



Technical Details & Assembly Note: Antenna Coil and Component placement guide

Overview:

Many young enthusiast who bought Crystal Radio Kit, were not able to wind coil and had questions on placement of components on PCB.

This document gives details, with pictures, as to how to wind & prepare an antenna coil and provides information on correct location/placement of other parts on PCB.

Antenna Coil Kit:

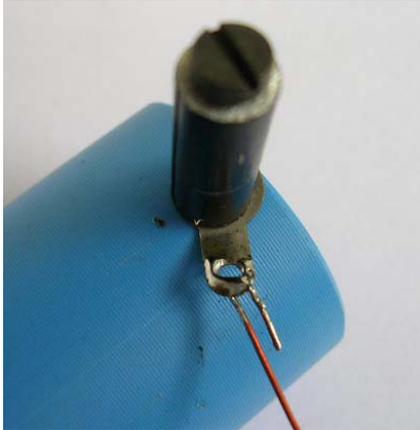


Coil kit consists of an enameled copper wire, few glass beads and a PVC pipe with aluminum stands, lugs and bolts.

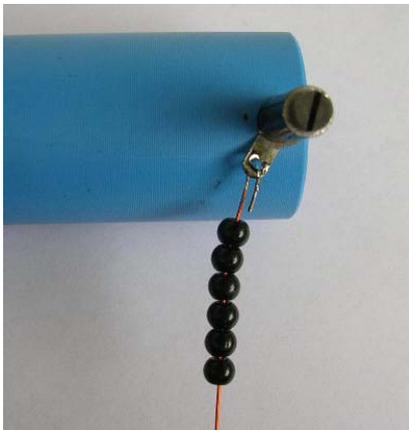
Coil Winding Procedure:

PVC Tube comes ready with two lugs and two aluminum posts pre-installed and has two bolts available for fixing this coil on to PCB.

The first step would be to open enameled copper wire in a straight line and lay it around house. This will avoid wrinkles when you start winding it.



Scrap the copper wire end using a sharp knife and solder it to the lug on one side of PVC coil former: Pass 6 beads as detailed below prior to this soldering.



Before doing above soldering to lug, pass the wire thru 6 glass beads provided in the kit. (Beads are used to elevate copper wire for easy soldering at every 20 turns)



Start winding coil as illustrated in picture at left.

At every 20 turns, leave one bead en-route to elevate copper wire for easy soldering of antenna or diode taps.

Keep winding tight



Antenna & Diode taps:

Antenna & Diode taps are required to be taken out with a short piece of wire (3 to 4 CM long)

Scrap the enameled wire near the bead & solder the tap wire as detailed in the picture.

You may take out 3 antenna taps and 3 diode taps, which will be soldered to the PCB at their appropriate locations.

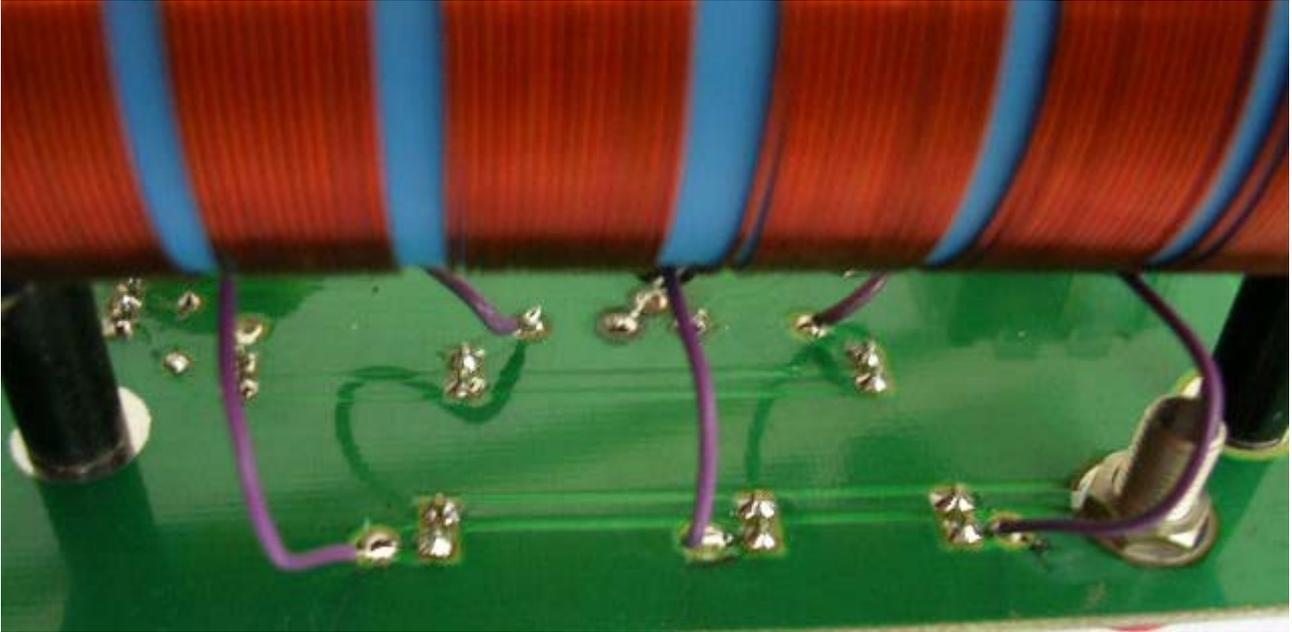
A completed coil would look like this



Completed coil with antenna & Diode Taps:



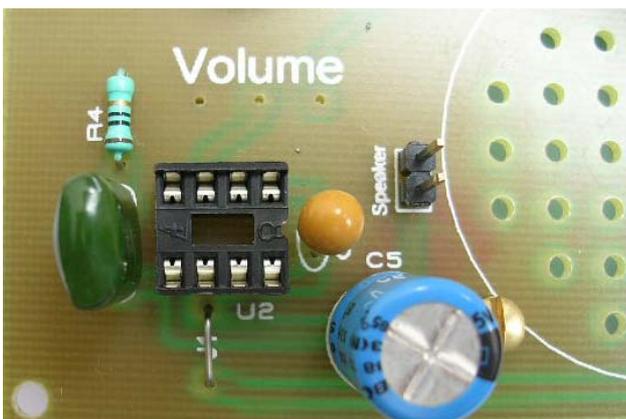
Fixing Antenna coil on PCB:



Solder 3 coil taps to “Antenna” solder pads and other 3 wires to “Diode” pads as indicated.

This completes the antenna coil winding & placement guidelines.

Component Identification & Placement Guide:



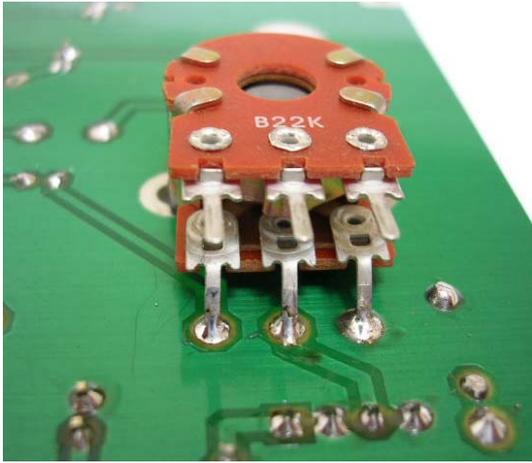
Picture of the LM386 IC and associated components.

Green capacitor is 0.1uf or 100nf.

Yellow is 10uf Tantalum. Observe polarity.

Blue is 470uf Electro. Observe polarity.

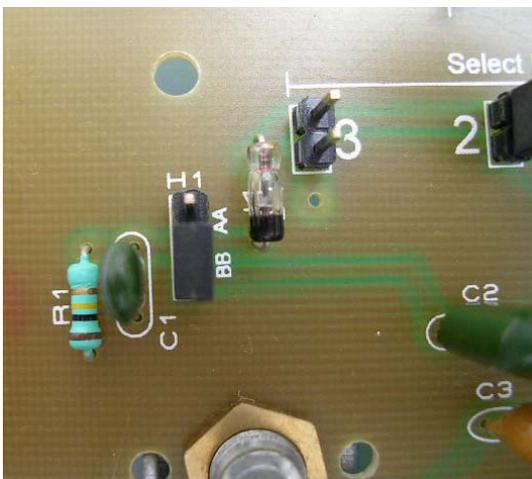
Bare wire at J1 is a jumper. It is used to short two pads of the PCB.



Volume Control is placed on PCB and tightened by a nut supplied with it.

Solder 3 terminals (Bottom line) directly to PCB by bending them.

Upper 3 terminals are not used.



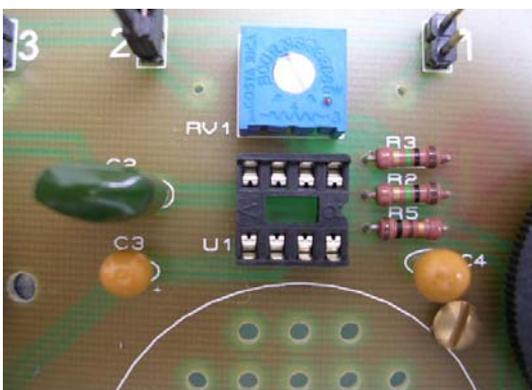
Header H1 Details:

Place a shunting pin provided with kit, at BB to get crystal output to IC amplifier.

Remove shunting pin (and do not install anywhere) if you want this radio to be a **Real Crystal Radio.**

You can connect a High impedance Earphone at AA (one point is ground & the other is Crystal Diode output)

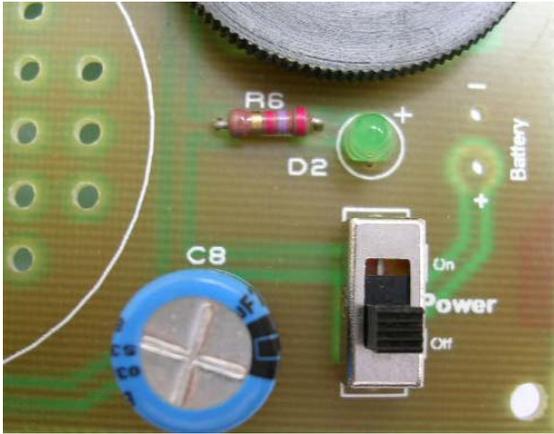
Dark Line on OA79 Germanium diode or a black band, indicates "K" or cathode



Picture of the Pre-Amp IC and associated components.

Fat big green on left is 100nf capacitor. Yellows are tantalum (Observe polarity)

Blue Square is RV1, which sets gain.

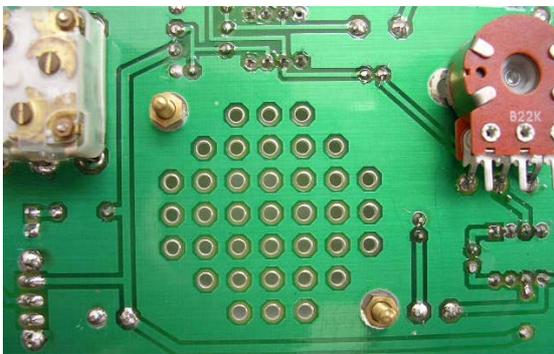


Right hand side of PCB:

Blue capacitor is 470uf electro. & Power on/off switch

LED (Green) with R6. + on LED is always anode, indicated physically by a longer lead length.

9V Battery connection terminals are on extreme right. Ensure that red goes to + and Black goes to -.



Speaker is mounted between two-brass nut & bolts provided with kit.

You may also use glue to paste speaker on the hole area visible in the picture at left.



Picture shows how a speaker may be fixed on the PCb by way of using support of two brass bolts.

You may also use rubber bends for this purpose.

Ensure that whatsoever you use, tie-up material must be "Insulated" and should not short circuit the two speaker connections!!

Now you have a completed Crystal Radio, ready to use & enjoy.

Good Luck & have fun.

**Regards
Nina Gajjar**

Visit project page at: <http://nina.foxdelta.com> for more details.