Ham Radio 101
Little Joe One Watt Transmitter
By Hal Silverman WB6WXO

For this article, I went back a few years and brought up a workshop project we did on a wireless breadboard. The original circuit was in a 1990 ARRL QRP Classic Book. It was written by Doug DeMaw [1].

FAR circuits have made a circuit board and are available for a nominal price.[2] The board can be made into 80, 40, 20, 15 and 10 meters. It is crystal controlled.

The original article has the circuit changes for the other bands.

I chose 80M because the crystal is available for a practically nothing. There are 3.579 MHz. These were crystals used in analog TV sets.

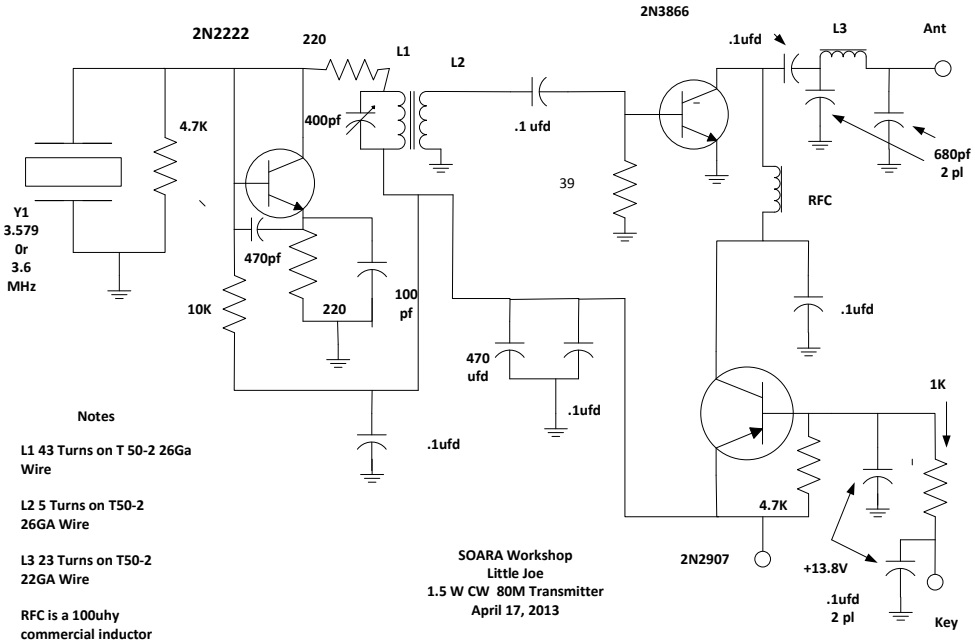

Figure 1
Little Joe Schematic

The article was listed as a 1.5 watt transmitter. I have never been able to get more than one watt out of the board. Figure 2 is the output as seen on an oscilloscope.

Figure 3 is the DC current input The DC input current is about 180 Ma. The power supply is Astron 13.2V at 4 amps.

I prefer to use analog meters. The one in figure 3 was found on E Bay. This power supply covers about 90% of all of my workshop activities. These are available on EBay or at the SOARA auction

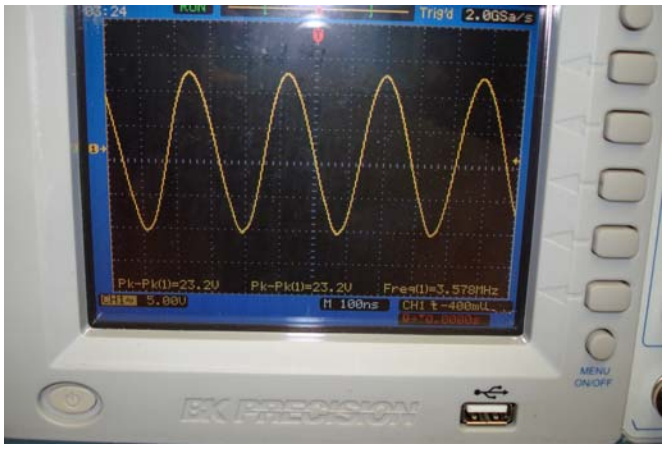

Figure 2
Oscilloscope Presentation

Figure 3
DC input current

In the next two figures, there is the RF meter in figure 4 that displays the output power. And a PC circuit board assembly.

Figure 4
RF output and Astron power supply

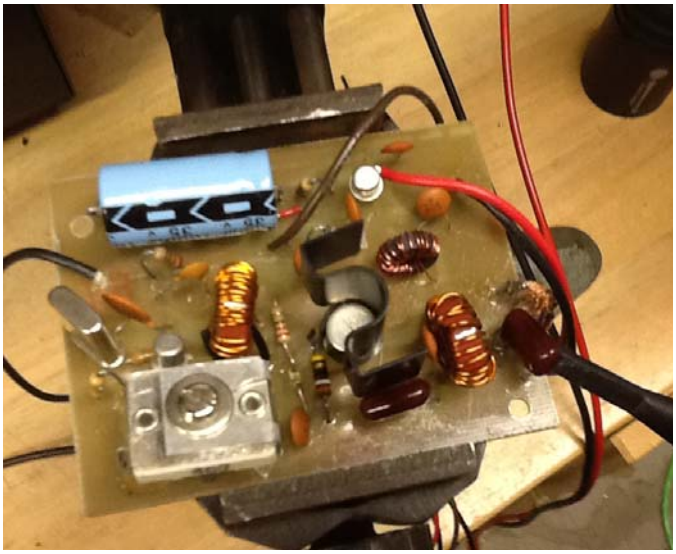

Figure 5
PC Board Assembly

I have added a clip-on heat sink to the collector of the 2N3866 transistor. It cools the transistor and provides better circuit performance. It can be seen in figure 5.

The components can be purchased from Electronix Express[3]. They have put kits together of common resistors, capacitors, semi-conductors and transformer wire. They cater to the schools and have a wide variety parts and equipment. You can order from them on line.

If there are any questions or comments, please contact me at WB6WXO@SOARA.org.

Foot Notes:

1: QRP Classics
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Doug DeMaw

2: FAR Circuits:
Fred KF9GX
18n1640 Field Ct
Dundee, IL 60118
mail@farcircuits.net

3 Electronix Express
RSR Electronics
365 Blair Rd.
Avenel, NJ 07001
1-800-972-2225
http://www.elexp.com