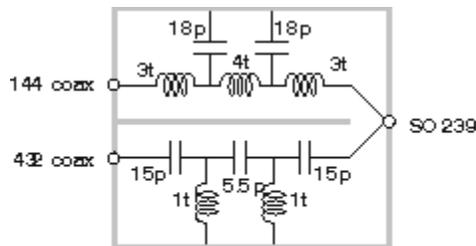


# 144/432MHz Homebrew Antenna Diplexers

Designed by John Stockley G8MNY



It consists of 2 paths of low & high pass filters, each path built on a wall of a double sided PCB BOX on opposite sides.

The UHF pass filter consists of 15pF 1 Turn to ground 5.5pF (2.2//3.3) and another 1 turn to ground, & finally a 15pF to the aerial socket at the end of the Box. The coils are about 5mm diameter in 0.5mm dia Wire (22SWG).

The VHF pass filter consists of 3 Turns with 18pF to ground, then 4 Turns and another 18 pF to ground, & finally a 3 Turns to the aerial socket.

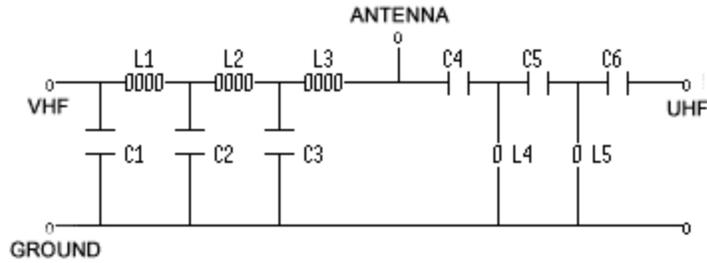
The box is 1" square soldered to the socket, & about 3-4" long. The component connections are soldered to knifed up 6mm square pads. The exact coil sizes needed are dependent on the real Cap values & box layout. So adjust the coil shapes (& size if needed) in the RF path for best SWR on each band.

The centre separator is soldered in after all SWR coil adjustments are made. Then re-tested, then a lid is soldered.

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Here is a design for a VHF/UHF Diplexer, this came originally from VKNET I don't know the bands, it is assumed from the inductors that the VHF is 2m and the UHF 70cms.

## VHF UHF DIPLEXER



- |          |  |
|----------|--|
| C1 10pF  | L1 4 Turns 5MM inside Dia 1 wire space 18 Gauge    |
| C2 18pF  | L2 As above  |
| C3 18pF  | L3 As above  |
| C4 10pF  | L4 1 1/2 Turn 3MM inside Dia 1 wire space 18 Gauge |
| C5 6.8pF | L5 As above  |
| C6 10pF  |  |

Capacitors disc ceramic or better if you can find them, leadless disc ceramics, or surface mount (SMD) ceramics. (Don't expect the solder ends to support the coils, they are not strong enough, use PCB to mount the caps and coils on). Use good RF practice keep all leads as short as possible.

One option is to make up a box out of PCB material about 2" square by 1" high. Solder all together to make up an RF tight box. This makes it easy to solder components to ground. Once constructed solder a lid on.

Connectors can be "N" or "UHF" or BNC.

