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The RCX2 Converter is a basic converter for 2 meters. It is intended to be used with the microR2 40 meter receiver, but any 7 MHz receiver can be used as the IF. It is intended to provide an easy to build, good performance, introductory 2 meter converter. When used with the microR2 receiver, it will make a good home station receiver for 2 meters, or a small portable low power consumption package for 2 meter experimental work.

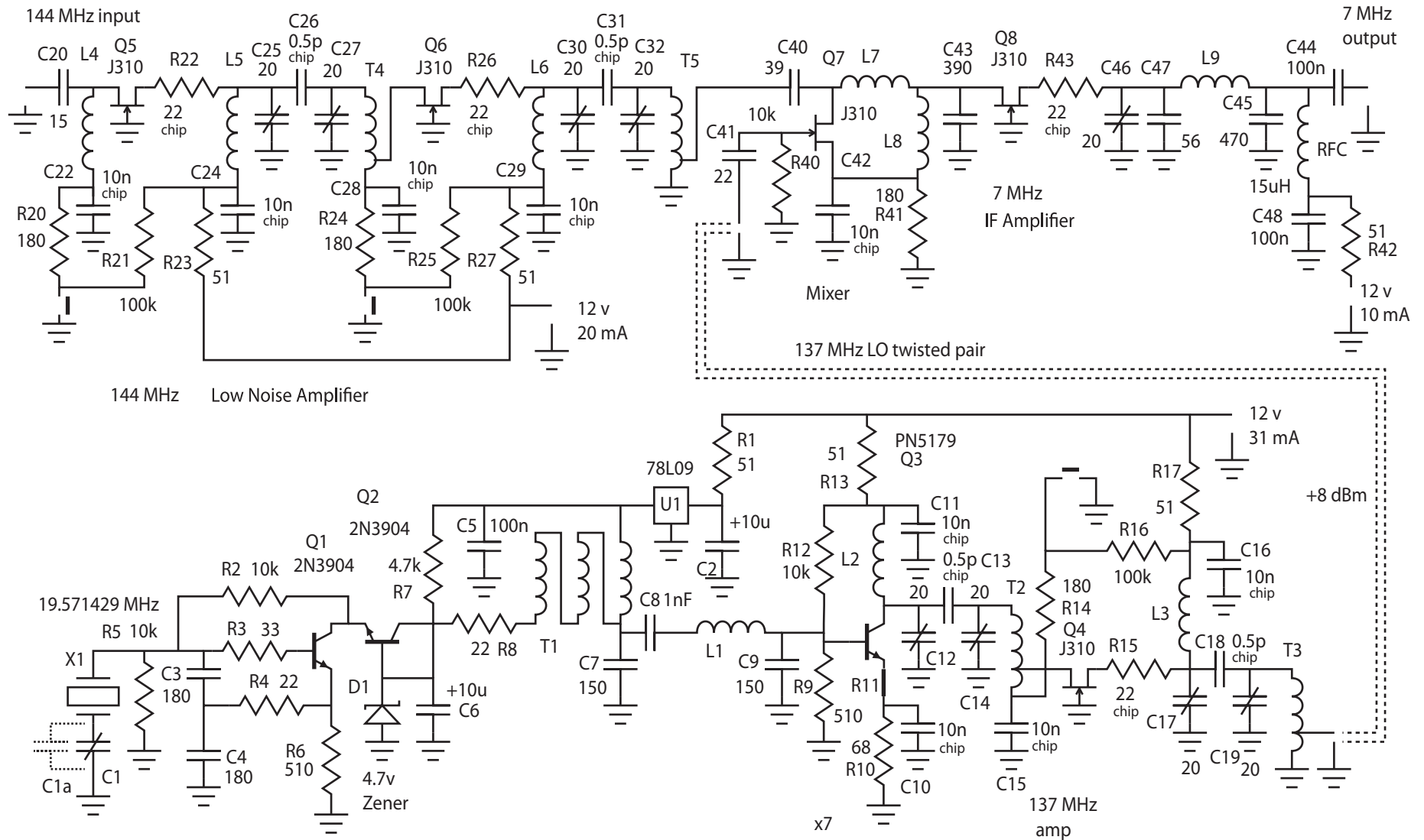
I have not built it yet, so I can't tell you much about how it sounds. Feedback is welcomed!

Have fun on 2 meters!

73 – Bill – N8ET

Kanga US

Rcx2 144 MHz Receive Converter



Rcx2 144 MHz to 7 MHz Receive Converter Parts List

Rick Campbell 9/20/09

C1 15 pF PC mount air variable

C1a 15 pF NP0 miniature disk ceramic soldered between C1 pins on back of board

C2,C6 10 uF 16v electrolytic

C3,C4 180pF NP0 miniature disk ceramic

C5 100nF poly

C7,C9 150pF miniature disk ceramic

C8 1000pF miniature disk ceramic

C10, C11, C15, C16, C22, C24, C28, C29, C42 10nF 1206 chip ceramic

C12, C14, C17, C19, C25, C27, C30, C31 20pF green film trimmer

C13, C18, C26, C31 0.5pF 0806 chip ceramic

C20 15pF NP0 miniature disk ceramic

C40 39pF NP0 miniature disk ceramic

C41 22pF NP0 miniature disk ceramic

C43 390pF NP0 miniature disk ceramic

C47 56pF NP0 miniature disk ceramic

C45 470pF NP0 miniature disk ceramic

C44, C48 100n poly

L1 16t #28 T25-6 approx 600nH

L2, L3, L5, L6 8 turns #24 bare 1 cm long using 3/16" drill bit as form

L4 8 turns #28 enameled close wound using 0.1" drill bit as form

L7 10 turns #28 enameled close wound using 0.1" drill bit as form

L8 18t #28 on T25-2 approx 1.1uH

L9 42 turns #32 on T30-2 approx 6 uH

T1 6t trifilar FT23-43

T2, T3, T4, T5 8 turns #24 bare 1 cm long using 3/16" drill bit as form
tap 1 turn from cold end

R1, R8, R13, R15, R17, R23, R27, R42 51 ohm 1/4 watt

R2, R5, R12, R40 10k 1/4 watt

R3 33 ohm 1/4 watt

R4 22 ohm 1/4 watt

R6, R9 510 ohm 1/4 watt

R7 4.7k 1/4 watt

R10 68 ohm 1/4 watt

R11 jumper

R14, R20, R24, R41 180 ohm 1/4 watt

R15, R22, R26, R43 22 ohm 1206 chip

R16, R21, R25 100k 1/4 watt

RFC 15uH molded epoxy 1/4 watt resistor size

Q1, Q2 2N3904

Q3 MPS 5179

Q4, Q5, Q6, Q7, Q8 J310

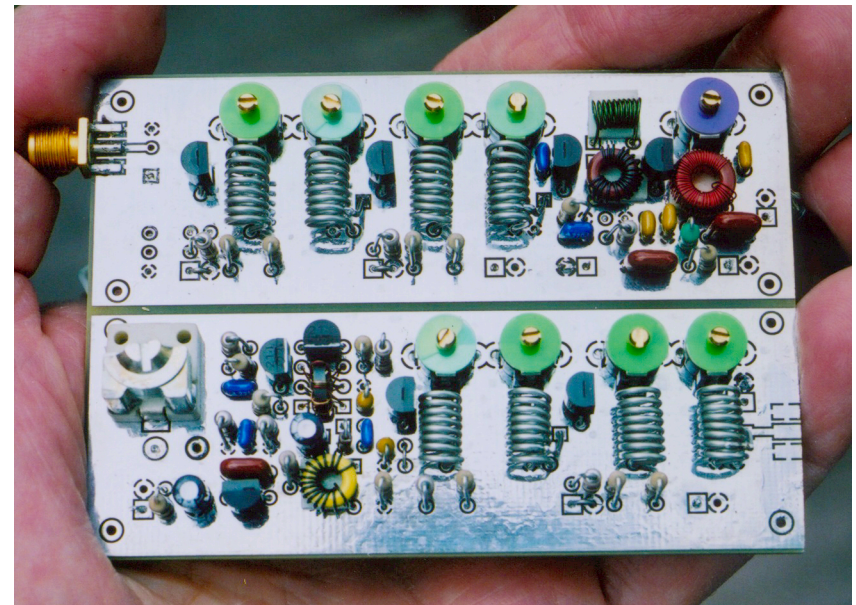
D1 4.7 volt zener

U1 78L09

X1 19.571429 MHz crystal

Notes: R and C part numbers 1-19 are in local oscillator , 20-39 in LNA and 40-49 in Mixer-IF

C1a is used to set frequency trimming range, and may be removed and replaced by an off-board variable or trimmer.



Prototype PCB. Input components L4 and C20 are soldered on the back of the board, and crystal has been removed.

2 Meter Converter – RXC2			
Part	Value	Digikey	Mouser
C1	15pf PC airmount		
C1a	15pf NP0		581-SR151A150J
C2	10uf 16v	P807-ND	
C3	180pf NP0	140-50N5-181J-RC	581-SR151A181J
C4	180pf NP0	140-50N5-181J-RC	581-SR151A181J
C5	100n	P4525-ND	
C6	10uf 16v	P807-ND	
C7	150pf disc		581-SR151A151J
C8	1000pf disc		140-50P2-102K-RC
C9	150pf disc		581-SR151A151J
C10	10nf 1206 chip		140-CC502B103K
C11	10nf 1206 chip		140-CC502B103K
C12	20pf trimmer green	SG3003-ND	
C13	.5pf 0806 chip		140-CC501N0.5C-RC
C14	20pf trimmer green	SG3003-ND	
C15	10nf 1206 chip		140-CC502B103K
C16	10nf 1206 chip		140-CC502B103K
C17	20pf trimmer green	SG3003-ND	
C18	.5pf 0806 chip		140-CC501N0.5C-RC
C19	20pf trimmer green	SG3003-ND	
C20	15pf NP0		581-SR151A150J
C21	not used		
C22	10nf 1206 chip		140-CC502B103K
C23	not used		
C24	10nf 1206 chip		140-CC502B103K
C25	20pf trimmer green	SG3003-ND	
C26	.5pf 0806 chip		140-CC501N0.5C-RC
C27	20pf trimmer green	SG3003-ND	
C28	10nf 1206 chip		140-CC502B103K
C29	10nf 1206 chip		140-CC502B103K
C30	20pf trimmer green	SG3003-ND	
C31	.5pf 0806 chip		140-CC501N0.5C-RC
C32	20pf trimmer green	SG3003-ND	
C40	39pf NP0		140-50N2-390J-RC
C41	22pf NP0		140-50N2-220J-RC
C42	10nf 1206 chip		140-CC502B103K
C43	390pf NP0		581-SR151A391J
C44	100n	P4525-ND	
C45	470pf NP0		581-SR151A471JAR
C46	20pf trimmer green	SG3003-ND	
C47	56pf NP0		140-50N2-560J-RC
C48	100n	P4525-ND	
L1	T25-6 16T		
L2	8T #24 bare		
L3	8T #24 bare		
L4	8T #28 enamel		
L5	8T #24 bare		
L6	8T #24 bare		

Sheet1

L7	10T #28 enamel		
L8	T25-2 18T #28		
L9	T30-2 42T #32		
T1	FT23-43 6T trifilar		
T2	8T #24 bare tap 1 T		
T3	8T #24 bare tap 1 T		
T4	8T #24 bare tap 1 T		
T5	8T #24 bare tap 1 T		
R1	51 ohms	51qbk-nd	
R2	10k	10kqbk-nd	
R3	33 ohm	33qbk-nd	
R4	22 ohm	22qbk-nd	
R5	10k	10kqbk-nd	
R6	510 ohm		
R7	4.7k	4.7kqbk-nd	
R8	51 ohms	51qbk-nd	
R9	510 ohm		
R10	68 ohm	68qbk-nd	
R11	jumper		
R12	10k	10kqbk-nd	
R13	51 ohms	51qbk-nd	
R14	180 ohm	180qbk-nd	
R15	22 ohm 1206 chip		263-22-RC
R16	100k	100kqbk-nd	
R17	51 ohms	51qbk-nd	
R20	180 ohm	180qbk-nd	
R21	100k	100kqbk-nd	
R22	22 ohm 1206 chip		263-22-RC
R23	51 ohms	51qbk-nd	
R24	180 ohm	180qbk-nd	
R25	100k	100kqbk-nd	
R26	22 ohm 1206 chip		263-22-RC
R27	51 ohms	51qbk-nd	
R40	10k	10kqbk-nd	
R41	180 ohm	180qbk-nd	
R42	51 ohms	51qbk-nd	
R43	22 ohm 1206 chip		263-22-RC
RFC	15uh molded		434-22.150
Q1	2N3904		512-2N3904TF
Q2	2N3904		512-2N3904TF
Q3	MPS5179		512-PN5179
Q4	J310		512-J310D26Z
Q5	J310		512-J310D26Z
Q6	J310		512-J310D26Z
Q7	J310		512-J310D26Z
Q8	J310		512-J310D26Z
D1	4.7v Zener 1N5230B		512-1N5230B
U1	78L09		512-KA78L09AZTA
X1	19.571429 MHz xtal		
Pc board			