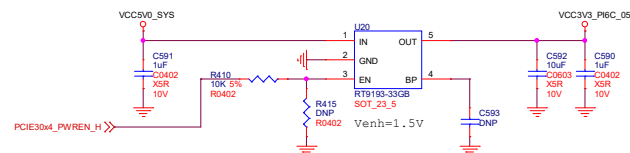
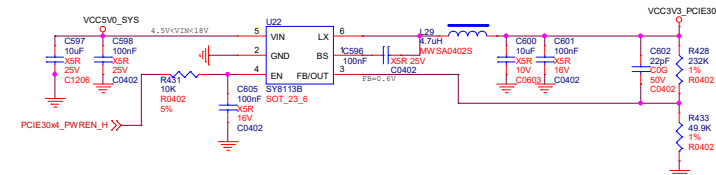
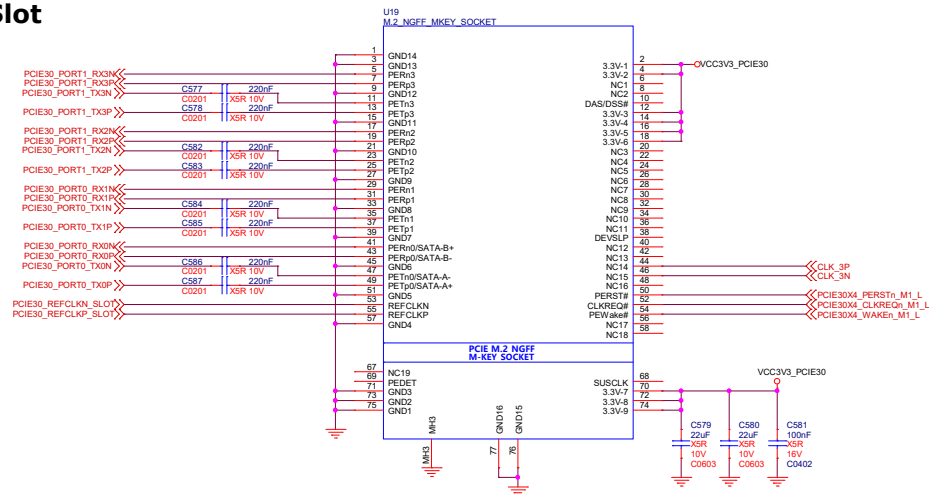
E KEY



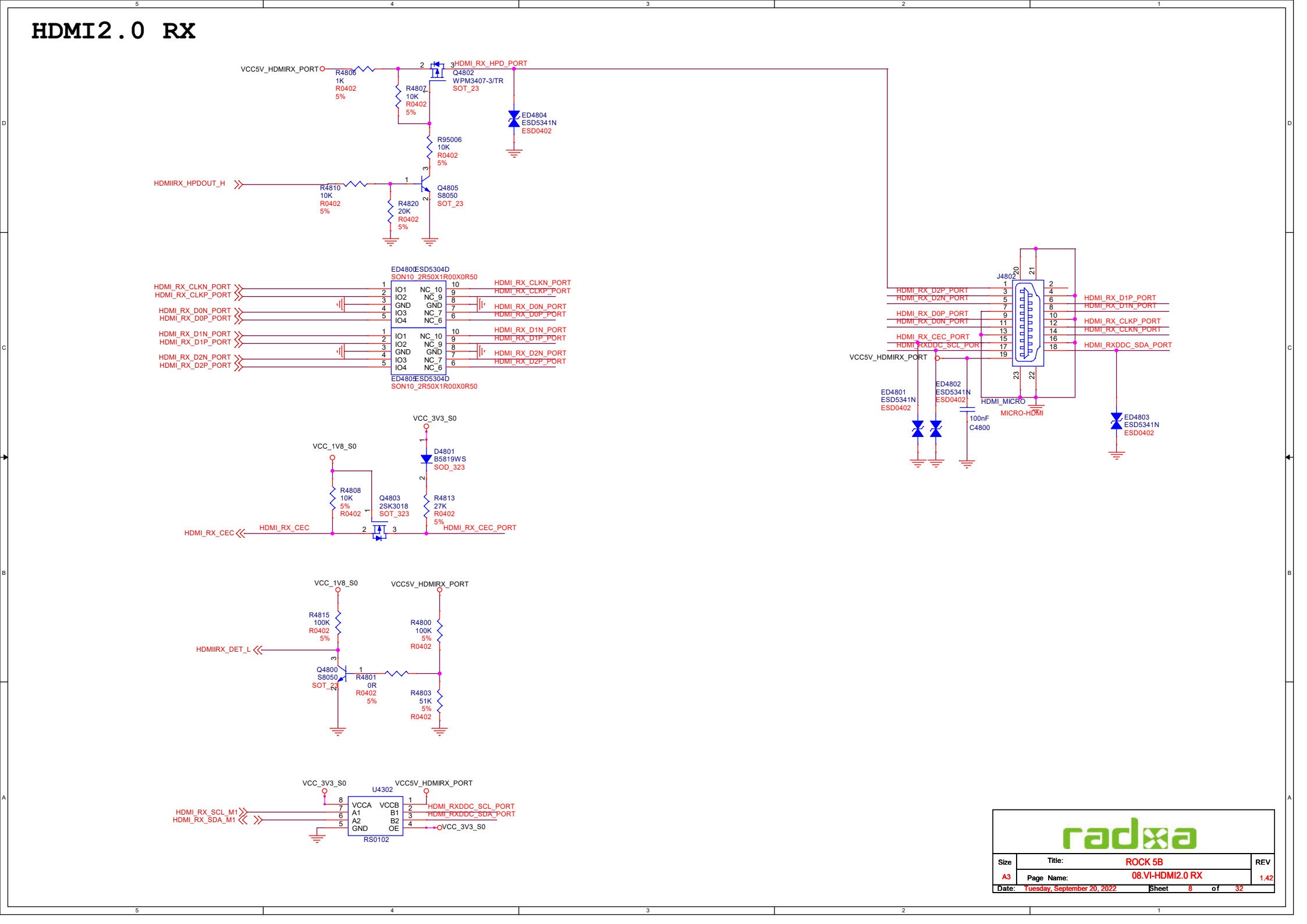
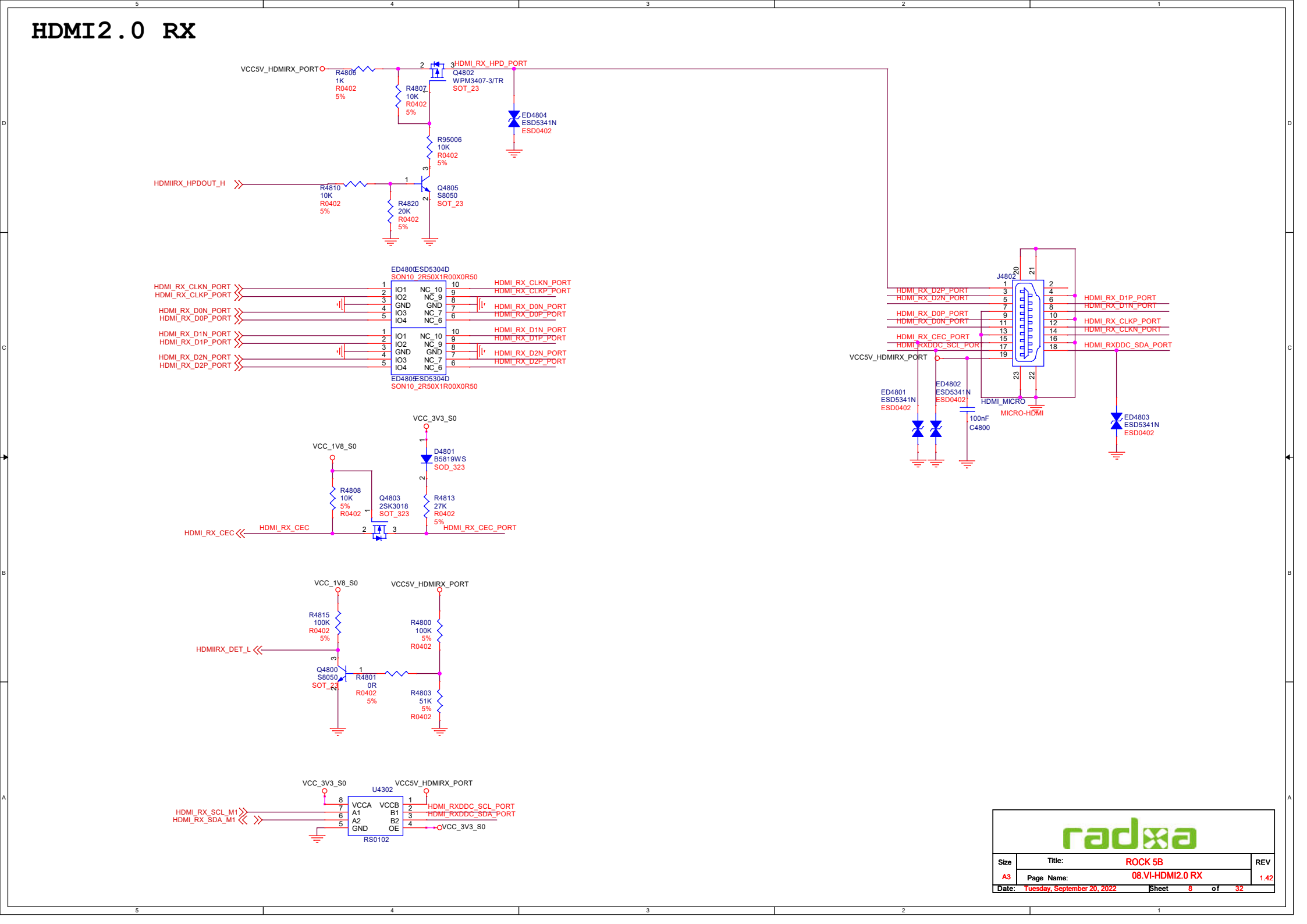
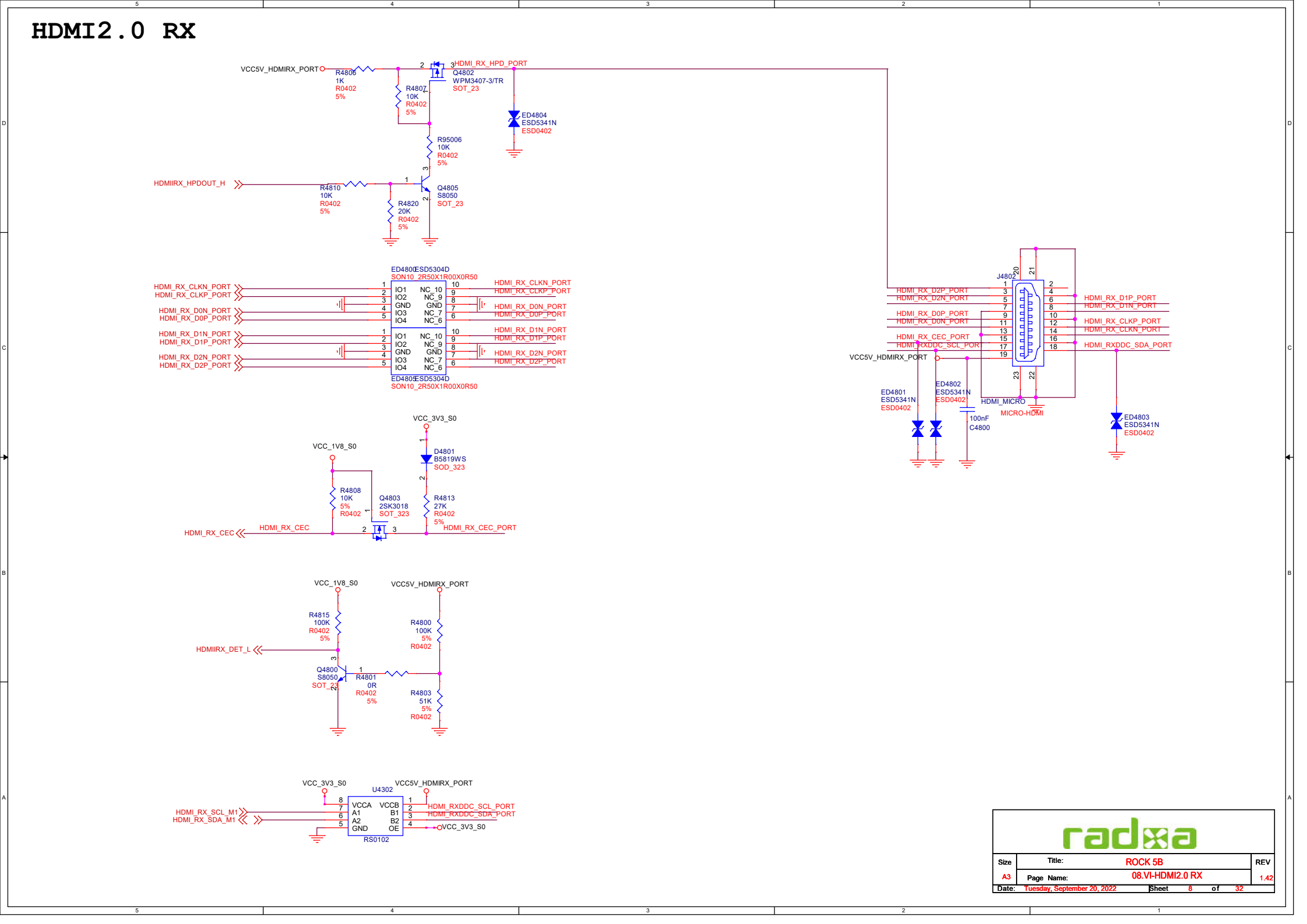
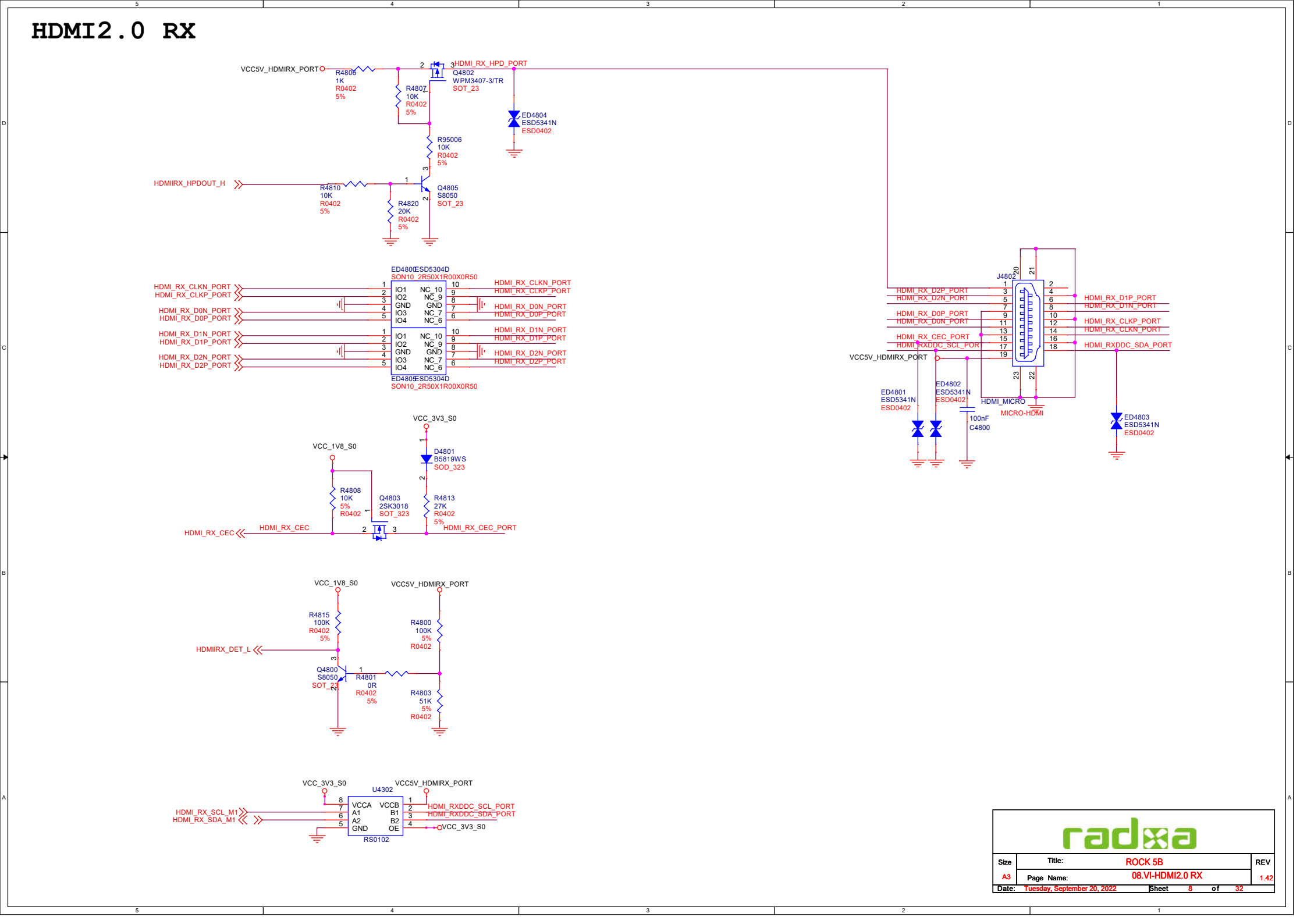
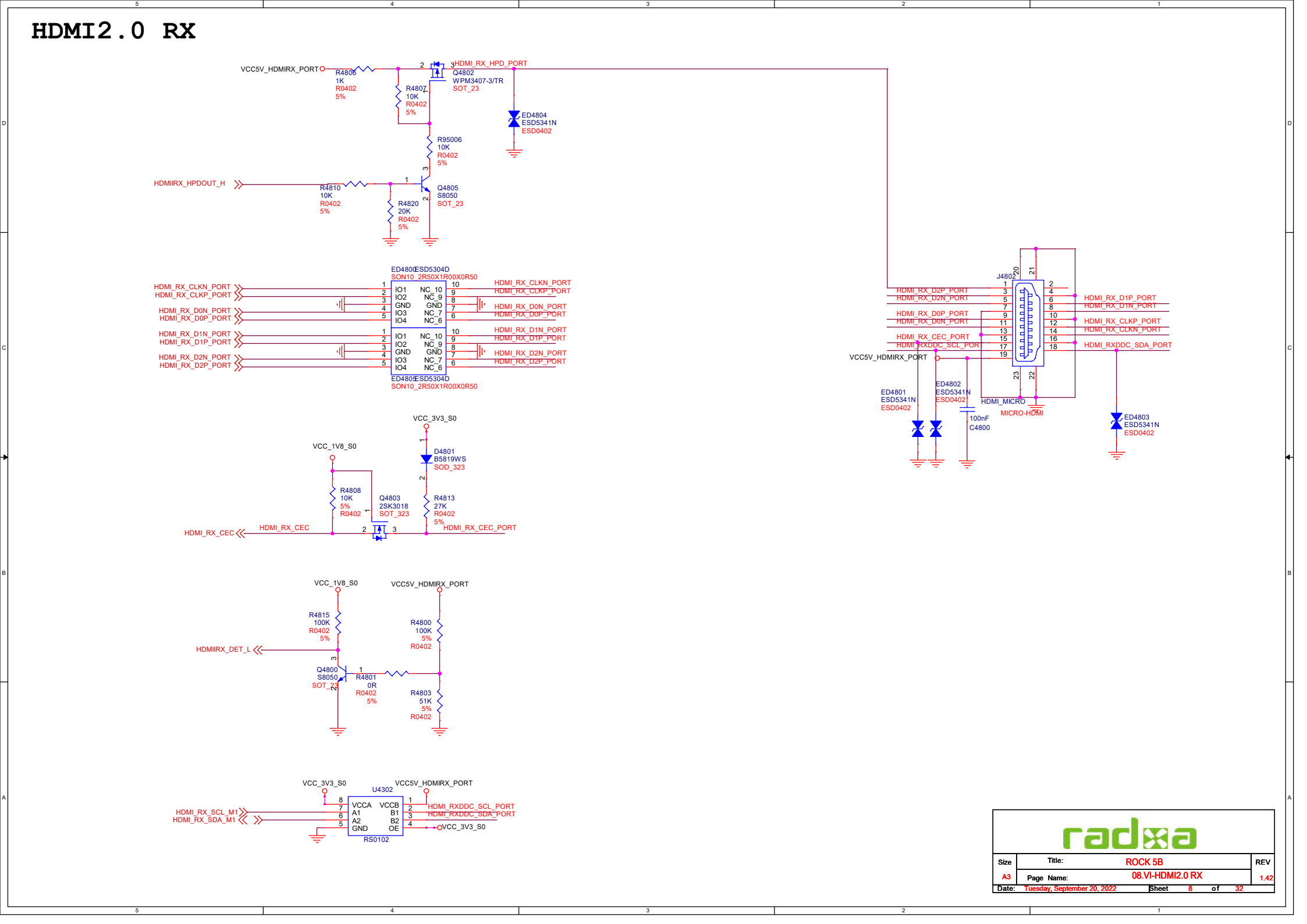
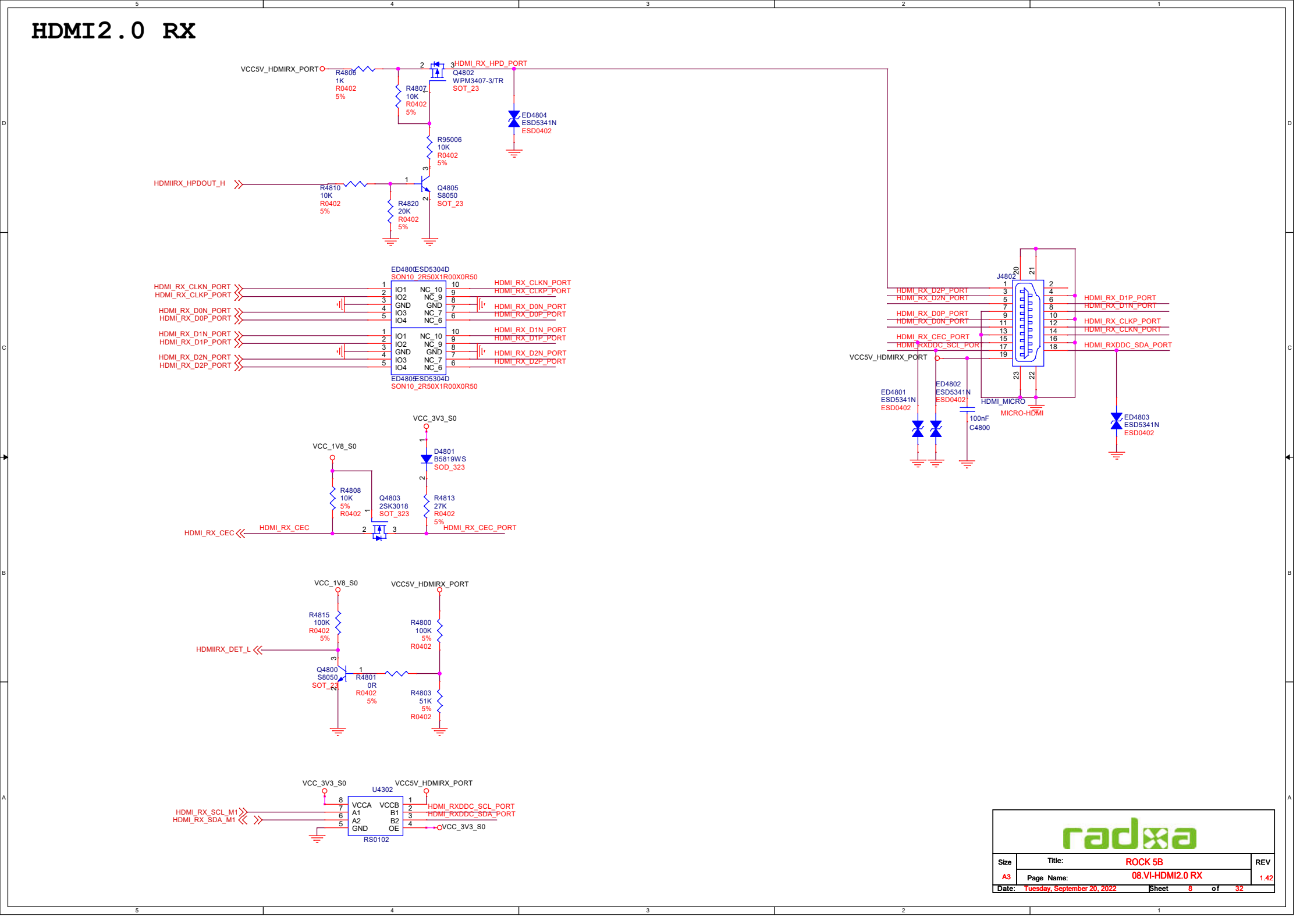
radxa

Size	Title:	REV
A3	Page Name:	1.42
Date:	06.PCIE-PCIE2.0_Slot-Ekey	
Tuesday, September 20, 2022	Sheet	6 of 32

PCIe3.0 x 4 Slot



HDMI2.0 RX

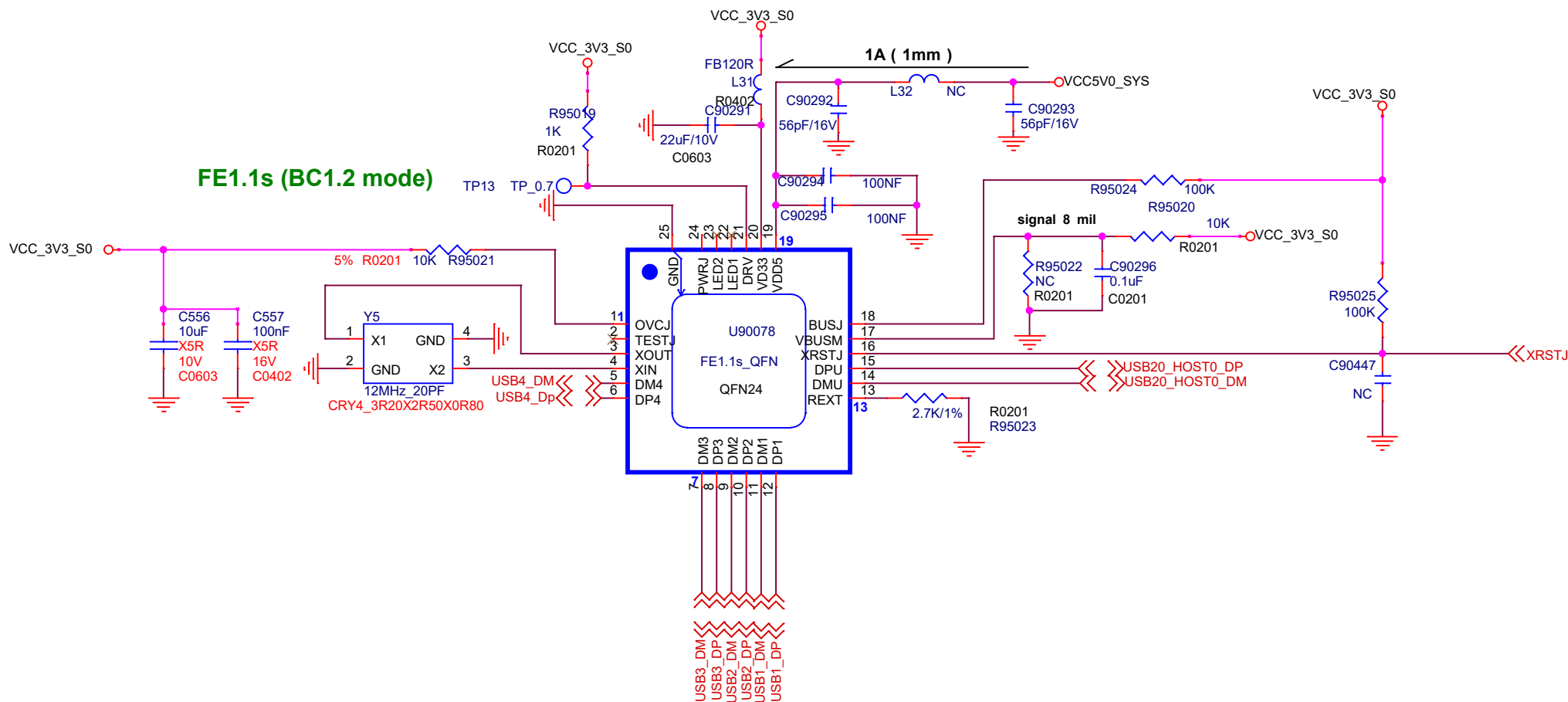


HDMI2.0 RX

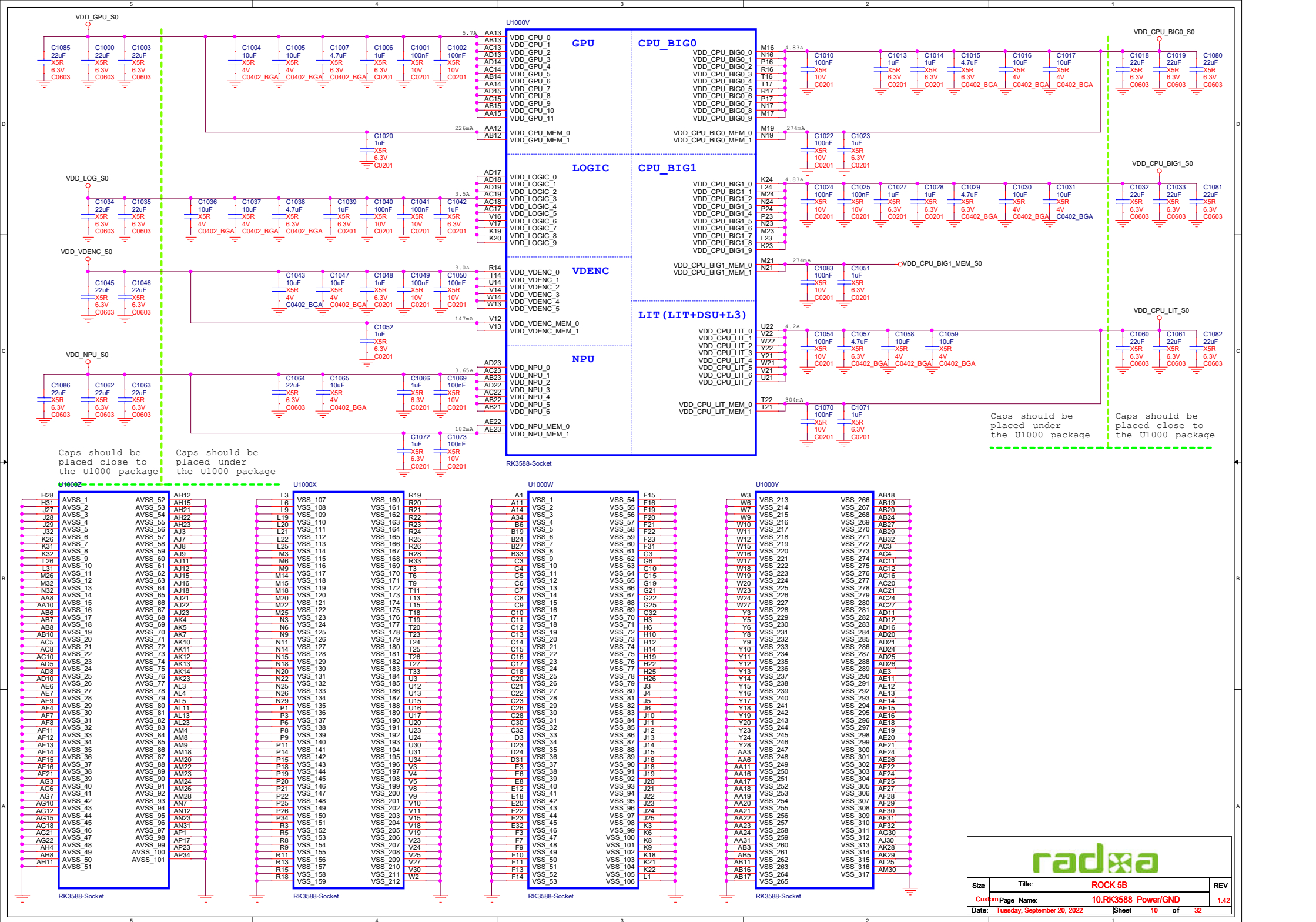
The schematic diagram illustrates the HDMI2.0 RX interface circuit. It features two main ICs: the ED480ESD5304D (SON10_2R50X1R00X0R50) and the ED4803ESD5341N (ESD0402). The circuit is powered by VCC5V_HDMIRX_PORT and VCC3V3_S0. Key components include resistors (R4800, R4801, R4802, R4803, R4808, R4810, R4815, R4813), transistors (Q4800, Q4801, Q4802, Q4803, Q4805, Q4807), diodes (D4801, D4803), and capacitors (C4800). The circuit is connected to various signals, including HDMI_RX_CLKN_PORT, HDMI_RX_CLKP_PORT, HDMI_RX_D0N_PORT, HDMI_RX_D0P_PORT, HDMI_RX_D1N_PORT, HDMI_RX_D1P_PORT, HDMI_RX_D2N_PORT, HDMI_RX_D2P_PORT, HDMI_RX_CEC, HDMI_RX_CEC_PORT, HDMI_RXD0C_SCL_PORT, HDMI_RXD0C_SDA_PORT, and HDMI_RXD1C_SCL_PORT, HDMI_RXD1C_SDA_PORT. The diagram also shows the connection to a MICRO-HDMI connector (J4802) and a 100nF capacitor (C4800).

Size	Title:	REV
A3	Page Name: 08.VI-HDMI2.0 RX	1.42
Date: Tuesday, September 20, 2022 Sheet 8 of 32		

FE1.1s (BC1.2 mode)



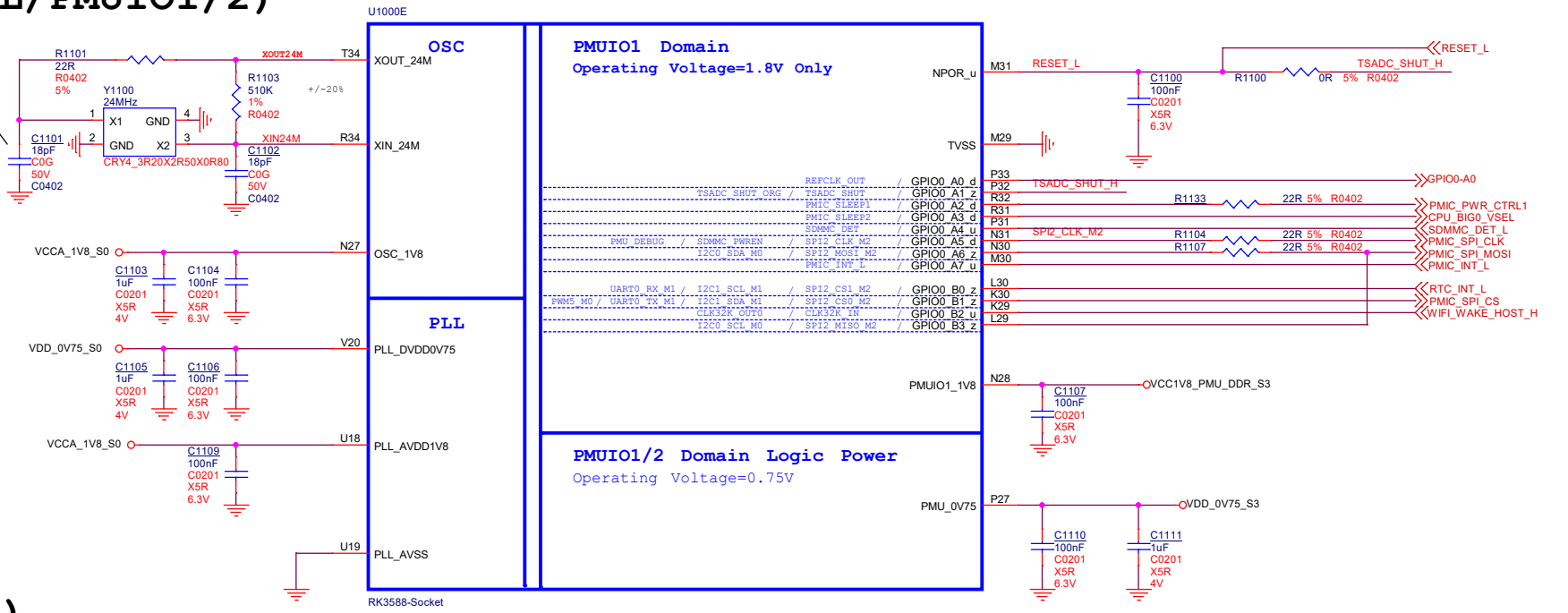
Size	Title: ROCK 5B	REV
A4	Page Name: 09.USB2HUB	1.42
Date: Tuesday, September 20, 2022 Sheet 9 of 32		



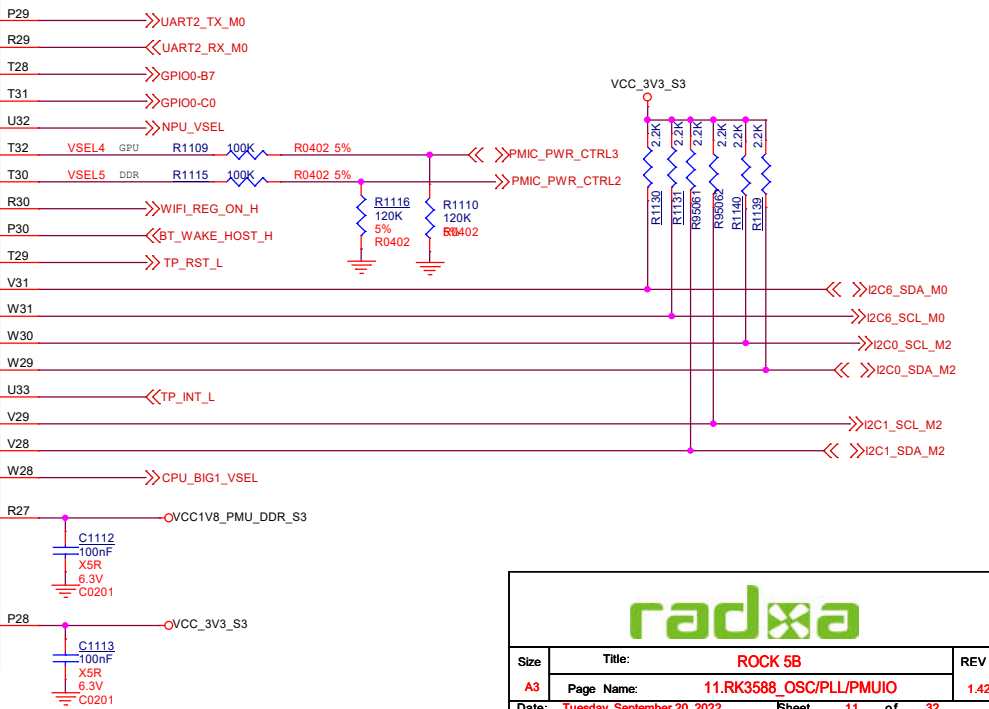
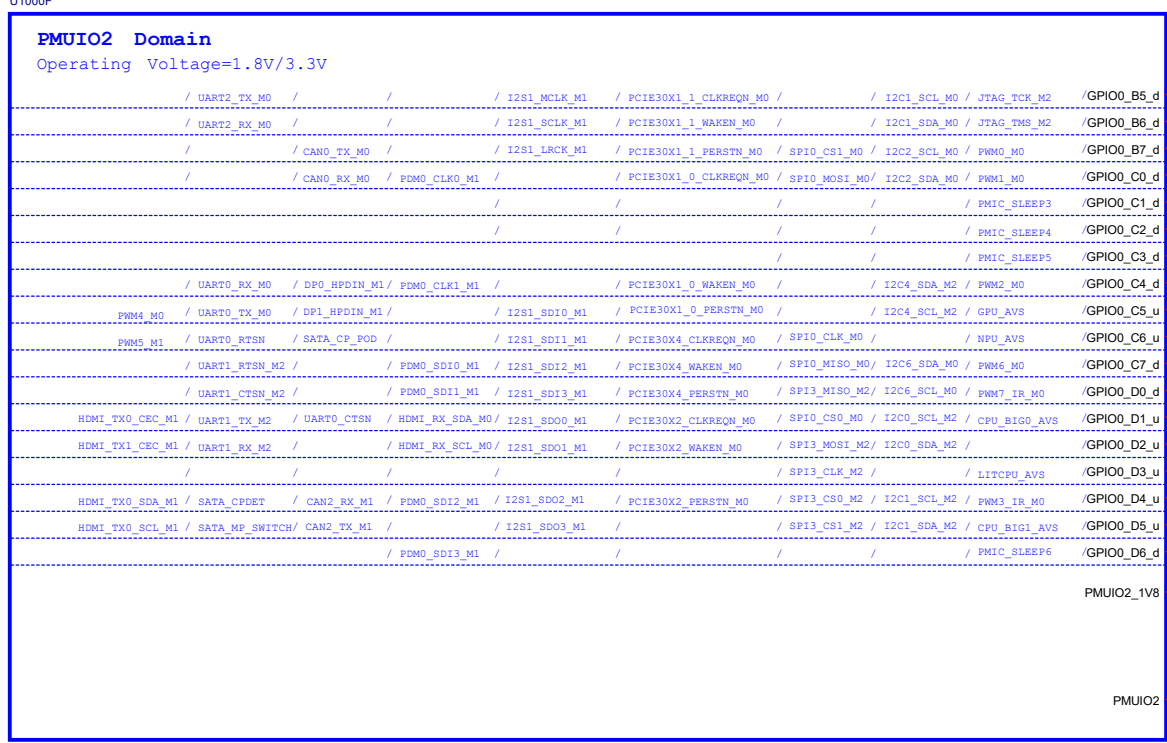
RK3588_E (OSC/PLL/PMUIO1/2)

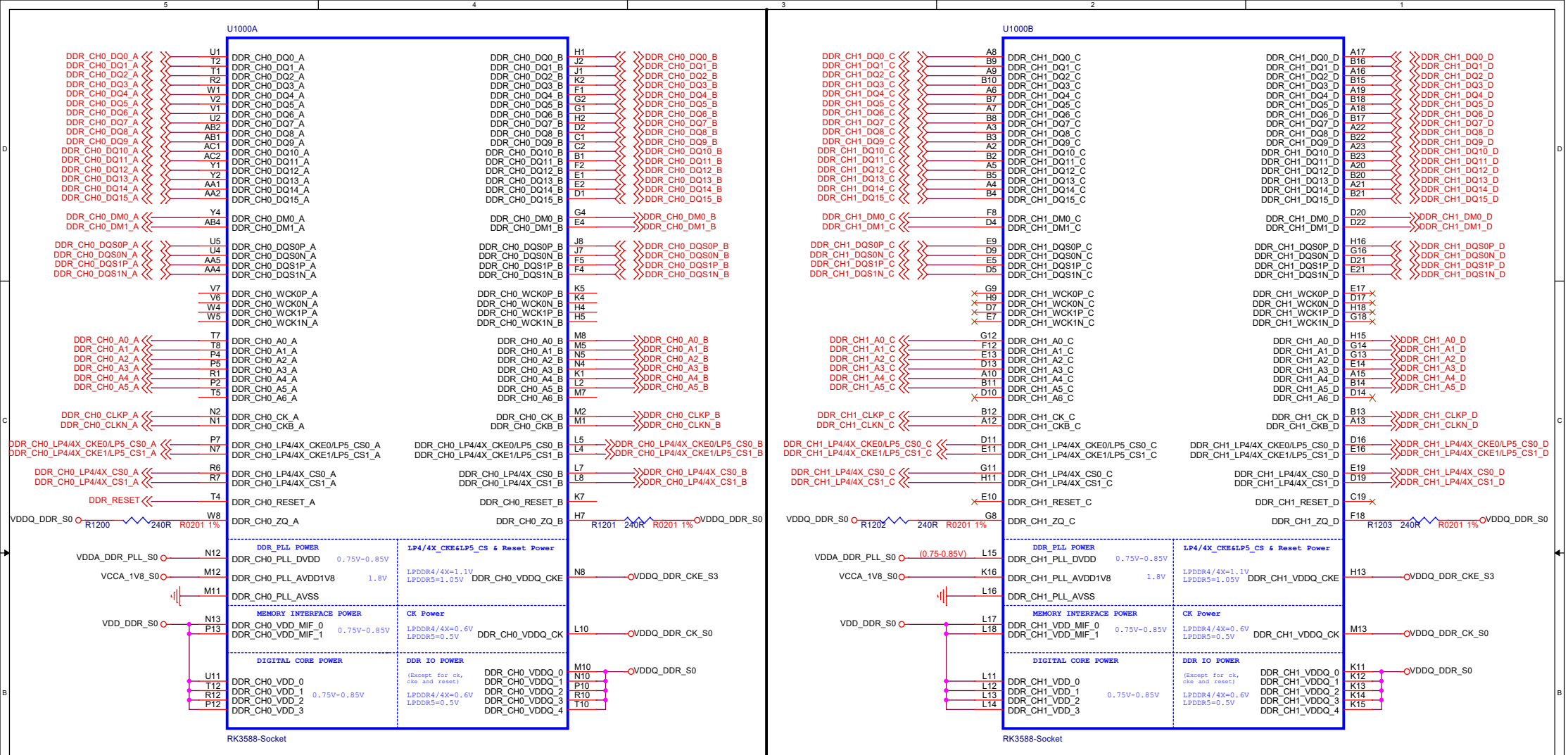
Note:
The CL is the load capacitance of the crystal that is recommended by the crystal vendors to obtain target clock frequency.

 $CL = (CL1 * CL2 / (CL1 + CL2)) + PCB\ strays$
Total CL<12pF

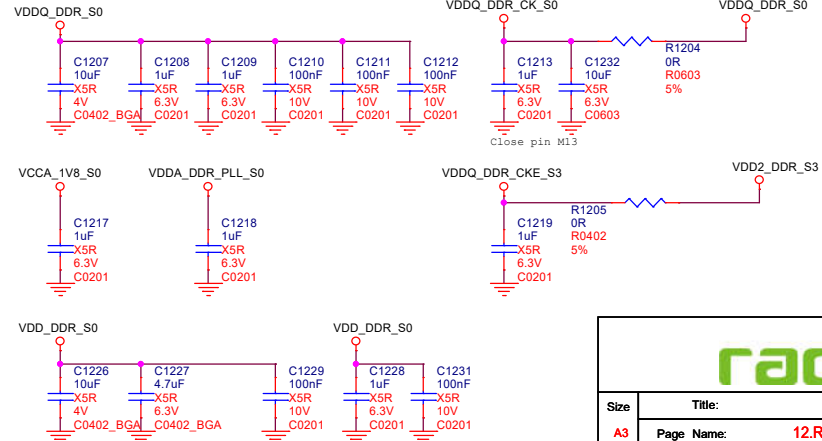
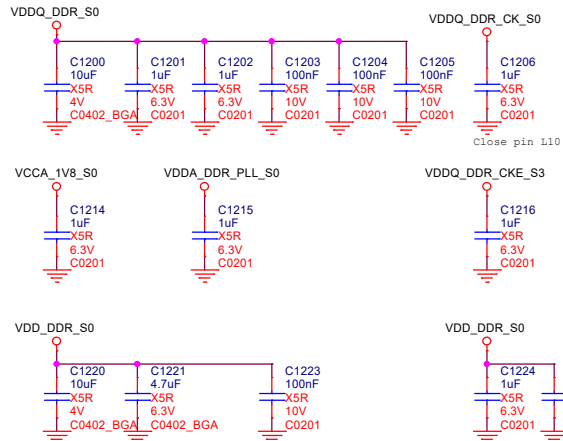


RK3588_F (PMUIO2)





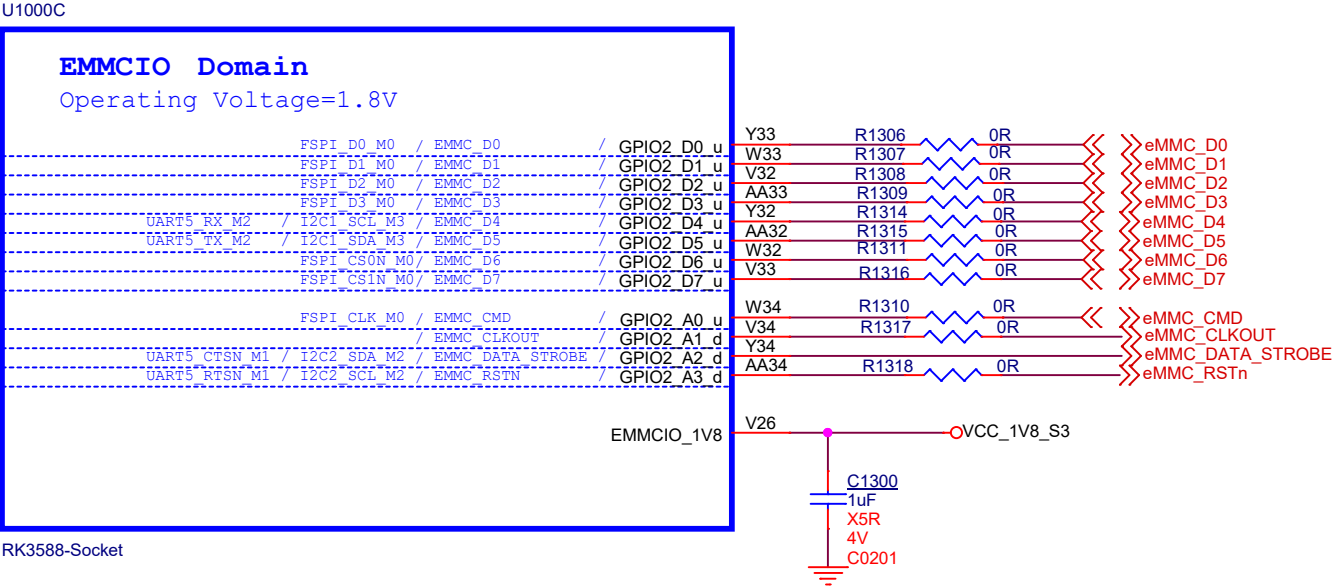
DDR FILTER



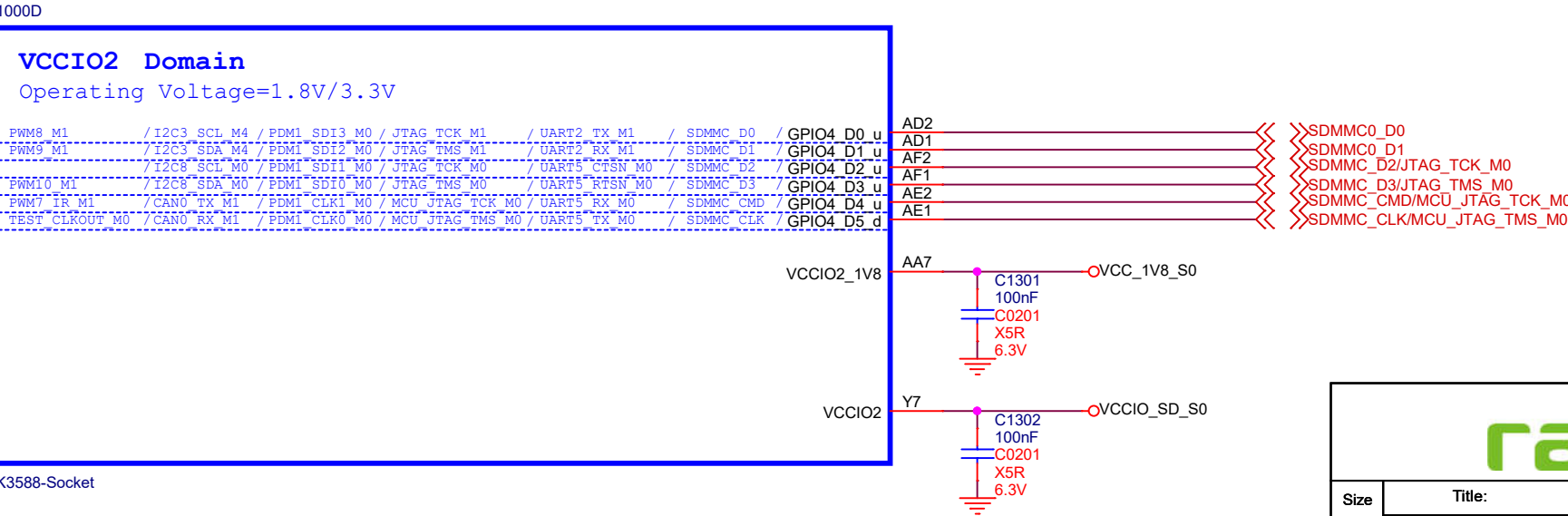
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Size	Title:	REV
A3	Page Name: 12.RK3588 DDR Controller	1.42
Date:	Tuesday, September 20, 2022	Sheet 12 of 32

RK3588_C (EMMCIO Domain)



RK3588_D (VCCIO2 Domain)





Size	Title: ROCK 5B	REV
A4	Page Name: 13.RK3588_Flash/SD Controller	1.42
Date: Tuesday, September 20, 2022	Sheet 13 of 32	

U1000M



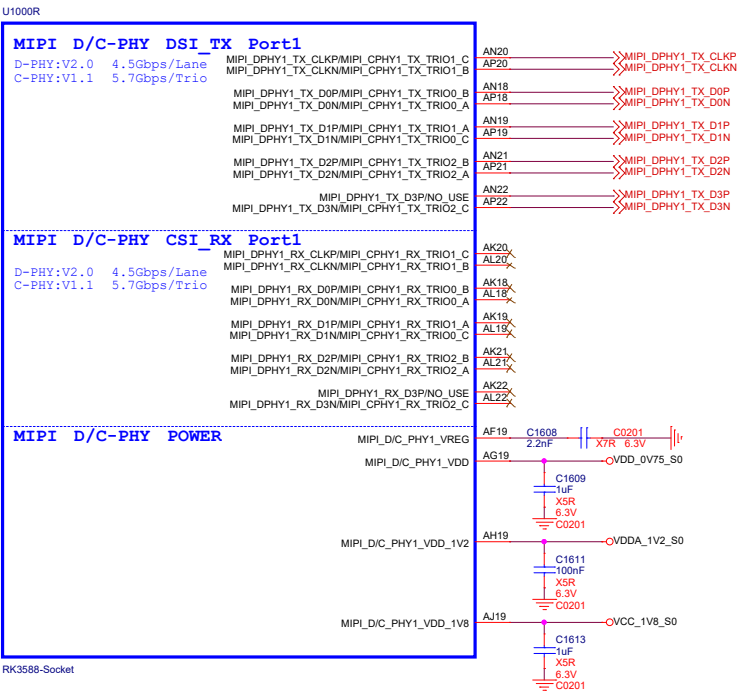
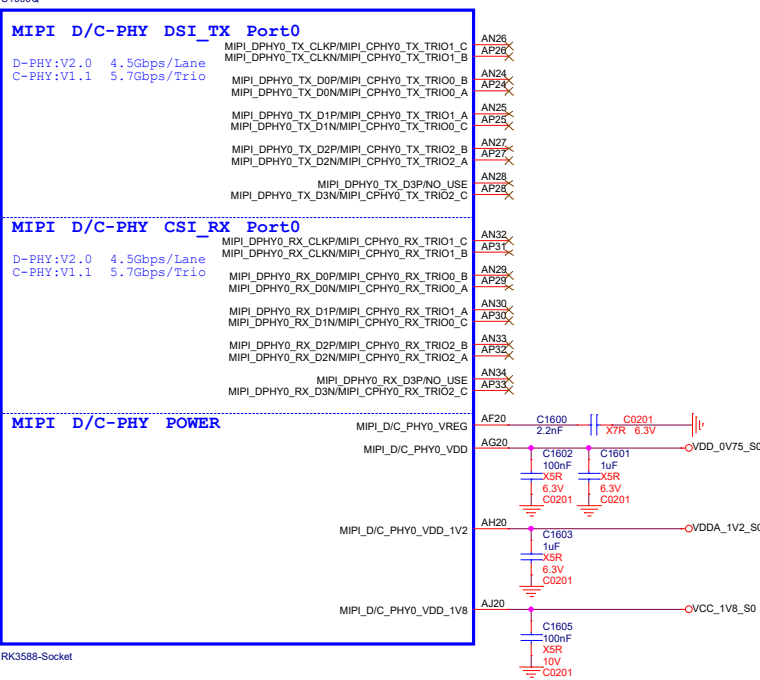
Option1	DP x4Lane	DP_TX_Lane0-3
Option2	USB30 x4Lane	DP_TX_Lane0-3
Option3	USB30X2Lane+DPX2Lane	USB30: Lane0 Lane1 DP: Lane2 Lane3
Option4	USB30X2Lane+DPX2Lane	USB30: Lane2 Lane3 DP: Lane0 Lane1

U1000L

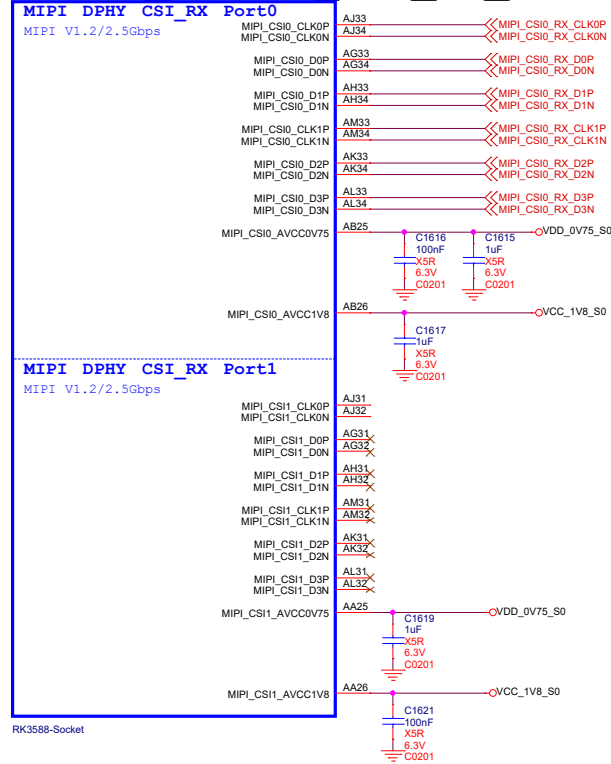


The USB20_VBUSDET pin internal has a pull-down resistance(40K ohm) to ground,The resistance creates a voltage with the external series 30K ohm resistor.The VBUSDETPin voltage range $\leq 3.3V$.

RK3588_Q/R(MIPI_D/C_PHY0/1)

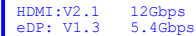


RK3588_P(MIPI_CSI_RX_PHY)



U1000\$

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

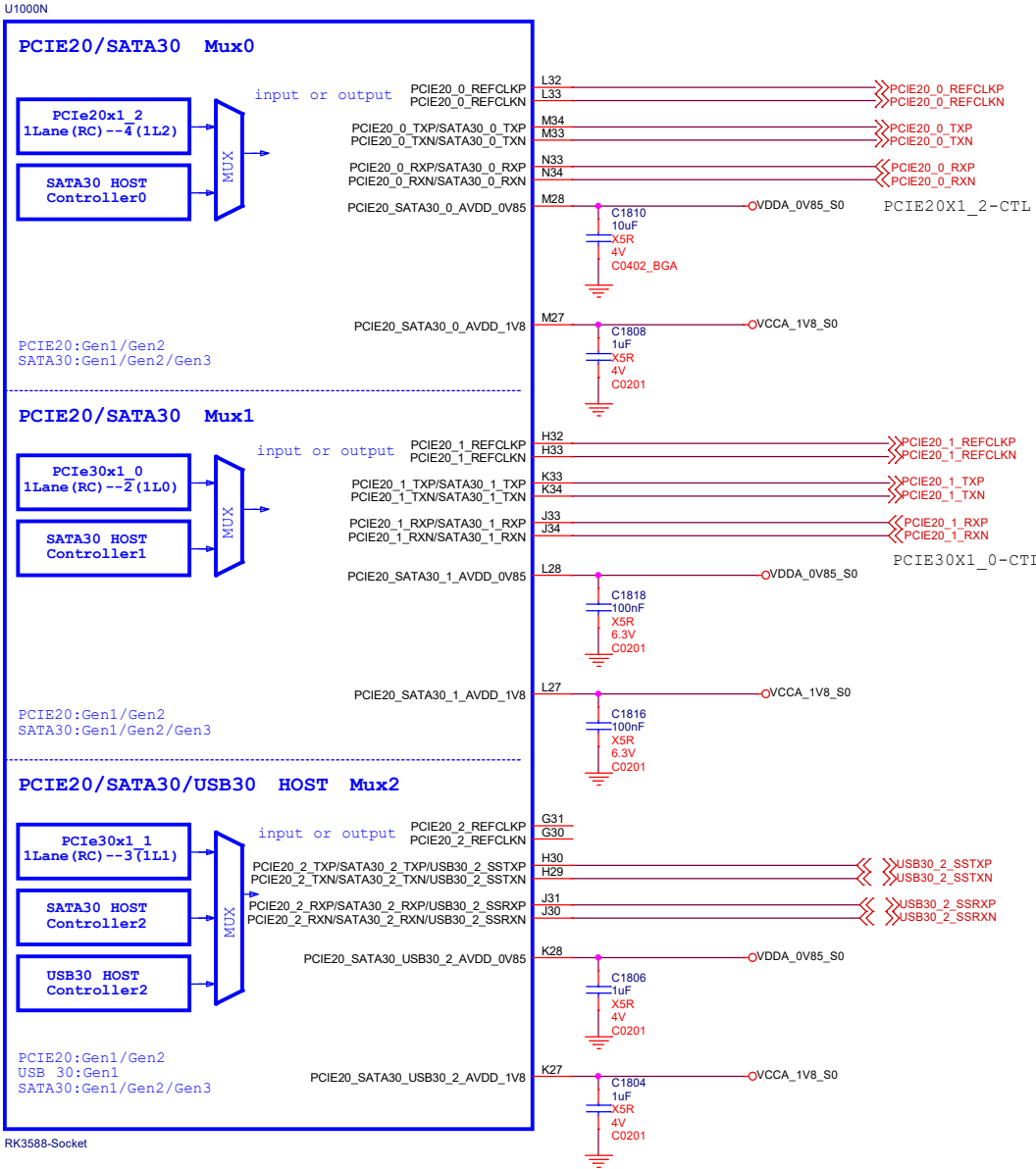


010001

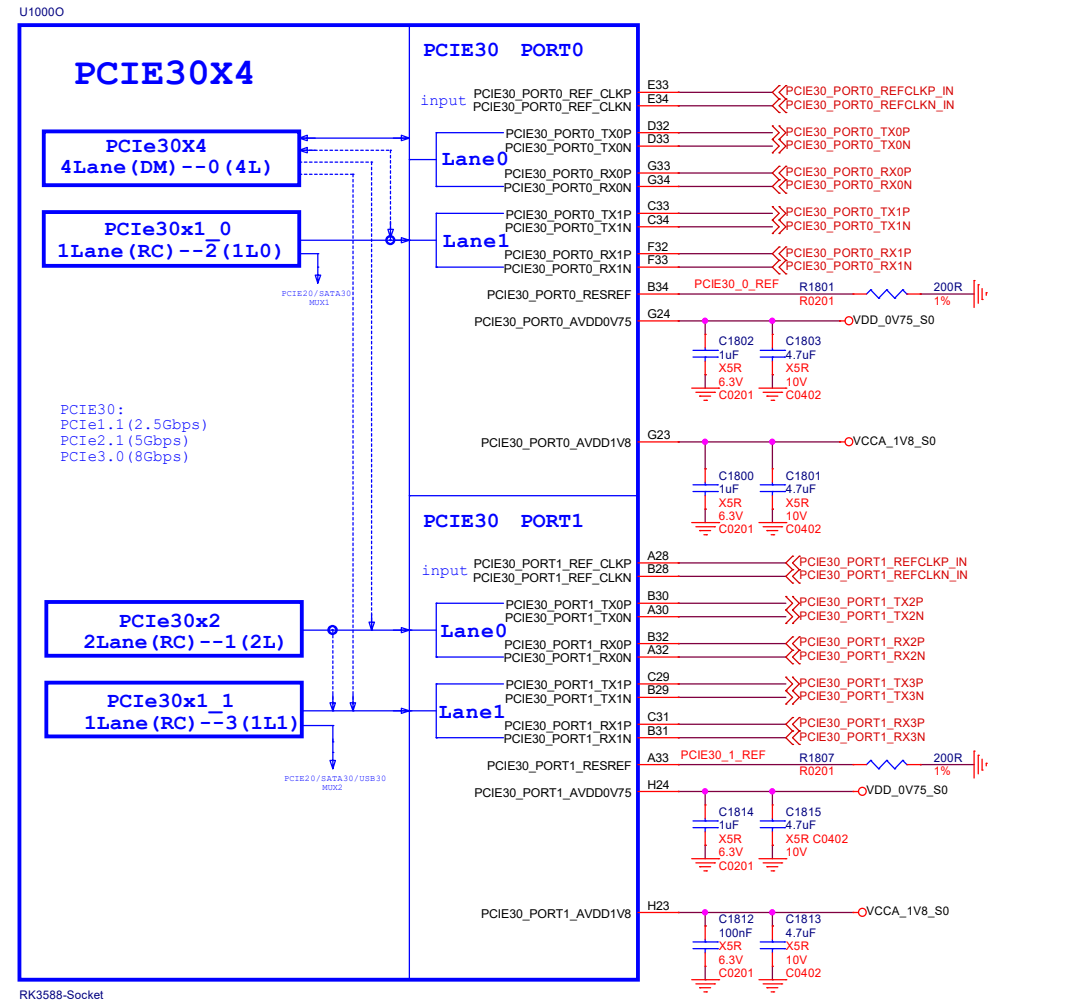
HDMI:V2.0



RK3588_N (PCIE20)



RK3588_O (PCIE30)

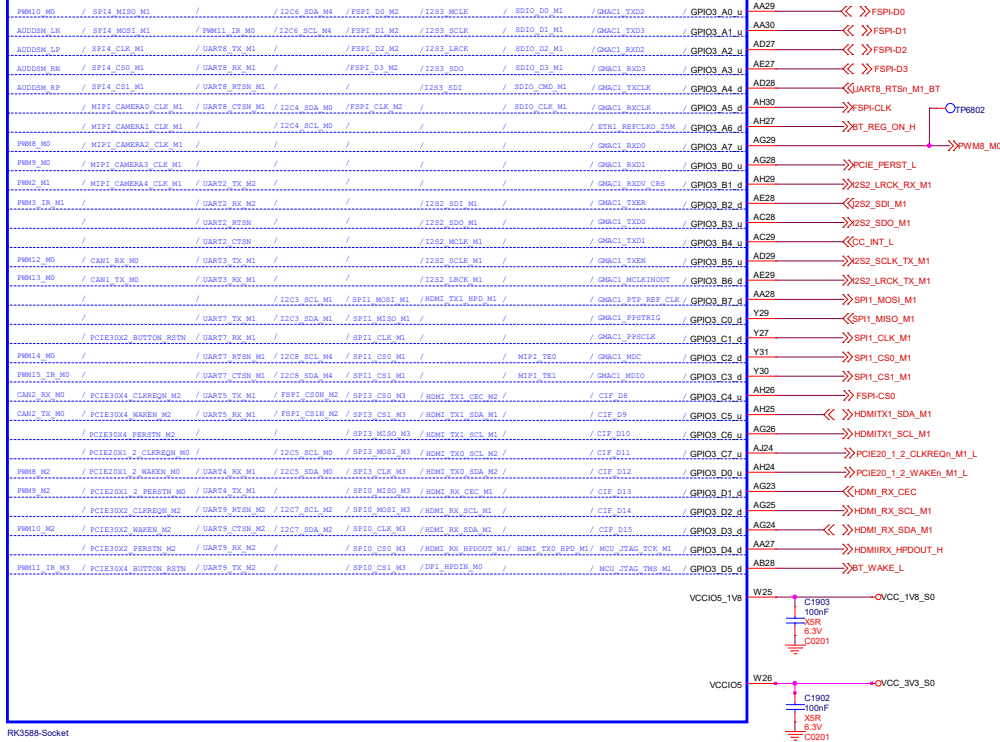


RK3588_J (VCCIO5 Domain)

U1000J

VCCIO5 Domain

Operating Voltage=1.8V/3.3V



RK3588-Socket

RK3588_K (VCCIO6 Domain)

U1000K

VCCIO6 Domain

Operating Voltage=1.8V/3.3V



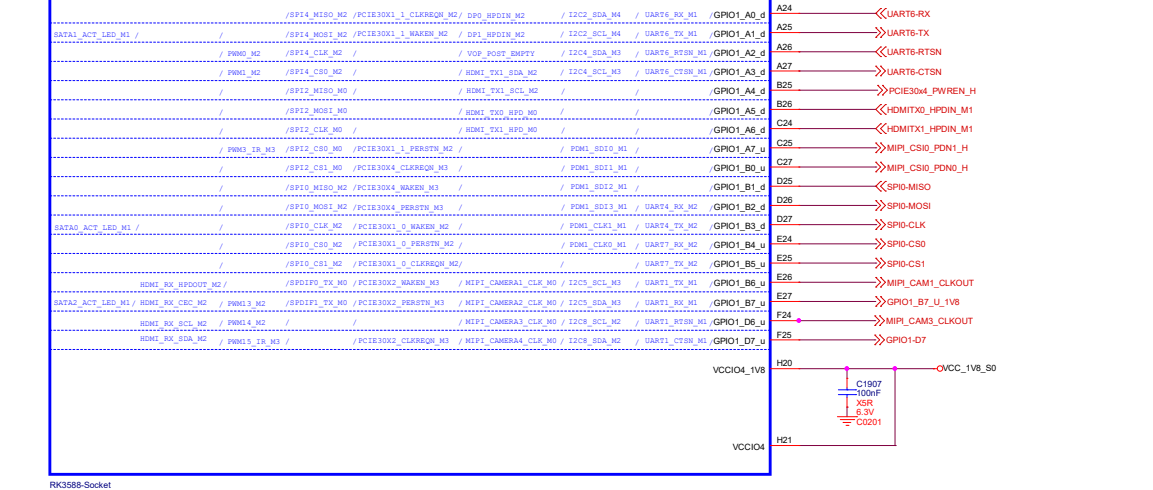
RK3588-Socket

RK3588_I (VCCIO4 Domain)

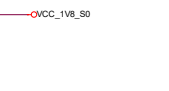
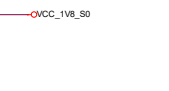
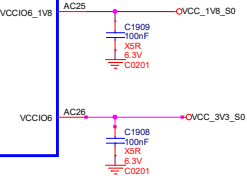
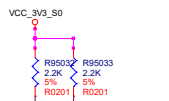
U1000I

VCCIO4 Domain

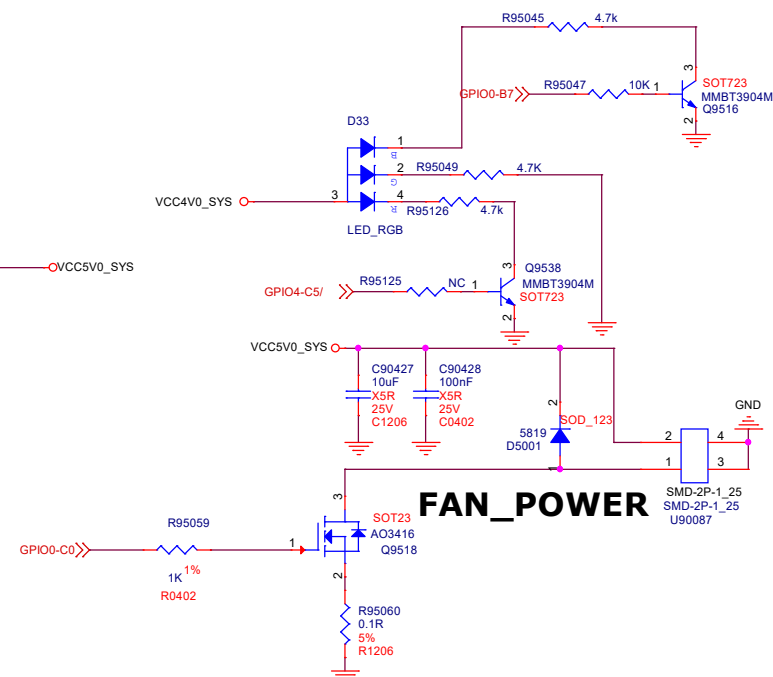
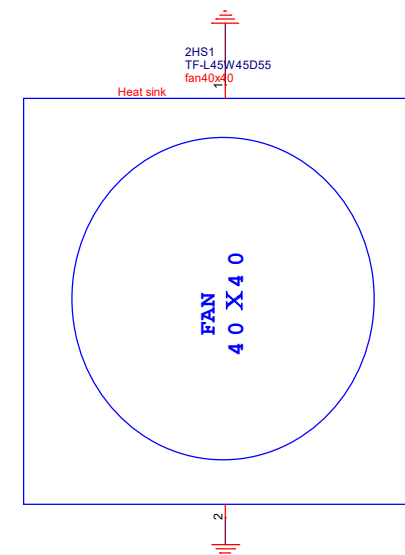
Operating Voltage=1.8V/3.3V



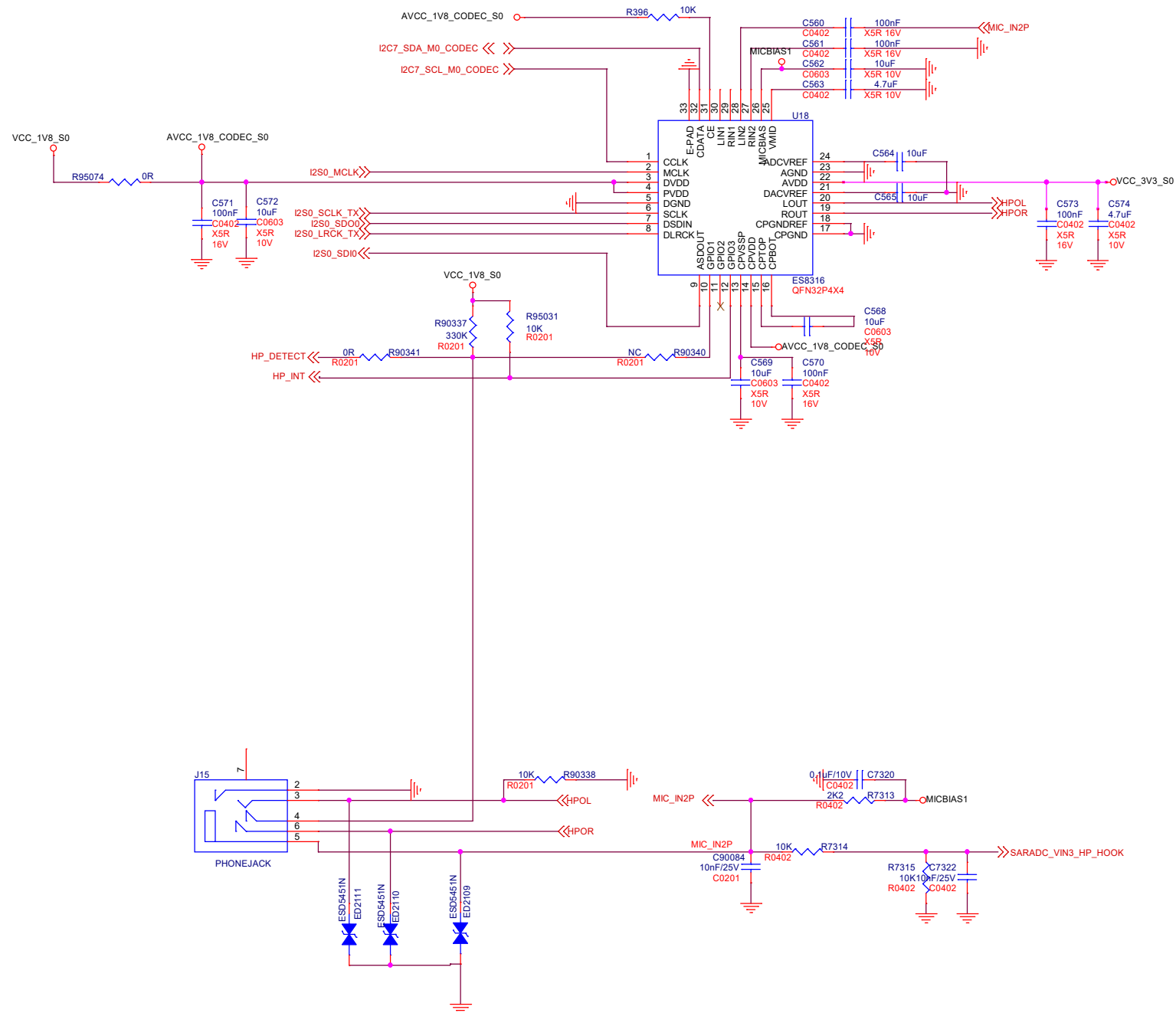
RK3588-Socket



radxa

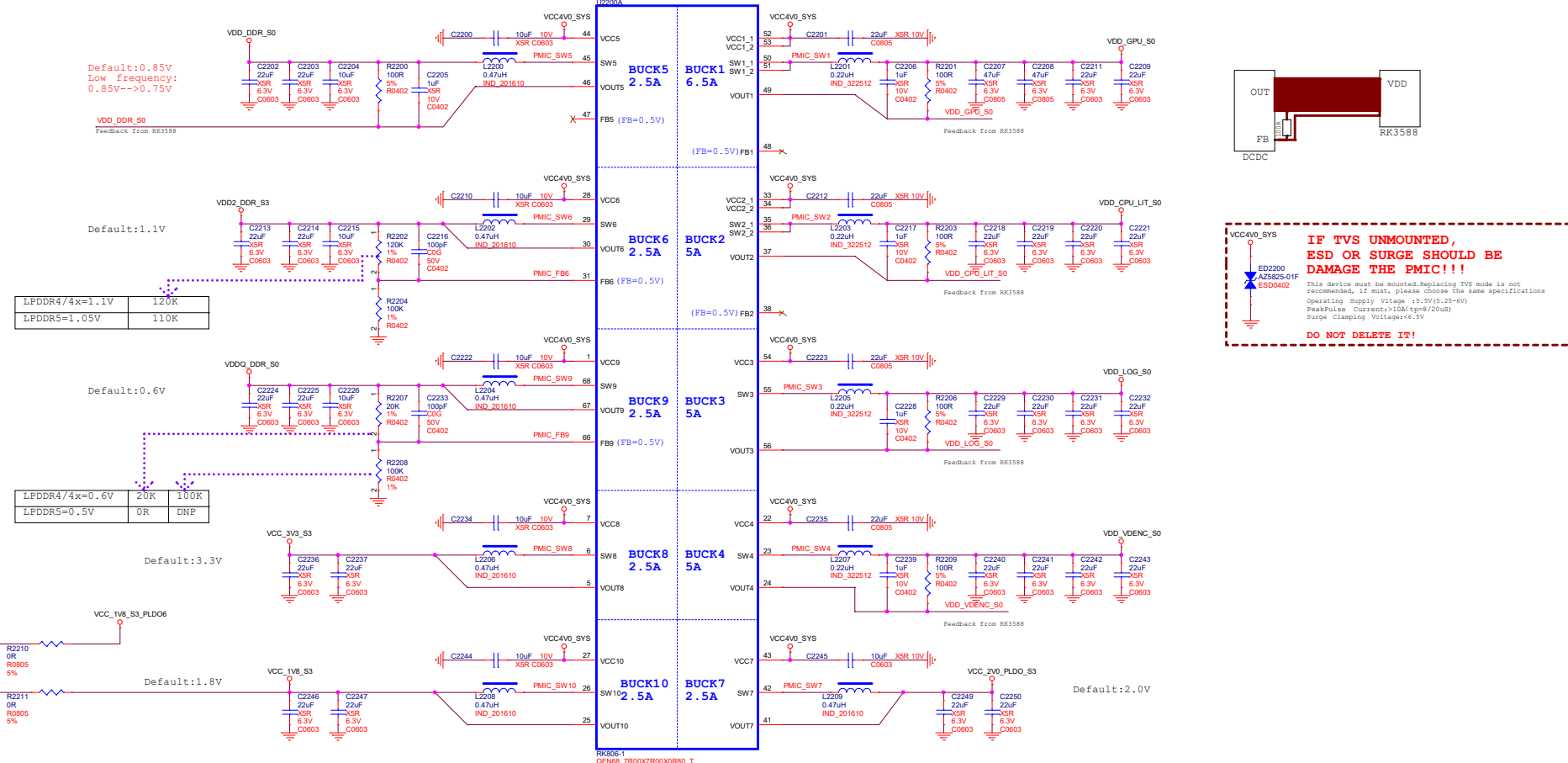


CODEC ES8316

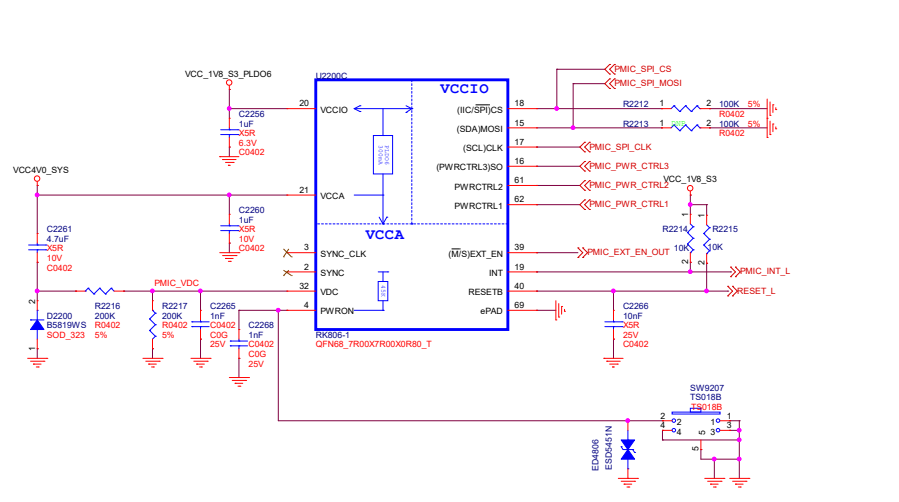


Size	Title: ROCK 5B	REV
A3	Page Name: 21.Audio Codec-ES8316	1.42
Date: Tuesday, September 20, 2022 Sheet 21 of 32		

PMIC RK806-1 BUCK



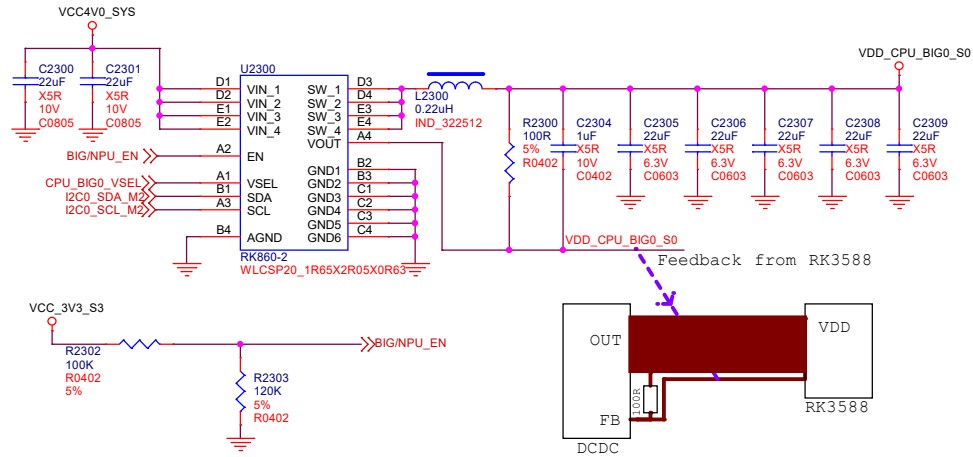
PMIC RK806-1 Managerment



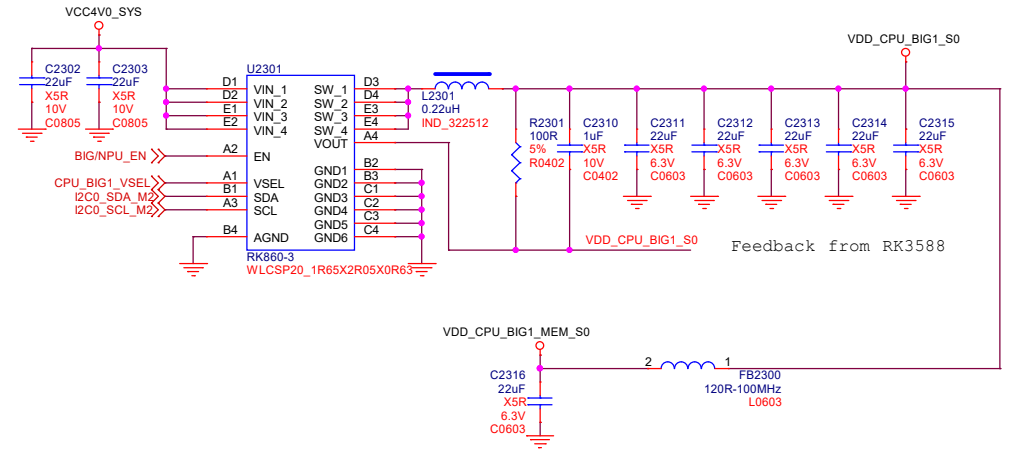
PMIC RK806-1 LDC



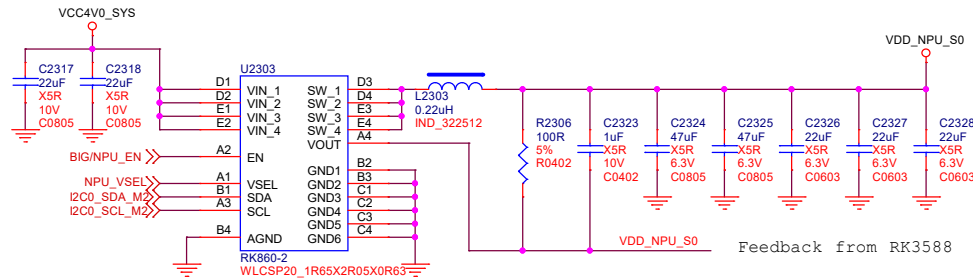
VDD_CPU_BIG0



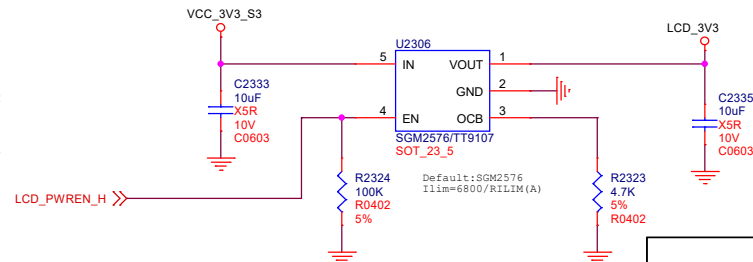
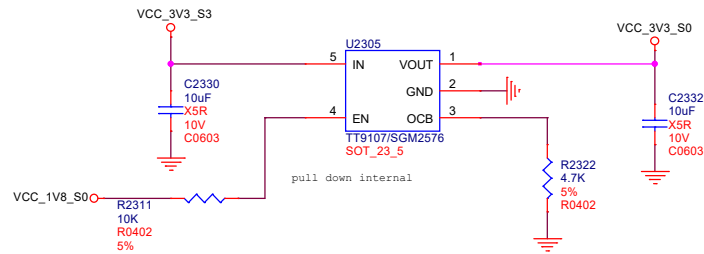
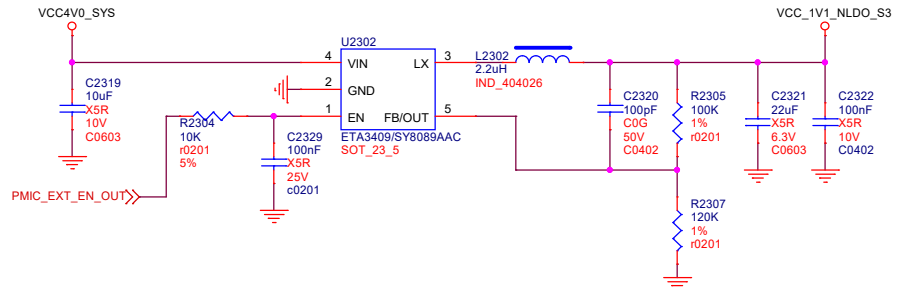
VDD_CPU_BIG1



VDD_NPU



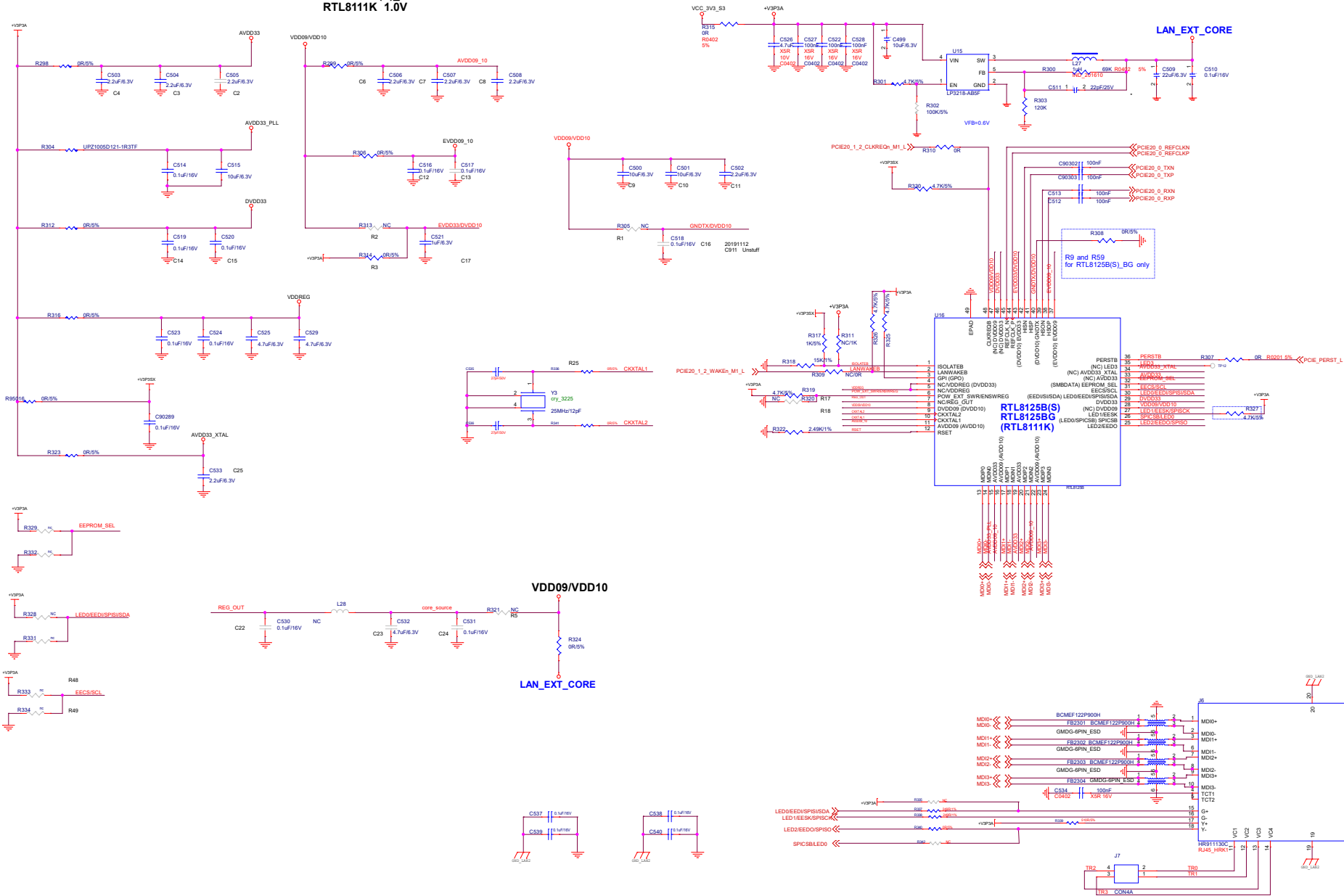
VCC_1V1_NLDO_S3

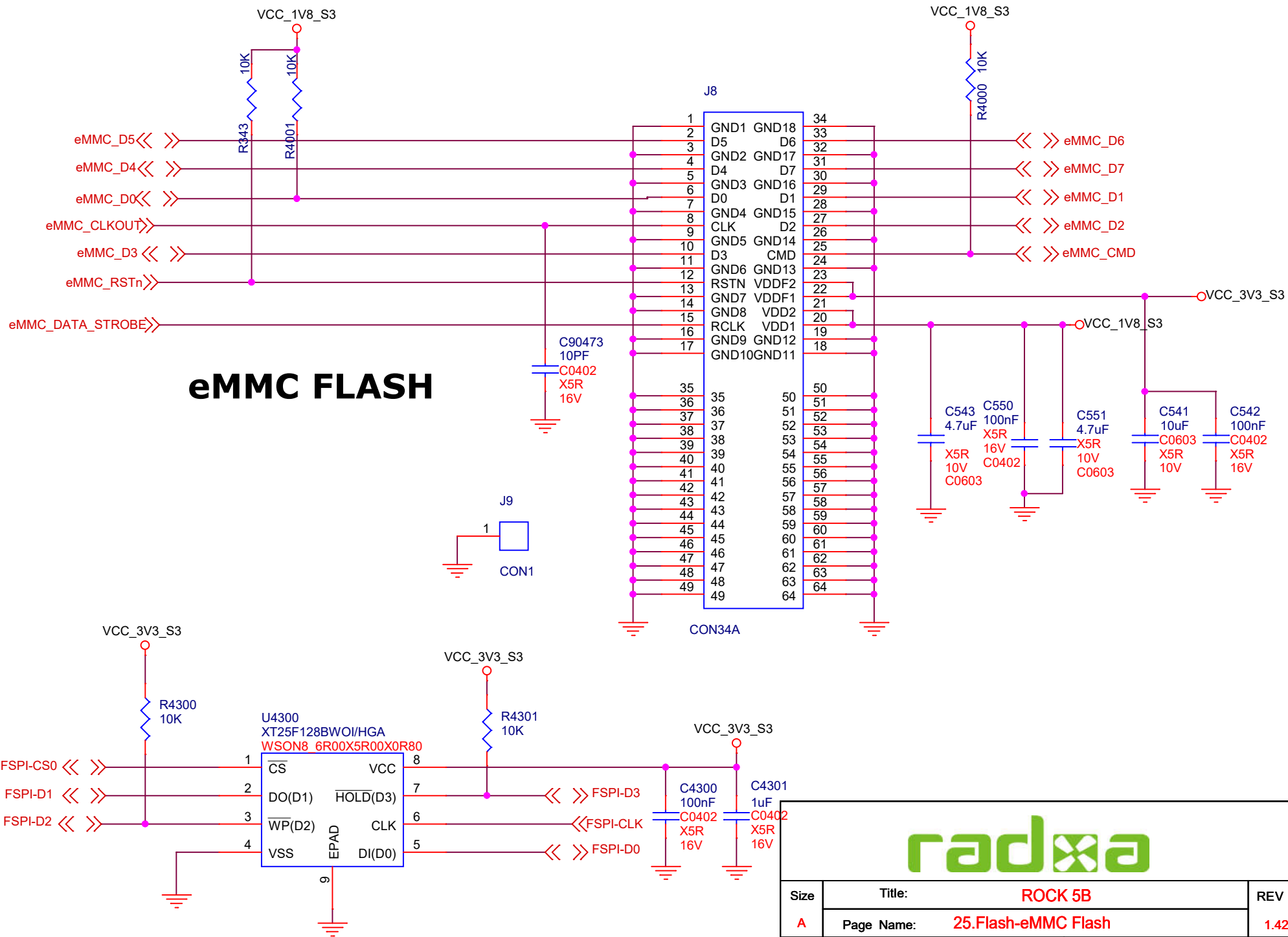


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Size	Title: ROCK 5B	REV
A3	Page Name: 22.Power-PMIC_RK806-1	1.42
Date: Tuesday, September 20, 2022	Sheet 23 of 32	

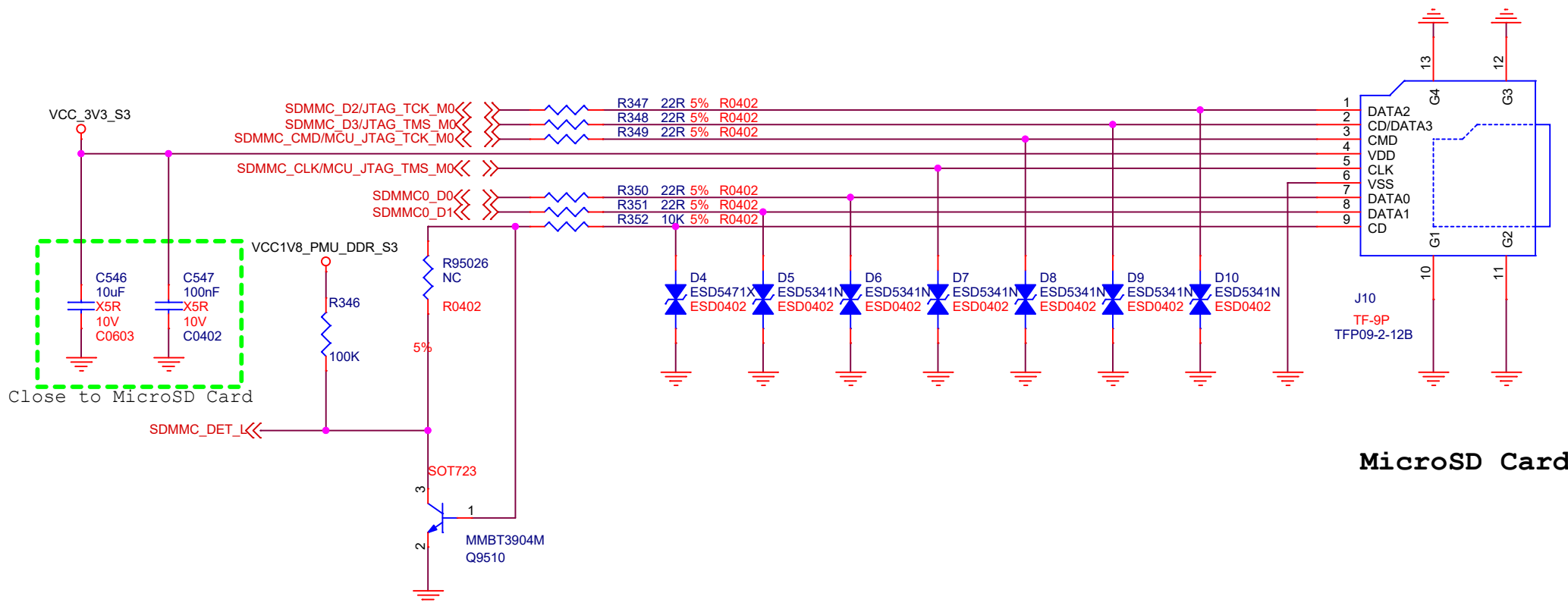
RTL8125B(S)_BG 0.95V
RTL8111K 1.0V





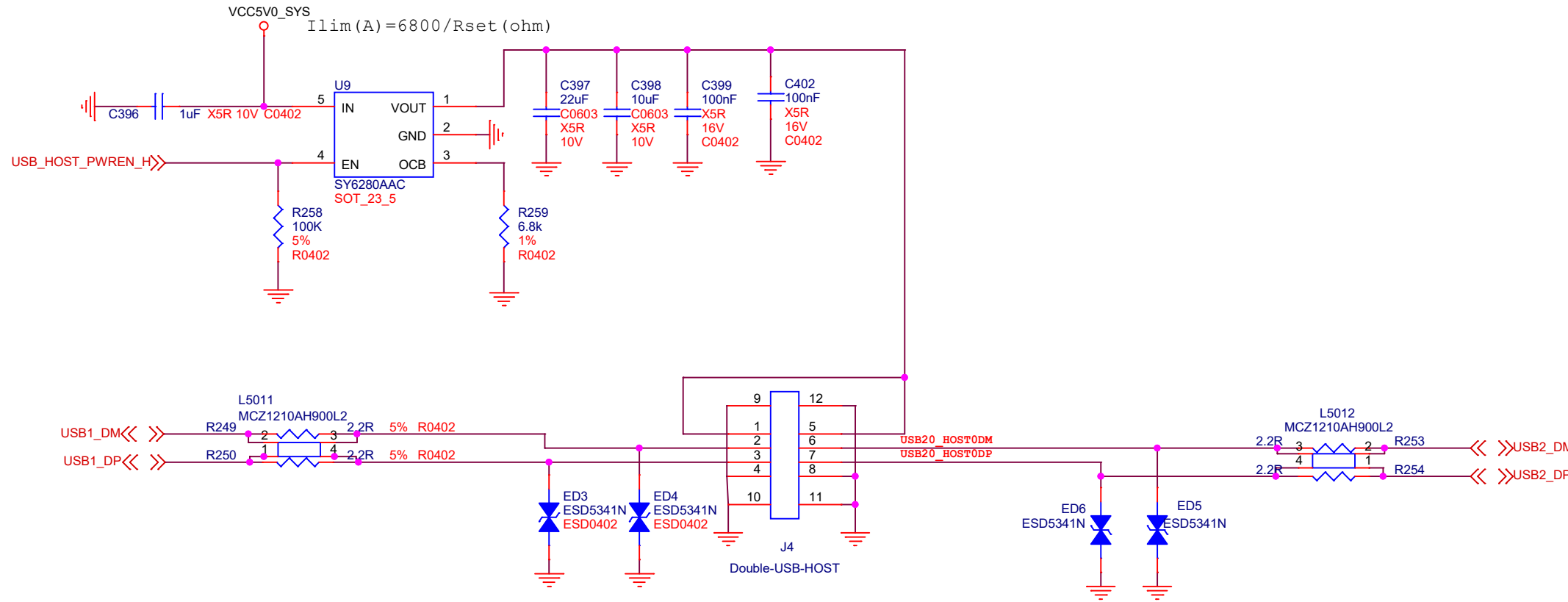
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TF CARD




MicroSD Card

USB2.0

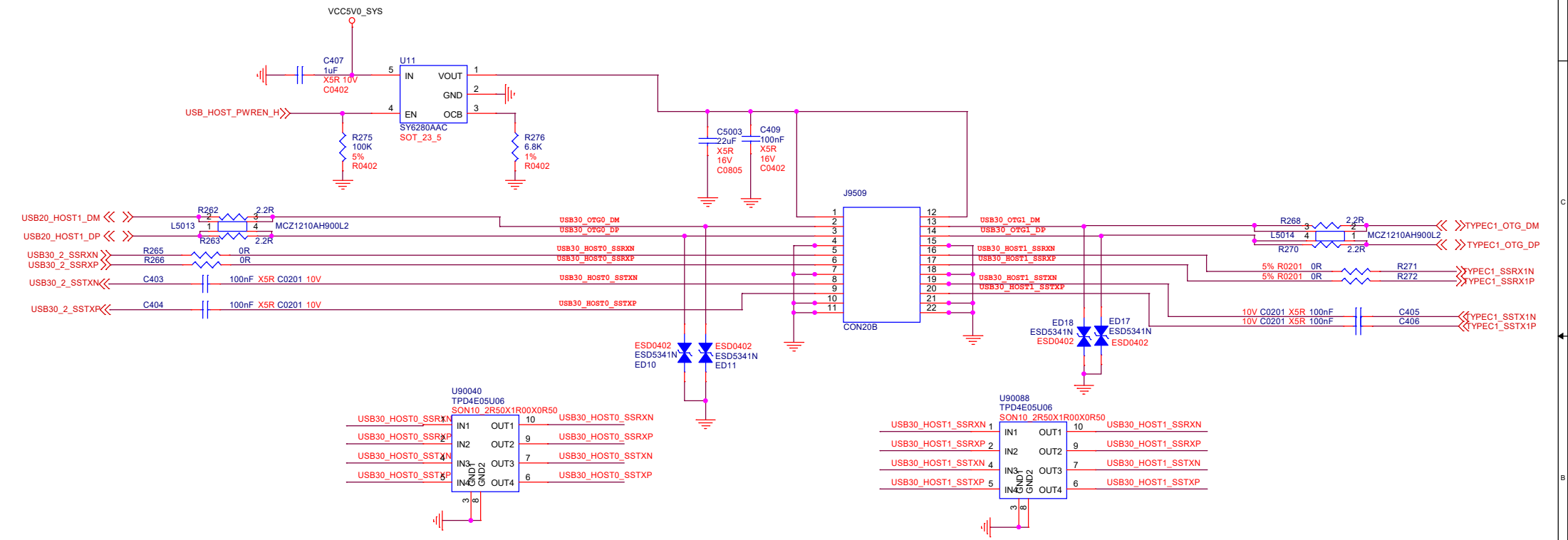


USB Impedance 90R

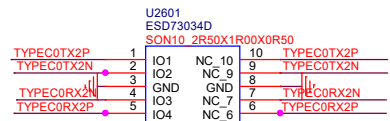
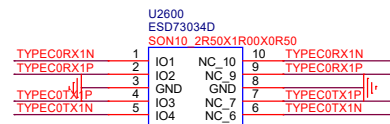
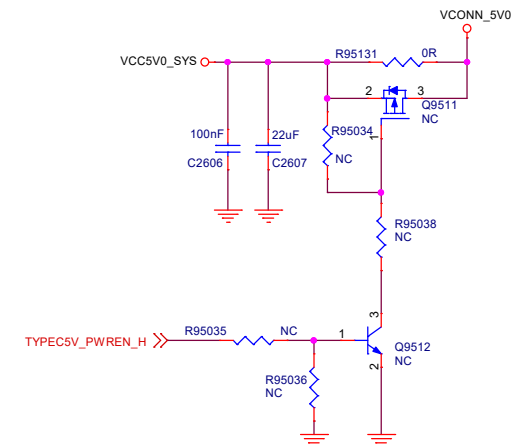
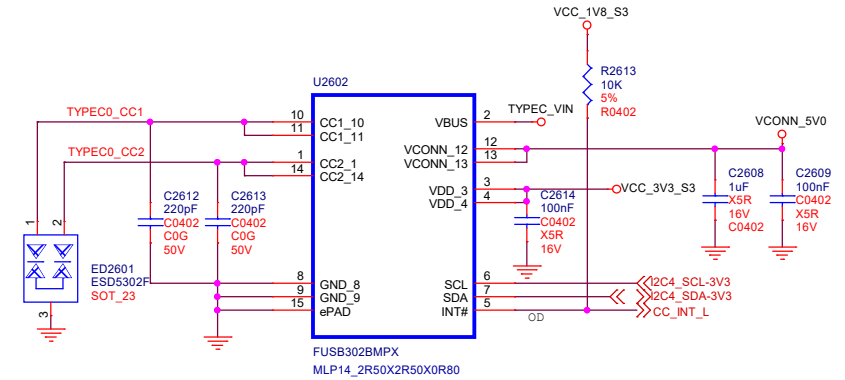
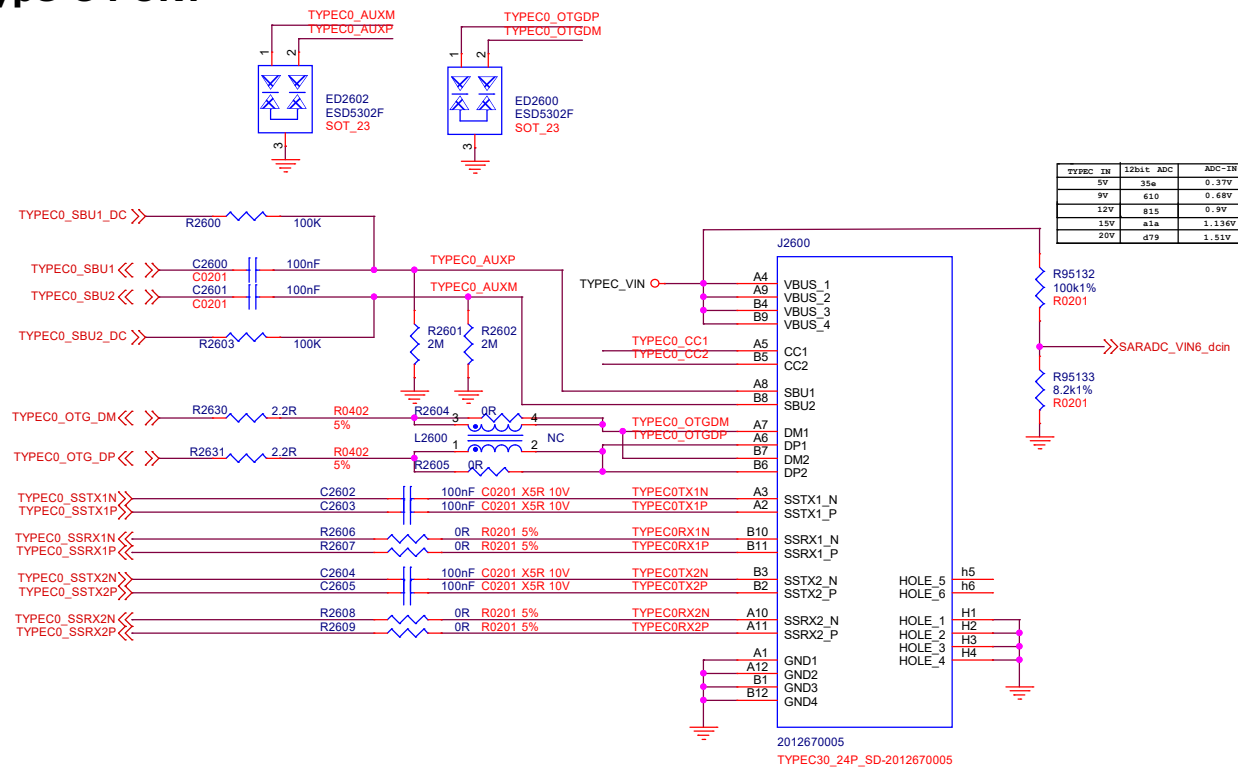


Size	Title: ROCK 5B	REV
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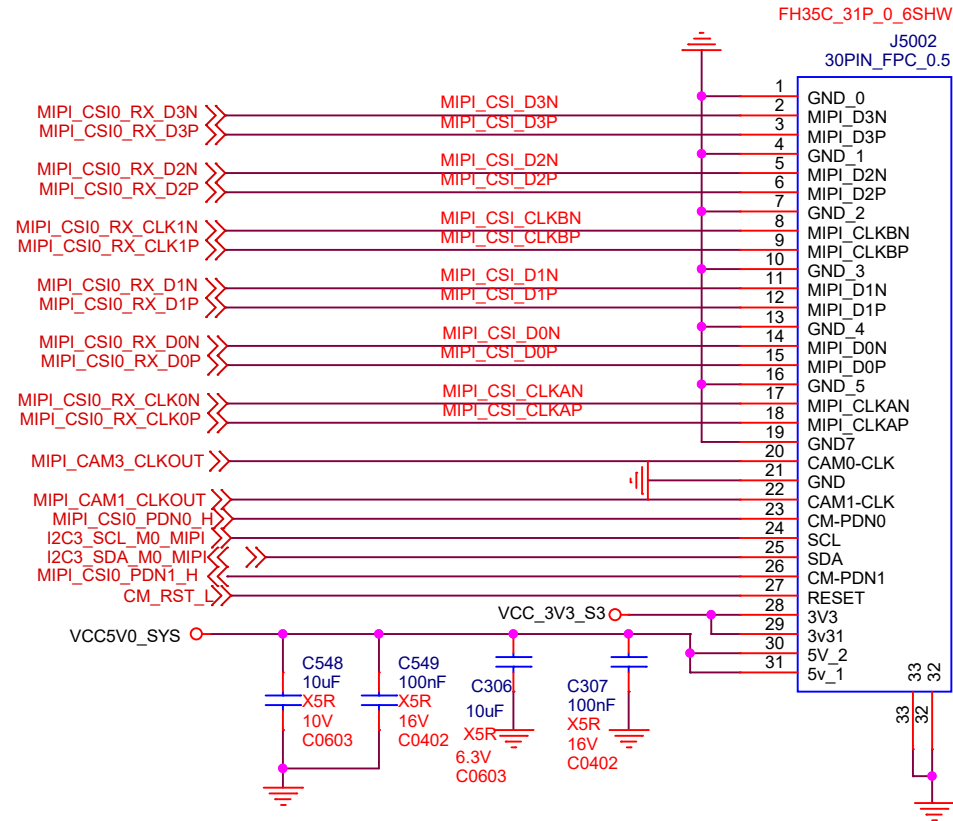
USB3.0 HOST PORT



Type-C PORT



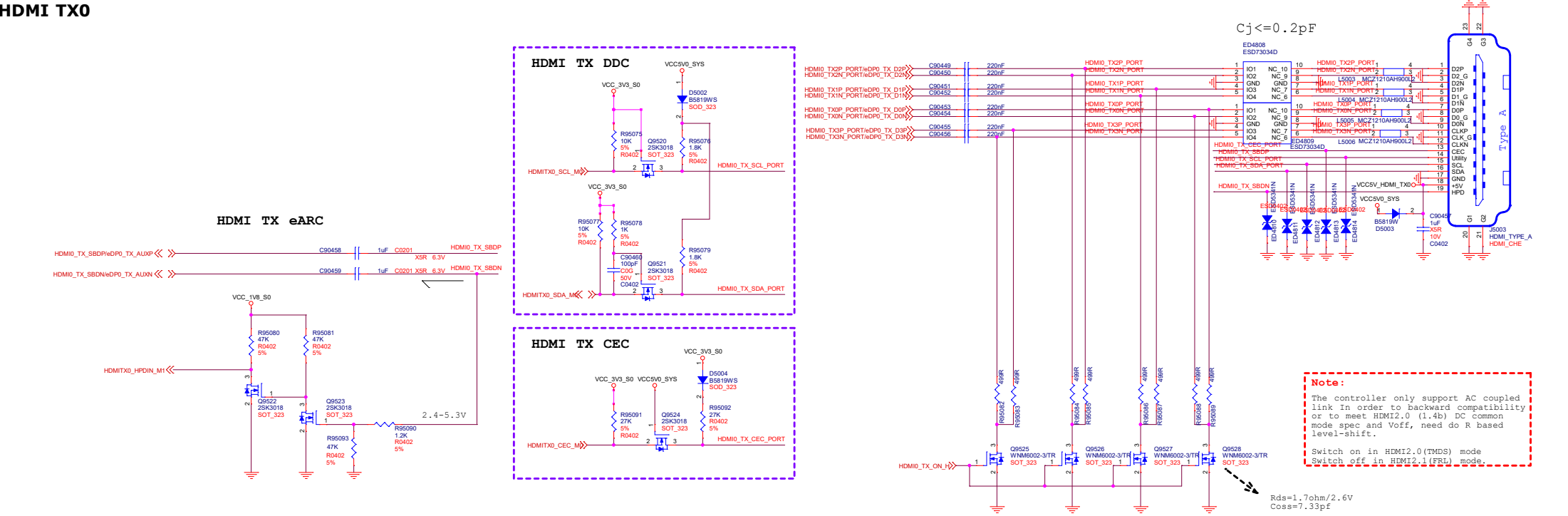
CAM



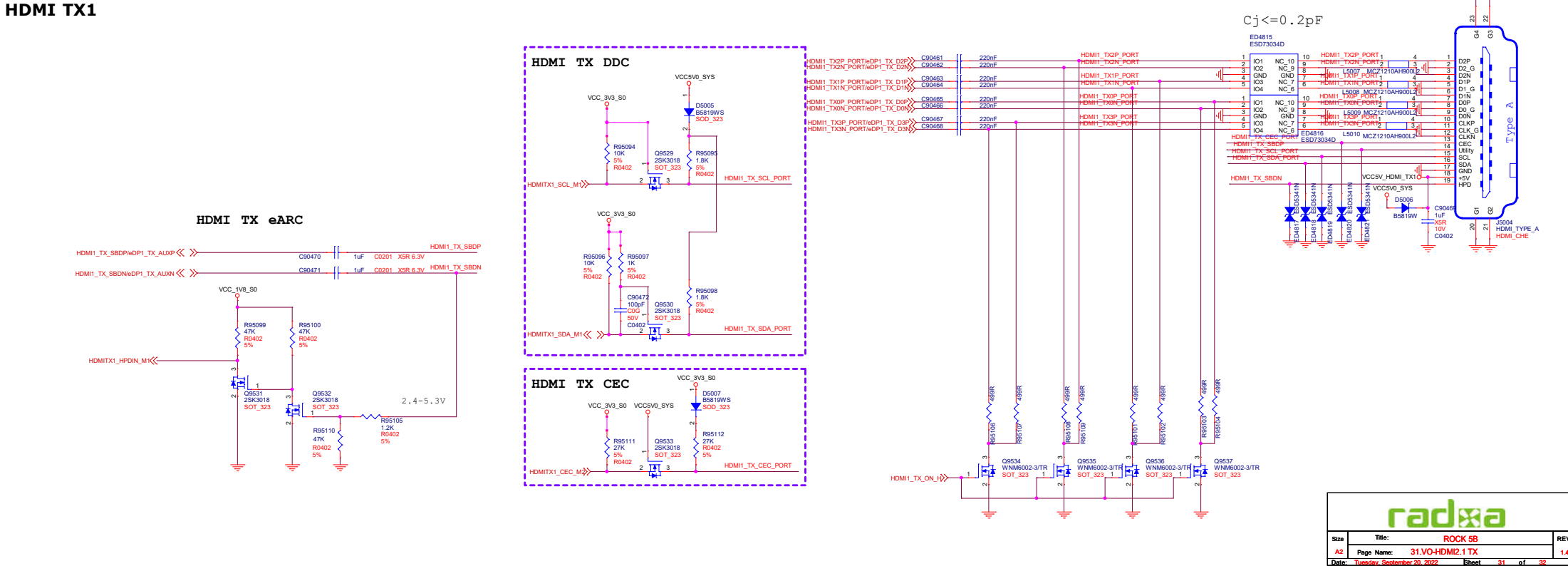
radxa

Size	Title: ROCK 5B	REV
A4	Page Name: 30.VI-Camera_MIPI-CSI	1.42
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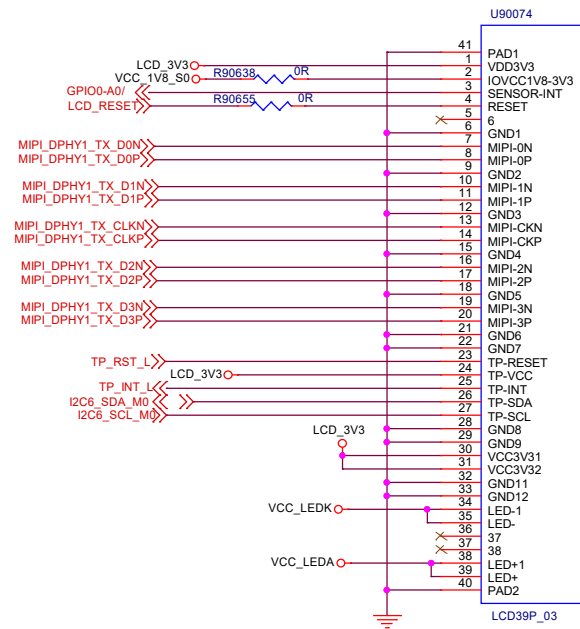
HDMI TX0



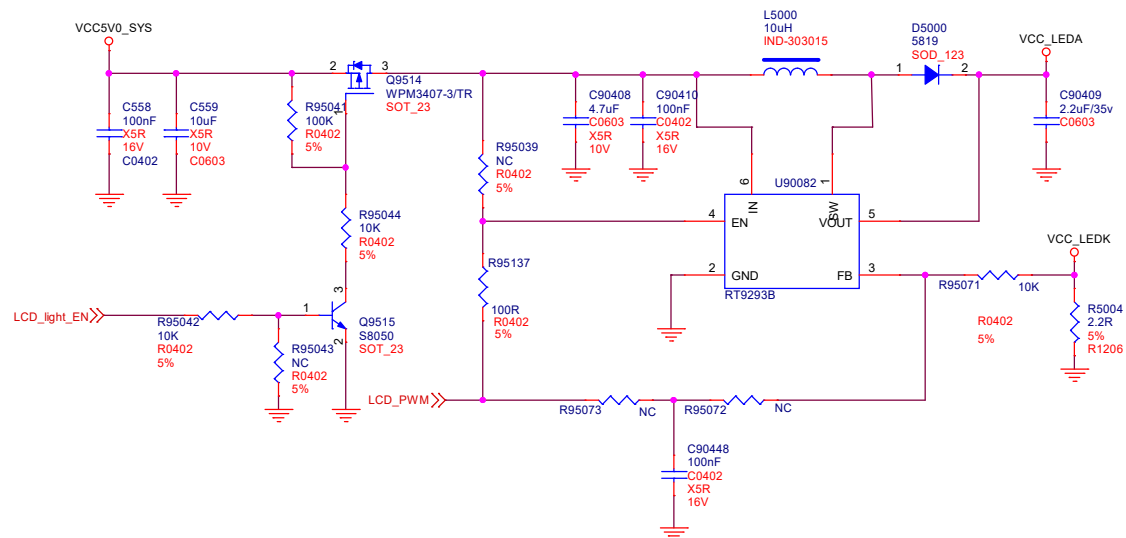
HDMI TX1



MIPI DPHY1 TX



LCD



Size	Title: ROCK 5B	REV
A3	Page Name: 32.VO-LCM_MIPI	1.42
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