

**TYPE N AND ON CARRIER REPEATERS — REPEATERED HIGH-FREQUENCY LINE
REPEATER TESTS — TRANSISTORIZED REPEATERS
TRANSISTOR EMITTER CURRENT AND THERMISTOR HEATER CURRENT TEST**

The voltage measured from an emitter test point to the appropriate circuit ground effectively measures the emitter current of that transistor. Any change in an emitter current indicates a change in the current gain of that transistor or a change in other biasing component values due to aging or temperature change. The voltage from the emitter of (Q3) to amplifier circuit ground is especially sensitive to component degradation in the amplifier circuit. It is factory set to exactly 3 volts at room temperature and, therefore, is not affected by initial component tolerances. Its value will be affected only by component degradation, repeater temperature and cable temperature.

The voltage measured from TP1 (red) to TP2 (black) indicates the current in the thermistor heater circuit. This voltage is factory set to 3 volts.

The purpose of these tests is to indicate a trouble condition caused by component degradation, not to specify the defective component.

APPARATUS:

- 1 — KS-14510 Voltmeter or equivalent (20,000 ohms/volt, 2% accuracy)
- 2 — Meter Leads adapted for insertions into KS-8586 Jacks.

Procedure:

Measure the following voltages and check that they fall within the specified limits. Use the 3-volt voltmeter scale whenever possible.

Caution: *To assure that the bias voltages are not affected by overdriving the amplifier due to line noise or high signal level — do not make these measurements unless carriers have been applied to the repeater and the repeater has regulated to the proper output power.*

If the voltages measured fall outside the limits specified, the unit should be replaced.

TEST JACK DESIGNATION	JACK NUMBERS	NOMINAL VOLTAGE 70°F	VOLTAGE LIMITS (40° to 100°F)	VOLTAGE LIMITS (-40° to +40°F) and (+100° to +140°F)									
W-E TEST AND E-W TEST	JB2 to JB1	2.2	1.9 to 2.6	1.7 to 2.7									
	JB3 to JB1	3.0 Factory Set	2.6 to 3.6	2.5 to 3.7									
	JB4 to JB1 (Low-High only)	3.0	2.6 to 3.6 (See Note)	2.5 to 3.7 (See Note)									
TEST	JC2 to JC5	2.2	1.6 to 3.0	1.6 to 3.0									
	JC3 to JC5	4.2	3.4 to 5.0	3.2 to 5.2									
RED & BLACK	TP1 to TP2	3.0 Factory Set	2.8 to 3.4	2.2 to 4.2									
<p>W-E TEST AND E-W TEST JB1 to JB4</p> <table border="1" style="margin: auto;"> <tr> <td style="padding: 5px;">4</td> <td style="padding: 5px;"> </td> <td style="padding: 5px;">2</td> </tr> <tr> <td style="padding: 5px;">—</td> <td style="padding: 5px;"></td> <td style="padding: 5px;">—</td> </tr> <tr> <td style="padding: 5px;">3</td> <td style="padding: 5px;"></td> <td style="padding: 5px;">1</td> </tr> </table> <p>KS-8586-L5</p>					4		2	—		—	3		1
4		2											
—		—											
3		1											
<p>TEST JC1 to JC6</p> <table border="1" style="margin: auto;"> <tr> <td style="padding: 5px;">6</td> <td style="padding: 5px;">4</td> <td style="padding: 5px;">2</td> </tr> <tr> <td style="padding: 5px;">—</td> <td style="padding: 5px;">—</td> <td style="padding: 5px;">—</td> </tr> <tr> <td style="padding: 5px;">5</td> <td style="padding: 5px;">3</td> <td style="padding: 5px;">1</td> </tr> </table> <p>KS-8586-L12</p>					6	4	2	—	—	—	5	3	1
6	4	2											
—	—	—											
5	3	1											

Note: This reading should be within 0.1 volt of the JB3 to JB1 reading.