# 9000M2 SERIES

## MODULAR DIGITAL MATRIX MIXER AND MIXER/AMPLIFIERS




***9000M2 Series with Unparalleled Versatility— ideal for multi-zone paging, music distribution and room-combining applications.***



**The TOA 9000M2 Series Digital Matrix Mixer/Amplifiers redefines the conventional mixer/amplifier category by combining a modular matrix mixer, digital signal processor (DSP) and amplifiers in a compact, two rack space package. The versatile new series is ideal for multi-zone paging, music distribution and room-combining applications. The 9000M2 Series models include dual and single channel amplifiers with high or low impedance outputs plus a matrix mixer-only version.**

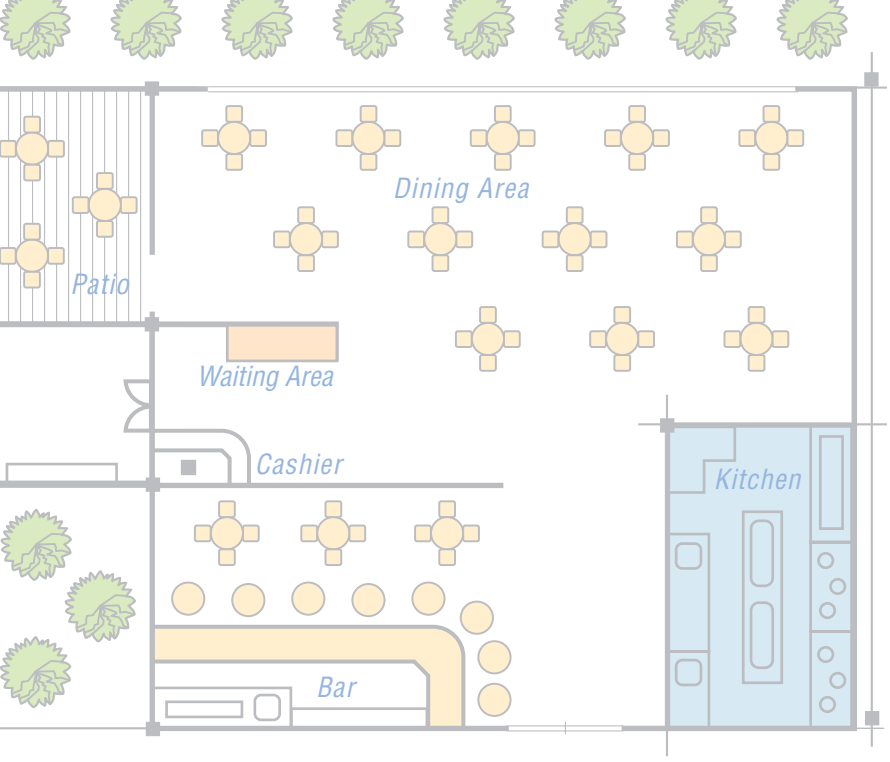
**All models allow for easily configured, custom systems with up to eight mic/line inputs and eight outputs. Each 9000M2 Series chassis has two output channels with built-in DSP, including ; ten band parametric EQ, compressor, deley and more. Input and output modules include additional DSP.**

**A new integrated operating mode provides powerful functionality for both simple mixing and complex multi-zone paging applications. Features include telephone zone paging, automatic microphone mixing and ambient noise control.**




9000M2 SERIES AMPLIFIER

- **Modular digital matrix mixer/amplifiers** for a multitude of applications including audio-visual, zone paging, room combining and many more.
- **Enhanced GUI programming interface** for PC configuration and uploading/downloading of settings using RS-232 connection. Includes setup wizards and firmware upgrade utility.
- **Exceptional Audio Quality:**
  - 24-bit, 48 kHz sampling • Ultra-Low Distortion – 0.0008%
- **Dual Channel Digital Signal Processor (DSP)** on Input & Output channels:
  - 10-Band Parametric EQ • High and Low Pass Filters • Bass and Treble
  - Loudness • Compressor • Gate • Ducker • NOM (Automix)
  - Delay (Output channel only) • TOA Speaker EQ Presets (Output channel only)
  - DSP included on 9000 Mainframe Outputs, D-001T, D-001R and T-001T modules
- **Single or Dual Channel Power Amplifiers** – 70.7V, 25V wide range of power ratings
- **Flexible, Integrated Operating System (Mixer + Paging Matrix):**
  - Mixer functions along with simultaneous Priority Paging Matrix activation, each with 32 presets.
  - Scene memory (x32) contains all mixer (non-priority) settings
  - Paging memory (x32) contains global (static) input settings, independent Xpoint assignments, paging trigger & paging output levels for all high priority (1, 2 & 3) inputs.
  - Both scene & paging memories are stored in a single template along with remote assignments, security lock and other global functions
  - Mixer & Paging functions are independent and mixer (scene) settings will not affect Paging (event) functions.











| Model | Power Amplifier Output(s) | Digital Signal Processor | Mic/Line Inputs | Line Outputs |
|---|---|---|---|---|
| **A-9060SM2** | 1 × 60W @ 25/70V, 4/8Ω | 2 Channels | Up to 8 (4 × D-001T) | Up to 7 (1 built-in plus 3 × T-001T) |
| **A-9120SM2** | 1 × 120W @ 25/70V, 4/8Ω | 2 Channels | Up to 8 (4 × D-001T) | Up to 7 (1 built-in plus 3 × T-001T) |
| **A-9240SHM2** | 1 × 240W @ 70V | 2 Channels | Up to 8 (4 × D-001T) | Up to 7 (1 built-in plus 3 × T-001T) |
| **A-9060DHM2** | 2 × 60W @ 70V | 2 Channels | Up to 8 (4 × D-001T) | Up to 6 (3 × T-001T) |
| **A-9120DHM2** | 2 × 120W @ 70V | 2 Channels | Up to 8 (4 × D-001T) | Up to 6 (3 × T-001T) |
| **M-9000M2** | 2 × Line Level | 2 Channels | Up to 8 (4 × D-001T) | Up to 8 (2 built-in plus 3 × T-001T) |

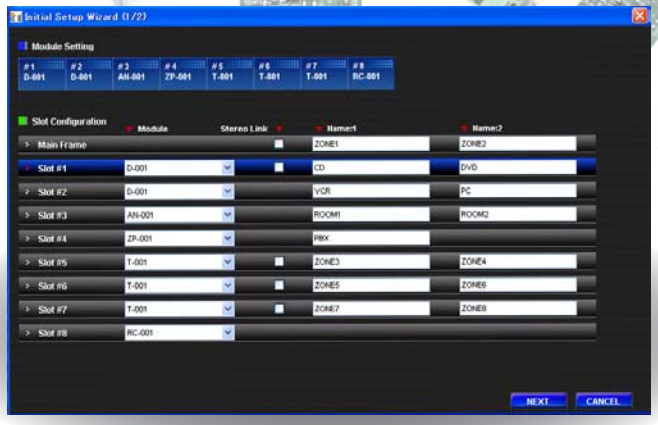
## Features

- Multiple Input Priority Modes sets priority order when multiple inputs with the same priority level and output assignment are broadcast
  - First-In-First-Out (FIFO): input that occurs first is broadcast
  - Last-In-First-Out (LIFO): the most recent input is broadcast
  - MIX: all inputs are simultaneously mixed and broadcast
- Voice Operated (VOX) paging activation with adjustable threshold/sensitivity and gate release time
- Stereo Link – Mirrors all the settings of one channel to the adjacent channel, reducing redundant setup tasks for stereo signals
- Speaker Line Switching – select up to four speaker lines from a single amplifier output using optional model SS-9001 Speaker Selector and AD-246 Power Supply
- Mixer Out/Power Amp In Patching Loops (Except M-9000M2) for connection of external processor(s)
- Balanced Line Output(s) – two: M-9000M2, one: A-9060SM2, A-9120SM2, A-9240SHM2; expandable with T-001T dual line output modules
- Keylock Security sets password-protected access to prevent access to Input, Output, Utility & Power functions
- Alphanumeric Input/Output Channel and Memory Naming
- Two Remote Volume Control Terminals on mainframe
- Four Control Inputs – programmable to activate Paging/Scene Memory, Volume Up/Down (Input or Output), Mute (Input or Output), Power On/Off, Emergency Mute, Sync On/Off (expandable to twelve with C-001T module). Works with optional ZM-9003 or custom contact panel
- Four Control Outputs (open collector) programmable to activate external relays (expandable to twelve with C-001T module) synchronized with Event/Scene Memory, Channel On/Off (Input or Output) and Power On/Off. Works with optional ZM-9003 or custom contact panel.
- RS-232C serial port
  - Allows upload & download of programming templates and firmware upgrades as well as real-time control of various parameters.
  - Control protocol available
  - AMX and Crestron control modules available

**AMX is a trademark of AMX Corporation*
**Crestron is a trademark of Crestron Electronics, Inc.*

# 9000M2 GUI

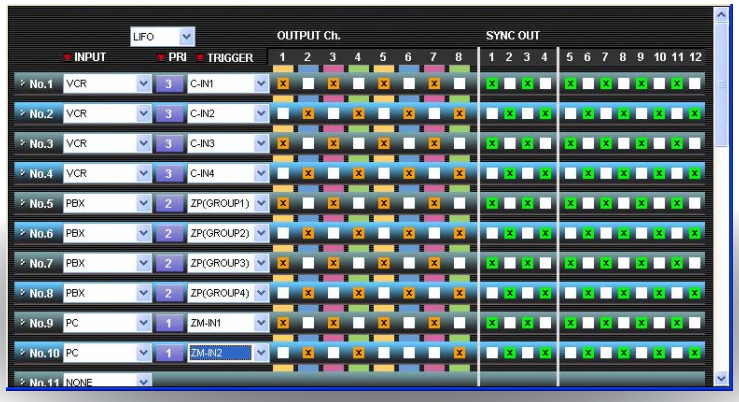
## Detailed screens make even complex settin

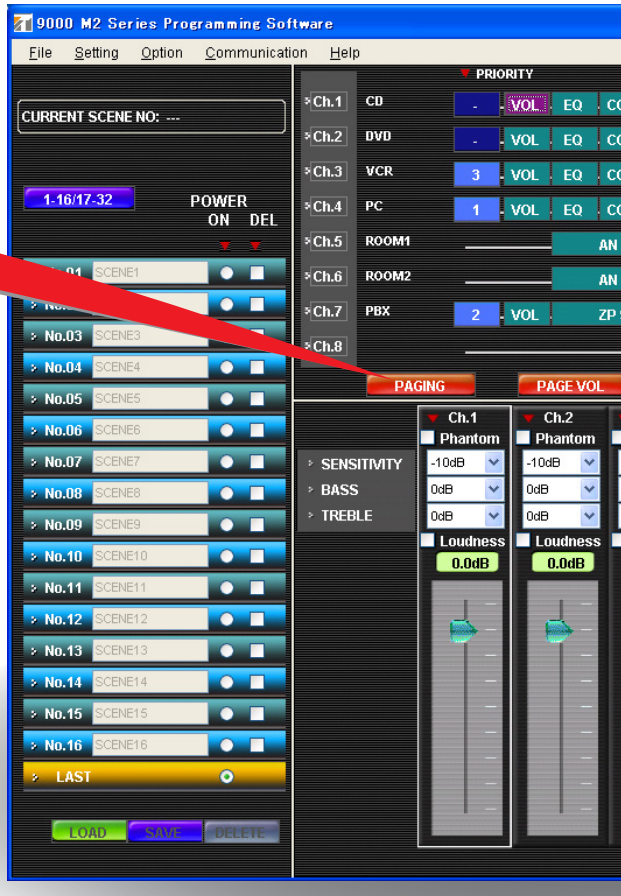



### Initial Setup Wizards

**Module Configuration Settings**
Displays possible selections according to module insertion rules, ensuring correct system configuration.

**Input & Output Channel Name Settings**
The names set using these screens are carried over into subsequent remote controller and paging configuration screens, streamlining the setting process.




### Paging Settings

**Set 3-level prioritized paging for each activation trigger (up to 32)**
To handle multiple simultaneous paging calls with the same priority level, the system can be set for “FIFO” (first in, first out), “LIFO” (last in, first out), or “MIX” (mixing). This allows paging settings to handle situations requiring sophisticated priority orders, for example in mass notification systems. It is also possible to make settings that cause a contact to be closed with the initiation of each page, a feature that can be used to illuminate a strobe, call up a CCTV camera’s preset positions, or enable audio or video recording via external equipment. Additionally, the optional S-20S module allows different messages to be broadcast corresponding to individual triggered outputs.

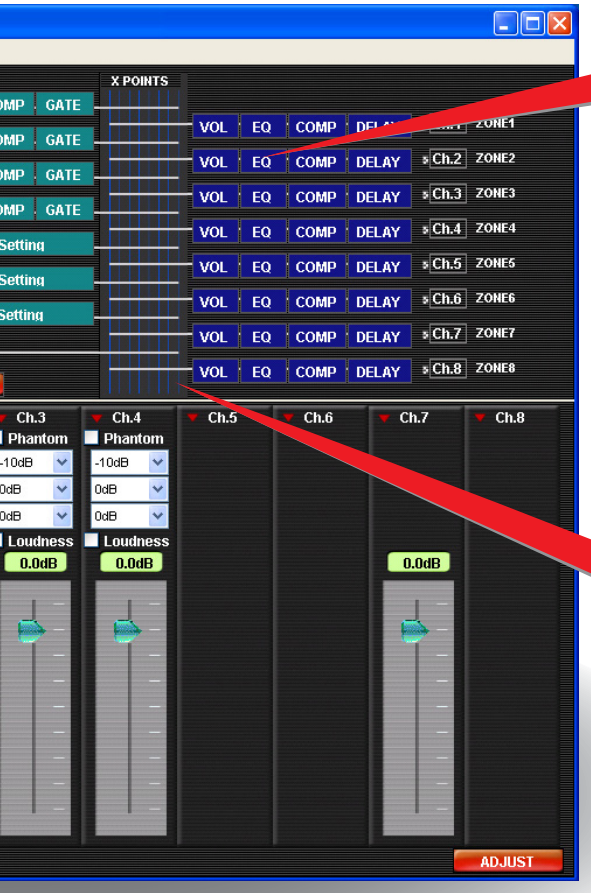


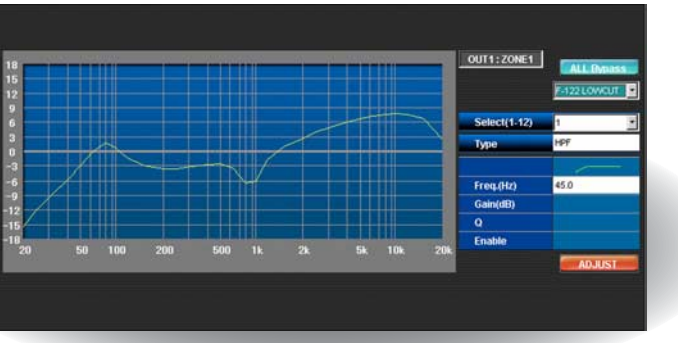
# gs intuitive and easy to understand




## Remote Controller Settings

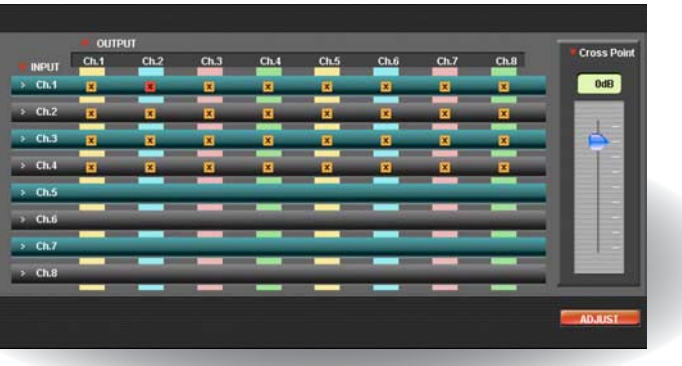
**Easy pull-down menu facilitates complex settings!**
The remote controller buttons can be used to switch scene memory, turn output sources on or off, and control the start and stop of paging. The output source on/off function includes Simultaneous Mode, which allows simultaneous output from multiple sources, and Exclusive Mode, which allows selection of only one output source. Knobs on the remote controller adjust the volume for the selected input-output channels.




## EQ Settings

**Select from 3 types: LPF, HPF and PEQ. Up to 12 filters can be applied to each input-output channel**
**TOA's Speaker preset EQ is visible in graphic display**
Use the Adjust button to change and check the effects of EQ settings on the fly. Use the Enable check boxes to deactivate filters without erasing their settings. Use the All Bypass button to disable all filters at once. Using these in conjunction with the Adjust button allows EQ effects to be compared efficiently.




## Cross Point Settings

Up to 32 preprogrammed broadcast patterns that switch according to each scene can be stored in the scene memory.

## 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

### D-001R
**Line Input Module with DSP**



- Two RCA phone inputs per channel provides stereo summing
- Digital Signal Processing
  - 10-Band Parametric EQ
  - Bass / Treble
  - Loudness
  - High and Low Pass Filters
  - Compressor

### 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

### 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

### 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

### C-001T
**Input/Output Control Module**



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

### RC-001T
**RS-485 Control Modules**



- Allows use of up o 16 RS-485 remote control panels
- Bi-directional RS-485 communication provides control and status feedback display for each remote function
- Dual ports allows independent home runs for up to 8 modules each
- 24V DC power adapter (optional AD-246) required for each 1 port used
- May be used in any control option slot on 9000M2 frame in addition to a C-001T when spare slots are available

## ACCESSORIES

### ZM-9001
**Remote Panel**



- Six assignable buttons to activate preset selection or volume up/down
- Operates on Remote Volume Control terminal on the 9000M2 back panel

### ZM-9002
**Remote Panel**



- Four assignable buttons to activate preset selection or volume up/down
- Variable knob to control volume
- Operates on Remote Volume Control terminal on the 9000M2 back panel

### ZM-9003
**Remote Panel**



- Works with contact inputs on 9000M2 mainframe and on C-001T
- Six buttons - 4 locking with label strips and two momentary buttons - may be assigned to control program change, volume up/down, channel on/mute, emergency mute, power and paging prohibit function.

### ZM-9011
**Remote Control Panel**



- Four assignable buttons each with LED status indicator can control Xpoint settings (on/off, select), paging activation, scene and relay activation
- Assignable ID rotary adjustment on box

### ZM-9012
**Remote Control Panel**



- Rotary Encoder can be assigned to control any input or output volume
- Multiple input or outputs may be “ganged” for Master volume terminals
- Multi-segment LED indicator provides visual volume level status

### ZM-9013
**Remote Control Panel**



- Eight assignable buttons each with LED status indicator can control Xpoint settings (on/off, select), paging activation, scene and relay activation
- Assignable ID rotary adjustment on box

### ZM-9014
**Remote Control Panel**



- Four assignable buttons each with LED status indicator can control Xpoint settings (on/off, select), paging activation, scene and relay activation
- Assignable ID rotary adjustment on box

### AN-9001
**Ambient Noise Sensing Microphone**



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

### SS-9001
**Speaker Selector**



- Switch up to four speaker lines on one amplifier output
- Two amplifier inputs for Paging/ BGM applications
- Wall-mount bracket included
- Requires optional 24VDC power supply, model AD-246

## SPECIFICATIONS

| Model No. | A-9060DHM2 | A-9120DHM2 | A-9060SM2 |
|---|---|---|---|
| **Output Power** | 2 × 60W @ 70V | 2 × 120W @ 70V | 1 × 60W@25/70V, 4/8 ohms |
| **Audio Input** | Max. 8 channels, modular construction (modules optional)<br>Power amplifier input 1, 2: 0dBV, 10kΩ, RCA pin jack | | |
| **Audio Output** | Preamplifier output 1, 2: 0dBV, 300Ω, unbalanced, RCA pin jack | | Preamplifier output 1: 0dBV, 300Ω, unbalanced, RCA pin jack; Preamplifier output 2: 0dBV, 600Ω, balanced, removable terminal block (3pins) |
| | Speaker output 1, 2: 60W, 70.7V line, 83Ω × 2, BTL output, removable terminal block (4 pins) | Speaker output 1, 2: 120W, 70.7V line, 41Ω × 2, BTL output, removable terminal block (4 pins) | Removable terminal block (7 pins); Direct: 60W, 4Ω, unbalanced; Transformer: 60W, 8Ω 25V and 70V, balanced |
| **Power Bandwidth** | 20Hz – 20kHz, 0.008% THD | | Direct: 20Hz – 20kHz, 0.02% THD; Transformer: 50Hz – 20kHz, 0.5% THD |
| **Frequency Response** | Power amplifier section: 20Hz – 20kHz, +0, -1dB<br>Analog input module to speaker output: 20Hz – 20kHz +1, -3dB | | |
| **Total Harmonic Distortion** | Power amplifier section: 0.0008% (22kHz LPF, 1 kHz, rated power)<br>Analog input module to speaker output: 0.008% (22kHz LPF, 1 kHz, rated power) | | 0.008% (22 kHz LPF, 1 kHz, rated power)<br>0.008% (22kHz LPF, 1 kHz, rated power) |
| **S/N Ratio** | At input short, 20Hz – 20kHz, ALL FLAT or OFF setting<br>Output volume min.: 90dB (preamplifier output)<br>Output volume max.: 61dB (preamplifier output, input 1 volume: 0dB, other inputs: OFF)<br>Power amplifier section: 110dB | | |
| **Crosstalk** | 64dB or more at 20kHz | | |
| **Tone Control** | Bass: +/-12dB (at 100Hz), Treble: +/-12dB (at 10kHz) | | |
| **Parametric EQ** | 10 bands, Freq: 20Hz – 20kHz, 31 steps, Various range: +/- 12dB, Q: 0.3 – 5 | | |
| **Speaker Equalizer** | 30 (presets for TOA speakers) | | |
| **High-pass Filter** | -12 dB/oct, Variable frequency range: 20Hz - 20kHz, 31 steps | | |
| **Low-pass Filter** | -12dB/oct, Variable frequency range: 20Hz - 20kHz, 31 steps | | |
| **Compressor** | Depth: 1 - 5 | | |
| **Delay** | 0 – 40ms (1 ms steps), maximum 40ms (CH1 + CH2) | | |
| **Scene/Paging Memory** | 32/32 | | |
| **Auxiliary Function** | Key lock function | | |
| **Control Input/Output** | RS-232C, D-sub connector (9P, female)<br>Control input: 4 inputs, no-voltage make contact input, open voltage: 3.3V DC, short-circuit current: 1mA or less, removable terminal block<br>Control output: 4 outputs, open collector output, withstand voltage: 27V DC, control current: 50mA, removable terminal block<br>Remote volume: 2 channels, connect a 10kΩ/linear taper variable resister or 0 – 10V DC, removable terminal block | | |
| **Power Source** | 120V AC, 60Hz | | |
| **Power Consumption** | 150W | 250W | 100W |
| **Operating Temperature** | 14° to 104° F (-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)** | 16.54" × 4.24" (3.5" w/out feet) × 15.55" (420 × 107.6 x 395mm) | | 16.54" × 4.24" (3.5" w/out feet) × 13.98" (420 × 107.6 × 355mm) |
| **Weight (without modules)** | 19.84 lbs. (9kg) | 24.25 lbs. (11kg) | 24.25 lbs. (11kg) |

## SPECIFICATIONS

| Model No. | A-9120SM2 | A-9240SHM2 | M-9000M2 |
|---|---|---|---|
| **Output Power** | 1 × 120W @ 25/70 V, 4/8 ohms | 1 × 240W @ 70 V | n/a |
| **Audio Input** | Max. 8 channels, modular construction (modules optional)<br>Power amplifier input: 0dBV, 10kΩ, RCA pin jack | | Max. 8 channels, modular construction (modules optional) |
| **Audio Output** | Preamplifier output 1: 0dBV, 300Ω, unbalanced, RCA pin jack<br>Preamplifier output 2: 0dBV, 600Ω, balanced, removable terminal block (3 pins) | | Preamplifier output 1, 2: 0dBV, 600Ω, balanced, removable terminal block (3 pins) |
| | Speaker output: Removable terminal block (7 pins); Direct: 120W, 4Ω, unbalanced; Transformer: 120W, 8Ω 25 V & 70 V, balanced | Speaker output: 240W, 21Ω, BTL output, removable terminal block (4 pins) | |
| **Power Bandwidth** | Direct: 20Hz – 20kHz, 0.02% THD<br>Transformer: 50Hz – 20kHz, 0.5%THD | 20Hz – 20kHz, 0.008% THD | |
| **Frequency Response** | Power amplifier section: 20Hz – 20kHz, +0, -1dB<br>Analog input module to speaker output: 20Hz – 20kHz +1, -3dB | | 20Hz – 20kHz +1, -3dB |
| **Total Harmonic Distortion** | Power amplifier section: 0.008% (22kHz LPF, 1kHz, rated power)<br>Analog input module to speaker output: 0.008%(22kHz LPF,1kHz, ratedpower) | Power amplifier section: 0.0008% (22kHz LPF, 1 kHz, rated power)<br>Analog input module to speaker output: 0.008%(22kHz LPF,1kHz, ratedpower) | 0.008% (22kHz LPF, 1kHz, +10 dBV output) |
| **S/N Ratio** | At input short, 20Hz – 20kHz, ALL FLAT or OFF setting<br>Output volume min.: 90dB (preamplifier output)<br>Output volume max.: 61dB (preamplifier output, input 1 volume: 0dB, other inputs: OFF)<br>Power amplifier section: 110dB | | At Input short, 20Hz – 20kHz, ALL FLAT or OFF setting<br>Output volume min.: 90dB<br>Output volume max.: 61dB (input 1 vol.: 0dB,other inputs:OFF) |
| **Crosstalk** | 64dB or more at 20kHz | | |
| **Tone Control** | Bass: +/-12dB (at 100Hz), Treble: +/-12dB (at 10kHz) | | |
| **Parametric EQ** | 10 bands, Freq: 20Hz – 20kHz, 31 steps, Various range: +/- 12dB, Q: 0.3 – 5 | | |
| **Speaker Equalizer** | 30 (presets for TOA speakers) | | |
| **High-pass Filter** | -12dB/oct, Variable frequency range: 20Hz - 20kHz, 31 steps | | |
| **Low-pass Filter** | -12dB/oct, Variable frequency range: 20Hz - 20kHz, 31 steps | | |
| **Compressor** | Depth: 1 - 5 | | |
| **Delay** | 0 – 40 ms (1 ms steps), maximum 40 ms (CH1 + CH2) | | |
| **Scene/Paging Memory** | 32/32 | | |
| **Auxiliary Function** | Key lock function | | |
| **Control Input/Output** | RS-232C, D-sub connector (9P, female)<br>Control input: 4 inputs, no-voltage make contact input, open voltage: 3.3V DC, short-circuit current: 1mA or less, removable terminal block<br>Control output: 4 outputs, open collector output, withstand voltage: 27V DC, control current: 50mA, removable terminal block<br>Remote volume: 2 channels, connect a 10kΩ/linear taper variable resister or 0 – 10VDC, removable terminal block | | |
| **Power Source** | 120V AC, 60Hz | | |
| **Power Consumption** | 150W | 250W | 40W |
| **OperatingTemperature** | 14° to 104°F (-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)** | 16.54" × 4.24" (3.5" w/out feet) × 13.98" (420 × 107.6 × 355mm) | 16.54" × 4.24" (3.5" w/out feet) × 15.55" (420 × 107.6 × 395mm) | 16.54" × 4.24" (3.5" w/out feet) × 13.9" (420 × 107.6 × 353mm) |
| **Weight (without modules)** | 28.66 lbs. (13 kg) | 24.25 lbs. (11 kg) | 13.23 lbs. (6 kg) |



## 2-Channel Power Amplifiers

- 2-Channel Power Amplifiers with 70.7V outputs:
  - **P-9060DH:** 2 × 60W
  - **P-9120DH:** 2 × 120W
- 2-Channel Power Amplifier models feature flexible output power allowing 50% of one amplifier channel to be allocated to the second amplifier channel.
- Channel 1 & 2 Inputs balanced (H=Hot, C=Cold and E=Shield) with selectable input sensitivity: 0dB or -20dB.
- Channel 1 input to ALL selectable switch.

**Human Society with Sound & Communication**

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Specifications are subject to change without notice.
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