

ConnectCore for i.MX8X Single Board Computer

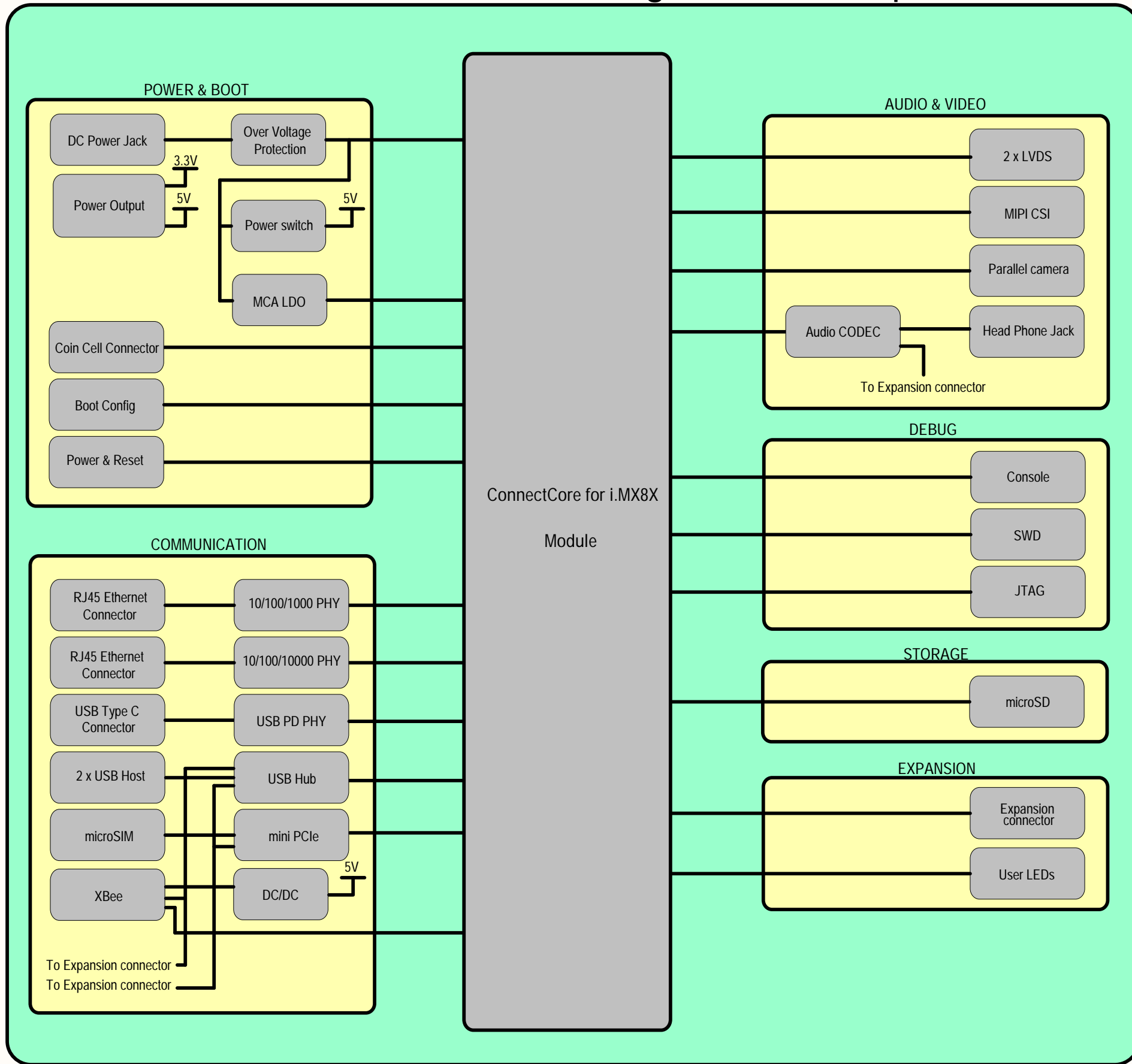
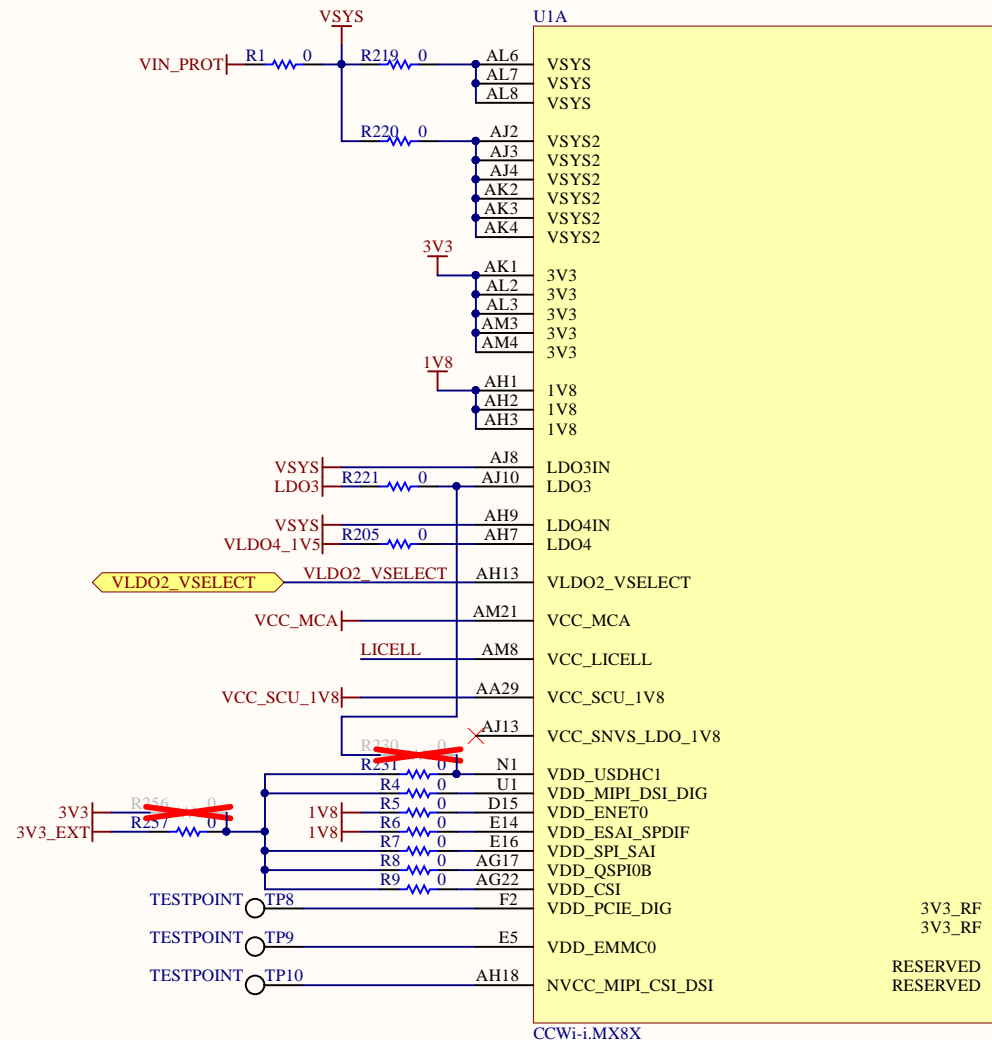


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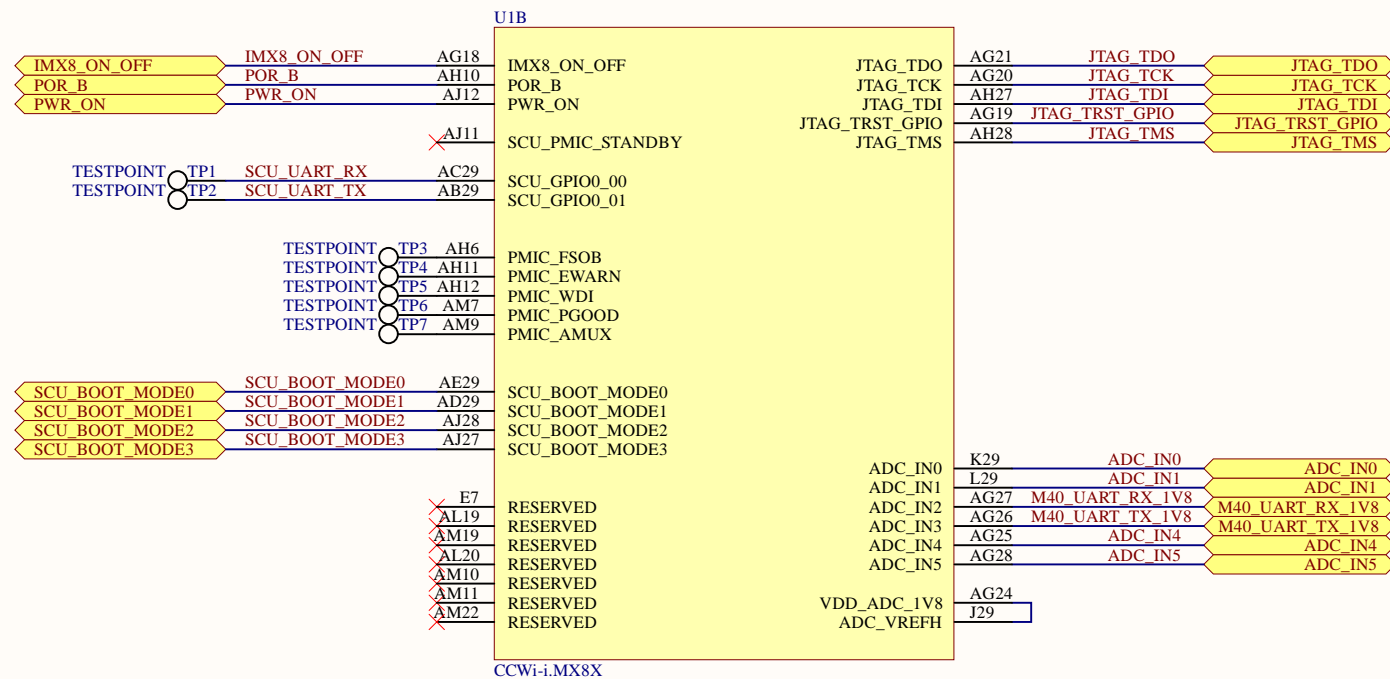
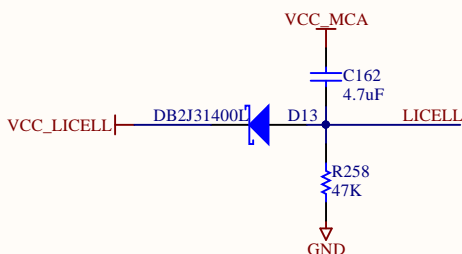
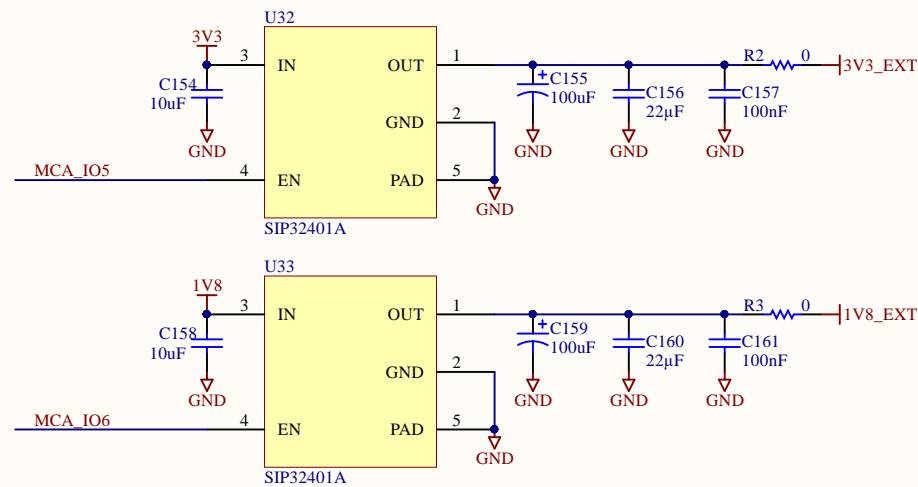
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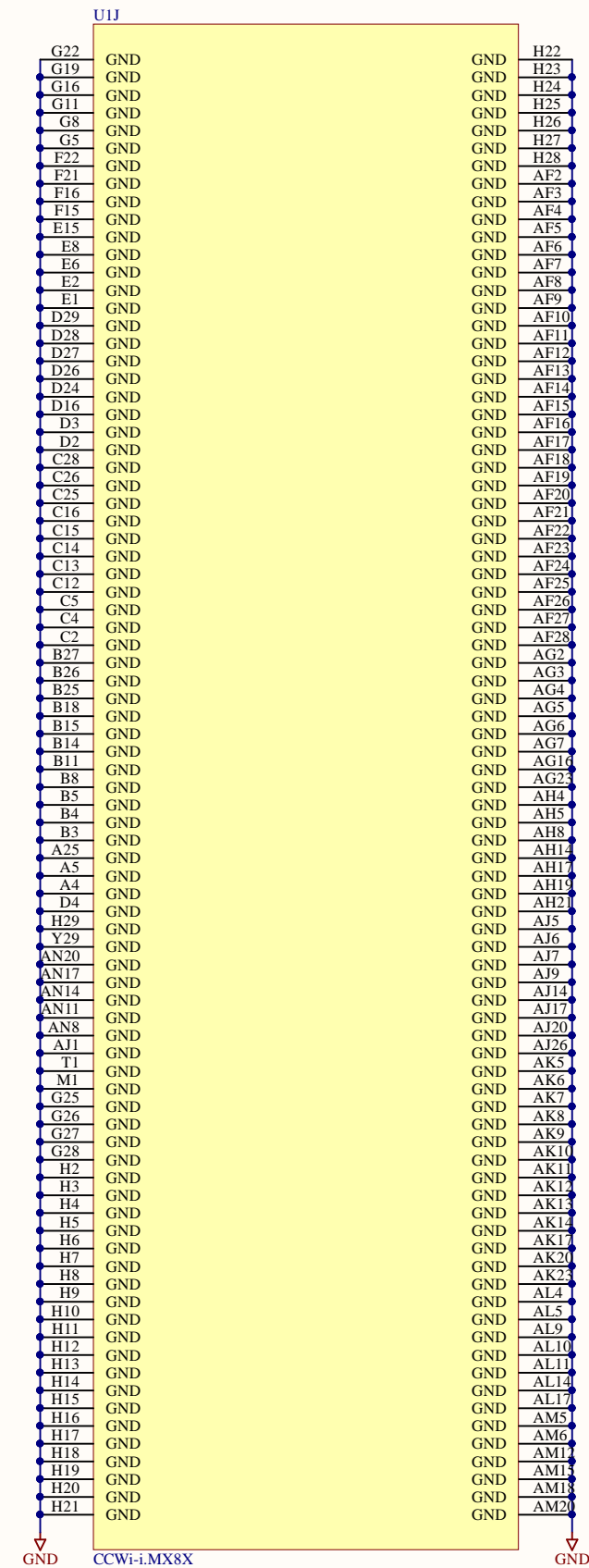


SYS_RESET	SYS_RESET	AN25	SYS_RESET	SYS_RESET	AN25
SWD_CLK/PWR_IO	SWD_CLK/PWR_IO	AN24	SWD_CLK/PWR_IO	SWD_CLK/PWR_IO	AN24
SWD_DIO	SWD_DIO	AN26	SWD_DIO/MCA_IO0	SWD_DIO/MCA_IO0	AN26
MCA_VIN_DET	MCA_VIN_DET	AM27	MCA_VIN_DET	MCA_VIN_DET	AM27
MCA_VREF_OUT	MCA_VREF_OUT	AM24	MCA_VREF_OUT	MCA_VREF_OUT	AM24
MCA_CLKOUT32K	MCA_CLKOUT32K	AL21	MCA_CLKOUT32K	MCA_CLKOUT32K	AL21
MCA_UART2_TX	MCA_UART2_TX	AN21	MCA_UART2_TX	MCA_UART2_TX	AN21
MCA_UART2_RX	MCA_UART2_RX	AN22	MCA_UART2_RX	MCA_UART2_RX	AN22
MCA_UART2_CTS	MCA_UART2_CTS	AN23	MCA_UART2_CTS	MCA_UART2_CTS	AN23
MCA_UART2_RTS	MCA_UART2_RTS	AL27	MCA_UART2_RTS	MCA_UART2_RTS	AL27
MCA_IO5	MCA_IO5	AL28	MCA_IO5	MCA_IO5	AL28
MCA_IO6	MCA_IO6	AK29	MCA_IO6	MCA_IO6	AK29
MCA_IO7	MCA_IO7	AJ29	MCA_IO7	MCA_IO7	AJ29
MCA_IO8	MCA_IO8	AH29	MCA_IO8	MCA_IO8	AH29
MCA_IO9	MCA_IO9	AG29	MCA_IO9	MCA_IO9	AG29
USER_LED1	USER_LED1	AF29	MCA_IO10	MCA_IO10	AF29
XBEE_SLEEP_RQ	XBEE_SLEEP_RQ	AM26	MCA_IO11	MCA_IO11	AM26
BT_WAKEUP_HOST	BT_WAKEUP_HOST	AM25	MCA_IO12	MCA_IO12	AM25
POWER_LED	POWER_LED	AL22	MCA_IO13	MCA_IO13	AL22
MCA_IO14	MCA_IO14	AL26	MCA_IO14	MCA_IO14	AL26
XBEE_RESET_N	XBEE_RESET_N	AL25	MCA_IO15	MCA_IO15	AL25
XBEE_ON/SLEEP_N	XBEE_ON/SLEEP_N	AL24	MCA_IO16	MCA_IO16	AL24
MCA_IO17	MCA_IO17	AL23	MCA_IO17	MCA_IO17	AL23
USER_LED0	USER_LED0	AM23	MCA_IO18	MCA_IO18	AM23

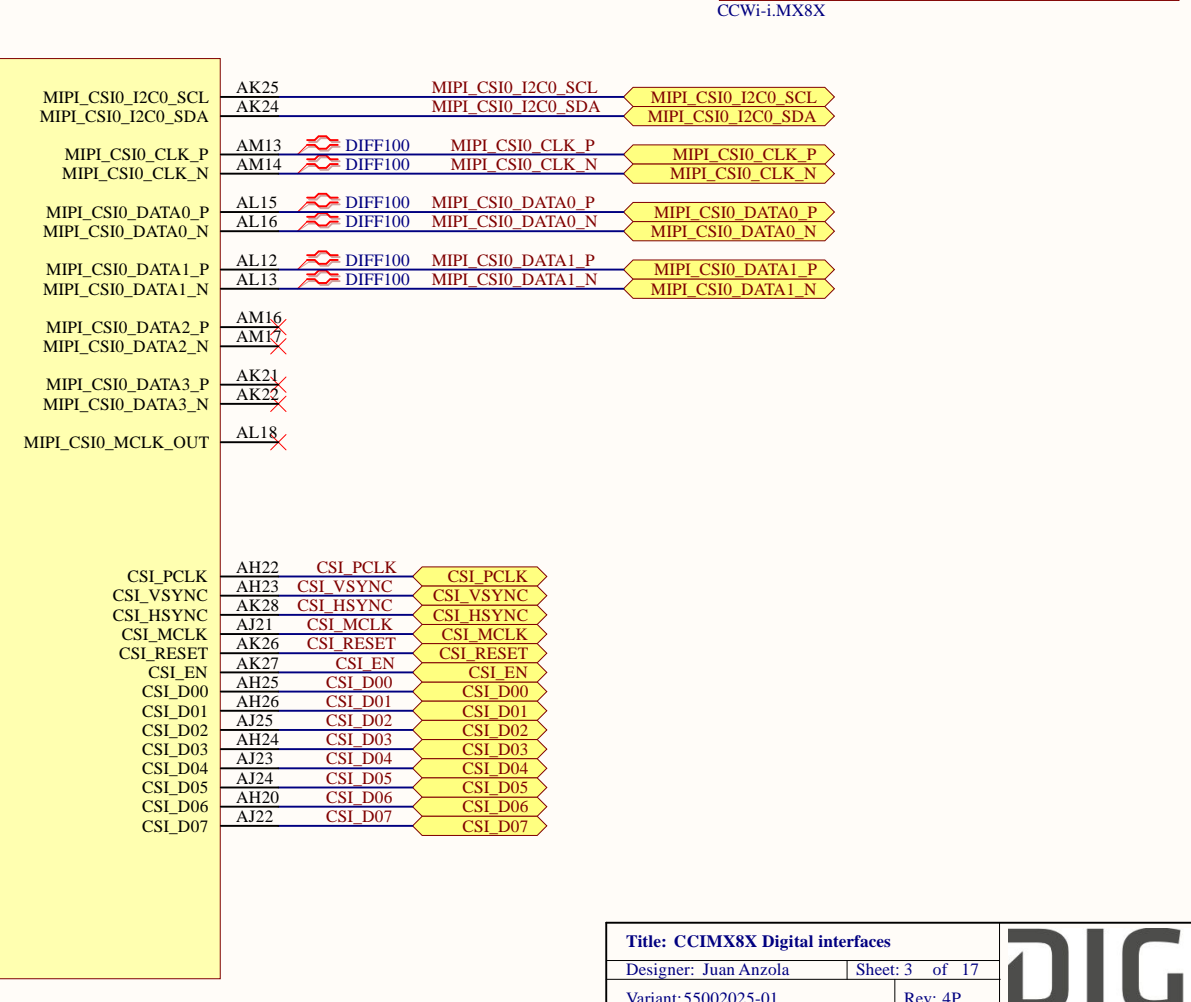
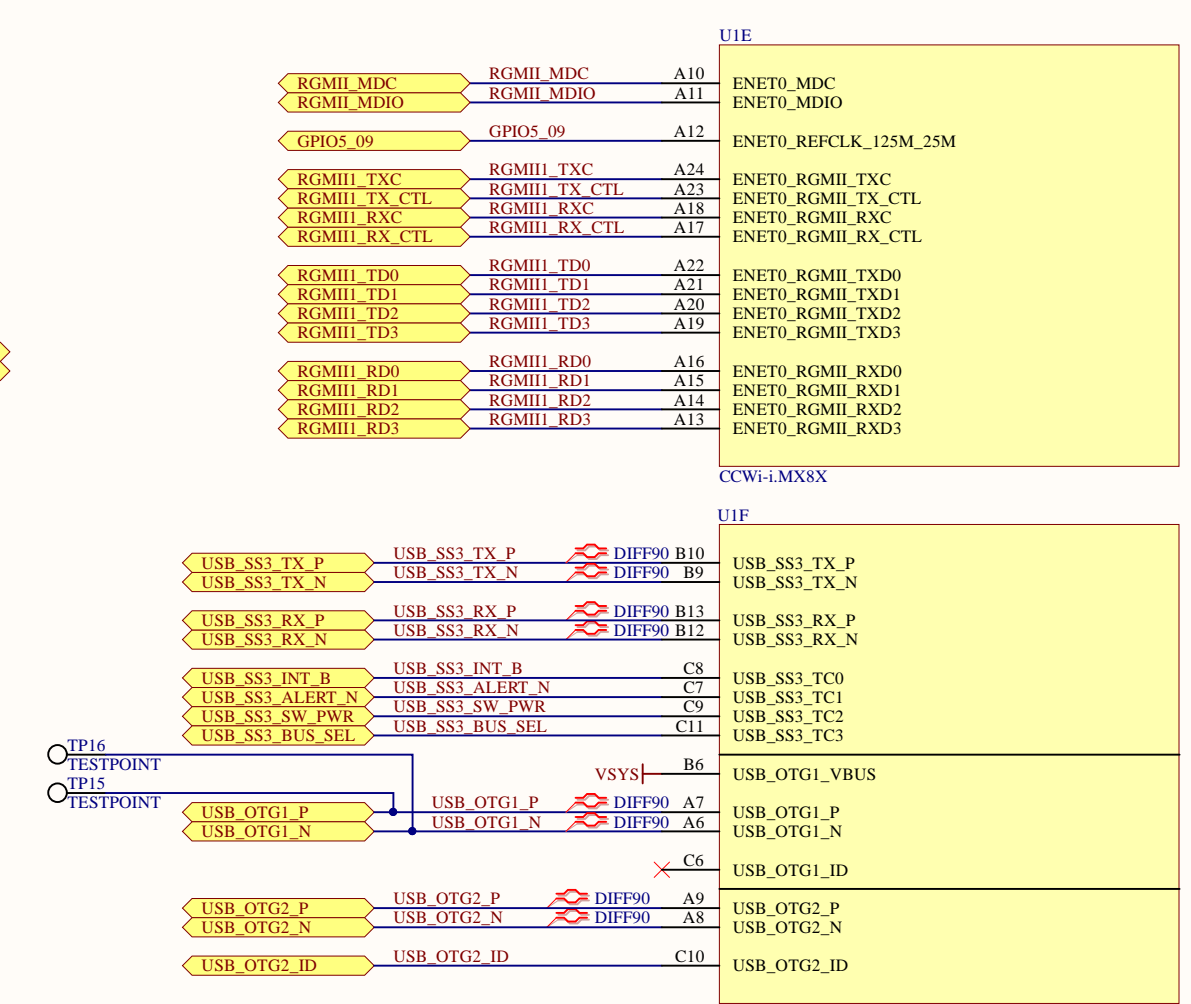
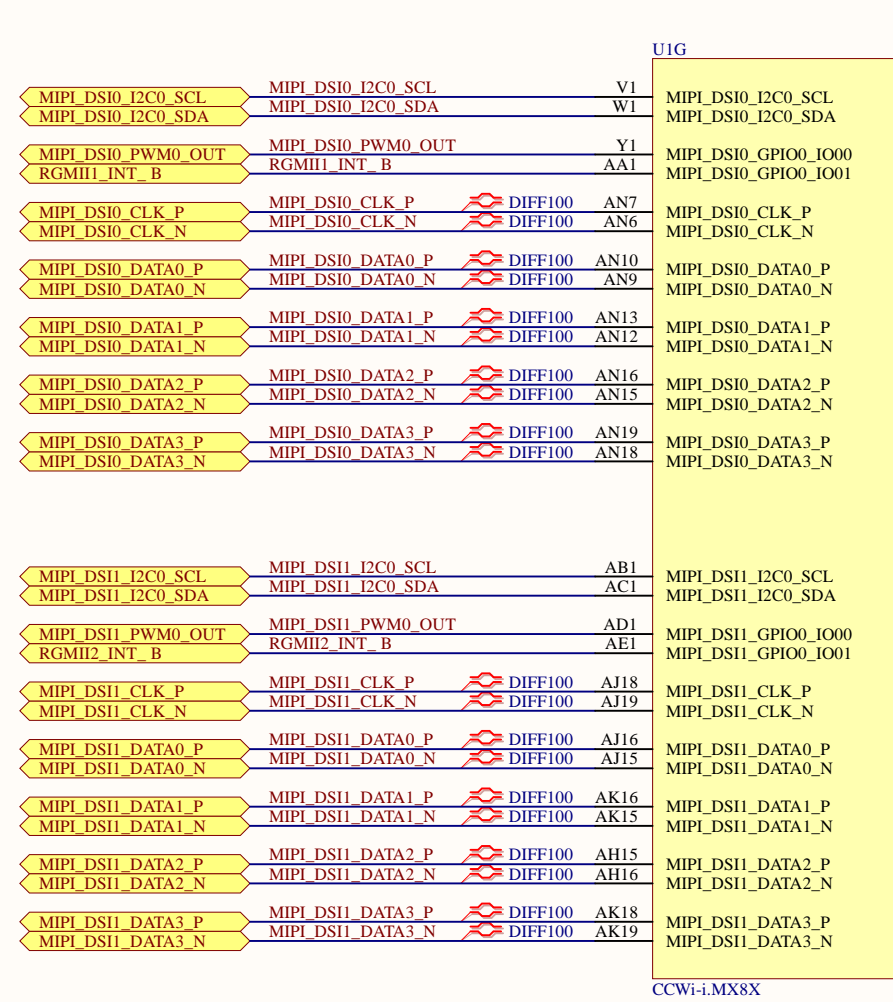
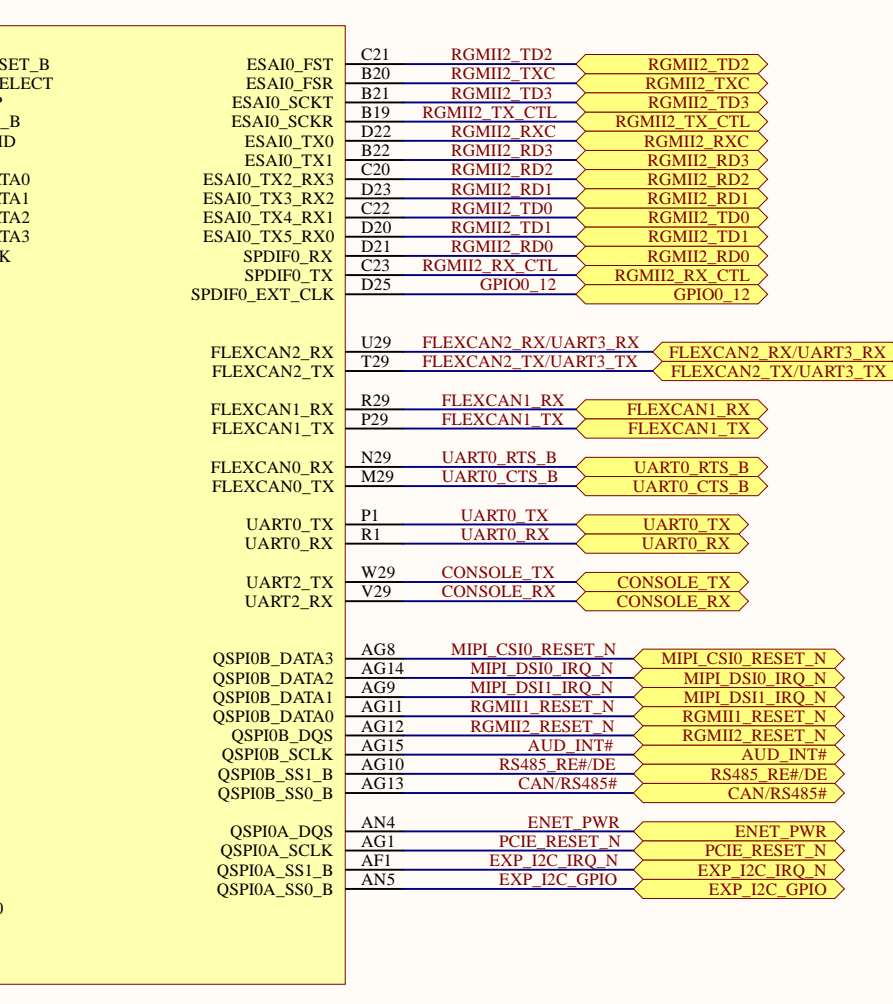
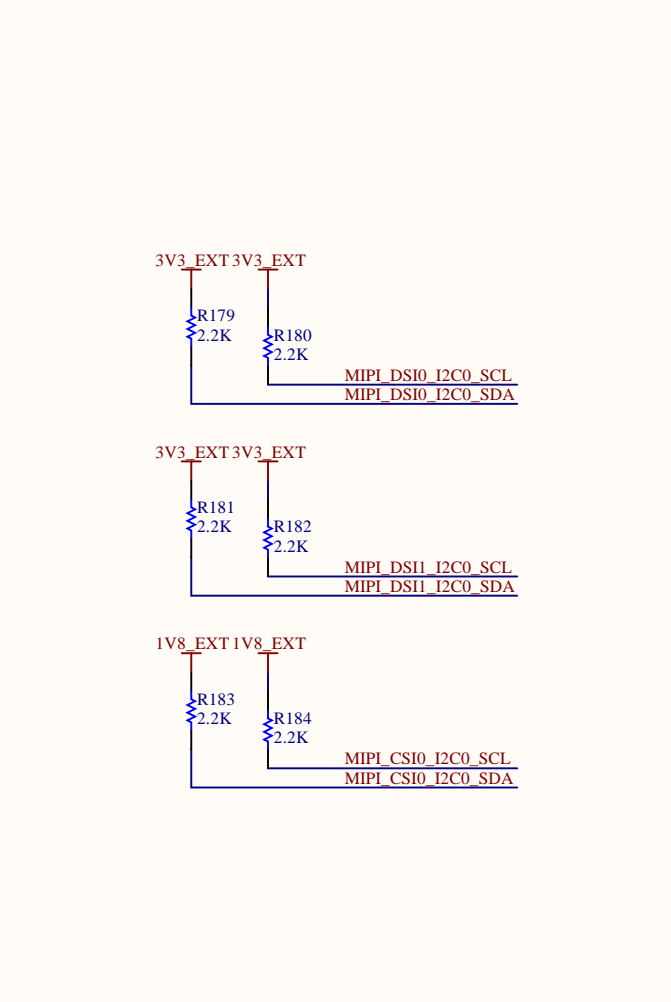
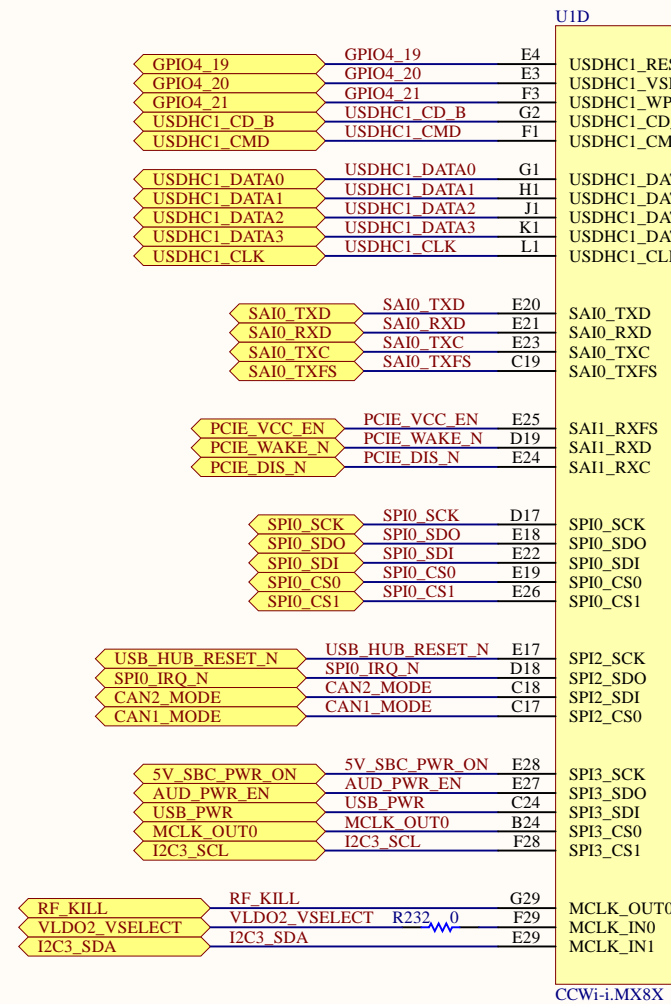
CCWi-i.MX8X



CCWi-i.MX8X

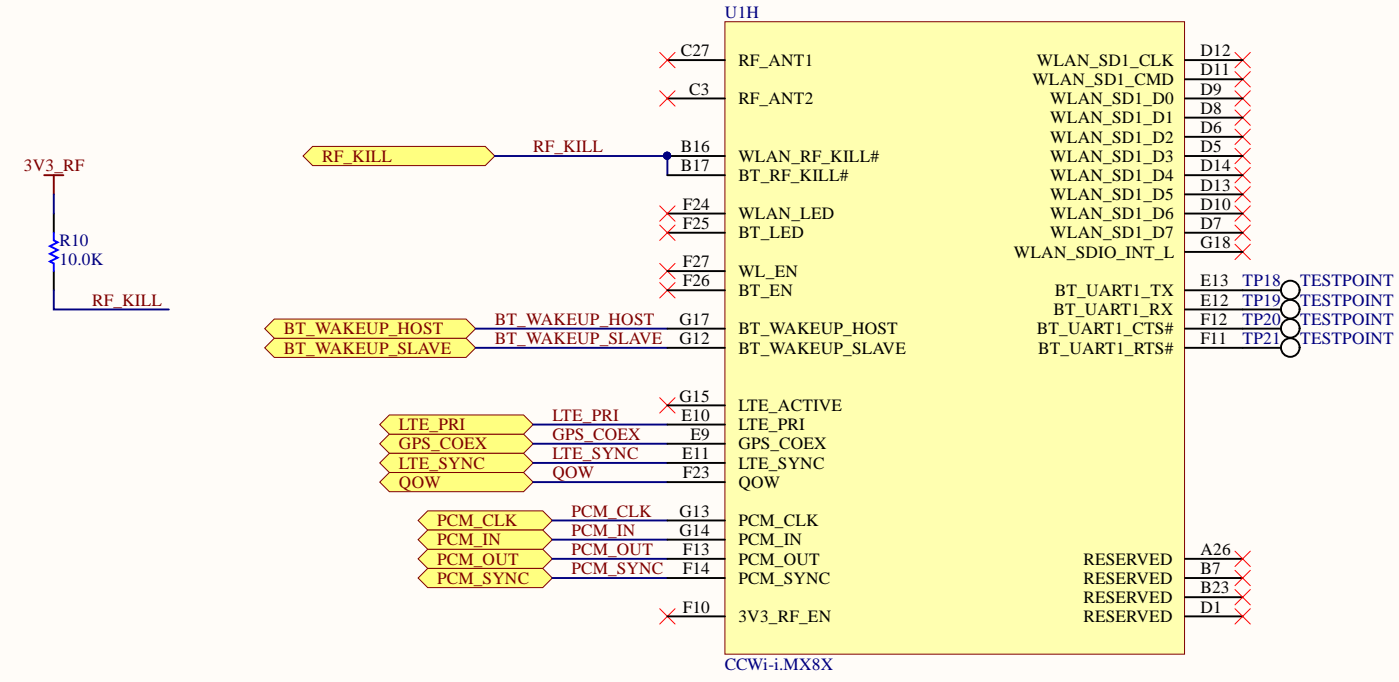


CCWi-i.MX8X



A

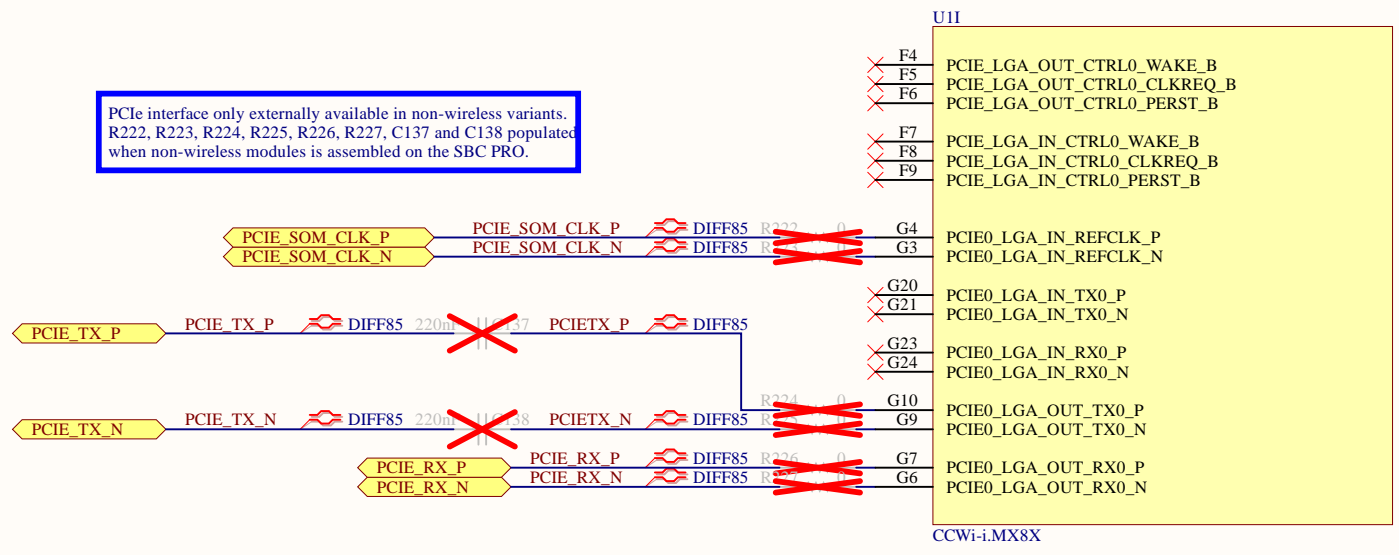
A



B

B

PCie interface only externally available in non-wireless variants. R222, R223, R224, R225, R226, R227, C137 and C138 populated when non-wireless modules is assembled on the SBC PRO.



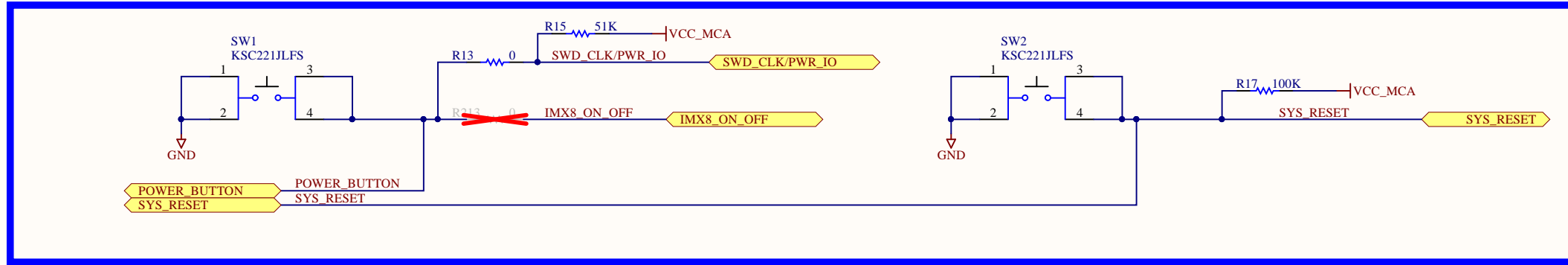
C

C

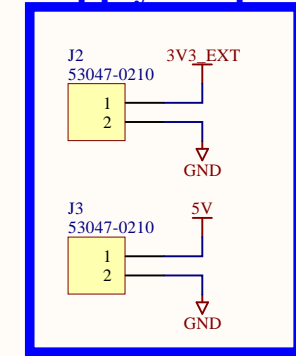
D

D

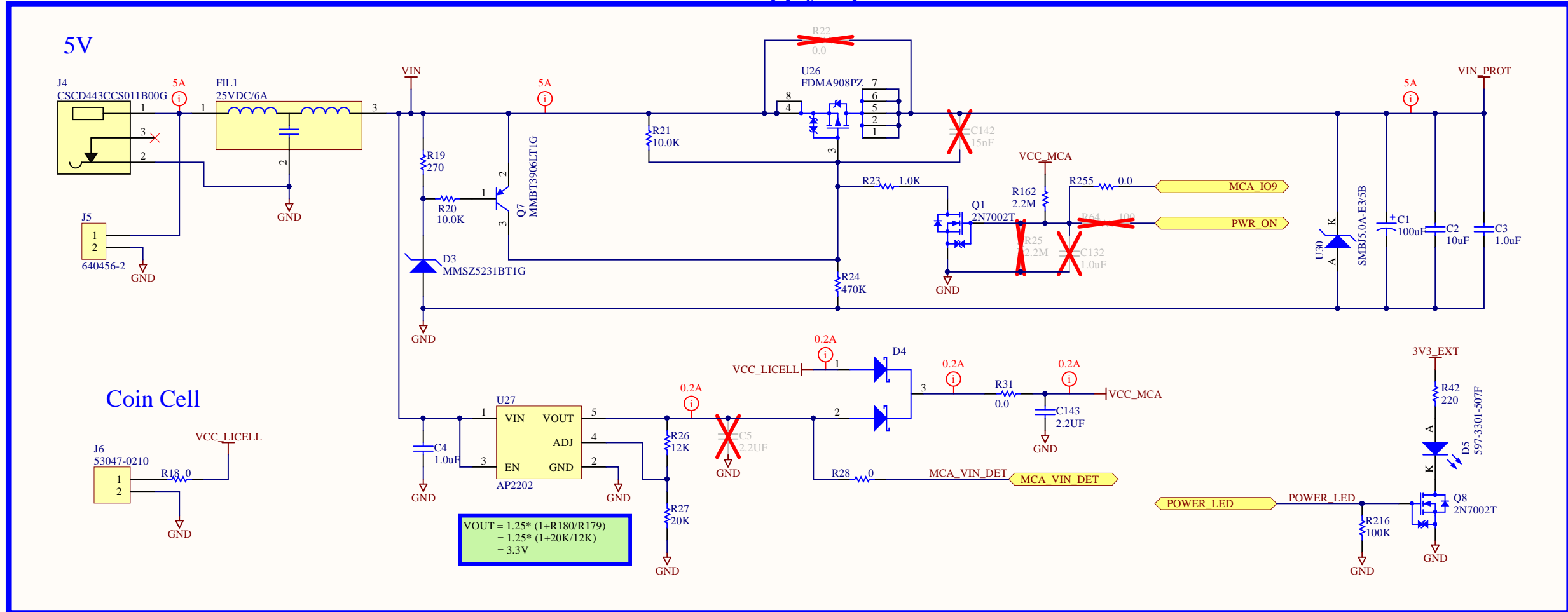
Power and Reset



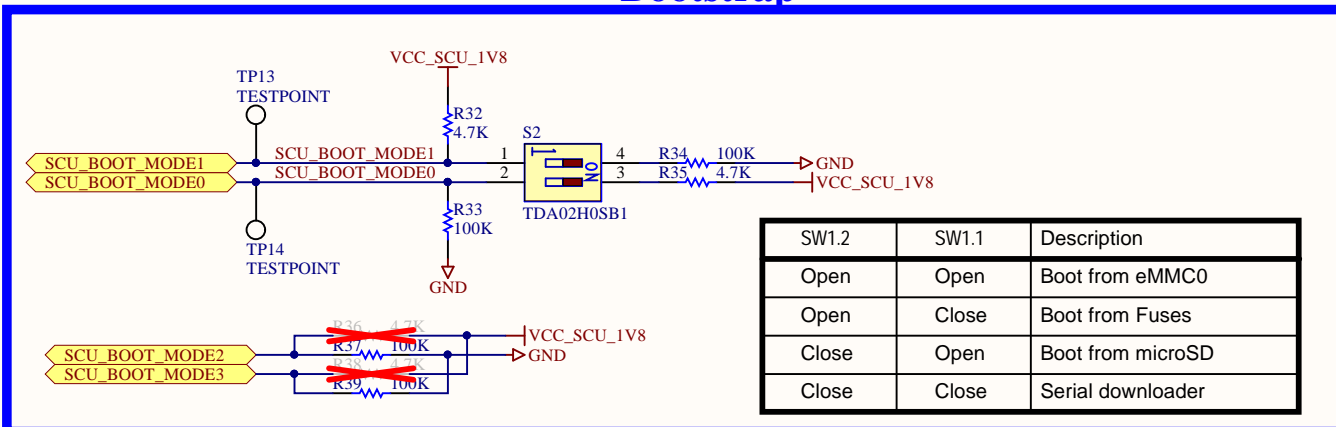
Supply Outputs



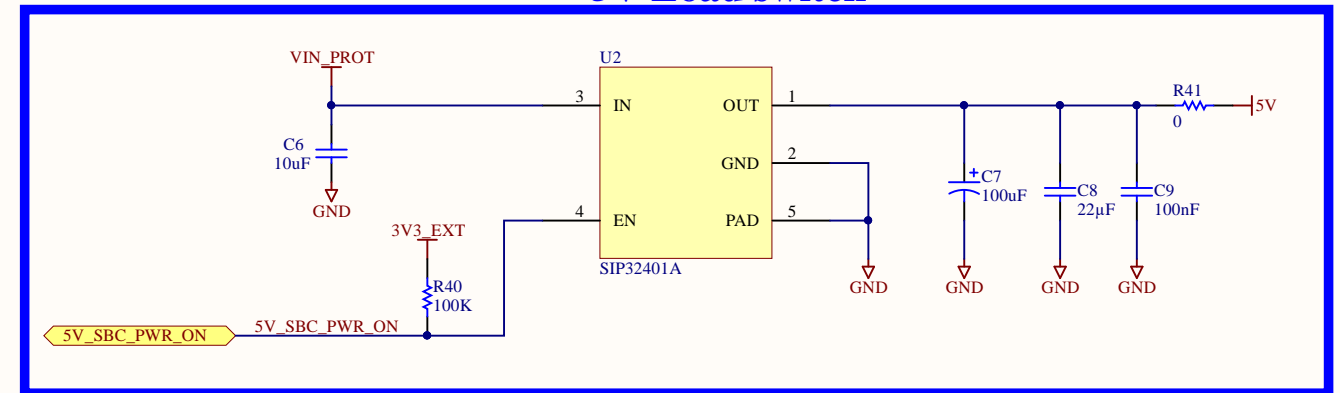
Supply Inputs



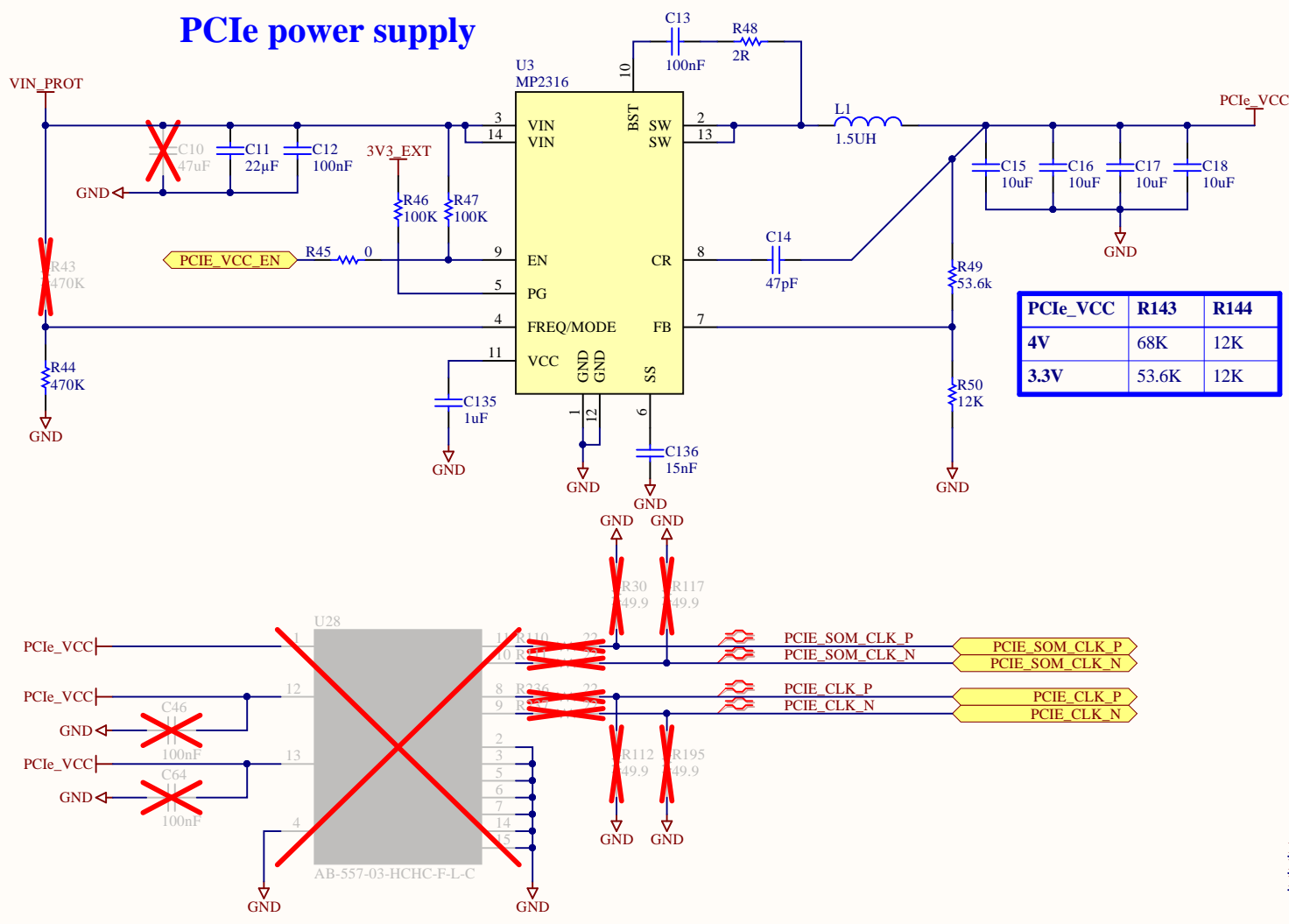
Bootstrap



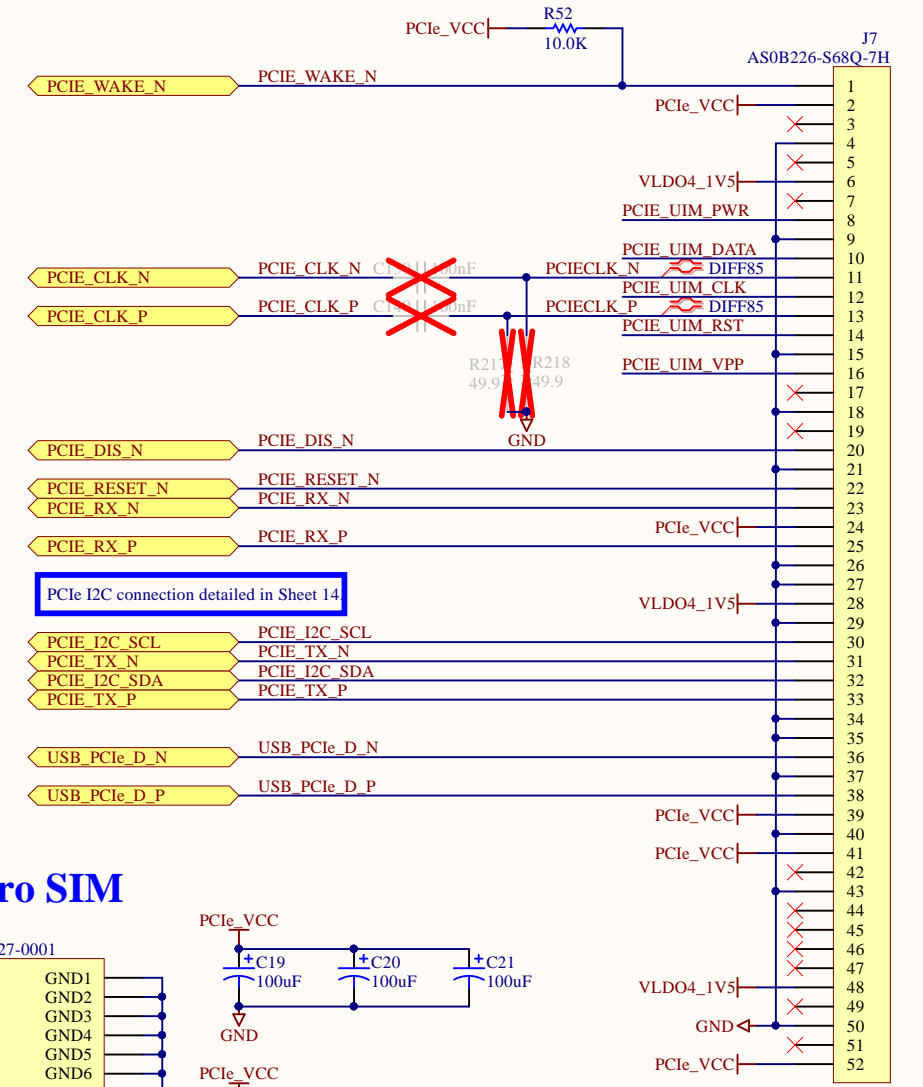
5V Load switch



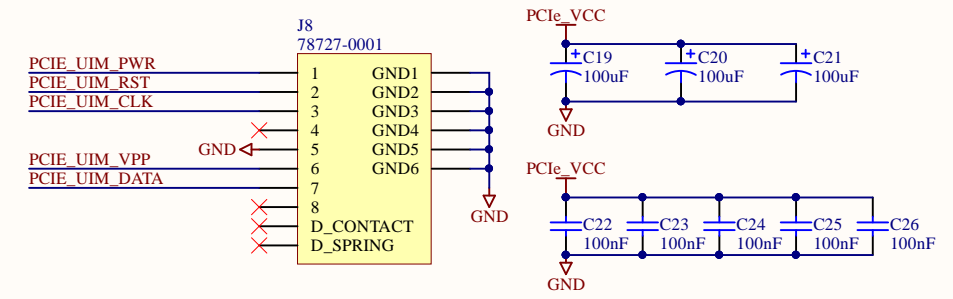
PCIe power supply



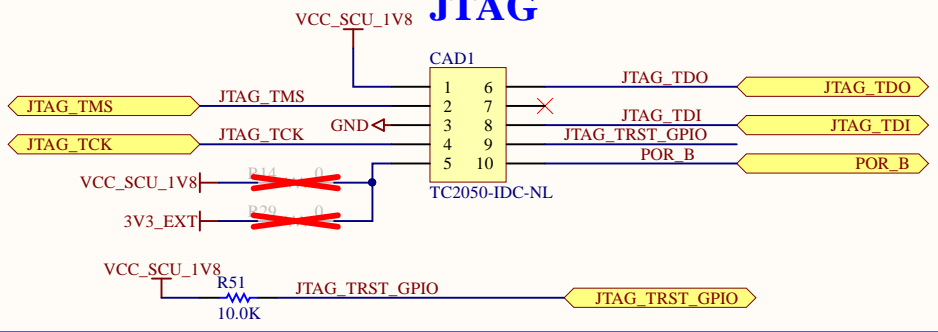
miniPCIe



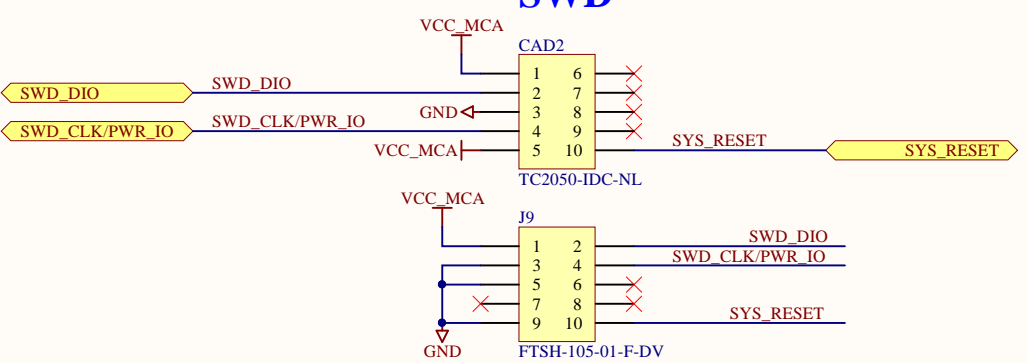
micro SIM



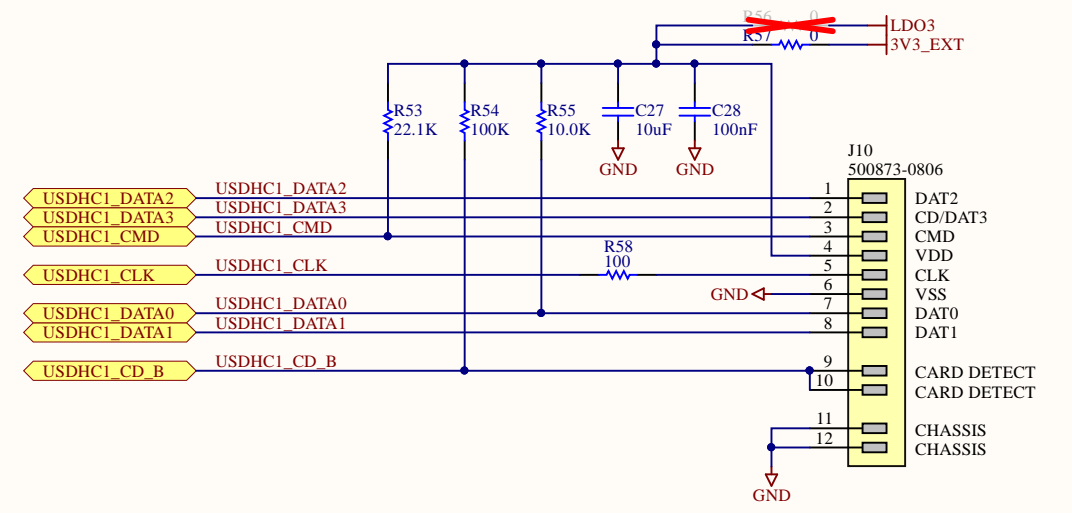
JTAG



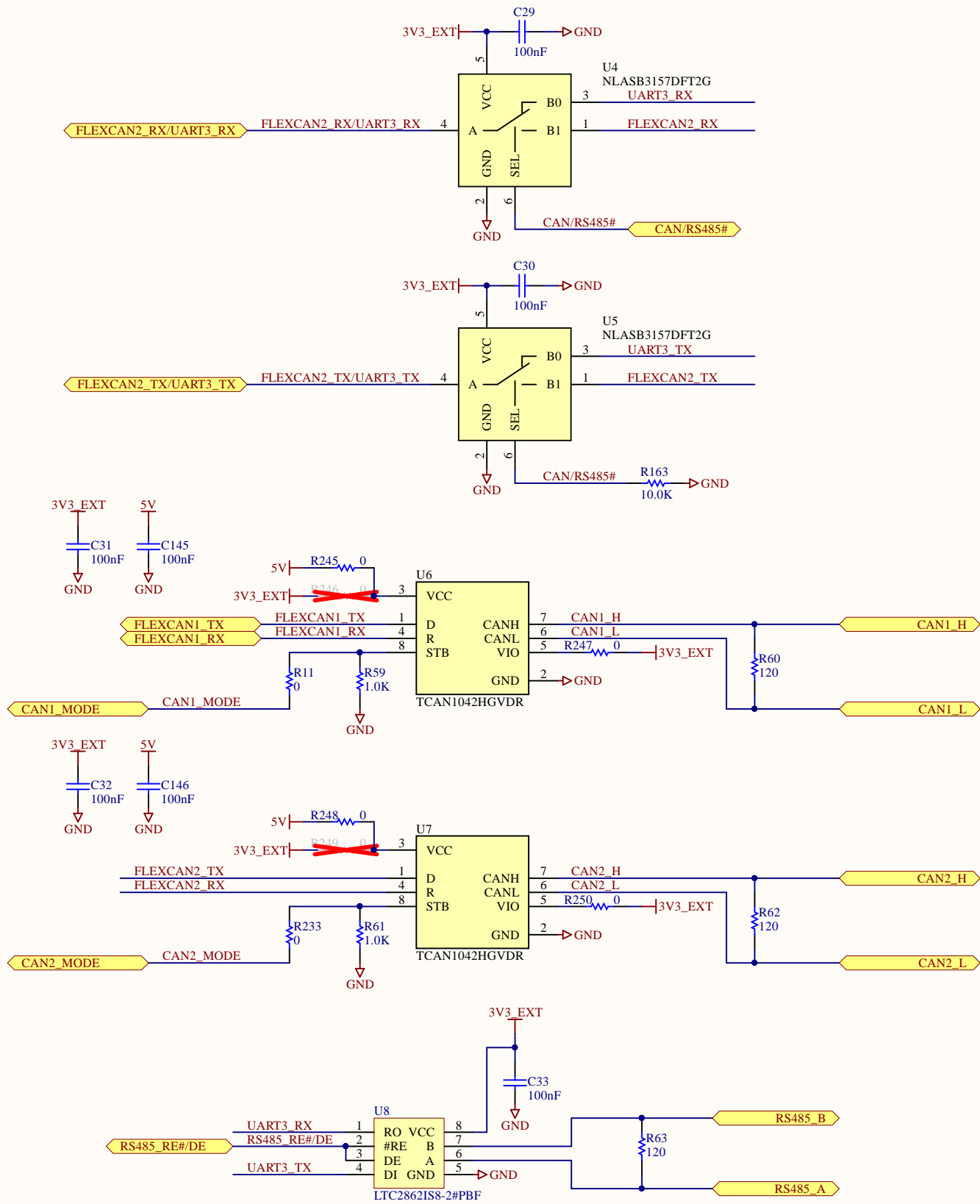
SWD



microSD

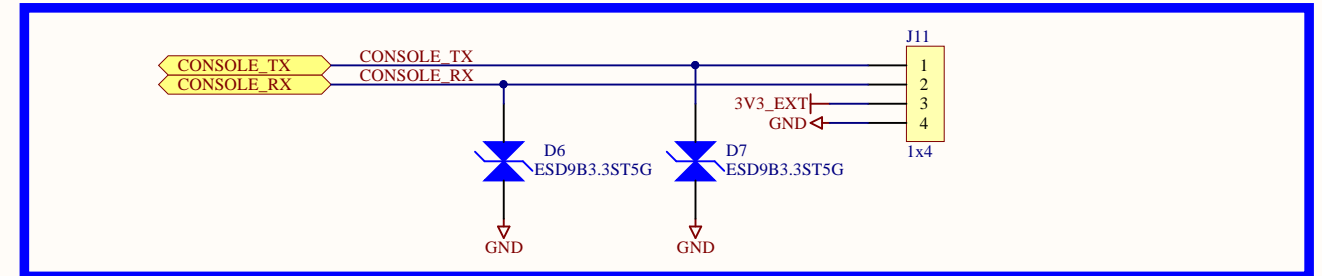


CAN & RS485

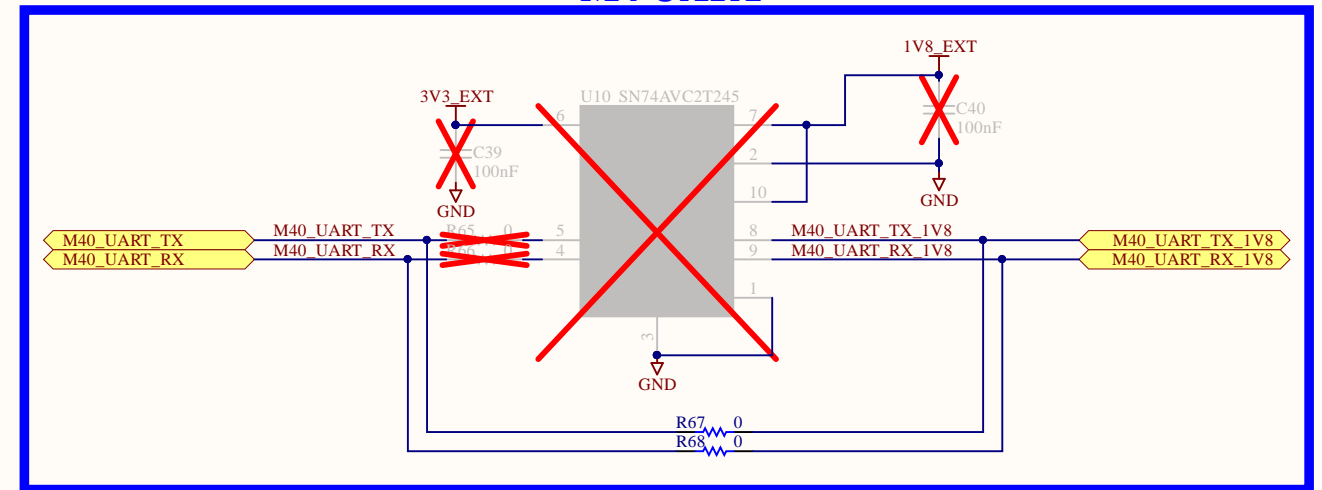


CAN/RS485#	FLEXCAN1	FLEXCAN2	RS485
0	ON	OFF	ON
1	ON	ON	OFF

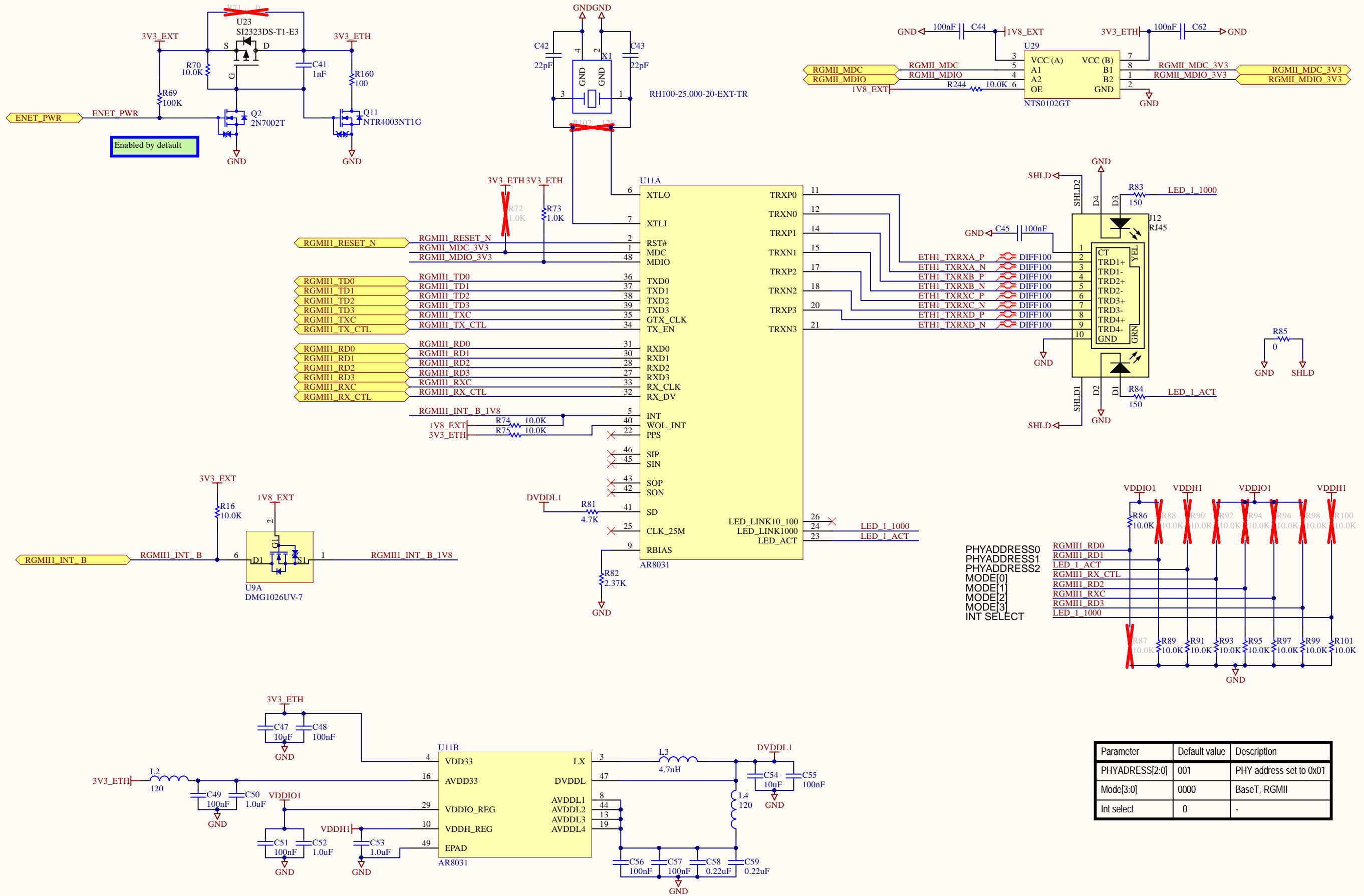
Console TTL



M4 UART

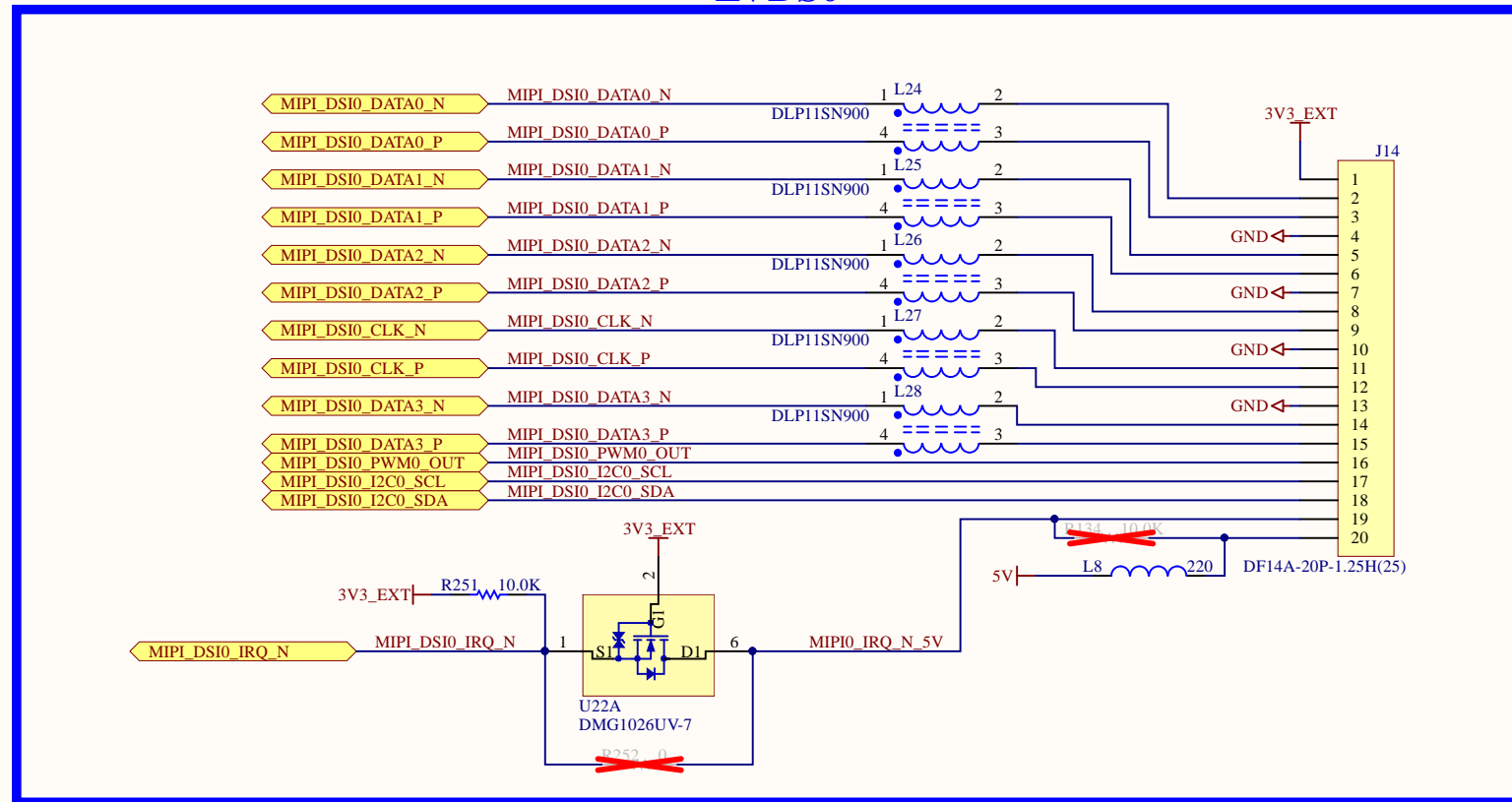


Gigabit Ethernet

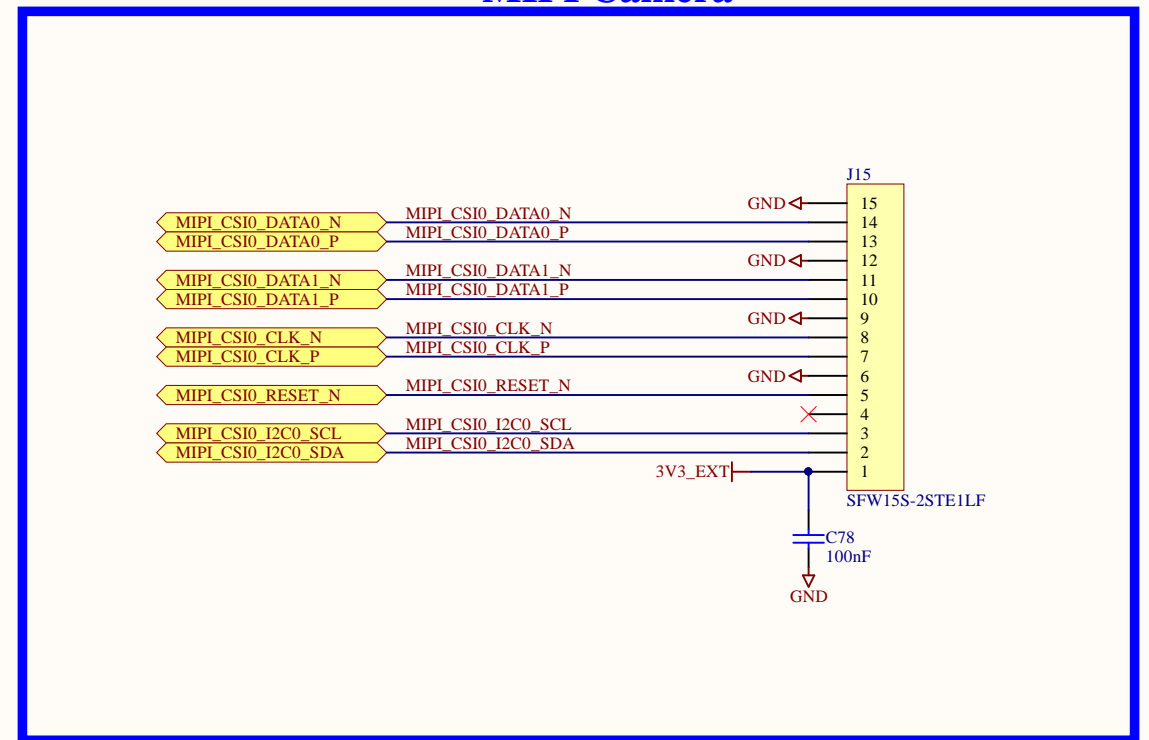


Parameter	Default value	Description
PHYADDRESS[2:0]	001	PHY address set to 0x01
Mode[3:0]	0000	BaseT, RGMII
Int select	0	-

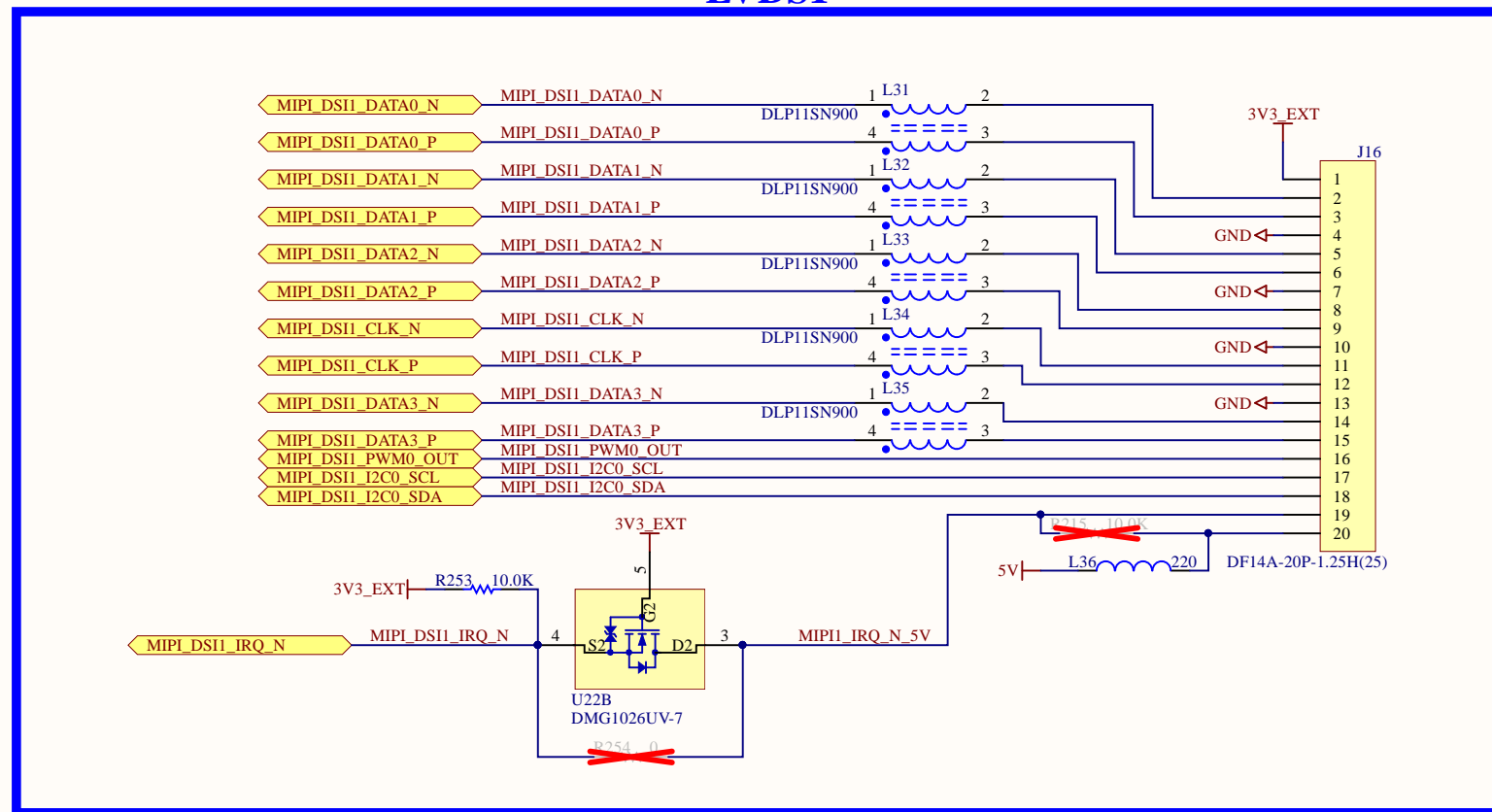
LVDS0



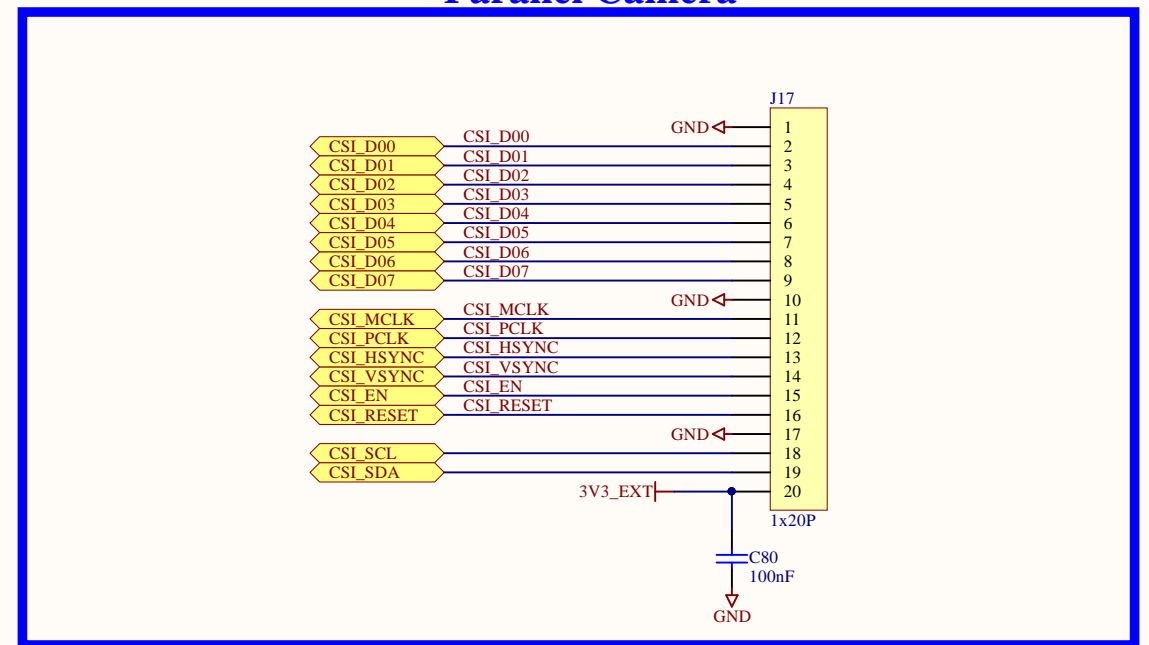
MIPI Camera



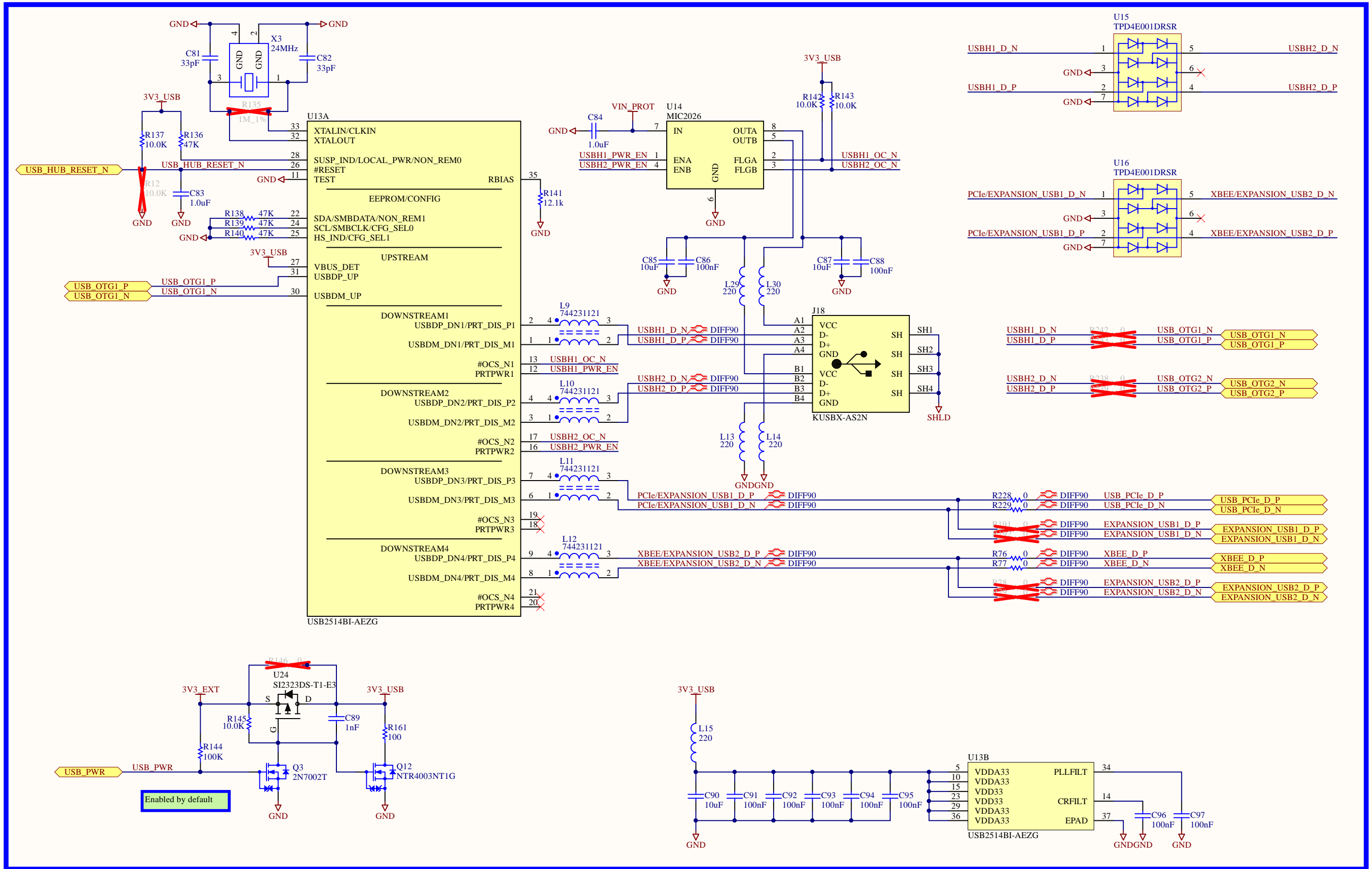
LVDS1



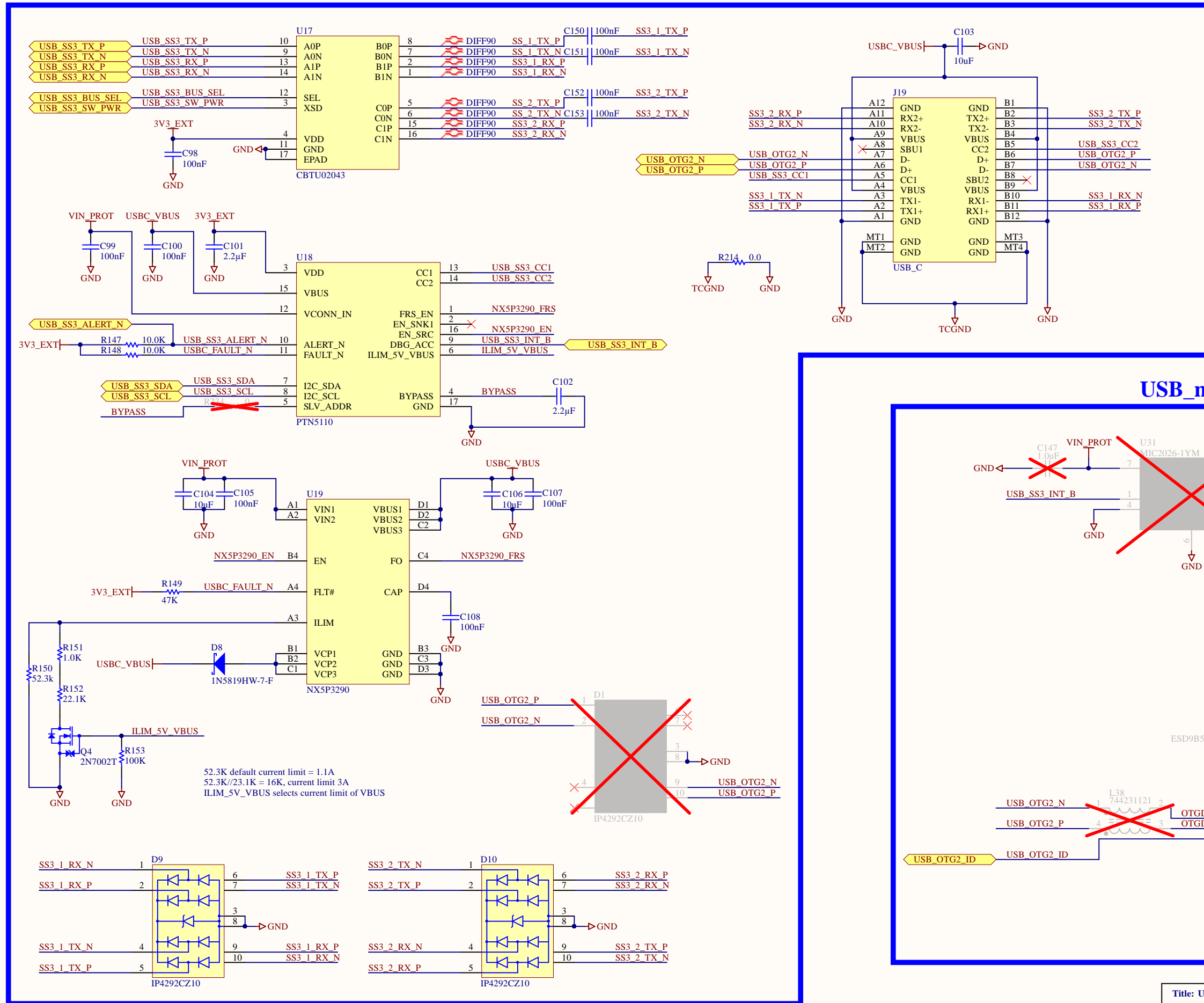
Parallel Camera



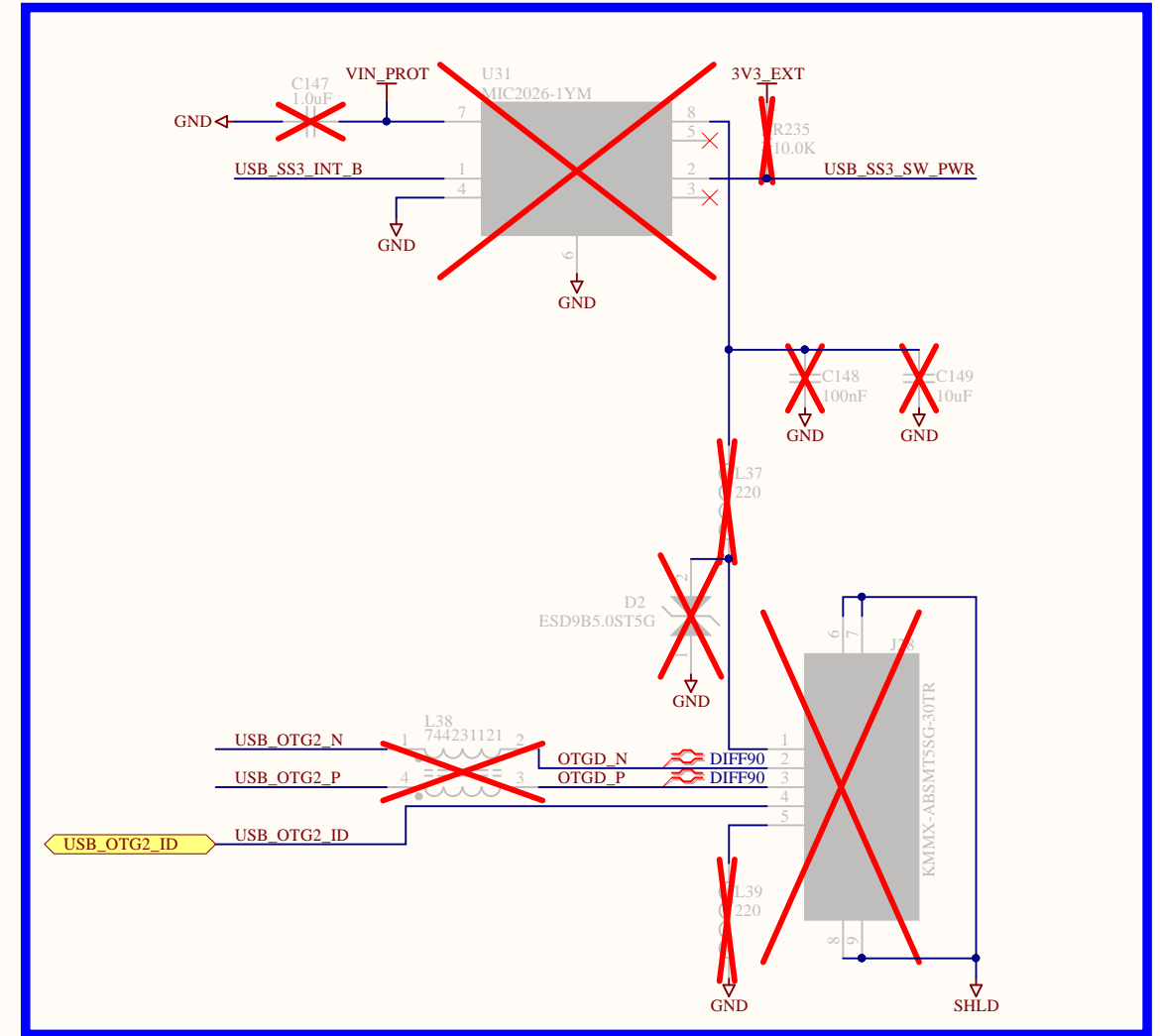
USB_HOST



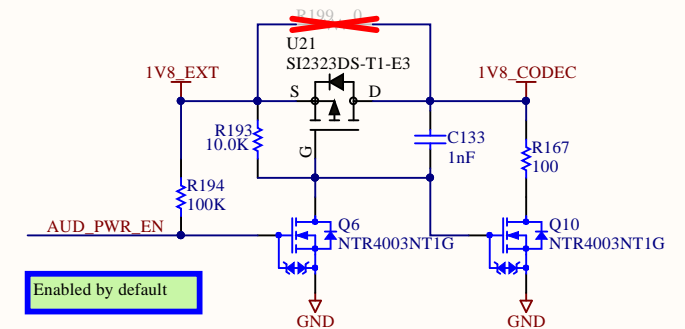
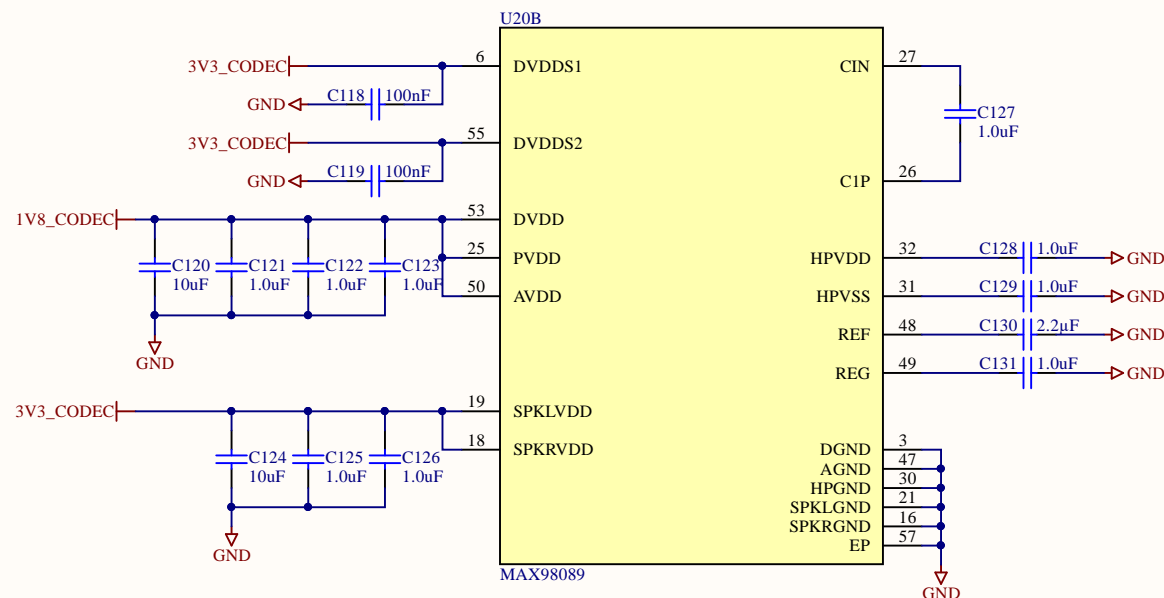
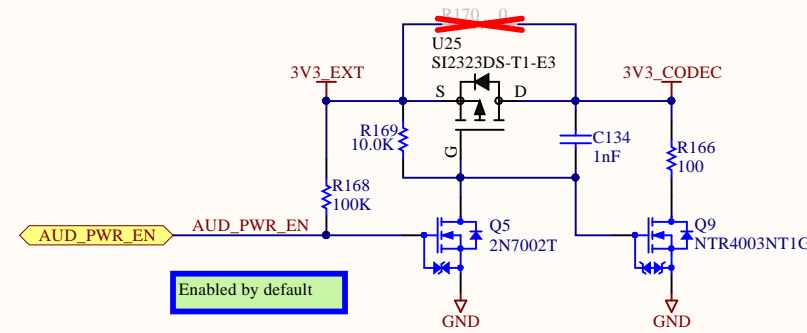
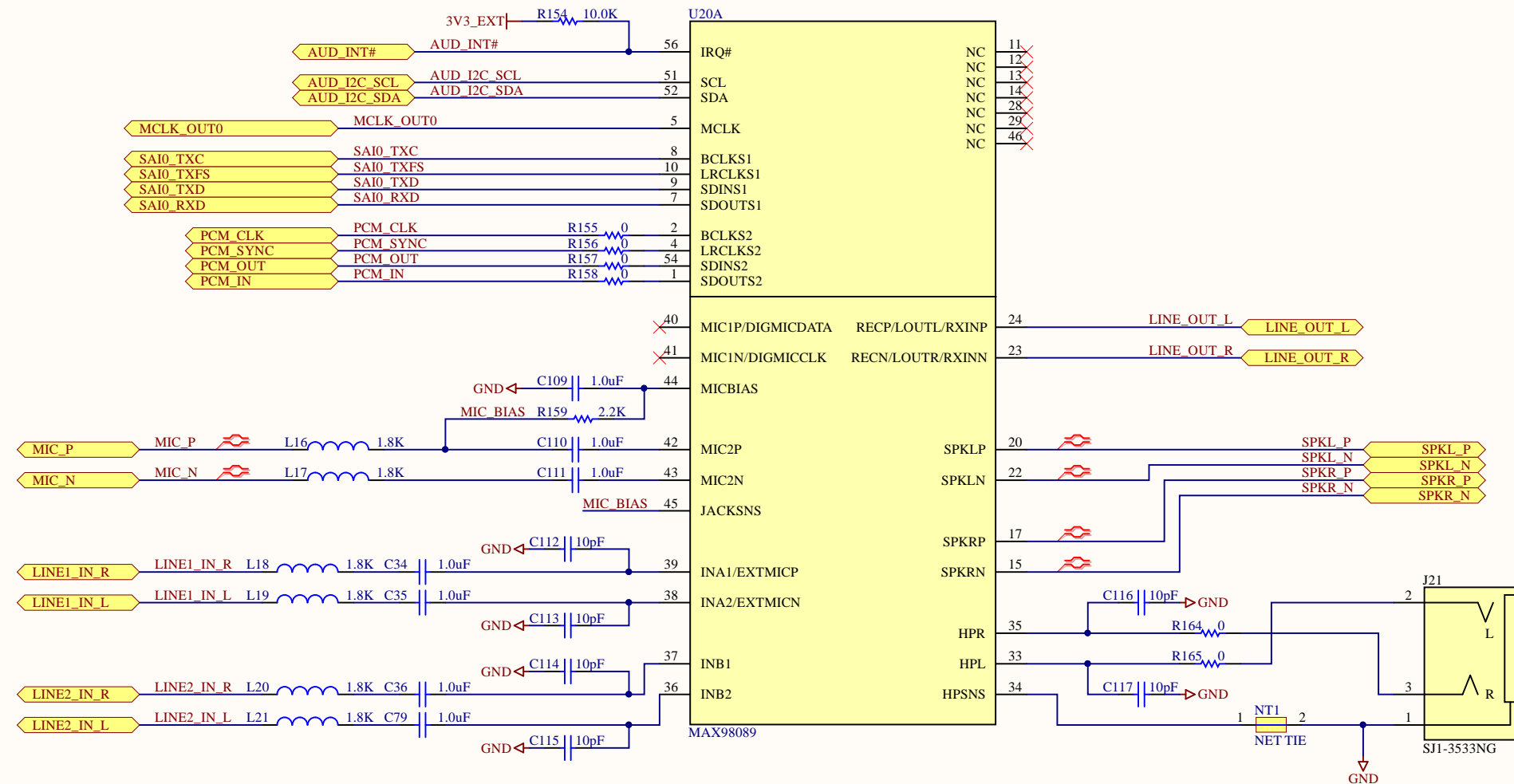
USB_Type_C



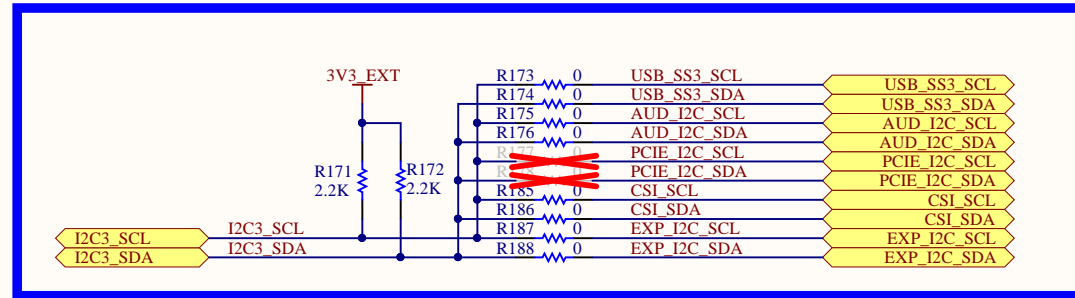
USB_microAB



AUDIO



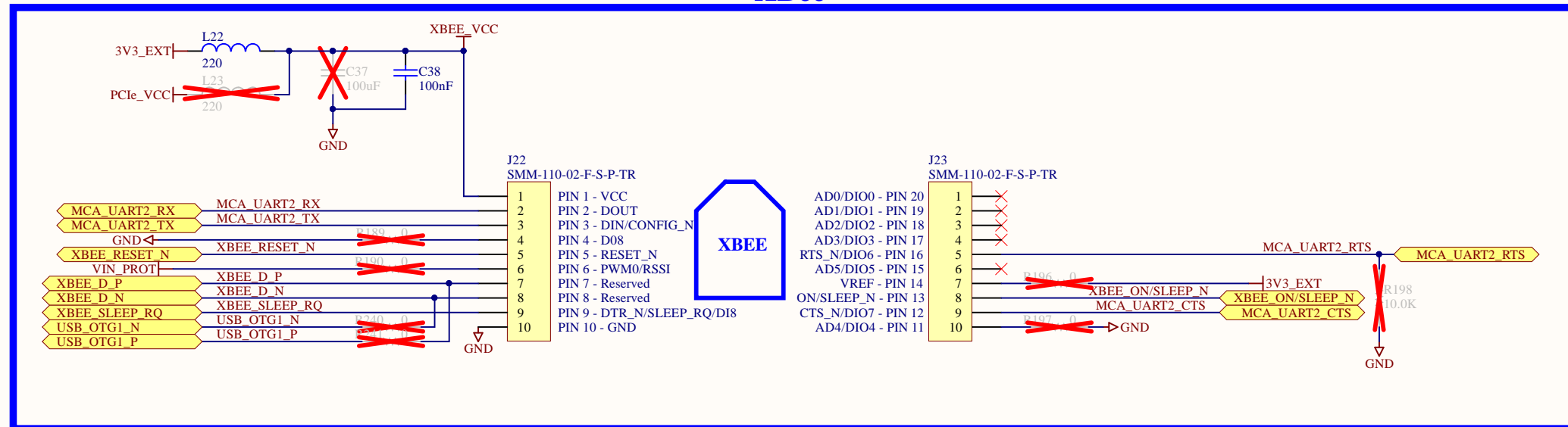
I2C

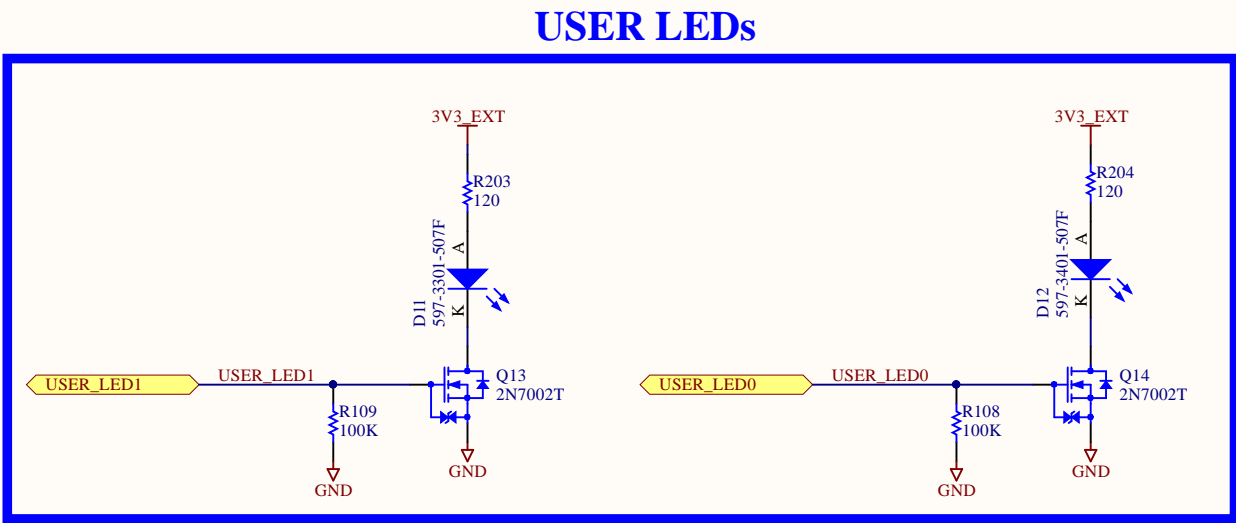
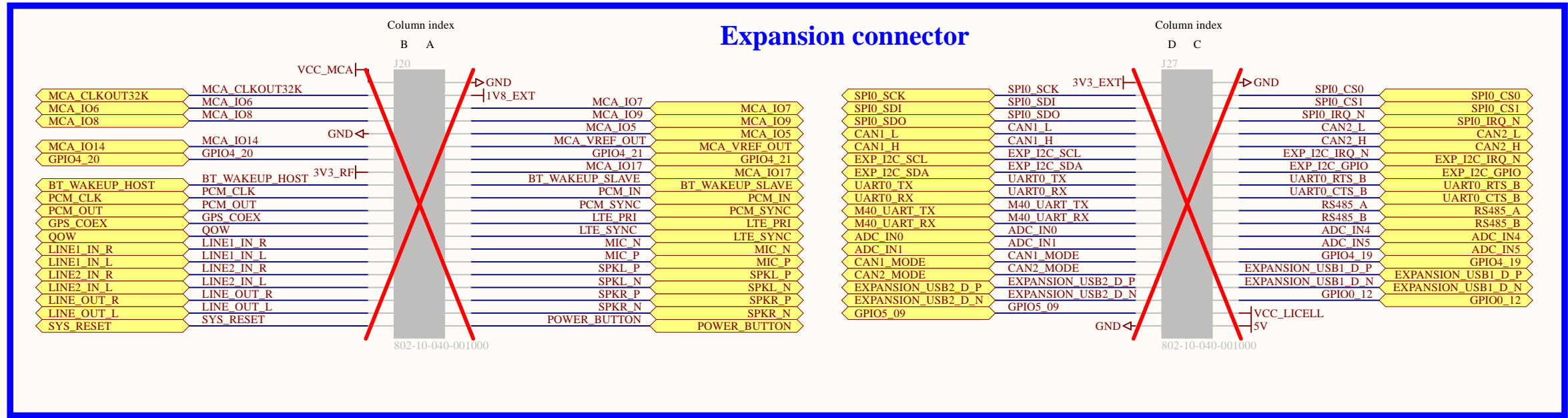


I2C3 (3.3V)

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

XBee





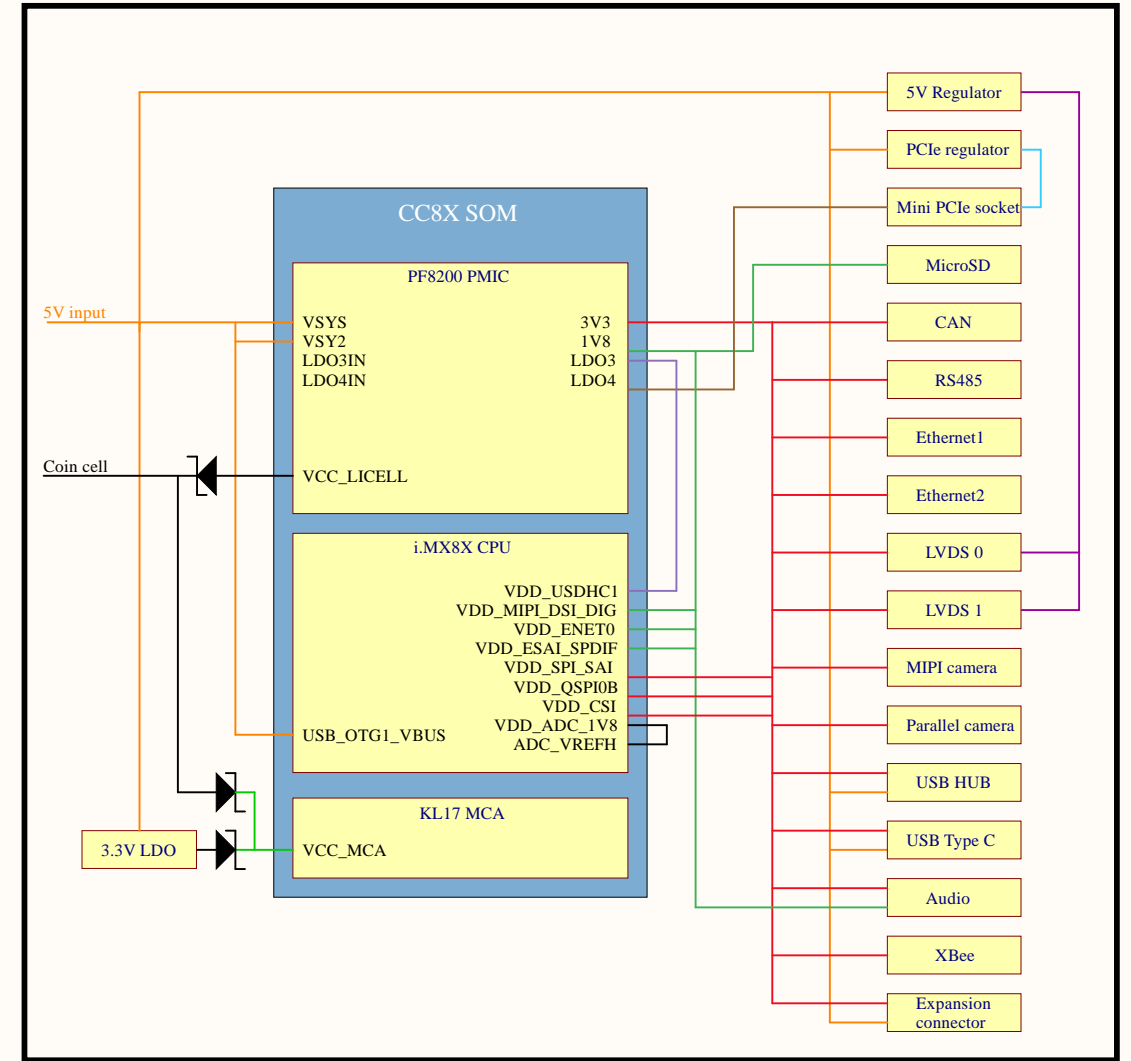
System Power Rails

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			
	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	
1.5	VLDO4_1V5	MicroSD	PMIC LDO3	400	
		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
RGMI1_RESET_N	GPIO3_18
RGMI2_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



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.

