
MULTIPLEX TERMINALS
CARRIER AND PILOT SUPPLY
INDEPENDENT 512-KHZ PILOT SUPPLY AND DISTRIBUTION CIRCUIT
TESTS

This section provides procedures to:

- (a) measure the output of the stabilizer and verify the performance of the detector, alarm, and switching circuits
- (b) measure the harmonic signal power
- (c) measure the distribution bus output
- (d) replace or restore a transfer switch.

This section is reissued to remove the ED-50921-() 512-kHz pilot level adjust unit tests and revise the patching procedure prior to removing the transfer switch. Tests and adjustments of the 512-kHz pilot signals at the wire line entrance links (WLEL) are covered in the practices for the WLEL's. Due to the extensive revisions, arrows normally used to indicate changes have been omitted. **Equipment Test Lists are affected.**

The J68911B independent 512-kHz pilot supply (Fig. 1) and associated J68909 distribution buses can supply line pilots for up to 66 wire line entrance links. A block diagram is shown in Fig. 2.

The pilot supply consists of two identical stabilizer, detector and alarm units.

A nonrevertive transfer circuit connects the in-service stabilizer to the distribution buses and terminates the idle stabilizer. Each stabilizer provides four filtered and amplitude-stabilized outputs. Three outputs are connected to the J68909B distribution buses, and one output is terminated in a test jack. Each distribution bus provides twenty-two 135-ohm balanced taps plus one test jack.

CHART	PAGE
1—Stabilizer, Detector and Alarm Tests	3
2—Harmonic Output	6
3—Distribution Bus Output	7
4—Transfer Switch Replacement and Restoration Procedures	8

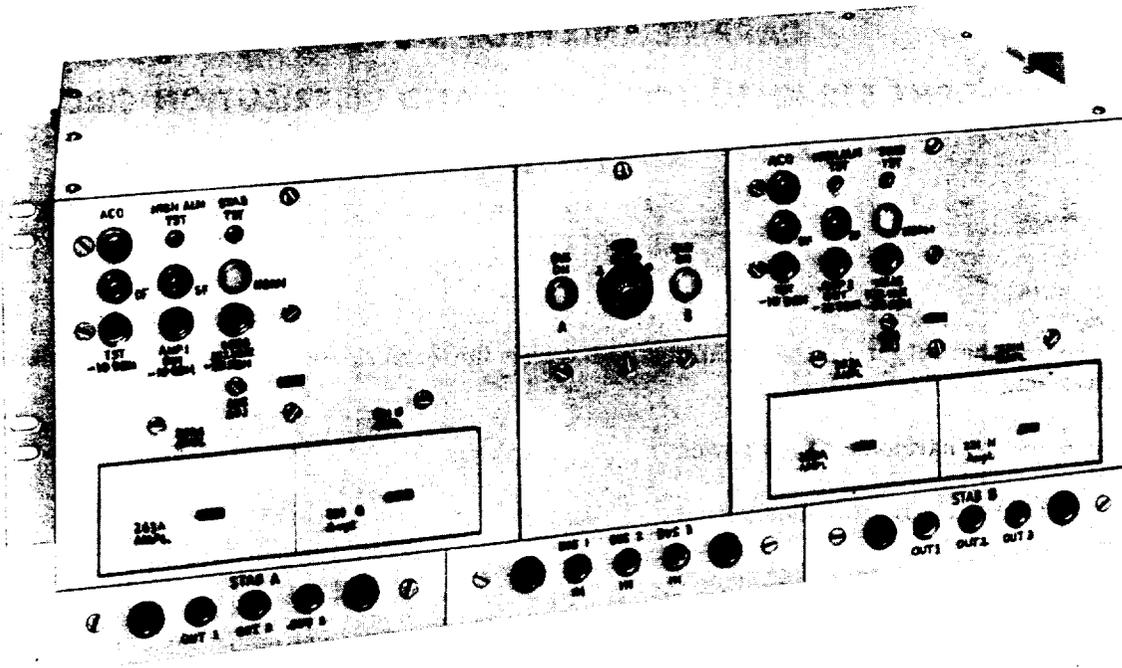


Fig. 1—J68911B Independent 512-kHz Pilot Supply

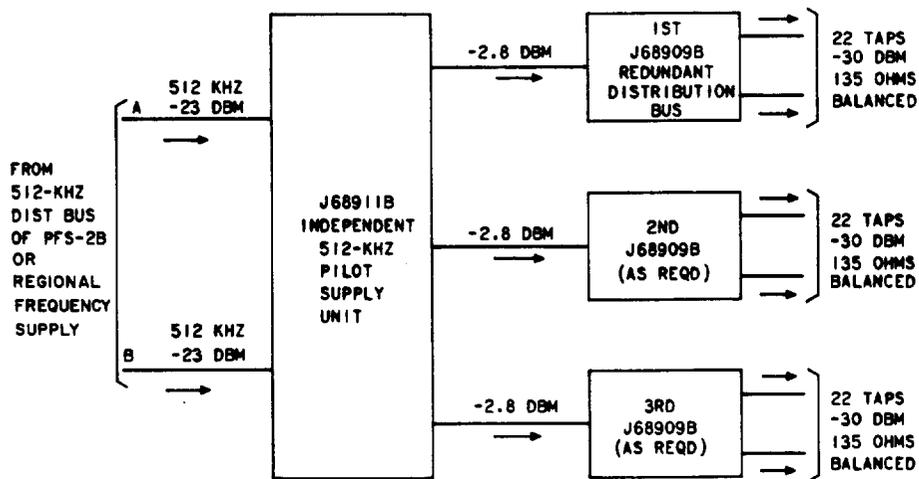


Fig. 2—Independent 512-kHz Pilot Supply and Distribution Circuit

APPARATUS

Receiving Test Equipment (RTE) having the following characteristics (Section 356-010-500):

Frequency Range: 512 kHz

Input Power: -35 to -10 dBm

Impedance: 135 ohms

Frequency Range: 512 kHz to 1.536 MHz

Input Power: -64 dBm

Impedance: 75 ohms

3P17B Cords

P2EE Cords

P2BJ Cords

3P6C Cords

758B High-Pass Filter

135:75-Ohm Impedance Matching Transformer

Note: The impedance matching transformer contained in the 34A Transmission Measuring Set is suitable for these tests.

CHART 1**STABILIZER, DETECTOR AND ALARM TESTS**

STEP	PROCEDURE
1	On the J68911B independent 512-kHz pilot supply, observe the BUS ON lamps located on the transfer switch unit to identify the idle stabilizer. Requirement: The <i>idle</i> stabilizer is indicated by the <i>extinguished</i> BUS ON lamp.
2	Calibrate the RTE for a 135-ohm terminated measurement of 512 kHz at -10 dBm.

CHART 1 (Cont)

STEP	PROCEDURE
3	Measure the power of the 512-kHz signal at the TST -10 DBM jack on the idle stabilizer [patch (1), Fig. 3].
	Requirement: -10 ± 0.05 dBm
4	If the requirement is not met, adjust the BUS ADJ control on the idle stabilizer.
5	If the requirement is now met, proceed to Step 9. If it is not met, proceed to Step 6.
6	Calibrate the RTE for a 135-ohm terminated measurement of 512 kHz at -35 dBm.
7	Measure the power of the 512-kHz signal at the MEAS 512 KHZ -35 DBM jack on the <i>idle stabilizer</i> [patch (2), Fig. 3].

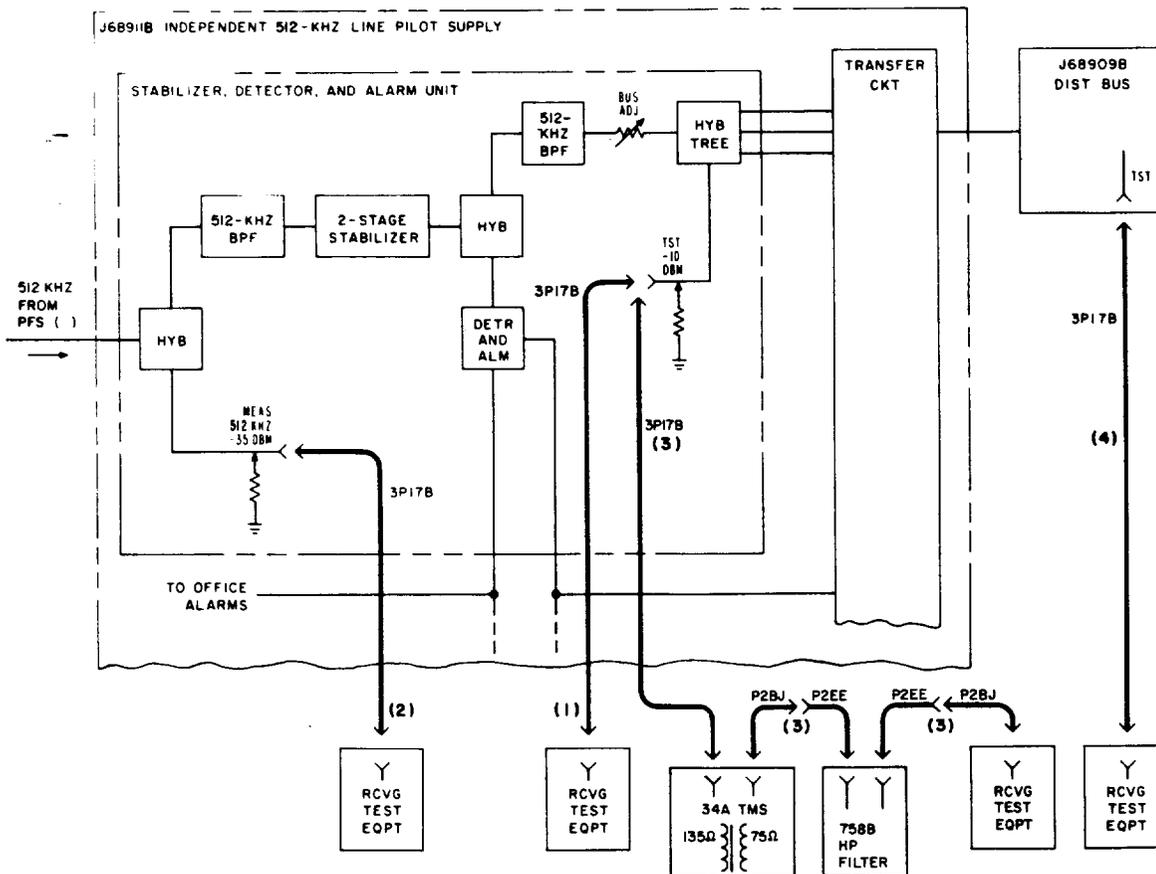


Fig. 3—Independent 512-kHz Pilot Supply and Distribution Circuit Test Connections

CHART 1 (Cont)

STEP**PROCEDURE**

Requirement: Between -36.5 and -32 dBm

- 8 If the requirement of Step 7 is not met, refer to Section 354-105-500 for PFS-2B, or Section 354-140-503 for RFS; clear trouble in the connecting apparatus or wiring, and repeat Steps 2 through 4.

STABILIZER TEST

- 9 Depress and hold depressed the STAB TST pushbutton on the idle stabilizer.
- 10 Note any change in the power of the 512-kHz signal.

Requirement: A decrease of less than 0.3 dB from the power measured in Step 3

- 11 Release the STAB TST key.
- 12 Remove all test connections.

DETECTOR AND ALARM TESTS

- 13 Depress and hold depressed the HIGH ALM TST pushbutton.

Requirements: (a) The NORM lamp extinguishes.
 (b) The SF lamp lights.
 (c) The audible alarm is operated.

- 14 Depress the ACO key to silence the audible alarm.
- 15 Release the HIGH ALM TST pushbutton.

Requirements: (a) The NORM lamp lights.
 (b) The SF lamp extinguishes.

- 16 Remove the 263A amplifier.

Requirements: (a) The NORM lamp extinguishes.
 (b) The SF lamp lights.
 (c) The audible alarm is operated.

- 17 Reinsert the 263A amplifier.

Requirements: (a) The NORM lamp lights.
 (b) The SF lamp extinguishes.
 (c) The audible alarm is silenced.

CHART 1 (Cont)

STEP	PROCEDURE
TRANSFER CIRCUIT TESTS	
Caution: Do not remove the A stabilizer when the transfer switch is in the AUTO position. If the A stabilizer is to be removed, first place the transfer switch in the B position.	
18	Position the transfer switch control from the AUTO position to the in-service stabilizer position indicated by the lighted BUS ON lamp.
Requirement: No change in status of BUS ON lamps	
19	Position the transfer switch control to the idle stabilizer position indicated by the extinguished BUS ON lamp.
Requirements: (a) The BUS ON lamp previously lighted is extinguished. (b) The BUS ON lamp previously extinguished is lighted.	
20	Repeat Steps 1 through 20 for the stabilizer now in the idle condition.
21	Restore the transfer switch manual control to the AUTO position.

CHART 2
HARMONIC OUTPUT

STEP	PROCEDURE
Caution: Do not remove the A stabilizer when the transfer switch is in the AUTO position. If the A stabilizer is to be removed, first place the transfer switch in the B position.	
1	On the J68911B independent 512-kHz pilot supply, observe the BUS ON lamps located on the transfer switch unit to identify the idle stabilizer.
Requirement: The <i>idle</i> stabilizer is indicated by the <i>extinguished</i> BUS ON lamp.	
2	Calibrate the RTE to make a 75-ohm terminated measurement of 1.536 MHz at -65 dBm.
3	Measure the power of the 1.536-MHz harmonic signal at the TST -10 dBm jack on the idle stabilizer [patch 3, Fig. 3].
Requirement: Less than -65 dBm	

CHART 2 (Cont)

STEP	PROCEDURE
4	If the requirement is not met, replace the stabilizer unit and repeat Step 3.
5	Transfer service to the idle stabilizer and repeat Steps 1 through 4 for the new idle stabilizer.
6	Remove all test connections.

CHART 3
DISTRIBUTION BUS OUTPUT

STEP	PROCEDURE
1	On the J68911B independent 512-kHz pilot supply, observe the BUS ON lamps located on the transfer switch unit to identify the in-service stabilizer. Requirement: The <i>in-service</i> stabilizer is indicated by the <i>lighted</i> BUS ON lamp.
2	Calibrate the RTE for a 135-ohm terminated measurement of 512 kHz at -30 dBm.
3	Measure the power of the 512-kHz signal at the TST jack on the first J68909B distribution bus [patch (4), Fig. 3]. Requirement: -30 ± 0.1 dBm
4	If the requirement is not met, adjust the BUS ADJ control on the in-service stabilizer.
5	If the requirement cannot be met by adjustment, perform the tests in Chart 1.
6	Transfer service to the idle stabilizer and repeat Steps 1 through 5 for the new in-service stabilizer.
7	Repeat Step 3 for the second and third J68909B distribution buses, if provided.
8	If the requirement of Step 3 cannot be met for the second and third buses, investigate the cause of trouble. DO NOT readjust the BUS ADJ controls on the stabilizers.
9	Remove all test connections.

CHART 4

TRANSFER SWITCH REPLACEMENT AND RESTORATION PROCEDURES

STEP	PROCEDURE
1	On the J68911B independent 512-kHz pilot supply, observe the BUS ON lamps located on the transfer switch unit to identify the in-service stabilizer. <i>Requirement:</i> The <i>in-service</i> stabilizer is indicated by the <i>lighted</i> BUS ON lamp.
2	Calibrate the RTE for a 135-ohm terminated measurement of 512 kHz at -30 dBm.
3	Connect the RTE to the TST jack on the first J68909B distribution bus [patch (1), Fig. 4].
4	Make patches 1, 2, and 3 in Fig. 4 on the J68911B independent 512-kHz pilot supply. <i>Note:</i> Depending upon equipment requirements, the BUS 2 and BUS 3 positions may not be equipped. Patches 2 and 3 are required for all equipment requirements to insure proper termination of the stabilizer when the transfer switch is removed.
5	Remove the transfer switch plug-in unit.
6	Verify that the RTE measures a 512-kHz signal at each distribution bus TST jack [patch (1), Fig. 4]. <i>Requirement:</i> -30.0 ± 0.5 dBm
7	Insert the replacement transfer switch plug-in unit.
8	Remove the patches placed in Step 4 while monitoring the 512-kHz signal output at the distribution bus TST jack associated with the patch cord being removed.
9	Remove all test connections.
10	Perform the tests in Charts 1 and 3.

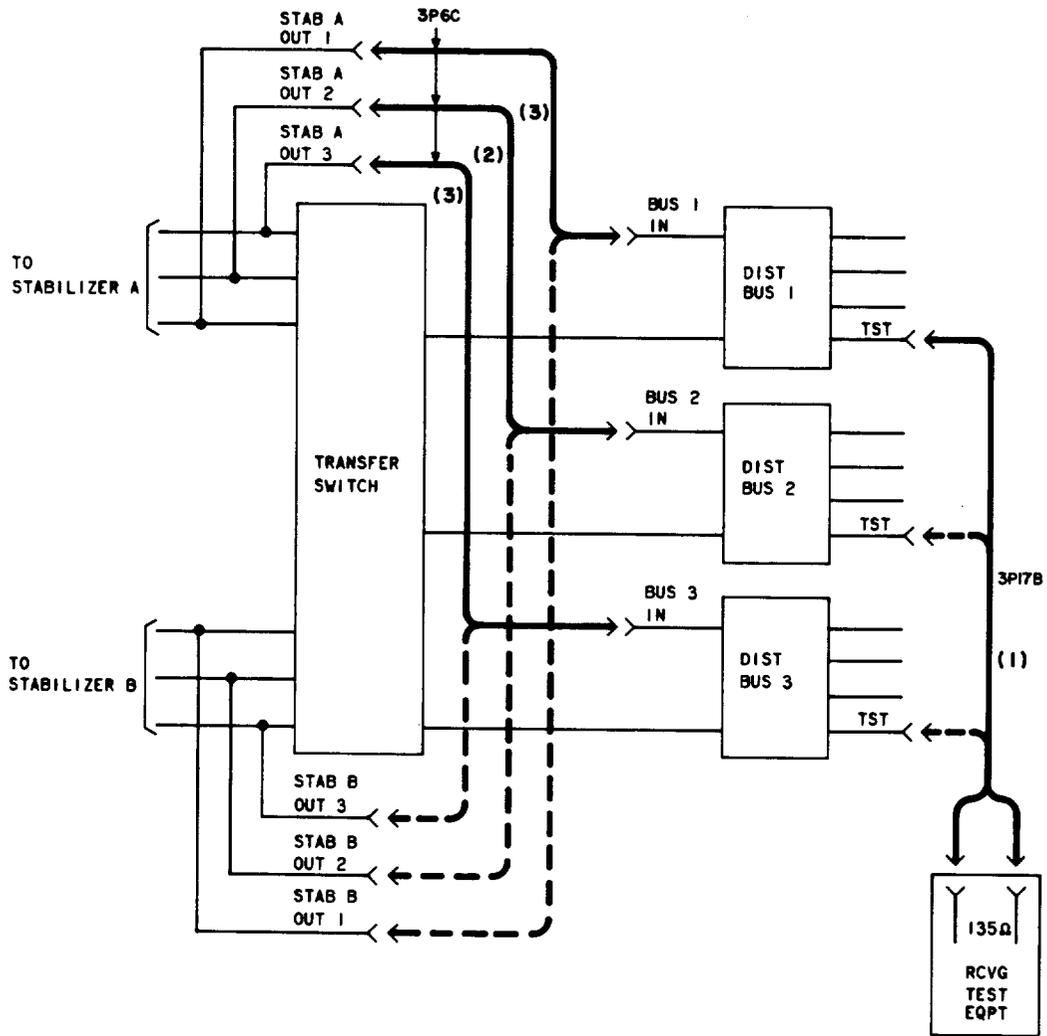


Fig. 4—Transfer Switch Replacement or Failure—Patching Procedures