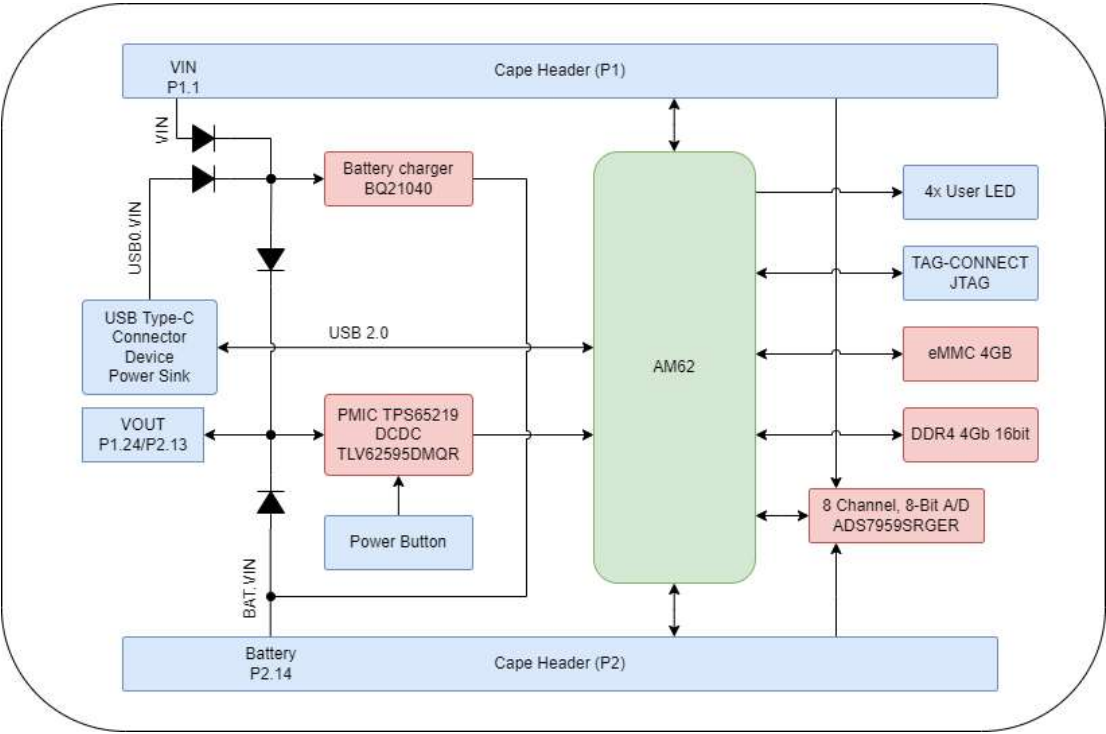


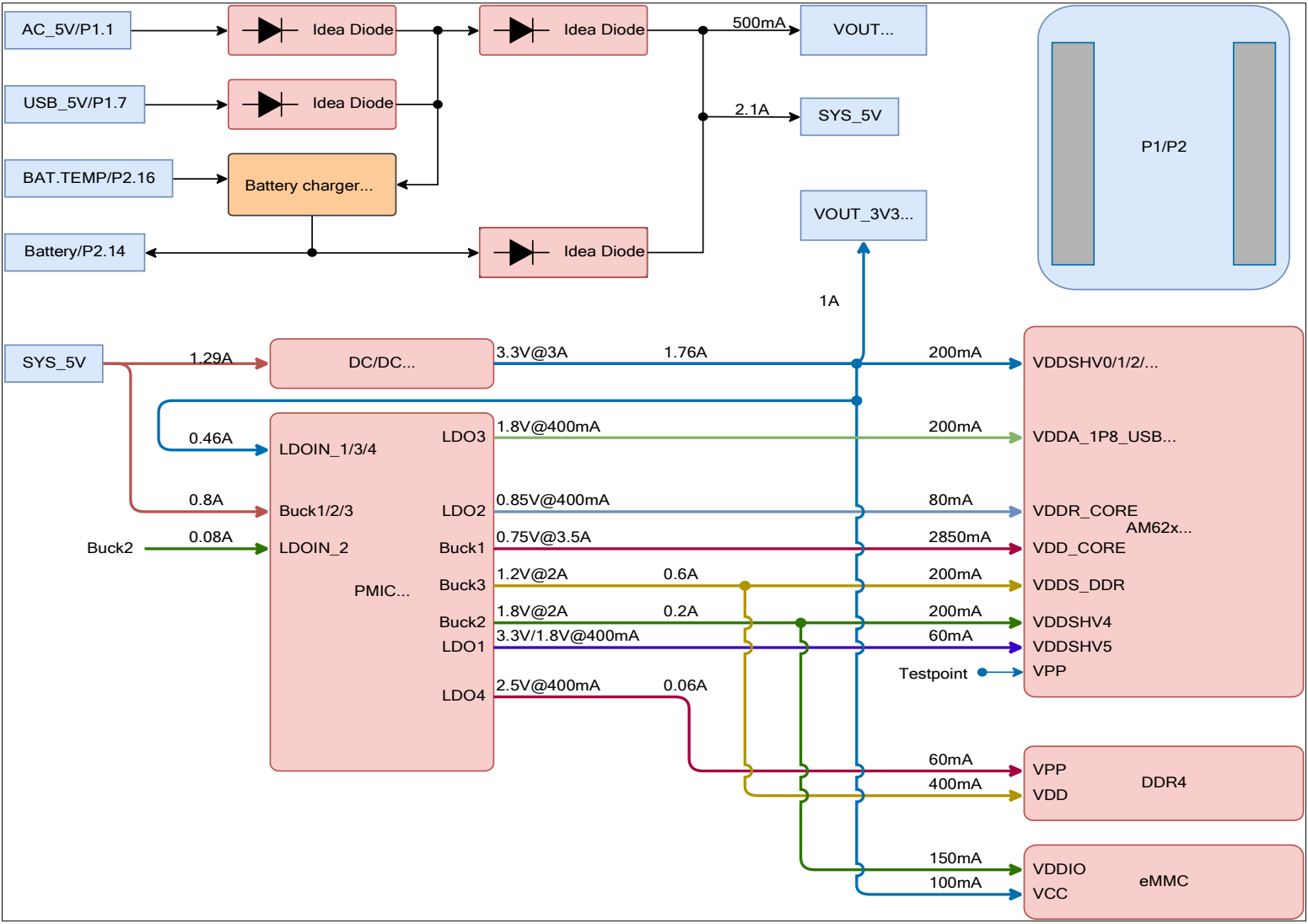
PAGE LIST	
PAGE	PAGE NAME
001	Revision History
002	002_Block Diagram
003	003_Power Tree
004	004_I2C Usage Diagram
005	005_PMIC & Charger
006	006_SoC Power
007	007_SoC DCAPs
008	008_SoC DDR & DDR4
009	009_SoC SDIO & eMMC & SD
010	010_SoC WKUP/MCU/System
011	011_SoC Bootstrap
012	012_SoC RGMII/OSPI
013	013_SoC GPIO/MCASP/VOUT
014	014_SoC USB/OLDI/CSI & USB C
015	015_SoC JTAG & MISC
016	016_BP P1 & P2

REVISION HISTORY			
VER #	DATE	DESCRIPTION OF CHANGES	AUTHOR
0.1	28 Oct. 2022	First release	qxn
0.2	1 Nov. 2022	1. Remove unused nets 2. Use WKUP_I2C0 for PMIC 3. Add pull-down to VPP 4. Move eMMC_RSTn to GPIO0_7 5. Add USER button for boot mode seletion 6. Try to add a CSI connector 7. Using processor boall numbers for signal name on P1 and P2 8. Change SoC to AM6232, change eMMC to 4GB, change DDR to 512MB	qxn
			qxn
			qxn

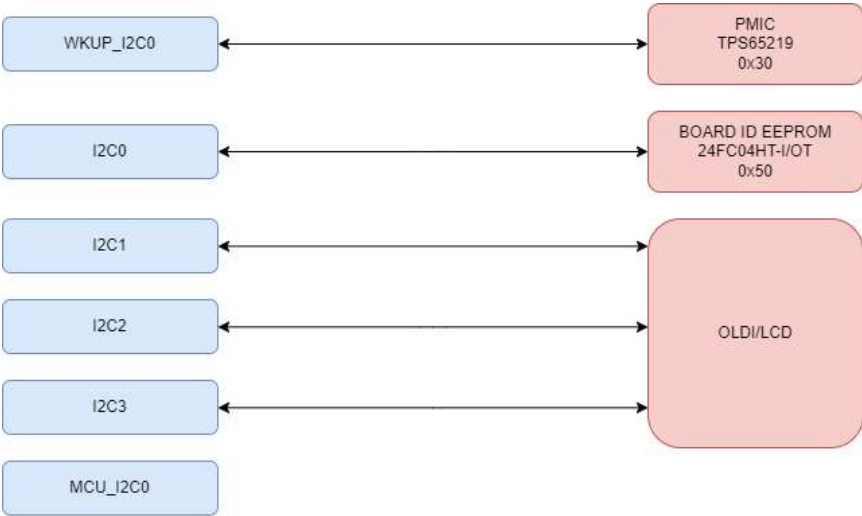
Block Diagram



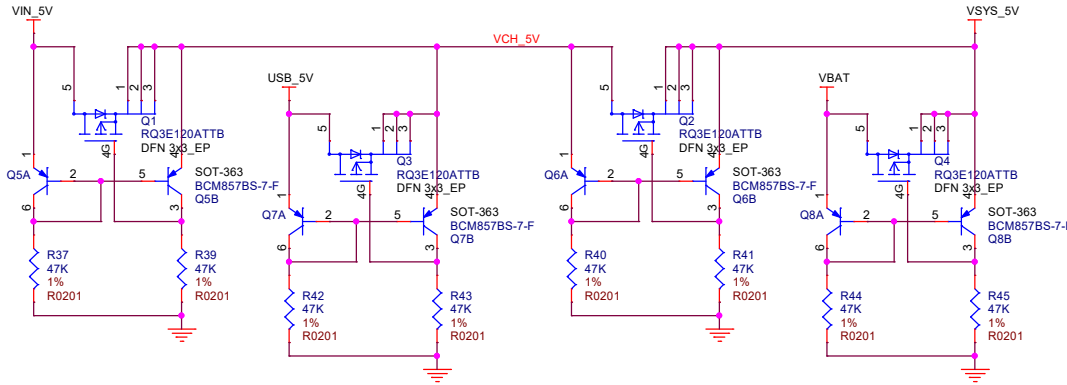
Power tree



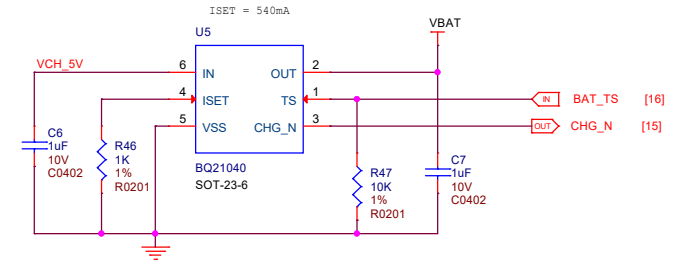
I2C Usage Diagram



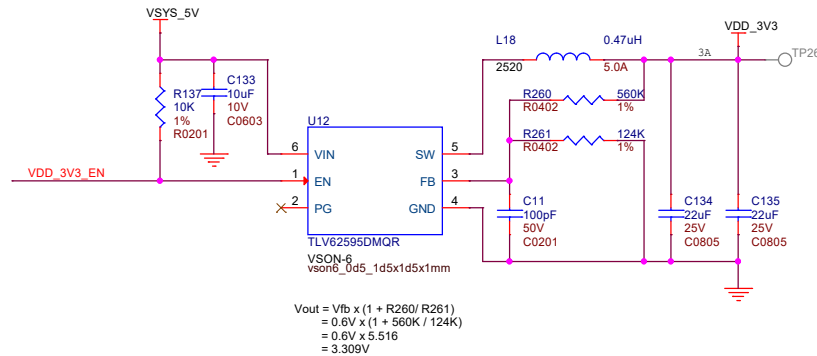
Power Path



Battery Charger



DCDC 3V3



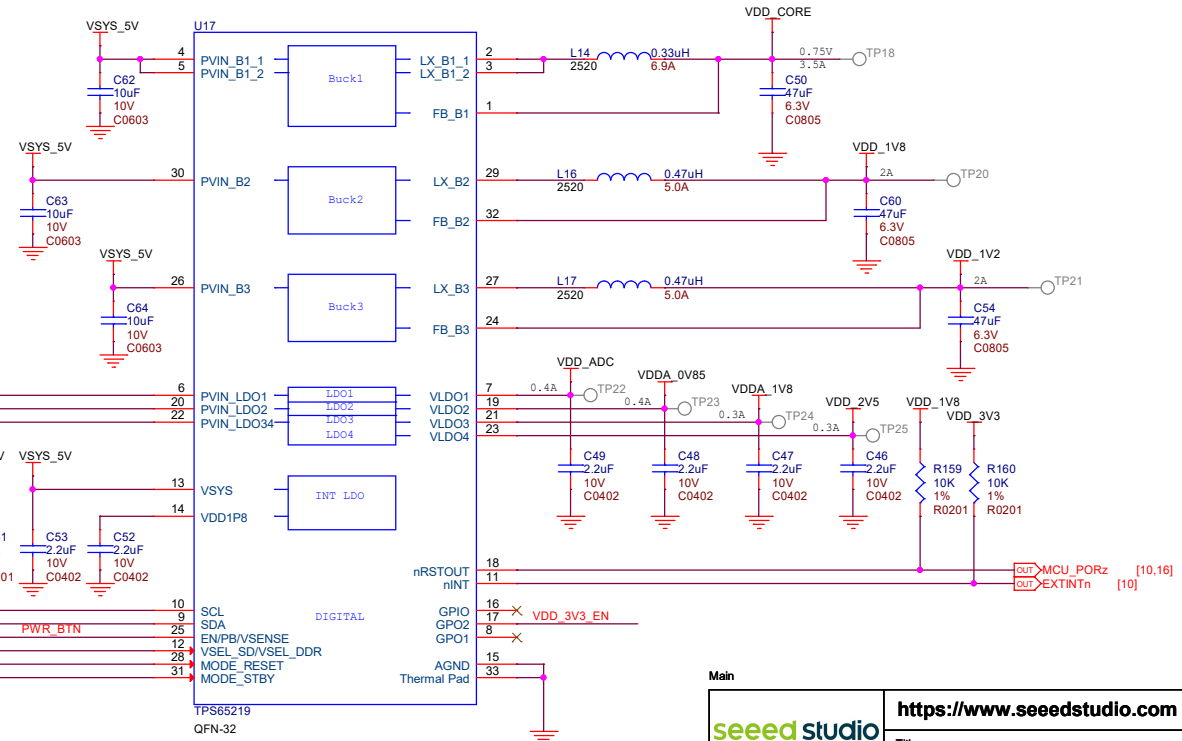
$$V_{out} = V_{fb} \times (1 + R_{260}/R_{261})$$

$$= 0.6V \times (1 + 560K / 124K)$$

$$= 0.6V \times 5.516$$

$$= 3.309V$$

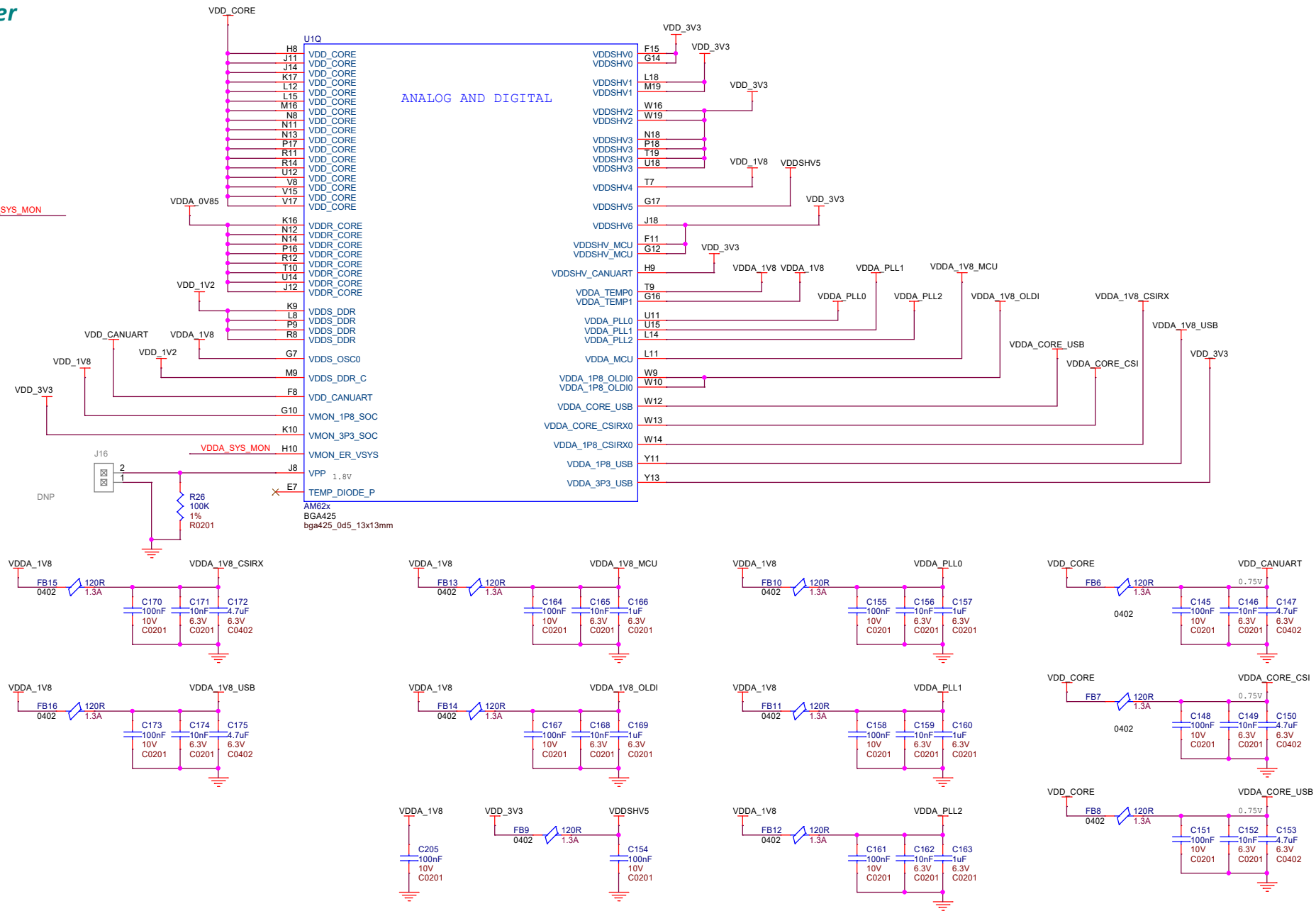
PMIC



Main

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Title:		PocketBeagle2	
Size: A3	Document Number:	005_PMIC & Charger	Rev: v0.2
Draw By: qxm	Date: Tuesday, November 01, 2022	Sheet: 5 of 16	

VSYS_5V



Main

seed studio

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Title: **PocketBeagle2**

Size:
A3

Document Number:	
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006_SoC Power

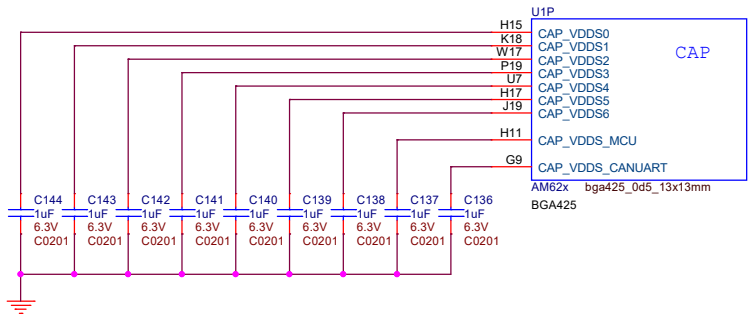
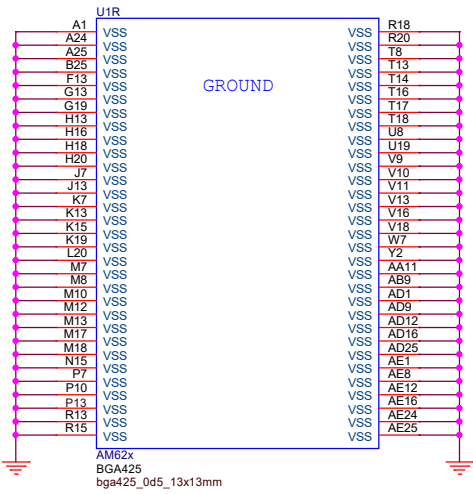
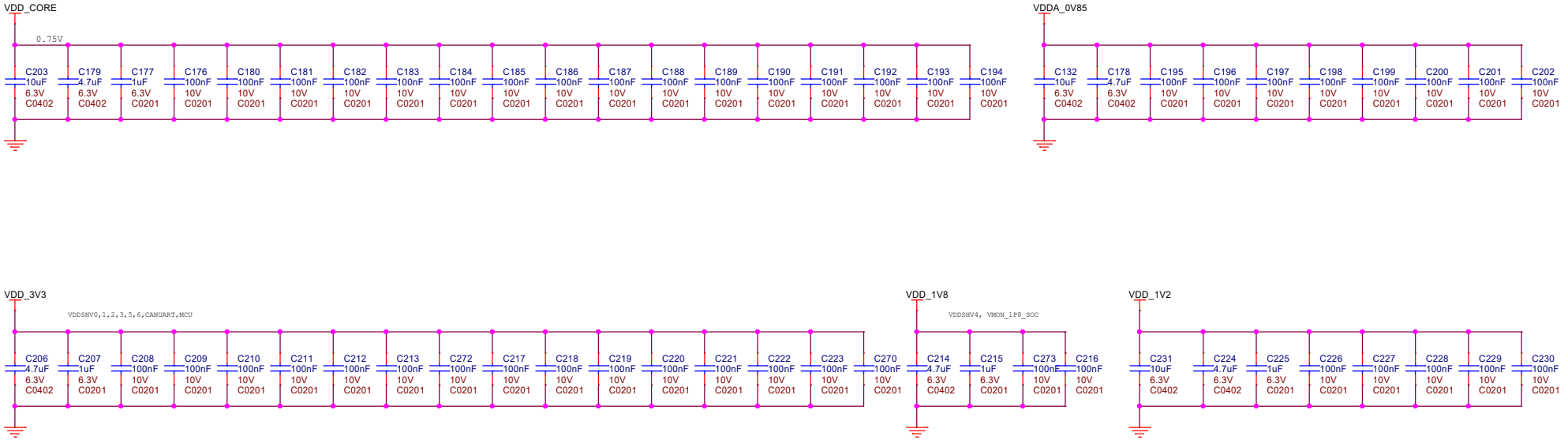
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Draw By: qxn

Date: Tuesday, November 01, 2022

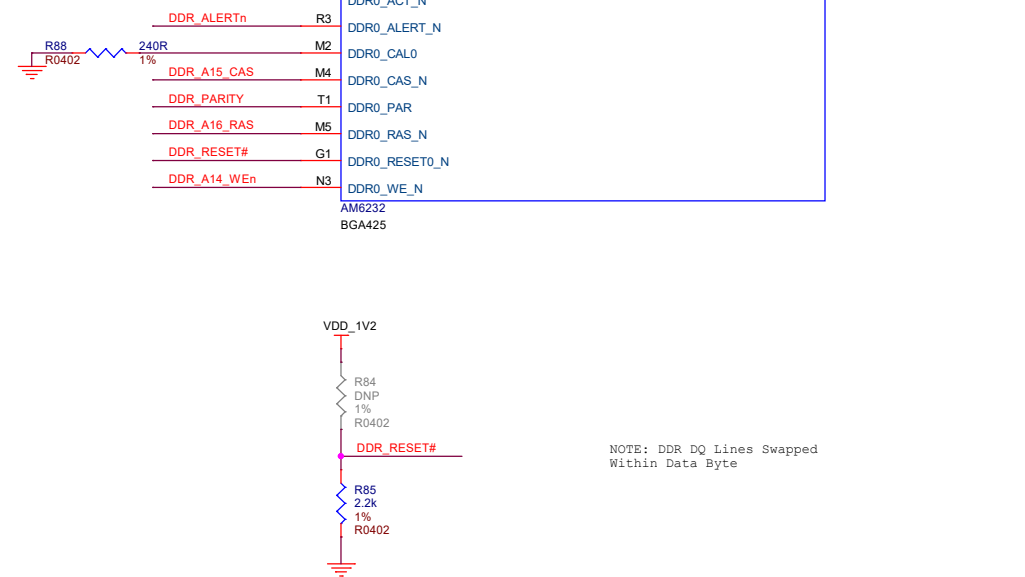
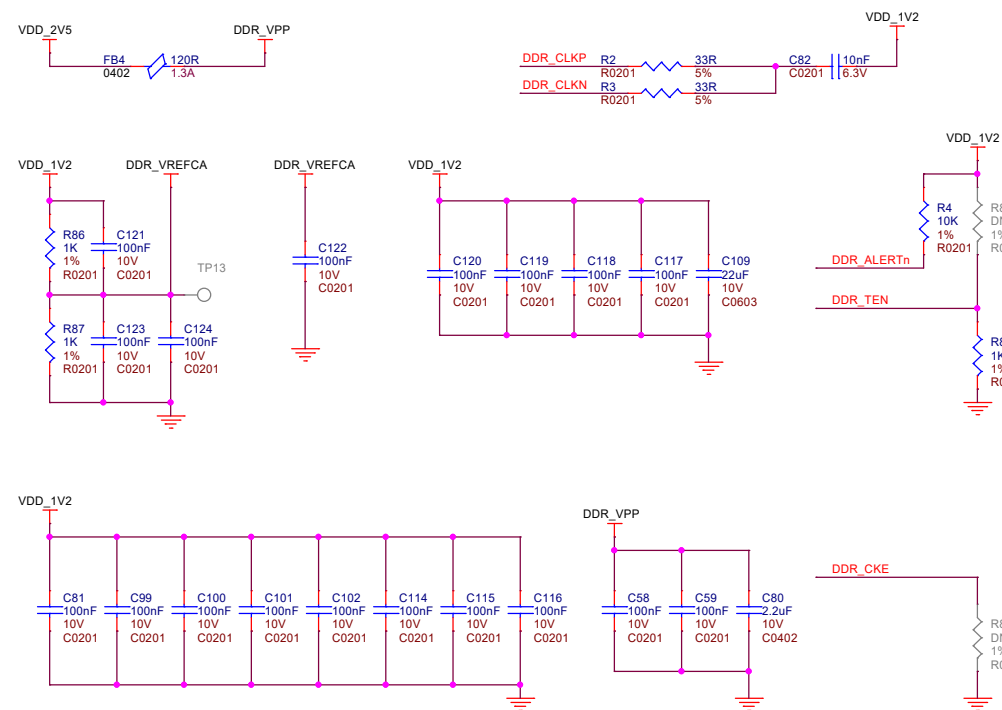
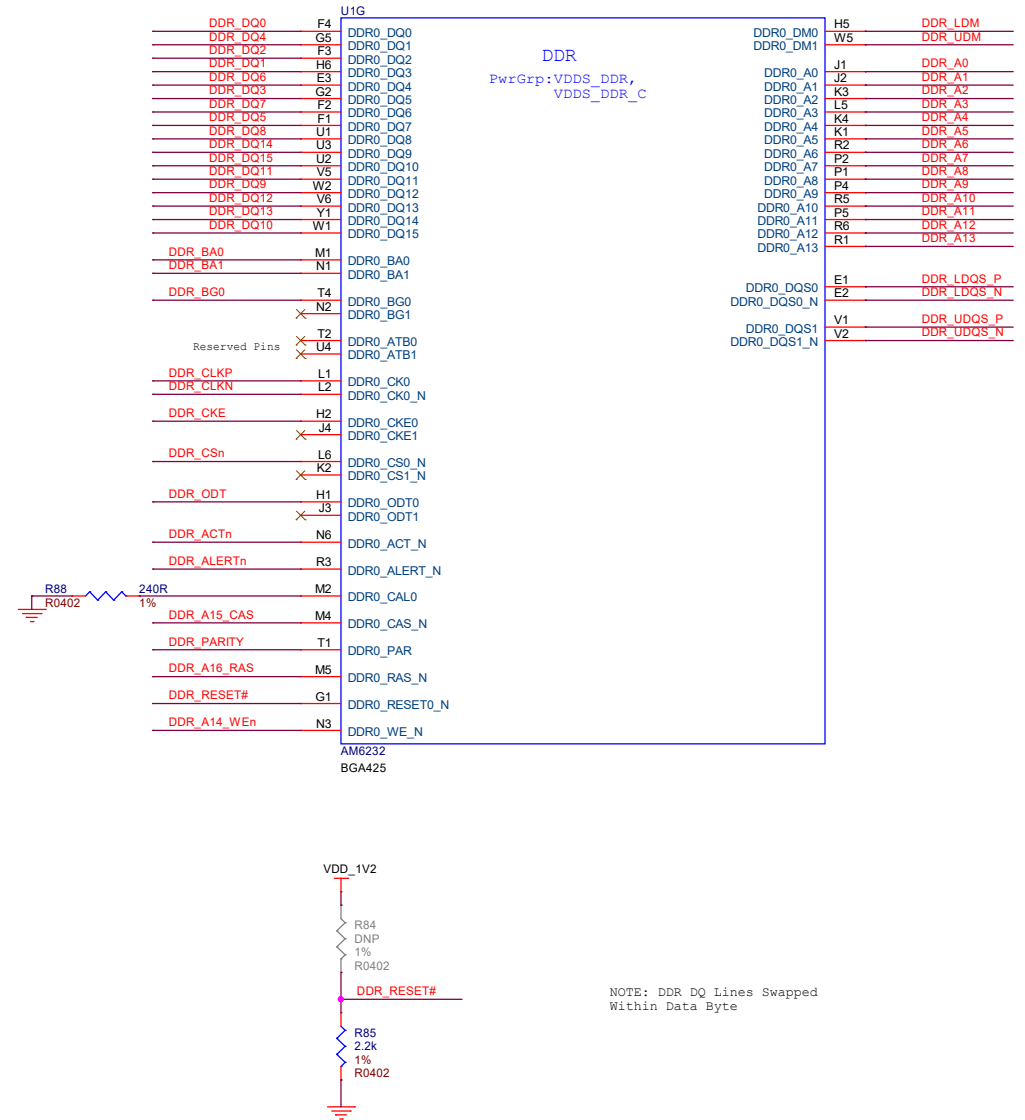
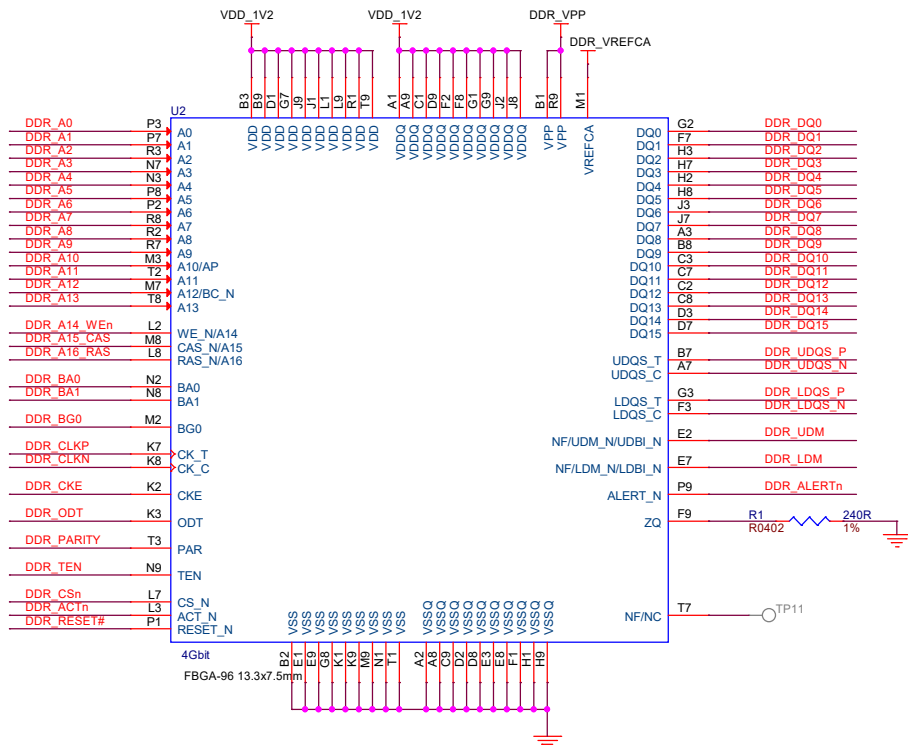
Sheet: 6 of 16

SoC DCAPs



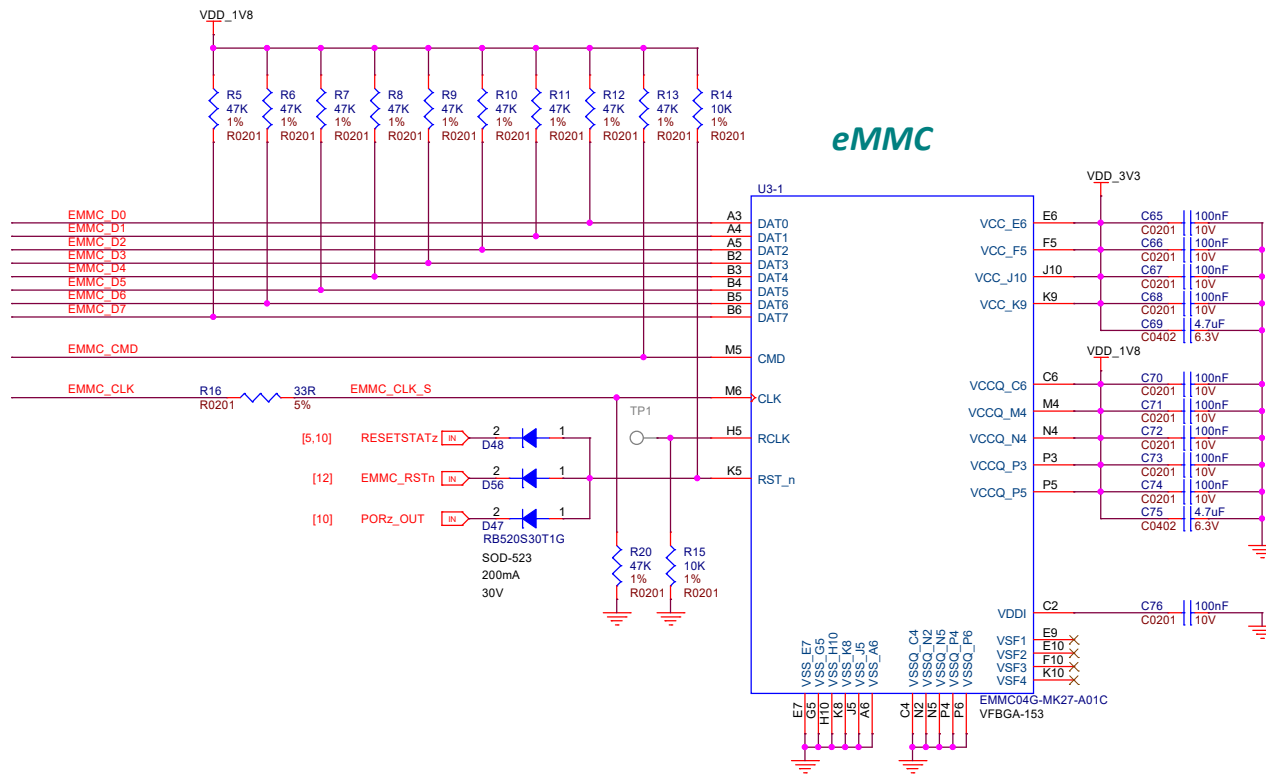
DDR4

SoC DDR controller

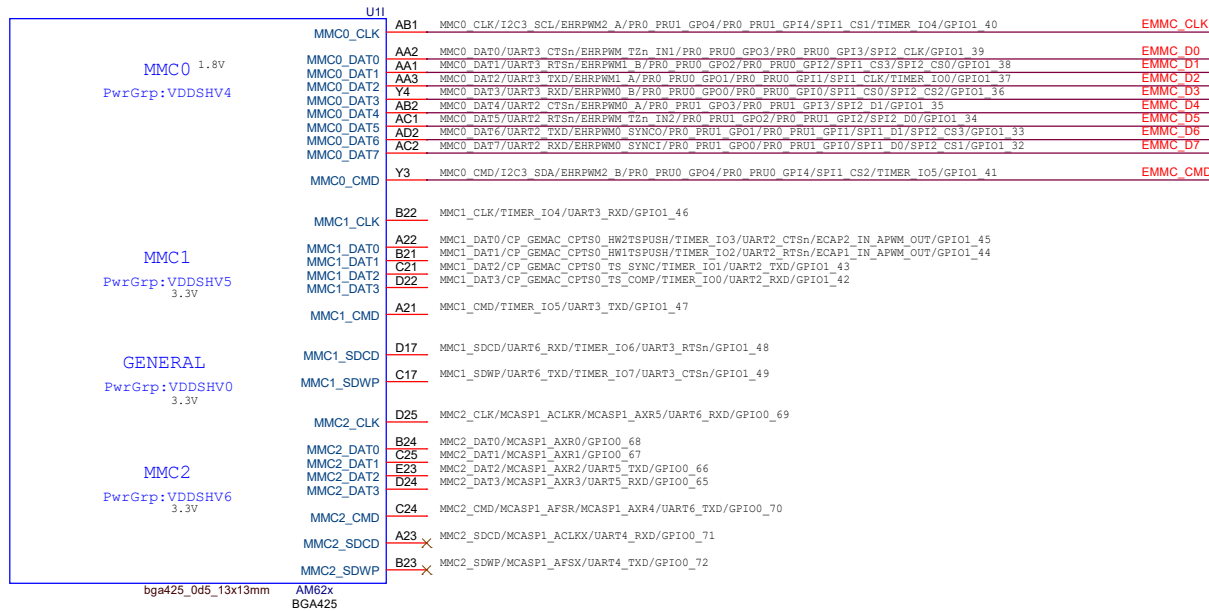


NOTE: DDR DQ Lines Swapped Within Data Byte

eMMC



SoC MMC



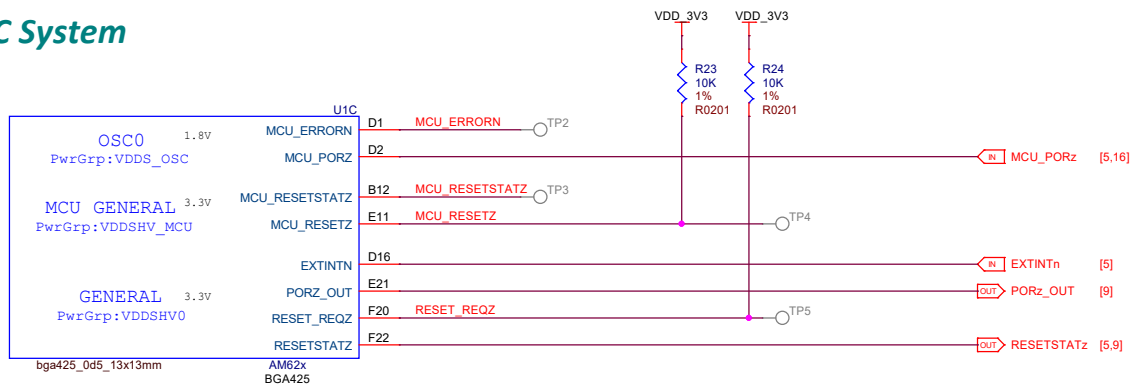
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A10	NC6	NC64	J1
A11	NC7	NC65	J2
A12	NC8	NC66	J3
A13	NC9	NC67	J12
A14	NC10	NC68	J13
B1	NC11	NC69	J14
B7	NC12	NC70	K1
B8	NC13	NC71	K2
B9	NC14	NC72	K3
B10	NC15	NC73	K6
B11	NC16	NC74	K7
B12	NC17	NC75	K12
B13	NC18	NC76	K13
B14	NC19	NC77	K14
C1	NC20	NC78	L1
C3	NC21	NC79	L2
C5	NC22	NC80	L3
C7	NC23	NC81	L12
C8	NC24	NC82	L13
C9	NC25	NC83	L14
C10	NC26	NC84	M1
C11	NC27	NC85	M2
C12	NC28	NC86	M3
C13	NC29	NC87	M7
C14	NC30	NC88	M8
D1	NC31	NC89	M9
D2	NC32	NC90	M10
D3	NC33	NC91	M11
D4	NC34	NC92	M12
D12	NC35	NC93	M13
D13	NC36	NC94	M14
D14	NC37	NC95	N1
E1	NC38	NC96	N1
E2	NC39	NC97	N6
E3	NC40	NC98	N7
E4	NC41	NC99	N8
E5	NC42	NC100	N8
E8	NC43	NC101	N9
E12	NC44	NC102	N10
E13	NC45	NC103	N11
E14	NC46	NC104	N13
F1	NC47	NC105	N14
F2	NC48	NC106	P1
F3	NC49	NC107	P2
F12	NC50	NC108	P7
F13	NC51	NC109	P8
F14	NC52	NC110	P9
G1	NC53	NC111	P10
G2	NC54	NC112	P11
G3	NC55	NC113	P12
G10	NC56	NC114	P13
G12	NC57	NC115	P14
G13	NC58	NC116	P14
G14			

EMMC16G-TB29-P290
VFBGA-153

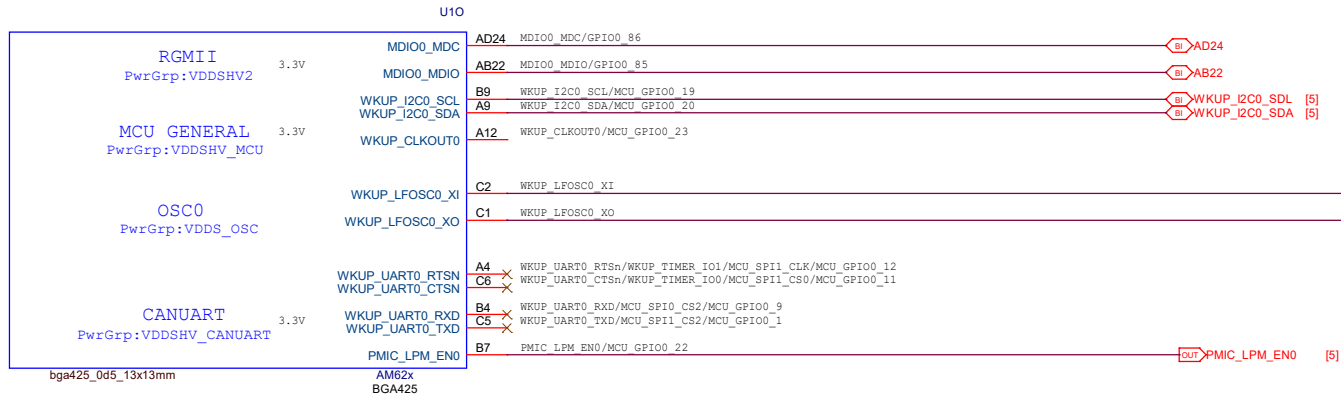
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Draw By: qxn	Date: Tuesday, November 01, 2022	Sheet: 9 of 16	

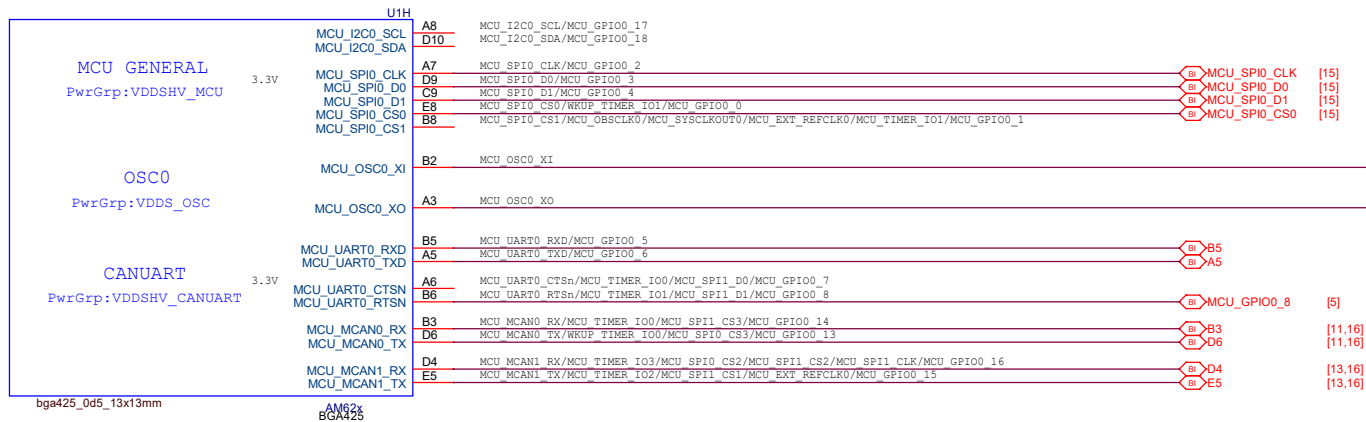
SoC System



WKUP Domain



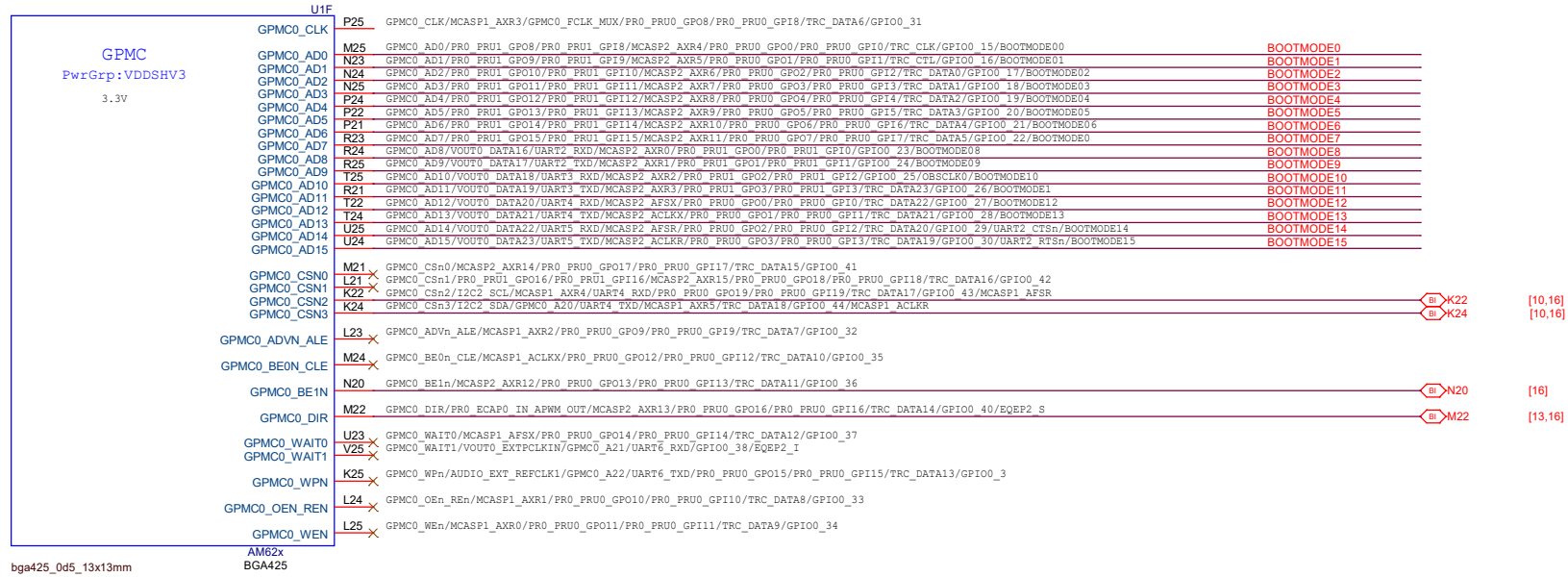
MCU Domain



Main

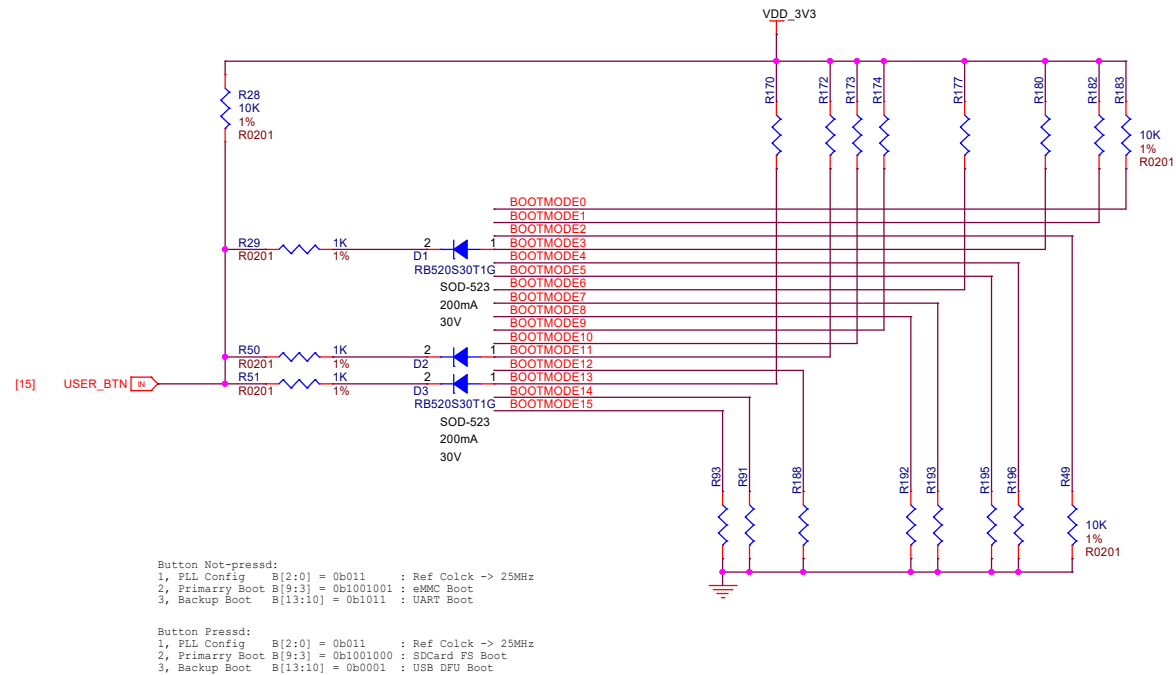
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Document Number:	010_SoC WKUP/MCU/System	Rev:	v0.2
Draw By: qxm	Date: Tuesday, November 01, 2022	Sheet:	10 of 16

SoC GPIO 1.8V




Bootstrap

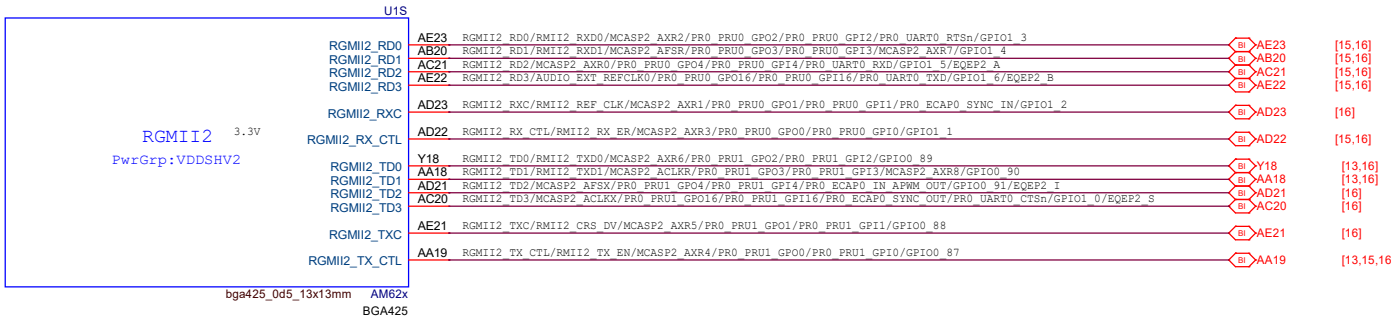
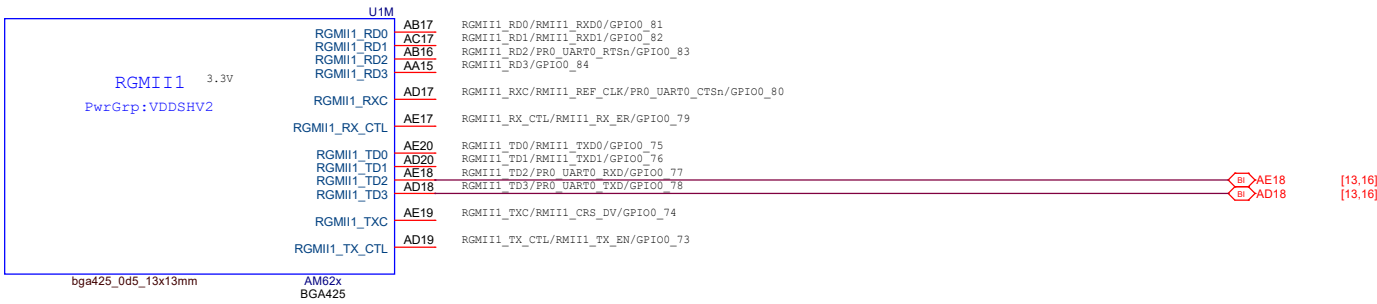
TBD:Boot Option needs to be redefiend.



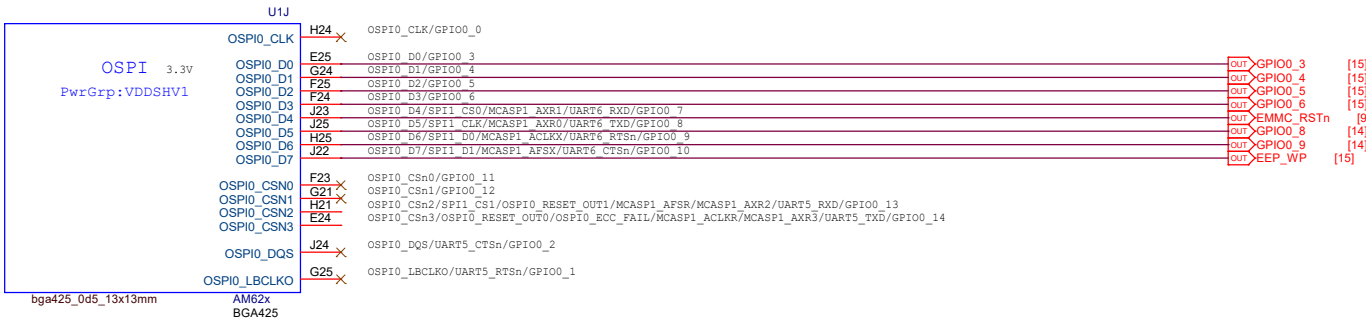
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Size: A3	Document Number: 011_SoC Bootstrap	Rev: v0.2	
Draw By: qxm	Date: Tuesday, November 01, 2022	Sheet: 11 of 16	

RGMII



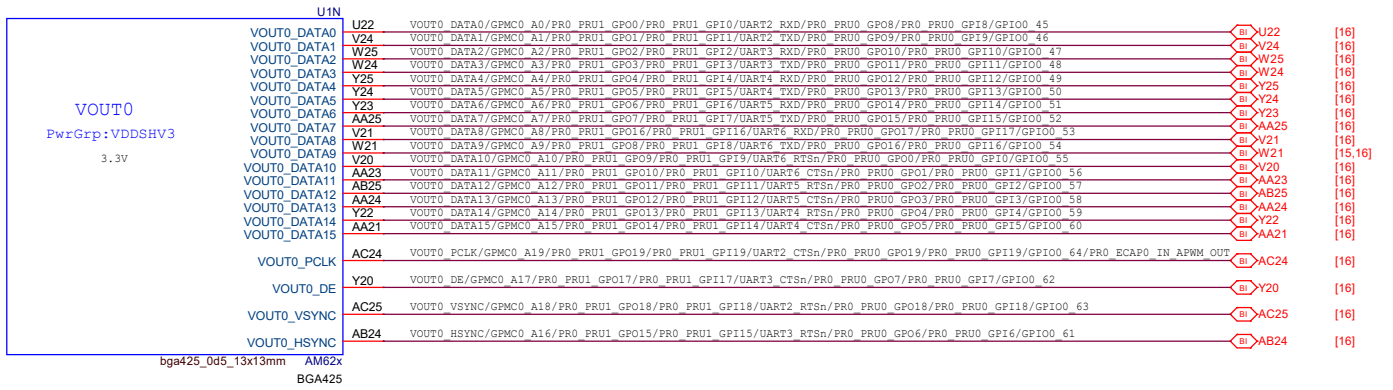
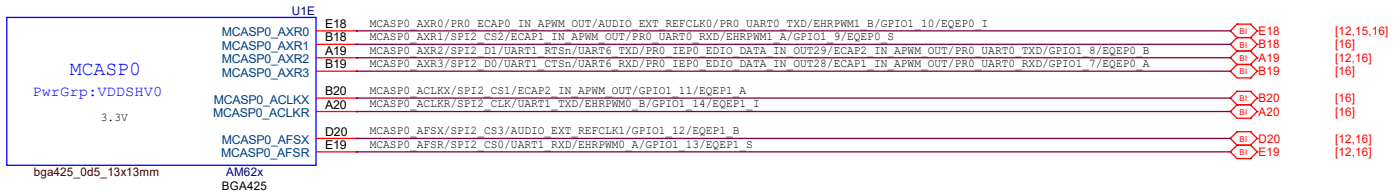
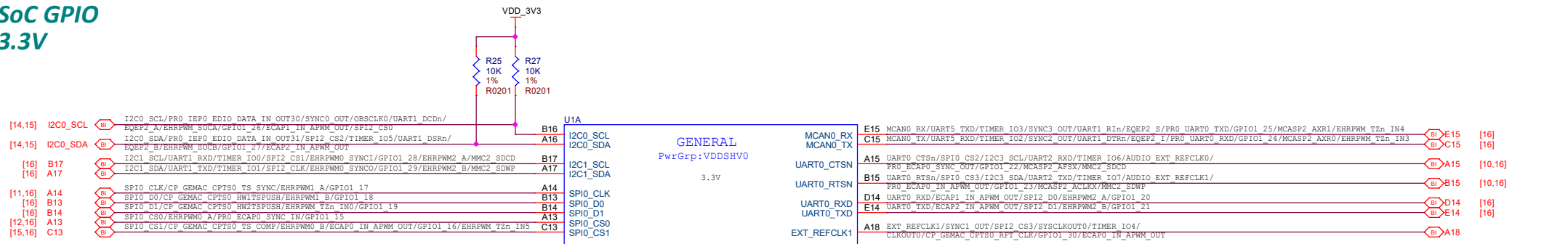
OSPI



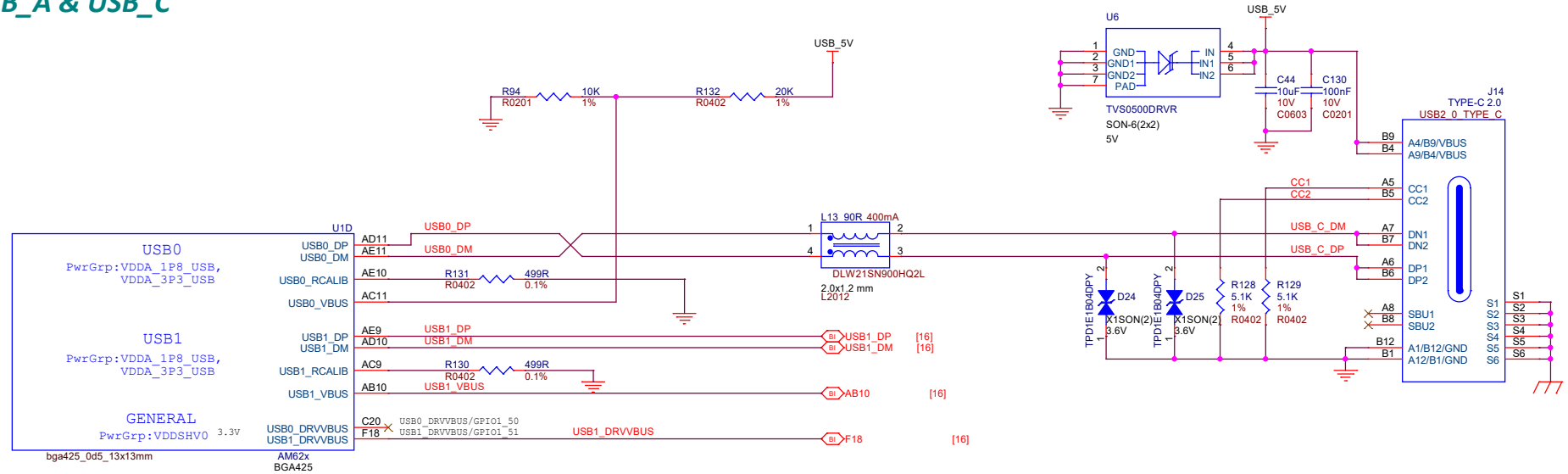
Main

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Draw By: qxm	Date: Tuesday, November 01, 2022	Sheet: 12 of 16	

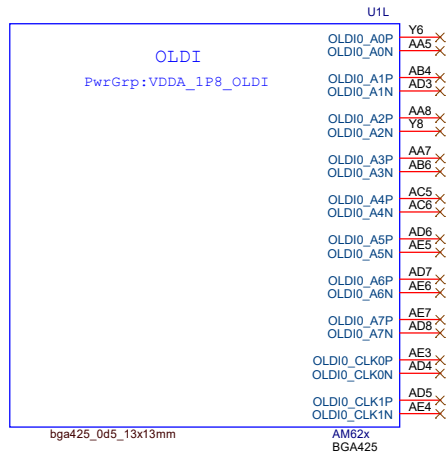
SoC GPIO
3.3V



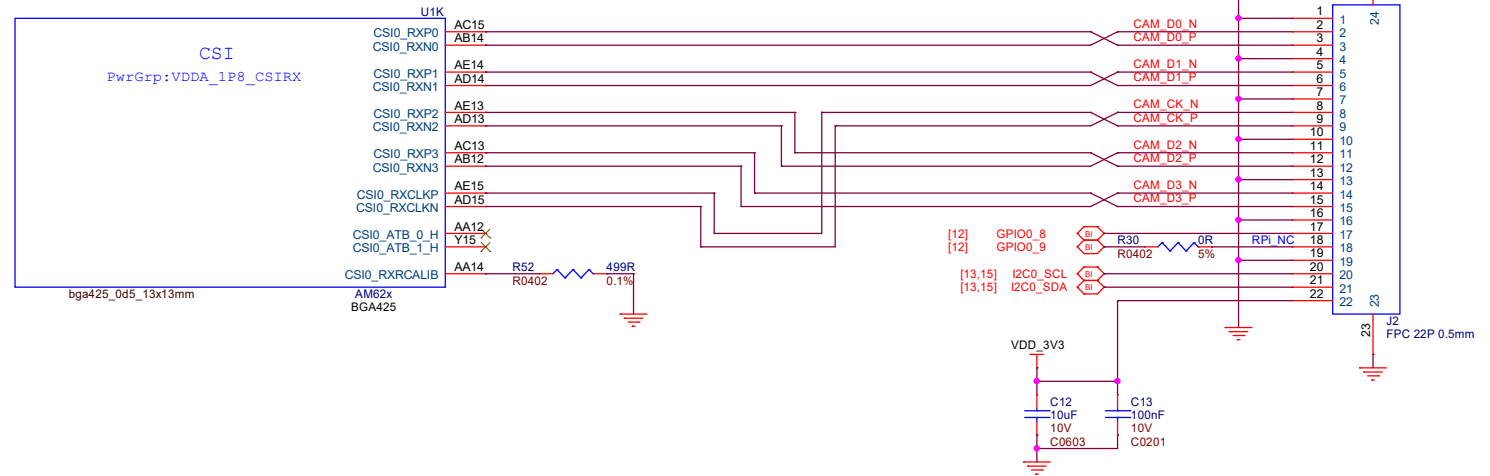
USB_A & USB_C



OLDI



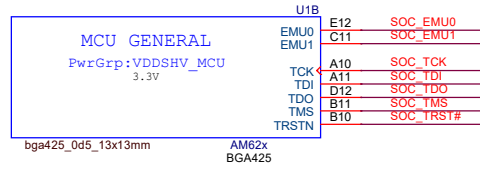
CSI



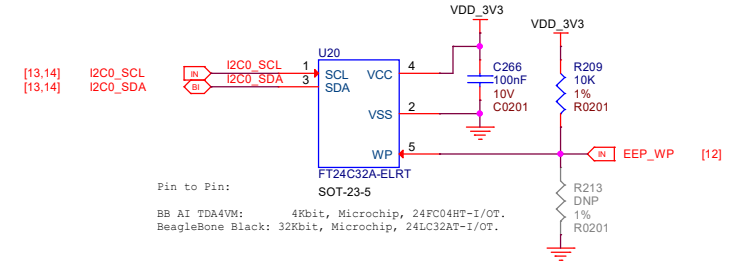
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Draw By: qm	Date: Tuesday, November 01, 2022	Sheet: 14 of 16	

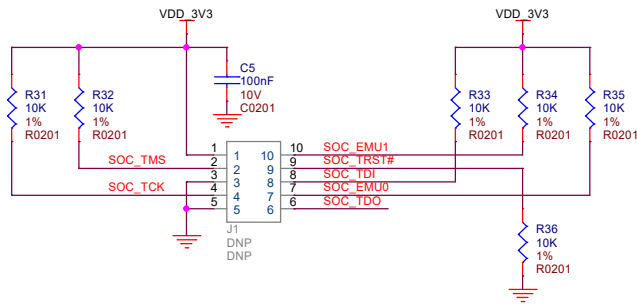
JTAG



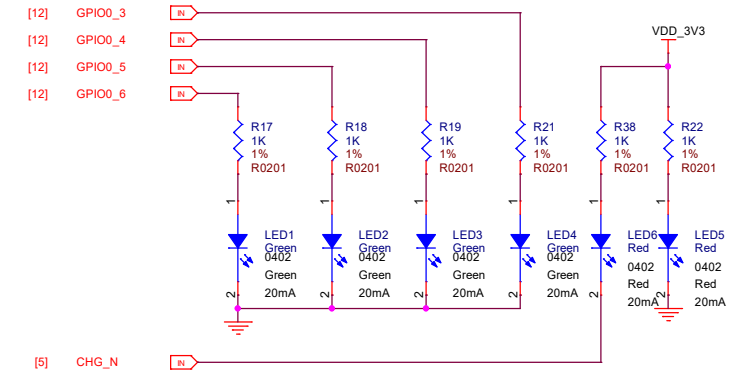
BOARD ID EEPROM 4Kbit



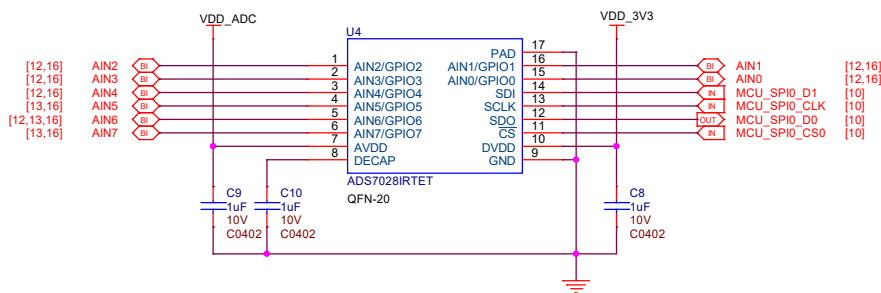
Tag-Connect



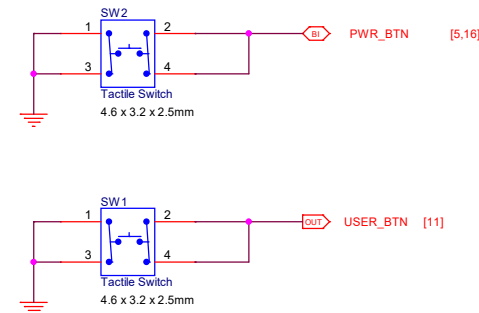
LEDs



ADC



Power Button



Main

		https://www.seeedstudio.com	
Size: A3		Title: PocketBeagle2	
Document Number: 015_SoC JTAG & MISC		Rev: v0.2	
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		Sheet: 15 of 16	

