

# Mobile Antenna Multiplexer

Many amateurs' cars are beginning to resemble porcupines; what with broadcast receivers, HF, 10m FM, 4m, 2m and 70cm all in regular mobile use, there comes a point when the car just cannot take another antenna.

The magic box described here helps to cut the number of 'whips' down to a very reasonable number; in

low capacitance coax cable to the vehicle broadcast receiver. Provision for VHF/FM broadcast was considered but, with poor coverage of the UK by VHF/FM for cars, coupled with the very few car radios that have VHF/FM, the author decided to dispense with the facility. C1 and C5 are important in that they act as LF blocking capacitors — so that the

thus having a high impedance elsewhere. C6/L4/C7 are a conventional pi-network to match the antenna to the CB/10m transceiver.

## 2m

Similarly to the CB/10m circuitry, L1/C1 are series resonant, this time at 145MHz. C2/L2/C3 may be dispensed with if only FM operation on 2m is required; these components act to broaden the bandwidth of the antenna (on 2m) considerably, permitting operation with reasonable matching from the SSB segment at the low end of 144MHz to the satellite band close to 146MHz.

## Construction

Construction of the multiplexer is not particularly critical, but good VHF construction practice, short leads and well soldered joints, is necessary.

C1, C2, and C3 are screwdriver-adjusted trimmers, mounted on two 6BA short screws with the shaft 'floating' (ie, not connected to earth

***Have you got more radio gear in your car than you've got room for antennas? Graham Packer, G3UUS, has the answer.***

this case, all that is needed is a single 2m  $\frac{5}{8}$  wave length for the bands listed above. ( $\frac{1}{2}$  or  $\frac{3}{4}$  will not do as they are usually DC grounded, a  $\frac{1}{4}$  is too short).

## LW/MW

In practice, a 2m  $\frac{5}{8}$  whip will be found to work as well as any other car aerial on LW/MW. The low frequency signal is fed off via RFC1, 2 and 3 to a Belling Lee socket for taking through

signal is not 'lost' in the front ends of the VHF/HF radio equipment in the car. C9, C10 and C8 remove RF from the feed to the broadcast band receiver and C4 allows the internal antenna trimmer in the broadcast receiver to be set mid range.

## CB/10m

The 2m  $\frac{5}{8}$ -wave antenna acts as a base-loaded  $\frac{1}{4}$ -wave for HF. C5/L3 are series resonant at CB/27MHz,

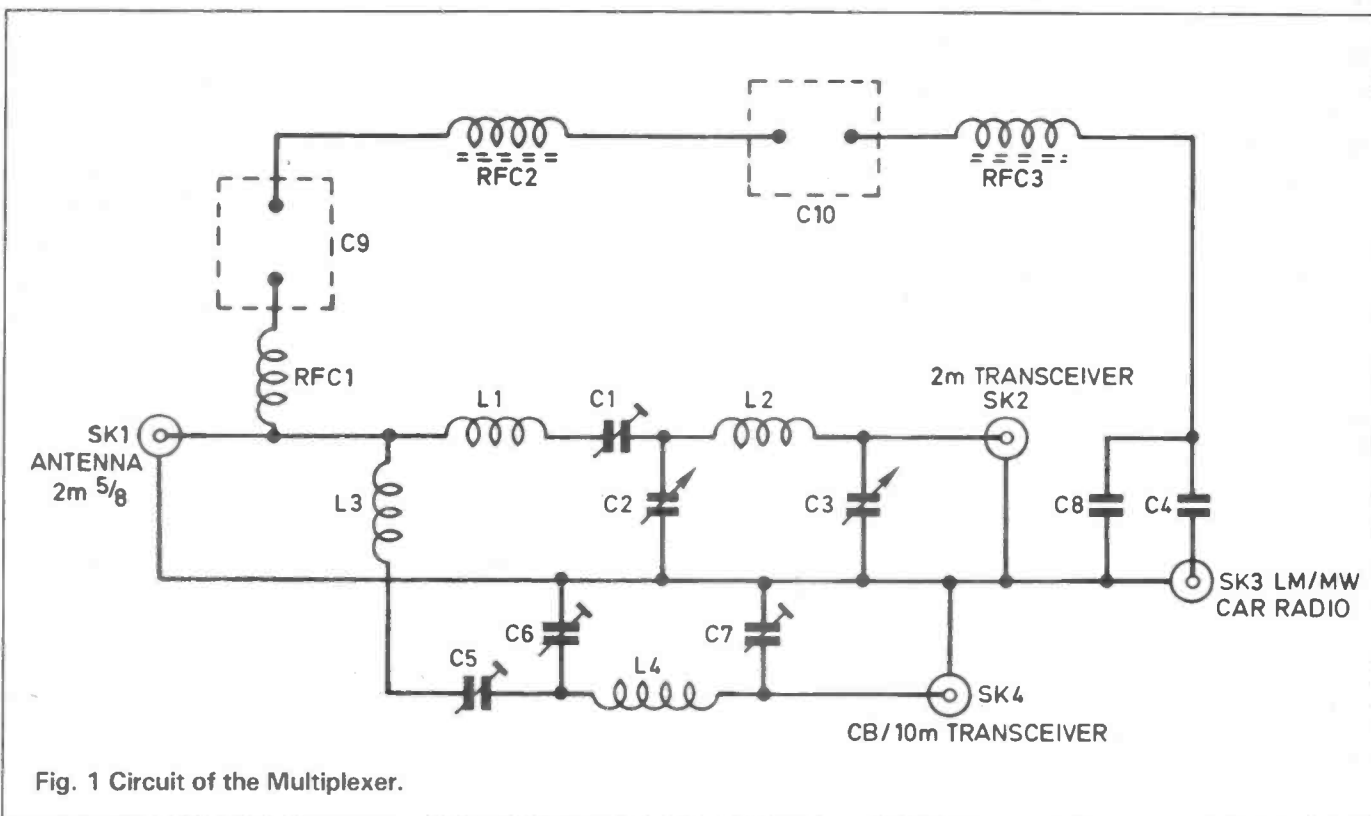


Fig. 1 Circuit of the Multiplexer.