Radxa ZERO 3W

schematic

V1.11

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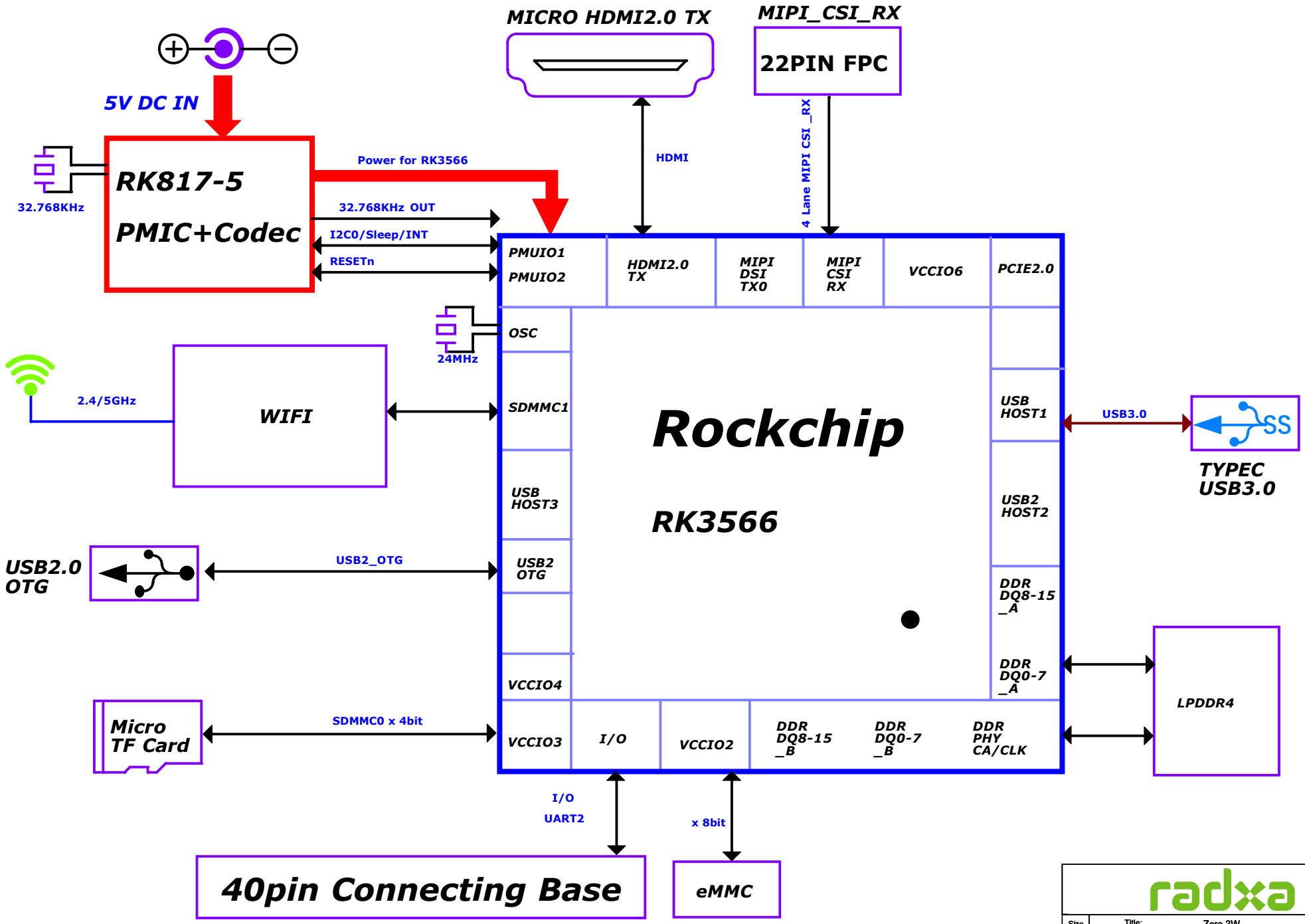
ROCK 3 Zero W Ref Block Diagram



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Size	Title:	REV
A3	Zero 3W	V1.11
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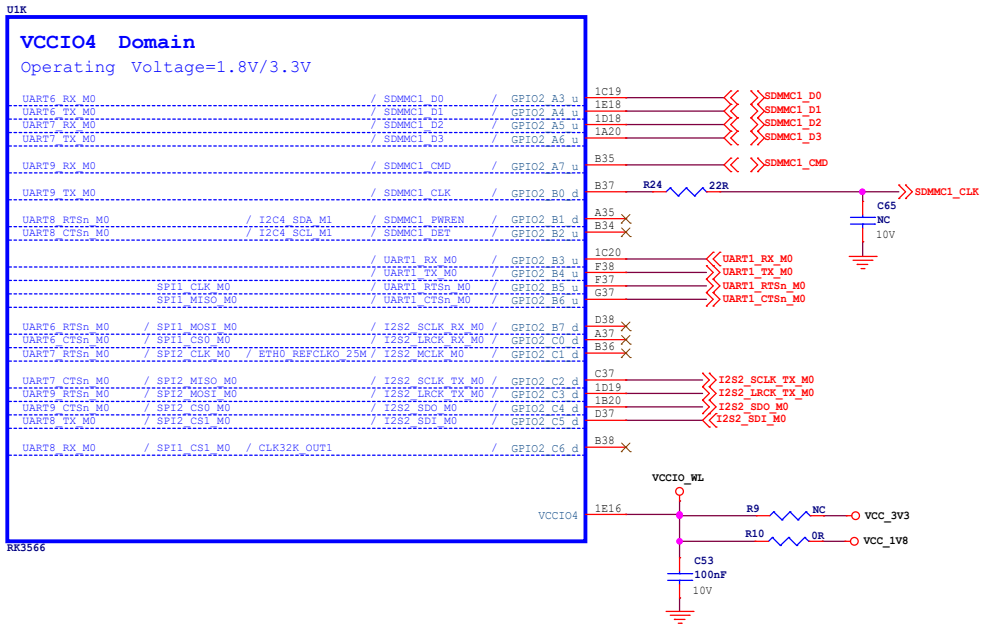
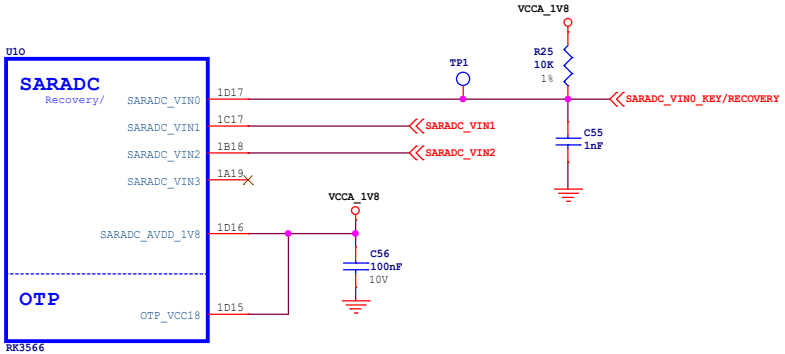
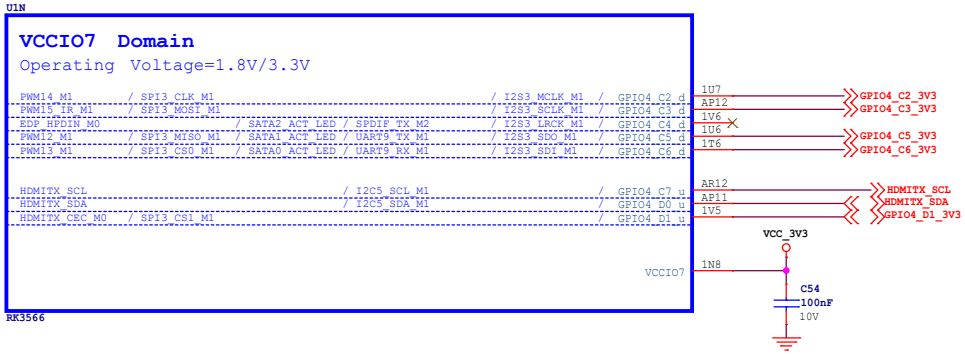
RK3566_K(VCCIO4 Domain)

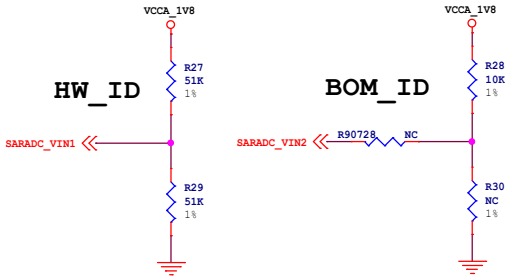


RK3566_O(SARADC/OTP)



RK3566_N(VCCIO7 Domain)





Size: A3	Title: Zero 3W	REV: V1.11
	Page Name: RK3566_SARADC/GPIO	
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RK3566_U

U1U

USB2.0 OTG_0
HS/FS/LS

(Download Port)

USB_OTG0_DP
USB_OTG0_DM
USB_OTG0_VBUSDET
USB_OTG0_ID

R37 R38 → USB_OTG0_DP / USB_OTG0_DM
T38 → USB_OTG0_VBUSDET
T37 → USB_OTG0_ID
C44 100nF 10V

USB2.0 HOST_1
HS/FS/LS

(DP/DM for USB3.0 HOST)

USB_HOST1_DP
USB_HOST1_DM

1J19 1J20 → USB3_HOST1_DP / USB3_HOST1_DM

USB2.0 Power
(for OTG_0 and HOST_1)

USB_AVDD1_0V9
USB_AVDD1_1V8
USB_AVDD1_3V3

1J17 → USB3_AVDD_0V9 → R19 1R 1% → VDDA_0V9
1H16 → USB3_AVDD_1V8 → R20 1R 1% → VCCA_1V8
1H18 → USB3_AVDD_3V3 → R21 0R → VCC_3V3
C45 100nF 10V
C46 100nF 10V
C47 100nF 10V

MULTI PHY U_S
(SS for USB3.0 HOST or SATA3_1)

USB3_HOST1_SSTXp/SATA1_TXp
USB3_HOST1_SSTXn/SATA1_TXn
USB3_HOST1_SSRXp/SATA1_RXp
USB3_HOST1_SSRXn/SATA1_RXn

W37 W38 → USB3_HOST1_SSTXP / USB3_HOST1_SSTXN
V38 V37 → USB3_HOST1_SSRXP / USB3_HOST1_SSRXN

MULTI PHY P_S
(PCIE2.0 or SATA3_2)

PCIE20_TXp/SATA2_TXp
PCIE20_TXn/SATA2_TXn
PCIE20_RXp/SATA2_RXp
PCIE20_RXn/SATA2_RXn
PCIE20_REFCLKp
PCIE20_REFCLKn

AA37 AA38
AB37 AB38
1K19 1K20

MULTI PHY Power
(for MULTI PHY U_S and P_S)

MULTI_PHY_AVDD_0V9
MULTI_PHY_AVDD_1V8

1K16 → VDDA_0V9
1K17 → VCCA_1V8
C51 100nF 10V
C52 100nF 10V

RK3566

RK3566_V

U1V

USB2.0
(for HOST_2 and HOST_3)

USB_HOST2_DP
USB_HOST2_DM
USB_HOST3_DP
USB_HOST3_DM
USB_AVDD2_0V9
USB_AVDD2_1V8
USB_AVDD2_3V3

V2 V1 → USB2_HOST2_DP / USB2_HOST2_DM
Y2 Y1
1J4 → USB3_AVDD_0V9
1J3 → USB3_AVDD_1V8
1J2 → USB3_AVDD_3V3
C48 DNP 10V
C49 DNP 10V
C50 DNP 10V

RK3566

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A4	Page Name:	RK3566_USB/PCIe/SATA PHY	V1.11
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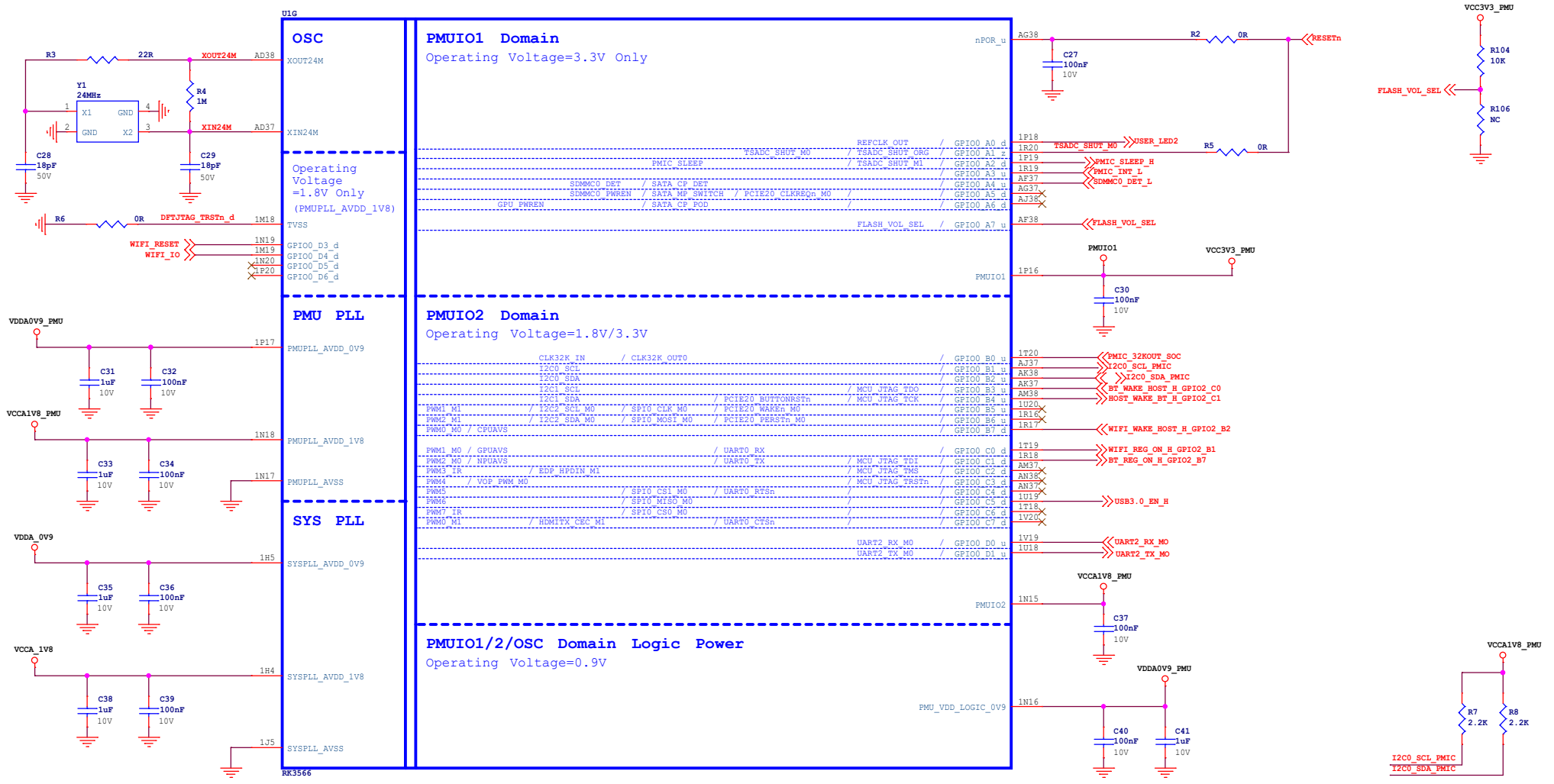
RK3566(OSC/PLL/PMUIO1/2)



Size	Title: Zero 3W		REV
A3	Page Name: RK3566_OSC/PLL/PMUIO		V1.11
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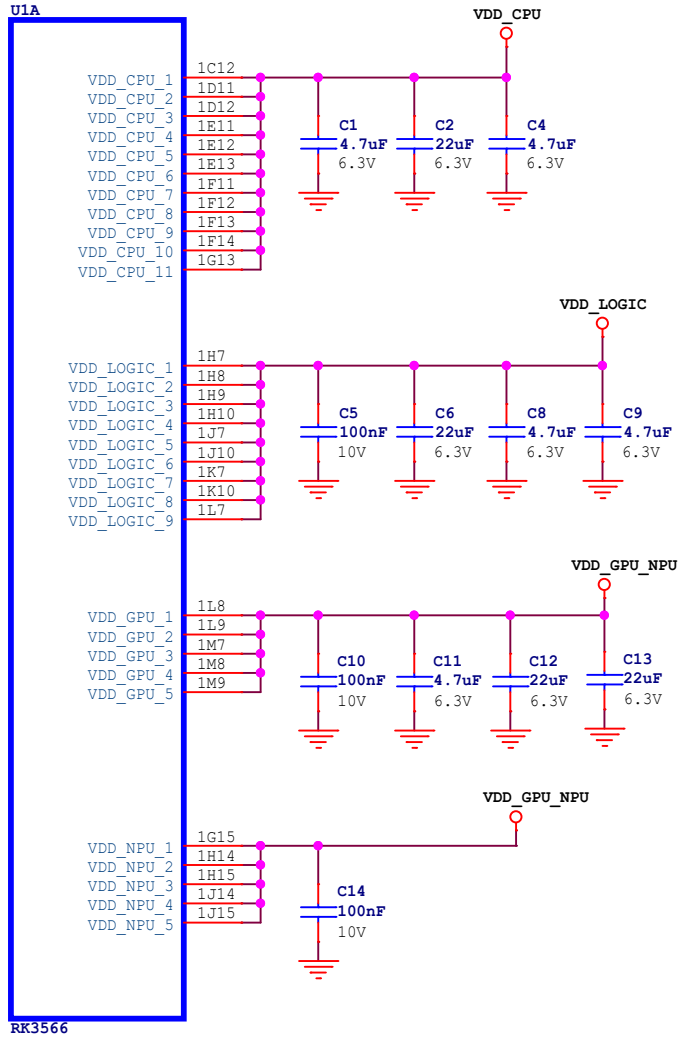
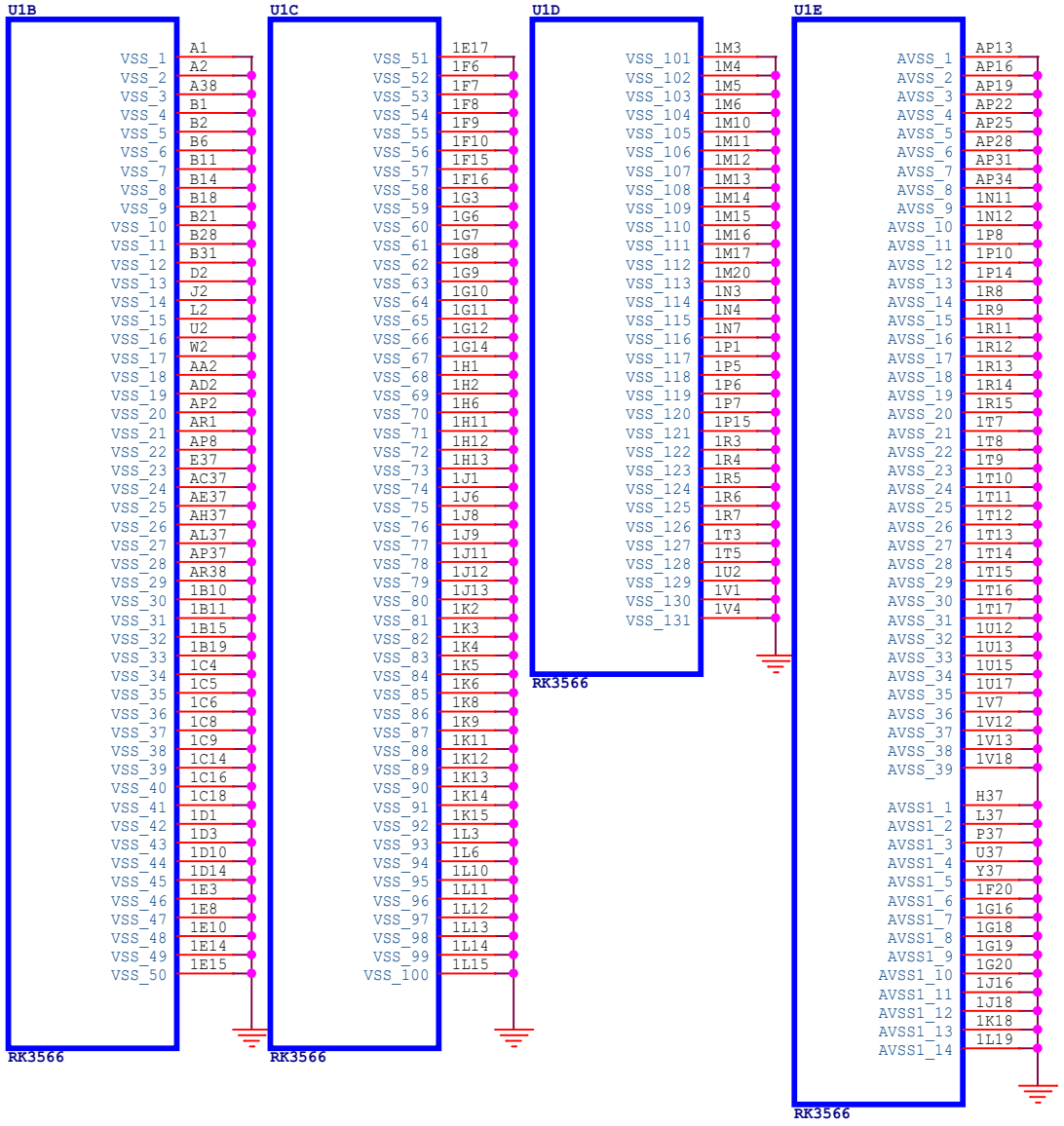
RK3566_ABCDE

(Power&GND)





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Size	Title:	Zero 3W	REV
A4	Page Name:	RK3566_Power/GND	V1.11
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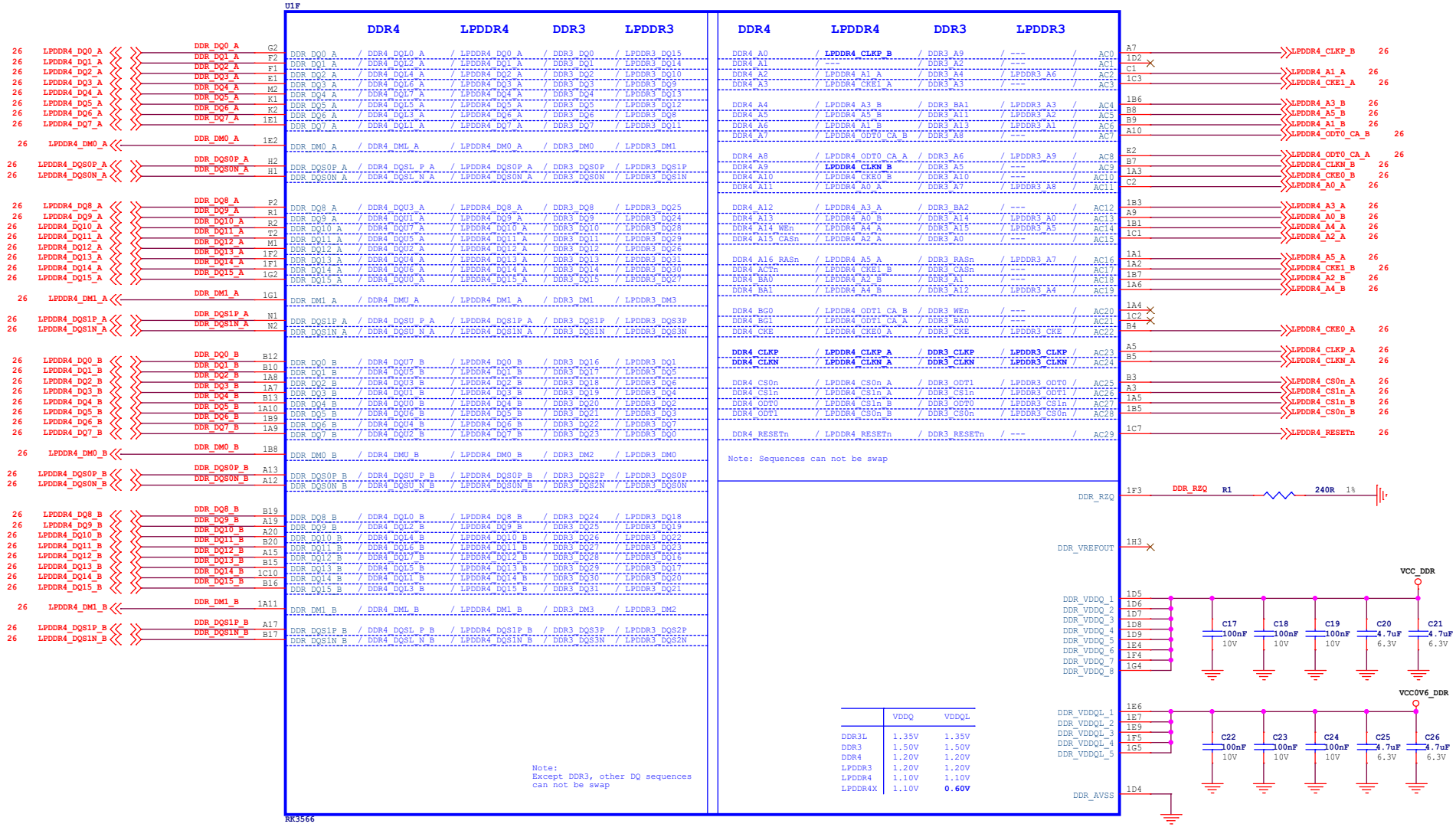
RK3566_F(DDR PHY)



Size	Title:	REV
A3	Zero 3W	V1.11
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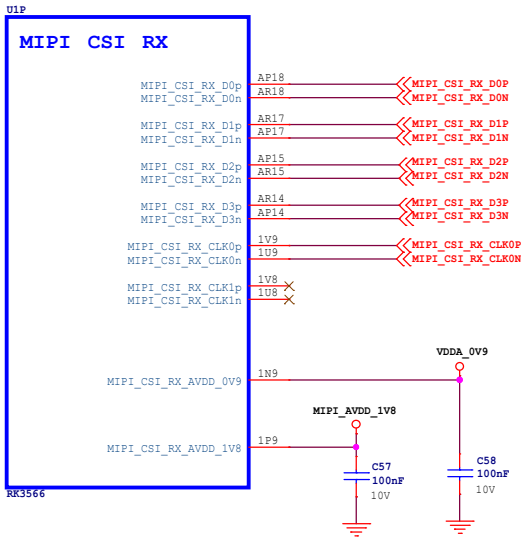
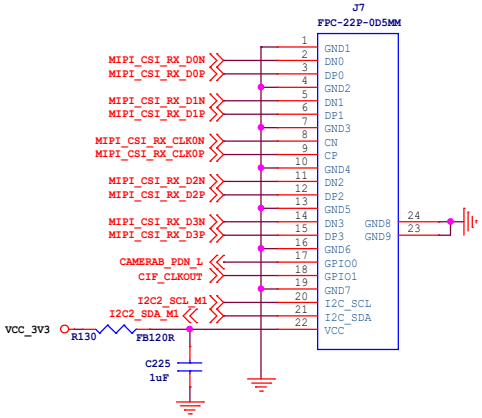
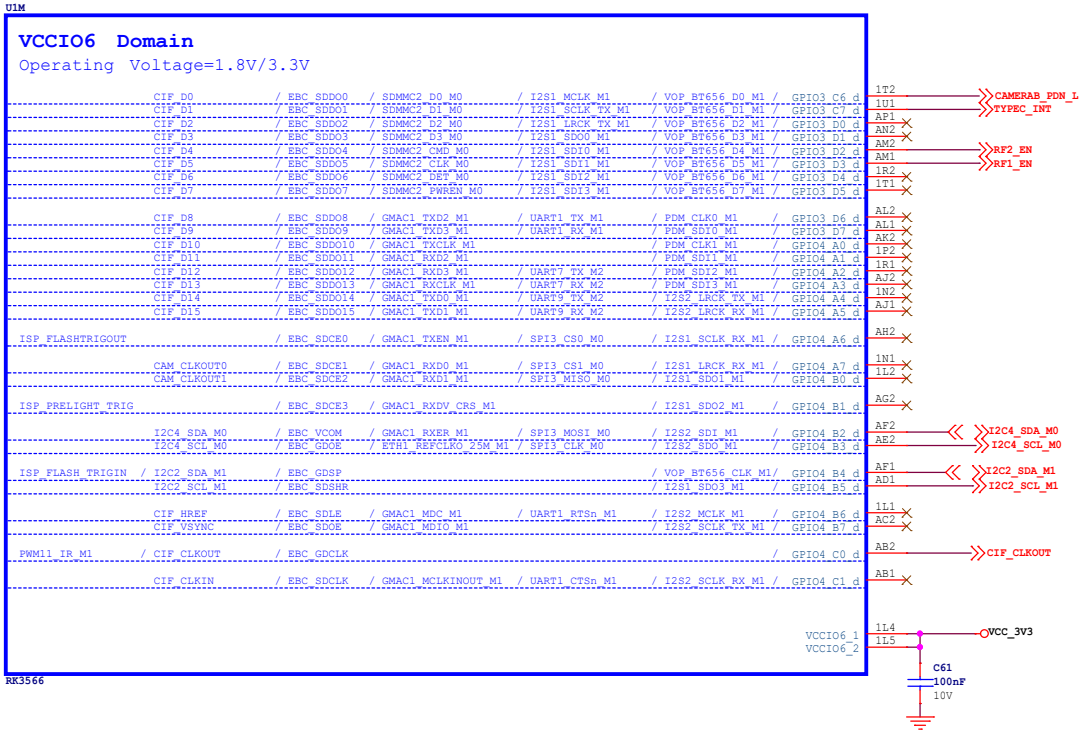
RK3566_P(MIPI_CSI_RX)

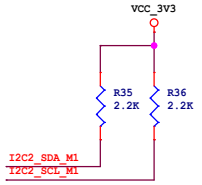


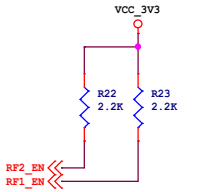
MIPI_CSI_RX 4Lanes

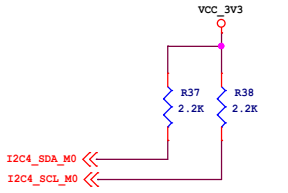


RK3566_M(VCCIO6 Domain)









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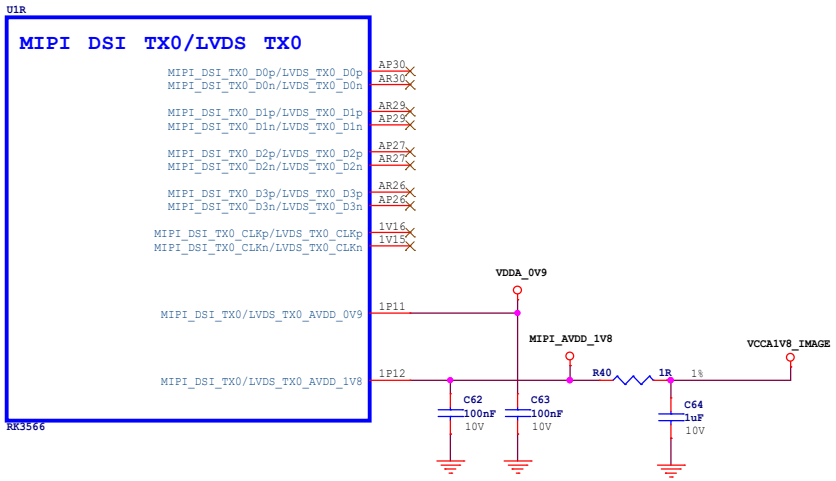
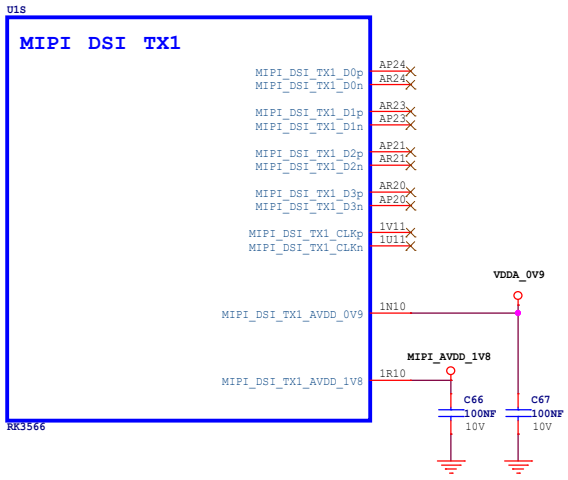
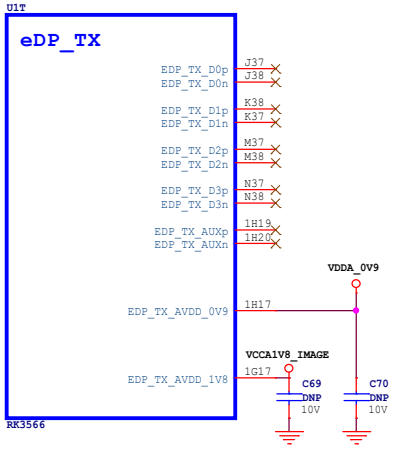
RK3566_R(MIPI_DSI_TX0/LVDS_TX0)



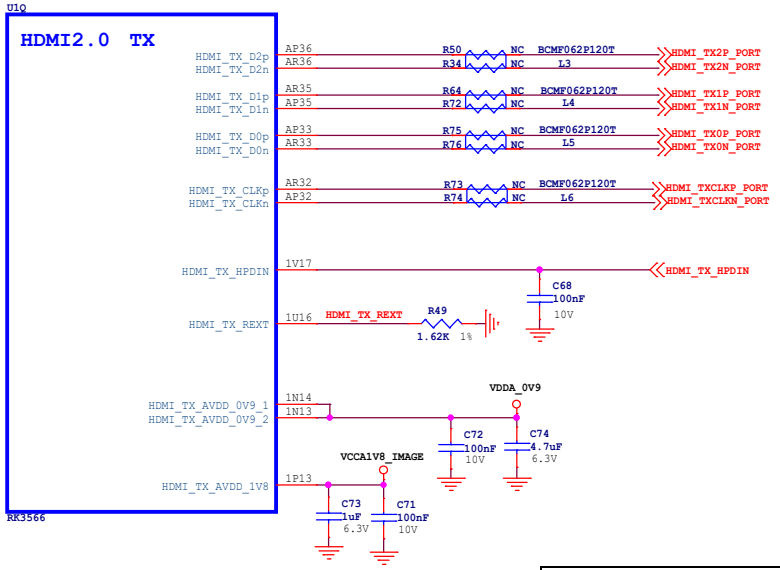
RK3566_S(MIPI_DSI_TX1/LVDS_TX1)



RK3566_T(eDP/DP TX)



RK3566_Q(HDMI2.0 TX)



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RK3566_L(VCCIO5 Domain)

U1L

VCCIO5 Domain

Operating Voltage=1.8V/3.3V

	VOP_BT1120_D0	/ SPI1_CS0_M1			/ SDMMC2_D0_M1	/ GPIO3_A1_d
	VOP_BT1120_D1		/ GMAC1_TXD2_M0	/ I2S3_MCLK_M0	/ SDMMC2_D1_M1	/ GPIO3_A2_d
	VOP_BT1120_D2		/ GMAC1_TXD3_M0	/ I2S3_SCLK_M0	/ SDMMC2_D2_M1	/ GPIO3_A3_d
	VOP_BT1120_D3		/ GMAC1_RXD2_M0	/ I2S3_LRCK_M0	/ SDMMC2_D3_M1	/ GPIO3_A4_d
	VOP_BT1120_D4		/ GMAC1_RXD3_M0	/ I2S3_SDO_M0	/ SDMMC2_CMD_M1	/ GPIO3_A5_d
	VOP_BT1120_CLK		/ GMAC1_TXCLK_M0	/ I2S3_SDI_M0	/ SDMMC2_CLK_M1	/ GPIO3_A6_d
	VOP_BT1120_D5		/ GMAC1_RXCLK_M0		/ SDMMC2_DET_M1	/ GPIO3_A7_d
	VOP_BT1120_D6		/ ETH1_REFCLKO_25M_M0		/ SDMMC2_PWREN_M1	/ GPIO3_B0_d
PWM8_M0	/ VOP_BT1120_D7		/ GMAC1_RXD0_M0	/ UART4_RX_M1		/ GPIO3_B1_d
PWM9_M0	/ VOP_BT1120_D8		/ GMAC1_RXD1_M0	/ UART4_TX_M1		/ GPIO3_B2_d
	VOP_BT1120_D9	/ I2C5_SCL_M0	/ GMAC1_RXDV_CRS_M0		/ PDM_SDI0_M2	/ GPIO3_B3_d
	VOP_BT1120_D10	/ I2C5_SDA_M0	/ GMAC1_RXER_M0		/ PDM_SDI1_M2	/ GPIO3_B4_d
PWM10_M0	/ VOP_BT1120_D11	/ I2C3_SCL_M1	/ GMAC1_TXD0_M0			/ GPIO3_B5_d
PWM11_IR_M0	/ VOP_BT1120_D12	/ I2C3_SDA_M1	/ GMAC1_TXD1_M0			/ GPIO3_B6_d
PWM12_M0			/ GMAC1_TXEN_M0	/ UART3_TX_M1	/ PDM_SDI2_M2	/ GPIO3_B7_d
PWM13_M0			/ GMAC1_MCLKINOUT_M0	/ UART3_RX_M1	/ PDM_SDI3_M2	/ GPIO3_C0_d
	VOP_BT1120_D13	/ SPI1_MOSI_M1		/ PCIE20_PERSTn_M1	/ I2S1_SDO2_M2	/ GPIO3_C1_d
	VOP_BT1120_D14	/ SPI1_MISO_M1		/ UART5_TX_M1	/ I2S1_SDO3_M2	/ GPIO3_C2_d
	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

RK3566

1U5 GPIO3_A1_3V3
AR10 GPIO3_A2_3V3
AP10 GPIO3_A3_3V3
AR9 GPIO3_A4_3V3
AP9 GPIO3_A5_3V3
1U4 GPIO3_A6_3V3
1V3 GPIO3_A7_3V3

AR7 GPIO3_B0_3V3
AP7 GPIO3_B1_3V3
AR6 GPIO3_B2_3V3
AP6 GPIO3_B3_3V3
1U3 GPIO3_B4_3V3
1T4 I2C3_SCL_M1
1V2 I2C3_SDA_M1
AP5 GMAC1_INT/PMEB_GPIO3_B7

AR4 GMAC1_RSTn_GPIO3_C0
AP4 GPIO3_C1_3V3
AP3 GPIO3_C2_3V3
AR2 GPIO3_C3_3V3

1P3 GPIO3_C4_3V3
1P4

VCC_3V3

VCCIO5_1 1N5
VCCIO5_2 1N6

C75
100nF
10V

VCC_3V3

R52
2.2K

R53
2.2K

I2C3_SCL_M1
I2C3_SDA_M1

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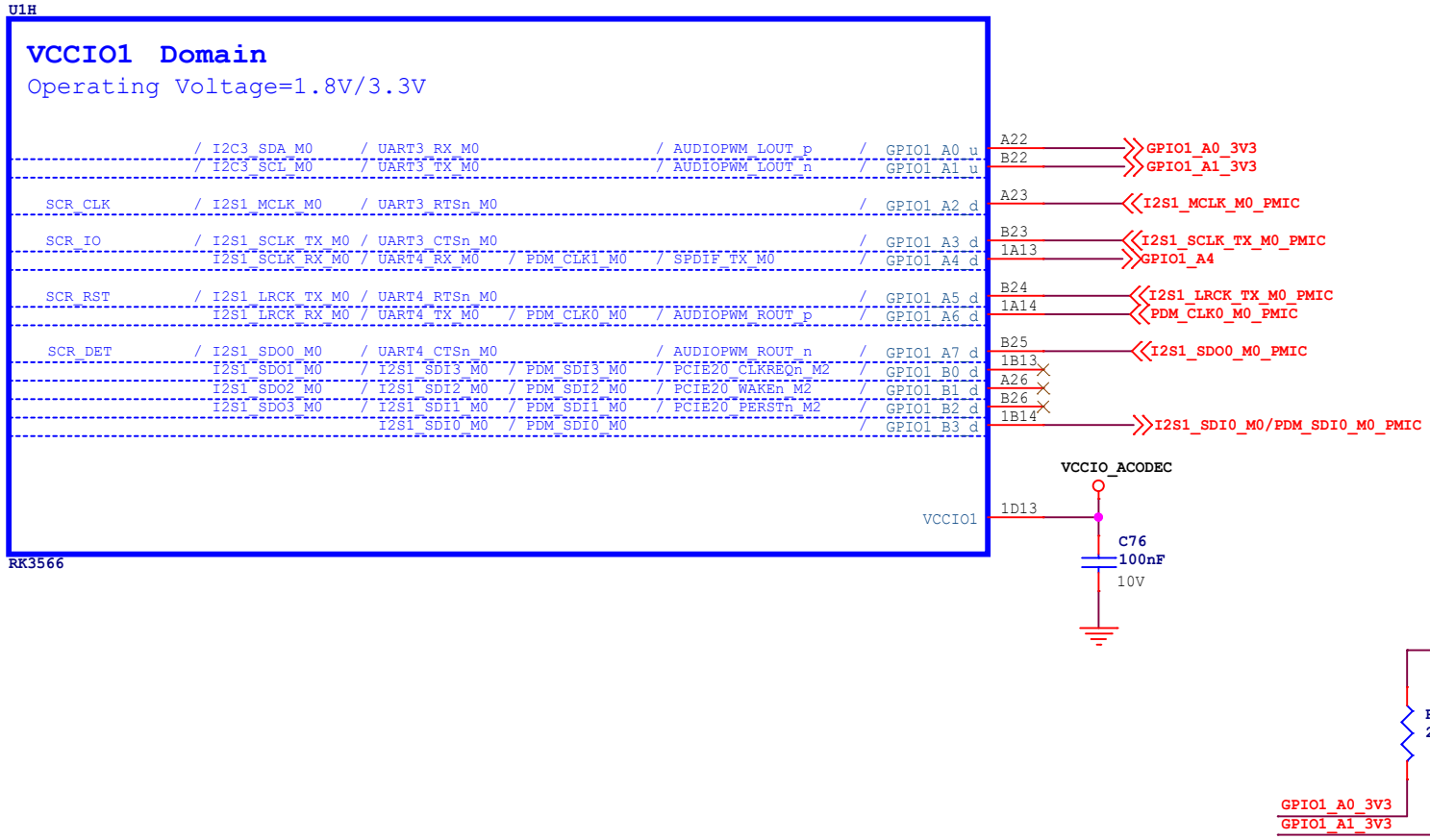
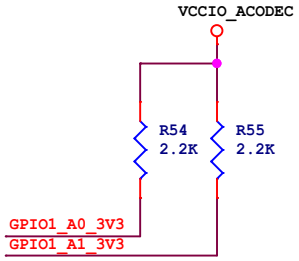
RK3566_H(VCCIO1 Domain)





Size: A4	Title: Zero 3W	REV: V1.11
	Page Name: RK3566_Audio Interface	
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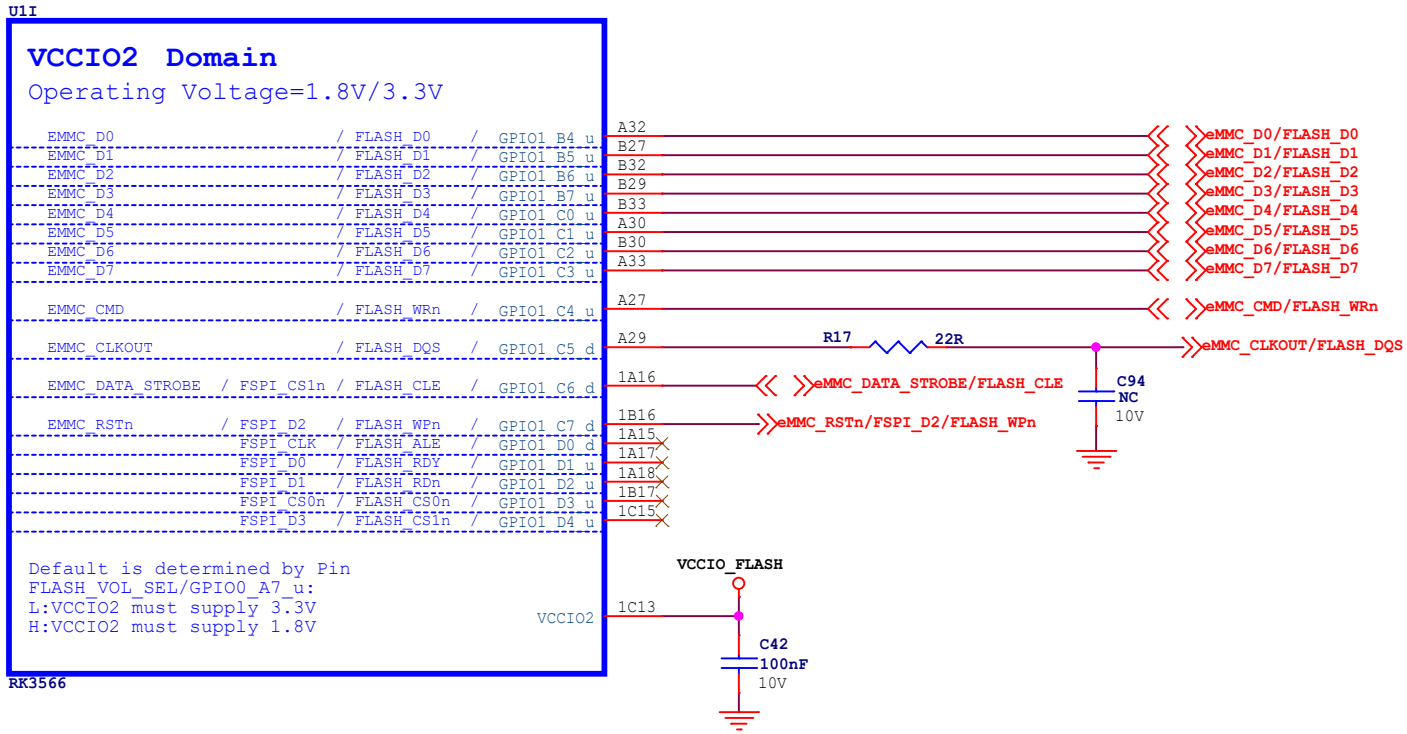
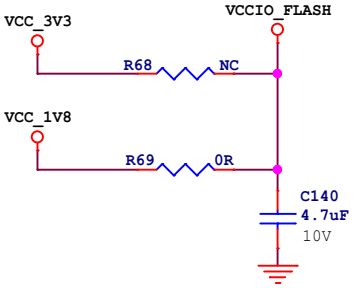
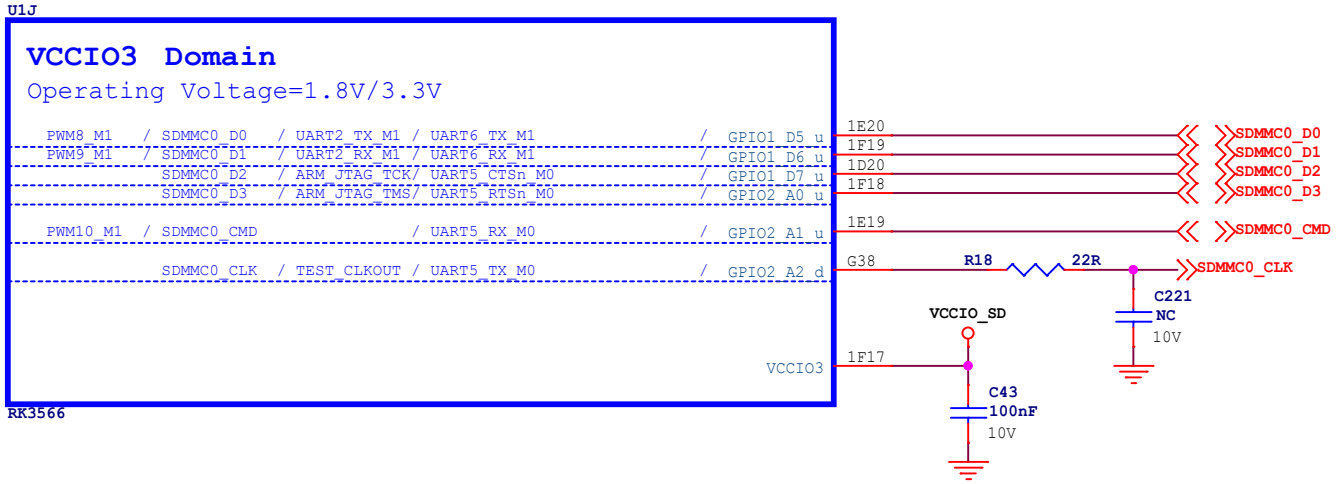
RK3566_I(VCCIO2 Domain)





RK3566_J(VCCIO3 Domain)



Size: A4	Title: Zero 3W	REV: V1.11
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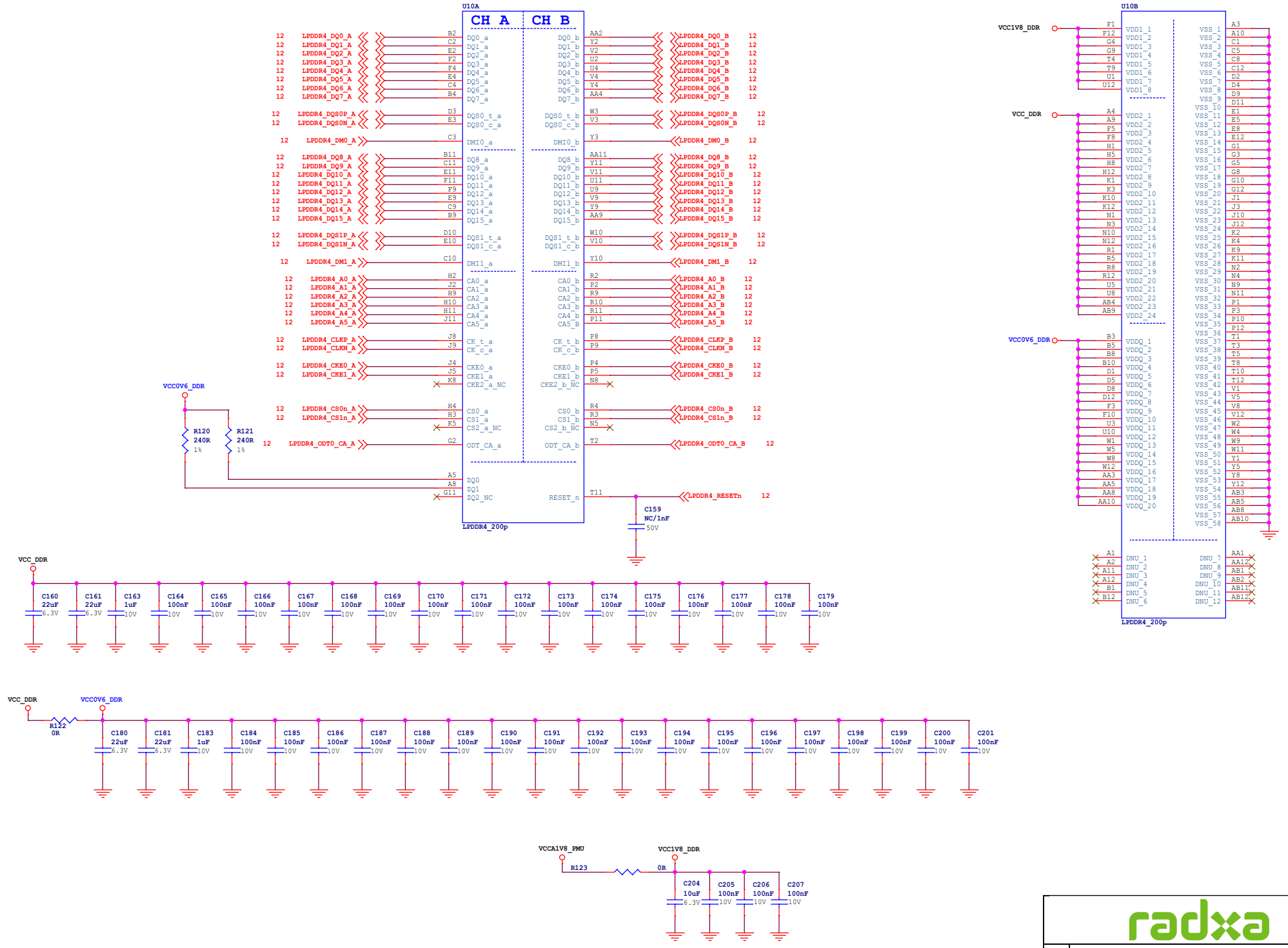
U10A
CH A
CH B
LPDDR4_200p
U10B
LPDDR4_200p
VCC1V8_DDR
VCC_DDR
VCC0V6_DDR
VCCA1V8_PMU
R120 240R 1%
R121 240R 1%
R122 0R
R123 0R
C159 NC/1nF 50V
Title: Zero 3W
REV V1.11
Page Name: LPDDR4X_1X32bit
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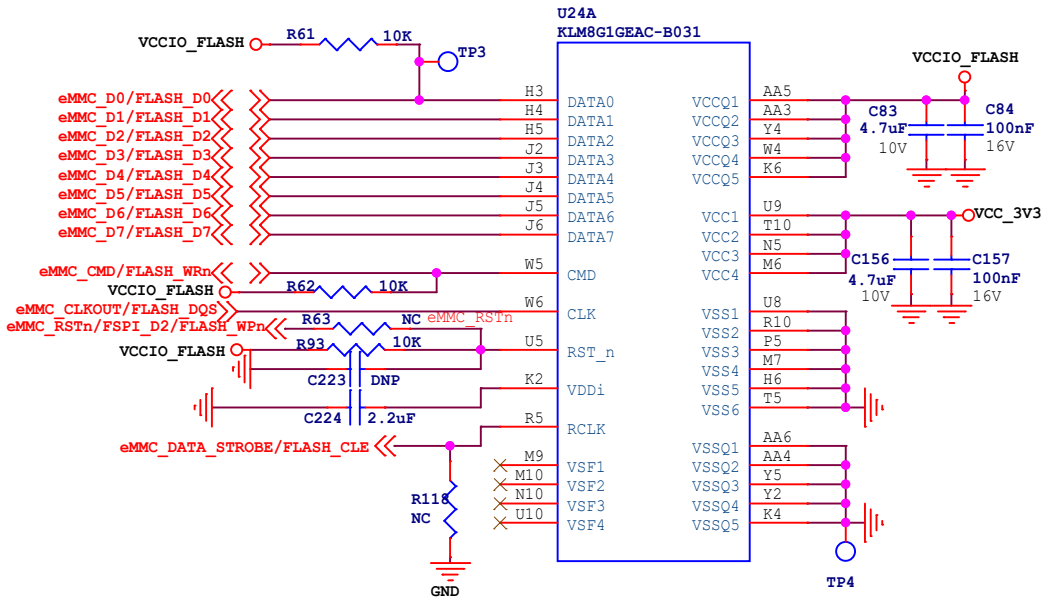
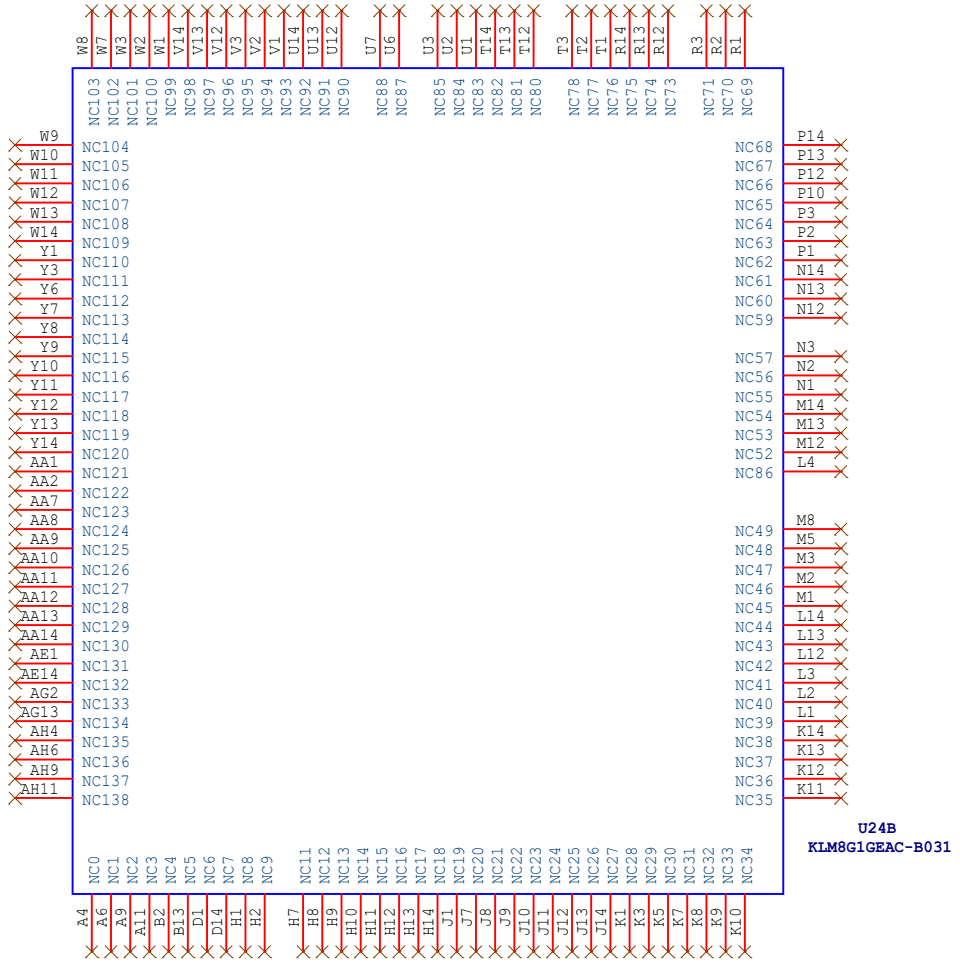
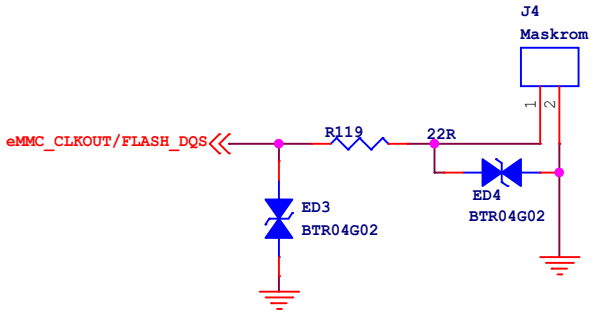
EMMC FLASH







Size	Title:	Zero 3W	REV
A4	Page Name:	SPI Flash/eMMC	V1.11
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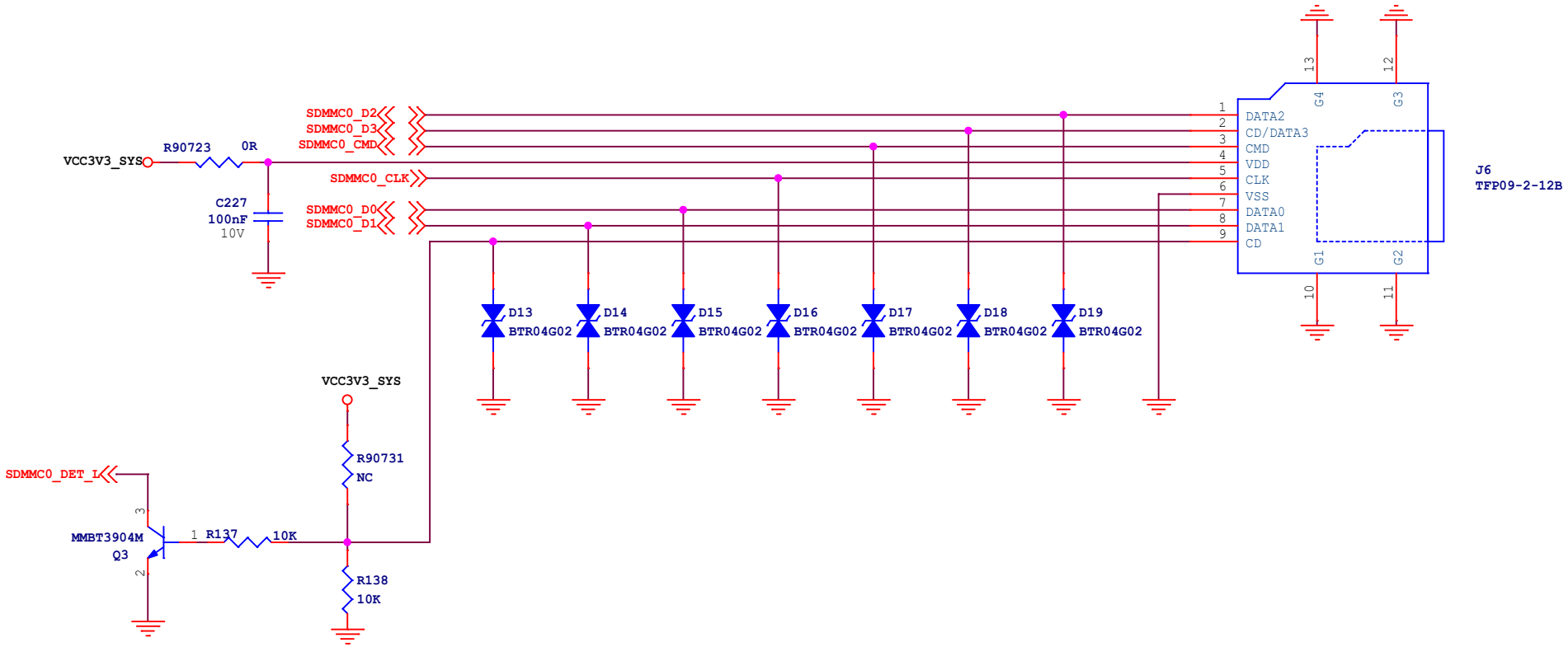
MicroSD Card



Size	Title:	Zero 3W	REV
A4	Page Name:	MicroSD Card	V1.11
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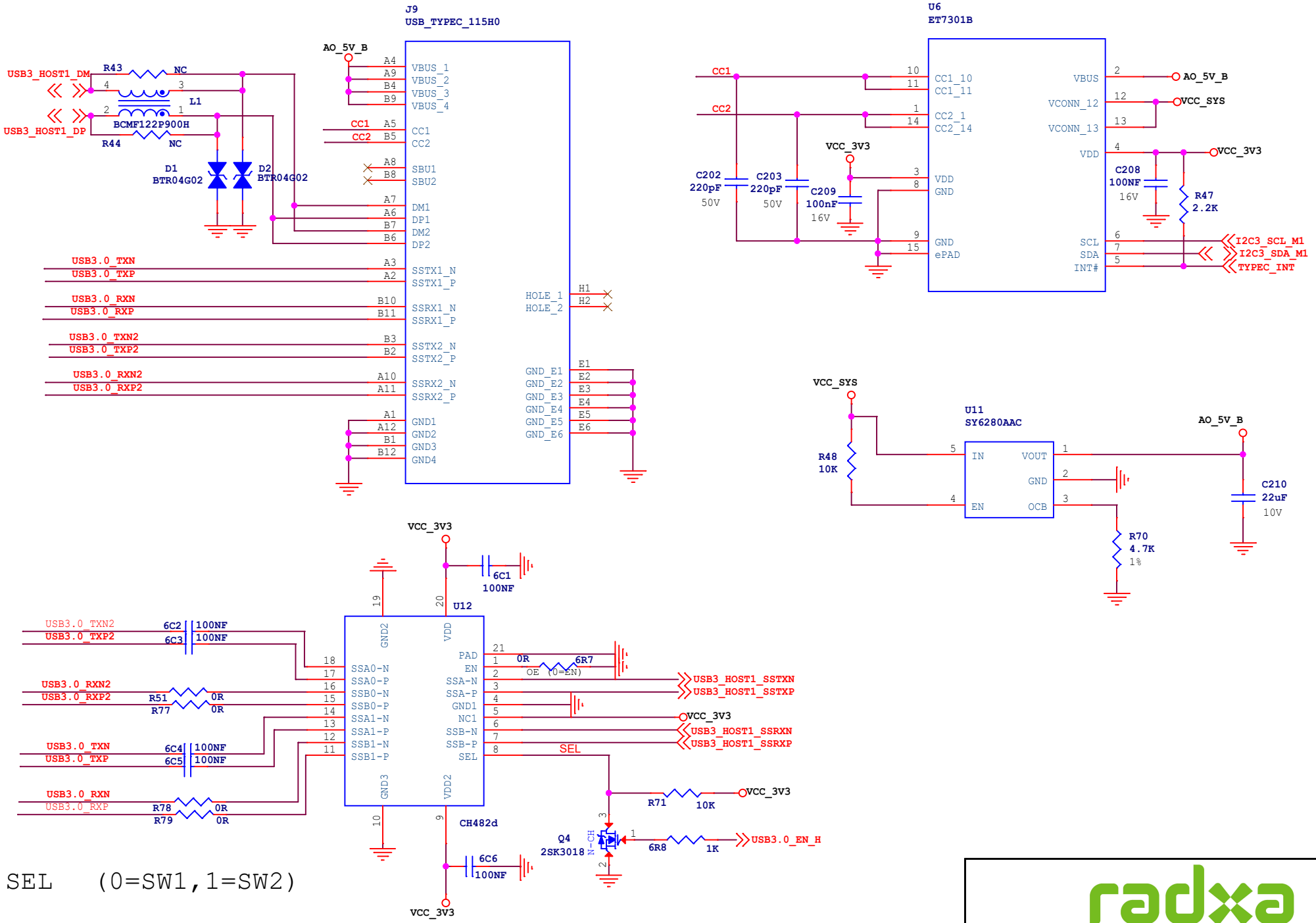

Size A4	Title: Zero 3W	REV V1.11
	Page Name: USB Port	
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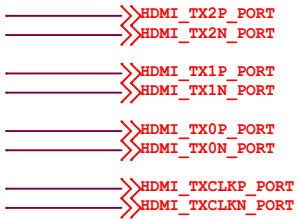
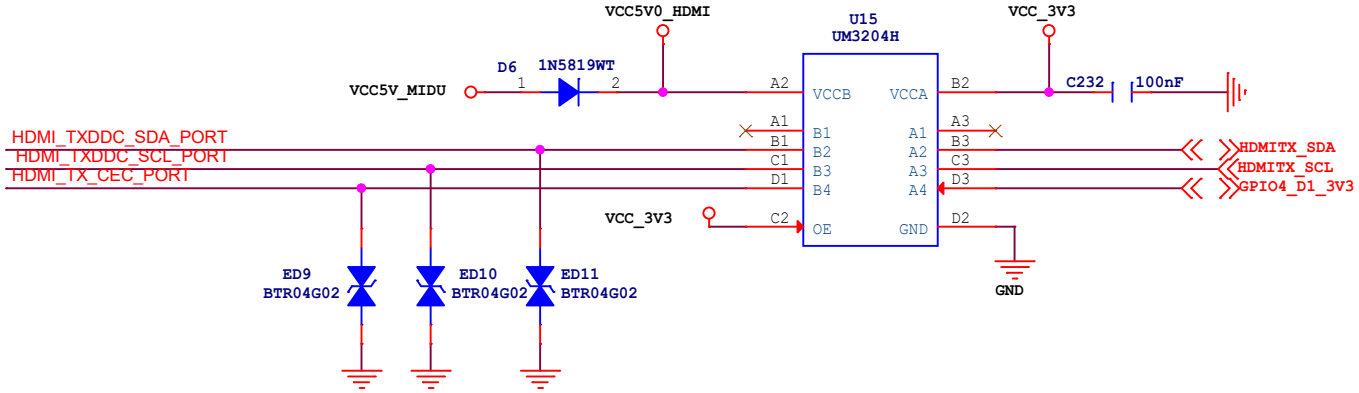
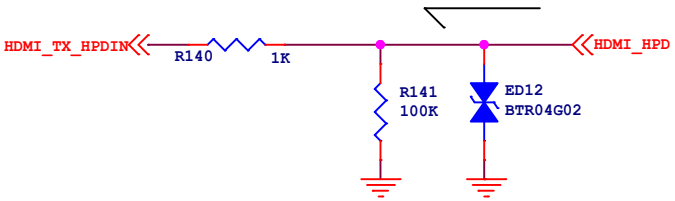
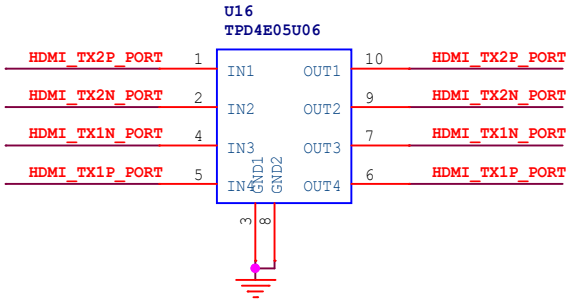
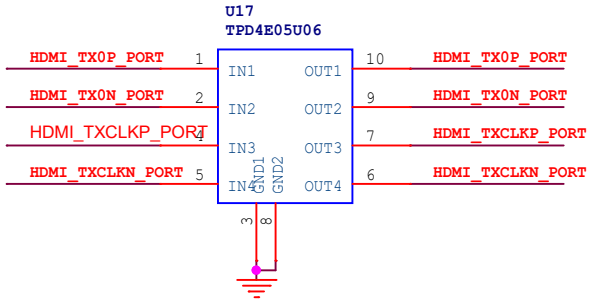




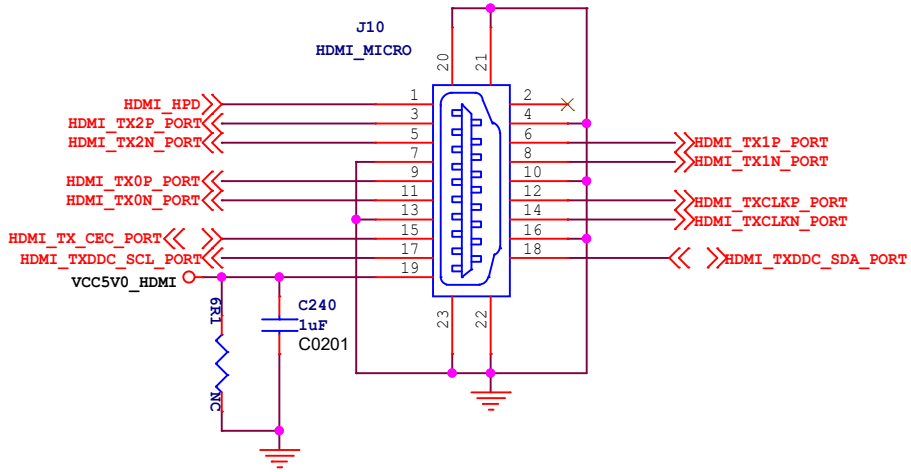
HDMI TX HPD







MICRO HDMI output



radxa

Size	Title:	Zero 3W	REV
A4	Page Name:	HDMI2.0 TX	V1.11
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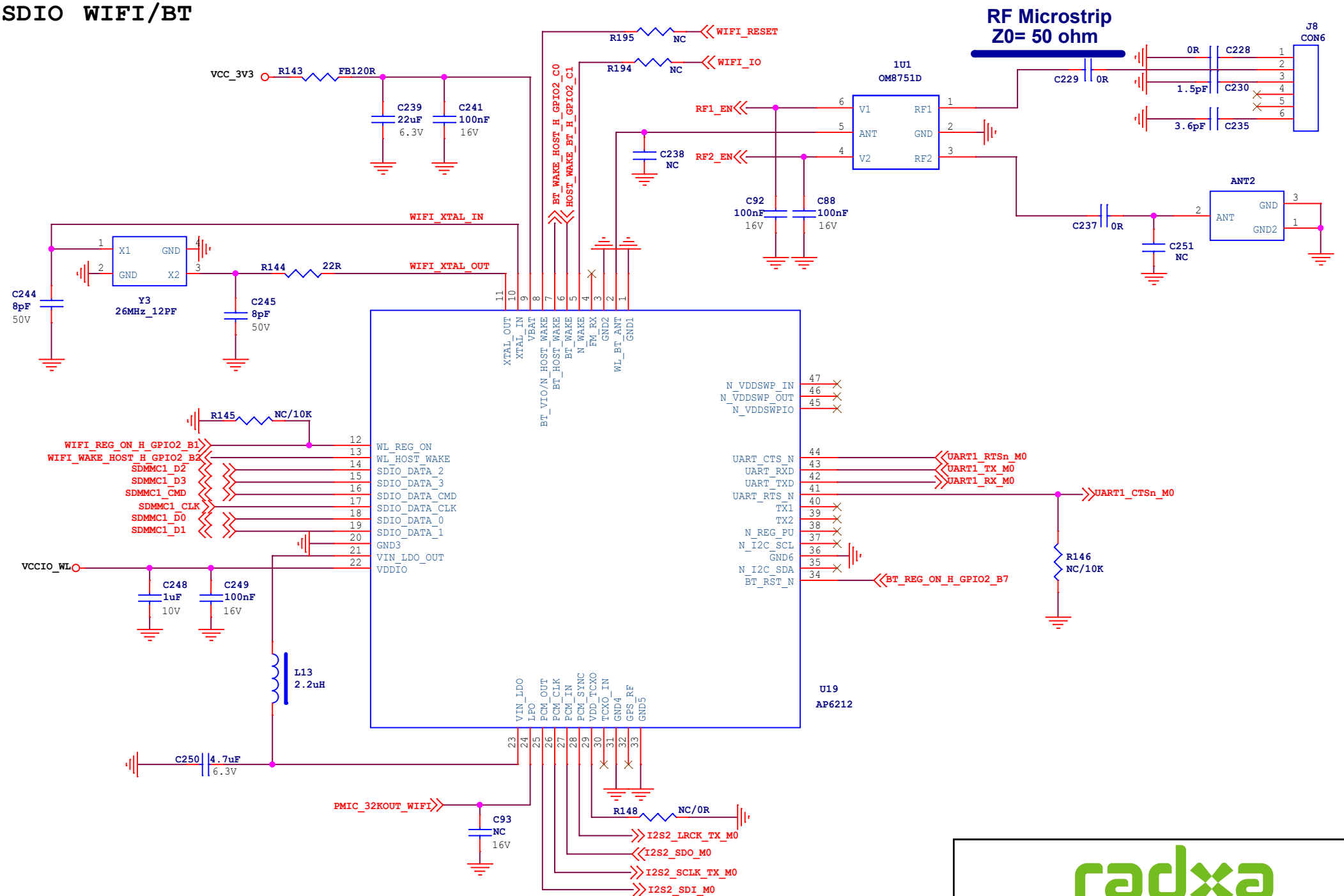
SDIO WIFI/BT



Size A4	Title: Zero 3W	REV V1.11
	Page Name: WIFI/BT-SDIO	
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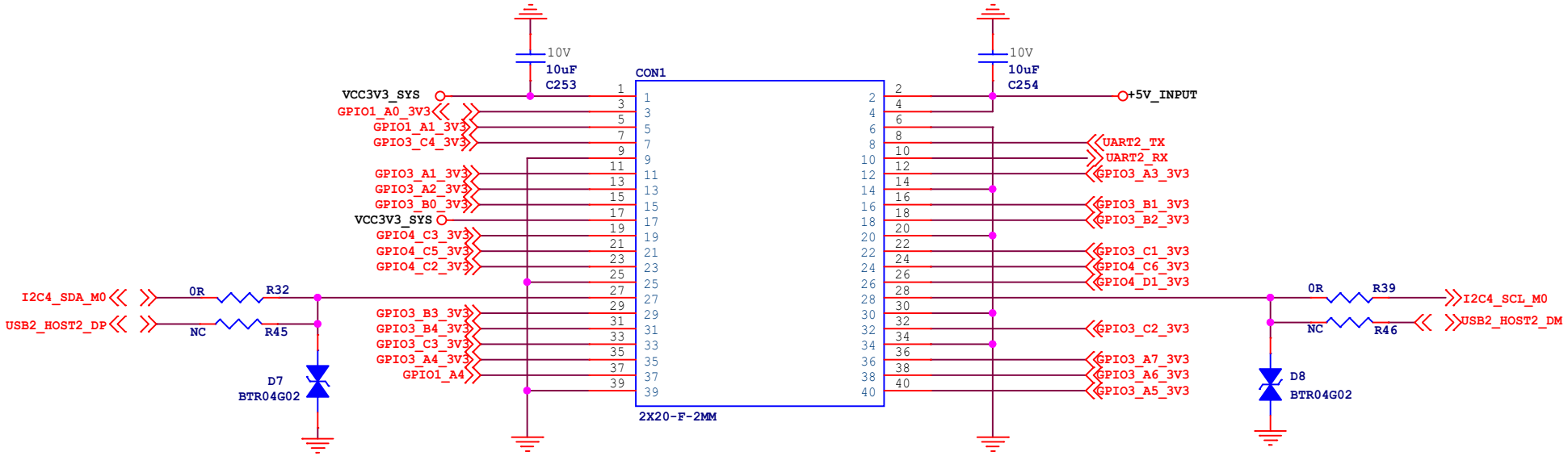

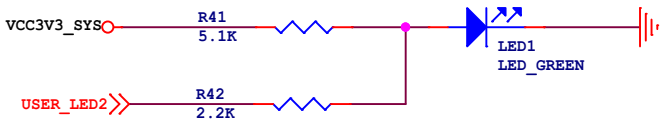

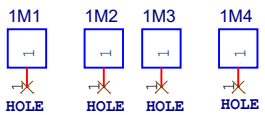

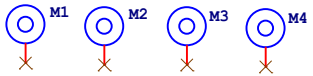

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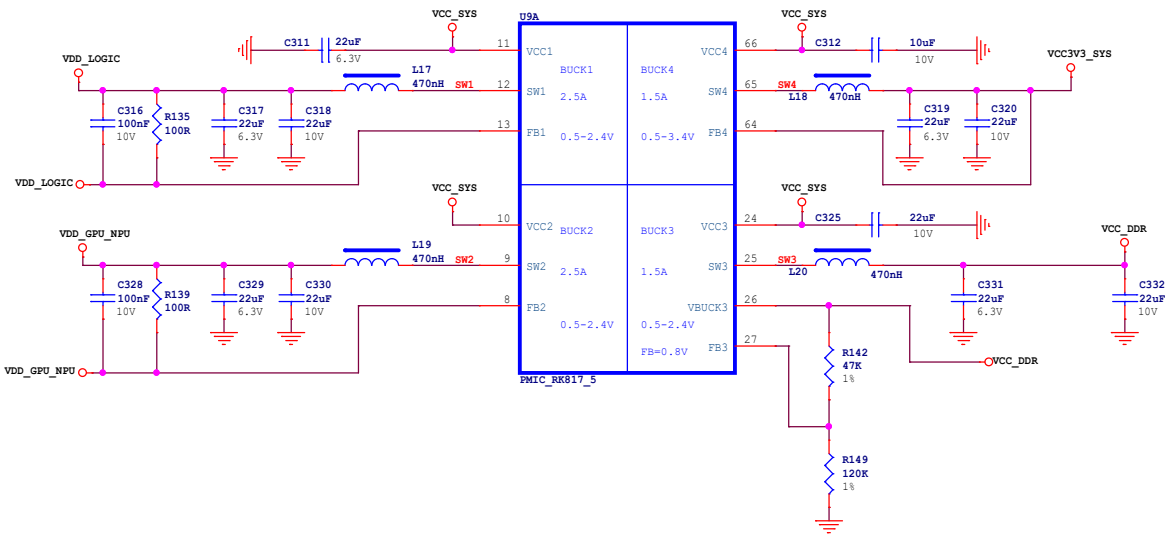
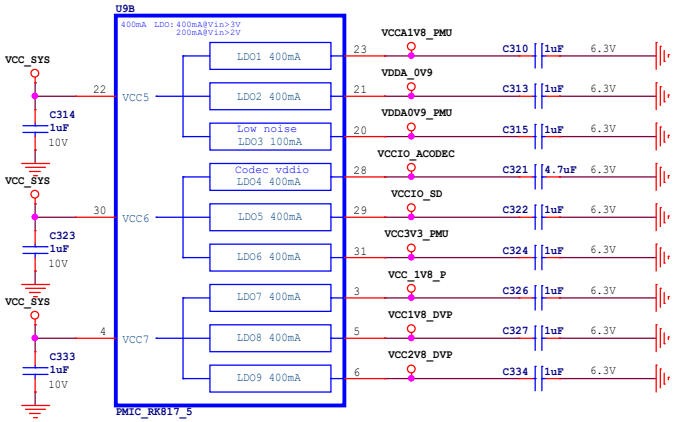
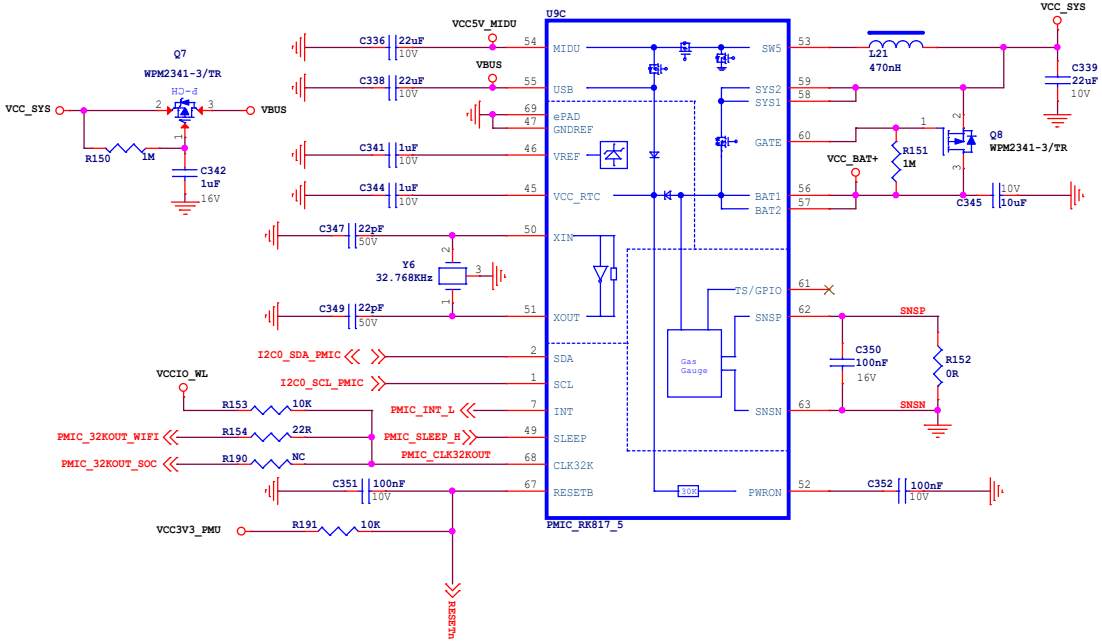
PMIC RK817 DCDC



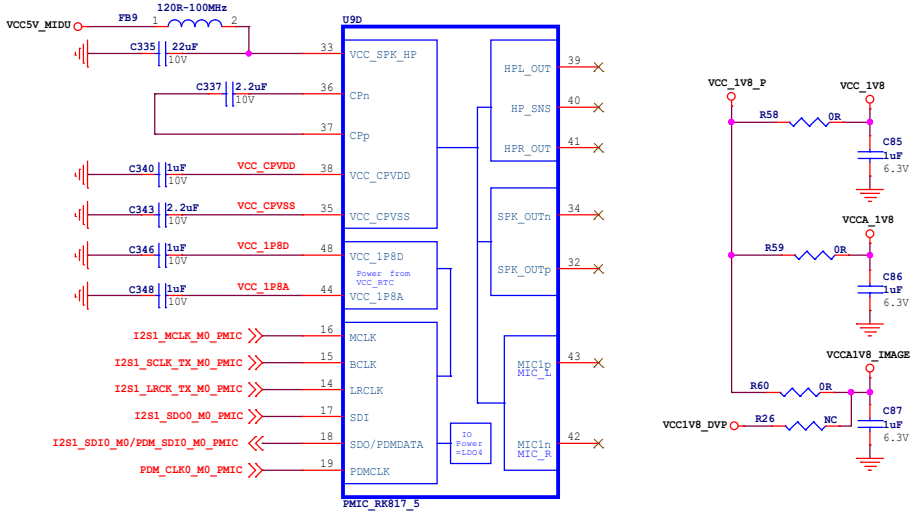
PMIC RK817 LDO



PMIC RK817 Managerment



PMIC RK817 CODEC



Size	Title: Zero 3W	REV
A3	Page Name: Power_PMIC	V1.11
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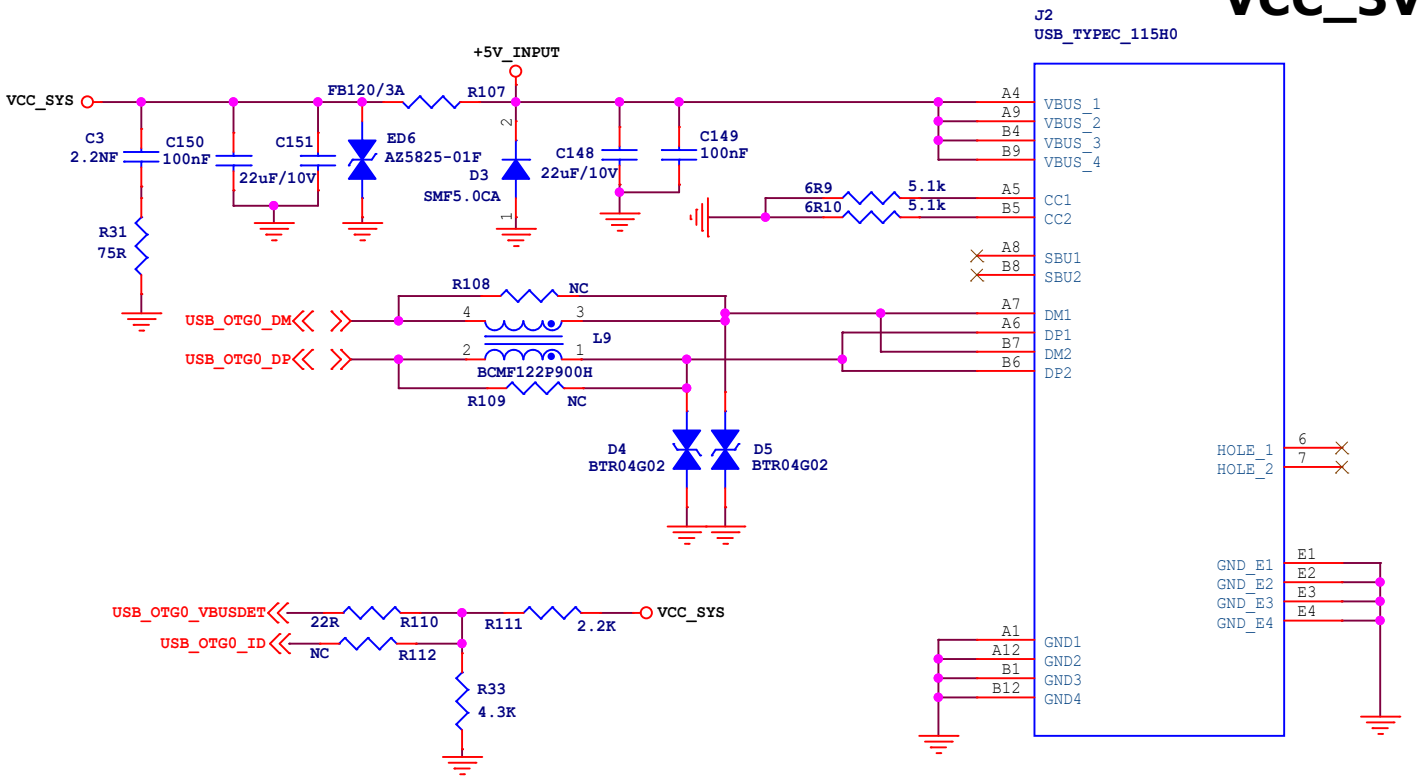
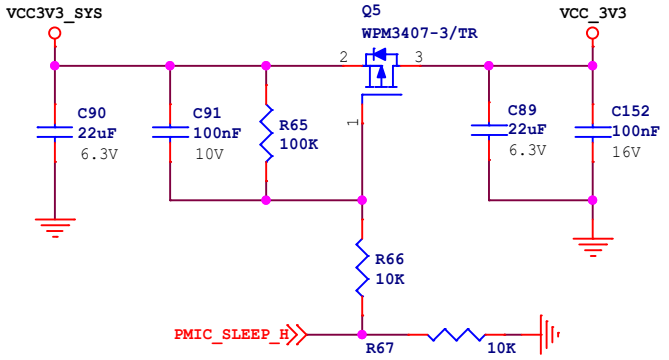
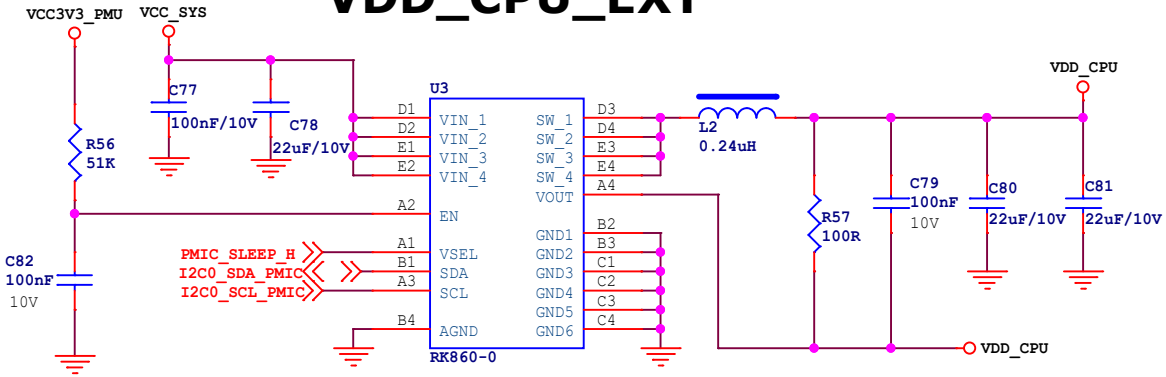
DC 5V IN



VCC_3V3 (Power OFF under SLEEP)



VDD_CPU_EXT



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