

**TYPE N1, O, AND ON CARRIER TELEPHONE SYSTEMS —  
OVERALL CHANNEL LINE-UP  
SUMMARY CHARTS — LINE-UP AND MAINTENANCE  
O AND ON CARRIER — THRU CHANNEL UNIT (J98705AF)**

This section is revised to add requirements when the thru channel unit is connected to N carrier. Since this reissue covers a general revision, marginal arrows ordinarily used to indicate changes have been omitted.

This section consists of an overall diagram of the channel unit (Fig. 1) and a chart giving the tests required for line-up and maintenance of a channel using the thru channel unit.

The thru channel unit (TCU) consists of a thru VF channel subassembly and a carrier frequency subassembly.

The carrier frequency subassembly is identical to that used in the J98705D message channel unit, and tests and adjustments involving the carrier frequency subassembly are also identical.

Two thru channel units are used in tandem to extend services. The thru channel unit that receives test tone or signaling tones from a distant terminal is the receiving TCU, and the thru channel unit that transmits toward a distant terminal in the same direction is the complementary TCU.

It will be necessary to refer to associated sections in this subdivision of practices for the detailed procedures and for steps to be taken where requirements are not met. Familiarity with the sections covering the testing methods in detail is essential before this section is used.

For investigation of noise on the overall message channel, the noise measurement at the output of the thru channel unit will be approximately 28 db higher than a comparable message channel unit because of the absence of the expander in the thru channel unit.

The tests must be completed in numerical sequence with testing equipment which has been accurately calibrated.

**APPARATUS:**

- 1 — Hewlett-Packard 400-type Vacuum Tube Voltmeter (VTVM)
- 1 — W2DW Cord (to connect VTVM to test points)
- 1 — Channel Unit Test Stand (J98705M)
- 1 — P19A Cord (used with channel unit test stand)
- 1 — 262B Plug (600 ohms)

CHART I

## LINE-UP AND MAINTENANCE TESTS — O AND ON CARRIER — THRU CHANNEL UNITS (J98705AF)

TEST	PURPOSE OF TEST	TEST STAND	MEAS EQUIP. REQUIRED		MEASURE TEST POINT TO GRD OR BETWEEN TEST POINTS	REQUIRED VALUE		ADJUST	TEST CONDITIONS AND REMARKS	SECTION REFERENCE
			TESTING END	DISTANT END		TEST	READJUST			
1	Receiving level	Yes	VTVM 262B plug	2B sig test set 1000~ test tone	R jack	11.0 ±1.0 db	+11.0 db	R	<i>Distant End:</i> Off-hook condition on M lead. Send 1000~ at 0 dbm, 2-wire; -16 dbm, 4-wire.	362-310-501
2	1000~ output receiving	Yes	VTVM 262B plug	2B sig test set 1000~ test tone	J3-J4 of receiving TCU	-16 db offices: +4.0 ±1.0 db	+4.0 db	CHAN on receiving TCU	<i>Testing End:</i> Terminate VF OUT jacks of test stand with 600 ohms when complementary TCU is not connected.	
3	3700~ output receiving	Yes	VTVM 262B plug	2B sig test set	J3-J4 of receiving TCU	<i>Front panel switch in O position:</i> -16 db offices — +5.5 ±1.0 db -13 db offices — +8.5 ±1.0 db	+5.5 db		SIG on receiving TCU	<i>Distant End:</i> Remove test tone, on-hook condition on M lead. <i>Testing End:</i> Terminate thru channel in 600 ohms when complementary TCU is not connected. Set switch OFF-N-O to N or O as required by the type of system to which the thru channel will be connected.
						<i>Front panel switch in N position:</i> -16 db offices — -1.5 ±1.0 db -13 db offices — +1.5 ±1.0 db	-1.5 db	—		
4	Message output transmitting (complementary TCU)	Yes	VTVM	2B sig test set 1000~ test tone	T jack	-40.0 to -42.0 db	-41 db	T	<i>Distant end:</i> Off-hook condition on M lead. Send 1000~ at 0 dbm, 2-wire; -16 dbm, 4-wire. <i>Testing end:</i> Turn the selector switch on stand to O1 TERM. Verify J3-J4 reading before adjusting potentiometer T.	362-115-502
5	Signaling output transmitting (complementary TCU)	Yes	VTVM	2B sig test set	T jack	-39.5 to -47.5 db	—	—	<i>Distant end:</i> On-hook condition on M lead.	
6	Carrier leak (complementary TCU)	Yes	VTVM	—	T jack	Less than -66.0 db	—	—	<i>Distant end:</i> Off-hook condition on M lead. <i>Testing end:</i> Terminate VF IN jacks of test stand in 600 ohms. Set switch S1 of test stand to O1 TERM.	362-115-502
						Less than -54.0 db	—	—	Turn selector switch to N1-O1 NORMAL.	

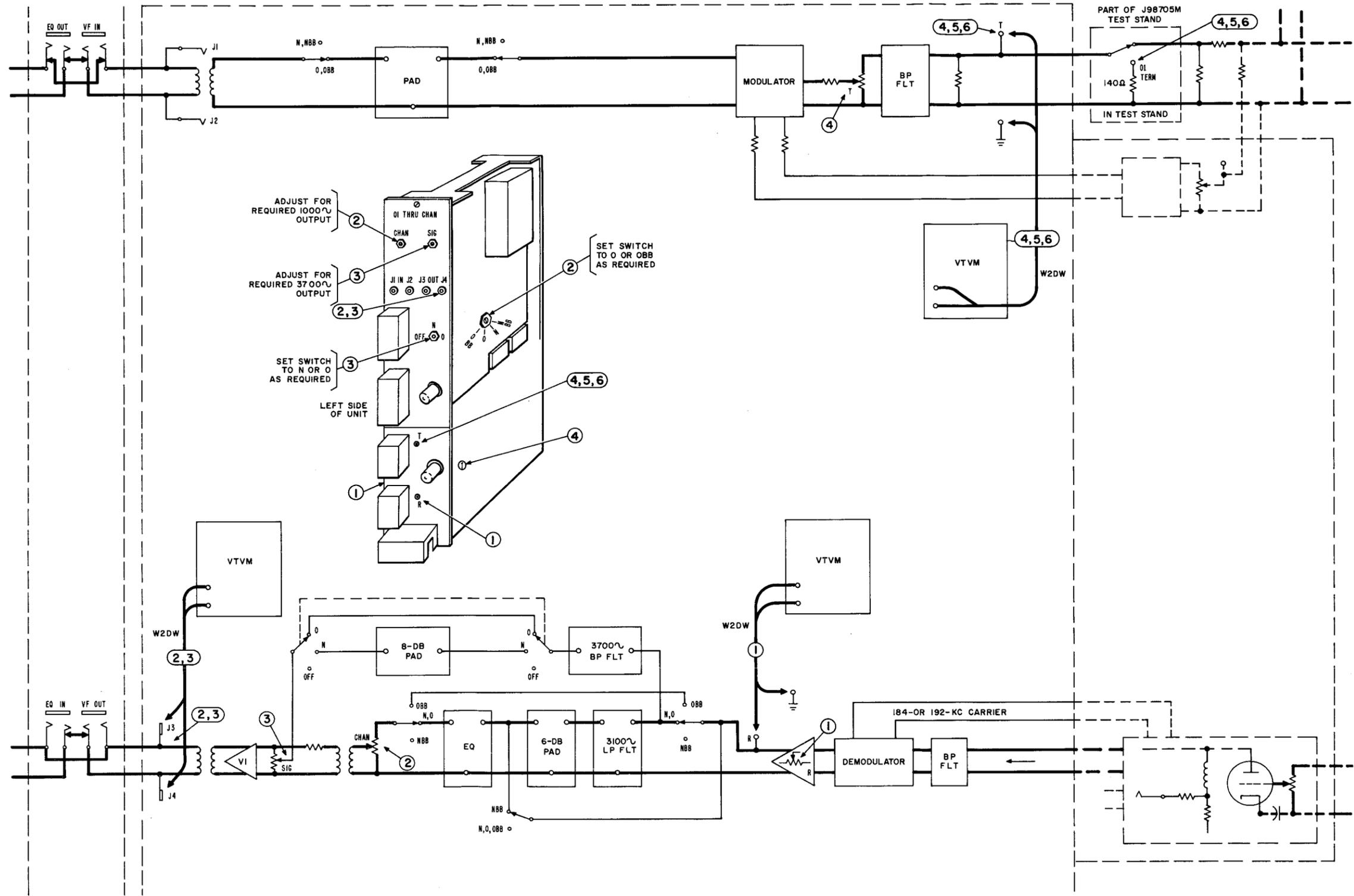


Fig. 1 — Line-Up and Maintenance Tests — O and ON Carrier — Thru Channel Units (J98705AF)