

TYPE N2 CARRIER REPEATERS
REPEATERED HIGH-FREQUENCY LINE
REPEATER DC VOLTAGE MEASUREMENTS

This section provides voltage requirements which should be met at the various test points on the face of the N2 repeater and its associated mounting shelf or adapter assembly. The voltage measured from an emitter test point to an appropriate circuit ground effectively measures the emitter current of that transistor. Any change in emitter current indicates a change in the current gain of the transistor or a change in the value of a biasing component. Voltages measured at the test points in the mounting shelf or repeater adapter assembly indicate line current. The remaining test points indicate the voltages applied to various points in the repeater circuit.

The purpose of these tests is to indicate a trouble condition caused by component degradation or power malfunction.

APPARATUS:

- 1 — KS-14510 Volt-Ohm-Milliammeter (VOM), or equivalent, with KS-14510, L8 Test Leads

STEP	PROCEDURE
1	Perform voltage measurements at the test points indicated on the repeater mounting shelf or adapter assembly in Table A to check the power feed current. If these measurements are not within the specified limits, check the repeater power supply points to ensure that correct current is being fed to the line.
2	If the test results on the repeater mounting shelf or adapter assembly in Table A are within the specified limits, proceed with the remaining tests shown in Tables B and C for the various repeater assemblies. If the measurements specified in Tables B and C are not within requirements, replace the repeater.

TABLE A
LINE CURRENT CHECK

REPEATER POWER SOURCE	TEST POINTS TP1 AND TP2 ON TEST ASSEMBLY	USED WITH REPEATER TYPE	NOMINAL VOLTAGE (Note 1)	VOLTAGE LIMITS
Local	N2 Repeater Mounting Shelf	H-L	2.28 (95 ma)	1.9 to 2.6
		L-H	3.36 (140 ma)	2.8 to 3.7
	N2 Repeater-to-N1A Adapter	H-L	2.64 (110 ma)	2.2 to 3.0
		L-H (-48V BAT.)	4.56 (190 ma)	3.6 to 4.9
		L-H (+130V BAT.)	2.64 (110 ma)	2.2 to 3.0
Remote	N2 Repeater MTG Shelf or N2 Repeater-to-N1A Adapter	Note 2	2.10 (85 ma)	1.9 to 2.2
		Note 3	2.28 (95 ma)	2.2 to 2.4
		Note 4	2.64 (110 ma)	2.4 to 2.8
		Note 5	2.88 (120 ma)	2.8 to 3.0
		Note 6	3.24 (135 ma)	3.0 to 3.8

Note 1: Numbers in parentheses refer to nominal line or repeater operating current.

Note 2: N2 repeater (H-L or L-H) receiving power from a constant current regulated source adjusted to feed N2 repeaters only.

Note 3: N2 repeater (H-L or L-H) preceded or followed by an N1A repeater receiving power from a constant current regulated source.

Note 4: N2 repeater (H-L or L-H) receiving power from an unregulated power source *or* N2 repeater (H-L or L-H) followed by a 240-type amplifier and another N2 repeater powered from the same constant current regulated source.

Note 5: N2 repeater (H-L or L-H) followed by a 240-type amplifier and an N1A repeater, receiving power from a constant current regulated source.

Note 6: N2 repeater (H-L or L-H) followed by a 240-type amplifier and an N1A repeater, receiving power from an unregulated power source.

TABLE B
L-H REPEATER VOLTAGE CHECK

TEST ASSEMBLY	MEASURE BETWEEN	NOMINAL VOLTAGE (70 F)	VOLTAGE LIMITS
W-E Ampl or E-W Ampl	NEG and 22	22.8	21.7 to 23.9
	NEG and A2	6.3	5.2 to 7.4
	NEG and A4	3.1	2.6 to 3.4
	NEG and A5	3.1	2.6 to 3.4
OSC	NEG and E1	5.6	4.5 to 6.1
	NEG and E2	7.1	6.1 to 7.8
	NEG and 16	16.4	15.0 to 17.7
	22 (W-E Ampl) and 16	6.2	5.6 to 6.8
W-E Mod or E-W Mod	16 (OSC) and MOD	0.8	0.7 to 0.9

TABLE C
H-L REPEATER VOLTAGE CHECK

TEST ASSEMBLY	MEASURE BETWEEN	NOMINAL VOLTAGE (70 F)	VOLTAGE LIMITS
W-E Ampl or E-W Ampl	NEG and 22	22.6	21.4 to 23.6
	NEG and A2	7.6	6.3 to 8.9
	NEG and A4	3.1	2.6 to 3.4
OSC	NEG and E1	5.6	4.5 to 6.1
	NEG and E2	7.1	6.1 to 7.8
	NEG and 16	16.4	15.0 to 17.7
	22 (W-E Ampl) and 16	6.2	5.6 to 6.8
W-E Mod or E-W Mod	16 (OSC) and MOD	1.7	1.5 to 1.9