



# Radxa ZERO 3W

Schematic

V1.12

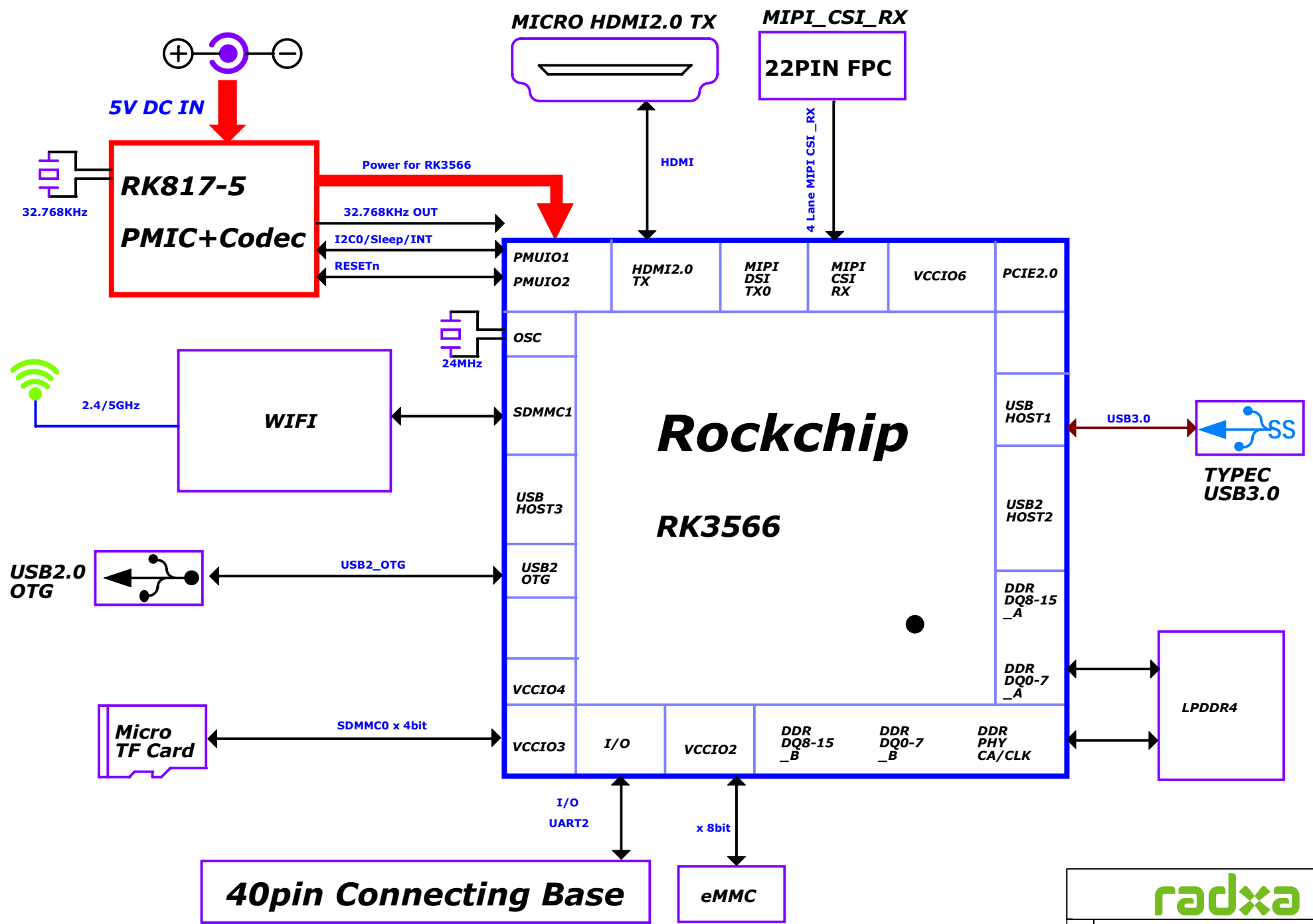
# Table of Content

- 01.cover
- 02.Index
- 03.Block Diagram
- 04.RK3566\_SARADC/GPIO
- 05.RK3566\_USB/PCIe/SATA PHY
- 06.RK3566\_OSC/PLL/PMUIO
- 07.RK3566\_Power/GND
- 08.RK3566\_DDR PHY
- 09.RK3566\_VI Interface
- 10.RK3566\_VO Interface\_1
- 11.RK3566\_VO Interface\_2
- 12.RK3566\_Audio Interface
- 13.RK3566\_Flash/SD
- 14.LPDDR4\_1X32bit
- 15.SPI Flash/eMMC
- 16.MicroSD Card
- 17.TYPEC\_USB3.0
- 18.HDMI2.0 TX
- 19.WIFI/BT-SDIO
- 20.CONNECTOR
- 21.Power\_PMIC
- 22.Power\_DC IN

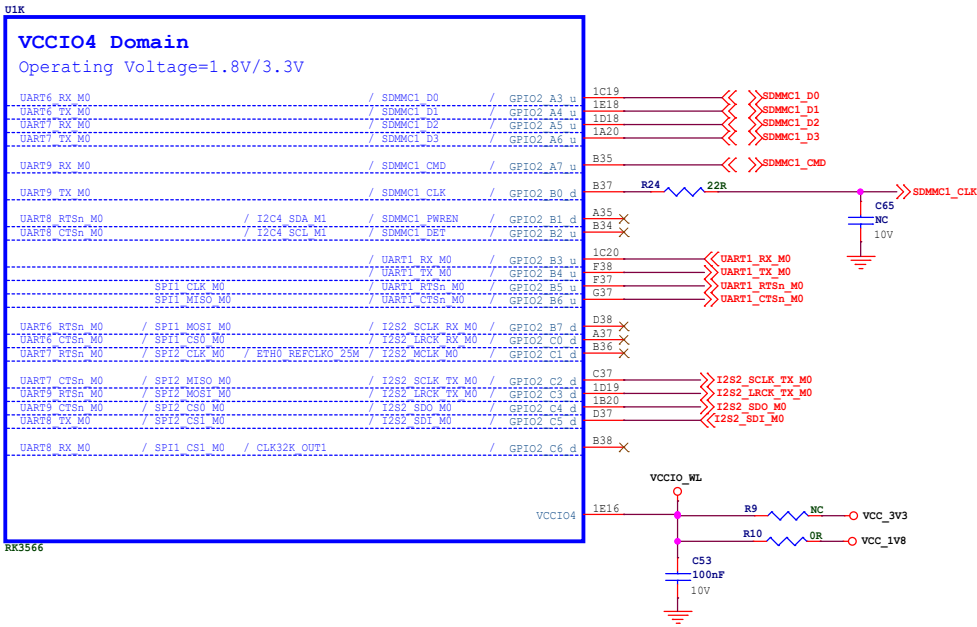


Size	Title: Zero 3W	REV
A4	Page Name: Index	V1.12
Date: Monday, November 25, 2024	Sheet 02 of 22	

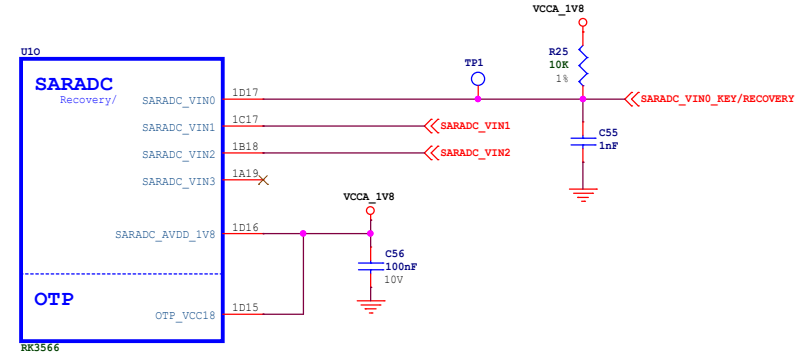
# ROCK 3 Zero W Ref Block Diagram



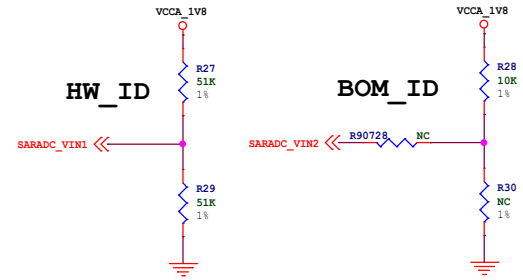
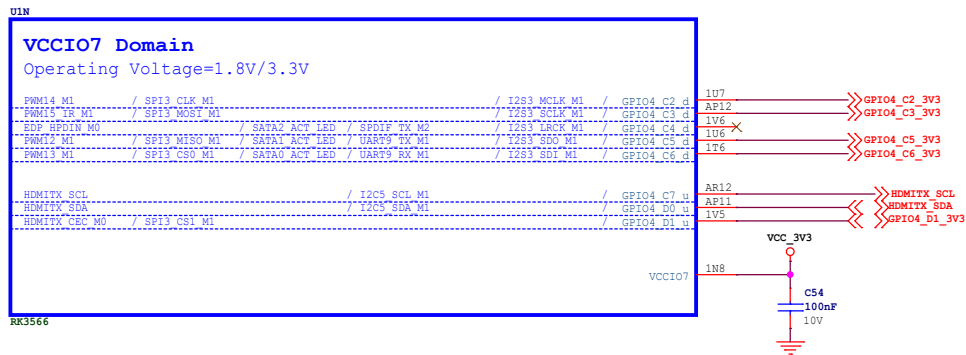
# RK3566\_K (VCCIO4 Domain)



# RK3566\_O (SARADC/OTP)



# RK3566\_N (VCCIO7 Domain)



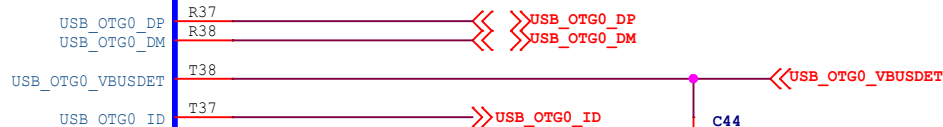
# RK3566\_U

U1U

## USB2.0 OTG\_0

HS/FS/LS

(Download Port)



## USB2.0 HOST\_1

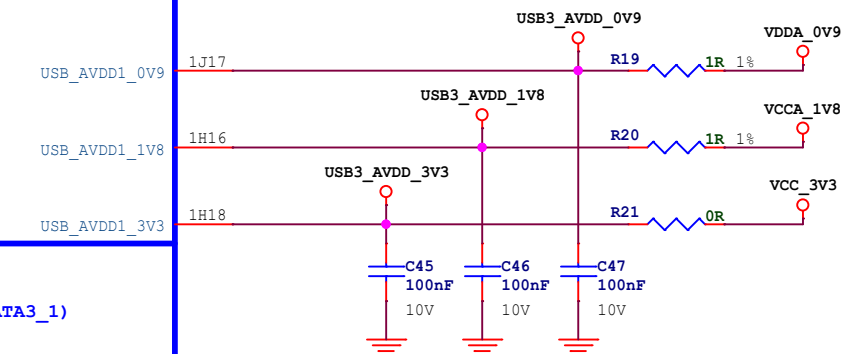
HS/FS/LS

(DP/DM for USB3.0 HOST)



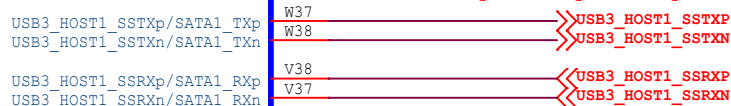
## USB2.0 Power

(for OTG\_0 and HOST\_1)



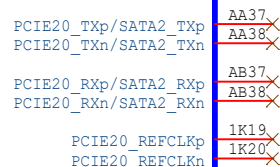
## MULTI PHY U\_S

(SS for USB3.0 HOST or SATA3\_1)



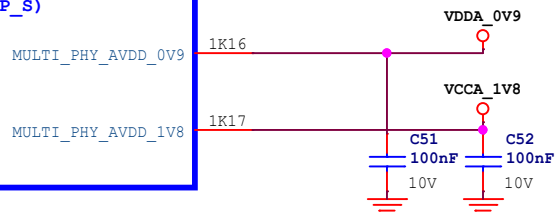
## MULTI PHY P\_S

(PCIe2.0 or SATA3\_2)



## MULTI PHY Power

(for MULTI PHY U\_S and P\_S)



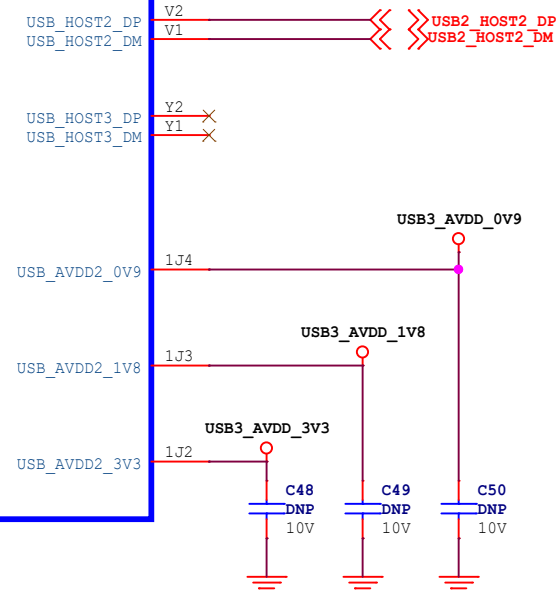
RK3566

# RK3566\_V

U1V

## USB2.0

(for HOST\_2 and HOST\_3)

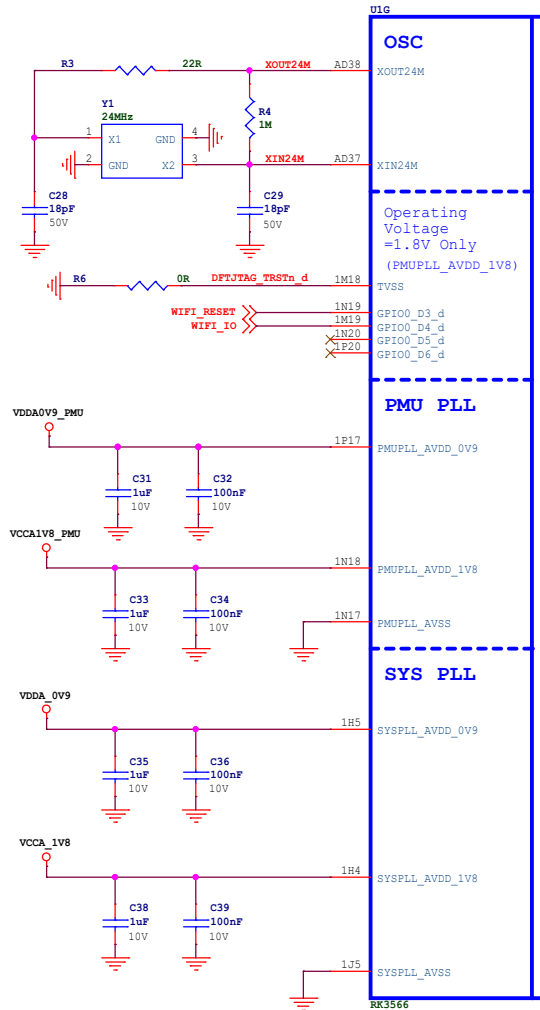


RK3566

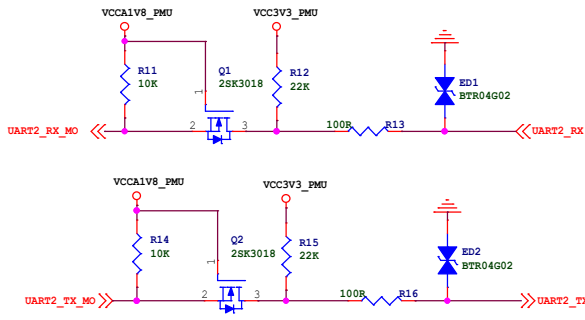
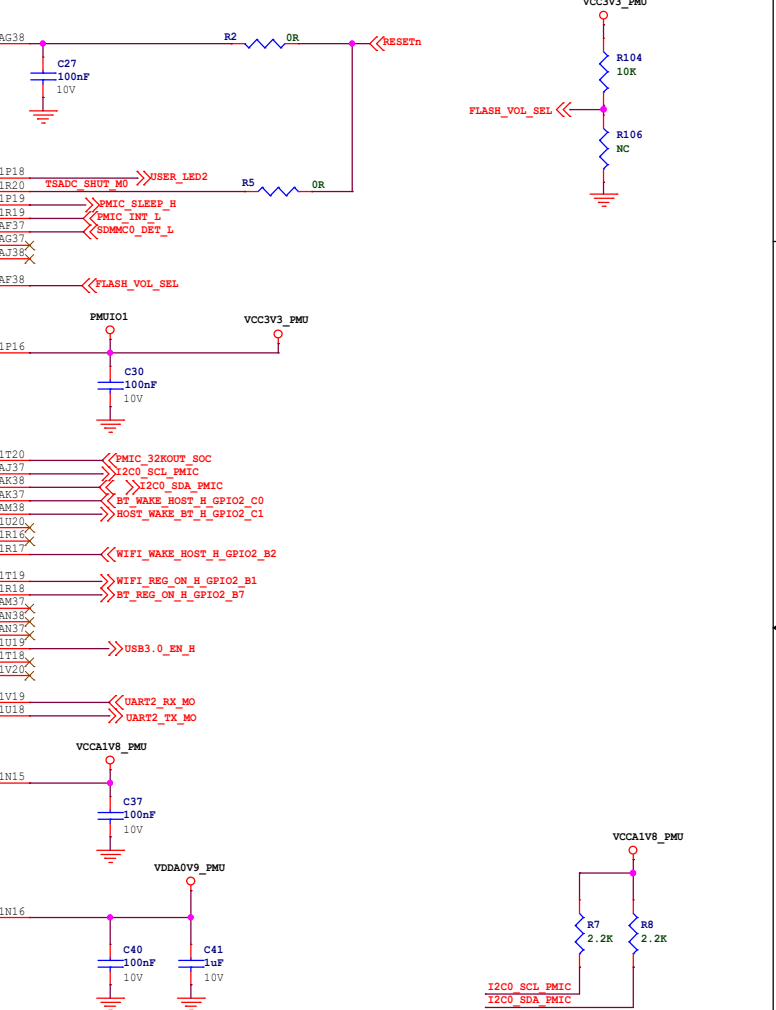


Size	Title: Zero 3W	REV
A4	Page Name: RK3566_USB/PCIe/SATA PHY	V1.12
Date: Monday, November 25, 2024	Sheet 05 of 22	

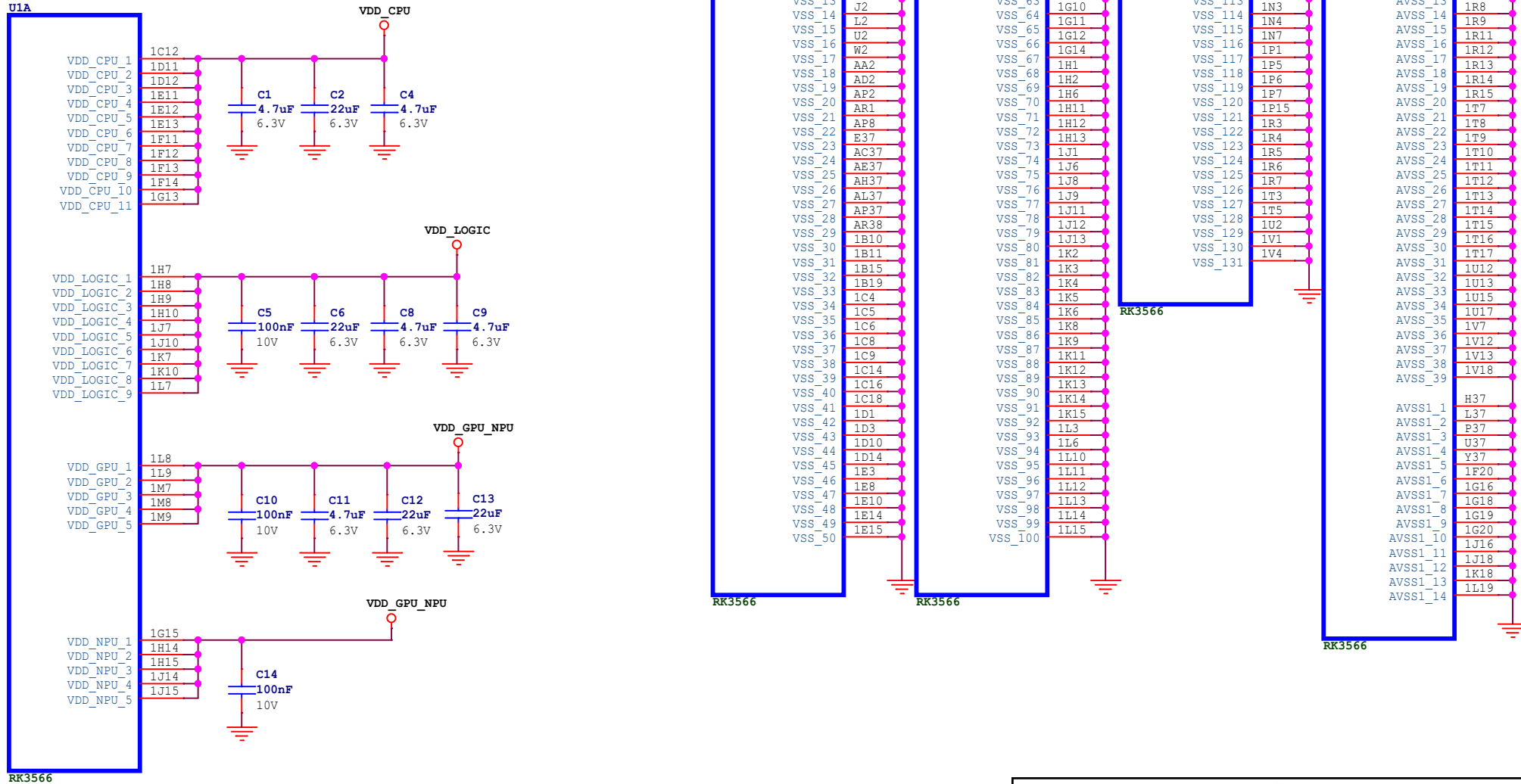
# RK3566 (OSC/PLL/PMUIO1/2)



PMUIO1 Domain	
Operating Voltage=3.3V Only	
REFCLK_OUT	GPIO0_A0_H
TSADC_SHUT_OG0	GPIO0_A1_Z
TSADC_SHUT_M0	GPIO0_A2_H
PMIC_SLEEP	GPIO0_A3_H
SIMMCO_DET	GPIO0_A4_H
SIMMCO_PWREN	GPIO0_A5_H
GPU_PWREN	GPIO0_A6_H
FLASH_VOL_SEL	GPIO0_A7_H
CLK32K_IN	GPIO0_B0_H
I2C0_SCL	GPIO0_B1_H
I2C0_SDA	GPIO0_B2_H
I2C1_SCL	GPIO0_B3_H
I2C1_SDA	GPIO0_B4_H
PMU1_M0	GPIO0_B5_H
PMU2_M0	GPIO0_B6_H
PMU0_M0	GPIO0_B7_H
PMU1_M0	GPIO0_C0_H
PMU2_M0	GPIO0_C1_H
PMU3_IR	GPIO0_C2_H
PMU4	GPIO0_C3_H
PMU5	GPIO0_C4_H
PMU6	GPIO0_C5_H
PMU7_IR	GPIO0_C6_H
PMU0_M0	GPIO0_C7_H
UART2_RX_M0	GPIO0_D0_H
UART2_TX_M0	GPIO0_D1_H

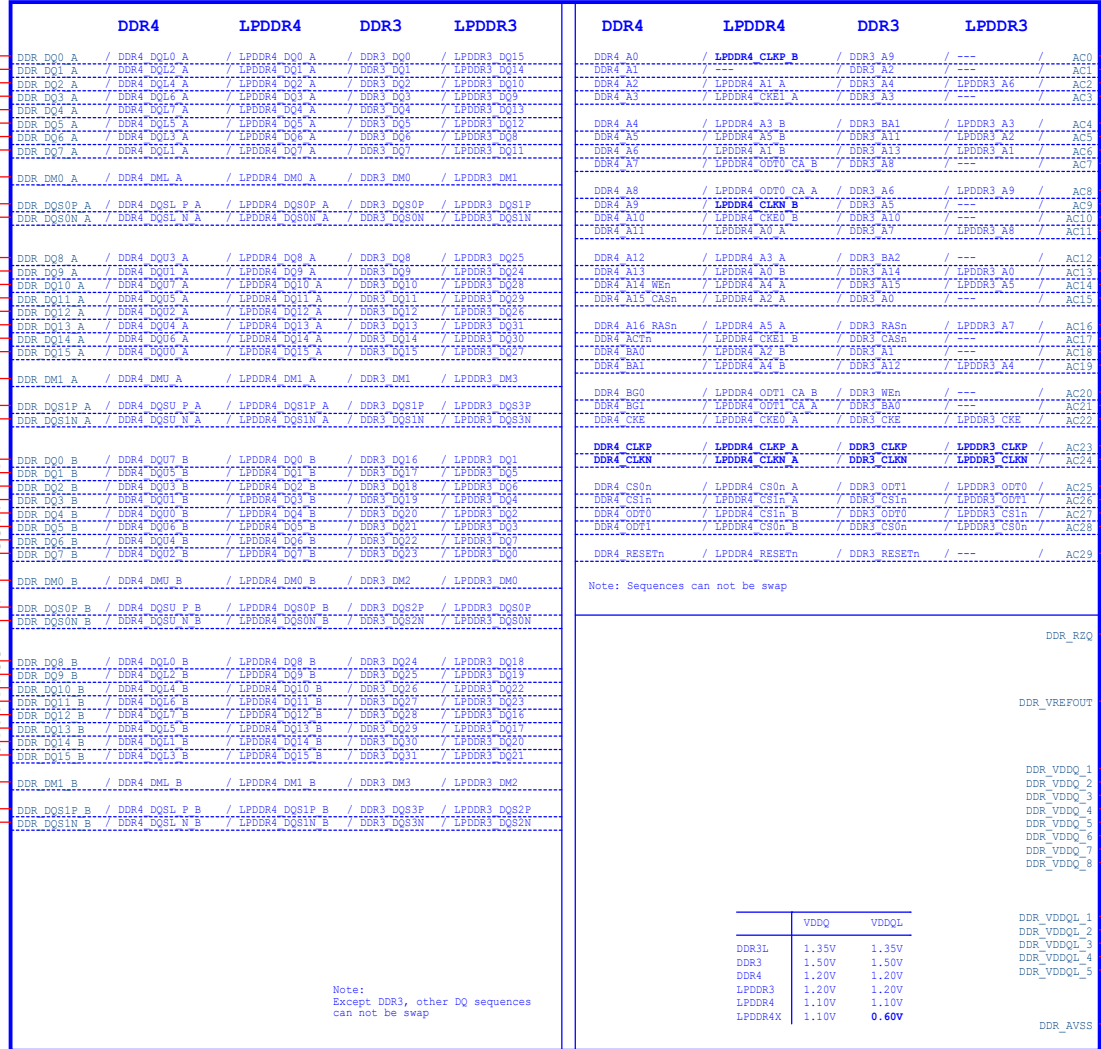


# RK3566\_ABCDE (Power&GND)

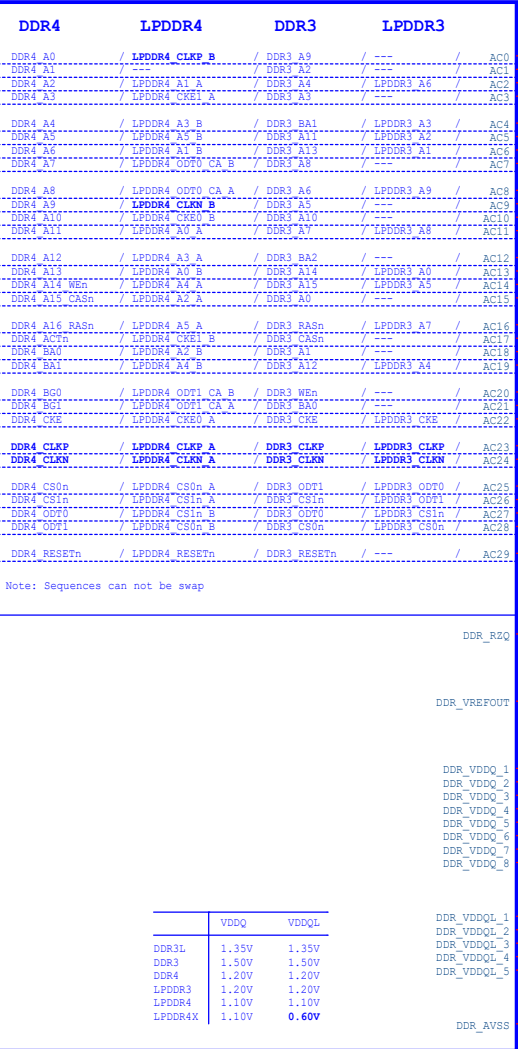


# RK3566\_F (DDR PHY)

UIF

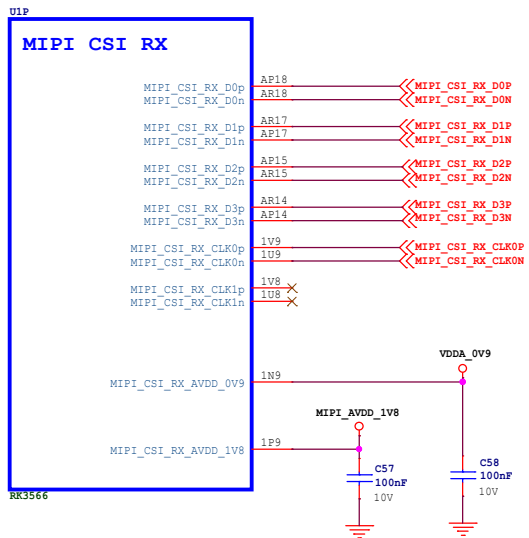


Note:  
Except DDR3, other DQ sequences  
can not be swap

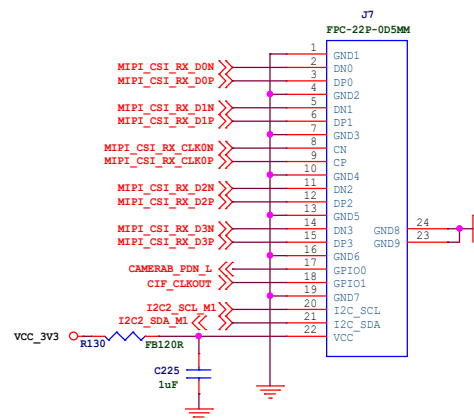




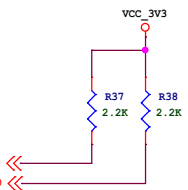
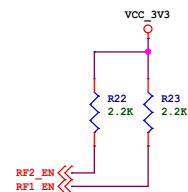
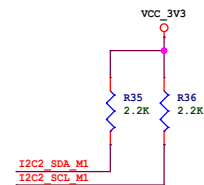
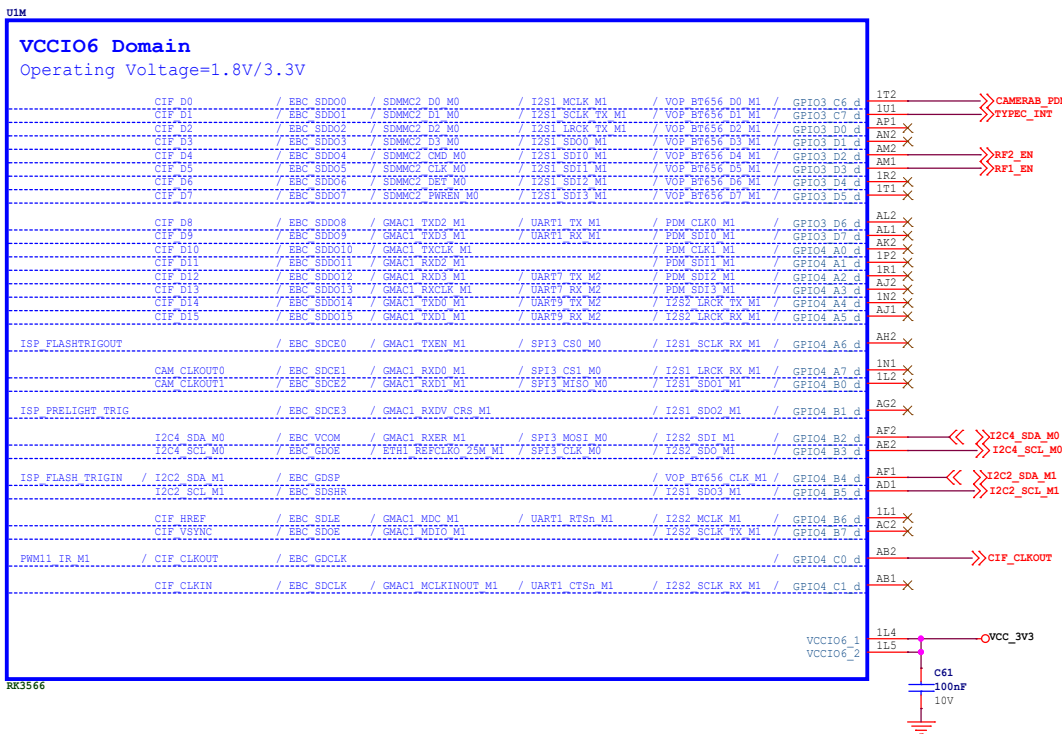
# RK3566\_P (MIPI\_CSI\_RX)



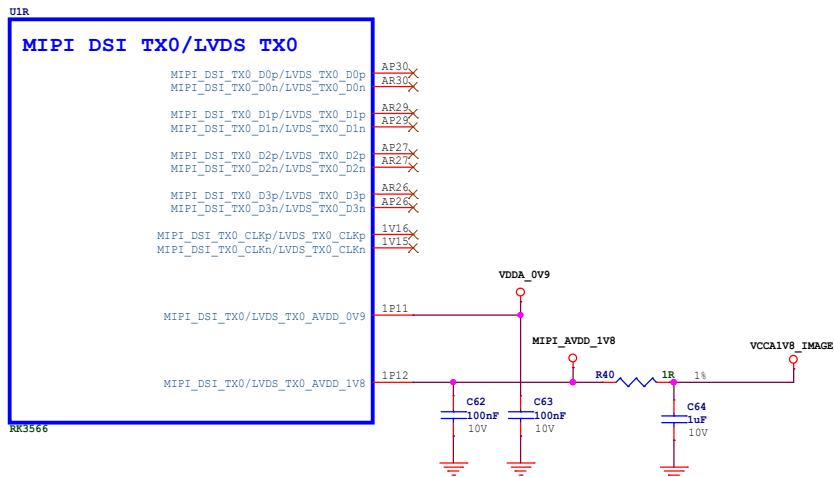
# MIPI\_CSI\_RX 4Lanes



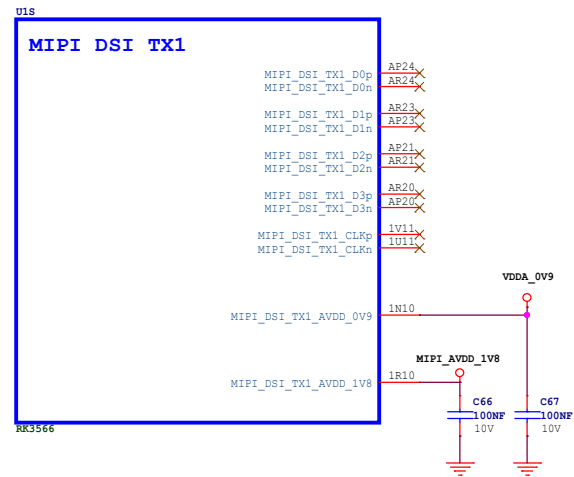
# RK3566\_M (VCCIO6 Domain)



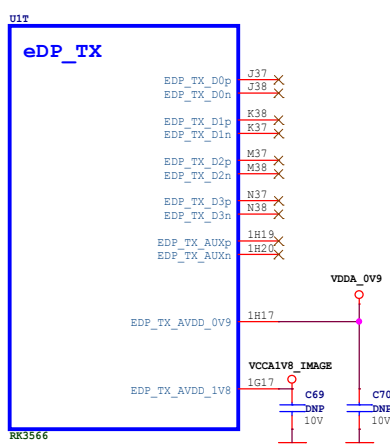
# RK3566\_R (MIPI\_DSI\_TX0/LVDS\_TX0)



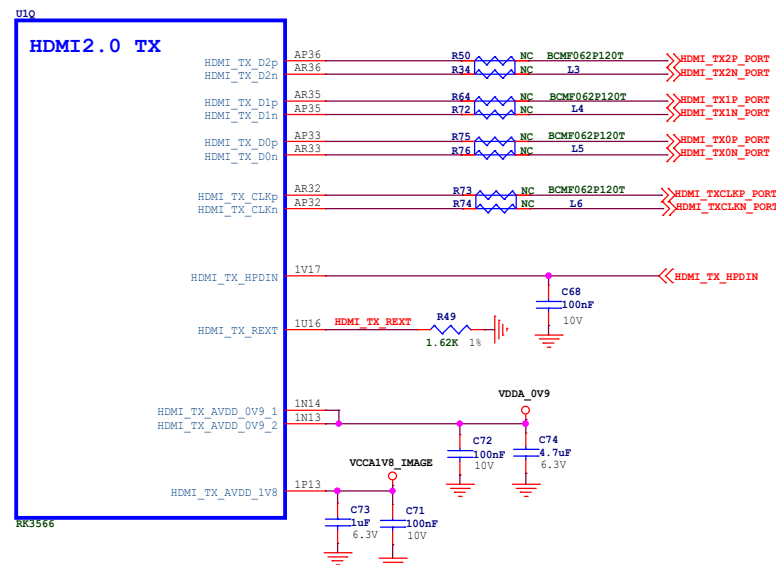
# RK3566\_S (MIPI\_DSI\_TX1/LVDS\_TX1)



# RK3566\_T (eDP/DP TX)



# RK3566\_Q (HDMI2.0 TX)

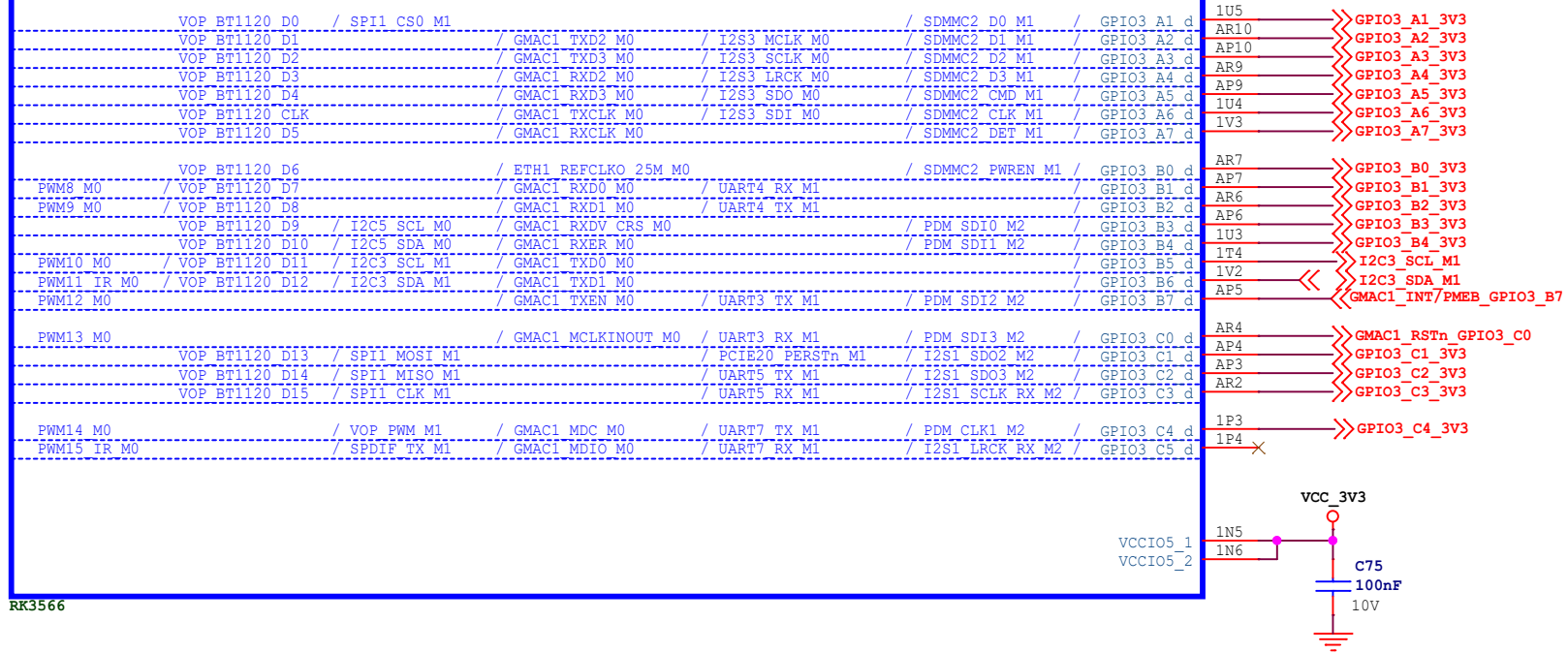


# RK3566\_L (VCCIO5 Domain)

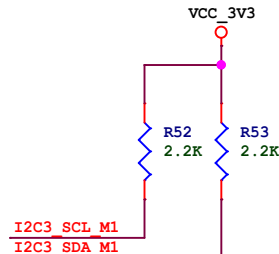
ULL

## VCCIO5 Domain

Operating Voltage=1.8V/3.3V



RK3566

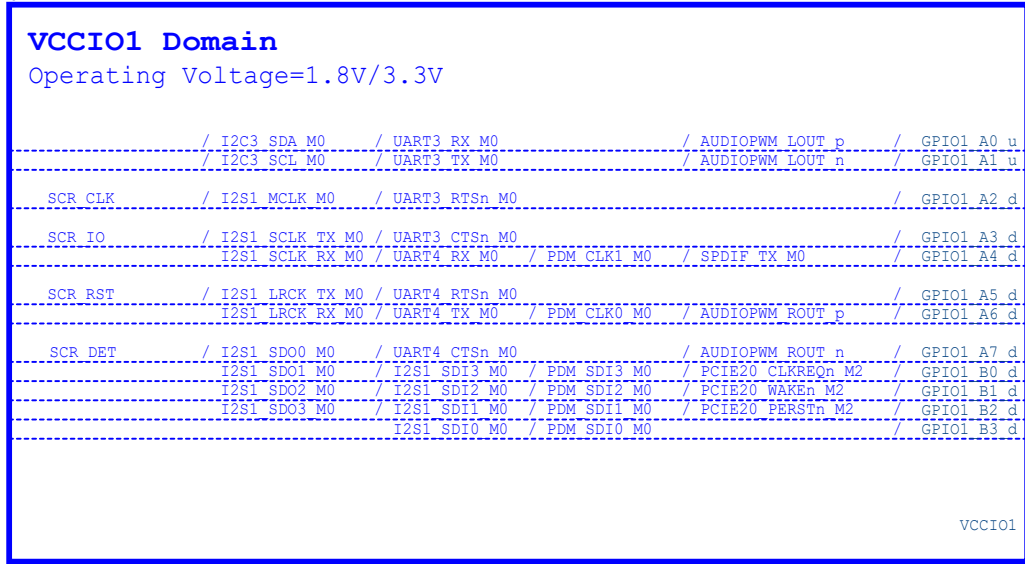


radxa

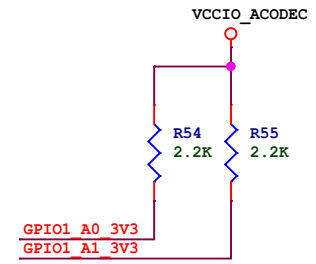
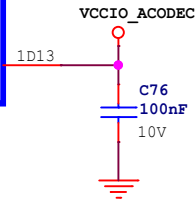
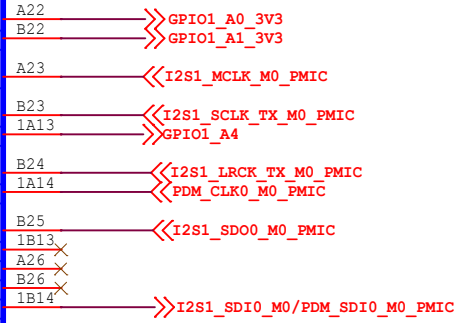
Size	Title: Zero 3W	REV
A4	Page Name: RK3566_VO Interface_2	V1.12
Date: Monday, November 25, 2024	Sheet 11 of 22	

# RK3566\_H (VCCIO1 Domain)

U1H

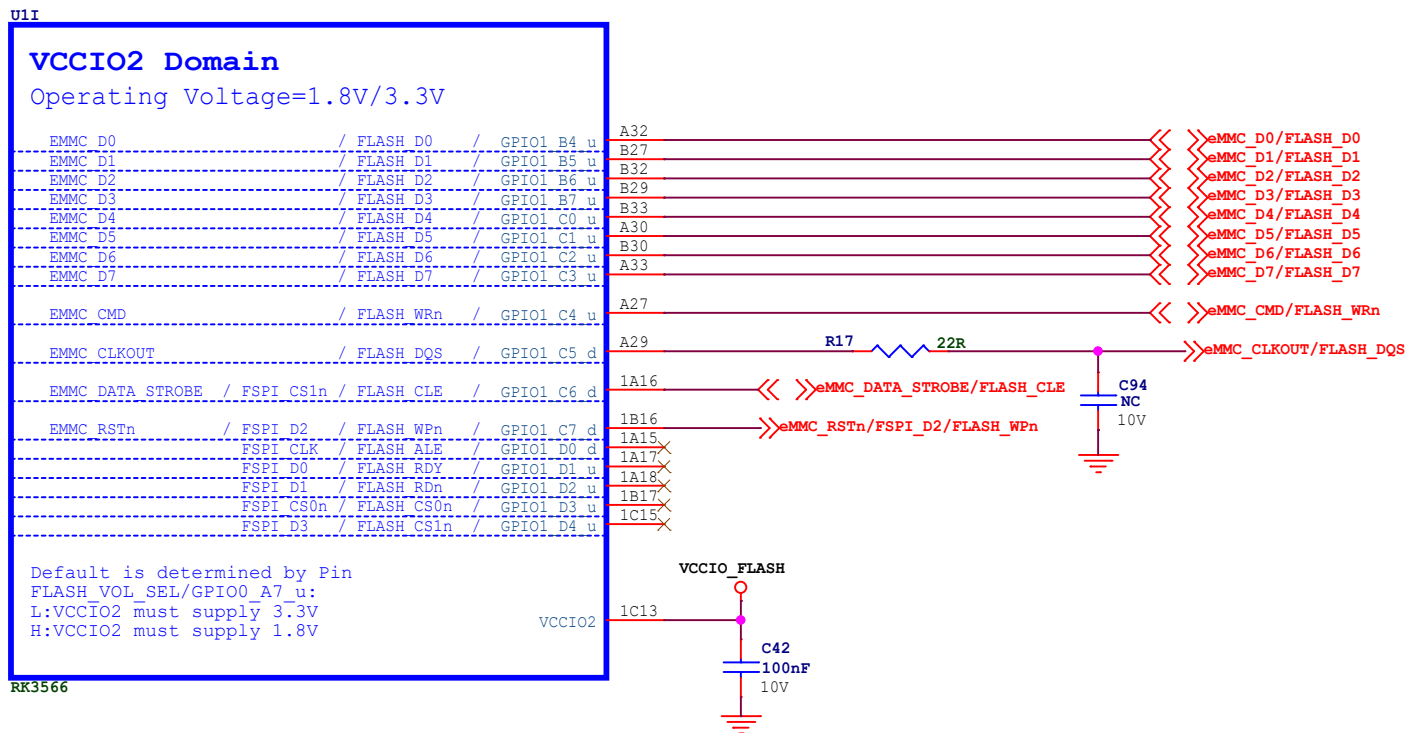


RK3566

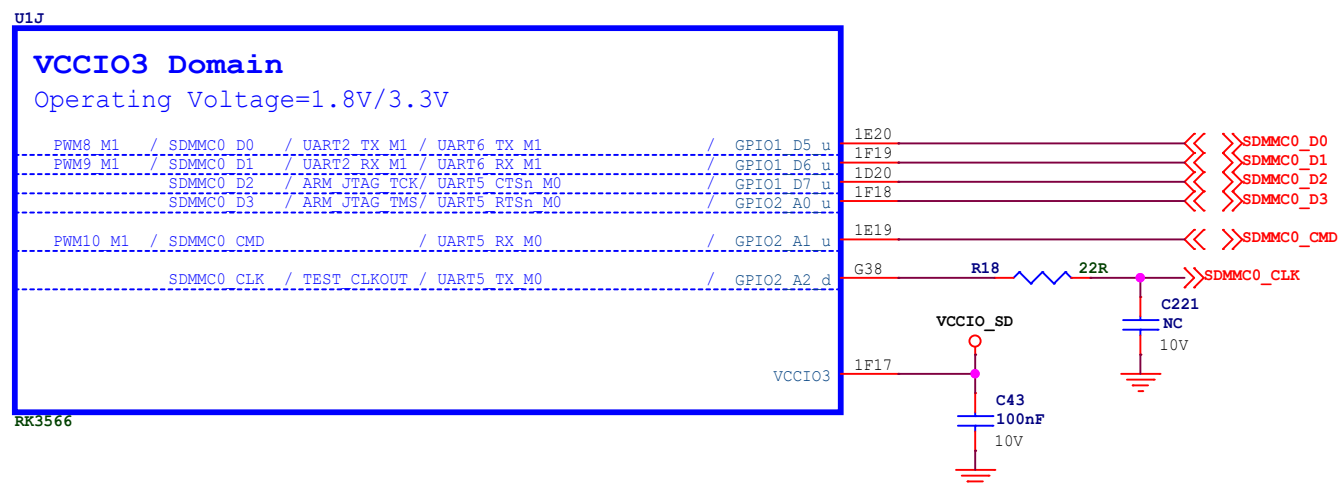


Size	Title: Zero 3W	REV
A4	Page Name: RK3566_Audio Interface	V1.12
Date: Monday, November 25, 2024	Sheet 12 of 22	

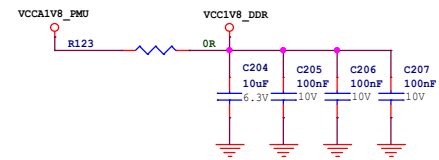
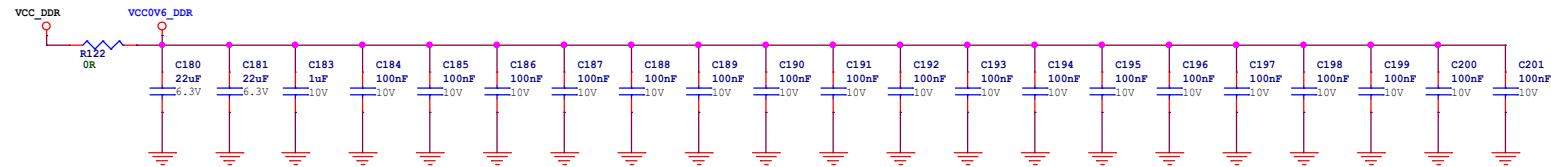
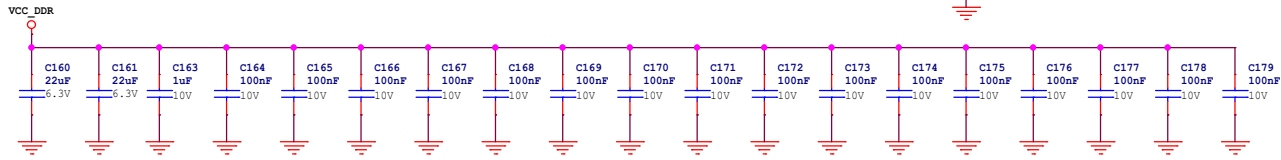
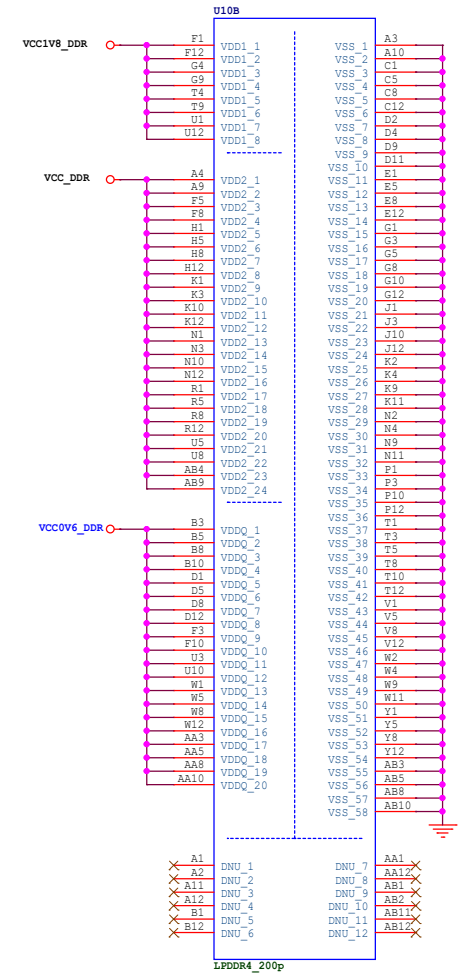
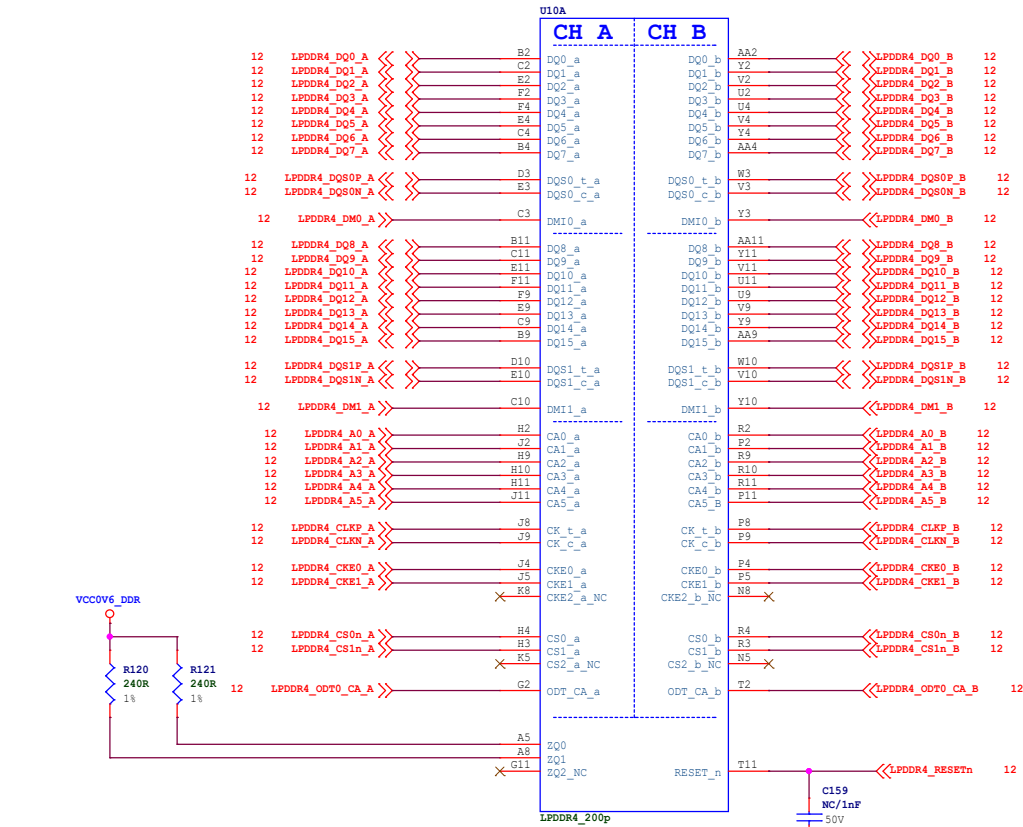
# RK3566\_I (VCCIO2 Domain)



# RK3566\_J (VCCIO3 Domain)



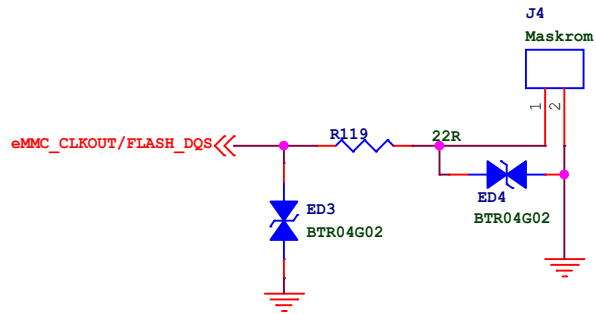
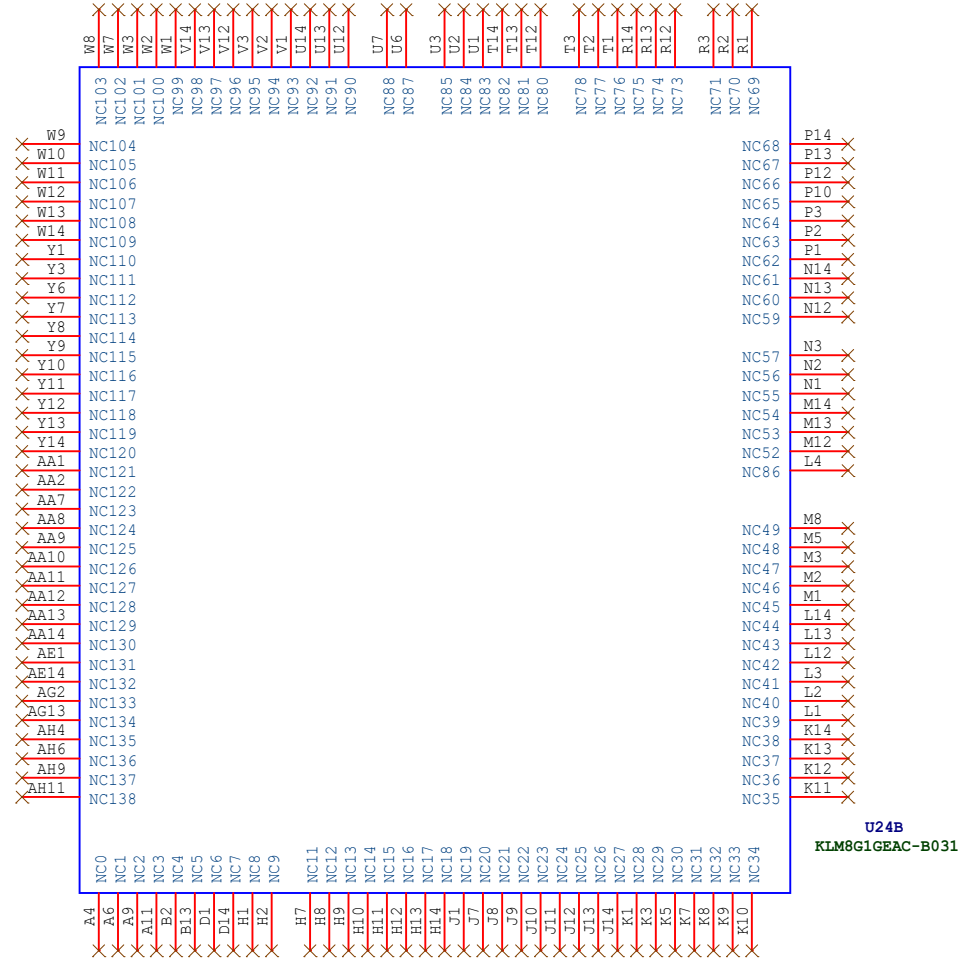
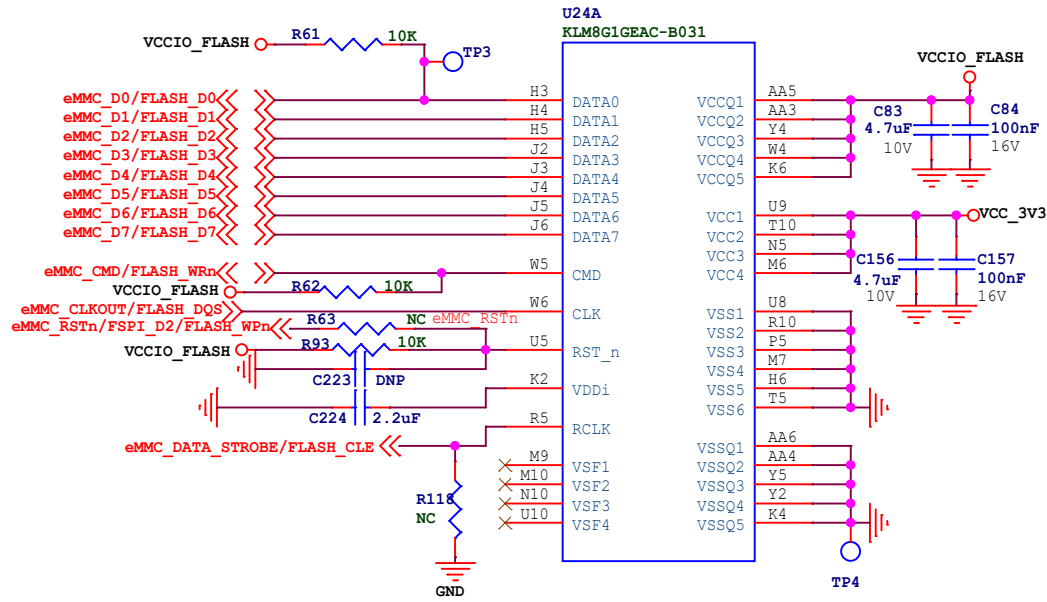
Size	Title: Zero 3W	REV
A4	Page Name: RK3566_Flash/SD	V1.12
Date: Monday, November 25, 2024	Sheet 13	of 22



**radxa**

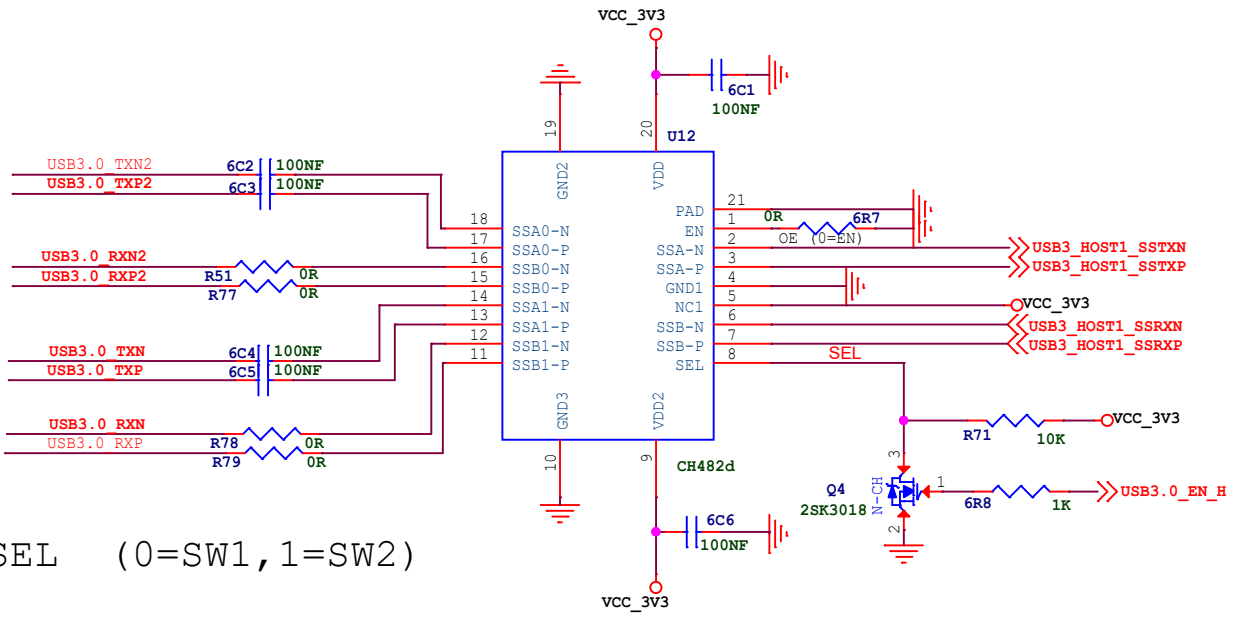
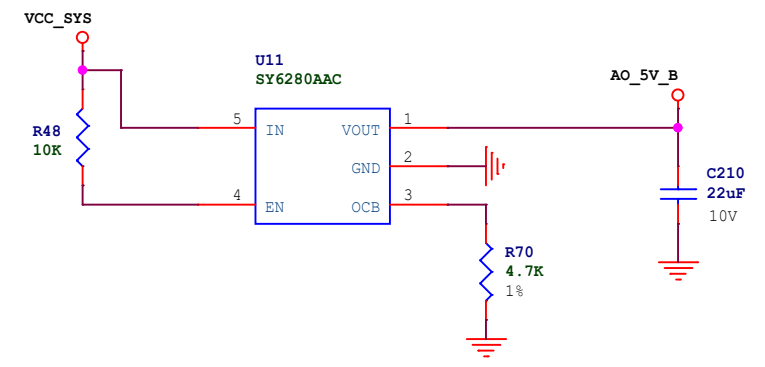
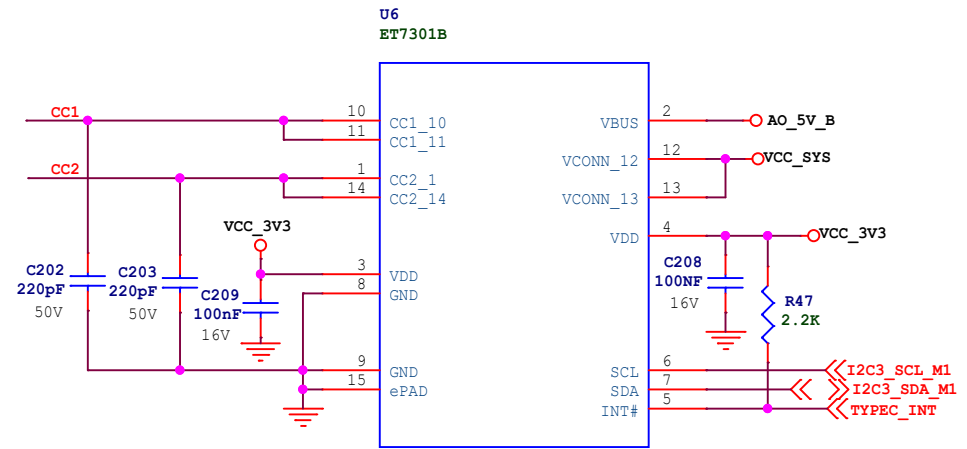
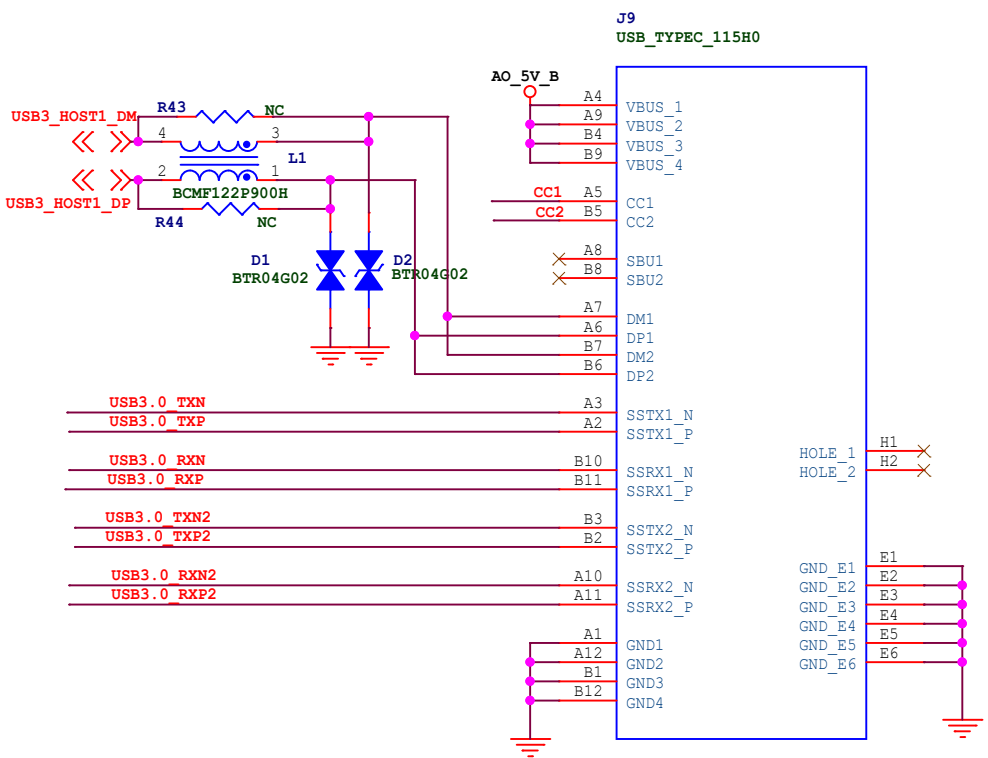
Size	Title:	Zero 3W	REV
A3	Page Name:	LPDDR4X_1X32bit	V1.12
Date:	Monday, November 25, 2024	Sheet	14 of 22

# EMMC FLASH








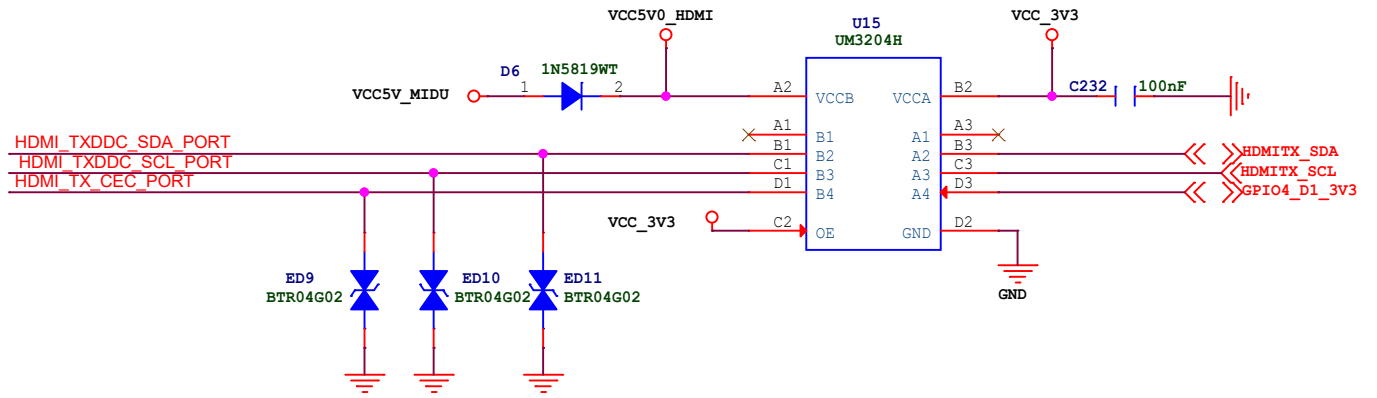


SEL (0=SW1, 1=SW2)

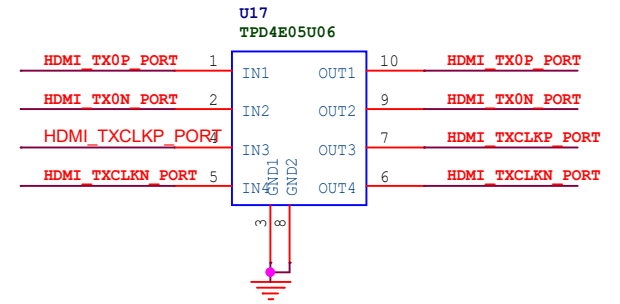
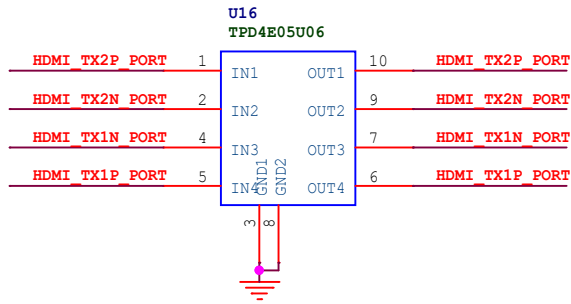
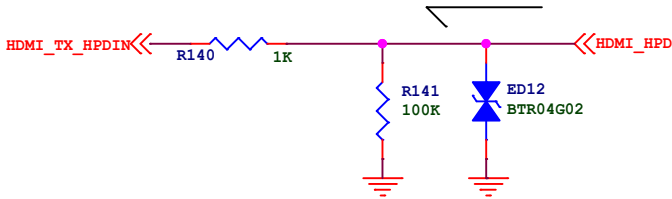


Size	Title: Zero 3W	REV
A4	Page Name: USB Port	V1.12
Date: Monday, November 25, 2024	Sheet 17	of 22

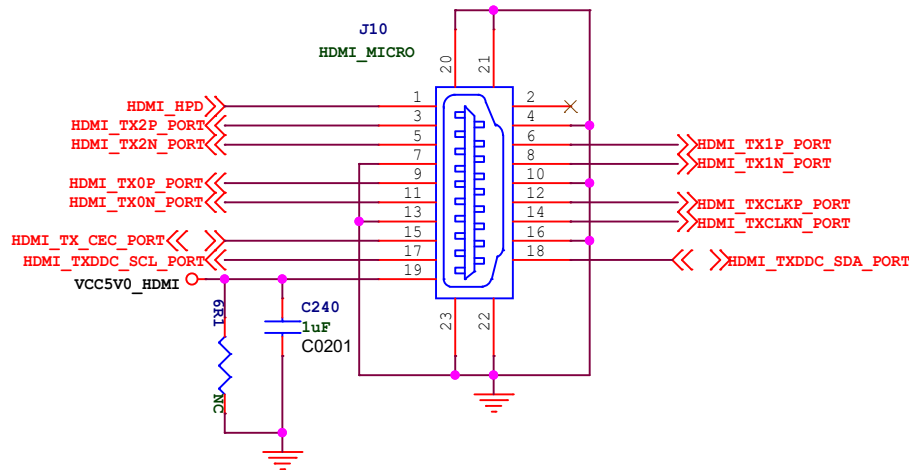
>>>HDMI\_TX2P\_PORT  
 >>>HDMI\_TX2N\_PORT  
 >>>HDMI\_TX1P\_PORT  
 >>>HDMI\_TX1N\_PORT  
 >>>HDMI\_TX0P\_PORT  
 >>>HDMI\_TX0N\_PORT  
 >>>HDMI\_TXCLKP\_PORT  
 >>>HDMI\_TXCLKN\_PORT



### HDMI TX HPD

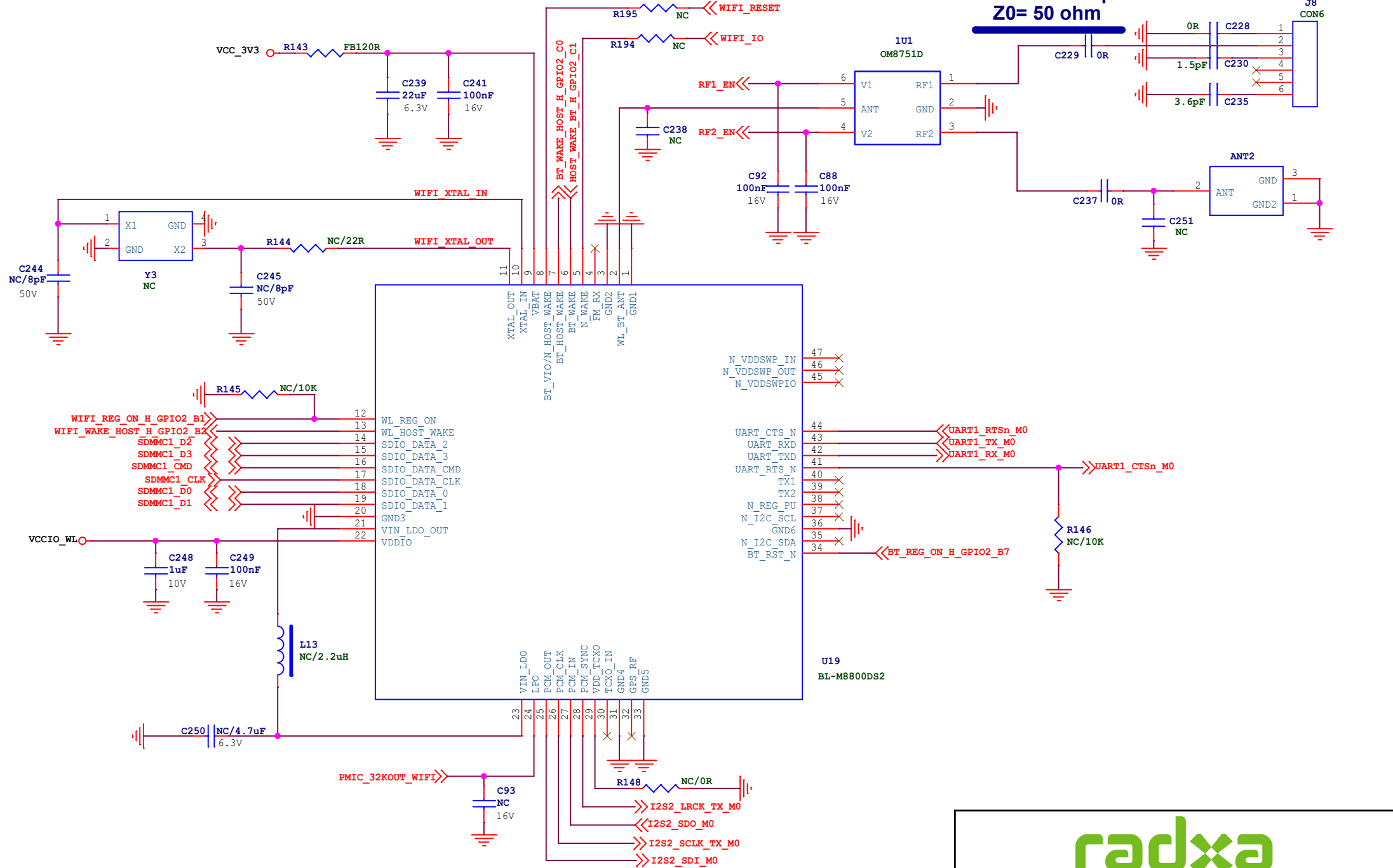



### MICRO HDMI output

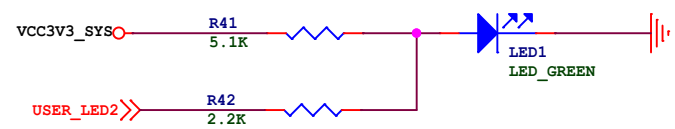
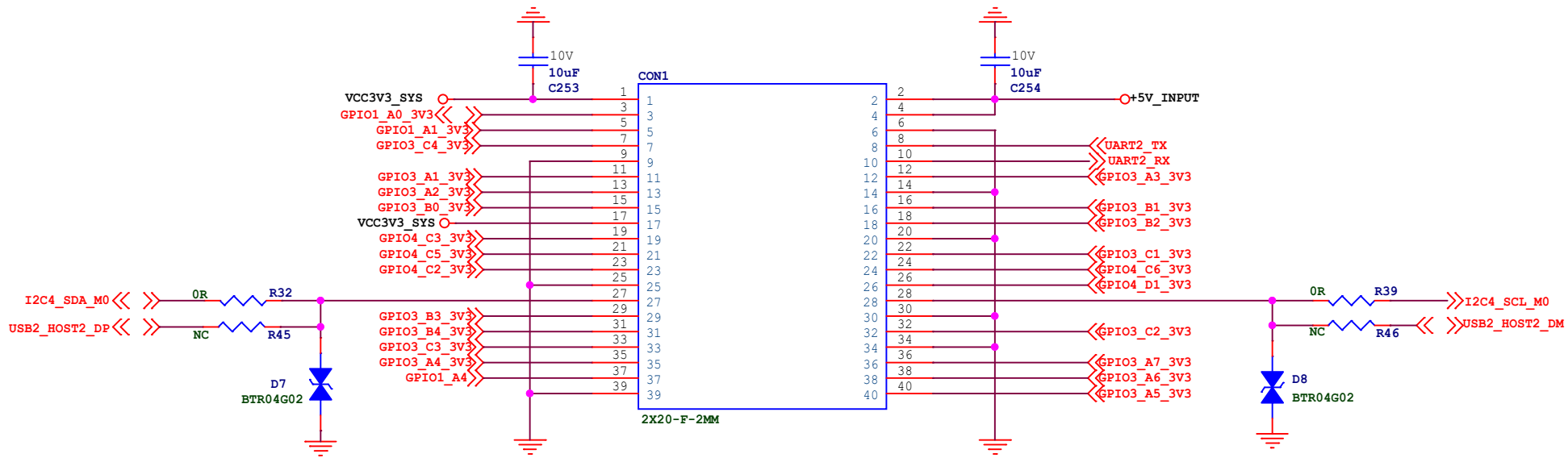


Size	Title: Zero 3W	REV
A4	Page Name: HDMI2.0 TX	V1.12
Date: Monday, November 25, 2024	Sheet 18 of 22	

# SDIO WIFI/BT

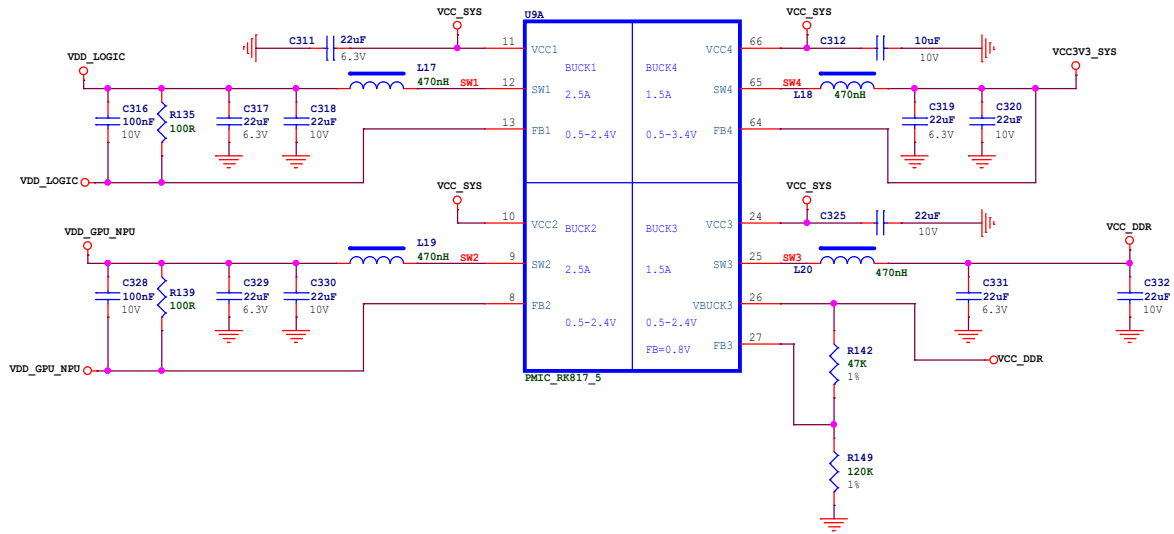
Size	Title: Zero 3W	REV
A4	Page Name: WIFI/BT-SDIO	V1.12
Date: Monday, November 25, 2024	Sheet 19 of 22	



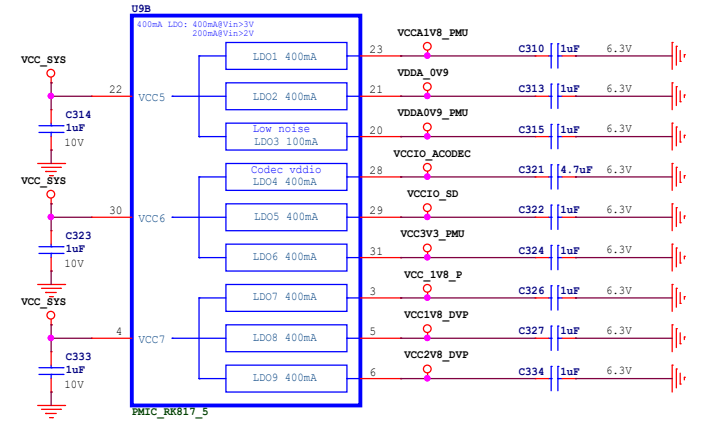
**radxa**

Size	Title: Zero 3W	REV
A4	Page Name: CONNECTOR	V1.12
Date: Monday, November 25, 2024		
Sheet		20 of 22

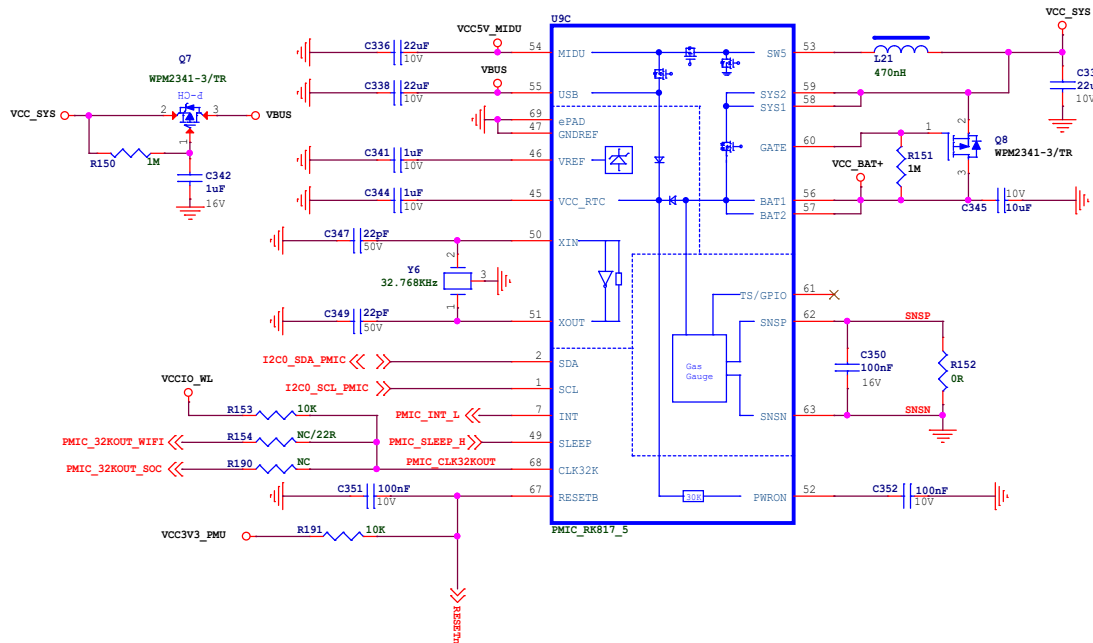
# PMIC RK817 DCDC



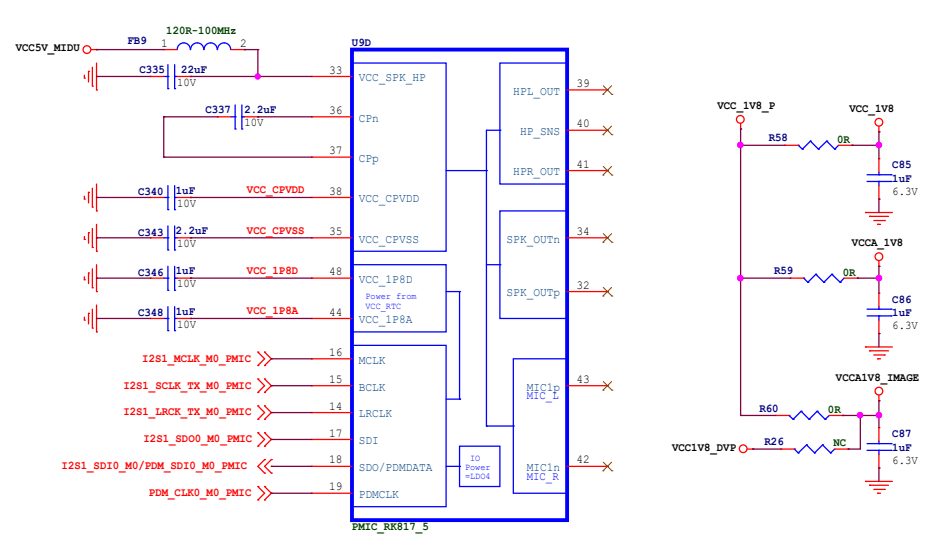
# PMIC RK817 LDO



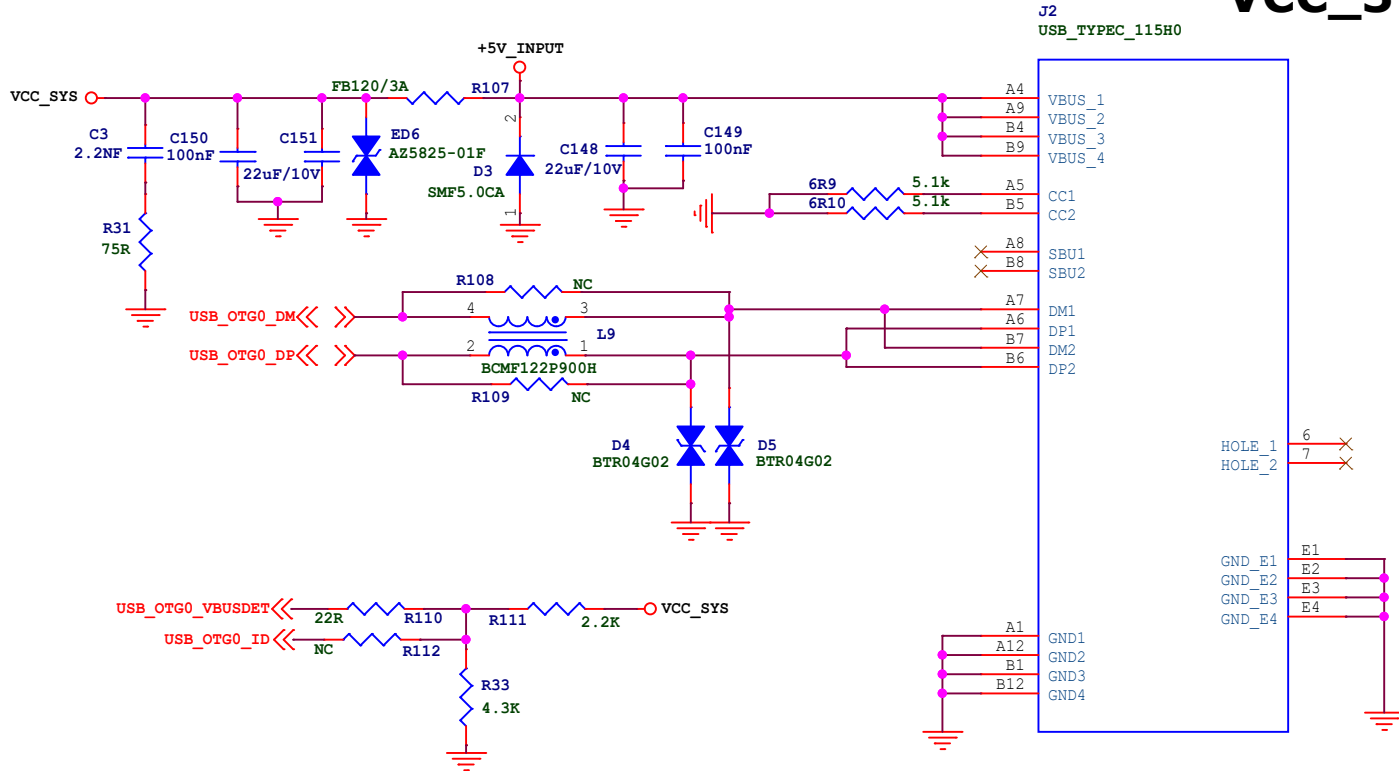
# PMIC RK817 Management



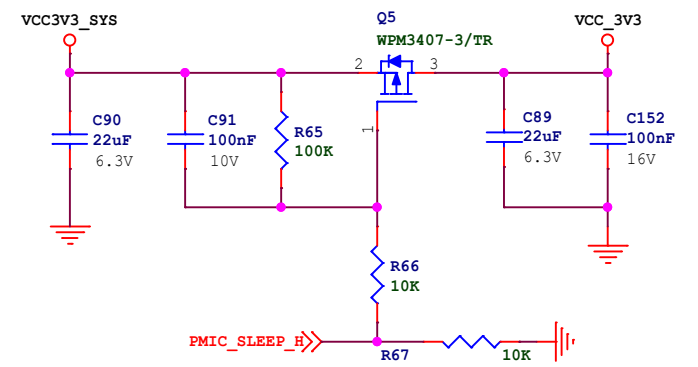
# PMIC RK817 CODEC



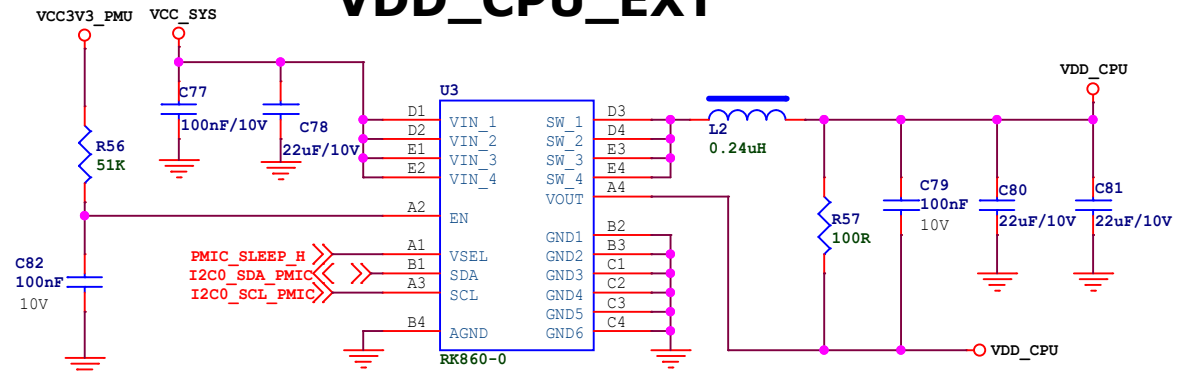
# DC 5V IN




# VCC\_3V3 (Power OFF under SLEEP)



# VDD\_CPU\_EXT





Size	Title: Zero 3W	REV
A4	Page Name: Power_DC IN	V1.12
Date: Monday, November 25, 2024		
Sheet 22 of 22		