
**OUTPUT POWER AND METER RELAY TESTS
PRIMARY CARRIER DISTRIBUTION CIRCUIT
LMX-1 AND MMX-1 CARRIER SUPPLY
ANALOG MULTIPLEX TERMINAL EQUIPMENT**

This section explains procedures for measuring the output carrier signal power of the primary carrier distribution panel (Fig. 1) and zeroing the meter relay.

This section is reissued to clarify the test procedure. Arrows are used to indicate significant changes. *Equipment Test Lists are not affected.*

APPARATUS:

◆ **Receiving test equipment** (RTE), such as Wandel-Goltermann selective detector AT-463, capable of making 75-ohm measurements of signals from 13.00 to 18.20 MHz at a power of approximately 0 dBm◆

P2BJ Cord (8 feet in length)

W2ED Cord

Volt-Ohm-Milliammeter KS-14510 (VOM) or other voltmeter with a sensitivity of at least 20,000 ohms per volt.

STEP

PROCEDURE

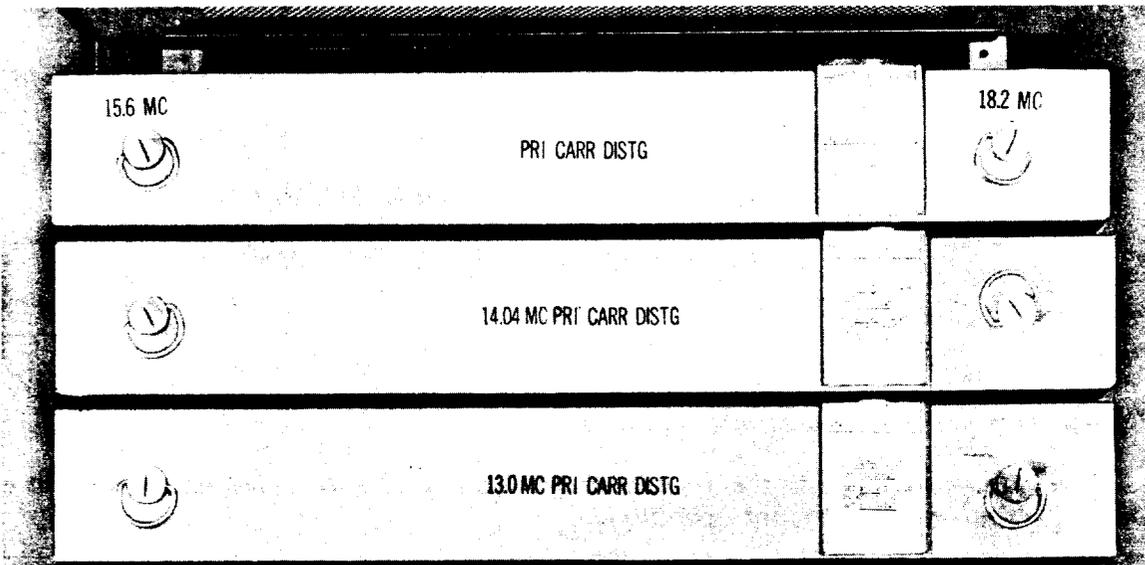
A. Measure Carrier Signal Power

Note: This procedure can be performed only when an unused tap is available on the distribution bus to be tested. If all taps on a bus are in use, measure the output of the carrier signal amplifier associated with the distribution bus as prescribed in Section 356-168-501.

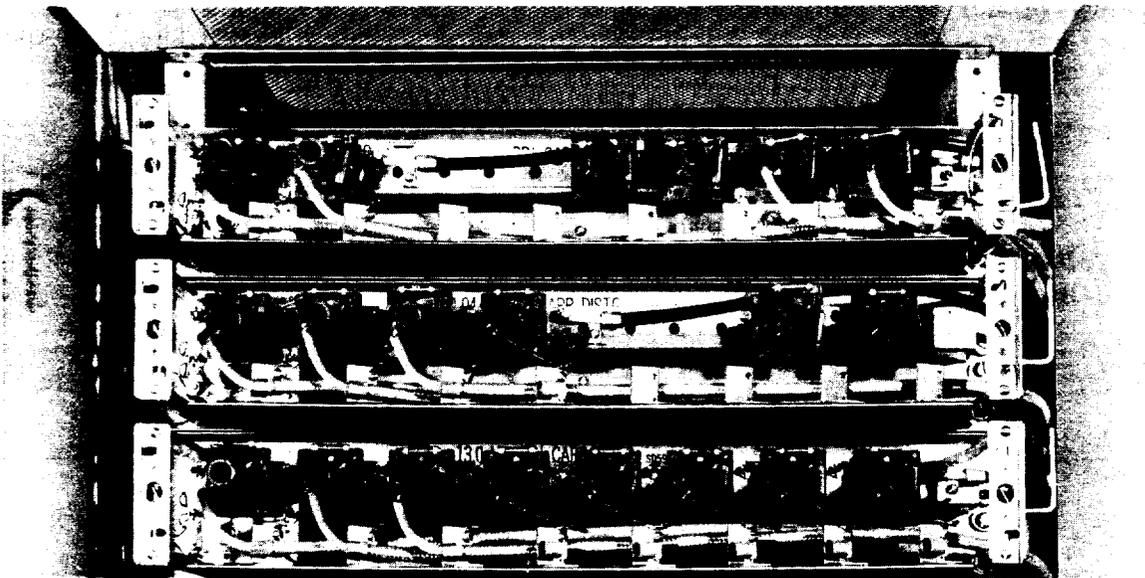
- 1 Prepare the RTE for a 75-ohm ◆terminated◆ measurement at a power of 0.0 dBm.
- 2 Connect the RTE to an unused tap on the 18.20-MHz distribution bus [patch (1), Fig. 2].

NOTICE

Not for use or disclosure outside the
Bell System except under written agreement



A. WITH COVER



B. WITHOUT COVER

Fig. 1—Primary Carrier Distribution Panel

CARRIER TRANSFER AND CONTROL CIRCUITS SD-59532-01

PRIMARY CARRIER DISTRIBUTION CKT (DISTN BUS) SD-59549-01

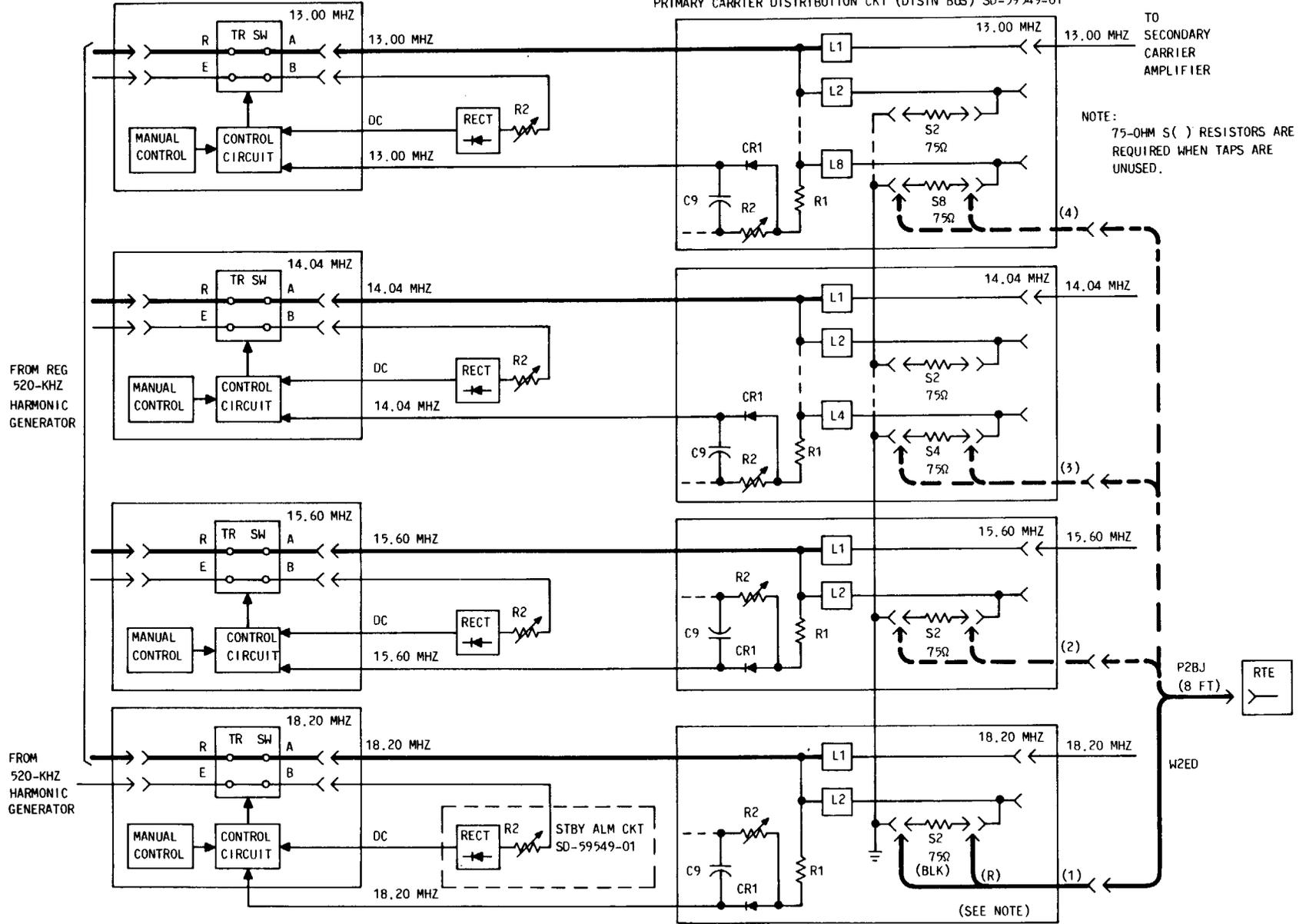


Fig. 2—Output Power Tests

STEP	PROCEDURE
3	Measure and record the power of the 18.20-MHz signal. Requirement: See Table A.
4	Repeat Steps 2 and 3 for each of the remaining frequencies listed in Table A [patches (2), (3), and (4), Fig. 2].
5	Proceed to Step 6 if the requirement is met for each carrier signal. Otherwise, perform the tests in Section 356-168-501. Caution: <i>The transfer of the carrier supply causes hits on data and carrier telegraph service, so the number of transfers should be kept to a minimum.</i>
6	Transfer service to the other 520-kHz harmonic generator per Section 356-150-300.
7	Repeat Steps 2, 3, and 4. Requirement: The output power at each frequency should not differ from the value recorded in Step 3 by more than ± 0.3 dB.
8	Perform the tests in Section 356-168-501 if this requirement is not met.

B. Adjust Meter Relay to Zero**STBY GEN meter relay**

Note: See the **Caution** before Step 6.

TABLE A
CARRIER DISTRIBUTION BUS OUTPUT
POWER VALUES

CARRIER SIGNAL	OUTPUT POWER	PATCH IN FIG. 2
18.20 MHz	+0.3 dBm \pm 1.5 dB	(1)
15.60 MHz	+0.3 dBm \pm 1.5 dB	(2)
14.04 MHz	-0.7 dBm \pm 1.5 dB	(3)
13.00 MHz	-0.7 dBm \pm 1.5 dB	(4)

STEP**PROCEDURE**

- 9 Lock in the regular carrier supply by turning the MAN CON switch to the REG position.
- 10 Adjust control R2 on the standby alarm circuit under test until the associated STBY GEN meter relay indicates 0.

Note: Operate the RESET key, if required, during the adjustment.

- 11 Proceed to Step 12 if zero adjustment can be obtained. Otherwise, proceed to Part C.

WKG GEN meter relay

Note: See the **Caution** before Step 6.

- 12 Lock in the emergency carrier supply by turning the MAN CON switch to the EM position.
- 13 Adjust control R2 on the regular alarm circuit under test until the associated WKG GEN meter relay indicates 0.

Note: Operate the RESET key, if required, during the adjustment.

- 14 Proceed to Step 15 if zero adjustment can be obtained. Otherwise, proceed to Part C.
- 15 Restore the MAN CON switch to the NORM position.
- 16 Remove all test connections.

C. Adjust Meter Relay Current

Note: This procedure can be used to measure and adjust the current through the meter relay. This procedure is for trouble investigation **only**; do **not** perform as a routine test.

- 17 Set the VOM scale switch to the 0.06 DC MA position.
- 18 Disconnect the AA lead (WKG GEN meter relay) from terminal 9 or disconnect the AB lead (STBY GEN meter relay) from terminal 11, as shown in Fig. B of SD-59532-01.
- 19 Connect the VOM between the lead disconnected and terminal 9 or 11 from which the lead was removed.
- 20 Adjust control R2, for the circuit under test, to obtain an indication of 30 μ A on the VOM.
- Note:** The rectifier should be capable of delivering at least 32 μ A when carrier signal power outputs are as listed in Table A.
- 21 Replace the rectifier if the current cannot be obtained.
- 22 Adjust the meter relay mechanical zero adjustment to center the pointer.
- 23 Disconnect the VOM.

STEP

PROCEDURE

24 Reconnect the AA or AB lead which was disconnected in Step 18.

25 Repeat the appropriate steps in Part B to adjust the meter relay to zero.

Note: Do **not** change the meter relay mechanical zero adjustment made in Step 22.♦