

L MULTIPLEX TERMINALS
MMX-1
RECEIVING MASTERGROUP BANK
TURNOVER TESTS

PURPOSE OF TESTS

To determine that the regular and spare receiving mastergroup circuits, when multipled, do not produce a large decrease in power because of phase difference.

REASON FOR REISSUE

To include reference to solid-state amplifiers in modified receiving mastergroup panels. Arrows are used to indicate significant changes. *Equipment Test Lists are not affected.*

SYNOPSIS

In the MMX-1 mastergroup multiplex terminal, large numbers of circuits are assigned to common equipment units. Corresponding equipment units are provided as spare and are interchangeable if required. To avoid service interruptions when patching service from regular mastergroup circuits to spare mastergroup circuits on an in-service basis, it is important that little or no difference exists in the phase relationship between the corresponding circuits. A difference in phase relationship may occur from wiring turnover in the mastergroup equipment.

METHOD OF TESTING

In this test, the output power of the regular mastergroup circuit is measured. Output power is measured again when the regular mastergroup circuit is multipled with a corresponding spare mastergroup circuit. With little or no difference in phase relationships, the combined output power will differ only a small amount from the output power of either mastergroup circuit when measured independently. The receiving mastergroup bank gain tests (Section 356-136-501) shall be performed prior to making this test. The mastergroup circuit must be removed from service to perform this test.

APPARATUS:

Transmission test equipment. Refer to Section 356-010-500 and select, from available equipment, sending and receiving units having the following capabilities:

Sending test equipment capable of delivering, into 75-ohm circuits, signals between 1500 kHz and 6700 kHz at -31.5 dBm

APPARATUS (Cont):

Receiving test equipment capable of detecting, from 75-ohm circuits, 1500 kHz at -14 dBm.

In addition, the following are required:

- Spare or Out-of-Service Receiving Mastergroup Bank*
- 75-Ohm Multiple Jacks (2)*
- P2BJ Cords*
- 368A Plugs (75 ohms)*

STEP

PROCEDURE

Caution: ♦ *This test requires that the regular and spare mastergroup equipment panels contain like amplifiers. A loss of level may occur when patches are made between a panel containing a vacuum-tube amplifier and one equipped with solid-state amplifiers.* ♦

Note: If the requirements in this test cannot be met, check the carrier supply and the hybrid coils within the regular and spare receiving mastergroup circuits for wiring turnover.

- 1 Verify that the equipment to be tested is out of service.
- 2 Prepare the RTE (receiving test equipment) for a 75-ohm terminated measurement of 1500 kHz at approximately -14 dBm.
- 3 Prepare the STE (sending test equipment) for an output level of -31.5 dBm at the appropriate mastergroup test frequency as indicated in Table A.

TABLE A

TURNOVER TEST FREQUENCIES		
MG	INPUT FREQ (KHZ)	OUTPUT FREQ (KHZ)
1	1500	1500
2	4100	1500
3	6700	1500

- 4 Make patches (1), (2), (3), and (4) in Fig. 1.
- 5 Insert 75-ohm plugs in the REG MG (*) OUT B and SP MG (*) OUT B jacks.

Note: The asterisk (*) refers to mastergroups 1, 2, or 3.

STEP	PROCEDURE
6	<p>Measure and record the level of the 1500-kHz signal at the REG MG (*) OUT A jack.</p> <p>Requirement: Approximately -14 dBm.</p>
7	<p>Make patches (5) and (6) in Fig. 1.</p>
8	<p>Measure the 1500-kHz level of the multiplied mastergroup bank circuits.</p> <p>Requirement: A decrease of not more than 2.5 dB from the value recorded in Step 6.</p>
9	<p>Remove patches (3), (5), and (6) in Fig. 1.</p>
10	<p>Remove the 75-ohm 368A plugs from the REG MG (*) OUT B and SP MG (*) OUT B jacks.</p>
11	<p>Insert 75-ohm 368A plugs in the REG MG (*) OUT A and SP MG (*) OUT A jacks.</p>
12	<p>Make patch (7) in Fig. 1.</p>
13	<p>Measure and record the level of the 1500-kHz signal at the REG MG (*) OUT B jack.</p> <p>Requirement: Approximately -14 dBm.</p>
14	<p>Make patches (5) and (8) in Fig. 1.</p>
15	<p>Measure the 1500-kHz level of the multiplied mastergroup bank circuits.</p> <p>Requirement: A decrease of not more than 2.5 dB from the value recorded in Step 13.</p>
16	<p>Remove all patch cords from the test jacks of the mastergroup bank circuits under test.</p>
17	<p>Remove the 75-ohm 368A plugs from the REG MG (*) OUT A and SP MG (*) OUT A jacks.</p>
18	<p>Insert 75-ohm 368A plugs in the REG MG (*) OUT B and SP MG (*) OUT B jacks.</p>
19	<p>Restore the mastergroup bank equipment to normal service.</p>

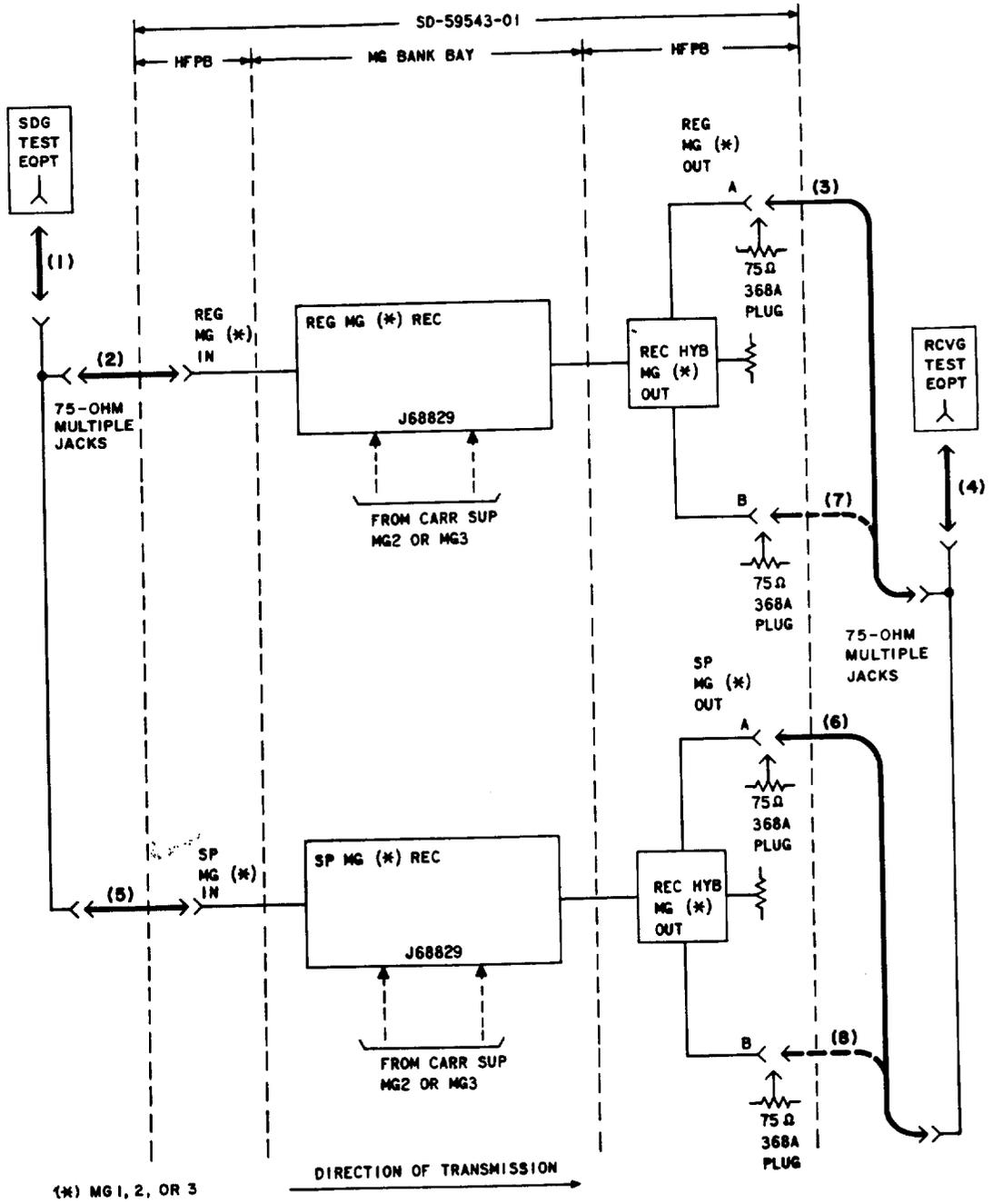


Fig. 1—Receiving Mastergroup Bank Circuit, Turnover Test