



# 900 SERIES

## MIXER/ AMPLIFIERS:

**A-903MK2**

**A-906MK2**

**A-912MK2**

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 **A-903MK2** (30 W), **A-906MK2** (60 W) and **A-912MK2** (120 W) **Modular Mixer/Amplifiers** are engineered for high performance with wide frequency response, very low noise and distortion, and excellent output regulation. Eight module slots allow you to easily configure custom configurations using TOA plug-in modules with an extensive array of features and connector types. You can increase the input capacity by connecting a second mixer or mixer/amplifier to the rear-panel Bridge In/Out jack. Outputs include transformer-isolated 25 V, 70 V and 8 ohm (A-903MK2: 4 ohm) plus a direct low-impedance mode if non-transformer operation is required.

Multiple paging priorities are easily configured using optional mute-type modules activated by external switch-closure or mute-send modules. Pre-Out/Power-In jacks allow connection of external signal processing between the mixer and amplifier sections. Other features include protection circuitry, auxiliary output, bass/treble controls and remote master volume terminals.

The 900 Series Mixer/Amplifiers are UL and cUL Listed and carry a five year warranty.



## HIGHLIGHTS

- **Modular Eight Channel Mixer/ Amplifiers** 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.
- **Three Models:** **A-903MK2** (30 W), **A-906MK2** (60 W), **A-912MK2** (120 W)
- **Eight Module Slots** accept any combination of TOA plug-in modules for custom system configurations.
- **25 V, 70 V and 8 Ohm Transformer-Isolated Speaker Outputs** with screw terminal connector and protective cover plate (A-903MK2: 4 ohm).
- **Direct Low-Impedance Output Mode** bypasses output transformer.
- **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.
- **Low Cut Switch** to limit low frequency response.
- **Auxiliary Output** for connecting an external mixer or recording device.
- **Insert Jacks** for connecting external signal processing.
- **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 and overheating.
- **Volume Control Security Knobs Included (4)**
- **Optional Rack-Mount Kits**
- **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/AMPLIFIERS

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



|                                                                                                  |                                                                                                                                |
|--------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|
| <b>Type</b>                                                                                      | 8-channel modular mixer/amplifier                                                                                              |
| <b>Output Power</b>                                                                              | <b>A-903MK2:</b> 30 W RMS; <b>A-906MK2:</b> 60 W RMS<br><b>A-912MK2:</b> 120 W RMS                                             |
| <b>Power Bandwidth</b>                                                                           | (D) 20 - 20k Hz, 0.5% THD; (T) 50 - 20k Hz, 0.5% THD                                                                           |
| <b>Frequency Response</b>                                                                        | (D) 20 - 20k Hz, $\pm 1$ dB; (T) 20 - 15k Hz, $\pm 1$ dB<br>(T) 20 - 20k Hz, +1 dB / -3 dB                                     |
| <b>Total Harmonic Distortion</b>                                                                 | 0.02% at 1k Hz, rated output                                                                                                   |
| <b>Inputs</b>                                                                                    | 8 input ports: every port accepts any input module<br>1 Bridging Input/Output                                                  |
| <b>Input Sensitivity &amp; Impedance</b>                                                         | Please refer to 900 Series module specifications.<br>Bridging Input/Output: 100 mV / 3.3k $\Omega$                             |
| <b>Pre-amp. Out/<br/>Power Amp. In</b>                                                           | 1 V, 600 $\Omega$ / 1 V, 10k $\Omega$                                                                                          |
| <b>Outputs</b><br><small>(T)=Transformer<br/>(D)=Direct</small>                                  | Main (T): 8 $\Omega$ , 25 V & 70 V, balanced<br>Main (D): 4 $\Omega$ , unbalanced<br>Aux: 1 V, 10k $\Omega$                    |
| <b>Output Regulation</b><br><small>(1k Hz)</small>                                               | (D): Less than 0.5 dB, no load to full load<br>(T): Less than 1.0 dB, no load to full load                                     |
| <b>Dynamic Range</b><br><small>(Band Pass: 20 - 20k Hz,<br/>with Tone Controls centered)</small> | Master volume set to min.: 90 dB<br>Master volume set to max.: 77 dB<br>Power amplifier only: 105 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 fuse                                                                                         |
| <b>Power Consumption</b>                                                                         | <b>A-903MK2:</b> 60 W; <b>A-906MK2:</b> 100 W; <b>A-912MK2:</b> 180 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)                                                                    | <b>A-903MK2:</b> 16.5" x 3.9" x 12.5" (420 x 99.1 x 318 mm)<br><b>A-906/912MK2:</b> 16.5" x 3.9" x 14.1" (420 x 99.1 x 358 mm) |
| <b>Weight</b> (without modules)                                                                  | <b>A-903MK2:</b> 17.2 lbs (7.8 kg); <b>A-906MK2:</b> 21.2 lbs (9.6 kg)<br><b>A-912MK2:</b> 25.1 lbs (11.4 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

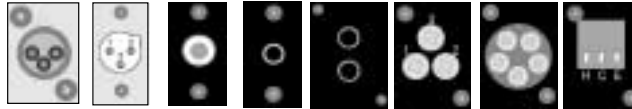


| Model | Type             | Description                                                                                                         |
|-------|------------------|---------------------------------------------------------------------------------------------------------------------|
| M-01F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



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# 900 SERIES MIXER/ AMPLIFIERS



Female XLR    Male XLR    1/4" Phone Jack    RCA Jack    Dual RCA Jacks    3 Screw Terminals    5 Screw Terminals    Removable Terminal Block

## 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<br>B-01F<br>U-01F |          | U-01P           | U-01R    |                | L-01S<br>B-01S<br>U-01S |                   |                          |
|                                          | Standard with high/low cut filters           |                         |          |                 |          | U-03R          |                         |                   | U-03S                    |
|                                          | Mute-Receive                                 |                         |          |                 | U-11R    |                | L-11S<br>B-11S<br>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<br>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".