



M-9000

Digital Matrix Mixer

The TOA M-9000 Series Digital Matrix Mixer features a compact design that fits in a two rack space package.

The versatile new Mixer is ideal for multi-zone paging, music distribution and room-combining applications.

The M-9000 includes eight module ports allowing designers to easily configure custom systems with up to eight mic/line inputs and eight outputs. The M-9000 chassis has two channels of built-in digital signal processing (DSP) with ten band parametric EQ, compressor, eight level ducking and more. Input and output modules provide additional DSP.

Two discrete operation modes, "Mixer" and "Matrix", allow the M-9000 to be used in both simple mixing and complex multi-zone paging applications.

Versatile features include telephone zone paging, automatic microphone mixing and ambient noise control.

Modules include the D-001T dual channel mic/line input module, T-001T dual channel line output module, ZP-001T telephone access zone paging module, C-001T control expansion module, and AN-001T Ambient Noise Control module.

Accessories include the AN-9001 ceiling/wall-mount microphone, ZM-9001 and ZM-9002 remote panels, and SS-9001 4-zone speaker selector.

safe&sound



M-9000

Digital Matrix Mixer

FEATURES

- **Modular Digital Matrix Mixer** for a multitude of applications including audio-visual, zone paging, room combining and many more
- **Dual Modes (MIXER and MATRIX)** –two separate feature sets to suit both simple mixing and complex multi-zone distribution applications
- **Easy to Configure and Operate**
- **Exceptional Audio Quality**
 - 24-bit, 48 kHz sampling
 - Low Distortion - 0.008%
- **Modular System**—up to 8 mic/line inputs and 8 outputs
- **Dual Channel Digital Signal Processor (DSP):**
 - 10-Band Parametric EQ
 - High and Low Pass Filters
 - Compressor • Loudness Contour
 - Bass and Treble • Delay (MIXER mode)
 - TOA Speaker EQ Presets
 - Additional DSP included on D-001T and T-001T modules
- **Telephone Zone Paging**—access up to eight zones with optional ZP-001T module
- **Ambient Noise Control**—automatically increase or reduce output levels in response to changes in ambient noise
- **Multi-function Display** allows programming and operation without a PC
- **Rack-mount Kit Included** (2RU)

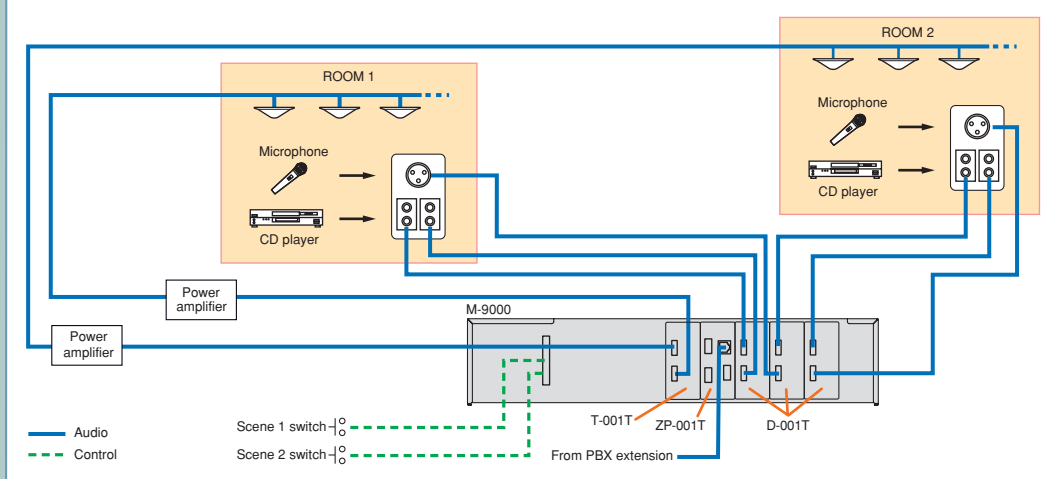


MIXER Mode

- **Ideal for Speech and Sound Reinforcement Applications** in hotel meeting rooms, houses of worship, and conference rooms
- **Automatic Mixing**
 - Automatically adjusts output level based on the total number of open microphones (NOM)
 - Adjustable output attenuation from 0 to 20 logNOM
- **32 Programmable Scenes** – activate via front panel, switch closure, RS-232 or optional remote panels, models ZM-9001 and ZM-9002
- **Flexible Input-to-Output Routing** – assign any input to one or more outputs with adjustable cross-point gain

- **Stereo Link** – control two inputs or outputs with one volume control
- **Paging Function**
 - Assign outputs to up to four zones
 - Trigger paging function with VOX (one routing), control input (up to four routings) or optional ZP-001T module
 - Selectively disable outputs from programmed paging zone with contact closures

Hotel/banquet : Room combining



APPLICATIONS

- Restaurants
- Retail Stores
- Training Rooms
- Bars/Lounges/Clubs
- Boardrooms
- Conference rooms
- Fitness Clubs/Gyms
- Educational Facilities
- Houses of Worship
- Museums
- Offices
- Theme Parks



Flexible Remote Control

- **Two Remote Volume Control Terminals**
 - Assignable to any input or output channel
 - Control with 10k ohm linear potentiometer, 0-10 VDC or optional ZM-9001/ZM-9002 remote panels
 - Assign remote volume control to background music(Priority 8) inputs without affecting paging input volume
- **Four Control Inputs** (expandable to twelve with C-001T module) – programmable to activate Memory, Volume Up/Down, Mute, Power On/Off, Emergency Mute
- **Four Control Outputs** (expandable to twelve with C-001T module) – programmable to activate external relays synchronized with Memory, Channel On/Off and Power On/Off
- **RS-232 Port**
 - Control protocol available for external devices (see protocol for controllable parameters)
 - AMX and Crestron control modules available

Additional Features

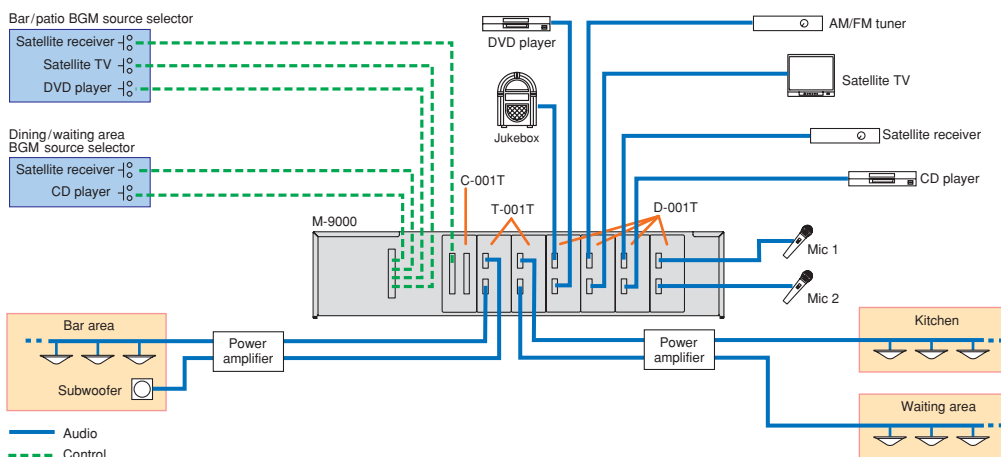
- **Software Utility** for saving unit parameters to PC, updating unit firmware, virtual control activation and status indication
- **MS Excel Programming Templates** – use Microsoft(R) Excel for off-site programming
- **Keylock Security** sets password-protected access to Input, Output, Utility & Power functions
- **Input and Output Metering** (D-001T module(s) required for input metering)
- **Alphanumeric Channel and Memory Naming**
- **Power On Memory** sets the Event/Scene selected when unit powers up
- **Detachable AC Cable**

MATRIX Mode

- **Multiple Simultaneous Event Activation** for paging and BGM distribution applications
- **Flexible Routing** – each audio input can be simultaneously routed to multiple outputs
- **Eight Level Ducker** – assignable priority levels and mute depth attenuates all other lower priority input signals
- **32 Programmable Events** – activate via control input, RS-232 or optional remote panels, models ZM-9001 and ZM-9002

- **Input Priority Modes** sets priority order when multiple inputs with the same priority level are broadcast
 - First-In-First-Out (FIFO): input that occurs first is broadcast
 - Last-In-First-Out (LIFO): most recent input is broadcast
 - MIX: all inputs are mixed and broadcast
- **Voice Operated (VOX) Event Activation** with adjustable threshold/sensitivity and gate release time

Restaurant/Bar: Multiple A/V sources, jukebox and zone paging



APPLICATIONS

- Restaurants
- Retail Stores
- Training Rooms
- Bars/Lounges/Clubs
- Fitness Clubs/Gyms
- Houses of Worship
- Educational Facilities
- Hotels/Hospitality
- Museums
- Auditoriums/Theatres
- Banks
- Offices
- Theme Parks
- Airports

SPECIFICATIONS

Audio Input	Max. 8 channels, modular construction (modules optional)
Audio Output	Preamplifier output 1 2: 0 dBV, 600Ω, balanced, removable terminal block (3 pins)
Frequency Response	20 – 20,000 Hz +1, -3 dB
Total Harmonic Distortion	0.008% (22 kHz LPF, 1 kHz, +10 dBV output)
S/N Ratio	At Input short, 20 – 20,000 Hz, ALL FLAT or OFF setting Output volume min.: 90 dB Output volume max.: 61 dB (input 1 vol.: 0 dB, other inputs: OFF)
Crosstalk	Over 64 dB at 20 kHz
Tone Control	Bass: +/-12 dB (at 100 Hz), Treble: +/-12 dB (at 10 kHz)
Parametric Equalizer	10 bands, Freq: 20 – 20,000Hz, 31 steps, Various range: +/-12 dB, Q: 0.3 – 5
Speaker Equalizer	15 (presets for TOA speakers)
High-pass Filter	-12 dB/oct, Variable frequency range: 20 – 400 Hz, 14 steps
Low-pass Filter	-12 dB/oct, Variable frequency range: 4,000 – 20,000 Hz, 8 steps
Compressor	Depth: 1 – 5
Delay	0 – 40 ms (1 ms steps), maximum 40 ms (CH1 + CH2) (Mix mode only)
Scene/Event Memory	32
Operation Mode	Matrix mode/Mix mode (selector switch)
Auxiliary Function	Key lock function
Control Input/Output	RS-232C, D-sub connector (9P, female) Control input: 4 inputs, no-voltage make contact input, open voltage: 3.3 V DC, short-circuit current: under 1 mA, removable terminal block Control output: 4 outputs, open collector output, withstand voltage: 27 V DC, control current: 50 mA, removable terminal block Remote volume: 2 channels, connect a 10kΩ/linear taper potentiometer or 0 – 10 V DC, removable terminal block
Power Source	AC mains, 50/60 Hz
Power Consumption	40W
Operating Temperature	-10° to 40°C
Operating Humidity	35% to 80% RH (no condensation)
Finish	Panel: Aluminum, hair-line, black; Case: Surface-treated steel plate, black paint
Dimensions (W × H × D)	420 × 107.6 × 353 mm
Weight (without modules)	6 kg

M-9000 MODULES

D-001T

Dual Mic/Line Input Module with DSP

- Two Balanced Mic / Line Inputs
- Digital Signal Processing
 - 10-Band Parametric EQ
 - Bass / Treble
 - Loudness
 - High and Low Pass Filters
 - Compressor
- Adjustable Sensitivity (nine levels, -60 to -10 dBV)
- Phantom Power (24 VDC)
- Removable Terminal Block
- Maximum four per chassis
- Required for VOX function and input metering



ZP-001T

Telephone Zone Paging Module

- Telephone Paging to up to eight zones
- Uses DTMF dialing to access outputs
- Dial up to eight output zones in one operation
- Analog extension or page port compatible
- Page port operation requires contact closure activation
- RJ-11 Telephone Jack and Removable Terminal Blocks
- Maximum one per chassis



AN-001T

Ambient Noise Controller Module

- Automatically adjusts output gain to compensate for changes in ambient noise level
- Each input can be assigned to control a specific output
- Two inputs with +24VDC phantom power for condenser mics
- 14 preset gain ratios
- Accessory sensing microphone available, model AN-9001
- Maximum two per chassis



T-001T

Dual Line Output Expansion Module with DSP

- Two Balanced Line Outputs
- Digital Signal Processing
 - 10-Band Parametric EQ
 - Bass / Treble
 - Loudness
 - High and Low Pass Filters
 - Compressor
 - TOA speaker EQ presets
- Removable Terminal Block
- Maximum three per chassis



C-001T

Input/Output Control Module

- Eight assignable control inputs for activating
- Event, Volume Up/Down, Mute, Power On/Off,
- Emergency Mute
- Eight assignable control outputs for activating external relays
- Removable Terminal Block
- Maximum one per chassis



ZM-9001

Remote Panel

- Six buttons to activate preset selection or volume up/down
- Wiring: Single conductor shielded cable
- Max. loop resistance: 50 ohms per line
- Fits one gang electrical box
- Maximum two ZM-9001/ZM-9002 per chassis



AN-9001

Ambient Noise Sensing Microphone

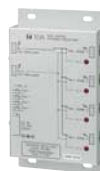
- Ceiling or wall-mount condenser microphone
- Fits one gang electrical box
- Use with AN-001T module or DP-L2 processor



SS-9001

Speaker Selector

- Switch up to four speaker lines on one amplifier output
- Two amplifier inputs for Paging/BGM applications
- Triggered by ZP-001T module control outputs
- 24VDC power supply



ZM-9002

Remote Panel

- Four push buttons to activate preset selection or volume up/down
- Volume control knob
- Wiring: Single conductor shielded cable
- Max. loop resistance: 50 ohms per line
- Fits one gang electrical box
- Maximum two ZM-9001/ZM-9002 per chassis



TOA Corporation

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Specifications are subject to change without notice.
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