

**KS-16740**  
**AMPLIFIER SYSTEM**  
**(ALTEC S-17 SYSTEM)**

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**1. GENERAL**

**1.01** This section describes the KS-16740 Amplifier System designed for use as a general purpose line amplifier system for local program circuits transmitting frequencies up to 15,000 cycles. It may be used as a portable unit where one or two equalized circuits are required. It may also be mounted in a central office where program equipment is not otherwise available.

**1.02** The KS-16740 Amplifier System includes two KS-16740, L2 Amplifiers, two KS-16740, L3 or L5 Equalizers, two jack bays and two terminal strips mounted in a KS-16740, L6 portable cabinet. The cabinet is supplied with detachable brackets so that the system can be mounted in a standard 19" bay if desired.

**1.03** The schematic drawing is SD-95284-01. The drawing includes a parts list and critical operating voltages. The detailed description of the system is covered in CD-95284-01.

**2. DESCRIPTION**

**2.01** The KS-16740, L2 Amplifier is the same as the Altec-Lansing 437B Amplifier which is used in their S-17B Amplifier System. It contains its own ac operated power supply and is a

plug-in unit. The input and output transformers are sufficiently well balanced and shielded to make the use of external line repeating coils unnecessary.

**2.02** Connections to the input and output circuit of the amplifier are made by means of jacks or terminal strips located on the cabinet below the jacks. The output of the amplifier contains a "Y" network with a 6 db loss. The main output is obtained through one branch of the "Y" while the other branch may be used for monitoring or for a volume indicator. The monitoring output is available through a pair of jacks which is terminated in a resistance when not in use. The termination is removed when a plug is inserted in the jacks.

**2.03** The input and output transformers may be strapped for either 150 or 600 ohms. This feature is provided by means of plugs which are inserted in the amplifier panel. The panel of the amplifier is stenciled 150 and 600 ohms as well as INPUT and OUTPUT.

**2.04** The KS-16740, L3 Equalizer is designed for use on 8 kc circuits. It is the same, electrically, as the 23A equalizer. The fixed resistances provided with the 23A are replaced with a continuously variable potentiometer to facilitate adjustment. This unit is the same as the Altec-Lansing unit coded 17224.

**2.05** The KS-16740, L5 Equalizer is designed for use on 15 kc non-loaded circuits. It is the same electrically as the SD-55503-01 equalizer except for the resistance element. The L/C ratio and resonating frequency is selected by means of soldered straps. The fixed resistances have been replaced with a continuously variable

330-ohm potentiometer with a locking feature. This unit is the same as the Altec-Lansing unit coded 17249.

**2.06** The above equalizers are held in the cabinet by two studs. The amplifier must be removed from the cabinet when placing or removing the equalizer. Two jumper wires, tip and ring, are soldered to appropriate terminals on the front of the unit. The opposite end of the wires are connected to the appropriate terminal strip on the cabinet.

**2.07** The KS-16740, L6 Cabinet and Jack Bay is designed to house equipment for two equalized channels. The cabinet is equipped with two jack fields, two terminal strips, two mounting arrangements for equalizers, two connectors for the plug-in amplifiers and a power cord. Mounting brackets are provided with the cabinet so that the whole assembly can be mounted in a standard 19" bay, if desired. These brackets may be stored in the cabinet cover when not in use. The KS-16740, L6 Cabinet and Jack Bay is the same as the Altec-Lansing unit coded 12299 except for the jacks. Western Electric types 410D and 218E jacks have been substituted for those supplied with the Altec-Lansing unit in order to provide more reliable service and lower contact noise.

**2.08** A removable cover is provided to protect the equalizers and terminal strips. This is held in position in the cabinet by means of a thumb screw.

### **3. ELECTRICAL CHARACTERISTICS**

**3.01** The following electrical characteristics are typical for the KS-16740, L2 Amplifier:

**Power Supply:**

115 volts, 60 cycles.

**Maximum Input:**

+16 dbm with minimum amplifier gain.

**Maximum Gain:**

44 db with either 150- or 600-ohm input and output connections.

**Minimum Gain:**

8 db with either 150- or 600-ohm input and output connections.

**Gain Adjustment:**

Main gain control has nineteen 2 db steps and off position.

Screwdriver operated vernier control is also available with range of 1.5 db.

**Frequency Response:**

20 to 20,000 cycles,  $\pm 1$  db.

**Power Output:**

+24 dbm.

**Distortion:**

Not over 0.5% from 30 to 15,000 cycles at +24 dbm output.

**Input Impedance:**

150 or 600 ohms.

**Output Impedance:**

150 or 600 ohms.

**Output Noise:**

-70 dbm maximum (unweighted) for any gain setting.

### **4. MECHANICAL CHARACTERISTICS**

**4.01** The following mechanical characteristics pertain to the cabinet which houses the KS-16740, L2 Amplifiers, equalizers and other equipment which make up the KS-16740 Amplifier System.

**Mechanical:**

**Width:**

18" over-all (Brackets provided to mount in 19" bay).

**Height:**

8-7/8".

**Depth:**

9-1/16".

**Projection:**

5" in front of bay.

**Weight:**

42 lbs. fully equipped.

**Finish:**

Gray enamel.

**Electron Tubes:**

The electron tube complement (furnished with amplifier) is as follows:

DESIGNATION	TUBE TYPE	FUNCTION
V1	12AY7	Voltage Amplifier and Phase Inverter
V2	12BY7A	Push-Pull Output
V3	12BY7A	Push-Pull Output

**5. INSTALLATION**

**5.01** The amplifier system should operate satisfactorily at room ambient temperatures up to 100° F. Several KS-16740 Amplifier Systems may be mounted in a relay rack or cabinet without forced ventilation provided the room ambient temperature does not exceed 100° F. At least 100 square inches of open area should be provided above the top amplifier and below the bottom amplifier when they are mounted in an enclosed cabinet.

**5.02** A 115V, 60-cycle ac outlet should be provided within 30" of the amplifier system. If possible, the outlet should not be at the control of a power switch. This will help to prevent accidental service interruptions. The outlet should also be arranged so that it switches automatically to the emergency supply in the event of a power failure.