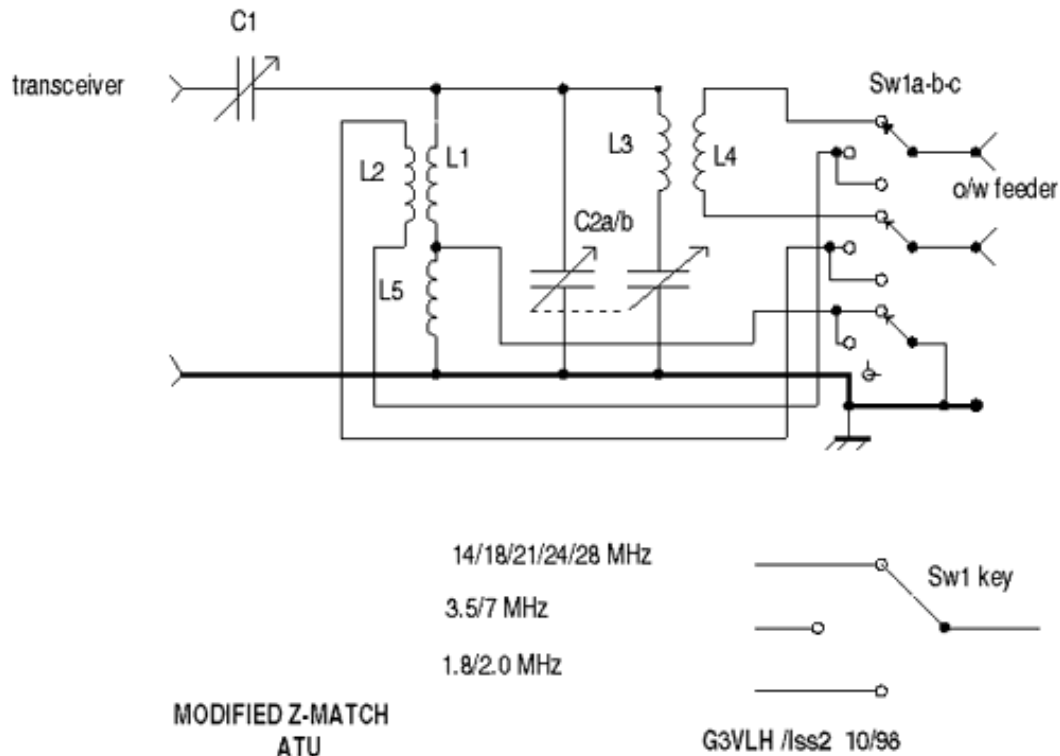


# NEWSLETTER ARCHIVES

## TOP BAND ON THE Z-MATCH ATU

John Longhurst G3VLH

The original Z Match ATU continues to provide interest and many users will testify to its effectiveness in matching balanced-feed multi-band antennas such as the G5RV. Recent coverage in Radcom's Technical Topics illustrates useful variations, but these in common with the original design, all suffer from a major disadvantage in not catering for 160 metres.



### Parts List

|                              |                               |
|------------------------------|-------------------------------|
| C1 350 pF air spaced         | L1/L2 5 turns tightly coupled |
| C2 500 pF two gang airspaced | L3/L4 8 & 6 turns             |
| Sw1 3 pole 3 position switch | L5 20 turns on 1" former      |

I use a 110 foot doublet fed with open-wire feeders on all bands 80m to 10m. Recent ambitions to work Top Band with this antenna and Z Match arrangement prompted an investigation of the circuit to see if this could be achieved without sacrificing coverage of the other bands, or degrading the coupling efficiency of the original design.

The resulting modifications meets these objectives, calling for an additional inductor of 20 turns on a 1 inch former, inserted at the ground end of the main 80/40m coil and selected or shorted out by a single pole, preferably ceramic, switch. Coupling to the antenna from the main 80/40 metre tank coil is via the overwound secondary winding. Using the minimum additional inductance necessary to tune to the LF end of 160m will ensure sufficiently tight coupling is maintained on Top Band.

If yours, like mine, is a home brew Z match it may already incorporate switching of the two outputs into the 300 ohm feeders in which case the most elegant means of incorporating the 160m modifications is to use a second wafer, thus avoiding the need for the additional switch position on the front panel. The modified Z Match saved the need for a separate 160m ATU and

all the switching and unplugging that would have entailed.

The basic design is well documented and appeared in numerous editions of the RSGB Radio Communications Handbook to which you are referred for details of the coil construction etc.

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