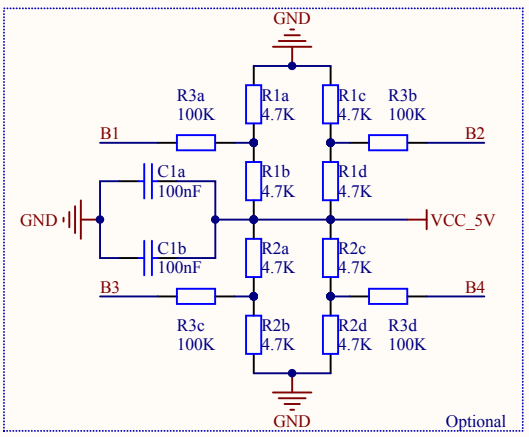
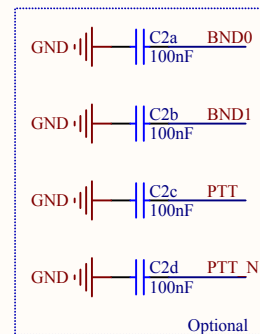


all filter caps 100V

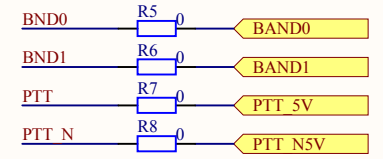
MODE	OE1	OE2	S1	S0	Switches	Filter
TX	1	0	0	0	2B1	20/30m
TX	1	0	0	1	2B2	40m
TX	1	0	1	0	2B3	15-10m
TX	1	0	1	1	2B4	80m
RX	0	1	0	0	1B1	20/30m
RX	0	1	0	1	1B2	40m
RX	0	1	1	0	1B3	15-10m
RX	0	1	1	1	1B4	80m



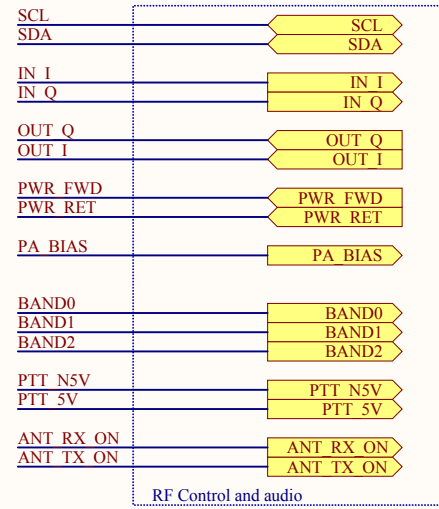
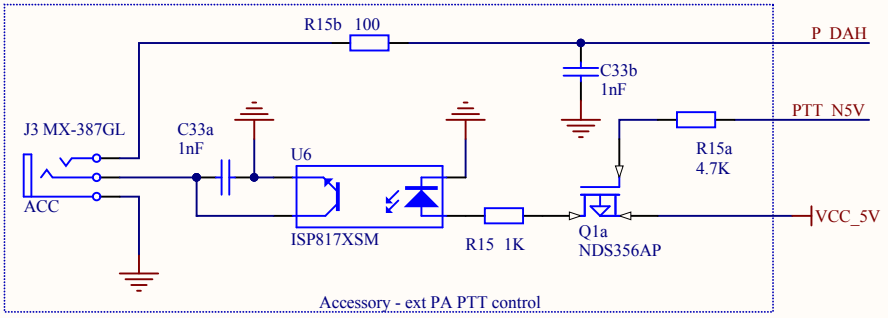
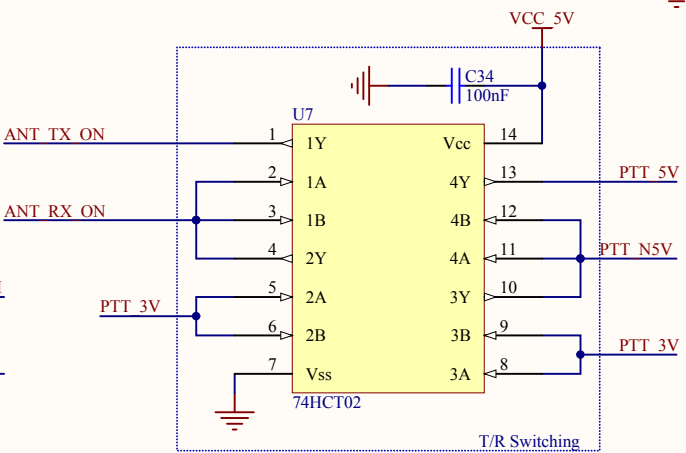
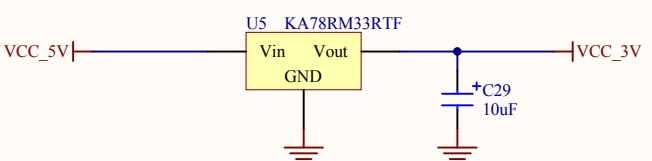
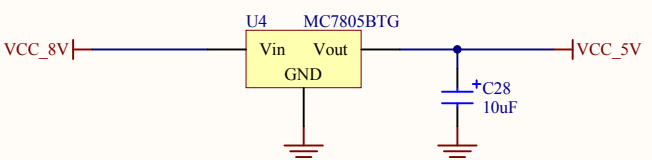
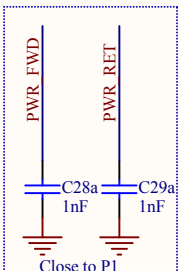
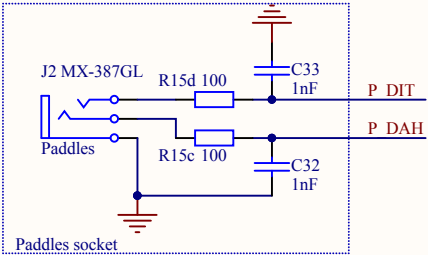
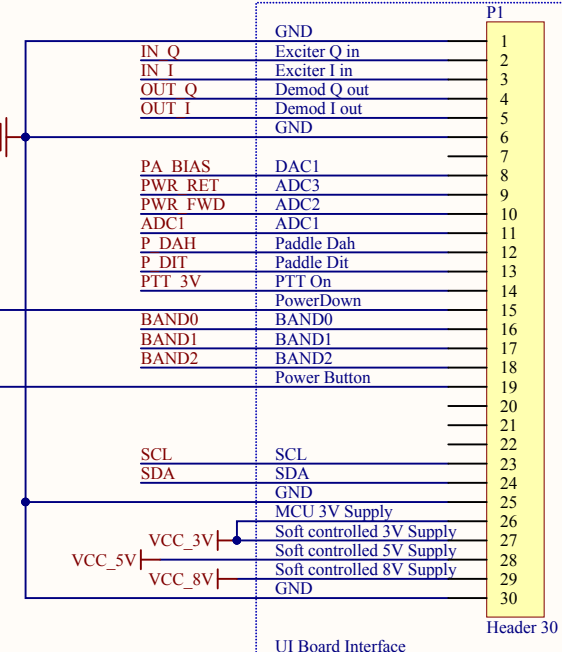
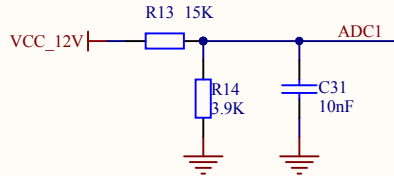
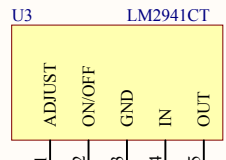
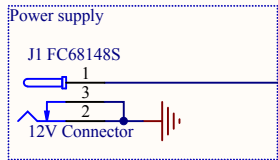
Optional



Optional



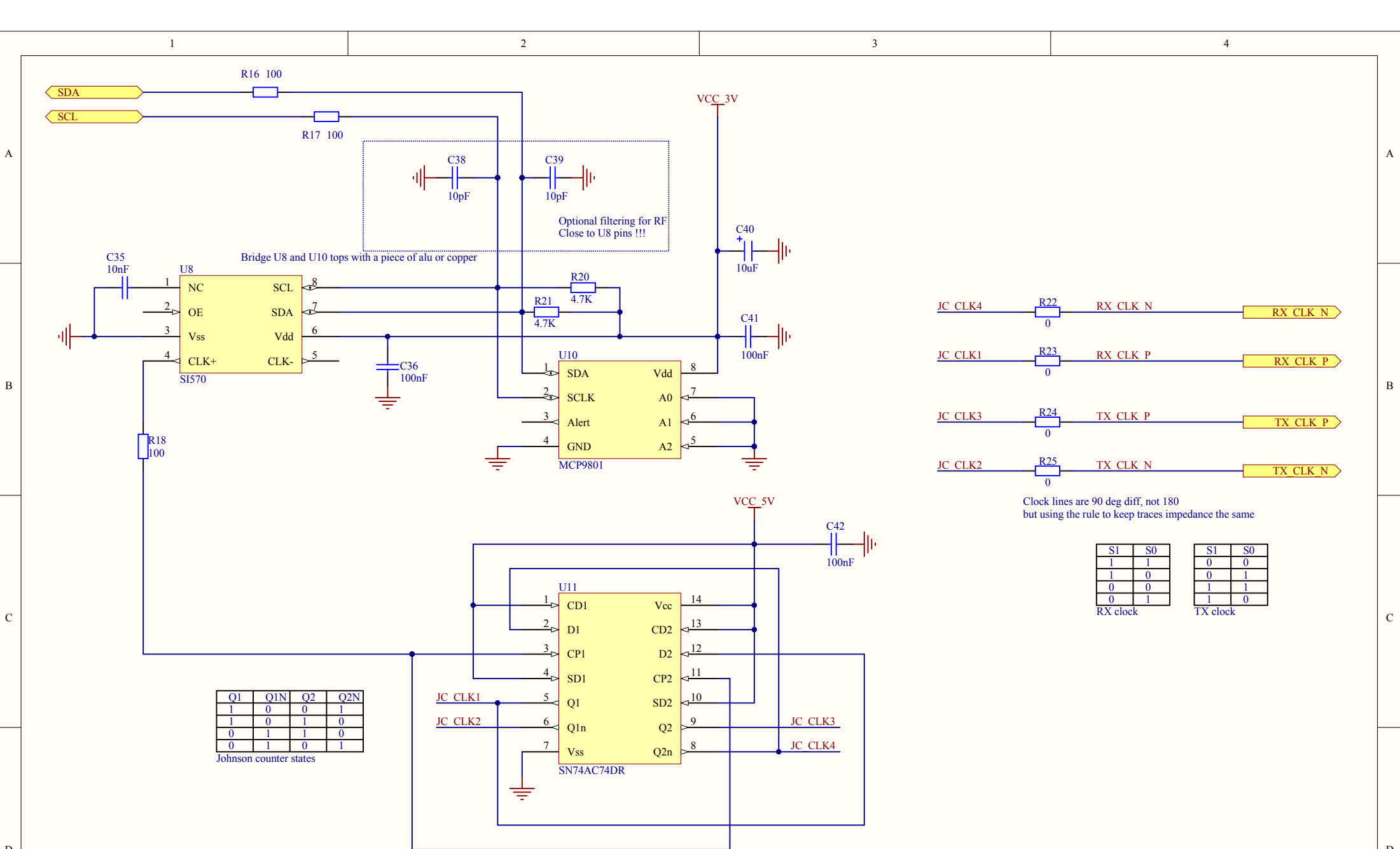
mcHF QRP Transceiver RF board		Bandpass filters	K Atanassov MONKA
Date: 27/03/2016	Revision: 0.5	Sheet 2 of 10	
File: C:\Projects\mcHF\pcb\rf\Schematics\rf_bpf.SchDoc			



mcHF QRP Transceiver RF board
 Date: 27/03/2016 Revision: 0.5 Sheet 3 of 10
 File: C:\Projects\mcHF\pcb\rf\Schematics\rf_conn.SchDoc

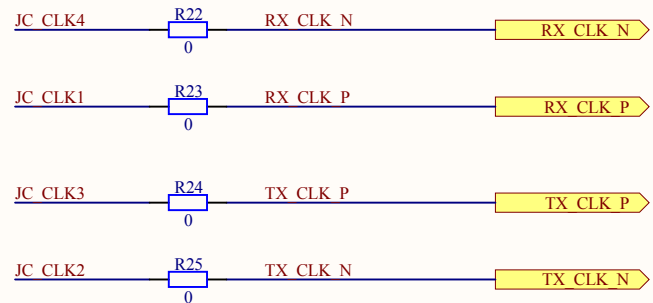
UI board interface and power

K Atanassov
MONKA



Q1	Q1N	Q2	Q2N
1	0	0	1
1	0	1	0
0	1	1	0
0	1	0	1

Johnson counter states



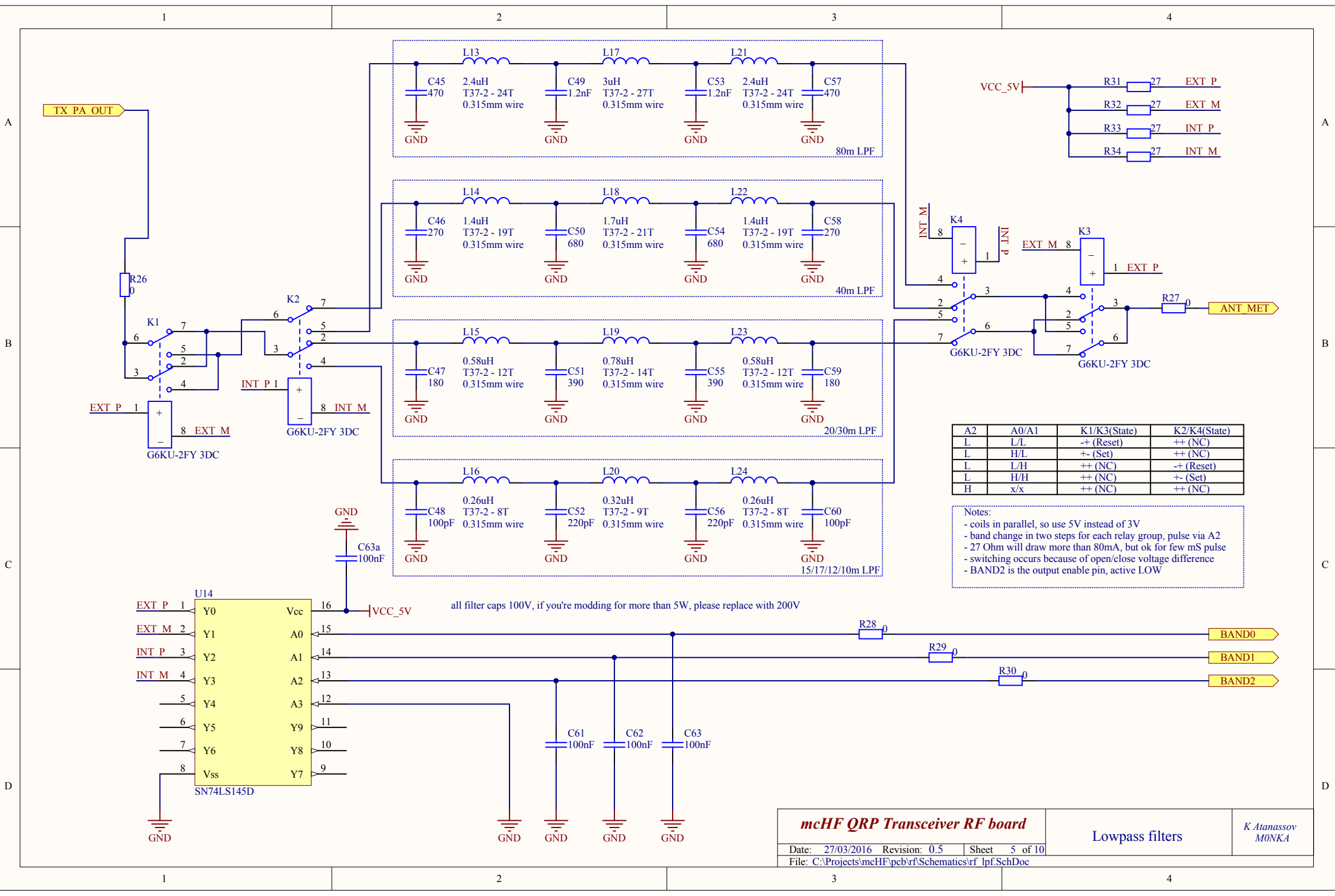
Clock lines are 90 deg diff, not 180
but using the rule to keep traces impedance the same

S1	S0
1	1
1	0
0	0
0	1

RX clock

S1	S0
0	0
0	1
1	1
1	0

TX clock



A2	A0/A1	K1/K3(State)	K2/K4(State)
L	L/L	-+ (Reset)	++ (NC)
L	H/L	+- (Set)	++ (NC)
L	L/H	++ (NC)	-+ (Reset)
L	H/H	++ (NC)	+- (Set)
H	x/x	++ (NC)	++ (NC)

Notes:
 - coils in parallel, so use 5V instead of 3V
 - band change in two steps for each relay group, pulse via A2
 - 27 Ohm will draw more than 80mA, but ok for few mS pulse
 - switching occurs because of open/close voltage difference
 - BAND2 is the output enable pin, active LOW

all filter caps 100V, if you're modding for more than 5W, please replace with 200V

mcHF QRP Transceiver RF board		Lowpass filters	K Atanassov MONKA
Date: 27/03/2016	Revision: 0.5	Sheet 5 of 10	
File: C:\Projects\mcHF\pcb\rf\Schematics\rf_lpf.SchDoc			

A

B

C

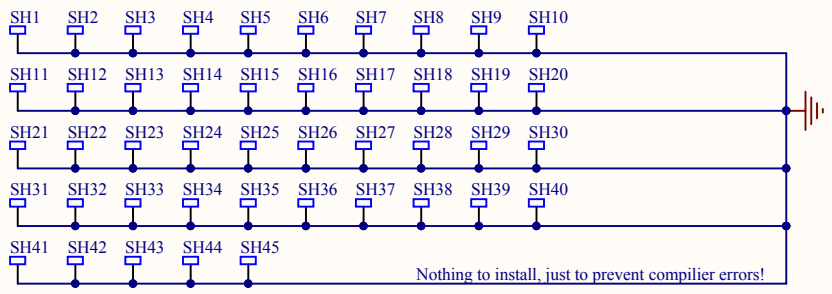
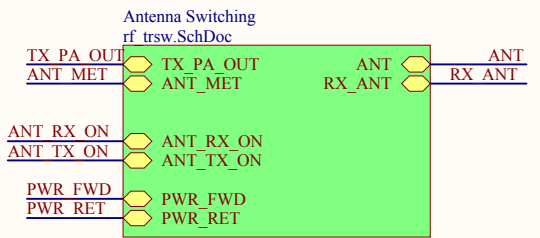
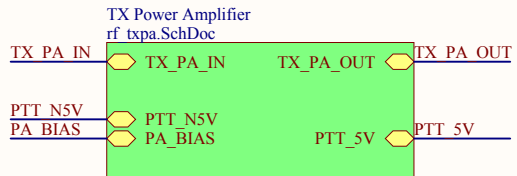
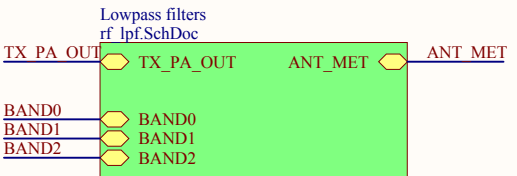
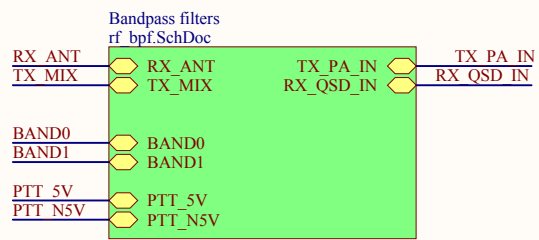
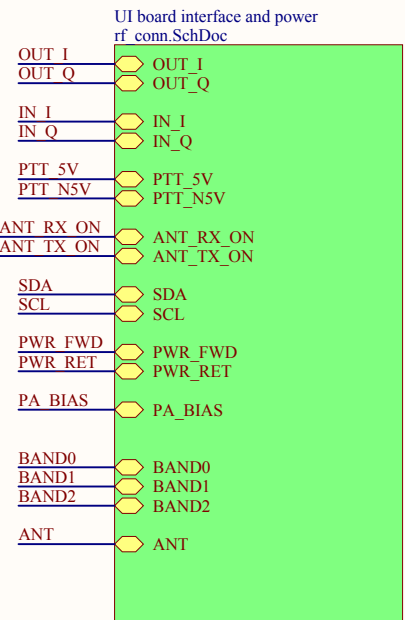
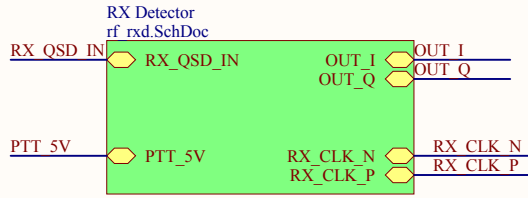
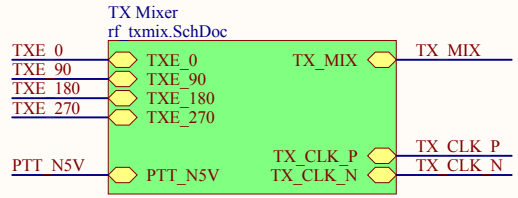
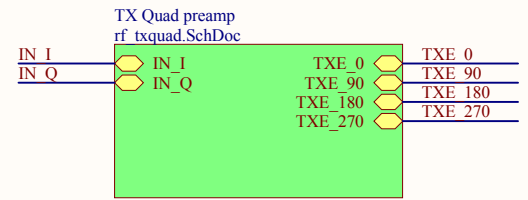
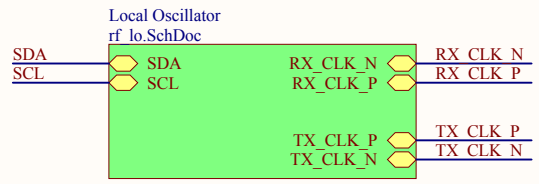
D

A

B

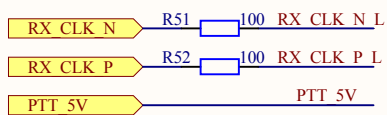
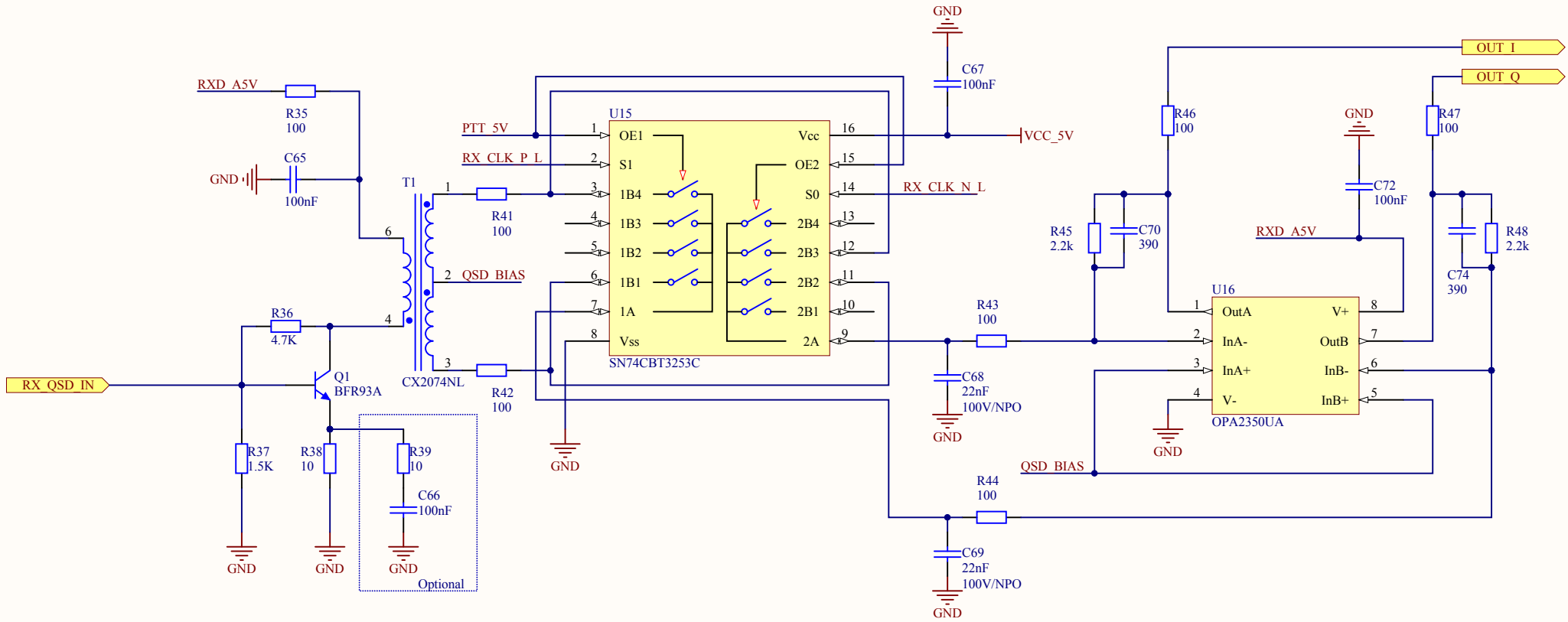
C

D



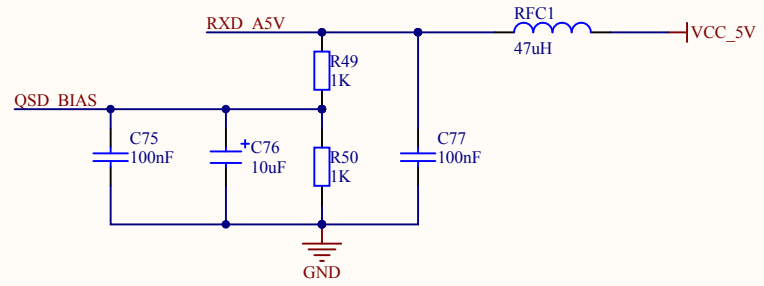
All jumpers installed by default, remove selectively to bypass modules during testing

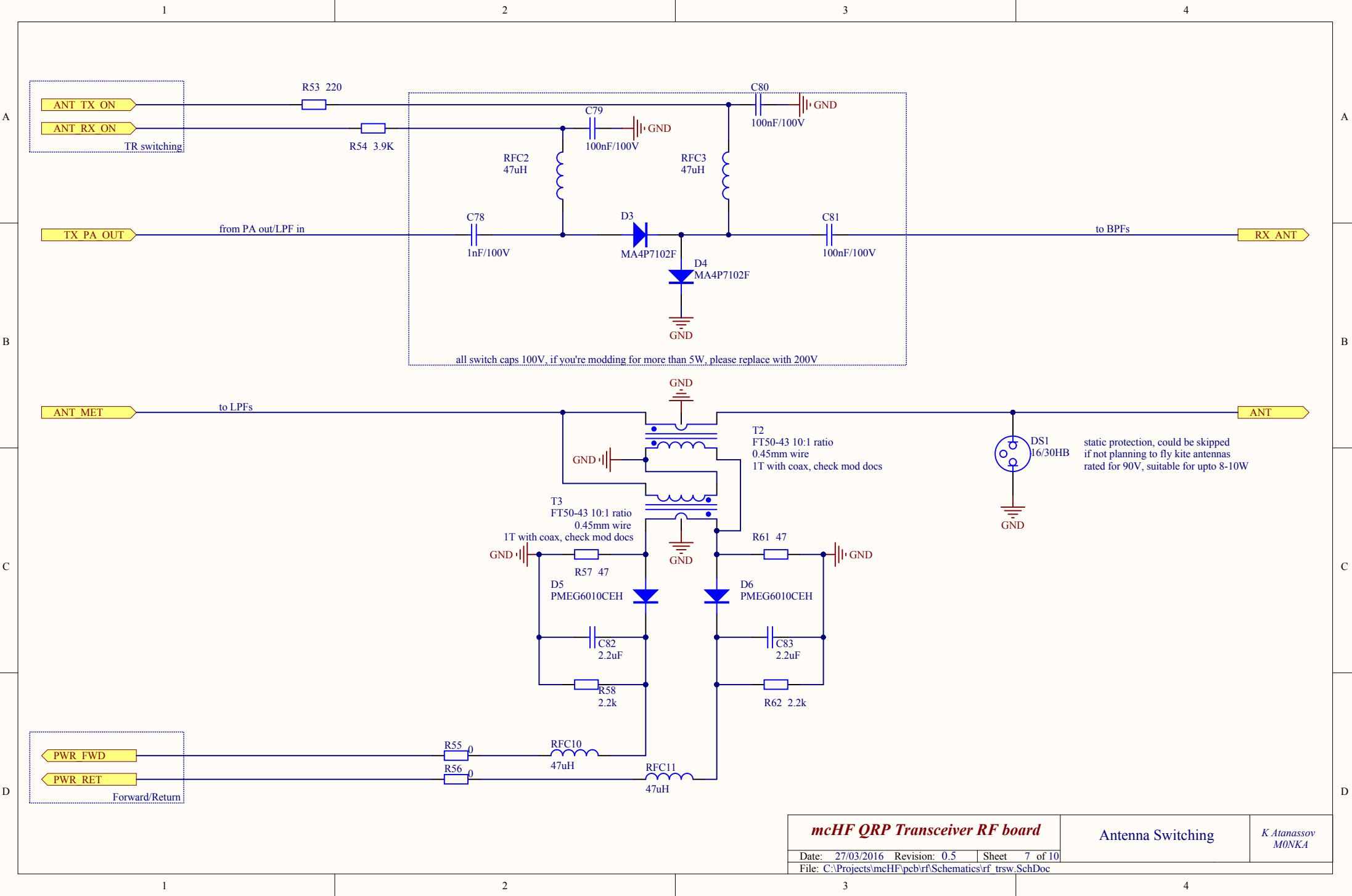
mcHF QRP Transceiver RF board		Modules interconnect	K Atanassov MONKA
Date: 27/03/2016	Revision: 0.5	Sheet 1 of 10	
File: C:\Projects\mcHF\pcb\rf\Schematics\rf_main.SchDoc			



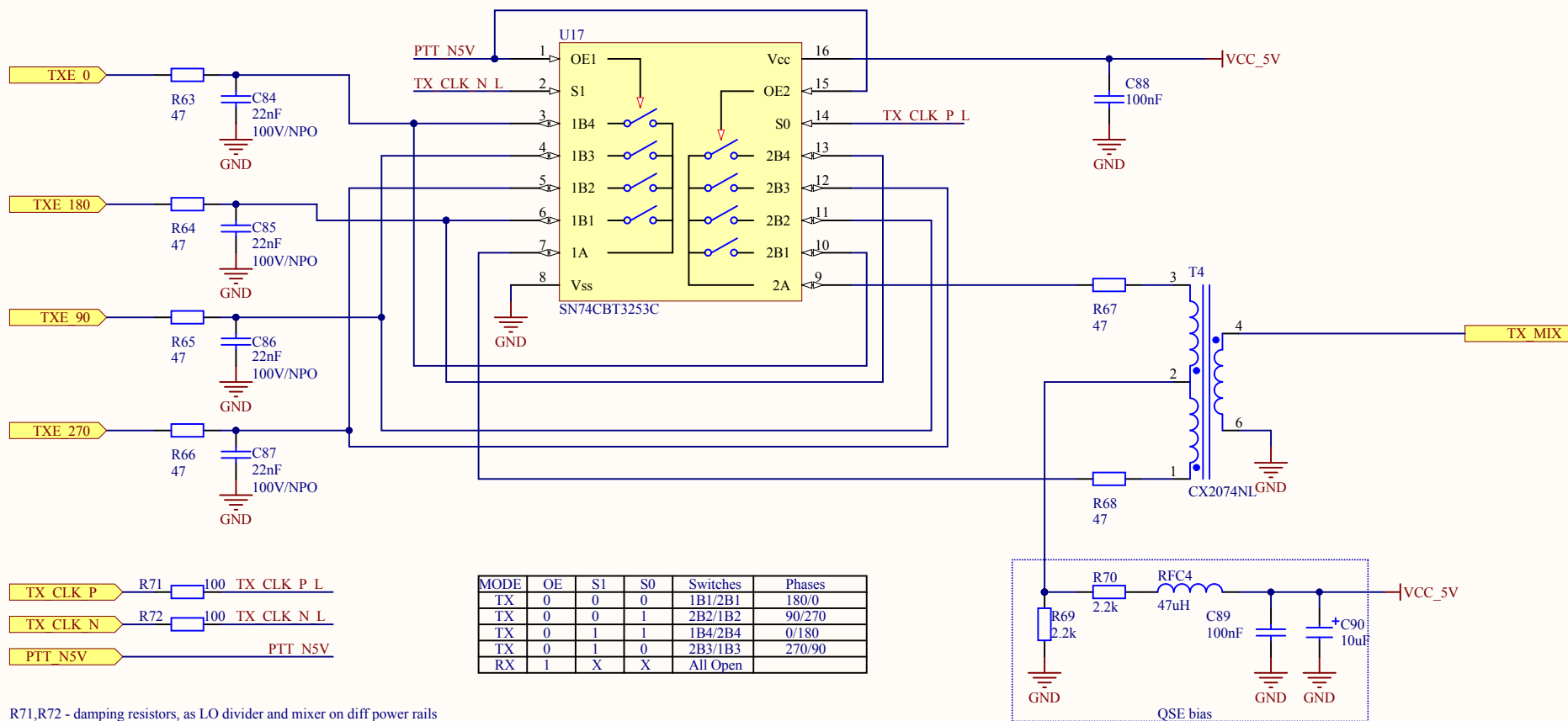
MODE	OE	S1	S0	Switches	Phases
RX	0	0	0	1B1	270
RX	0	0	1	2B2	0
RX	0	1	1	1B4	90
RX	0	1	0	2B3	180
TX	1	X	X	All Open	

R51,R52 - damping resistors, as LO divider and mixer on diff power rails could be replaced with jumpers if one feels they are not needed

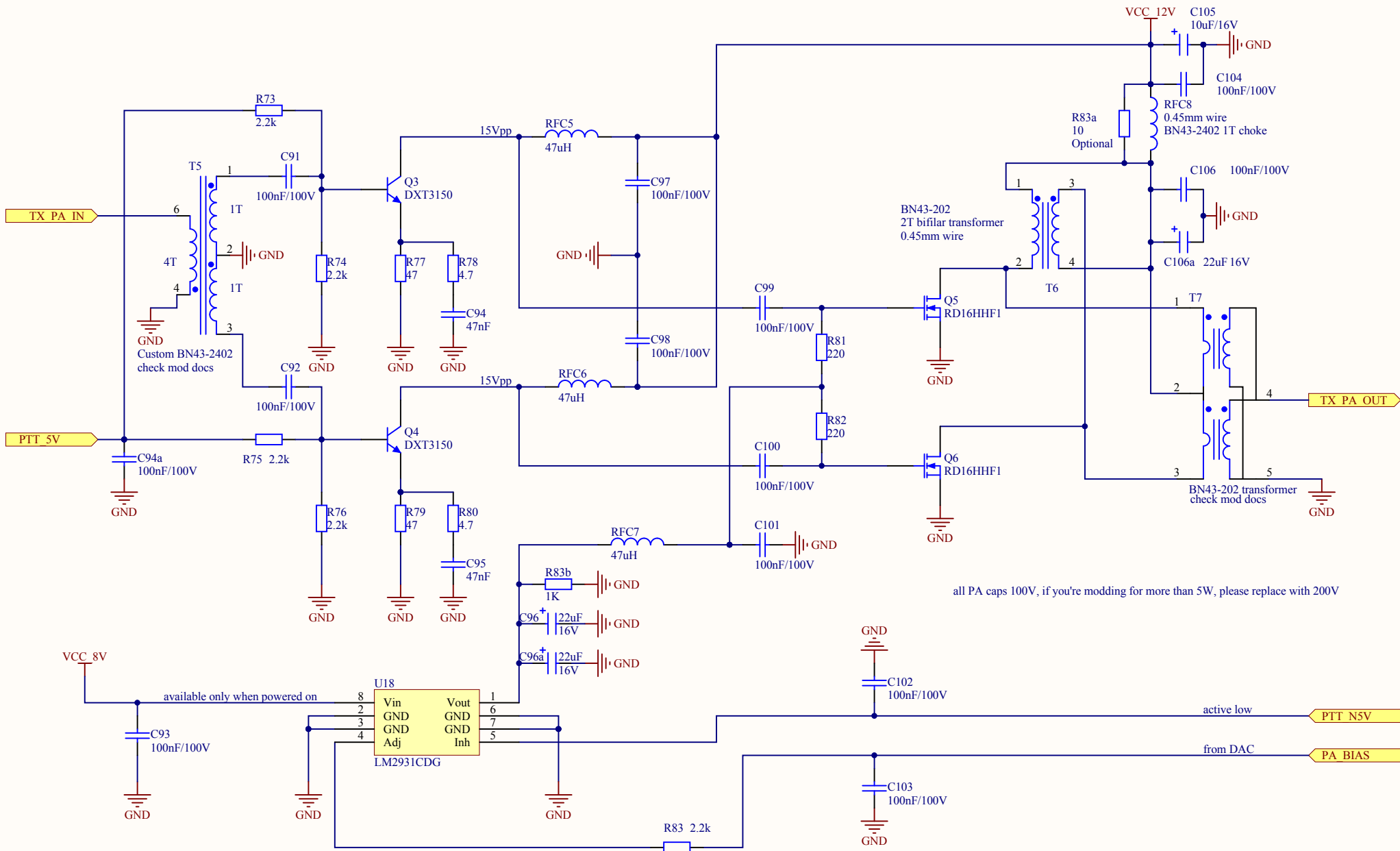




mcHF QRP Transceiver RF board		Antenna Switching	K Atanassov MONKA
Date: 27/03/2016	Revision: 0.5	Sheet 7 of 10	
File: C:\Projects\mcHF\pcb\rf\Schematics\rf_trsw.SchDoc			



R71,R72 - damping resistors, as LO divider and mixer on diff power rails could be replaced with jumpers if one feels they are not needed



all PA caps 100V, if you're modding for more than 5W, please replace with 200V

mcHF QRP Transceiver RF board		TX Power Amplifier		<i>K Atanassov MONKA</i>
Date: 27/03/2016	Revision: 0.5	Sheet 9 of 10		
File: C:\Projects\mcHF\pcb\rf\Schematics\rf_txpa.SchDoc				

