

830G NETWORK DESCRIPTION

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1. GENERAL

1.01 This section describes the 830G network (Fig. 1). This network is intended for use as a near-end line buildout (LBO) on E6 repeatered, 26-gauge, H88 loaded cable. See Table A for cable length limitations.

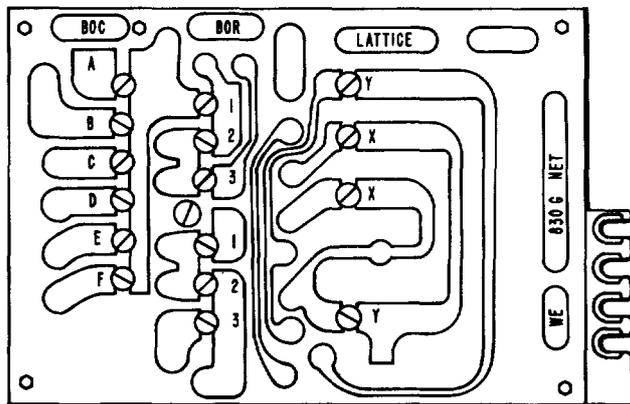


Fig. 1—830G Network

1.02 This section is reissued to make corrections to Table A.

2. EQUIPMENT DESCRIPTION

2.01 The 830G network is contained in a plastic case and measures approximately 3.2 inches wide, 1.3 inches high, and 4.9 inches deep. It is mounted face up on either side of the E6 repeater

chassis and is secured by four screws on the chassis connector block. These screws also make the required electrical connections between the network and the repeater. On the face of the 830G network there are 16 screw switches for BOR, BOC, and LATTICE settings.

3. CIRCUIT DESCRIPTION

3.01 The circuit arrangement of the 830G network is shown in Fig. 2. Terminals 1 through 4 connect to the E6 repeater.

3.02 The 830G is a passive network consisting of a build-out resistance (BOR) section, a build-out capacitance (BOC) section, a LATTICE section, and an impedance-matching section.

3.03 The LATTICE section represents a fixed amount (3 kft) of H88, loaded, high-capacitance, 26-gauge cable. The LATTICE must be fully in the circuit (both X screws turned in, both Y screws turned out) or fully out of the circuit (both X screws turned out, both Y screws turned in). The BOR and BOC are adjustable and may be set to represent any length of high-capacity, 26-gauge, H88 cable from 0 to 3 kft. By use of the BOR, BOC, and LATTICE sections, any end section may be built out to a full load section.

3.04 Impedance matching is effected by the use of a subnetwork that shapes the impedance of the build-out cable such that the resulting impedance is a good match to 900 ohms in series with 2.16 μ F.

3.05 Lineup of the 830G network will be through use of prescription settings (Section 332-206-227) to build out the cable end section to an equivalent full load section. Table B lists prescription settings for the BOR and BOC sections.

3.06 The 1-kHz insertion loss is 1.65 dB with the BOR, BOC, and LATTICE sections out of the circuit.

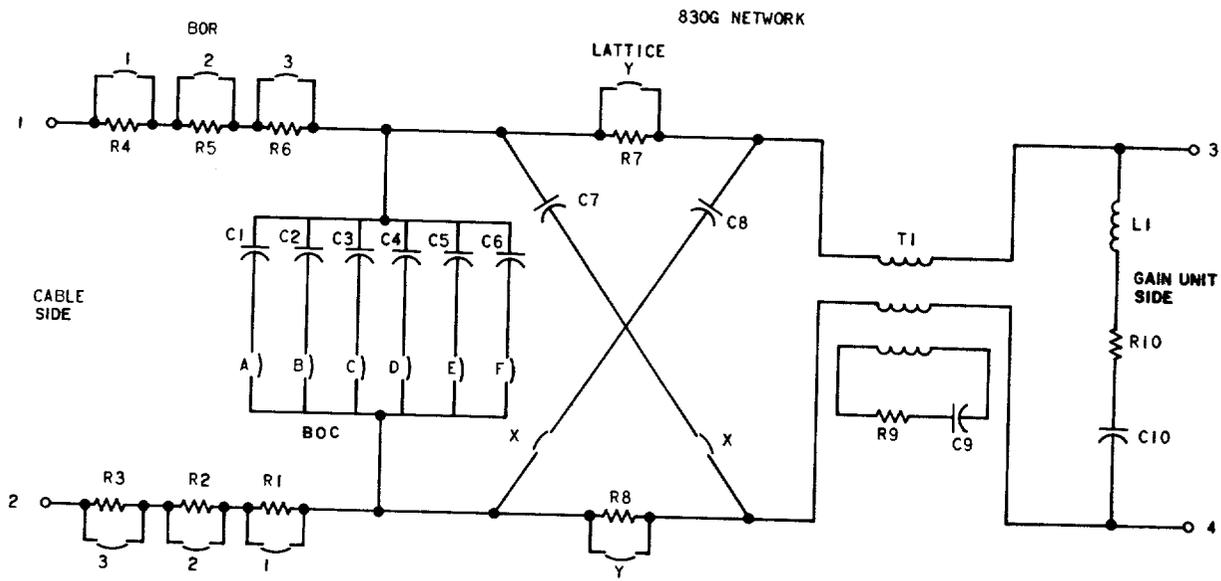


Fig. 2—830G Network Schematic

TABLE A
CABLE LENGTH LIMITATIONS* (KFT)

| MESSAGE TRUNKS | | | | SPECIAL SERVICES CIRCUITS | | | |
|---------------------------|----------------|----------------|-----------------------|---------------------------|-----|------------------------|-----|
| REPEATER ARRANGEMENT | DIRECT (5 dB)† | TANDEM (3 dB)† | TCT (3 dB WITH 837G)† | FX LINE (5 dB)† | OPS | PBX-CO (W OR W/O 837G) | FXT |
| Terminal | 24 | 18 | 18 | 24 | ‡ | 18 | 18 |
| 2-Terminal | 36 | 24 | ‡ | ‡ | ‡ | ‡ | ‡ |
| Intermediate | 36 | ‡ | ‡ | 30 | 24 | ‡ | ‡ |
| Intermediate and Terminal | 42 | ‡ | ‡ | ‡ | ‡ | ‡ | ‡ |

Note: Minimum cable length is 12 kft with two loading coils.

* These length limitations assume the end sections are 3 kft. For end sections greater than 3 kft, the lengths above can be increased by the difference between the actual end section and 3 kft. No additional loading coils are permitted when the length limitation is increased.

† This is the amount of overall loss desirable for this type of circuit.

‡ The circuit arrangements in these categories are not recommended; therefore, no limits are given.

TABLE B
BUILD-OUT RESISTANCE AND CAPACITANCE VALUE SETTINGS

| BOR (Ω) | TURN DOWN SCREWS |
|---------------------|---------------------|
| 0 | 1, 2, 3, & 1, 2, 3 |
| 33 | 1, 2 & 1, 2 |
| 66 | 1, 3 & 1, 3 |
| 99 | 1 & 1 |
| 132 | 2, 3 & 2, 3 |
| 165 | 2 & 2 |
| 198 | 3 & 3 |
| 231 | (All screws up) |

| BOC | BOC CAPACITOR VALUES (μF) |
|-----|---|
| A | 0.001 |
| B | 0.002 |
| C | 0.004 |
| D | 0.007 |
| E | 0.013 |
| F | 0.025 |