

**L MULTIPLEX TERMINALS**  
**LMX-1**  
**CARRIER AND PILOT SUPPLY**  
**88-KHZ PROGRAM CARRIER**  
**TESTS AND ADJUSTMENTS**

**PURPOSE OF TEST**

To measure and, if necessary, to adjust the output of the 88-kHz distributing circuit (Fig. 1).

**REASON FOR ISSUE**

This section supersedes and updates Section 356-062-501 which has been cancelled. *Equipment Test Lists are affected.*

**SYNOPSIS**

The J68787V 88-kHz carrier supply unit provides the carrier for broadband carrier program services and contains the following panels:

J68787R 88-kHz Amplifier

J68787S 88-kHz Distribution Circuit

J68787U 88-kHz Carrier Alarm and Transfer Panel

The input signal for the 88-kHz distributing circuit is received from a tap on the 88-kHz channel carrier distribution bus. When two independent 88-kHz signals are supplied from the channel carrier circuits, both signals are connected to an automatic transfer circuit which selects the working supply. The selected 88-kHz signal is connected to individual variable-gain amplifiers (A and B).

The outputs of both amplifiers are paralleled through a common distribution bus.

**Caution:** *Use extreme care in making the tests in Charts 1 and 2; only one of the amplifiers will be feeding service to the bus.*

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| 1—Preliminary Tests . . . . . | 3    |
| 2—Amplifier Tuning . . . . .  | 5    |
| 3—Alarm Test . . . . .        | 6    |

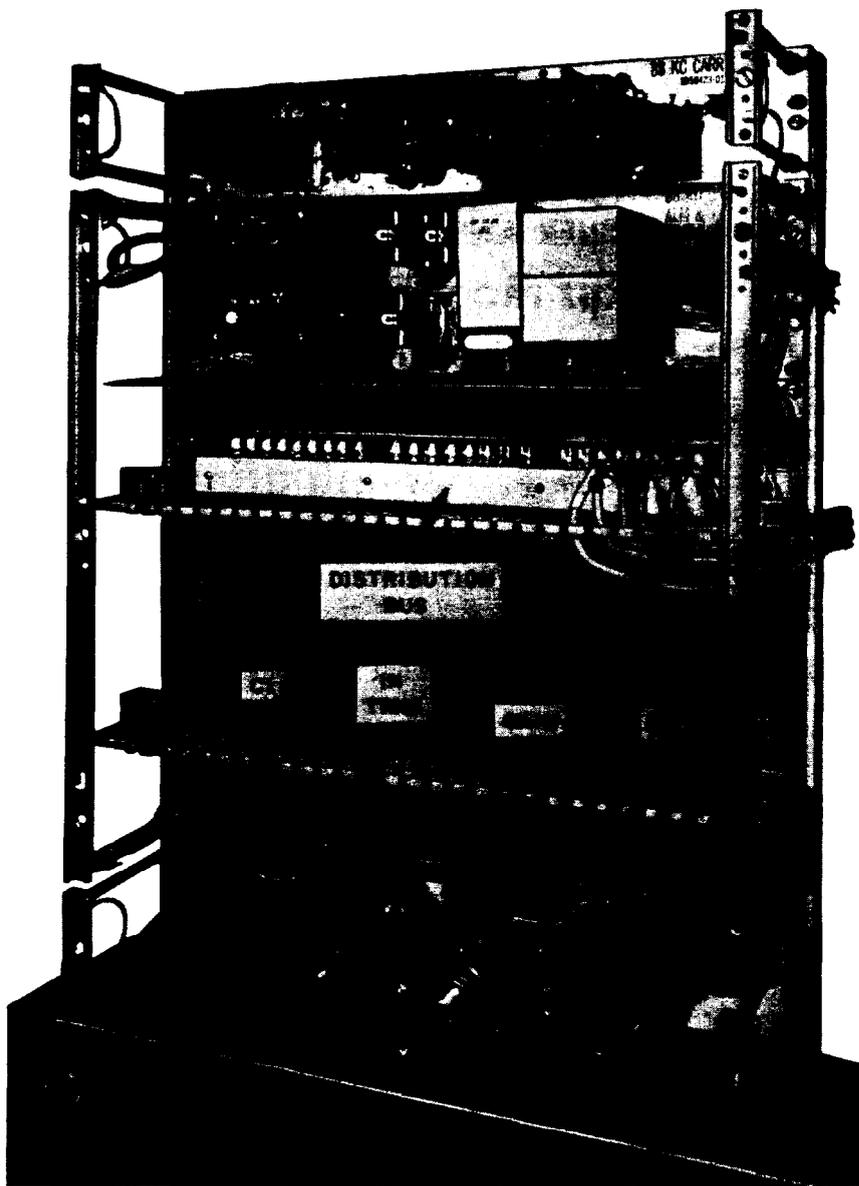


Fig. 1—88-kHz Carrier Amplifiers and Associated Distribution Bus

**APPARATUS**

*Receiving Test Equipment* (RTE), per Section 356-010-500, having the following input characteristics:

Frequency: 88 kHz

Power: 0.0 dBm

Impedance: 135 ohms

*Sending Test Equipment* (STE), per Section 356-010-500, having the above output characteristics

**APPARATUS (Cont)***323A Plug**3P20B Cord**2W24A Cord***CHART I****PRELIMINARY TESTS**

| STEP | PROCEDURE   |
|------|---|
| 1    | If the 88-kHz distributing circuit is being fed by one channel carrier distribution bus, proceed to Step 2. If it is being fed by two channel carrier distribution buses, rotate the AUTO TRNS switch to SUP 1. |
| 2    | Prepare the RTE for a 135-ohm measurement of 88 kHz at 0.0 dBm.   |
| 3    | Insert a 323A plug into the OUT jack of the B amplifier.  |
| 4    | Connect the RTE to an unused bus tap [patch (1), Fig. 2].   |

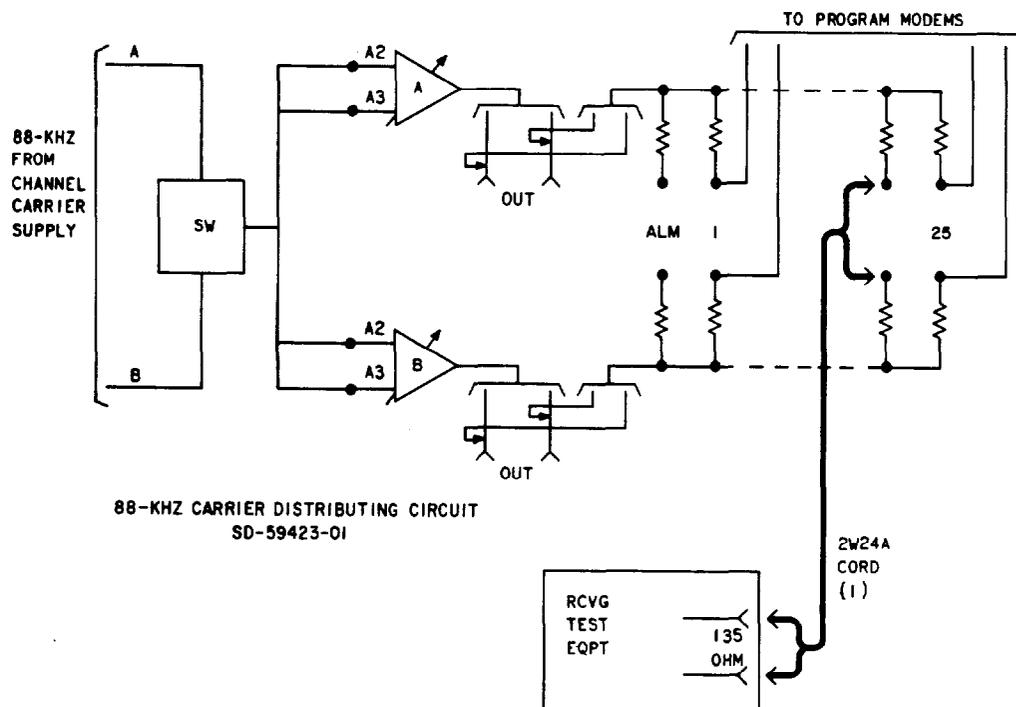
**Fig. 2—88-kHz Carrier Distributing Circuit—Output Power Test**

CHART 1 (Cont)

| STEP | PROCEDURE  |
|------|--|
| 5    | <p>Read the RTE meter indication.</p> <p><b>Requirement:</b> <math>-2.0 \text{ dBm} \pm 0.5 \text{ dB}</math></p>  |
| 6    | <p>If the requirement of Step 5 is met, proceed to Step 7. If it is not met, perform the following steps (in the order listed) until the requirement is met:</p> <p>(a) Adjust the A amplifier GAIN control</p> <p>(b) Perform adjustments in Chart 2 of this section.</p>         |
| 7    | <p>Remove the 323A plug from the B amplifier OUT jack and insert it into the A amplifier OUT jack.</p>   |
| 8    | <p>Read the RTE meter indication.</p> <p><b>Requirement:</b> <math>-2.0 \text{ dBm} \pm 0.5 \text{ dB}</math></p>  |
| 9    | <p>If the requirement of Step 8 is met, proceed to Step 10. If it is not met, perform the following steps (in the order listed) until the requirement is met:</p> <p>(a) Adjust the B amplifier GAIN control.</p> <p>(b) Perform the adjustments in Chart 2 of this section.</p>   |
| 10   | <p>Remove the 323A plug from the B amplifier OUT jack.</p>   |
| 11   | <p>Read the RTE meter indication.</p> <p><b>Requirement:</b> <math>0.0 \text{ dBm} \pm 0.5 \text{ dB}</math></p>   |
| 12   | <p>If the requirement of Step 11 is met, proceed to Step 13. If it is not met, rotate C1 in the A amplifier <i>clockwise</i> and C1 in the B amplifier <i>counterclockwise</i> by equal amounts until the requirement is met.</p>  |
| 13   | <p>If the 88-kHz distributing circuit is being fed by two channel carrier distribution buses, proceed to Step 14. If it is being fed by one channel carrier distribution bus, remove patch (1), Fig. 2 and restore equipment to normal.</p>  |
| 14   | <p>Rotate the AUTO-TRNS switch to SUP 2.</p>   |
| 15   | <p>Read the RTE meter indication.</p> <p><b>Requirement:</b> <math>0.0 \text{ dBm} \pm 0.5 \text{ dB}</math></p> <p><b>Note:</b> If this requirement is not met, perform adjustments in Chart 2. Then repeat tests in Chart 1 with the AUTO-TRNS switch in the SUP 2 position.</p> |

## CHART 1 (Cont)

| STEP | PROCEDURE                           |
|------|-------------------------------------|
| 16   | Remove patch (1), Fig. 2.           |
| 17   | Rotate the AUTO-TRNS switch to NOR. |

CHART 2  
AMPLIFIER TUNING

| STEP | PROCEDURE   |
|------|---|
| 1    | If the 88-kHz distributing circuit is being fed by two channel carrier distribution buses, verify that the AUTO-TRNS switch is in the SUP 1 position. |
| 2    | Connect the RTE to the OUT jack of the amplifier to be tuned [patch (1), Fig. 3].   |

88-KHZ CARRIER DISTRIBUTING CIRCUIT  
SD-59423-01

**Fig. 3—88-kHz Carrier Distributing Circuit—Amplifier Tuning**

|   |  |
|---|--|
| 3 | Prepare the STE to deliver an 88-kHz signal into 135 ohms at 0 dBm.  |
| 4 | At the amplifier to be tested, unsolder and remove the wires at the A2 and A3 terminals of the IN transformer. |

## CHART 2 (Cont)

| STEP | PROCEDURE  |
|------|--|
| 5    | Connect the STE to terminals A2 and A3 of the IN transformer [patch (2), Fig. 3].          |
| 6    | Adjust capacitors C1 and C2 (located in the amplifier) for a maximum RTE meter indication. |
| 7    | Remove patches (1) and (2), Fig. 3.  |
| 8    | Reconnect the wires to terminals A2 and A3 of the IN transformer.                          |
| 9    | Continue with tests in Chart 1 of this section.  |

**CHART 3**  
**ALARM TEST**

| STEP | PROCEDURE  |
|------|--|
|      | <p><i>Caution: The following steps are performed when the 88-kHz distributing circuit is being fed by two channel carrier supply buses and are to be performed on an out-of-service basis.</i></p>   |
| 1    | <p>Insert 232A plugs into the OUT jacks of the A and B amplifiers.</p> <p><i>Requirement 1:</i> Major and minor alarms are activated.</p> <p><i>Requirement 2:</i> ALM and TR lamps are lighted.</p> |
| 2    | <p>Remove 232A plugs from both amplifier OUT jacks.</p> <p><i>Requirement 1:</i> Major alarm is silenced.</p> <p><i>Requirement 2:</i> ALM lamp is extinguished.</p>                                 |
| 3    | <p>Rotate AUTO-TRNS switch to SUP 2.</p> <p><i>Requirement:</i> Minor alarm is extinguished.</p>   |
| 4    | <p>Rotate AUTO-TRNS switch to NOR.</p> <p><i>Requirement:</i> TR lamp is extinguished.</p>   |