

**CARRIER GROUP ALARM CIRCUITS**  
**J99272AR SIGNAL RECEIVER**  
**OUT-OF-SERVICE TESTS USING**  
**TESTING CIRCUIT SD-96519-01**

This section describes the method of making out-of-service tests of the carrier group alarm signal receiver circuit J99272AR, using testing circuit per SD-96519-01. The signal receiver units are factory tested and ready for service, therefore this section is required for maintenance only.

The tests included in this section are:

**(A) Preparation**

**(B) Operate Sensitivity of Receiver Signaling Amplifier**

This test checks the receiver sensitivity and tells how to adjust the SS potentiometer to set the required operating point.

**(C) Receiver Guard Action**

This test checks efficiency of the receiver guard circuit in preventing operation by frequencies other than the signal frequency.

**(D) Bias of Q1 Transistor**

This test checks the base bias and emitter current of this transistor with no signal input.

The J98613AY Test Panel (SD-96519-01) is referred to in this section as test panel. KEYERS Switch 1 and RECEIVER Switch 2 on this panel are referred to as KEYERS and RECEIVER, respectively. Jacks and keys mentioned in this practice are part of the test panel unless otherwise specified.

The tests should be made in the order specified and all steps of each test are independent of other tests.

**Apparatus:**

Test Panel J98613AY (SD-96519-01) including folding test fixture J98613AC.

Transmission Measuring Set 21A TMS, 400-type VTVM (equipped with H-P AC-60A input transformer, or equivalent 1:1 ratio transformer) or equivalent.

600-ohm, 145 resistor to place across terminals 2 and 4 of the S Connector of the unit during tests.

1 — 3P17B Cord, if the 21A TMS is used.

1 — 2W42A Cord (or equivalent), if the VTVM is used as a TMS.

KS-14510 Meter

STEP	PROCEDURE
	<p><b>(A) PREPARATION</b></p> <p>1 Twist keys in the testing circuit are operated when the white line is in the vertical position and normal when the white line is in the horizontal position.</p> <p>2 The transmission measuring set should be calibrated in accordance with the appropriate practice.</p> <p>If a 400-type VTVM is to be used it should be terminated in a 600-ohm, 145A resistor and should be isolated from ground by using a H-P AC-60A (or equivalent 1:1 ratio) input transformer.</p> <p>3 Connect the 3P17B Cord to the 21A TMS (or the 2W42A Cord to the VTVM input transformer).</p> <p>4 The test panel should be connected to a signal source via its 21-pin connector and the unit to be tested should be mounted in the test set folding test fixture. The 2-WIRE key in the test panel should be operated and should be left in this condition for all tests.</p> <p>5 Connect a 600-ohm, 145A resistor across terminals 2 and 4 of the S Connector on the J99272AR Signal Receiver Unit. This should be left connected until tests are completed.</p> <p>6 Connect the cord from the TMS to the SF SUP jack on the test panel.</p> <p><b>Requirement:</b> The TMS should read <math>-15.6 \pm 0.5</math> db.</p> <p><b>Note:</b> If this requirement is not met, check the SF Supply for the proper level.</p> <p>7 Disconnect the cord from the SF SUP jack and connect it to the TMS jack.</p> <p>8 Check the Signal Receiver unit to see that the springs of the wire spring relay are not crossed and that the cover and card do not interfere with proper operation.</p>
	<p><b>(B) OPERATE SENSITIVITY OF RECEIVER SIGNALING AMPLIFIER</b></p> <p>1 Set KEYERS to position 6 (SIG ON) and RECEIVER to position 4 (MEAS INPUT) and switch the TMS to appropriate scale to read 0 db.</p> <p>2 Set ATTEN to 10.</p> <p><b>Requirement:</b> TMS reads <math>0 \pm 0.2</math> db.</p> <p><b>Note:</b> If this requirement is not met, adjust the gain control of the V3 TEST AMPL in the test panel for 0 db.</p> <p>3 Set ATTEN to 36 and turn the SS potentiometer of the unit under test full counter-clockwise.</p>

STEP	PROCEDURE
4	Set RECEIVER to position 3 (M RLS) and adjust the SS potentiometer clockwise until the R relay releases. This adjustment sets the operate level of the R relay.
5	Set ATTEN to 32.  <i>Requirement:</i> The R relay should operate.  <i>Note:</i> If relay does not operate adjust the SS potentiometer clockwise to just operate the R relay.
6	Set ATTEN to 36.  <i>Requirement:</i> The R relay should release.
7	Repeat Steps 3 thru 6 to check that the relay operates when ATTEN is set to 32 and releases when ATTEN is set to 36.
	<p><b>(C) RECEIVER GUARD ACTION</b></p> <p><i>Note:</i> Before proceeding with this test, recheck test (B) unless it has been done recently.</p> <p>1 Set the TMS to appropriate scale to read <math>-20</math> db.</p> <p>2 Set ATTEN to 0.</p> <p>3 Set KEYERS to position 5 (SF OFF) and RECEIVER to position 6 (MEAS 1 KC IN).   <i>Requirement:</i> The TMS should read <math>-19 \pm 0.5</math> db.   <i>Note:</i> If this requirement cannot be met, check the office milliwatt supply.</p> <p>4 Set ATTEN to 32 and set RECEIVER to position 5 (M RLS).   <i>Requirement:</i> R relay remains released.</p> <p>5 Set KEYERS to position 6 (SIG ON); (this adds 2600-cycle SF tone to <math>-19</math> db 1000-cycle guard tone).   <i>Requirement:</i> R relay remains released. Observe this at relay contacts.</p> <p>6 Reduce ATTEN slowly until the R relay operates.   <i>Requirement:</i> The R relay should not operate when ATTEN is set to 27 but should operate when ATTEN is set to 24. Observe this at relay contacts.</p>

STEP	PROCEDURE
7	<p>Set RECEIVER to position 4.</p> <p><i>Requirement:</i> R relay should release. Observe this at relay contacts.</p>
1	<p><b>(D) BIAS OF Q1 TRANSISTOR</b></p> <p>Set KEYERS to position 5 (SIG OFF) and RECEIVER to position 1 (MEAS INPUT).</p>
2	<p>With the KS-14510 meter on the 12V dc range, measure from test point No. 1 to ground on the unit under test.</p> <p><i>Requirement:</i> There should be no reading on the voltmeter.</p>