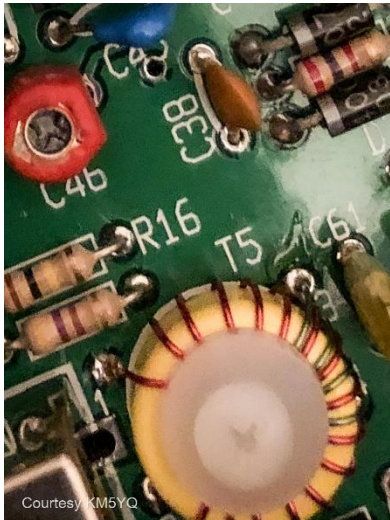


Kit Building—A Dying Breed? A K2 Comes to Life Part III

David Duke, KM5YQ, continues his series about his Elecraft K2 build.



The third phase of the K2 build is to install the remaining band pass filter, low pass filter and the transmitter components. Another decent size group of resistors and a large group of capacitors were the first big steps. Somewhat tedious, but these are the steps where it is important to take your time, and several breaks. After this, the build went much quicker as I had already pre-wound the remaining toroids.

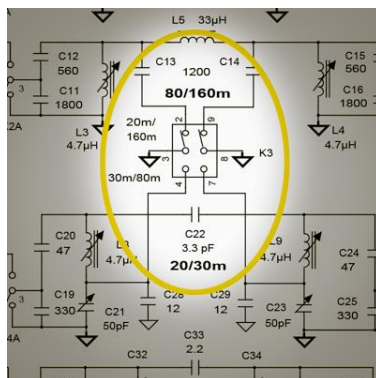
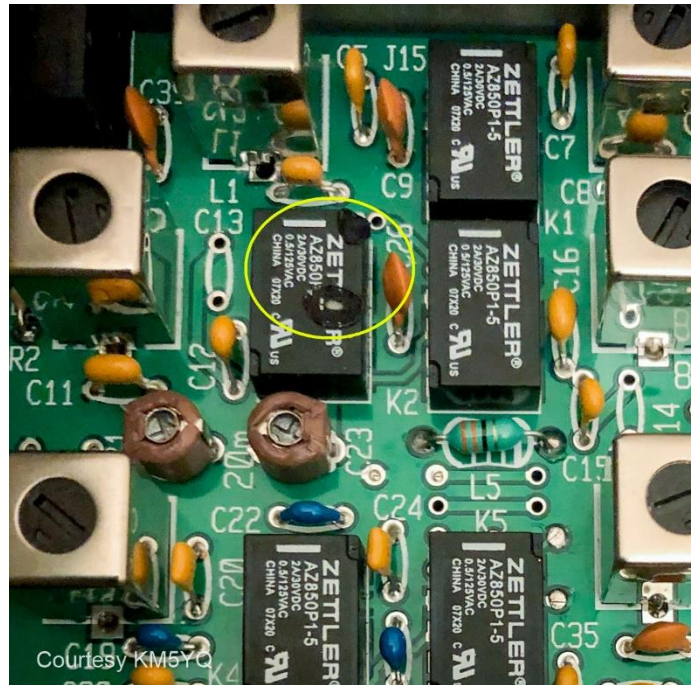
There was a binocular toroid with complex windings, and precarious mounting over two screws that cannot come loose, not too difficult to make but detailed. The installation of the other toroids was relatively simple.

Next came the finals—finally. This was a bit tricky as they are installed on the bottom of the RF board with the metal side facing away, with a thermal pad that will come in direct contact with the “heat sink,” which is just a narrow part of the chassis itself. There are several components that are mounted on the screw that secures each transistor to the bottom of the RF board with the nut on top, firmly against the heat sink. The manual suggested setting the radio on its side during this process to keep the spacer components from falling out and this worked well.

At this point there is a step to temporarily install nuts on the screws to keep these together, to allow you to install a few components for any options you’ve chosen. This saves having to remove the heat sink and reinstalling these tiny parts for the finals later, (which I had to do anyway, as you’ll see). I took advantage of this and installed a few pin connectors. At this point I inspected my work and noticed that I had “touched” one of the relays [see “touched” relay at right] with my soldering iron slightly at two places. Hoping that this was only cosmetic and that I had not damaged it, I carried on.

Time to align the transmitter starting with 40 meters. When I got to 20 meters, I noticed a problem. I was getting only about a half a watt—30 meters wasn’t better. But 80, 40, 17, 15, 12, and 10 meters seemed to be okay. At this point I was a bit tired and set the kit aside to get some rest and recharge.

I was a bit unsure if I was aligning it properly but decided to try it out and see. I took the K2 over to my Dad’s house and setup my Buddipole. The receiver worked really great, and it was just dead on frequency when checking against WWV. I heard several stations very clearly on 20 meters, including one station from 8-land sending at about 13 WPM clearly above the noise, but a contact wasn’t to be. Output on 20 meters was still low—my K2 was not ready yet.



I checked the schematic, and it was quite obvious that the suspect relay was not working. The band pass filters to 20m and 30m were not being used. I removed the damaged relay. This was a tricky proposition as there are several components that surround it. Working slowly with my clippers I removed little bits at a time, all the way down to the board and the leads. De-soldering and removing the leads from the pads was tedious. My goal was not to damage the pads or the board! Solder-wick, a solder sucker, and some hookup wire removed all the solder from the pads and through holes. Once done I installed the replacement relay. Whew!

With the repair complete, I reassembled everything, including all those tiny little parts for the finals. I went through alignment again, and what do you know, the transmitter is working on all bands as expected!

I installed the noise blanker and audio filter options, and both are working great. Those were one evening builds. I'm working on the ATU option as well and hope to have that installed and tested before its first field test. There is also a third party PA T-R relay board that I built and installed for a future external amplifier. (I'm going to build that too!)

Coming up in the final part of this series, I'll report on K2 #7976's first contact, some of the lessons learned along the way, and my thoughts on building.

73, David KM5YQ
