TYPE O AND ON CARRIER TELEPHONE SYSTEMS—TERMINALS AND JUNCTIONS

CHANNEL UNIT LINEUP—TRANSMITTING

MESSAGE OUTPUT—SIGNALING OUTPUT AND CARRIER LEAK

▶Terminal noise can be reduced 1 to 4 dB by using 3-dB reduced level signaling. Old group oscillators must be modified with option ZZ to produce level reduction. New oscillators come equipped with this option.◀

This section is reissued to add a caution and to make other miscellaneous changes. Arrows indicate changes in this section. This reissue does not affect Equipment Test Lists.

The carrier used in the channel modulator is generated in the twin channel unit. The channel modulator modulates the carrier with the voice frequencies and the 3700-Hz signaling tone. The T jack on the channel unit is connected at the output of the bandpass filter and is used for various tests and adjustments. ▶The T potentiometer on the input of the bandpass filter is used for adjustment.◀

The purpose of this section is to test and adjust the channel message output and to test the signaling output and carrier leak at the output of the channel unit.

APPARATUS:

1—Hewlett-Packard 400-Type Vacuum Tube Voltmeter (VTVM)

1—2B Signaling Test Set

1—2P1D Cord (used to connect 2B Signaling Test Set)

1—W2DW Cord (to connect VTVM to test points—do not substitute test cord)

1—262B Plug (used to terminate 600 ohms)

1—Channel Unit Test Stand (J98705M)

1—P19A Cord (used with channel unit test stand)

STEP	PROCEDURE
	Note: To make these tests, the channel unit must be out of service and inserted in the channel unit test stand.

STEP	PROCEDURE
	Caution: ***When testing at a carrier terminal on a channel that has −48 volts applied to disable the 3700-Hz signaling tone, do not perform any tests with the 2B signaling test set. Operating the TWD L key under this condition may result in damage to the 2B set.***
	Message Output
1	Connect the 2B signaling test set (Fig. 1) and place an off-hook condition on the line.
	Note: The 2B signaling test set is connected as follows. At the transmitting terminal, connect jack M of the 2B test set to jack M of the test stand using a 2P1D cord. Operate the TWD L key of the 2B test set to ON HK or OFF HK, as required.
2	Send 1000 Hz at the VF IN jack of the test stand at −16 dBm (4 wire) or 0 dBm (2 wire).
3	Connect the upper terminal of the VTVM to jack T located on the channel unit. Connect the lower terminal of the VTVM to the ground jack on the unit being tested.
4	Turn the selector switch on the test stand to O1 TERM.
5	Measure the channel output. ***Requirement:*** Test −40.0 to −42.0 dB Lineup −41.0 dB
6	Adjust potentiometer T on the channel unit to meet the requirement.
	Signaling Output
	Note: This test applies when out-of-band signaling (3700 Hz) is used.
7	Operate the TWD L key of the 2B signaling test set to ON HK to place an on-hook condition on the line.
8	Terminate the VF IN jack of the test stand in 600 ohms with a 262B plug.
9	Measure the signaling tone output with the VTVM at jack T.

SYSTEMS	*3-dB REDUCED LEVEL	OLD LEVEL
O and ON	−50.5 to −42.5 dB	−47.5 to −39.5 dB
ON/K	−54 to −47 dB	−51 to −44 dB

*Old group oscillators must be modified with option ZZ to produce level reduction.

Carrier Leak

STEP	PROCEDURE
	Caution: When testing at a carrier terminal on a channel that has −48 volts applied to disable the 3700-Hz signaling tone, do not perform tests with the 2B signaling test set. Operating the TWD L key under this condition may result in damage to the 2B set.
10	Leave the selector switch on the test set in O1 TERM position. When out-of-band signaling is used, place an off-hook condition on the line with the 2B signaling test set. Terminate the VF IN jack of the test stand in 600 ohms with a 262B plug.
11	Measure the carrier leak at jack T using the VTVM. ***Requirement:*** Less than −66.0 dB.
12	Turn the selector switch on the test stand to N1-O1 NORMAL and again measure the carrier leak at jack T. ***Requirement:*** Less than −54.0 dB. ***Note 1:*** If a reading higher than −54.0 dB is obtained, remove the group from service (4 channels) and pull both twin channel units in the group momentarily to determine if the twin channel oscillators are feeding power back through the combining multiple to jack T. If the reading at jack T remains greater than −54.9 dB, the group transmitting unit should be replaced. ***Note 2:*** Generally, a high transmitting group unit carrier leak accompanied by a high group oscillator output measurement indicates a defective varistor in the group transmitting unit.
13	Remove all test connections.

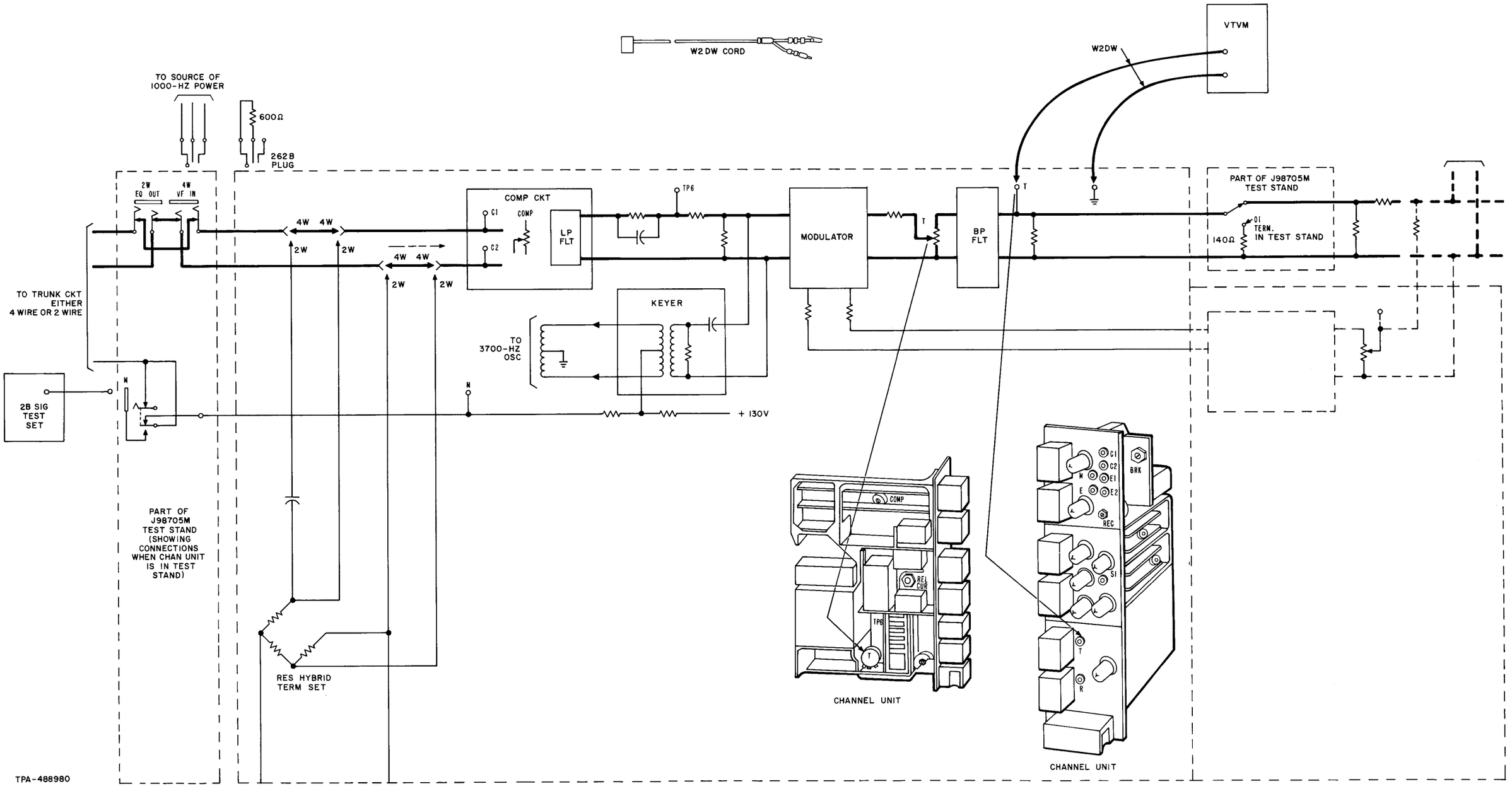

Fig. 1—Channel Unit Message Output, Signaling Output, Carrier Leak