

This modification is for the Quansaheng UV5-K and (8)
It is for technical and educational purposes only.
As of 5/21/24 V2_D

*****This modification is intended to make your radio a Low-Band 10 meter radio only*****

This modification is for educational and informational purposes only.

WARNING: Any use of this modification to transmit outside your licensed band is a violation of
FCC rules 47 C.F.R part 95 and or 47 C.F.R part 97.

This modification, where allowed, allows the transmission of 10/11/12 meter
at a 3 to 4.5 watt RF output and lowers harmonic content to better than -68dBm.

10/11/12 Meter
Lets have some fun!

Link to the files we use:

Firmware:

[https://www.dropbox.com/scl/fi/ot82e4blfsyyk7rttcya9/27MHz_IJV3.14.zip?
rlkey=kljbtkgpicjlkvf3hwr4h0wdd&dl=0](https://www.dropbox.com/scl/fi/ot82e4blfsyyk7rttcya9/27MHz_IJV3.14.zip?rlkey=kljbtkgpicjlkvf3hwr4h0wdd&dl=0)

Manual:

https://www.dropbox.com/scl/fi/2cer713dzszrggxdhkpf9/Quansheng_UV-K5_-_Manual_Firmware_IJV_-_Eng-Vertical.pdf?rlkey=qugnkw7ygtlctr68zhg68bwsu&dl=0

For this modification, you will need:

Needle point solder tip / .020 mm solder / SMD tweezers / Microscope or equivalent,
Bell wire .5mm OD (24AWG) / Spectrum analyzer / Watt Meter and 50Ohm load.

Things you will need:

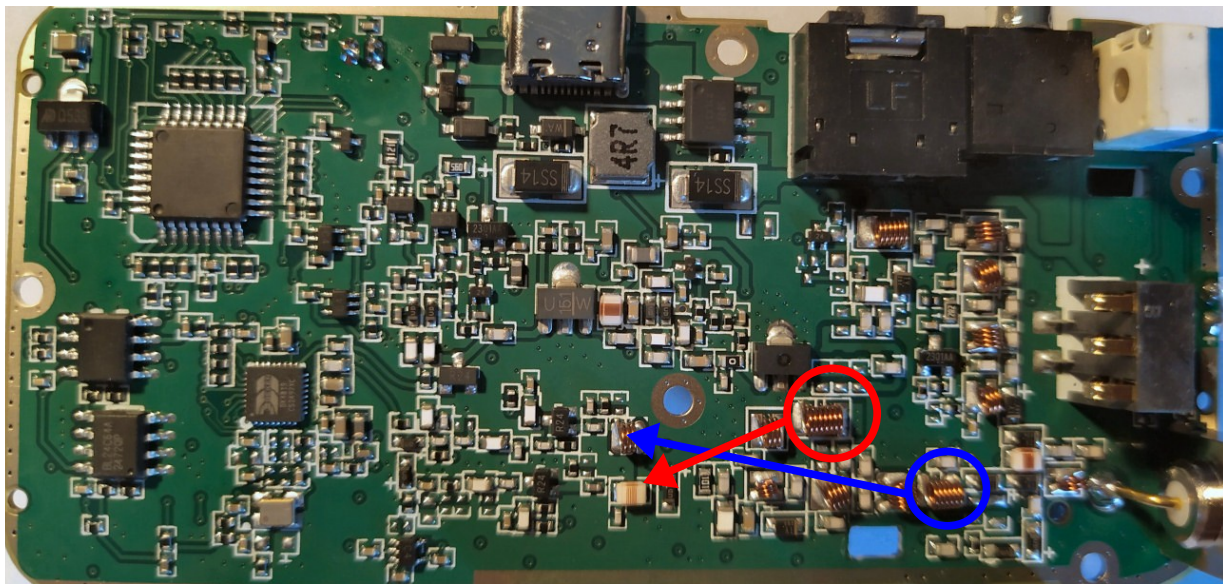
IJV 3.14 firmware. If you would like a copy of our settings and calibration, email me:
n5sim53@gmail.com

Qty	Value
1	220pF
2	47pF
2	1nf (<i>experiment 1 or 2 for best output</i>).
2	*100pF 0603
1	100pf 0805 for the inductor.
3	220pF 0603
2	1nf 0603
1	330pF 0603
1	22pF 0603
1	*10pF
2	470pF 0603
2	47pF 0603
1	*68pF
1	300nH inductor. 0402
1	1.5 to 1.7 uH power inductor. 0805

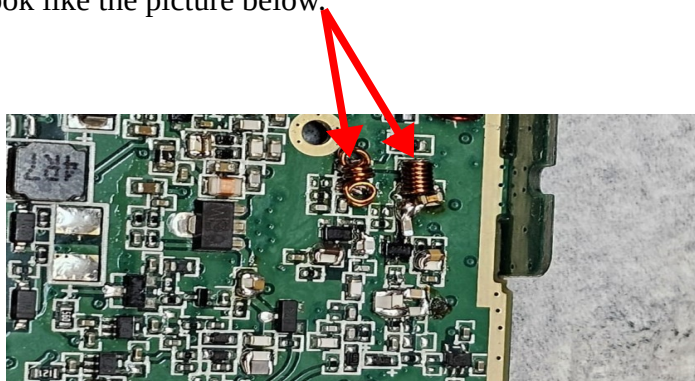
*You can find these parts on the PC board VHF section and
use them since they are no longer needed.

Receiver selectivity modification:

1. Remove each inductor shown and place it where the arrow points.
Using a plastic blade or tool, bend 2 turns down on each side of the 6 turn coil as pictured.

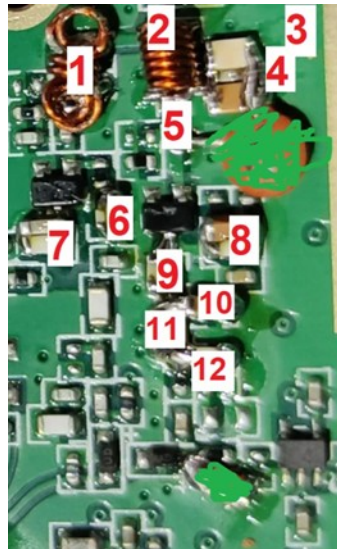


Now it should look like the picture below.



2. Add the capacitors across the originals as shown:

UPDATE: leave 5 as original.



1 = 6 Turns, 2 turns at each end bent.

2 = 7 Turn

3 = 300nH

4 = 220pF

5 = leave him original

6 = 35pF

7 = 10pF

8 = 220pF

9 = add a 470pf

10 = 220pF

11 = 47pF

12 = 68pF

Pre-drive and drive stages:

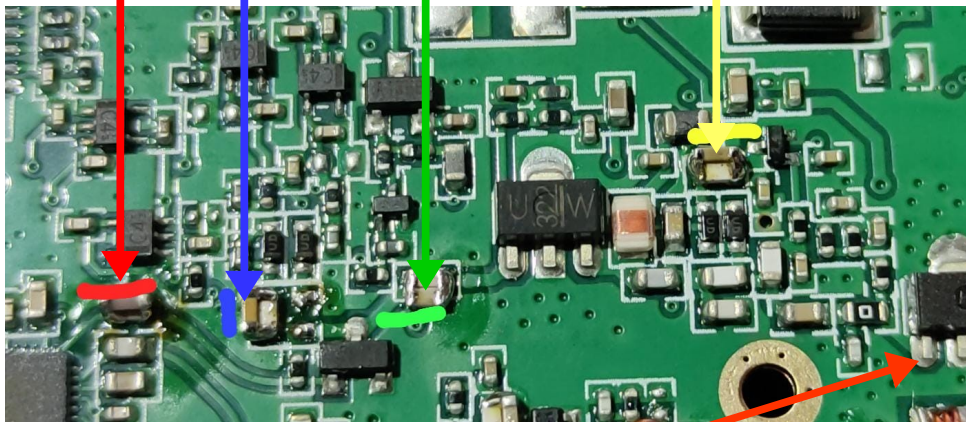
Place capacitors across the originals as follows:

Leave original

Blue = 330pf

Green = 470 pf

Yellow = 1nF

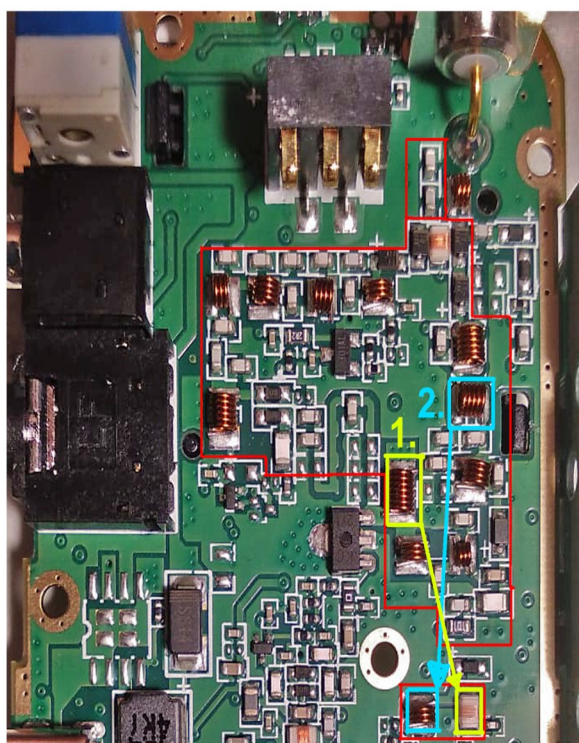


If done correctly, remove the inductor on the gate of the final and measure the drain on the final. You should be seeing nominally 18.0dBm this will give you 4.8 watt output.

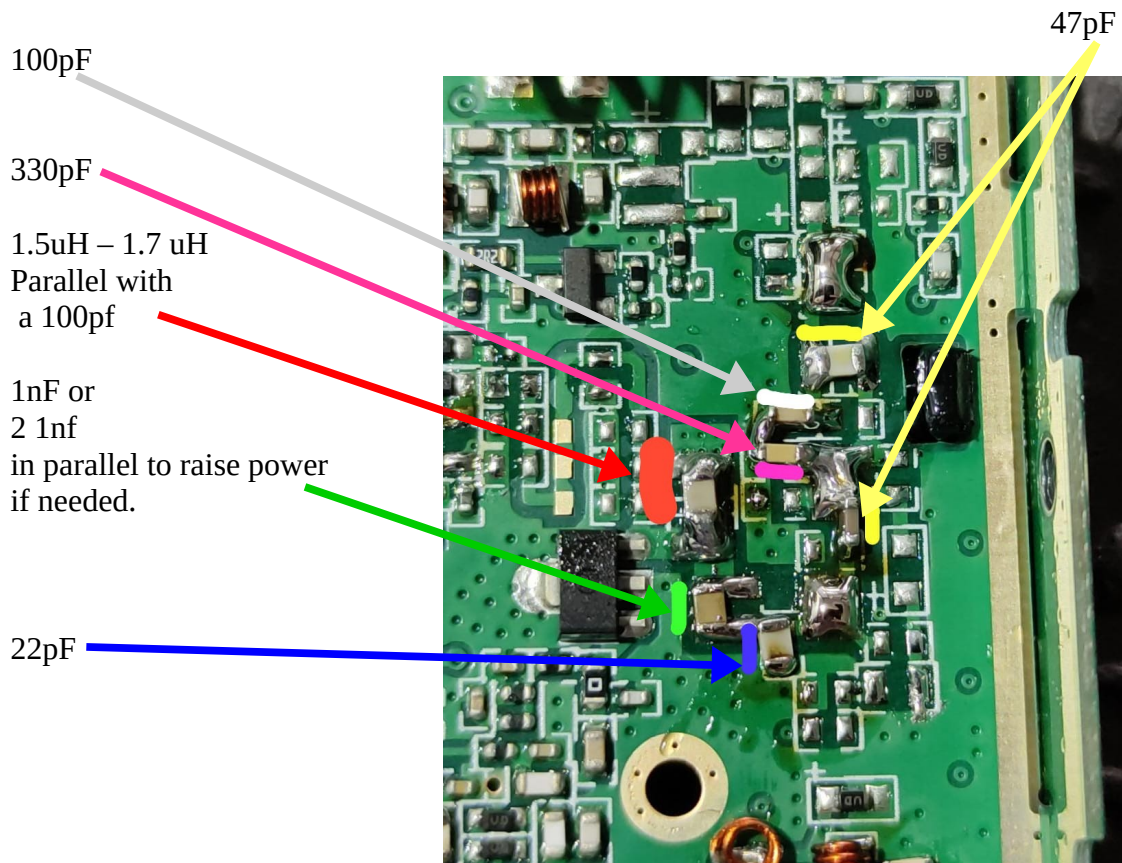


PA preparation.

1. Remove all parts inside the red, as seen in the picture.
Remember to swap the inductors 1&2 as shown.



2. Now, place the capacitors and inductor as follows:

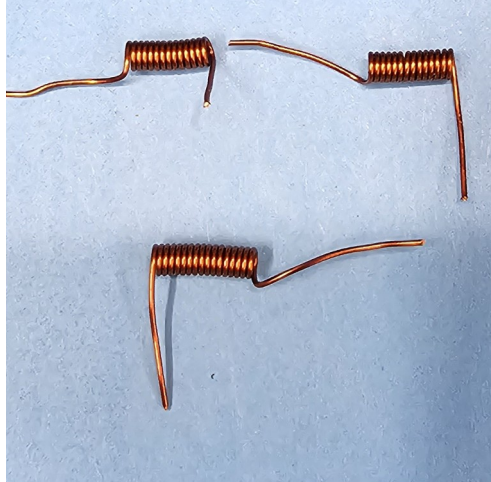


Low Pass Filter:

1. Hand wrap 3 Coils from 24Awg (.5mm od) bell wire around a 2mm shaft as follows:

2 coils @ 14 turns ea. CW leave 3mm at each end.

1 coil @ 17 turns. CCW. Leave 3mm at start end and 3 mm at the other end.



Guess what, your at the end run!

Good job so far, now take a break, check and recheck all your work. When your rested, lets move on!

Low-pass Filter:

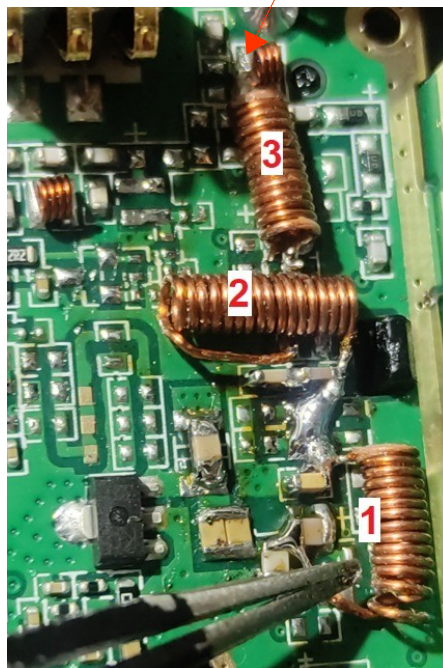
Place your coils as pictured:

1= 14 turns

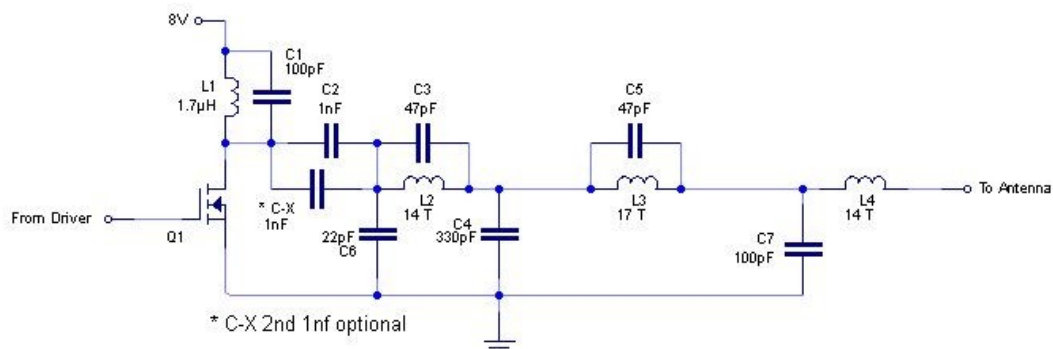
2=17 turns

3=14 turns

The antenna end of coil #3, is soldered on the left of the small 3 turn coil.



Here is a schematic representation of the LPF:



The END:

Check, check and double check your work, if it is correct, you will have a 4 watts out of the antenna port and Receive will be -110 dBm to -119 dBm @20db quieting.

The Harmonics will be at least -68dBm from the fundamental frequency. I have seen as low as -78dBm.

To adjust for maximum RF out, you may spread / tighten the coils ever so slightly.
If you see a small drop in Rf power out when you place the PCB back in the housing, this is normal.

It has been the teams pleasure to get this modification project to you, and we hope you enjoy it!

If you have some improvements or suggestions, please Email n5sim53@gmail.com

Thanks to:
PU4WLG
ZS6DJM
KE5KLY

73,
Toby D. N5SIM