

 **SHURE**®

# CIRCUITRY

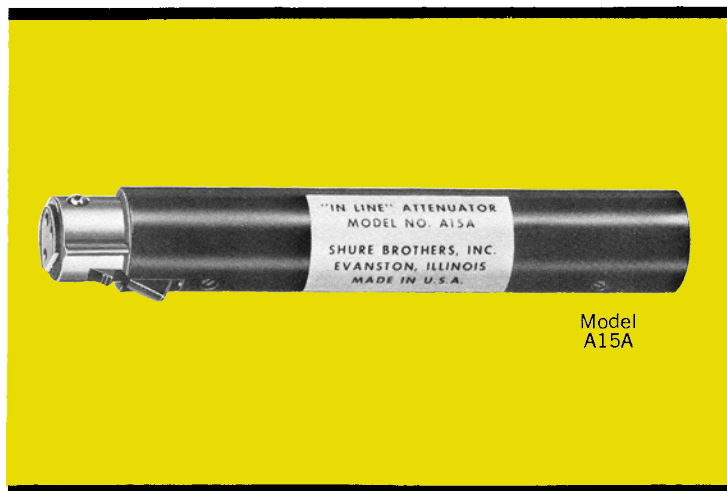
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For Sound Reinforcement,  
Recording,  
& Broadcasting





# SHURE® Microphone Modifiers



Model  
A15A

## A15 SERIES "PLUG-IN" MICROPHONE ATTENUATORS, EQUALIZERS AND ADAPTERS

A series of in-line microphone attenuators, equalizers and adapters that plug in to give instant modifications of response and performance in microphones and sound systems — without time-consuming permanent rewiring or soldering. Only 114 mm (4½ inches) long x 19 mm (¾ inches) dia., with color-coded nameplates for quick identification. Three-pin FEMALE input and MALE output professional audio connectors.\*

### A15A Microphone Attenuator:

Prevents input overload in applications where very strong signals are applied to a microphone input. Inserts a 15 dB loss.

### A15PR Phase Reverser:

Reverses the phase of a balanced line without modification of equipment.

### A15HP High Pass Filter:

Provides a low frequency cut-off to reduce unwanted low frequency noises.

### A15LP Low Pass Filter:

Provides a high frequency cut-off to reduce objectionable high frequency noises.

### A15PA Presence Adapter:

Adds "presence" to vocals or instruments in recording, broadcasting, and P.A. applications.

### A15RS Response Shaper:

Provides sibilance filtering in recording, broadcasting, and P.A. applications.

### A15LA Line Input Adapter:

Converts balanced low impedance microphone input to bridging line level input.

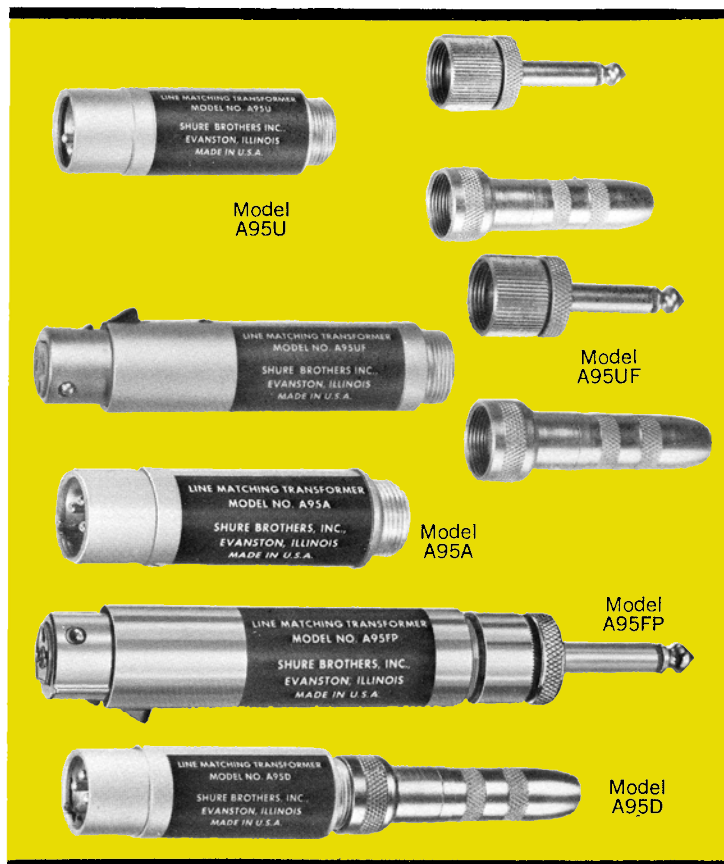
### A15BT Bridging Transformer:

Matches balanced or unbalanced devices of different impedances. (33 kilohm primary, and 600 or 7,500 ohm secondary.)

### A15TG Tone Generator:

Produces a continuous 700 Hz signal capable of driving low impedance balanced lines, and is extremely useful in setting up and trouble-shooting audio equipment. Plugs into microphone input to enable engineer to check levels, connections, mixer inputs, cables, and speakers. Permits one man to do the work of two. Powered by a miniature mercury battery.

\* Designed to mate with Cannon XL Series, Switchcraft A3 (Q.G.) series, or equivalent connector.



## A95 SERIES: LOW-IMPEDANCE TO HIGH-IMPEDANCE LINE MATCHING TRANSFORMERS (PLUG-IN TYPES)

High quality transformers that make it possible to connect a low-impedance microphone to a high-impedance amplifier input or vice versa. Terminated with a variety of connectors that allow instant connection of these transformers to most microphone plugs and amplifier jacks. Solves problems of excessive high-frequency loss and objectionable hum when long lengths of cable are used.

Model	Low-Impedance Connector (three-pin professional audio*)	High-Impedance Connector
A95A	MALE	MC1M**
A95F	FEMALE	MC1M**
A95P	MALE	¼ inch phone plug
A95FP	FEMALE	¼ inch phone plug
A95D	MALE	¼ inch phone jack
A95FD	FEMALE	¼ inch phone jack
A95U	MALE	¼ inch phone plug and ¼ inch phone jack
A95UF	FEMALE	¼ inch phone plug and ¼ inch phone jack

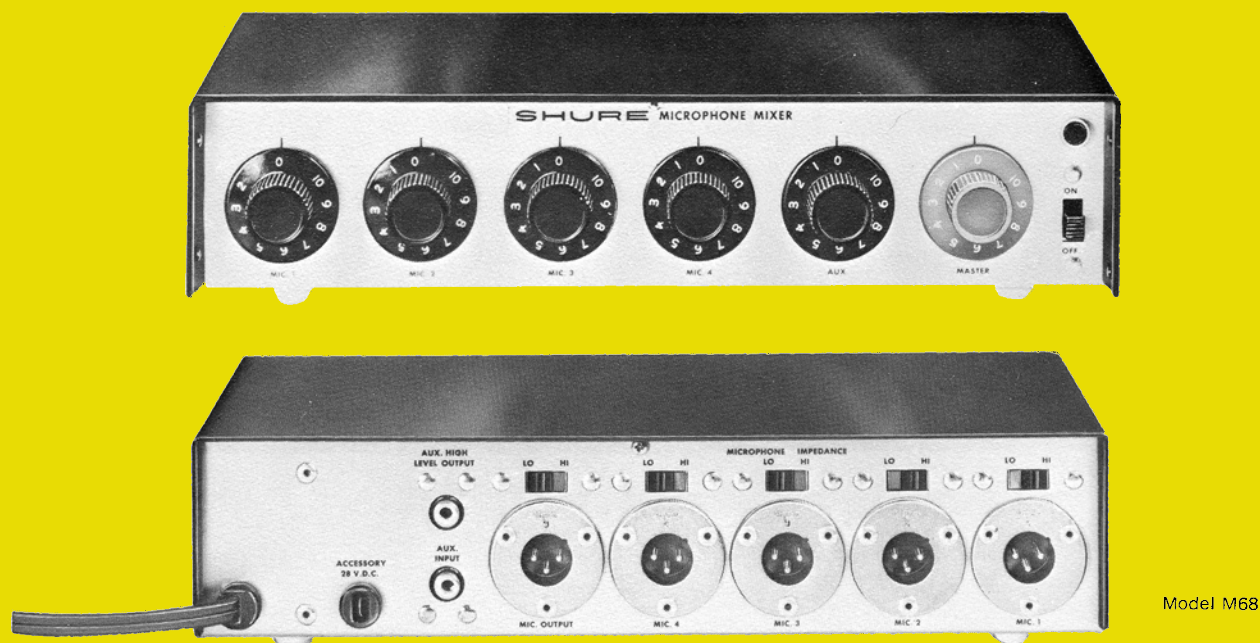
### LOW-IMPEDANCE TO MEDIUM-IMPEDANCE LINE MATCHING TRANSFORMER. A97A LINE MATCHING TRANSFORMER:

High quality transformer designed to properly match low-impedance (150-ohm to 600-ohm) microphone outputs to medium-impedance (1-kilohm to 10-kilohm) inputs, such as those frequently used in cassette recorders. Low-impedance connector — three-pin MALE professional audio connector\*. Medium-impedance connector — Amphenol MC1M type connector\*\*.

\* Designed to mate with Cannon XL Series, Switchcraft A3 (Q.G.) series, or equivalent connector.

\*\* Mating connector supplied with unit.

# SHURE® Standard & Reverberation Microphone Mixers



69.9mm h x 289mm w x 133mm d (2¾" h x 11⅜" w x 5¼" d)

## MODELS M68 • M68FC • M68P • M68RM

Shure Microphone Mixers are a practical, efficient and economical way to increase the efficiency, usefulness and flexibility of public-address and paging systems, or tape recorders using more than one microphone or other sound source. (One prime example: extra microphones can be placed in the audience for question-and-answer sessions.) These mixers are unique in that they satisfy the requirements of most sound system installations and serious tape recording enthusiasts, while being light enough to be portable, simple to operate and modest in cost. Each microphone (or other sound source) can be independently balanced for volume without affecting any of the other inputs. In addition to independent volume controls, a master volume control simultaneously controls the gain of all inputs. The M68 can therefore be used as a conveniently-at-hand sound system volume control in situations where the regular amplifier is located some distance away.

**Model M68 Mixer.** Input connections are MALE professional three-pin audio connectors\* for 120 Volts ac  $\pm 10\%$  50/60 Hz.

**Model M68FC Mixer.** Input connections are FEMALE profes-

sional three-pin audio connectors\* for 120 Volts ac  $\pm 10\%$  50/60 Hz.

**Model M68FCE Mixer.** Same as M68FC, but for both 105-130 Volts ac 50/60 Hz and 210-260 Volts ac 50/60 Hz with 3 Conductor Cable.

**Model M68P Mixer.** Input connections are phone plug (high impedance only). 120 Volts ac  $\pm 10\%$  50/60 Hz.

## REVERBERATION MIXERS

**Model M68RM.** 4-channel Reverberation Mixer. Female professional three-pin audio connectors\* 120 Volts  $\pm 10\%$  ac, 50/60 Hz.

**Model M68RM-2E.** Same as M68RM but for 240 Volts  $\pm 10\%$  ac 50/60 Hz. 3-conductor cable.

\* Designed to mate with Cannon XL Series, Switchcraft A3 (Q.G.) series, or equivalent connector.

## Specifications for M68 Series Mixers

**Frequency Response:** Flat  $\pm 3$  dB, 40 to 20,000 Hz.

**Power Consumption:** 3 watts.

**Microphone Inputs:** Accept Dynamic, Ribbon or Condenser microphones (not recommended for crystal or ceramic microphones), either high impedance (unbalanced) or low impedance (balanced transformer input). Input impedance for each microphone is selected by a slide switch. You can use one type or model microphone, or mix several types and impedances. (Model M68P is High Impedance only.)

**Auxiliary Input:** High level—accepts output of additional M68 Series Mixer, tape recorder, tuner, or phonograph signal (with additional preamplifier).

**Controls:** Four individual Microphone Volume Controls to raise or lower the level of sound from each microphone. Auxiliary Input Volume Control adjusts sound level of tape recorder, phonograph, tuner or additional mixer. Master Volume Control simultaneously adjusts the volume of all inputs. On-Off switch and Pilot Light.

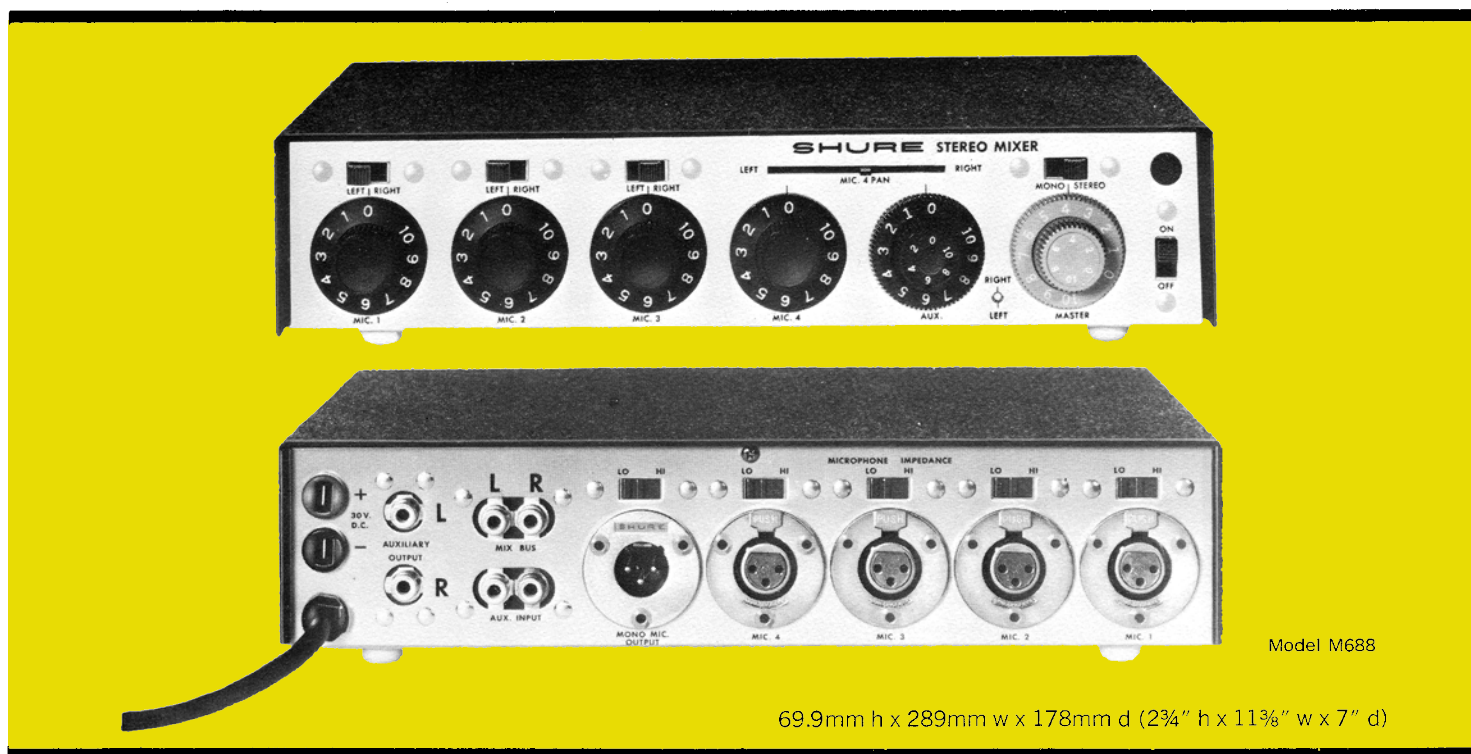
**Outputs:** Two outputs: one provides high or low impedance output for connection to the microphone input of a sound system amplifier or tape recorder. Impedance is selected by switch (except M68P which has a separate phone jack output for high impedance). The other provides a high impedance, high level output designed primarily to feed a power amplifier or tape recorder requiring 0.5 to 2 volts.

**Battery Operation:** All units can be operated from an external battery supply. See accessories on back page for battery supply unit.

**Weight:** Model M68P, 1.36 kg (3 lbs.); Models M68, M68FC and M68FCE, 1.8 kg (4 lbs.); Models M68RM and M68RM-2E, 2.3 kg (5 lbs., 2 oz.).

**Dimensions:** 69.9mm h x 289mm w x 133mm d (2¾" h x 11⅜" w x 5¼" d) (except Models M68RM and M68RM-2E, which are 184mm (7¼") deep). UL and CSA listing on models M68, M68FC, M68RM and M68P only.

# SHURE® Stereo Microphone Mixer



69.9mm h x 289mm w x 178mm d (2¾" h x 11½" w x 7" d)

## MODEL M688 SERIES MICROPHONE MIXERS

The Model M688 Stereo Microphone Mixer provides unusual versatility and excellent audio control in (1) audio-visual and multi-media presentations in which a stereo music source is used in the input mix; (2) for high quality amateur recording with tape recorders that do not have mixing capability; (3) for high quality, versatile sound reinforcement systems that call for simultaneous stereo recording; (4) for location stereo recording of musical or dramatic events; and (5) for mixing sound-on-sound tape recordings.

### INPUTS AND OUTPUTS

The M688 accepts four high or low impedance Dynamic, Ribbon or Condenser microphones through four microphone inputs, each with its own individual volume control. Inputs #1, #2 and #3 have slide switches for left channel or right channel output; input #4 features a pan control which adjusts the apparent location of Mic. #4 to the left channel, the right channel, or anywhere in between. Stereo high-level auxiliary inputs accept

signals from a tape recorder, tuner, or the output of a stereo magnetic phono preamplifier, such as the Shure M64 Series Preamplifiers. A ganged stereo master volume control simultaneously adjusts the level of all inputs. Additional inputs may be added by paralleling an M67 Mixer or additional M688 units via the mix bus jacks.

Outputs include stereo auxiliary output jacks which feed a power amplifier or the auxiliary or tuner inputs of an amplifier or tape recorder. A high or low impedance mono microphone level output (mixed L + R of all sources) feeds an amplifier or tape recorder microphone level input. The auxiliary outputs may be converted to monophonic output by a Mono-Stereo selector switch.

**Model M688 Mixer.** For 120 Volts ac  $\pm 10\%$ , 50/60 Hz, 5 watts, UL and CSA listed.

**Model M688E Mixer.** Same as M688, but for 120 Volts ac  $\pm 10\%$ , 50/60 Hz, or 240 Volts ac  $\pm 10\%$ , 50/60 Hz, 5 watts, with 3 conductor cable.

### Specifications

#### Gain (at 1,000 Hz):

Input	OUTPUT			
	Mix Bus	Low Imp. Mic.	High Imp. Mic.	Aux. (High Imp.)
Low Imp. Mic.	+18.5 dB	+1.5 dB	+25.5 dB	+59.0 dB
High Imp. Mic.	-4.5 dB	-21.5 dB	+2.5 dB	+36.0 dB
Mix Bus	—	-23.0 dB	+1.0 dB	+34.5 dB
Aux.	-26.0 dB	-43.0 dB	-19.0 dB	+14.5 dB

**Frequency Response:** Flat  $\pm 3$  dB from 40 Hz to 20,000 Hz.

**Input Impedance:** Microphone inputs suitable for high or low impedance dynamic, ribbon or condenser microphones. Auxiliary Input—50,000 ohms. Mix Bus—3,300 ohms.

#### Recommended Load Impedance:

Low Impedance Microphone Output... 25 to 600 ohms  
High Impedance Microphone Output... 20,000 ohms or greater  
Auxiliary High Impedance Output... 50,000 ohms or greater  
Mix Bus... 2,700 ohms or greater

**Distortion:** Less than 1% Total Harmonic Distortion when Low Impedance Microphone Output is at 5 mV level, High Impedance Microphone Output is at 70 mV level, and Aux. Output is at 2.0 volt level.

#### Input Clipping Level:

Low Impedance Microphone Input.....	25 mV
High Impedance Microphone Input.....	350 mV
Mix Bus .....	650 mV

Minimum Clipping Level

#### Output Clipping Level:

		Minimum Clipping Level
Low Imp. Mic. ....	Stereo .....	7 mV
	Mono .....	14 mV
High Imp. Mic. ....	Stereo .....	110 mV
	Mono .....	220 mV
Aux. ....	Stereo .....	6.6 V
	Mono .....	5.7 V

**Phase:** The Mono Mic. Output is in phase with all microphone inputs. The Mix Bus is out of phase with pin 3 of the microphone inputs. The Auxiliary Input is out of phase with pin 3 of the microphone inputs. The Auxiliary Output is in phase with the Aux. Input and the Mix Bus.

**D.C. Voltage:** 30 volts, 7.5 mA. See accessories on back page for battery supply unit.

**Case:** Painted Metal.

**Dimensions:** 69.9mm h x 289mm w x 178mm d (2¾" h x 11½" w x 7" d).

**Weight:** 2.27 kg (5 pounds).



# SHURE® Professional Microphone Mixers & Audio Control Centers



69.9mm h x 289mm w x 190mm d (2¾" h x 11½" w x 7½" d)

## MODEL M67 PROFESSIONAL MICROPHONE MIXERS

A compact, lightweight and economical professional microphone mixer/remote amplifier specifically designed for professional recording, TV and radio studios, remote broadcasting, and sound reinforcement installations. Provides four low-impedance transformer-coupled balanced microphone inputs (one convertible to line input). The excellent performance and versatility of the M67 make it ideal for use as a complete, compact console for original installation use—and as an add-on mixer for expanding existing facilities and providing additional microphone inputs with tape recorders and VTR's. Built-in tone oscillator provides calibration signal to adjust signal levels.

The M67 features balanced 600 ohm line and microphone level outputs; an illuminated VU meter calibrated for +4 and +10 dBm out; extremely low noise and RF susceptibility; wide, flat frequency response; two-level headphone monitor jack. Ac or battery operation (see battery pack and other accessories on back page). Noiseless automatic switchover to battery if ac line fails.

**Model M67.** For 120 Volts ac  $\pm 10\%$ , 50/60 Hz.

**Model M67-2E.** For 240 Volts ac  $\pm 10\%$ , 50/60 Hz with 3 conductor cable.

### M67 Specifications

**Frequency Response:**  $\pm 2$  dB from 30 to 20,000 Hz.

**Voltage Gain:** 91 dB max; 150 ohm microphone to 600 ohm line.

**Equivalent Input Noise:**  $-129$  dBV, 300 to 20,000 Hz, at 91 dB gain.

**Hum and Noise:**  $-125$  dBV equivalent input hum and noise, 20 to 20,000 Hz, at 91 dB gain.

**Distortion:** Under 1% THD from 20 to 20,000 Hz at +10 dBm output, 0.5% typical.

**Power Consumption:** 3 watts.

**Inputs:** Four low-impedance microphones, one convertible to line, bridging or 600 ohms.

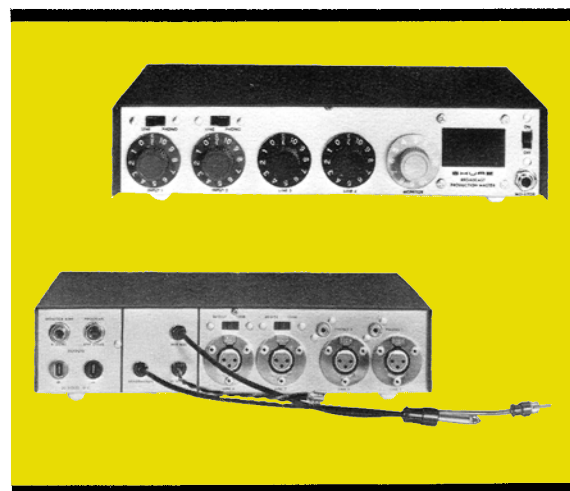
**Outputs and Levels:** 600 ohm line output, +18 dBm max; low-impedance microphone output,  $-44$  dBV max, Headphone output for 600-2,000 ohm headphones.

**Dimensions:** 69.9mm h x 289mm w x 190mm d (2¾" h x 11½" w x 7½" d).

**Weight:** 2.18 kg (4 lbs., 13 oz.).

**Operating Temperature:**  $-18^\circ$  to  $57^\circ$  C ( $0^\circ$  to  $135^\circ$  F).

**UL and CSA Listing:** On Model M67 only.



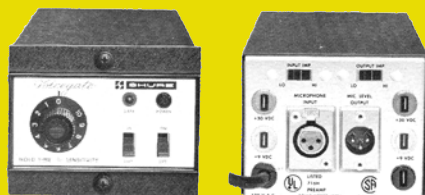
## MODEL M675 BROADCAST PRODUCTION MASTER

A totally new approach to broadcast systems flexibility. The M675 was designed for use primarily with the Shure M67 Series Microphone Mixers to provide a complete, small size, professional quality broadcast console—with cueable magnetic phono and line inputs. (The M675 may also be used with the Shure M63 and M63-2E Audio Master and with the M67-2E Mixer.)

Use the M675 with a Shure M67 as a production studio console for recording with cuing and monitoring, as a complete audio console for both in-studio and remote assignments, as a complete CATV (audio) console, and as a standby console in any broadcasting operation. With the Shure M63 Audio Master, the M675 may be used for tape duplication and equalization assignments.

The M675 features extremely low noise and RF susceptibility, with wide frequency response. Four inputs, each with its own individual gain control and its own switchable "Cue" mode: two balanced line inputs are convertible to magnetic phono inputs (RIAA equalization) through front-panel slide switches, and the other two balanced line inputs are switchable between high impedance bridging and 600 ohm terminating line inputs. Four monitoring facilities: (1) an internal speaker built into the front panel; (2) a rear-panel, eight-ohm speaker output jack with provision for external muting; (3) a front-panel headphone jack that provides an automatic muting of the internal speaker or external speaker output; and (4) a rear-panel headphone jack which enables the engineer or announcer to monitor only program material. Outputs (1), (2), and (3) reproduce both program and cue material. Built-in dc power pack (batteries not included) powers the M675 and an M67 or M63 in the event of ac power failure. Size and weight: 69.9mm h x 289mm w x 178mm d (2¾" h x 11½" w x 7½" d), 2.38 kg (5 lbs., 4 oz.). Write "Shure Marketing Services" for complete specifications and technical description.

## MODEL M625 VOICEGATE®



Voice-activated microphone gain controller with response-shaped voice-frequency sensor. Blocks unwanted background noise. Adjustable to keep microphone "on" up to 45 seconds during conversation pauses. Professional three-pin audio connectors: female input and male output, designed to mate with Cannon XL series, Switchcraft A3 (Q.G.) series or equivalent connectors. Designed especially for multi-microphone systems.

**Model M625.** For 120 Volts ac  $\pm 10\%$ , 50/60 Hz, 3 watts, and can also be powered by a 9- and 30-volt external dc source. UL and CSA listed.

**Model M625AM** is a "modular" unit which takes its power from the M625. (One M625 can power three M625AM units for a total of four gain controls.)

**Model M625-2E.** For 120 or 240 Volts ac  $\pm 10\%$ , 3 watts, 50/60 Hz with 3 conductor cable.

# SHURE® Feedback Controller & Equalization Circuitry



## MODEL M610 FEEDBACK CONTROLLER

The Shure M610 Feedback Controller marks the beginning of a new era in sound reinforcement. When the M610 is included in the sound system, its special set of filters and roll-off switches are used to smooth out the peaks and valleys in the system's frequency response, so that the system gain may be increased to significantly higher levels before reaching the feedback threshold! The user is able to "tune" the sound system to the acoustics of the room to maximize output and minimize feedback.

The M610 gives you the basic advantages of room/system equalization—but without the high costs involved in elaborate, complex, highly specialized equalization equipment. The M610 Feedback Controller uses eight resonant dip filters, each controlled by a linear-motion potentiometer. Each of these filters, unlike highly selective "notch" or single-frequency filters, acts on a band of frequencies around its center frequency, so that attenuation is smooth and complete. These filters function in the most critical portion of the audio spectrum, with center frequencies of 63, 125, 250, 500, 1,000, 2,000, 4,000, and 8,000 Hz. Each is infinitely variable from "0 attenuation" (flat) to a maximum cut of 12 dB. The M610 also features "high end" (above 8 kHz) and "low end" (below 63 Hz) roll-off switches to control response outside the range of these filters.

Built-in, variable amplification allows the user to conveniently increase the overall gain of the system to a level even higher than original level—even though any or all of the filters have been activated! The M610 also may be used to improve sound quality and increase intelligibility by filtering out "problem frequencies" that cause oscillating ("ringing"), boominess and other disruptive resonances in acoustically difficult rooms.

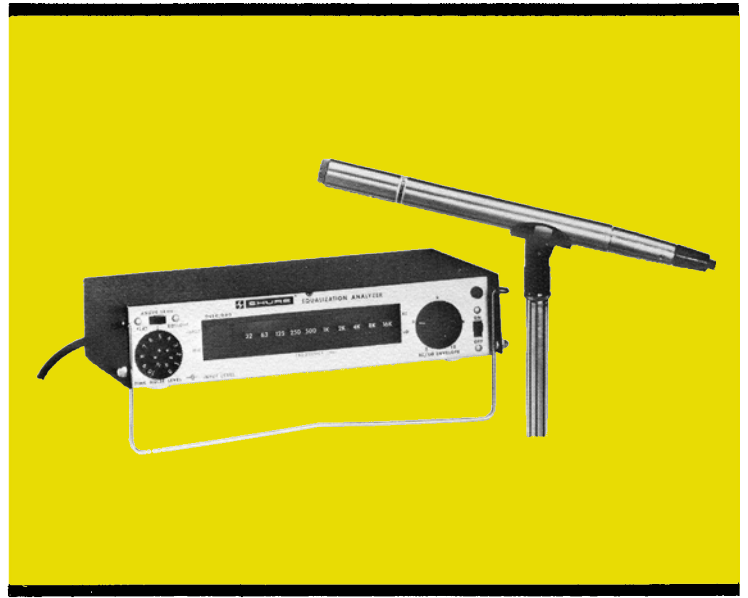
**Filter Characteristics:** Typical filter frequency response characteristics are shown in Figures 1, 2 and 3. Filters are electrically isolated for minimum phase interaction.

Moving Filter Frequency control from 0 to 12 reduces gain by 12 dB  $\pm 2$  dB at frequency of maximum attenuation. This center frequency is within  $\pm 20\%$  of nominal frequency. One octave from center frequency, moving Filter Frequency control from 0 to 12 reduces gain by 3.5 dB  $\pm 1$  dB.

**Model M610.** For 120 Vac,  $\pm 10\%$ , 50/60 Hz, 3 watts. UL and CSA listed.

**Model M610-2E.** For 240 Vac,  $\pm 10\%$ , 50/60 Hz with 3 conductor cable.

Write "Shure Marketing Services" for complete specifications and technical description.



## MODEL M615AS EQUALIZATION ANALYZER SYSTEM

Rapid and accurate adjustment of sound system frequency response is finally within the reach of most budgets. The new breakthrough *Shure M615AS Equalization Analyzer System* lets you "see" room response trouble spots in sound reinforcement, motion picture, monitoring, hi-fi and playback systems . . . without bulky, expensive equipment.

The system features an M615 Analyzer, ES615 Analyzer Microphone, accessories, and a portable carrying case . . . all at a cost 1/3 or less that of conventional analyzers. The M615 provides two major functions:

*First*, it's a source of equal-energy-per-octave random noise ("pink noise") which serves as a test signal. The pink noise signal is available at microphone or aux levels, and is adjustable.

*Second*, it's a display consisting of light-emitting diodes (LEDs) on the M615 front panel indicating the relative energy in each of 10 octave bands. If a LO LED is on, the frequency response for that octave is *below* a preset envelope level. If a HI LED is lit, the frequency response for that octave is *above* the preset envelope level.

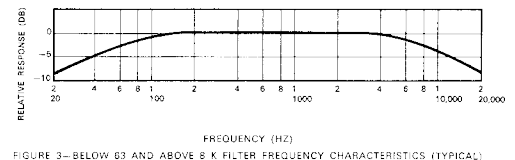
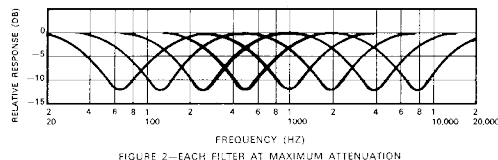
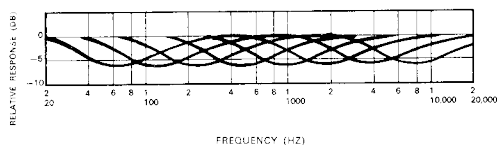
The operator simply adjusts the sound system equalizer filters (such as those on a Shure M610 Feedback Controller) until the M615's corresponding LEDs go out, indicating the desired equalization levels in each of 10 octave bands from 32 Hz to 16,000 Hz. An input overload LED lights if the input level control is set too high, and a microphone overload LED lights if the microphone input is too high and requires attenuation.

Concentric pink noise and input level controls set the pink noise output level and the input signal level (LO LED threshold to the analyzer). An above 1 kHz switch selects either a flat high-frequency response or a 3 dB per octave high-frequency rolloff above 1 kHz typical of most desired "house curves."

A rotary hi/lo envelope control adjusts the HI LED threshold relative to the LO LED threshold. With a minimum setting on the envelope control and all LEDs off, the resultant frequency response is flat within approximately  $\pm 1$  dB.

**Model M615AS.** For 108 to 132 Vac, 50/60 Hz, 5 watts, UL and CSA listed.

Write "Shure Marketing Services" for complete specifications and descriptions.



# SHURE® Stereo Preamplifier & Audio Level Controllers



69.9mm h x 289mm w x 151mm d (2¾" h x 11½" w x 6" d)

## MODEL M63 SERIES AUDIO MASTER®

A new concept in economical, total control of audio response. Can be used to equalize sound systems, correct room acoustics, reduce feedback, provide special sound effects, reduce stage and stand noise — or for tape recording. Ideal as a low-cost equalizer when teamed-up with M68 series or M67 mixers . . . gives you more output modes and response control than any other system on the market.

Continuously variable high-pass and low-pass 6 dB-per-octave filters, plus separate bass and treble controls, can be combined for virtually unlimited response characteristics as a result of the "hinge" effect of bass and treble controls, and "slope" effect of high and low filters.

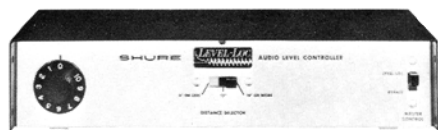
VU meter for correct output readings. Five outputs: high impedance high level, high impedance mic level, low impedance mic level, 600 ohm balanced line, headphone. Two inputs accept signals from microphone mixers, tape recorders or tuners. Master volume control adjusts both inputs simultaneously. UL and CSA listing on Model M63 only. Only 69.9mm h x 289mm w x 151 mm d (11½" x 6" x 2¾"). 1.4 kg (3 lbs., 2 oz.).

**Model M63.** For 120 Volts ac  $\pm 10\%$ , 50/60 Hz, 3 watts.

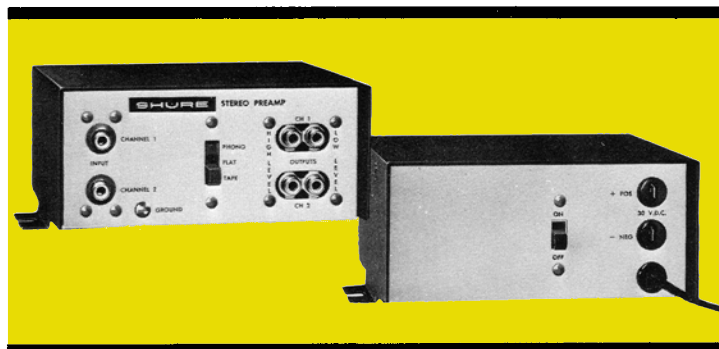
**Model M63-2E.** For 220-260 Volts ac, 50/60 Hz, 3 watts, with 3 conductor cable.

Write "Shure Marketing Services" for complete specifications and descriptions.

## MODEL M62V LEVEL-LOC® AUDIO LEVEL CONTROLLER



The Shure Model M62V LEVEL-LOC is a low-cost, versatile audio level controller designed especially for paging, public address and tape recording applications. It reduces an overly strong input signal by as much as 100 times — automatically and instantly — to keep actual sound output at a predetermined maximum level. The M62V features three variable sound control zones (6", 12" and 18" from the microphone) with a variable level control that functions *between* these zones, and as an input attenuator for signals that are higher in level than microphone signals. An effective component for control of excessive output volume in a variety of sound reinforcement and recording situations. Operates from self-contained 9-volt transistor-type battery (not included), A67B battery power supply, or can be powered directly from any Shure M67 or M68 Series mixer or M63 AUDIO MASTER®. Write "Shure Marketing Services" for complete specifications and technical description.



## MODEL M64 STEREO PREAMPLIFIER

Provides stable voltage gain, no microphonics, freedom from noise, and equalization necessary to operate magnetic phono cartridges (such as Shure Dynetic® Cartridges) and tape playback heads with audio amplifiers that have no equalization. Without using equalization feature, Model M64 is recommended for use with microphones and as buffer amplifier.

Three-position switch controls equalization selection (phono, tape, and flat). All input and output connectors are standard phono jacks. Two phono jack inputs, On-Off switch controlled ac or dc operation.

**Model M64.** For 120 Vac,  $\pm 10\%$ , 50/60 Hz, 5 watts. UL and CSA listed.

**Model M64-2E.** For 240 Vac,  $\pm 10\%$ , 50/60 Hz, 5 watts.

### SPECIFICATIONS

#### Frequency Response:

Flat —  $\pm 2$  dB, 20 Hz to 20 kHz.

Phono —  $\pm 2$  dB of standard RIAA curve (40 Hz to 15 kHz).

Tape —  $\pm 2$  dB of the 7½ IPS NAB curve (50 Hz to 15 kHz).

**Gain:** Measured at 1 kHz with inputs through 680 ohms; 47 kilohm output terminations.

Equalization Switch Position	High Level Output	Low Level Output
Flat	+27.5 dB	+ 4.0 dB
Phono	+34.5 dB	+11.0 dB
Tape	+37.0 dB	+13.5 dB

**Distortion:** Under 1% total harmonic distortion for 2 volt output at 1 kHz for phono, tape or flat position. In phono position, less than 1% at 30 Hz (2 volts output).

**Clipping Level:** Phono (100 mV); tape (80 mV); flat (250 mV) — maximum input at 1 kHz without clipping.

**Outputs and Levels:** Four phono jacks (2 high level, 2 low level). High Level Impedance — less than 1 kilohm at 1 kHz (minimum recommended load is 22 kilohms). Low Level Impedance — 600 ohms. Any low level load does not affect input clipping level.

**Dimensions:** 59.1mm h x 142mm w x 114mm d (2-41/64" h x 5-19/32" w x 4½" d).

**Weight:** 794 grams (1¾ lbs.).

## MODEL M677 ACCESSORY ADD-ON MIXER

Shure's M677 puts up to six more microphones in the line when coupled with master microphone mixers or audio controllers (such as the Shure M63 AUDIO MASTER®). This new concept in transistorized mixers gives you not only more channels, but more control, too — from roll-off filters to individual microphone/line input switches.

The M677 can be powered either from the nominal 27 to 30 Vdc output of an attached master mixer or from a Shure A67B Battery Power Supply. Also can be coupled with *any* standard microphone mixer when connected to a dc power source.

**Dimensions:** 69.9mm h x 289mm w x 178mm d (2¾" h x 11½" w x 7" d). **Weight:** 17 kg (3¾ lbs.).





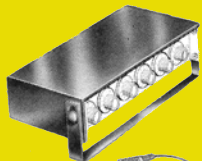
# SHURE® Accessories



**AC60 Attache Carrying Case**—Handsome slimline vinyl leatherette attache case holds mixer, microphones, cables. 85.7mm x 467mm x 295mm (3 3/8" x 18 3/8" x 11 3/8"). Fits M62V, M63, M67, M675, M610, M615, M677, M688 or M68 Series.



**A68B Battery Power Supply**—Eliminates need for 115 V., A.C., hookup. Supplied less U20 type (30 V., D.C.) battery. Use with M62V and all M68 Series, except M688, M68RM and M68RM-2E.



**A67B Battery Power Supply** for M63, M67, M677, M68 Series, M62V, M610, or M688. May be used as sole power source. On the M67 it may also be used as standby during ac operations providing noiseless switchover in case of ac failure.



**A67H Handle/Tilt Stand**—Serves as a handy carrying handle, or provides a locking tilt of 20° for greater control visibility and ease of operation. Fits M62V LEVEL-LOC®, M63 AUDIO MASTER®, M67 and M68 Series Mixers, M677, M675 and M688.



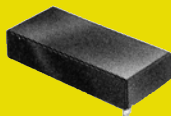
**A68C Output Cable Kit**—Enables you to connect any of the circuitry products to the mic input of virtually any P.A. system or amplifier. Includes cables and adapters for Hubbel, Amphenol MC1 type and standard phone plug inputs.



**A68P Phono Preamp**—Converts the Auxiliary input channel to a magnetic or ceramic phonograph input. Built-in scratch filter has On-Off switch. Takes its power directly from the mixer. Use with M68 Series Mixers or M63 AUDIO MASTER®. May be used with the M67 and M677 by replacing the Phono Plug with a Male professional three-pin audio connector.



**A68S Stacking Kit**—Enables you to conveniently interconnect and stack 2 Units—with 2 M68's you get 8 microphone inputs and 1 Auxiliary input. With 2 kits you can stack three Units—say 2 M68's and 1 M63. A single master volume control handles the entire matrix. Includes brackets, interconnecting cable. Fits M62V, M63, M677, M67 and M68 Series and M688.



**A68SC Interconnecting Cable Only**—Enables you to interconnect mixers as above, but without stacking brackets. Use with M68 Series, M688, M63, M677, and M67. (M688 requires two.)

**A68L Locking Panel**—Fastens over controls, locks in place with padlock (provided). Prevents tampering. Fits all Shure circuitry (except M625) units.

**A68R Rack Panel Kit**—Standard 19" x 3 1/2" audio equipment rack panel for use with all circuitry except M625 units. Gray Hammertone finish.

**A68R-AL Rack Panel Kit**—Same as Model A68R (above), except aluminum finish.

**A68R-BL Rack Panel Kit**—Same as Model A68R (above), except black finish.

**Model A62R Rack Panel**—Standard rack panel kit for up to four VOICEGATE® units. Includes blank rack faces to cover unused slots when fewer than four units are used. Dark Gray/Brown finish. Also available in Black (A62R-BL) and Aluminum finish (A62R-AL).



**A68M Microphone Preamplifier**—Designed to provide a balanced line input or additional microphone input channel to Shure audio control components. Mounts on the left side of the "master" component, and allows input selections of low impedance balanced microphone, high impedance unbalanced microphone or balanced line. Aux. output through shielded cable and phono pin plug. Use with M610, M63, M68 Series and M688 Series (twin A68M units needed for stereo pair inputs).

**A68BC Chassis Assembly**—A blank chassis and cover assembly for providing a matching panel to mount accessory parts used with mixers. 63.5 mm h x 289 mm w x 106 mm d (2 1/2" x 11 3/8" x 4-5/32").

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