

Fig.5 Circuit diagram of general purpose 2m matching unit.

long wire it can match 10-300 ohms resistive and for twin open wire feeder 100-2000 ohms. These limits may change for reactive loads.

Construction

Construction isn't particularly critical (see Fig.6) but, as usual for VHF, use

the shortest and most direct connections possible. It is housed in a standard 'medium' alloy die-cast box, perhaps pre-painted or hammer-finished to give it a professional finish.

Operation

Connect your equipment together as

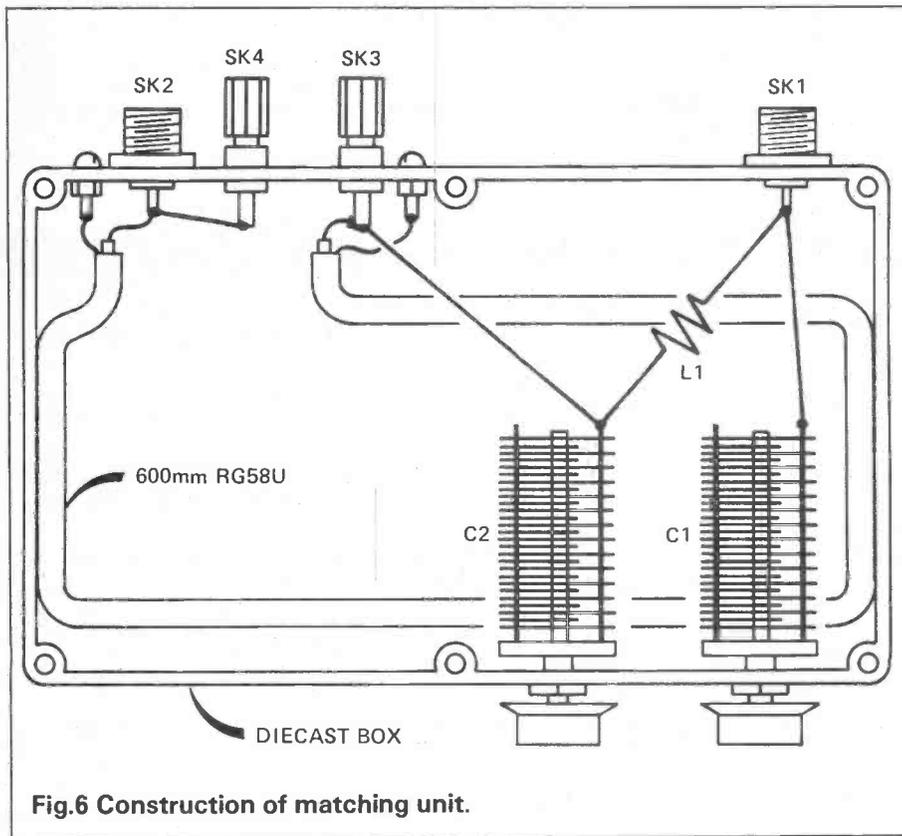


Fig.6 Construction of matching unit.

in Fig.7. Ensure you are switched to LOW POWER if possible and that if you have an external power amplifier it is switched off. First tune the two controls on the ATU for maximum received signal from (say) a local repeater or beacon. The two controls do interact in the manner of the 'tune' and 'load' controls of an HF rig. Try slowly rotating one control whilst rocking the other. Its a knack to be learnt but an hours twiddling will pay dividends.

Now switch to transmit and watch the VSWR meter. Unless the antenna is very 'reactive' it should be possible to get a 1:1 VSWR very easily. Only now let yourself loose with HIGH POWER. You may have to 'touch-up' the controls if your VSWR meter is a bit insensitive on low power but don't do anything drastic! Most modern transceivers will withstand a bad match, in fact they have built in VSWR protection circuitry, but don't push your luck! Adjusting for minimum VSWR with the power level fluctuating wildly is at least fairly certain to give you a nervous breakdown.

Now check the bandwidth of your antenna. As most wire antennas are very broad, you may not even notice the VSWR rise at the band edges, but do find out. Your PA can now be brought in to play, but remember an ATU is capable of producing a violent mismatch if misused. Be careful, 100W PA transistors can be expensive!

COMPONENTS - ATU	
C1,2	30 pf variable
L1	2turn 16 swg
	10mm dia, 5mm spacing
SK1,2	S0239 or BNC
SK3,4	4mm terminals
T1	600mm RG58U co-ax

Suitable components and boxes for the ATU and 'terminating resistance' may be obtained from HAMPTRON, Sanderson Centre, Gosport, Hampshire.

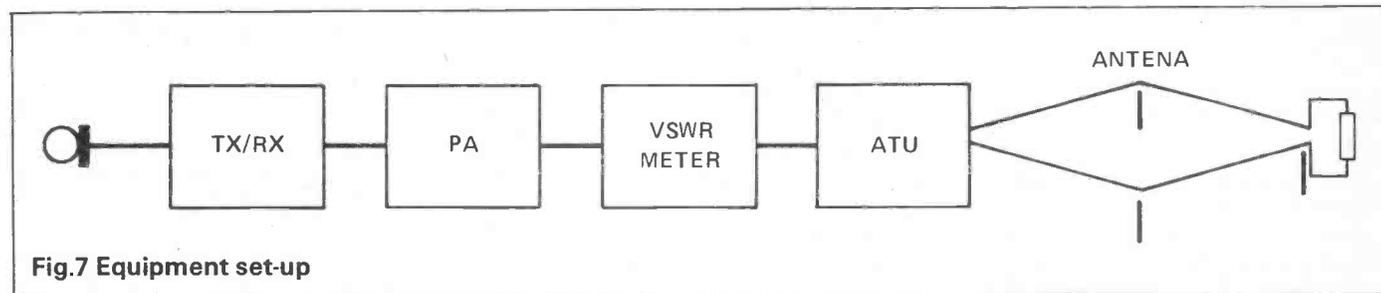


Fig.7 Equipment set-up