

TYPE N2 CARRIER TELEPHONE SYSTEM
OVERALL CHANNEL LINE-UP
MESSAGE AND SCHEDULE C AND D PROGRAM CHANNELS
CHANNEL NET GAIN AND FREQUENCY RESPONSE

Voice frequencies at the transmitting end of a channel enter the compressor circuit of a compandor unit where their volume range is reduced by one-half and the syllabic power is increased. The compressed signals are passed through the channel modulator and common terminal equipment to the line. No line-up adjustments are provided in the compressor circuits.

At the receiving end of a channel, the compressed signals from the carrier line again pass through common terminal equipment to the channel demodulator output where voice frequencies are fed into the expander circuit, which restores the speech to its original volume range.

For the channel net gain test, a 1000-cycle tone is applied to the channel at the transmitting end, and the expander output is measured at the receiving end. The OUT ADJ potentiometer on the compandor unit provides means for adjusting the gain of the expander circuit and, thus, the received signal power at the N2 terminal VF output. This is the only adjustment available for channel gain.

The adjustments are made so that a standard office power of +7 dbm (+4 in -13 and +4 offices) is provided at the 4-wire jacks if they are available. If 4-wire jacks are not provided, the +7 dbm standard power will be provided at the output of the N2 expander. Where 4-wire jack appearances are available, in a centralized patching bay or in a packaged bay jack field, Test A of this section should be performed. Where 4-wire jack appearances are not available, an N2 terminal test stand is required, and Test B of this section should be performed.

The schedule C and D frequency response test compares the received signal power at specified frequencies to the 1000-cycle level. No equalization adjustment is provided.

These tests should be performed only when the compressor and modem units at the transmitting terminal, the high-frequency line, and the receiving terminal modem unit are within their requirements.

This section is reissued to simplify the test procedures, to add frequency response requirements for schedule C and D program channels, and to eliminate reference to a balanced voice-frequency potentiometer (GAIN ADJ). Since this reissue also incorporates a general revision, marginal arrows ordinarily used to indicate changes have been omitted.

The purpose of these tests is to measure and adjust the overall channel net gain of message and schedule C and D program channels and to measure the frequency response of schedule C and D program channels.

APPARATUS:

- 1 — J64021A Transmission Measuring Set (TMS) (or 40-Type) Transmission Measuring System*
- 1 — N2 Terminal Test Stand (J99272W or J99272AH)
- 1 — 3P6 Cord
- 1 — 3P17 Cord

*The TMS includes a variable frequency source which is required for frequency response measurements on schedule C and D program channels (Test C).

TEST A**ADJUSTMENT OF CHANNEL NET GAIN AT OFFICES
WITH 4-WIRE JACK APPEARANCES**

STEP	PROCEDURE
1	Remove the channel to be tested from service.
2	At the transmitting terminal, patch a 1000-cycle test tone (600-ohm source) at -16 dbm to the MOD IN or VF IN jacks in the jack field or patch bay.
3	<p>At the receiving terminal, measure the 1000-cycle tone with the TMS at the DEM OUT or VF OUT jack on the jack field or patch bay.</p> <p>Line-up Requirement: +7.0 dbm.</p> <p>If this requirement is not met, adjust the OUT ADJ potentiometer on the compandor unit at the receiving terminal.</p> <p>Maintenance Requirement: +7.0 ±0.2 dbm.</p> <p>If this requirement is not met, adjust the OUT ADJ potentiometer on the compandor unit to obtain a reading of +7.0 dbm.</p>
4	Restore the channel to service.

TEST B**ADJUSTMENT OF CHANNEL NET GAIN AT
OFFICES WITHOUT 4-WIRE JACK APPEARANCES**

STEP	PROCEDURE
1	Remove the channel to be tested from service.
2	At both the transmitting and receiving terminals, remove the compandor units and reconnect them using the N2 terminal test stand.

STEP	PROCEDURE																	
3	<p>At the transmitting terminal, patch a 1000-cycle (600-ohm source) test tone to the terminal test stand using test-tone power and jack connections as indicated in Table A.</p> <p style="text-align: center;">TABLE A</p> <table border="1" data-bbox="349 457 1515 871"> <thead> <tr> <th data-bbox="349 457 669 541">TEST-TONE POWER</th> <th data-bbox="669 457 1097 541">J99272W TEST STAND</th> <th data-bbox="1097 457 1515 541">J99272AH TEST STAND</th> </tr> </thead> <tbody> <tr> <td data-bbox="349 541 669 772">0 dbm</td> <td data-bbox="669 541 1097 772">(1) Patch to MW IN jack (2) Patch from -16 DBM OUT jack to COMP IN jack</td> <td data-bbox="1097 541 1515 772">(1) Patch to MW IN jack (2) Patch from -16 DBM OUT jack to VF IN jack</td> </tr> <tr> <td data-bbox="349 772 669 871">-16 dbm</td> <td data-bbox="669 772 1097 871">Patch to COMP IN jack</td> <td data-bbox="1097 772 1515 871">Patch to VF IN jack</td> </tr> </tbody> </table>	TEST-TONE POWER	J99272W TEST STAND	J99272AH TEST STAND	0 dbm	(1) Patch to MW IN jack (2) Patch from -16 DBM OUT jack to COMP IN jack	(1) Patch to MW IN jack (2) Patch from -16 DBM OUT jack to VF IN jack	-16 dbm	Patch to COMP IN jack	Patch to VF IN jack								
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4	<p>At the receiving terminal, connect the TMS to the terminal test stand as outlined in Table B.</p> <p style="text-align: center;">TABLE B</p> <table border="1" data-bbox="414 1060 1450 1423"> <thead> <tr> <th data-bbox="414 1060 550 1157" rowspan="2">TEST SET</th> <th data-bbox="550 1060 781 1157" rowspan="2">TEST SET OUTPUT JACK</th> <th data-bbox="781 1060 954 1157" rowspan="2">PATCH CORD</th> <th colspan="2" data-bbox="954 1060 1450 1098">TERMINAL TEST STAND JACKS</th> </tr> <tr> <th data-bbox="954 1098 1205 1157">J99272W</th> <th data-bbox="1205 1098 1450 1157">J99272AH</th> </tr> </thead> <tbody> <tr> <td data-bbox="414 1157 550 1289">21A TMS</td> <td data-bbox="550 1157 781 1289">DET IN-600Ω</td> <td data-bbox="781 1157 954 1289">3P17</td> <td data-bbox="954 1157 1205 1289">EXP OUT</td> <td data-bbox="1205 1157 1450 1289">VF OUT</td> </tr> <tr> <td data-bbox="414 1289 550 1423">40-Type</td> <td data-bbox="550 1289 781 1423">600Ω TST</td> <td data-bbox="781 1289 954 1423">3P6</td> <td data-bbox="954 1289 1205 1423">EXP OUT</td> <td data-bbox="1205 1289 1450 1423">VF OUT</td> </tr> </tbody> </table> <p>Line-up Requirement: +7.0 dbm.</p> <p>If this requirement is not met, adjust the OUT ADJ potentiometer on the compandor unit at the receiving terminal.</p> <p>Maintenance Requirement: +7.0 ±0.2 dbm.</p> <p>If this requirement is not met, adjust the OUT ADJ potentiometer on the compandor unit at the receiving terminal to obtain a reading of +7.0 dbm.</p>	TEST SET	TEST SET OUTPUT JACK	PATCH CORD	TERMINAL TEST STAND JACKS		J99272W	J99272AH	21A TMS	DET IN-600Ω	3P17	EXP OUT	VF OUT	40-Type	600Ω TST	3P6	EXP OUT	VF OUT
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5	Restore the channel to service.																	

TEST C

FREQUENCY RESPONSE SCHEDULE C AND D PROGRAM CHANNELS

STEP	PROCEDURE																					
1	Remove the channel to be tested from service.																					
2	At the transmitting terminal, connect a variable frequency source (21A TMS) to the MOD IN or VF IN jacks in the jack field or patch bay. If a 4-wire jack appearance is not available, use the terminal test stand and connect the variable frequency source as indicated in Test B.																					
3	Coordinate with the receiving terminal and transmit the frequencies shown in Table C.																					
4	At the receiving terminal, measure the power of each frequency with the TMS at the DEM OUT or VF OUT jacks in the jack field or patch bay. If a 4-wire jack appearance is not available, use the terminal test stand as indicated in Test B.																					
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*Adjust OUT ADJ potentiometer to meet the requirement.																						
6	Restore channel to service.																					