

TYPE O AND ON CARRIER TELEPHONE SYSTEMS — TERMINALS AND JUNCTIONS
SUMMARY CHARTS — LINE-UP AND MAINTENANCE
ON CARRIER TERMINALS — GROUP AND TWIN CHANNEL UNITS

This section is reissued to incorporate changes made in the referenced sections.

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 group and twin channel units and a chart giving the tests required for the line-up and maintenance of the group and twin channel units.

Tests 1 through 10 cover the tests of the transmitting portion of the units and tests; tests 11 and 12 cover the receiving portion.

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.

Note 1: Complete the line-up tests in numerical sequence.

Note 2: When the 400-type VTVM is used, the meter should be grounded on the unit being measured.

APPARATUS:

- 1 — Hewlett-Packard 400-type Vacuum Tube Voltmeter (VTVM)
- 1 — KS-14510 Volt-Ohm-Milliammeter, or equivalent (20,000 ohms per volt) (VOM)
- 1 — Frequency Counter HP5232A, HP5532A, or equivalent
- 1 — Oscilloscope
- 1 — W2DW Cord
- 1 — Channel Unit Test Stand (J98705M) or O and ON Unit Extender (J98705AY)
- 1 — P19A Cord
- 5 — P1M Cords with Hubbell 708S29 Alligator Clips
- 1 — 20-ohm Resistor

CHART I

LINE-UP AND MAINTENANCE TESTS — TYPE ON CARRIER GROUP AND TWIN CHANNEL UNITS

TEST	PURPOSE OF TEST	TEST STAND OR EXTENDER	MEAS EQUIP. REQUIRED		MEASURE TEST POINT TO GRD OR BETWEEN TEST POINTS	GROUPS EQUIPPED	REQUIRED VALUE		ADJUST	TEST CONDITIONS AND REMARKS		SECTION REFERENCE
			TESTING END	DISTANT END			TEST	READJUST				
1	Group osc output level (carr H osc)	—	VTVM	—	CARR H jack	—	-10.0 to 0.0 db	—	—	ON1 group 2 or 4 ON2 group 1, 3, or 5	ON2 group 2 can be either H or L osc	362-130-501
2	Group osc output level (carr L osc)	—	VTVM	—	CARR L jack	—	-10.0 to 0.0 db	—	—			
3	Group osc output freq	Ext for adj	Counter	—	CARR H or CARR L jack	—	±10 cycles of specified frequency	—	—	For adjustment refer to 362-130-501.		
4	3700~ osc output level	—	VTVM	—	3700 jack	—	+3.0 to +4.5 db	+3.8 db	3700 OUT	Check tubes before readjustment. For ON/K systems — Readjust value may be lower, if required in Sections 362-115-502 and 362-130-501.		
5	3700~ osc output waveform	—	Oscilloscope	—	3700 jack	—	Peaks rounded with no evidence of flattening	—	—	All channels in on-hook condition.		
6	3700~ osc output freq	Ext for adj	Counter	—	3700 jack	—	3700~ ±20~	3700~	—	For adjustment refer to 362-130-501.		
7	Twin channel unit output level	Test stand for adj	VTVM	—	TC jack	—	+0.4 to +1.6 db	+1.0 db	TC	If adjusted, realign associated circuits.		362-120-501
8	Twin channel unit output freq	Test stand for adj	Counter	—	TC jack	—	184 kc or 192 kc ±10~	—	C4	After adjustment, the open area of C4 should be 50° or greater.		
9	Group trmtg unit output	Ext for adj	VTVM 4 P1M cords	—	OUT jack of group trmtg unit	—	2 Twin Channel Units +3.0 to +4.5 db +4.0 db 1 Twin Channel Unit +1.5 to +2.5 db +2.0 db		OUT potentiometer of group trmtg unit	Ground all T jacks. Use both X and Y wiring. <i>Note:</i> Where it is necessary to have additional range to drop levels for coordination reasons, remove the X wiring.		362-130-502
10	76-kc level control osc output	—	VTVM	—	LEVEL CONT jack	1 1, 2 1, 2, 3 1, 2, 3, 5 1 1, 2 1, 2, 3 1, 2, 3, 6 1, 2, 3, 6, 5	ON1 +3.8 to +4.7 db +1.8 to +2.7 db +0.3 to +1.2 db -2.8 to -1.9 db ON2 +4.9 to +5.8 db +3.3 to +4.2 db +2.4 to +3.3 db +0.4 to +1.3 db -2.6 to -1.7 db	+4.2 db +2.2 db +0.8 db -2.4 db +5.3 db +3.8 db +2.9 db +0.8 db -2.2 db	LEV CONT	—		362-130-503

CHART I (Cont)

LINE-UP AND MAINTENANCE TESTS — TYPE ON CARRIER GROUP AND TWIN CHANNEL UNITS (Cont)

TEST	PURPOSE OF TEST	TEST STAND OR EXTENDER	MEAS EQUIP. REQUIRED		MEASURE TEST POINT TO GRD OR BETWEEN TEST POINTS	GROUPS EQUIPPED	REQUIRED VALUE		ADJUST	TEST CONDITIONS AND REMARKS	SECTION REFERENCE
			TESTING END	DISTANT END			TEST	READJUST			
12	Twin channel regulator adjustment	Test stand for adj	VOM	4 P1M cords	REG jack to +130v jack in test stand or +130v jack in ON term.	—	0.4 to 2.0v	1.0v	REG	<i>Caution: Approx 125 volts on REG jack, insert test cord in REG jack last.</i> Start reading on 300-volt scale of meter for protection. Ground all T jacks at distant end; wait at least 3 minutes for regulator to stabilize. Adjustment made in test stand; reading will be slightly higher in terminal.	362-125-501
13	Carrier alarm circuit for ON2 terminals	—	VOM (300v scale) 20-ohm resistor		Terminal 1 of V31 socket (Alarm Ckt on term. mounting)	—	Turn BIAS pot. until C relay back contact releases. approx. 80 to 100 volts on meter		BIAS potentiometer	Remove 313C gas tube V31 Turn BIAS control fully counterclockwise. Connect 20-ohm resistor from GND jack to (+) terminal on C64 capacitor. Adjust BIAS potentiometer.	362-125-501

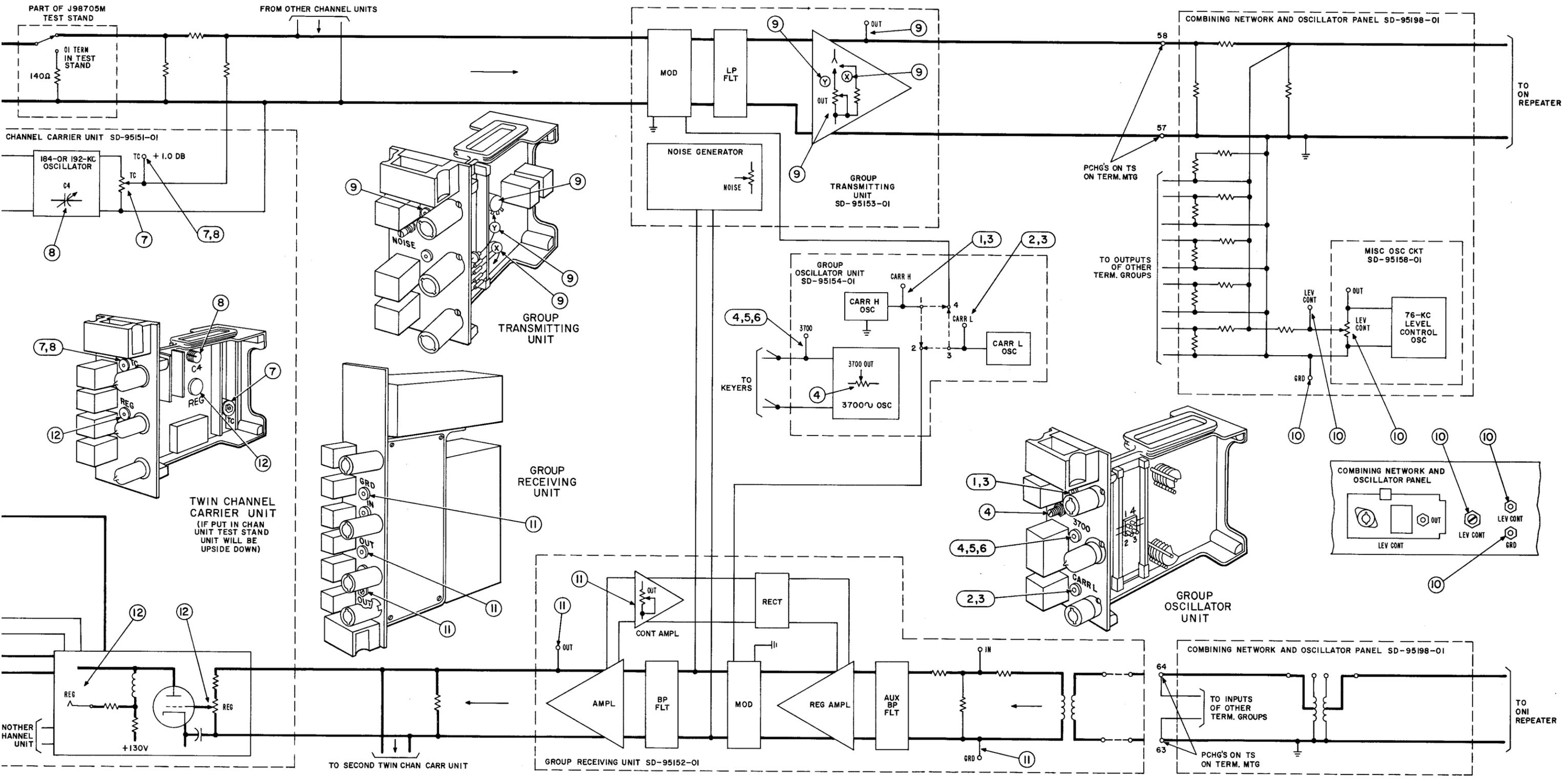


Fig. 1 — Line-Up and Maintenance Tests — ON Terminal

