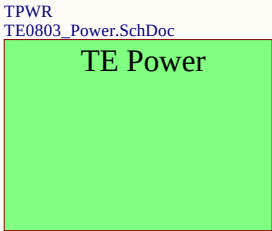
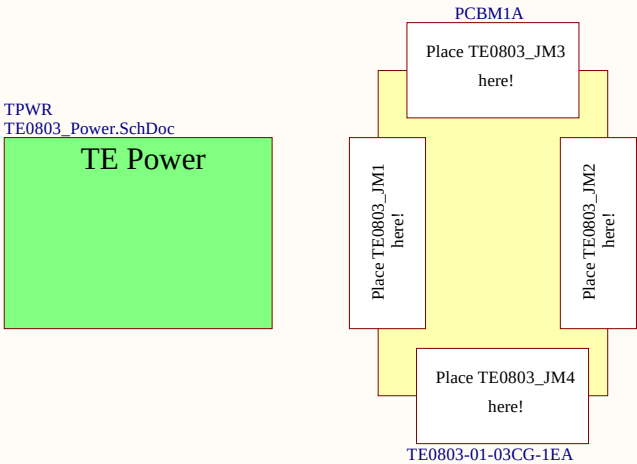
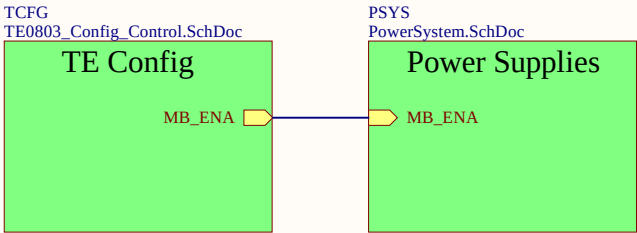
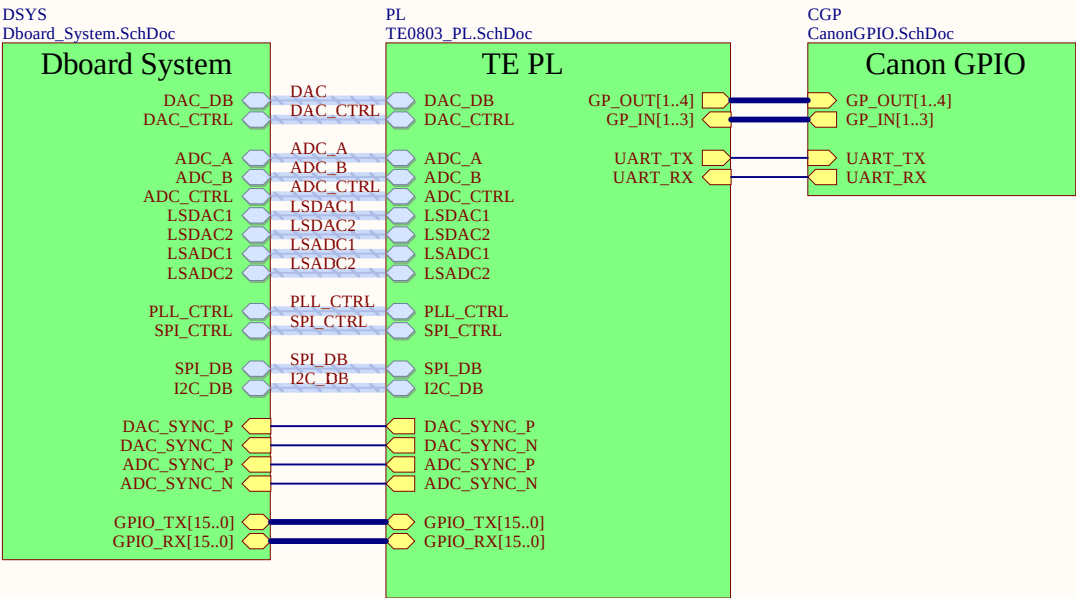
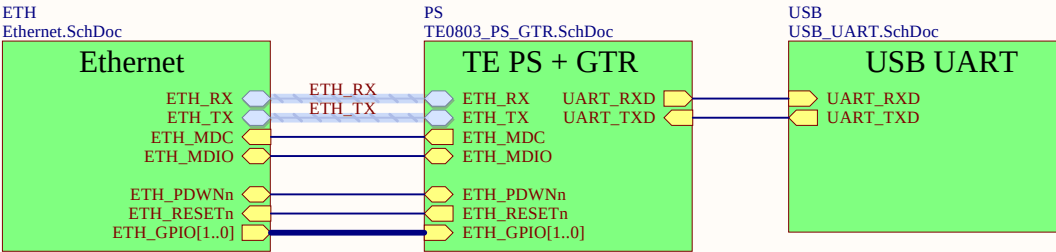


Radio Mother-Board Top Block Design

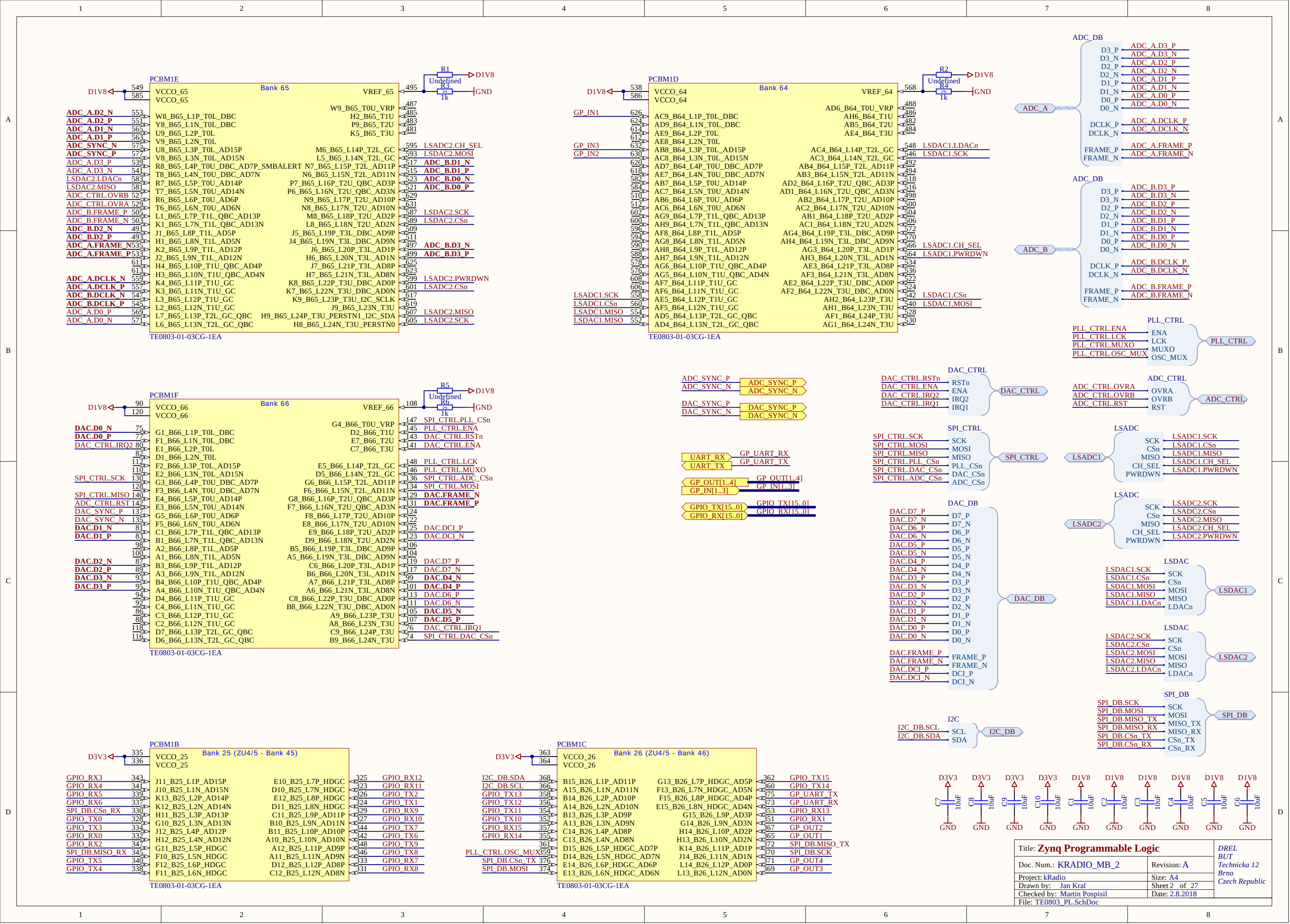
PL Systems

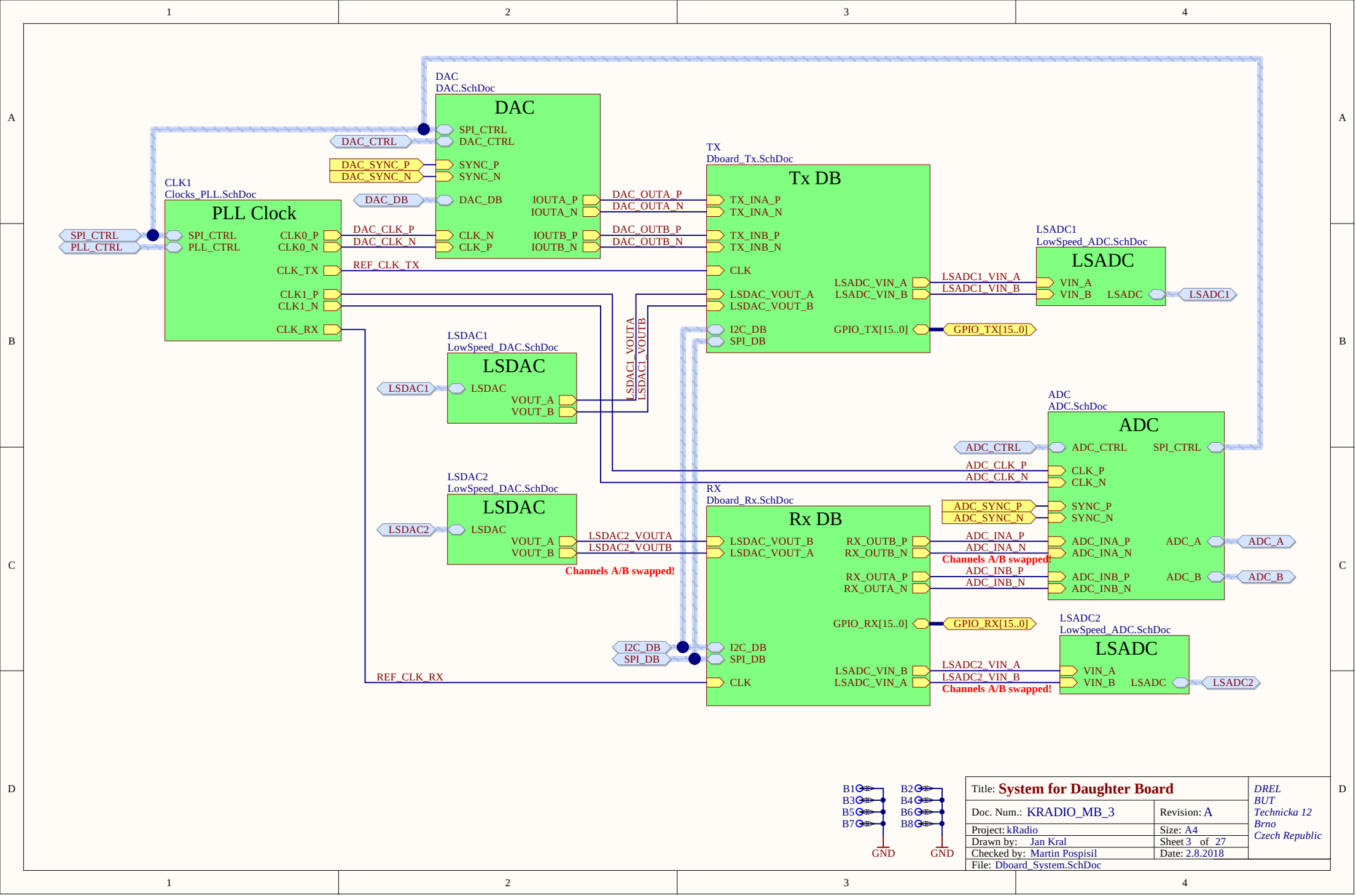


PS Systems

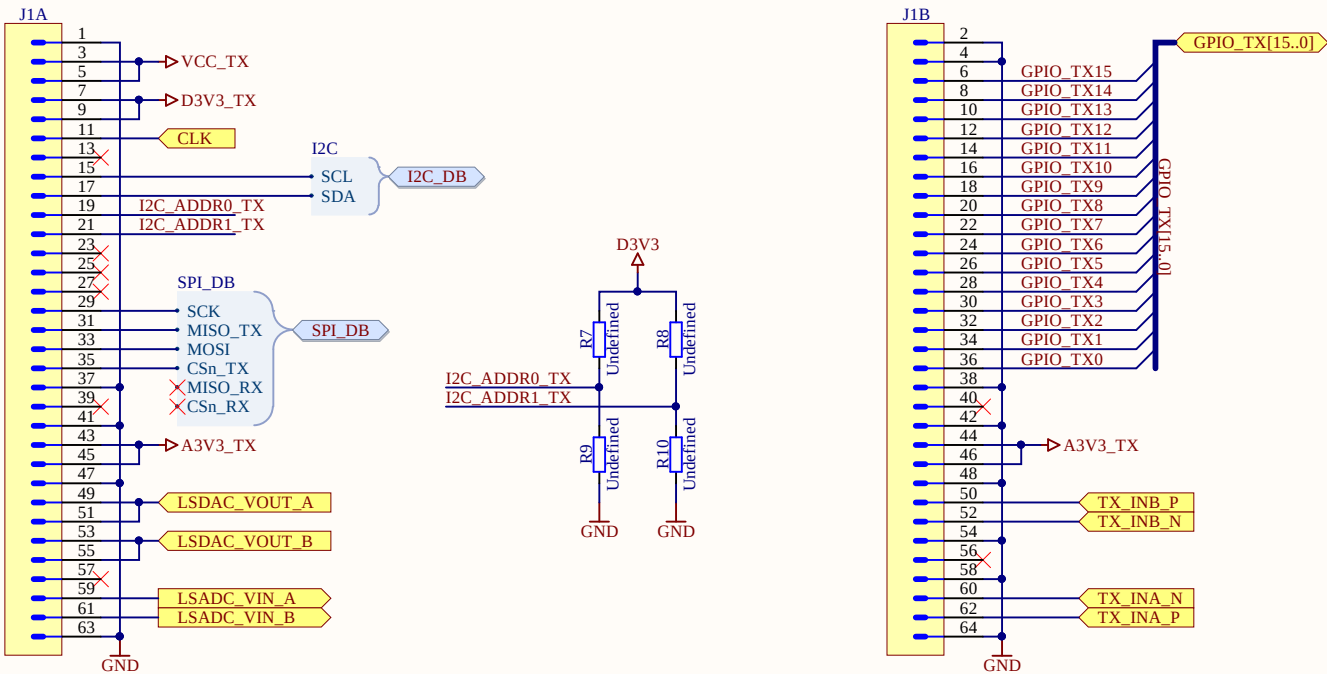


Title: Top Block Design		DREL BUT Technická 12 Brno Czech Republic	
Doc. Num.: KRADIO_MB_1	Revision: A		
Project: kRadio	Size: A4		
Drawn by: Jan Kral	Sheet 1 of 27		
Checked by: Martin Pospisil	Date: 2.8.2018		
File: Radio_Top.SchDoc			



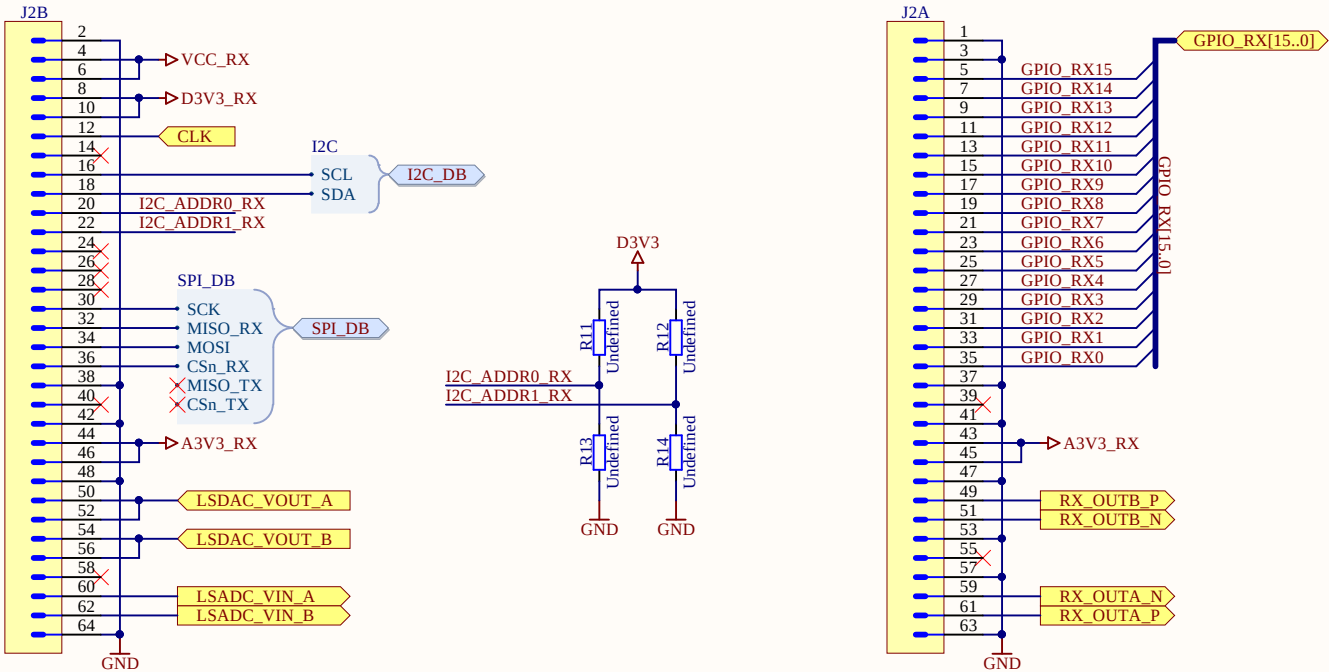


Daughter-Board Tx Connector

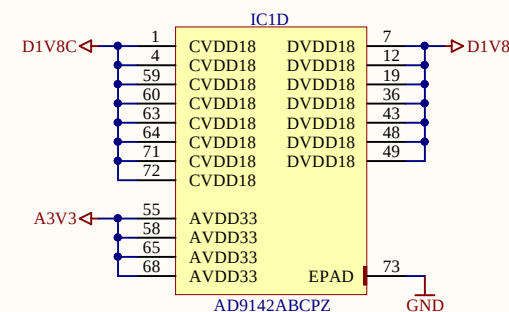
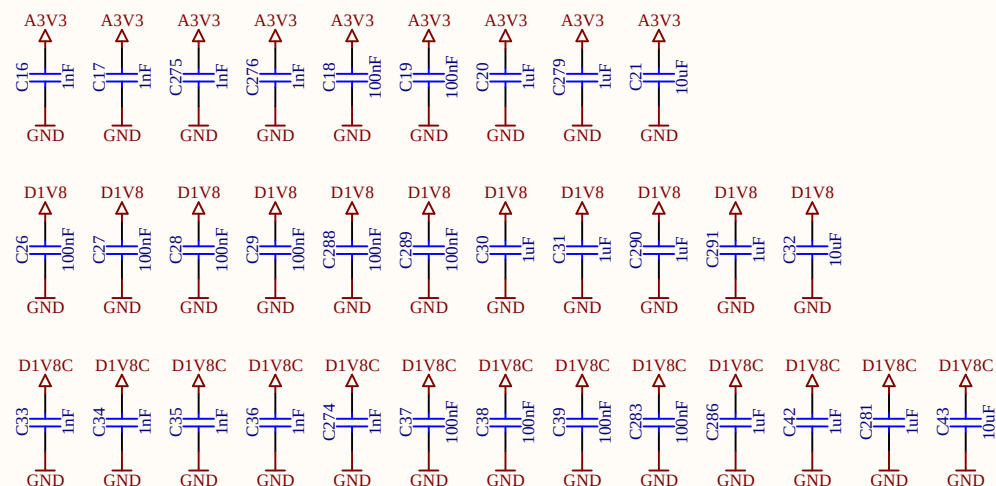
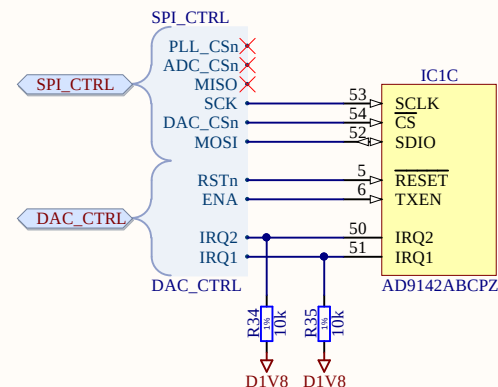
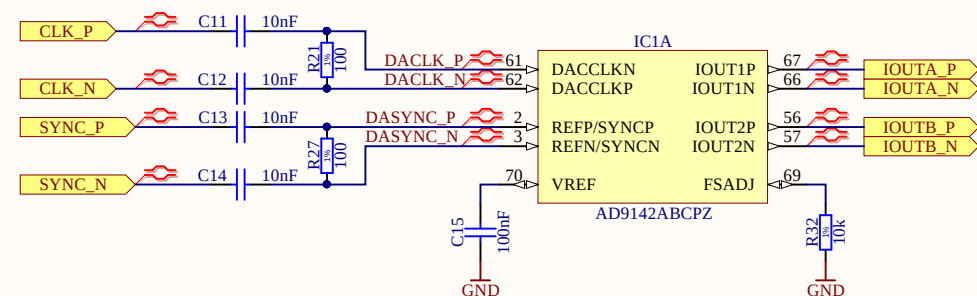
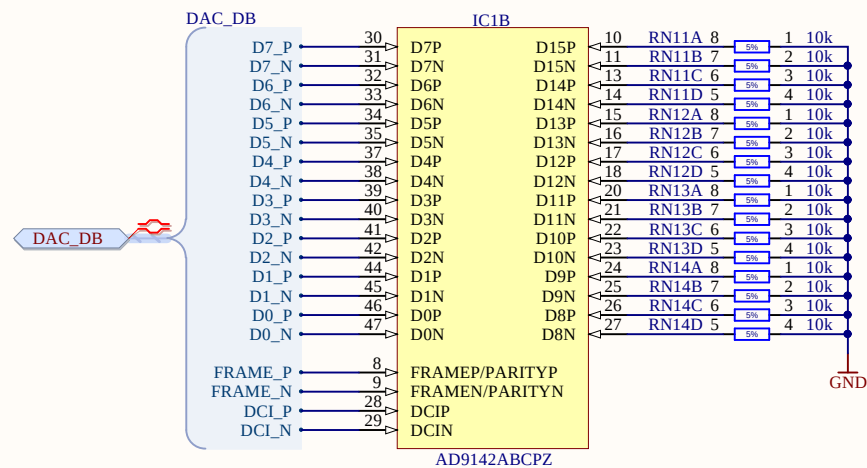


Title: Daughter-Board Tx		DREL BUT Technická 12 Brno Czech Republic
Doc. Num.: KRADIO_MB_4	Revision: A	
Project: kRadio	Size: A4	
Drawn by: Jan Kral	Sheet 4 of 27	
Checked by: Martin Pospisil	Date: 2.8.2018	
File: Dboard_Tx.SchDoc		

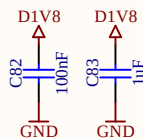
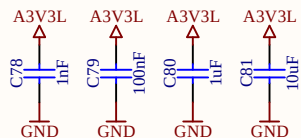
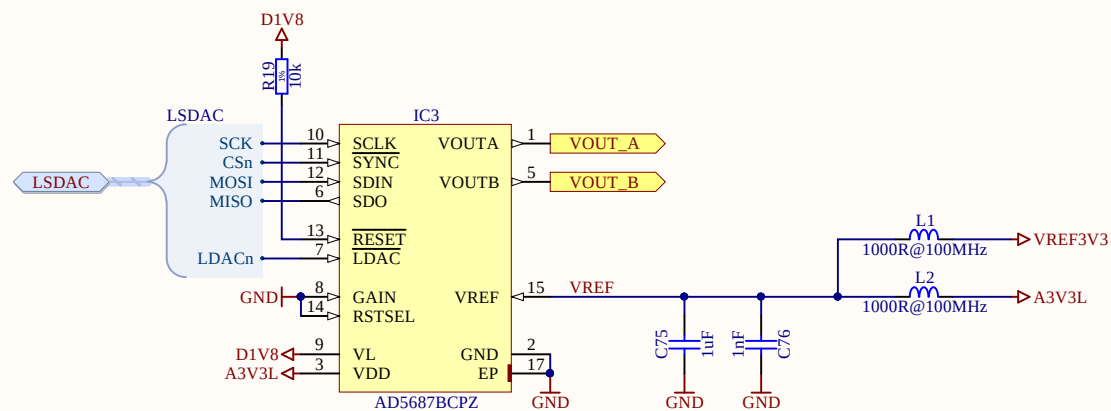
Daughter-Board Rx Connector



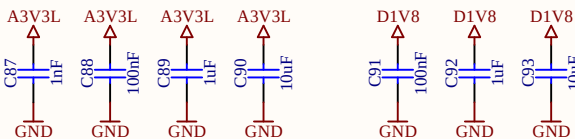
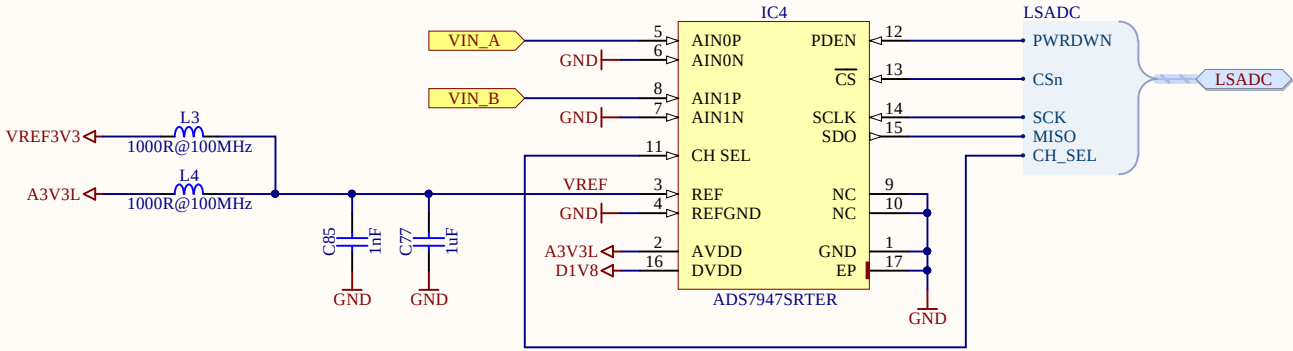
Title: Daughter-Board Rx		DREL BUT Technická 12 Brno Czech Republic
Doc. Num.: KRADIO_MB_5	Revision: A	
Project: kRadio	Size: A4	
Drawn by: Jan Kral	Sheet 5 of 27	
Checked by: Martin Pospisil	Date: 2.8.2018	
File: Dboard_Rx.SchDoc		



Title: DAC		<i>DREL BUT Technicka 12 Brno Czech Republic</i>
Doc. Num.: KRADIO_MB_6	Revision: A	
Project: kRadio	Size: A4	
Drawn by: Jan Kral	Sheet 6 of 27	
Checked by: Martin Pospisil	Date: 2.8.2018	
File: DAC.SchDoc		



Title: Low Speed DAC		DREL BUT Technická 12 Brno Czech Republic
Doc. Num.: KRADIO_MB_8	Revision: A	
Project: kRadio	Size: A4	
Drawn by: Jan Kral	Sheet 8 of 27	
Checked by: Martin Pospisil	Date: 2.8.2018	
File: LowSpeed_DAC.SchDoc		



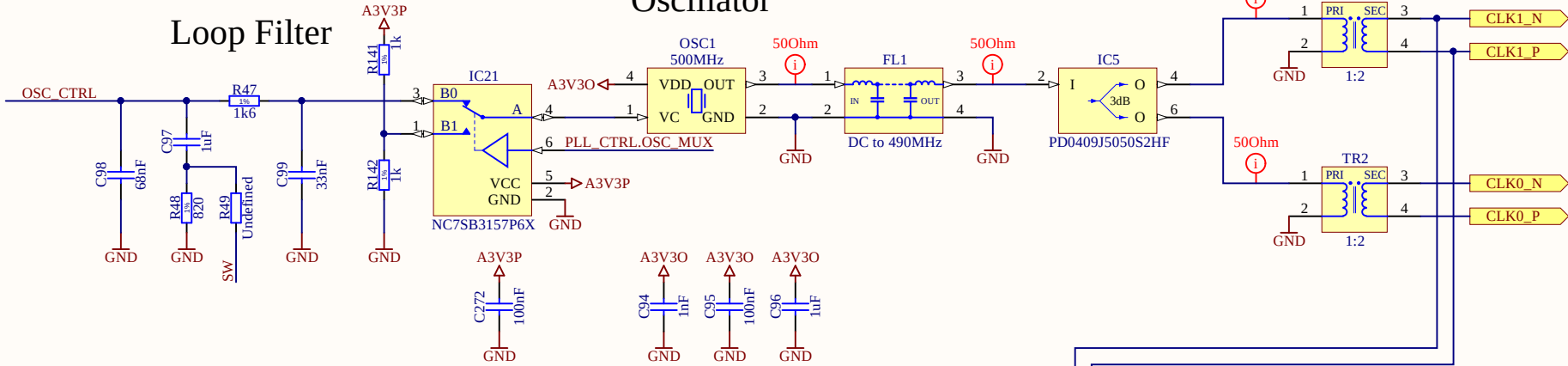
Title: Low Speed ADC		DREL BUT Technická 12 Brno Czech Republic
Doc. Num.: KRADIO_MB_9	Revision: A	
Project: kRadio	Size: A4	
Drawn by: Jan Kral	Sheet 9 of 27	
Checked by: Martin Pospisil	Date: 2.8.2018	
File: LowSpeed_ADC.SchDoc		

Switch for PLL Loop

ADC and DAC Clocks

Oscillator

Loop Filter

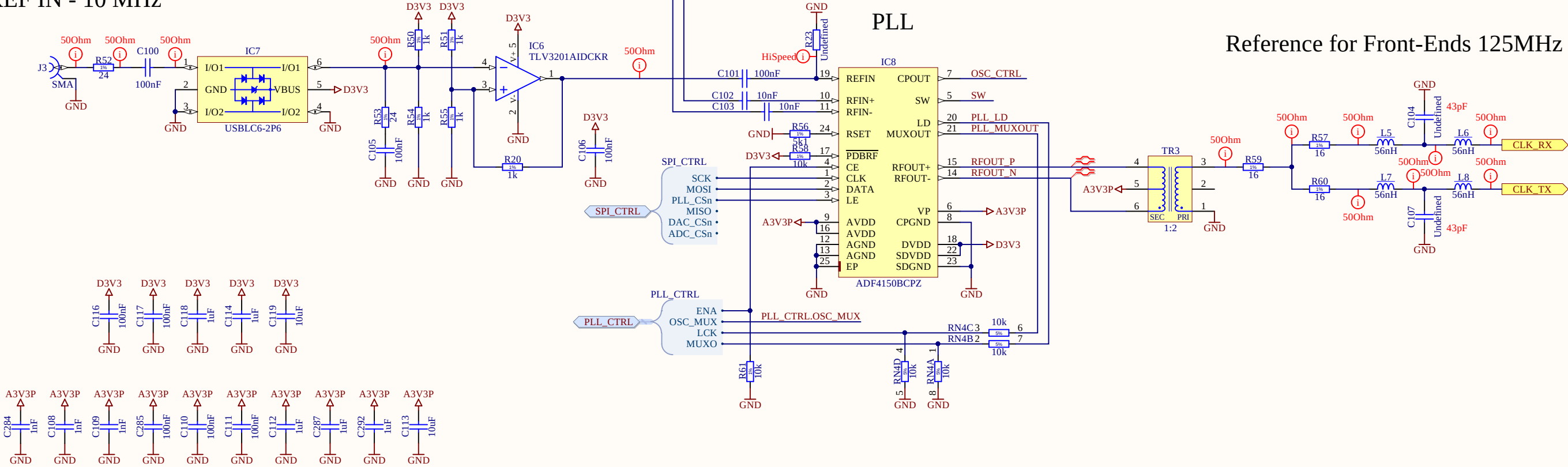


REF IN - 10 MHz

Shaping

PLL

Reference for Front-Ends 125MHz



A

B

C

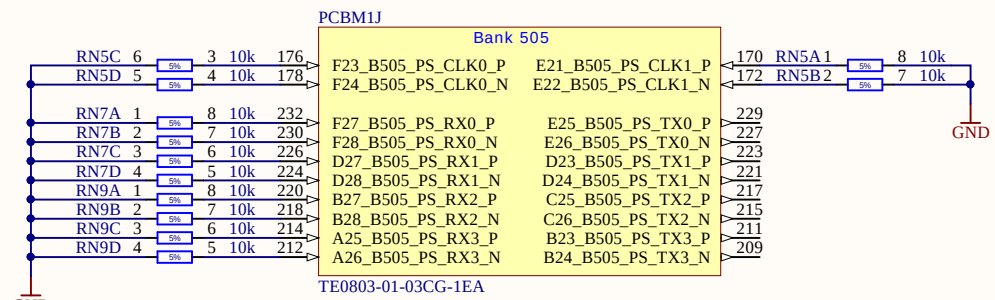
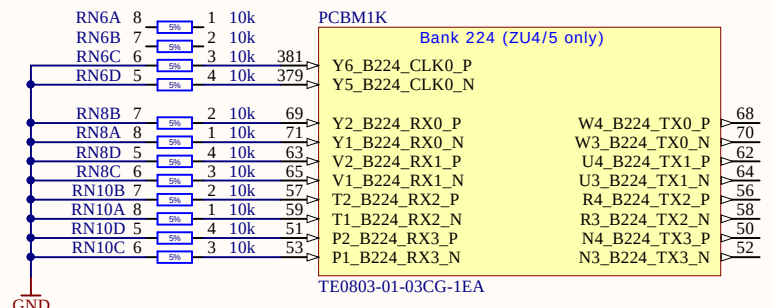
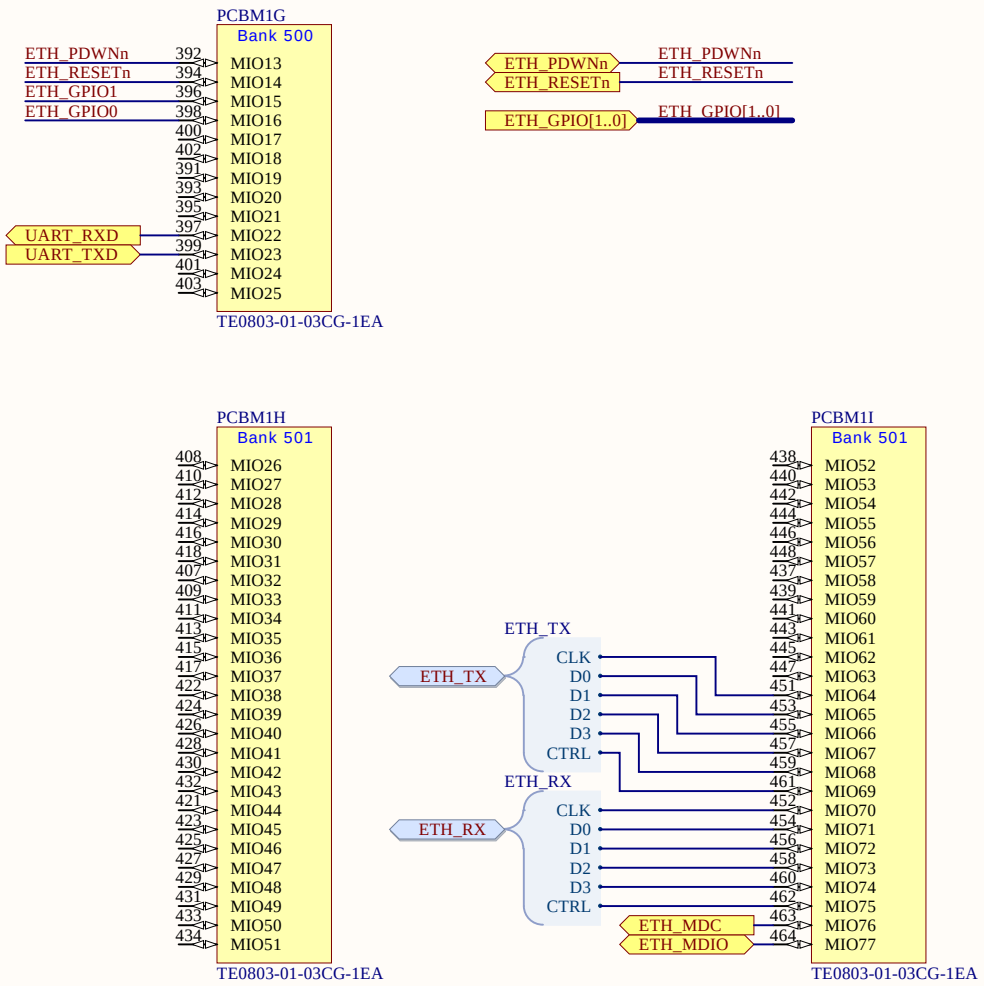
D

A

B

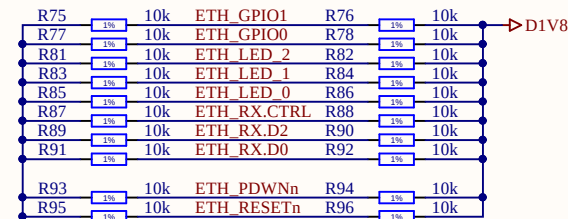
C

D



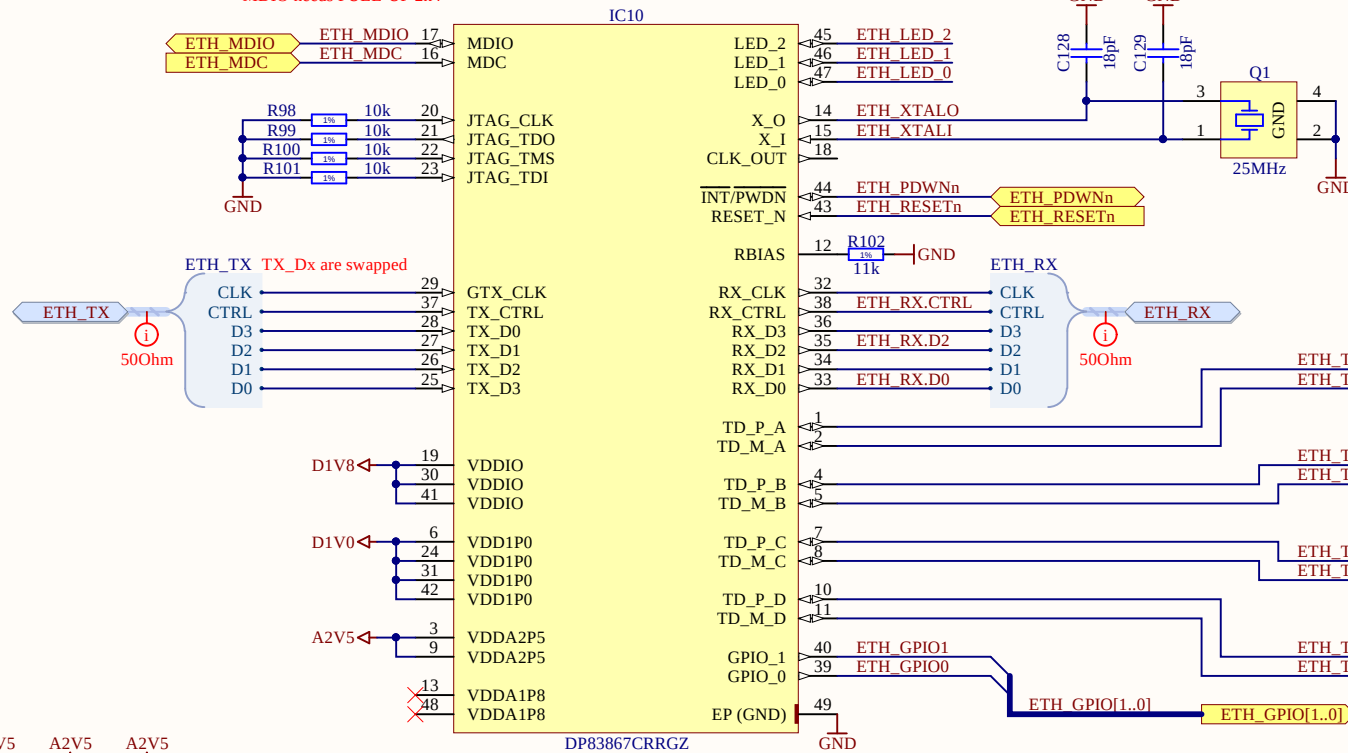
Title: Zynq Processing System		<i>DREL BUT Technicka 12 Brno Czech Republic</i>
Doc. Num.: KRADIO_MB_11	Revision: A	
Project: kRadio	Size: A4	
Drawn by: Jan Kral	Sheet 11 of 27	
Checked by: Martin Pospisil	Date: 2.8.2018	
File: TE0803_PS_GTR.SchDoc		

Configuration Resistors

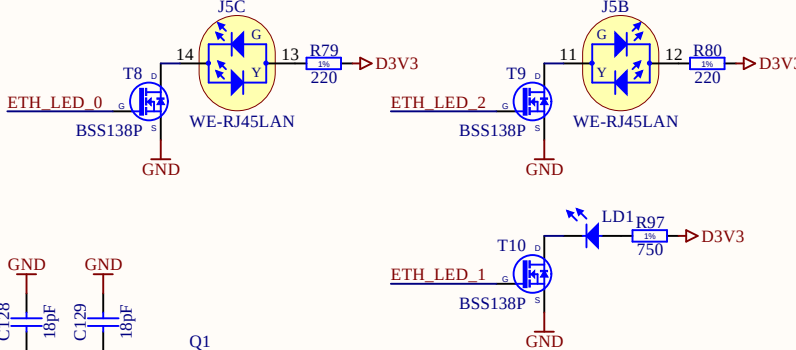


GND GPIO0 needs 1k pulldown to overwrite FPGA pull-up
MDIO needs PULL-UP 2k4

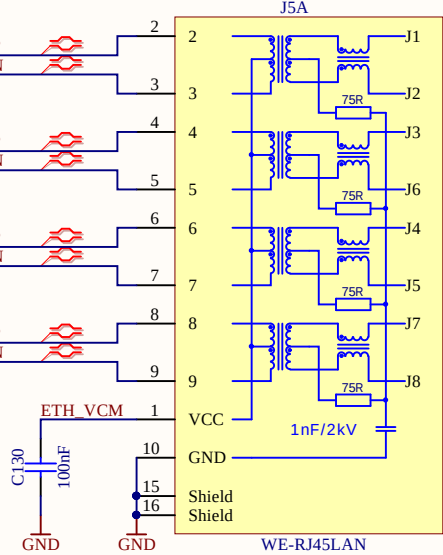
Ethernet PHY



Ethernet LEDs

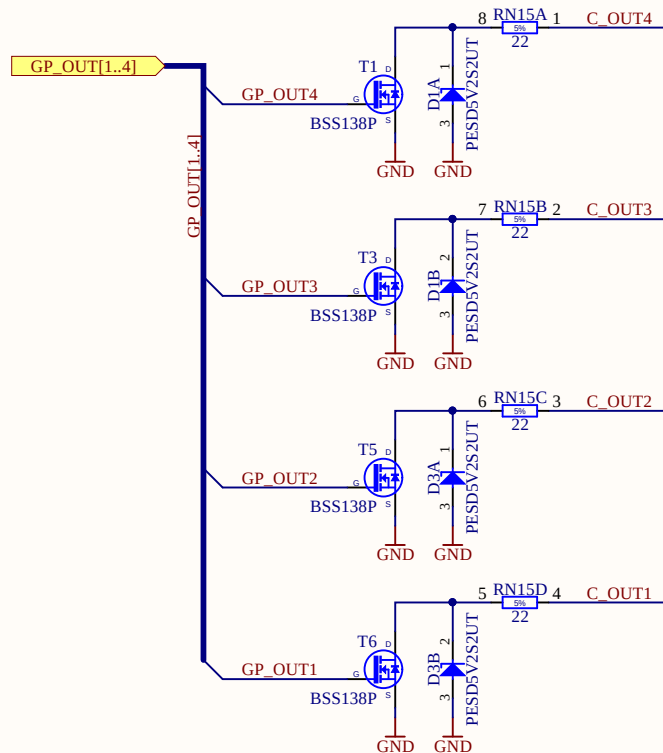


Ethernet Connector

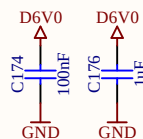
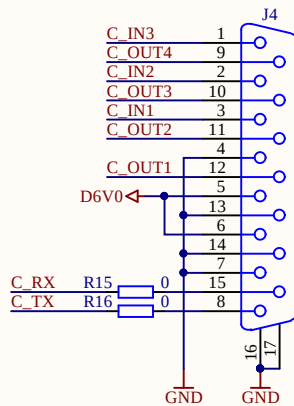


Title: Ethernet PHY		DREL BUT Technicka 12 Brno Czech Republic
Doc. Num.: KRADIO_MB_12	Revision: A	
Project: kRadio	Size: A4	
Drawn by: Jan Kral	Sheet 12 of 27	
Checked by: Martin Pospisil	Date: 2.8.2018	
File: Ethernet.SchDoc		

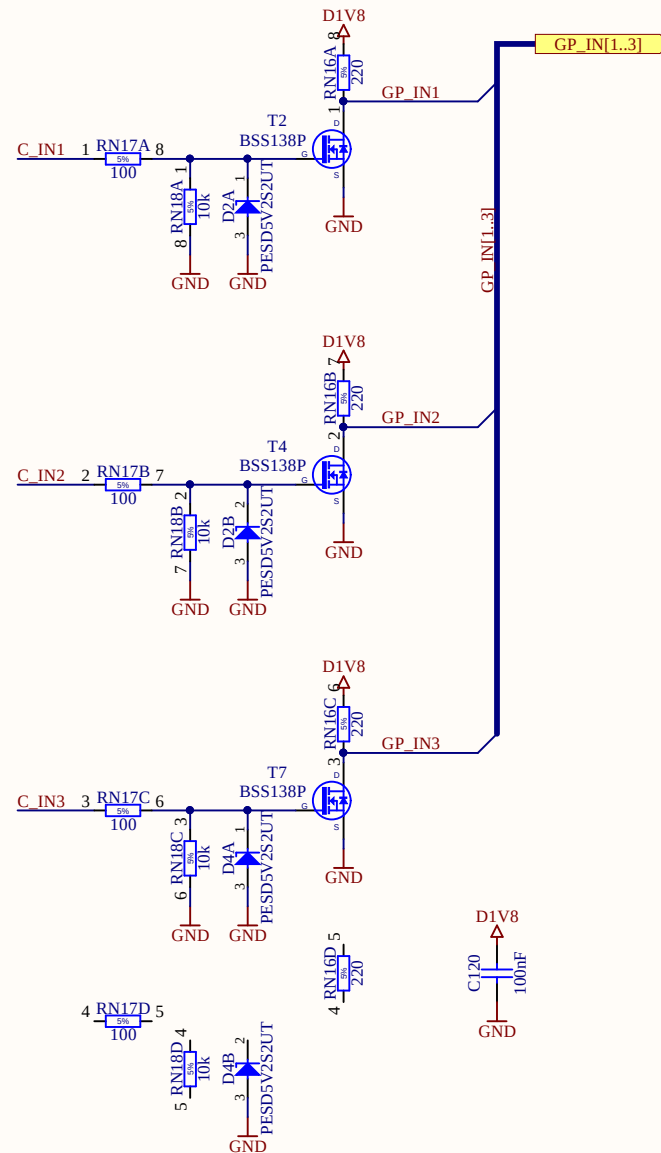
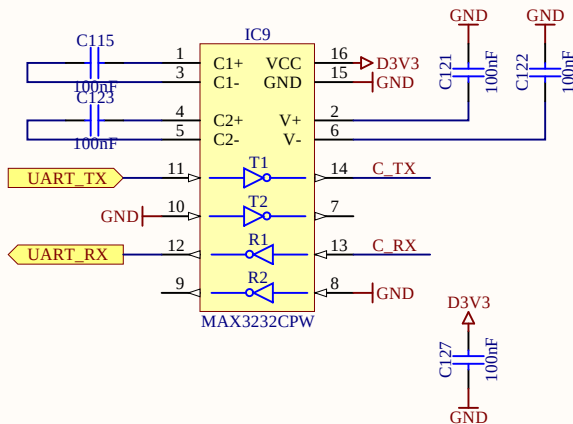
Output Open-Collectors



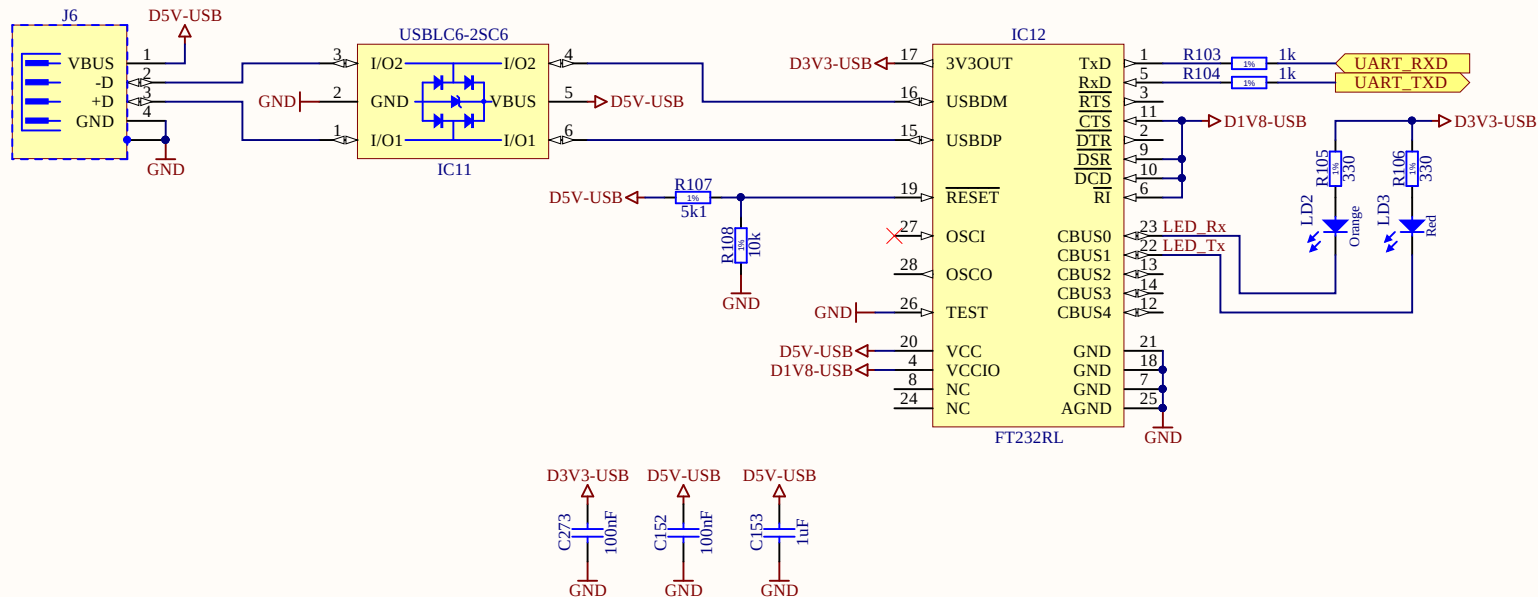
Canon GPIO



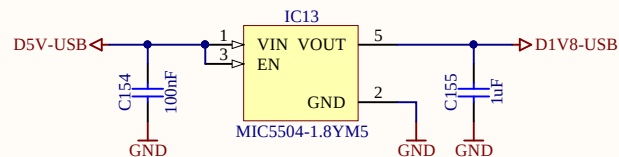
RS-232 Transciever



Title: Canon GPIO		DREL BUT Technická 12 Brno Czech Republic	
Doc. Num.: KRADIO_MB_13		Revision: A	
Project: kRadio		Size: A4	
Drawn by: Jan Kral		Sheet 13 of 27	
Checked by: Martin Pospisil		Date: 2.8.2018	
File: CanonGPIO.SchDoc			

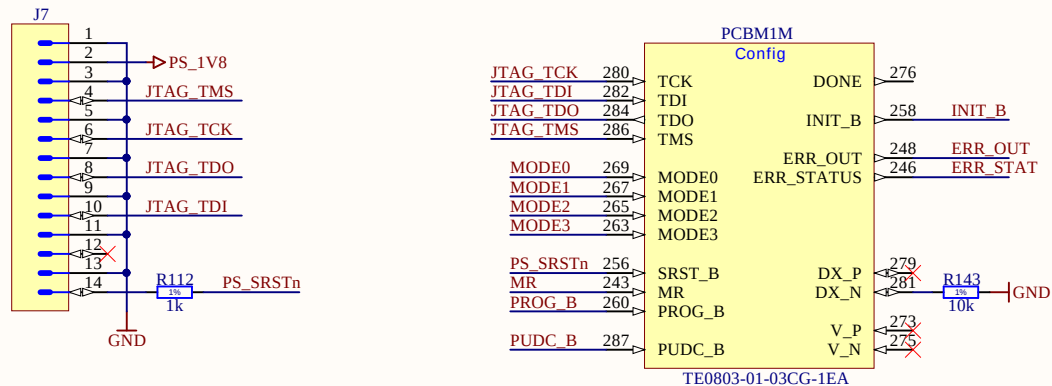


LDO 1.8 V for USB

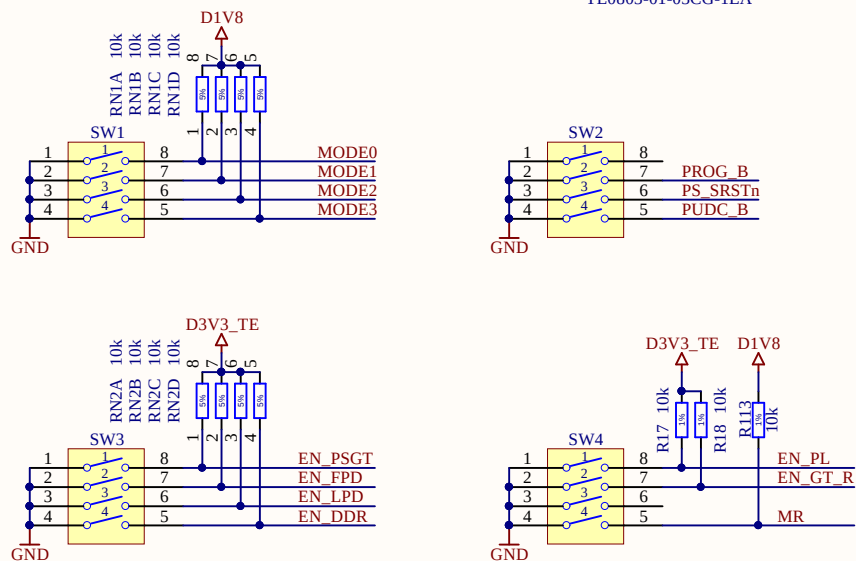


Title: USB UART		DREL BUT Technická 12 Brno Czech Republic
Doc. Num.: KRADIO_MB_14	Revision: A	
Project: kRadio	Size: A4	
Drawn by: Jan Kral	Sheet 14 of 27	
Checked by: Martin Pospisil	Date: 2.8.2018	
File: USB_UART.SchDoc		

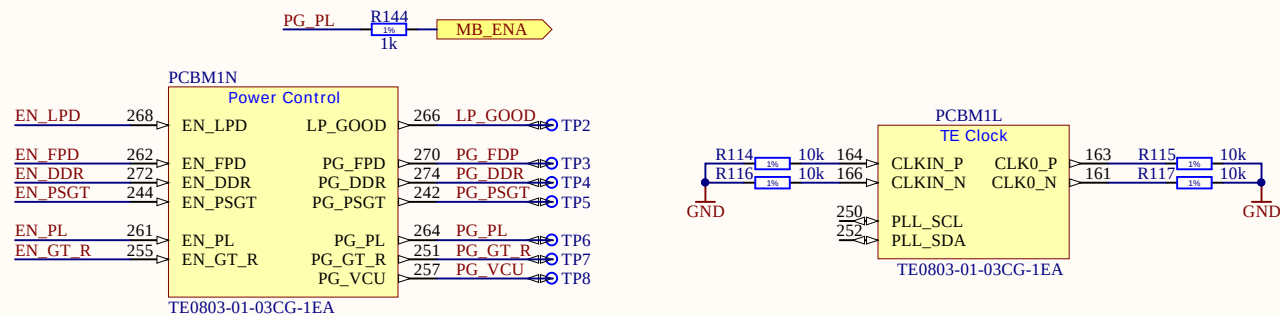
A



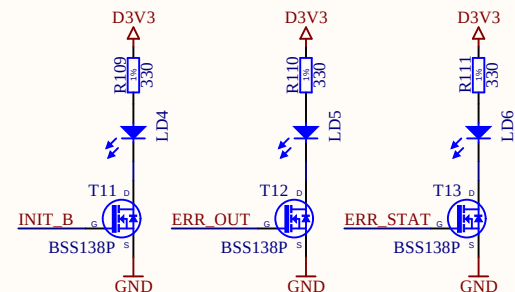
B



C



D



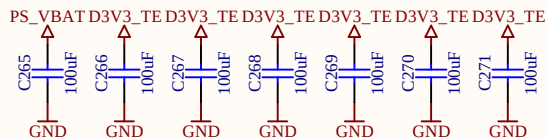
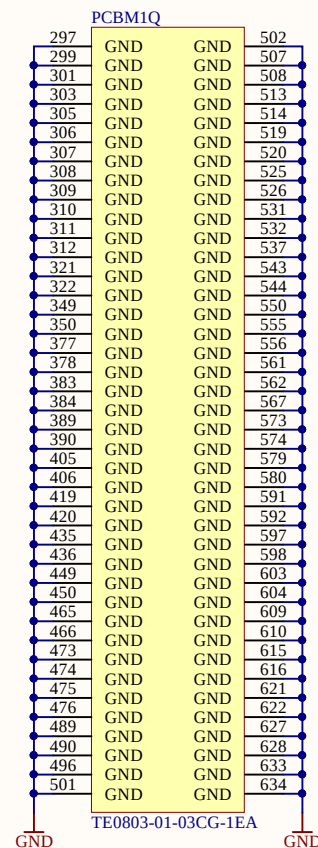
A

B

C

D

Title: Zynq Config and Control		<i>DREL BUT Technicka 12 Brno Czech Republic</i>
Doc. Num.: KRADIO_MB_15	Revision: A	
Project: kRadio	Size: A4	
Drawn by: Jan Kral	Sheet 15 of 27	
Checked by: Martin Pospisil	Date: 2.8.2018	
File: TE0803_Config_Control.SchDoc		



Title: Zynq Power		<i>DREL BUT Technicka 12 Brno Czech Republic</i>
Doc. Num.: KRADIO_MB_16	Revision: A	
Project: kRadio	Size: A4	
Drawn by: Jan Kral	Sheet 16 of 27	
Checked by: Martin Pospisil	Date: 2.8.2018	
File: TE0803 Power.SchDoc		

A

B

C

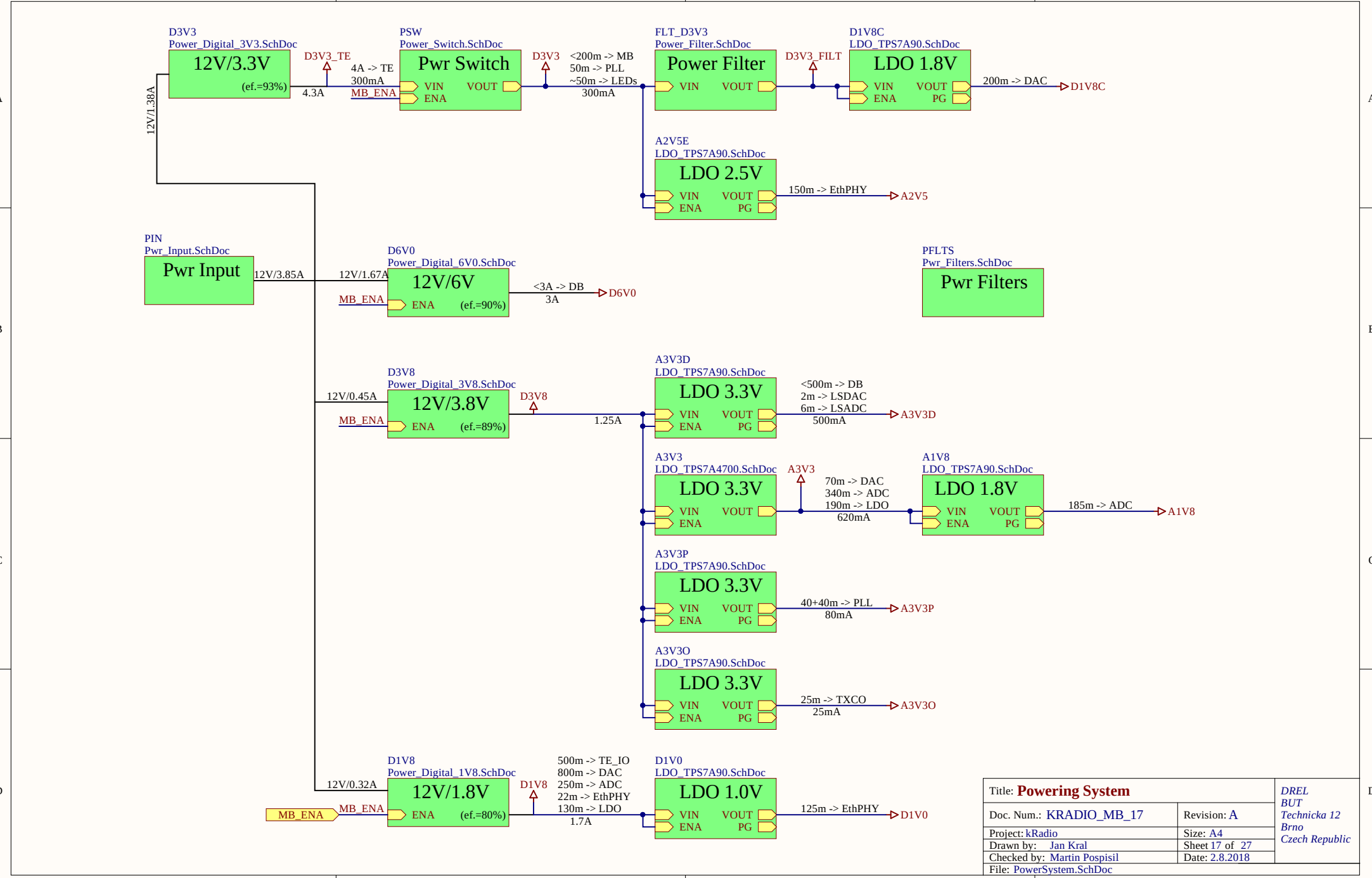
D

A

B

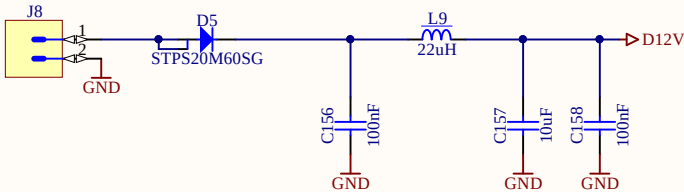
C

D



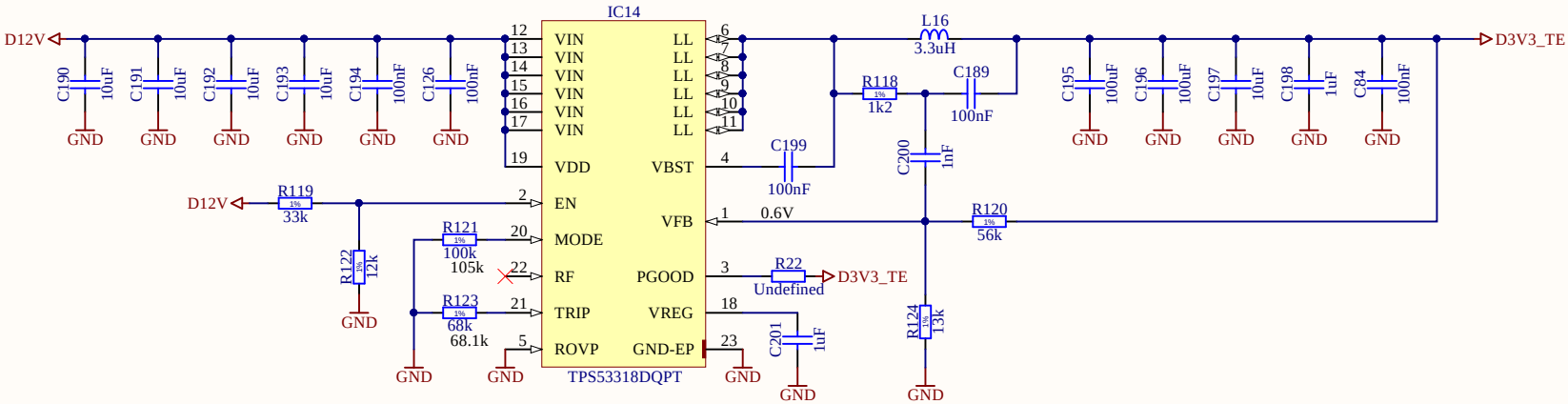
Title: Powering System		<i>DREL BUT Technicka 12 Brno Czech Republic</i>
Doc. Num.: KRADIO_MB_17	Revision: A	
Project: kRadio	Size: A4	
Drawn by: Jan Kral	Sheet 17 of 27	
Checked by: Martin Pospisil	Date: 2.8.2018	
File: PowerSystem.SchDoc		

Power Input



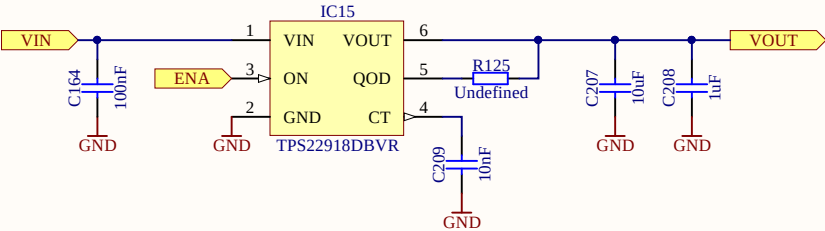
Title: Power Input		<i>DREL BUT Technická 12 Brno Czech Republic</i>
Doc. Num.: KRADIO_MB_18	Revision: A	
Project: kRadio	Size: A4	
Drawn by: Jan Kral	Sheet 18 of 27	
Checked by: Martin Pospisil	Date: 2.8.2018	
File: Pwr_Input.SchDoc		

Main 12V -> 3.3V Step-Down



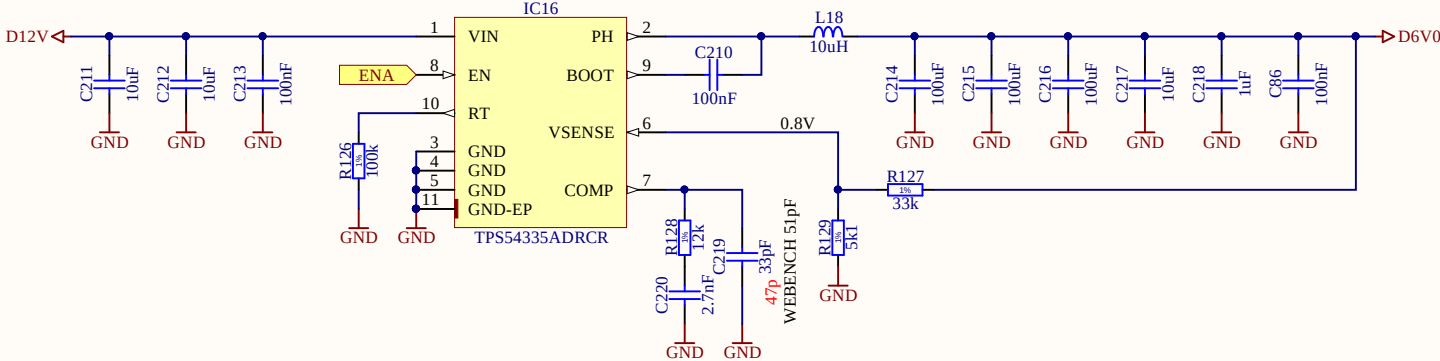
Title: Main 12V -> 3V3 Step-Down		DREL BUT Technicka 12 Brno Czech Republic	
Doc. Num.: KRADIO_MB_19		Revision: A	
Project: kRadio		Size: A4	
Drawn by: Jan Kral		Sheet 19 of 27	
Checked by: Martin Pospisil		Date: 2.8.2018	
File: Power_Digital_3V3.SchDoc			

Power Switch for On-Mother-Board Peripherals



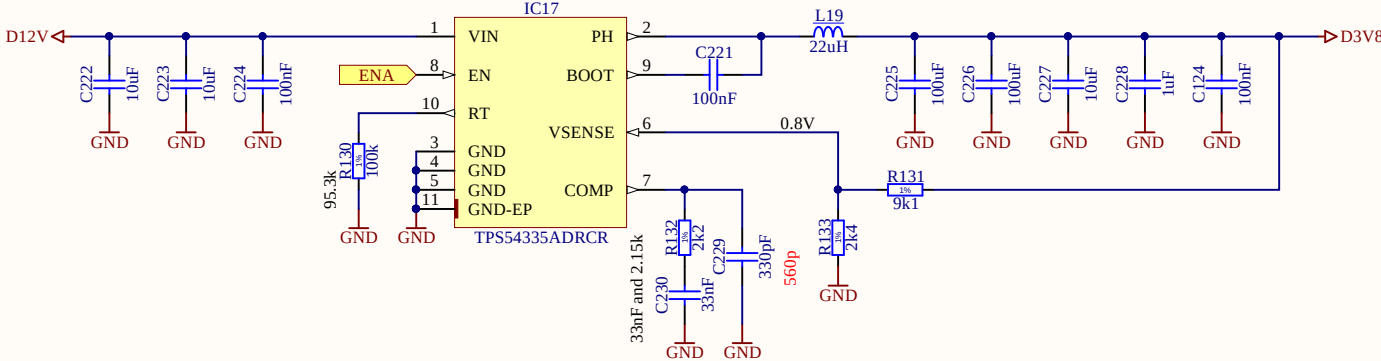
Title: Power Switch for Peripherals		<i>DREL BUT Technicka 12 Brno Czech Republic</i>
Doc. Num.: KRADIO_MB_20	Revision: A	
Project: kRadio	Size: A4	
Drawn by: Jan Kral	Sheet 20 of 27	
Checked by: Martin Pospisil	Date: 2.8.2018	
File: Power_Switch.SchDoc		

12V -> 6V Step-Down for Daughter-Board



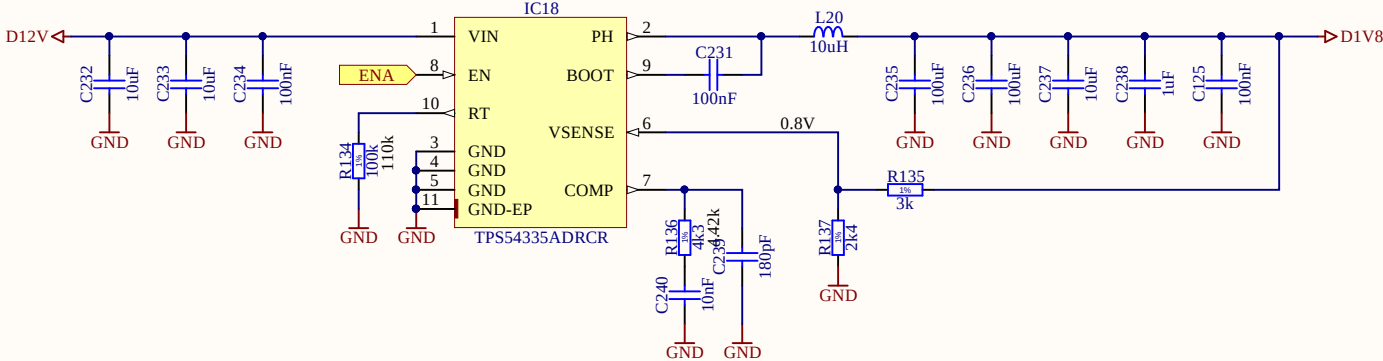
Title: 12V -> 6V Step-Down - Dautherboards		<i>DREL BUT Technicka 12 Brno Czech Republic</i>
Doc. Num.: KRADIO_MB_21	Revision: A	
Project: kRadio	Size: A4	
Drawn by: Jan Kral	Sheet 21 of 27	
Checked by: Martin Pospisil	Date: 2.8.2018	
File: Power_Digital_6V0.SchDoc		

12V -> 3.8V for Analog Powering LDOs



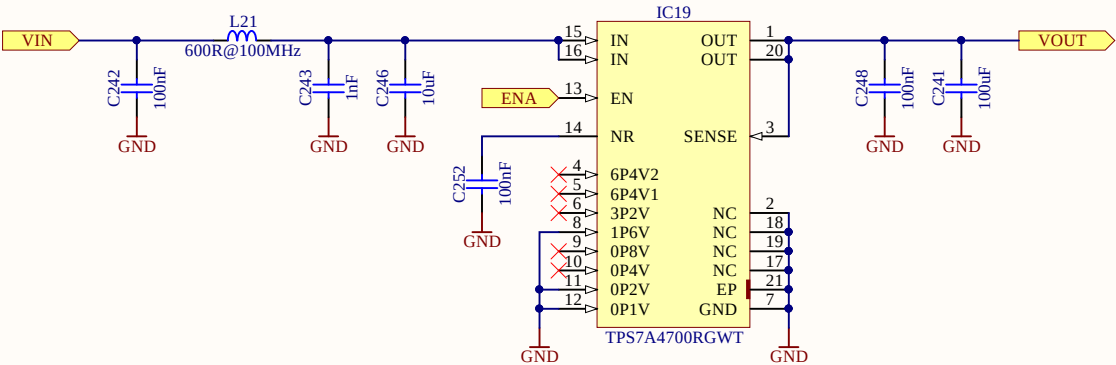
Title: 12V -> 3V8 Step-Down - Analog LDOs		DREL
Doc. Num.: KRADIO_MB_22	Revision: A	BUT
Project: kRadio	Size: A4	Technicka 12
Drawn by: Jan Kral	Sheet 22 of 27	Brno
Checked by: Martin Pospisil	Date: 2.8.2018	Czech Republic
File: Power_Digital_3V8.SchDoc		

12V -> 1.8V for Digital Circuits



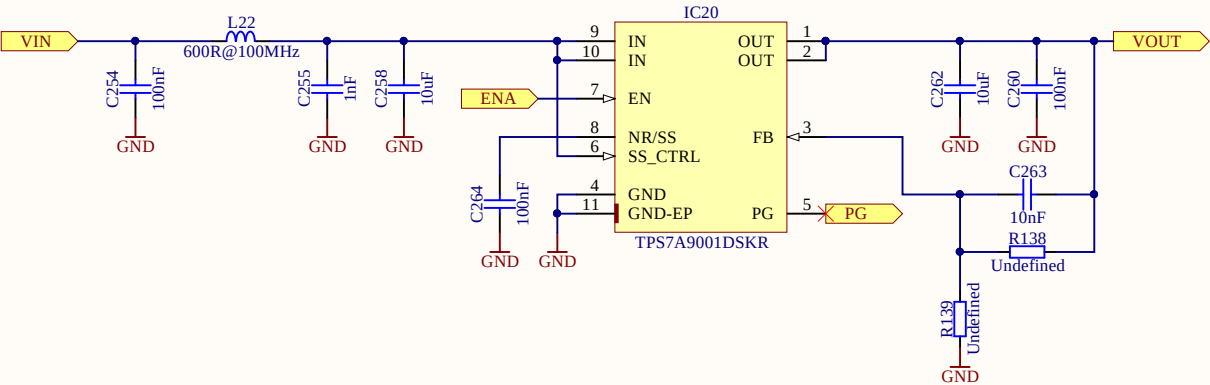
Title: 12V -> 1V8 Step-Down - Digital ICs		DREL BUT Technicka 12 Brno Czech Republic
Doc. Num.: KRADIO_MB_23	Revision: A	
Project: kRadio	Size: A4	
Drawn by: Jan Kral	Sheet 23 of 27	
Checked by: Martin Pospisil	Date: 2.8.2018	
File: Power_Digital_1V8.SchDoc		

Low Noise LDO 3.3V Out Powering Analog

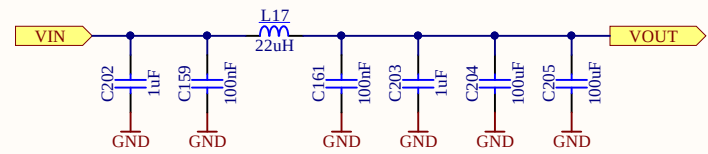


Title: Low Noise 3V3 Out LDO		DREL BUT Technická 12 Brno Czech Republic
Doc. Num.: KRADIO_MB_24	Revision: A	
Project: kRadio	Size: A4	
Drawn by: Jan Kral	Sheet 24 of 27	
Checked by: Martin Pospisil	Date: 2.8.2018	
File: LDO_TPS7A4700.SchDoc		

Generic LDO

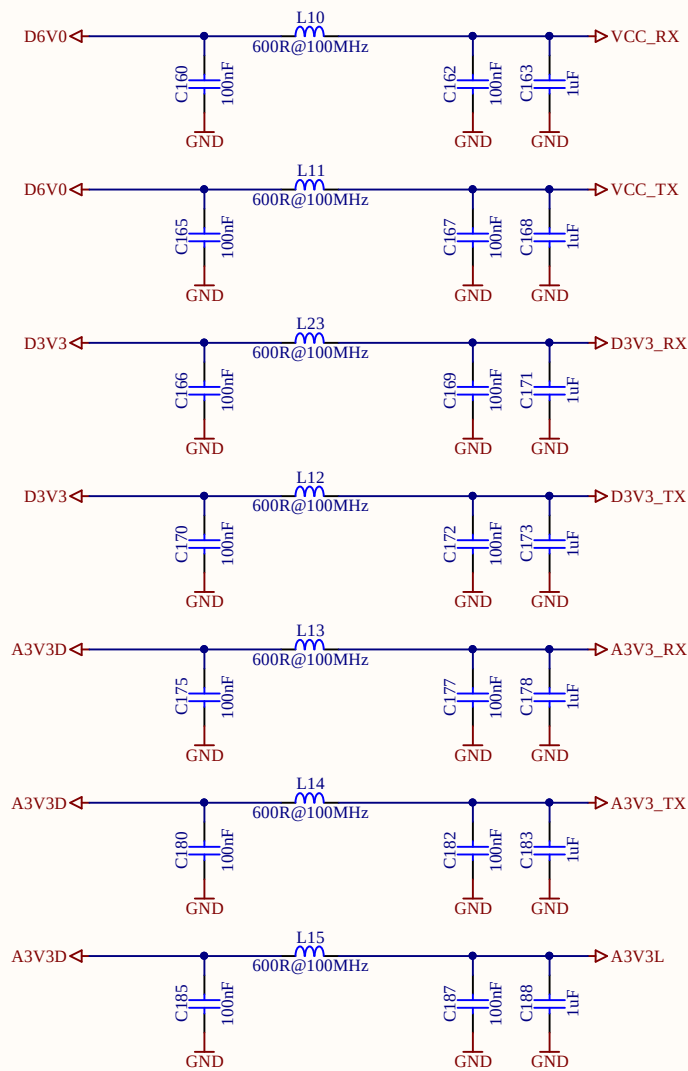


Title: Generic LDO		<i>DREL BUT Technická 12 Brno Czech Republic</i>
Doc. Num.: KRADIO_MB_25	Revision: A	
Project: kRadio	Size: A4	
Drawn by: Jan Kral	Sheet 25 of 27	
Checked by: Martin Pospisil	Date: 2.8.2018	
File: LDO_TPS7A90.SchDoc		



Title: Power Filter		<i>DREL BUT Technicka 12 Brno Czech Republic</i>
Doc. Num.: KRADIO_MB_26	Revision: A	
Project: kRadio		
Drawn by: Jan Kral	Size: A4	
Checked by: Martin Pospisil	Sheet 26 of 27	
File: Power_Filter.SchDoc	Date: 2.8.2018	

Power Filters



Title: Ferrite Bead Power Filters		DREL BUT Technická 12 Brno Czech Republic
Doc. Num.: KRADIO_MB_27	Revision: A	
Project: kRadio	Size: A4	
Drawn by: Jan Kral	Sheet 27 of 27	
Checked by: Martin Pospisil	Date: 2.8.2018	
File: Pwr_Filters.SchDoc		