INTEGRATED VOICE EVACUATION SYSTEM



VM-2000 SERIES

DESCRIPTION

The TOA System Management Amplifiers VM-2120 and VM-2240 are expressly designed to fulfill increasing requirements for reliable and efficient communications in mid-size facilities such as office buildings, factories, hospitals, transportation terminals and many other sites. Both amplifiers are multifunctional designs, with the VM-2120 rated at 120W and the VM-2240 at 240W. Each amplifier may be cascade-configured to meet increased power demands. Conforming to EIA standards both amplifiers may be rack-mounted, taking up just a 3-unit space.

A VM-2000 Series amplifier accepts six audio inputs which include two BGM inputs and a telephone paging input. Speaker output selector for five zones is provided as well as an internal speaker attenuator. In addition to general-purpose broadcasts, EN60849* standard-based emergency broadcasts which may be pre-recorded*1 or transmitted via the optional RM-200M Remote Microphone are possible. These operations can also be remotely controlled using external auxiliary equipment.

A VM-2000 Series amplifier is also equipped with surveillance capability*2 that conducts automatic system checks for malfunctions.

* EN denotes European Standard
*1 requires optional EV-200 Announcement Board.
*2 requires optional SV-200M Surveillance Board.

Remote Microphone RM-200M
May be connected to either amplifier to provide general purpose and emergency broadcasts.

Remote Microphone Extension RM-210
Facilitating communications as an extension unit for controlling key system operations.

FEATURES

- A VM-2000 Series amplifier can be combined to increase its system coverage number of speaker zones.
- Use of the optional SV-200M Surveillance Board allows system-wide integrity to be conveniently monitored such as CPU-initiated automatic checking at pre-set times for open or shorted speaker lines, any speaker circuit ground leaks as well as power amp section malfunctions. Signals can be sent to a status display which simplifies maintenance and instantly calls attention to faults.
- If the EV-200 Voice Announcement Board is used, five general-purpose messages and two emergency messages as well as a chime tone can be output. To record customized announcements and messages, the optional EV-350R Digital Announcer can be used. In addition, this allows adding a customized chime tone to the six built-in chime tones.
- When a VM-2000 Series amplifier is used in combination with an emergency power supply unit*, a backup battery ensures uninterrupted operation during power outages.
  * TOA DS-1000B or similar emergency power supply unit.
- During emergency situations a VM-2000 Series amplifier can provide phased emergency broadcasts as per EN60849* standard.
- Emergency broadcasts preempt system volume settings as well any external attenuators to ensure the broadcast is easily heard in any speaker zone.
- Four priority levels can be set for general broadcasts. All priority levels of general broadcasts are overridden in an emergency situation while emergency broadcasts are supplied to all zones.
- Standard speaker line distribution is rated for 100V applications. 50V or 70V speaker line distribution can also be selected by an easily performed internal wiring change.
- The system will accept up to four remote microphones (RM-200M) that can be extended totally up to a maximum of 800 meters.
- The independent speaker zones may be programmed into a maximum of five groups to receive group broadcasts. If a remote microphone is used, it can broadcast to Group 1 and Group 2.
- The RM-200M remote microphone provides announcements with extraordinary clarity and freedom from distortion thanks to a high-performance built-in compression circuit.

TOA

VM-2120/VM-2240

System Management Amplifiers



- Versatile inputs provided include a remote microphone input, three microphone/line inputs, two background music inputs as well as a telephone paging input.
- Every input can be balanced with the exception of the BGM inputs. An isolation transformer is optionally available. The balanced configuration helps ensure a system with high resistance to external noise pickup.
- The microphone/line input and the BGM input channels are equipped with individual low and high frequency controls for desired tonal adjustment.
- Built-in top priority is automatically assigned to emergency broadcasts at all times. For general announcements made using INPUT numbers 1-3, BGM is automatically muted during the announcement. Broadcast priorities can be set for each input.
- In addition to the six standard chimes, a custom chime tone from the optional EV-200 Voice Announcement Board can be combined with announcements.
- The BGM input as well as INPUT numbers 1-3 allow setting the volume level for each zone. If an emergency announcement or all call paging is required, the master volume control and zone volume controls are bypassed to ensure the broadcast is effectively heard throughout the zone or zones.
- Three- or four-wire speaker line control is possible. Emergency broadcasts and all calls paging can be made even while the local attenuator is turned down.
- For local systems used for non-emergency applications, broadcasts may be interrupted by control signals from the emergency master system. Local speakers can then also be utilized as master system speakers.
- The distributed speaker line can handle a 100V (standard), 70V or 50V speaker distribution system by reconfiguring the unit's internal wiring.
- Power turn on/off can be remotely activated from external equipment. If using the amplifiers as local amplifiers, power can be turned on or off by control signals sent from the master system.

RM-200M/RM-210

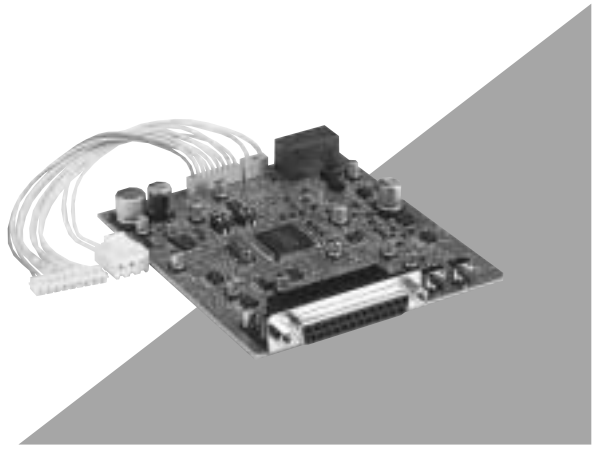
Remote Microphone RM-200M/Remote Microphone Extension Unit RM-210



- Up to four remote microphones can be connected but the maximum connection length for all cables is approximately 800 meters (a VM-2000 main unit can supply power to a single RM-200/RM-210 unit).
- Five independent broadcast zones can be configured as groups by the VM-2000. Two groups from the five can be selected using the remote microphone.
- An external microphone input terminal is provided to allow using a headset microphone.
- Built-in internal compressor circuitry ensures broadcasts are always clear and distortion-free.
- The TALK button may be a PTT or lock-type. The lock-type also provides "AUTO MIC Off" capability to automatically switch off the microphone if the TALK switch is inadvertently left on.
- The emergency activation button is equipped with a cover in case of accidental selection.
- Broadcasting zone selection and activating the EV-200 Voice Announcement Board is possible through dedicated operation buttons.

SV-200M

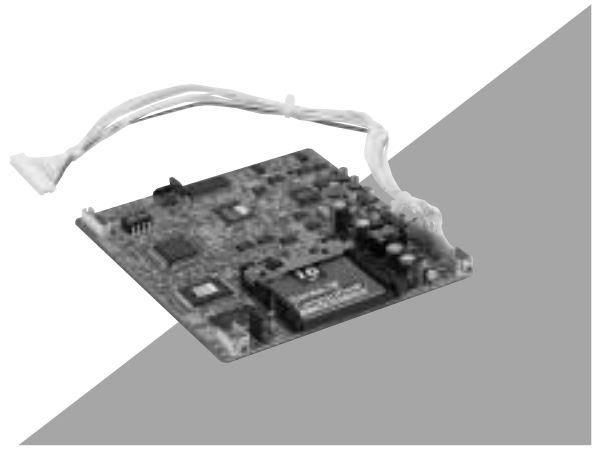
Surveillance Board



- Installed in the VM-2000, this board makes it possible to easily detect shorted, open or speaker lines with ground leakage.
- Checks individual speaker line status whether shorted, open, or improperly grounded and also power amplifier malfunctions.
- Checks speaker line impedance status and detects other possible faults and irregularities.
- Allows external control settings for speaker line checking.
- Allows external control checking of the speaker line.

EV-200

Voice Announcement Board



- When installed in the VM-2000, the board allows playback of up to eight prerecorded programs.
- Accepts the playback mode selected by the optionally available digital announcer EV-350R.

[Setting items different in playback methods]

Playback method	Program interval (Interval Timer)	Number of plays	Play interval	Busy output
Continuous Program Playback	——		——	——
Single Program Playback	OFF (no relation) 10, 20, …50 sec 1, 2, …99 min	——	——	ON / OFF (At program interval)
Repeat Playback	——	1, 2, …128 repeats, Endless	0, 10, …50 sec 1, 2, …99 min	ON / OFF (At repeat interval)
Endless Playback	——		0, 1, 2, 3, 4, 5 sec	——

- Recorded programs can be externally activated by either selecting the message selector key of the remote microphone or by sending the required signals to Control I/O connector.
- LEDs indicate CPU operational and CompactFlash* card status.

*a trademark of SanDisk Corporation.

EV-350R

Digital Announcer

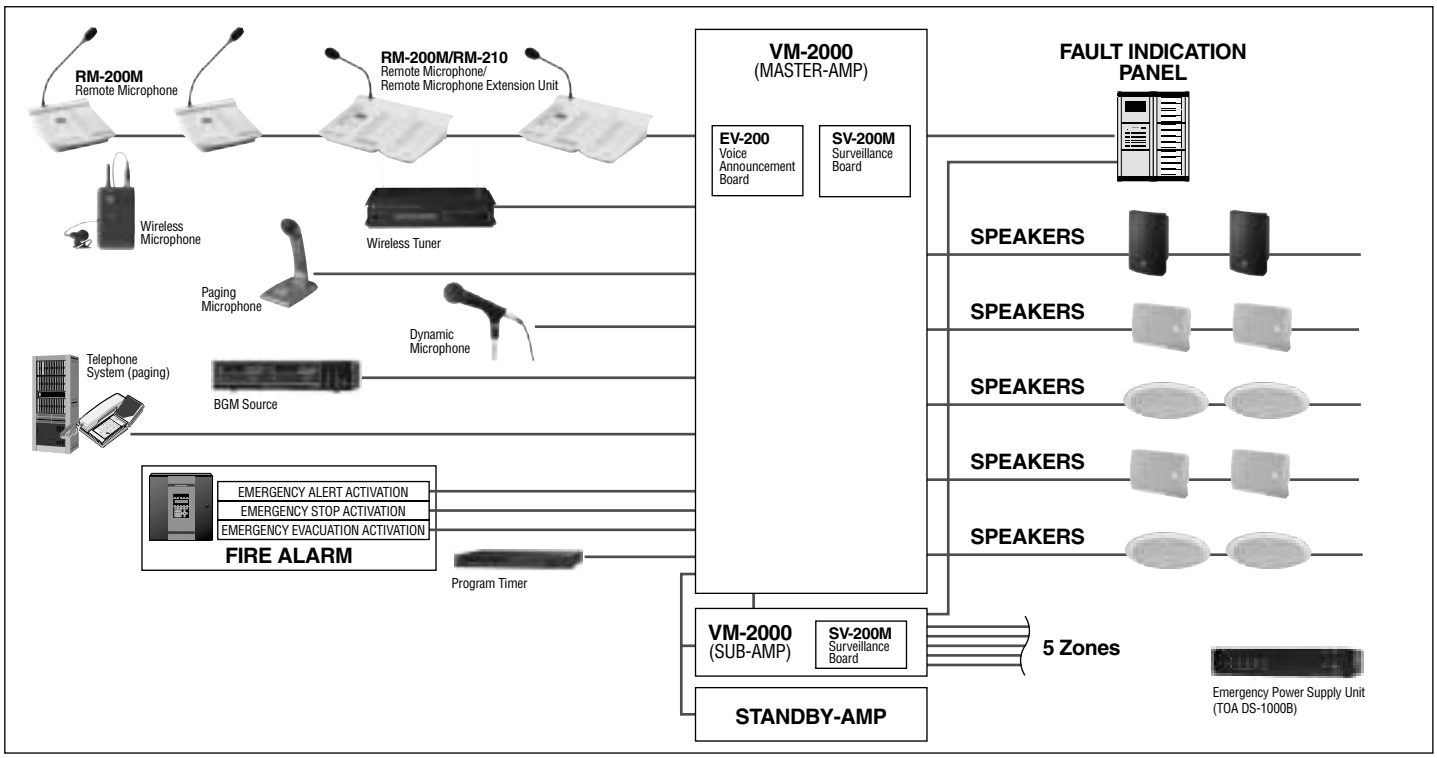


- LCD-displayed operation guides and handy selection dial facilitate recording and playback.
- Holds up to two memory cards.
- The combination of two sampling frequencies (32 kHz and 44.1 kHz) and four recording grades ("Long", "Normal", "High" and "Extremely High") permits selection of up to eight levels of recording sound quality to best suit a given situation.
- Recorded sentences can be combined into complete messages and played back as a program.
- Up to 256 programs can be played back.
- Up to 256 or 1,024 sentences (changeable) can be recorded (when two memory cards are installed).
- Two different messages can be simultaneously output to two different locations.
- In emergency situations, emergency messages can be set to override current programs. (Emergency messages must be pre-recorded.)
- Recording, playback, erasure, and stop can be remotely controlled by external equipment.
- Detachable front cover protects the memory cards from tampering.

* Optional adapter required for CompactFlash* card recording/playback using the EV-350R.

VM-2000 SERIES

APPLICATION EXAMPLE

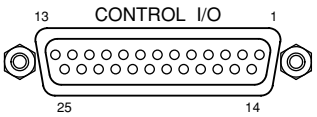


KEY FEATURES

CONTROL I/O CONNECTOR FUNCTIONS

The rear panel-mounted Control I/O connector enables the VM amplifier to be controlled or monitored by connected external equipment.

VM amplifier's D-sub female connector



Locking nut: 4-40 UNC

CONTROL I/O connector pin function table

Pin No.	Signal name	IN/ OUT	Signal/logic	Function/status
1	AC power ON	OUT	Active Low	When AC power is on
2	DC power ON	OUT	Active Low	When DC power is on
3 | 7	Message 1 – 5 activation	IN	One-shot make	Activates EV-200 Board's Message 1 –5*1
8	VM amplifier's broadcast cutoff control	IN	At make	Cuts off the VM amplifier's power amplifier output.*1 *2 (External signals applied to EXTERNAL SP INPUT go through to the speakers.)
			At break	The VM amplifier's power amplifier output is resumed.
9	Chime activation (6 built-in chimes)	IN	Break -to-Make edge	Activates a start chime tone.
			Make-to-Bread edge	Activates an end chime tone (4-tone Down).
10	Power ON/OFF control	IN	Break-to-Make edge	Turns power on.
			Make-to-Break edge	Turns power off.
11	Westminster chime activation	IN	One-shot make	Activates the internal Westminster chime unit.
12	Emergency alert activation	IN	One-shot make	Places the unit in "Emergency broadcast" mode, during which time an "Alert" announcement and an "Evacuation" announcement are broadcast.*1
13	Emergency stop activation	IN	One-shot make	Resets the unit from "Emergency broadcast" mode.
14	Emergency evacuation activation	IN	One-shot make	Places the unit in "Emergency broadcast" mode, during which time an "Evacuation" announcement is repeated.*1
15	Failure indicator control	IN	At make	The FAULT indicator lights to indicate external equipment failure.
16 | 20	GND			
21	Power switch on	OUT	Active Low	When the power switch is on by means of manual or external control
22	Communications error	OUT	Active Low	When communications cannot be achieved between the RM-200M and the VM amplifier or between VM amplifiers (High state when communications are restored.)
23	Failure indication	OUT	Active Low	When the FAULT indicator lamp is on.
24	Emergency Broadcast on	OUT	Active Low	When an Emergency broadcast is performed by the VM amplifier or the external equipment. (See the description of Pin 8 VM amplifier's broadcast cutoff.)
25	EV-200's failure	OUT	Active Low	When the EV-200 Voice Announcement Board fails.*1

*1 Requires installation of the optional EV-200 Voice Announcement Board.

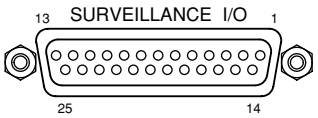
*2 Use this pin to cut off the VM amplifier's power amplifier output to allow the "Emergency broadcast" initiated by connected external equipment to go through.

SURVEILLANCE I/O CONNECTOR FUNCTIONS

The rear panel Surveillance I/O connector* permits "Speaker Line Reference Impedance Measurement (Initial Setting)" and "Speaker Line Check" to be enabled and monitored by connected external equipment.

* Requires installation of the optional SV-200M Surveillance Board.

SV-200M's D-sub female connector



Locking nut: 4-40 UNC

SURVEILLANCE I/O connector pin function table

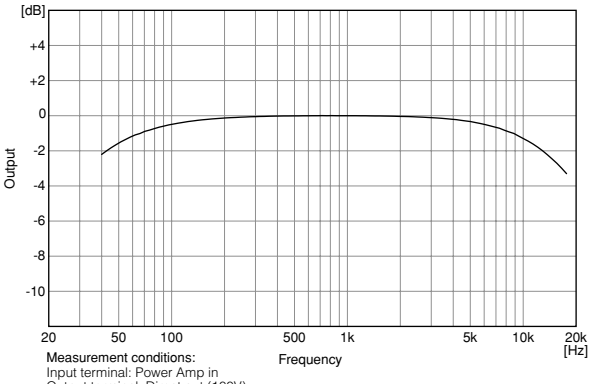
Pin No.	Signal name	IN/ OUT	Signal/logic	Function/status
1	Zone 1 short	OUT	Active Low	Zone 1 speaker line is shorted.
2	Zone 1 Disconnection	OUT	Active Low	Zone 1 speaker line is disconnected.
3	Zone 2 short	OUT	Active Low	Zone 1 speaker line is shorted.
4	Zone 2 Disconnection	OUT	Active Low	Zone 1 speaker line is disconnected.
5	Zone 3 short	OUT	Active Low	Zone 1 speaker line is shorted.
6	Zone 3 Disconnection	OUT	Active Low	Zone 1 speaker line is disconnected.
7	Zone 4 short	OUT	Active Low	Zone 1 speaker line is shorted.
8	Zone 4 Disconnection	OUT	Active Low	Zone 1 speaker line is disconnected.
9	Zone 5 short	OUT	Active Low	Zone 1 speaker line is shorted.
10	Zone 5 Disconnection	OUT	Active Low	Zone 1 speaker line is disconnected.
11	Ground fault	OUT	Active Low	Some of speaker lines are grounded.
12	Power amplifier failure	OUT	Active Low	Power amplifier is faulty.
13	Setting/checking busy	OUT	Active Low	During measurement of the speaker line reference impedance (Initial setting) or during check of the speaker lines.
14	Initial setting error	OUT	Active Low	The speaker line reference impedance couldn't be measured successfully. (The measured impedance exceeds the expected range or is unstable.)
15 | 22				Not used.
23	Speaker line check activation	IN	One-shot make	Check of the speaker line impedance starts.
24	Speaker line initial setting activation	IN	One-shot make	Measurement of the speaker line reference impedance (Initial setting) starts.
25	GND			

VM-2120/VM-2240

CHARACTERISTIC DIAGRAMS

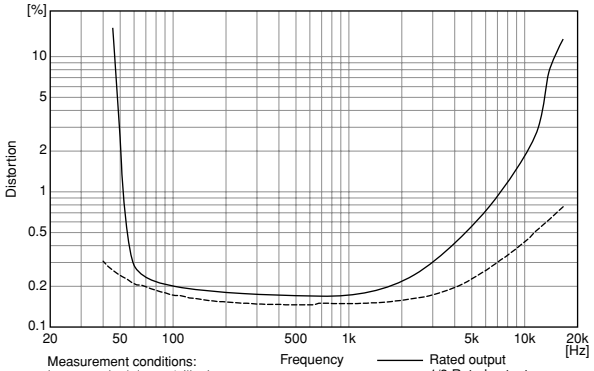
VM-2120

Frequency Response



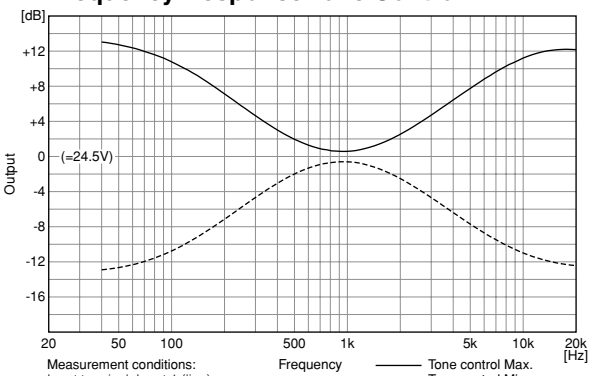
Measurement conditions:
Input terminal: Power Amp in
Output terminal: Direct out (100V)
Signal level: 1/3 rated output

Distortion vs Frequency



Measurement conditions:
Input terminal: Input 1 (line)
Output terminal: Direct out (100V)

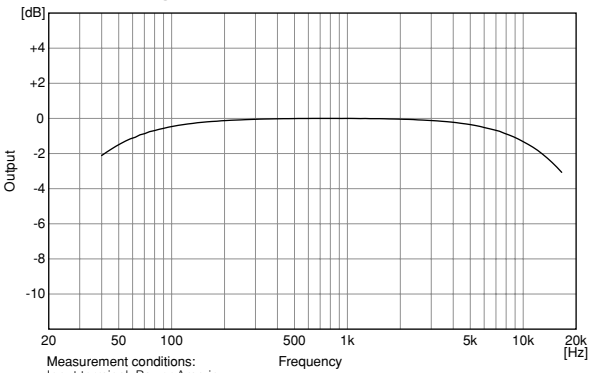
Frequency Response Tone Control



Measurement conditions:
Input terminal: Input 1 (line)
Output terminal: Direct out (100V)

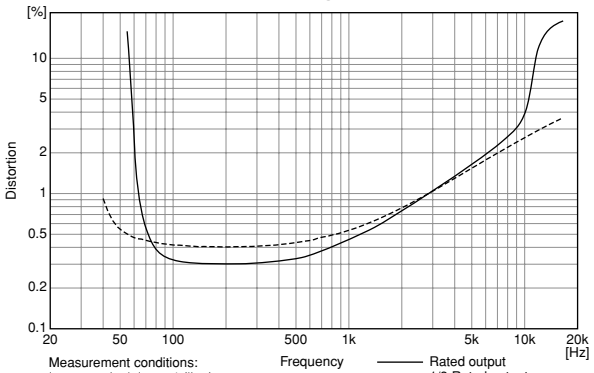
VM-2240

Frequency Response



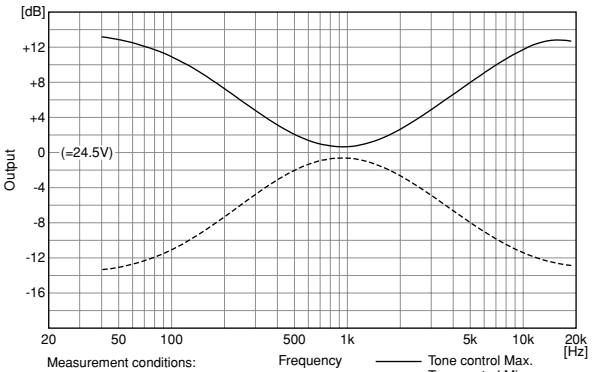
Measurement conditions:
Input terminal: Power Amp in
Output terminal: Direct out (100V)
Signal level: 1/3 rated output

Distortion vs Frequency



Measurement conditions:
Input terminal: Input 1 (line)
Output terminal: Direct out (100V)

Frequency Response Tone Control



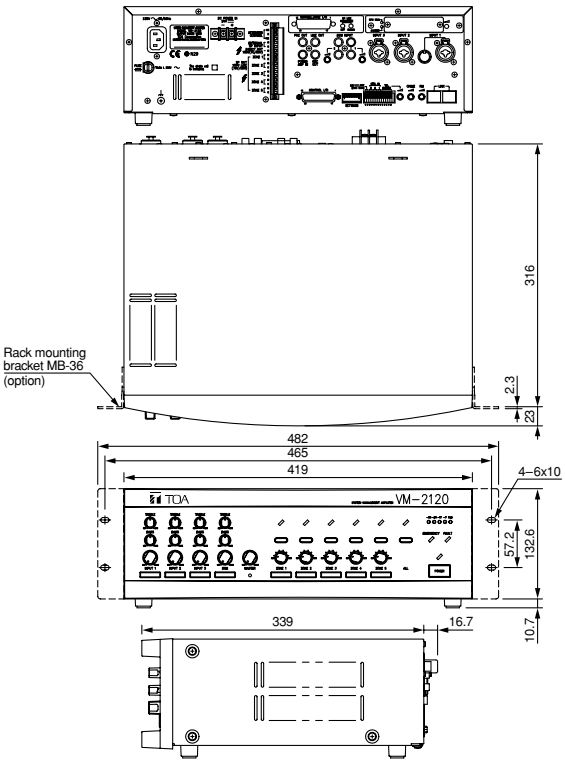
Measurement conditions:
Input terminal: Input 1 (line)
Output terminal: Direct out (100V)

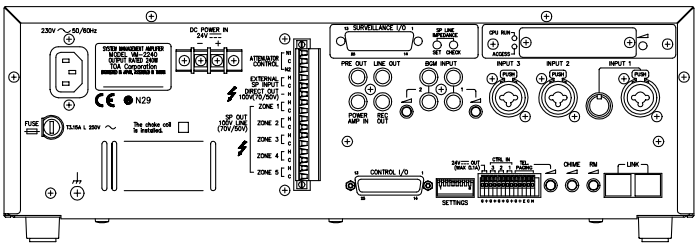
VM-2000 SERIES

APPEARANCE AND DIMENSIONAL DIAGRAMS

VM-2120/2240

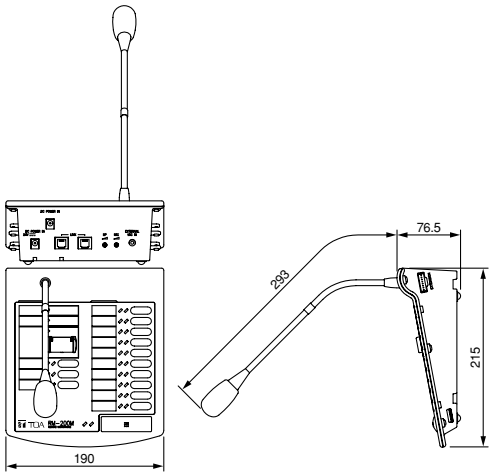
Unit: mm



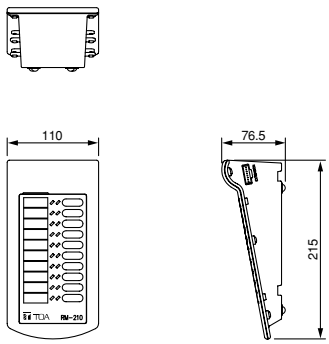


*This shows the ER/UK version

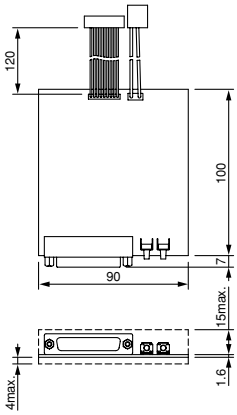
RM-200M



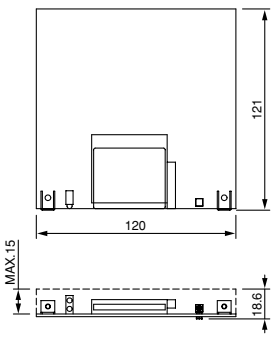
RM-210



SV-200M

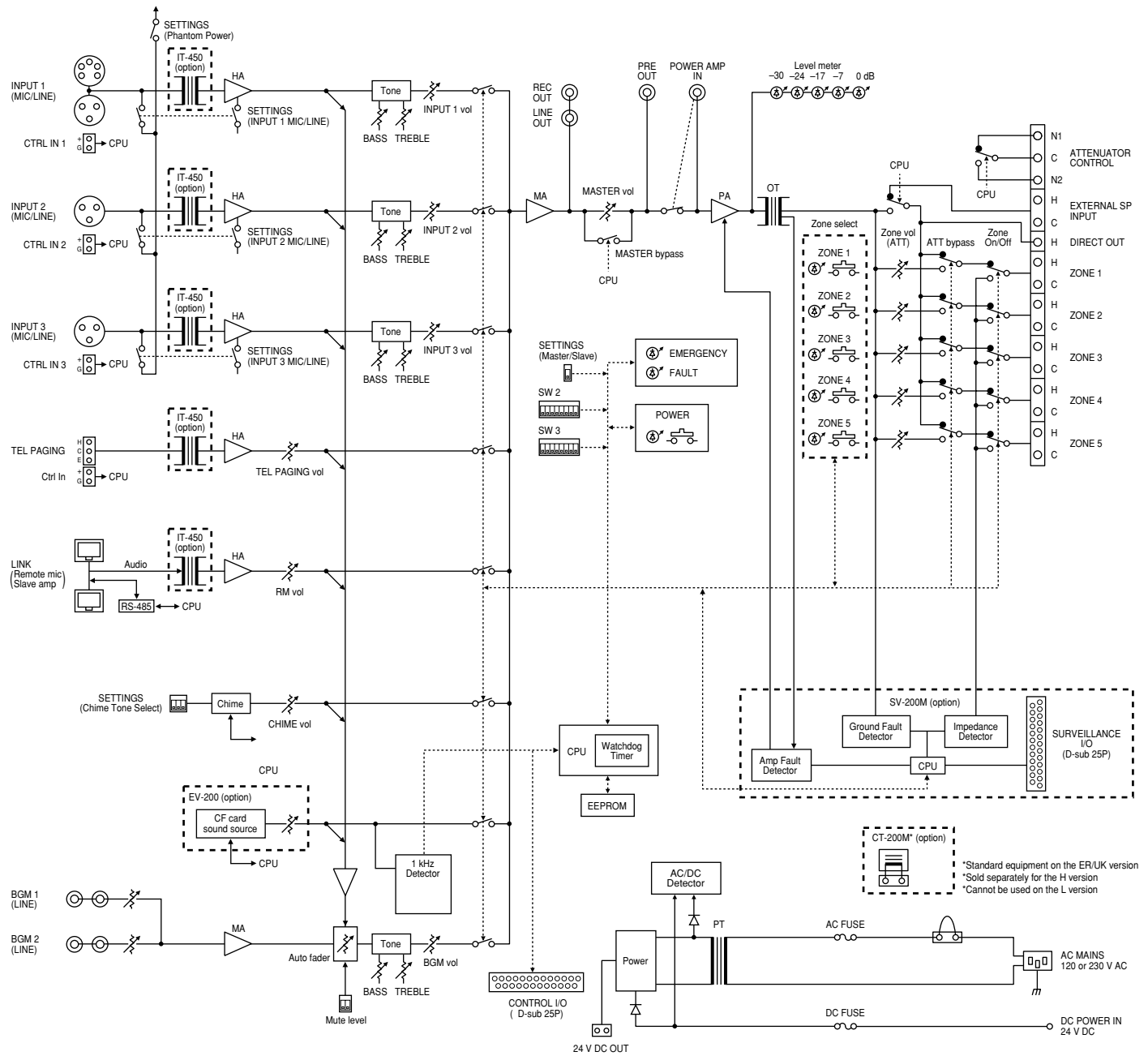


EV-200



VM-2000 SERIES

BLOCK DIAGRAMS



OPTIONS



IT-450
Input Transformer

The IT-450 input transformer can be used to isolate AUDIO INPUTS 1-3, the remote microphone, as well as the telephone paging input on the VM-2120/2240. Each transformer must be installed individually for an input to be isolated.

Impedance: 600Ω ±10%
Frequency Response: 200 – 10,000Hz



MB-36
Rack Mounting Brackets

The MB-36 Rack Mounting Brackets are to be used to install the VM-2120/2240 as a 3 unit-size component in an EIA Standard equipment rack.

Finish: Steel plate, dark gray

SPECIFICATIONS

Model No.	VM-2120 System Management Amplifier	VM-2240 System Management Amplifier
Power Requirement	AC: mains, 50/60 Hz DC: 24 V DC/7.5 A, M3.5 screw terminal, Barrier distance: 8 mm, Applicable cable diameter: AWG22 – AWG14	AC: mains, 50/60 Hz DC: 24 V DC/15 A, M3.5 screw terminal, Barrier distance: 8 mm, Applicable cable diameter: AWG22 – AWG14
Power Consumption on AC Mains	With no signal present: 37 W Under normal operating conditions according to EN60065: 1998 sec. 4.2: 107W With rated output signal: 201 W	With no signal present: 54 W Under normal operating conditions according to EN60065: 1998 sec. 4.2: 255 W With rated output signal: 549 W
Current Consumption on 24V DC Power Input	With no signal present: 0.7 A Under normal operating conditions according to EN60065: 1998 sec. 4.2: 2.1 A With rated output signal: 5.2 A	With no signal present: 1 A Under normal operating conditions according to EN60065: 1998 sec. 4.2: 5 A With rated output signal: 14 A
Rated Output	120 W	240 W
Output Voltage/Impedance	100 V/83Ω, 70 V/42Ω, 50 V/21Ω (selectable by the internal wiring change)	100 V/42Ω, 70 V/21Ω, 50 V/10Ω (selectable by the internal wiring change)
Frequency Response	50 – 16,000 Hz	
Distortion	Under 1%	
Signal-to-Noise Ratio	Over 60 dB	
Tone Control	Bass:100 Hz ±10 dB, Treble: 10 kHz ±10 dB (Inputs 1 – 3 and BGM individually adjustable.)	
Remote Microphone/ Expansion Amplifier Connection	2 RJ45 female connectors for connecting the RM-200M Remote Microphone and the VM-2120 or VM-2240 unit used as an expansion amplifier. Maximum distance: 800m in total, Link cable: Category 5 shielded Number of connectable RM-200M's: Up to 4 Twisted-Pair straight cable (TIA/EIA-568A standard)	
Input **Inputs 1 – 3:**	–60 dB*1 (MIC)/–10 dB*1 (LINE) (changeable), 600 Ω, electronically balanced*2, combined XLR connector (female)/phone jack (Only Input 1 is additionally equipped with DIN connector*3.)	
Telephone paging input:	Push-in terminal block*4 Voice sound: –10 dB*1, 10kΩ, electronically-balanced input with shield terminal*2 Control: No-voltage make contact input, open voltage: 30 V DC, short-circuit current: under 0.1 A	
BGM 1 - 2	–20 dB*1, 10 kΩ, RCA pin jack, monaural (internally mixed)	
Power amplifier input:	0 dB*1, 10 kΩ, RCA pin jack	
External speaker line input:	100 V line, for All-Zone Broadcast (This input is selected when the "Unit's broadcast cutoff" control is activated.)	
Output **Speaker output:**	Plug-in screw connector*5 5-zone selector with attenuator (all zones simultaneously selectable)	
Direct speaker line output:	Direct output from the power amplifier output transformer (attenuator bypassed), Plug-in screw connector*5	
Line output	0 dB*1, 10 kΩ, RCA pin jack	
Recording output	0 dB*1, 10 kΩ, RCA pin jack	
Preamplifier output	0 dB*1, 10 kΩ, RCA pin jack	
Control Input	For controlling Inputs 1– 3, Push-in terminal block No-voltage make contact input, open voltage: 3.3 V DC, short-circuit current: under 1 mA	
Control Input and Output	D-sub connector (25-pin, female) Input: No-voltage make contact input, open voltage: 3.3 V DC, short-circuit current: under 1 mA Output: Open collector output, withstand voltage: 30V DC, control current: under 10 mA (1)External control input •Activation of messages*6 •Activation of power •Activation and stop of Emergency Broadcast •Unit's broadcast cutoff (when activated by an external emergency equipment) (2)Status output •Irregularity of communications with the Remote Microphone and an expansion amplifier •AC power condition •DC power condition •Irregularity of the sound source of the Voice Announcement Board •Failure (FAULT) indication on •Power switch on	
External Attenuator Control Output	Plug-in screw connector*5, relay, no-voltage make contact output, transfer type, withstand voltage: 30 V DC, 125 V AC, contact current: under 7 A (DC), under 7 A (AC)	
Surveillance Input and Output*7	D-sub connector (25-pin, female) Input: No-voltage make contact input, open voltage: 3.3 V DC, short-circuit current: under 1 mA Output: Open collector output, withstand voltage: 30 V DC, control current: under 10 mA	
Power Supply	24 V DC/0.1 A, for supplying power to an optional Amplifier Control Unit RU-2001/2002, push-in terminal block*4	
Chime Tone	Built-in chime: 2-tone chime/2-tone chime (fast repeat)/4-tone chime (Up)/ Single-tone chime/4-tone chime (Up & Down)/Gong/off Voice Announcement Board sound source: Pre-recorded chime*6	
Function	Two units stacking (VM-2120 or VM-2240) Emergency broadcast (sequential control) Broadcast priority control Surveillance (failure detection) function*7 Power supply to only one Remote Microphone (RM-200M) Line resistance: Under 24 Ω (one way)	
Operating Temperature	0°C to +40°C	
Finish	Panel: ABS resin, dark gray, paint Case: Steel plate, dark gray, paint	
Dimensions	419 (W) ×143.3 (H) × 355.7 (D) mm	
Weight	12.5 kg	14.5 kg
Accessory	Power cable (2m) …1, Miniature type time-lag fuse…1, Name label…1, Volume cover…4	Power cable (2 m) …1, Miniature type time-lag fuse…1, Name label…1, Volume cover…4
Option	Rack mounting bracket: MB-36, Input transformer: IT-450, Voice announcement board: EV-200, Surveillance board: SV-200M	

*1 0 dB = 1 V
*2 Can be transformer-balanced with the addition of an optional IT-450 input transformer.
*3 For connection of the Paging Microphone PM-660D with a remote control switch.
*4 Usable cable diameter: AWG26-AWG20, 0.5 mm².
*5 Usable cable diameter: AWG24-AWG12, 2.5 mm².
*6 An optional EV-200 Voice Announcement Board is required.
The chime sound source must be pre-recorded into a CF (CompactFlash) card to be inserted into the EV-200 Board.
*7 An optional SV-200M Surveillance Board is required.

Model No.	RM-200M Remote Microphone
Power Requirement	24 V DC (Operating range: 14 – 28 V DC) Power input jack: Non-polarity type Usable power input plug*2: Outer diameter ø5.5 mm, inner diameter ø2.1 mm, length 9.5 mm
Current Consumption	100 mA maximum
Distortion	Under 1%
Frequency Response	100 – 20,000 Hz
Signal-to-Noise Ratio	Over 60 dB
Audio Output	0 dB*1, 600 Ω, balanced
Microphone	Unidirectional electret condenser microphone
Speaker Control	Zones 1 – 5 or Zones 1 – 10 (2 stacked amplifiers connection), Groups 1 – 2, and All-Zone Broadcast
Emergency Broadcast	Activation of Emergency Broadcast (pre-recorded announcement*3 or live microphone announcement) by Emergency Broadcast Switch
Voice Message Control	Activation of 5 messages*3
Volume Control	Microphone volume control
Connection Cable and Connector	Category 5 STP cable, RJ45 connector
Finish	ABS resin, bluish gray
Dimensions	190 (W) × 76.5 (H) × 215 (D) mm (Gooseneck microphone excluded)
Weight	750 g
Accessory	Link cable (3m) …1

*1 0 dB = 1 V
*2 Use the AC adapter AD-4800 optionally available as our service component.
*3 An optional EV-200 Board must be mounted in the VM-2120 or VM-2240 Amplifier.
The voice messages must be pre-recorded into a CF (CompactFlash) card to be inserted into the EV-200 Board.

Model No.	RM-210 Remote Microphone Extension Unit
Current Consumption	20 mA maximum (in terms of RM-200M's DC power input)
Connection	Connection to RM-200M by dedicated cable
Function	Activation of Voice Announcement Board's voice messages when controlling speakers in 10 zones at RM-200M
Finish	ABS resin, bluish gray
Dimensions	110 (W) × 76.5 (H) × 215 (D) mm
Weight	350 g
Accessory	Extension cable …1, Linkage bracket A…2, Linkage bracket B…1, Screw for linkage bracket…12

Model No.	EV-200 Voice Announcement Board
Power Requirement	24 V DC, 0.1 A
Power Consumption	3 W
Output	0 dB*1
Frequency Response	20 – 20,000 Hz (44.1 kHz sampling) 20 – 14,000 Hz (32 kHz sampling)
Distortion	Under 0.3% (44.1 kHz, recording method: Extremely High)
Memory Card	SanDisk*2 CompactFlash*2 card is optionally required. Number of mountable card: 1
Playback Mode	Single source playback
No. of Playback Program	8 programs
Operating Temperature	0°C to +50°C
Operating Humidity	Less than 90% (must be free from dew condensation)
Dimensions	120 (W) × 18.6 (H) × 121 (D) mm
Weight	110 g
Accessory	Mounting screw…2

*1 0 dB = 1 V
*2 Trademark of SanDisk Corporation.
Note: Use the CompactFlash card adapter on the market for recording by the EV-350R.

Model No.	SV-200M Surveillance Board
Power Requirement	24V DC
Current Consumption	0.1 A
Control Input and Output	Input: No-voltage make contact input, open voltage: 3.3 V DC, short circuit current: under 1 mA (1) Speaker line initial setting activation signal (2) Speaker line surveillance activation signal Output: Open collector output, withstand voltage: 30 V DC, control current: under 10 mA (1) Monitoring short or open of individual speaker line (zone 1 – 5) (2) Ground fault (insulation resistance: under 50 kΩ) (3) Power amplifier failures Connector: D-sub connector (25-pin, female)
Failure Detection	Power amplifier failure: 20 kHz pilot tone detection Speaker line failure: 40 Hz impedance detection
Speaker Line Surveillance	Speaker lines are automatically monitored at set time intervals
Set Time	(10 – 60 min, at 10 min intervals)
Operating Temperature	0°C to +50°C
Operating Humidity	Less than 90% (must be free from dew condition)
Weight	70 g

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