

L MULTIPLEX TERMINALS
LMX-2
RECEIVING CIRCUITS
GROUP DEMODULATOR
TURNOVER TEST

This section provides the procedure for conducting an out-of-service turnover test of the LMX-2 multiplex terminal receiving group bank circuits. The purpose of this test is to determine that no wiring turnover exists in both the regular and spare receiving group bank circuits.

Spare group bank equipment is provided in the LMX-2 multiplex terminal to minimize service interruptions. The spare group equipment is arranged to be substituted, by appropriate patching, for a working group bank. When patching groups on an in-service basis, no turnover should be present in the wiring of the group equipment.

In this test, a spare or out-of-service transmitting group bank is used as a test frequency supply. The group translated pilot frequencies are connected through a spare flat-gain amplifier to the regular and spare receiving group banks to be checked for wiring turnover. The output power of the regular group demodulator is compared with the output of a corresponding spare group demodulator. With no wiring turnover, the power will change only a small amount when the regular and spare group demodulators are paralleled.

The information in this section was formerly contained in Section 356-230-512. It is renumbered in the process of reorganizing the 356- division of practices. ***Equipment Test Lists are affected.***

APPARATUS:

The test in this section requires suitable transmission test equipment. Refer to Section 356-010-500 and select, from available equipment, a receiving unit having the following capabilities:

Receiving test equipment capable of detecting from:

- (a) 75-ohm circuits, signals between 315 kHz and 508 kHz at a power level of -48 dBm
- (b) 135-ohm balanced circuits, a signal of 104.08 kHz at a power level of -25 dBm.

In addition to the above, the following are required:

Flat-Gain Amplifier (Transistor-Type per ED-51318-() or Tube-Type, such as J68808F)

APPARATUS (Cont):

Spare or Out-of-Service Transmitting Group Bank

Spare Hybrid Coil

Attenuator, such as KS-13964

P2BJ Cords, as required

3P20B Cords, as required

135-Ohm Multiple Jacks

STEP

PROCEDURE

Caution: *Avoid patch cord turnover when making the patches used in this test.*

- 1 Check that the equipment to be tested is out of service.
- 2 Set up and calibrate the receiving test equipment for a 75-ohm terminated measurement of -48 dBm at the input pilot frequency listed in Table A for the group demodulator circuit under test.

TABLE A

FREQUENCY TRANSLATION (GROUP DEMODULATORS)					
INPUT PILOT FREQUENCY (KHZ) FOR GROUPS 1 THROUGH 5					OUTPUT PILOT FREQUENCY (KHZ)
1	2	3	4	5	
315.92	363.92	411.92	459.92	507.92	104.08

- 3 Make patches designated (1), (2), (3), and (4) in Fig. 1 to a spare or out-of-service transmitting group bank.
- 4 Make patch designated (5) in Fig. 1 to a regular receiving group bank.
- 5 Measure the power of the input pilot frequency at the SP HYB OUT B jack for the group demodulator circuit under test.

Requirement: -48 dBm ±0.05 dB.
- 6 If the requirement of Step 5 is met, proceed to Step 7. If it is not met, adjust the attenuator to meet the requirement.

STEP	PROCEDURE
7	<p>Repeat Steps 2 and 5 for each of the input pilot frequencies for the group demodulator circuits to be tested.</p> <p>Requirement: -48 dBm \pm0.05 dB.</p>
8	<p>If the requirement of Step 7 is met, proceed to Step 9. If it is not met, check the individual transmitting bank gains as prescribed in Section 356-205-502.</p>
9	<p>Remove patch designated (4) in Fig. 1.</p>
10	<p>Make patch designated (6) in Fig. 1 to a spare receiving group bank.</p>
11	<p>Prepare the receiving test equipment for a 135-ohm terminated measurement of 104.08 kHz at -25 dBm.</p>
12	<p>Make patches designated (7) and (8) in Fig. 1.</p>
13	<p>Measure and record the output power at the GR DEM OUT jacks of the regular group demodulator.</p> <p>Note: Allow 25 seconds after the regulating pilot is applied to permit the group regulated amplifier to stabilize.</p> <p>Requirement: -25 dBm \pm0.1 dB.</p>
14	<p>If the requirement of Step 13 is met, proceed to Step 16. If it is not met, adjust the GR OUTPUT control to meet the requirement.</p>
15	<p>If the requirement of Step 13 cannot be met, make tests as prescribed in Section 356-220-502.</p>
16	<p>Remove patch designated (8) in Fig. 1.</p>
17	<p>Make patch designated (9) in Fig. 1 to a corresponding spare group demodulator circuit.</p>
18	<p>Repeat Steps 13 through 15, as required, for the spare group demodulator circuit.</p>
19	<p>Make patch designated (8) in Fig. 1.</p>
20	<p>Measure the 104.08-kHz output power of the paralleled group demodulator circuits.</p> <p>Requirement: At least 1.5 dB greater than the value recorded in Step 13.</p> <p>Note: -23.5 dBm is 1.5 dB greater than -25 dBm.</p>
21	<p>If the requirement of Step 20 is met, proceed to Step 24. If it is not met, locate and correct the wiring turnover in the group demodulator circuit under test.</p>
22	<p>Remove patch designated (9) in Fig. 1 as the initial step in verifying correction of the wiring turnover.</p>

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STEP	PROCEDURE
23	Repeat Steps 13 through 21, as required.
24	Repeat Steps 12 through 23 for each of the identically numbered group demodulators in the regular and spare receiving group banks.
25	Remove all patches and restore the equipment to normal service.

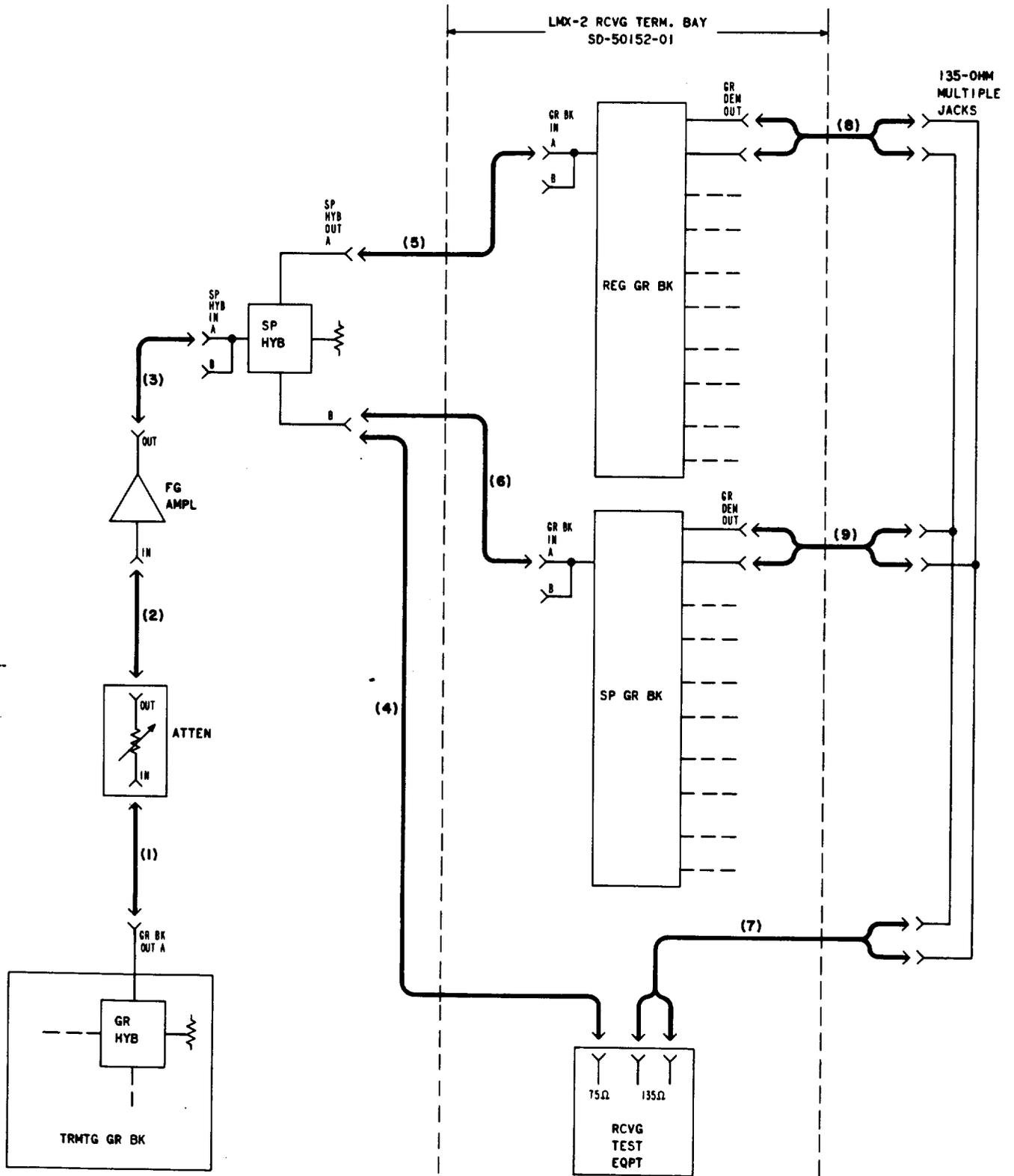


Fig. 1—Receiving Group Bank Circuits—Turnover Tests