

ConnectCore 93 Dev Board

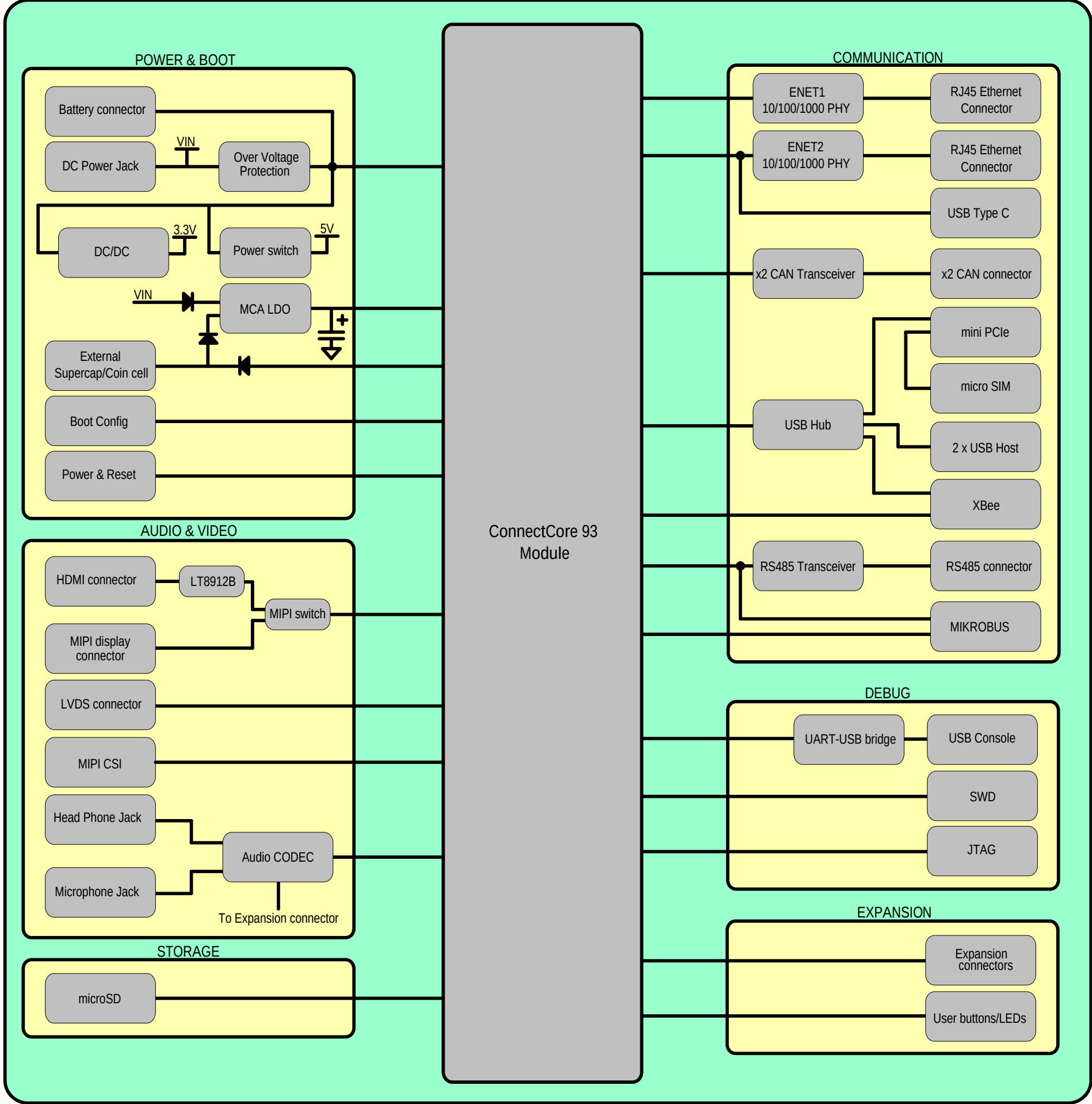
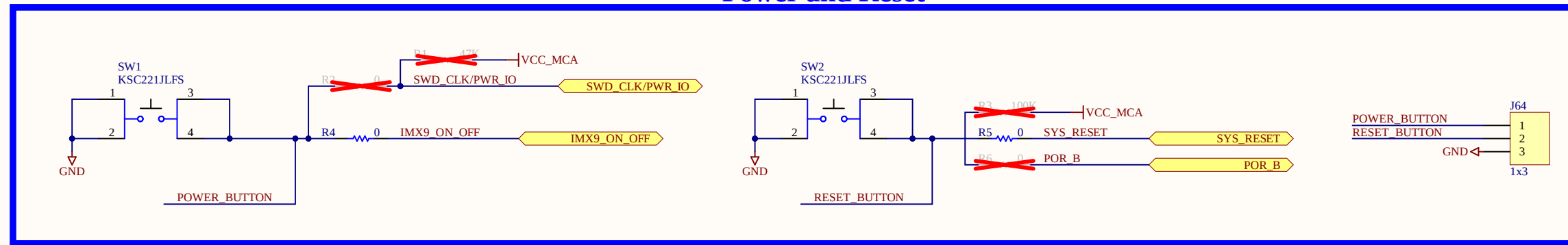


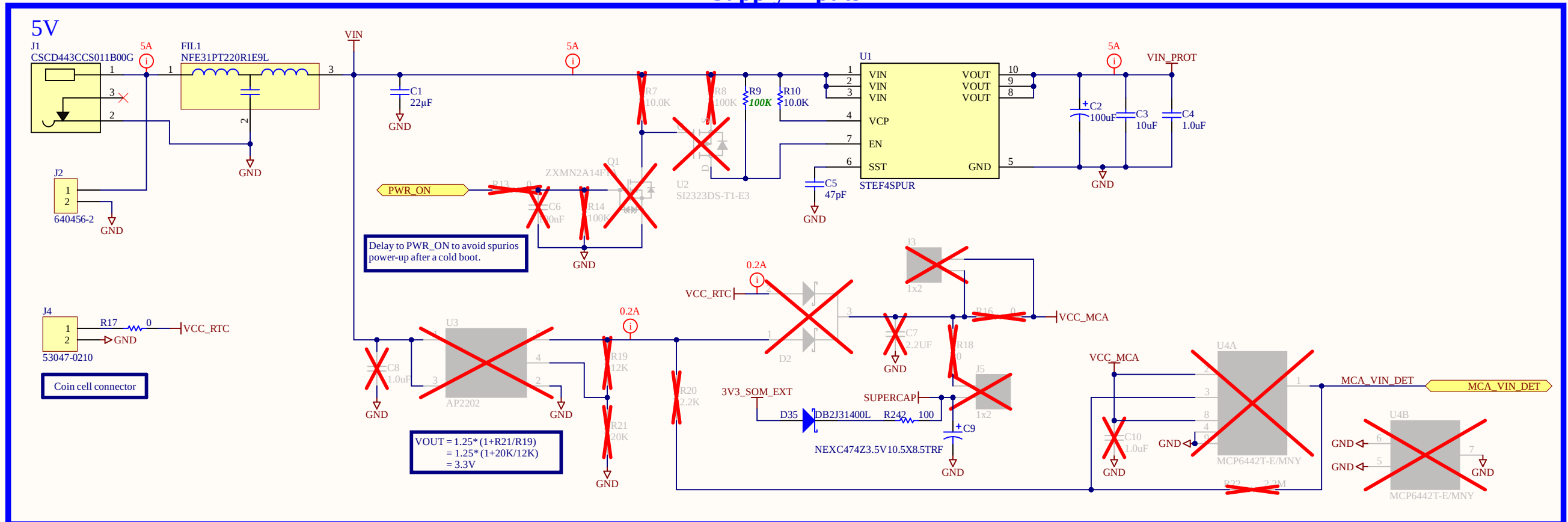
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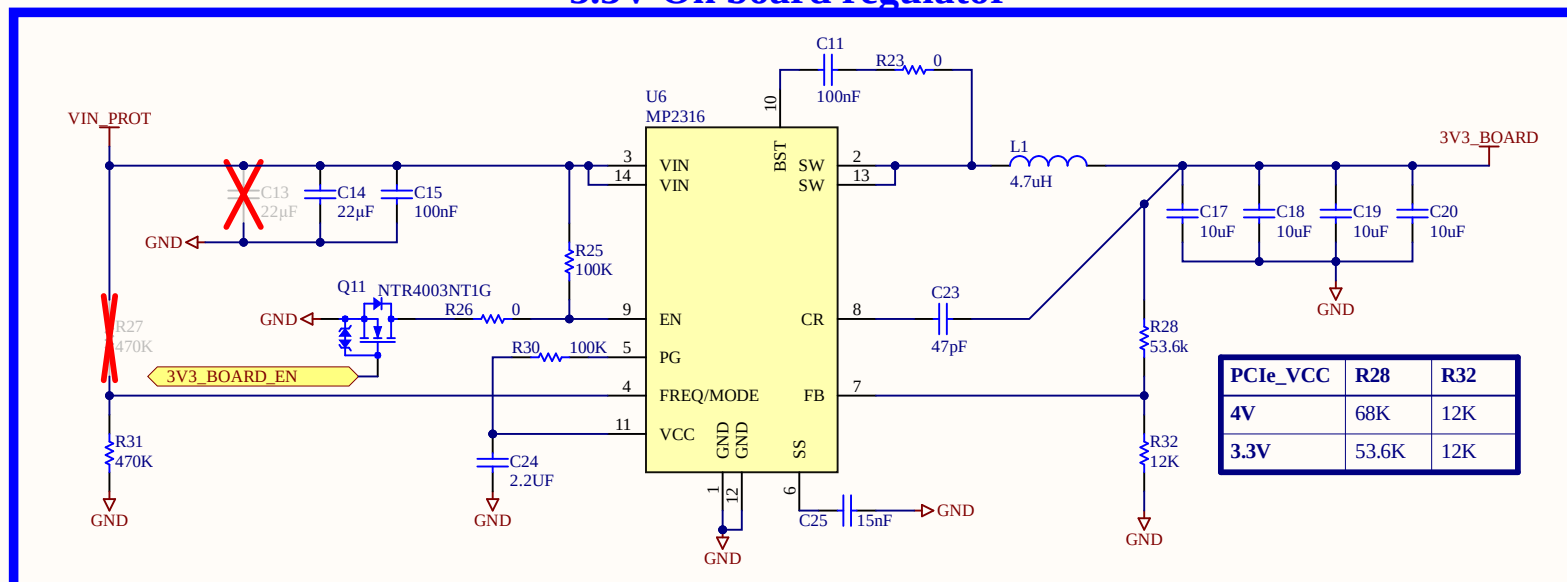
Power and Reset



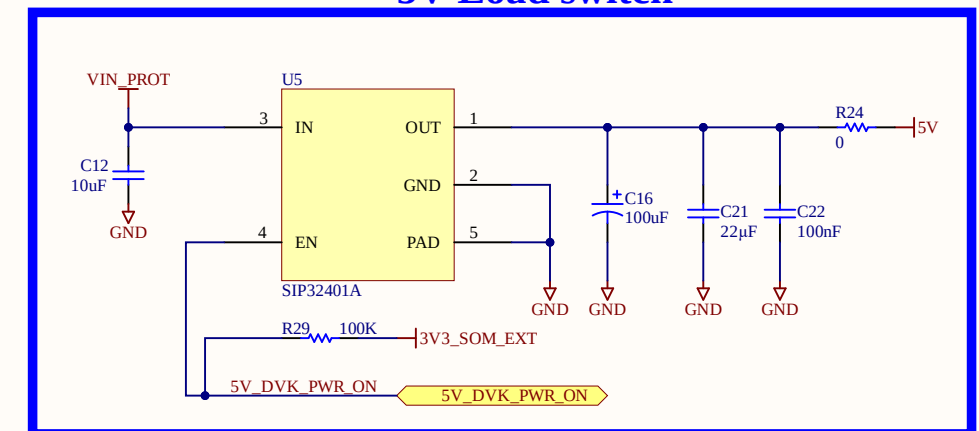
Supply Inputs



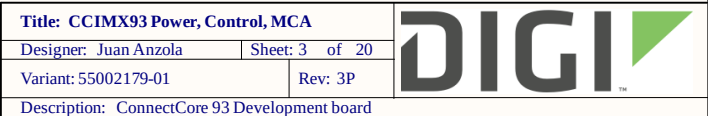
3.3V On board regulator

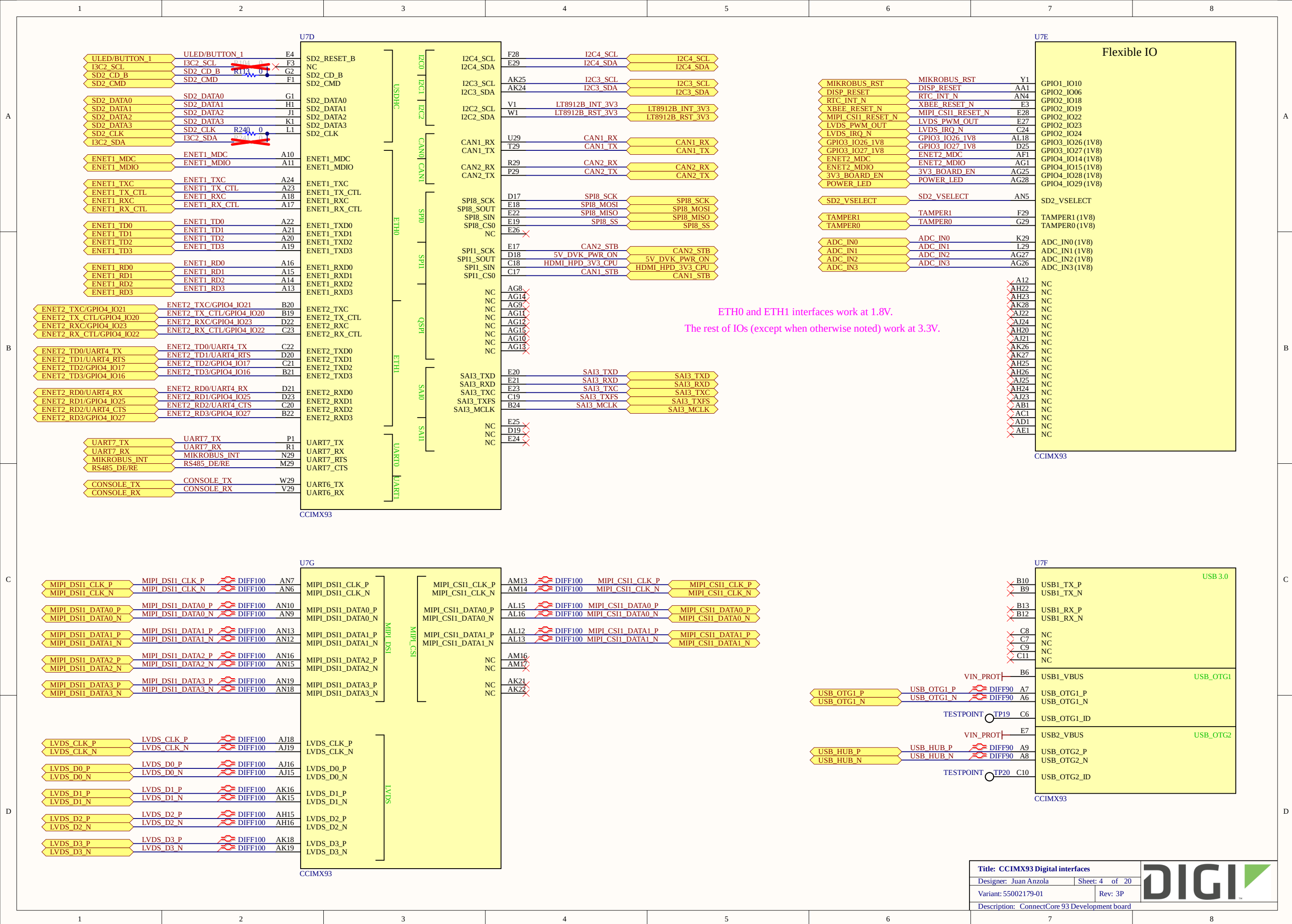


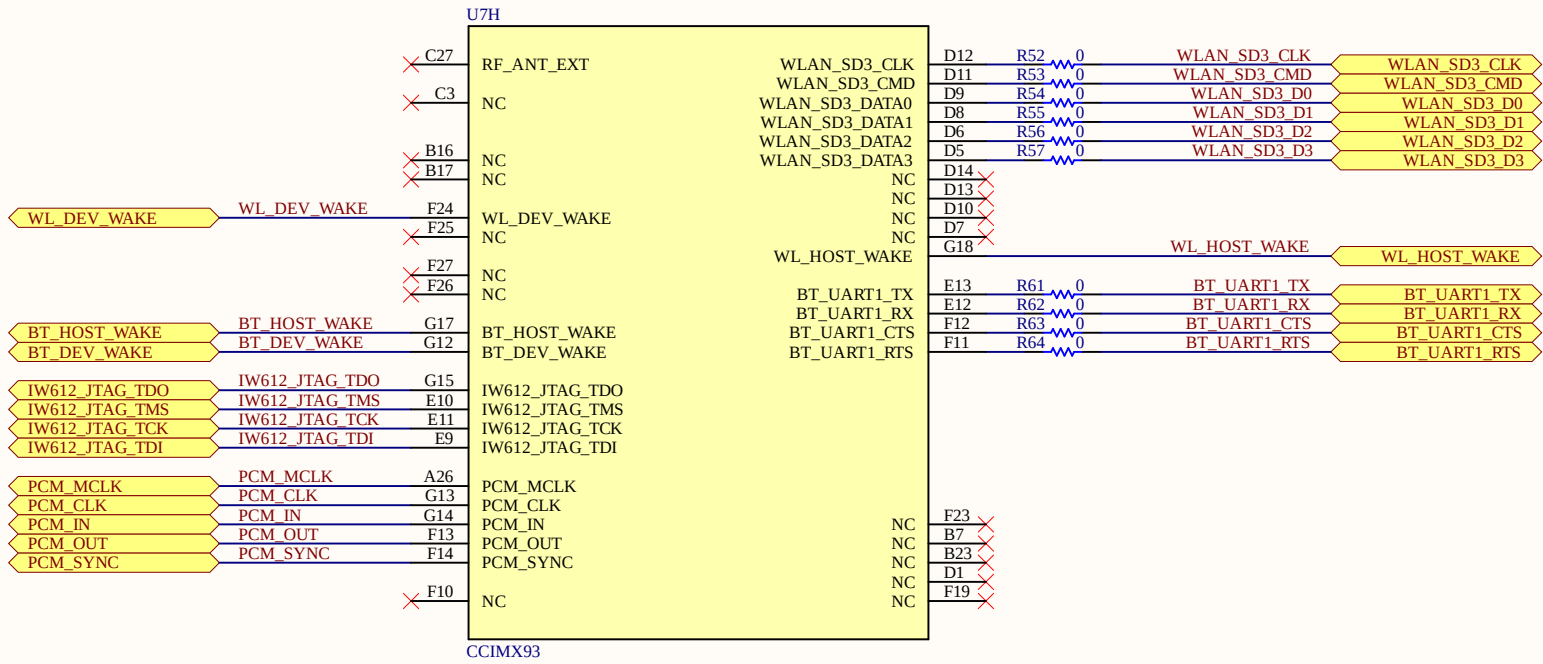
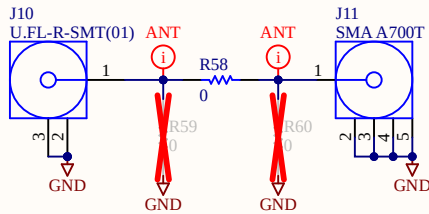
5V Load switch



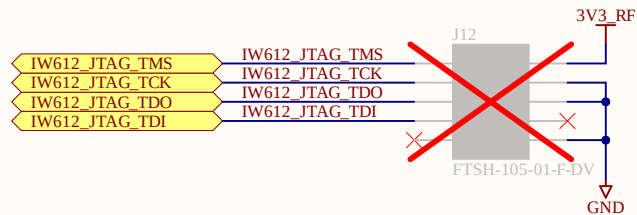
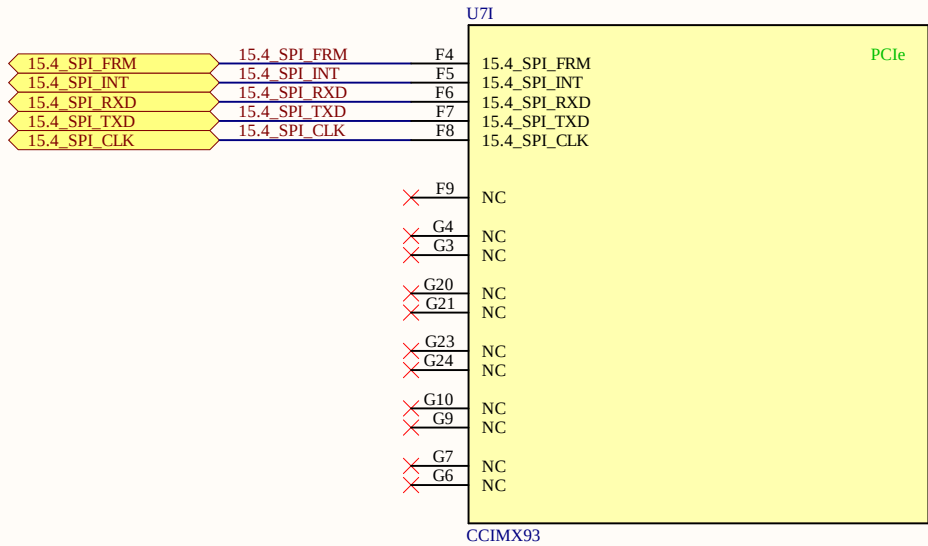
PCIE_VCC	R28	R32
4V	68K	12K
3.3V	53.6K	12K





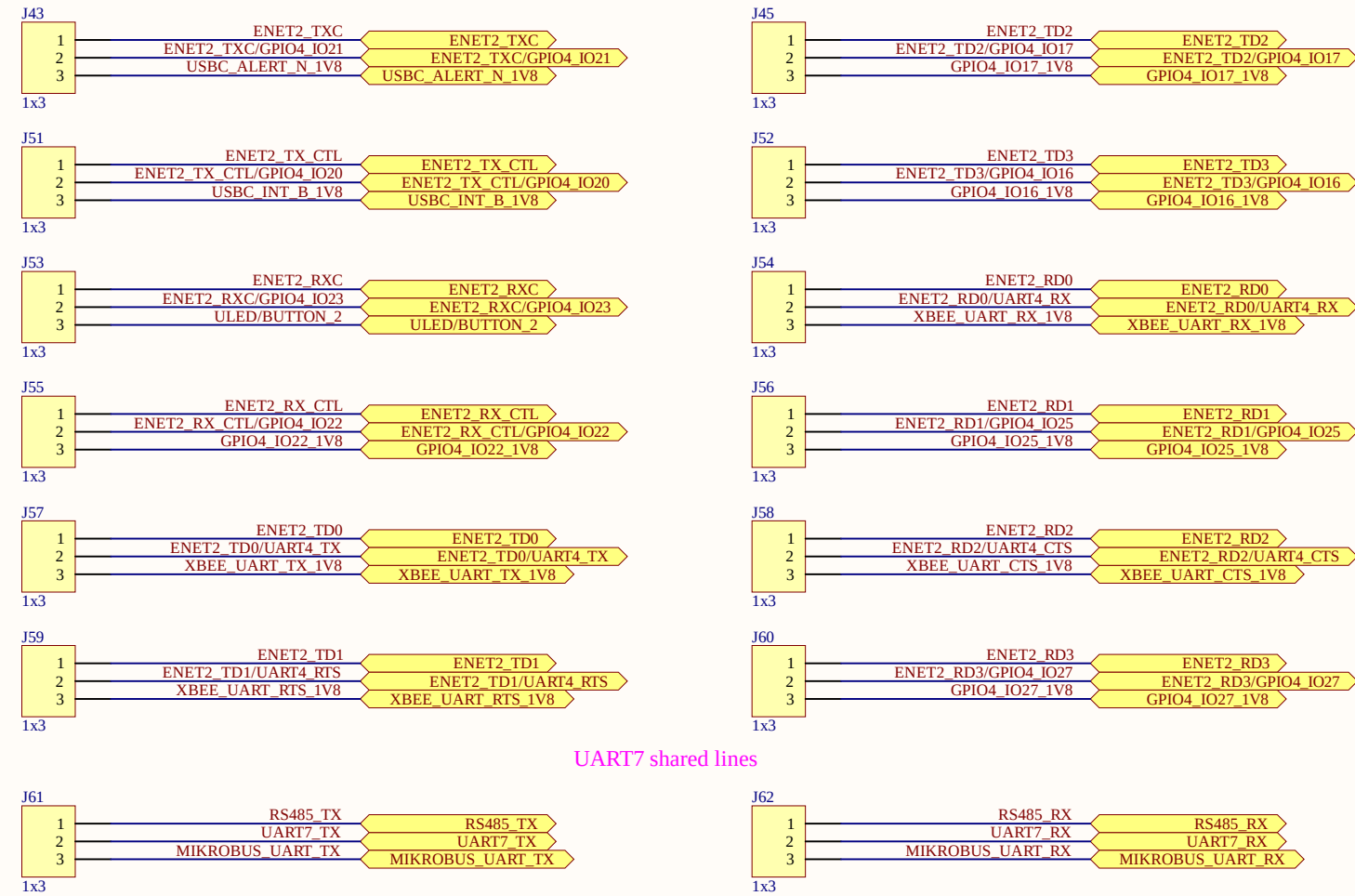


WLAN_SD3 works at 1.8V



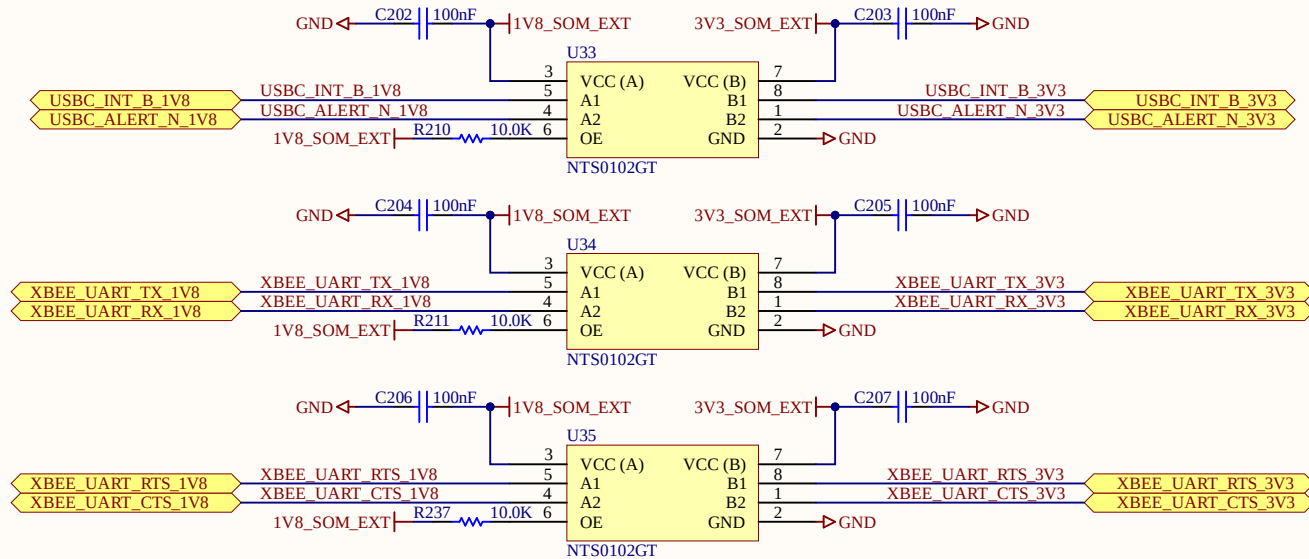
Shared interfaces lines selection

ENET2 shared lines

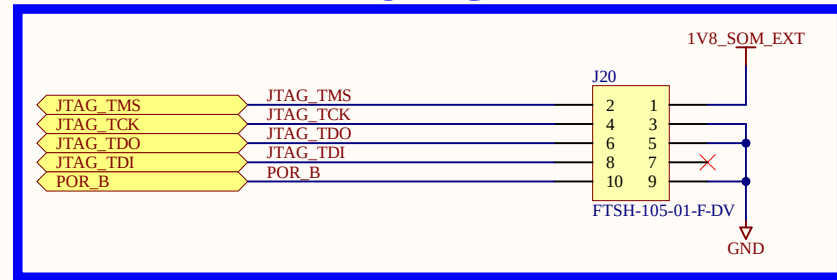


UART7 shared lines

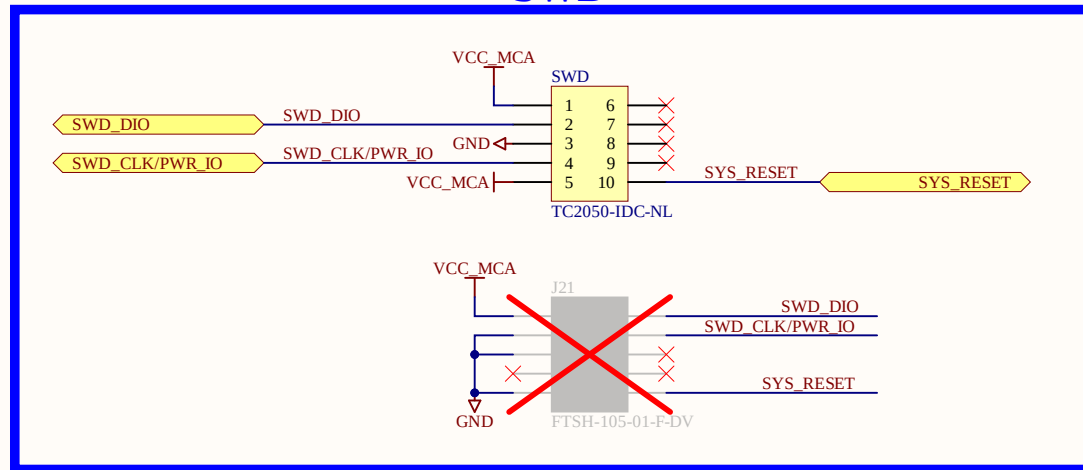
XBEE UART and USB Type-C Voltage level translation



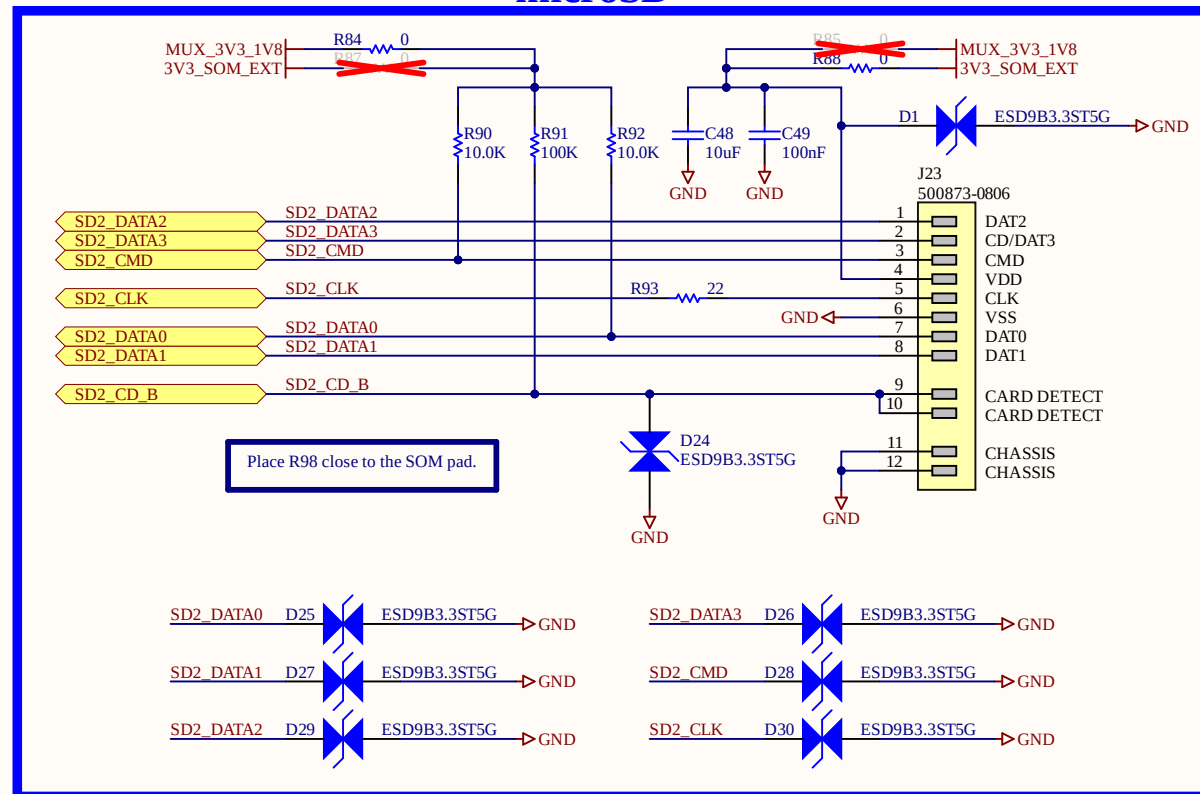
JTAG



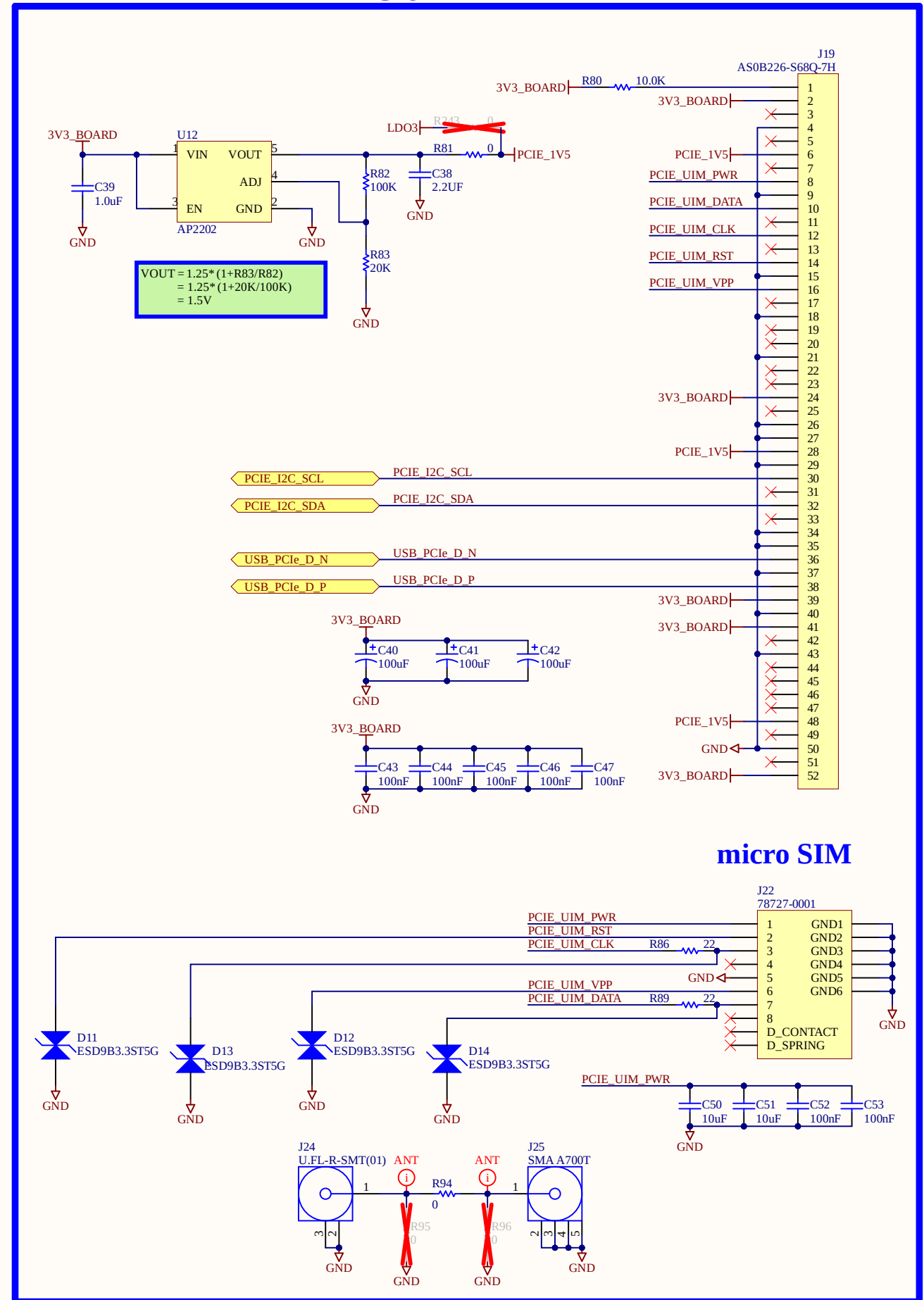
SWD



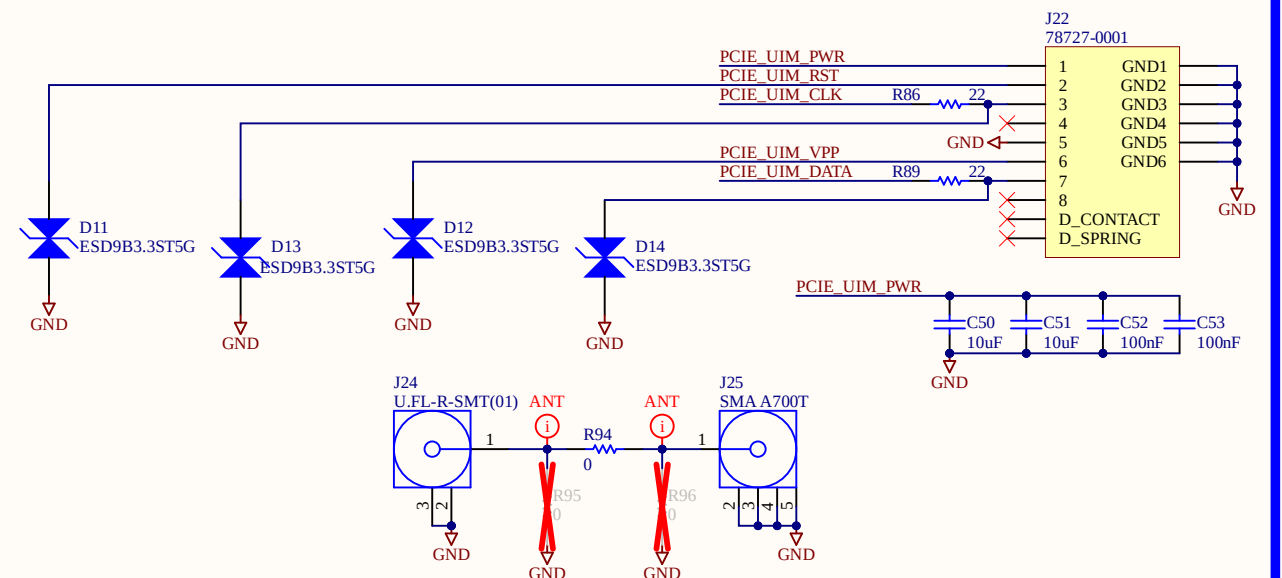
microSD



miniPCIe



micro SIM



Title: JTAG, SWD, uSD, Mini PCIe, uSIM

Designer: Juan Anzola Sheet: 8 of 20

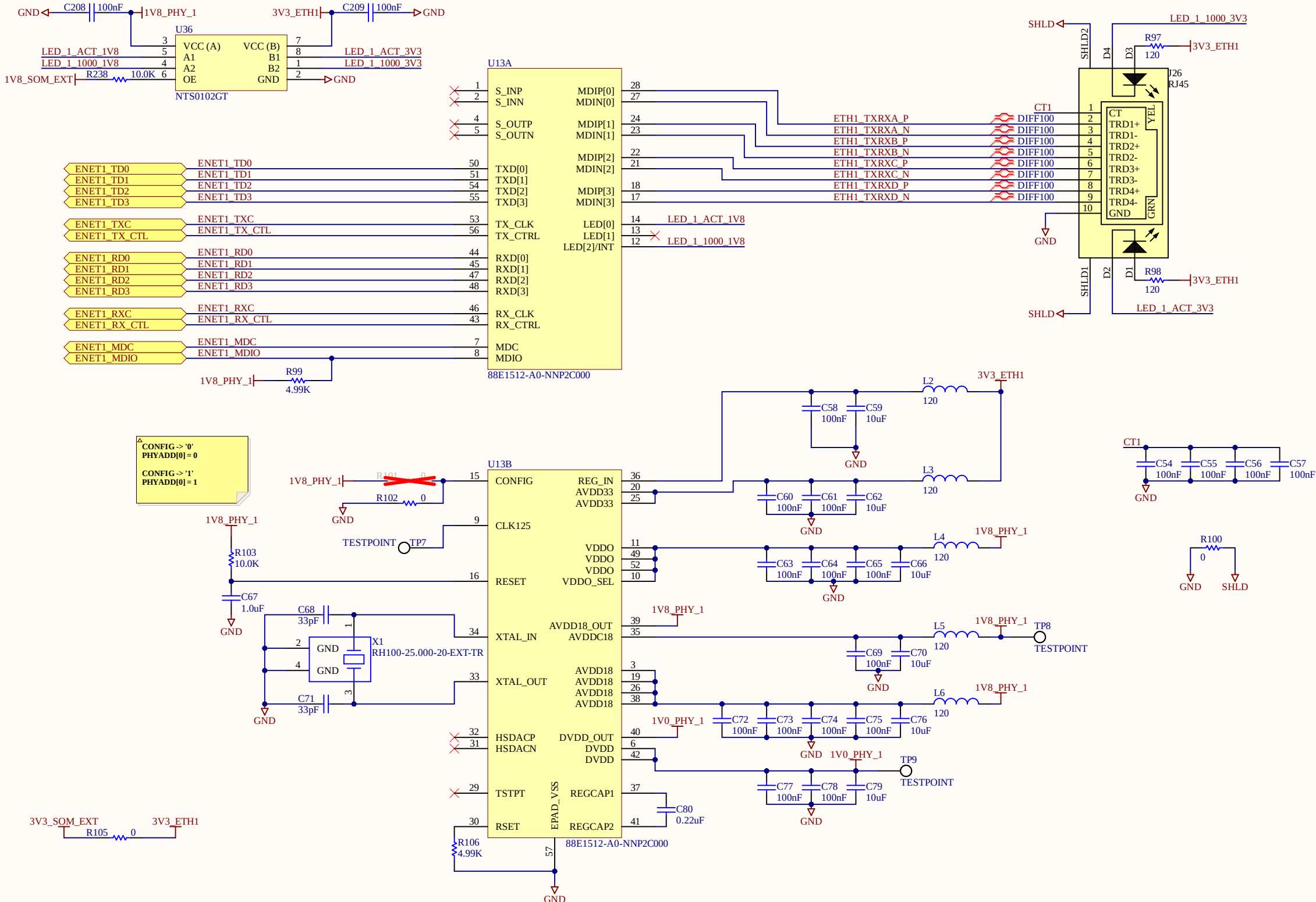
Variant: 55002179-01

Rev: 3P

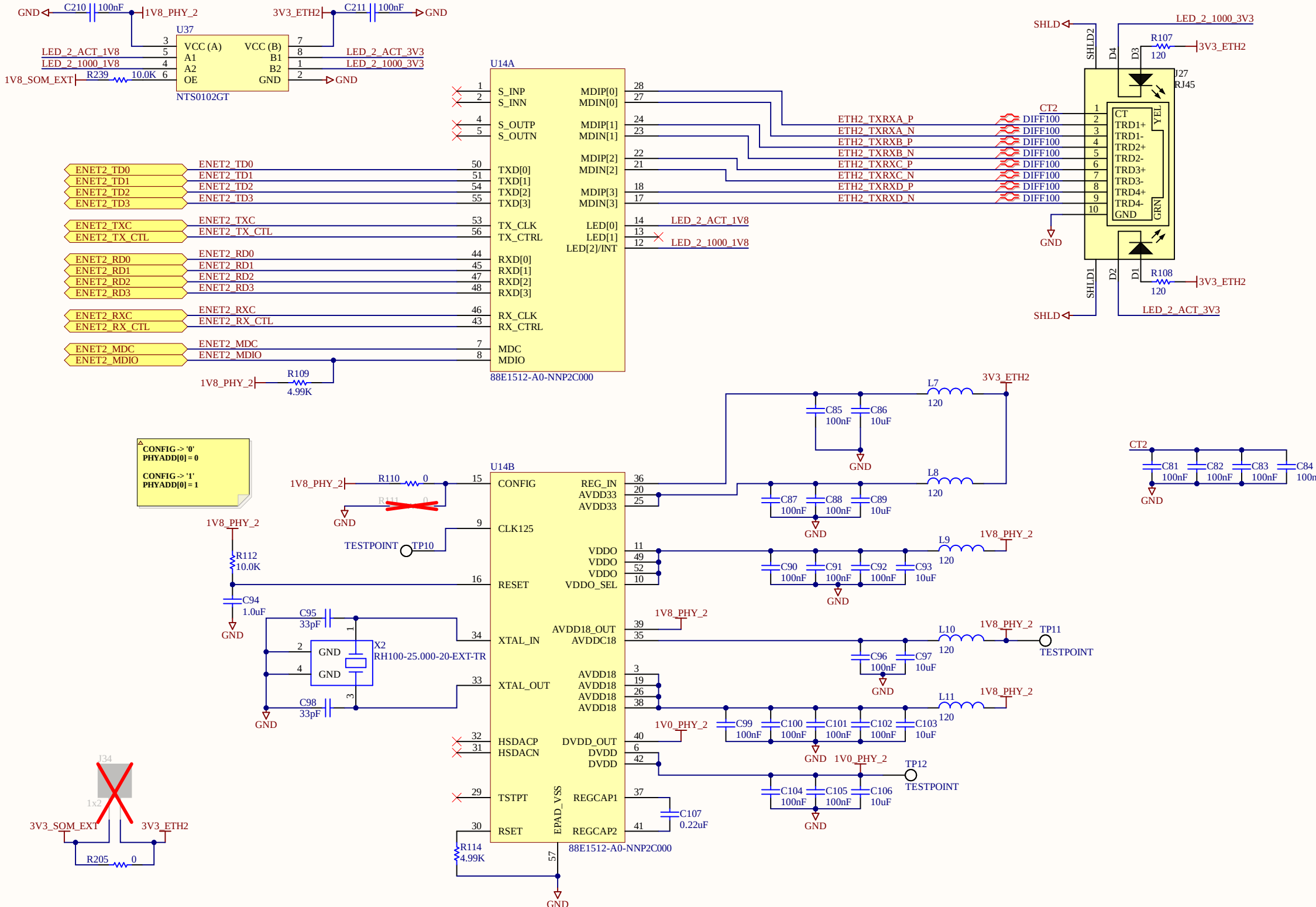
Description: ConnectCore 93 Development board



10/100/1000M Ethernet 1



10/100/1000M Ethernet 2

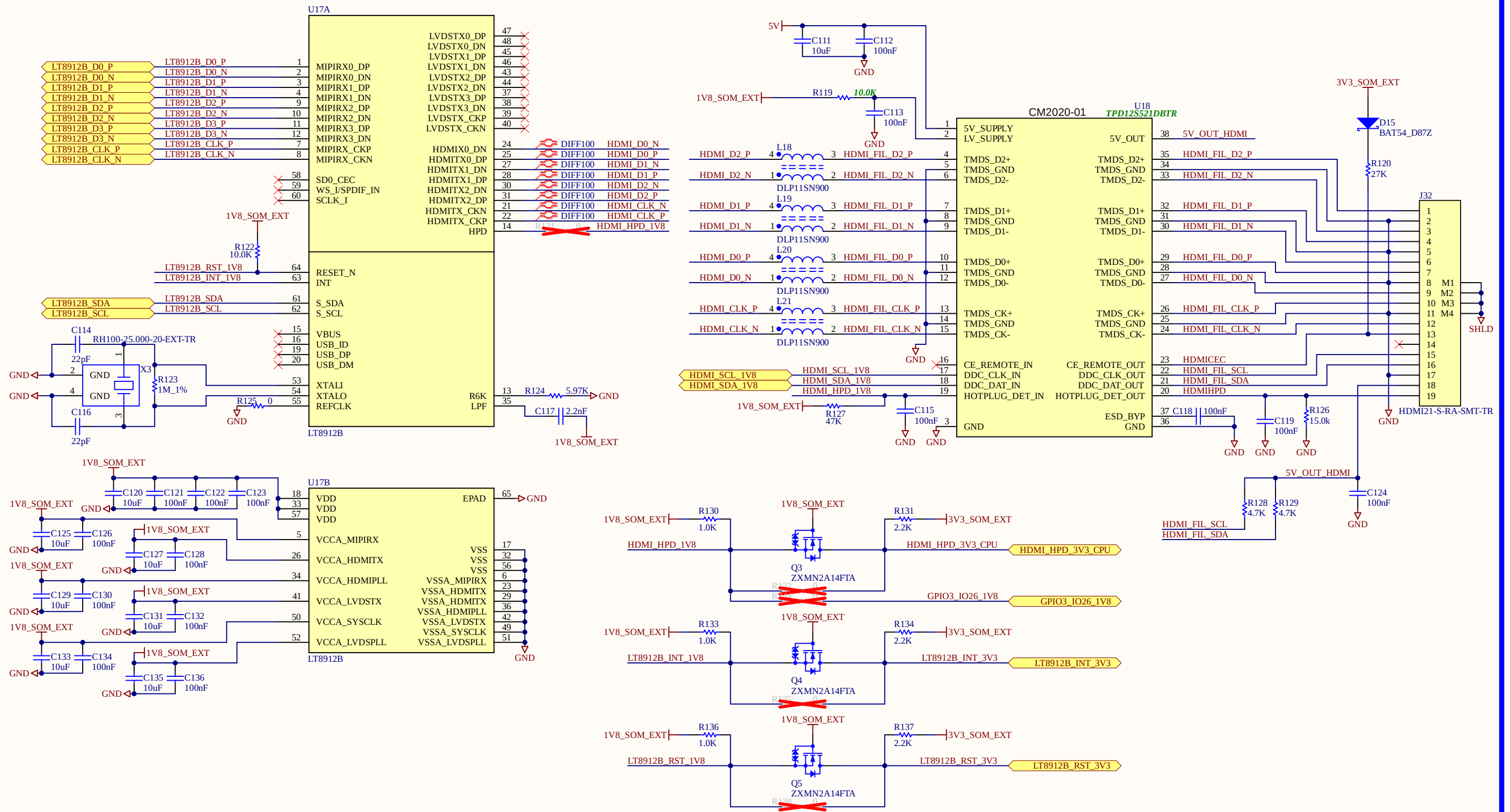


[illegible]

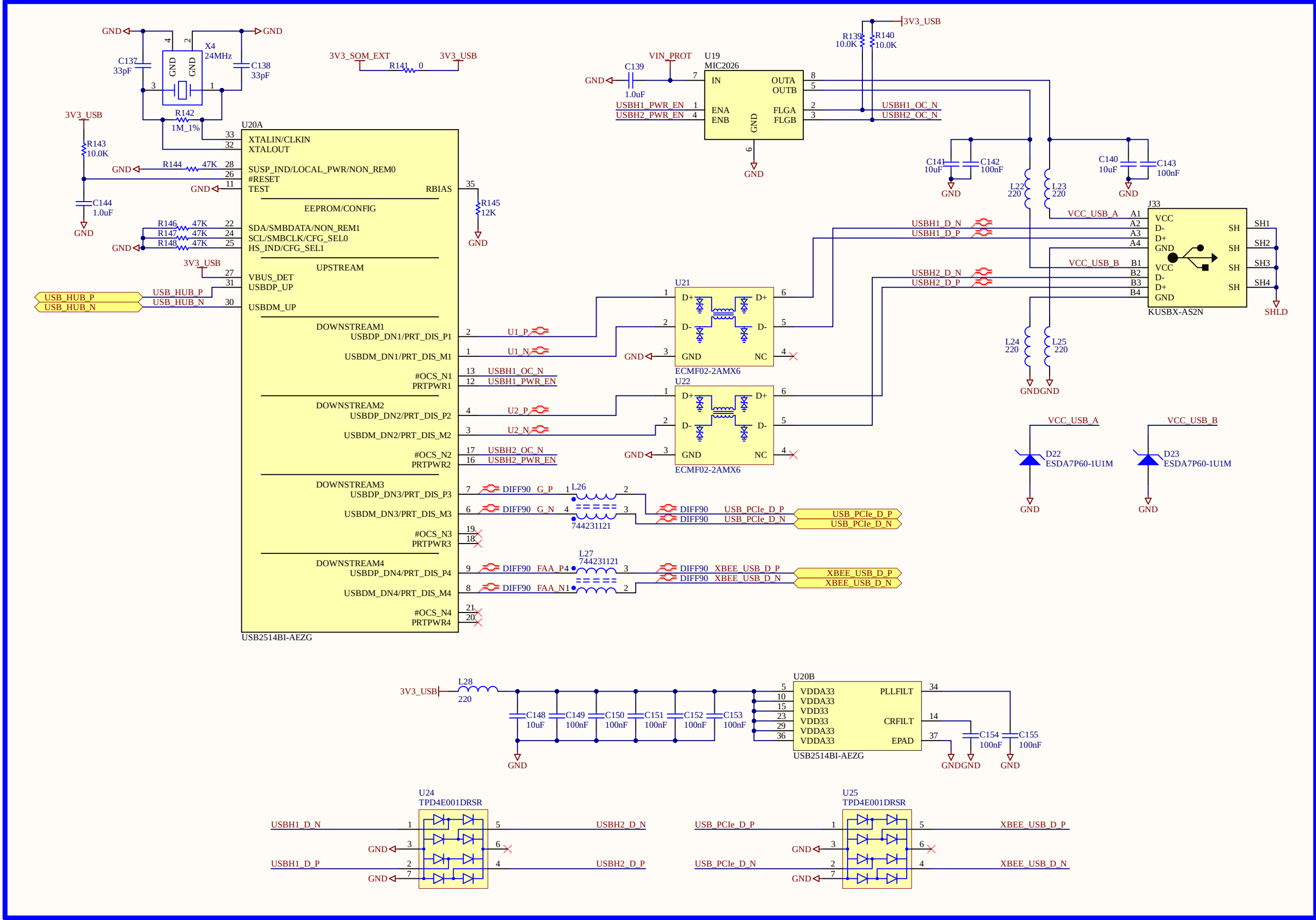
Pinout mirrored compared to Raspberry Pi

DF14A-20P-1.25H(25)

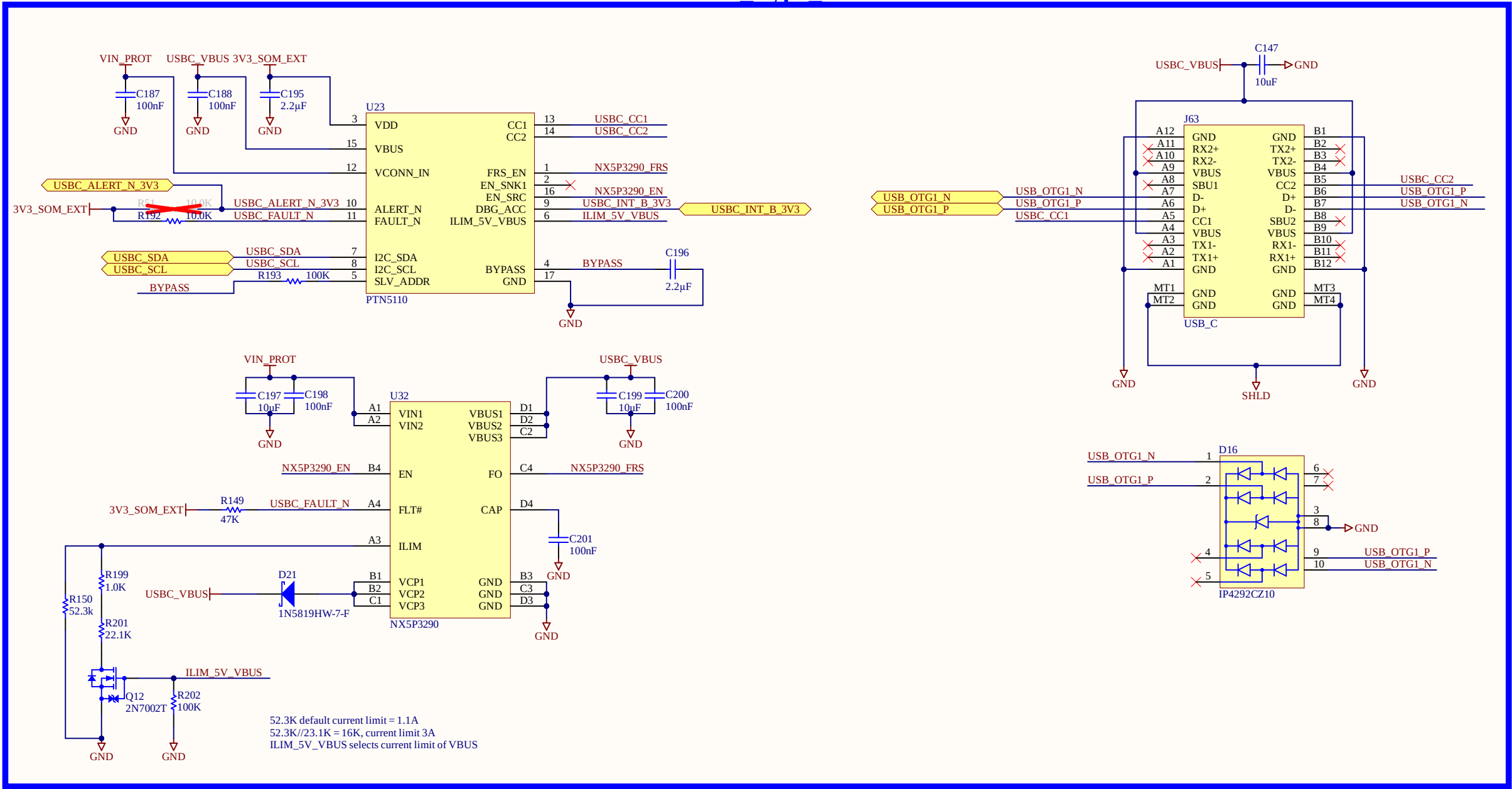
LT8912 MIPI to HDMI bridge



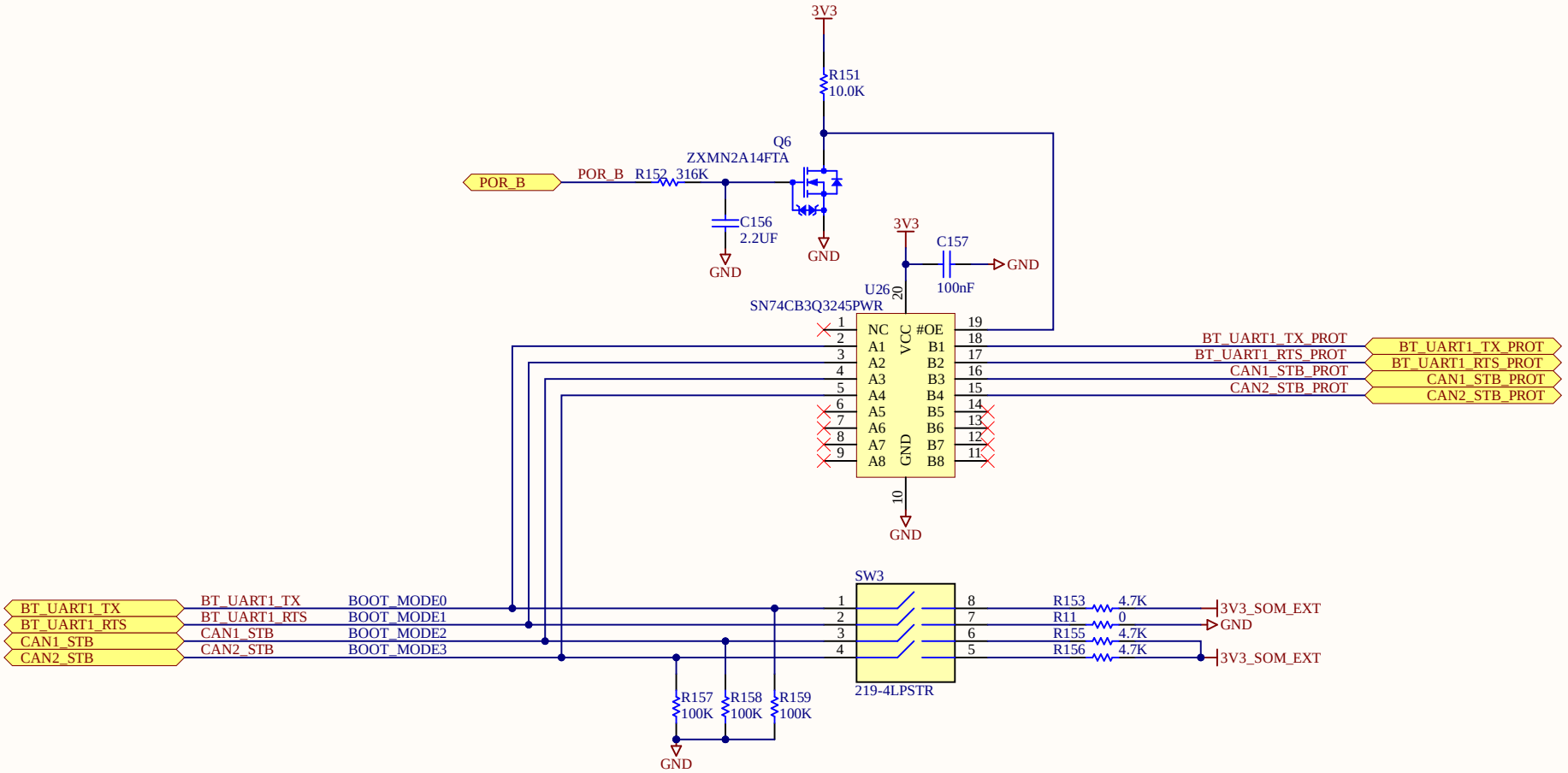
USB HUB



USB Type C



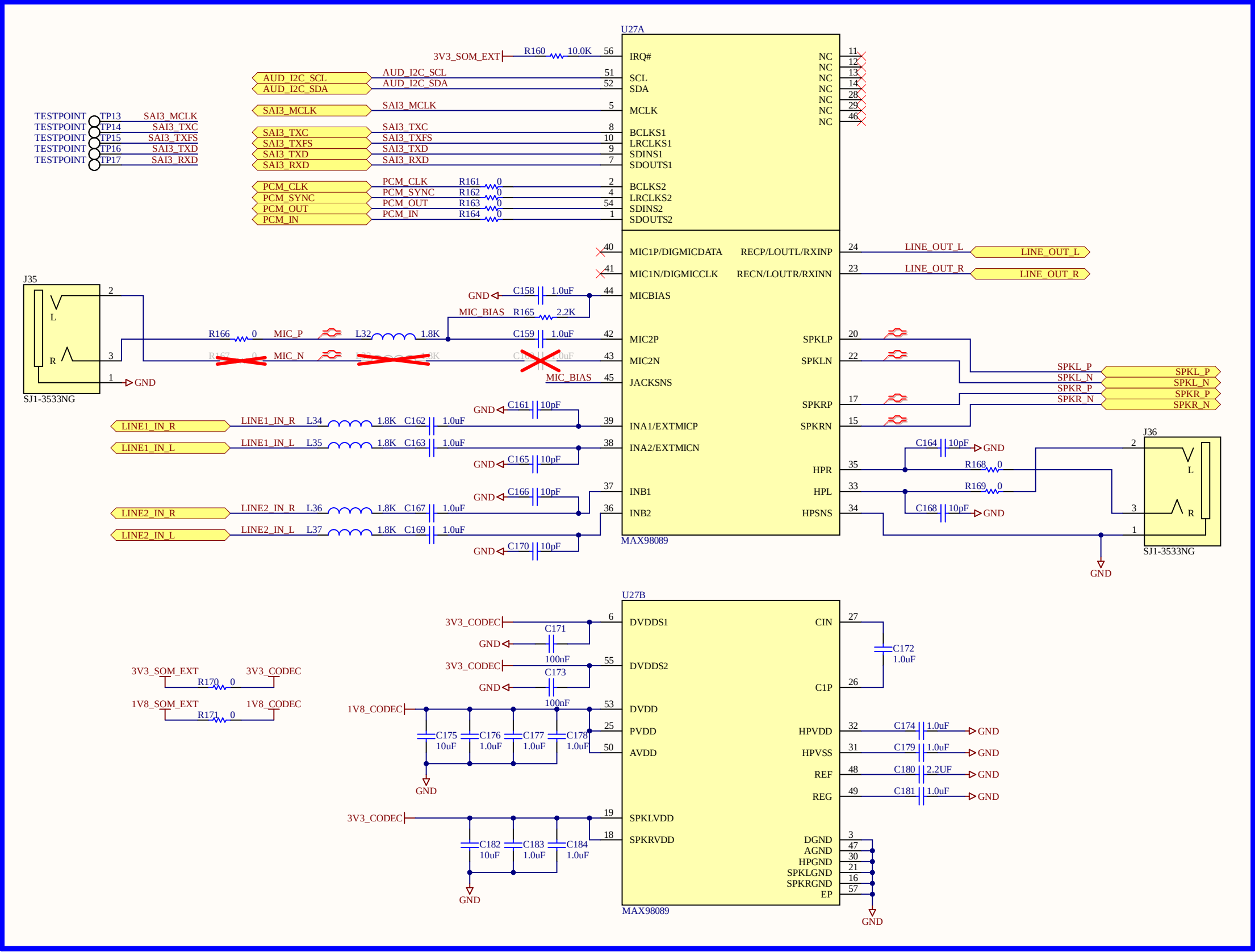
Bootstrap



SW3.1	SW3.2	SW3.3	SW3.4	BOOT_MODE[3:0]	Description
OFF	OFF	OFF	X	x010	USDHC1 8-bit eMMC 5.1
OFF	OFF	ON	X	x110	Infinite Loop
OFF	ON	OFF	X	x000	From internal fuses
OFF	ON	ON	X	x100	FlexSPI Serial NOR
ON	OFF	OFF	X	x011	USDHC2 4-bit SD3.0
ON	OFF	ON	X	x111	Test Mode
ON	ON	OFF	X	x001	Serial Downloader
ON	ON	ON	X	x101	FlexSPI Serial NAND 2K page

Leaving SW3.4 open selects the Cortex-A55. Closing it selects the Cortex-M33.

AUDIO



The schematic diagram illustrates the electrical connections for an XBEE module. The module is represented by a blue house-shaped symbol labeled "XBEE". It features two pin headers: J37 (SMM-110-02-F-S-P-TR) on the left and J38 (SMM-110-02-F-S-P-TR) on the right.

Power Connections:

- 3V3_SOM_EXT:** Connected to pin 1 (VCC) via a 220Ω resistor (L38).
- 3V3_BOARD:** Connected to pin 1 (VCC) via a 220Ω resistor (L39).
- XBEE_VCC:** Connected to pin 1 (VCC) via a 100nF capacitor (C186).

Data and Control Connections:

- XBEE_UART_RX_3V3:** Connected to pin 2 (DOUT).
- XBEE_UART_TX_3V3:** Connected to pin 3 (DIN/CONFIG_N).
- XBEE_RESET_N:** Connected to pin 5 (RESET_N) via a 10kΩ resistor (R194).
- XBEE_USB_D_P:** Connected to pin 6 (PWM0/RSSI).
- XBEE_USB_D_N:** Connected to pin 7 (Reserved).
- XBEE_UART_RTS_3V3:** Connected to pin 15 (RTS_N/DIO6).
- XBEE_UART_CTS_3V3:** Connected to pin 12 (CTS_N/DIO7).

Other Connections:

- Pin 4 (D08):** Connected to GND.
- Pin 9 (DTR_N/SLEEP_RQ/DI8):** Connected to GND.
- Pin 10 (GND):** Connected to GND.
- Pin 16 (AD5/DIO5):** Connected to GND.
- Pin 17 (VREF):** Connected to GND.
- Pin 18 (ON/SLEEP_N):** Connected to GND.
- Pin 19 (AD4/DIO4):** Connected to GND.

Components:

- Capacitors:** C185 (100uF), C186 (100nF).
- Inductors:** L38 (220), L39 (220).
- Resistors:** R194 (10k), R196 (10k), R197 (10k), R198 (10.0K).

Notes:

- Red 'X' marks indicate connections that are not made or are to be avoided.
- Yellow boxes highlight specific connection points.

The diagram illustrates the MikroBUS module with two headers, J39 and J40. The module is labeled "MIKROBUS" and "1x8POS 0.1".

Header J39 Connections:

- 1: MIKROBUS_ADC
- 2: MIKROBUS_RST
- 3: SPI8_SS
- 4: SPI8_SCK
- 5: SPI8_MISO
- 6: SPI8_MOSI
- 7: 3V3_SOM_EXT
- 8: GND

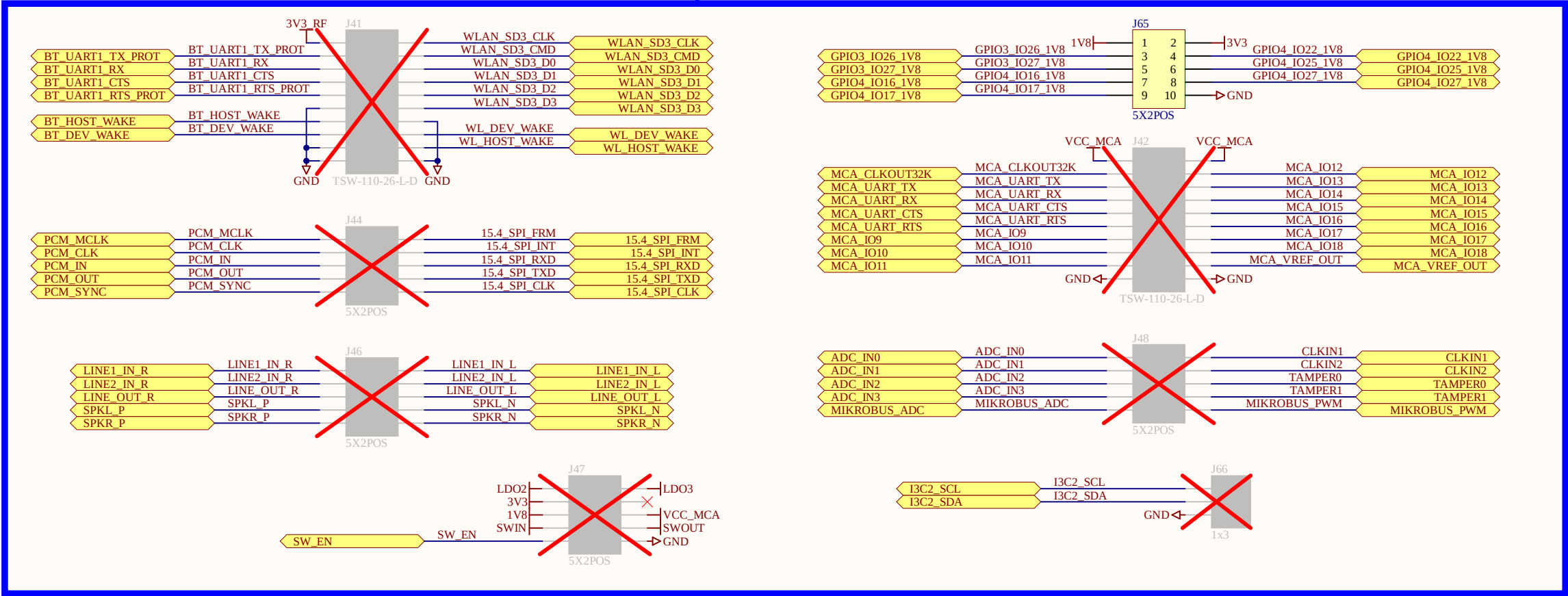
Header J40 Connections:

- 1: MIKROBUS_PWM
- 2: MIKROBUS_INT
- 3: MIKROBUS_UART_TX
- 4: MIKROBUS_UART_RX
- 5: MIKROBUS_I2C_SCL
- 6: MIKROBUS_I2C_SDA
- 7: GND
- 8: 5V

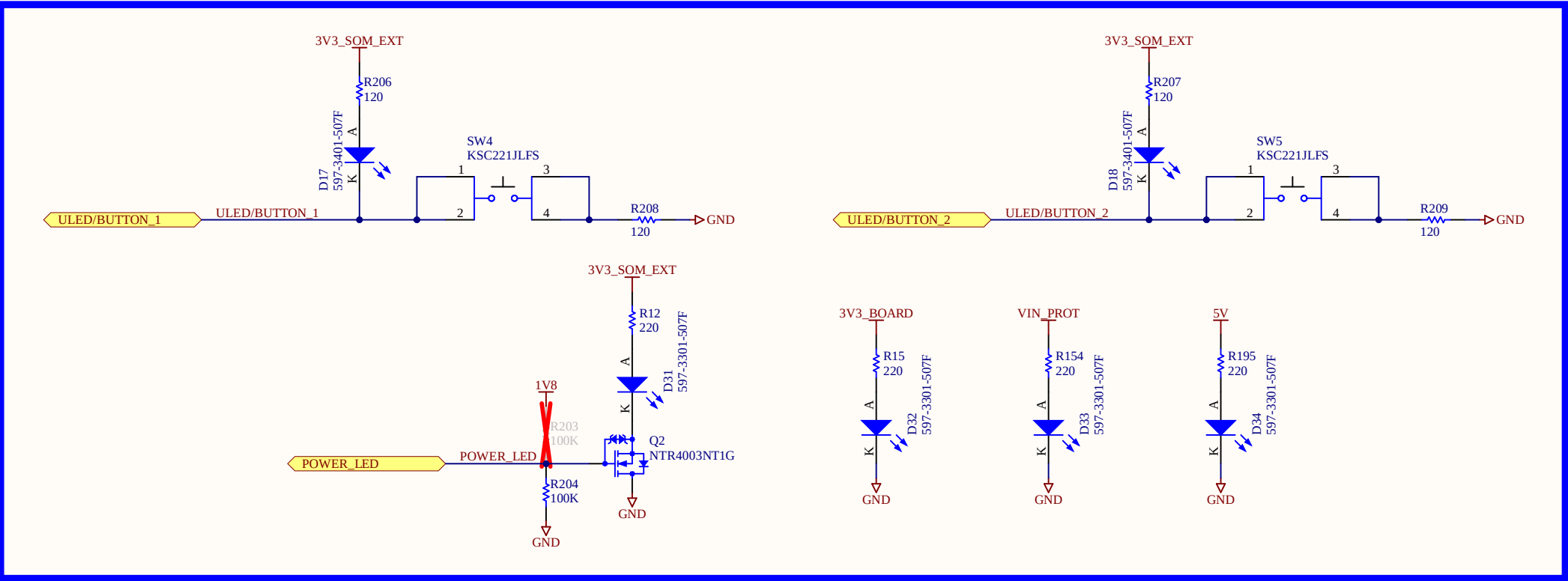
Additional Components:

- R50:** 10.0K resistor connected between J40 pin 1 and 3V3_SOM_EXT.
- C145:** 100nF capacitor connected to GND.
- C146:** 100nF capacitor connected to GND.

Expansion connectors



User LEDs & Buttons



System Power Rails

Voltage (V)	Supply Name	Block	Generated by	Current Capability (mA)
5.0	VIN	Input power protection	External DC supply	-
		MCA LDO		
	VIN_PROT	ConnectCore 93	Overvoltage protection	-
		5V load switch		
		3.3V board regulator		
		USB Host		
		USB Type C		
	5V	CAN	SIP32401A (U5)	-
		MIPI		
		LVDS		
		HDMI		
		Mikrobus		
3.3	3V3_SOM_EXT	RS485	CC93	3A Used also inside the SOM
		MicroSD		
		Ethernet		
		MIPI CSI		
		LVDS		
		USB HUB		
		USB Type C		
		Audio		
		XBee		
		Mikrobus		
	3V3_BOARD	PCIe	MP2316 (U6)	3A
		XBee		
	VCC_MCA	MCA	AP2202 (U3)	150mA
3.0	VCC_RTC	RTC	J4	
1.8	1V8_SOM_EXT	HDMI	CC93	2A Used also inside the SOM
		Audio		
1.5	PCIE_1V5	PCIe	3V3_BOARD	150mA

GPIO Table

Signal Name	GPIO
3V3_BOARD_EN	GPIO4_IO28
5V_DVK_PWR_ON	GPIO1_IO14
CAN1_STB	GPIO1_IO11
CAN2_STB	GPIO1_IO13
DISP_RESET	GPIO2_IO06
ENET1_RST	GPIO3_IO26
ENET2_RST	GPIO3_IO27
HDMI_HPD_3V3_CPU	GPIO1_IO12
LT8912B_INT_3V3	GPIO1_IO02
LT8912B_RST_3V3	GPIO1_IO03
LVDS_PWM_OUT	GPIO2_IO23
LVDS_IRQ_N	GPIO2_IO24
MIKROBUS_INT	GPIO2_IO11
MIKROBUS_RST	GPIO1_IO10
MIPI_CSI1_RESET_N	GPIO2_IO22
POWER_LED	GPIO4_IO29
RTC_INT_N	GPIO2_IO18
RS485_DE/RE	GPIO2_IO10
ULED/BUTTON_1	GPIO3_IO07
ULED/BUTTON_2	GPIO4_IO23
USBC_ALERT_N	GPIO4_IO21
USBC_INT_B	GPIO4_IO20
XBEE1_RESET_N	GPIO2_IO19

1	2	3	4	5	6	7	8									
A	Format: DD/MM/YYYY 19/12/2022 - CC93 Development Board * Revision: 01 - Initial version. 08/02/2023 - CC93 Development Board * Revision: 02 - PCB spin: 3001753x-01 rev A => 3001753x-02 rev A 27/04/2023 - CC93 Development Board * Revision: 1P - NPRO-006380 - Remove Ethernet PHY reset connection to the CPU. Add the RC network on the reset pin: populate R103, R112, C67, C94 and remove R104 and R113. - Disconnect USB Type-C controller from the I2C bus: remove R46 and R47. - Change USB Type-C I2C address by populating R193 with 100K value - Fix USB Host ESD protections orientation: update symbol and rotate D22 and D23. - Remove MIPI display connector and LED driver. - Remove SW4, R206, R208 and D17. - Remove MCA SWD connector J21. 28/11/2023 - CC93 Development Board * Revision: 2P - ECO-012884 - PCB spin: 3001753x-02 rev A => 3001753x-03 rev A 29/04/2024 - CC93 Development Board * Revision: 3P - ECO-013213 - Replace U18 (16051861, EOL) by 16000235. - Replace R119 by 10K resistor.						A									
B							B									
C	LBL1 LABEL 28000351_LABEL TXT1 LABEL TEXT 95023240						C									
D							D									
						<table><tr><td colspan="2">Title: History, Mechanicals</td></tr><tr><td>Designer: Juan Anzola</td><td>Sheet: 20 of 20</td></tr><tr><td>Variant: 55002179-01</td><td>Rev: 3P</td></tr><tr><td colspan="2">Description: ConnectCore 93 Development board</td></tr></table>	Title: History, Mechanicals		Designer: Juan Anzola	Sheet: 20 of 20	Variant: 55002179-01	Rev: 3P	Description: ConnectCore 93 Development board		DIGI	
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