

**TYPE N1, O AND ON CARRIER TELEPHONE SYSTEMS —
OVER-ALL CHANNEL LINE-UP
SUMMARY CHARTS — LINE-UP AND MAINTENANCE
N1 CARRIER — SPECIAL SERVICES CHANNEL UNIT (J98703AM)**

This section is reissued to clarify the dual voice frequency requirements, to add tests for modified carrier frequency units, to add Chart II and to make other minor changes. The section consists of an over-all diagram of the channel unit and charts giving the tests required for line-up and maintenance of a special services channel unit. Chart I is provided for the standard testing arrangement, Chart II is provided for locations where the Mobile Carrier Test Bay is used.

The special services channel unit consists of a VF subassembly and a carrier frequency subassembly. The carrier frequency subassembly is identical to that used in the J98703 FA message channel unit and may be Modified (blue label on the handle) or Original (silver label or no label on the handle).

It is important to remember that the F carrier frequency subassembly cannot be substituted for the FA unit.

The N, O switch on the left side of the channel unit must be set to N position for these tests.

It will be necessary to refer to associated sections in this division 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.

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

The maximum allowable over-all channel noise level is determined by engineering requirements for the type of circuit to be applied to the special services channel.

APPARATUS:

- 1 — Hewlett-Packard 400-type Vacuum Tube Voltmeter
- 1 — KS-14510, L1 or L5 Volt-Ohm-Milliammeter, or equivalent (20,000 ohms per volt)
- 1 — W2DW Cord (to connect VTVM to test points)
- 1 — Channel Unit Test Stand (J98705M)
- 1 — Transmission Measuring Set, 40B, 21A TMS or equivalent (600-ohm measuring set)
- 1 — 3A Noise Measuring Set

CHART I

LINE-UP AND MAINTENANCE TESTS FOR N1 CARRIER SPECIAL SERVICES CHANNEL UNIT (J98703AM)

TEST	PURPOSE OF TEST		TEST STAND REQ	MEAS EQUIP REQUIRED	TEST TONE REQUIRED	MEASURE TEST POINT TO GRD. OR BETWEEN TEST POINTS	REQUIRED VALUE		ADJUST	TEST CONDITIONS AND REMARKS	SECTION REFERENCE
							TEST	READJUST			
	<i>Note:</i> Before placing a Special Services Channel Unit in the Test Stand, replace the 130V 1/8 ampere fuse with a 3/8 ampere fuse.										362-315-501
1	Channel Carrier Output		No	400C or D	—	M2	Recorded value ± 0.5 db	Recorded value	MOD	Maintenance requirements. For initial line-up see 362-025-501.	362-025-501
2	Channel Carrier Leak		No	400C or D	—	M2	At least 18 db below TEST 1	—	—	Ground M1 jack (Original units) or TP7 (Modified units).	
3	Transmitting VF Output		No	400C or D	*	J5	+ 4.0 to + 5.0 db	+4.5 db	TRSG	General use.	362-315-501
							+11.0 to +12.0 db	+11.5 db			
4	Received Channel Carrier		No	400C or D	—	R1	<i>Line-up:</i> -13.0 to -29.0 db <i>Maintenance:</i> Recorded value ± 5.0 db.		—	Modified units — Set REG pot. for maximum reading.	362-030-501
5	Channel Regulator	Original	Yes	Volt-ohmmeter	—	R2 Jack to +130V Jack in Test Stand	2.6 to 3.4 volts	3.0V dc	REG	<i>Caution: Approximately 125 volts on R2 jack, insert test cord in R2 jack last.</i>	
		Modified	Yes	400C or D	—	R1	-28.0 to -38.0 db	-33.0 db	REG		
6	Receiving VF Input		No	400C or D	*	J6	+11.8 to +14.8 db	—	—	General use.	362-315-502
							+18.8 to +21.8 db	—			
7	Receiving VF Output		No	Transmission Meas. Set	*	DEMOD OUT or equivalent VF OUT jacks	Per circuit order	Per circuit order	REC		
8	Channel Regulation	a	Yes	400C or D	*	R1	—	-41.0 db	REG	Modified units only. For Original units see 362-030-501.	362-030-501
		b		Trans. Meas. Set		DEMOD OUT jacks	TEST 7 value ± 0.5 db	—	—		
		c		400C or D		R1	—	-33.0 db	REG		
9	Noise Measurement		No	3A Noise Measuring Set	—	DEMOD OUT or equivalent VF OUT jacks	Engineering Requirements	—	—	<i>Distant Terminal:</i> Terminate MOD IN jacks (or equivalent) in 600 ohms.	362-305-510

* At the transmitting terminal patch a 1000-cycle tone of proper power value (-13 dbm or -16 dbm) into the MOD IN or equivalent VF IN jacks of the channel being tested.

Note: Original units have a silver label (or no label) on the handle.
Modified units have a blue label on the handle.

CHART I

LINE-UP AND MAINTENANCE TESTS
FOR N1 CARRIER SPECIAL SERVICES CHANNEL UNIT

CHART II

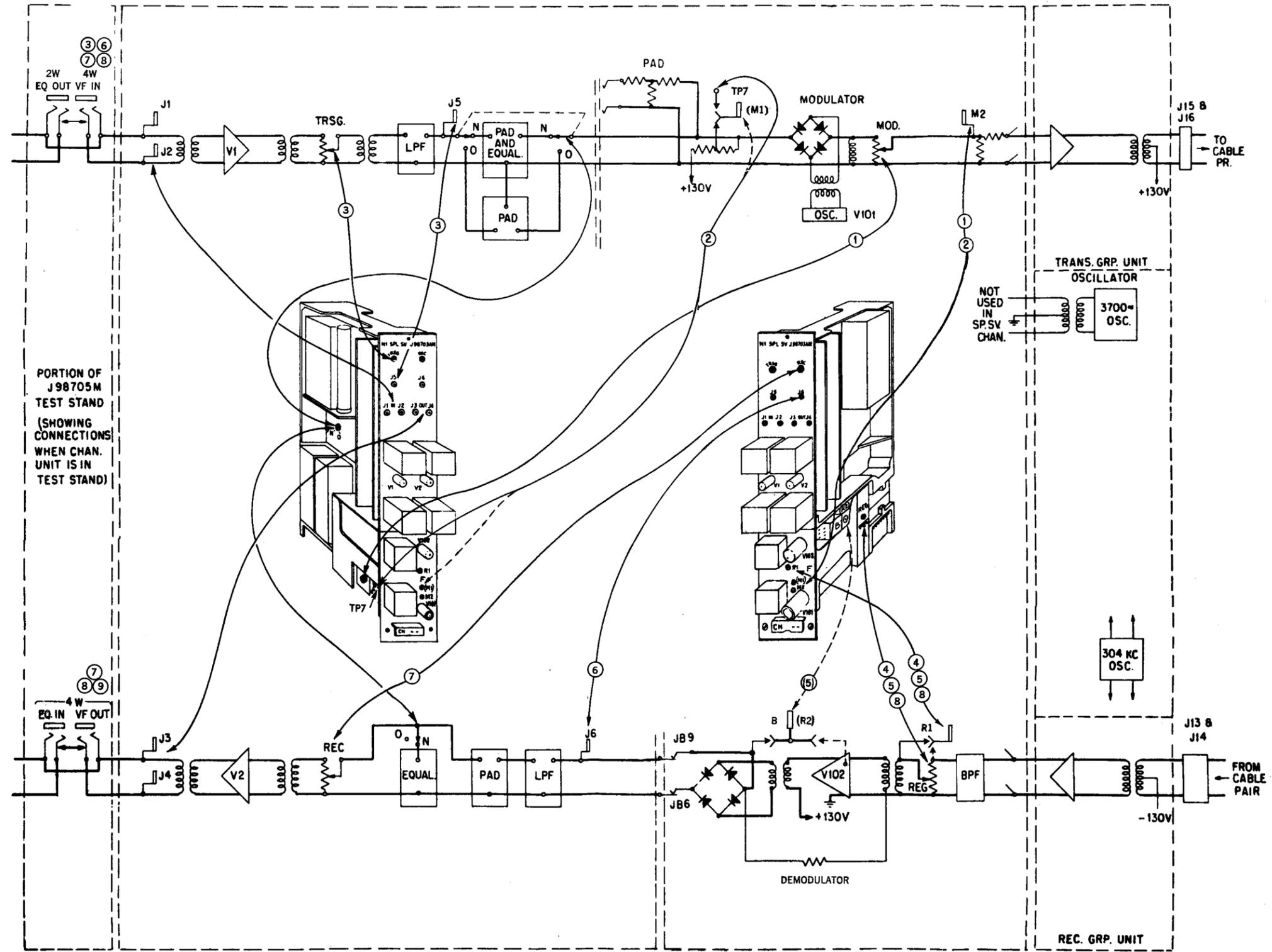
LINE-UP AND MAINTENANCE TESTS FOR N1 CARRIER SPECIAL SERVICES CHANNEL UNIT
Using the Mobile Carrier Test Bay

TEST	PURPOSE OF TEST	METER SWITCH	VF PATH SWITCH	MEASURE TEST POINT TO GRD. OR BETWEEN TEST POINTS	REQUIRED VALUE		ADJUST	TEST CONDITIONS AND REMARKS	SECTION REFERENCE 362-	
					TEST	READJUST				
<p>Note: Before placing Channel in Test Stand, replace 130 V 1/8 amp. fuse with 3/8 amp fuse.</p>									315-501	
1	Carrier Output	5	*	M2	Recorded value ± 0.5 db	Recorded value	MOD	Maintenance requirement. For line-up see 362-025-501.	025-501	
2	Carrier Leak	5	*	M2	At least 18 db below TEST 1		—	Ground M1 jack (Original) or TP7 (Modified)		
3	Transmitting VF Output	5	5	J5	+ 4.0 to + 5.0 db	+4.5 db	TRSG	General use.	315-501	
					+11.0 to +12.0 db	+11.5 db		B1 Data channel use only.		
4	Received Carrier	5	*	R1	<i>Line-up:</i> -13.0 to -29.0 db <i>Maintenance:</i> Recorded value ± 5.0 db		—	Modified units — Set REG pot. for maximum reading.	030-501	
5	Channel Regulator	Original	3	*	R2	2.6 to 3.4 volts	3.0V	REG		<i>Caution: 125V on R2 jack. Insert test cord in R2 jack last.</i>
		Modified	5	*	R1	-28.0 to -38.0 db	-33.0 db	REG		
6	Receiving VF Input	5	*	J6	+11.8 to +14.8	—	—	General use.	315-501	
					+18.8 to +21.8 db	—	—	B1 Data channel use only.		
7	Receiving VF Output **	7	6	—	Per circuit order		REC			
8	Channel Regulation	a	5	*	R1	—	-41.0 db	REG	Modified units only. For Original units see 362-030-501.	
		b	7	6	—	TEST 7 value ± 0.5 db	—	—		
		c	5	*	R1	—	-33.0 db	REG		
9	Noise	This test to be made at VF Patch Bay only.							305-510	

* VF PATH switch not used for these tests; can be left in any position except 2 or 6.

** Make final adjustment with a transmission measuring set at the VF Patch Bay.

Note: Original units have a silver label (or no label) on the handle.
Modified units have a blue label on the handle.



PORTION OF J98705M TEST STAND (SHOWING CONNECTIONS WHEN CHAN. UNIT IS IN TEST STAND)

SPECIAL SERVICES CHANNEL UNIT --- AND () = ORIGINAL UNITS

LINE-UP AND MAINTENANCE TESTS FOR N1 CARRIER SPECIAL SERVICES CHANNEL UNIT (J98703AM)