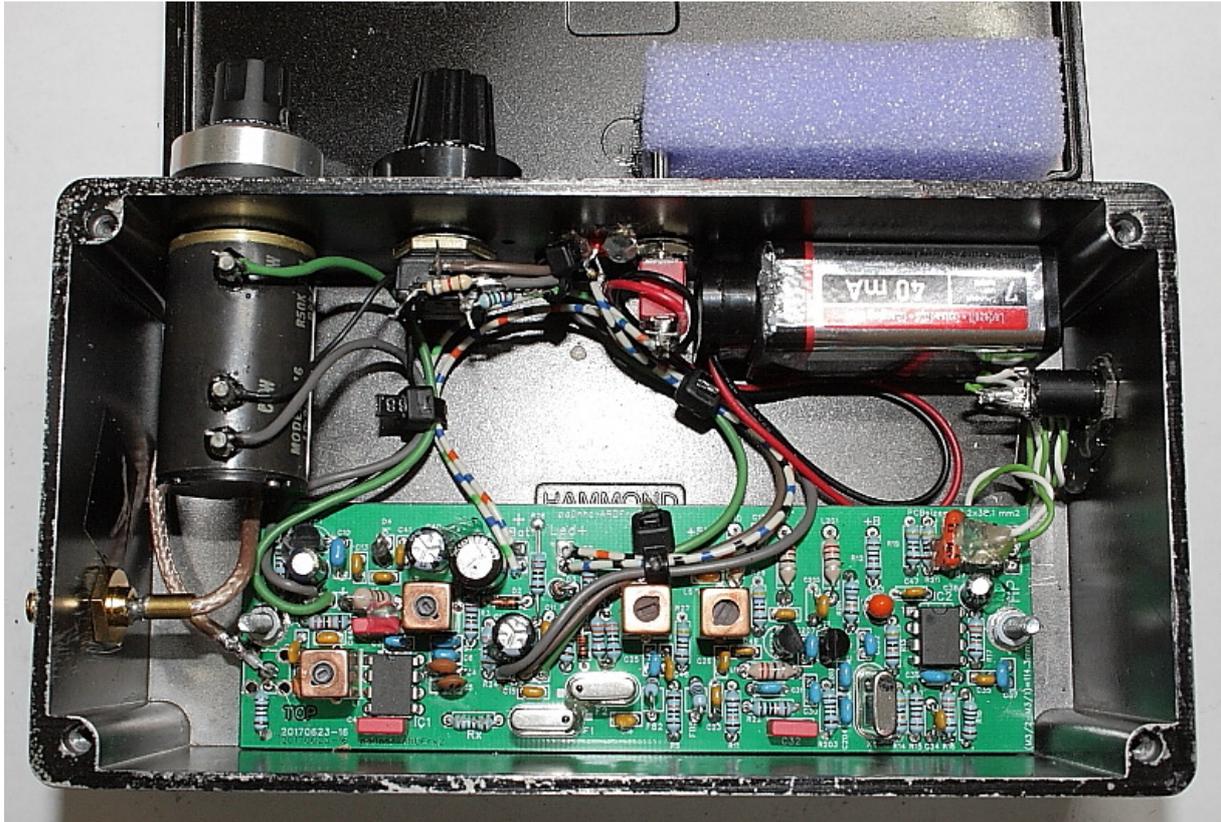


Pa0nhc ARDFrx2m PCB v16. 20171102 / 20171217
 Assembly.



I used a 10-turn Helipot tune potentiometer i had in stock.
 The component list mentions a cheaper and smaller Vishay type.
 Do use it with a 10-turn scale knob

Prevent problems. BEFORE placing and soldering :

- MEASURE the value of every resistor using a digital meter.
- CHECK the value of every capacitor from the text on it.

Warning :

The last digit in the value represents the number of ZEROS following the preceding number.

"100" could mean "10 followed by ZERO zeros" = 10pF and NOT 100pF.

"104" means "10 followed by FOUR zeros" = 10 0000 pF = 100,000 pF = 100 nF = 0.1 uF.
 See table ==>>

Rated Capacitance

Code	Cap. (PF)	Code	Cap. (PF)
101	100PF	821	820 PF
121	120PF	102	1,000 PF
151	150PF	152	1,500 PF
181	180PF	222	2,200 PF
221	220PF	332	3,300 PF
271	270PF	392	3,900 PF
331	330PF	472	4,700 PF
391	390PF	682	6,800 PF
471	470PF	822	8,200 PF
561	560PF	103	10,000 PF
681	680PF		

1. First solder all components having low height and seating flat onto the PCB without space. (resistors, small capacitors, connectors, headers, inductors).

2. Then place all remaining bigger parts (elco's, coil busses, crystal).
 Solder the crystal housing quickly to mass to prevent radiation and hum.
 REM: It could be necessary to place crystal Xt horizontally. **See "Suggestions for housing".**

Take the following anti-static measures, before soldering active components :

3. Temporarily solder on the PCB the TUNE potentiometer connection "Tune mid" to "Tune minimum".

4. Temporarily solder on the PCB the GAIN potentiometer connection "Gain mid" to "Gain minimum".

5. Connect yourselves, and the soldering iron to a mass connection on the PCB (screw hole h2)..

For FET5 an easy available Jfet BF256b with low value I_{dss} is used.

You have to change its pinning sequence to fit the PCB. See photo ==>

6. Do NOT use an IC socket for IC1. Solder IC1 directly into the PCB.

7. Place one of the following items at a time, on the top surface of the PCB, and solder it at the bottom side :

Solder the ICs starting with its ground pin..

D1, 2, 3, 4, Fet5, T1, IC1 en IC2

8. After that, solder onto the bottom side of the PCB :

– SMD varicap CD1, Fet1 en Fet4.

– See correct positions (schematic).

– **The broad leg of FETs 1 and 4 is source and is soldred to mass.** When soldered you should see the TOP side of them, and their legs bended downwards to the PCB.

– CD1 : the stripe is cathode.

The other side (anode) is soldered to mass.

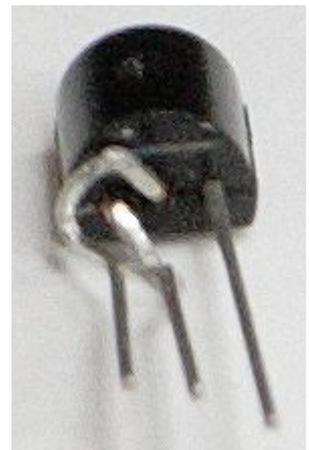
10. Check for short circuits, especially at the ground lugs of the coil cans of L1,2,3,6 ..

11. Now, first connect external wiring (Tune, Gain, Led, Hp).

12. Only then remove the temporary grounding connections at TUNE and GAIN.

13. See "SETUP" " for completing tests and adjustment of the whole receiver.

12. The PCB should be screwed on holes h1 and h2 into a screening (metal) housing, with each two or three M3 nuts as spacers between housing and PCB bottom.



A from GSD to SGD
modified BF256B
(seen from the back)

