

## Premium Solid State Audio Amplifiers—6300



M-6315

### TRANSISTOR MONITOR AMPLIFIER

#### SPECIFICATIONS

**GAIN:** 80 db.,  $\pm 1.0$  db. (may be reduced with gain control).

**FREQUENCY RESPONSE:**  $\pm 1$  db. from 20 to 20,000 cycles or  $\pm 0.5$  db. from 30 to 15,000 cps.

**DISTORTION:** 0.5% maximum from 50 to 15,000 cps. at + 40 dbm. output.  
1% maximum from 30 to 15,000 cps at + 40 dbm. output.

**NOISE:** — 121 dbm. relative input noise, 30 to 15,000 cycles.

**SOURCE IMPEDANCE:** 150 ohms, balanced or unbalanced, center tapped\*.

**LOAD IMPEDANCE:** 150 ohms, balanced or unbalanced, center tapped\*.

**POWER:** Self-contained power supply, 117 volts nominal, 50/60 cycles, 60 watts maximum.

**GAIN CONTROL:** Two lamp operated photo-cells controlled by a remote actuator (Maximum control current of 30 ma, at 30 volts D.C.—supplied from Monitor Amplifier) with line distance of up to one thousand feet. A 10,000 ohm Log Taper potentiometer will provide control of the pump-operated photo-cells. (Potentiometer is optional equipment.)

**CONNECTOR:** 16 terminal, self-aligning. Connector recessed to prevent damage.

**SWITCH AND FUSE:** Switch and illuminated indicating fuse holder located on the front escutcheon for A.C. control of the Amplifier.

**TEST POINT:** Pin jacks provide audio-output monitoring.

**MOUNTING TRAY:** M-6343 tray and receptacle. Four M-6315 Monitor Amplifiers mount in 3½" of vertical rack space.

**SIZE:** 4⅞" wide x 3¼" high x 14¾" long, over-all.

**WEIGHT:** 9½ lbs., net.



M-6338

### TRANSISTOR POWER SUPPLY

#### SPECIFICATIONS

**CAPACITY:** Up to 50 M-6313 Transistor Pre-amplifiers, or up to 10 M-6314 Program/AGC Amplifiers or any combination with a maximum rated current of 1.5 amps. Use for large systems or where growth is anticipated.

**OUTPUT:** 48 volts D.C. at 0 to 1.5 amps. continuous.

**RIPPLE:** Less than 1.0 mv. from 0 to full load.

**INTERNAL IMPEDANCE:** 0.05 ohms.

**REGULATION:** 0.3%.

**POWER:** 117 volts nominal, 50/60 cps., 130 watts maximum.

**SHORT CIRCUIT PROTECTION:** Resistive short circuit protection allows full operation to resume after momentary short circuits on the output. Primary fuse prevents component damage with sustained short circuits.

**UNDERVOLTAGE ALARM:** Self-contained relay actuates with approximately 10% undervoltage. Contacts are connected to the output plug to permit the operation of an external alarm.

**CONNECTORS:** 16 terminal, self-aligning, recessed to prevent damage.

**SWITCH AND FUSE:** Switch and illuminated indicating fuse holder located on the front escutcheon for A.C. control of the Power Supply.

**MONITORING:** Neon lamp (to indicate presence of AC supply voltage), and load lamp (to indicate output voltage). Output sampling jack located on the front escutcheon.

**MOUNTING TRAY:** M-6344 tray and receptacle. Four M-6338 Power Supplies mount in 3½" of vertical rack space.

**SIZE:** 4⅞" wide x 3⅞" high x 14¾" long, over-all.

**WEIGHT:** 7½ lbs., net.



\* M-6321

### \* PROGRAM AMPLIFIER

#### SPECIFICATIONS

**GAIN:** 62 db.,  $\pm 0.3$  db., unterminated input.

**FREQUENCY RESPONSE:**  $\pm 0.5$  db. from 20 to 20,000 cycles or  $\pm 0.25$  db., 30-15,000 cycles.

**DISTORTION:** 0.25% maximum from 30 to 15,000 cps @ 32 dbm. output.

**NOISE:** — 116 dbm. relative input noise, 30 to 15,000 cps.

**SOURCE IMPEDANCE:** 150 ohms, balanced or unbalanced, center tapped\*.

**LOAD IMPEDANCE:** 150 ohms, balanced or unbalanced, center tapped\*.

**POWER:** 48 volts D.C. @ 140 ma.

**CONNECTORS:** 16 terminal self-aligning, recessed to prevent damage.

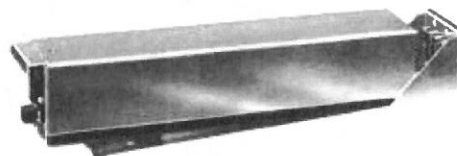
**MONITORING:** Indicator lamp provides warning of short-circuit condition.

**TEST POINT:** Pin jacks provide audio output monitoring.

**MOUNTING TRAY:** M6426 tray and receptacle for up to six program amplifiers in 3½" of vertical rack space.

**SIZE:** 2¾" wide x 3⅞" high x 14¾" long, over-all.

**WEIGHT:** 4½ lbs., net.



Above illustrates preamplifier and accessory tray assembly. Plugs on all amplifiers are recessed to assure no damage to pins.

# Premium Solid State Audio Amplifiers—“6300” Series



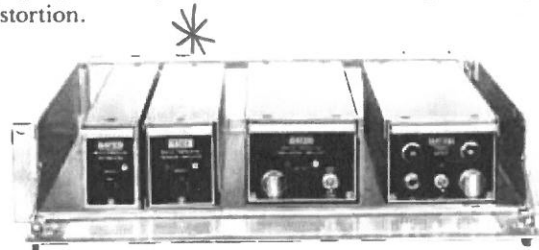
TRANSISTOR POWER SUPPLY  
SPECIFICATIONS

- CAPACITY:**  
Up to ten M-6313 Preamplifiers, or two M-6314 Program/AGC amplifiers, or any system combination with a maximum rated current not exceeding 300 ma. for use in smaller systems.
- OUTPUT:**  
48 volts D.C. at 0 to 300 ma. continuous.
- RIPPLE:**  
Less than 1.0 mv. from 0 to full load.
- INTERNAL IMPEDANCE:**  
0.05 ohms.
- REGULATION:**  
0.3%.
- POWER:**  
117 volts nominal, 50/60 cps., 30 watts.
- SHORT CIRCUIT PROTECTION:**  
Resistive for momentary short circuits on output. Primary fuse prevents damage from sustained short circuits.
- CONNECTORS:**  
16 terminal, self-aligning, recessed to prevent damage.
- SWITCH AND FUSE:**  
Located on front escutcheon.
- MOUNTING TRAY:**  
M-6422 tray and receptacle. Six M-6421 power supplies mount in 3½" of vertical rack space.
- SIZE:**  
2¾" wide x 3¼" high x 14¾" long, over-all.
- WEIGHT:**  
5½ lbs., net.

## ACCESSORIES

Complete mounting accessories are available for the 6300 Series *Solid-Statesman* Amplifiers. The M-6345 Panel and Shelf Assembly unit occupies only 3½" of 19" wide rack space. Built of heavy gauge plated, non-corrosive steel, finished in medium satin gray, and with hinged front panel. The shelf assembly is provided with an upper cross-bar to prevent damaging amplifier plugs or tray receptacles. Individual mounting trays have been designed for each model of amplifier and power supply.

In system practice a typical audio input signal may pass through four amplifiers, four faders, nine transformers, and be bridged a dozen or so times, yet the system performance at the output is equal or better than any individual amplifier specification. Of particular importance is the higher rated output levels of both pre-amplifiers and program amplifiers to accommodate greater dynamic range at no increase in distortion.



Above M-6345 Panel and Shelf Assembly showing for illustrative purposes one each of preamplifier, program amplifier, monitoring amplifier and power supply. Only 3½" of rack panel space is required.

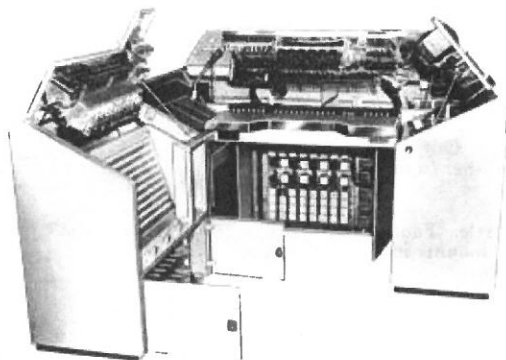
## ORDERING INFORMATION

- |  |   |
|--|---|
| Preamplifier . . . . . (Catalog No.) M-6313      | Panel and Shelf Assembly . . . . . M-6345     |
| ● Program Amplifier . . . . . M-6321             | Television Audio Control Console . . . M-6337 |
| Program/AGC Amplifier . . . . . M-6314           |   |
| Monitor Amplifier . . . . . M-6315               |   |
| Potentiometer for Monitor                        |   |
| Amplifier Gain Control . . . . . 550-0255        |   |
| 300 Ma. 48 Volt Power Supply . . . . . M-6421    |   |
| 1.5 Amp 48 Volt Power Supply . . . . . M-6338    |   |
| Mtg. Tray for Preamplifier . . . . . M-6341      |   |
| Mtg. Tray for Program Amplifier . . . . . M-6426 |   |
| Mtg. Tray for PGM/AGC Amplifier . . . M-6342     |   |
| Mtg. Tray for Monitor Amplifier . . . . . M-6343 |   |
| Mtg. Tray for M-6421 Power Supply . . M-6422     |   |
| Mtg. Tray for M-6338 Power Supply . . M-6344     |   |

\*The source of load impedance of the amplifiers as listed in the specifications is the recommended impedance of the connecting device (such as a microphone, attenuator, line or loudspeaker). However, the input impedance of all four amplifiers is approximately ten times higher than the source impedance, giving the systems designer greater flexibility.  
The output impedance is approximately 1/10 the load impedance, which permits multiple bridging without any degradation of the output signal.

## TELEVISION AUDIO CONSOLE

The production console at the left is now in use in a leading television network, and houses 57 of these "6300" series *Solid-Statesman* transistorized units. This Television Audio Console marks a significant advance in the development of solid state equipment for broadcasting. The remarkable capabilities of this completely self-contained console include: mixing from 25 input audio sources simultaneously into nine separate program channels, each with automatic level control; built-in video monitoring, ten audio monitoring channels; twelve microphone equalizers; two graphic program equalizers; five sound effects filters; two reverberation send and return channels; vertical attenuators; three video controlled audio channels, plus many other special features, described in detail on page 110.



\* The above production console made for a leading television network houses 57 of the 6300 Series *Solid Statesman* transistorized units described herein.

AUDIO

## M6321-C TECHNICAL DATA

- GAIN:** 62 db,  $\pm 0.3$  db, unterminated input.
- FREQUENCY RESPONSE:**  $\pm 0.25$  db from 30 to 15,000 Hz;  $\pm 0.5$  db from 20 to 20,000 Hz.
- HARMONIC DISTORTION:** 0.25% maximum from 30 to 15,000 Hz @ +32 dbm output.
- NOISE LEVEL:** -116 dbm relative input noise, from 30 to 15,000 Hz.
- SOURCE IMPEDANCE:** 37.5, 150 or 600 ohms, balanced or unbalanced with C-T on 150 and 600 ohms.
- INPUT IMPEDANCE:** 1000 ohms or higher from 50 to 15,000 cps.
- LOAD IMPEDANCE:** 150 or 600 ohms, balanced or unbalanced with C-T.
- OUTPUT IMPEDANCE:** 18 ohms,  $\pm 7$  ohms, from 50 to 15,000 Hz.
- CROSS-TALK:** Between adjacent amplifiers of this type will meet the above signal to noise requirements when operated at rated output levels in the same mounting frame.
- POWER REQUIREMENTS:** -48 volts D.C. @ 140 ma. from a common power supply with 1.5 millivolts maximum ripple.
- Zener diode isolation and regulation in the Program amplifier permits common power supply leads.
- An M6421 Power Supply will furnish power for 2 of the M6321-C Program Amplifiers or the M6338 may be used to furnish power for up to 10 of the M6321-C Program Amplifiers.
- AMBIENT TEMPERATURE RANGE:** -20°C to +60°C (-4°F to +140°F).
- FINISH:** Anodized aluminum escutcheon plate on front of a black anodized aluminum chassis/heat sink with a plated steel cover.
- PHASING:** The low terminal number of the input pair and the low terminal number of the output pair are in phase.
- MOUNTING TRAY:** M6426 Program Amplifier Mounting Tray.
- SHELF ASSEMBLY:** M6689 Shelf Assembly (19 x 3-1/2" Panel).
- SIZE:** 2-11/16" wide, 3-3/32" high and 14-11/16" long. Up to six Program Amps. may be mounted on a shelf assembly.

## DESCRIPTION:

The M6321-C Program Amplifier is designed specifically for use in network origination and other large systems where a great number of amplifiers may be connected in series. The very uniform response and exceedingly low distortion assures good overall characteristics under these conditions. Install a 150 or 600 ohm load resistor on input terminals of the mounting tray (this load will convert the unit to a 56 db gain terminated input program amplifier).

For optimum operation with minimum cross-talk it is best to mount only M6321-C Program Amplifiers on a program amplifiers shelf assembly. If AGC amplifiers are required in the system the M6321-C Program/AGC Amplifiers may be mounted on the same shelf assembly with M6321-C Program Amplifiers. The orientation of all the transformers, monitor amplifiers, and power supplies allows maximum flux coupling on a horizontal plane, minimum on a vertical plane. This allows close vertical spacing of unlike units without interference of cross-talk or hum pickup.

The modest size of 2-11/16" x 3-3/32" x 14-11/16" allows six of the M6321-C Program Amplifiers to be mounted in one of the 19" wide by 3-1/2" high M6689 Shelf Assemblies.

The program amplifier shelf assemblies may be mounted in 3-1/2" close spaced increments without forced rack cabinet exhausting with a maximum rack ambient temperature of +55°C (+131°F). If rack temperatures (at the rear of the shelf assemblies) exceed +55°C, the rack cabinet should be exhausted to provide additional air movement. A perforated front panel on the shelf assembly permits natural convection of air past the amplifier enclosures.

The M6426 Program Amplifier Mounting Tray carries the mating receptacle and is supplied with mounting hardware to fasten it to the shelf assembly. The M6689 Shelf Assembly has multiple mounting holes for the Program Amplifier Trays as well as trays for companion units.

## INSTALLATION:

Mounting holes have been spaced in the Shelf Assembly to allow it to be completely filled with trays of any one type of the M6300 series of transistor amplifiers and power supplies. However, it is possible - where maximum use of shelf space is not required, and the ultimate in cross-talk is not demanded - to mix trays of different sizes. Thus, a monitor amplifier or power supply could be placed at the extreme right (normal practice, viewed from rack front) and several program amplifiers or pre-amplifiers at the left side.

1. Locate the first tray at the extreme left or right side of the shelf assembly with the receptacle at the rear. The dimpled holes of the tray will fit into