

## TOA M-9000M2

# TOA M-9000M2 Modular Digital Matrix Mixer Instruction Manual

MODEL: M-9000M2 CU

## 1. Introduction

This manual provides detailed instructions for the installation, operation, and maintenance of the TOA M-9000M2 CU Modular Digital Matrix Mixer. The M-9000M2 CU is a versatile audio processing unit designed for professional sound reinforcement applications, offering extensive input/output routing, digital signal processing, and remote control capabilities. Please read this manual thoroughly before using the product to ensure correct and safe operation.

## 2. Safety Information

To prevent personal injury and property damage, observe the following safety precautions:

- Ensure the unit is connected to a power source within the specified voltage range (120V AC, 60Hz).
- Do not expose the unit to rain or moisture to prevent fire or electric shock.
- Do not open the unit's casing. Refer all servicing to qualified personnel.
- Avoid placing the unit in direct sunlight, near heat sources, or in areas with excessive dust or vibration.
- Ensure proper ventilation around the unit to prevent overheating.

## 3. Key Features

- Supports up to 8 mic/line inputs and 8 outputs.
- Flexible routing: Any combination of inputs can be routed to any combination of outputs.

- Intuitive GUI software for detailed configuration and control.
- Compatibility with up to 16 dedicated RS-485 wall-mount remote controls.
- Integration with 3rd party systems via RS-232 control.
- 32 scene memories and 32 paging memories for quick recall of settings.
- Accepts 9000 and 900 series modules (9000 modules include dual input and DSP, except ZP-001T).
- Two built-in line level outputs on the frame.
- Ethernet connectivity and iPad App support for remote management.
- Rack-Mount Kit Included for easy installation.
- UL certified for safety standards.

## 4. Package Contents

Verify that all items are present in the package:

- TOA M-9000M2 CU Modular Digital Matrix Mixer unit
- Power Cord
- Rack-Mount Kit
- Instruction Manual (this document)
- Warranty Card

*Note: Input modules are sold separately and are required for operation.*

## 5. Setup

### 5.1 Front Panel Overview



The image above displays the front panel of the TOA M-9000M2 CU. It features a central display screen, input select buttons on the left, input and output volume controls, and navigation/utility buttons on the right. The power button is located on the far right.

- **INPUT SELECT (1-8):** Buttons to select individual input channels.
- **DISPLAY:** Shows current settings, menus, and status (e.g., "DISPLAY SAVER MODE").
- **INPUT VOLUME:** Rotary knob to adjust the input level.
- **OUTPUT VOLUME:** Rotary knob to adjust the output level.
- **ON/OFF (Input/Output):** Buttons to mute/unmute input or output channels.
- **OUTPUT SEL:** Button to select output channels for adjustment.

- **MEMORY:** Accesses memory functions (scene/paging).
- **UTILITY:** Accesses utility settings and system configurations.
- **ENTER:** Confirms selections or enters menu items.
- **ESC/BACK:** Exits current menu or goes back to the previous screen.
- **Navigation Arrows (Up/Down/Left/Right):** Used for menu navigation and parameter adjustment.
- **POWER:** Main power button with indicator light.

## 5.2 Module Installation

The M-9000M2 CU is a modular system. Before operation, install the necessary input and output modules (9000 series or 900 series) into the designated slots on the rear panel. Ensure modules are securely seated and locked into place. Refer to the individual module's manual for specific installation instructions.

## 5.3 Connections

Connect your audio sources (microphones, line-level devices) to the input modules and your amplifiers/speakers to the output modules. Use appropriate shielded cables for all audio connections. Connect the Ethernet port to a network for GUI software or iPad App control. For RS-232C or RS-485 control, connect the respective ports to your control system or remote panels.

## 5.4 Power On/Off

After all connections are made, connect the power cord to the unit and a suitable AC outlet. Press the POWER button on the front panel to turn the unit on. The power indicator will illuminate. To turn off, press the POWER button again.

# 6. Operating Instructions

## 6.1 Basic Operation

Use the INPUT SELECT buttons to choose an input channel. Adjust the INPUT VOLUME knob to set the desired input level. Similarly, use the OUTPUT SEL button to choose an output and adjust its level with the OUTPUT VOLUME knob. The ON/OFF buttons can mute or unmute channels.

## 6.2 Input/Output Routing

The M-9000M2 CU allows flexible routing. This is primarily configured through the dedicated GUI software. Access the routing matrix within the software to assign any input to any output, or multiple outputs, as required by your audio system design.

## 6.3 Scene and Paging Memories

The unit supports 32 scene memories and 32 paging memories. Use the MEMORY button on the front panel or the GUI software to save and recall complete system configurations (scenes) or specific paging settings. This feature is useful for quickly switching between different audio setups for various events or zones.

## 6.4 DSP Functions

The M-9000M2 CU includes extensive DSP capabilities, accessible via the GUI software. These include:

- **Tone Control:** Bass ( $\pm 12$ dB at 100Hz) and Treble ( $\pm 12$ dB at 10kHz).
- **Parametric Equalizer:** 10 bands, 20Hz - 20kHz (31 points),  $\pm 12$ dB variable range, Q: 0.3 - 5.
- **Speaker Equalizer:** 10 presets (30 TOA speaker presets available in software).
- **High-pass Filter:** -12dB/oct, 20Hz - 20kHz variable frequency (31 points).
- **Low-pass Filter:** -12dB/oct, 20Hz - 20kHz variable frequency (31 points).

- **Delay:** 0-40ms (1ms steps), maximum 40ms (CH 1 + CH 2) in mixer mode.

### 6.5 Remote Control and Software

The unit can be controlled remotely using:

- **GUI Software:** Connect the unit to a computer via Ethernet for detailed configuration and real-time control.
- **iPad App:** Download the official TOA app for wireless control over your network.
- **RS-485 Wall-mount Remote Controls:** Up to 16 dedicated remote controls can be integrated for localized control.
- **RS-232 Control:** Integrate with third-party control systems for advanced automation.

## 7. Maintenance

Regular maintenance ensures optimal performance and longevity of your M-9000M2 CU.

- **Cleaning:** Wipe the exterior with a soft, dry cloth. Do not use abrasive cleaners or solvents.
- **Ventilation:** Ensure ventilation openings are clear of dust and obstructions.
- **Storage:** If storing the unit for an extended period, disconnect power and store in a cool, dry place away from direct sunlight.

## 8. Troubleshooting

If you encounter issues, refer to the following common problems and solutions:

- **No Power:** Check power cord connection, AC outlet, and ensure the power button is pressed.
- **No Audio Output:** Verify input and output module installation, check input source connections, output connections to amplifiers, and ensure channel volumes are not muted or set too low. Check routing in GUI software.
- **Distorted Audio:** Check input levels to prevent clipping. Ensure all cables are securely connected and undamaged. Verify DSP settings (EQ, filters).
- **Remote Control Not Responding:** Check network connection for Ethernet/iPad App. Verify RS-232/RS-485 cable connections and communication settings.
- **Unit Overheating:** Ensure adequate ventilation. Clear any obstructions from vents.

For persistent issues, contact TOA customer support or a qualified service technician.

## 9. Specifications

Power Source	120V AC, 60Hz
Power Consumption	40W
Digital Audio Signal Reference Level	-20 dBFS

<b>Frequency Response</b>	20Hz - 20kHz, +1, -3dB
<b>Total Harmonic Distortion</b>	0.008% (at 22kHz LPF, 1kHz, +10dB output)
<b>S/N Ratio</b>	At Input short, 20Hz - 20 kHz, set to ALL FLAT or OFF setting
<b>Cross Talk</b>	64dB or more (at 20kHz)
<b>Tone Control</b>	Bass: $\pm 12$ dB (at 100Hz) / Treble: $\pm 12$ dB (at 10kHz)
<b>Parametric Equalizer</b>	10 bands, Frequency: 20Hz - 20kHz, 31 points, Variable range: $\pm 12$ dB, Q: 0.3 - 5
<b>Speaker Equalizer</b>	10 (setup software has 30 TOA speaker presets)
<b>High-pass Filter</b>	-12dB/oct, Variable frequency range: 20Hz-20kHz, 31 points
<b>Low-pass Filter</b>	-12dB/oct, Variable frequency range: 20Hz-20kHz, 31 points
<b>Delay</b>	0-40ms (1ms steps), maximum 40ms (CH 1 + CH 2), mixer mode only
<b>Auxiliary Function</b>	Key lock function
<b>Operating Temperature</b>	-10°C to +40°C
<b>Operating Humidity</b>	35% to 80% RH (no condensation)
<b>Dimensions</b>	16.54"W x 4.24"H x 13.9"D
<b>Weight</b>	13.23 lb (Unit) / 21.17 lb (Shipping)

## 10. Warranty and Support

TOA products are designed for reliability and performance. For warranty information, please refer to the warranty card included with your product or visit the official TOA website. For technical support, service, or inquiries, please contact your authorized TOA dealer or TOA customer service.

*TOA Corporation is committed to continuous product improvement. Specifications are subject to change without notice.*

