

# INTEGRATED VOICE EVACUATION SYSTEM



VX-2000 SERIES

## DESCRIPTION

The TOA VX-2000 Series broadcast system is designed for both general purpose and emergency broadcasts. It is comprised of the System Manager, Surveillance Frame, Power Amplifiers, Power Supply unit, Emergency Power Supply, and a user-specified number of Remote Microphones. The system complies with the EN 54\* standard and its failure detection circuitry operates continuously to check components and speaker lines for any irregularities. If detected, failure warnings are provided by way of an LED indicator and a buzzer.

\* EN 54 is a standard of the European Union (EU) for fire alarm systems, ensuring high product quality and reliability, and enabling better integration of Voice Alarm (VA) and Public Address (PA). EN 54 will play a significant role in the market for voice evacuation equipment, as the member states of the European Union replace their local standards with the EN 54 standard. All emergency voice evacuation systems marketed in the member states of the European Union are required to be certified to this standard.

The VX-2000 system is certified on the European Norm EN 54-16 with CPD number 1134-CPD-110.

The VX-2000DS (ER/UK version) Power manager and VX-200PS (ER/UK version) power supply are certified on the European Norm EN 54-4 with CPD number 1134-CPD-083.

## FEATURES

- **Microprocessor-controlled 4 audio signal bus matrix system** comprising System Manager VX-2000 for the input signal matrix and Surveillance Frame VX-2000SF for the output signal matrix.
- **Max. 18 inputs** {8 input slots, 8 Remote Microphones including Fireman's Mic, 2 EVs (Voice Announcement Board) and Chime} and 80 output zones (max. 8 Surveillance Frames) available.
- **Two different emergency messages** (Alert and Evacuation) **simultaneously available** if 2 EV-200M cards are installed.
- **Surveillance function for the critical speech path** from the microphone element of Fireman's Microphone(s) to each speaker line fully complies with the EN 54 standard.
- **Speaker line surveillance method** can be independently selected for each speaker line (Pilot tone detection, end of line detection or impedance comparison)
- Any **surveillance function will not interrupt** BGM distribution and paging announcements.
- **PC software available** for easy system configuring and parameter setting.
- **Yearly program timer function** for scheduled events. (10-Day Programs of 32 events each, 40 Holiday Programs, setting daylight saving time and adjusting time setting)
- **Monitor bus system allows Remote Monitoring** of the audio signal on output zones.
- Standard configuration of 16 control inputs and 16 control outputs **can be expanded up to 128 inputs and outputs.**
- A **standby amplifier** can be reserved for each Surveillance Frame.
- **All-call function still available at Fireman's Microphone(s)** even with CPU failure.
- All **Remote Microphone** (Fireman's Microphone) **switches** are assignable function switches.
- **LEDs on the Remote Microphone** (Fireman's Microphone) can be set as Fault Indicators.
- Remote Microphone (Fireman's Microphone) **function switches with 2 LEDs can be expanded up to 105 per unit** (with RM-210 Remote Microphone Extension Units).
- **Software-driven logging function** records the last 2000 events and downloads data to a PC.
- **Printable** software-driven Setting list and Block Diagram of Project
- **System configuration and connection check** function available during system installation.
- **9-band Graphic EQ card** available for each output zone.
- **DC power supply for whole system** excluding BGM sources minimizes use of AC cables.
- **System failures are automatically detected** such as general power amplifier failures and faults as well as DC fuse failures and power amplifier thermal faults.
- **Power amplifier standby function** maximizes battery-powered operation time.
- **Inspection mode** can be activated on setting software for emergency operation without requiring actual broadcasting.
- **Automatically reduces power consumption** when using the battery power supply.

# VX-2000

## System Manager

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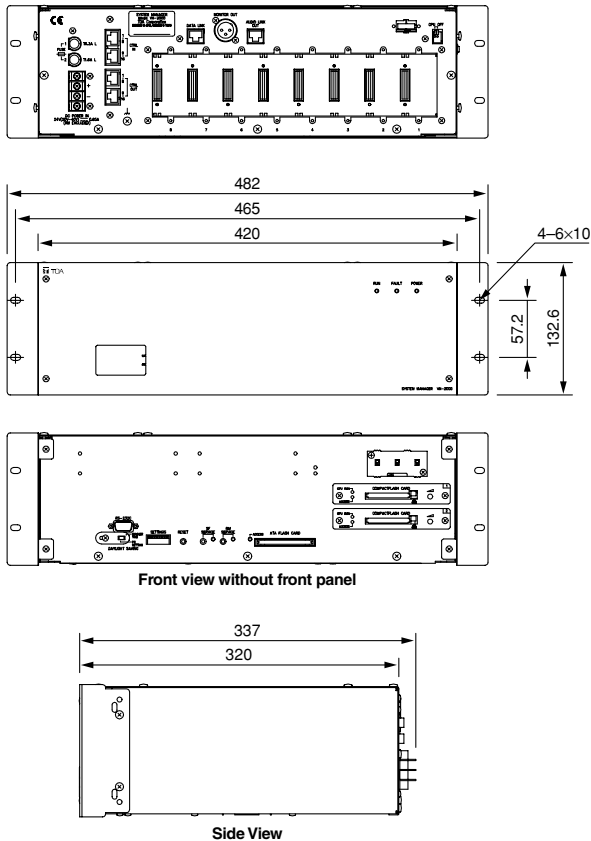


The VX-2000 System Manager is an input matrix unit that assigns input signals to 4 audio buses, and functions as the VX-2000 system's main controller. A total of up to 8 units of the VX-2000XI, VX-200XR, and 900 Series input modules can be mounted in a System Manager. The VX-2000 can control audio signal routing, priorities, and peripheral equipment, while input and output control settings are performed by way of a PC. Up to 2,000 system events and failures can also be recorded, and the log can be viewed from a PC.



Rear Panel

### APPEARANCE AND DIMENSIONAL DIAGRAM



### SPECIFICATIONS

| Model No.             | VX-2000<br>System Manager   |
|-----------------------|---|
| Power Source          | 24V DC (operating range: 20 – 40V DC)<br>M3.5 screw terminal, distance between barriers: 8.8m   |
| Current consumption   | Under 650mA (20V DC)  |
| Input                 | -20dB*, unbalanced, Number of module slots: 8<br>Usable module: VX-200XR, VX-200XI, 900 series plug-in modules (M-01F, M-01M, M-01P, M-01S, M-03P, M-51F, M-51S, M-51T, M-61F, M-61S, M-61T, U-01F, U-01P, U-01R, U-01S, U-01T, U-03R, U-03S, U-61S, U-61T) |
| Audio Link Output     | Number of audio buses: 4<br>0dB*, electronically balanced, RJ45 female connector<br>Twisted-pair straight cable (TIA/EIA-568A standard)   |
| Monitor Output        | 0dB*, electronically balanced, XLR receptacle (3 pins)  |
| Frequency Response    | 20Hz – 20kHz  |
| S/N Ratio             | Over 60dB   |
| Distortion            | Under 0.5%  |
| Cross Talk            | Under -60dB (1kHz, 0dB*)  |
| Control Input         | 16 inputs, no-voltage make contact, open voltage: 17V DC,<br>Short circuit current: Under 5mA, RJ45 connector × 2   |
| Control Output        | 16 outputs, open collector output, withstand voltage: 30V DC,<br>Control current: Under 5mA, RJ45 connector × 2   |
| Chime Tone            | Built-in chime: 4-tone chime (up)/4-tone chime (down)/2-tone chime/Gong   |
| Communication System  | PC (Setting software to be installed): D-sub connector (9 pins), cross cable, RS-232C<br>VX-2000SF: RJ45 female connector, Twisted-pair straight cable (TIA/EIA-568A standard), LONWORKS RS-485   |
| Operating Temperature | 0° C to +40° C  |
| Finish                | Panel: Surface-treated steel plate, black, 30% gloss, paint   |
| Dimensions            | 482 (W) × 132.6 (H) × 337 (D)mm   |
| Weight                | 6.4kg   |
| Accessory             | Rack mounting bracket (preinstalled on the unit) × 2, Rack mounting screw × 4, Fiber washer × 4, Blank panel × 7, Blank panel mounting screw × 14, Setting software installation CD × 1, Fuse (T1.6A L) × 1/(T6.3A L) × 1                                   |
| Option                | Voice announcement board: EV-200M, Isolation transformer: IT-450 (audio link output)  |

\* 0 dB = 1 V

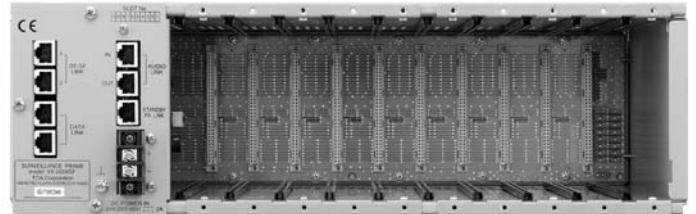
Note: LONWORKS is a trademark of Echelon Corporation.

# VX-2000SF

## Surveillance Frame

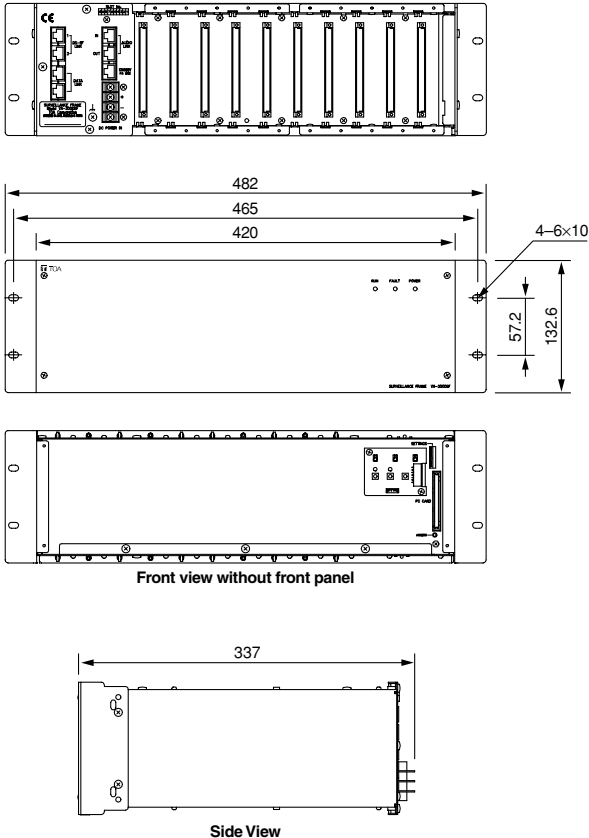


The VX-2000SF Surveillance Frame is the output matrix section of the VX-2000 system that assigns audio signals to individual zones from 4 audio buses. It can be extended to up to 8 units. A total of 10 units of output modules and control modules can be installed per VX-2000SF. The following 6 types of modules can be used: the VX-200SP Pilot Tone Detection module, The VX-200SP-2 Pilot Tone Detection module (End of Line), the VX-200SZ Impedance Detection module, the VX-200SZ-2 Impedance Detection module, the VX-200SI Control Input module, and the VX-200SO Control Output module.



Rear Panel

### APPEARANCE AND DIMENSIONAL DIAGRAM



### SPECIFICATIONS

| Model No.                      | VX-2000SF<br>Surveillance Frame  |
|--------------------------------|--|
| <b>Power Source</b>            | 24V DC (operating range: 20 – 40V DC)<br>M3.5 screw terminal, distance between barriers: 8.8mm   |
| <b>Current Consumption</b>     | Under 2A (40V DC)  |
| <b>Number of Module Slot</b>   | 10, usable modules: VX-200SZ, VX-200SP, VX-200SI, VX-200SO   |
| <b>Frequency Response</b>      | 20Hz – 20kHz   |
| <b>S/N Ratio</b>               | Over 60dB  |
| <b>Distortion</b>              | Under 0.5%   |
| <b>Cross Talk</b>              | Under -60dB (1kHz, 0dB*)   |
| <b>Audio Link Input/Output</b> | Number of audio busses: 4<br>0dB*, electronically balanced, RJ45 female connector<br>Twisted-pair straight cable (TIA/EIA-568A standard)   |
| <b>Standby Amplifier Link</b>  | RJ45 female connector for connecting the VP-2064, VP-2122, VP-2241, VP-2421<br>Power Amplifier.<br>Twisted-pair straight cable (TIA/EIA-568A standard)                               |
| <b>Communication System</b>    | VX-2000, VX-2000SF: RJ45 female connector x 2, LONWORKS RS-485<br>VX-2000DS: RJ45 female connector x 2, Twisted-pair straight cable (TIA/EIA-568A standard)                          |
| <b>Operating Temperature</b>   | 0° C to +40° C   |
| <b>Finish</b>                  | Panel: Surface-treated steel plate, black, 30% gloss, paint  |
| <b>Dimensions</b>              | 482 (W) x 132.6 (H) x 337 (D)mm  |
| <b>Weight</b>                  | 5.6kg  |
| <b>Accessory</b>               | Rack mounting bracket (preinstalled on the unit) x 2, Rack mounting screw x 4,<br>Fiber washer x 4, Blank panel x 9, Blank panel mounting screw x 18,<br>Standby amp. cable (3m) x 1 |
| <b>Option</b>                  | Isolation transformer: IT-450 (audio link output)  |

\* 0 dB = 1 V  
Note: LONWORKS is a trademark of Echelon Corporation.

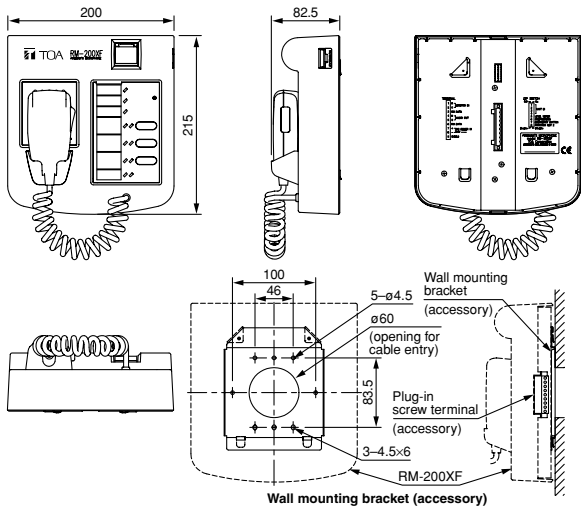
# RM-200XF

## Fireman's Microphone



A dedicated microphone for the VX-2000 system, the RM-200XF is designed to be exclusively used for emergency broadcast, however it can be used for general-purpose broadcast applications as well.

### APPEARANCE AND DIMENSIONAL DIAGRAM



### SPECIFICATIONS

| Model No.                      | RM-200XF<br>Fireman's Microphone   |
|--------------------------------|--|
| Power Source                   | 24V DC (operating range: 16 – 40V DC)  |
| Current Consumption            | Under 200mA (RM-200XF), 850mA (with 10 RM-210s connected)  |
| Audio Output                   | 0dB*, 600Ω, balanced   |
| Hand-Held Microphone           | Dynamic microphone, Function switch (default: Press-to-talk), Microphone element fault detection       |
| Distortion                     | Under 1%   |
| Frequency Response             | 200Hz – 15kHz  |
| S/N Ratio                      | 55dB or more   |
| Internal Monitor Speaker       | 200mW  |
| Volume Control                 | Microphone volume control, Monitor speaker volume control  |
| Number of Function Keys        | 5 (including Hand-held microphone's switch), extendable up to 105 (with 10 RM-210s connected)          |
| Key Extension                  | 10 keys extension per RM-210, EXTENSION connector  |
| Number of Connectable Units    | 4  |
| Communication System           | LONWORKS twisted pair free topology transceiver  |
| Connection Cable and Connector | Category 5 STP cable, plug-in screw connector  |
| Communication Distance         | 500m (Free topology wiring)  |
| Finish                         | ABS resin, blueish gray (PANTONE 538 or its equivalent)  |
| Dimensions                     | 200 (W) × 215 (H) × 82.5 (D)mm (excluding the coiled cord)   |
| Weight                         | 1.2kg  |
| Accessory                      | Plug-in screw terminal × 1, Wall mounting bracket × 1, Wall mounting screw × 2, Box mounting screw × 2 |
| Applicable Box                 | YS-11A   |

\* 0 dB = 1 V  
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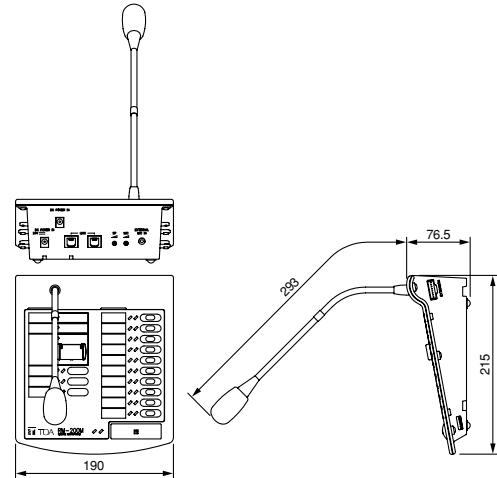
# RM-200X

## Remote Microphone



The RM-200X is a dedicated unit for the VX-2000 system, and permits emergency broadcast as well as general-purpose broadcast.

### APPEARANCE AND DIMENSIONAL DIAGRAM



### SPECIFICATIONS

| Model No.                      | RM-200X<br>Remote Microphone  |
|--------------------------------|---|
| Power Source                   | 24V DC (operating range: 16 – 40V DC), supplied from RJ45 connector or power input jack (non-polarity type)<br>Usable power input plug: 5.5mm outer diameter, 2.1mm inner diameter, and 9.5mm long. |
| Current Consumption            | Under 200mA (RM-200X), 750mA (with 9 RM-210s connected)   |
| Audio Output                   | 0dB*, 600Ω, balanced, RJ45 connector  |
| Gooseneck Microphone           | Unidirectional electret condenser microphone  |
| External Microphone Input      | -40dB*, 2.2kΩ, unbalanced, mini jack, phantom powering  |
| Distortion                     | Under 1%  |
| Frequency Response             | 100Hz – 20kHz   |
| S/N Ratio                      | 60dB or more  |
| Internal Monitor Speaker       | 200mW   |
| Volume Control                 | Microphone volume control, Monitor speaker volume control   |
| Number of Function Keys        | 15, extendable up to 105 (with 9 RM-210s connected)   |
| Key Extension                  | 10 keys extension per RM-210, EXTENSION connector   |
| Number of Connectable Units    | 8 (include RM-200XF)  |
| Communication System           | LONWORKS twisted pair free topology transceiver   |
| Connection Cable and Connector | Category 5 STP cable, RJ45 connector  |
| Communication Distance         | 500m (Free topology wiring)   |
| Finish                         | ABS resin, blueish gray (PANTONE 538 or its equivalent)   |
| Dimensions                     | 190 (W) × 76.5 (H) × 215 (D)mm (gooseneck microphone excluded)  |
| Weight                         | 850g  |

\* 0 dB = 1 V  
 Note: LONWORKS is a trademark of Echelon Corporation.

# RM-210

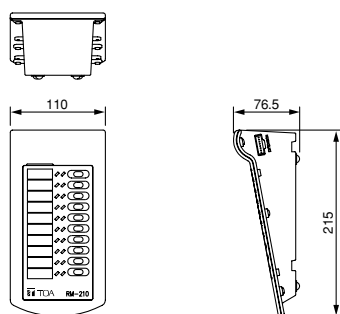
## Remote Microphone Extension

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The RM-210 is an extension unit for increasing the number of function keys of TOA's RM-200M, RM-200XF and RM-200X Remote Microphones.

### APPEARANCE AND DIMENSIONAL DIAGRAM

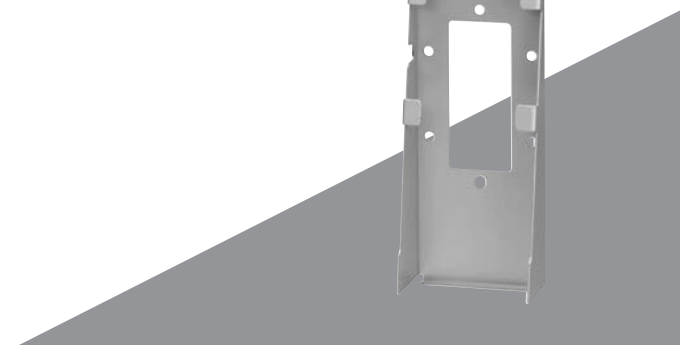


### SPECIFICATIONS

| Model No.               | RM-210<br>Remote Microphone Extension   |
|-------------------------|---|
| Current Consumption     | 20mA max. (in terms of RM-200M's DC power input)<br>75mA max. (in terms of DC power inputs of RM-200X and RM-200XF)<br>80mA max. (in terms of RM-200S's DC power input) |
| Connection              | Connection by way of dedicated cable  |
| Number of Function Keys | 10  |
| Finish                  | ABS resin, blueish gray (PANTONE 538 or its equivalent)   |
| Dimensions              | 110 (W) × 76.5 (H) × 215 (D)mm  |
| Weight                  | 350g  |
| Accessory               | Extension cable × 1, Linkage bracket A × 2, Linkage bracket B × 1,<br>Screw for linkage bracket × 12  |

# WB-RM200

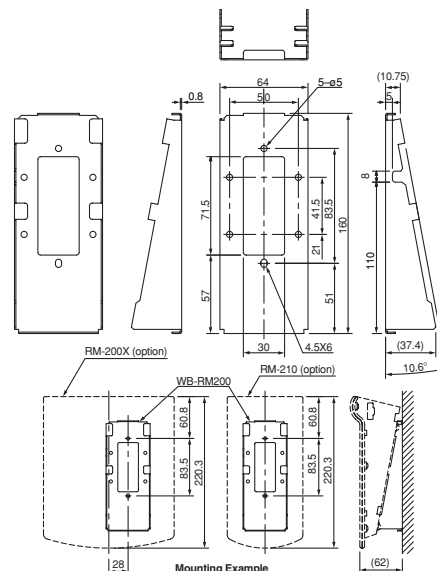
## Wall Mounting Bracket



The WB-RM200 is to mount RM-200X and RM-210 on the wall.

- **Finish:** Surface-treated steel plate, black paint
- **Weight:** 100g

### APPEARANCE AND DIMENSIONAL DIAGRAM



## General Input Modules

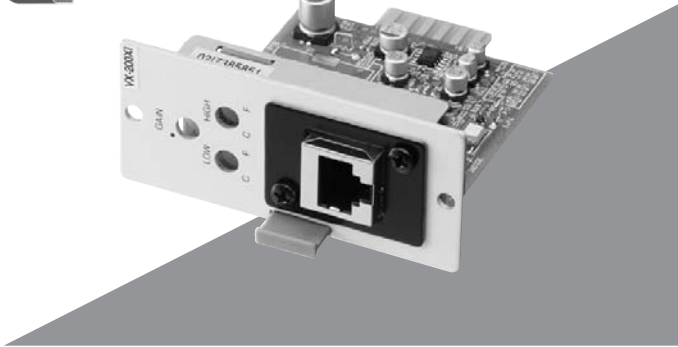


U-01R, U-03R, U-01F, for the line level input with different input connectors. M-01F, M-01T for the microphone level input.

# VX-200XI

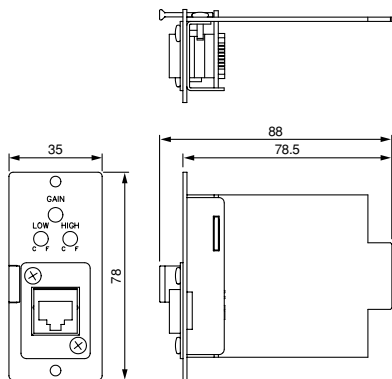
## Audio Input Module with Control Input

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The VX-200XI module is designed to be used in conjunction with the VX-2000 System Manager, and comes with control input terminals, low-cut and high-cut filters, and gain controls.

### APPEARANCE AND DIMENSIONAL DIAGRAM



### SPECIFICATIONS

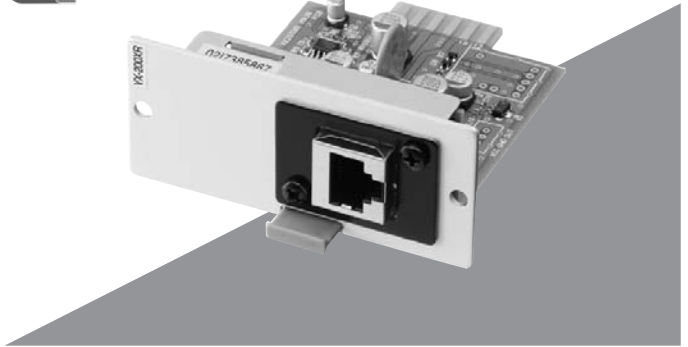
| Model No.                              | VX-200XI<br>Audio Input Module with Control Input   |
|--|---|
| Power Source                           | Supplied from VX-2000   |
| Current Consumption                    | Under 30mA  |
| Input Sensitivity (Rated Output -20dB) | MIC: -70 to -42.5dB* (adjustable)<br>LINE: -20 to +7.5dB* (adjustable)<br>MIC or LINE selectable by the built-in switch |
| Low Cut Filter (100Hz)                 | 9 to 15dB attenuation (adjustable)  |
| High Cut Filter (10kHz)                | 8 to 14dB attenuation (adjustable)  |
| Distortion                             | Under 0.5%  |
| Frequency Response                     | 50 - 20,000Hz   |
| Phantom Power                          | 15V (open), 6V (current consumption: 3.3mA)   |
| Control Input                          | No-voltage make contact, open voltage: 17V DC, short-circuit current: Under 5mA   |
| Input Connector                        | RJ45 female connector<br>Twisted-pair straight cable (TIA/EIA-568A standard)  |
| Finish                                 | Panel: Aluminum, hairline   |
| Dimensions                             | 35 (W) × 78 (H) × 88 (D)mm  |
| Weight                                 | 70g   |
| Accessory                              | Mounting screw × 2  |
| Option                                 | Isolation transformer: IT-450   |
| Applicable Model                       | VX-2000   |

\*0 dB = 1V

# VX-200XR

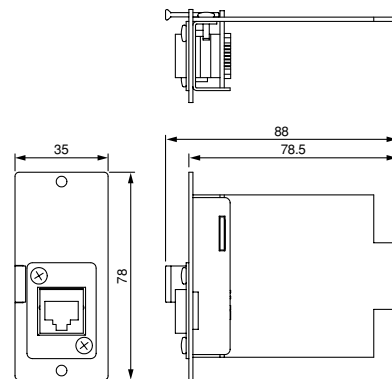
## Remote Microphone Input Module

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The VX-200XR module is designed to be used with the RM-200X Remote Microphone or RM-200XF Fireman's Microphone. Insert one of these modules into the VX-2000's input module slot for each Remote or Fire Microphone used in the system.

### APPEARANCE AND DIMENSIONAL DIAGRAM

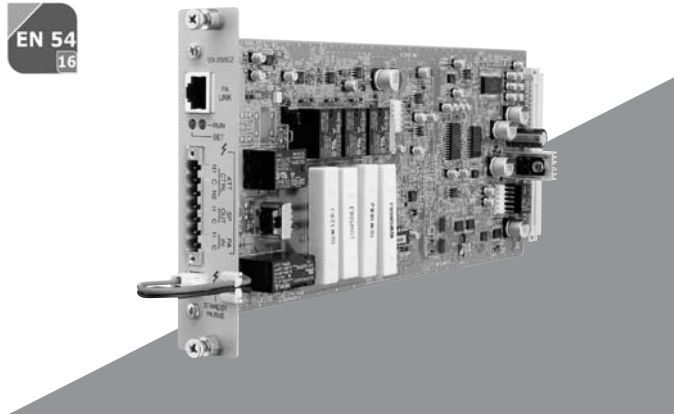


### SPECIFICATIONS

| Model No.                     | VX-200XR<br>Remote Microphone Input Module                                   |
|-------------------------------|--|
| Power Source                  | Supplied from VX-2000  |
| Current Consumption           | Under 17mA   |
| Connectable Remote Microphone | RM-200X and RM-200XF   |
| Input Connector               | RJ45 female connector<br>Twisted-pair straight cable (TIA/EIA-568A standard) |
| Finish                        | Panel: Aluminum, hairline  |
| Dimensions                    | 35 (W) × 78 (H) × 88 (D)mm   |
| Weight                        | 70g  |
| Accessory                     | Mounting screw × 2   |
| Applicable Model              | VX-2000  |

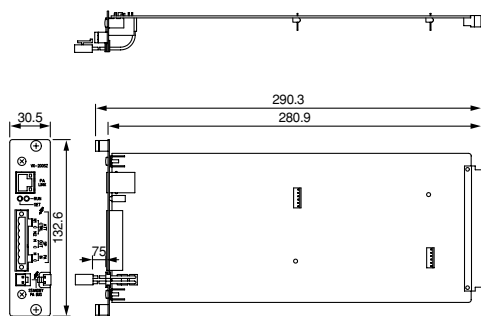
# VX-200SZ

## Impedance Detection Module



The VX-200SZ is an audio signal output module of the VX-2000 system with speaker line impedance detection. This module is to be mounted in the VX-2000SF Surveillance Frame and detects speaker line short circuits, open circuits by comparing impedance, and ground fault.

### APPEARANCE AND DIMENSIONAL DIAGRAM



### SPECIFICATIONS

| Model No.                          | VX-200SZ<br>Impedance Detection Module   |
|------------------------------------|--|
| Power Source                       | Supplied from VX-2000SF  |
| Current Consumption                | Under 150mA  |
| Power Amplifier Link               | RJ45 female connector for connecting the VP-2064, VP-2122, VP-2241, VP-2421 Power Amplifier.<br>Twisted-pair straight cable (TIA/EIA-568A standard)  |
| External Attenuator Control Output | Plug-in screw connector, relay, no-voltage make contact output, transfer type, withstand voltage: 30V DC, 250V AC, contact current: Under 7A (DC), under 7A (AC)<br>Applicable cable diameter: AWG24 – AWG16 |
| Speaker Output                     | Plug-in screw connector<br>Applicable cable diameter: AWG24 – AWG16  |
| Power Amplifier Input              | Plug-in screw connector for connecting the VP-2064, VP-2122, VP-2241, VP-2421 Power Amplifier.<br>Applicable cable diameter: AWG24 – AWG16   |
| Fault Detection System             | Short circuit, open circuit (impedance detection method), ground fault   |
| Finish                             | Panel: Surface-treated steel plate   |
| Dimensions                         | 30.5 (W) × 132.6 (H) × 290.3 (D)mm   |
| Weight                             | 320g   |
| Accessory                          | Plug-in screw terminal × 1   |
| Option                             | Equaliser card: VX-200SE   |
| Applicable Model                   | VX-2000SF  |

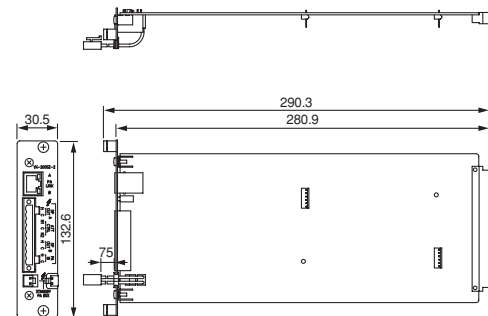
# VX-200SZ-2

## Impedance Detection Module



The VX-200SZ-2 is an audio signal output module of the VX-2000 system with speaker line impedance detection. This module is to be mounted in the VX-2000SF Surveillance Frame and detects speaker line short circuits, open circuits by comparing impedance, and ground fault. Since the module is equipped with 2 speaker outputs (A and B), broadcasts can be maintained even if one of the two outputs fails. Failures are indicated by the LED on the panel.

### APPEARANCE AND DIMENSIONAL DIAGRAM

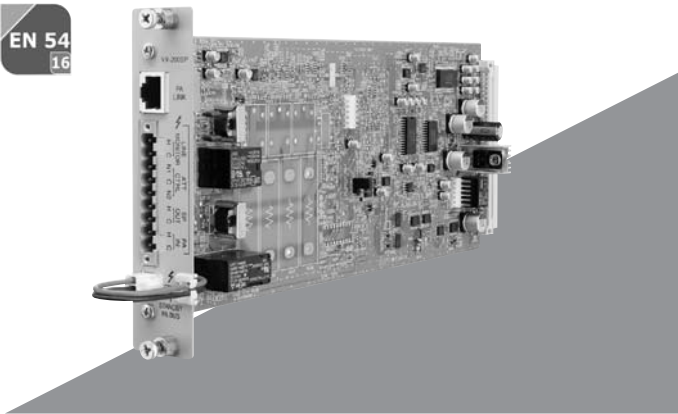


### SPECIFICATIONS

| Model No.                          | VX-200SZ-2<br>Impedance Detection Module   |
|------------------------------------|--|
| Power Source                       | Supplied from VX-2000SF  |
| Current Consumption                | Under 170mA  |
| Power Amplifier Link               | RJ45 female connector for connecting the VP-2064, VP-2122, VP-2241, VP-2421 Power Amplifier.<br>Twisted-pair straight cable (TIA/EIA-568A standard)  |
| External Attenuator Control Output | Plug-in screw connector, relay, no-voltage make contact output, transfer type, withstand voltage: 30V DC, 250V AC, contact current: Under 7A (DC), under 7A (AC)<br>Applicable cable diameter: AWG 24 – AWG 16 |
| Speaker Output                     | 2 outputs (A, B), plug-in screw connector<br>Applicable cable diameter: AWG 24 – AWG 16  |
| Power Amplifier Input              | Plug-in screw connector for connecting the VP-2064, VP-2122, VP-2241, VP-2421 Power Amplifier.<br>Applicable cable diameter: AWG 24 – AWG 16   |
| Fault Detection System             | Short circuit, open circuit (impedance detection method), ground fault   |
| Finish                             | Panel: Surface-treated steel plate   |
| Dimensions                         | 30.5 (W) × 132.6 (H) × 290.3 (D)mm   |
| Weight                             | 335g   |
| Accessory                          | Plug-in screw terminal × 1   |
| Option                             | Equaliser card: VX-200SE   |
| Applicable Model                   | VX-2000SF  |

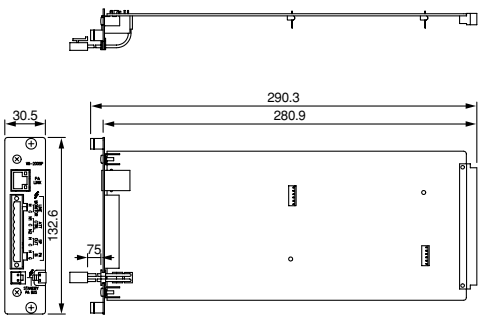
# VX-200SP

## Pilot Tone Detection Module



The VX-200SP is an audio signal output module of the VX-2000 system with speaker line pilot tone detection. This module is to be mounted in the VX-2000SF Surveillance Frame and detects speaker line short circuits, open circuits by monitoring for the presence of a pilot signal, and ground fault.

### APPEARANCE AND DIMENSIONAL DIAGRAM

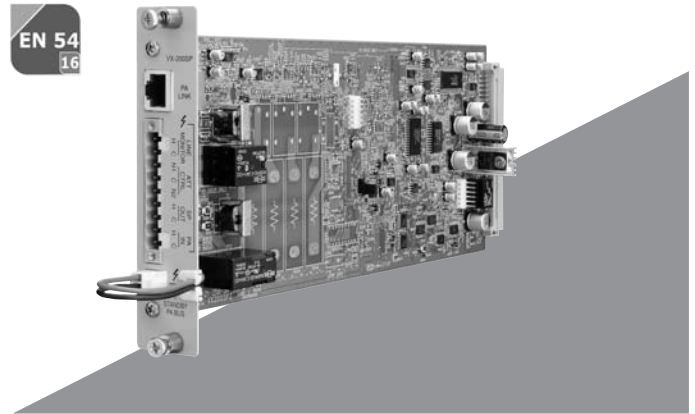


### SPECIFICATIONS

| Model No.                          | VX-200SP<br>Pilot Tone Detection Module  |
|------------------------------------|--|
| Power Source                       | Supplied from VX-2000SF  |
| Current Consumption                | Under 100mA  |
| Power Amplifier Link               | RJ45 female connector for connecting the VP-2064, VP-2122, VP-2241, VP-2421 Power Amplifier.<br>Twisted-pair straight cable (TIA/EIA-568A standard)  |
| Line Monitor                       | Plug-in screw connector<br>Applicable cable diameter: AWG24 – AWG16  |
| External Attenuator Control Output | Plug-in screw connector, relay, no-voltage make contact output, transfer type, withstand voltage: 30V DC, 250V AC, contact current: Under 7A (DC), under 7A (AC)<br>Applicable cable diameter: AWG24 – AWG16 |
| Speaker Output                     | Plug-in screw connector<br>Applicable cable diameter: AWG24 – AWG16  |
| Power Amplifier Input              | Plug-in screw connector for connecting the VP-2064, VP-2122, VP-2241, VP-2421 Power Amplifier.<br>Applicable cable diameter: AWG24 – AWG16   |
| Fault Detection System             | Short circuit, open circuit (pilot tone detection method), ground fault  |
| Finish                             | Panel: Surface-treated steel plate   |
| Dimensions                         | 30.5 (W) × 132.6 (H) × 290.3 (D)mm   |
| Weight                             | 240g   |
| Accessory                          | Plug-in screw terminal × 1   |
| Option                             | Equaliser card: VX-200SE   |
| Applicable Model                   | VX-2000SF  |

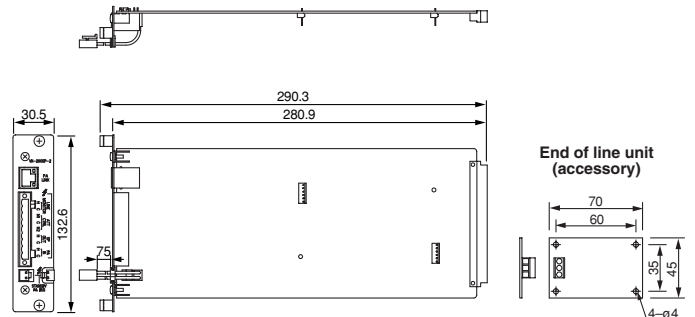
# VX-200SP-2

## Pilot Tone Detection Module



The VX-200SP-2 is an audio signal output module of the VX-2000 system with speaker line pilot tone detection. This module is to be mounted in the VX-2000SF Surveillance Frame and detects speaker line short circuits, open circuits by monitoring for the presence of a pilot signal, and ground fault. Connecting the supplied line to the end of the speaker line eliminates the necessity of using the speaker line for line monitoring. However, the shielded cable must be used for the speaker line.

### APPEARANCE AND DIMENSIONAL DIAGRAM



### SPECIFICATIONS

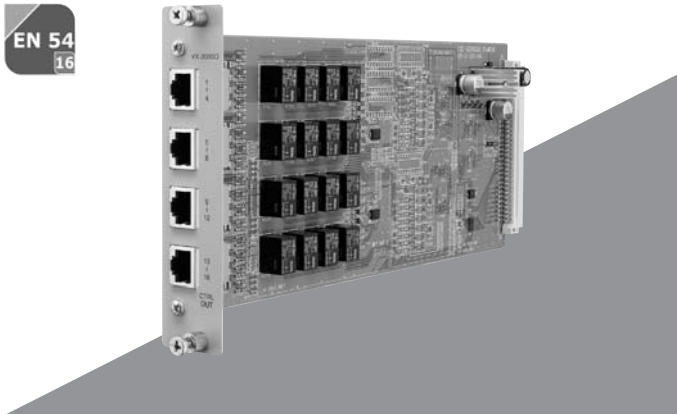
| Model No.                           | VX-200SP-2<br>Pilot Tone Detection Module  |
|-------------------------------------|--|
| Power Source                        | Supplied from VX-2000SF  |
| Current Consumption                 | Under 100mA  |
| Power Amplifier Link                | RJ45 female connector for connecting the VP-2064, VP-2122, VP-2241, VP-2421 Power Amplifier.<br>Twisted-pair straight cable (TIA/EIA-568A standard)  |
| Line Monitor*                       | Plug-in screw connector<br>Applicable cable diameter: AWG 24 – AWG 16  |
| External Attenuator Control Output  | Plug-in screw connector, relay, no-voltage make contact output, transfer type, withstand voltage: 30V DC, 250V AC, contact current: Under 7A (DC), under 7A (AC)<br>Applicable cable diameter: AWG 24 – AWG 16 |
| Speaker Output                      | Plug-in screw connector<br>Applicable cable diameter: AWG 24 – AWG 16  |
| Power Amplifier Input               | Plug-in screw connector for connecting the VP-2064, VP-2122, VP-2241, VP-2421 Power Amplifier.<br>Applicable cable diameter: AWG 24 – AWG 16   |
| Fault Detection System              | Short circuit, open circuit (pilot tone detection method), ground fault  |
| Finish                              | Panel: Surface-treated steel plate   |
| Dimensions                          | 30.5 (W) × 132.6 (H) × 290.3 (D)mm   |
| Weight                              | 235g   |
| Accessory                           | Plug-in screw terminal × 1, End of line unit × 1   |
| Option                              | Equaliser card: VX-200SE   |
| Applicable Model                    | VX-2000SF  |
| <b>End of line unit (accessory)</b> |  |
| Power Source                        | Supplied from the VX-200SP-2 (Generated by 40Hz sine wave)   |
| Speaker Line Connections            | Screw connector, Applicable cable diameter: AWG 24 – AWG 16  |
| In Case of Normal                   | Terminated by 470kΩ between the speaker line and the shield  |
| In Case of Open                     | Opened between the speaker line and shield   |
| Weight                              | 22g  |

\* Connect to Speaker Output.



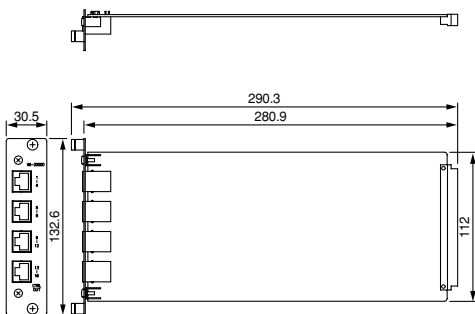
# VX-200SO

## Control Output Module



TOA's VX-200SO Control Output Module is used to increase the number of control outputs to be used in the VX-2000 system. It features 16 control outputs and is mounted in the VX-2000SF Surveillance Frame.

### APPEARANCE AND DIMENSIONAL DIAGRAM

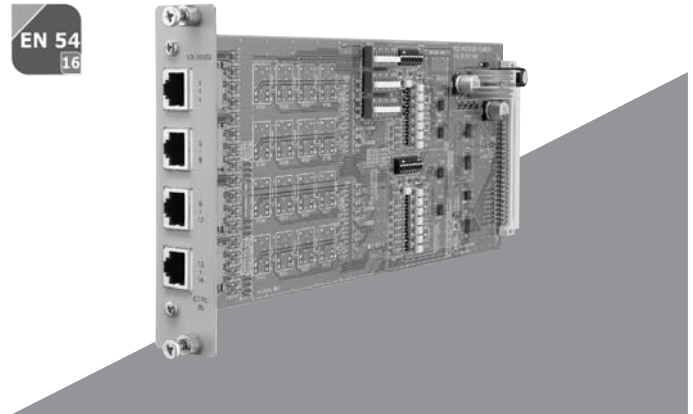


### SPECIFICATIONS

| Model No.           | VX-200SO<br>Control Output Module   |
|---------------------|---|
| Power Source        | Supplied from VX-2000SF   |
| Current Consumption | Under 150mA   |
| Control Output      | 16 outputs, no-voltage make contact, contact capacity: 28V DC, 1A, RJ45 connector |
| Finish              | Panel: Surface-treated steel plate  |
| Dimensions          | 30.5 (W) × 132.6 (H) × 290.3 (D)mm  |
| Weight              | 250g  |
| Applicable Model    | VX-2000SF   |

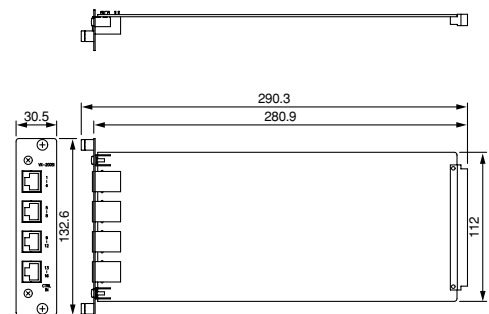
# VX-200SI

## Control Input Module



TOA's VX-200SI Control Input Module is used to increase the number of control inputs to be used in the VX-2000 system. It features 16 control inputs and is mounted in the VX-2000SF Surveillance Frame.

### APPEARANCE AND DIMENSIONAL DIAGRAM



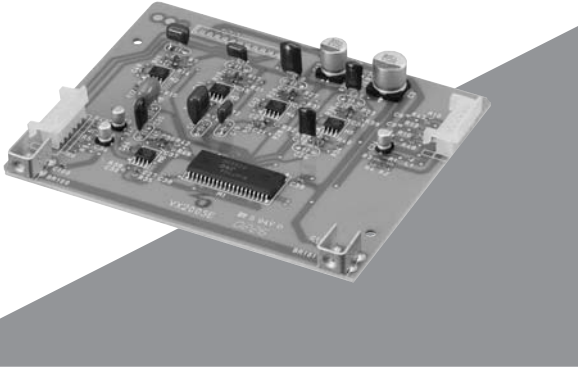
### SPECIFICATIONS

| Model No.           | VX-200SI<br>Control Input Module  |
|---------------------|---|
| Power Source        | Supplied from VX-2000SF   |
| Current Consumption | Under 100mA   |
| Control Input       | 16 inputs, no-voltage make contact, open voltage: 24V DC, short circuit current: under 10mA, RJ45 connector |
| Finish              | Panel: Surface-treated steel plate  |
| Dimensions          | 30.5 (W) × 132.6 (H) × 290.3 (D)mm  |
| Weight              | 200g  |
| Applicable Model    | VX-2000SF   |

# VX-200SE

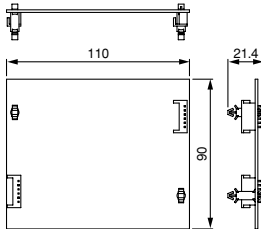
Equaliser Card

EN 54  
16



The VX-200SE Equaliser is a 9-band, 1-channel equaliser to be mounted on the circuit board of the VX-200SP/VX-200SP-2 Pilot Tone Detection module or VX-200SZ/VX-200SZ-2 Impedance Detection module.

## APPEARANCE AND DIMENSIONAL DIAGRAM



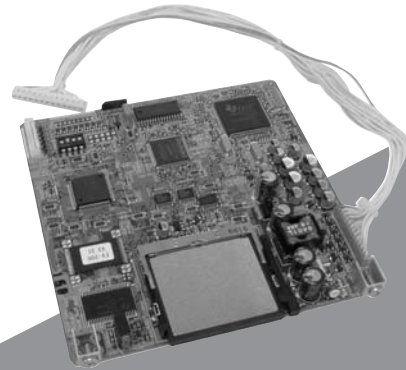
## SPECIFICATIONS

| Model No.                  | VX-200SE<br>Equaliser Card                               |
|----------------------------|--|
| Power Source               | Supplied from VX-200SZ, VX-200SP                         |
| Current Consumption        | Under 50mA   |
| Equaliser Centre Frequency | 80Hz, 125Hz, 250Hz, 500Hz, 1kHz, 2kHz, 4kHz, 8kHz, 12kHz |
| Gain Range                 | ±12dB, adjustable in 2dB steps                           |
| Dimensions                 | 110 (W) × 90 (H) × 21.4 (D)mm                            |
| Weight                     | 50g  |
| Applicable Model           | VX-200SZ, VX-200SP                                       |

# EV-200M

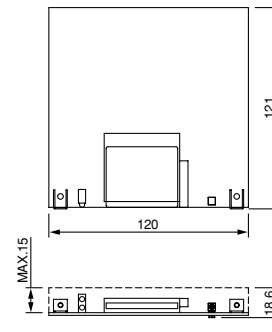
Voice Announcement Board

EN 54  
16



The EV-200M is a playback-only Voice Announcing board to play back the messages recorded on TOA's EV-350R. The EV-200M is designed to be built in the VX-2000.

## APPEARANCE AND DIMENSIONAL DIAGRAM



## SPECIFICATIONS

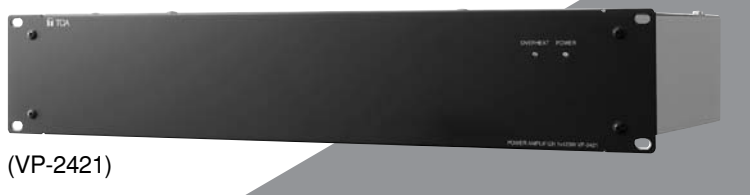
| Model No.               | EV-200M<br>Voice Announcement Board  |
|-------------------------|--|
| Power Source            | 24 V DC, 0.2 A   |
| Power Consumption       | 5 W  |
| Output                  | 0 dB*1   |
| Frequency Response      | 20 – 20,000 Hz (44.1 kHz sampling)<br>20 – 14,000 Hz (32 kHz sampling)         |
| Distortion              | Under 0.3% (44.1 kHz, recording method: Extremely High)                        |
| Playback Mode           | Single source playback   |
| No. of Playback Program | 8 programs   |
| Operating Temperature   | 0°C to +50°C   |
| Operating Humidity      | Less than 90% RH (no condensation)   |
| Dimensions              | 120 (W) × 18.6 (H) × 121 (D) mm  |
| Weight                  | 120 g  |
| Accessory               | Mounting screw × 2,<br>CompactFlash card (128MB, preinstalled on the unit) × 1 |

\*1 0 dB = 1 V

Note: Use the CompactFlash card adapter on the market for recording by the EV-350R.

# Power Amplifiers

EN 54  
16

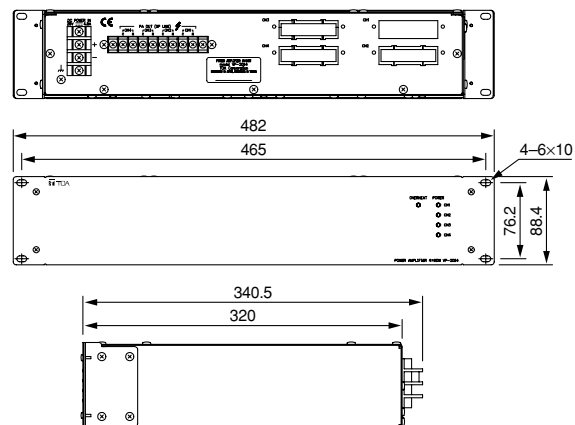


(VP-2421)

Power Amplifier uses the VP-200VX Power Amplifier Input Module per channel.

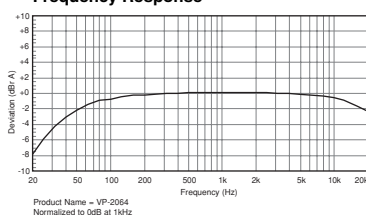
## APPEARANCE AND DIMENSIONAL DIAGRAM

### VP-2064

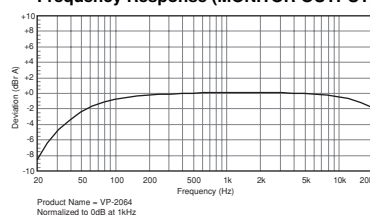


## CHARACTERISTIC DIAGRAMS EXAMPLE

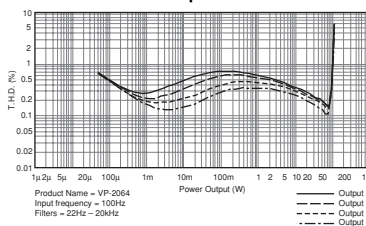
Frequency Response



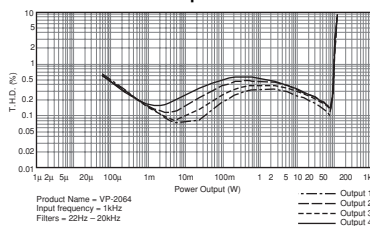
Frequency Response (MONITOR OUTPUT)



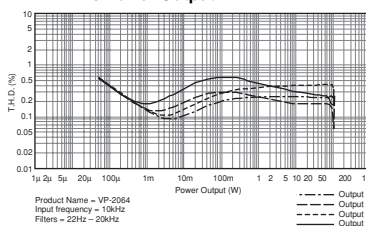
T.H.D vs Power Output



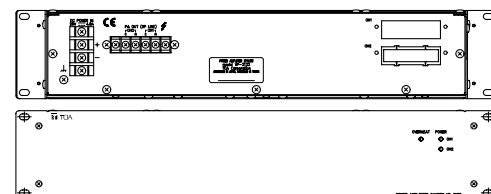
T.H.D vs Power Output



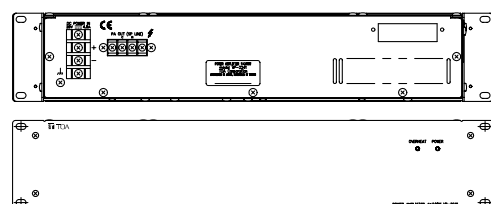
T.H.D vs Power Output



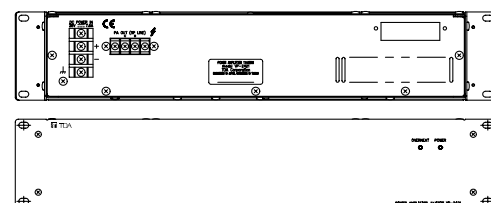
### VP-2122



### VP-2241



### VP-2421



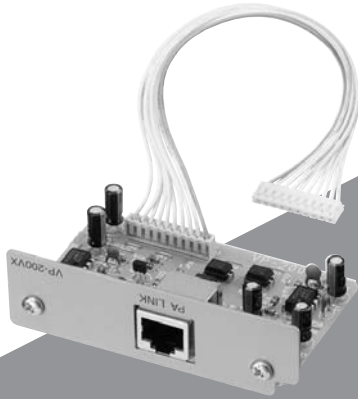
## SPECIFICATIONS

| Model No.                     | VP-2064<br>Power Amplifier 4 × 60W   | VP-2122<br>Power Amplifier 2 × 120W   | VP-2241<br>Power Amplifier 1 × 240W   | VP-2421<br>Power Amplifier 1 × 420W                                     |
|-------------------------------|--|---|---|---|
| Power Source                  | 28V DC (operating range: 20 - 40V DC)<br>M4 screw terminal, distance between barriers: 12mm  |   |   |   |
| Current Consumption (EN60065) | 4.8A in total  |   |   |   |
| Rated Output Power            | 60W × 4  | 120W × 2  | 240W  | 420W  |
| Output Voltage/Impedance      | 100V/167Ω, 70V/83Ω, 50V/41Ω<br>(selectable by the internal wiring change)                    | 100V/83Ω, 70V/41Ω, 50V/21Ω<br>(selectable by the internal wiring change)                  | 100V/41Ω, 70V/21Ω, 50V/10Ω<br>(selectable by the internal wiring change)                  | 100V/24Ω, 70V/12Ω, 50V/6Ω<br>(selectable by the internal wiring change) |
| Number of Channels            | 4  | 2   | 1   |   |
| Input                         | Specified by input module VP-200VX   |   |   |   |
| Number of Module Slots        | 4, usable module: VP-200VX   | 2, usable module: VP-200VX  | 1, usable module: VP-200VX  |   |
| Output                        | Power amplifier output (speaker line): M3.5 screw terminal, distance between barriers: 8.8mm |   |   |   |
| Frequency Response            | 40 - 16,000Hz, ±3dB (at 1/3 rated output)  |   |   |   |
| Distortion                    | Under 1% (at rated output, 1kHz)   |   |   |   |
| S/N Ratio                     | Over 80dB  |   |   |   |
| Panel Indicator               | Channel power indicator: 4 channels,<br>dual colour LED<br>Overheat indicator: Yellow LED    | Channel power indicator: 2 channels,<br>dual colour LED<br>Overheat indicator: Yellow LED | Channel power indicator: 1 channels,<br>dual colour LED<br>Overheat indicator: Yellow LED |   |
| Operating temperature         | 0° to +40°C  |   |   |   |
| Finish                        | Panel: Surface-treated steel plate, black, 30% gloss, paint                                  |   |   |   |
| Dimensions                    | 482 (W) × 88.4 (H) × 340.5 (D)mm   |   |   |   |
| Weight                        | 11.2kg   | 9.1kg   | 8.1kg   | 9.5kg   |
| Accessory                     | Rack mounting screw × 4, Fiber washer × 4  |   |   |   |

# VP-200VX

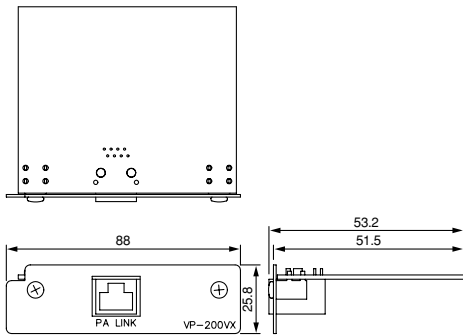
## Power Amplifier Input Module

EN 54  
1.6



The VP-200VX Power Amplifier Input Module is designed to be used in conjunction with the VP-2064, VP-2122, VP-2241 or VP-2421 power amplifier.

### APPEARANCE AND DIMENSIONAL DIAGRAM



### SPECIFICATIONS

| Model No.            | VP-200VX<br>Power Amplifier Input Module  |
|----------------------|---|
| Power Source         | Supplied from VP-2064, VP-2122, VP-2241 or VP-2421  |
| Current Consumption  | Under 30 mA   |
| Power Amplifier Link | RJ45 female connector for connecting the VX-200SP or VX-200SZ Audio Output module.<br>Twisted-pair straight cable (TIA/EIA-568A standard) |
| Finish               | Panel: Surface-treated steel plate  |
| Dimensions           | 88 (W) × 25.8 (H) × 53.2 (D) mm   |
| Weight               | 50g   |
| Applicable Model     | VP-2064, VP-2122, VP-2241, VP-2421  |

# VX-2000DS

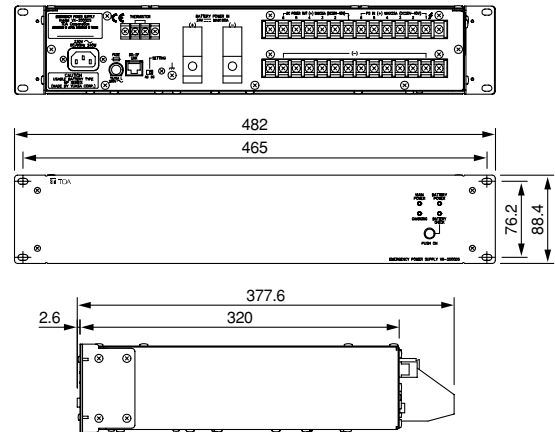
## Emergency Power Supply

EN 54  
4



The VX-2000DS Emergency Power Supply unit supplies the DC power to each equipment in the VX-2000 system by connecting the VX-200PS Power Supply Unit. It keeps the battery unit that contains 2 × 12 V sealed lead batteries charged compensating for the temperature of the battery charging voltage. When the DC power supply from the VX-200PS stops, the VX-2000DS is automatically switched to the backup battery.

### APPEARANCE AND DIMENSIONAL DIAGRAM



### SPECIFICATIONS

| Model No.               | VX-2000DS<br>Emergency Power Supply   |
|-------------------------|---|
| Power Source            | 230V AC, 50/60Hz  |
| Power Consumption       | 240W max.   |
| Applicable Battery      | YUASA NP series (12V × 2 or 4)  |
| Charging Method         | Trickle charging  |
| Charging Current        | 5A max  |
| Charging Output Voltage | 27.3V ±0.3V (at 25°C)<br>Temperature correction coefficient: -40mV/°C   |
| Power Supply Input      | 6 M4 screw terminal, distance between barriers: 11mm  |
| DC Power Output         | 6 (25A max. each) M4 screw terminal, distance between barriers: 11mm  |
| Control Connector       | RJ45 female connector for connecting the VX-2000SF Surveillance Frame.<br>Twisted-pair straight cable (TIA/EIA-568A standard)<br>Type of control signal: Battery check, AC power status, DC power status, charging circuit failure, and battery failure |
| Battery Connection      | 1 pair of positive and negative terminals<br>Applicable cable diameter: AWG 6 – AWG 1/0   |
| Operating Temperature   | 0° to +40°C   |
| Finish                  | Panel: Surface-treated steel plate, black, 30% gloss, paint   |
| Dimensions              | 482 (W) × 88.4 (H) × 377.6 (D)mm  |
| Weight                  | 10.5kg  |
| Accessory               | Rack mounting screw × 4, Fiber washer × 4, Blade fuse (40A) × 3, Fuse (T3.15A L) × 1, Power cable × 1, Insulating sheet × 1, Attention label (German) × 1   |

# VX-200PS

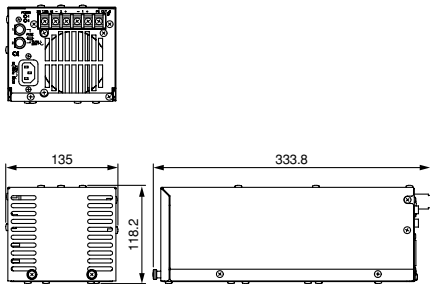
## Power Supply Unit

EN 54  
4



The VX-200PS Power Supply Unit is mounted in the VX-2000PF Power Supply Frame when in use. There are 2 DC output channels per unit. Use the VX-200PS in the number suited to the required total system power.

### APPEARANCE AND DIMENSIONAL DIAGRAM



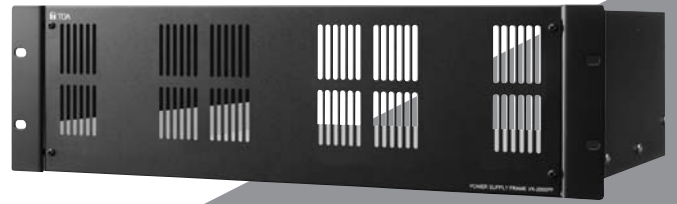
### SPECIFICATIONS

| Model No.             | VX-200PS<br>Power Supply Unit  |
|-----------------------|--|
| Power Source          | 230V AC, 50/60Hz   |
| Power Consumption     | 580W   |
| PS OUT                | Rated output: 210W (29V, 7.25A) × 2<br>Peak output: 400W × 2<br>M4 screw terminal, distance between barriers: 11mm |
| Operating Temperature | 0° to +40°C  |
| Applicable Frame      | VX-2000PF  |
| Finish                | Surface-treated steel plate  |
| Dimensions            | 135 (W) × 118.2 (H) × 324.8 (D)mm  |
| Weight                | 13.2kg   |
| Accessory             | Fuse (T3.15A L) × 1, Power cable × 1   |

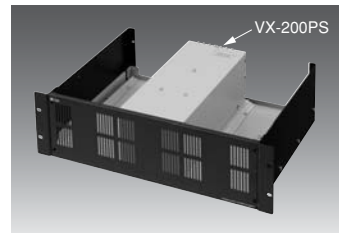
# VX-2000PF

## Power Supply Frame

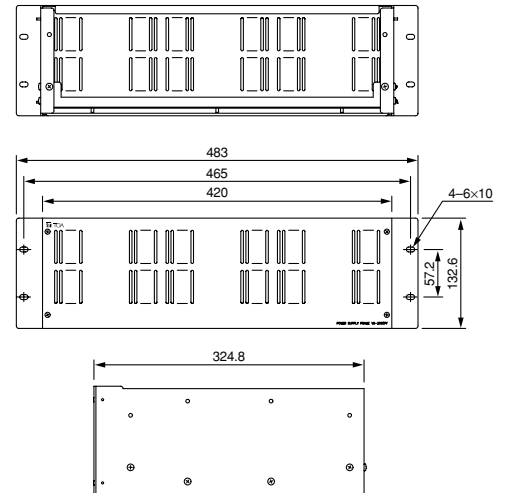
EN 54  
4



The VX-2000PF permits the VX-200PS Power Supply Unit to be mounted in an equipment rack. Up to 3 VX-200PS units can be installed in the unit.



### APPEARANCE AND DIMENSIONAL DIAGRAM

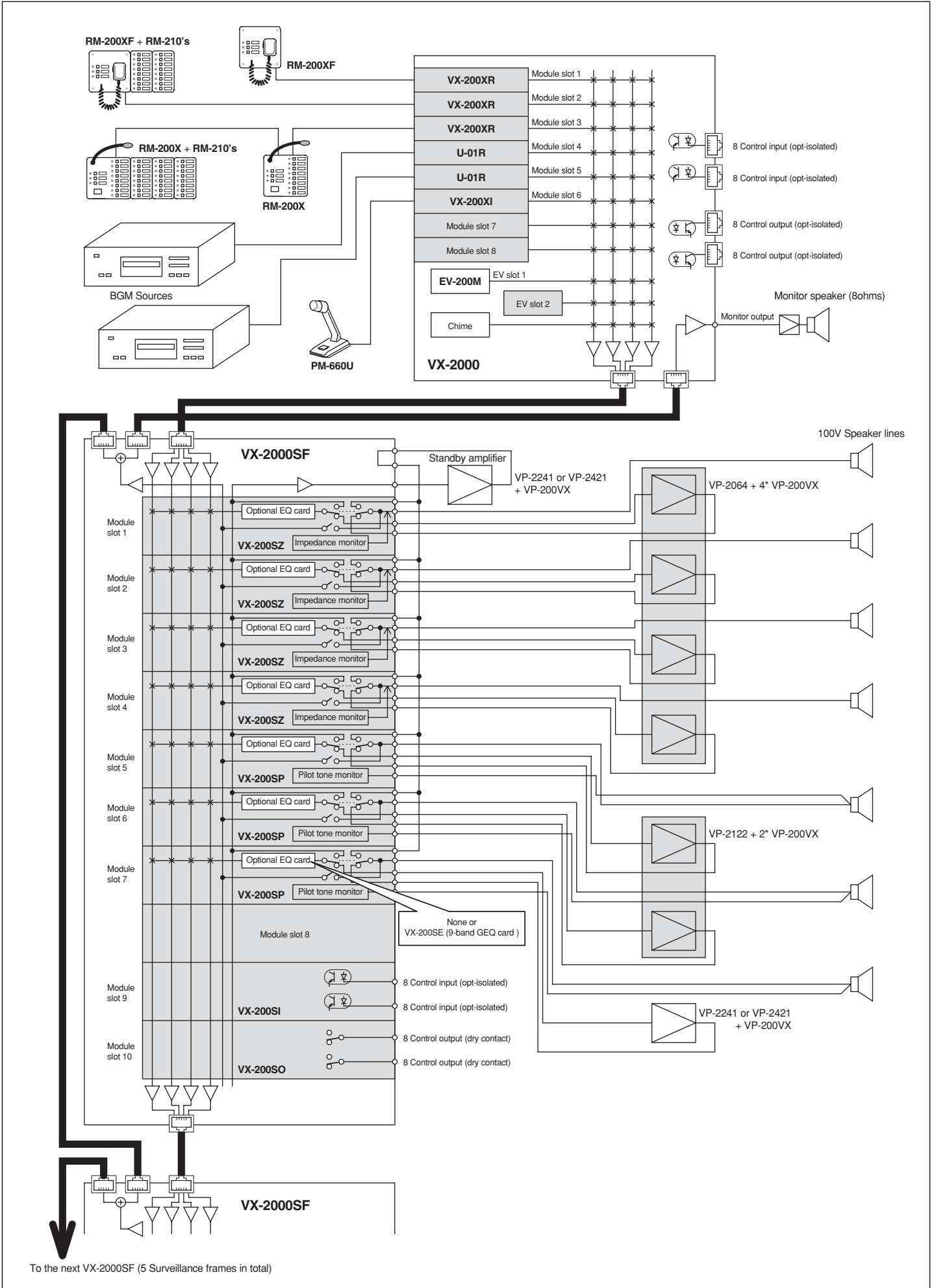


### SPECIFICATIONS

| Model No.           | VX-2000PF<br>Power Supply Frame                             |
|---------------------|---|
| Finish              | Panel: Surface-treated steel plate, black, 30% gloss, paint |
| Dimensions          | 483 (W) × 132.6 (H) × 324.8 (D)mm                           |
| Weight              | 5.5kg   |
| Product Composition | Side panel × 2, Chassis × 1, Front panel × 1                |
| Accessory           | Rack mounting screw × 4, Fiber washer × 4                   |
| Usable Unit         | VX-200PS (up to 3)  |

# VX-2000 SERIES

## BLOCK DIAGRAM

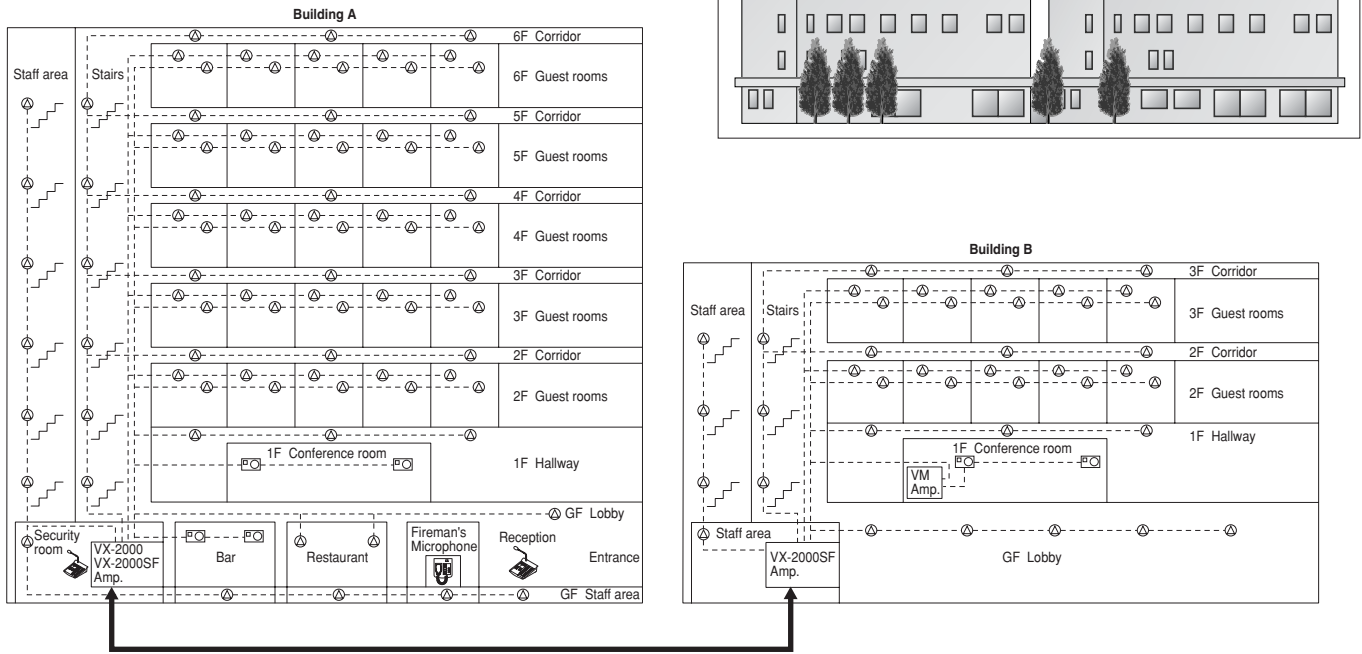


# VX-2000 SERIES

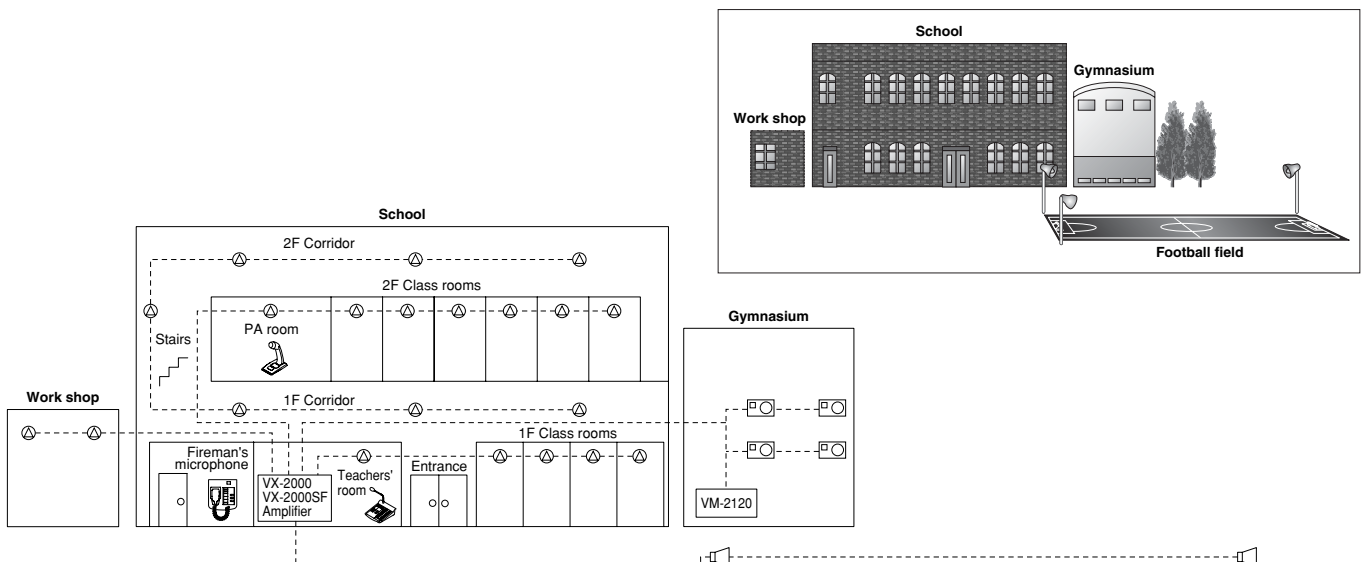
## INSTALLATION EXAMPLE

### Installation Example of the Hotel

The location is a hotel where Building A is linked with Building B. Building A was built earlier, and Building B added later. The original public address system was expanded by adding a VX-2000SF to cover Building B.



### Installation Example of the School



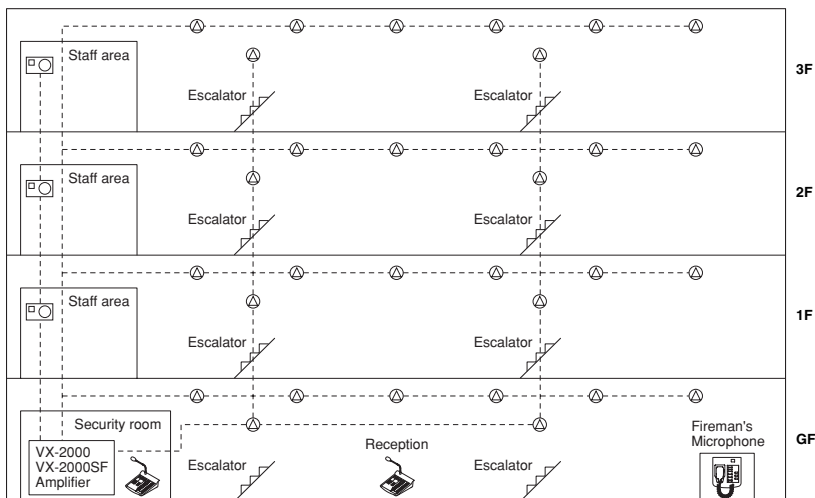
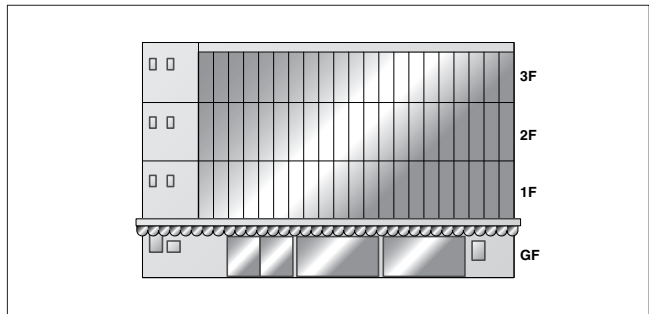
- The EV-200M can be set to broadcast chimes, programmed announcements, etc. at regular daily intervals using the software timer.
- Output from the local powered mixer used in the gymnasium can be interrupted by broadcasts from the VX-2000 when an urgent call is made.
- The Remote Microphones installed in the teachers' room and the Staff area can make individual zone calls to other buildings. System failure modes can also be indicated on RM-200X + RM-210 x 2.
- In the gymnasium, the local VM-2120 amplifier is installed. Broadcast is switched from the local VM-2120 amplifier operation to the central VX-2000 system operation by the VX-200SZ's external attenuator control signals.

# VX-2000 SERIES

## INSTALLATION EXAMPLE

### Installation Example of the Department Store

- The key factor in this system application is simultaneous broadcast.
- BGM sound is broadcast from CD player.
- Pre-recorded messages are played back to any zones you had set, when software timer activates the EV-200M.



## OPTIONS

### 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.

### IT-450 Line Transformer



Required by an audio line signal when the distance between the VX-2000 and VX-2000SF needs to be extended. Each input requires one IT-450 transformer to be installed in order for it to be isolated.

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



TOA Corporation

www.toa.jp

Specifications are subject to change without notice.  
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