

SECTION 2

AERIAL-COUPLING UNIT ACU/4

General Description

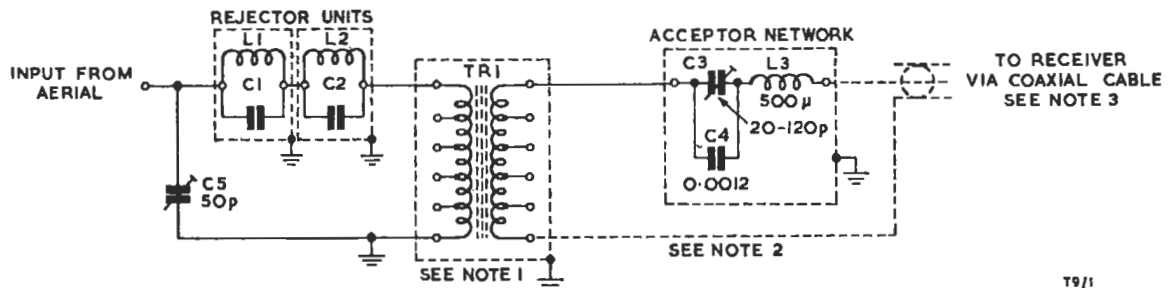
The Type-ACU/4 Aerial-coupling Unit is designed to transform the impedance of the vertical, or *Skyrod* aerial to 75 ohms (unbalanced) for matching a coaxial r.f. cable or a receiver input.

The circuit, given in Fig. 2.1, utilises the aerial capacitance as part of a network that is equivalent to a band-pass filter plus an ideal transformer. Provision is made for the addition of rejector units to prevent induction and cross-modulation trouble which may arise when the unit is employed in strong r.f. fields such as those present at high-power transmitting stations.

The screened coaxial output cable should be earthed at the distant, i.e. receiver, end only and the outer screen of this cable should not be in contact with the box of the ACU/4.

Adjustments

The rejector units and the acceptor network are already adjusted for the requirements of the station at which the unit is to be used, and are sealed. In the event of the source frequency or the rejected frequencies being changed, new acceptor or rejector units should be ordered and the existing units replaced.



NOTES

- 1 TRANSFORMER DRB 67A1 TO BE USED ON MEDIUM-WAVE UNITS DRB 66A1 TO BE USED ON LONG WAVE UNITS
- 2 CAPACITOR C4 (0.0012µF) TO BE FITTED ON LONG-WAVE UNITS ONLY
- 3 CABLE COAXIAL TELCON TYPE PT 11YM. THE SCREEN OF THIS CABLE MUST BE EARTHED AT THE RECEIVER END ONLY AND SHOULD NOT BE IN CONTACT WITH THE OUTER BOX OF THE ACU/4

Fig. 2.1 Aerial-coupling Unit ACU/4

Installation

To instal the unit, remove the cover and undo the four screws holding the panel. The box can then be drilled and countersunk for fixing in position. It should be fixed at the base of the aerial with its aerial terminal underneath and with the lower side level so that any condensed moisture can drain off through the hole provided. The panel can then be remounted, connected up and adjusted. Finally the cover of the unit should be replaced.

It is essential that the box be securely bonded to a local earth as close as possible to the aerial as this earth provides the return path for the aerial.

The only adjustments required on site are as follows:—

Long-wave Unit

Adjust C5 (Fig.2.1) to give maximum output at the desired frequency.

Medium-wave Unit

- (i) Adjust the transformer primary tap and C5 to give maximum output at the desired frequency.
 - (ii) Adjust the transformer secondary tap to give maximum output at the desired frequency.
- Adjustments (i) and (ii) should be repeated until the best maximum is achieved.