

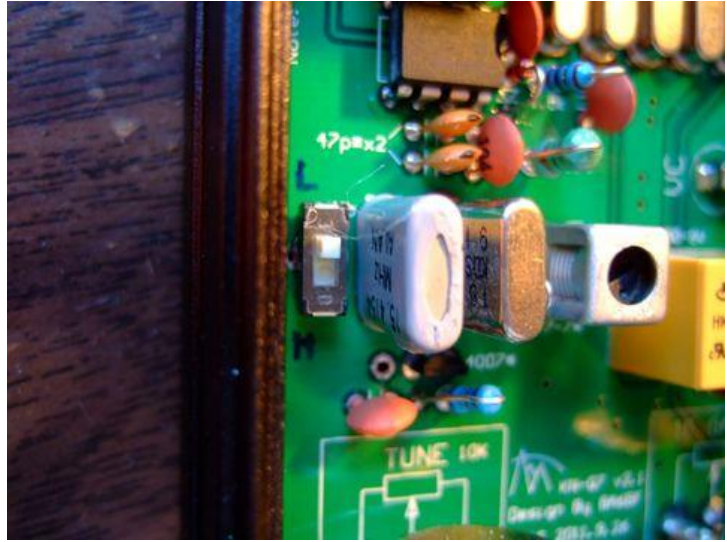
# KN-Q7A Application for Multiple Frequency Operation

By Larry Lovell (N7RGW)

Thanks for suggestions from: Edgardo Maffia (LU1AR) and Mark McNabb (N7EKU)

- 1) Original Modification recommended
- 2) Additional method of modification
- 3) Updated version for modification

## Original Modification recommended



By design, the KN-Q7A has limited tuning capability. In order to add additional band coverage in the 40 Meter band, you need to add an additional crystal.

You must choose crystals such that they use the same IF frequency. There are two IF frequency options available:

### IF Frequency 8.467 MHz

LO: 15.536 MHz

LO: 15.570 MHz

### IF Frequency 8.192 MHz

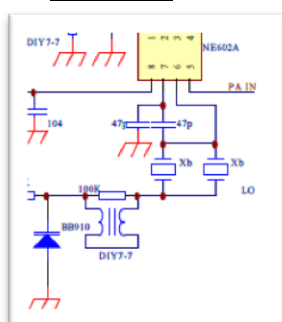
LO: 15.360 MHz

LO: 15.418 MHz

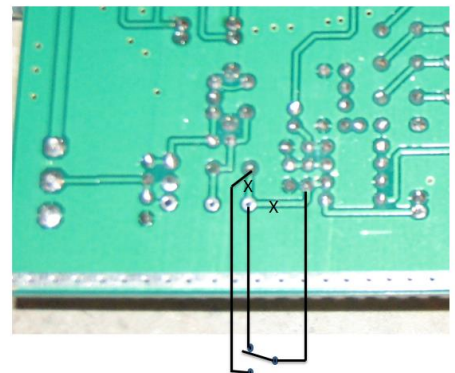
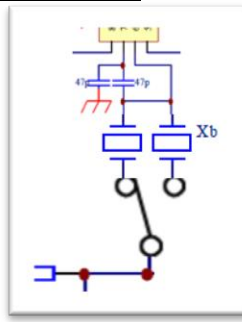
LO: 15.500 MHz

These are the options offered by Adam. The basic equation is  $\text{Transmit Frequency} = \text{LO frequency} - \text{IF frequency}$ . Therefore, if you purchased an IF of 8.467 MHz, you have two crystal options, one additional to what you purchased with your kit. If you purchased the 8.192 MHz, you have three crystal options. In the schematic, the IF crystals are referred to as  $X_a$  while the LO is referred to as  $X_b$ . Switch can be a relay if desired!

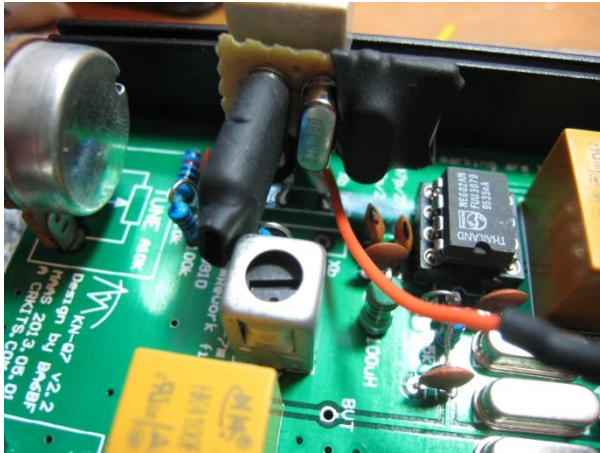
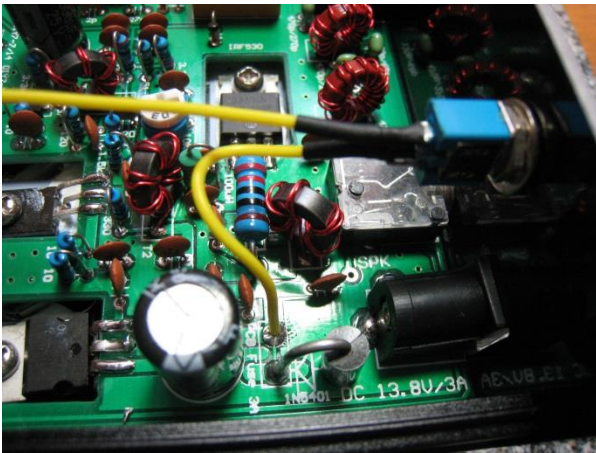
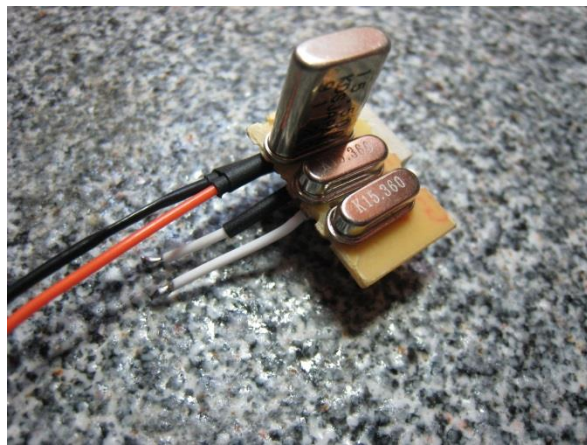
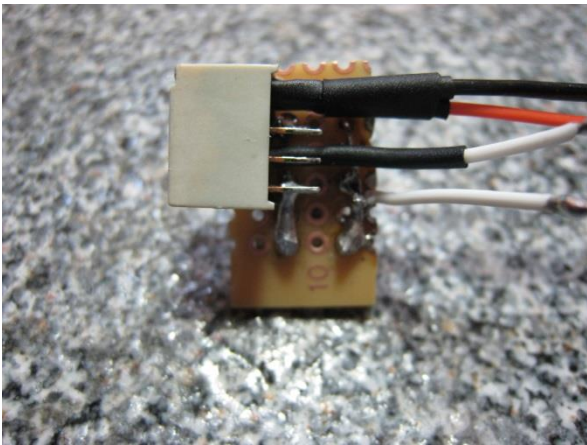
### Original



### Modified



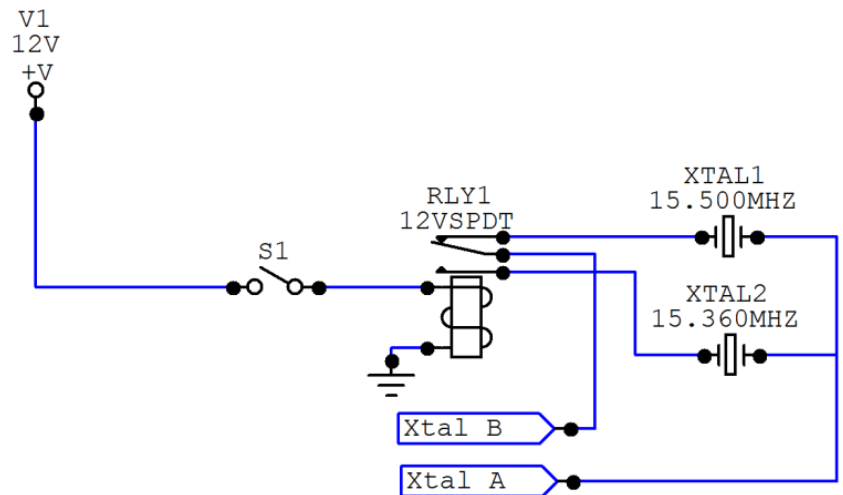
## Additional method of modification



Two crystal frequencies are selected.  
No cutting of PC Board Required  
A switch to control the relay is added to the rear of the unit.  
The relay switches in either the low or high crystal.

### Parts Needed:

- 1) SPST Switch
- 2) SPDT 12 volt relay
- 3) PC Board to hold crystals and relay
- 4) Wire
- 5) Heat Shrink tubing for insulation.





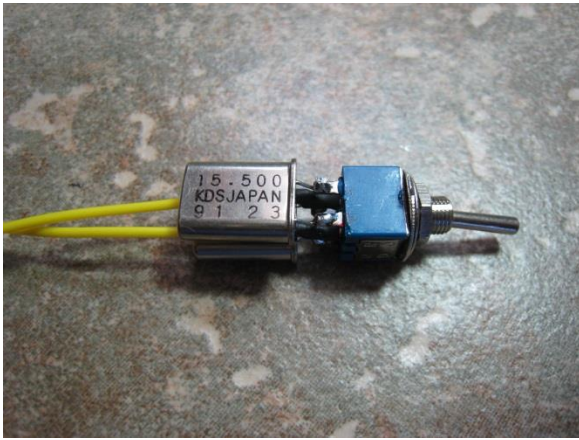
## Updated version for modification

Aug 23, 2013

The idea here is to only use a switch and two crystals.

Parts Needed:

- 1) DPDT Switch (miniature)
- 2) Two crystals
- 3) Two pieces of wire
- 4) Heat Shrink tubing for insulation.



Two Crystals soldered to switch



Second View



Internal mounting



External mounting (should have moved it to the right a bit)

Band coverage is now about 7.200 MHz to 7.300 MHz