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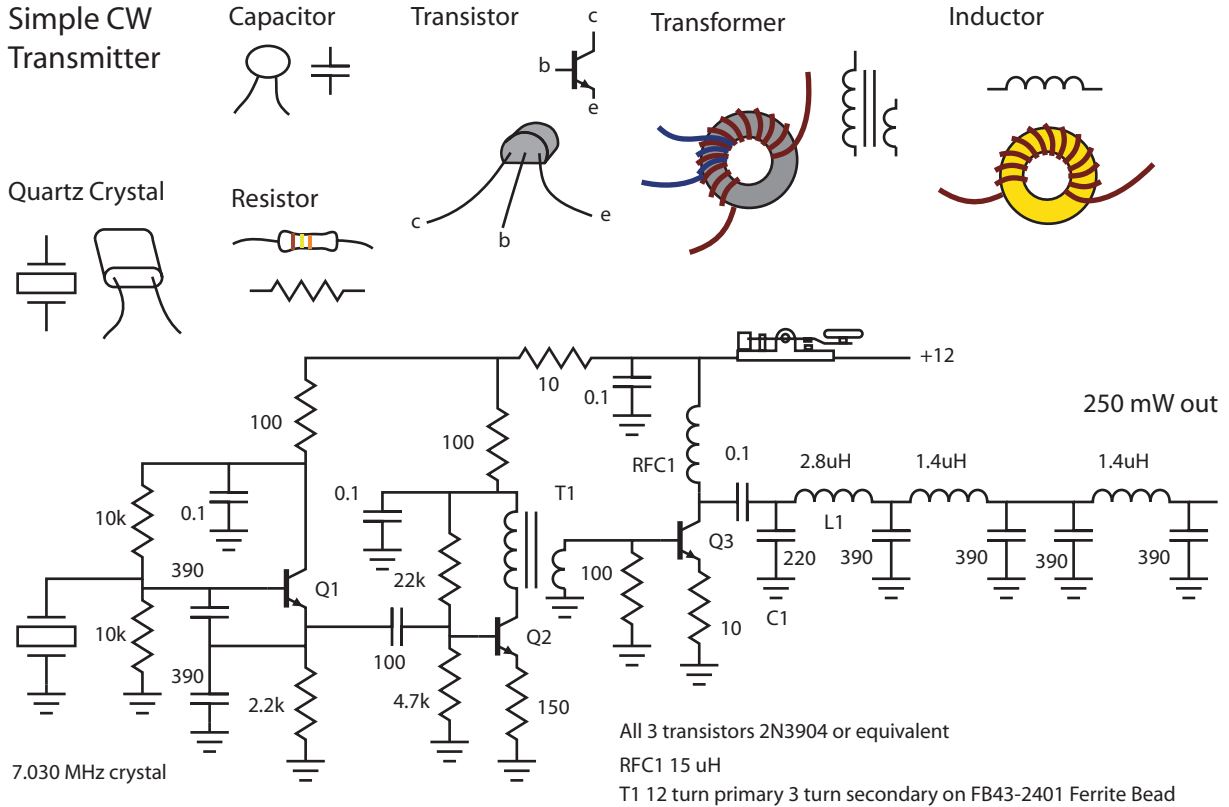
May 9, 2009

The Simple Effective CW Transmitter is a Kitlet that has been put together to go with a talk given by KK7B at the ARCI FDIIM Conference in Dayton on May 14, 2009. It provides all the electronic part so that the simple CW transmitter mentioned in the talk can be built ugly stype. No PC board is available. There should be enough information available in the single sheet of notes provided by KK7B for you to successfully built the TX. Additional background information is available in [Experimental Methods in RF Design](#) pages 1.17 – 1.22.

Have fun!

73 – Bill - N8ET

A very simple, effective CW Transmitter



Notes: To optimize for 9v DC power, experiment with smaller values of emitter resistor on Q2, an extra turn on the secondary of T1, and use the Smith Chart to optimize the values of L1 and C1 for a lower impedance load presented to the collector of Q3. For more power output, Q3 may be paralleled 2N3904 devices or a different transistor type. Increasing the power output will require more drive from Q2

Several hundred of these simple transmitters have evolved since 2005 by RF Design students at Portland State University. Testing is done in class using a #47 light bulb load and a clip lead antenna to radiate enough signal to pick up in a nearby receiver. The original design by Wes Hayward appears as figure 1.34 in EMRFD, but students are encouraged/required to modify the design to meet different criteria.

Figure 1

Simple Effective CW Transmitter (Fig 1.34 E)

Part	Value	Digikey	Mouser
C1	100n	P4525-ND	
C2	390p		140-50P2-391K-RC
C3	390p		140-50P2-391K-RC
C4	100n	P4525-ND	
C5	100p		140-50P2-101K-RC
C6	100n	P4525-ND	
C7	100n	P4525-ND	
C8	220p		140-50P2-221K-RC
C9	390p		140-50P2-391K-RC
C10	390p		140-50P2-391K-RC
C11	390p		140-50P2-391K-RC
C12	390p		140-50P2-391K-RC
R1	10k	10kqbk-nd	
R2	10k	10kqbk-nd	
R3	100 ohms	100qbk-nd	
R4	2.2k	2.2kqbk-nd	
R5	22k	22kqbk-nd	
R6	4.7k	4.7kqbk-nd	
R7	150 ohms	150qbk-nd	
R8	100 ohms	100qbk-nd	
R9	10 ohms	10qbk-nd	
R10	100 ohms	100qbk-nd	
R11	10 ohms	10qbk-nd	
RFC1	15uh		434-22-150
Q1	2N3904		512-2N3904TF
Q2	2N3904		512-2N3904TF
Q3	2N3904		512-2N3904TF
T1	FB43-2401	FT37-43 Supplied	12T : 3T
L1	T50-6 26T		
L2	T50-6 19T		
L3	T50-6 19T		
XTAL	7.030 MHz		