L MULTIPLEX TERMINALS

LMX-1

CARRIER AND PILOT SUPPLY

CHANNEL CARRIER

EQUALIZATION OF PILOT FREQUENCY

The purpose of this test is to equalize the 4-kHz harmonic generator to the channel carrier distribution bus (Fig. 1). This test pertains to the J68775AJ channel carrier distributing circuit and to the J68735D and AB units which have been rated "MFR DISC" but which may still be in service at some locations.

This section supersedes and updates the information contained in Sections 356-057-502 and 356-057-504 which have been cancelled. ***Equipment Test Lists are affected.***

The filters and distribution buses for the 12 channel carrier frequencies (Fig. 1) are mounted in the same carrier supply bay as the **A** and **B** 4-kHz harmonic generators and the carrier supply transfer panel. Odd and even harmonics from each 4-kHz harmonic generator (A and B) are fed through odd and even hybrid coils to individual filters which select the 12 channel carrier frequencies in the range of 64 to 108 kHz. Since 64-, 88-, 92-, and 108-kHz carrier frequencies are used either directly or in the generation of pilot frequencies, distribution bus output power for these frequencies must be held within a close tolerance. Four adjustable networks (one for each frequency) are provided for equalizing the 4-kHz harmonic generator outputs to the distribution buses. These networks are connected across the generator (A or B) having the higher output.

APPARATUS

Receiving Test Equipment (RTE), per Section 356-010-500, having the following input characteristics:

Frequency: 64 to 108 kHz

Power: 0 dBm

Impedance: 135 ohms

2W24A Cord

STEP	PROCEDURE
	Caution: Transfer of the carrier supply will cause hits on data and telegraph service; therefore, the number of transfers should be limited to minimize service interruptions.

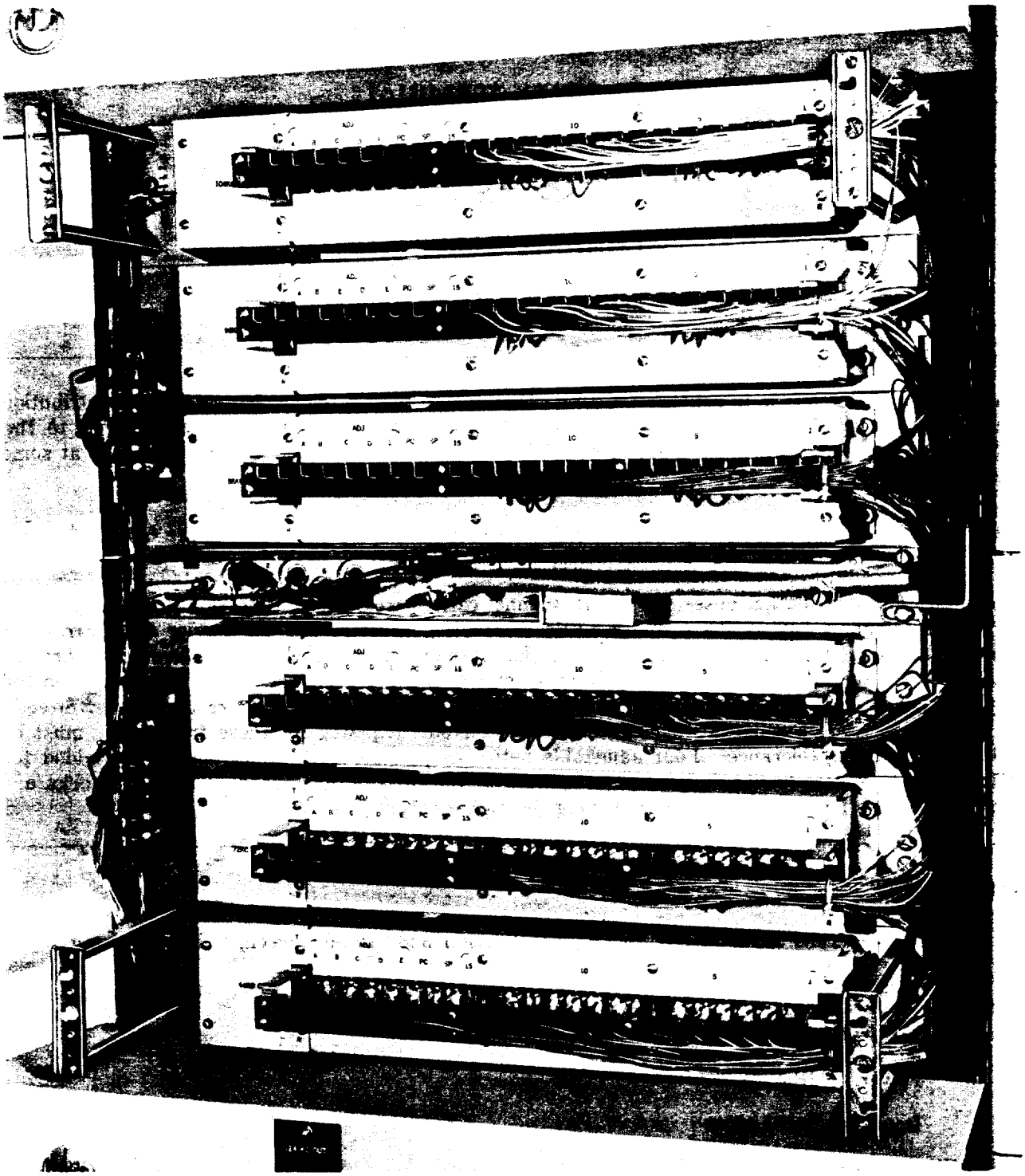

Fig. 1—J68775AJ Channel Carrier Distribution Circuit-Front Cover Removed

STEP	PROCEDURE
1	Prepare the RTE for a 135-ohm measurement of the carrier frequency to be tested (Table A) at approximately 0 dBm.
2	At the carrier supply transfer panel, manually transfer to the **A** 4-kHz harmonic generator.
3	Connect the RTE across the SP tap or any available unused tap of the associated distribution bus [patch (1), Fig. 2]. ***Note:*** If unused taps are not available, connect the RTE across either the A, B, C, or D ADJ resistor.
4	Record the power at the distribution bus.
5	At the carrier supply transfer panel, manually transfer to the **B** 4-kHz harmonic generator.
6	Measure the power at the distribution bus. ***Requirement:*** Within $\pm$0.25 dB of the reading obtained in Step 4.
7	If the requirement of Step 6 is met, proceed to Step 12. If it is not met, proceed to Step 8.
8	Refer to SD-64984-02 for proper wiring options and connect the associated equalizing network across the 4-kHz harmonic generator having the higher output.
9	Temporarily strap out the four associated equalizing resistors listed in Table A.
10	Adjust the associated tuning capacitor for a minimum power indication on the RTE.
11	Restrap various combinations of adjusting resistors, as indicated in Table A, until the output power readings of both 4-kHz harmonic generators are equal. ***Note:*** It is necessary to manually transfer between the two 4-kHz harmonic generators until both outputs are equal.
12	Remove patch (1), Fig. 2.
13	At the carrier supply transfer panel, return the transfer switch to normal service.

TABLE A

EQUALIZING NETWORK CONNECTION AND ADJUSTMENTS

FREQ (KHZ)	4-KHZ HG	* WIRING * OPTION	ADJUST CAPACITOR	ADJUST NETWORK RESISTORS	STRAP OUT NETWORK RESISTORS			
					0.5 DB	1.0 DB	1.5 DB	2.0 DB
64	A	X	A1	E,F,G,H	E,F,G	E,F,H	E,G,H	F,G,H
64	B	Y						
88	A	U	C1	J,K,L,M	J,K,L	J,K,M	L,M,K	K,L,M
88	B	V						
92	A	W	B1	A,B,C,D	A,B,C	A,B,D	A,C,D	B,C,D
92	B	Z						
108	A	S	D1	P,R,S,T	P,R,S	P,R,T	P,S,T	R,S,T
108	B	T						

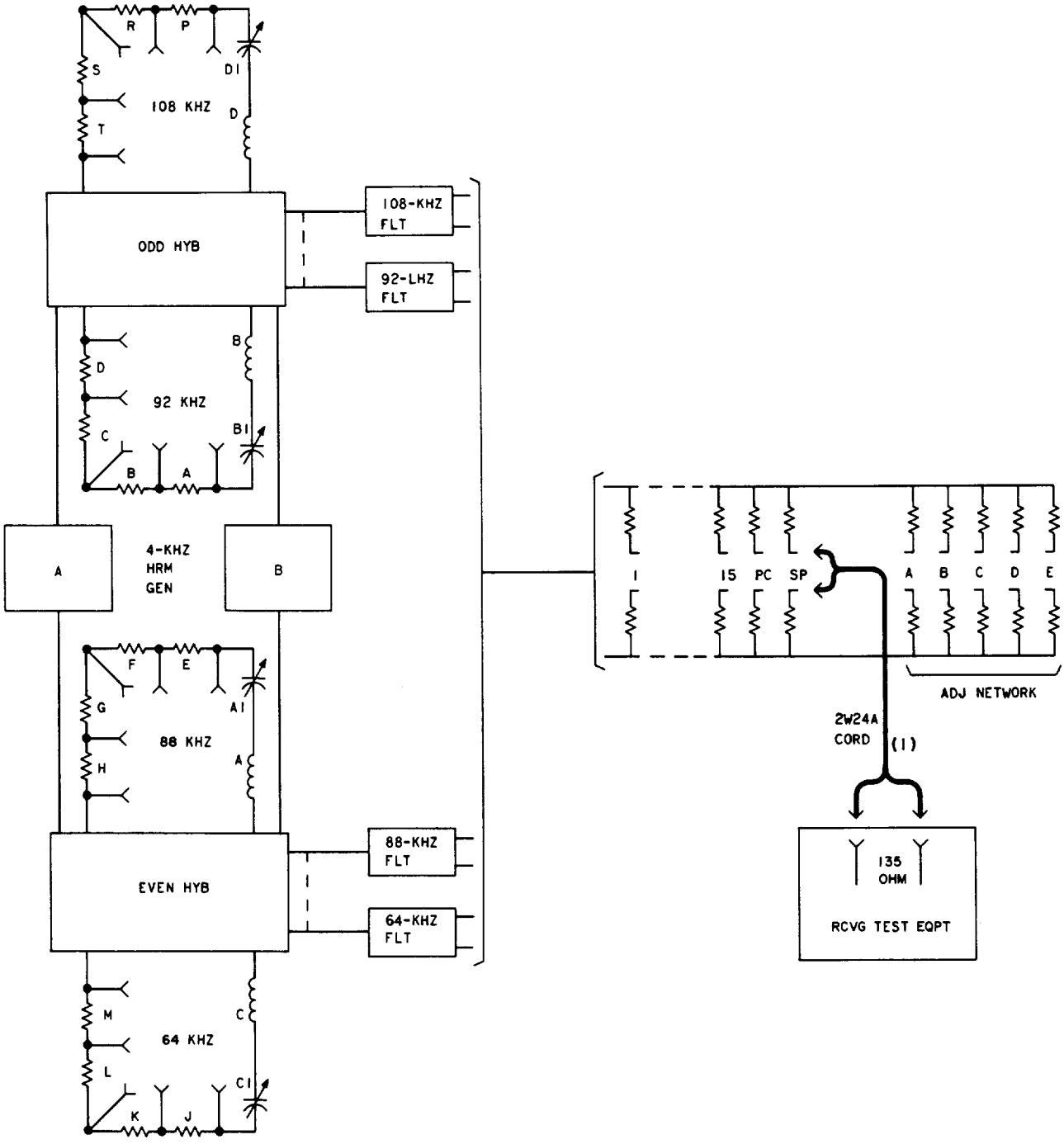

Fig. 2—Channel Carrier Distribution Circuit-Equalization of Pilot Frequencies