

**TYPE N3 CARRIER TELEPHONE SYSTEM
GROUP TRANSMITTER AND RECEIVER UNITS
TRANSISTOR EMITTER CURRENT TEST**

This section describes the measurement of transistor emitter currents in N3 carrier group equipment. The voltage measured from an emitter test point to the -21 volt test point effectively measures the emitter current of that transistor. Any change in emitter current indicates a change in the current gain of that transistor or a change in biasing circuit component values due to aging or temperature change.

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

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

APPARATUS:

KS-14510, List 1 Volt-ohm-milliammeter or equivalent (20,000 ohms per volt, 2 per cent accuracy) with KS-14510, List 1 test probes

STEP	PROCEDURE															
1	<p>Measure the following voltages on both the group transmitter and receiver units and check that they fall within the specified limits. Use the 3-volt scale whenever possible.</p> <p><i>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 measurements on the receiver units unless carriers have been applied and the unit has regulated to the proper output power.</i></p> <p><i>Requirement:</i> The voltages shall be as follows:</p> <table border="1" style="margin-left: auto; margin-right: auto; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">TEST POINTS ON FACE OF GROUP EQUIPMENT</th> <th style="text-align: center;">NOMINAL VOLTAGE</th> <th style="text-align: center;">VOLTAGE LIMITS</th> </tr> <tr> <td></td> <td colspan="2" style="text-align: center;">VOLTS</td> </tr> </thead> <tbody> <tr> <td style="text-align: center;">BIAS Q1 to -21V</td> <td style="text-align: center;">2.3</td> <td style="text-align: center;">1.9 to 2.7</td> </tr> <tr> <td style="text-align: center;">BIAS Q3 to -21V</td> <td style="text-align: center;">3.0</td> <td style="text-align: center;">2.4 to 3.6</td> </tr> <tr> <td style="text-align: center;">BIAS Q4 to -21V</td> <td style="text-align: center;">3.0</td> <td style="text-align: center;">2.4 to 3.6</td> </tr> </tbody> </table>	TEST POINTS ON FACE OF GROUP EQUIPMENT	NOMINAL VOLTAGE	VOLTAGE LIMITS		VOLTS		BIAS Q1 to -21V	2.3	1.9 to 2.7	BIAS Q3 to -21V	3.0	2.4 to 3.6	BIAS Q4 to -21V	3.0	2.4 to 3.6
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