

Kanga US

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The 2 meter CW source is a stable, clean low power (10mw) CW source. It can perform a variety of functions. It can be used as a low power 2 meter CW transmitter, as a local oscillator for a converter or receiver, or a clean signal source for your test bench. The frequency is VXO controlled. The variable capacitor that comes standard with the kit is a board mounted trimmer which is convenient for setting one frequency. An optional off board mounted variable capacitor is available which can be panel mounted to allow fast QSY across the range provided by the VXO (approximately 100 kHz).

The unit is small enough and has a very low current consumption so makes a good transmitter to use for portable experimental 2m cw work

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

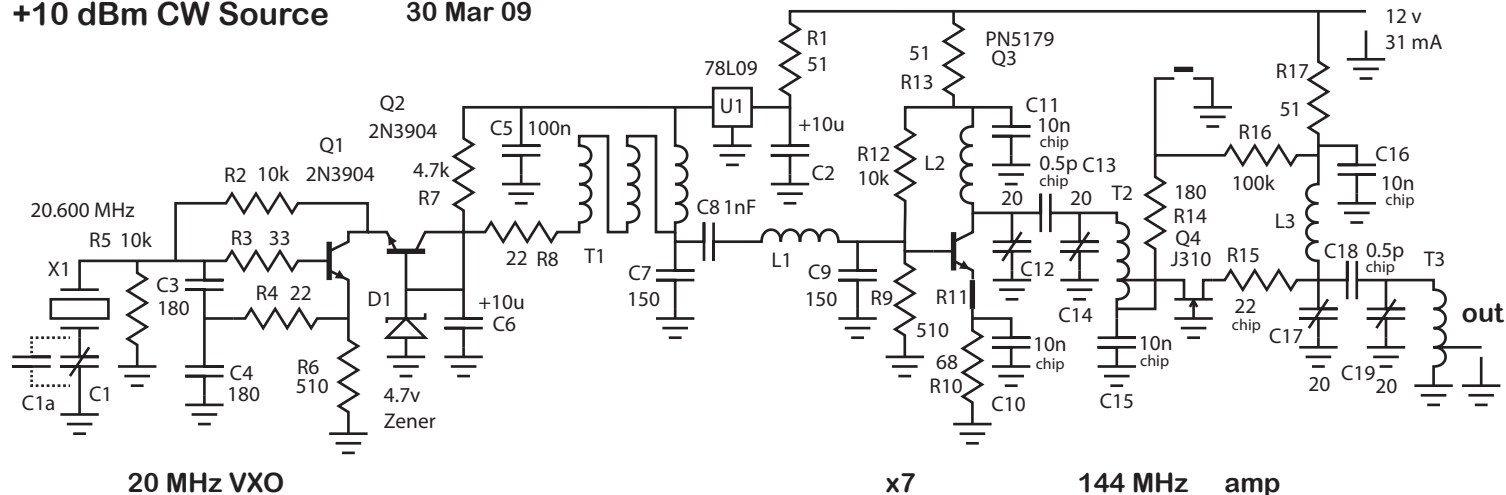
Have fun on 2 meters!

73 – Bill – N8ET

Kanga US

**144 MHz
+10 dBm CW Source**

**Rick Campbell KK7B
30 Mar 09**



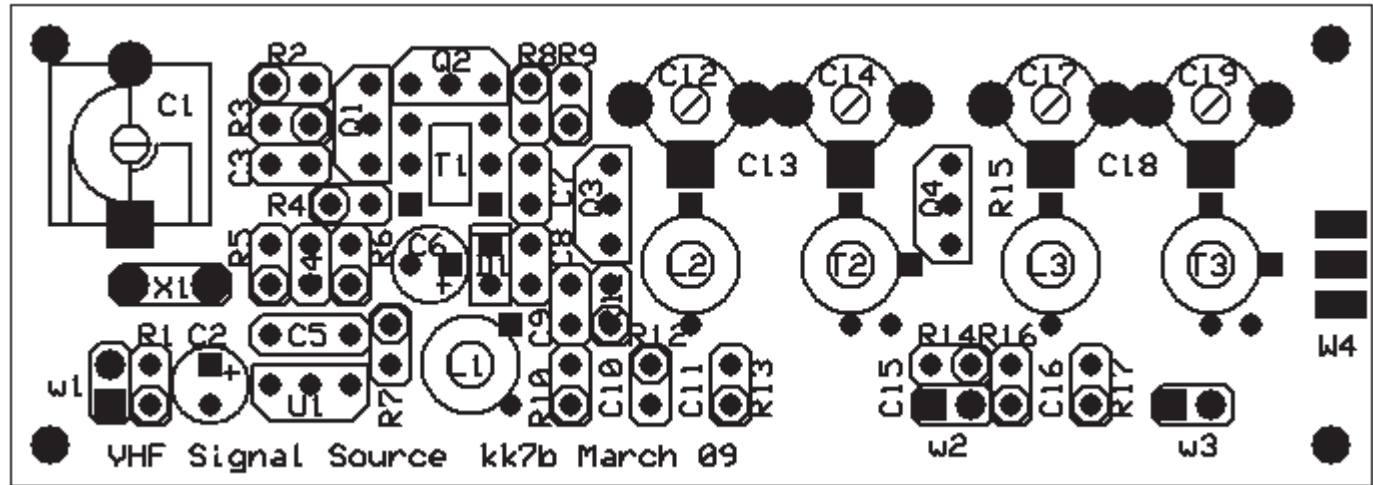
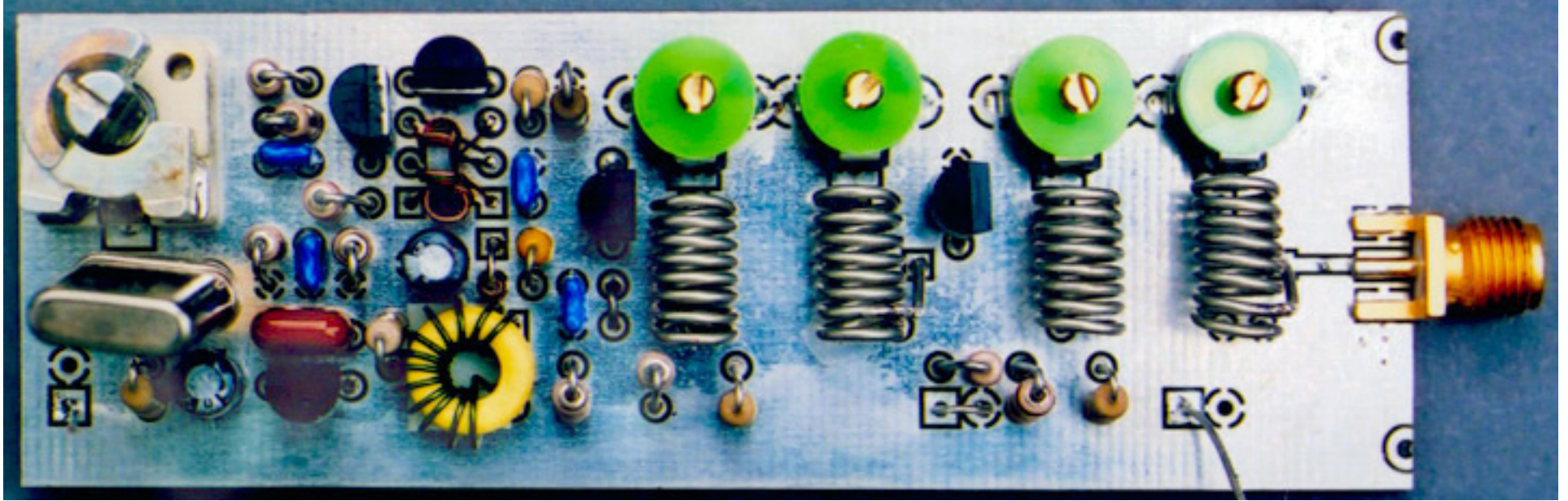
Output lowers gracefully to +8 dBm at 11volts with no change in frequency. Below 11 volts 78L09 voltage regulator drops out.

- C1 15 pF PC mount air variable
- C2,C6 10 uF 16v electrolytic
- C3,C4 180pF NPO miniature disk ceramic
- C5 100nF poly
- C7,C9 150pF miniature disk ceramic
- C8 1000pF miniature disk ceramic
- C10, C11, C15, C16 10nF 1206 chip ceramic
- C12, C14, C17, C19 20pF green film trimmer
- C13, C18 0.5pF 0806 chip ceramic

- Q1, Q2 2N3904
- Q3 MPS 5179
- Q4 J310
- D1 4.7 volt zener
- U1 78L09
- X1 20.600 MHz crystal

- R1, R8, R13, R15, R17 51 ohm 1/4 watt
- R2, R5, R12 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 180 ohm 1/4 watt
- R15 22 ohm 1206 chip
- R16 100k 1/4 watt

- L1 16t T25-6 approx 600nH
- L2, L3 8 turns #24 bare 1 cm long using 1/8" drill bit as form
- T1 6t trifilar FT23-43
- T2, T3 8 turns #24 bare 1 cm long using 1/8" drill bit as form tap 1 turn from cold end



144 Mhz CW Source			
Part	Value	Digikey	Mouser
C1	50p var cap		
C2	10u	P807ND	
C3	180pf NP0		581-sr151a181j
C4	180pf NP0		581-sr151a181j
C5	100n	P4525-ND	
C6	10u	P807ND	
C7	150pf NP0		581-sr151a151j
C8	1000pf disc		140-50P2-102K-RC
C9	150pf NP0		581-sr151a151j
C10	10n 1206 chip		140-CC502B103K
C11	10n 1206 chip		140-CC502B103K
C12	20p trim	SG3003-ND	
C13	0.5pf 0806 chip		140-CC501N0.5C-RC
C14	20p trim	SG3003-ND	
C15	10n 1206 chip		140-CC502B103K
C16	10n 1206 chip		140-CC502B103K
C17	20p trim	SG3003-ND	
C18	0.5pf 0806 chip		140-CC501N0.5C-RC
C19	20p trim	SG3003-ND	
R1	51 ohms	51qbk-nd	
R2	10k	10kqbk-nd	
R3	33 ohms	33qbk-nd	
R4	22 ohms	22qbk-nd	
R5	10k	10kqbk-nd	
R6	510 ohm	510qbk-nd	
R7	4.7k	4.7kqbk-nd	
R8	51 ohms	51qbk-nd	
R9	510 ohm	510qbk-nd	
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	
D1	1N5320B		512-1n5230B
TR1	2N3904		512-2N3904TF
TR2	2N3904		512-2N3904TF
TR3	MPS 5179		512-PN5179
TR4	J310		512-J310D26Z
U1	78L09		512-KA78L09AZTA
T1	FT23-48 6T trifilar		
T2	8T #24 bare, Tap 1T		
T3	8T #24 bare, Tap 1T		

Sheet1

L1	T25-6 16T		
L2	8T #24 bare		
L3	8T #24 bare		
XTAL			
PC Board			