L MULTIPLEX TERMINALS
COMMON EQUIPMENT
GROUP TRANSMISSION PILOT
IN-SERVICE ADJUSTMENT

PURPOSE OF TEST

To measure and, if necessary, adjust the level of the transmitting 104.08-kHz group pilot.

REASON FOR ISSUE

The information in this section was previously in Section 356-215-511 which is now superceded. It is renumbered during the process of reorganizing the 356- division of practices. ***Equipment Test Lists are affected.***

SYNOPSIS

In the L multiplex transmitting terminal, the 104.08-kHz group pilot is inserted between the output of the channel bank and the input of the group modulator through a pilot insertion module. In the L multiplex receiving terminal, the output of the group demodulator is regulated by the received 104.08-kHz group pilot.

In a similar manner, the output of the supergroup demodulator is regulated by the received translated 315.92-kHz supergroup pilot. This regulation is dependent upon the level of the received pilots.

The following three group pilot circuit applications allow in-service pilot level adjustment:

(a) Channel banks with no carrier leak blocking filter in the pilot insertion module

(b) Group connectors and channel banks with the pilot blocked and reinserted

(c) Group connectors with a 104.08-kHz through pilot.

APPARATUS:

This test 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 or 75-ohm circuits, a signal of 104.08 kHz at −62 dBm or −72 dBm.

APPARATUS (Cont):

In addition to the above, the following are required:

J68858AT Pilot Filter Set, if required (see caution preceding test)

3P20B Cord

P2BJ Cords, as required

STEP	PROCEDURE
	Caution: The channel 2 carrier frequency is 104 kHz resulting in a pilot frequency offset of 80 Hz. Carrier leak into the pilot insertion module will normally be −75 dBm or less. If a 49A TMS is not available, a J68858AT pilot filter set should always be used to avoid selecting any tone other than the 104.08-kHz pilot, such as carrier leak or an SF tone. The pilot filter set is covered in Section 103-407-101.
1	Prepare the receiving test equipment for a 135-ohm terminated measurement of 104.08 kHz at −62 dBm. ***Note:*** If the J68858AT pilot filter set is used, prepare the equipment for a 75-ohm terminated measurement at −72 dBm.
2	Patch the test equipment to the CH BK or GR CONN OUT ALT jacks [patch (1) in Fig. 1]. ***Note:*** If the J68858AT pilot filter set is used, make patches (1) and (2).
3	Measure the power of the 104.08-kHz signal. ***Requirement:*** −62 dBm ±0.05 dB (if the 49A TMS is used). −72 dBm ±0.05 dB (if the J68858AT pilot filter set is used).
4	If the requirement of Step 3 is met, proceed to Step 18. If it is not met, proceed to Step 5.
5	From office records, determine the group pilot application for the channel bank under test and perform (a) or (b), as applicable. (a) ***If the circuit is arranged for a through pilot from a group connector,*** perform tests as prescribed in Section 356-020-502 (currently Section 356-240-511). (b) ***If the pilot is inserted or blocked and reinserted,*** proceed to Step 6.
6	Slowly adjust the ADJ control on the pilot insertion module to meet the requirement of Step 3.

STEP	PROCEDURE
7	If the requirement of Step 3 is met, proceed to Step 18. If it cannot be met, either of the following may be the cause of trouble. (a) The level of the 104.08-kHz signal from the secondary distributing bus may be incorrect. (b) The pilot insertion module may be defective. Proceed to Step 8 to determine fault location.
8	Select two or more channel banks having pilot insertion modules fed from the same secondary distributing bus as the channel bank tested in Step 3.
9	Repeat Steps 1 through 3 on the selected channel banks.
10	If the requirement of Step 3 ***is met*** in each selected channel bank, a defective pilot insertion module is indicated. Proceed to Step 15.
11	If the requirement of Step 3 ***is not met*** and each channel bank measurement ***differs excessively in the same direction,*** verify the 104.08-kHz stabilizer output as prescribed in Section 356-011-501 (currently Section 356-254-511).
12	If the stabilizer output was adjusted, repeat Steps 1 through 4 on the original channel bank being tested.
13	If the stabilizer output was within limits, verify the output of the secondary distributing bus as prescribed in Section 356-011-502 (currently Section 356-254-512).
14	If the secondary distributing bus output was adjusted, repeat Steps 1 through 4 on the original channel bank being tested. ***Caution: If adjustments were made in Step 11 or Step 13, repeat Steps 1 through 4 for each pilot insertion module fed from the secondary distributing bus involved.***
15	Remove from service either the group connector or the channel bank, as applicable.
16	Remove and replace the defective pilot insertion module with a module of the same group pilot application.
17	Repeat Steps 1 through 4 for the new module.
18	Remove patch (1) in Fig. 1. ***Caution: Interaction may occur between the J68857P pilot insertion modules fed by the same secondary distributing bus. When several of these modules are adjusted, recheck one or two of the first modules to verify that the measured levels have not changed.***

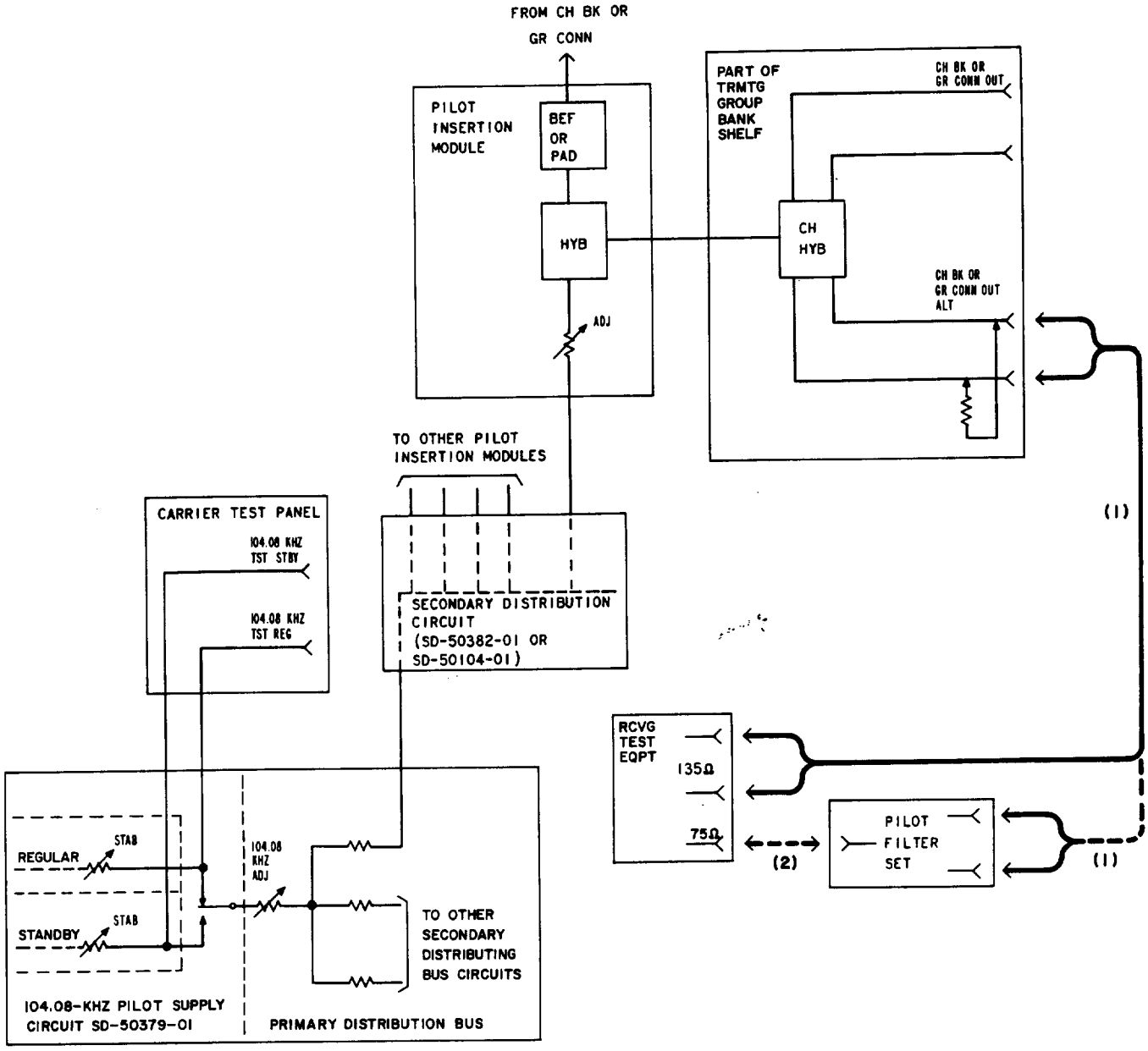

Fig. 1—Transmitting Circuits—104.08-KHZ Group Pilot—In-Service Adjustment