KS-20449 AMPLIFIER

DESCRIPTION

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1. GENERAL

1.01 The KS-20449 L1 amplifier is a 1/2 watt transistorized speech amplifier used in such applications as military conference arrangements, call distributor systems, and No. 300 switching systems. ▶The KS-20449 L1 amplifier is similar to but not a direct replacement for the KS-16754 amplifier. The KS-20449 amplifier is not equipped for input bridging and the strapping arrangements differ from the KS-16754 amplifier.◀

1.02 This section is reissued to revise 1.01, 1.03, 1.05, and to delete Fig. 3.

1.03 ▶The KS-20449 L1 amplifier (Fig. 1 and 2) may be installed on a 23-inch relay rack using a 189A mounting plate drilled for mounting the KS-20449 L1 amplifier or may be mounted vertically on rails similar to the mounting used for the KS-16754 amplifier. The modified 189A mounting plate will accommodate three amplifiers. The KS-20449 amplifier comes equipped with two retained No. 10-24 mounting screws on 4-5/8 inch mounting centers.◀

1.04 The KS-20449 L1 amplifier may be operated from either a 24- or 48-volt positive or negative grounded power supply.

1.05 The amplifier consists of an input transformer, a screwdriver operated gain control, an automatic gain control (AGC) circuit, a three stage transistor amplifier, and an output transformer, all mounted on a printed wiring board. In addition, a converter, terminal board, and filtering circuit are mounted on the amplifier chassis. ▶The amplifier may also be operated without AGC.◀

1.06 The input transformer provides input terminating impedance of 1.5, 20, and 600 ohms. The output transformer provides for load impedances of 3, 12, and 600 ohms. The AGC circuit maintains an essentially constant output level of approximately +24 dBm for input variations of approximately 35 dB.

1.07 The schematic diagram for the amplifier is shown in ▶Section 024-174-500.◀ The detailed circuit description is covered in CD-99531-01.

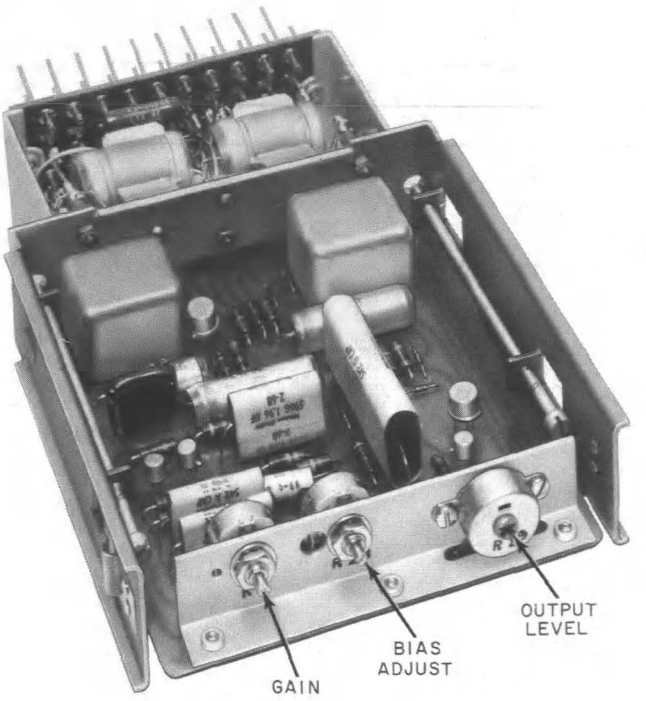

Fig. 1—KS-20449 Amplifier—Front View With Cover Removed

2. ELECTRICAL CHARACTERISTICS

2.01 The electrical characteristics (typical) of the amplifier are as follows:

(a) ***Gain:*** 65 dB between nominal source and load impedance.

(b) ***Frequency Response:*** Within 2 dB of 1000 Hz value from 150 to 7000 Hz.

(c) ***Harmonic Distortion:*** Less than 1 percent.

(d) ***Rated Power Output:*** 0.5 watt into rated resistive load.

(e) ***Output Noise:*** −50 dBm (unweighted).

(f) ***Input Impedance:*** Nominal source and internal input impedances of 1.5, 20, and 600 ohms, balanced.

(g) ***Load Impedance:*** Nominal rated loads of 3, 12, and 600 ohms, balanced or unbalanced.

(h) ***Internal Output Impedance:*** 15 percent of rated load impedance.

(i) ***AGC Attack Time:*** 2 msec or 15 msec.

(j) ***AGC Recovery Time:*** Approximately 2 seconds.

(k) ***Operating Temperature Range:*** −30°F to +140°F.

(l) ***Maximum Permissable Input Level:*** +18 dBm. Use external input pad for higher levels to prevent overloading of the input transformer. The input circuit is not designed to carry direct current.

2.02 The electrical characteristics of the power supply are as follows:

(a) ***24 Volts:*** 30 mA standby to 80 mA maximum.

(b) ***48 Volts:*** 70 mA standby to 110 mA maximum.

3. MECHANICAL CHARACTERISTICS

3.01 The mechanical characteristics of the amplifier are as follows:

(a) Size: Width—5 1/4 inches

Height—1 3/4 inches

Depth—7 1/2 inches (extends approximately 5 inches in front of mounting plate on equipment side)

(b) Weight: Approximately 2 1/4 lbs.

(c) Finish: Light gray.

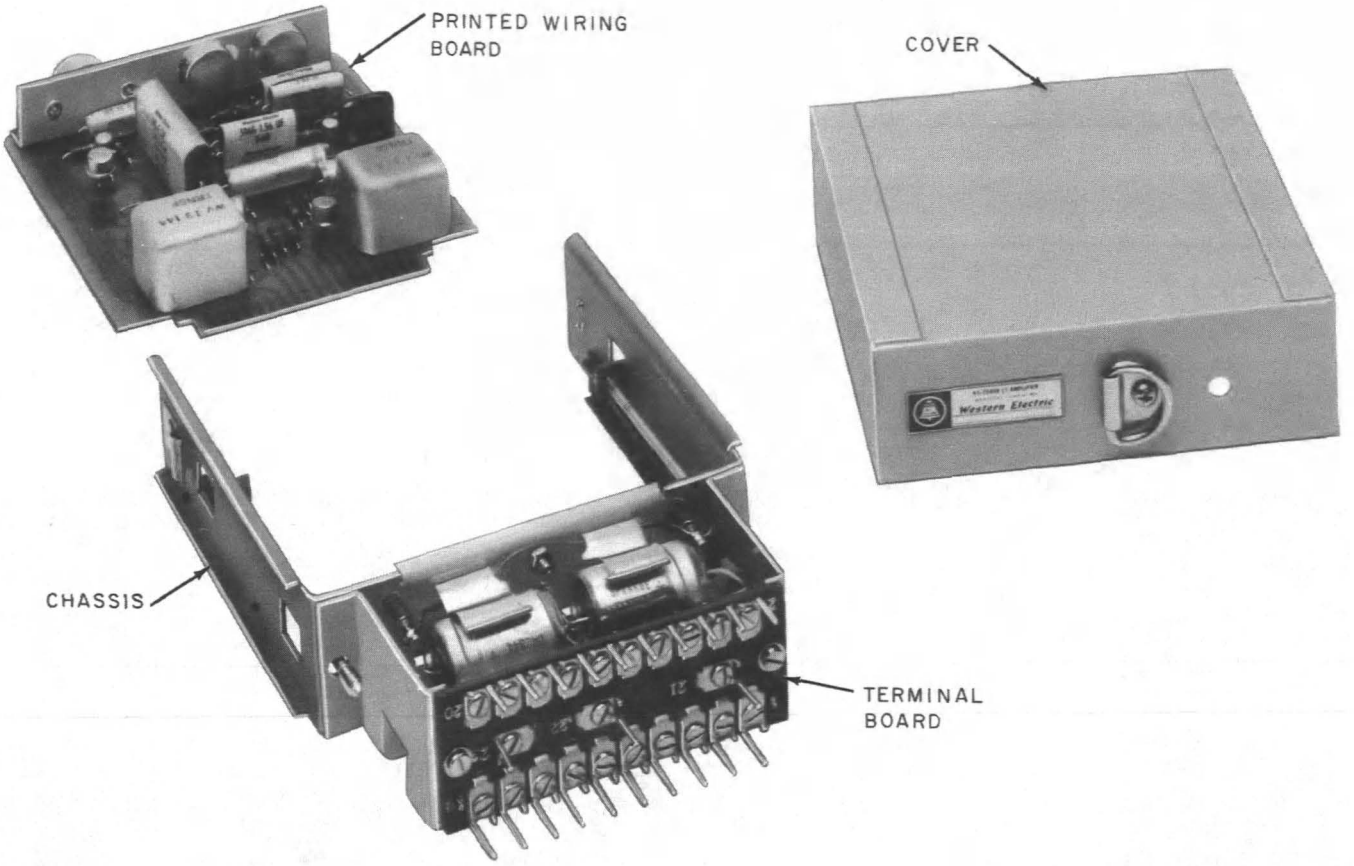

Fig. 2—KS-20449 Amplifier—Terminal View With Printed Wiring Board and Cover Removed