

DUAL CHANNEL RECEIVER CIRCUIT SD-95956-01
(FOR COIN CONTROL AND RINGING SIGNAL DETECTION)
ADJUSTING PROCEDURE USING THE 72A FREQUENCY METER
SD-59373-01 (J64072A)

1. GENERAL

1.01 This section describes a method of adjusting the sensitivity of the dual channel receiver circuit SD-95956-01.

1.02 This section is reissued to include the 23D transmission measuring set and to make other minor changes.

1.03 The tests covered are:

A. Adjusting the Sensitivity of the 700-Hz Channel: This procedure adjusts the potential at the output test point TP1 when a 700 Hz \pm one percent signal is applied to the input. **3**

B. Adjusting the Sensitivity of the 1100-Hz Channel: This procedure adjust the potential at the output test point TP2 of the 1100-Hz channel. **4**

1.04 These procedures require that the trunk serving the dual channel receiver under test be made busy.

1.05 These procedures should be carried out each time a receiver is repaired or when circuit operation indicates that maintenance is necessary.

1.06 In step-by-step, offices, a plug-in unit is provided. This is to permit the unit to be removed from the frame and shipped to a central test location for adjustment, thus eliminating the need for test equipment at the local step-by-step office.

1.07 Lettered Steps: A letter a, b, c, etc, added to a step number in Part 3 or 4 of this section, indicates an action which may or may not be required depending on local conditions. The

condition under which a lettered step or a series of lettered steps should be made is given in the ACTION column, and all steps governed by the same condition are designated by the same letter within a test. Where a condition does not apply, all steps designated by that letter should be omitted.

2. APPARATUS

All Tests

2.01 72A frequency meter J64072A (SD-59373-01).

2.02 23D transmission measuring set (TMS).

2.03 KS-14510 Volt-ohm-milliammeter (or equivalent dc voltmeter having a scale that covers 0-9 volts and a sensitivity of 20,000 ohms/volt or greater) and a set of test leads.

2.04 5A attenuator.

2.05 W2BP cord, 6 feet long, equipped with one 241A plug and two 35 cord tips (2W15B cord).

2.06 P2AA cord, 6 feet long, equipped with two 241A plugs (2P13B cord).

2.07 P2T cord, 6 feet long, equipped with one 241A plug and one 347A plug (2P12A cord).

2.08 893 cord, 3 feet long, equipped with two 360A tools (1W13A cord) and two 624A tools (required only when receiver under test is wired-in type).

2.09 Test receiver, 716C receiver, attached to a W2AB cord equipped with two 360A tools (2W21A cord) and one KS-6278 connecting clip and one 411A tool (test pick).

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2.10 KS-14528-L2 test connector, two 360A tools, and two KS-6278 connecting clips, assembled locally as shown in Fig. 1 (required only when receiver under test is plug-in type).

2.11 322A (make-busy) plugs, as required.

2.12 258C (make-busy) plugs, as required.

2.13 KS-6854 screwdriver (or equivalent).

2.14 R-1770 wrench, 1/2-9/16 inch open end (or equivalent).

3. PREPARATION

STEP	ACTION	VERIFICATION
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All Tests

- | | | |
|----|---|--|
| 1 | Make busy associated outgoing trunk. | |
| 2a | If receiver under test is wired-in unit—
At A terminal strip of receiver under test—
Strap punching 11 to punching 14, using 1W13A cord.

<i>Caution: Punching 11 is connected to — 48 volt battery. When placing the test connection, connect to terminal 14 first; when removing the test connection, disconnect from terminal 14 last.</i> | |
| 3b | If receiver under test is plug-in unit—
Disconnect KS-14528-L2 connector from receiver. | |
| 4c | If receiver under test is plug-in unit and is to be adjusted at centralized test location—
Remove receiver from frame, replace with working unit. | |
| 5c | Connect KS-14528-L2 connector to working unit. | |
| 6c | Remove make-busy condition from trunk associated with receiver under test. | |
| 7 | At local office or at centralized test location—
Apply battery, ground to receiver through KS-14528-L2 test connector wired as in Fig. 1. | |
| 8 | ◆ Operate INPUT switch on 23D TMS to 600. | |
| 9 | Operate DIAL-MEAS-EXT key on TMS to MEAS. | |
| 10 | Set ADD DBM switch on TMS to —15.◆ | |

Note: The 23D TMS requires that the ADD DBM switch be set to the proper position for each measurement. The TMS indications called

STEP	ACTION	VERIFICATION
	for as verification in this section are the combined total of the ADD DBM switch setting and the meter indication.	
11	Prepare and maintain in calibration 72A frequency meter as covered in Section 103-425-100.	
12	Set CAL-MEAS-SEARCH switch of 72A frequency meter to MEAS position.	
13	Connect frequency meter, attenuator, transmission measuring set as shown in Fig. 2.	
14	Operate 5-dB, 10-dB keys of 5A attenuator.	
4. METHOD		
A. Adjusting the Sensitivity of the 700-Hz Channel		
15	Set FREQUENCY CPS control of 72A frequency meter to obtain 700 Hz.	
16	Adjust OSC OUT control of 72A frequency meter until level of exactly -16 dBm is indicated on 23A transmission measuring set.	
17	Remove W2BP cord from output jacks of 5A attenuator.	
18	Connect frequency meter, attenuator, circuit under test as shown in Fig. 3.	
19	Set scale selector of voltmeter to lowest scale covering 0-9 volts dc.	
20	Connect positive terminal of voltmeter to ground.	
21	Connect negative terminal of voltmeter to punching 26 ITP1) of E terminal strip or to 2RT of P1 relay.	Voltmeter indicates an optimum of 4.0 volts.
22	If voltmeter indicates in excess of 4.0 volts—Loosen locknut of A1 potentiometer and turn potentiometer counterclockwise until an indication of 4.0 volts is achieved or the maximum counterclockwise position is reached.	Voltmeter indicates 4.0 volts. <i>Note:</i> With potentiometer turned fully counterclockwise, voltmeter may indicate between 4.0 and 9.0 volts, which is within limits.
23	Tighten locknut on A1 potentiometer.	Voltmeter indication remains unchanged.

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STEP	ACTION	VERIFICATION
24	If voltmeter indicates less than 4.0 volts— Loosen locknut on A1 potentiometer and turn potentiometer clockwise until an indication of 4.0 volts is achieved or the maximum clockwise position is reached.	Voltmeter indicates 4.0 volts. <i>Note:</i> With potentiometer turned fully clockwise, voltmeter may indicate between 0.5 and 4.0 volts, which is within limits.
25e	Tighten locknut on A1 potentiometer.	
26	Remove voltmeter leads from receiver under test.	
27	Test for presence of ground on punching 25 of A terminal strip.	Ground present.
28	Remove P2T cord from 5A attenuator, receiver under test.	
29	Test for presence of ground on punching 25 of A terminal strip.	Ground not present.
30	If no other tests are to be performed— Remove all test connections.	
31	If no other tests are to be performed and if receiver under test is plug-in unit that has been tested on frame— Connect KS-14528-L2 connector to receiver.	
32	Remove make-busy condition from trunk associated with receiver under test.	

B. Adjusting the Sensitivity of the 1100-Hz Channel

- 15 Set FREQUENCY CPS control of 72A frequency meter to obtain 1100 Hz.
- 16 Adjust OSC OUT control of 72A frequency meter until level of exactly -16 dBm is read on #23D TMS.
- 17 Remove W2BP cord from output jacks of 5A attenuator.
- 18 Connect frequency meter, attenuator, circuit under test as shown in Fig. 3.
- 19 Set scale selector of voltmeter to lowest scale covering 0-9 volts dc.
- 20 Connect positive terminal of voltmeter to ground.

STEP	ACTION	VERIFICATION
21	Connect negative terminal of voltmeter to punching 26 (TP2) of C terminal strip or to 2RT of P1 relay.	Voltmeter indicates an optimum of 4.0 volts.
22	If volt meter indicates in excess of 4.0 volts— Loosen locknut of A2 potentiometer and turn potentiometer counterclockwise until an indication of 4.0 volts is achieved or the maximum counterclockwise position is reached.	Voltmeter indicates 4.0 volts. <i>Note:</i> With potentiometer turned fully counterclockwise, voltmeter may indicate between 4.0 and 9.0 volts, which is within limits.
23	Tighten locknut on A2 potentiometer.	Voltmeter indication remains unchanged.
24	If voltmeter indicates less than 4.0 volts— Loosen locknut on A2 potentiometer and turn potentiometer clockwise until an indication of 4.0 volts is achieved or the maximum clockwise position is reached.	Voltmeter indicates 4.0 volts. <i>Note:</i> With potentiometer turned fully clockwise, voltmeter may indicate between 0.5 and 4.0 volts, which is within limits.
25	Tighten locknut on A2 potentiometer.	
26	Remove voltmeter leads from receiver under test.	
27	Test for presence of ground on punching 15 of A terminal strip.	Ground present.
28	Remove 2P12A cord from 5A attenuator, receiver under test.	
29	Test for presence of ground on punching 15 of A terminal strip.	Ground not present.
30	If no other tests are to be performed— Remove all test connections.	
31	If no other tests are to be performed and if receiver under test is plug-in unit that has been tested on frame— Connect KS-14528-L2 connector to receiver.	
32	If no other tests are to be performed and receiver has been tested on frame— Remove make-busy condition from trunk associated with receiver under test.	

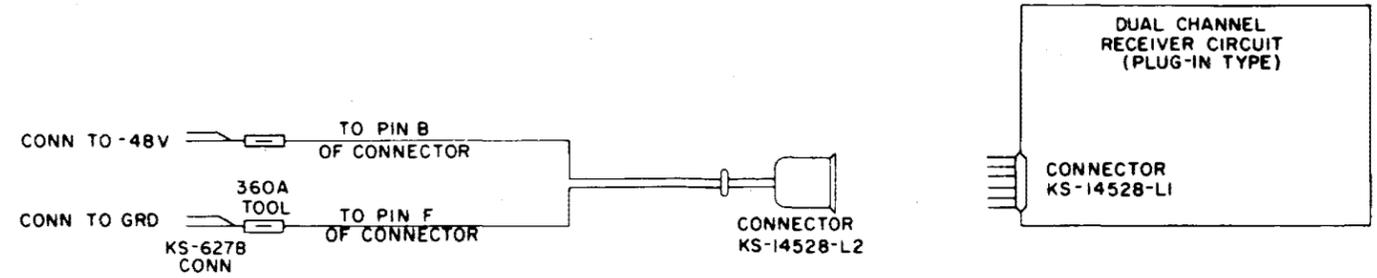


FIG. 1

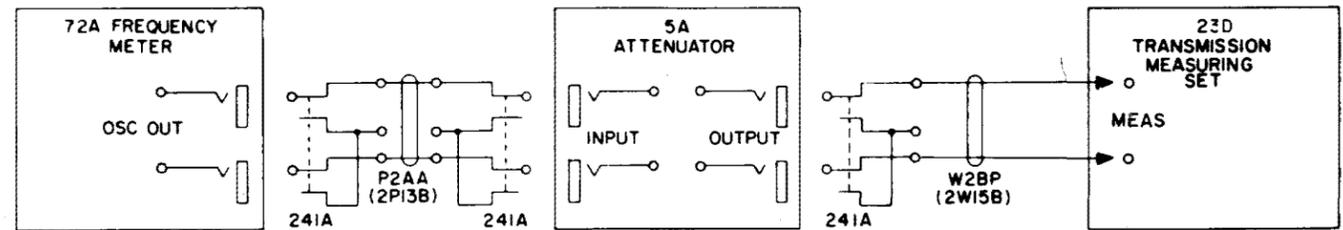


FIG. 2

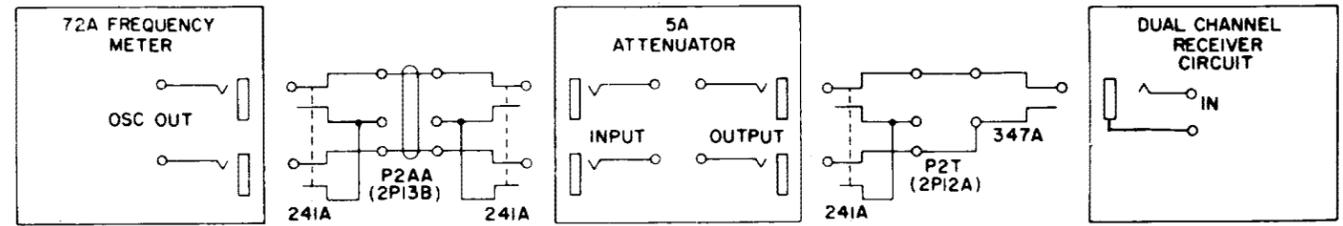


FIG. 3

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