



# 900 SERIES

## M-900MK2 MIXER/ PRE-AMPLIFIER

THE TOA 900 SERIES are widely recognized as the industry standard in installed sound system amplification. When reliability and performance are critical – such as in paging and music distribution for airport, hospital, and industrial sound systems – you can count on the TOA 900 Series to perform consistently, day-in and day-out.

The M-900MK2 Mixer/Pre-amplifier is engineered for high performance with wide frequency response, very low noise and distortion, and excellent output regulation. Eight module slots allows you to easily configure custom configurations using TOA plug-in modules with an extensive array of features and connector types. With the rear-panel Bridge In/Out jack, you can increase the input capacity by connecting a second mixer or mixer/amplifier. Outputs include a balanced, transformer-isolated, line-level output for connection to an external amplifier and an unbalanced auxiliary output.

Multiple paging priorities are easily configured using optional mute-type modules activated by external switch-closure or mute-send modules. Other features include bass/treble controls and remote master volume terminals.

The M-900MK2 is UL and cUL Listed and carries a five year warranty.



## HIGHLIGHTS

- **Modular Eight Channel Mixer/Pre-amplifier** for paging, background/foreground music distribution and music/messaging-on-hold.
- **Proven TOA Quality and Reliability**
- **Engineered for High Performance** with wide frequency response, very low noise and distortion, and excellent output regulation.
- **Eight Module Slots** accept any combination of TOA plug-in modules for custom system configurations.
- **Balanced, Transformer-Isolated Output** with selectable impedance, screw terminal connector and protective cover plate.
- **Dual Mute Bus** permits multiple levels of paging priority using optional mute-type modules.
- **External Mute Terminals** for activating mute function with external switch-closure.
- **Remote Master Volume Terminals** for control with an external 10k ohm linear-taper potentiometer.
- **Individual Channel and Master Volume Controls**
- **Bass/Treble Tone Controls** with tone defeat switch.
- **Auxiliary Output** for connecting an external mixer or recording device.
- **Bridging Input/Output** for input expansion or recording device.
- **Normal, Clip, Power, Protect, and Signal Indicators** provide unit status.
- **Rear Panel AC Convenience Outlet** for powering external equipment.
- **Turn-On Delay** disconnects output during power-up.
- **Over-current and Thermal Protection Circuitry** prevents potential damage from overload, short-circuit or overheating.
- **Volume Control Security Knobs Included (4)**
- **Optional Rack-Mount Kit**
- **UL / cUL Listed**
- **Five Year Warranty**

## OPTIONAL ACCESSORIES

Plug-in Modules (see individual module specifications)

MB-25B Rack-mount Kit (2 RU)

PF-511 Perforated Rack Panel (2 RU)

YA-920 Volume Control Security Knob

900 Series Module Guide available from <http://www.toaelectronics.com>

# SPECIFICATIONS

900 SERIES  
MIXER/PRE-AMPLIFIER

Tel: 800-733-7088  
Fax: 800-733-9766  
www.toaelectronics.com



<b>Type</b>	8-channel mixer/pre-amplifier	
<b>Output Power</b>	+4 dBm, +20 dBm (max.)	
<b>Power Bandwidth</b>	30 - 20k Hz, +20 dBm 0.5% THD 250 - 20k Hz, +18 dBm 0.5% THD	
<b>Frequency Response</b>	20 - 20k Hz, $\pm 1$ dB	
<b>Total Harmonic Distortion</b>	0.01% at 1k Hz, rated output	
<b>Inputs</b>	8 input ports: every port accepts any input module 1 Bridging Input/Output	
<b>Input Sensitivity &amp; Impedance</b>	Input port #1 to #8: 100 mV / 10k $\Omega$ Bridging Input/Output: 100 mV / 3.3k $\Omega$	
<b>Outputs</b>	Main: Balanced, 150/600 $\Omega$ Aux: Unbalanced, 10k $\Omega$ , 0 dBm	
<b>Output Regulation</b> (1k Hz)	Less than 1.5 dB, no load to full load	
<b>Dynamic Range</b> (Band Pass: 20 - 20k Hz, with Tone Controls centered)	Master volume set to min.:	90 dB
	Master volume set to max.:	77 dB
<b>Tone Controls</b>	Bass: $\pm 10$ dB at 100 Hz; Treble: $\pm 10$ dB at 10k Hz	
<b>Indicators</b>	Normal, Peak, Power, Protect, and Signal LEDs	
<b>Protection</b>	Self-protection, with internal AC fuses	
<b>Power Consumption</b>	18 W	
<b>Temperature Range</b>	12° F to 140° F (-10° C to +60° C)	
<b>Color</b>	Black	
<b>Dimensions</b> (W x H x D)	16.5" x 3.9" x 12.1" (420 x 99.1 x 307.5 mm)	
<b>Weight</b> (without modules)	11.7 lbs (5.3 kg)	
<b>Other Features</b>	Output connects approx. 5 seconds after switching power on.	

## APPLICATIONS

A/V Rentals  
Airports  
Audio/Visual  
Auditoriums / Theatres  
Banks  
Bars / Lounges / Nightclubs  
Boardrooms  
Business Music  
Conference Facilities  
Convenience Stores  
Educational Facilities  
Fitness Clubs / Gymnasiums  
Hotels / Hospitality  
Houses of Worship  
Industrial / Warehouses  
Museums  
Music Distribution  
Offices  
Public Address  
Restaurants  
Retail Stores  
Theme Parks  
Training Rooms

Visit [www.toaelectronics.com](http://www.toaelectronics.com) to download:

900 Series Architect and Engineering Specifications  
900 Series Installation Manual  
900 Series CAD Files  
900 Series Module Guide



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# MODULE SELECTION

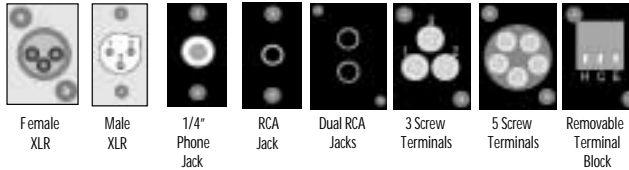


Model	Type	Description
<b>M-01F</b>	MIC	Microphone Input Module, Balanced, 200 $\Omega$ , Lo/Hi-Cut Filters, Female XLR
<b>M-01M</b>	MIC	Same as M-01F with Male XLR
<b>M-01P</b>	MIC	Same as M-01F with Phone Jack
<b>M-01S</b>	MIC	Same as M-01F with Screw Terminals
<b>M-03P</b>	MIC	Microphone Input Module, HiZ, Unbalanced, 50k $\Omega$ , Lo/Hi-Cut Filters, Phone Jack
<b>M-11S</b>	MIC	Microphone Input Module, Balanced, 200 $\Omega$ , Lo/Hi-Cut Filters, Mute-Receive, Screw Terminals
<b>M-21S</b>	MIC	Microphone Input Module, Balanced, 200 $\Omega$ , Lo/Hi-Cut Filters, Remote Vol. Control, Screw Terminals
<b>M-41S</b>	MIC	Microphone Input Module, Balanced, 200 $\Omega$ , Lo/Hi-Cut Filters, Mute-Send, Removable Terminal Block
<b>M-51F</b>	MIC	Microphone Input Module, Balanced, 200 $\Omega$ , Lo-Cut Filter, Voice Gate, Female XLR
<b>M-51S</b>	MIC	Same as M-51F with Screw Terminals
<b>M-61F</b>	MIC	Microphone Input Module, Balanced, 200 $\Omega$ , Lo/Hi-Cut Filters, Compressor, Female XLR
<b>M-61S</b>	MIC	Same as M-61F with Screw Terminals
<b>B-01F</b>	LINE	Balanced Line Input Module, 10k $\Omega$ Transformer, Female XLR
<b>B-01S</b>	LINE	Balanced Line Input Module, 10k $\Omega$ Transformer, Screw Terminals
<b>B-11S</b>	LINE	Balanced Line Input Module, 10k $\Omega$ Transformer, Mute-Receive, Screw Terminals
<b>B-21S</b>	LINE	Balanced Line Input Module, 10k $\Omega$ Transformer, Remote Volume Control, Screw Terminals
<b>B-41S</b>	LINE	Balanced Line Input Module, 10k $\Omega$ Transformer, Mute-Send, Removable Terminal Block
<b>L-01F</b>	LINE	Line Matching Input Module, 600 $\Omega$ Transformer, Balanced, Female XLR
<b>L-01S</b>	LINE	Same as L-01F with Screw Terminals
<b>L-11S</b>	LINE	Line Matching Input Module, 600 $\Omega$ Transformer, Balanced, Mute-Receive, Screw Terminals
<b>L-41S</b>	LINE	Line Matching Input Module, 600 $\Omega$ Transformer, Balanced, Mute-Send, Screw Terminals
<b>U-01F</b>	LINE	Line Input Module, Unbalanced, 220k $\Omega$ , Female XLR
<b>U-01P</b>	LINE	Same as U-01F with Phone Jack
<b>U-01R</b>	LINE	Same as U-01F with RCA Jack
<b>U-01S</b>	LINE	Same as U-01F with Screw Terminals
<b>U-03R</b>	LINE	Stereo Line Input Module, Lo/Hi-Cut Filters, Stereo Summing Dual RCA Jacks
<b>U-03S</b>	LINE	Line Input Module, Lo/Hi-Cut Filters, Screw Terminals
<b>U-11R</b>	LINE	Line Input Module, Unbalanced, 220k $\Omega$ , Mute-Receive, RCA Jack
<b>U-11S</b>	LINE	Line Input Module, Unbalanced, 220k $\Omega$ , Mute-Receive, Screw Terminals
<b>U-12S</b>	LINE	Line Input Module, Unbalanced, 220k $\Omega$ , Variable Mute-Receive Depth, Screw Terminals
<b>U-13R</b>	LINE	Same as U-03R with Mute-Receive
<b>U-13S</b>	LINE	Same as U-03S with Mute-Receive
<b>U-21S</b>	LINE	Line Input Module, Unbalanced, 220k $\Omega$ , Remote Volume Control, Screw Terminals
<b>U-43R</b>	LINE	Same as U-03R with Mute-Send
<b>U-43S</b>	LINE	Same as U-03S with Mute-Send
<b>U-61S</b>	LINE	Line Input Module, Unbalanced, 220k $\Omega$ , Compressor, Screw Terminals
<b>E-03R</b>	SPECIAL FUNCTION	900 Series Processor Module for F-121C/CM Speakers, Dual RCA Jacks
<b>E-04R</b>	SPECIAL FUNCTION	900 Series Processor Module for H-1 Speakers, Dual RCA Jacks
<b>E-05R</b>	SPECIAL FUNCTION	900 Series Processor Module for H-2/H-2WP Speakers, Dual RCA Jacks
<b>E-06R</b>	SPECIAL FUNCTION	900 Series Processor Module for H-3/H-3WP Speakers, Dual RCA Jacks
<b>E-07S</b>	SPECIAL FUNCTION	900 Series Low Pass Filter Output Module for FB-100 and HB-1, Removable Terminal Block
<b>S-01S</b>	SPECIAL FUNCTION	Signal Generator Module, 1 kHz Sine Wave, Screw Terminals
<b>S-02S</b>	SPECIAL FUNCTION	Signal Generator Module, Buzzer/Yelp, Screw Terminals
<b>S-04S</b>	SPECIAL FUNCTION	Signal Generator Module, 8 Selectable Tones, Screw Terminals
<b>T-01S</b>	SPECIAL FUNCTION	Line Output Module, Balanced, 600 $\Omega$ , Screw Terminals
<b>T-02S</b>	SPECIAL FUNCTION	Line Input Module for Music-on-Hold, Unbalanced, 220k $\Omega$ Input, 600 $\Omega$ Balanced Output, Screw Terminals
<b>T-12S</b>	SPECIAL FUNCTION	Same as T-02S with Input Mute-Receive



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## 900 SERIES MODULE CHART

		Female XLR	Male XLR	1/4" Phone Jack	RCA Jack	Dual RCA Jacks	3 Screw Terminals	5 Screw Terminals	Removable Terminal Block
<b>Microphone Input Modules</b>	Standard with high/low cut filters	M-01F	M-01M	M-01P			M-01S		
	Mute-Receive with high/low cut filters						M-11S		
	Mute-Send with high/low cut filters								M-41S
	Voice Gate with low cut filters	M-51F					M-51S		
	Compressor with high/low cut filters	M-61F					M-61S		
	Remote Volume Control with high/low filters							M-21S	
	For high-Z mic. only w/ high/low cut filters			M-03P					
<b>Line Input Modules*</b>	Standard, no special features	L-01F B-01F U-01F		U-01P	U-01R		L-01S B-01S U-01S		
	Standard with high/low cut filters					U-03R			U-03S
	Mute-Receive				U-11R		L-11S B-11S U-11S		
	Mute-Receive with high/low cut filters					U-13R			U-13S
	Mute-Receive with variable mute depth						U-12S		
	Mute-Send						L-41S		B-41S
	Mute-Send with high/low cut filters					U-43R			U-43S
	Remote Volume Control							B-21S U-21S	
Compressor						U-61S			
<b>Special Function Modules</b>	Line output						T-01S		
	Line input with Music-On-Hold (MOH) output							T-02S	
	Line input w/ MOH & input Mute-Receive							T-12S	
	1 kHz Sine Wave test tone						S-01S		
	Buzzer/Yelp signal tone						S-02S		
	Switch-selectable tone						S-04S		
	Equalizer for F-121C/CM Speakers					E-03R			
	Equalizer for H-1 Speakers					E-04R			
	Equalizer for H-2/H-2WP Speakers					E-05R			
	Equalizer for H-3/H-3WP Speakers					E-06R			
Low Pass Filter for FB-100/HB-1 Speakers								E-07S	

\*For Line Input Modules: Use "B" modules w/ transformer isolation for balanced/unbalanced sources. Use "L" modules only for 600 ohm impedance matching. Use "U" for unbalanced sources w/ short cables (≤ 15 feet).

### MUTING MODULES

The two types of muting modules, MUTE-RECEIVE and MUTE-SEND, have mute function circuitry that connects to two common "MUTE" buses, and one common "GROUND" bus when installed in an A-900MK2 mixer/amplifier or M-900MK2 mixer/pre-amplifier. A "BUS" is simply an internal wire that connects from module-slot to module-slot. You can access these buses via rear-panel screw terminals, labeled, "MUTE 1", "MUTE 2" and "GND". Mute-type modules connect to both mute buses "out-of-the-box". You can disconnect the module's mute function circuitry from each mute bus by cutting jumper wires on the modules. This allows you to configure systems with multiple levels of priority.

MUTE-RECEIVE modules respond to mute bus activation in either of two ways: 1) Switch Activation: Connecting a switch closure between the "MUTE" (1 or 2) and "GND" screw terminals on the rear of the mixer/amplifier activates the mute function circuitry of MUTE-RECEIVE modules connected to the same bus. This is also referred to as "manual muting". 2) Auto-Mute: When input signal level to a MUTE-SEND module exceeds a user-adjustable threshold, the module's mute function circuitry activates the mute function circuitry of all MUTE-RECEIVE modules connected to the same bus. This is also referred to as "signal-activated muting".