

**L MULTIPLEX TERMINALS  
LMX-1  
TRANSMITTING CIRCUITS  
INTERMEDIATE AMPLIFIER  
GAIN TEST**

**PURPOSE OF TEST**

To determine that the transmitting intermediate amplifier in each group bank meets its gain requirements.

**REASON FOR ISSUE**

Reorganization and update of the 356- division. The information supersedes similar information in Section 356-123-503. *Equipment Test Lists are affected.*

**SYNOPSIS (Fig. 1 and 3)**

The transmitting intermediate amplifier receives the signals from the five group modulators and raises the signal level to  $-25$  dBm. Amplification is in two stages using 310-type tubes and provides a nominal gain of approximately 34 dB. The GAIN control allows the gain to be varied over a range from about 29 dB to 37 dB. The amplifier is located in the equipment bay, and the GAIN control is accessible without removing the cover.

**METHOD OF TESTING**

The lead at terminal 2 of the input transformer is removed, and a 421-kHz test signal is applied across terminals 1 and 2 (Fig. 2). Measurement is made at the GR BK OUT A jack in the HFPB with the GAIN control positioned first for maximum gain and then for minimum gain.

**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, 421 kHz at  $-36.7$  dBm.

*Receiving test equipment* capable of detecting, from 75-ohm circuits, 421 kHz at 0 dBm.

**P2BJ Cords**

**W2ED Cord**

STEP	PROCEDURE
1	In the equipment bay, locate the transmitting intermediate amplifier to be tested.
2	Verify that the group bank containing the amplifier has been removed from service.
3	Remove the equipment cover.
4	Disconnect, by unsoldering, the lead from terminal 2 of the input transformer (Fig. 2).
5	Set the GAIN control to its maximum clockwise position.
6	Prepare the RTE (receiving test equipment) for a 75-ohm terminated measurement of 421 kHz at 0 dBm.
7	Prepare the STE (sending test equipment) to deliver, into a 75-ohm circuit, 421 kHz at -36.7 dBm.
8	Connect the STE to terminals 1 and 2 of the input transformer [patches (1) and (2), Fig. 2].
9	Connect the RTE to the GR BK OUT A jack of the group bank containing the amplifier being tested [patch (3), Fig. 2].
10	Measure and record the level of the 421-kHz signal.  <b>Requirement:</b> At least 0 dBm.
11	<b>Note:</b> 0 dBm represents 36.7-dB gain.  Set the GAIN control to its maximum counterclockwise position.
12	Measure the level of the 421-kHz signal.  <b>Requirement:</b> At least 8 dB less than the value recorded in Step 10.
13	If the requirements of Step 10 and 12 are met, proceed to Step 14. If they are not met, make electron tube tests as prescribed in Section 356-051-501 (to be renumbered 356-150-501) and repeat Steps 10 through 12.
14	Remove patches (1), (2), and (3) in Fig. 2.
15	Connect, by soldering, the lead removed in Step 4 to terminal 2 of the input transformer.
16	Replace the equipment cover.

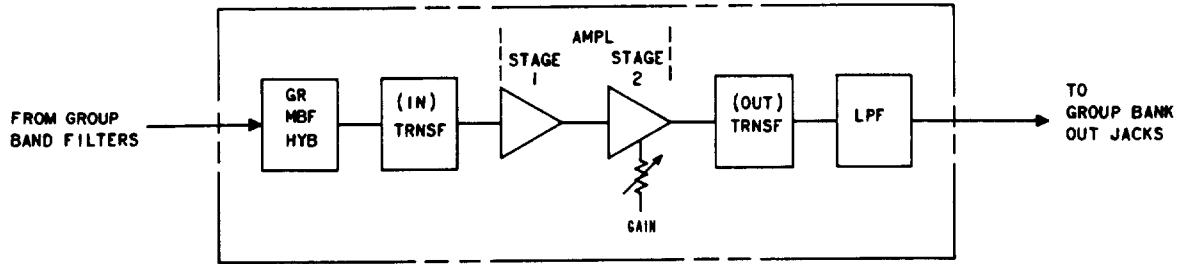


Fig. 1—Transmitting Intermediate Amplifier—Block Diagram

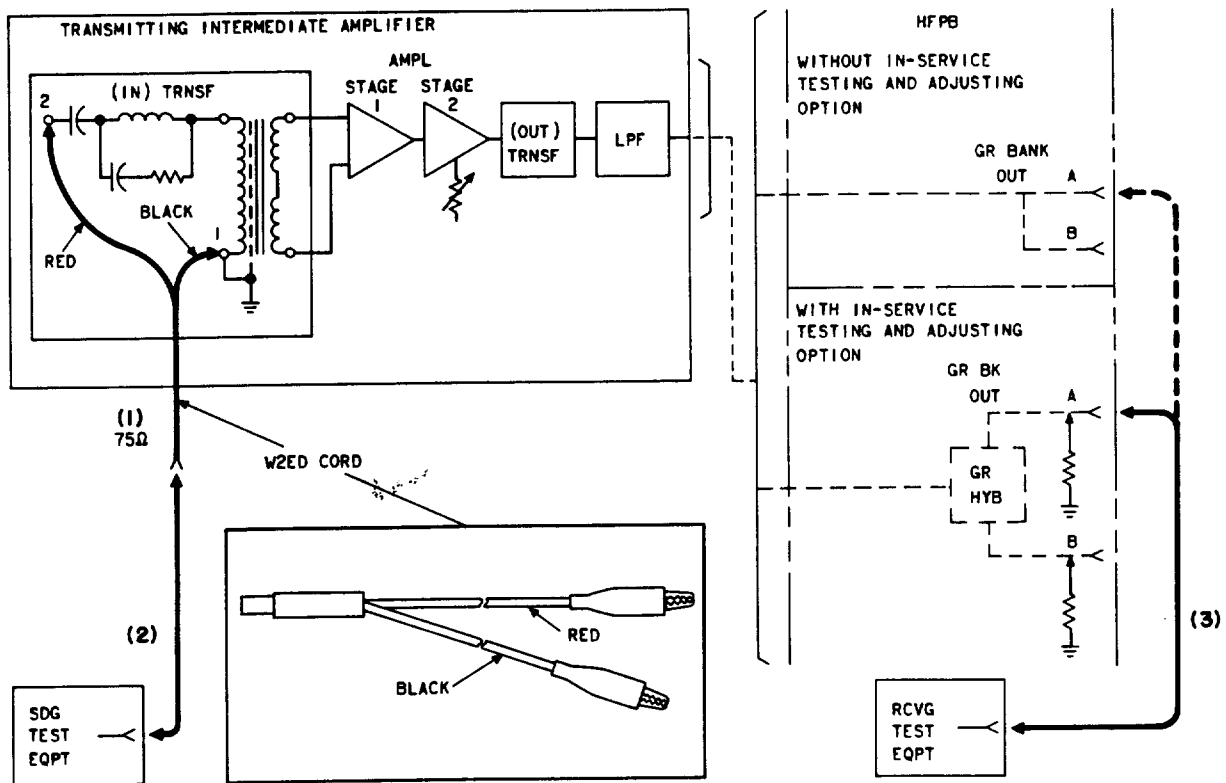


Fig. 2—Gain Test—Test Connections

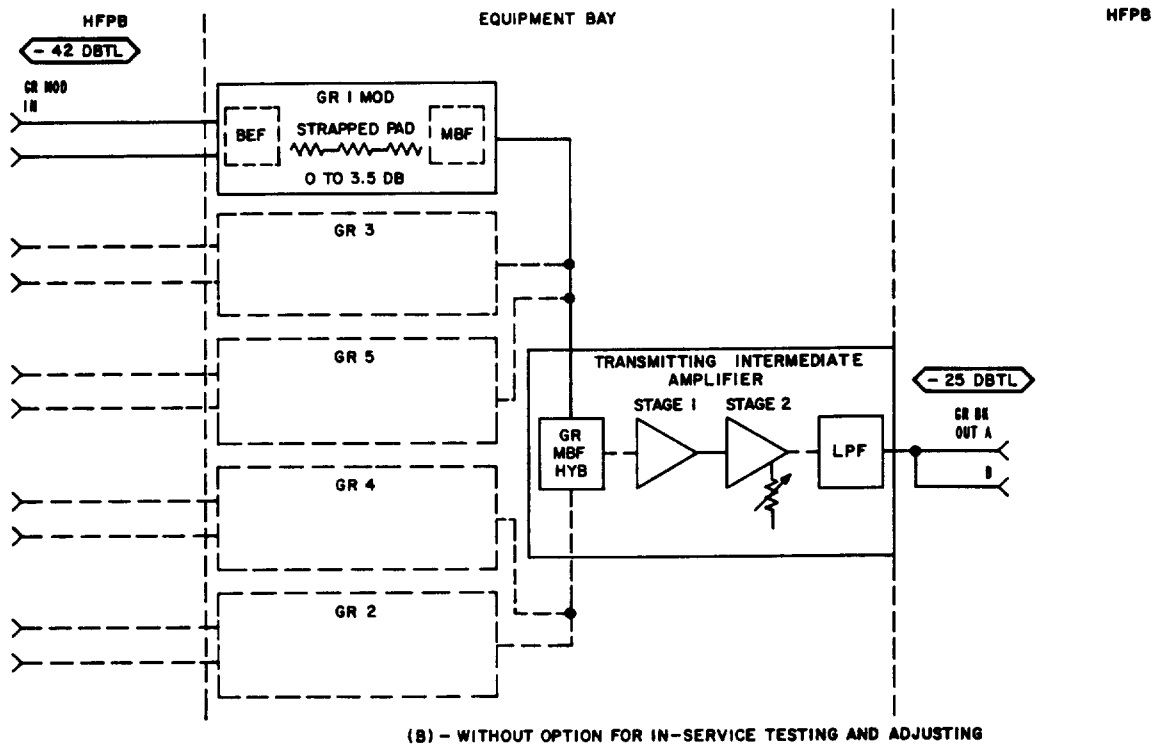
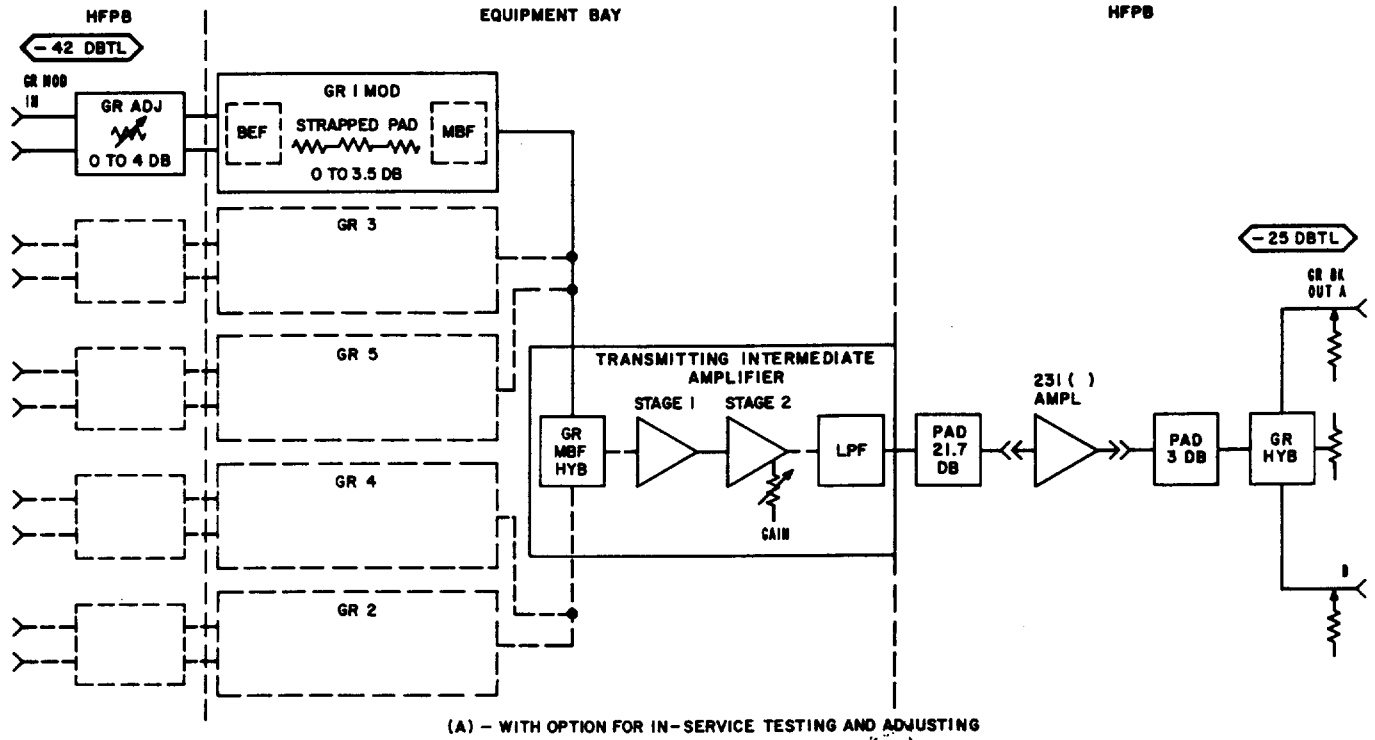


Fig. 3—LMX-1 Transmitting Group Bank