

CRKITS.COM D4D DSB Transceiver Kit : One-Page Quick Guide Rev. B – June 2, 2019

Thank you for purchasing our kit. We are available for consultation by email at rongxh@gmail.com and at the group <https://groups.io/g/crkits> . You are also welcome to write review at <https://www.eham.net/reviews/addreview/14267> .

This quick guide is not a full manual; it only highlights the key points you need to take care during the building of this kit. A step-by-step manual with lots of photos will be available for downloading at <https://groups.io/g/crkits/files/D4D%20Kit%20Documentations> after you joining the group.

Notes for parts inventory: A complete part list will be available for downloading at the above link as well. Before you start soldering, please make sure you have all the parts ready. Please note C25 (10uF electro) and C26 (10uF electro NP) are very identical, but you can see NP marking on C26. Please also note that 2N3906 and 2N3904 markings are very small and identical so use magnifying glass if necessary. Report missing parts to your seller.

Notes for parts soldering and assembly:

- Follow the full manual to solder the parts in several steps. Test at the end of each step to make sure you are good to proceed. The parts are all through hole, and the clearance is big enough so you don't have to worry about the sequence of soldering.
- R20* is the heater for the crystal. One pin connects to the 12V receive power supply and the other pin connects to GND. You will need to put the resistor on top of the crystal X2. The pin for GND will be also soldered to the crystal case to help ground the case and better heat coupling. **Note that you must not short the pin for 12V to the crystal case!**
- T1 transformer is not difficult if you have built KN-Q7A kit before. Use 20cm red and golden enameled wires to twist 5 twists per inch. Wind 8 turns on the black toroid, scratch the coating of the wire ends, and pick red wire on one end and golden wire on another end to connect them to make the middle tap by twisting them together. The middle tap will be soldered in the center bigger pad on the PCB. To verify you have winded the transformer right, you can measure any two ends of the total 3 ends and they must be conductive.
- Before you wind L1, L2 and L3 coils, please check part list to cut correct length of the wire. If you leave the wire too long, you may run out of wire in the end. The L1 was originally designed for a fixed inductor, but later changed to a toroidal coil.
- Bend the LED pins to protrude about 2/3 length of the main body out of the board edge. The long pin is A and short pin is K.
- Put the Audio IN, Audio OUT, DC IN and ANT connectors in place and solder. If they are floating, you may have difficulty to put on the panels.
- Q4 soldering is the key. Plug in Q4 into the board and make sure it is facing the board center. Put a thermal pad (insulator) in between Q4 and the rear panel. Use the bigger screw and nut to temporarily fix them (no more insulator required for screw as TO-126 transistor has insulation in the hole). Temporarily put on nuts for ANT connector. Align the DC IN connector hole, and turn over the board to make sure the board edge is in parallel with the rear panel edge, then solder. After soldering, fix the nuts tightly.
- **IMD improvement modification is highly recommended.** You can modify it while building. The impacted parts are R13, C5 and C6. You will add 27 ohm, 103 and 1uF cap.

Notes for alignment: You don't need to adjust any part. Use a 12V 1A or higher power supply and a 5-watt or bigger 50 ohm dummy load or a resonating antenna to perform current measurements. The overall RX current is around 23mA if R20* is connected, and TX current is 200-350mA if you inject audio above 600mV into AUDIO IN connector to trigger VOX to TX (You can use WSJT-x or JTDX Tune button and push Pwr bar to max and system volume to max as well) . Check FAQ portion of the full manual to judge if the behavior is as designed.