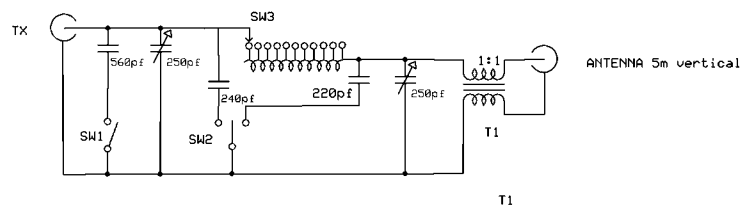
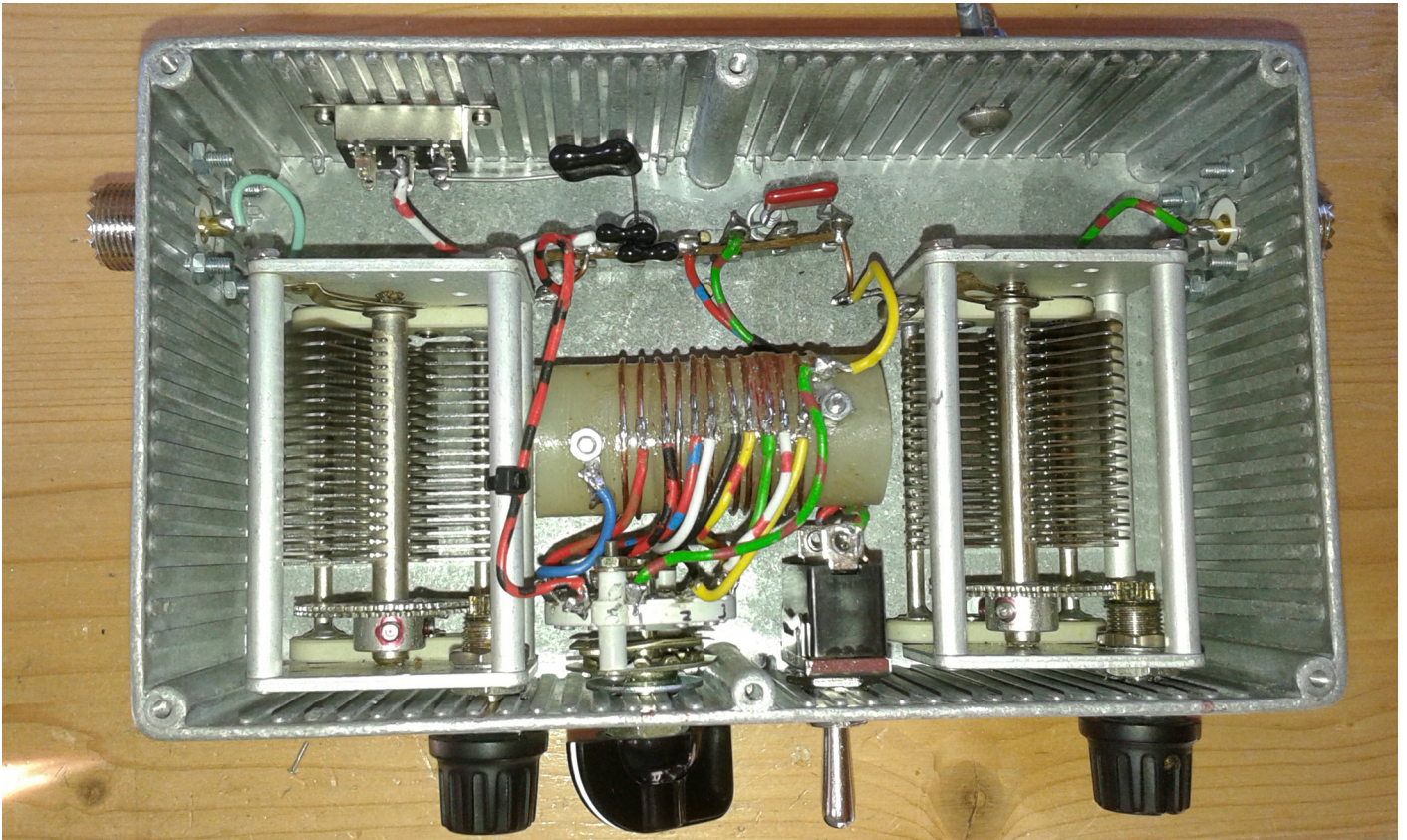


# G8GRL's Converted CB antenna for 40-6m

I was looking for a multi band antenna for the HF bands. Most antennas were over £200. So I decided to make my own with a budget of less than £100. Looking through EBay I saw CB base antennas at £30 just what I wanted. Three day later I had a 5,5m long aluminium CB antenna. Five metres would make it quarter wave on 20m. Next I looked at base of the antenna, which had a matching coil. The matching coil was remove and replaced with a single wire from the centre pin of PL259 to the antenna rod. Next I installed a 4ft earth rod and ran an earth wire to base of the antenna. SWR was high so need some type of matching device. Next I made Pi network ATU. This worked ok on 20 & 10m but not on any other bands. It also had a problem that if you touched the ATU the SWR changed. Next I constructed a 1:1 Balun and placed it between ATU and the Antenna. The ATU now worked as it should but still no 40 & 15m. So I played around with some fixed capacitors. With 220pf capacitor on antenna side of the ATU I was able to use the 15m band. Now for 40m I needed a 560pf capacitor on the TX side of the ATU. I also found that if I used 240pf on TX side I had a better match on 17 & 20m. The hard part was making multi tapped inductor and finding switches that would not break down with the 100 watts of power. The ATU is made up of 1 taped Inductor, 2 tuning Capacitors , 3 fixed Capacitors and 3 Switches. With changes of the values of the inductor and capacitors you may be able to make it work on lower frequencies. Efficiencies on these bands would be very low. I now have a multi band Antenna with good SWR on all of the band for under £100. It was hard work as I had no Antenna analyser to help. The only thing is it would have been easier to build in a larger Box.



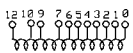
# Layout and Diagram



For use with converted CB base antenna

Coil is wound on 25mm former using 25sug wire

Taps are at 1-2-3-4-5-6-7-9-10-12 turns



Fixed capacitors are 350volt silver mica type

Switch 1 - 2 & 3 are 250V 3A type

T1 T130-2 Toroid with 10 bifilar turns

<b>G8GRL</b>	
<b>40m to 6m 100Watt A.T.U</b>	
Kim Edwards	Rev 1.0 01/10/2015