

837C NETWORK
DESCRIPTION

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1. GENERAL

1.01 This section describes the 837C network. This network and the E6 repeater utilizing an 830C network are used to improve impedance and equalize insertion loss of nonloaded cable. The 837C network and the E6 repeater are used at opposite ends of the cable.

2. EQUIPMENT DESCRIPTION

2.01 The 837C network is fitted into an aluminum can and measures 1.7 inches wide, 4.3 inches high, and 4.3 inches deep. The network is stud-mounted on a shelf near where the cable pairs are brought out to the panel wiring boards. Connections to the cable and line circuit are made at four terminals which extend from the rear of the network. The front of the network incorporates an adjustable resistor, a 239C jack, and four screw-type terminals. A photograph of the network is shown in Fig. 1.

3. CIRCUIT DESCRIPTION

3.01 The circuit arrangement of the 837C network is shown in Fig. 2. Terminals 1 and 2 connect to the cable, and terminals 3 and 4 con-

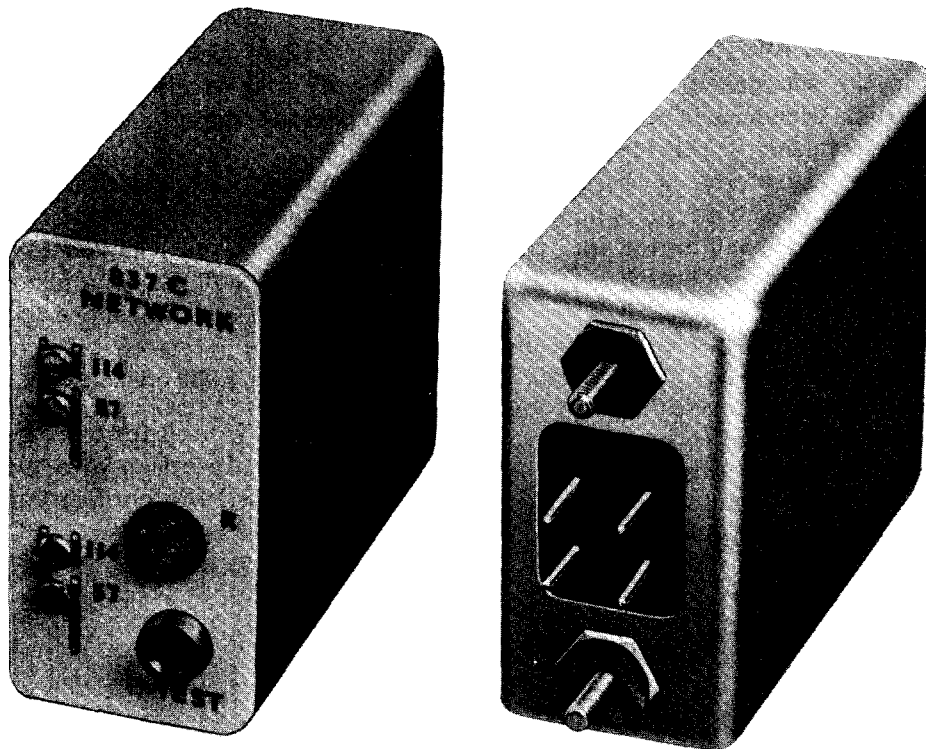


Fig. 1 — 837C Network

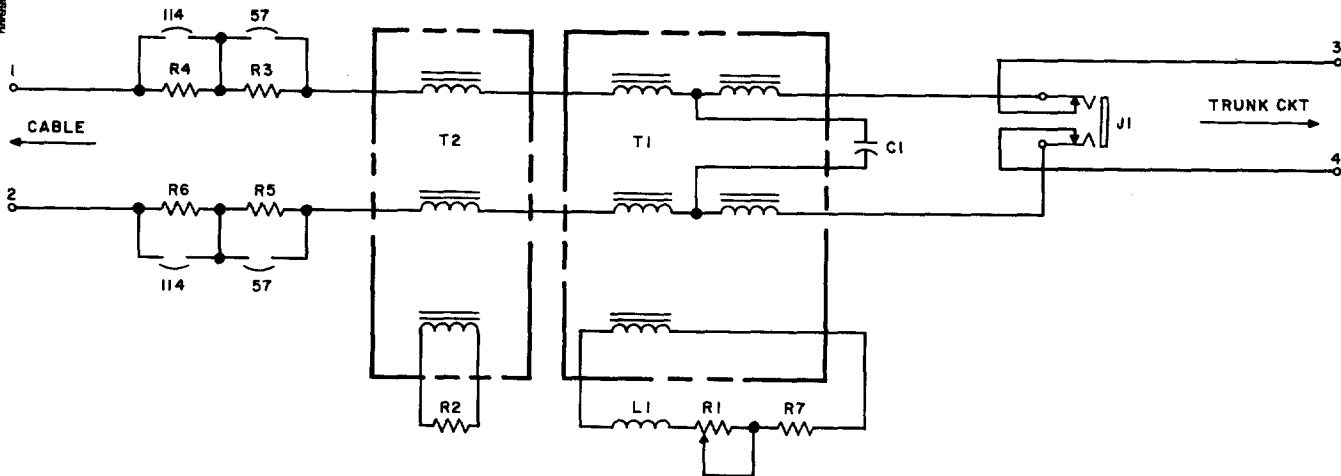


Fig. 2 — 837C Network — Schematic Diagram

nect to the trunk circuit. Resistors R3, R4, R5, and R6 are used in the network to build out resistance when required. Inclusion of the resistors into the circuit is controlled by the four screw-type terminals on the face of the network. The resistors are shorted out of the circuit when the screws are turned in, but are connected into the circuit when the screws are turned out.

3.02 Transformer T2 and resistor R2 aid in improving input impedance and insertion loss. They are effective at frequencies above 1 kc. Transformer T1 has an impedance step-up ratio of 1:1.7 from the cable side to the trunk circuit side. Capacitor C1 is connected between the winding to inhibit the impedance step-up at low fre-

quencies (200 cps). At high frequencies, C1 is essentially a short circuit and has little effect on the impedance step-up.

3.03 Inductor L1, resistor R7, and adjustable resistor R1 are connected to a winding which is inductively coupled to transformer T1. Adjustable resistor R1 is adjusted during line-up to obtain improved impedance. The combination of L1, R7, and R1 is effective over a frequency range of 200 to 4,000 cps.

3.04 Jack J1 is used for testing and line-up procedures. Insertion of a plug into the jack disconnects the PBX cord circuit from the network.