

L MULTIPLEX TERMINALS
COMMON EQUIPMENT
SCANNER AND TEST AND ALARM CIRCUITS
GROUP PILOT MEASURING CIRCUIT CALIBRATION

PURPOSE OF TEST

- (a) To measure and, if necessary, adjust the gain of the group pilot measuring circuit.
- (b) To adjust the group pilot meter calibrating circuit.

REASON FOR ISSUE

The information in this section was formerly in Section 356-270-511 which is cancelled. It is renumbered during the process of reorganizing the 356-division of practices. *Equipment Test Lists are affected.*

SYNOPSIS

In LMX-1 and LMX-2 multiplex terminals, a 104.08-kHz pilot is supplied to each group modulator at the transmitting terminal. The group pilot is transmitted through the system and at the receiving terminal, a circuit is provided for measuring the pilot output power of the receiving group amplifier. The group pilot measuring circuit compares the pilot output power with a reference power derived from the stabilized 104.08-kHz group pilot supply circuit. The difference is amplified, rectified, and used to drive a 0-center meter displaying the deviation above and below nominal pilot power.

METHOD OF TESTING

The group pilot measuring circuit is so selective that it is impractical to calibrate the circuit by means of a variable frequency oscillator. In this test, a test signal is obtained from the stabilized group pilot supply. Calibration of the group pilot measuring circuit is performed by first measuring and, if necessary, adjusting the level of the 104.08-kHz test signal which is then used to calibrate the group pilot measuring circuit.

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 135-ohm circuits, a signal of 104.08 kHz at a power level of -35 dBm.

APPARATUS (Cont):

In addition to the above, the following is required:

3P20B Cord

STEP	PROCEDURE
	<p>Note: The requirements in this test are based on the assumption that the level of the 104.08-kHz group pilot signal is correct. The level from the group pilot stabilizing circuit can be tested in accordance with the appropriate section.</p> <p>1 Access to the 838B network and 226E amplifier units is required when performing this test. Remove the two machine screws and coverplate from the front right-hand side of the pilot measuring panel.</p> <p>2 Set up and calibrate the receiving test equipment for a 135-ohm terminated measurement of 104.08 kHz at a level of -35 dBm.</p> <p>3 Make patch (1) in Fig. 1.</p> <p>4 Measure the power level of the 104.08-kHz signal at the GR CAL jack.</p> <p>Requirement: -35 dBm \pm0.05 dB.</p> <p>5 If the requirement of Step 4 is met, proceed to Step 6. If it is not met, adjust the GR control on the 838B network to meet the requirement.</p> <p>6 Remove patch (1) in Fig. 1.</p> <p>7 Make patch (2) in Fig. 1.</p> <p>8 Read the GROUP PILOT-DB fine meter (see Note in Fig. 1).</p> <p>Requirement: 0 dB.</p> <p>9 If the requirement of Step 8 is met, proceed to Step 10. If it is not met, adjust the GAIN control on the GR amplifier for a reading as close to zero as possible, but in no case outside a \pm0.1 dB deviation.</p> <p>10 Depress and hold depressed the -1 DB switch on the 838B network.</p> <p>11 Read the GROUP PILOT-DB fine meter.</p> <p>Requirement: 1 dB less than the value read in Step 8 (or Step 9 if adjustment was required).</p> <p>12 If the requirement of Step 11 is met, proceed to Step 15. If it is not met, maintain the -1 DB switch depressed and adjust the SCALE control on the GR amplifier to meet the requirement.</p>

STEP	PROCEDURE
13	<i>The adjustments in Steps 9 and 12 are interactive.</i> Repeat Steps 8 through 12, in the order given, until the requirements of Steps 8 or 9 and Step 11 are met.
14	If the requirements of Steps 8 or 9 and Step 11 cannot be met, locate and correct the trouble in the group measuring circuit under test. Repeat Steps 8 through 13, as required.
15	If the GROUP PILOT-DB coarse meter is provided (see Note in Fig. 1), proceed to Step 16. If it is not provided, proceed to Step 20.
16	Depress and hold depressed the -1 DB switch on the 838B network.
17	Read the GROUP PILOT-DB coarse meter.
	<i>Requirement:</i> The meter shall indicate exactly on the left edge of the cross-hatched area.
18	If the requirement of Step 17 is met, proceed to Step 20. If it is not met, maintain the -1 DB switch depressed and adjust the COARSE control on the GR amplifier to meet the requirement.
19	If the requirement of Step 17 cannot be met, locate and correct the trouble in the group pilot measuring circuit under test. Repeat Steps 8 through 18, as required.
20	Remove patch (2) in Fig. 1.
21	Replace the front coverplate and the two machine screws removed in Step 1.

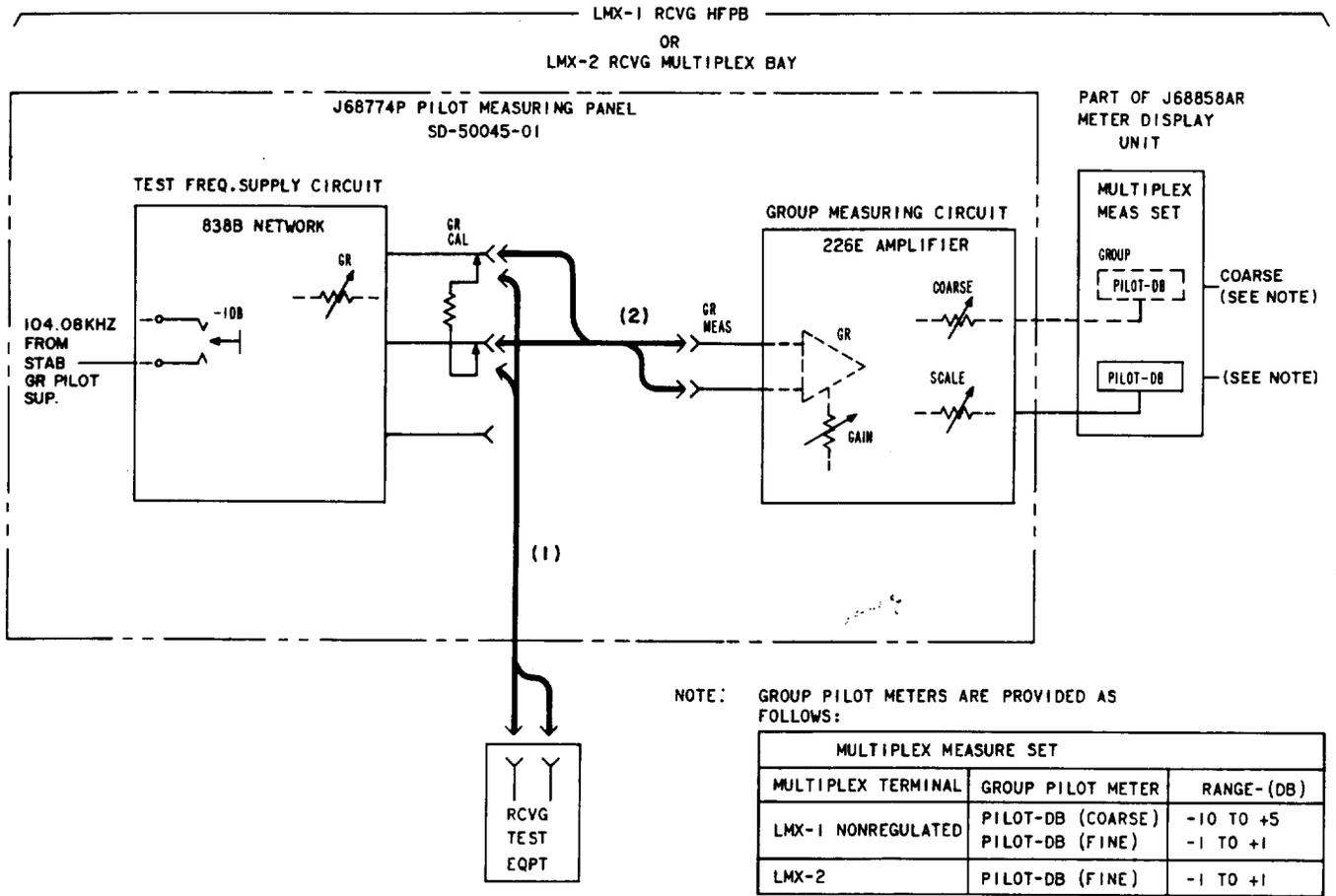


Fig. 1—104.08-KHZ Group Pilot Measuring Circuit Calibration