
TYPE N1, O AND ON CARRIER TELEPHONE SYSTEM
OVER-ALL CHANNEL LINE-UP
TYPE N CARRIER—SCHEDULE C AND D PROGRAM CHANNEL UNIT
VOICE FREQUENCY TESTS AND ADJUSTMENTS

This section gives the tests required for the line-up of the voice frequency portions of the N Carrier C and D program channel unit. The carrier frequency tests are the same as those required for message channels.

This section is reissued to specify the use of a 3/8-ampere fuse in the J98705M Channel Unit Test Stand when testing C and D program channel units. Arrows are used to indicate changes. This reissue affects the Equipment Test List.

The C and D program channel unit is always tested using a -27 dbm, 1000-cycle test tone. This is used in place of the -16 dbm test tone used for other channels because of the possibility of compandor tracking error between the test levels and the levels used on the service assigned to the channel. The -27 dbm source can be obtained by using any of the following means:

- A 21A TMS with the oscillator output set for -27 dbm.
- A 1MW supply and a 5A attenuator set for 27 db loss.
- A -16 dbm supply and a 1C pad equipped with an 89 BC (11 db) resistor.

The T, TA switch on the expander subassembly should be set to T when an F-type carrier frequency subassembly is used or to TA when an FA-type carrier frequency subassembly is used.

APPARATUS:

- 1—Hewlett-Packard 400-type Vacuum Tube Voltmeter (VTVM)
- 1—Channel Unit Test Stand (J98705M)
- 1—3P6F Cord (used to connect 1000-cycle testing tone to the Channel Unit Test Stand)
- 1—W2DW Cord (used to connect the VTVM to test points)
- 1—Source of 1000-cycle, -27 dbm tone (see above)
- 1—262B Plug (600 ohms)
- 1—3/8 ampere +130V fuse

NOTICE

Not for use or disclosure outside the
Bell System except under written agreement

(A) ADJUSTMENT OF COMPRESSOR OUTPUT

STEP	PROCEDURE
1	◆Replace the 1/8 ampere +130V fuse in the test stand with a 3/8 ampere + 130V fuse.◆
2	Remove the channel from service and place it in the test stand.
3	Patch the 1000-cycle -27 dbm test tone to the VF IN jacks on the channel unit test stand.
4	Using a W2DW cord, connect the vacuum tube voltmeter between the M jack on the channel unit and the GRD jack on the channel unit test stand.
5	Adjust the COMP potentiometer for a maximum reading. The meter should indicate a reading of—
	Requirement: At least +3.0 db
	(a) If the requirement is met proceed to Step 5.
	(b) If the requirement cannot be met, connect the VTVM to the C1 and C2 jacks (using a W2DW cord) and measure the compressor input. The level should be -27 ±0.5 db with some deviation caused by the grounded VTVM (must be grounded for safety reasons).
	(c) If the requirement still cannot be met check the electron tubes in the compressor subassembly.
	(d) If the requirement still cannot be met replace the compressor subassembly.
6	Adjust the COMP potentiometer for a reading of—
	Requirement: +2.5 db
7	◆If no other tests are to be made, remove the test connections, replace the channel unit in the terminal mounting, and replace the 3/8 ampere test-stand fuse with the normal 1/8 ampere fuse.◆

(B) RECEIVING VOICE FREQUENCY TESTS

STEP	PROCEDURE
	These tests are to be made only after the carrier frequency tests, covered in another section, have been made.
1	◆Replace the 1/8 ampere, +130V fuse in the test stand with a 3/8 ampere, +130V fuse.◆

(B) RECEIVING VOICE FREQUENCY TESTS (Cont)

STEP	PROCEDURE
2	Remove the channel from service and place it in the channel unit test stand.
	At the Transmitting (Distant) Terminal—
3	Patch a 1000-cycle, -27 dbm test tone to the MOD IN or equivalent VF IN jacks. (If jack appearances are not available, the channel must be placed in the channel unit test stand to gain access to the VF IN jack.)
	At the Receiving (Local) Terminal—
4	Terminate the expander by placing a 262B plug (600 ohms) in the VF OUT jack of the channel unit test stand.
5	Connect the VTVM to terminal 6 of FL 42 (outside center terminal of the 168E filter) and to the GRD jack on the test stand. Read the meter.
	Requirement: +11.0 to +14.0 db
6	Move the VTVM leads to the E1 and E2 jacks. Read the meter and adjust the EXP potentiometer for a reading of:
	Requirement: -4.0 dbm
7	If a modified carrier frequency subassembly is being used (blue label on the handle), proceed to Step 6. If an unmodified carrier frequency subassembly is being used (silver label or no label on the handle), proceed to Step 11.
8	Move the VTVM leads to the R1 jack on the channel unit and the GRD jack on the test stand.
9	Adjust the REG potentiometer for a reading of -41 db.
10	Move the VTVM leads to the E1 and E2 jacks and read the meter.
	Requirement: -3.5 to -4.5 dbm
	If this requirement is not met, replace the V102 tube and recheck the regulator performance (receiving carrier frequency adjustment and Steps 5 through 8). If the requirement is still not met, replace the carrier frequency subassembly.
11	Move the VTVM leads to the R1 and GRD jacks.
12	Adjust the REG potentiometer for a reading of -33.0 db.

(B) RECEIVING VOICE FREQUENCY TESTS (Cont)

STEP	PROCEDURE
13	If no other tests are to be made, remove the test connections, replace the channel unit in the terminal mounting, and replace the 3/8 ampere test-stand fuse with the normal 1/8 ampere fuse.

(C) MAINTENANCE MEASUREMENTS WITH CHANNEL IN TERMINAL

STEP	PROCEDURE
Compressor Output	
1	Remove the channel from service.
2	Connect 1000-cycle, -27 dbm tone to the MOD IN or equivalent VF IN jacks.
3	Using the W2DW cord, connect the VTVM between the M jack on the channel unit and chassis ground.
Requirement: +2.0 to +3.0 db	
If this requirement is not met, recheck the compressor as described in Part (A).	
Expander Output	
1	Remove the channel from service.
2	Have the distant terminal connect 1000-cycle, -27 dbm tone to the MOD IN or equivalent VF IN jack.
3	Using the W2DW cord, connect the VTVM to the E1 and E2 jacks on the channel unit.
Requirement: -3.0 to -5.0 dbm	
If this requirement is not met, have the distant terminal check their compressor output. If the requirement is met, readjust the expander as described in Part (B).	

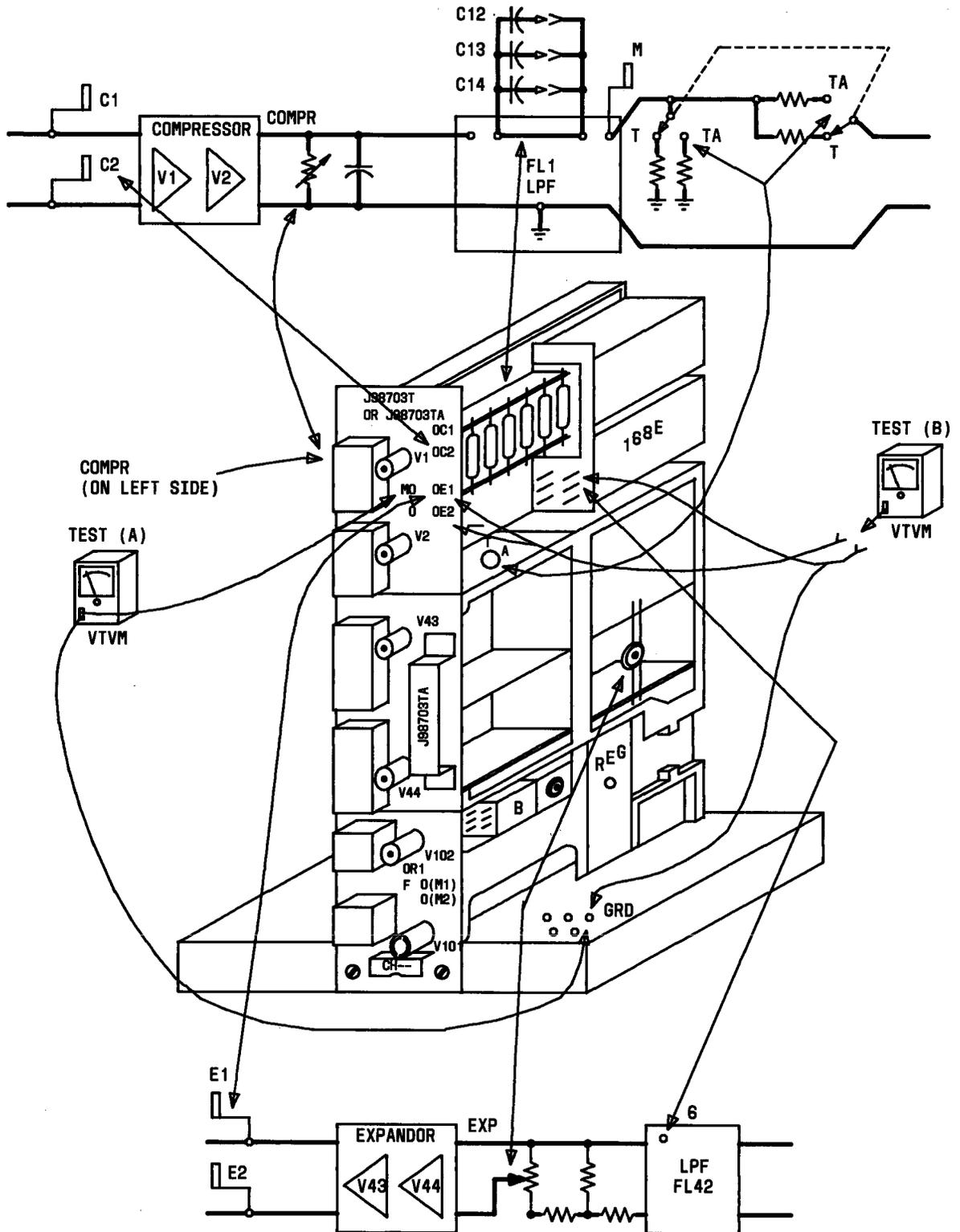


Fig. 1—Test Setup