

TYPE N1, O AND ON CARRIER TELEPHONE SYSTEMS
OVER-ALL CHANNEL LINE-UP
SUMMARY CHARTS — LINE-UP AND MAINTENANCE
N1 CARRIER — CHANNEL UNIT WITHOUT SIGNALING (J98703AP)

This section consists of an over-all diagram of the channel unit and charts giving the tests required for line-up and maintenance of the channel unit without signaling. Charts I and II are provided for the standard testing arrangement; Charts III and IV are provided for locations where the Mobile Carrier Test Bay is used.

The compressor and the carrier-frequency subassemblies of the J98703AP channel unit are identical to those used in the *J98703FA message channel unit*. The expander subassembly has no provisions for signaling and cannot be used with the J98703F unit.

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.

NOTES:

1. Complete the tests in numerical order.
2. All testing equipment must be accurately calibrated.
3. Charts I and III are used for Original channels (silver label or no label on handle); Charts II and IV are used for Modified channels (blue label on handle).

APPARATUS:

- 1 — Hewlett-Packard, 400C or 400D Vacuum Tube Voltmeter
- 1 — KS-14510, L1 or L5 Volt-Ohm-Milliammeter, or equivalent (20,000 ohms per volt)
- 1 — 3A Noise Measuring Set
- 1 — W2DW Cord (to connect VTVM to test points)
- 1 — Transmission Measuring Set (Type 40B, or equivalent, 600-ohm)
- 1 — Channel Unit Test Stand (J98705M)
- 1 — P19A Cord (used with channel test stand)
- 1 — 262 Plug (600 ohms to terminate channel VF output)

CHART I — ORIGINAL UNITS

LINE-UP AND MAINTENANCE TESTS FOR N1 CARRIER CHANNEL UNIT WITHOUT SIGNALING (J98703AP)

TEST	PURPOSE OF TEST		TEST STAND REQ.	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	Channel Carrier Output		No	400C or D	—	M2	Recorded Value ±0.5 db	Recorded Value	MOD	Maintenance only. See 362-025-501 for initial line-up.		362-025-501
2	Channel Carrier Leak		No	400C or D	—	M2	At least 18 db below TEST 1		—	Ground M1 jack		
3	Compressor Gain		Yes	400C or D	—	Term. 6 FL1	At least +8.5 db	—	—	COMP pot. at max. output.	Send 1000~ at -16 dbm	362-025-502
4	a	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		—			362-030-501
	b	Channel Regulator	Yes	Volt-ohm-meter	—	R2 Jack to +130V Jack in Test Stand	2.6 to 3.4 Volts	3.0 V	REG	<i>Caution: Approx. 125 Volts on R2 jack, insert test cord in R2 jack last.</i>		
5	Demodulator Output		Yes	400C or D	—	Term. 6 of FL42 (168B)	+11.0 to +14.0 db	—	—	<i>Distant End:</i> Send 1000~ at -16 dbm.		
6	Expander Output		No	400C or D	1000~ Tone	E1-E2	+9.0 to +11.0 db	+10.0 dbm	EXP	<i>Distant End:</i> Send 1000~ at -16 dbm. <i>Testing End:</i> For line-up turn REC extreme clockwise; 600-ohm termination in DEMOD OUT jack.		362-305-501
7	Channel Regulation	a	Yes	400C or D	1000~ Tone	Term. 3 (center) REG pot.	Read and record value, Adj. to 5.0 db lower level		REG			362-030-501
		E1-E2				+8.5 to +10.5 db	—	—				
		Term. 3 (center) REG pot.				Value Recorded in 7(a)		REG				
8	Channel Noise		No	3A Noise Set		DEMOD OUT	See Section 362-305-510		—	<i>Distant End:</i> Term. chan. in 600 ohms. <i>Testing End:</i> Turn REC extreme clockwise.		362-305-510
9	Channel Net Loss		No	Transmission Meas. Set	1000~ Tone	DEMOD OUT	—	+7.0 (+4.0)	REC	<i>Distant End:</i> Send 1000~ at -16 dbm.		362-305-512

CHART I ORIGINAL UNITS
 LINE-UP AND MAINTENANCE TESTS FOR N1 CARRIER
 CHANNEL UNIT WITHOUT SIGNALING (J98703AP)

CHART II — MODIFIED UNITS

LINE-UP AND MAINTENANCE TESTS FOR N1 CARRIER CHANNEL UNIT WITHOUT SIGNALING (J98703AP)

TEST	PURPOSE OF TEST		TEST STAND REQ.	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	Channel Carrier Output		No	400C or D	—	M2	Recorded Value ±0.5 db	Recorded Value	MOD	Maintenance only. See 362-025-501 for initial line-up.		362-025-501
2	Channel Carrier Leak		No	400C or D	—	M2	At least 18 db below TEST 1		—	Ground TP7.		
3	a	Compressor Gain	No	400C or D	—	F	At least +8.5 db	—	—	COMP pot. at max. output.	Send 1000~ at -16 dbm	362-025-502
	b	Compressor Noise	No	400C or D	—	F	Max. -19.0 db	—	—			
4	Received Channel Carrier		No	400C or D	—	R1	-13.0 to -29.0 db	—	—	REG pot. set for maximum reading.		362-030-501
							-28.0 to -38.0 db	-33.0 db	REG			
5	Demodulator Output		Yes	400C or D	—	Term.6 of FL42 (168B)	+11.0 to +14.0 db	—	—	<i>Distant End:</i> Send 1000~ at -16 dbm.		
6	Expander Output		No	400C or D	1000~ Tone	E1-E2	+9.0 to +11.0 db	+10.0 dbm	EXP	<i>Distant End:</i> Send 1000~ at -16 dbm. <i>Testing End:</i> For line-up turn REC extreme clockwise; 600-ohm termination in DEMOD OUT jack.		362-305-501
7	Channel Regulation		Yes	400C or D	1000~ Tone	R1	—	-41.0 db	REG	<i>Distant End:</i> Send 1000~ at -16 dbm.		362-030-501
						E1-E2	+9.0 to +10.5 db	—	—			
						R1	—	-33.0 db.	REG			
8	Channel Noise		No	3A Noise Set	—	DEMOD OUT	See Section 362-305-510		—	<i>Distant End:</i> Term. Chan. in 600 ohms. <i>Testing End:</i> Turn REC extreme clockwise.		362-305-510
9	Channel Net Loss		No	Transmission Meas. Set	1000~ Tone	DEMOD OUT	—	+7.0 (+4.0)	REC	<i>Distant End:</i> Send 1000~ at -16 dbm.		362-305-512

CHART II MODIFIED UNITS
 LINE-UP AND MAINTENANCE TESTS FOR N1 CARRIER
 CHANNEL UNIT WITHOUT SIGNALING (J98703AP)

CHART III — ORIGINAL UNITS
LINE-UP AND MAINTENANCE TESTS FOR N1 CARRIER CHANNEL UNIT WITHOUT SIGNALING
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	
					TEST	READJUST				
1	Channel Carrier Output	5	*	M2	Recorded Value ±0.5 db	Recorded Value	MOD	Maintenance only. See 362-025-501 for initial line-up.	025-501	
2	Channel Carrier Leak	5	*	M2	At least 18 db below TEST 1		—	Ground M1 jack		
3	Compressor Gain	5	5	Term 6 FL1	At least +8.5 db	—	—	COMP pot. at max. output.	025-502	
					—	+8.0 db	COMP			
4	a	Received Channel Carrier	5	*	R1	<i>Line up:</i> —13.0 to —29.0 db <i>Maintenance:</i> Recorded Value ±5.0 db		—	030-501	
	b	Channel Regulator	3	*	R2	2.6 to 3.4 Volts	3.0 V	REG		<i>Caution: Approx. 125 V on R2 jack.</i>
5	Demodulator Output	5	*	Term 6 FL42	+11.0 to +14.0 db	—	—	<i>Distant End:</i> Send 1000~ at —16 dbm		
6	Expander Output	6	5	E1-E2	+9.0 to +11.0 db	+10.0 db	EXP		<i>Testing End:</i> REC pot. max. c.w.	305-501
7	Channel Regulation	a	5	*	Term 3 REG (center)	Read and record value Adj to 5.0 db lower level			REG	030-501
		b	6	5	E1-E2	+8.5 to +10.5 db	—		—	
		c	5	*	Term 3 REG	Adj to Value recorded in 7a		REG		
8	Channel Noise	THIS TEST TO BE MADE ONLY AT VF PATCH BAY.							305-510	
9	Channel Net Loss **	7	6	—	—	+7.0(+4.0)	REC		305-512	

* 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.

CHART IV — MODIFIED UNITS

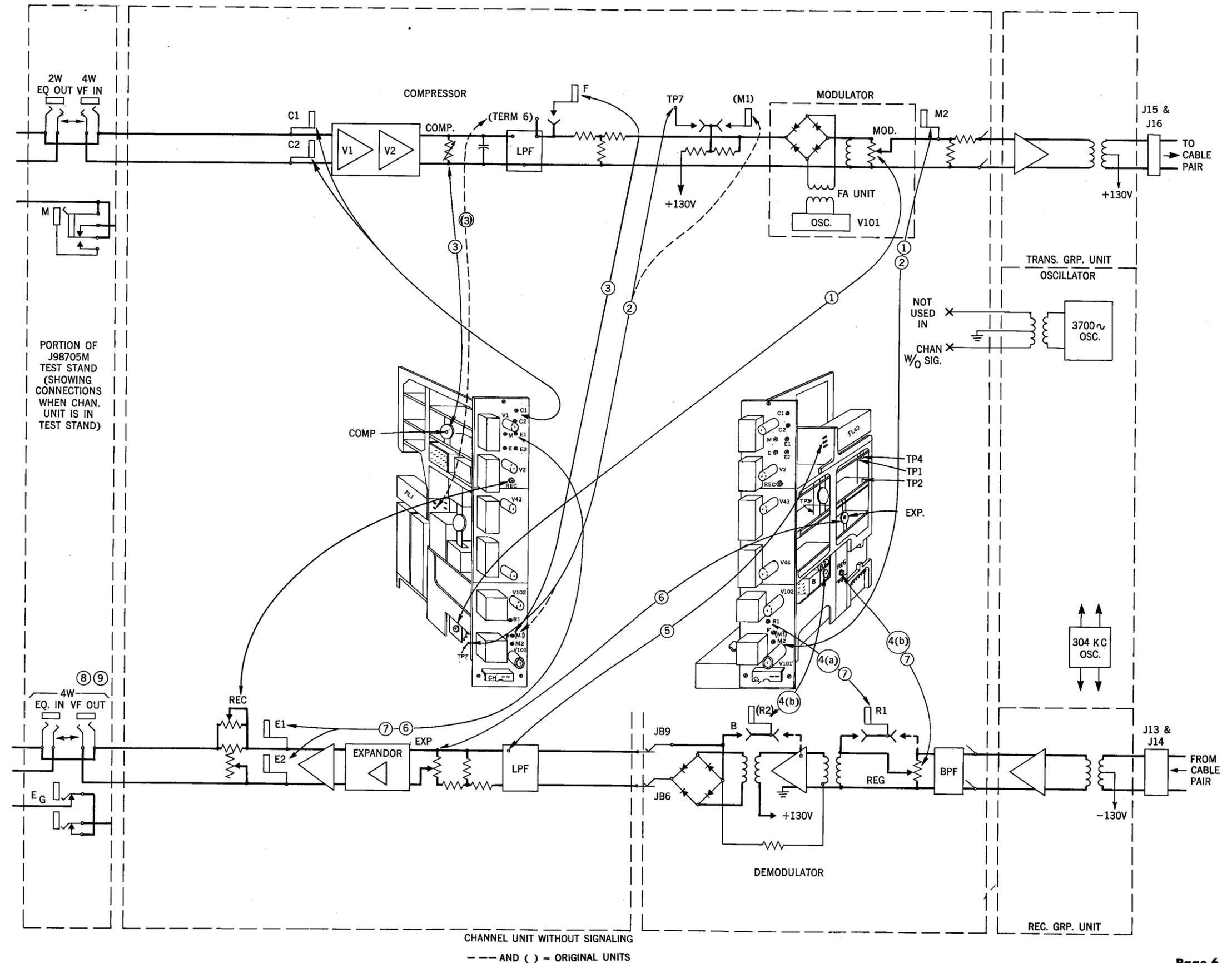
LINE-UP AND MAINTENANCE TESTS FOR N1 CARRIER CHANNEL UNIT WITHOUT SIGNALING

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				
1	Channel Carrier Output	5	*	M2	Recorded Value ±0.5 db	Recorded Value	MOD	Maintenance only. See 362-025-501 for initial line-up.	025-501	
2	Channel Carrier Leak	5	*	M2	At least 18 db below TEST 1		—	Ground TP7		
3	Compressor Gain	5	5	F	At least +8.5 db	—	—	COMP pot. at max. output.	025-502	
					+7.5 to +8.5 db	+8.0 db	COMP			
4	Received Channel Carrier	5	*	R1	—13.0 to —29.0 db	—	—	REG. pot. set for maximum reading.	030-501	
					—28.0 to —38.0 db	—33.0 db	REG			
5	Demodulator Output	5	*	Term 6 FL42	+11.0 to +14.0 db	—	—	<i>Distant End:</i> Send 1000~ at —16 dbm		
6	Expander Output	6	5	E1-E2	+9.0 to +11.0 db	+10.0 db	EXP		<i>Testing End:</i> REC pot. max. c.w.	305-501
7	Channel Regulation	a	5	*	R1	—	—41.0 db		REG	030-501
		b	6	5	E1-E2	+9.0 to +10.5 db	—		—	
		c	5	*	R1	—	—33.0 db		REG	
8	Channel Noise	THIS TEST TO BE MADE ONLY AT VF PATCH BAY.							305-510	
9	Channel Net Loss **	7	6	—	—	+7.0(+4.0)	REC		305-512	

* 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.



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

CHANNEL UNIT WITHOUT SIGNALING
--- AND () = ORIGINAL UNITS

LINE-UP AND MAINTENANCE TESTS FOR N1 CARRIER
CHANNEL UNIT WITHOUT SIGNALING (J98703AP)