

Assembling.

pa0nhc ARDFrx80-7 20140914 / 20171215

To prevent "hand effect", a sheet aluminum foil 15cm x 4cm must be glued in the bottom of the ABS box, under de location of the PCB. It will be connect to the PCB's bottom copper mass via the PCBs M3 screws. Two or three nuts on top of each other on each M3 screw serve as spacer between the PCB and the ALU screen.

Pacing parts.

Prevent damage to active components : Solder active components (diodes, tranistors, ICs) as last of all.

1. FIRST place all low profile *passive* components on the top copper (trimmer-capacitors, resistors, small capacitors, and the link) and solder them.

2. Then place all remaining bigger passive components on the top copper (elcos, chokes, coils, crystals) and solder them.

Quickly solder the metal can of the 10.7 MHz xtal near R14 to the top mass plane.

Before soldering any active components, prevent static damage as follows :

3. **Connect the mass of the soldering iron, and your body, to the PCB mass planes via a souple piece of wire.**

4. Solder FA3 and FA5 temporarily to FA4.

5. Solder "Tunepot-mid" temporarily to "Tunepot-min".

6. Solder "Gainpot-mid" temporarily to "Gainpot-min".

REM : for Fets 101 / 102 / 103 / 5 : observe pinning.

For FETs 101,102.103 and 5 each a BF256B is used as they are available at Conrad. Their pins must be bend to change the pinning order from GSD to SGD of the PCB. **See photo ==>>**

For FET102 and FET103 find two pieces with equal I_{dss} to keep best balance.

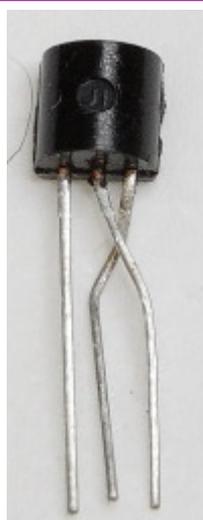
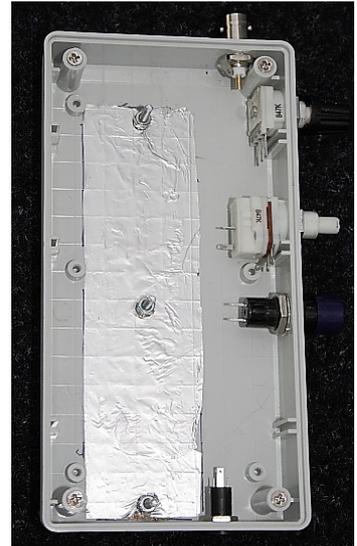
REM: do not use an IC socket for IC1, but solder IC1 directly into the PCB.

7. Insert from the top copper D1, 2, 3, 4, Fet5, 101, 102, 103, T1, VR1, IC1, IC2 and solder them.

8. Then place and solder at the bottom copper the SMD varicaps (CD1, 101,102) and Fets 1 and 4 .

REM: Check that the SMD components are positioned with their legs bend TOWARDS the PCB surface.

- The broad leg of Fets 1/4 is source, it should make contact with the PCBs mass connection.
- CD1 : marking is cathode. The other side must be in contact with mass.
- At CD101 / 102, the mid leg is cathode. The other two are anode.



Back view of adapted BF256b



Correct position of adapted BF256b (left) in PCB 20140909-15

9. Check if all components are placed.

Using a magnification glass, check all soldering (!) and check for short circuits .



10. Connect all external components (Sa, Pb, Fa, Tune, Gain, Bat, Phone) with supple wires. REM: keep all wires away from the oscillator circuit environment, as a little movement could detune the receiver. After testing, fix the wires with some glue to hold them steady in place.

11. Then remove the temporary mass connections from FA3,5, Tune and Gain.

12. Goto **SETUP**.
