

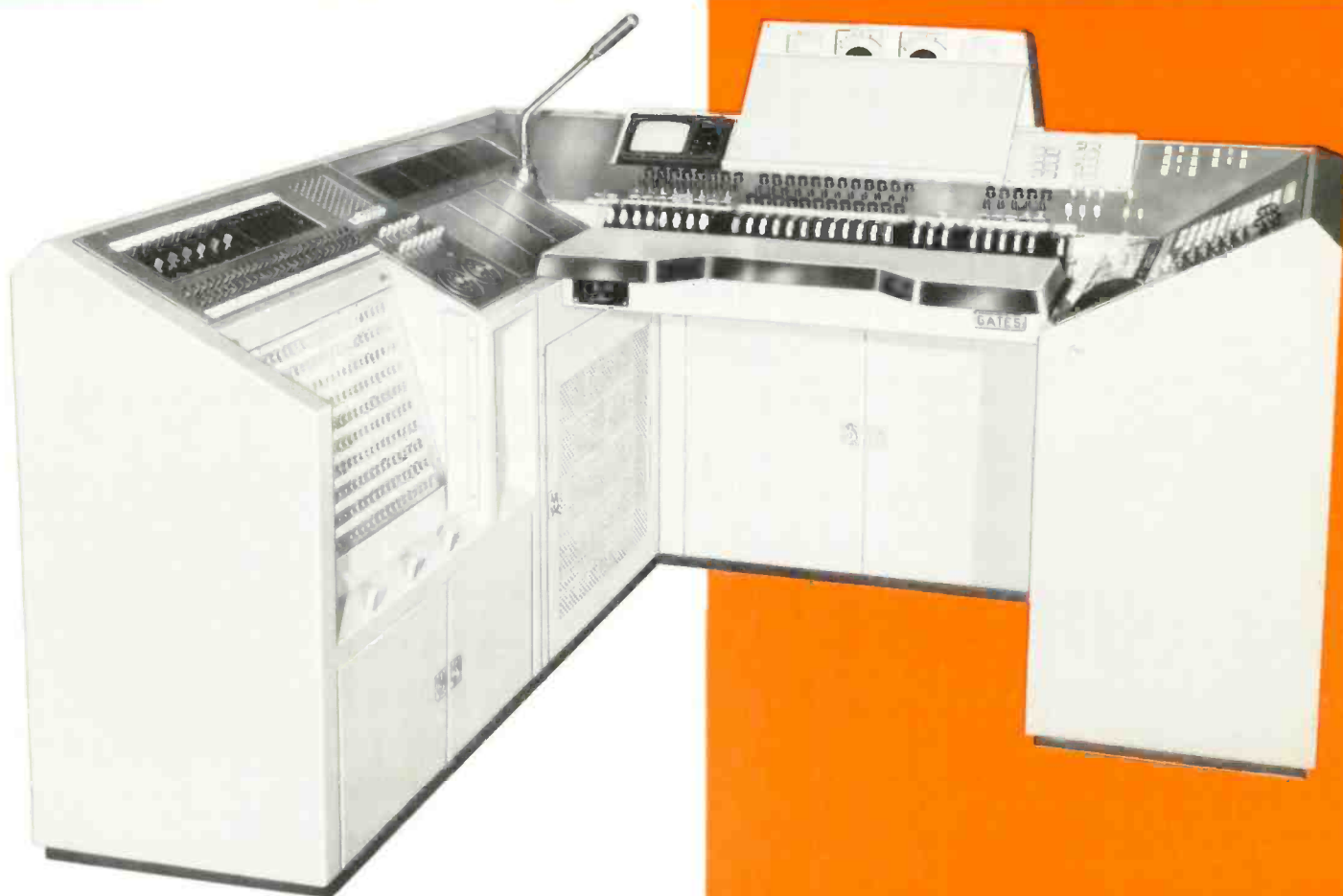
Six Premium Quality Transistorized Products

6300 Series Solid-Statesman Plug-in Audio

HARRIS
INTERTYPE
CORPORATION

GATES

AMPLIFIERS



THE GATES M-6337 TELEVISION AUDIO CONTROL 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; 10 audio monitoring channels; 12 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.

A TOTALLY NEW SOLID-STATESMAN AMPLIFIER FAMILY was developed for use in audio systems where nothing but the very finest will suffice. There are no compromises in the design or construction of these premium-grade Solid-Statesman amplifiers and power supply units, all compact and plug-in.

For the most critical applications, Gates recommends the "6300" Solid-Statesman series.



M-6313

TRANSISTOR PREAMPLIFIER

SPECIFICATIONS

GAIN:

40 db, or 46 db (by receptacle strapping), ± 0.3 db.

FREQUENCY RESPONSE:

± 0.5 db from 20 to 20,000 cps, or ± 0.25 db from 30 to 15,000 cps.

DISTORTION:

0.25% maximum from 30 to 15,000 cps., @ +20 dbm output.

NOISE:

-123 dbm relative input noise, 30-15,000 cps.

SOURCE IMPEDANCE:

150 ohms, balanced or unbalanced, center tapped*.

LOAD IMPEDANCE:

150 ohms, balanced or unbalanced*.

POWER:

48 volts D.C. @ 30 ma.

SIZE:

2" wide x $3\frac{1}{8}$ " high x $14\frac{3}{4}$ " long, over-all.

TRANSISTORS:

2 — 2N1307, 2 — 2N1414, 1 — 2N696.

DIODES:

1 — 1N3033B, 1 — 1N2070.

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:

M-6341 tray and receptacle. Tray attaches to M-6345 panel and shelf assembly for mounting up to eight preamplifiers in $3\frac{1}{2}$ " of vertical rack space.



M-6321

PROGRAM AMPLIFIER

SPECIFICATIONS

GAIN:

62 db, ± 0.3 db, unterminated input.

FREQUENCY RESPONSE:

± 0.5 db from 20 to 20,000 cycles or ± 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.

SIZE:

$2\frac{3}{4}$ " wide x $3\frac{1}{8}$ " high x $14\frac{3}{4}$ " long, over-all.

TRANSISTORS:

3 — 2N1307, 2 — 2N1414, 1 — 2N494,
1 — 2N 1183A, 1 — 2N1483.

DIODES:

1 — 1N2992B, 1 — 1N2070.

CONNECTORS:

16 terminal (2) 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 $3\frac{1}{2}$ " of vertical rack space.



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.



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

Complete mounting accessories are available for the 6300 Series Solid-Staterman 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.

The physical and performance characteristics of this premium series in Gates Solid-Staterman equipment were originally developed in conjunction with leading network engineers. In system practice, a typical audio input signal will 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 preamplifiers and program amplifiers to accommodate greater dynamic range at no increase in distortion.

For present or future system expansion requirements, this premium grade 6300 Series Solid-Staterman line indeed offers the extra in fully transistorized equipment not available in other equipment.

ORDERING INFORMATION

Preamplifier	M-6313
Program Amplifier	M-6321
Program/AGC Amplifier	M-6314
Monitor Amplifier	M-6315
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
Panel and Shelf Assembly	M-6345
Television Audio Control Console	M-6337

*The source of load impedance of the amplifiers as listed in the specification 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.



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M-6314

**TRANSISTOR PROGRAM-AUTOMATIC
GAIN CONTROL AMPLIFIER**

SPECIFICATIONS

GAIN:

62 db, ± 0.3 db; or 80 db, ± 0.5 db, (by receptacle strapping).

FREQUENCY RESPONSE:

± 0.5 db from 20 to 20,000 cycles or
 ± 0.25 db from 30 to 15,000 cps (62 db gain)
 ± 0.5 db from 30 to 15,000 cps. (80 db gain)

DISTORTION:

0.25% maximum from 30 to 15,000 cps., (62 db gain @ +32 dbm output level). 0.5% maximum from 30 to 15,000 cps., (80 db gain @ +32 dbm output level).

NOISE:

-116 dbm relative input noise (62 db gain mode) from 30 to 15,000 cps. -118 dbm relative input noise (80 db gain mode) from 30 to 15,000 cps.

GAIN REDUCTION (AGC):

Amplifier input/output characteristics linear below threshold of AGC @ +20 dbm output level. 3 db gain reduction maximum in 62 db gain mode. After maximum of 6 db AGC, amplifier input/output characteristics become linear again. An input level of -24 dbm will result in 6 db gain reduction and an output level of +32 dbm.

Approximately 21 db AGC in the 80 db gain mode. Amplifier characteristics linear below the threshold of AGC @ +20 dbm output level. An input level of -27 dbm will result in 21 db gain reduction and an output level of +32 dbm. An external switch permits disabling the AGC action, without thumps or clicks in the program circuit.

ATTACK TIME:

AGC attack time = 25, ± 3 milliseconds.

RECOVERY TIME:

AGC recovery time = 0.5, ± 0.1 second.

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.

SIZE:

2 $\frac{3}{4}$ " wide x 3 $\frac{1}{8}$ " high x 14 $\frac{3}{4}$ " long, over-all.

TRANSISTORS AND DIODES:

Transistors: 9 — 2N1307, 2 — 2N1414, 1 — 2N696, 1 — 2N1183A, 1 — 2N1483.

Diodes: 1 — 1N2992B, 1 — 1N2070.

CONNECTORS:

16 terminal (2), self-aligning, connectors recessed to prevent damage.

MONITORING:

Indicator lamp provides warning of short-circuit condition.

TEST POINT:

Pin jacks provide audio output monitoring.

MOUNTING TRAY:

M-6342 tray and receptacle. Six PGM/AGC amplifiers mount in 3 $\frac{1}{2}$ " of vertical rack space.



M-6315

**TRANSISTOR MONITOR AMPLIFIER
(POWER SUPPLY SELF-CONTAINED)**

SPECIFICATIONS

GAIN:

80 db, ± 1.0 db (may be reduced with gain control).

FREQUENCY RESPONSE:

± 1 db from 20 to 20,000 cycles or
 ± 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.

SIZE:

4 $\frac{1}{8}$ " wide x 3 $\frac{1}{4}$ " high x 14 $\frac{3}{4}$ " long, over-all.

TRANSISTORS AND DIODES:

16 transistors; 8 diodes.

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 lamp 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.

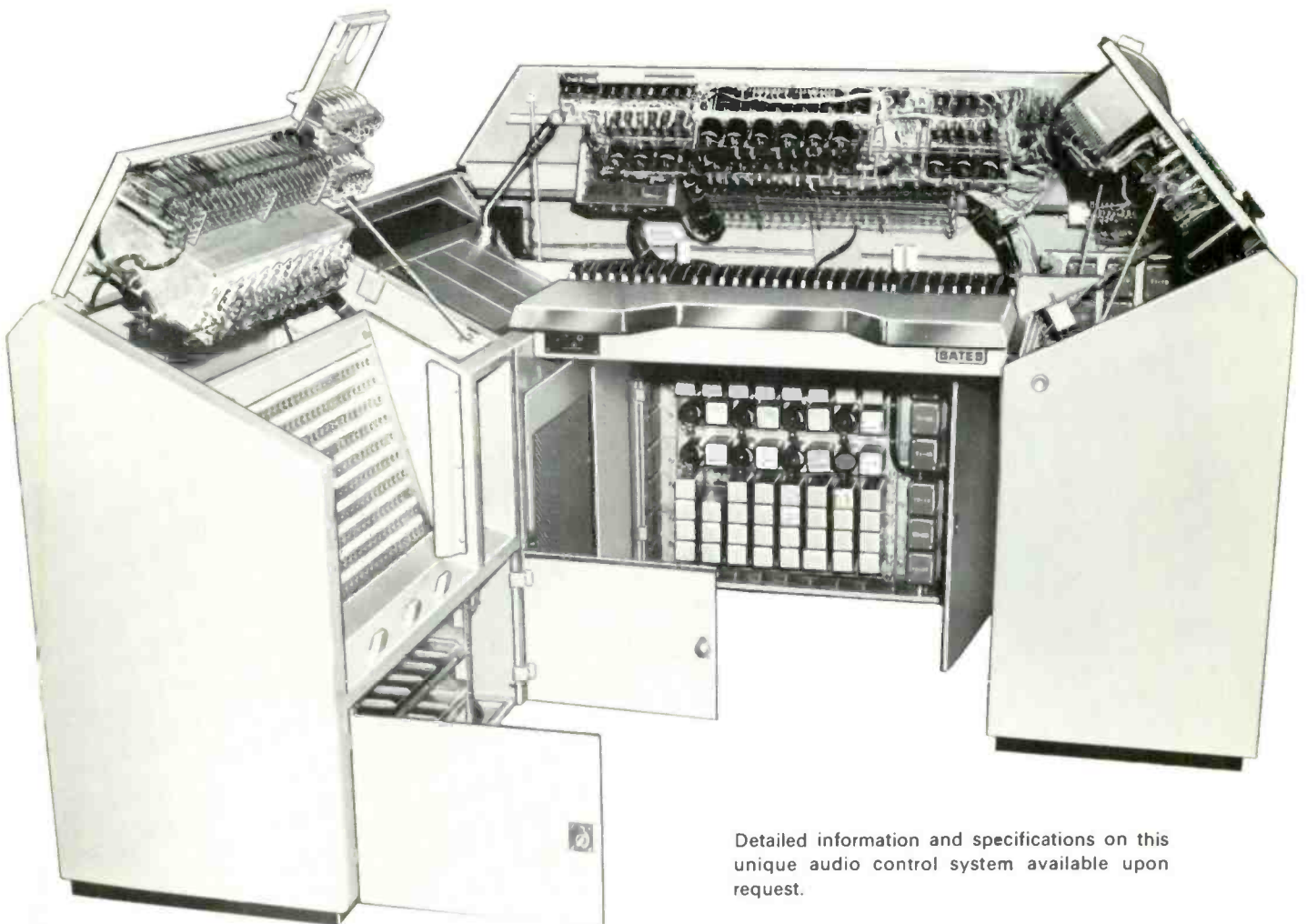
MOUNTING TRAY:

M-6343 tray and receptacle. Four M-6315 Monitor Amplifiers mount in 3 $\frac{1}{2}$ " of vertical rack space.



These premium quality Gates products are already in use in two of the nation's leading television networks. Entirely new, these fully transistorized audio amplifiers incorporate the latest state-of-the-art engineering advances, resulting in performance standards that in many instances exceed previous industry achievements. Without question, this new Gates Solid-Statesman audio equipment is the finest ever manufactured. Exhaustive laboratory testing, over a period of several man-years, have established each amplifier as absolutely the finest in its field.

Included in this complete line are: Preamplifier, Program Amplifier, Program/AGC (automatic gain control) Amplifier, Monitor Amplifier, Power Supplies, mounting trays and a compact shelf assembly for rack mounting.



Detailed information and specifications on this unique audio control system available upon request.



M-6338

**TRANSISTOR POWER SUPPLY,
1½ AMPERES**

SPECIFICATIONS

CAPACITY:

Up to 50 M-6313 Transistor Preamplifiers, 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.

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.

SIZE:

4 1/8" wide x 3 3/8" high x 14 3/4" long, over-all.

TRANSISTORS AND DIODES:

4 transistors; 7 diodes.

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 3 1/2" of vertical rack space.



M-6421

TRANSISTOR POWER SUPPLY, 300 MA

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.

SIZE:

2 3/4" wide x 3 3/8" high x 14 3/4" long, over-all.

TRANSISTORS AND DIODES:

3 transistors; 5 diodes.

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 3 1/2" of vertical rack space.

"6300" SERIES AMPLIFIER

PRICE LIST

For economy in large systems, quantity prices have been established for 100 or more units.

NOVEMBER, 1964

		Price (Qty. 1 to 99)
M-6313	Preamplifier	164.00
M-6321	Program Amplifier	227.00
M-6314	Program/AGC Amplifier	279.00
M-6315	Monitoring Amplifier	358.00
M-6421	300 Ma. 48 Volt Power Supply	156.00
M-6338	1.5 Amp. 48 Volt Power Supply	205.00
M-6341	Preamplifier Mounting Tray	9.50
M-6426	Program Amplifier Mounting Tray	9.50
M-6342	Program/AGC Amplifier Mounting Tray	11.50
M-6343	Monitor Amplifier Mounting Tray	9.50
M-6422	300 Ma. Power Supply Mounting Tray	9.50
M-6344	1.5 Amp. Power Supply Mounting Tray	9.50
M-6345	Panel and Shelf Assembly	30.00
M-6337	Audio Control Console	

Price and delivery
Information on request.

ACCESSORIES

		Price
RAK-1	Basic Cabinet	175.00
TRM-1	Single Corner Trim	12.00
TRM-2	Double Corner Trim	13.20
SP-1	Side Panel	22.80
SH-1	Shield	7.50
SH-2	Shield	6.60
BRK-1	Terminal Board Mounting Bracket	4.10
RAK-F-1	Ventilating Fan	39.50

NOTE: See reverse side for helpful system applications chart on 6300 Series equipment.
Prices subject to change without notice. All prices F.O.B. Quincy, Ill.



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PERFORMANCE CHARACTERISTICS

OF GATES "6300 SERIES" SOLID STATESMAN PLUG-IN AUDIO

TYPE	Application	Maximum Gain DB	Maximum Input DBM	Maximum Output DBM	Source Impedance	Load Impedance	Type of Mounting
M-6313	Preamplifier Booster Amplifier	40 db or 46 db	-20 dbm	+20 dbm	150 ohms, balanced or unbalanced/CT	150 ohms, balanced or unbalanced	Plug-in M-6341 Tray required
M-6321	Program Amplifier	62 db	-30 dbm	+32 dbm	150 ohms, balanced or unbalanced/CT	150 ohms balanced or unbalanced	Plug-in M-6426 Tray required
M-6314	Program Amplifier Program/AGC Amplifier or as an	62 db	W/O AGC: -30 dbm With AGC: -24 dbm Threshold: -42 dbm	+32 dbm	150 ohms, balanced or unbalanced/CT	150 ohms, balanced or unbalanced	Plug-in M-6342 Tray
	Intercom Amplifier	80 db	W/O AGC: -48 dbm With AGC: -36 dbm Threshold: -60 dbm	+32 dbm			
M-6315	Monitor Amplifier	80 db	-28 dbm	+40 dbm	150 ohms, balanced or unbalanced/CT	150 ohms, balanced or unbalanced	Plug-in M-6343 Tray required

AMPLIFIER MOUNTING INFORMATION

Each amplifier type such as preamplifier, program amplifier, etc., has the mounting tray with locating pin for plug-in, designed so that it is only possible to insert preamplifiers in preamplifier trays, program amplifiers in program amplifier trays, etc.

Amplifier or Power Supply	Tray and Receptacle	Total in one M-6345 Panel and Shelf Assembly
M-6313	M-6341	8
M-6321	M-6426	6
M-6314	M-6342	6
M-6315	M-6343	4
M-6421	M-6422	6
M-6338	M-6344	4

Capacity of each 19" x 3 1/2" M-6345 Panel and Shelf Assembly is shown on the left. All mounting trays are supplied with gold-plated receptacles for mating with plugs on the amplifier or power supply. When used with the M-6345 Panel and Shelf Assembly, inter-connecting cabling is made convenient by the recessed frame construction.

RACK CABINET RAK-1

A unit system type of rack cabinet of open frame construction, having removable sides along with various shields, joiner trims and end bells. Rack mounting strips are movable from front to back in 6 steps of 1 1/4". Basic frame includes 2 panel mounting angles, 2 terminal board mounting angles, full size rear door and panel mounting screws. Other accessories are as follows:

SINGLE CORNER TRIM TRM-1:

Corner style trim that also covers the rack mounting bolts. Maximum of two used for single cabinet or any group of cabinets side by side.

DOUBLE CORNER TRIM TRM-2:

Style trim to join two cabinets together and also covers rack mounting bolts. One used to join second cabinet to first, third to second, etc.

SIDE PANELS SP-1:

Or end bells. Is styled cabinet side. Use on each end of one or any group of cabinets side by side.

LARGE SIDE SHIELD SH-1:

An electrical top and bottom side shield plate 15 1/8" x 28" on side where cabinets are joined together.

SMALL SIDE SHIELD SH-2:

An electrical center side shield plate 15 1/8" x 21" on side where cabinets are joined together.

TERMINAL BOARD MOUNTING BRACKET BRK-1:

Mounts at bottom rear of cabinet for the support of audio and power terminal blocks

SPECIFICATIONS:

Height Over-All: 84".
Width (less SP-1 side panel): 22".
Width of SP-1 Side Panel: 3".
Depth Over-All: 21". Door Swing: 22 1/2".
Panel Space: 19" x 77".
Maximum Clearance Behind Front Panel: 17".
Panel Mounting: Standard rack multiples.
12/24 mounting screws provided.
Finish: Medium Gloss Gray enamel.
Net Weight, Rak-1: 100 lbs. (Basic cabinet)
Shipping Weight: 120 lbs.

ORDERING INFORMATION:

Basic Cabinet RAK-1
Single Corner Trim TRM-1
Double Corner Trim TRM-2
Side Panel SP-1
Shield, large SH-1
Shield, small SH-2
Terminal Board Mounting
Bracket BRK-1
Ventilating Fan RAK-F-1

