

Keying Modification for the Cricket 30 Transceiver

by Michael Babineau, VE3WMB

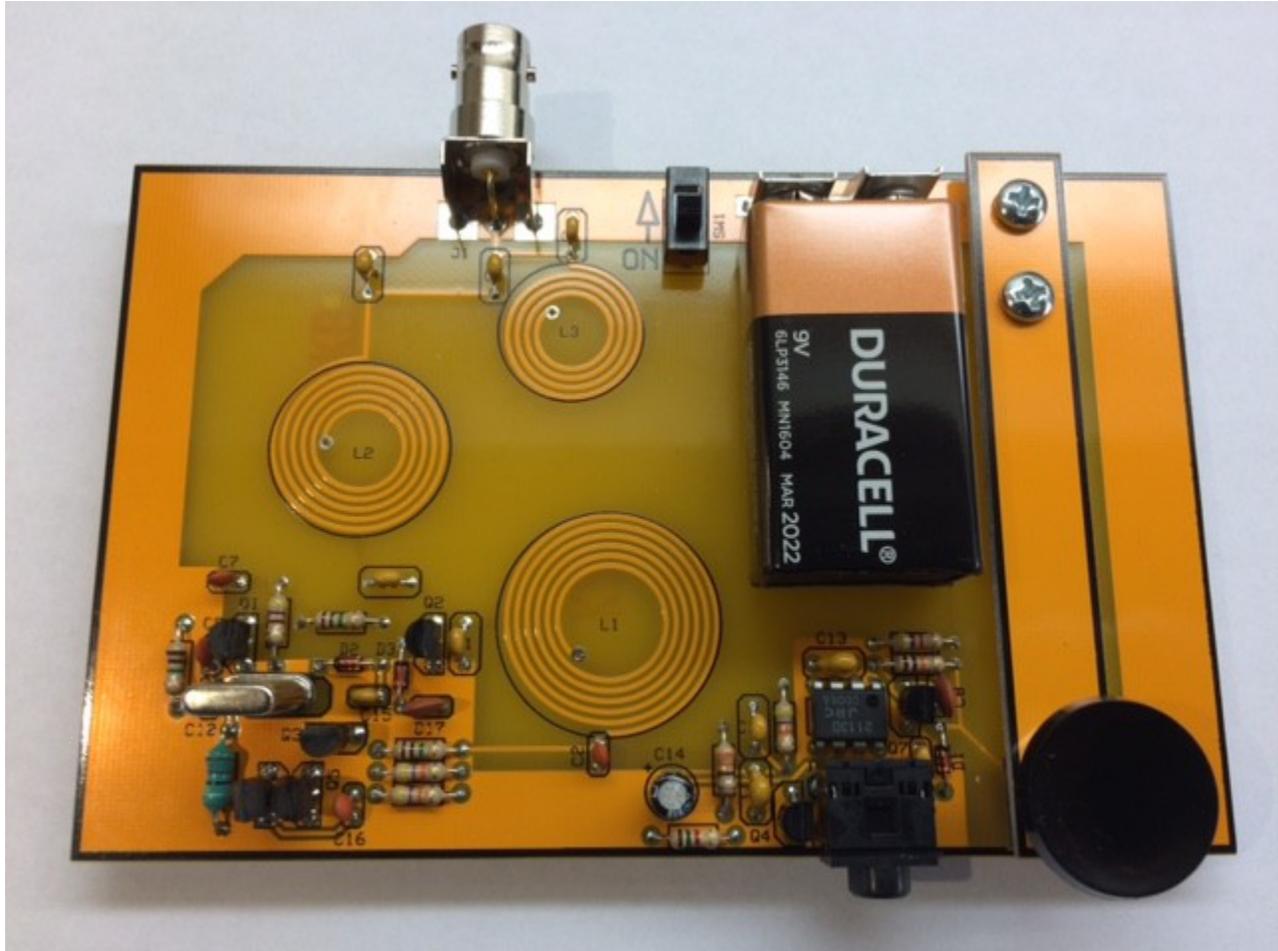


Photo 1: Cricket 30 with Key Strip installed to provide a built-in straight key.

The Four State QRP Club Cricket 30 transceiver kit comes with two options for keying. The first option is to use the standard *key strip* board as shown installed in Photo 1 above. The second option is referred to as the *keying adaptor* and it is also included with the kit. It allows the installation of a 1/8 inch stereo jack to enable the use of an external morse key. This option can't be used as a built-in straight key.

Both options are shown together in Photo 2 below, with the *key strip* on top and the *keying adaptor board* on the bottom.

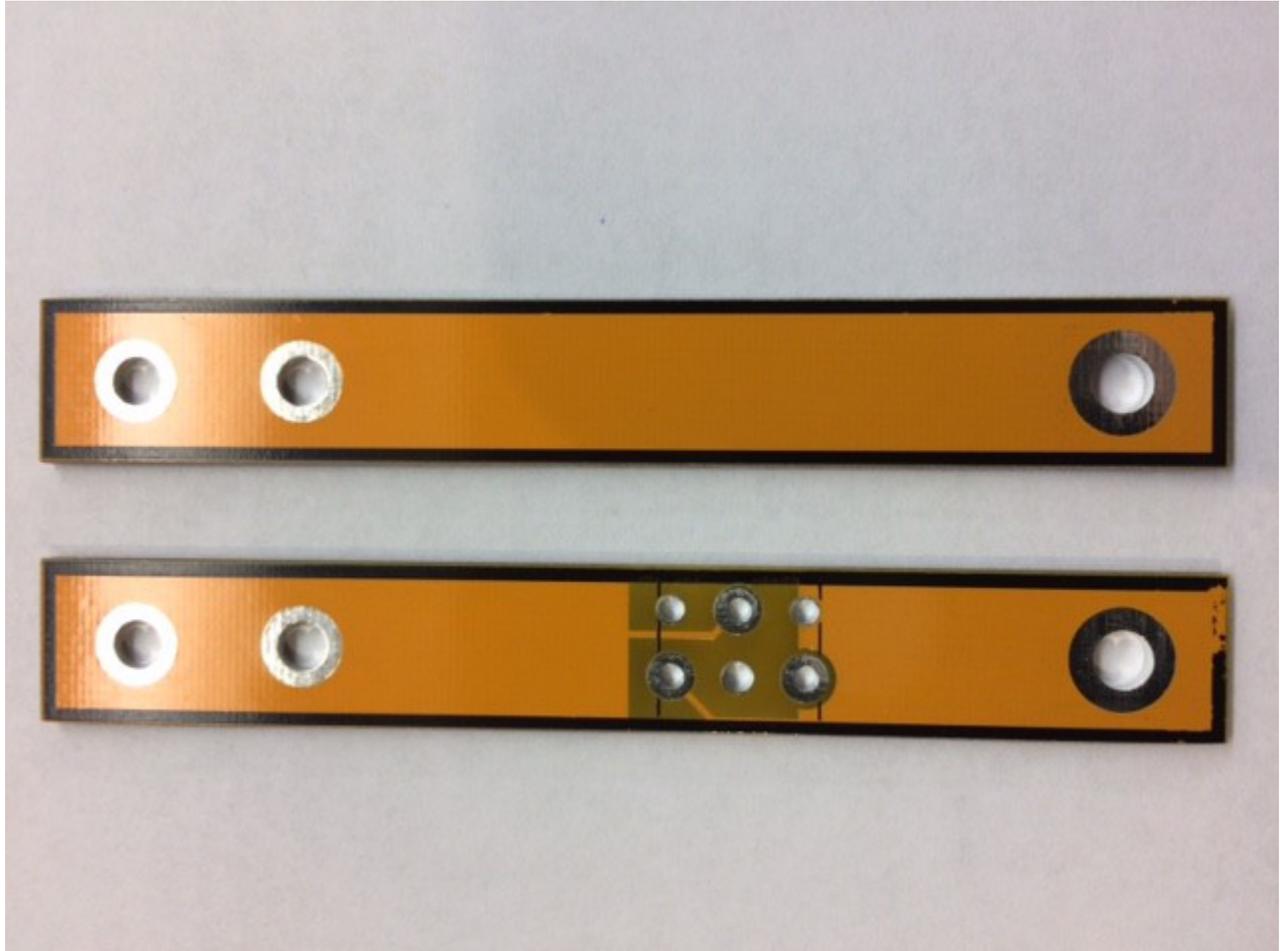


Photo 2: Key Strip (top) and Keying Adaptor (bottom) – Mounting holes on left, keying knob holes on the right.

With the installation of the *key strip*, the two mounting holes on the left (top image in Photo 2) are connected to ground via the mounting screws, spacers and nuts. The key knob is installed on the right end and the screw holding the knob completes the keying circuit to ground when the key is depressed. The *key strip* is one continuous copper pad.

With the *keying adaptor* board (Photo 2 bottom image) the knob end of the board is electrically isolated from the mounting (ground) end, with the connection between the two halves being made via a key connected to the 1/8 inch stereo jack (using tip and ground on the jack). The *keying adaptor* is installed using washers under the screw head holding the knob so that the screw is in continuous contact with the large keying pad at the front of the main board. This installation prevents the *keying adaptor* from moving and precludes the possibility (both physically and electrically) of allowing it to be used as a built-in key. Choosing to use the *keying adaptor* only allows keying via an externally connected key.

The following modification enables the use of the *keying adaptor* board as both a built-in straight key as well as a means to connect an external key or keyer.

Step One – Isolate the tip of the keying jack by cutting a board trace on the top side of *keying adaptor* board

As shown in the Photo 3, using an exacto knife cut the trace connecting the key jack tip to the knob end of the board to electrically isolate it. **This must be done before you install the keying jack onto the *keying adaptor board* as the trace will be inaccessible once the jack is installed.** Before proceeding verify the isolation of this pad with an ohmmeter.

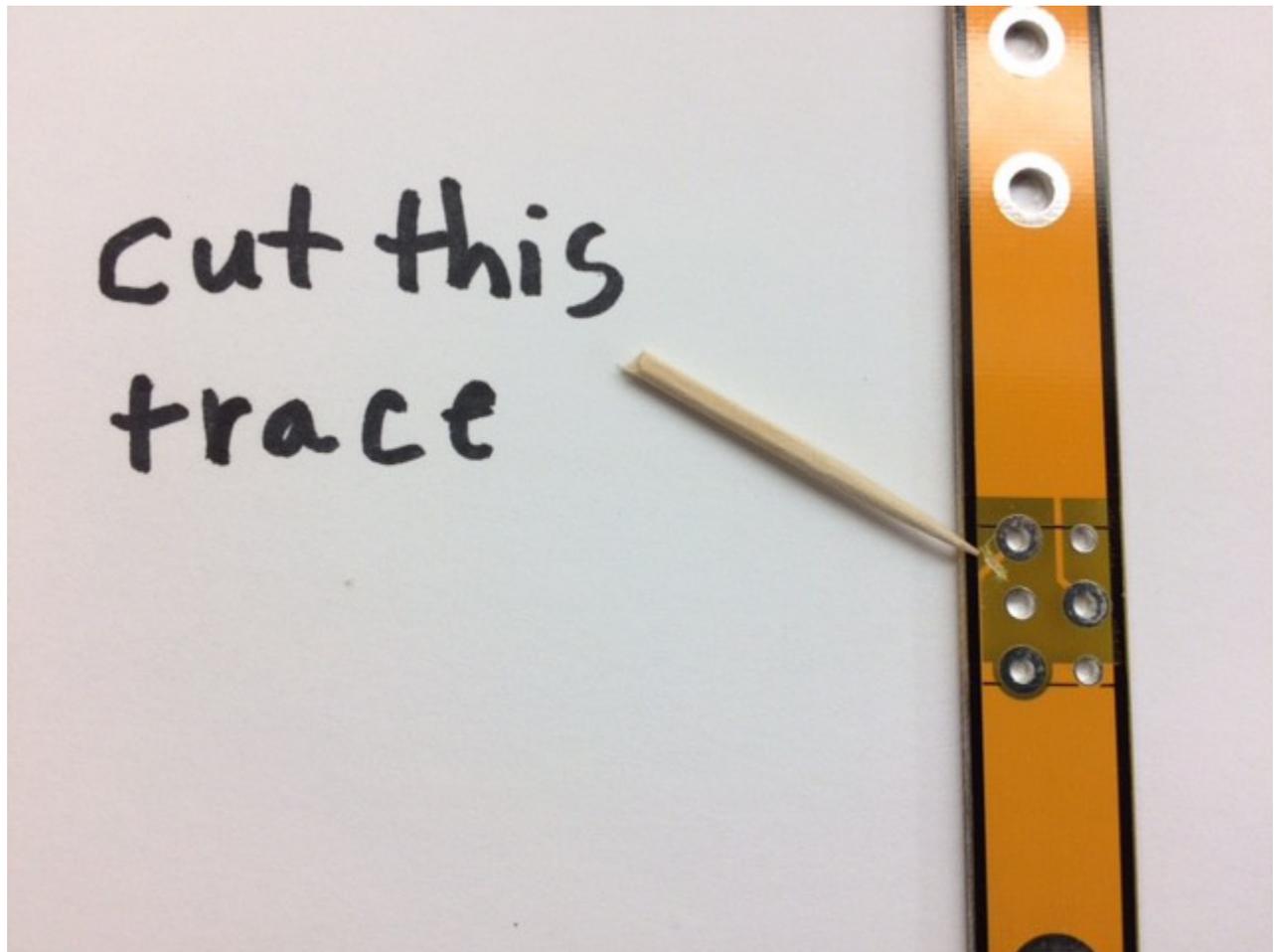


Photo 3: Isolating the Key jack tip connection by cutting the trace

Step Two – Install the keying jack on the top side of the *keying adaptor* board as shown in the photo. Double check that the jack opening will be on the right when the board is facing up, before you flip it over to solder the leads.

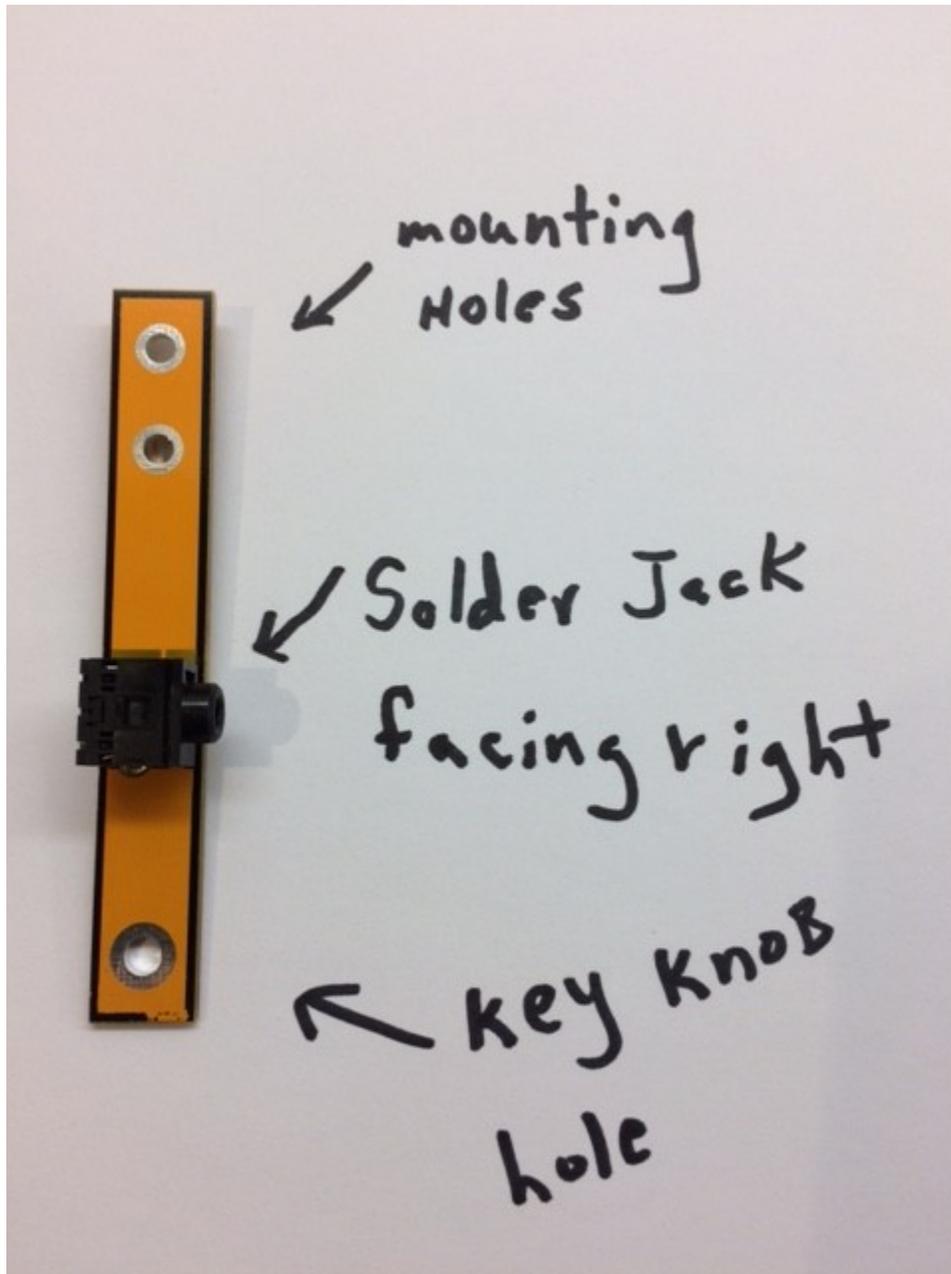


Photo 4: Key jack orientation on Keying Adaptor Board (top side of board)

Step Three – Bridge the mounting end and knob ends of the *keying adaptor* board by soldering a short piece of wire between the left middle and left bottom holes as shown in Photo 6. Also solder an approximately two inch long piece of insulated wire to the top hole on the right side as shown in Photo 6.

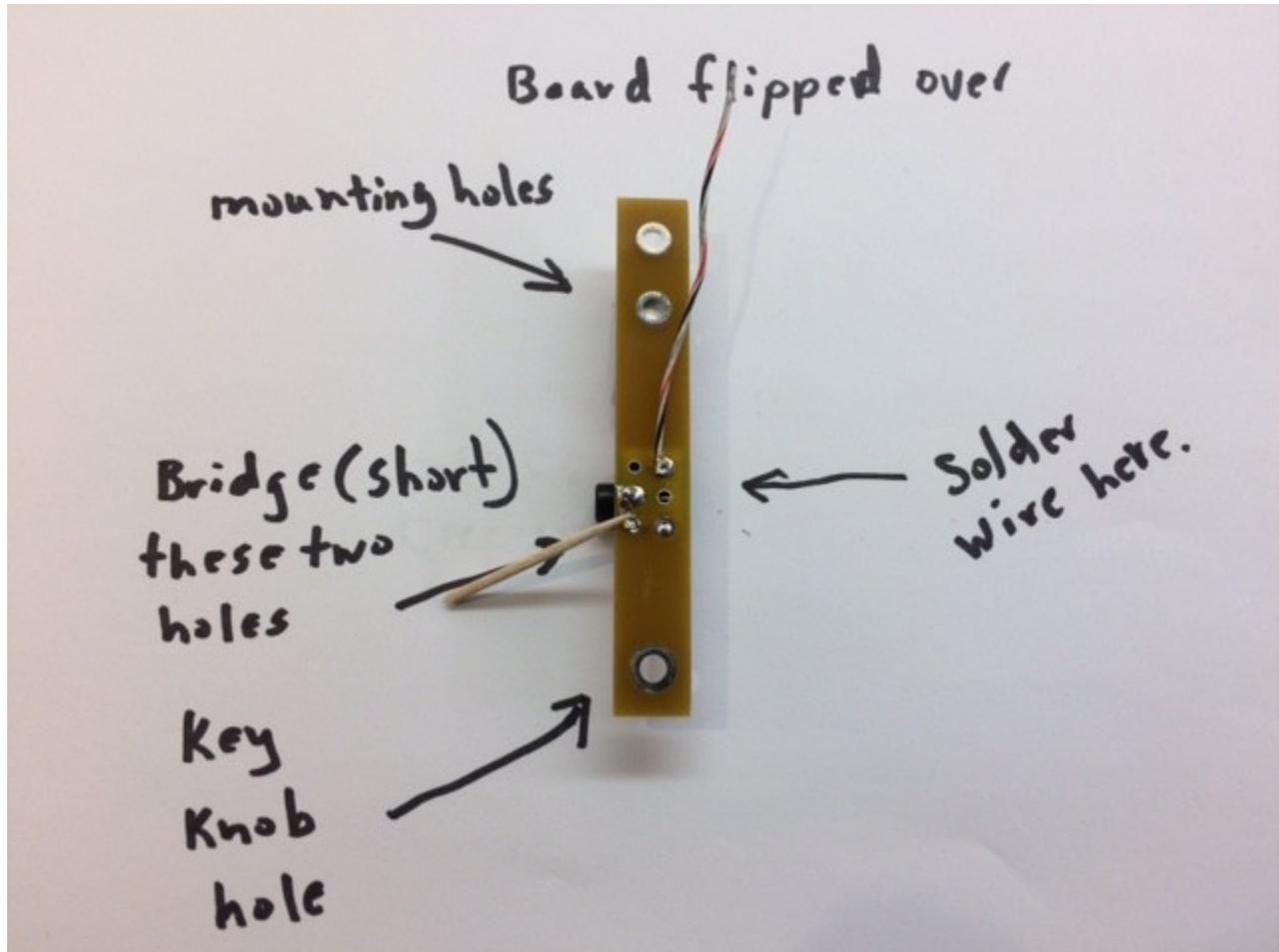


Photo 5: Modifications to the underside of Keying Adaptor Board

Step Four – Using an ohmmeter, verify continuity between the mounting holes and knob hole. Also verify that the insulated wire is isolated from the mounting/knob holes.

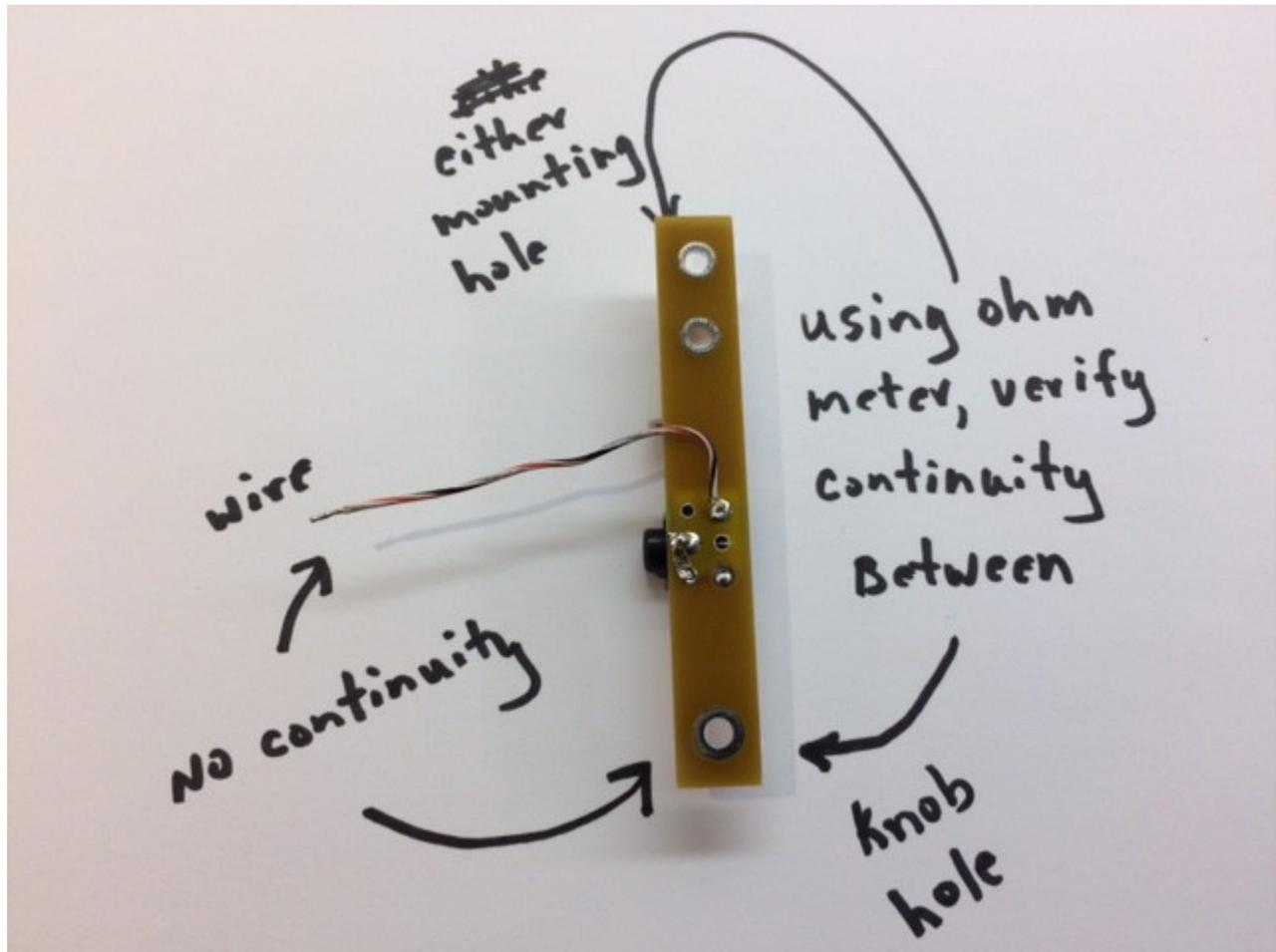


Photo 6: Verifying continuity.

Step Five – Fold the insulated wire as shown and solder the free end of the insulated wire to the back corner of the large pad at the front (right) of the main Cricket 30 board.

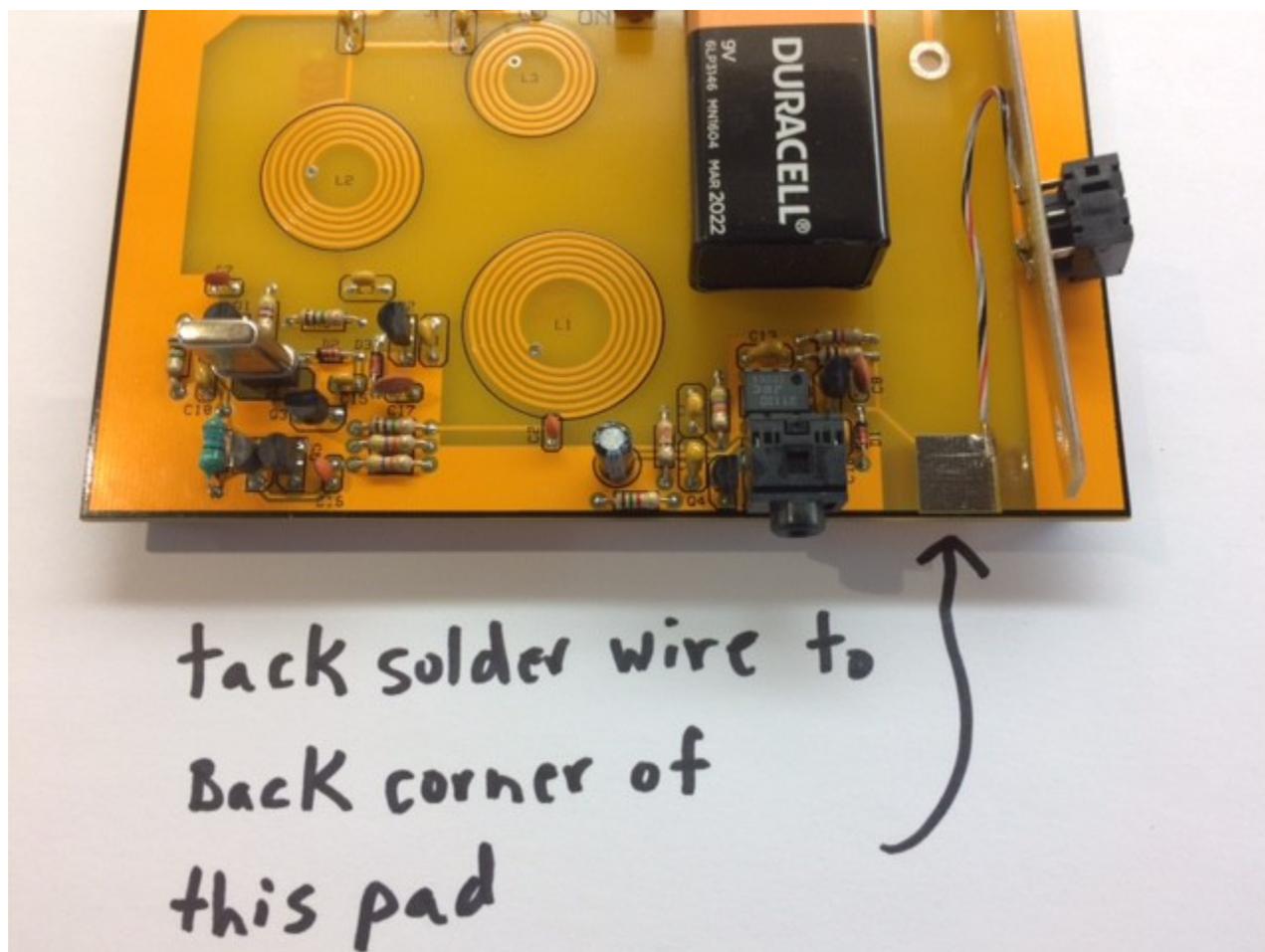
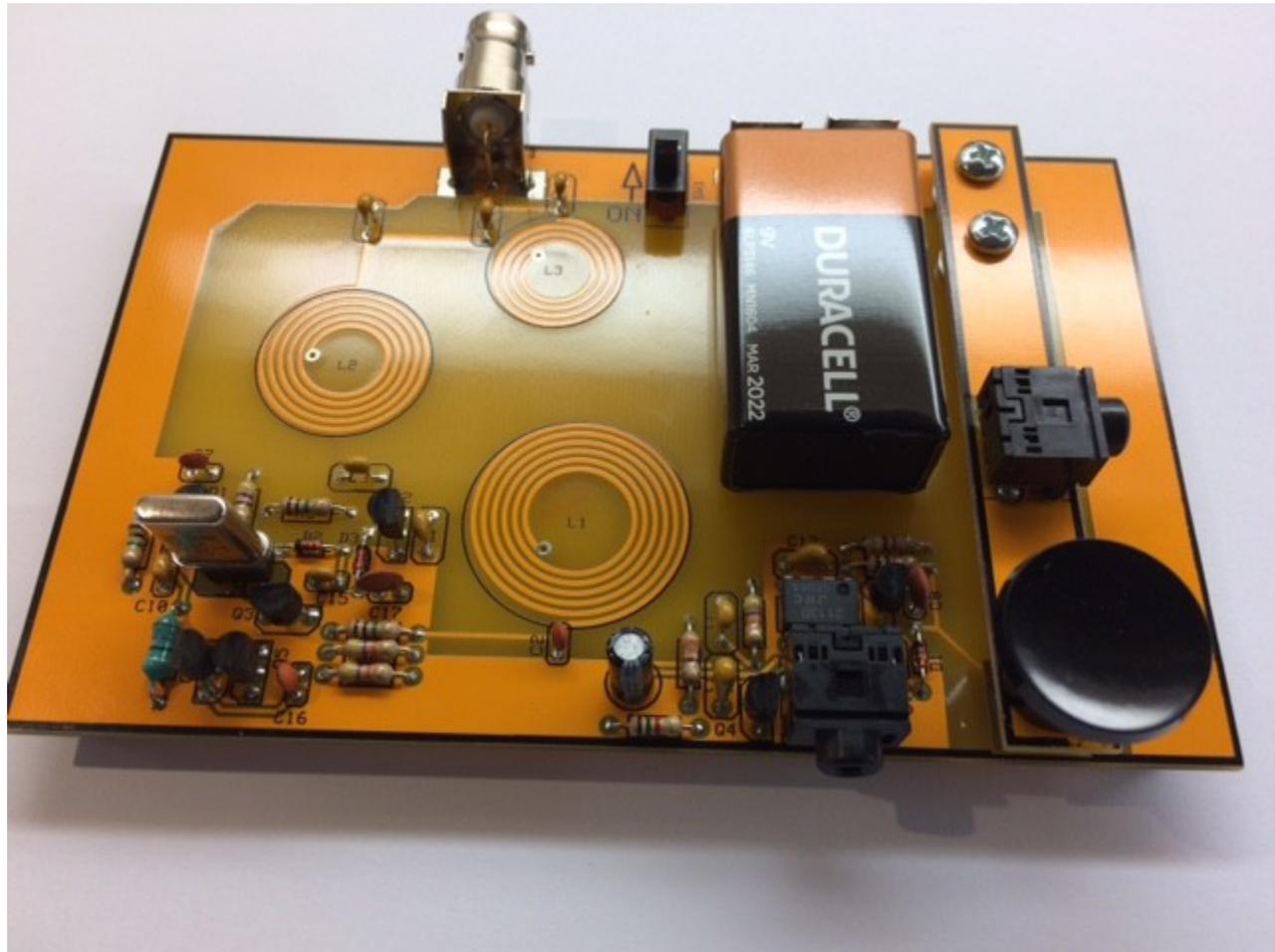


Photo 7: Connecting wire (jack tip) to keying circuit.

Step Six – Install the knob on the *keying adaptor* board. Do not use the washers under the screw head. Use Cricket 30 manual instructions to install the *keying adaptor* board as you would the *key strip* board, using the screws, spacers and nuts.



You are done !

You now have a built-in straight key as with the *key strip*, but you also have the flexibility of attaching an external key/keyer. The jack is now wired in parallel with the built-in key, via the 1/8 inch stereo jack, using the tip and ground connections.

Note that it is possible to coarsely adjust the gap of the built-in key as follows. Adding washers under the spacers on the mounting screws for the *keying adaptor* board will increase the size of the key gap. Adding a washer under the head of the screw holding the knob will decrease the gap. You can experiment with your own washers of various thickness until you find a spacing that you are happy with.

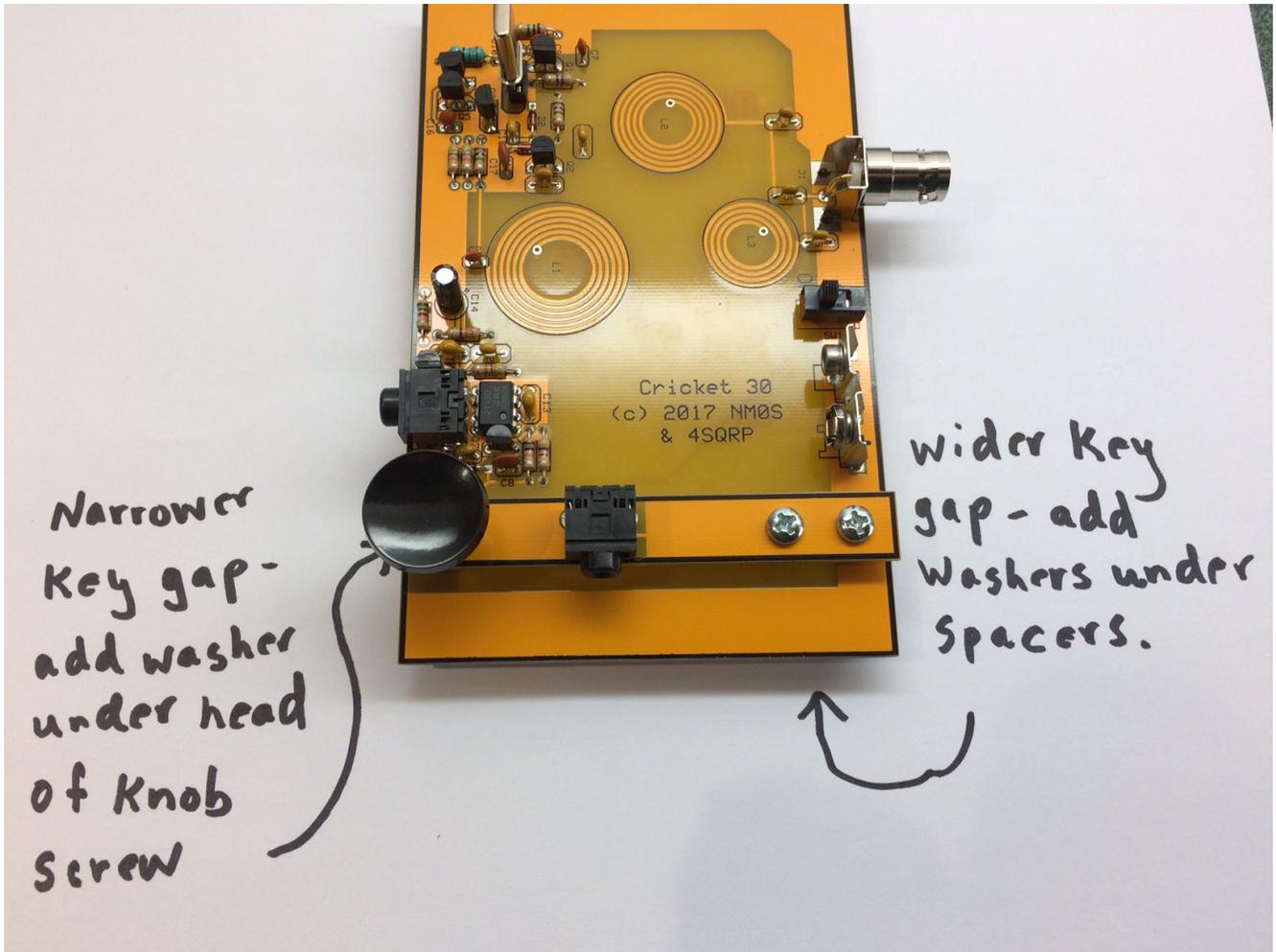


Photo 8: Key Gap Adjustments

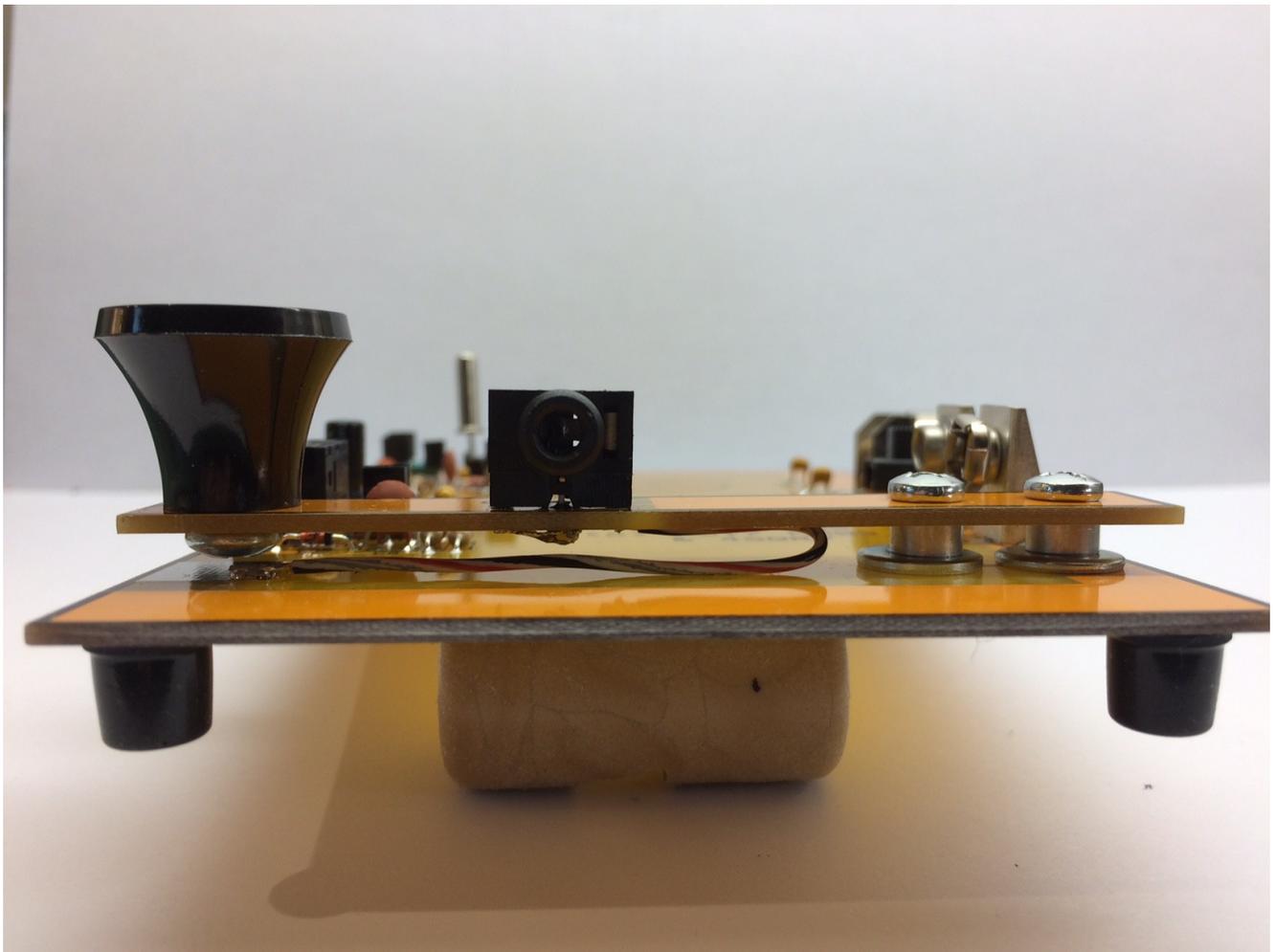


Photo 9: Side view of installed mod, including washers inserted under the spacers for a bigger gap.

73 de VE3WMB