



Radxa CM5

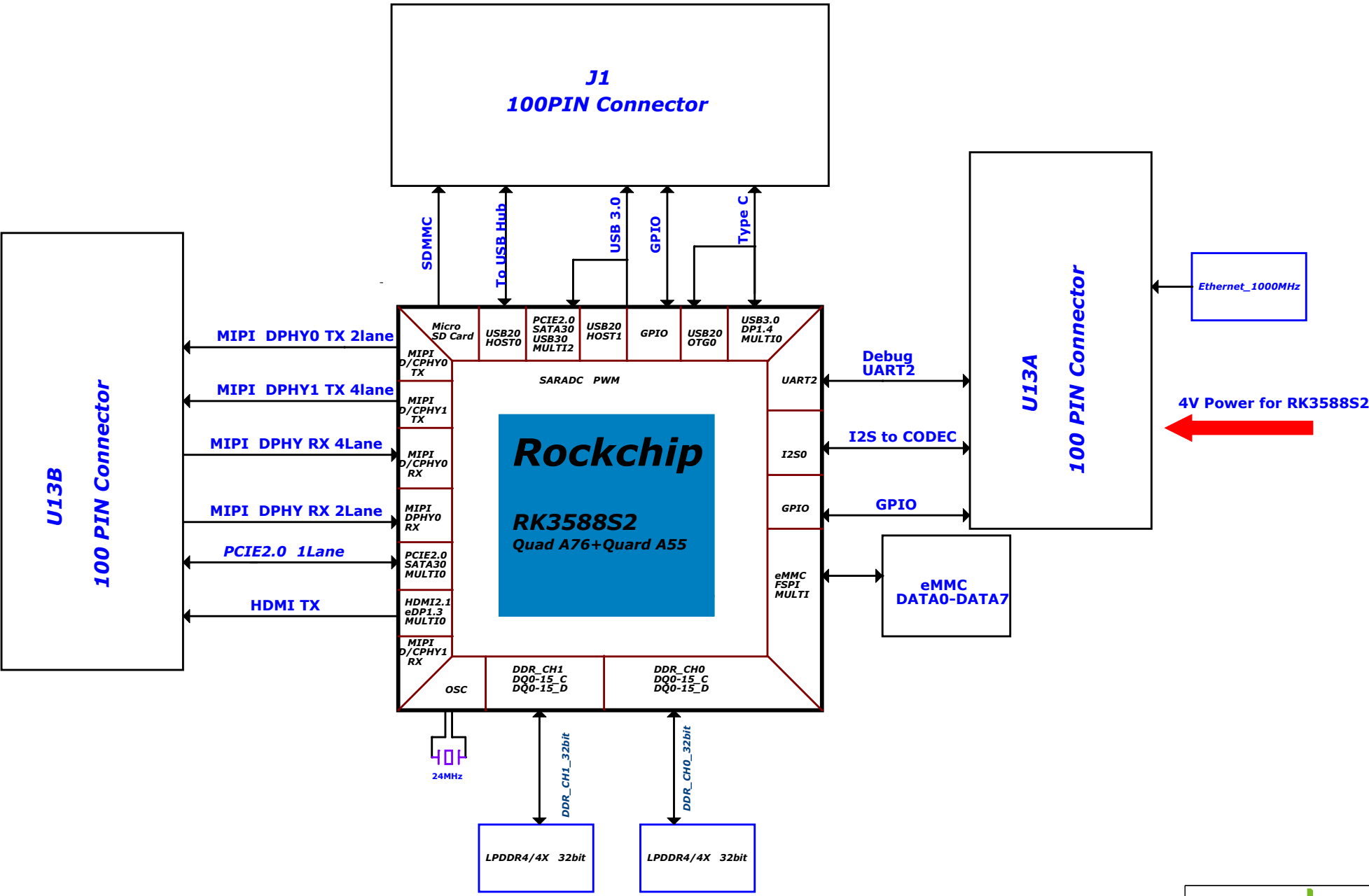
schematic

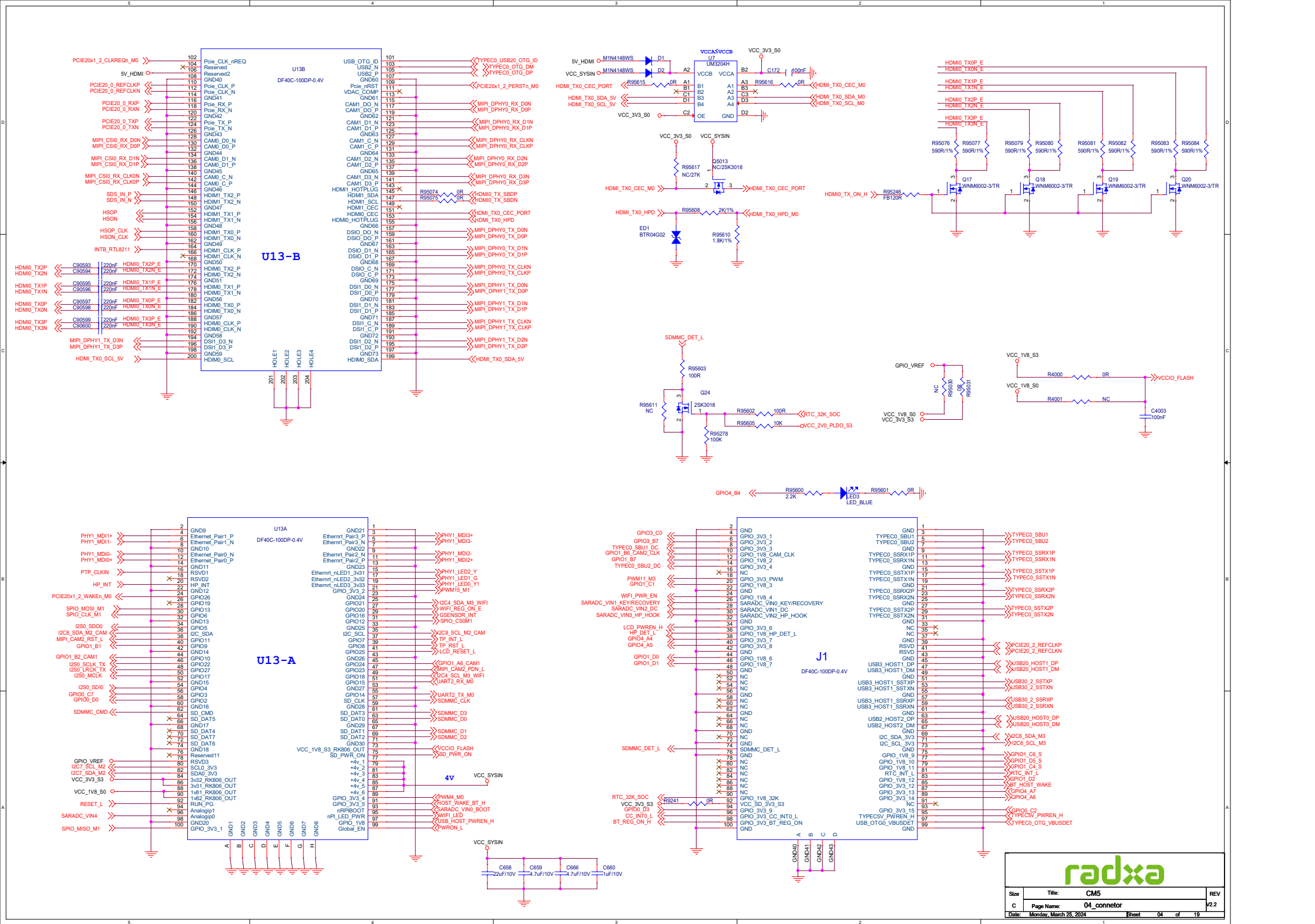
V2.21

Index

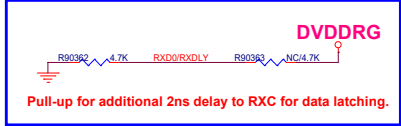
Page 1	01.Cover
Page 2	02.Index
Page 3	03.Block
Page 4	04 _connetor
Page 5	05 _Ethernet_ 1000MHz
Page 6	06 _Power_ Ext Discrete
Page 7	08 _DRAM-LPDDR4_ 4X_ 200P
Page 8	09 _RK3588S2_Power_GND
Page 9	10 _RK3588S2_OSC_PLL_PMUIO
Page 10	11 _RK3588S2_DDR_ Controler
Page 11	12 _RK3588S2_Flash_SD_Controller
Page 12	13 _RK3588S2_USB20_USB30_DP_PHY
Page 13	14 _RK3588S2_SARADC_1.8V_GPIO
Page 14	15 _RK3588S2_MIPi_Interface
Page 15	16 _RK3588S2_HDMI_eDP_Interface
Page 16	17 _RK3588S2_PCIE2_SATA3_USB3_PHY
Page 17	18 _RK3588S2_GPIO
Page 18	19 _Power_PMIC_RK806_1
Page 19	19 _eMMC

CM5 Block Diagram





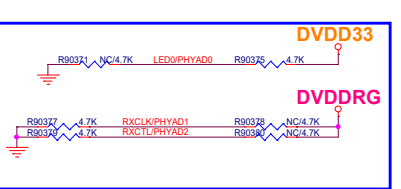
RGMII RXC Delay Config.



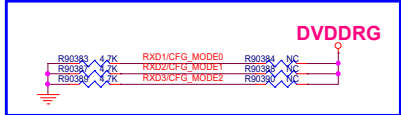
RGMII Voltage Config.



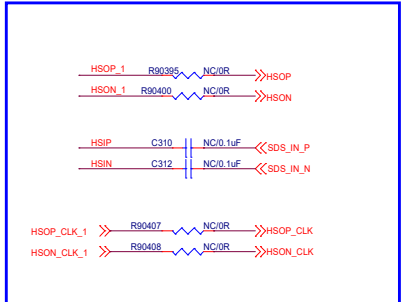
PHY Address Config.



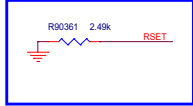
PHY Config.



SERDES (NC)



RSET

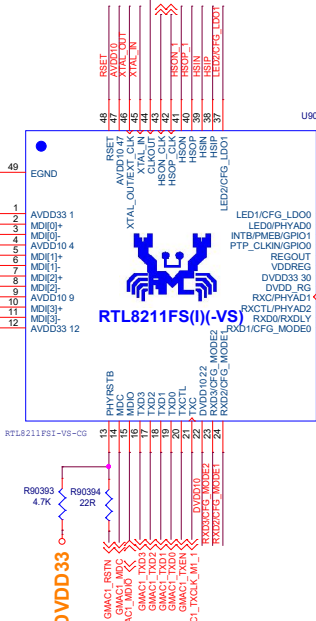
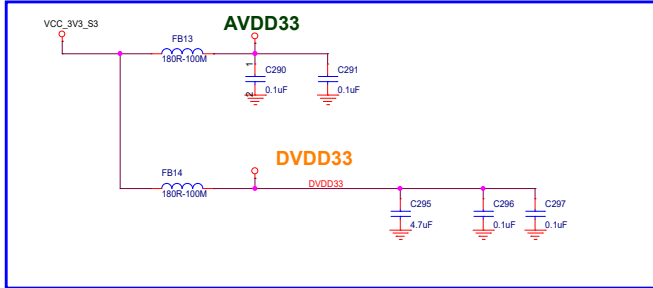


RGMII Power Source	CFG_LDO[1:0]
External 3.3V (default)	2'b00
Internal 2.5V	2'b01
Internal 1.8V	2'b10
Internal 1.5V	2'b11

PHY Address	PHYAD[2:0]
0	3'b000
1 (default)	3'b001
2	3'b010
3	3'b011
4	3'b100
5	3'b101
6	3'b110
7	3'b111

Operating Mode	CFG_MODE[2:0]
UTP <=> RGMII (default)	3'b000
FIBER <=> RGMII	3'b001
UTP/FIBER <=> RGMII	3'b010
UTP <=> SGMII	3'b011
SGMII (PHY) <=> RGMII	3'b100
SGMII (MAC) <=> RGMII	3'b101
UTP <=> FIBER (AUTO)	3'b110
UTP <=> FIBER (FORCE)	3'b111

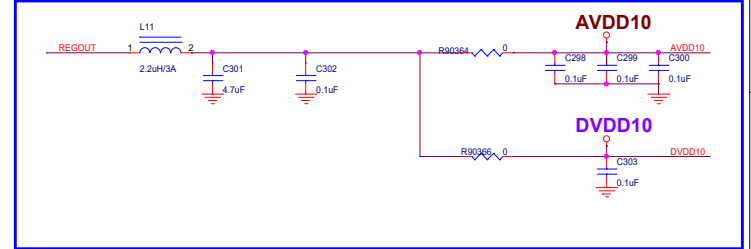
3.3V Power Supply



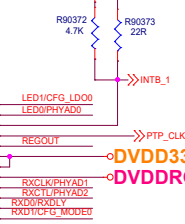
RGMII Power



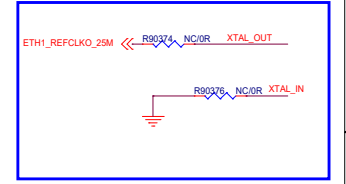
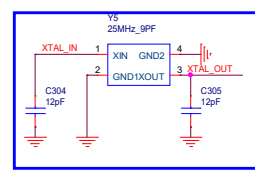
Switching Regulator



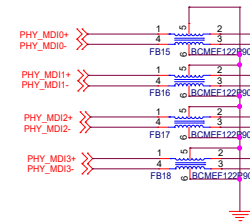
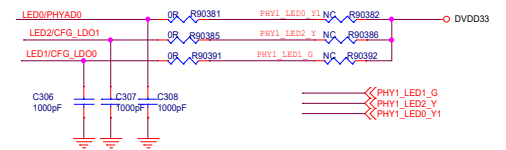
DVDD33



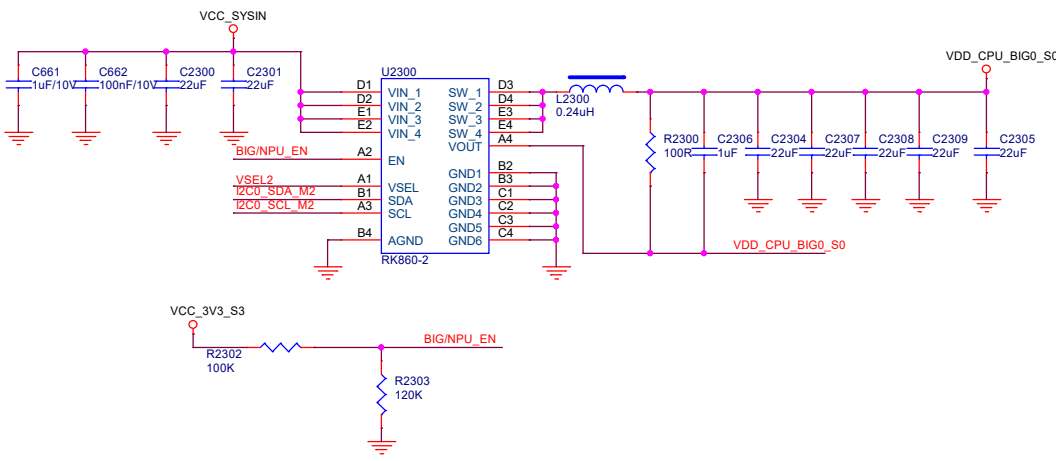
Crystal Case External clock Case



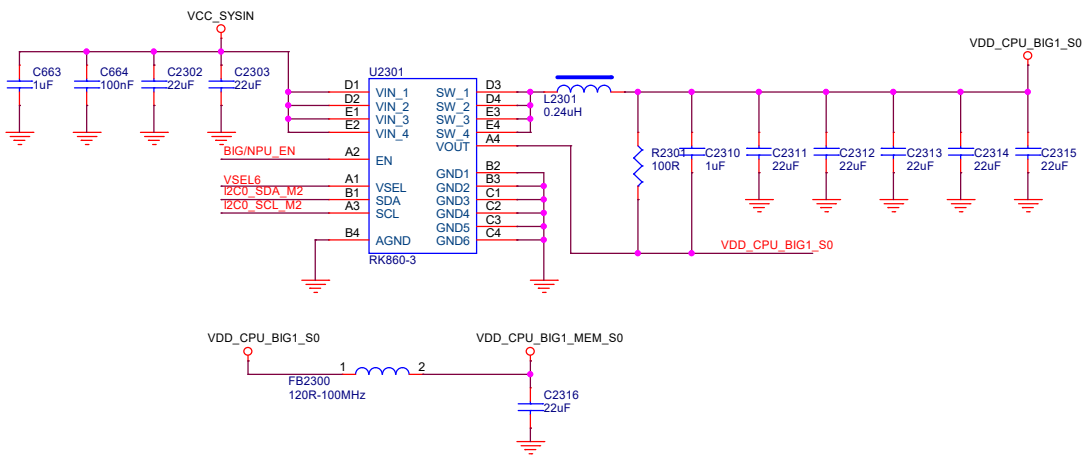
LEDs Configuration



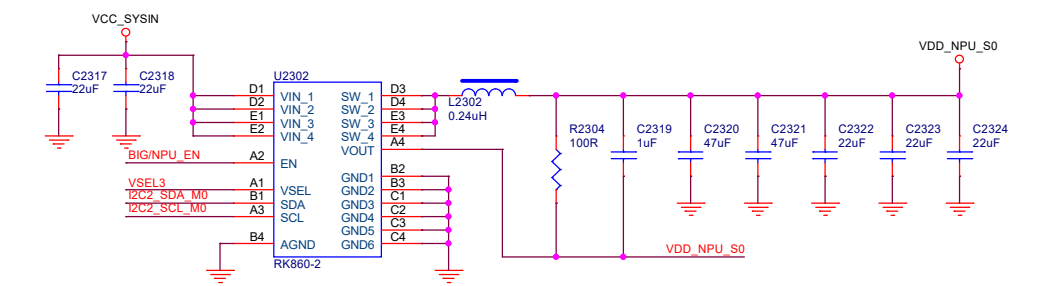
VDD_CPU_BIG0



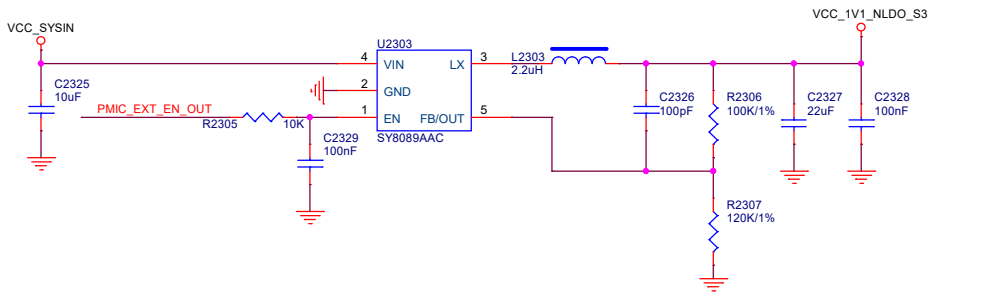
VDD_CPU_BIG1



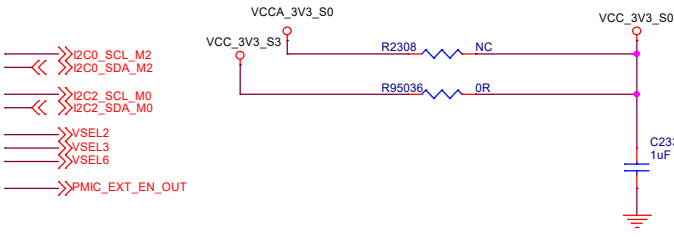
VDD_NPU



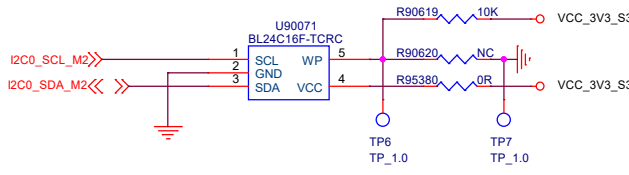
VCC_1V1_NLDO



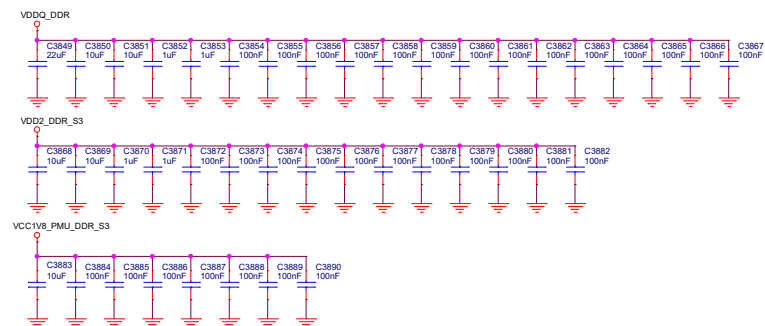
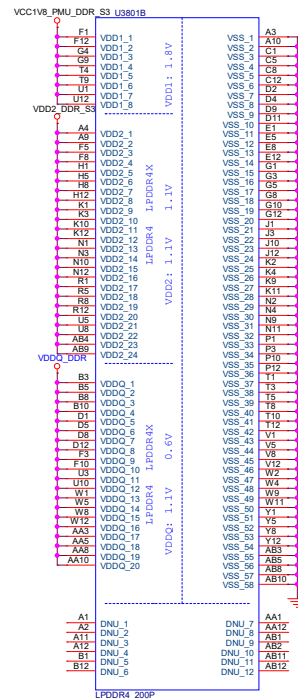
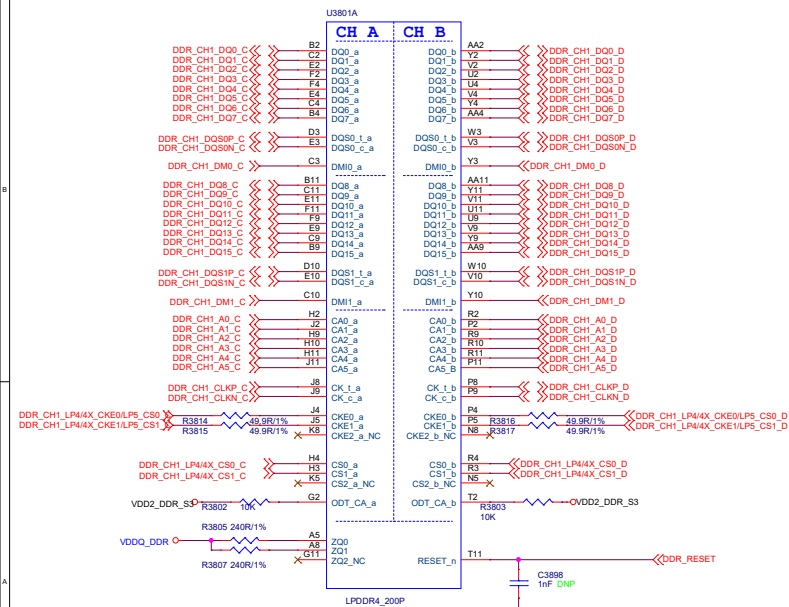
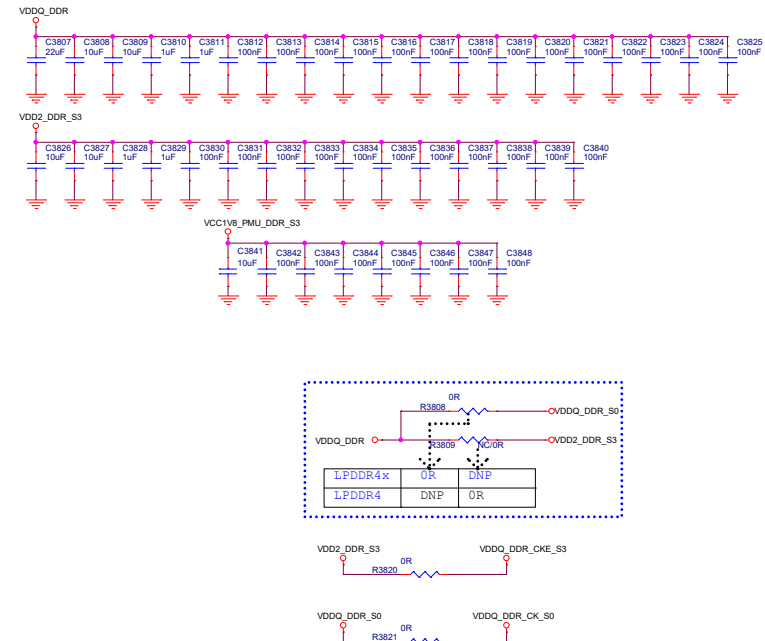
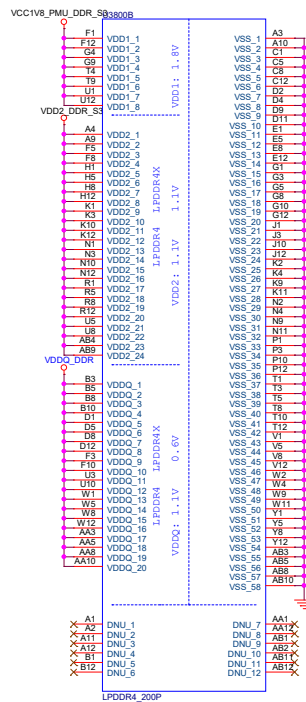
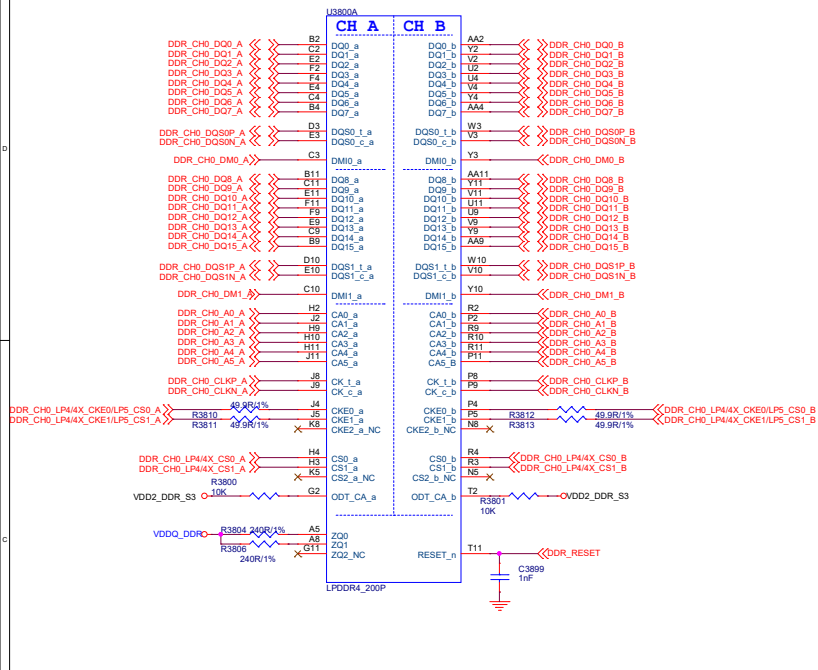
VCC_3V3_S0



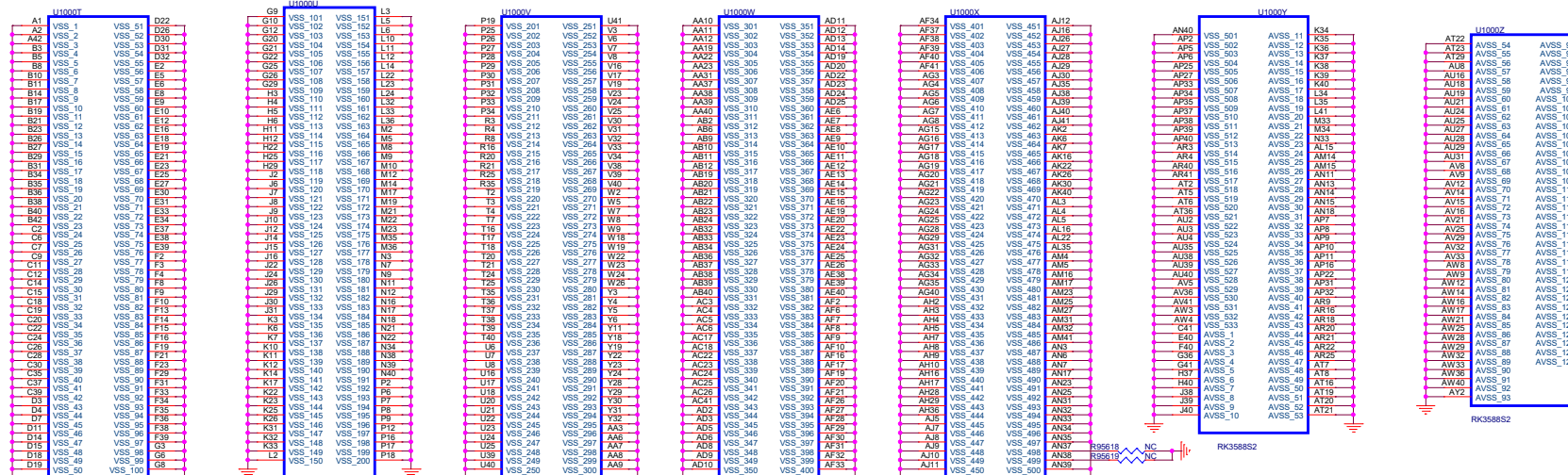
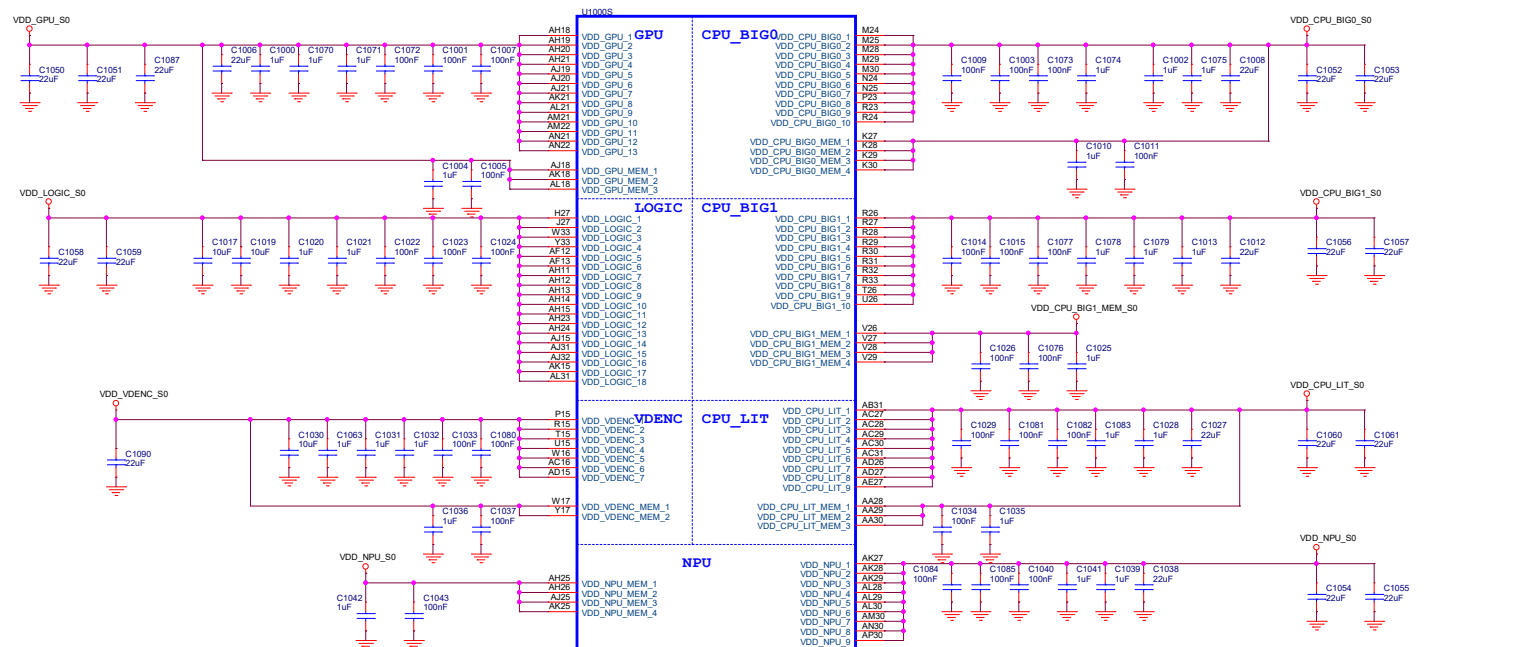
Mechine ID



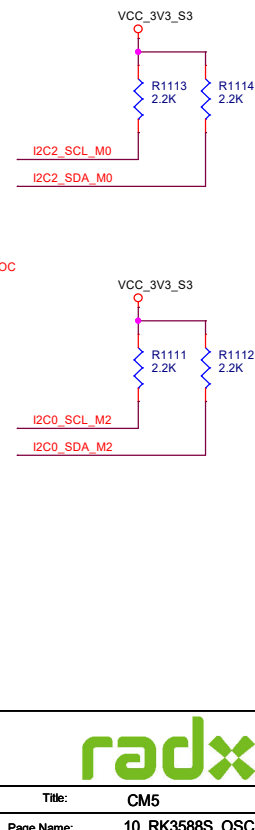
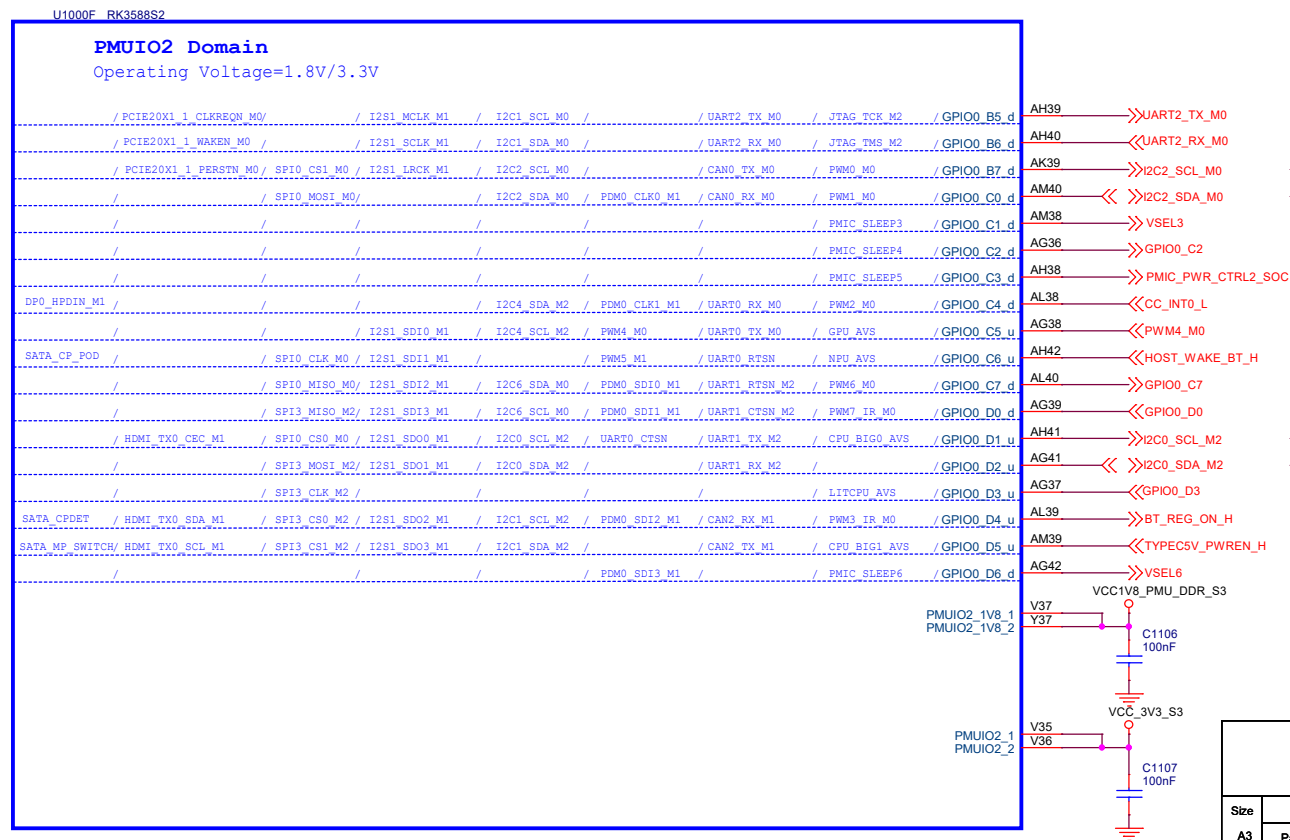
DRAM-LPDDR4/4x_2X32bit



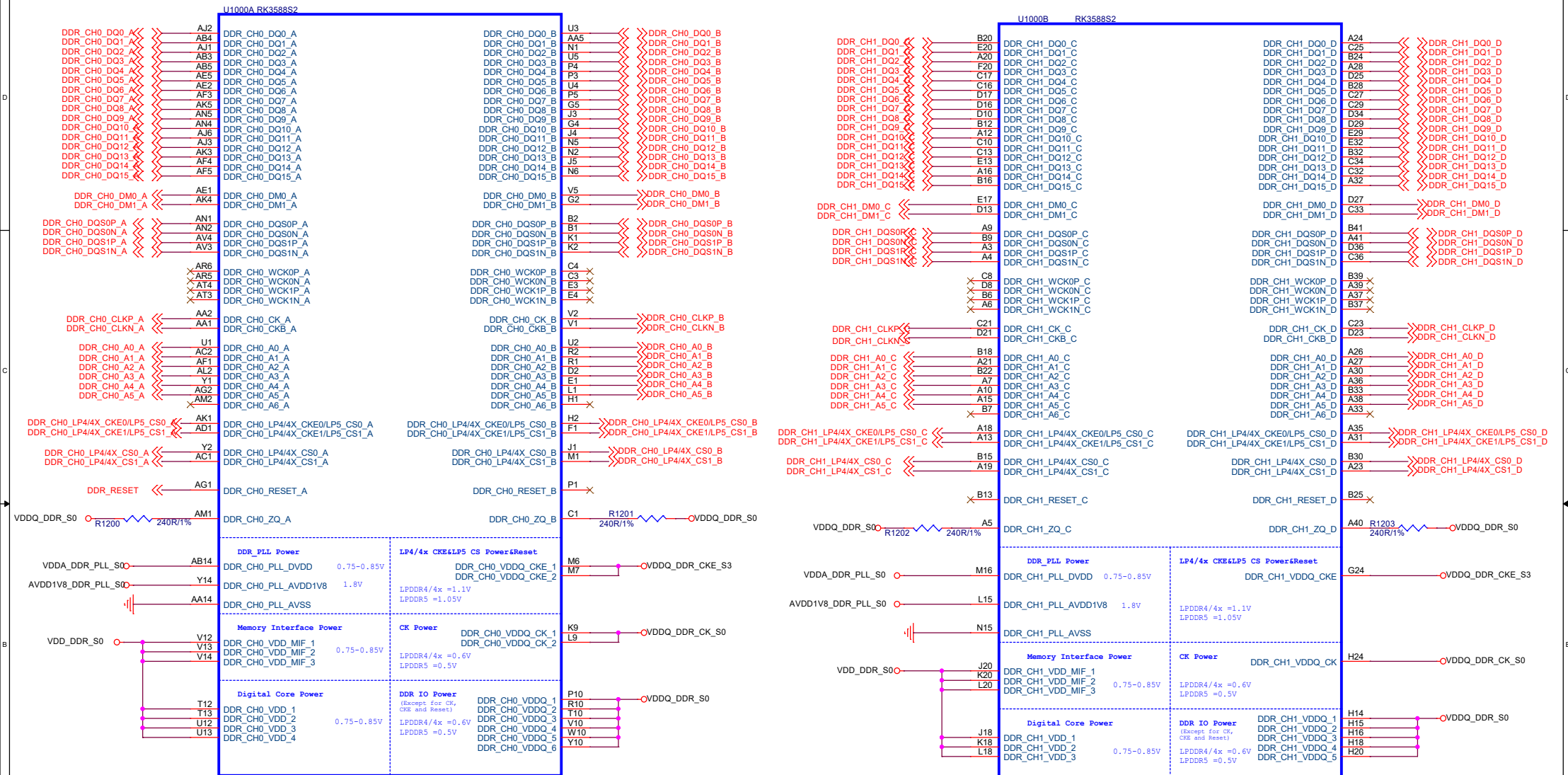
RK3588S2 (Power&Gnd)



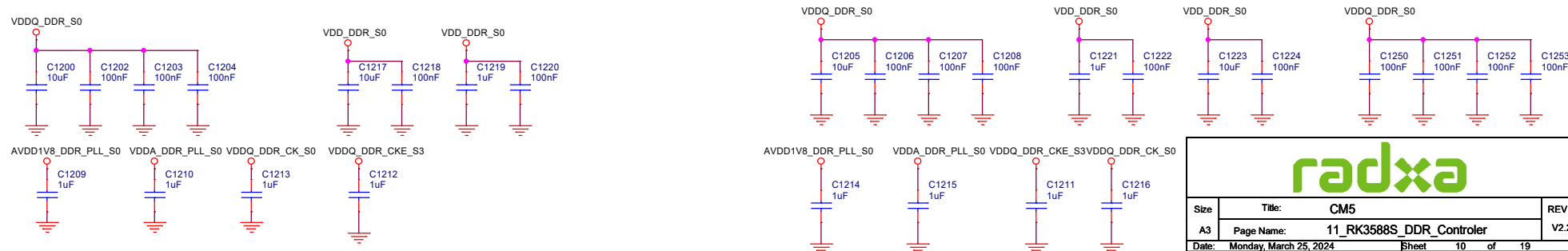
RK3588S2 (PMUIO2)



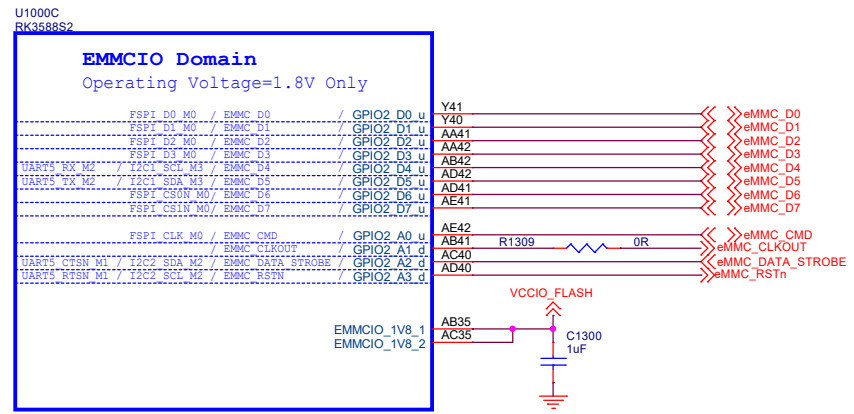
RK3588S2 (DDR PHY)



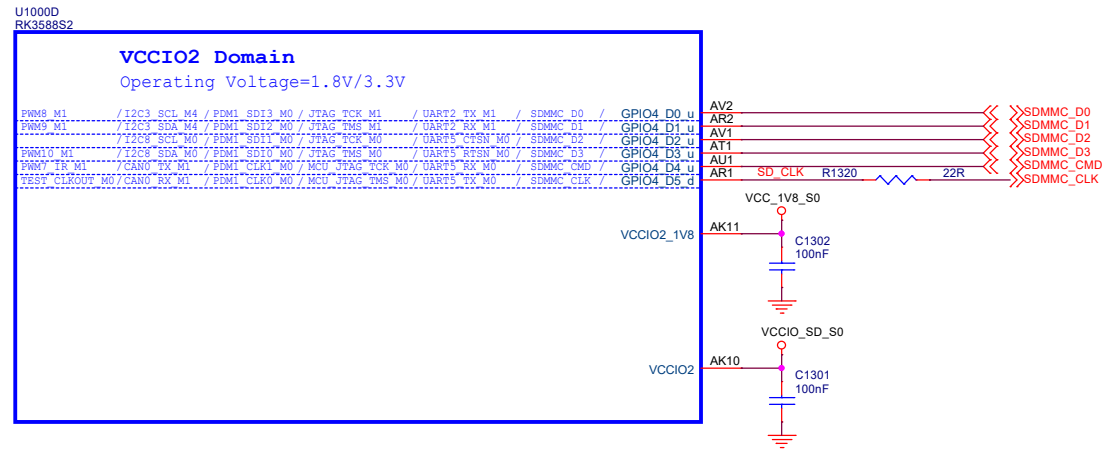
DDR FILTER



RK3588S2 (EMMCIO Domain)



RK3588S2 (VCCIO2 Domain)



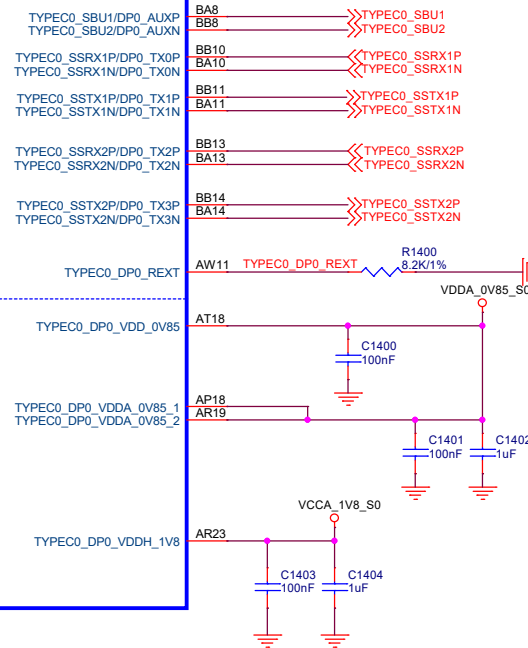
RK3588S2 (USB3.0/DP1.4)

U1000L RK3588S2

USB 3.0 OTG of TYPEC0 /DP1.4 ALT

USB:U3/Gen1
DP:RBR/HBR/HBR2/HBR3

POWER



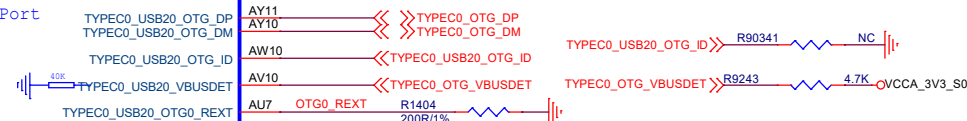
RK3588S2 (USB2.0)

U1000K RK3588S2

USB2.0 OTG of TYPEC0

HS/FS/LS

Download Port



USB2.0 HOST0

HS/FS/LS

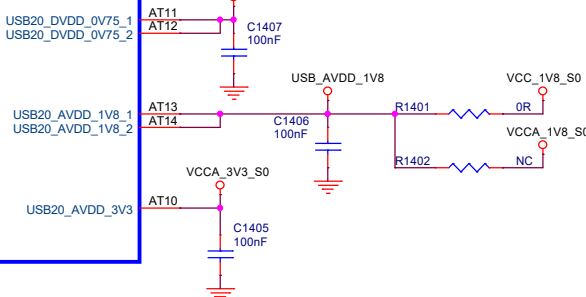


USB2.0 HOST1

HS/FS/LS



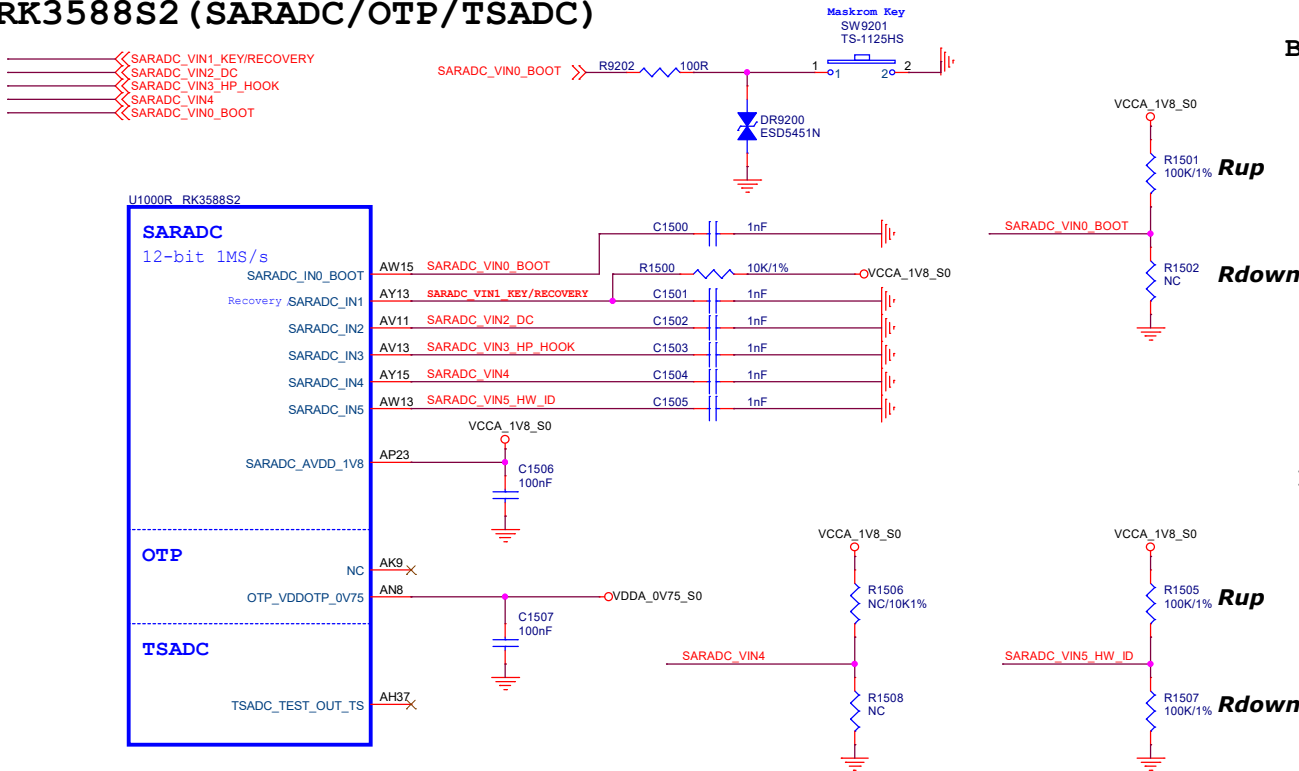
USB2.0 POWER



radxa

Size	Title:	CM5	REV
A3	Page Name:	13_RK3588S_USB20_USB30_DP_PHY	V2.2
Date:	Monday, March 25, 2024	Sheet	12 of 19

RK3588S2 (SARADC/OTP/TSADC)



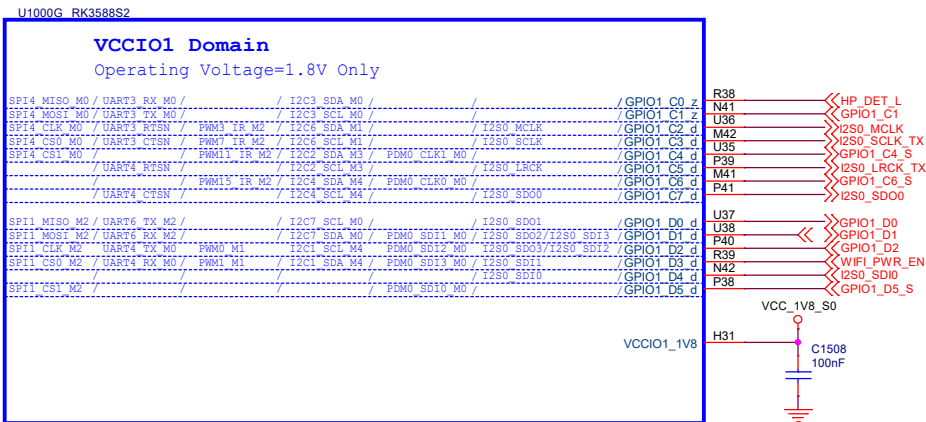
BOOT MODE CONFIG

Item	Rup	Rdown	ADC	BOOT MODE(saradc_in5)
LEVEL1	DNP	100K	0	USB (Maskrom mode)
LEVEL2	100K	20K	682	SD Card-USB
LEVEL3	100K	51K	1365	EMMC-USB
LEVEL4	100K	100K	2047	FSPI M0-USB
LEVEL5	100K	200K	2730	FSPI M1-USB
LEVEL6	100K	499K	3412	FSPI M2-USB
LEVEL7	100K	NC	4095	FSPI M2-FSPI M0-EMMC -SD Card-USB

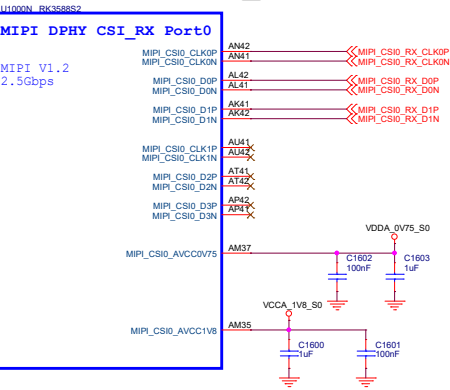
BOARD ID CONFIG

Item	Rup	Rdown	ADC	VERSION
LEVEL1	DNP	100K	0	V1.0
LEVEL2	100K	20K	682	V2.0
LEVEL3	100K	51K	1365	V3.0
LEVEL4	100K	100K	2047	V4.0
LEVEL5	100K	200K	2730	V5.0
LEVEL6	100K	499K	3412	V6.0
LEVEL7	100K	DNP	4095	V7.0

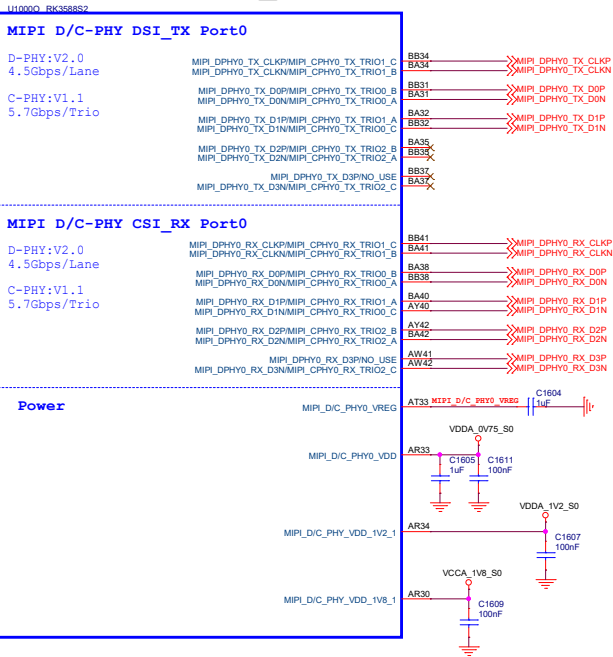
RK3588S2 (VCCIO1 Domain)



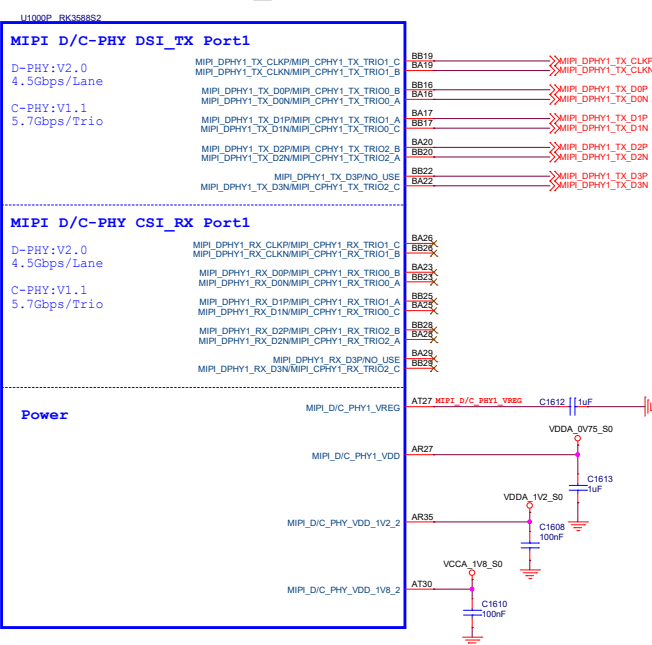
RK3588S2 (MIPI_DPHY CSI0 RX)



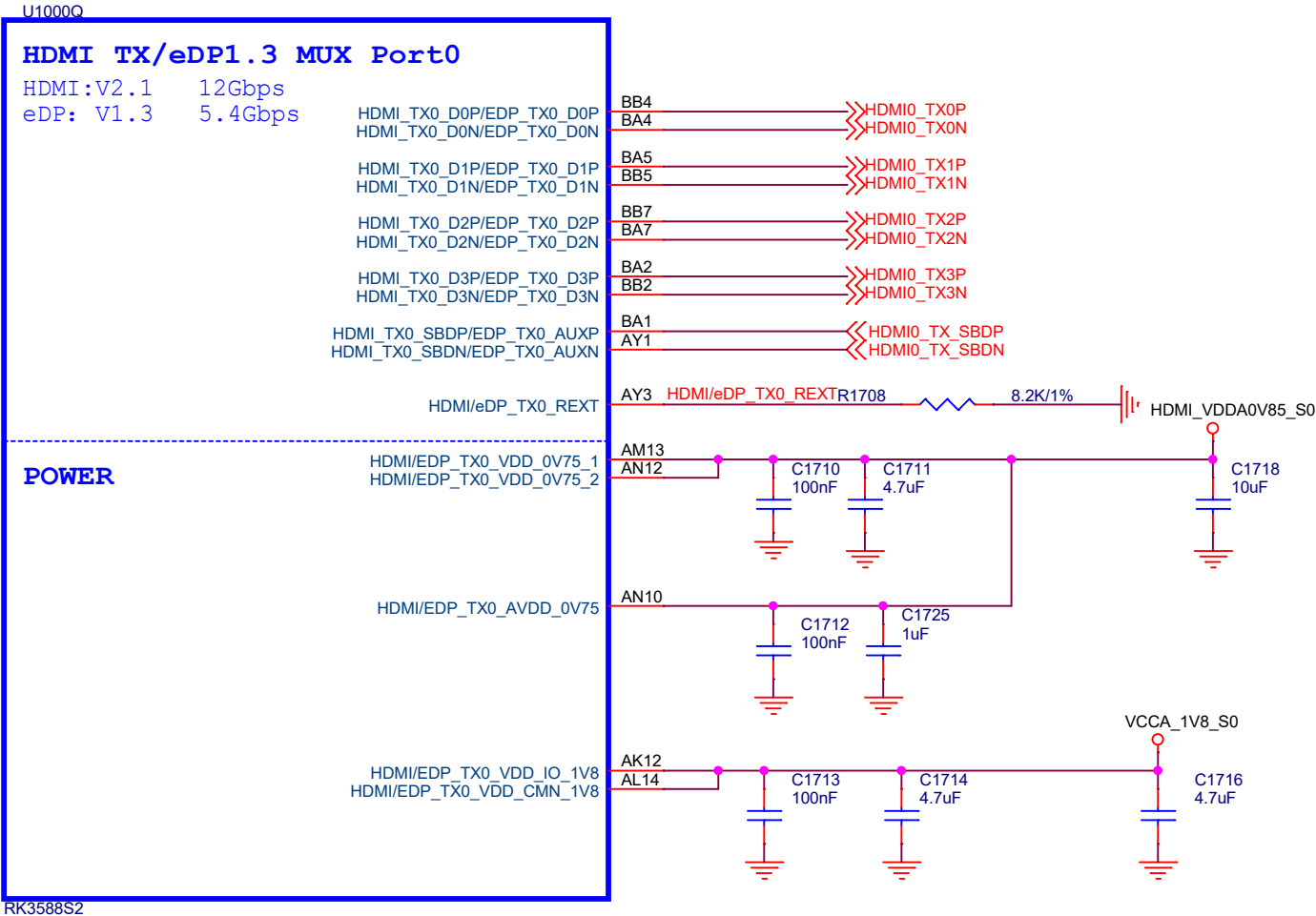
RK3588S2 (MIPI_D/C PHY0)



RK3588S2 (MIPI_D/C PHY1)

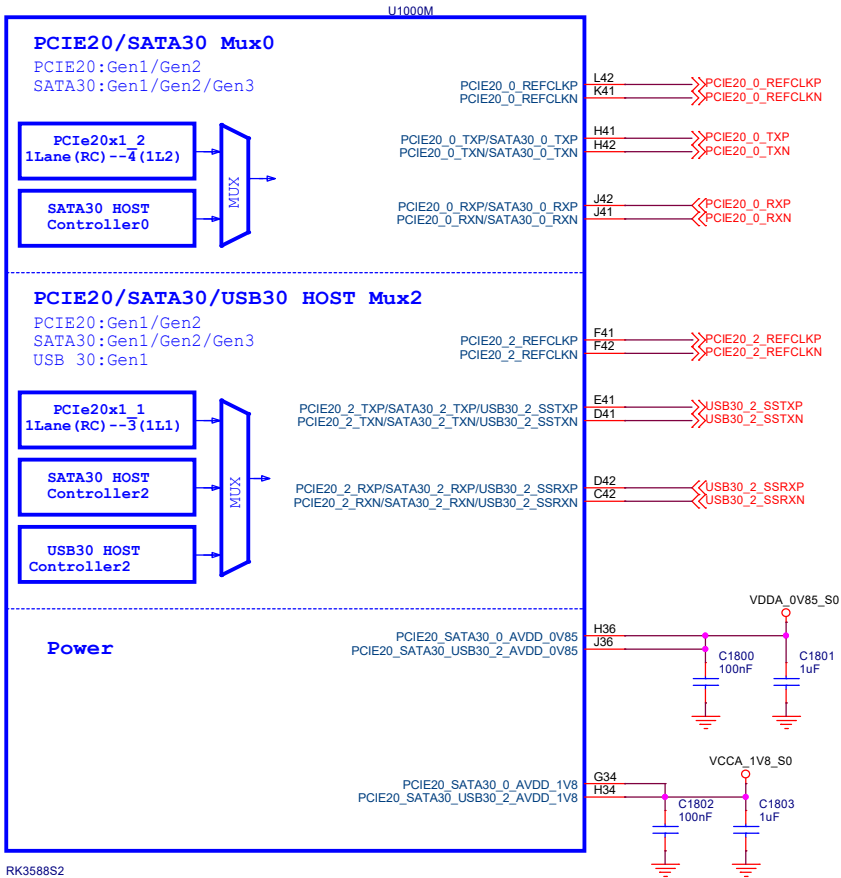


RK3588S2 (HDMI2.1 TX/eDP1.3 TX)



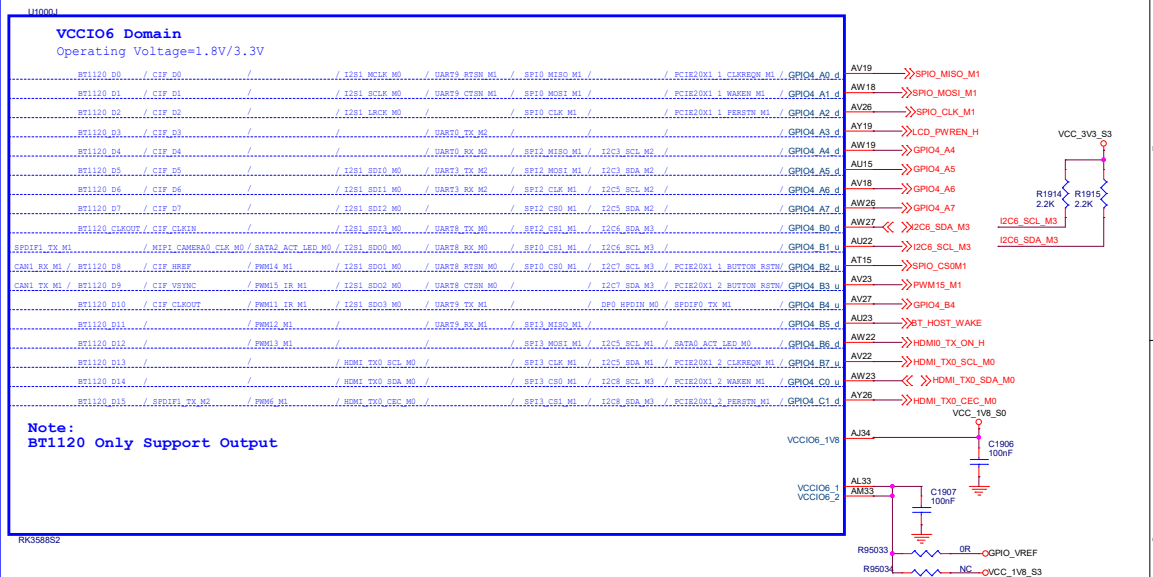
Size	Title: CM5		REV
A4	Page Name: 16_RK3588S_HDMI_eDP_Interface		V2.2
Date:	Monday, March 25, 2024	Sheet 15 of 19	

RK3588S2 (PCIE20/SATA30/USB30)



RK3588S2

RK3588S2 (VCCI06 Domain)

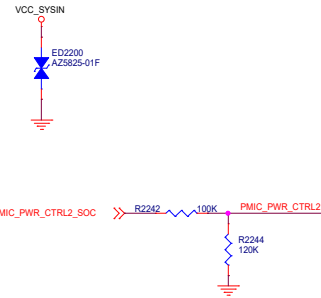


VCCIO5 Domain
Operating Voltage=1.8V/3.3V

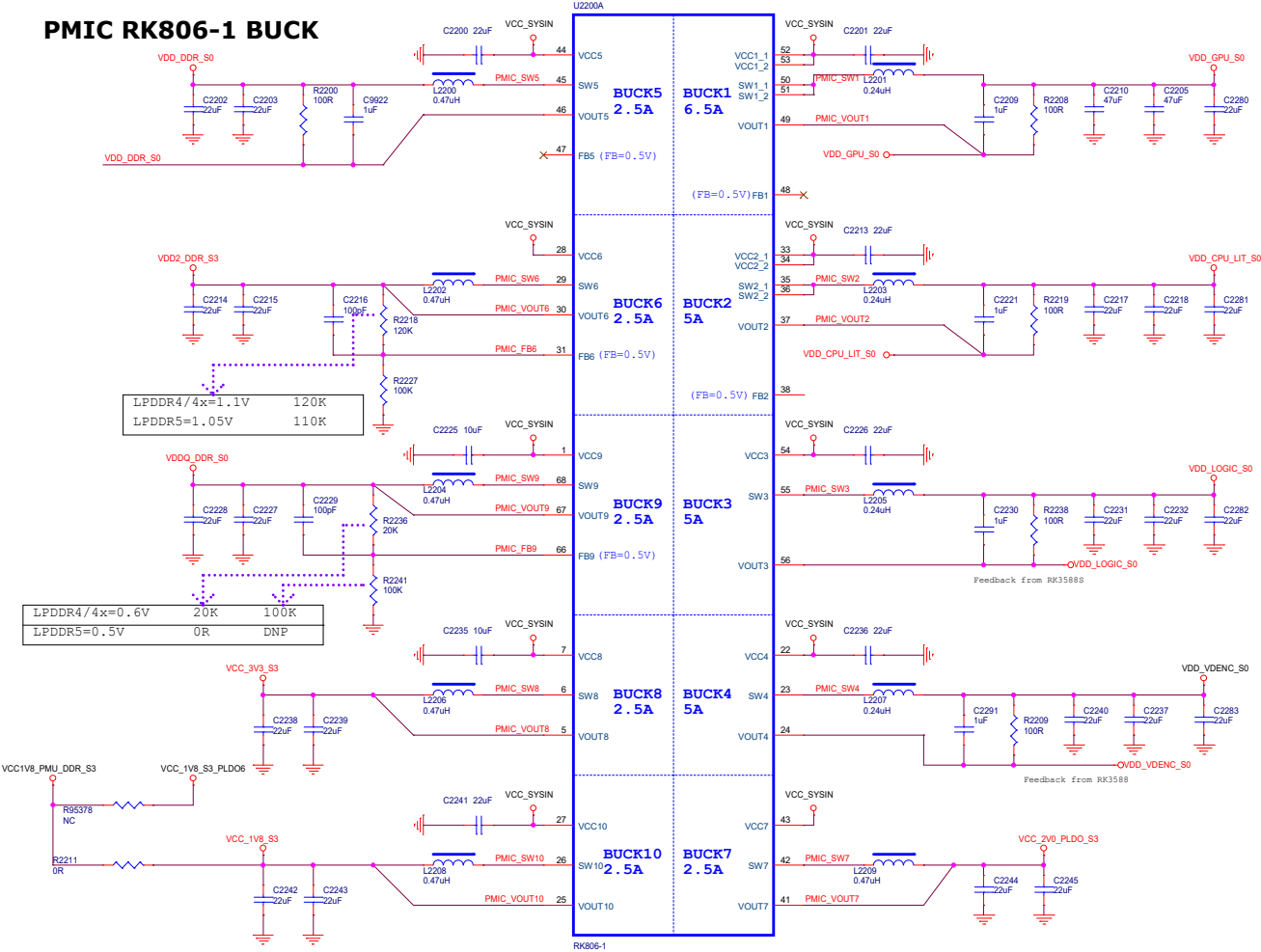
Pin	Function	Pin	Function	Pin	Function
GPIO0_0	GPIO0_0	GPIO16_0	GPIO16_0	GPIO32_0	GPIO32_0
GPIO0_1	GPIO0_1	GPIO16_1	GPIO16_1	GPIO32_1	GPIO32_1
GPIO0_2	GPIO0_2	GPIO16_2	GPIO16_2	GPIO32_2	GPIO32_2
GPIO0_3	GPIO0_3	GPIO16_3	GPIO16_3	GPIO32_3	GPIO32_3
GPIO0_4	GPIO0_4	GPIO16_4	GPIO16_4	GPIO32_4	GPIO32_4
GPIO0_5	GPIO0_5	GPIO16_5	GPIO16_5	GPIO32_5	GPIO32_5
GPIO0_6	GPIO0_6	GPIO16_6	GPIO16_6	GPIO32_6	GPIO32_6
GPIO0_7	GPIO0_7	GPIO16_7	GPIO16_7	GPIO32_7	GPIO32_7
GPIO0_8	GPIO0_8	GPIO16_8	GPIO16_8	GPIO32_8	GPIO32_8
GPIO0_9	GPIO0_9	GPIO16_9	GPIO16_9	GPIO32_9	GPIO32_9
GPIO0_10	GPIO0_10	GPIO16_10	GPIO16_10	GPIO32_10	GPIO32_10
GPIO0_11	GPIO0_11	GPIO16_11	GPIO16_11	GPIO32_11	GPIO32_11
GPIO0_12	GPIO0_12	GPIO16_12	GPIO16_12	GPIO32_12	GPIO32_12
GPIO0_13	GPIO0_13	GPIO16_13	GPIO16_13	GPIO32_13	GPIO32_13
GPIO0_14	GPIO0_14	GPIO16_14	GPIO16_14	GPIO32_14	GPIO32_14
GPIO0_15	GPIO0_15	GPIO16_15	GPIO16_15	GPIO32_15	GPIO32_15
GPIO1_0	GPIO1_0	GPIO17_0	GPIO17_0	GPIO33_0	GPIO33_0
GPIO1_1	GPIO1_1	GPIO17_1	GPIO17_1	GPIO33_1	GPIO33_1
GPIO1_2	GPIO1_2	GPIO17_2	GPIO17_2	GPIO33_2	GPIO33_2
GPIO1_3	GPIO1_3	GPIO17_3	GPIO17_3	GPIO33_3	GPIO33_3
GPIO1_4	GPIO1_4	GPIO17_4	GPIO17_4	GPIO33_4	GPIO33_4
GPIO1_5	GPIO1_5	GPIO17_5	GPIO17_5	GPIO33_5	GPIO33_5
GPIO1_6	GPIO1_6	GPIO17_6	GPIO17_6	GPIO33_6	GPIO33_6
GPIO1_7	GPIO1_7	GPIO17_7	GPIO17_7	GPIO33_7	GPIO33_7
GPIO1_8	GPIO1_8	GPIO17_8	GPIO17_8	GPIO33_8	GPIO33_8
GPIO1_9	GPIO1_9	GPIO17_9	GPIO17_9	GPIO33_9	GPIO33_9
GPIO1_10	GPIO1_10	GPIO17_10	GPIO17_10	GPIO33_10	GPIO33_10
GPIO1_11	GPIO1_11	GPIO17_11	GPIO17_11	GPIO33_11	GPIO33_11
GPIO1_12	GPIO1_12	GPIO17_12	GPIO17_12	GPIO33_12	GPIO33_12
GPIO1_13	GPIO1_13	GPIO17_13	GPIO17_13	GPIO33_13	GPIO33_13
GPIO1_14	GPIO1_14	GPIO17_14	GPIO17_14	GPIO33_14	GPIO33_14
GPIO1_15	GPIO1_15	GPIO17_15	GPIO17_15	GPIO33_15	GPIO33_15
GPIO2_0	GPIO2_0	GPIO18_0	GPIO18_0	GPIO34_0	GPIO34_0
GPIO2_1	GPIO2_1	GPIO18_1	GPIO18_1	GPIO34_1	GPIO34_1
GPIO2_2	GPIO2_2	GPIO18_2	GPIO18_2	GPIO34_2	GPIO34_2
GPIO2_3	GPIO2_3	GPIO18_3	GPIO18_3	GPIO34_3	GPIO34_3
GPIO2_4	GPIO2_4	GPIO18_4	GPIO18_4	GPIO34_4	GPIO34_4
GPIO2_5	GPIO2_5	GPIO18_5	GPIO18_5	GPIO34_5	GPIO34_5
GPIO2_6	GPIO2_6	GPIO18_6	GPIO18_6	GPIO34_6	GPIO34_6
GPIO2_7	GPIO2_7	GPIO18_7	GPIO18_7	GPIO34_7	GPIO34_7
GPIO2_8	GPIO2_8	GPIO18_8	GPIO18_8	GPIO34_8	GPIO34_8
GPIO2_9	GPIO2_9	GPIO18_9	GPIO18_9	GPIO34_9	GPIO34_9
GPIO2_10	GPIO2_10	GPIO18_10	GPIO18_10	GPIO34_10	GPIO34_10
GPIO2_11	GPIO2_11	GPIO18_11	GPIO18_11	GPIO34_11	GPIO34_11
GPIO2_12	GPIO2_12	GPIO18_12	GPIO18_12	GPIO34_12	GPIO34_12
GPIO2_13	GPIO2_13	GPIO18_13	GPIO18_13	GPIO34_13	GPIO34_13
GPIO2_14	GPIO2_14	GPIO18_14	GPIO18_14	GPIO34_14	GPIO34_14
GPIO2_15	GPIO2_15	GPIO18_15	GPIO18_15	GPIO34_15	GPIO34_15
GPIO3_0	GPIO3_0	GPIO19_0	GPIO19_0	GPIO35_0	GPIO35_0
GPIO3_1	GPIO3_1	GPIO19_1	GPIO19_1	GPIO35_1	GPIO35_1
GPIO3_2	GPIO3_2	GPIO19_2	GPIO19_2	GPIO35_2	GPIO35_2
GPIO3_3	GPIO3_3	GPIO19_3	GPIO19_3	GPIO35_3	GPIO35_3
GPIO3_4	GPIO3_4	GPIO19_4	GPIO19_4	GPIO35_4	GPIO35_4
GPIO3_5	GPIO3_5	GPIO19_5	GPIO19_5		

PMIC1 RK806-1

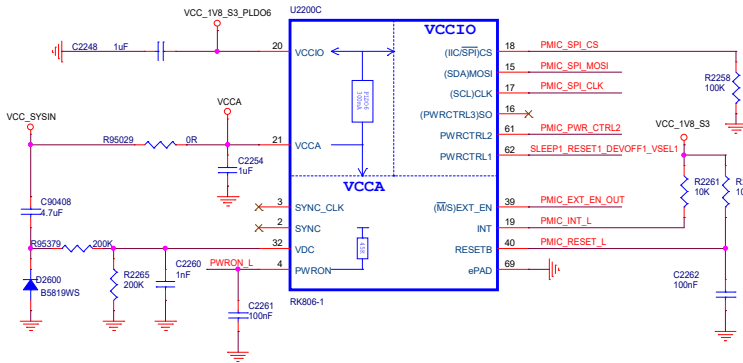
SLEEP1_RESET1_DEVOFF1_VSEL1
PMIC_PWR_CTRL2_SOC
PMIC_INT_L
PWRON_L
PMIC_RESET_L
PMIC_EXT_EN_OUT
PMIC_SPI_CLK
PMIC_SPI_CS
PMIC_SPI_MOSI



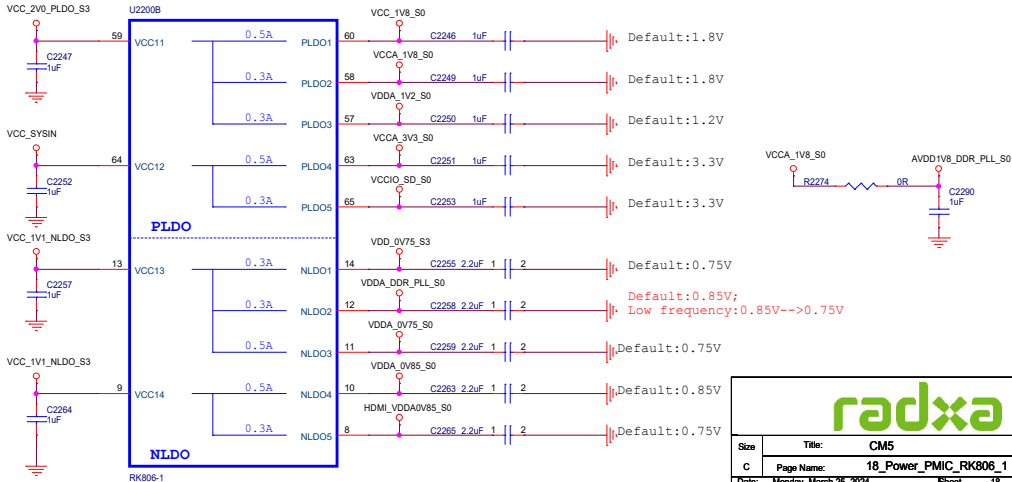
PMIC RK806-1 BUCK



PMIC RK806-1 Management



PMIC RK806-1 LDO



eMMC

