

PAGE LIST	
PAGE	PAGE NAME
001	Revision History
002	002_Block Diagram
003	003_Power Tree
004	004_I2C Usage Diagram
005	005_DCDC & PMIC
006	006_SoC Power
007	007_SoC DCAPs
008	008_SoC DDR & DDR4
009	009_SoC SDIO & eMMC & SD
010	010_SoC RGMII & GBE PHY
011	011_SoC RMII & SPE PHY
012	012_SoC DDS & HDMI
013	013_SoC GPIO 3.3V
014	014_SoC GPIO 1.8V & Bootstrap
015	015_SoC USB & USB_A & USB_C
016	016_SoC Reset & MCU
017	017_SoC CSI & OLDI
018	018_RTC & ID & DEBUG
019	019_CC1352P
020	020_WiFi WL1807MOD
021	021_BUTTONs & LEDs
022	022_GROVE &QWIIC &MikroBus &ADC

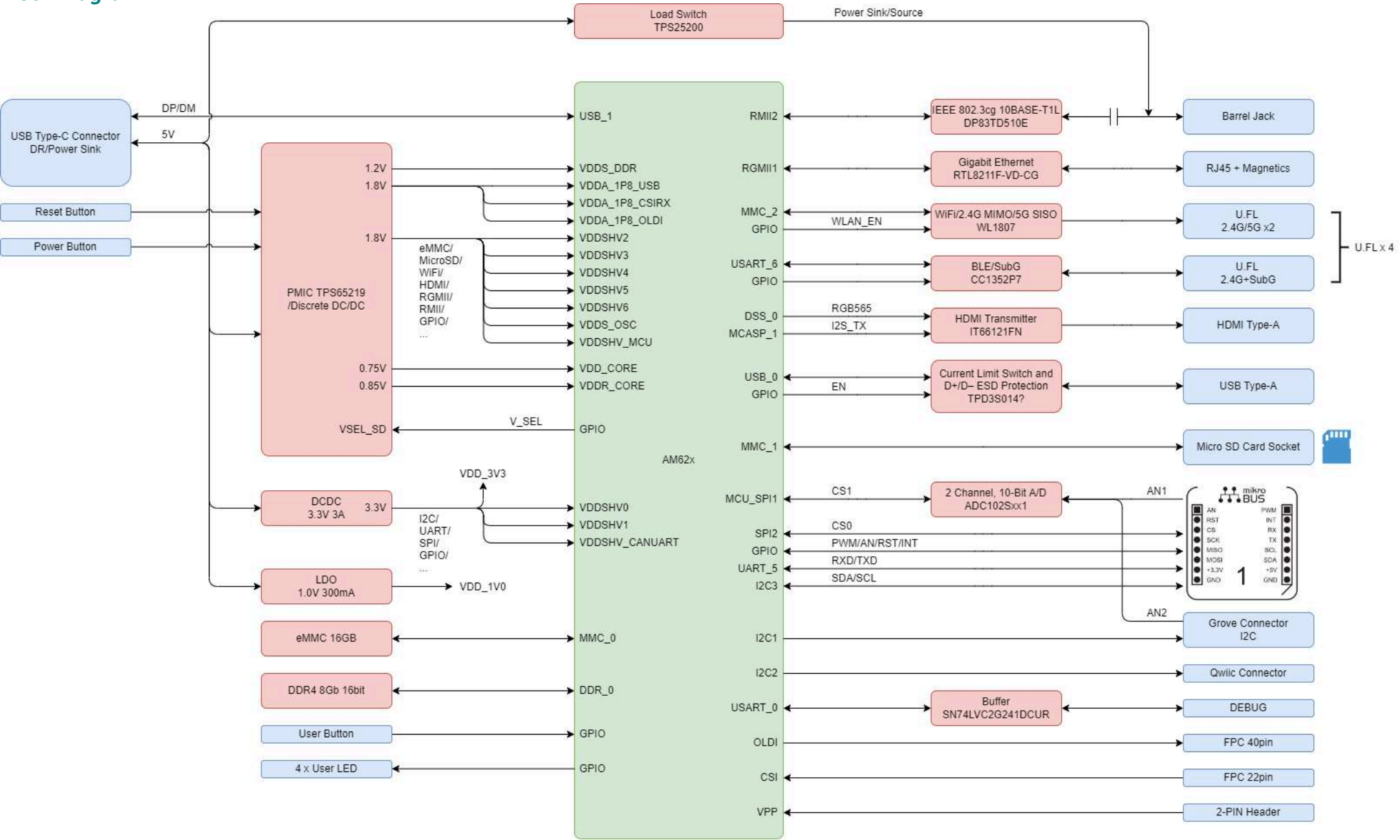
REVISION HISTORY			
VER #	DATE	DESCRIPTION OF CHANGES	AUTHOR
0.20	15 Sep. 2022	DVT1 Board release	qxn
0.21	Nov. 10, 2022	1. Modify all crystal CL value to match frequency 2. Add serial termination resistors for RGB data lane 3. Add CMC on HDMI output 4. Use WKUP_CLKOUT0 for WiFi 5. Use MCU_OBSCLK0 for GBE 6. Increase resistance on all board LEDs 7. Remove R243 TP_INT Pulldown 8. Add ferrite bead on Grove and QWIIC 9. Add feed forward capacitor on TLV62595 10. Remove ESDs on HDMI TMDS signals	qxn
0.22	Dc. 12, 2022	1. Add feed forward capacitor on TLV62595 2. Remove ESDs on HDMI TMDS signals 3. Add ferrite bead on HDMI shield 4. Change R16 and R80 to 0R 5. Change pullup resistors to 2.2k on I2C0-I2C3 6. Change FB30 and FB31 to 0R	qxn
1.0	Dc. 27, 2022	1. Add testpoint to QWIIC 2. Add serial resistors on I2C0 - I2C3 SCL 3. Add more capacitors on VDD_1V2 4. Add 0R on HDMI shield 5. Add series resistor on SPE LED control	qxn

Main

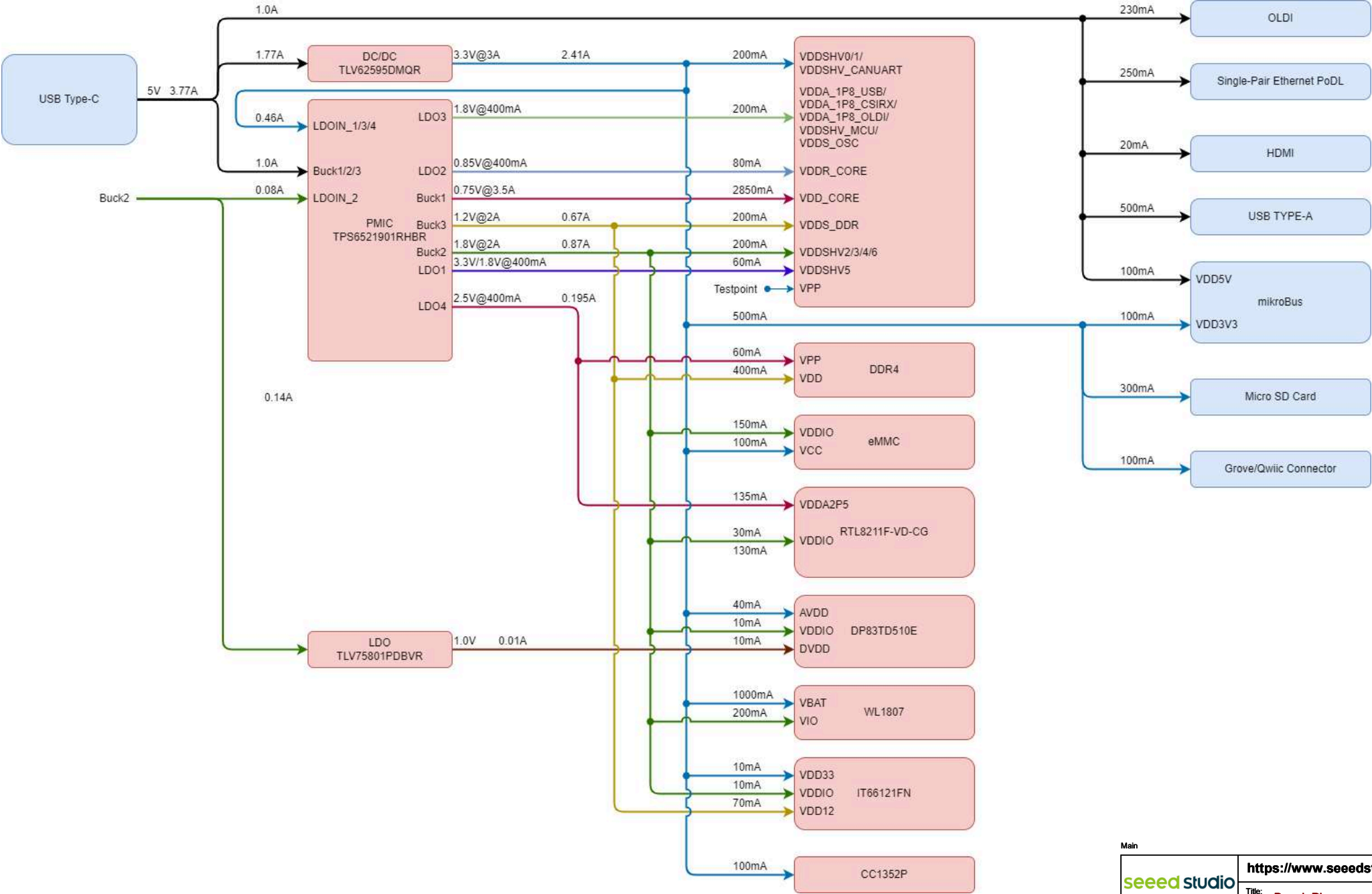


seeed studio		https://www.seeedstudio.com	
		Title: BeaglePlay	
Size: A3	Document Number:	001_Revision History	Rev: v1.0
Draw By: qxn	Date: Monday, March 06, 2023	Sheet: 1 of 22	

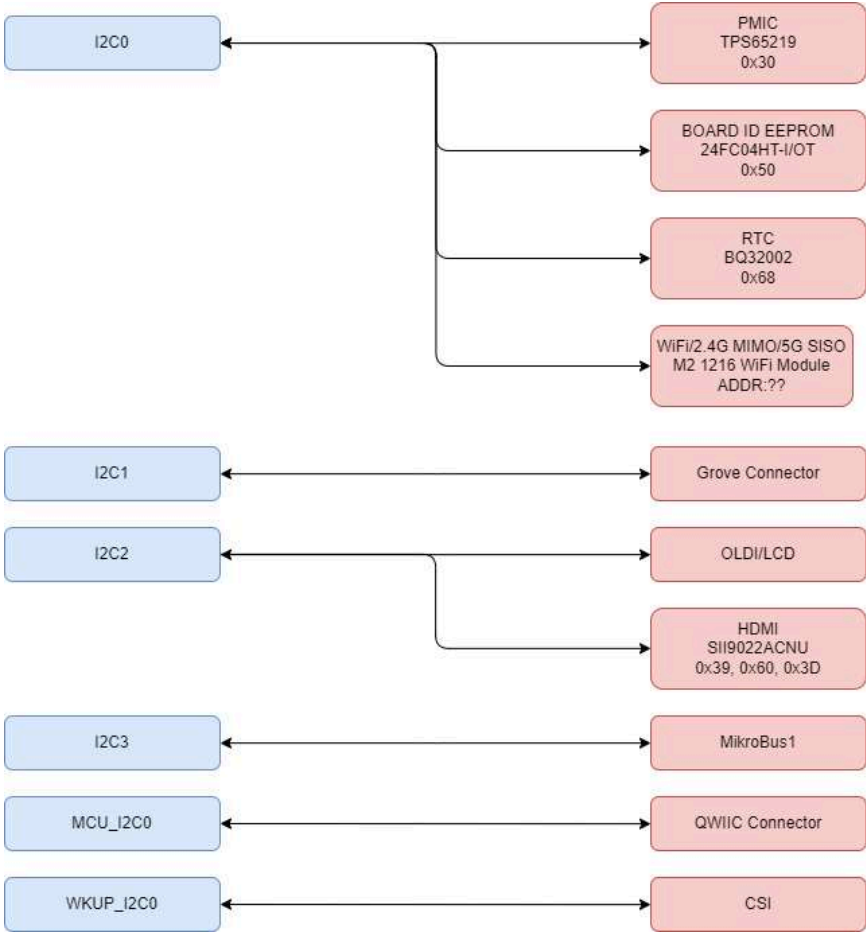
Block Diagram



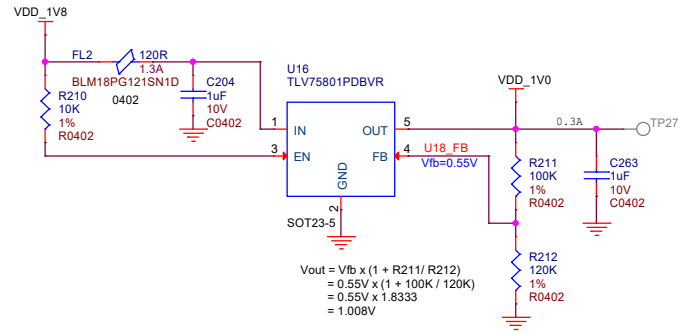
Power tree



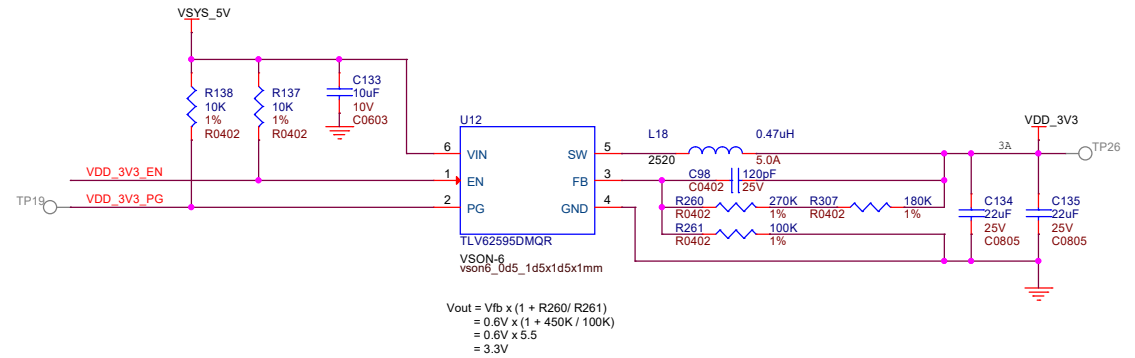
I2C Usage Diagram



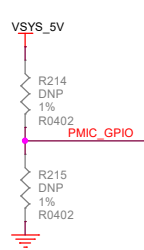
LDO 1V0



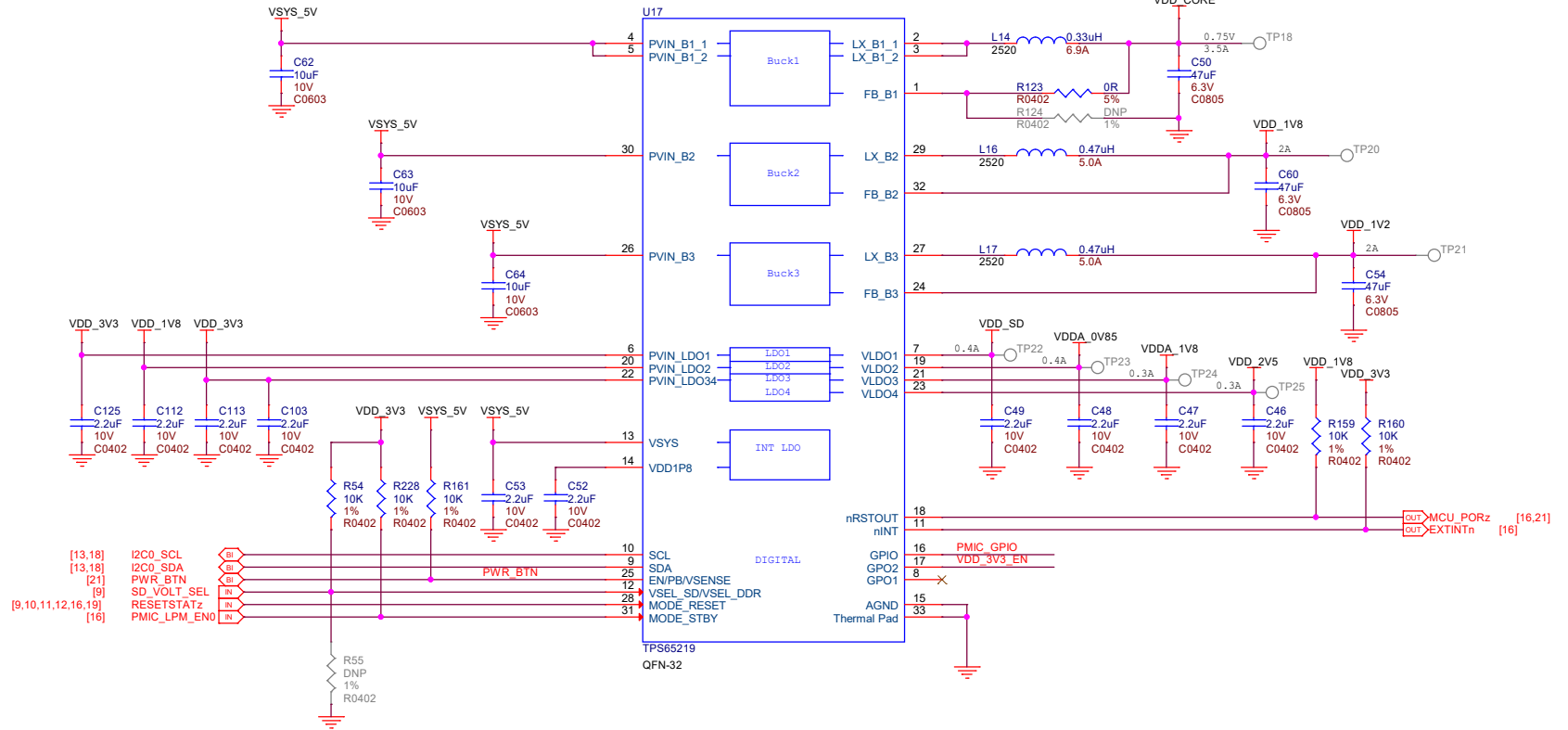
DCDC 3V3



PMIC_Strap option

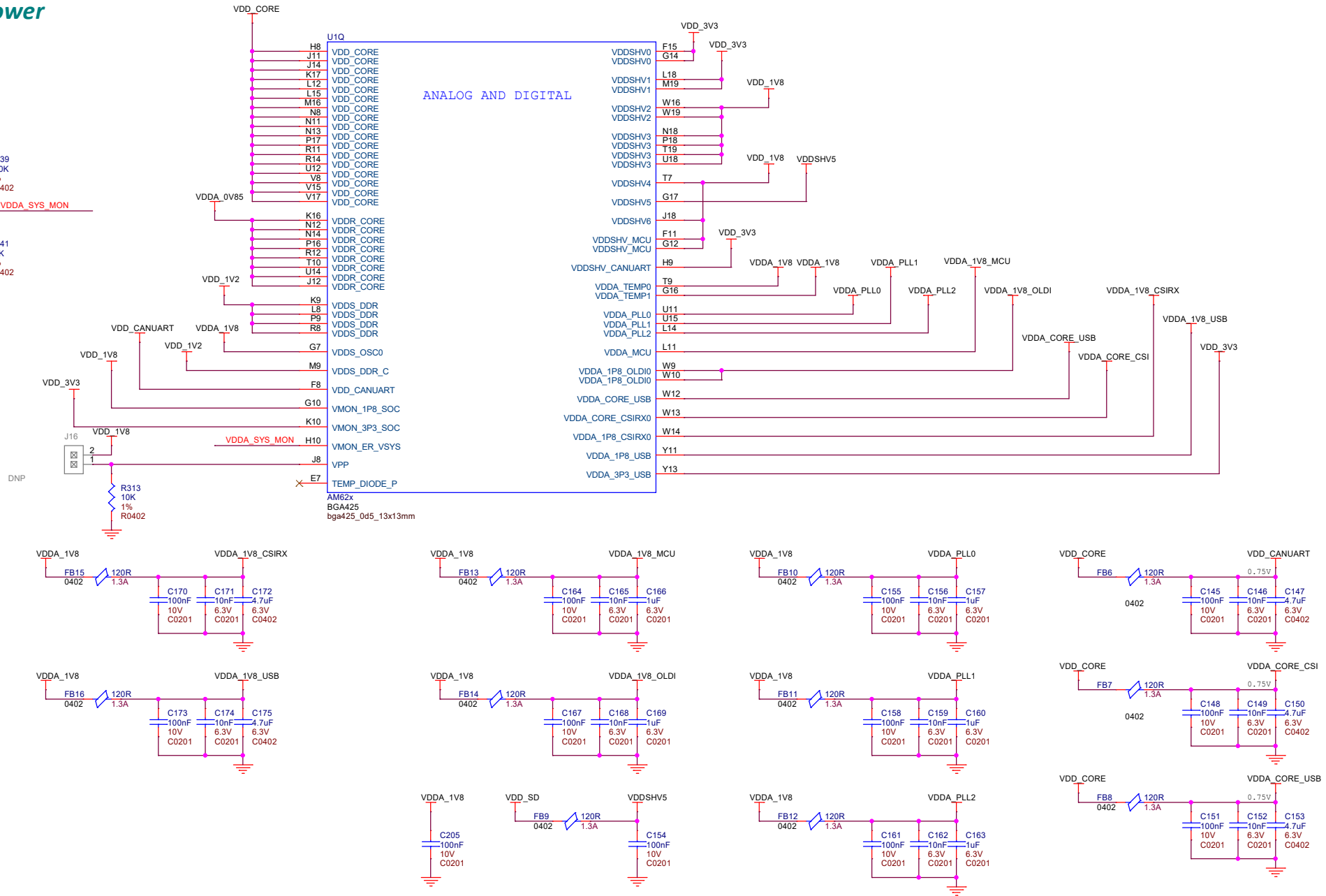


PMIC



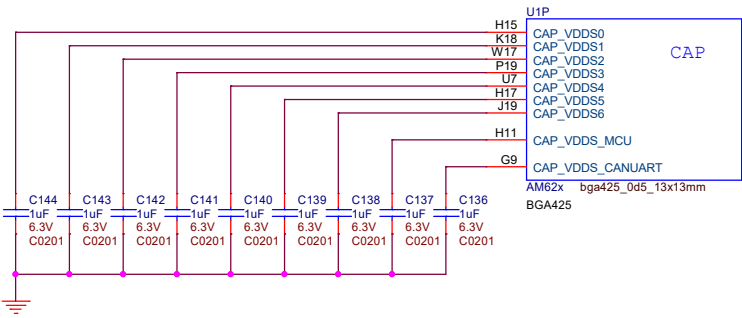
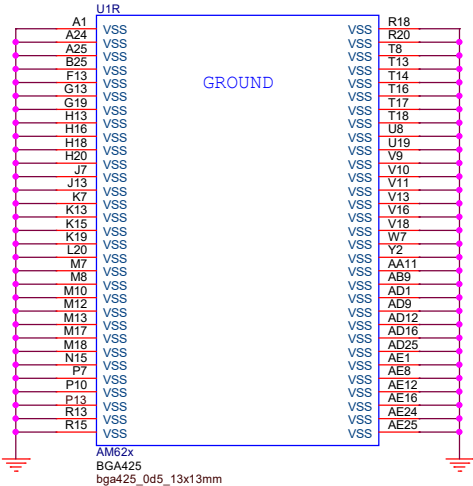
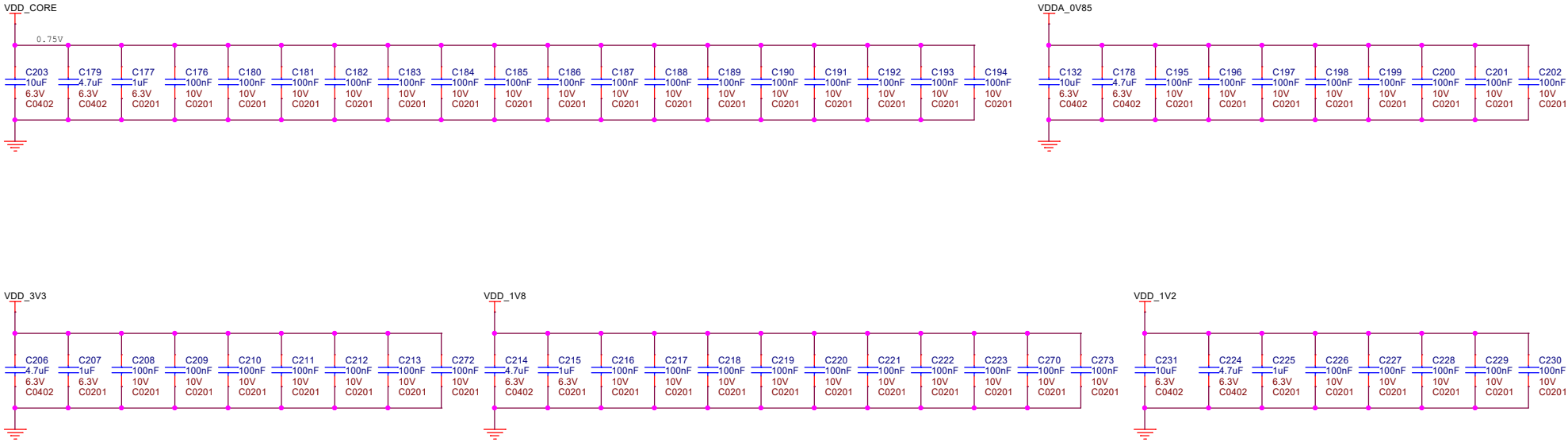
Main

		https://www.seeedstudio.com	
Title:		BeaglePlay	
Size: A3	Document Number:	005_DCDC & PMIC	Rev: v1.0
Draw By: qm	Date: Tuesday, December 27, 2022	Sheet: 5 of 22	

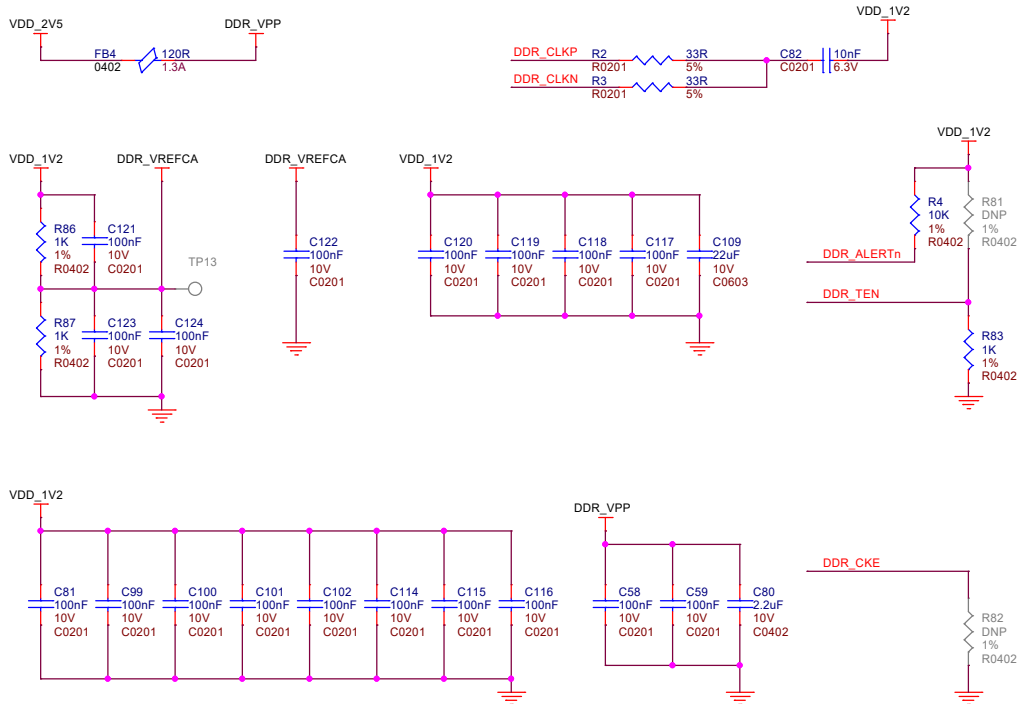
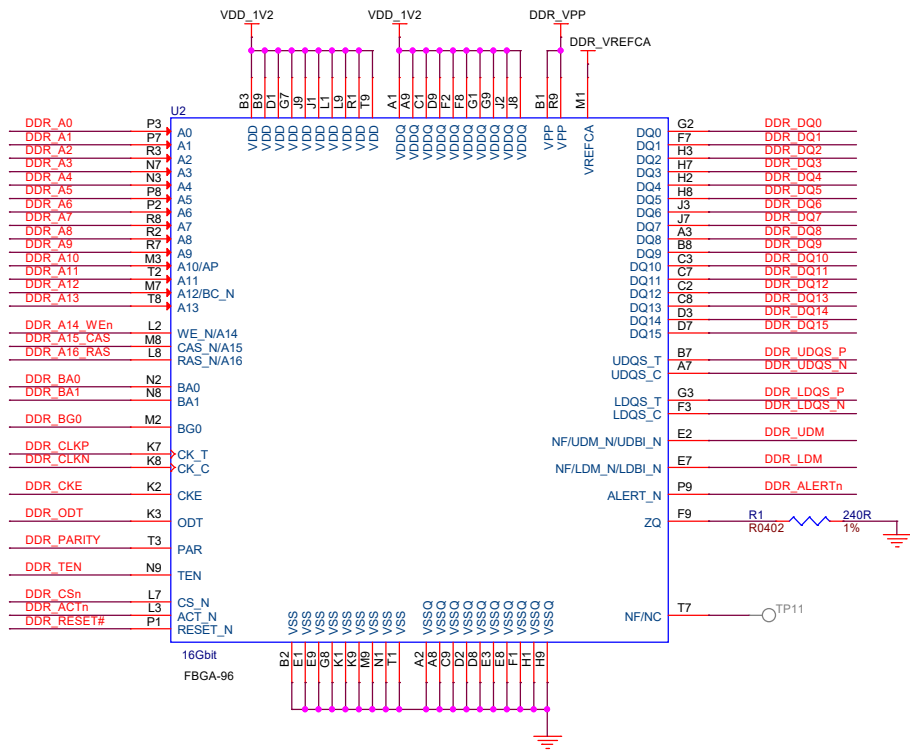


		https://www.seeedstudio.com	
		Title: BeaglePlay	
Size: A3	Document Number:	006_SoC Power	Rev: v1.0
Draw By: qxn	Date:	Tuesday, December 27, 2022	Sheet: 6 of 22

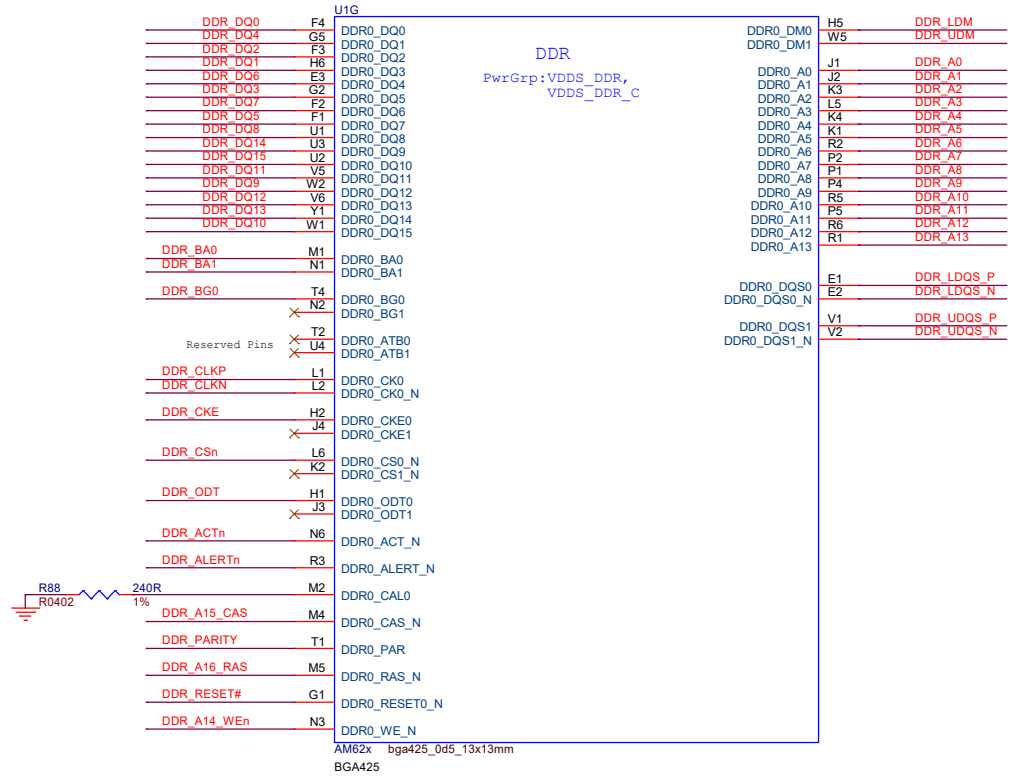
SoC DCAPs



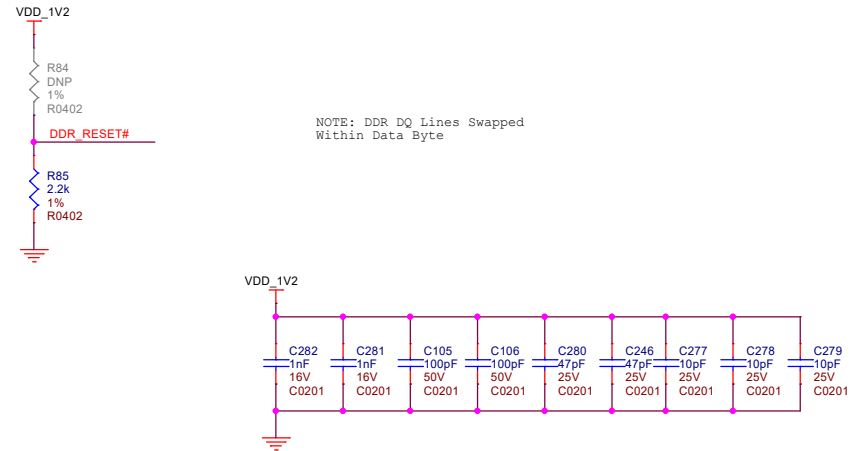
DDR4



SoC DDR controller

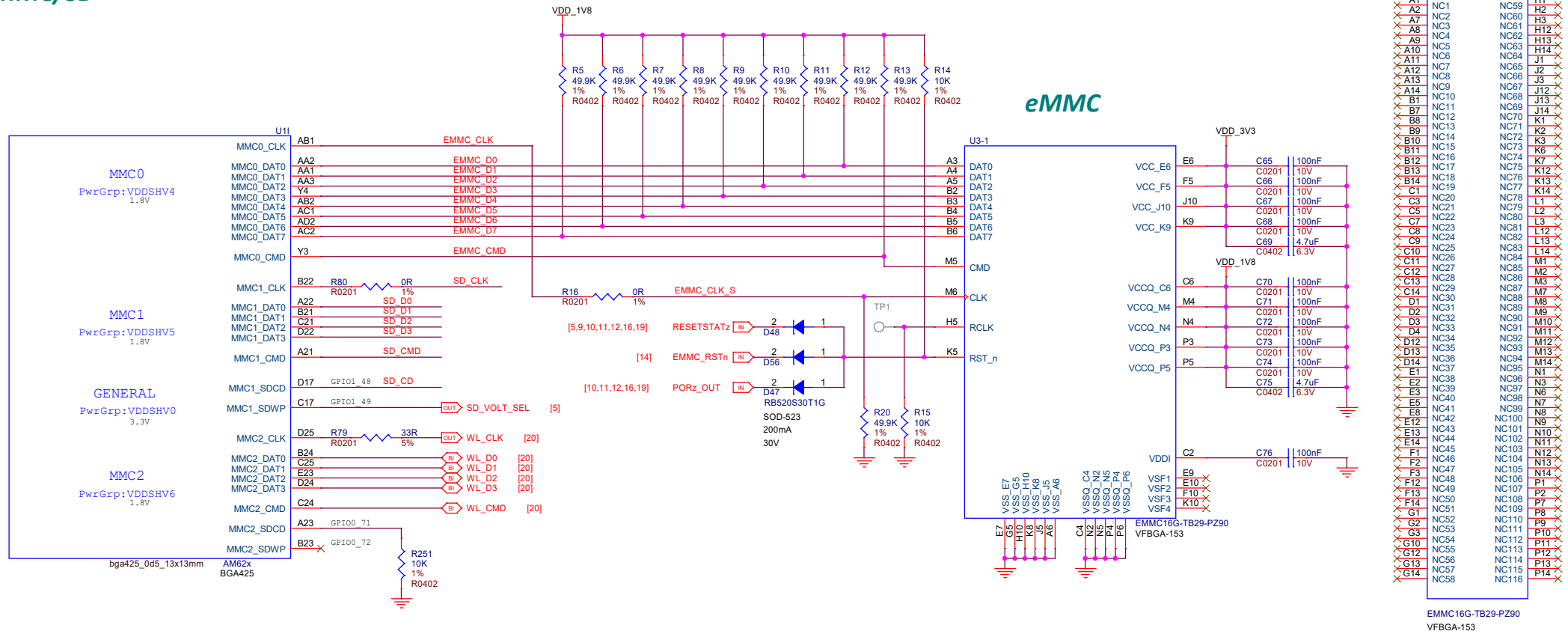


NOTE: DDR DQ Lines Swapped
Within Data Byte

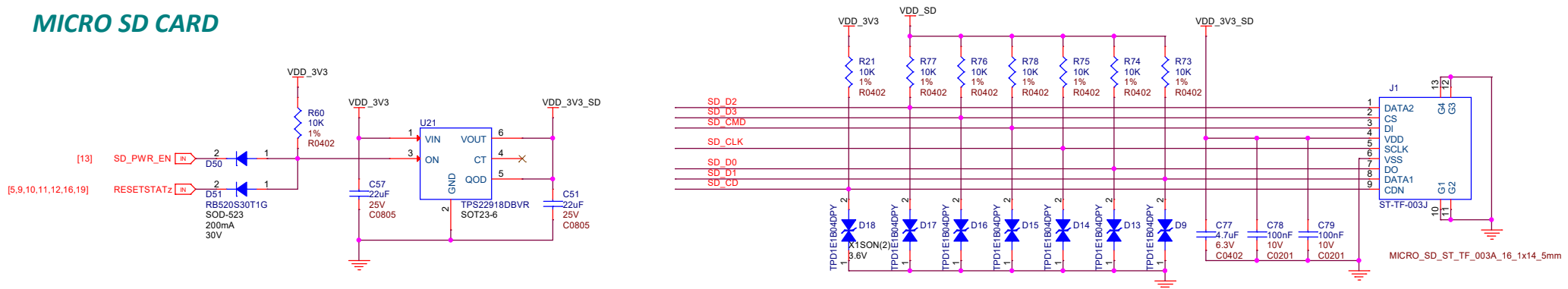


Main

eMMC/SD



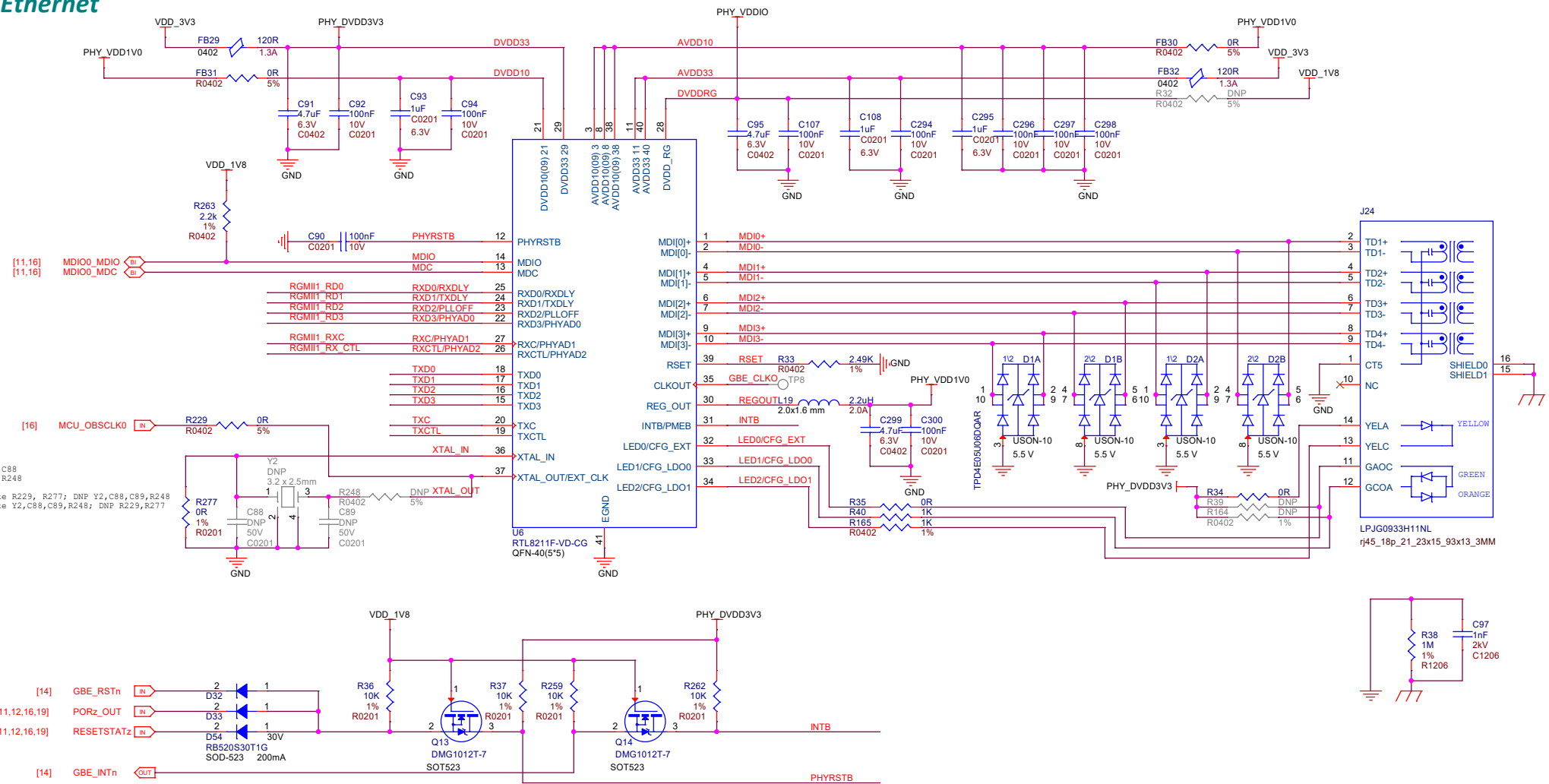
MICRO SD CARD



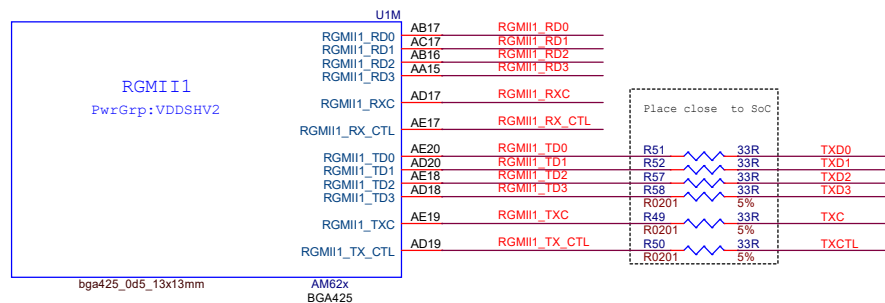
Main

		https://www.seeedstudio.com	
		Title: BeaglePlay	
Size: A3	Document Number: 009_SoC SDIO & eMMC & SD	Rev: v1.0	
Draw By: qxm	Date: Tuesday, December 27, 2022	Sheet: 9 of 22	

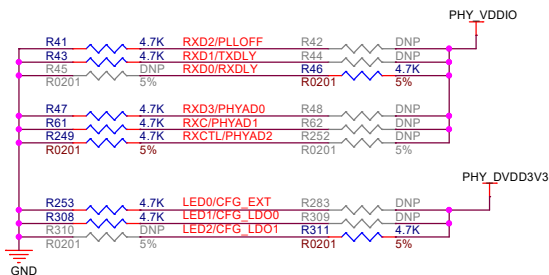
Gigabit Ethernet



SoC MAC 1.8V

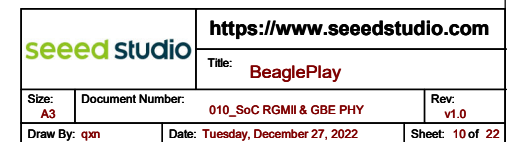


Strap options

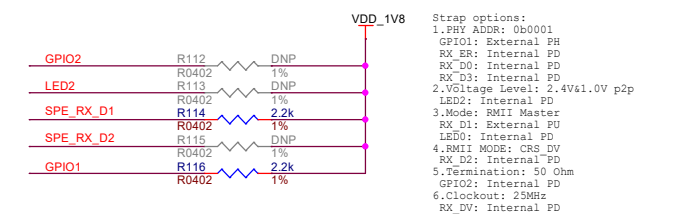


```
CFG_EXT = 0, CFG_LDO[1:0] = 10 : Internal 1.8V
PHY_AD[2:0] = 000: PHY Addr 000
PHY_PLLOF = 0 : Enable PLL
PHY_TXDLY = 0 : TX delay: 0ns
PHY_RXDLY = 1 : RX delay: 2ns
```

Main

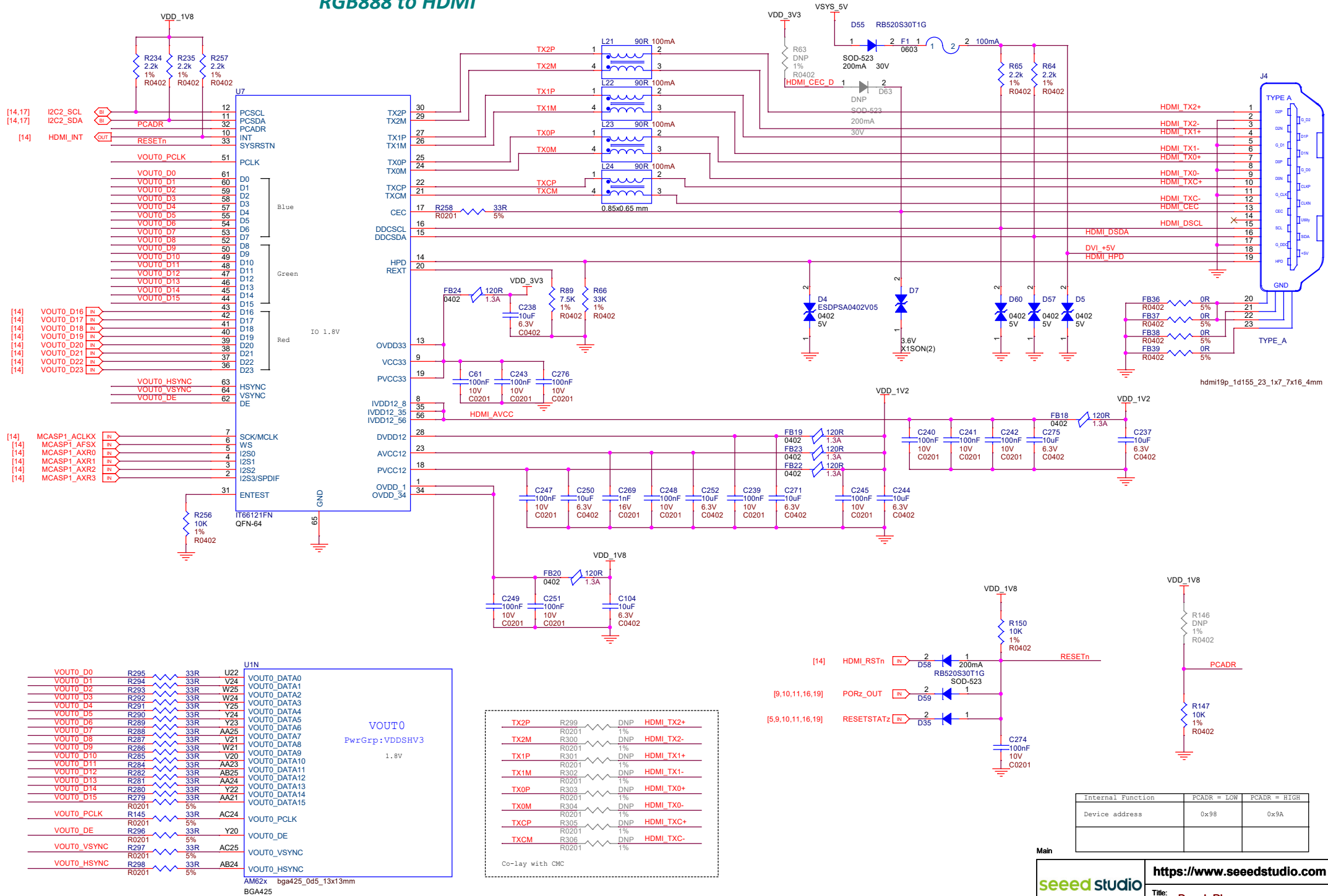


SoC MAC 1.8V



Main

RGB888 to HDMI



Main

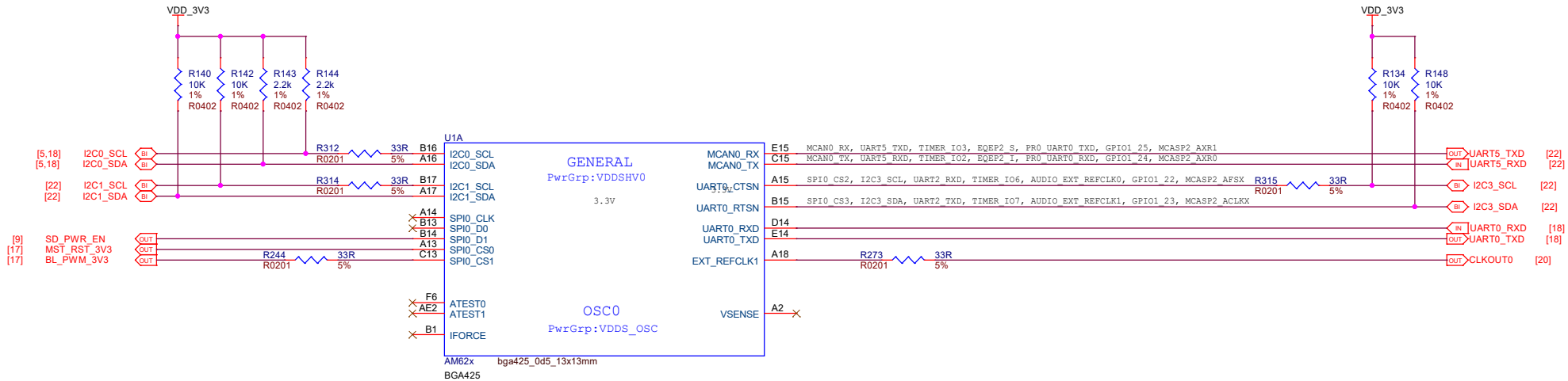
<https://www.seeedstudio.com>

Title: BeaglePlay

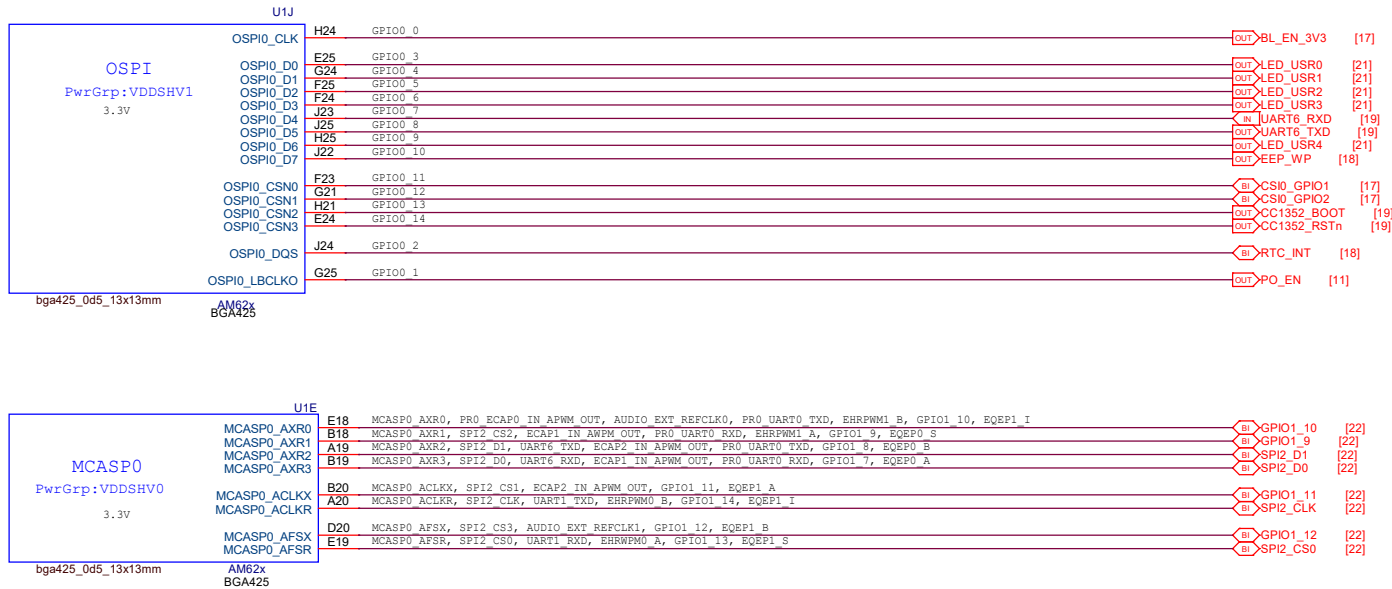
Size: A3 **Document Number:** 012_SoC DDS & HDMI **Rev:** v1.0

Draw By: qxm **Date:** Tuesday, December 27, 2022 **Sheet:** 12 of 22

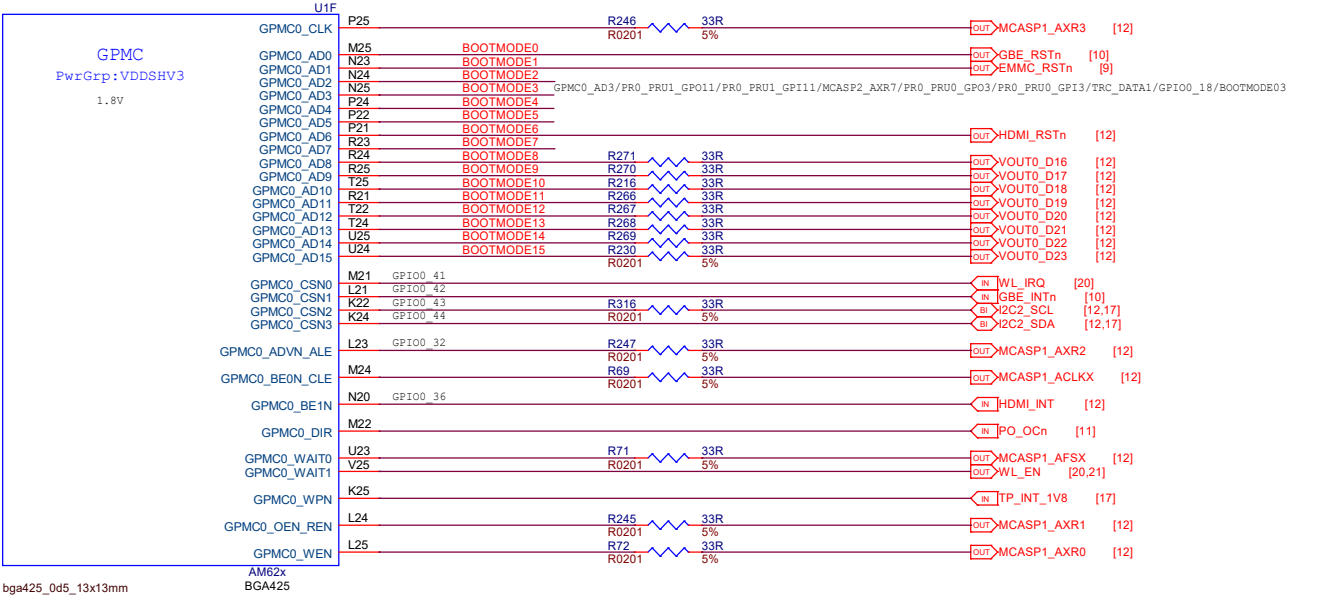
SoC GPIO 3.3V



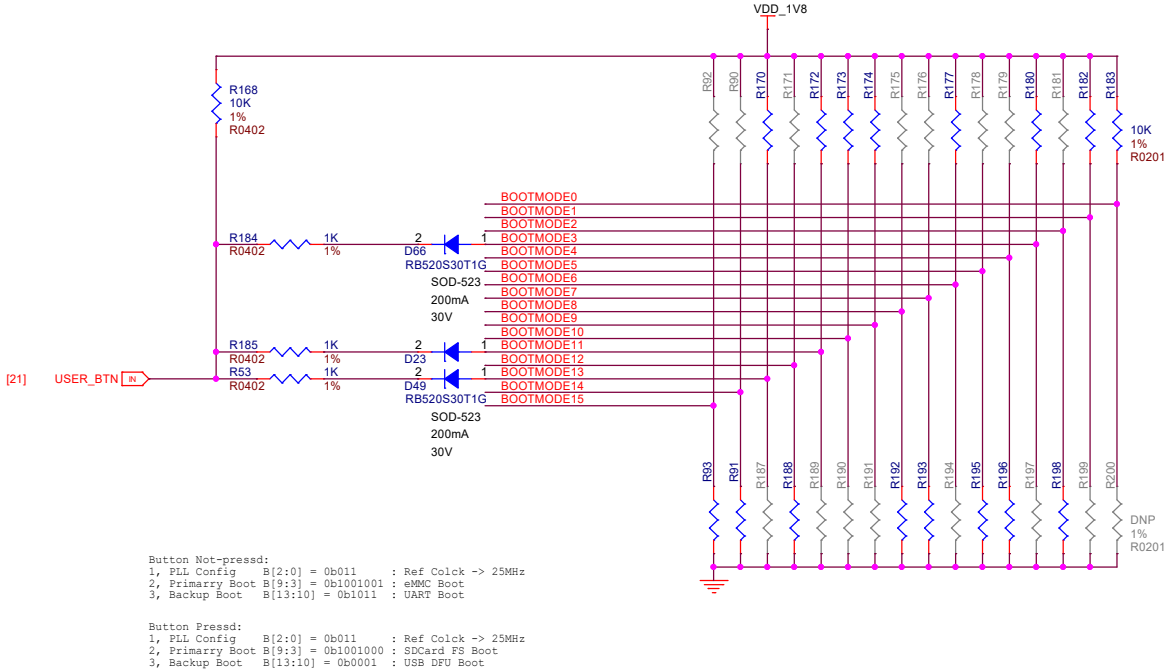
SoC GPIO 3.3V



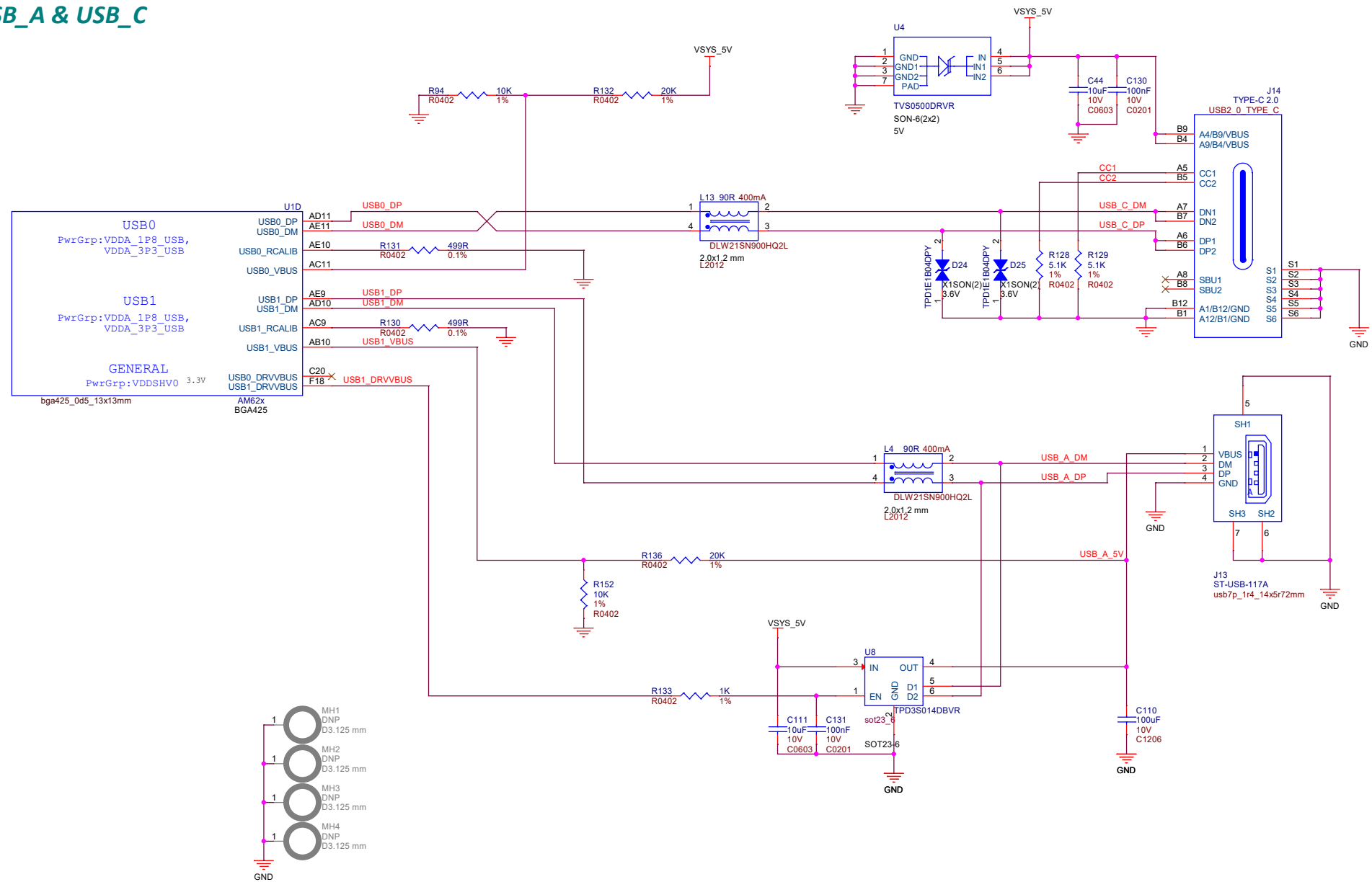
SoC GPIO 1.8V



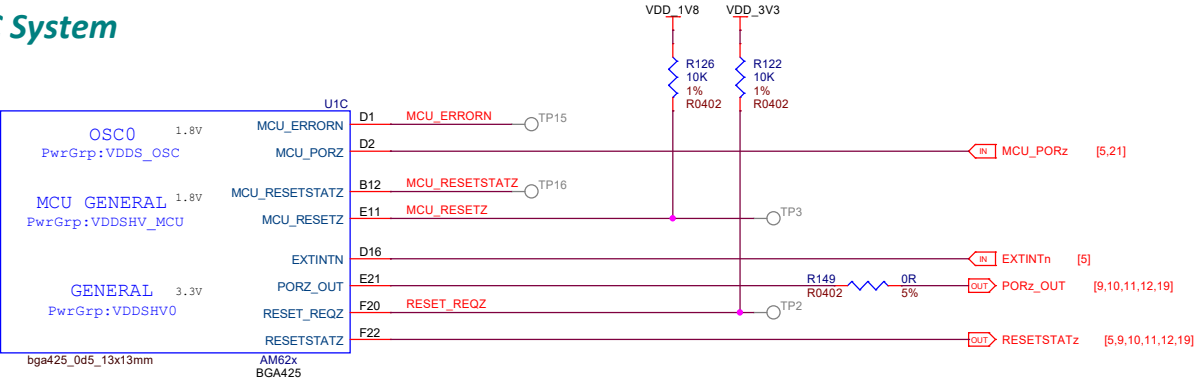
Bootstrap



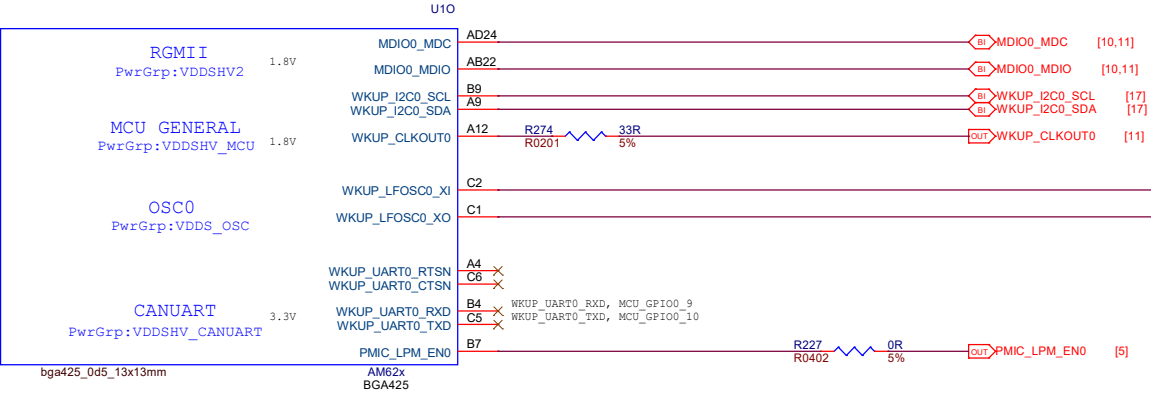
USB_A & USB_C



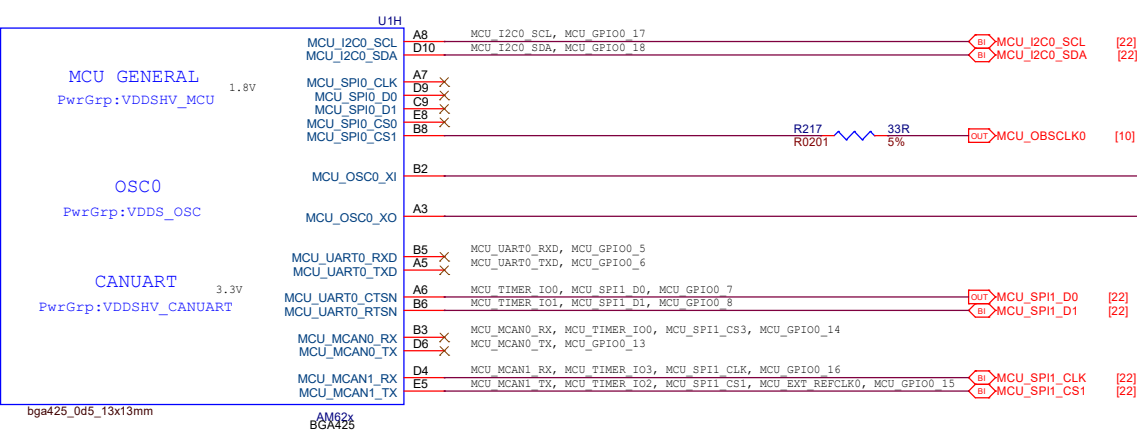
SoC System



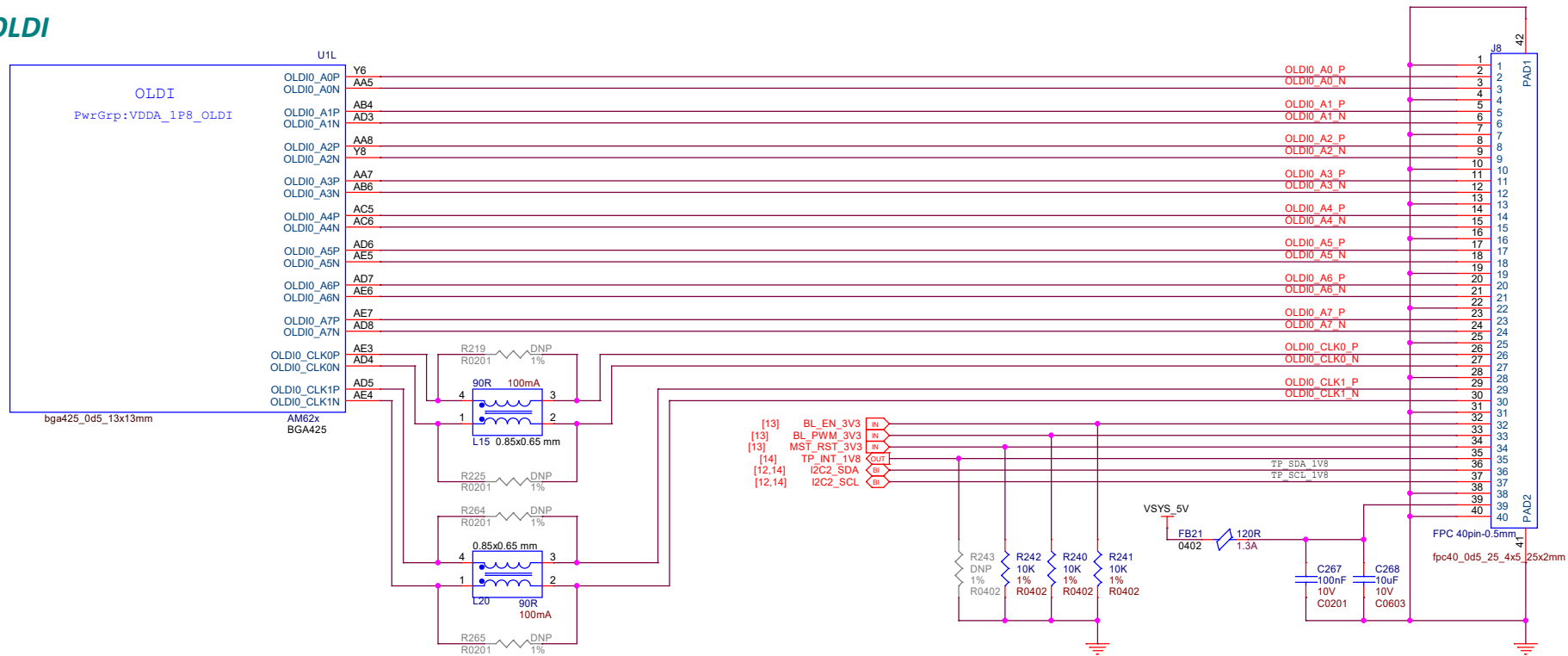
WKUP Domain



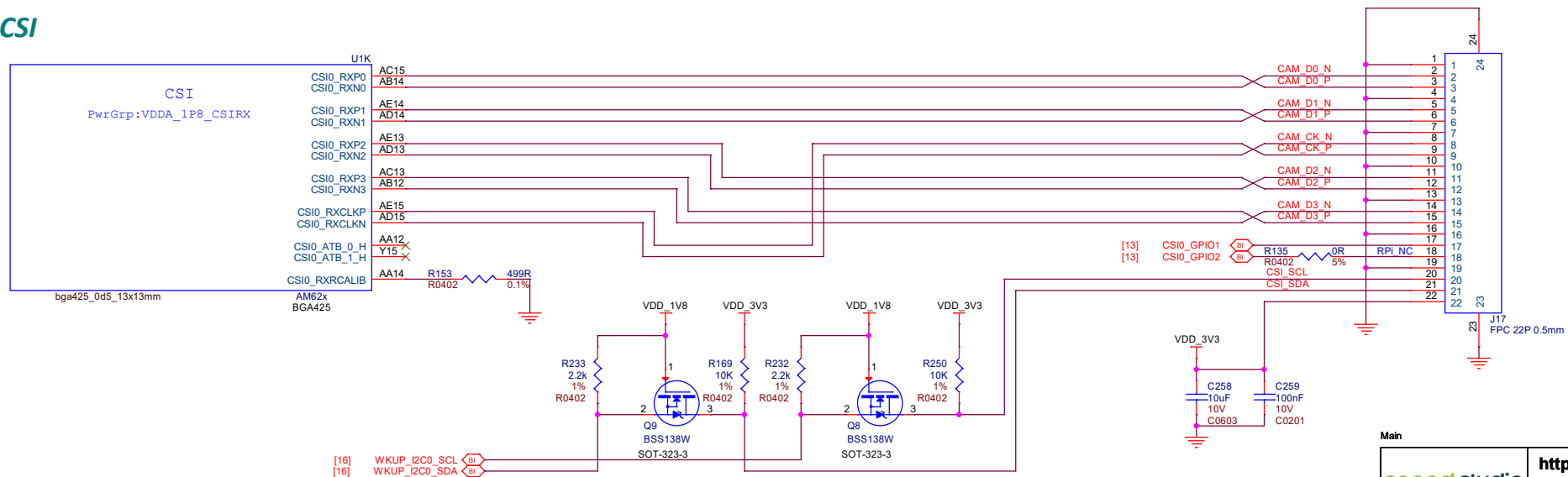
MCU Domain



OLDI



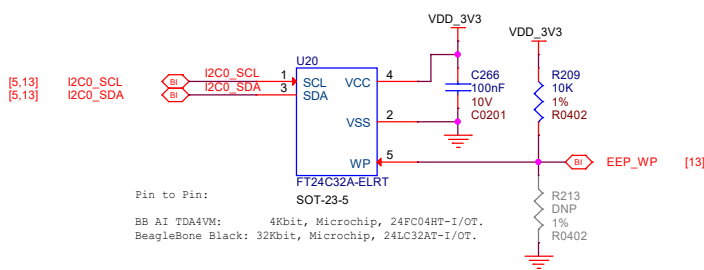
CSI



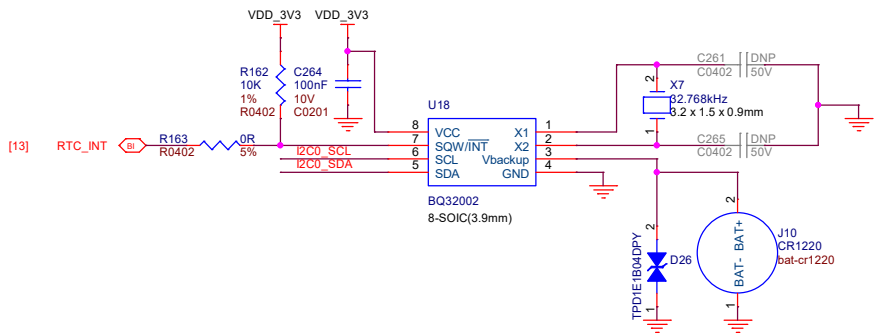
Main

		https://www.seeedstudio.com	
Title: BeaglePlay		Rev: v1.0	
Size: A3	Document Number: 017_SoC CSI & OLDI	Rev: v1.0	
Draw By: qm	Date: Tuesday, December 27, 2022	Sheet: 17 of 22	

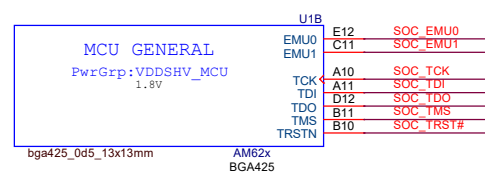
BOARD ID EEPROM 4Kbit



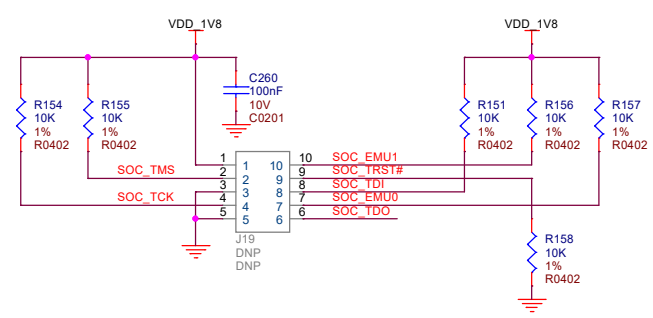
RTC



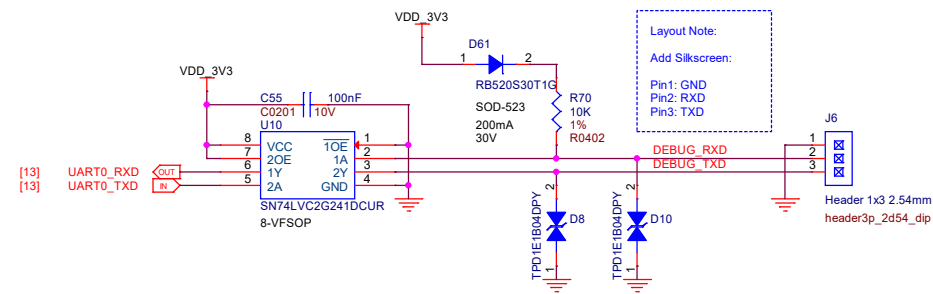
JTAG



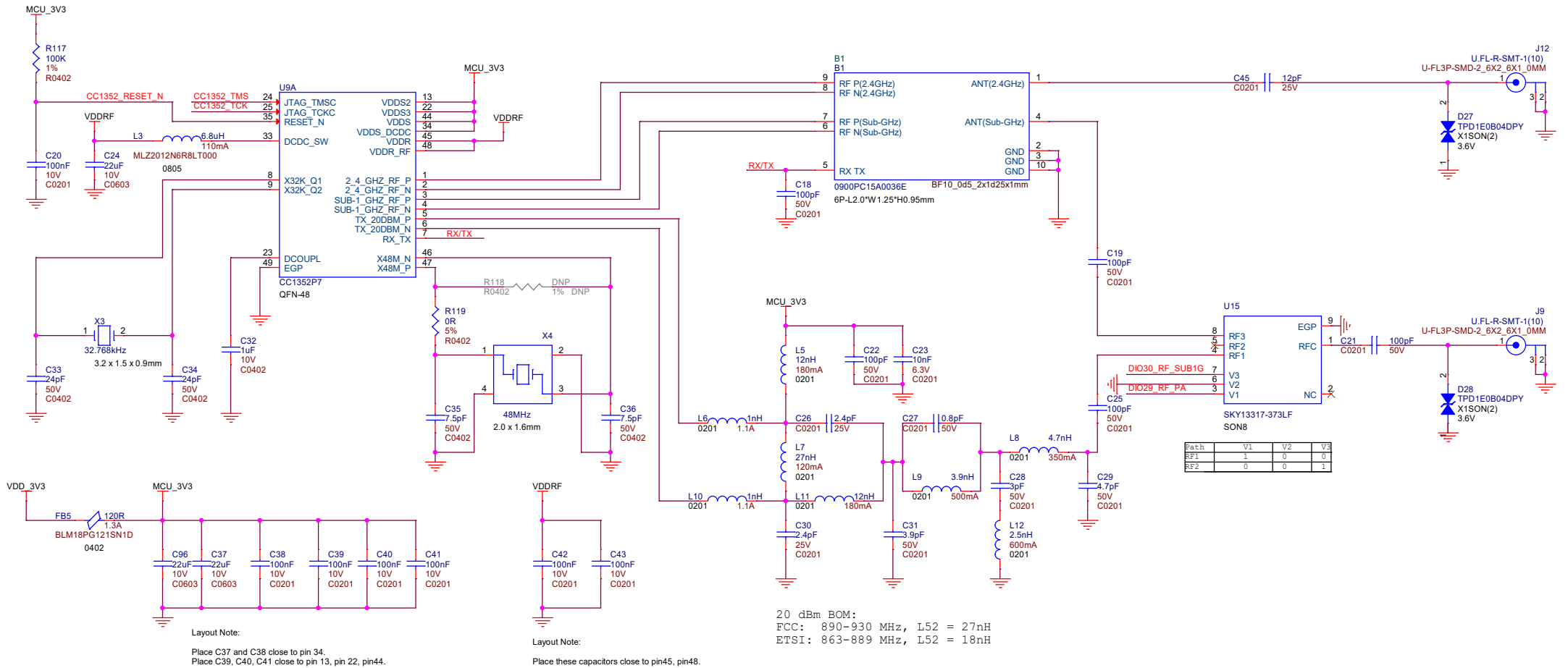
Tag-Connect



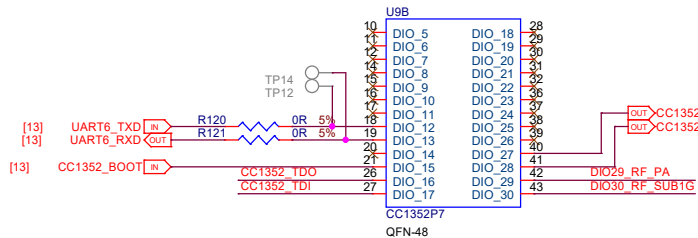
Debug



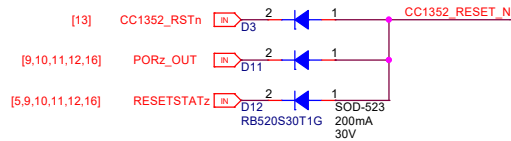
CC1352P RF



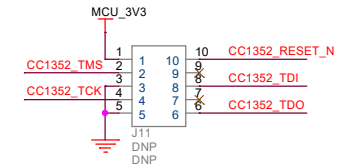
CC1352P GPIO



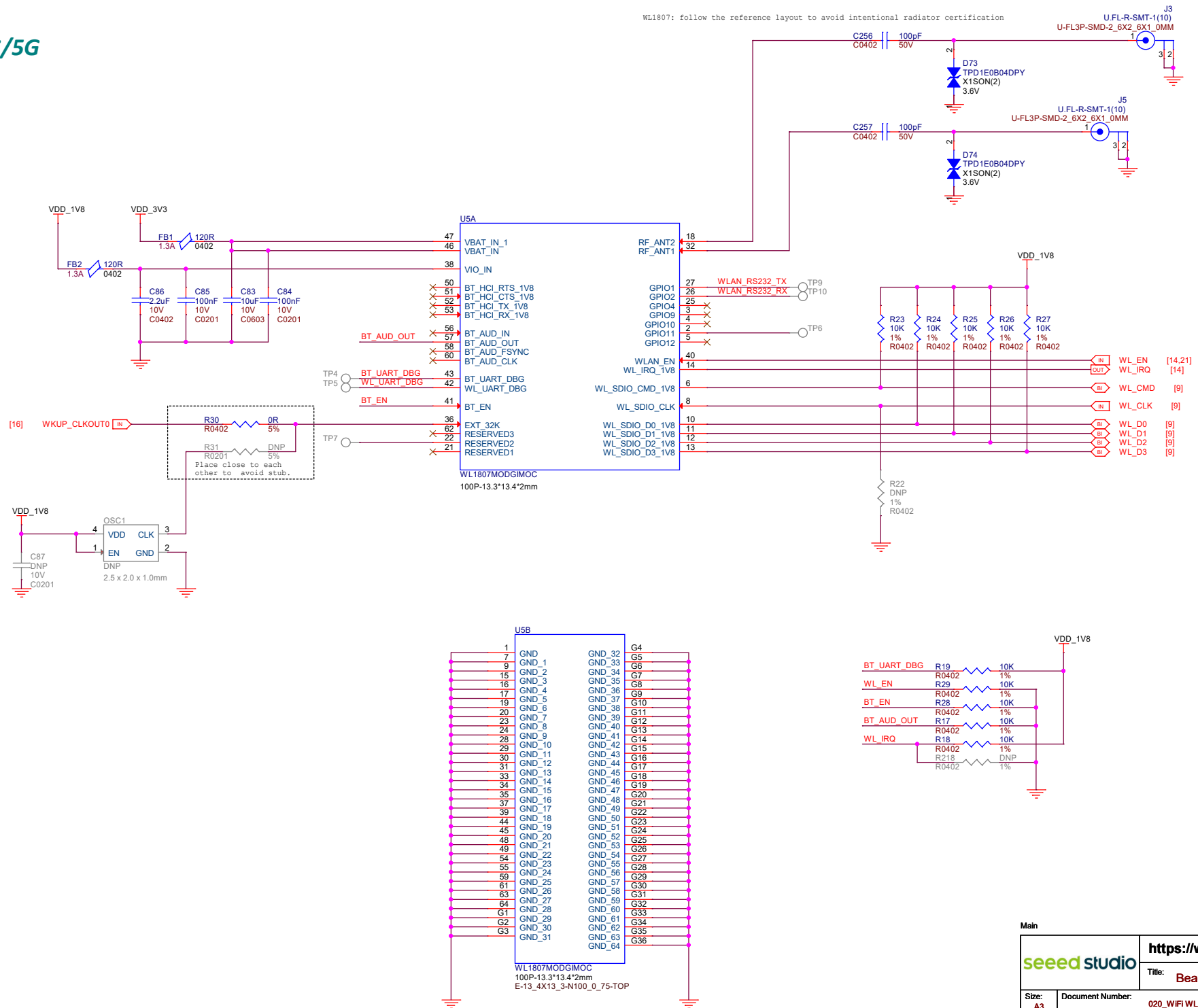
RESET



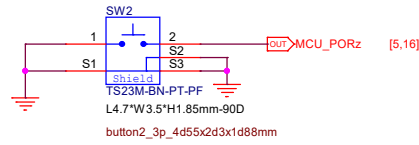
CC1352P JTAG Tag-Connect



WiFi 2.4G/5G

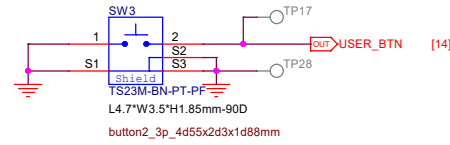


Reset Button

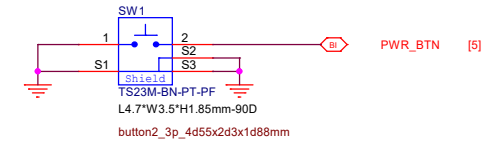


User Button

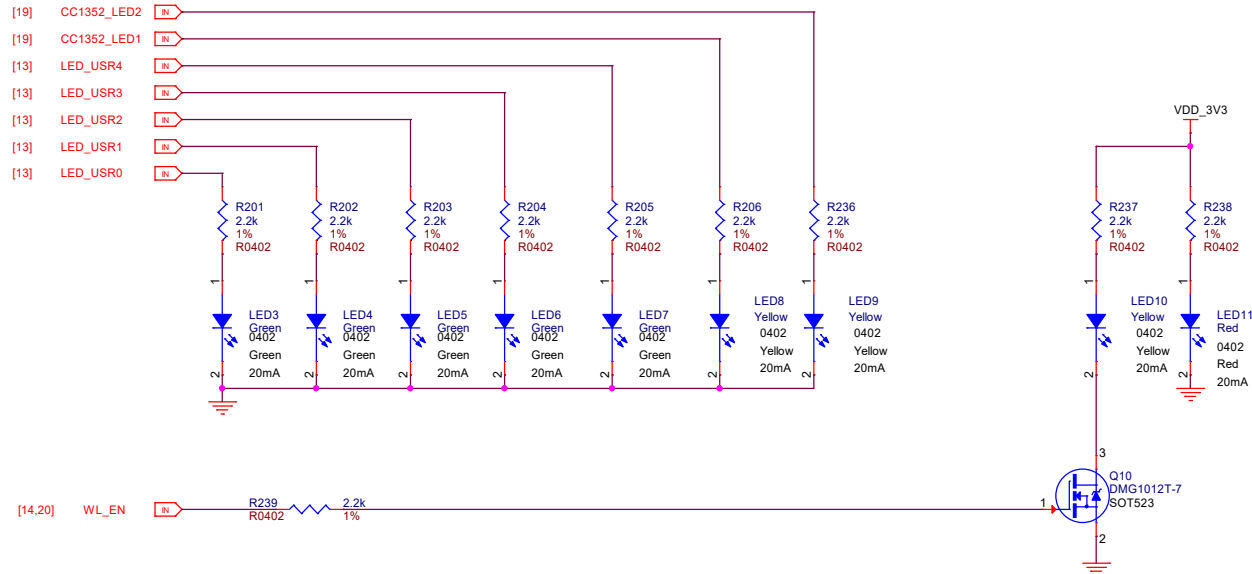
Layout Noete:
Place TP17 and TP28 close to each othter, keep 2.54mm spacing.



Power Button



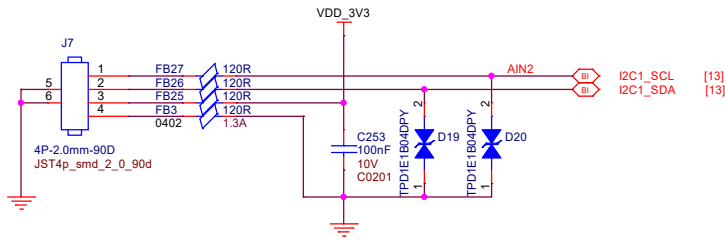
LEDs



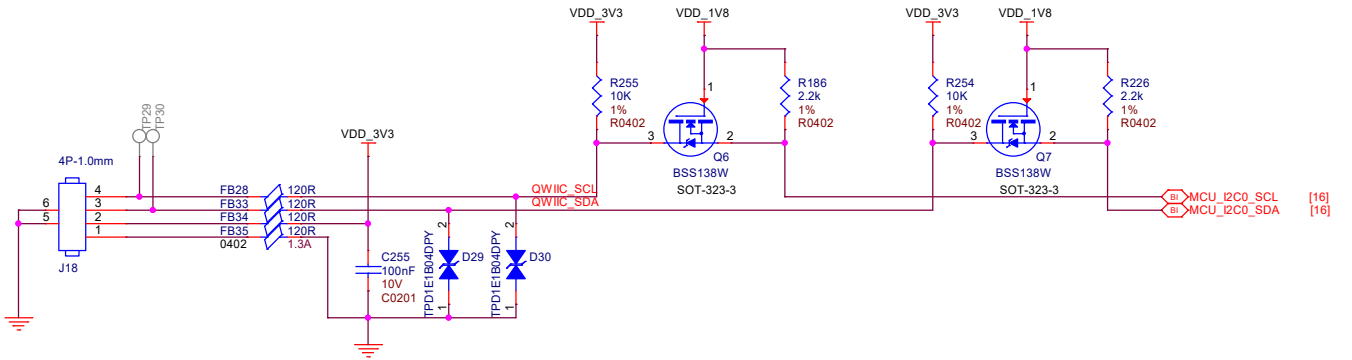
Main

seeed studio		https://www.seeedstudio.com	
Title:		BeaglePlay	
Size: A3	Document Number:	021_BUTTONS & LEDs	Rev: v1.0
Draw By: qxm	Date: Tuesday, December 27, 2022	Sheet: 21 of 22	

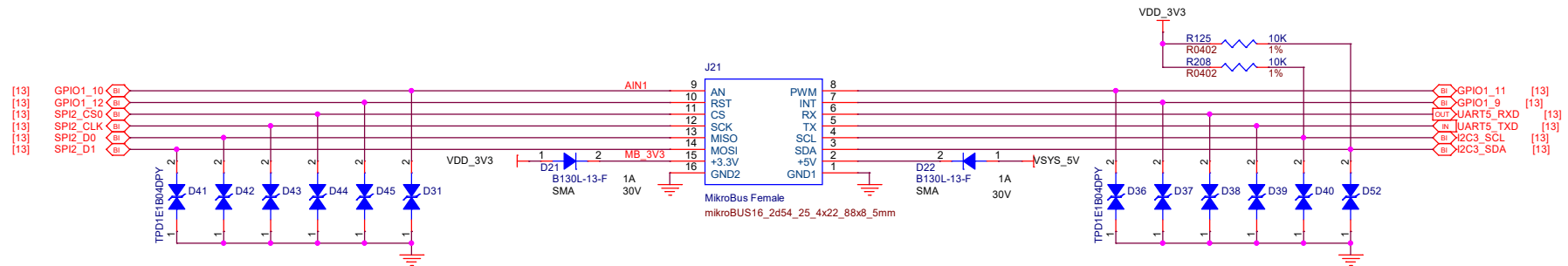
Grove Connector



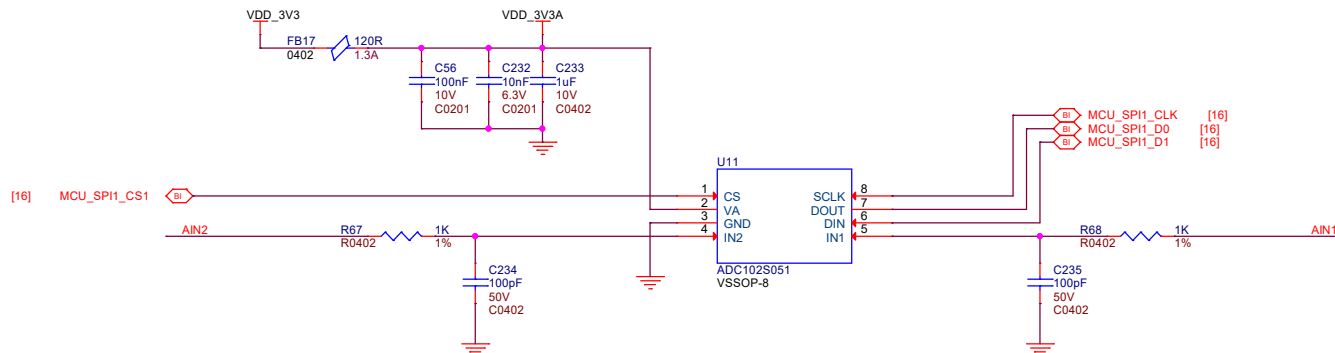
QWIIC Connector



MikroBus



ADC



Main

seeed studio		https://www.seeedstudio.com	
Title:		BeaglePlay	
Size: A3	Document Number:	022_GROVE & QWIIC & MikroBus & ADC	Rev: v1.0
Draw By: qxm	Date: Tuesday, December 27, 2022	Sheet: 22 of 22	