Adding a screen to TJ2A for better performance

TJ2A is a small rig and the PCB space is limited. VC2 is placed very close to the band switching relay RL1. In USB and CW modes, VC2 introduces some BFO energy to RL1, routing to the LO output port, causing some interference to the mixer and affecting the AGC function of U1. It is suggested to place a screen between RL1 and VC1 so that they would not see each other.

Cut a piece of metal strip measuring 28 × 10mm (this could be obtained from the canned food casing). Place it between RL1 and VC2. Do not place the metal strip too close against RL1 or VC1. Place it along the copper line beside RL1 (i.e., to leave some clearance from either RL1 or VC1) and solder (see picture below). You have to remove a little green pain from the PCB and tin before soldering the screen.

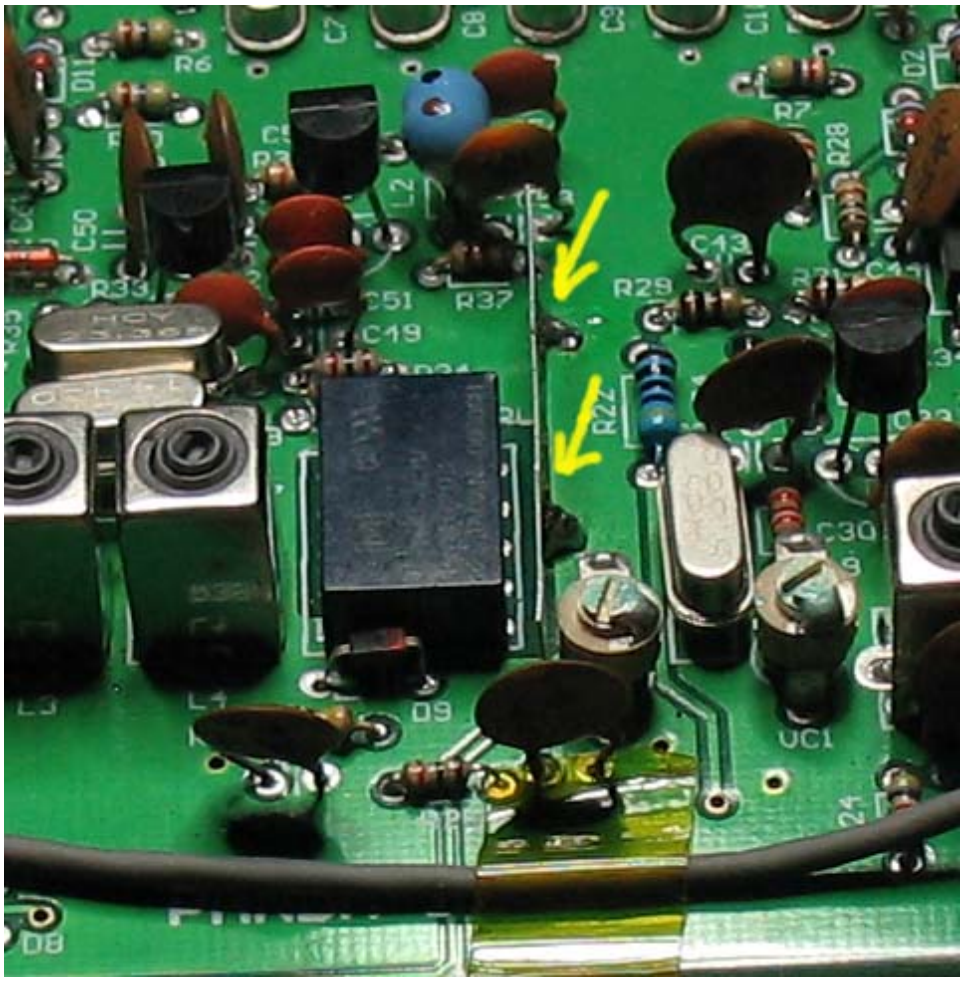

Fig. 1 Place a wall so that VC2 would not see RL1.

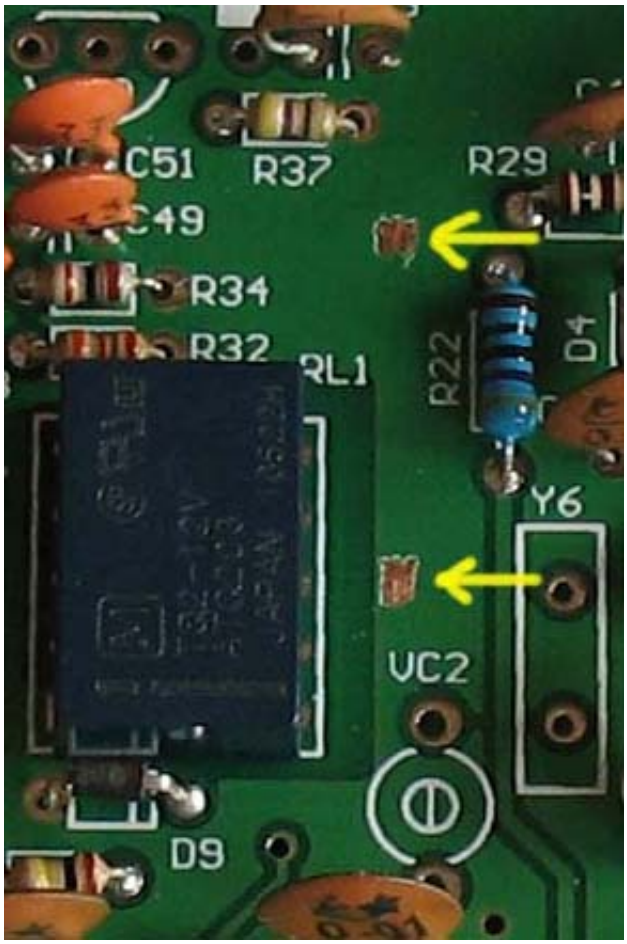

Fig. 2 Remove a little green paint from the PCB in suitable position as indicated, and tin the two points.

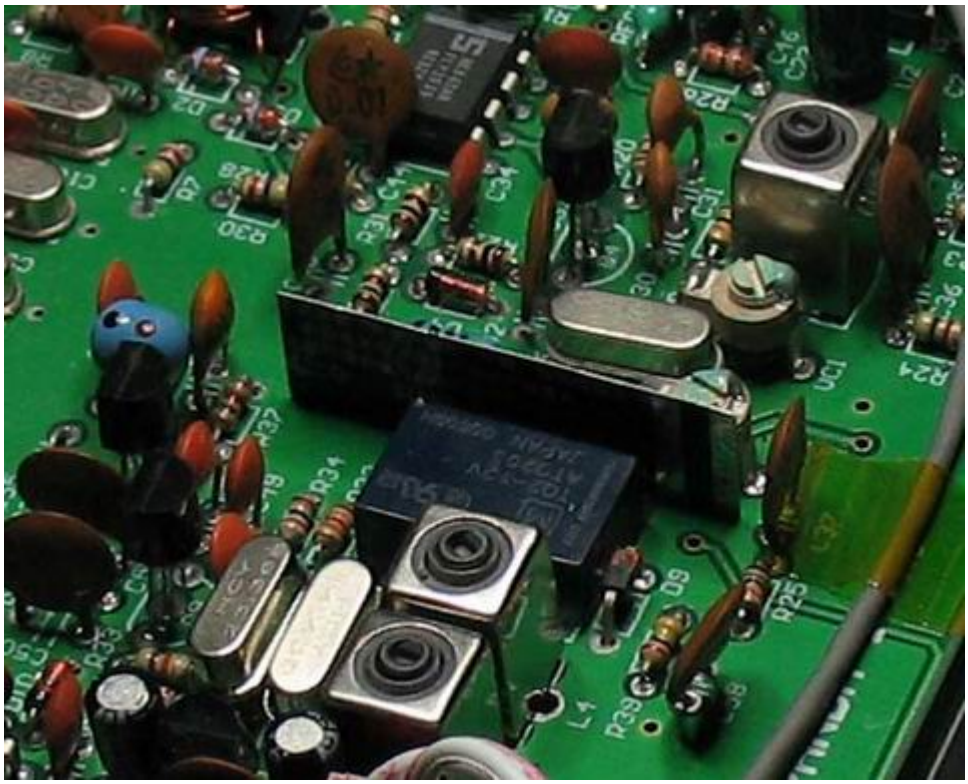

Fig. 3 Place the metal strip in such a place as to separate VC2 from RL1.

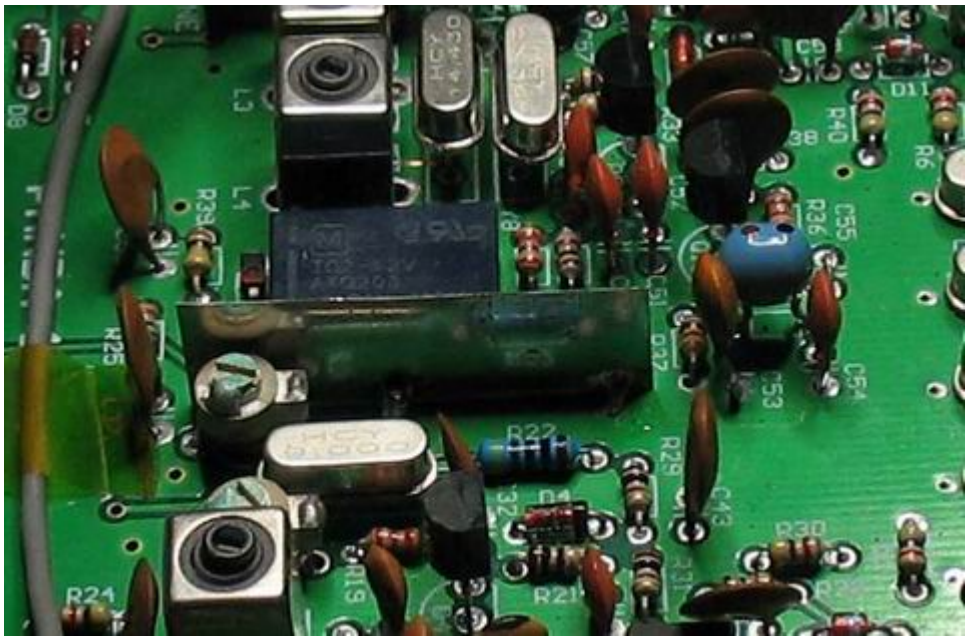

Fig.4 With the screen, BFO energy would not get into RL1 to affect the mixer and U1's AGC function.

The above mentioned screen has solved the BFO leakage. However, a more luxurious screen could be placed. See Figures 5 – 7.

Fig.5 If a larger piece of tin strip is at hand, more perfect screen could be made, shielding RL1.

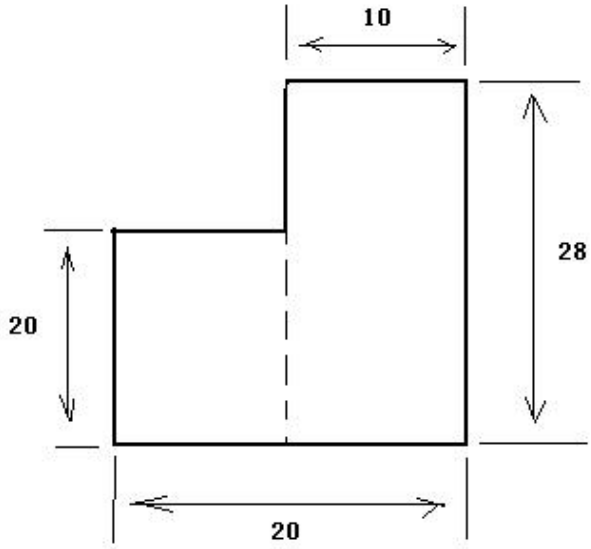

Fig.6 Cut the metal strip into shape. Bent along the dotted line.

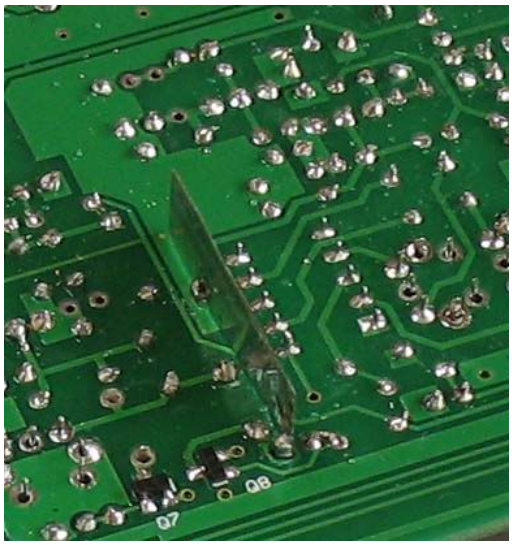

Fig.7 Even underside shield (6 × 25 mm) could be placed, with the end soldered on GND pad of C37. Leave a clearance of 0.5 mm, to prevent it from short-circuiting the track.