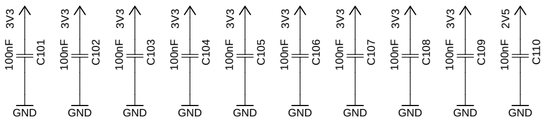

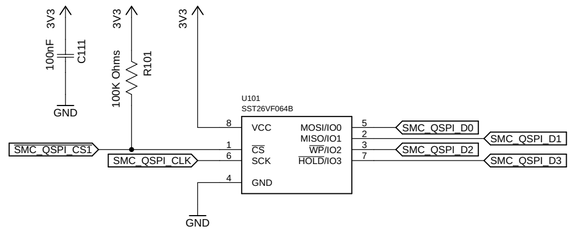

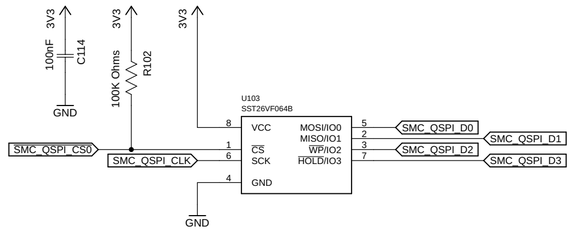

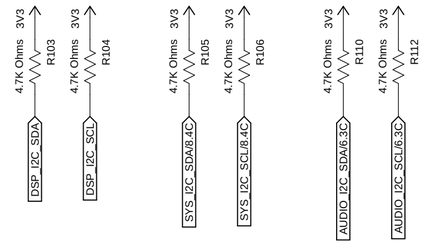

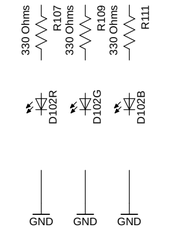

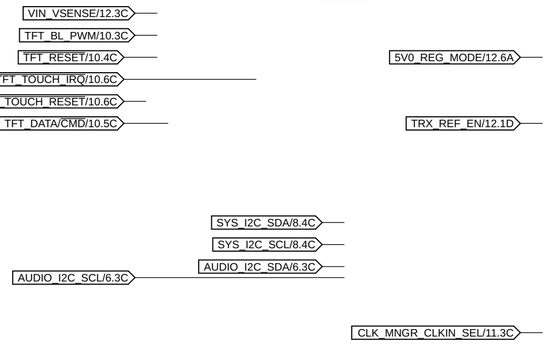

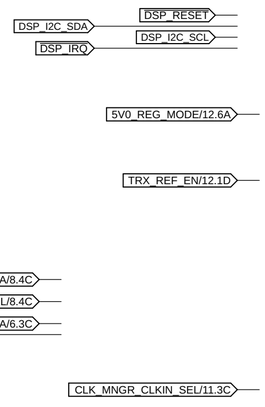

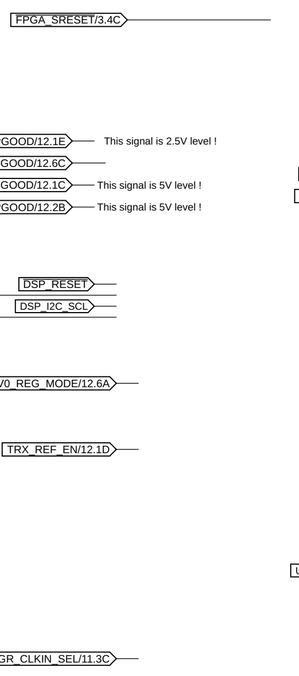

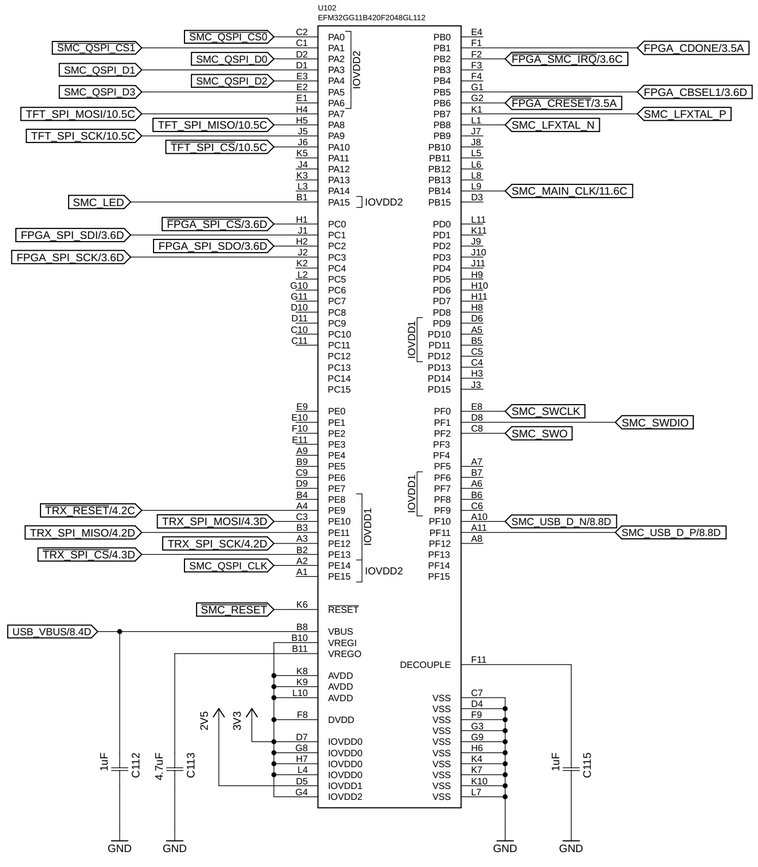

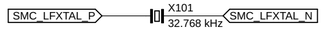

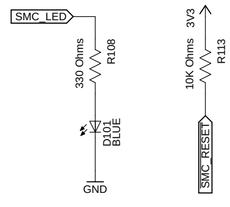

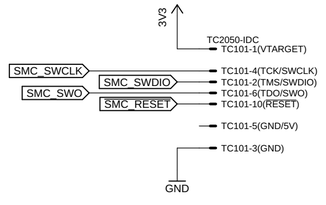

TODO:
- Connect IOs
- Find IOs scattered around

icyradio-main	João Silva Logo
Joao Silva	
Sheet: 1/13	SMC MCU
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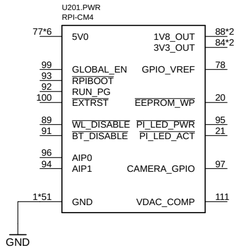
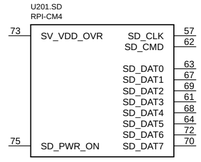
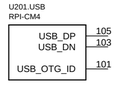
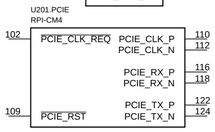
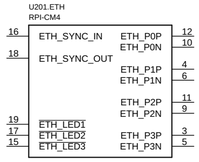
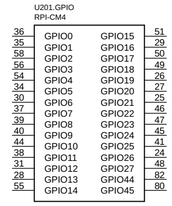




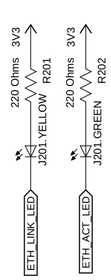


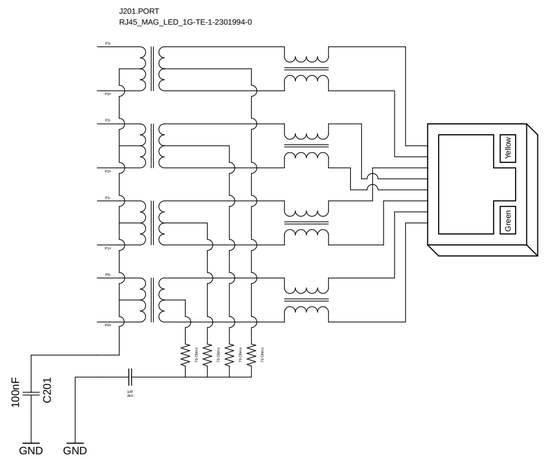






TODO:
- Connect interfaces





icyradio-main	
Joao Silva	
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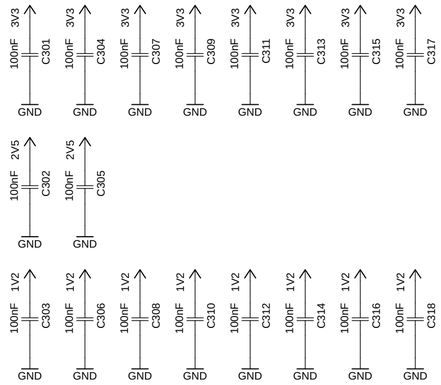
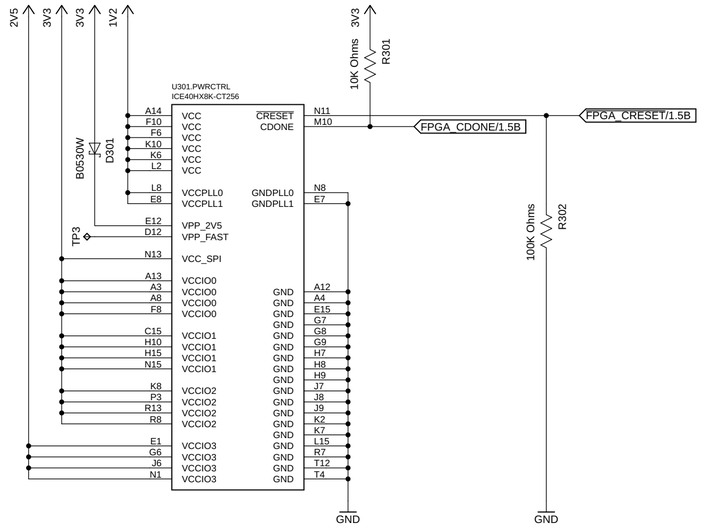
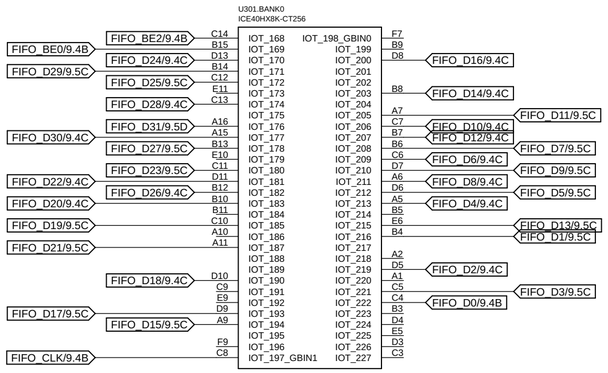
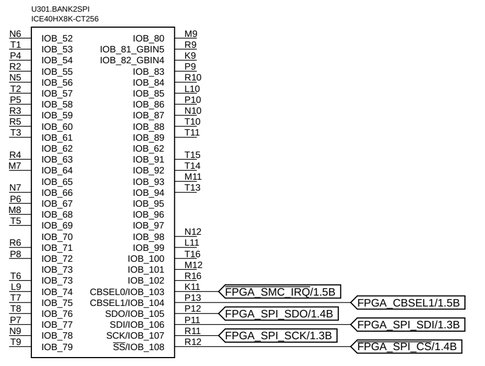
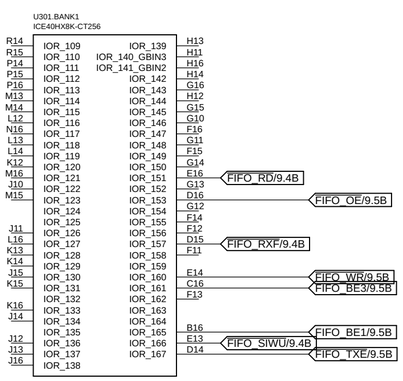


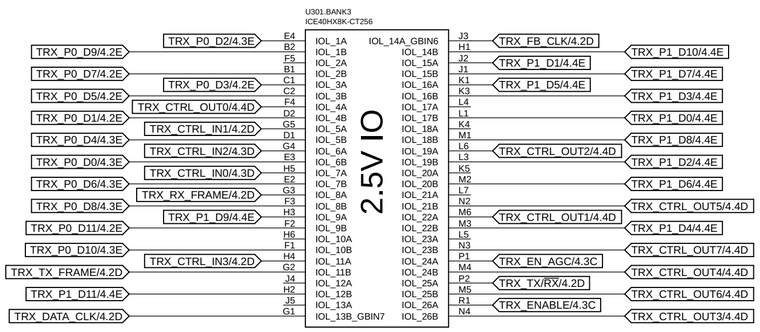


TODO:
- Connect IOs
- Find IOs scattered around









icyradio-main	
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Sheet: 3/13	FPGA
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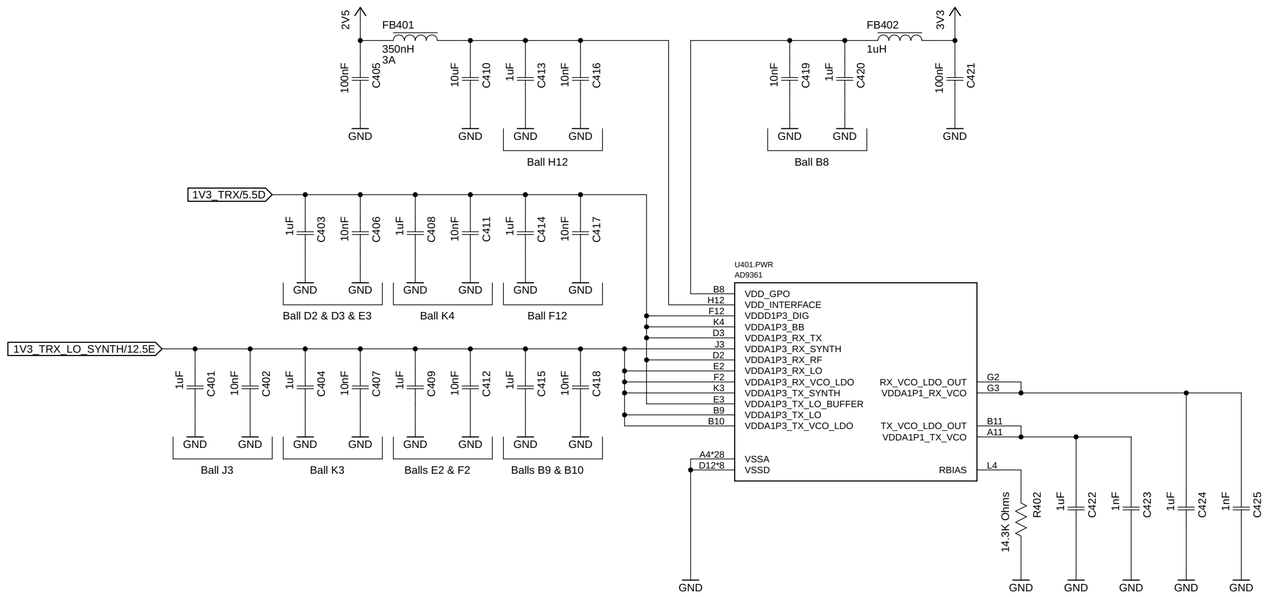
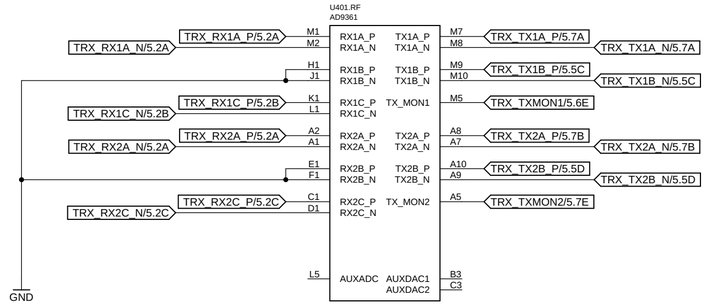
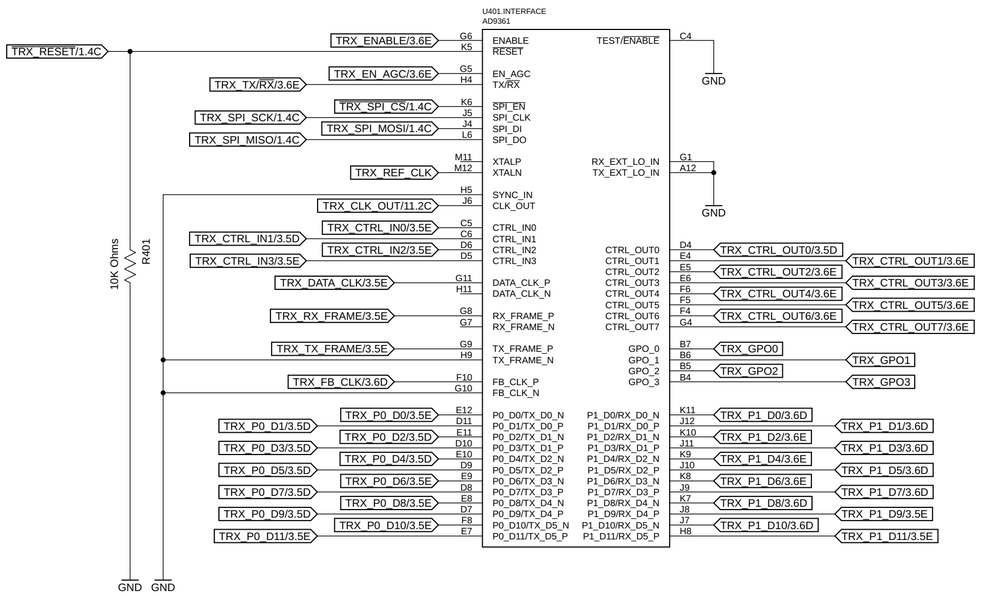
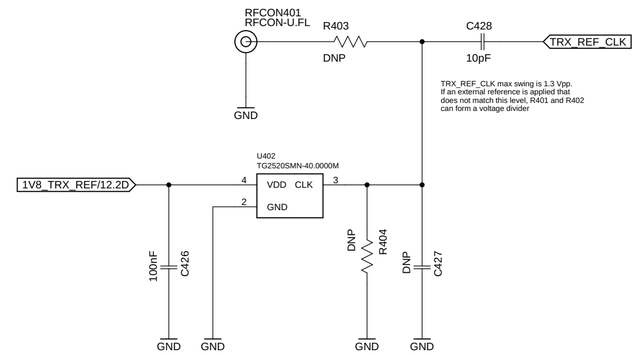




TODO:
- AUXDAC
- AUXADC
- GPO
- Add keepout on RF components
- GPO at 2.5V
- Caps 0201 below IC





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Sheet: 4/13	RF Transceiver
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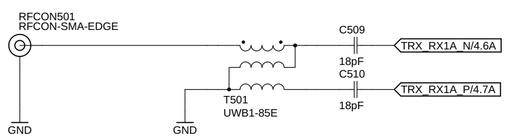

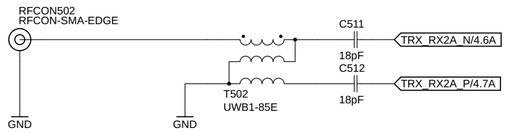

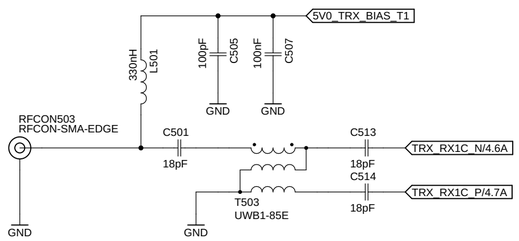

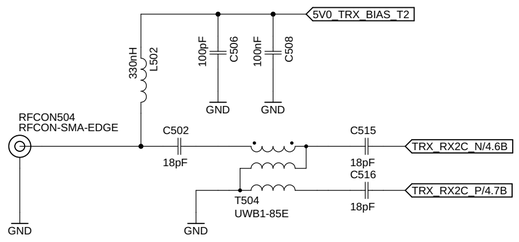

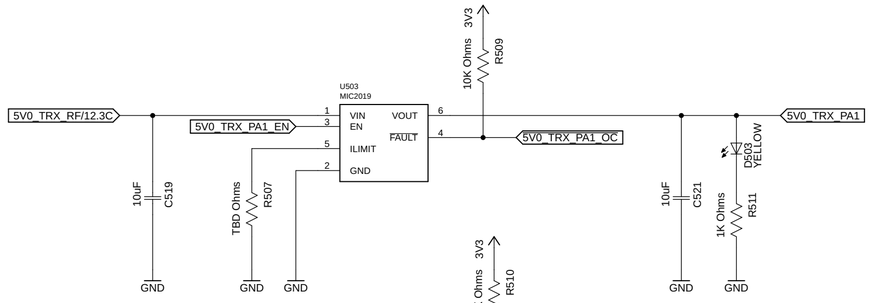

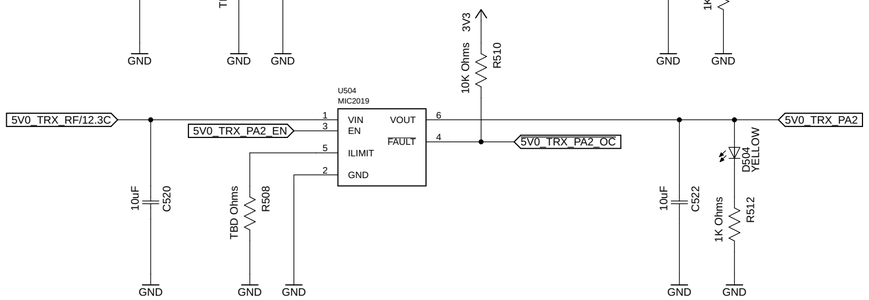

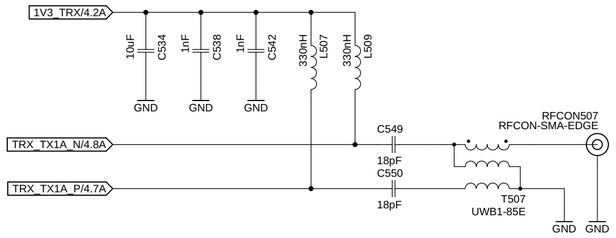

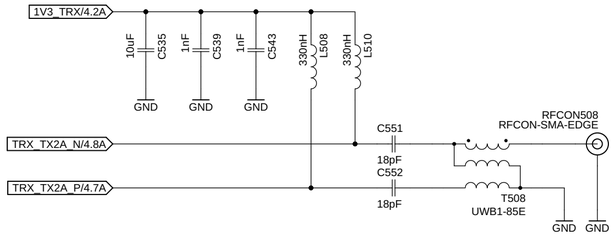

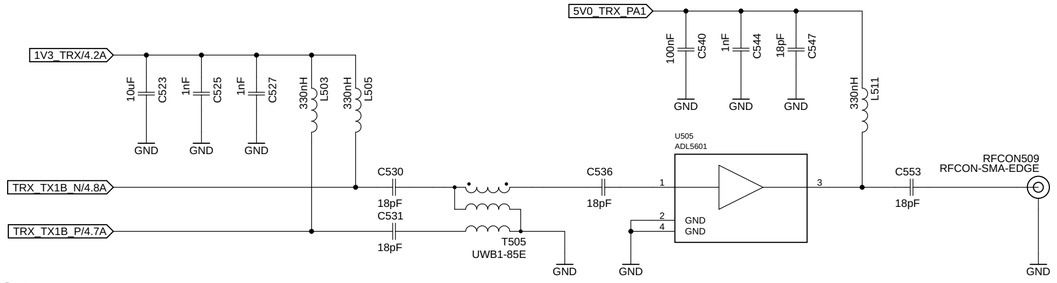

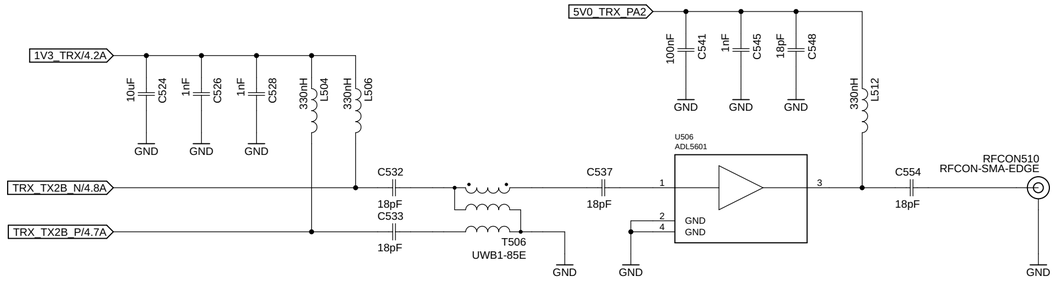

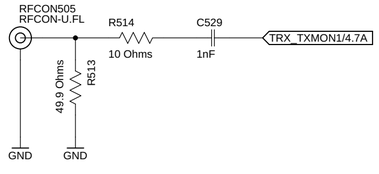

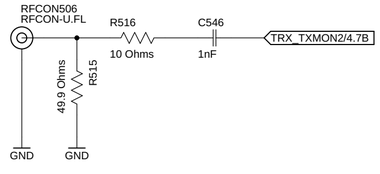

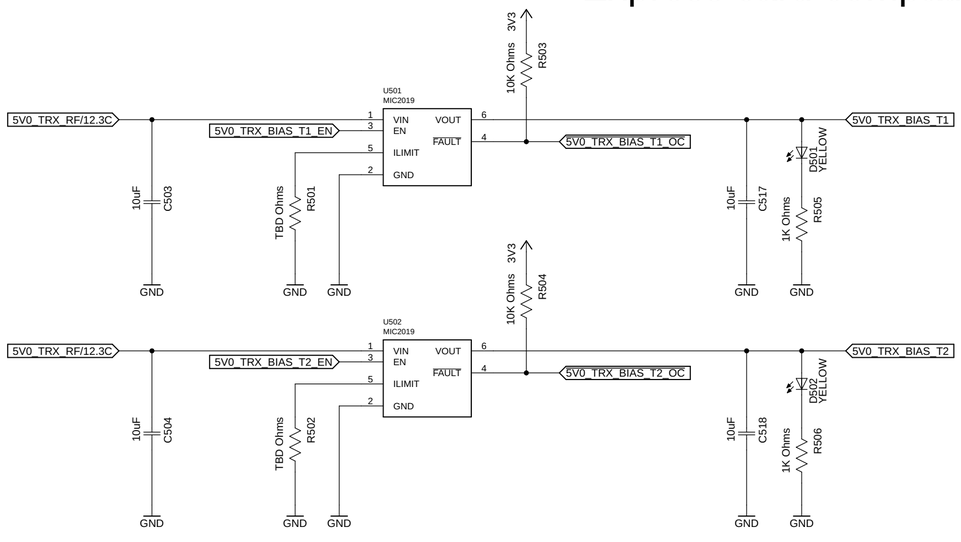

TODO:
- Replace SMA edge connectors with raised SMA connectors, for PCI Express card compatibility

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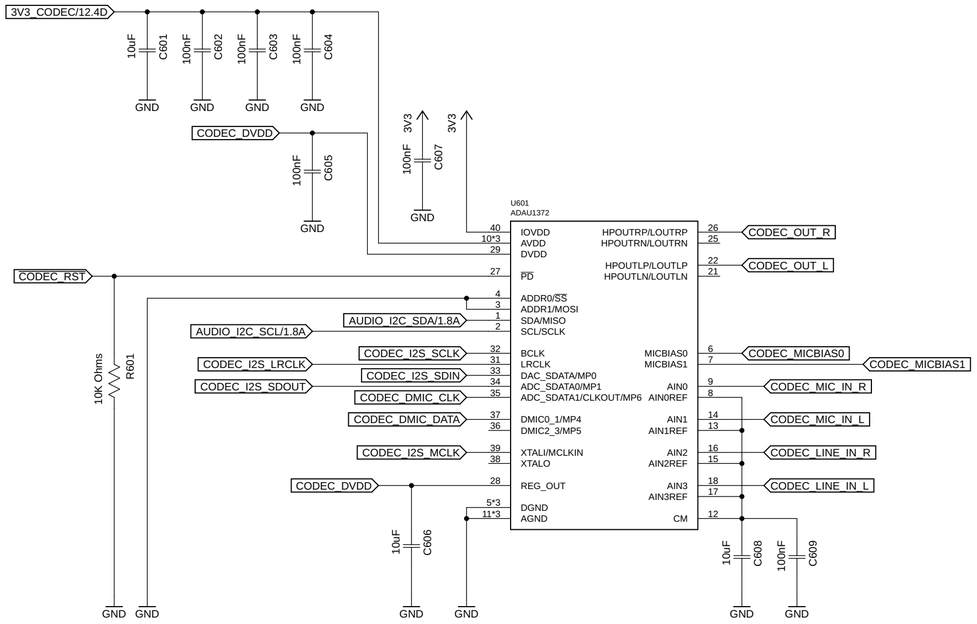
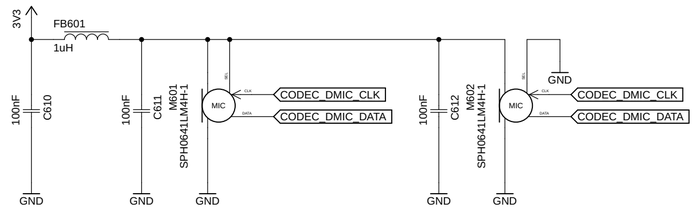
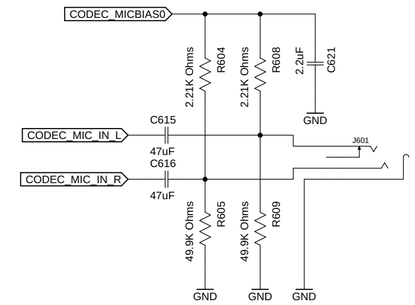
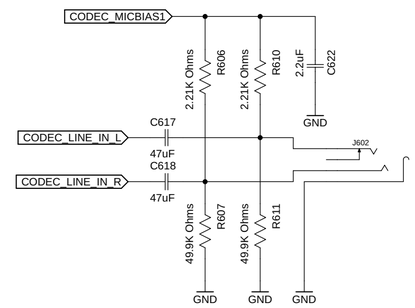
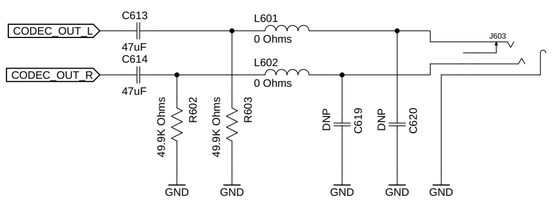
TODO:
- Figure out a smart way to connect this
no easily available drivers for RPi yet...
Or replace with a supported CODEC











icyradio-main	
Joao Silva	
Sheet: 6/13	Audio CODEC
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PCIE-X1-EDGE

CON701-A1(PRSNT1)		CON701-B1(+12V0)	
CON701-A2(+12V0)		CON701-B2(+12V0)	
CON701-A3(+12V0)		CON701-B3(RSVD)	
CON701-A4(GND)		CON701-B4(GND)	
CON701-A5(TCK)		CON701-B5(SMCLK)	
CON701-A6(TDI)		CON701-B6(SMDAT)	
CON701-A7(TDO)		CON701-B7(GND)	
CON701-A8(TMS)		CON701-B8(+3V3)	
CON701-A9(+3V3)		CON701-B9(TRST)	
CON701-A10(+3V3)		CON701-B10(+3V3AUX)	
CON701-A11(PWRGD)		CON701-B11(WAKE)	
CON701-A12(GND)		CON701-B12(RSVD)	
CON701-A13(REFCLKP)		CON701-B13(GND)	
CON701-A14(REFCLKN)		CON701-B14(TX0P)	
CON701-A15(GND)		CON701-B15(TX0N)	
CON701-A16(RX0P)		CON701-B16(GND)	
CON701-A17(RX0N)		CON701-B17(PRSNT2)	
CON701-A18(GND)		CON701-B18(GND)	

U701
VL805

9*4	VDD	USB2D1P	58
54*2	VCCA10SSRX12	USB2D1N	59
3*2	VCCA10SSRX34		
32*2	VSUS33	SSTX1P	52
57*2	VCCA33SS12	SSTX1N	53
6*2	VCCA33SS34	SSRX1P	55
23	VCCA33PEX	SSRX1N	56
49	VCCA33SSM		
		USB2D2P	67
		USB2D2N	68
31	PONRST		
		SSTX2P	61
		SSTX2N	62
30	PEXCREQ	SSRX2P	64
19	PEXRST	SSRX2N	65
20	PEXWAKE		
21	PEXCLKP	USB2D3P	7
22	PEXCLKN	USB2D3N	8
27	PEXRXP		
28	PEXRXN	SSTX3P	1
24	PEXTXP	SSTX3N	2
25	PEXTXN	SSRX3P	4
		SSRX3N	5
18	SMI		
		USB2D4P	16
35	SPICK	USB2D4N	17
33	SPISO		
36	SPISI	SSTX4P	10
34	SPICS	SSTX4N	11
		SSRX4P	13
		SSRX4N	14
47	SSXI		
48	SSXO	USBHPE1	44
		USBHOC1	43
		USBHPE2	42
50	SSREXT	USBHOC2	41
		USBHPE3	40
51	TESTEN	USBHOC3	39
		USBHPE4	38
69	VSS	USBHOC4	37

TODO:
- Connect this

icyradio-main	
Joao Silva	
Sheet: 7/13	PCI Express
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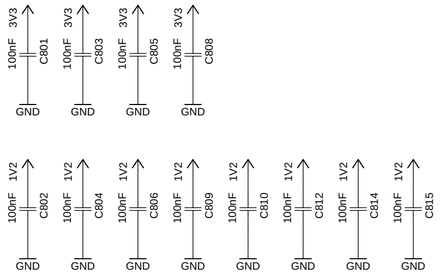
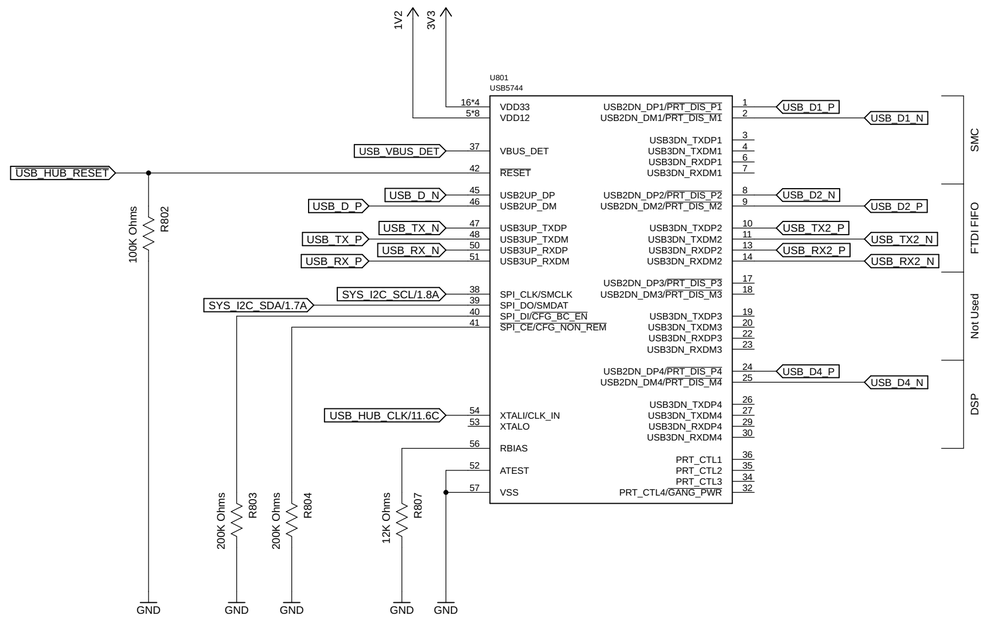
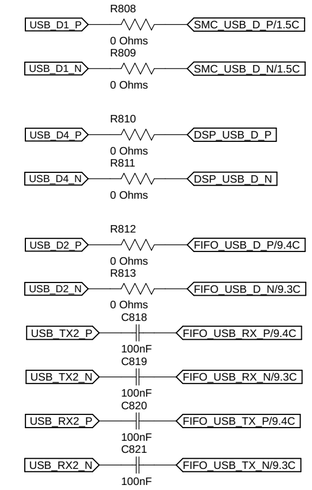
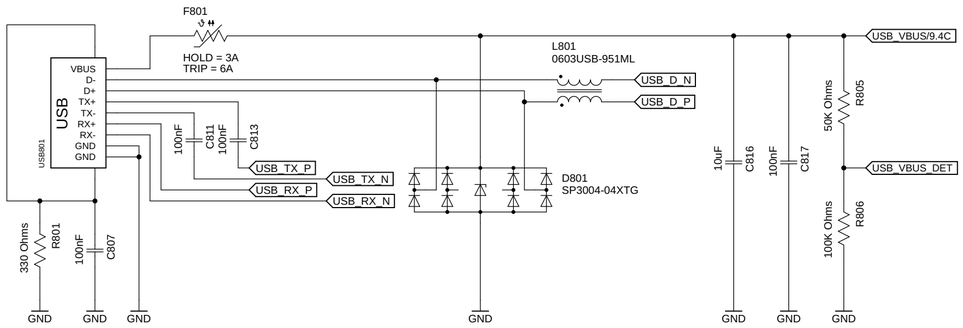


TODO:
- Think about all possible USB configurations and port directions



Upstream port DM/DP are swapped for routing ease
Downstream port 2 DM/DP are swapped for routing ease





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Sheet: 8/13	USB Hub
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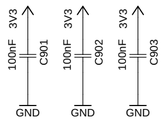
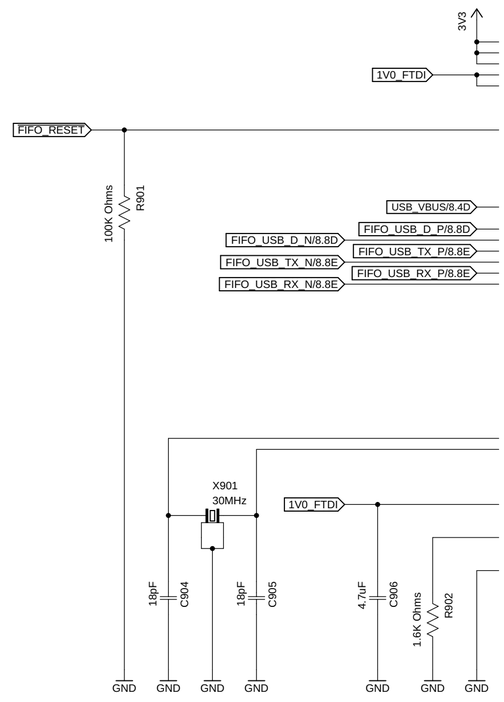
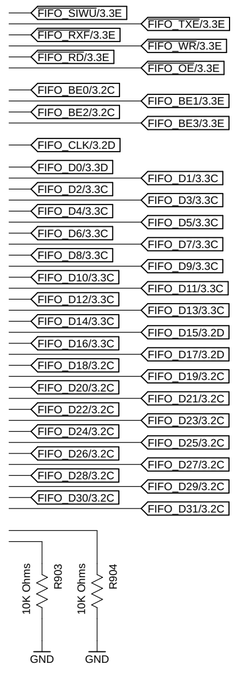
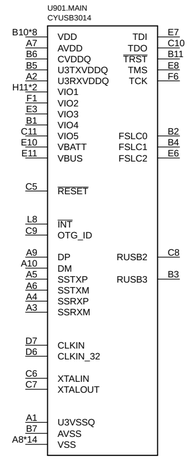
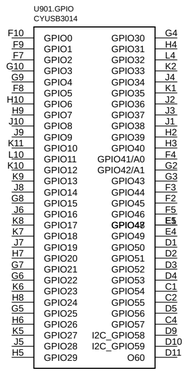


TODO:
- GTFO FTDI
- Replace with Cypress FX3 (+ configurable, + driver support)









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Sheet: 9/13	USB Interface
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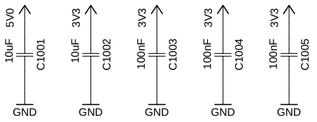
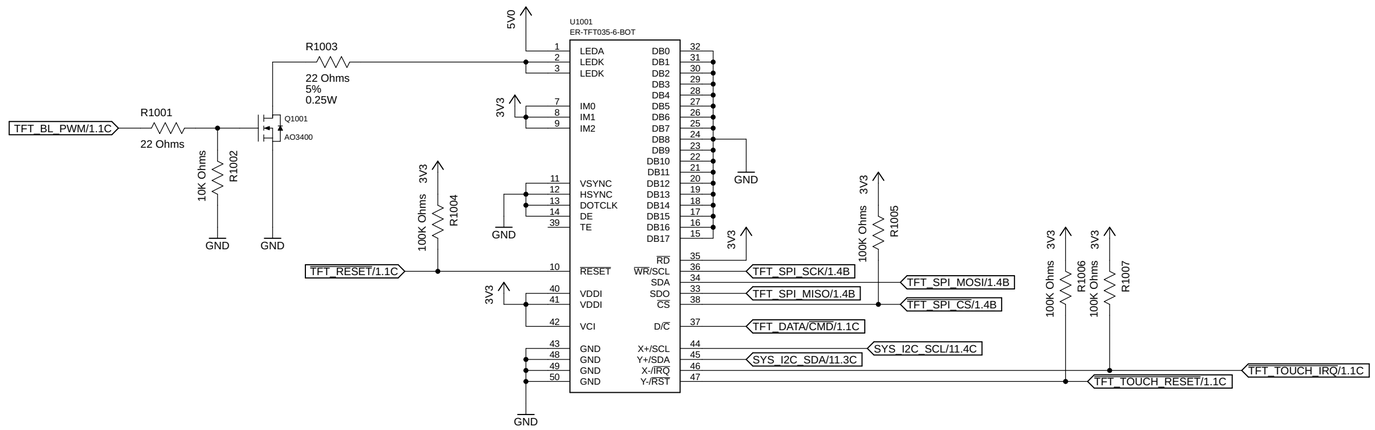


TODO:
- Probably remove this...
- Phisically constrains the board dimensions and port locations, and routing is harder because of the slot thas has to be cut for the flex cable... Does not add much functionality



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Sheet: 10/13	TFT Display
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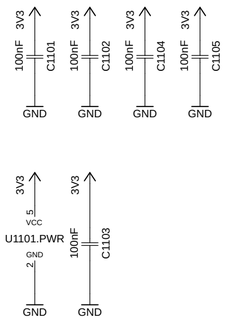
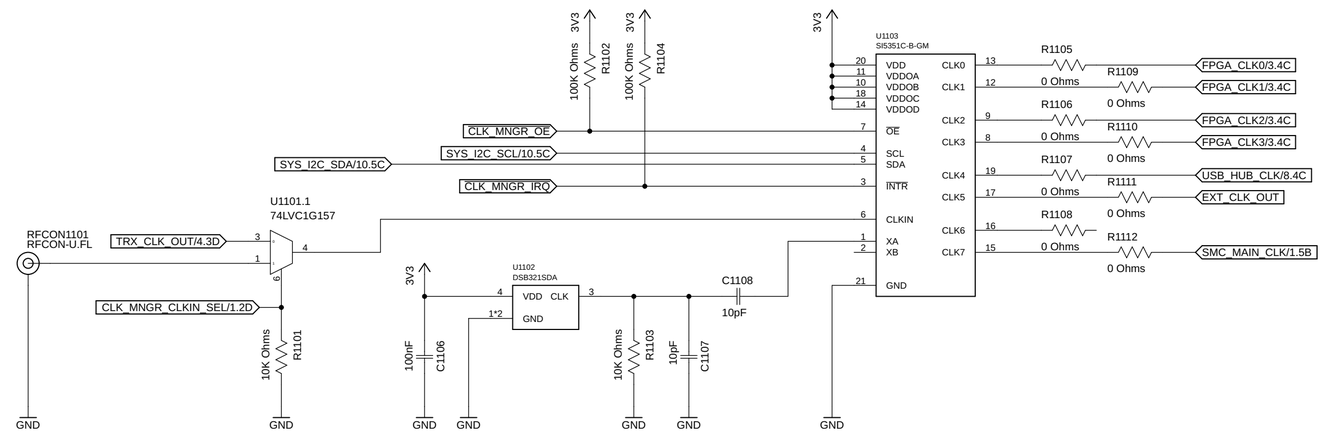
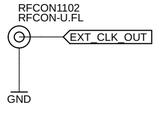


TODO:
- Discuss external reference clock connection method
(two inputs, one for RF, one for digital)
- Does this part degrade the clock provided to it? (adds jitter, phase noise?)
- Can a clock output from this IC be used as the
transceiver reference?
- Would be nice to have only a single external clock input...





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Sheet: 11/13	Clock generator
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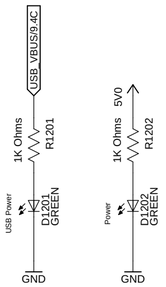
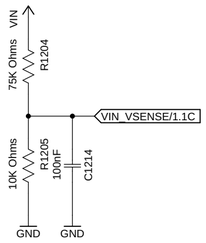
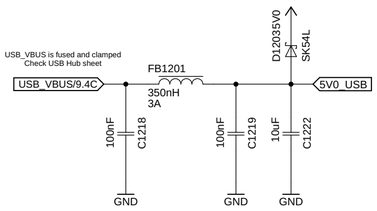
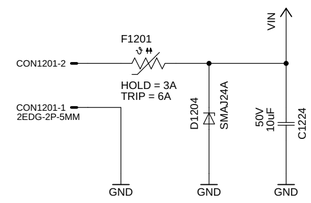
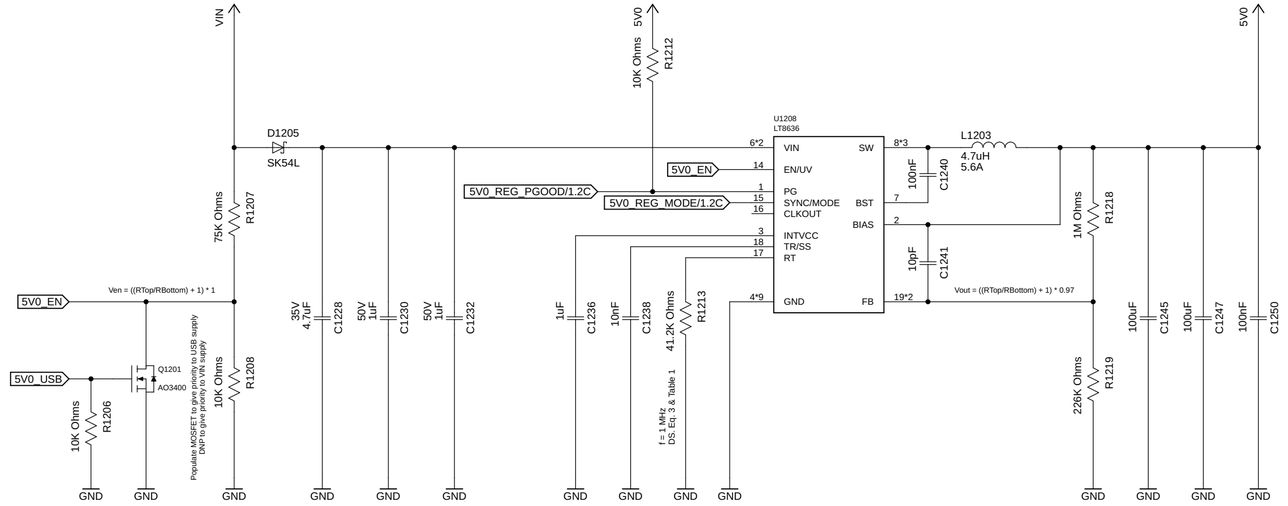
TODO:
- Check all power supplies
- Implement everything
in the power tree

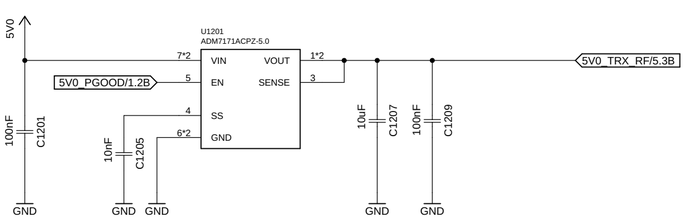


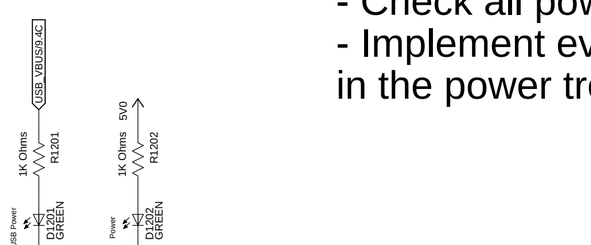


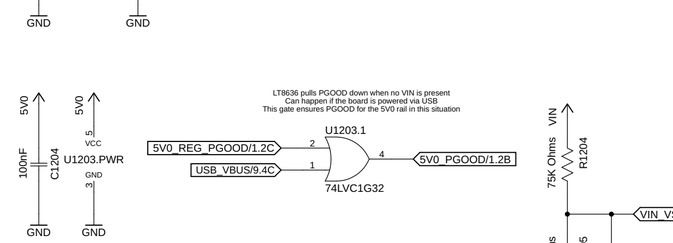


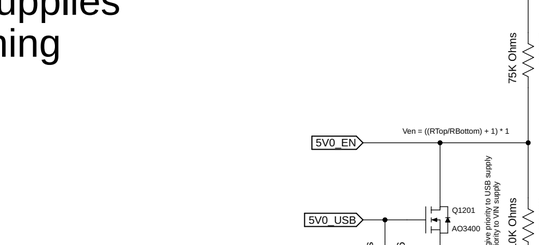


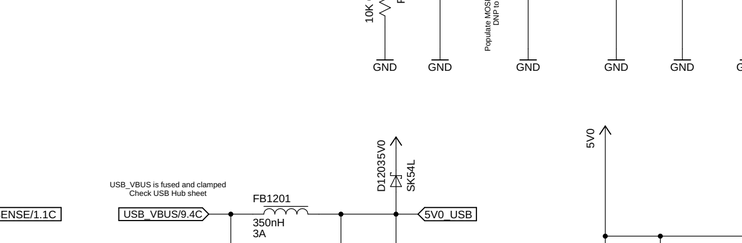


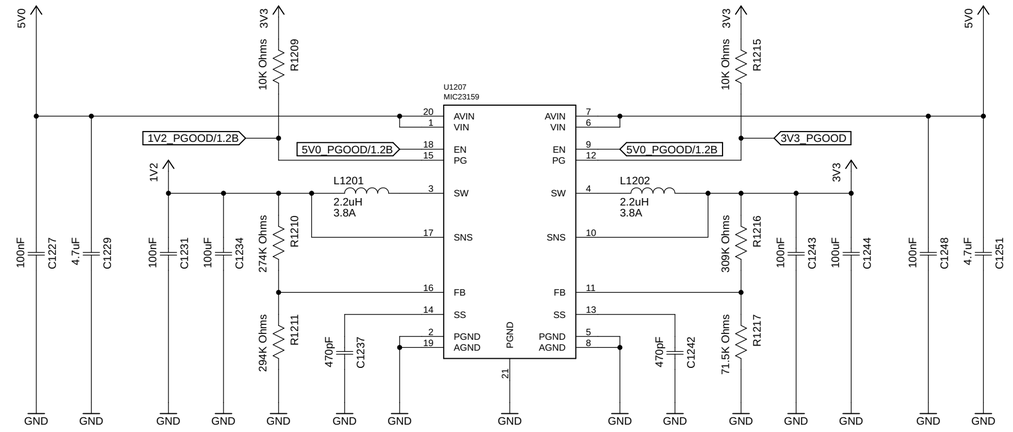


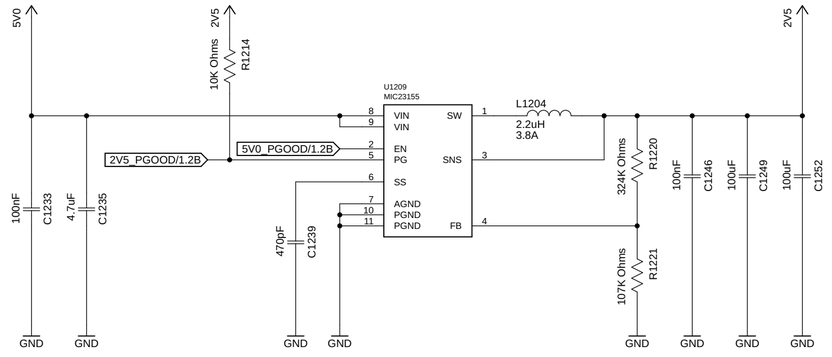












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Sheet: 12/13	Power
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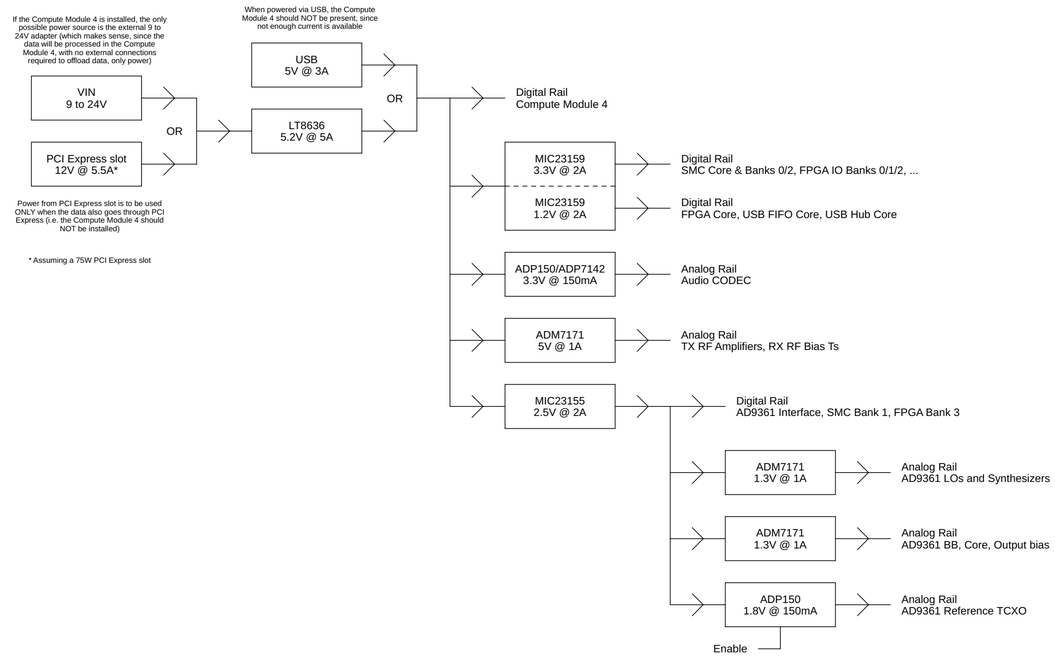
TODO:
- Review current requirements
- Check if the parts can supply the requested current



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Sheet: 13/13	Power tree
Date: 27/07/21 13:22	Rev: 2