L MULTIPLEX TERMINAL

LMX-1

CARRIER AND PILOT SUPPLY

J68775U PRIMARY FREQUENCY SUPPLY (PFS-1)

4-KHZ DISTRIBUTION CIRCUIT TESTS

The purpose of this test is to measure and, if necessary, to adjust the output power of the J68775AU impedance transformation and 4-kHz distributing circuit (Fig. 1).

This section supersedes and updates information contained in Section 356-054-504, which has been cancelled. ***Equipment Test Lists are affected.***

The J68775AU impedance transformation and 4-kHz distributing circuit (designated A or B) receives two input signals from a 4-kHz primary frequency supply and distributes odd and even harmonics to a maximum of twenty harmonic generators or L3 frequency converter circuits. A typical LMX-1 installation would include two duplicate J68775AU units receiving inputs from the **A** and **B** 4-kHz primary frequency supply. For the purpose of simplification, Fig. 2 contains the J68775AU impedance transformation and 4-kHz distributing circuit for only the ***A*** 4-kHz supply bus. The test in this section should be repeated for the **B** 4-kHz supply bus.

The impedance transformation circuit is located between the ***A*** and ***B*** 4-kHz distributing circuits (Fig. 1). The G-125 resistor pad assembly for each 4-kHz supply channel is mounted between the associated IN E and IN O transformers. Restrapping of the G-125 resistor pad assembly is facilitated by removing the J68755AU front panel cover.

APPARATUS

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

Frequency: 4 kHz

Power: +14.0 dBm

Impedance: 135 ohms

3P20B Cord

305A Plug (as required)

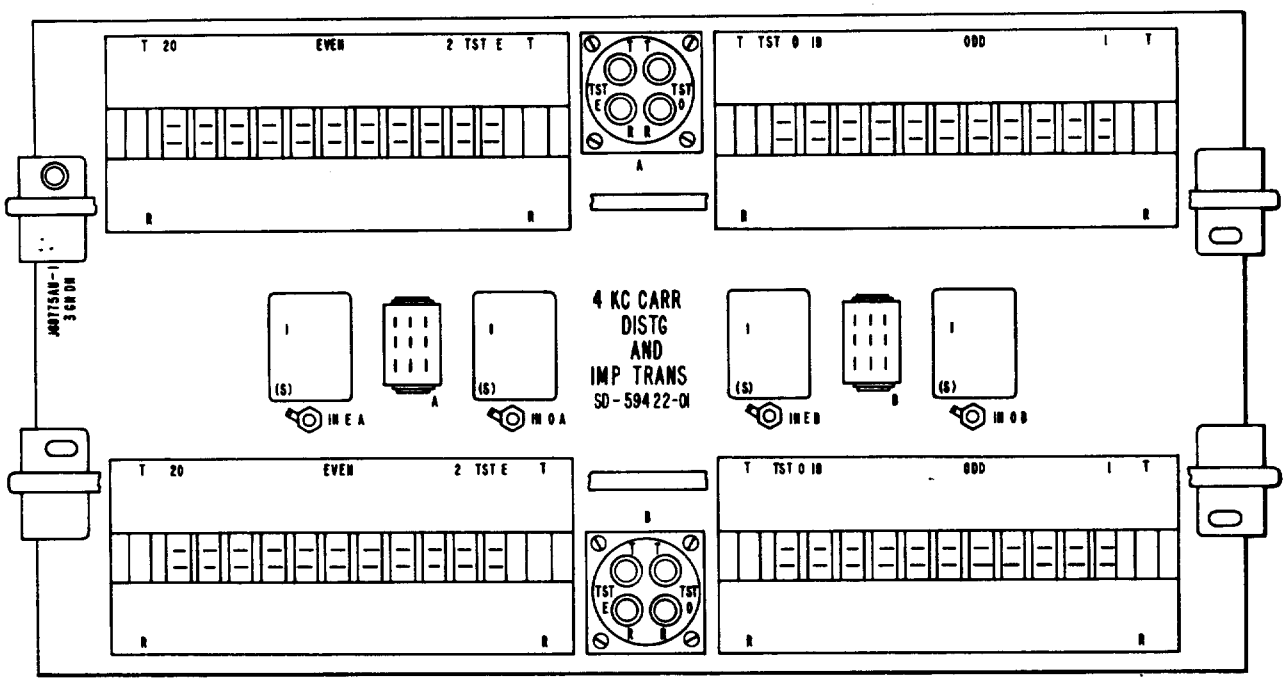
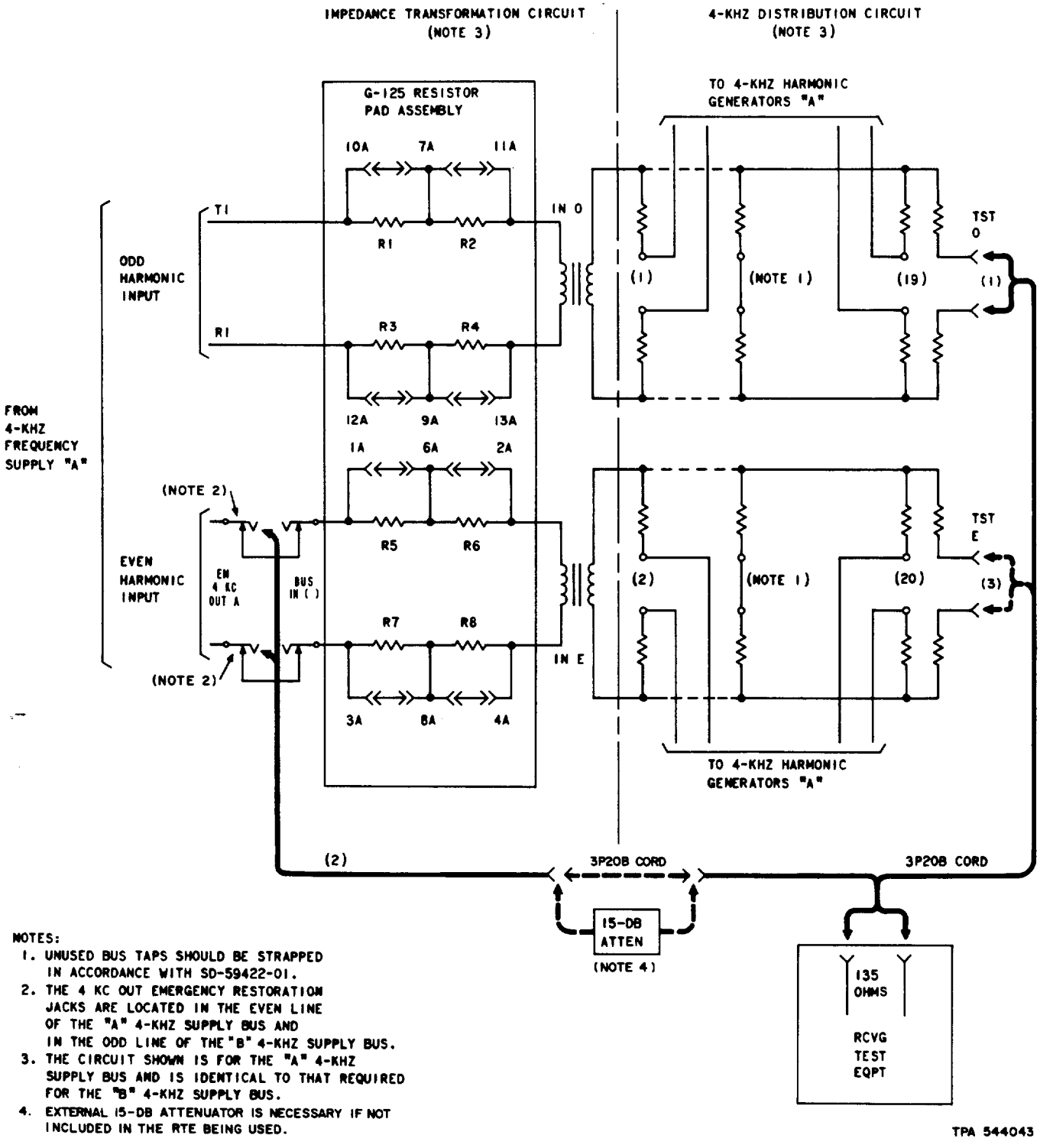


Fig. 1—J68775AU 4-kHz Carrier Distribution and Impedance Transformation Unit (Front Cover Removed)

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.
1	Referring to Section 356-150-300, manually transfer the 4-kHz frequency supply to be tested out of service.
	Caution: Do not proceed with this test until the green lamp A on the 4-kHz frequency supply to be tested is lighted.
2	At the J68857W 104.08-kHz pilot supply, insert an open-circuit 305A plug into the TST jack (REG or STBY) adjacent to the BUS ON REG or BUS ON STBY lamp which is not lighted. This will prevent an accidental transfer of the 104.08-kHz pilot supply to an idle 4-kHz supply bus.
3	Prepare the RTE for a 135-ohm measurement of 4 kHz at approximately +1.0 dBm.
4	Connect the RTE to the TST O jack of the 4-kHz distribution bus (A or B) under test [patch (1), Fig. 2].
5	Measure the power at the TST O jack. ***Requirement:*** +1.0 dBm ±2.0 dB
6	If the requirement of Step 5 is met, proceed to Step 9. If it is not met, determine the availability of the EM 4 KC OUT ( ) jacks. If the EM 4 KC OUT ( ) jacks are provided, proceed to Step 7. If the EM 4 KC OUT ( ) jacks are not provided, proceed to Step 8.



NOTES:
1. UNUSED BUS TAPS SHOULD BE STRAPPED IN ACCORDANCE WITH SD-59422-01.
2. THE 4 KC OUT EMERGENCY RESTORATION JACKS ARE LOCATED IN THE EVEN LINE OF THE "A" 4-KHZ SUPPLY BUS AND IN THE ODD LINE OF THE "B" 4-KHZ SUPPLY BUS.
3. THE CIRCUIT SHOWN IS FOR THE "A" 4-KHZ SUPPLY BUS AND IS IDENTICAL TO THAT REQUIRED FOR THE "B" 4-KHZ SUPPLY BUS.
4. EXTERNAL 15-DB ATTENUATOR IS NECESSARY IF NOT INCLUDED IN THE RTE BEING USED.

Fig. 2—J68775U 4-kHz Frequency Supply Circuit—Measurement and Adjustment of Output Power

STEP	PROCEDURE
7	Perform the following steps (in the order listed), as necessary, to meet the requirement; then proceed to Step 9. (a) Remove patch (1), Fig. 2. (b) Connect the RTE (through a suitable 15-dB attenuator, if required) to the associated EM 4 KC OUT ( ) jack of the distributing circuit (A or B) under test [patch (2), Fig. 2.]. (c) Measure the power at the EM 4 KC OUT ( ) jack. ***Requirement:*** +14.0 dBm ±3.0 dB ***Note:*** The attenuator value plus the meter indication is equal to the actual measured power. (d) If the requirement of Step 7(c) is met, remove the front panel cover of the J68775AU 4-kHz distribution unit and restrap the impedance transformation circuit (Fig. 2), as indicated in Table A, to meet the requirement of Step 5. (e) If the requirement of Step 7(c) is not met, test electron tubes S1 and S2 in the 4-kHz primary frequency supply per Section 356-150-501. (f) Perform tests in Section 356-151-503.

TABLE A

STRAPPING OF G-125 RESISTOR PAD ASSEMBLY

DB INCREASE	ODD DISTRIBUTION BUS	EVEN DISTRIBUTION BUS
6	10A to 11A 12A to 13A	1A to 2A 3A to 4A
5	7A to 11A 12A to 13A	6A to 2A 3A to 4A
4	7A to 11A 9A to 13A	6A to 2A 8A to 4A
3	7A to 11A 12A to 9A	6A to 2A 3A to 8A
2	10A to 7A 12A to 9A	1A to 6A 3A to 8A
1	12A to 9A	3A to 8A
0	None	None

STEP	PROCEDURE
8	When the requirement of Step 5 is not met and the EM 4 KC OUT ( ) jacks are ***not*** provided, perform the following steps (in the order listed), as necessary, to meet the requirement; then proceed to Step 9. (a) Remove the front panel cover of the J68775AU 4-kHz distribution unit and restrap the impedance transformation circuit (Fig. 2), as indicated in Table A, to meet the requirement of Step 5. (b) Test electron tubes S1 and S2 in the 4-kHz primary frequency supply per Section 356-150-501. (c) Perform tests in Section 356-151-503.
9	Remove all patches.
10	Connect the RTE to the TST E jack of the 4-kHz distribution bus (A or B) under test [patch (3), Fig. 2], and repeat the entire test.
11	At the carrier generator transfer panel, restore the transfer switch to NORM.