4066E NETWORK

DESCRIPTION

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1. GENERAL

1.01 This section describes the 4066E network, which is a plug-in apparatus unit designed to improve the hybrid balance in V4 and other telephone repeater applications.

1.02 The 4066E network is an adjustable 2-terminal network. It is normally used in conjunction with a 1-type terminating set to improve the balance of the hybrid when the 2-wire circuit consists of side circuits of H44-loaded 19-gauge cable. The resulting improved hybrid balance produces a high loss in the transmission path from one 4-wire leg to the other and thus reduces the possibility of "singing" or oscillations in the 4-wire loop.

1.03 The 24V4C repeater mounting shelf (J98615BJ) is equipped with a socket for mounting the 4066-type network. The 4066-type network, when plugged into the network socket, is connected through shelf wiring to the balancing network terminals (10, 11) of the 1-type terminating set. Mounting for the 4066-type network is not provided in older 24V4 terminal repeaters. When used with this older equipment, the network is separately mounted, and cross-connected to the repeater as required.

Fig. 1 — 4066E Network

2. EQUIPMENT DESCRIPTION

2.01 The 4066E network (see Fig. 1) consists of an aluminum can containing a printed circuit board, a 20-pin connector plug, and a plastic faceplate which contains two screw-type switches. The network is approximately 1-3/4 inches high by 1-3/4 inches wide by 7 inches long. Tabs are provided on the front of the can to facilitate removal of the network from the mounting shelf socket by the use of a 602C or 602D tool.

2.02 The two screw-type switches are identified on the faceplate by the letters A and B. The circuit location and function of the switches are illustrated in Fig. 2.

3. CIRCUIT DESCRIPTION

3.01 Fig. 2 is a schematic of the 4066E network. The circuit consists of four resistors, three capacitors, an inductor, and two faceplate screw-type switches arranged to provide an adjustable impedance across terminals 10 and 11.

3.02 Adjustment of the network for the various capacitance levels encountered in specific cables is accomplished by opening or closing the appropriate faceplate screw-type switches. Table A lists the screw settings required to obtain the precision impedance balance of the cable facilities involved.

3.03 Fig. 3 illustrates the midsection impedance characteristics of the 4066E network.

TABLE A

4066E NETWORK — SCREW SETTINGS

CABLE TYPE	CABLE CAPACITANCE		SCREW CLOSED (TURNED IN)	BUILDOUT TO HALF-SECTION CAPACITANCE (μF)
	μF/SECTION	μF/MILE		
19-Gauge H44 Side	<0.0690	<0.0607	None	0.0234
	0.0690 to 0.0715	0.0607 to 0.0629	A	—
	0.0715 to 0.0745	0.0629 to 0.0656	B	—
	>0.0745	>0.0656	AB	—

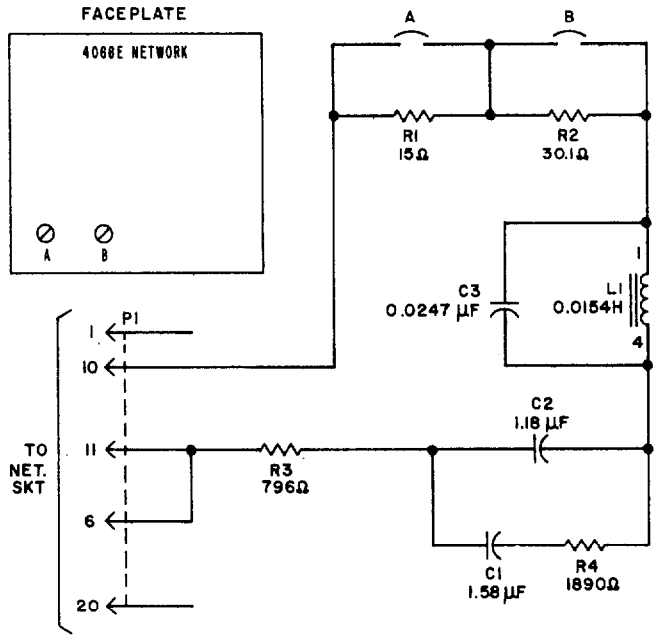

Fig. 2 — 4066E Network — Schematic

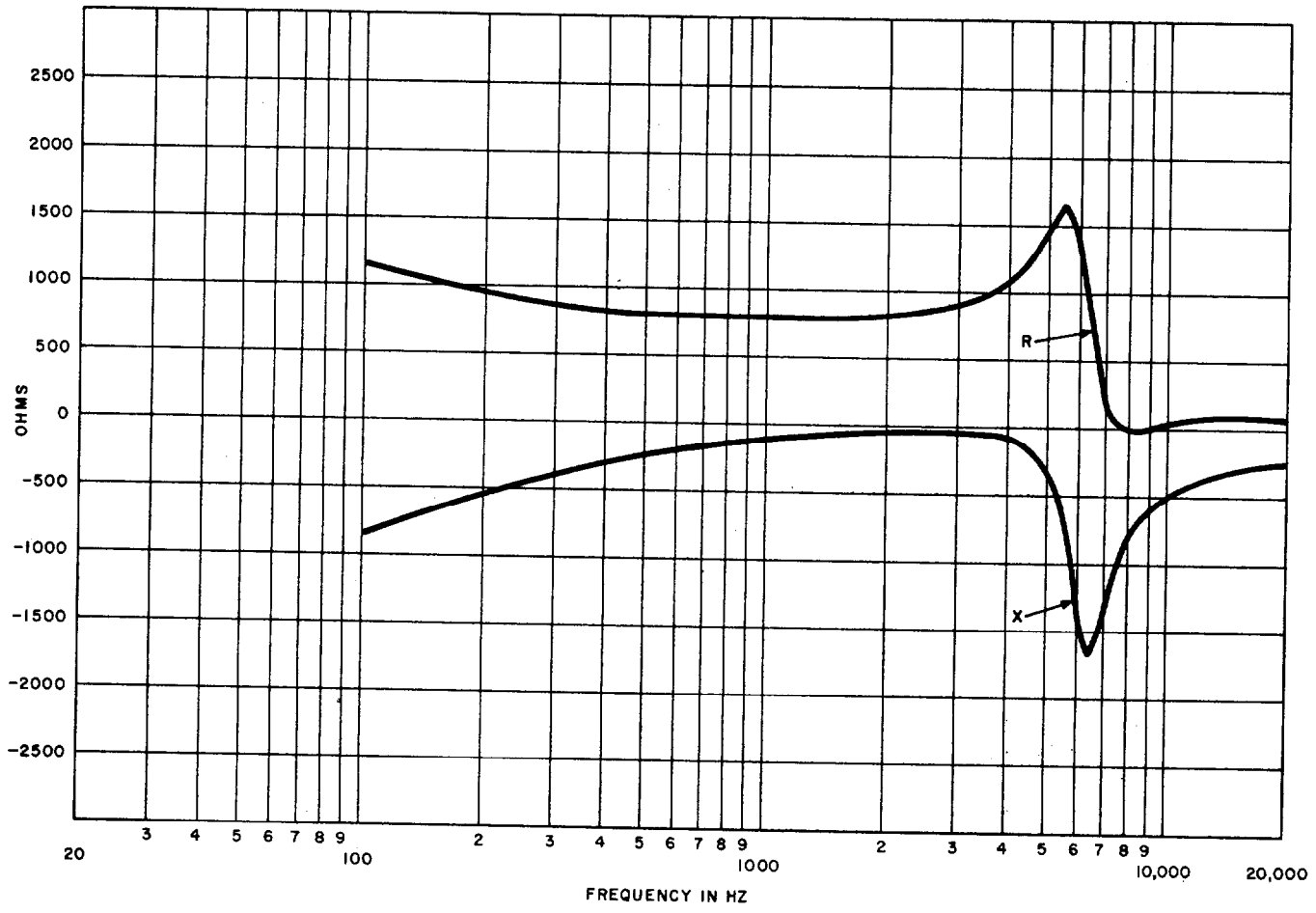

Fig. 3 — 4066E Network — Midsection Impedance — Simulating 19H44-S Cable