

ConnectCore for i.MX8X Single Board Computer

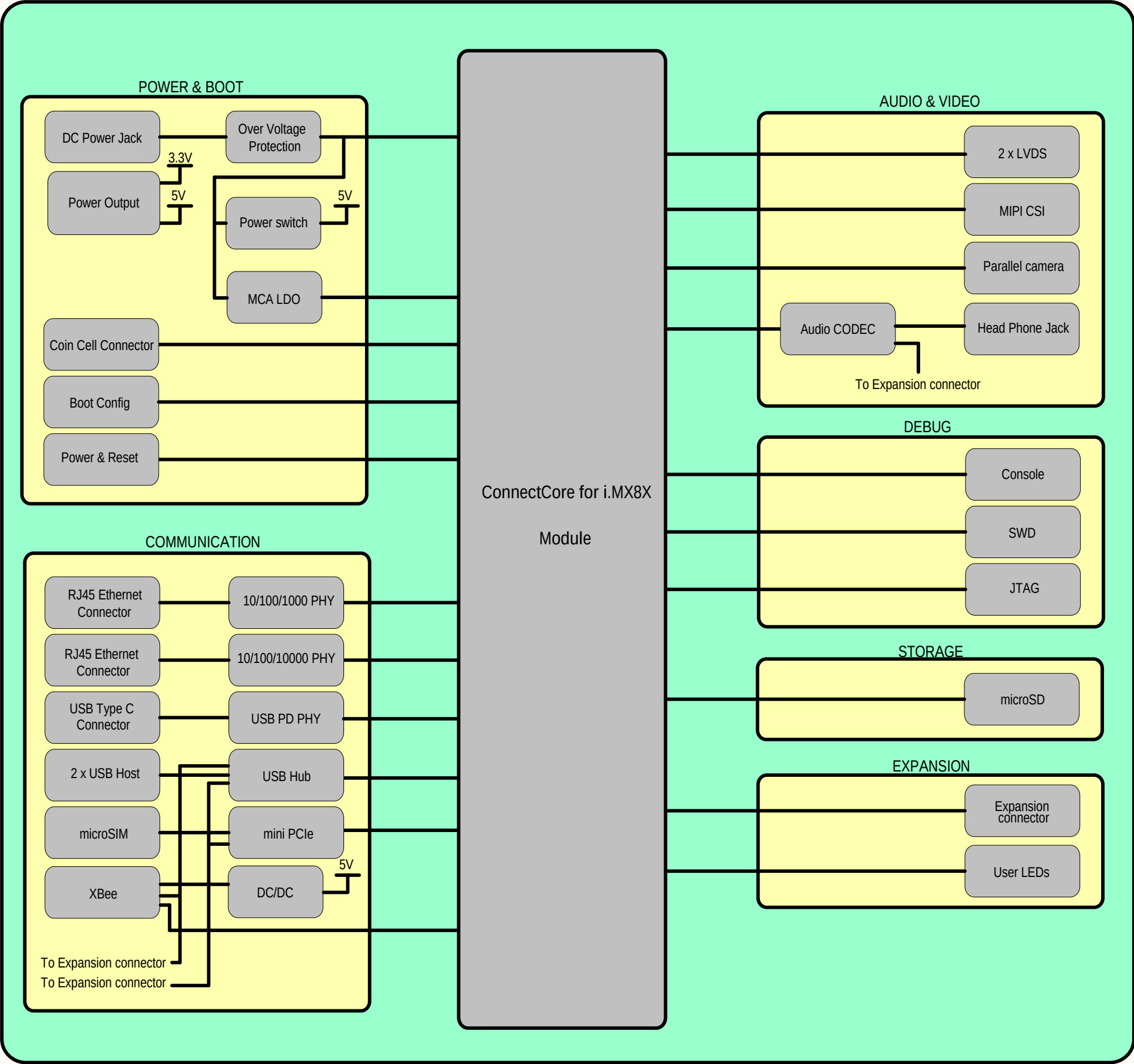
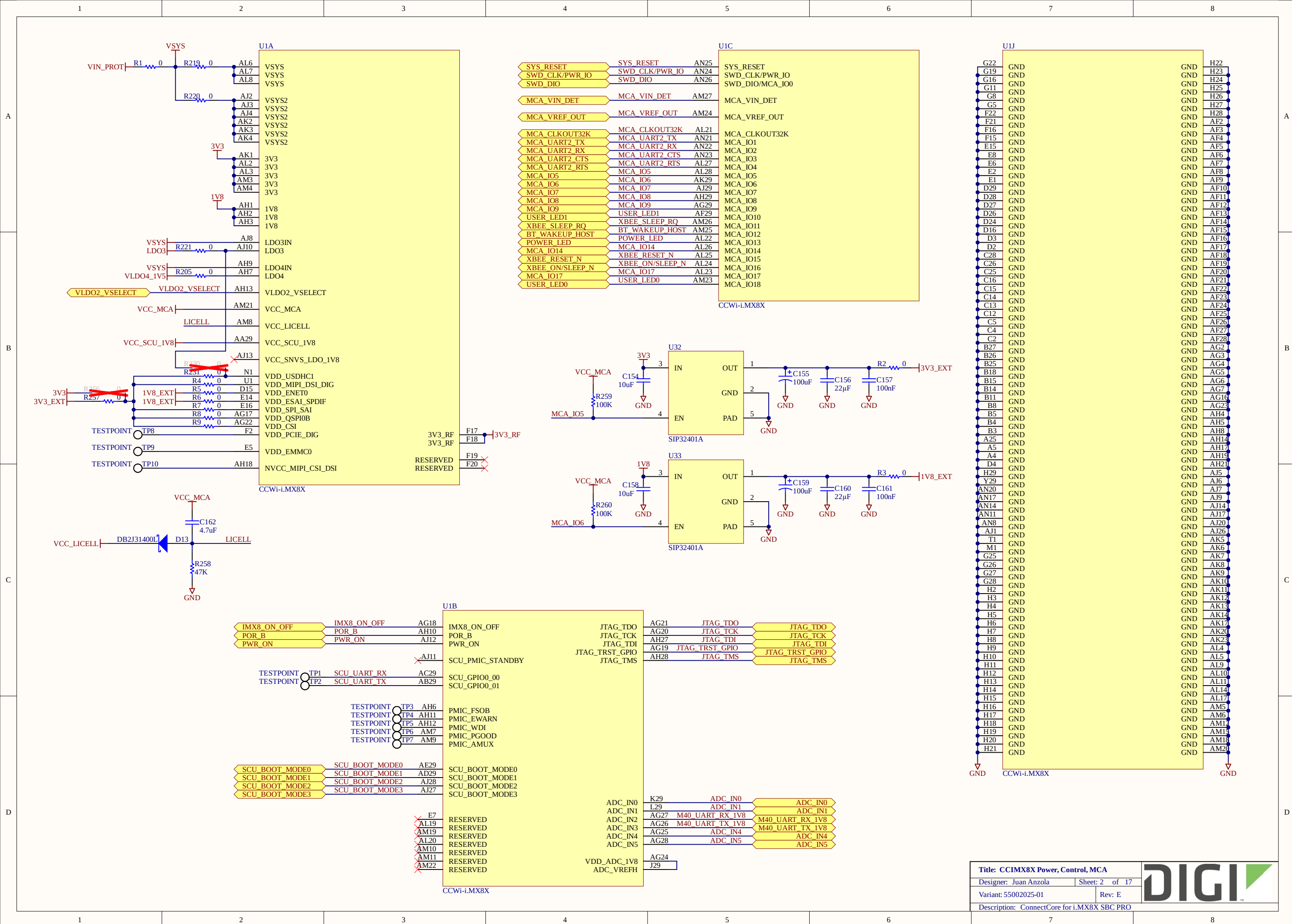
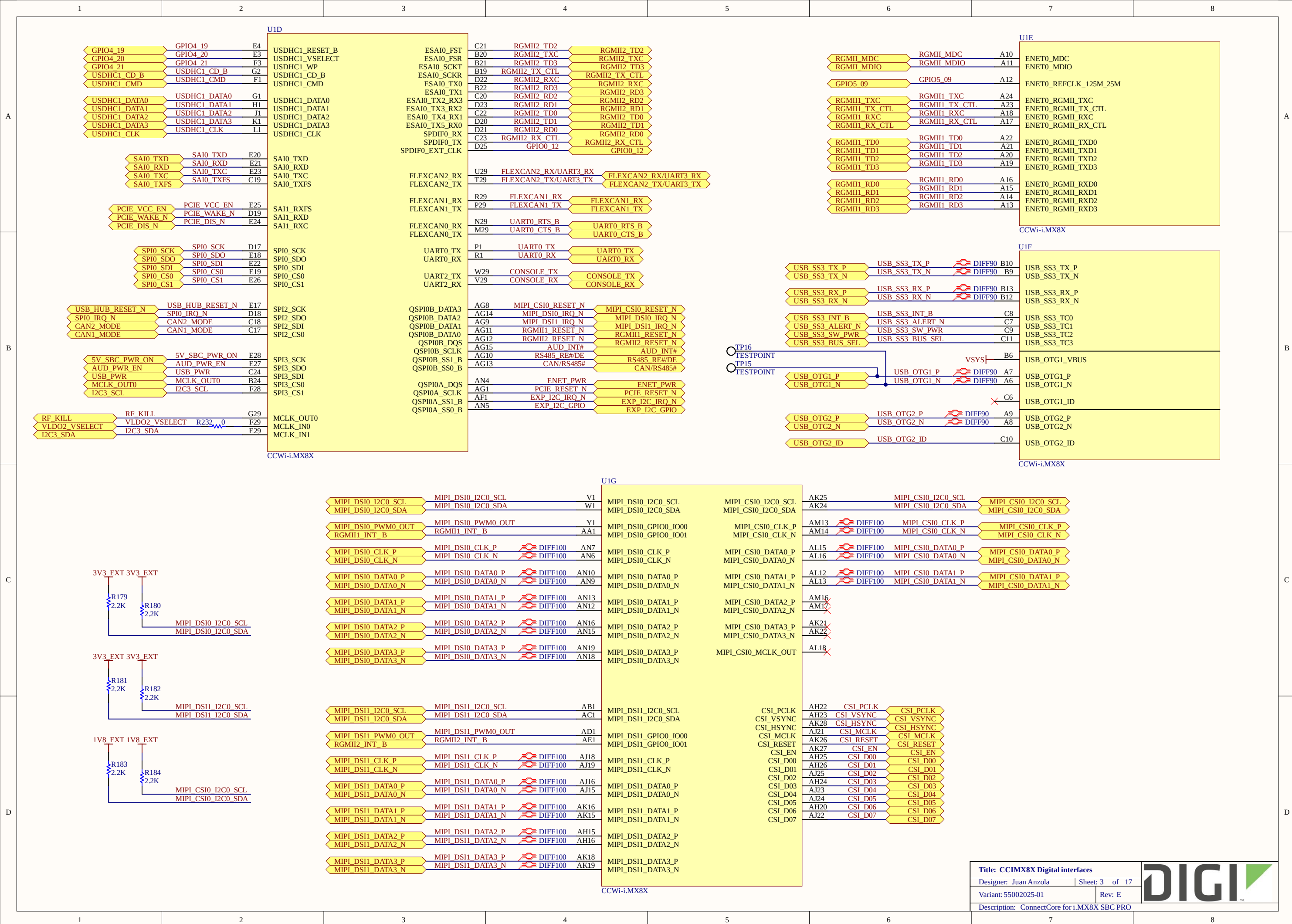
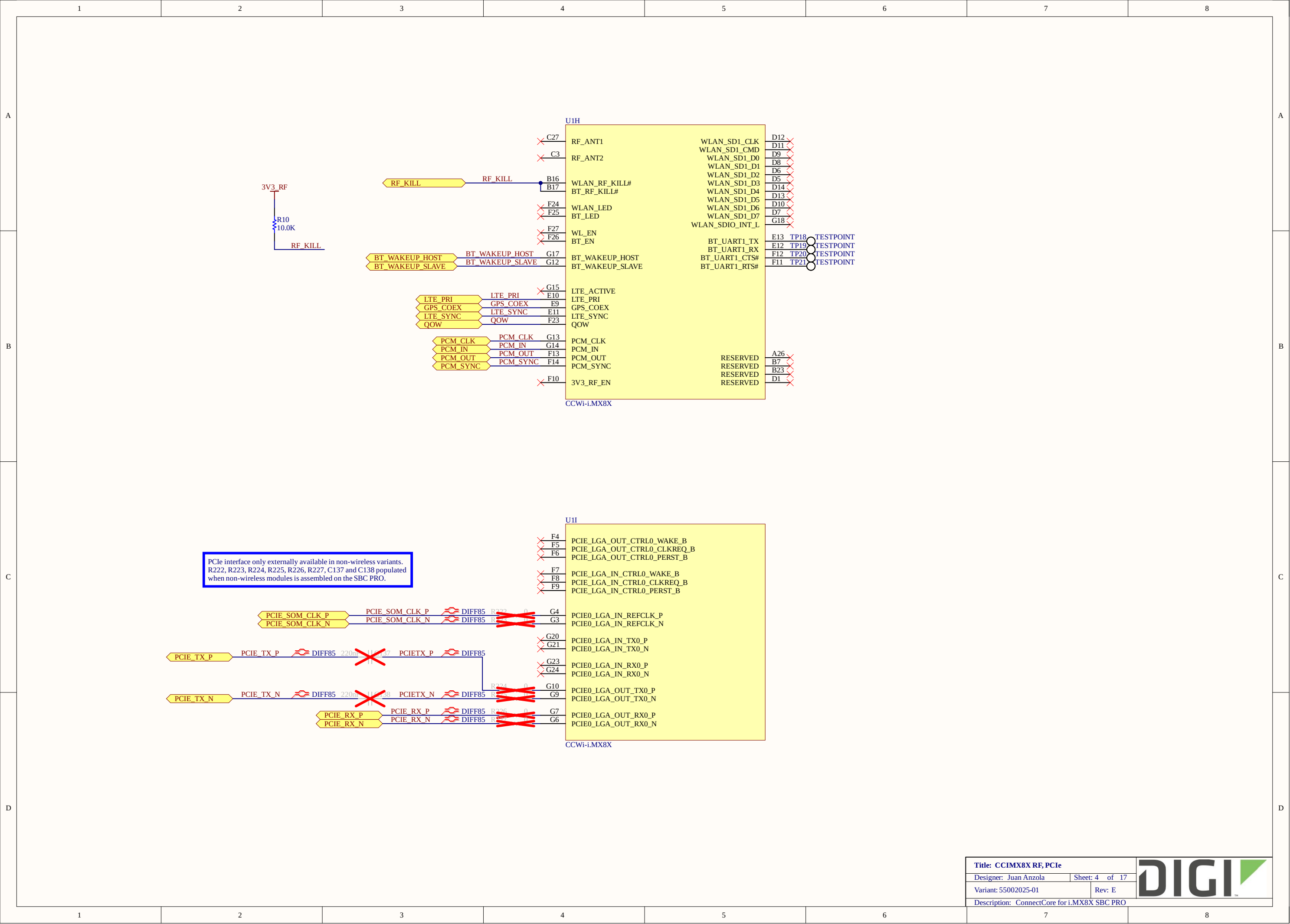


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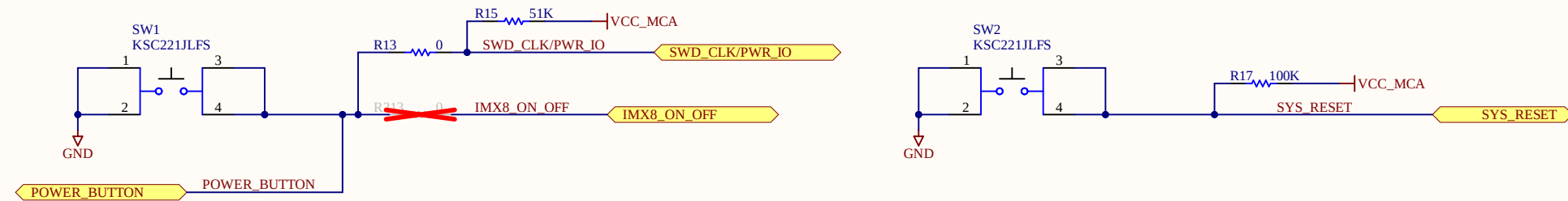
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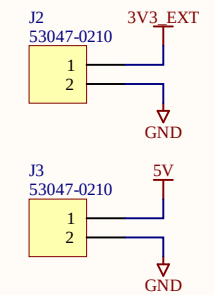




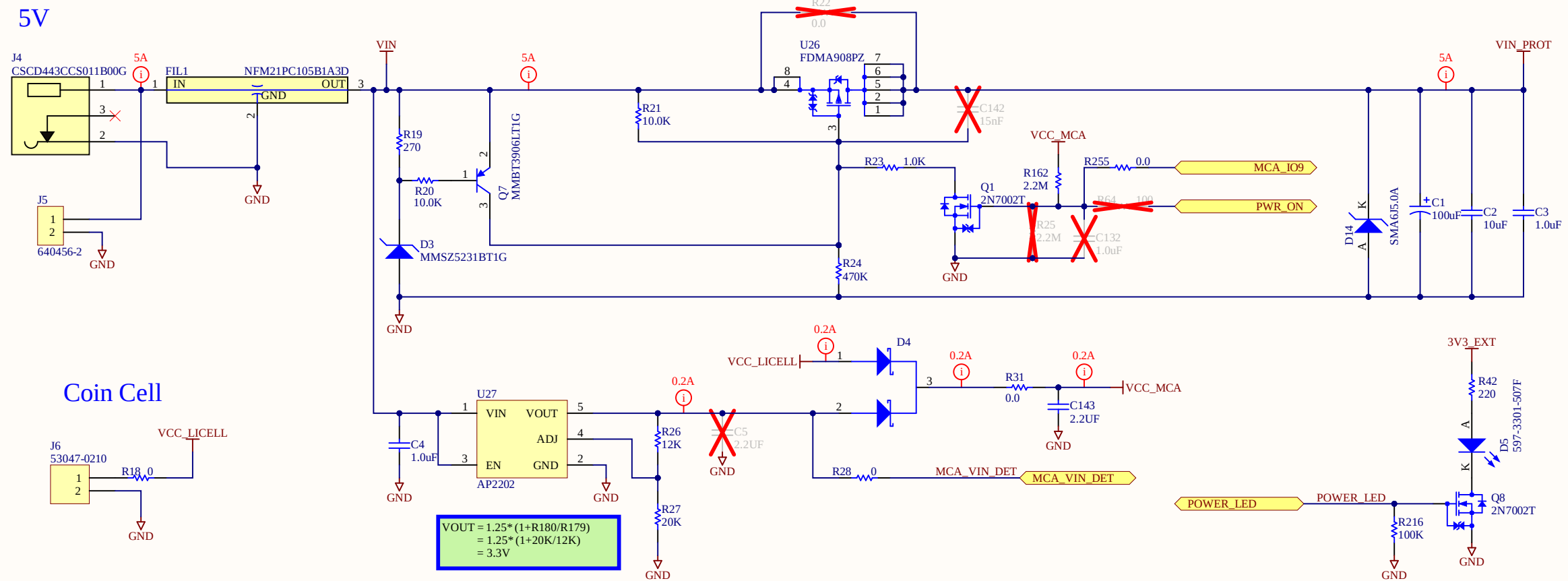
Power and Reset



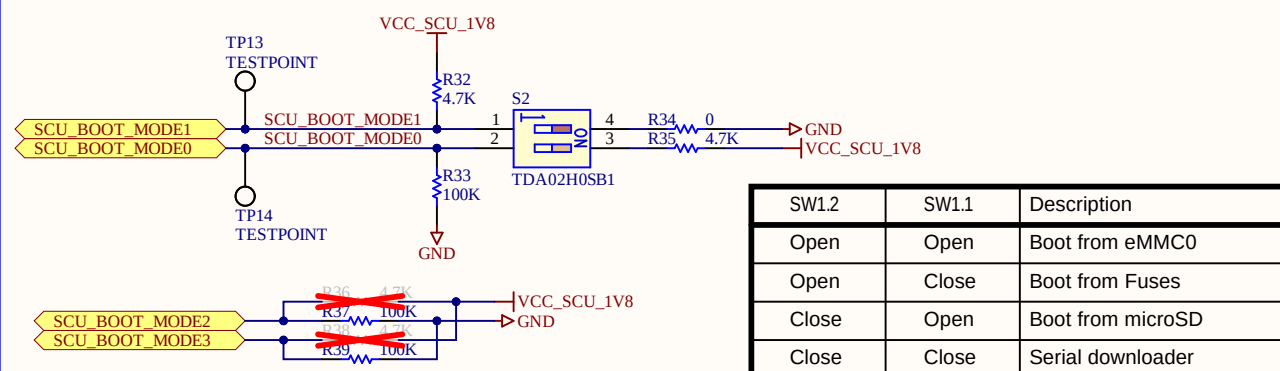
Supply Outputs



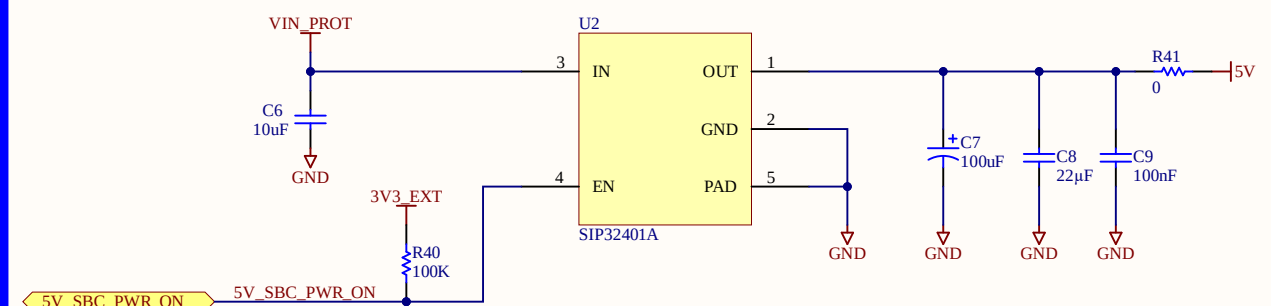
Supply Inputs



Bootstrap

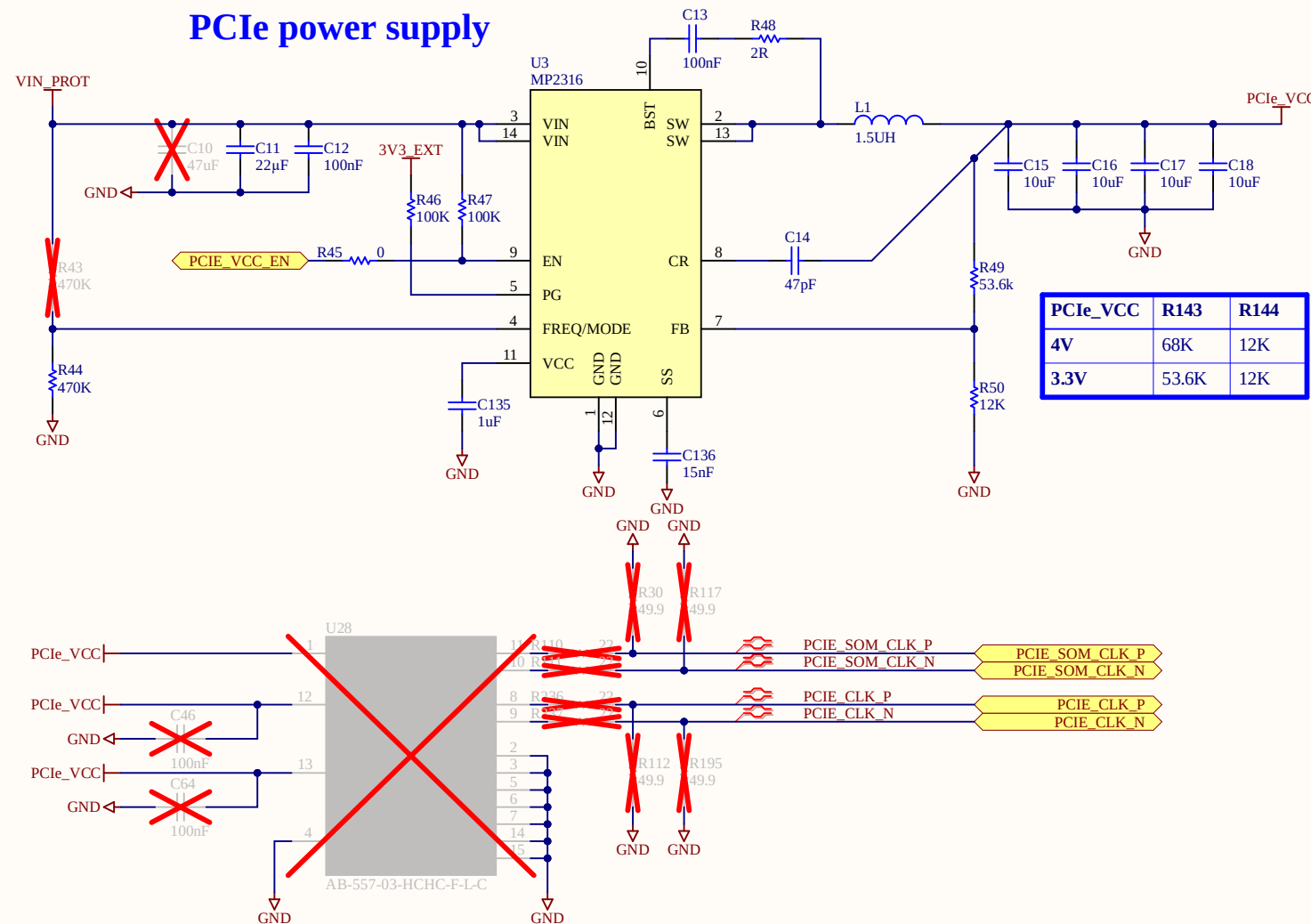


5V Load switch



miniPCIe

PCIe power supply

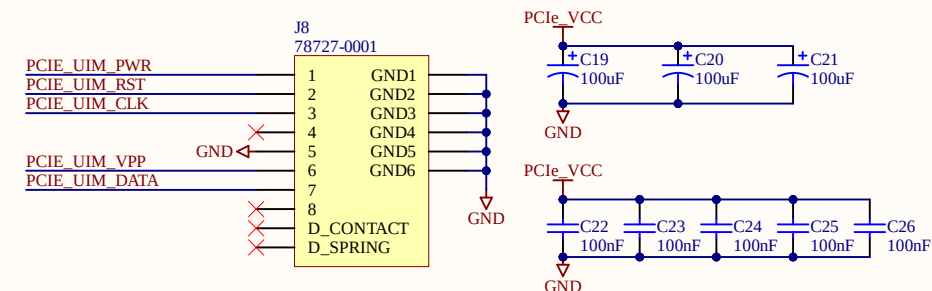


PCIe_VCC	R143	R144
4V	68K	12K
3.3V	53.6K	12K

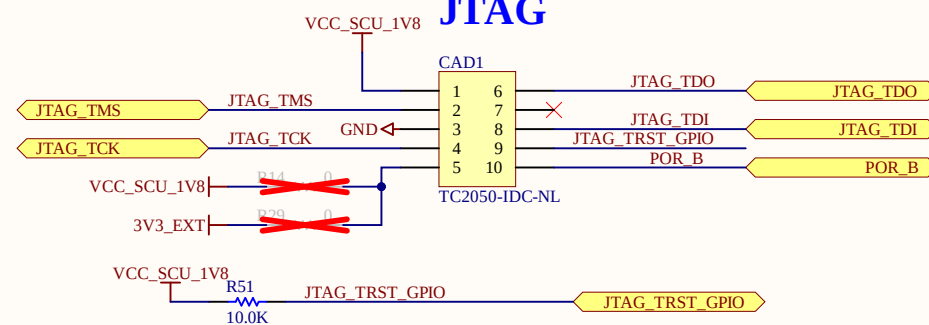
Signal	Pin
PCIE_WAKE_N	1
PCIE_CLK_N	10
PCIE_CLK_P	12
PCIE_DIS_N	19
PCIE_RESET_N	22
PCIE_RX_N	23
PCIE_RX_P	25
PCIE_I2C_SCL	30
PCIE_TX_N	31
PCIE_I2C_SDA	32
PCIE_TX_P	33
USB_PcIe_D_N	35
USB_PcIe_D_P	36

PCIE I2C connection detailed in Sheet 14.

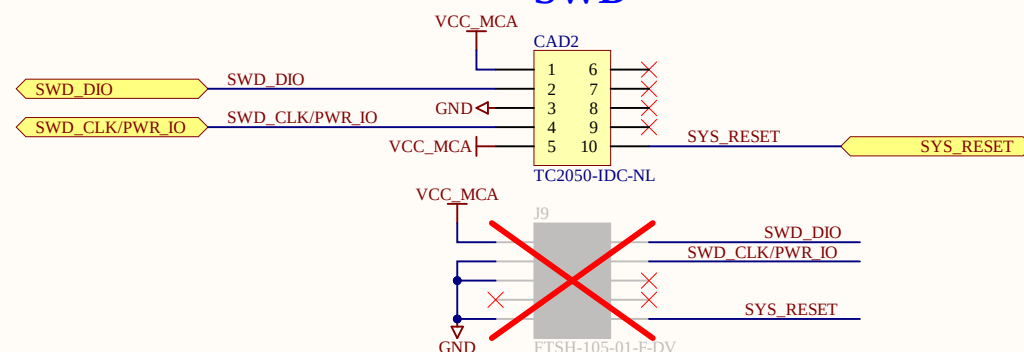
micro SIM



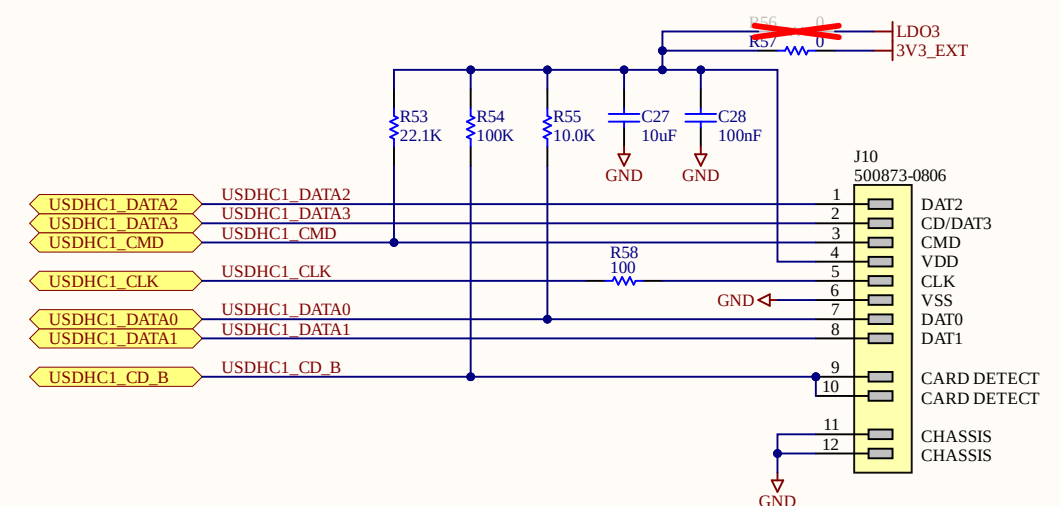
JTAG



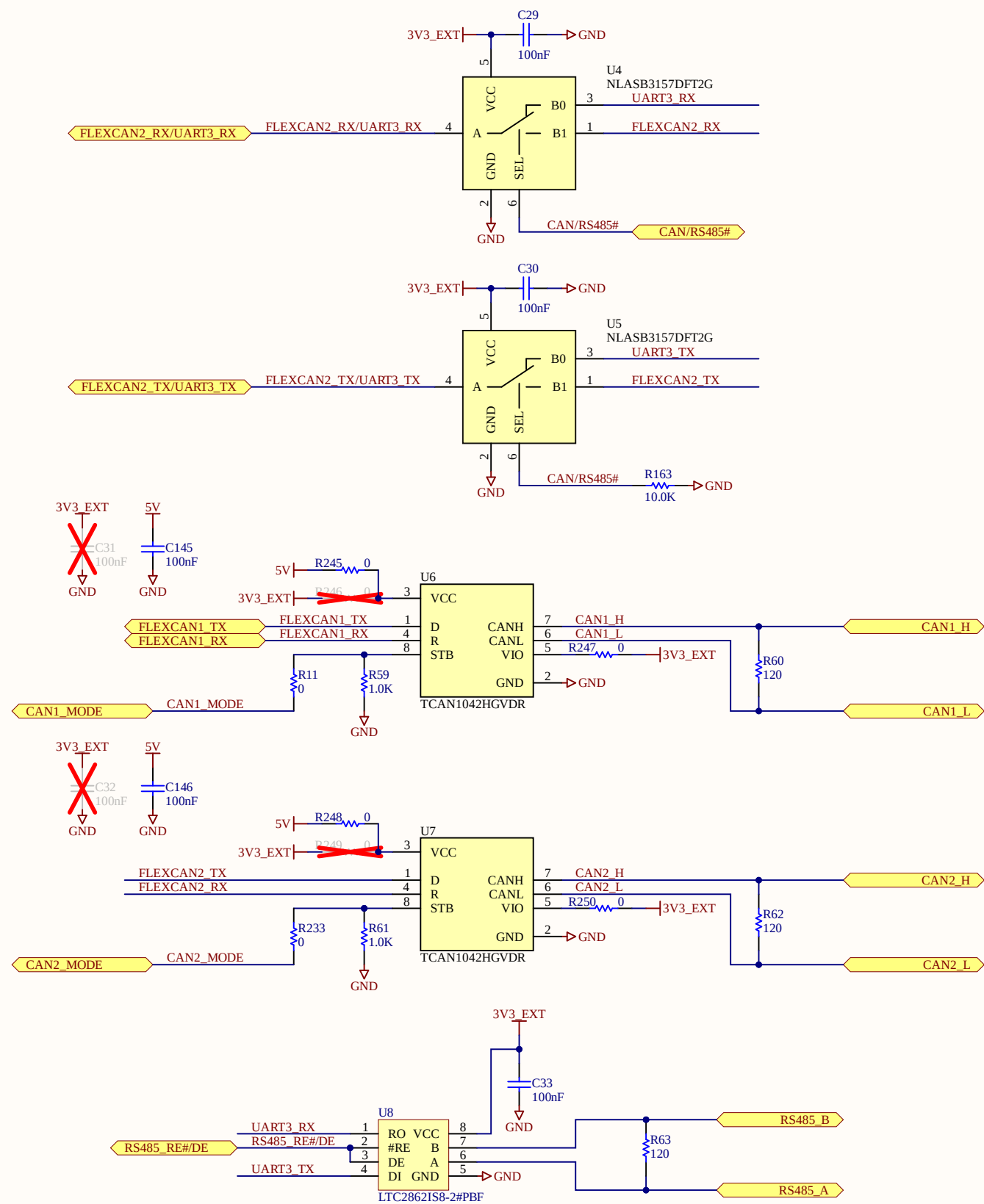
SWD



microSD

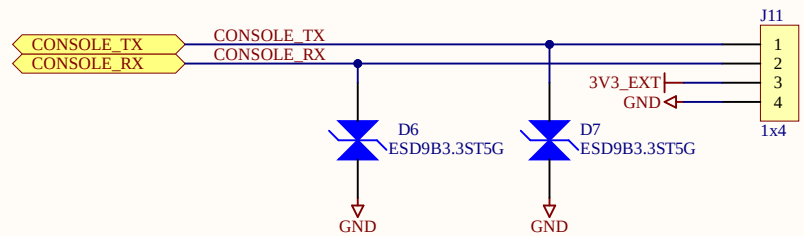


CAN & RS485

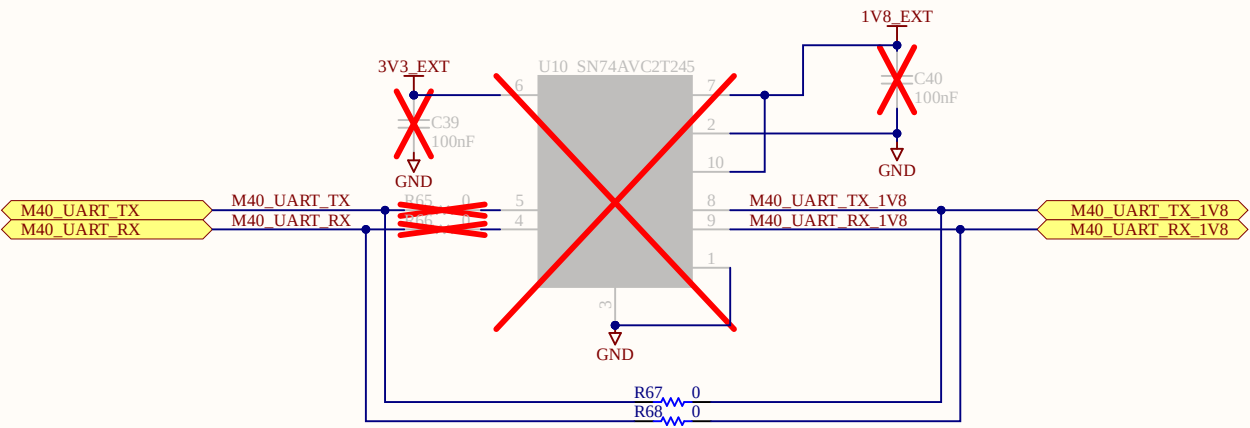


CAN/RS485#	FLEXCAN1	FLEXCAN2	RS485
0	ON	OFF	ON
1	ON	ON	OFF

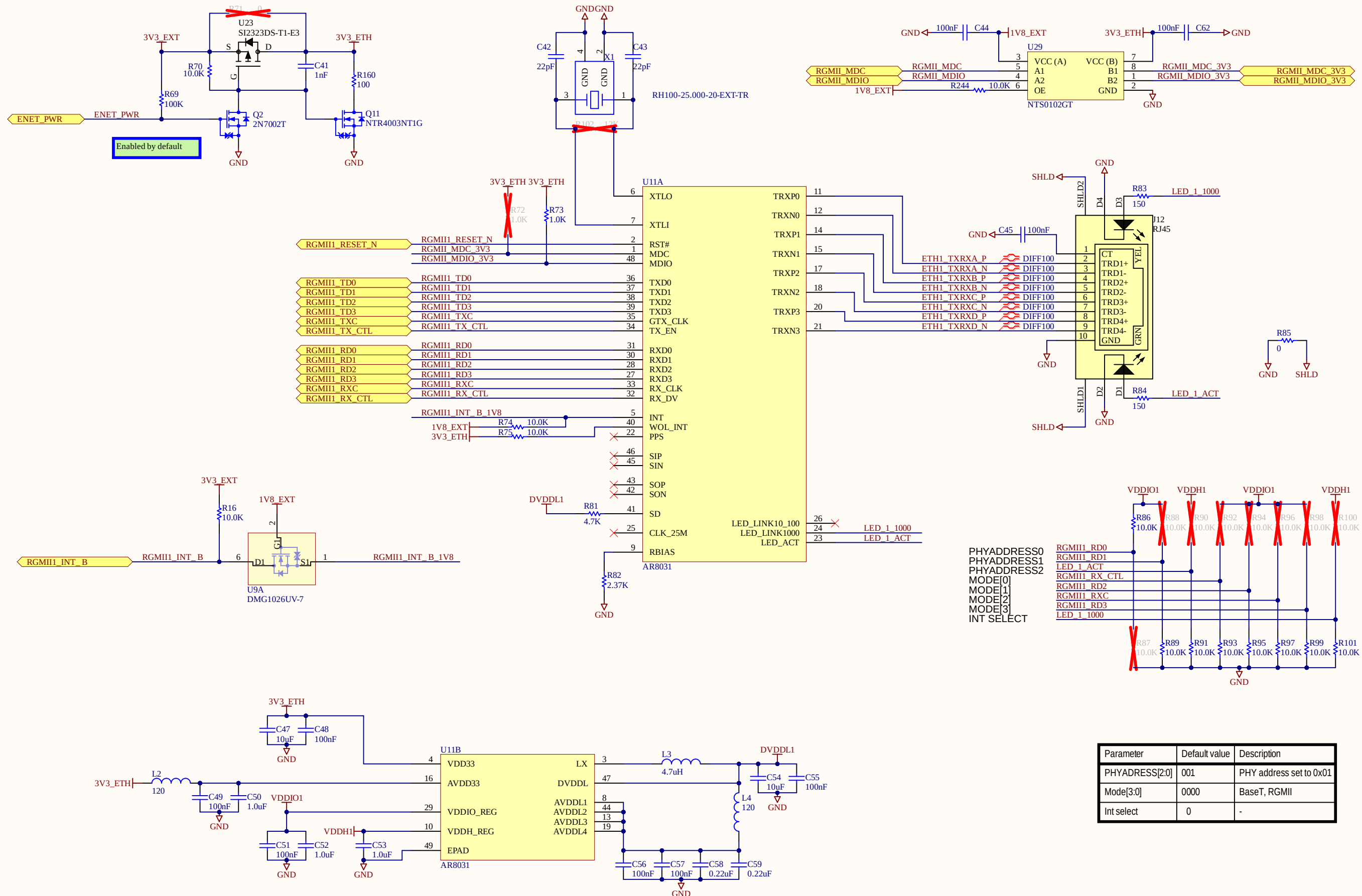
Console TTL



M4 UART

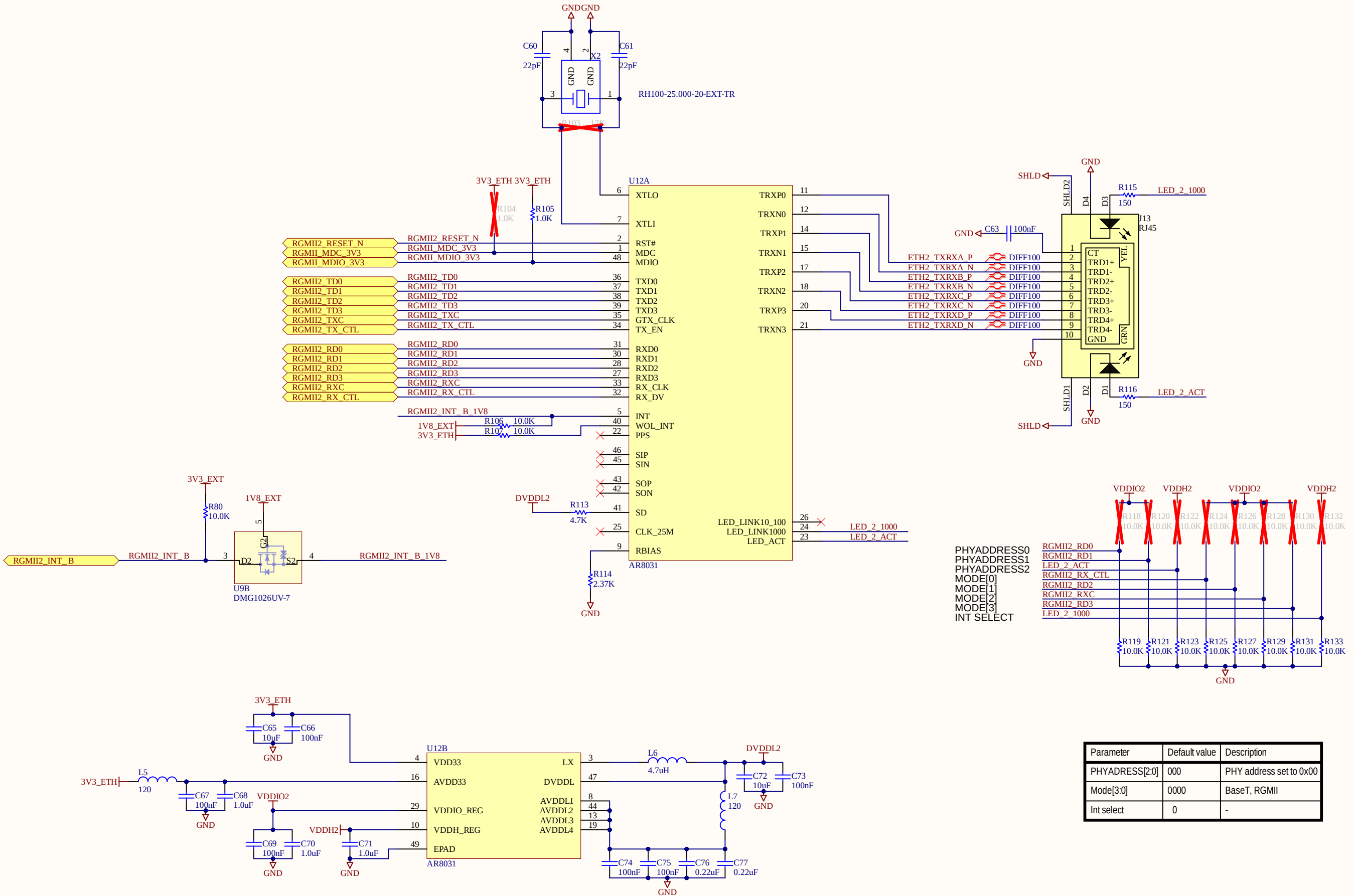


Gigabit Ethernet



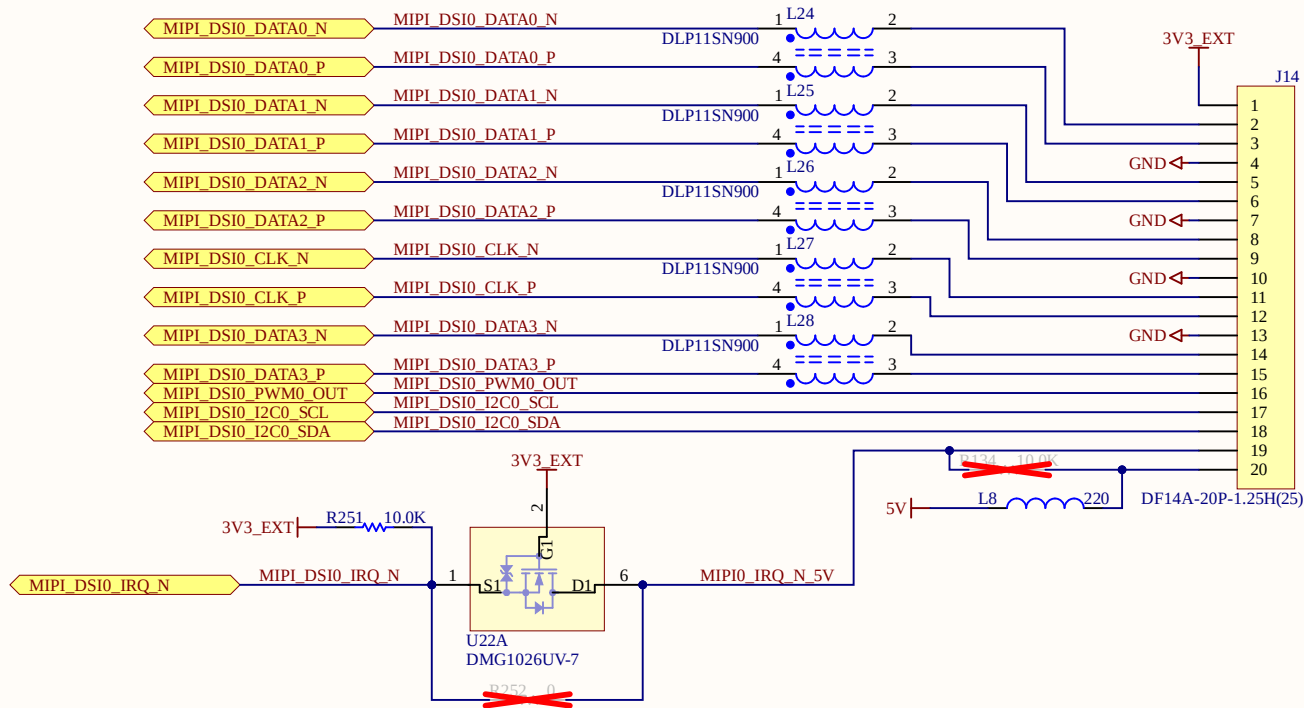
Parameter	Default value	Description
PHYADDRESS[2:0]	001	PHY address set to 0x01
Mode[3:0]	0000	BaseT, RGMII
Int select	0	-

Gigabit Ethernet

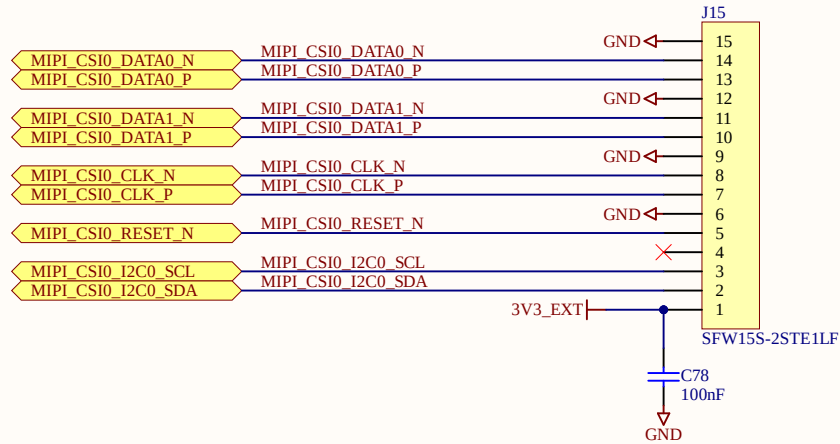


Parameter	Default value	Description
PHYADDRESS[2:0]	000	PHY address set to 0x00
Mode[3:0]	0000	BaseT, RGMII
Int select	0	-

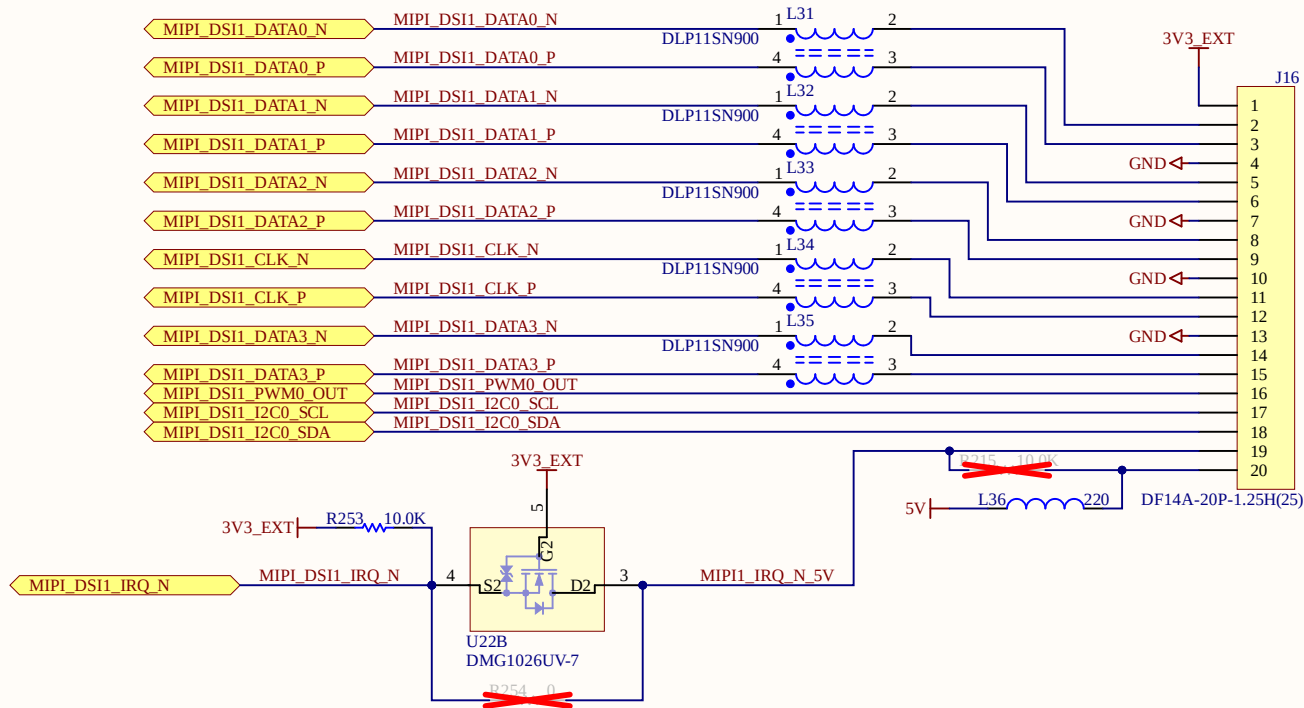
LVDS0



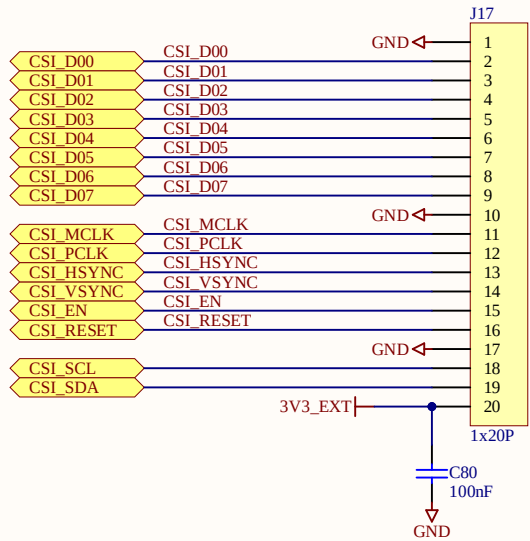
MIPI Camera



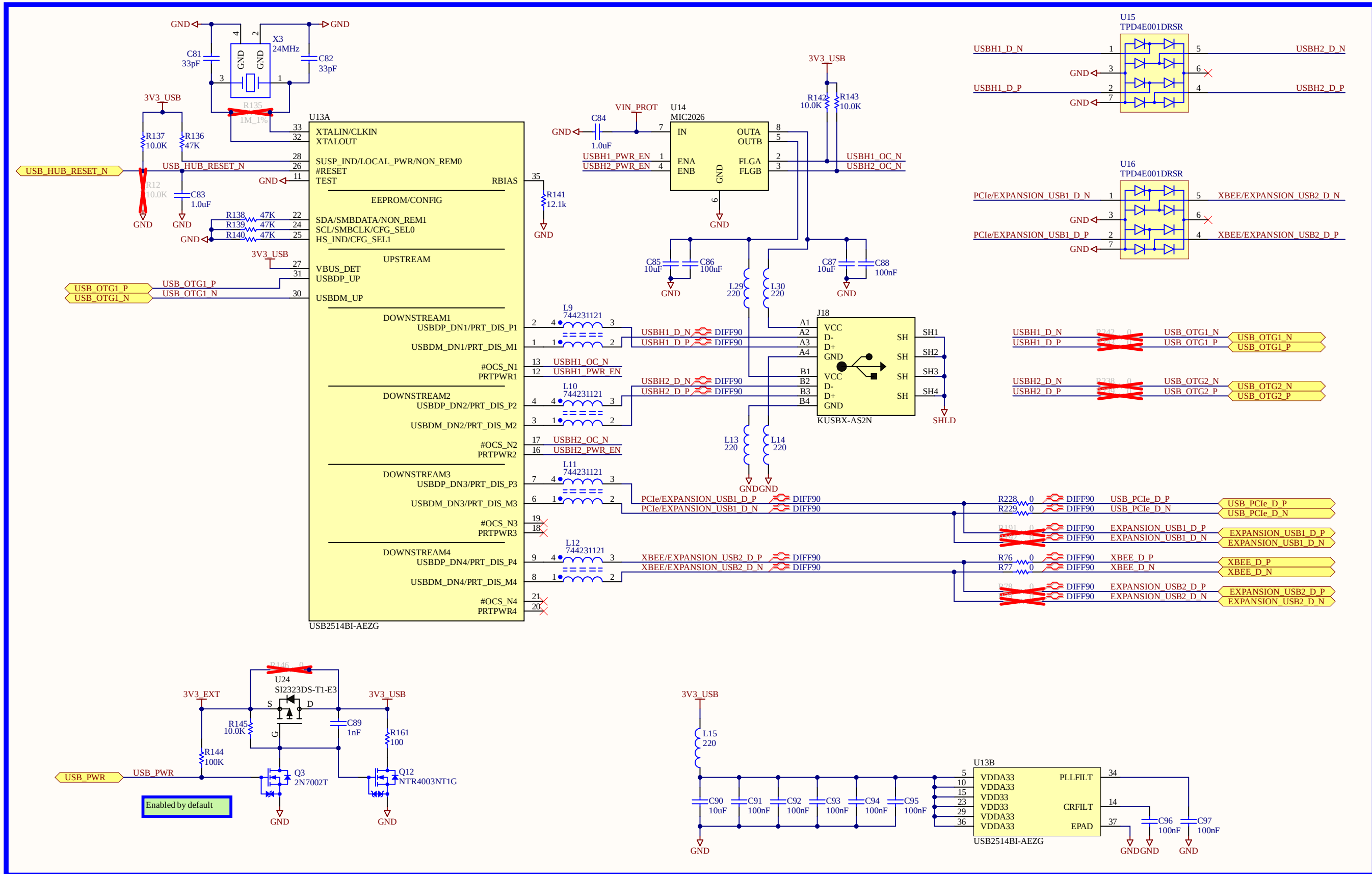
LVDS1



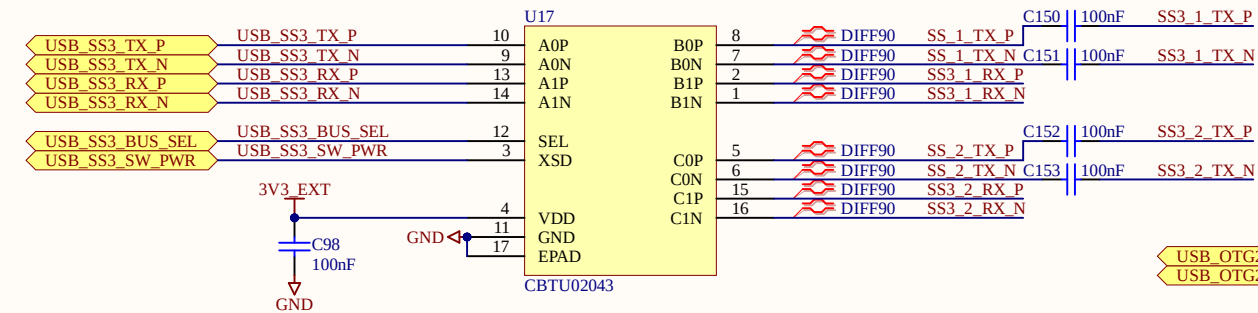
Parallel Camera



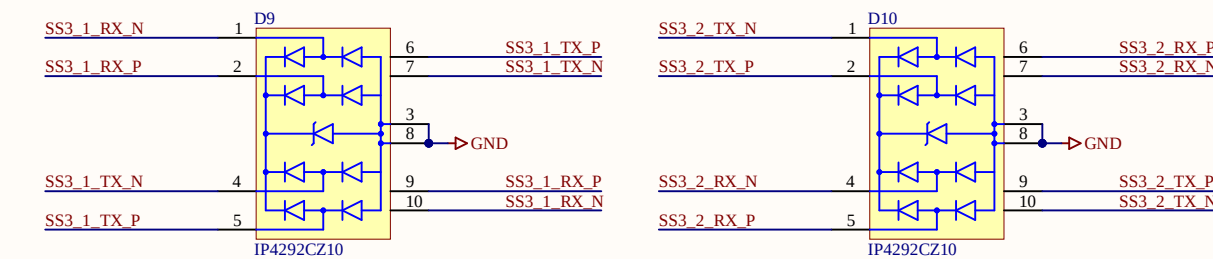
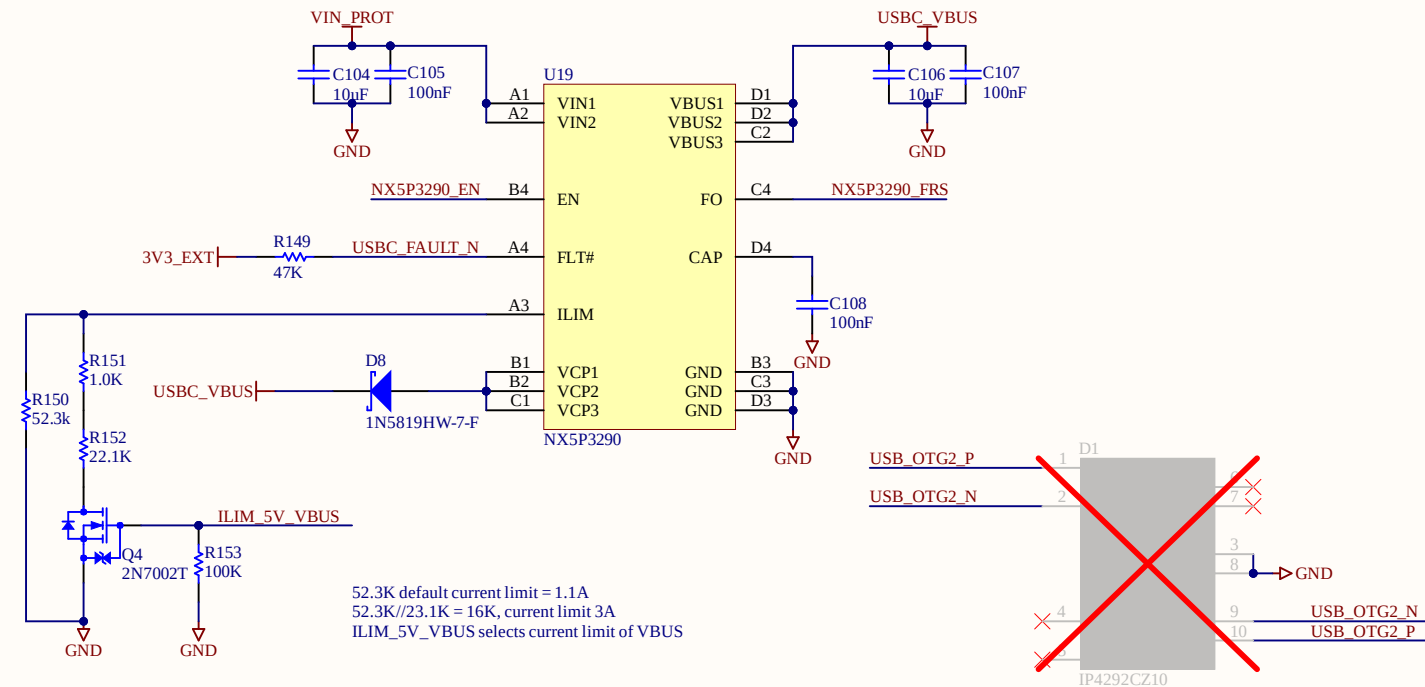
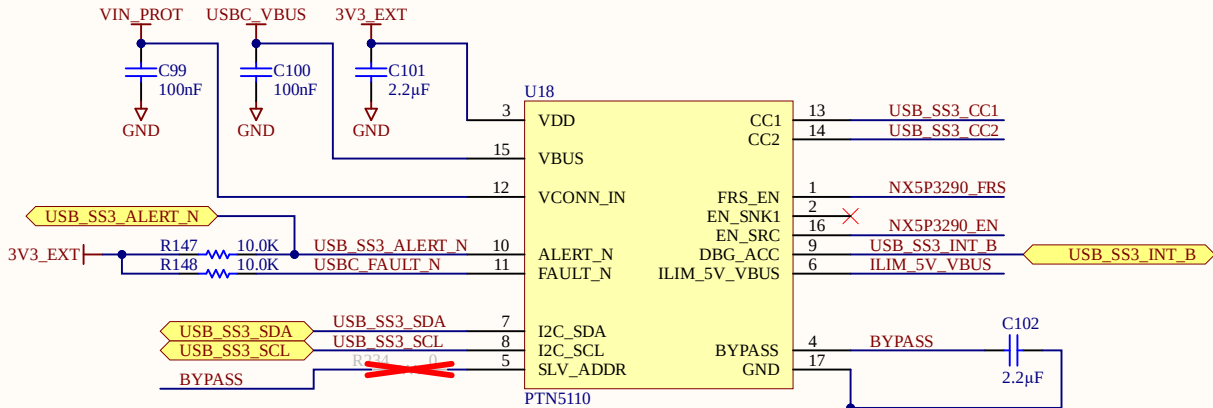
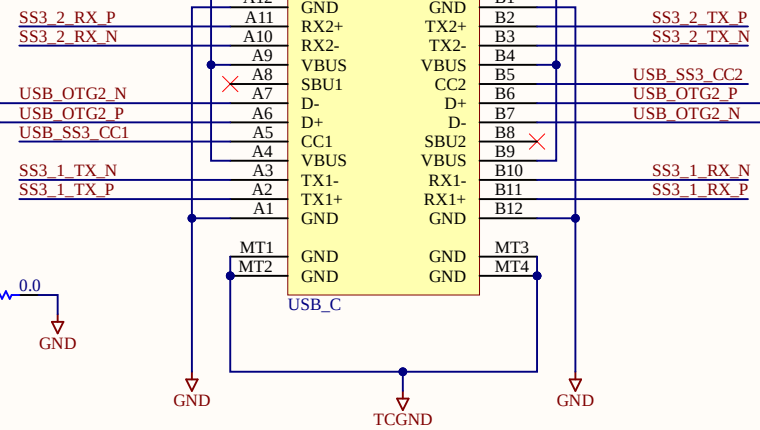
USB_HOST



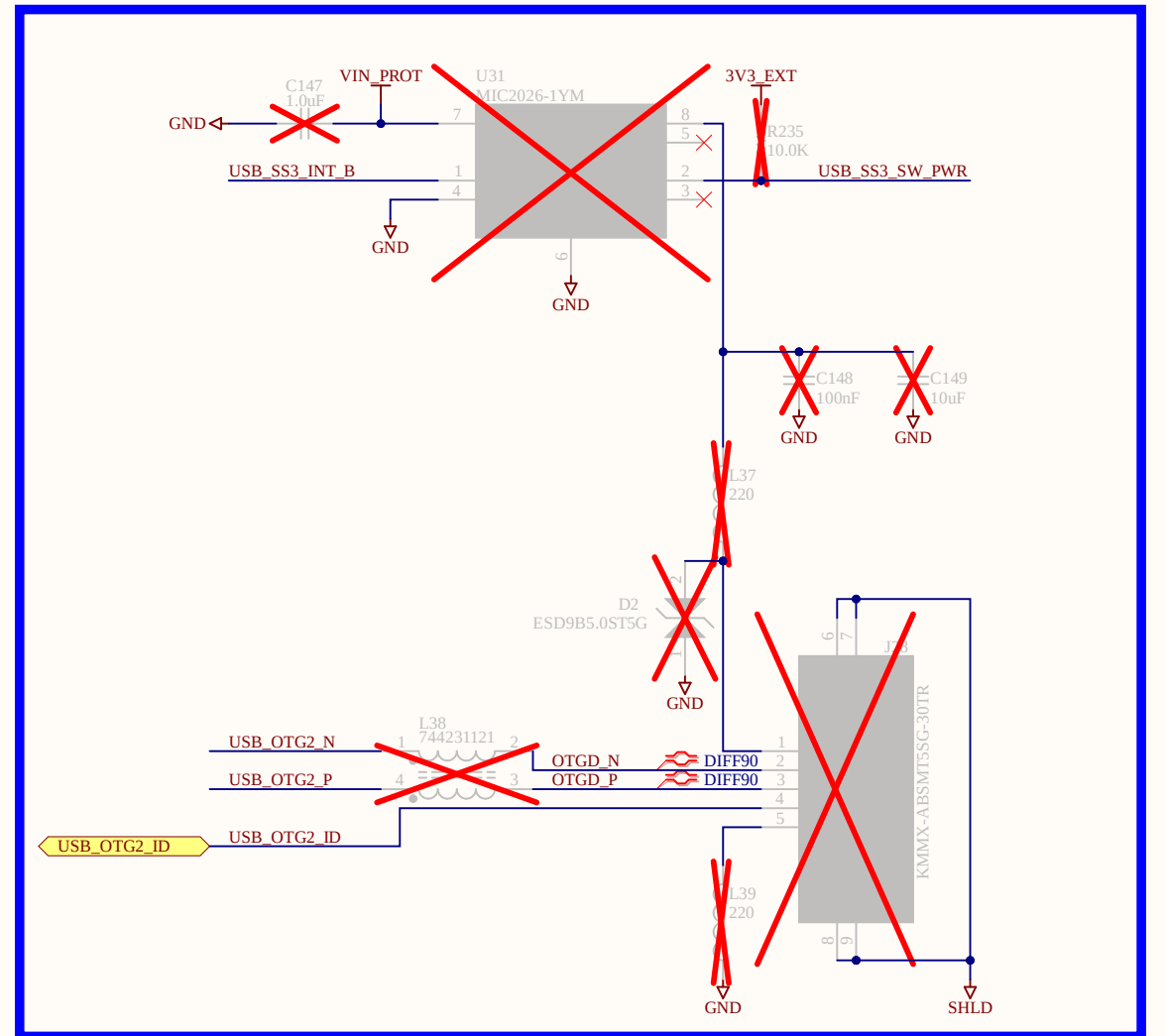
USB_Type_C



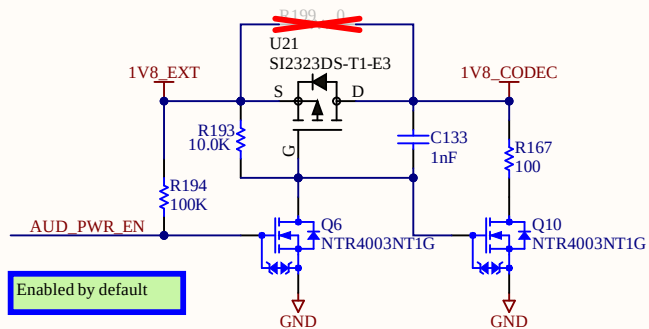
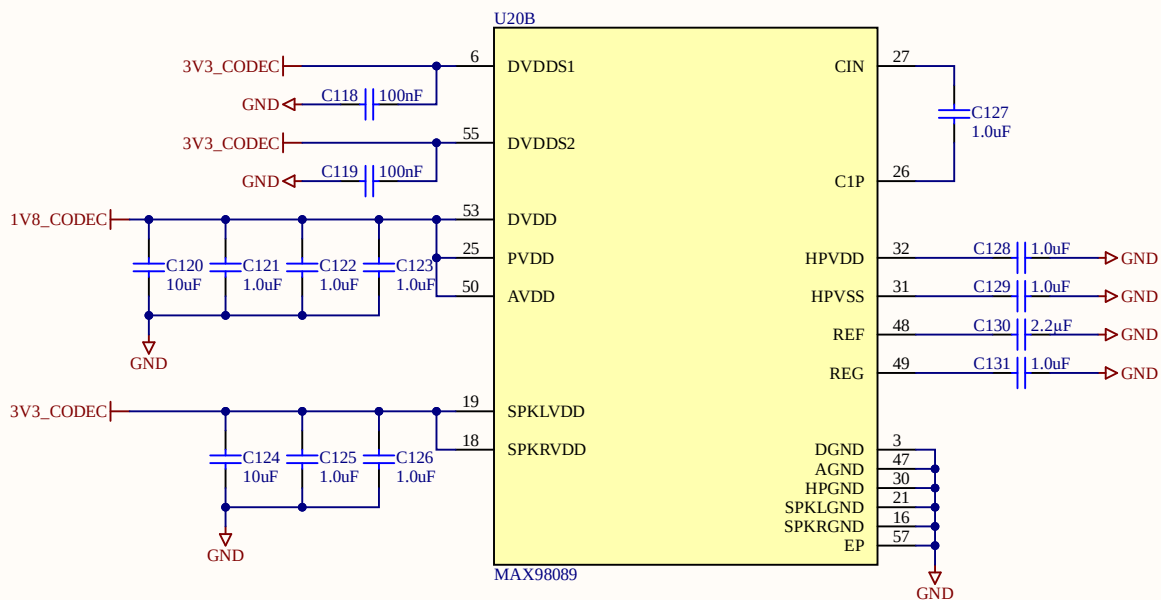
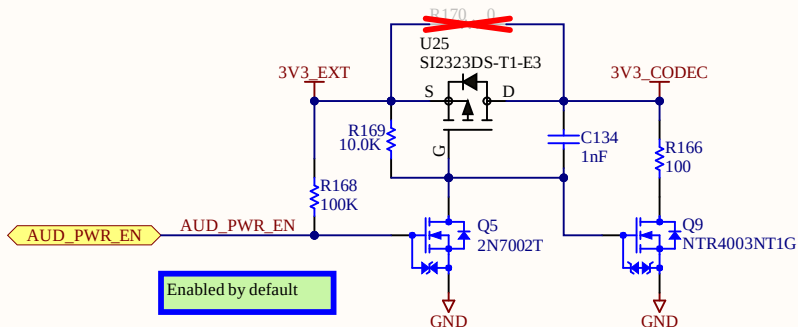
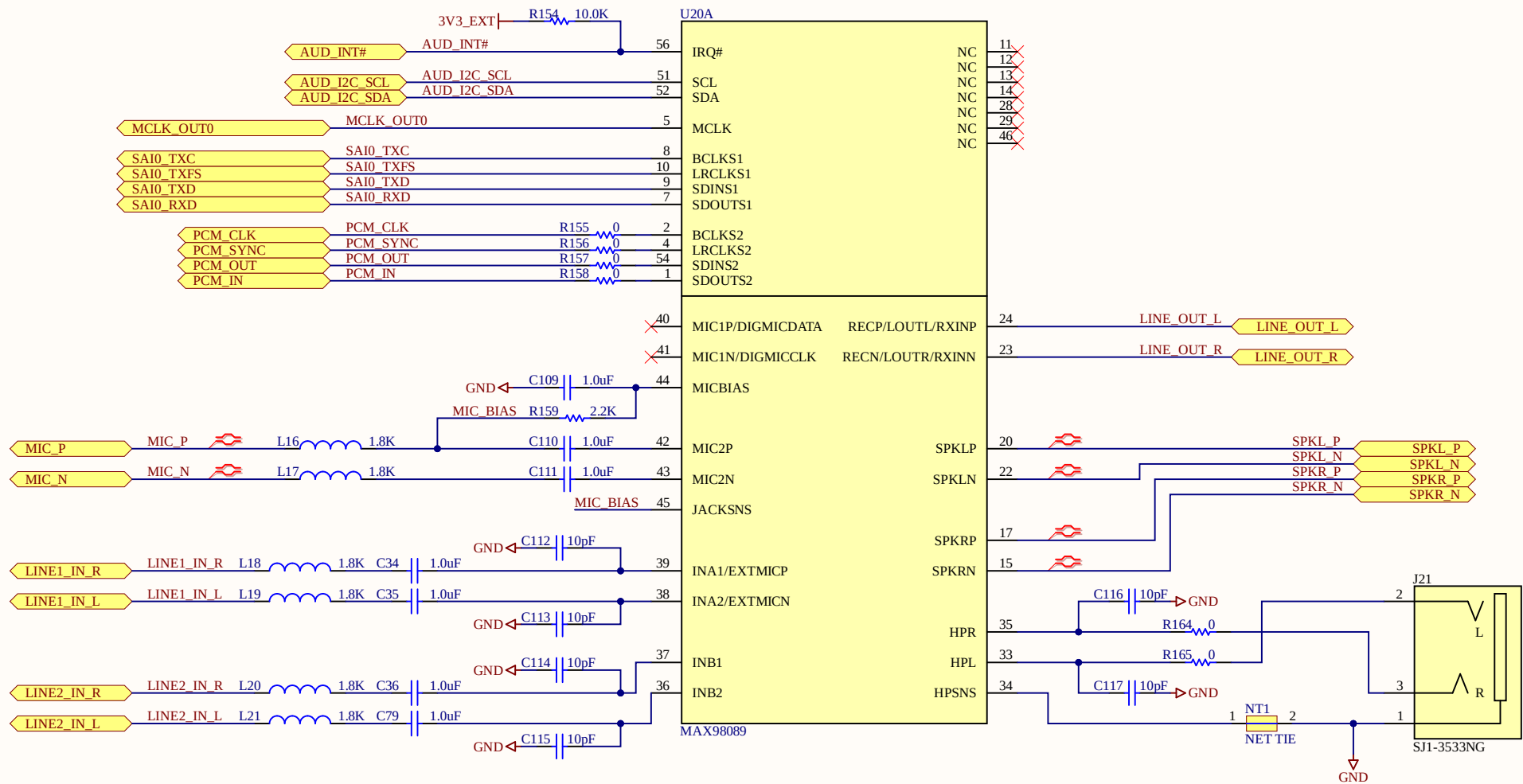
USB_OTG2_N
USB_OTG2_P



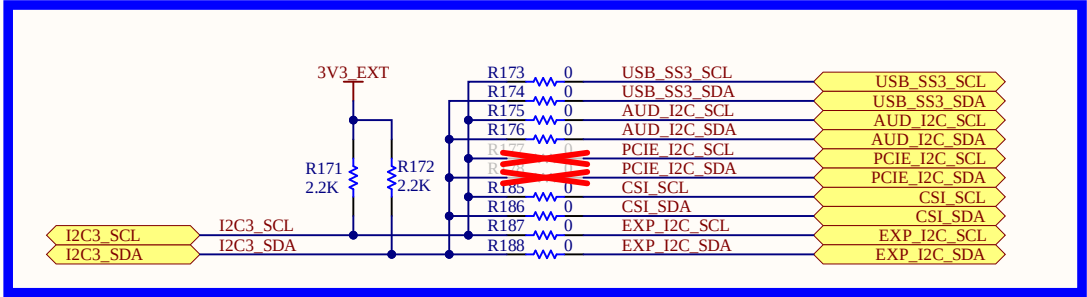
USB_microAB



AUDIO



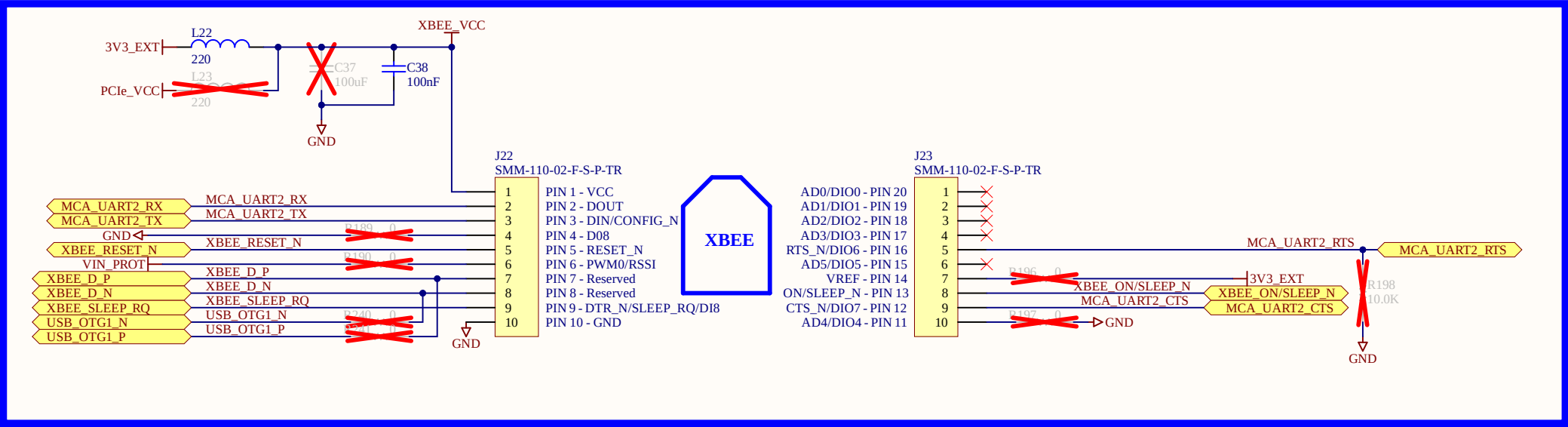
I2C

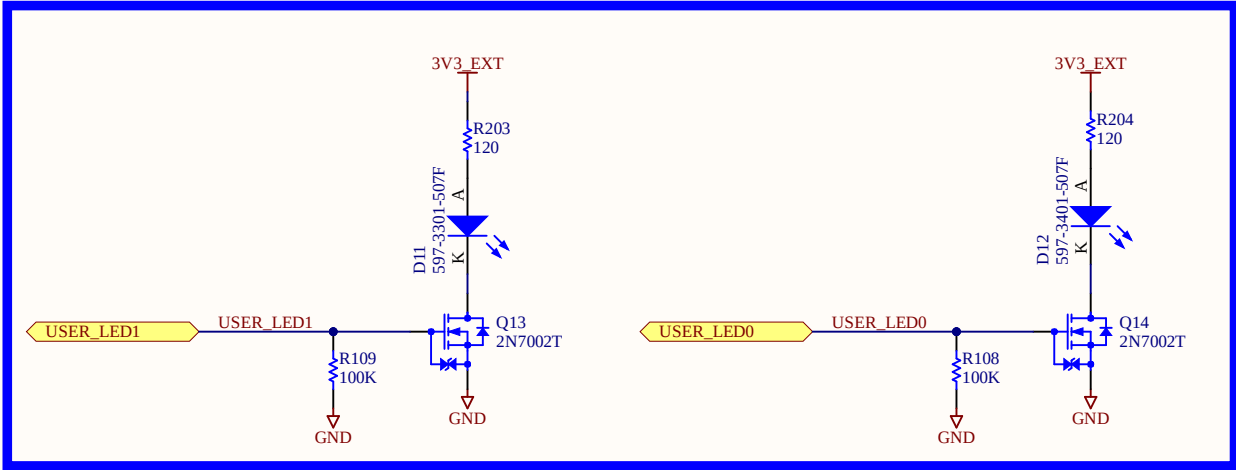
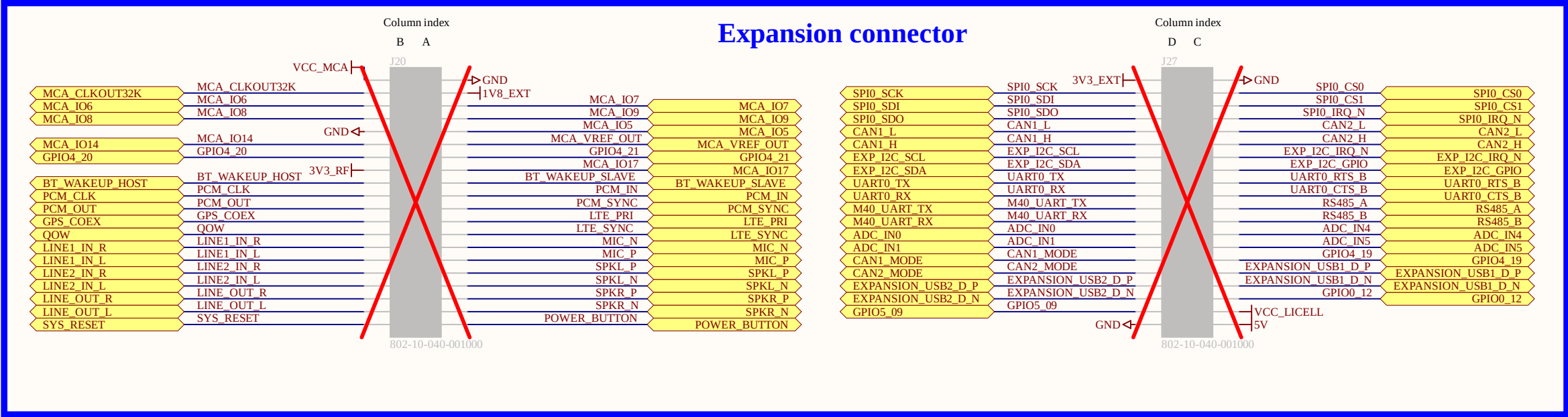


I2C3 (3.3V)

Peripheral	7-bit address (Hex)
USB_SS3	0x52
Audio CODEC	0x10
CSI	-
PCle Port	-
Expansion I2C	-

XBee





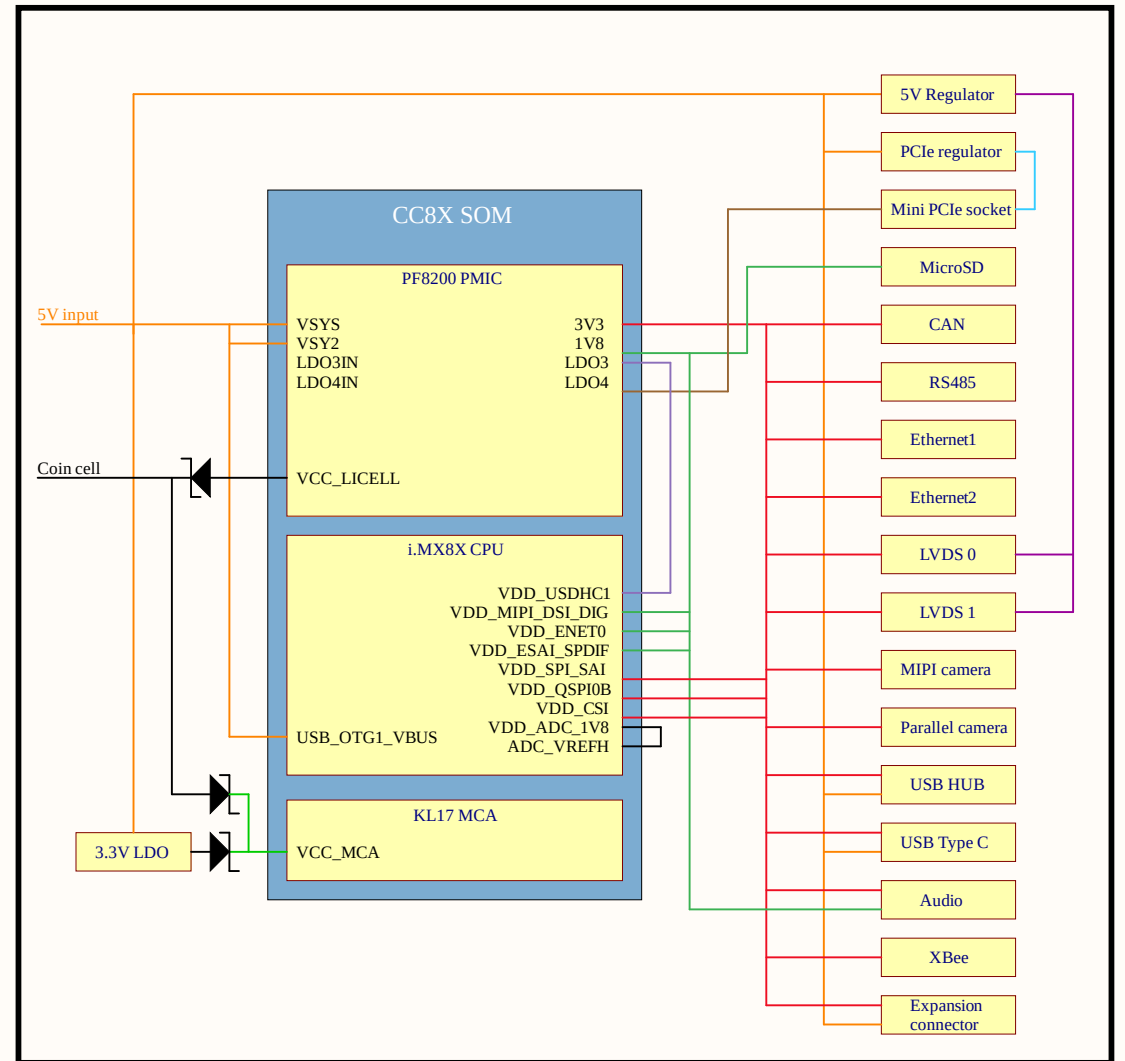
System Power Rails

Voltage (V)	Supply Name	Block	Generated by	Current Capability (mA)	Notes
5.0	VIN	Overvoltage Prot	External DC supply	-	
		MCA LDO			
	VIN_PROT	ConnectCore 8X	Overvoltage Prot	-	
		5V load switch			
		USB Host VBUS			
		USB Type C			
		USB microAB			
		PCIe Regulator			
		Expansion connector			
	5V	CAN	Load switch (U7)	-	
LVDS0					
LVDS1					
3.3	3V3_EXT	UART RS-485	PMIC SW7	2500	
		CAN			
		Ethernet1			
		Ethernet2			
		USB Type C PD			
		USB HUB			
		LVDS0			
		LVDS1			
		MIPI CSI			
		Parallel camera			
		Audio			
		XBee			
		Expansion connector			
	PCIe_VCC	PCIe minicard	VIN_PROT	3000	
VCC_MCA	MCA	AP2202	150		
3.0	VCC_LICELL	RTC	External Coin Cell	-	
1.8	1V8_EXT	UART Level shifter	PMIC SW6	2500	
		Audio			
	VCC_SCU_1V8	Bootstrap	PMIC LDO1	400	
	LDO3	MicroSD	PMIC LDO3	400	
1.5	VLDO4_1V5	Mini PCIe socket	PMIC LDO4	400	

GPIO Table

Signal Name	GPIO
AUD_INT#	GPIO3_17
AUD_PWR_EN	GPIO0_14
CAN1_MODE	GPIO1_00
CAN2_MODE	GPIO1_02
CAN/RS485#	GPIO3_23
ENET_PWR	GPIO3_13
EXP_I2C_GPIO	GPIO3_14
EXP_I2C_IRQ_N	GPIO3_15
MIPI_CSI0_RESET_N	GPIO3_21
MIPI_DSI0_IRQ_N	GPIO3_20
MIPI_DSI1_IRQ_N	GPIO3_19
PCIE_DIS_N	GPIO0_30
PCIE_RESET_N	GPIO3_16
PCIE_VCC_EN	GPIO0_31
PCIE_WAKE_N	GPIO0_29
POWER_LED	PTD7
5V_SBC_PWR_ON	GPIO0_13
RGMII1_RESET_N	GPIO3_18
RGMII2_RESET_N	GPIO3_22
RS485_RE#/DE	GPIO3_24
RF_KILL	GPIO0_20
SPI0_IRQ_N	GPIO1_01
USB_HUB_RESET_N	GPIO1_03
USB_PWR	GPIO0_15
USB_SS3_ALERT_N	GPIO4_04
USB_SS3_BUS_SEL	GPIO4_06
USB_SS3_INT_B	GPIO4_03
USB_SS3_SW_PWR	GPIO4_05
USER_LED0	PTD5
USER_LED1	PTD6
VLDO2_VSELECT	GPIO0_19
XBEE_ON/SLEEP_N	PTC4
XBEE_RESET_N	PTC3
XBEE_SLEEP_RQ	PTE20

Power architecture diagram



1	2	3	4	5	6	7	8	
A	Format: DD/MM/YYYY 28/06/2018 - ConnectCore for i.MX8QX Single Board Computer PRO * Initial version: 55002025-01 rev02 17/10/2018 - ConnectCore for i.MX8QX Single Board Computer PRO * 55002025-01 rev03 - PCB board redesign. 21/11/2018 - ConnectCore for i.MX8QX Single Board Computer PRO * 55002025-01 rev04 - Power microSD from 3V3 instead of LDO3. Depopulate R56 and R230 and populate R57 and R231. 27/12/2018 - ConnectCore for i.MX8QX Single Board Computer PRO * 55002025-01 rev05 - Fixed SoM internal P/N - Improved suspend to RAM and power-off power consumption: - R162 changed from 1K to 2.2M - Depopulate R25 and C132 04/02/2019 - ConnectCore for i.MX8QX Single Board Computer PRO * 55002025-01 rev1P - Remove: R56, R230, R246, R249 and R64. - Populate: R57, R162 and R231. 04/04/2019 - ConnectCore for i.MX8QX Single Board Computer PRO * ECO-009688 - 55002025-01 rev2P - No changes on the SBC PRO. Move to the new revision of the SoM (55001984-02 rev2P). 27/05/2019 - ConnectCore for i.MX8QX Single Board Computer PRO * ECO-009766 - 55002025-01 rev3P - No changes on the SBC PRO. Move to the new revision of the SoM (55001984-02 rev3P). 03/07/2019 - ConnectCore for i.MX8QX Single Board Computer PRO * ECO-009955 - 55002025-01 rev4P - Move to the new PCB: 3001575x-04 revA. - Change the voltage shifter (U22) on the IRQ line of the touch controller of the LVDS interfaces so that this line is bi-directional. - Change the strategy around the PWR_ON signal to improve the functionality in low-power modes. - MCA_IO19 has been used on the SoM and is marked as reserved on the SBC. - Add the RC network into the CoinCell charger output. - Add power switches to 3V3 and 1V8 power rails. 25/09/2019 - ConnectCore for i.MX 8X Single Board Computer PRO * ECO-010037 - 55002025-01 rev5P - Move to the new SoM PCB (30015412-04 revA). - No PCB change. 27/09/2019 - ConnectCore for i.MX 8X Single Board Computer PRO * ECO-010139 - 55002025-01 rev6P - U-Boot and MCA firmware update on CC8X SoM. - No PCB change. 27/01/2020 - ConnectCore for i.MX 8X Single Board Computer PRO * ECO-010154 - 55002025-01 rev7P - Label update on CC8X SoM. - No PCB change. 05/03/2020 - ConnectCore for i.MX 8X Single Board Computer PRO * ECO-010425 - 55002025-01 rev8P - Replacing 30015752-04 by 30015752-05 PCB. - Replacing U30 (17050018) by D14 (17000173) - Replacing 50001980-02 SoM P/N by its ship level CC-WMX-JM8E-NN - Replacing FIL1 (21000532) by FIL1 (21000606) 06/10/2020 - ConnectCore for i.MX 8X Single Board Computer PRO * ECO-010845 - 55002025-01 revA - Release to revA without BOM changes. 13/01/2021 - ConnectCore for i.MX 8X Single Board Computer PRO * ECO-010955 - 55002025-01 revB - Release to revB without BOM changes. 02/06/2021 - ConnectCore for i.MX 8X Single Board Computer PRO * ECO-011363 - 55002025-01 revC - Release to revC without BOM changes. 21/10/2021 - ConnectCore for i.MX 8X Single Board Computer PRO * ECO-011604 - 55002025-01 revE - Remove J9.							A
B								B
C								C
D	H1 H2 H3 H4 TXT1 LABEL TEXT 95022431							D
1	2	3	4	5	6	7	8	