

QRP

Here is the Ozark 17m QRP TxRx-cw SMD Kit.

Description: 18.090 to 18.100 MHz cw and superhet receiver. Separate TX and Rx on board so a RIT is not needed. Sidetone is heard through RX on Transmit, just line up sidetone to frequency of station to be called. Power out at 12v is 1w, 13.8v it is 1.5 watts. Low noise front-end on Hi IP mixer. Kit is 98% surface mount using 1206 and 805 parts, two IC's.

MOD's

Those that have built the Ozark 17m Kit noticed that I would suggest improving the rig by modifications that are simple but done after the boards were produced. Only one item was noticed on the rig that needed some help and that was the frequency coverage to go lower in the band. Not much activity on QRP- 18.096 MHz! Most activity is around .075 to .085. To cover this area the inductor that is used with the 18 MHz TX crystal should be replaced with a hand wound with #26 on a T-50 Blue Core. About 26 to 28 turns, depending how low you want to go, but 26t will get you to .080. I wanted to go lower and stay close to .096 so I also added a MV209 varactor in place of the two diodes. Now coverage with 27turns is 18.073 to 18.095 at 12v.

On RX it is easier to add a 4.7 to 5.6 uH in series to the 20uH in the RX LO of 12.096 MHz. I did place an extra pad on the board to place another inductor, notice it is next to the 20uH inductor. You can also try different values here to get even greater coverage. Two 12 uH worked fine. I also added a MV209 varactor in place of the two diodes, Coverage 18.073 to 18.096.

The only other things I added was another SMD 2n2222 in parallel with the output PA for a solid 1.5 watts at 12v. I designed the output filter for 50 ohms and this falls well in the range, output harmonics are still -50 dB down.

I also cut back the gain a bit on RX and added some more resistance to the PAD from the MMIC to the DBM. 6 to 10 dB works nice.

I have two working 40m and 80m rigs using the same board, but will not kit any at this time. The 40m rig uses 4 MHz IF and works well on RX, the 80m RX uses 6.56 MHz IF and the 10.116 MHz crystal from NorCal for the LO. Both rigs needed more Output Filtering to stay better than -43 dB on TX spurs. More info soon.