



PLEASE READ THIS MANUAL FIRST!

MATRIX SYSTEM

SX-2000 SERIES

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Thank you for purchasing TOA's Matrix System.
Please carefully follow the instructions in this manual to ensure long, trouble-free use of your equipment.

1. SAFETY PRECAUTIONS

- Before installation or use, be sure to carefully read all the instructions in this section for correct and safe operation.
- Be sure to follow all the precautionary instructions in this section, which contain important warnings and/or cautions regarding safety.
- After reading, keep this manual handy for future reference.



WARNING

Indicates a potentially hazardous situation which, if mishandled, could result in death or serious personal injury.

When Installing the Unit

- Do not expose the unit to rain or an environment where it may be splashed by water or other liquids, as doing so may result in fire or electric shock.
- Use the unit only with the voltage specified on the unit. Using a voltage higher than that which is specified may result in fire or electric shock.
- (Applicable to VX-2000DS, VX-200PS, VP-2064, VP-2122, VP-2241, and VP-2421 only)
Do not cut, kink, otherwise damage nor modify the power supply cord. In addition, avoid using the power cord in close proximity to heaters, and never place heavy objects -- including the unit itself -- on the power cord, as doing so may result in fire or electric shock.
- (Applicable to RM-200SF, RM-200SA, RM-210, and RM-200RJ only)
Avoid installing or mounting the unit in unstable locations, such as on a rickety table or a slanted surface. Doing so may result in the unit falling down and causing personal injury and/or property damage.
- (Applicable to RM-200SF, RM-200SA, RM-210, and RM-200RJ only)
Install the unit only in a location that can structurally support the weight of the unit and the mounting bracket. Doing otherwise may result in the unit falling down and causing personal injury and/or property damage.
- Since the unit is designed for in-door use, do not install it outdoors. If installed outdoors, the aging of parts causes the unit to fall off, resulting in personal injury. Also, when it gets wet with rain, there is a danger of electric shock.

When the Unit is in Use

- Should the following irregularity be found during use, immediately switch off the main power (or circuit breaker), and contact your nearest TOA dealer. Make no further attempt to operate the unit in this condition as this may cause fire or electric shock.
 - If you detect smoke or a strange smell coming from the unit.
 - If water or any metallic object gets into the unit
 - If the unit falls, or the unit case breaks
 - (Applicable to VX-2000DS and VX-200PS only)
If the power supply cord is damaged (exposure of the core, disconnection, etc.)
 - If it is malfunctioning (no tone sounds.)
- To prevent a fire or electric shock, never open the unit case nor modify the unit. Refer all servicing to qualified service personnel.
- Do not place cups, bowls, or other containers of liquid or metallic objects on top of the unit. If they accidentally spill into the unit, this may cause a fire or electric shock.
- (Applicable to VX-2000DS, VX-200PS, VP-2064, VP-2122, VP-2241, and VP-2421 only)
Do not insert nor drop metallic objects or flammable materials in the ventilation slots of the unit's cover as this may result in fire or electric shock.
- (Applicable to VX-2000DS and VX-200PS only)
Do not touch a power supply plug during thunder and lightning, as this may result in electric shock.
- (Applicable to VX-200PS only)
When replacing the fuse, be sure to use the supplied one (3.15 A). Using any other fuse than supplied may cause fire or electric shock.

CAUTION

Indicates a potentially hazardous situation which, if mishandled, could result in moderate or minor personal injury, and/or property damage.

When Installing the Unit

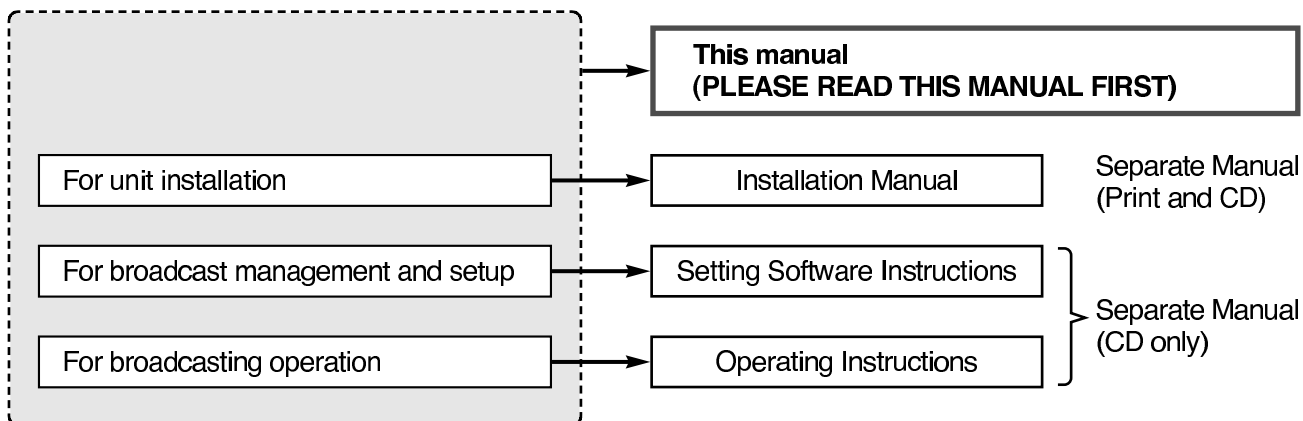
- (Applicable to VX-2000DS and VX-200PS only)
Never plug in nor remove the power supply plug with wet hands, as doing so may cause electric shock.
- (Applicable to VX-2000DS and VX-200PS only)
When unplugging the power supply cord, be sure to grasp the power supply plug; never pull on the cord itself. Operating the unit with a damaged power supply cord may cause a fire or electric shock.
- (Applicable to VX-2000DS, VX-200PS, VP-2064, VP-2122, VP-2241, and VP-2421 only)
Do not block the ventilation slots in the unit's cover. Doing so may cause heat to build up inside the unit and result in fire.
- Avoid installing the unit in humid or dusty locations, in locations exposed to the direct sunlight, near the heaters, or in locations generating sooty smoke or steam as doing otherwise may result in fire or electric shock.
- Note correct polarity (positive and negative orientation) when connecting the power supply cord. Reversed polarity connections will cause damage to the amplifier.
- System units (except remote microphones) are designed exclusively to be mounted in an equipment rack. Be sure to observe the following instructions when rack-mounting the unit. Failure to do so may cause a fire or personal injury.
 - Install the equipment rack on a stable, hard floor. Fix it with anchor bolts or take other arrangements to prevent it from falling down.
 - When connecting the power cord of the DC power supply panel for the units to an AC outlet, ensure that the total load current never exceeds the AC outlet's allowable current capacity.
 - The supplied rack-mounting screws can be used for the TOA equipment rack only. Do not use them for other racks.
- (Applicable to VX-2000DS only)
Note correct polarity (positive and negative orientation) when connecting the power supply cord. Reversed polarity connections will cause damage to the system.

When the Unit is in Use

- (Applicable to VP-2064, VP-2122, VP-2241, and VP-2421 only)
Do not operate the unit for an extended period of time with the sound distorting. This is an indication of a malfunction, which in turn can cause heat to generate and result in a fire.
- Use the specified power supply unit for the system. Note that the use of other power supply unit may cause a fire.
- (Applicable to VX-2000DS only)
Make sure to observe the following handling precautions so that a fire or personal injury does not result from leakage or explosion of the battery.
 - Do not short, disassemble, heat nor put the battery into a fire.
 - Avoid using both new and old batteries together.
 - Never charge batteries of the type which are not rechargeable.
 - Do not solder a battery directly.
 - Be sure to use the specified type of batteries.
 - Note correct polarity (positive and negative orientation) when connecting a battery to the unit.
 - Avoid locations exposed to the direct sunlight, high temperature and high humidity when storing batteries.
- (Applicable to RM-200SF and RM-200SA only)
Have the unit checked periodically by the shop from where it was purchased. Failure to do so may result in corrosion or damage to the unit or its mounting bracket that could cause the unit to fall, possibly causing personal injury.
- (Applicable to VX-200PS only)
Contact your TOA dealer as to the cleaning. If dust is allowed to accumulate in the unit over a long period of time, a fire or damage to the unit may result.

2. COMPOSITION OF THE SX-2000 INSTRUCTION MANUAL

The SX-2000 system Instruction manual is divided into 4 parts.
Please read the proper manual for your purpose.



3. SYSTEM SUMMARY

TOA's SX-2000 series Matrix systems are input and output signal routing processing systems that function as the core for multi-channel general-purpose broadcast systems, and are designed for use in such locations as shopping centers, department stores and shop/store complexes. The SX-2000 systems are designed to distribute remote microphone outputs, automatic guidance broadcasts, background music, and sounds from other connected sources to power amplifiers via an audio signal/control signal matrix with 16 digital busses using pre-determined conditions and priorities.

The SX-2000 system allows 3 types of broadcasts to be made: General-purpose broadcast such as general paging and BGM, Emergency broadcast that the emergency messages are to be broadcast by an automatic announcement device or remote microphone, and General urgency all-call broadcast* that is to be made available even during system malfunctions or failures.

The dedicated software is used to perform all necessary settings related to the entire system operation and functions including system configurations, input-to-output signal routing, function assignment to the operation keys, operation of the control terminals, and selection of the failure detection points.

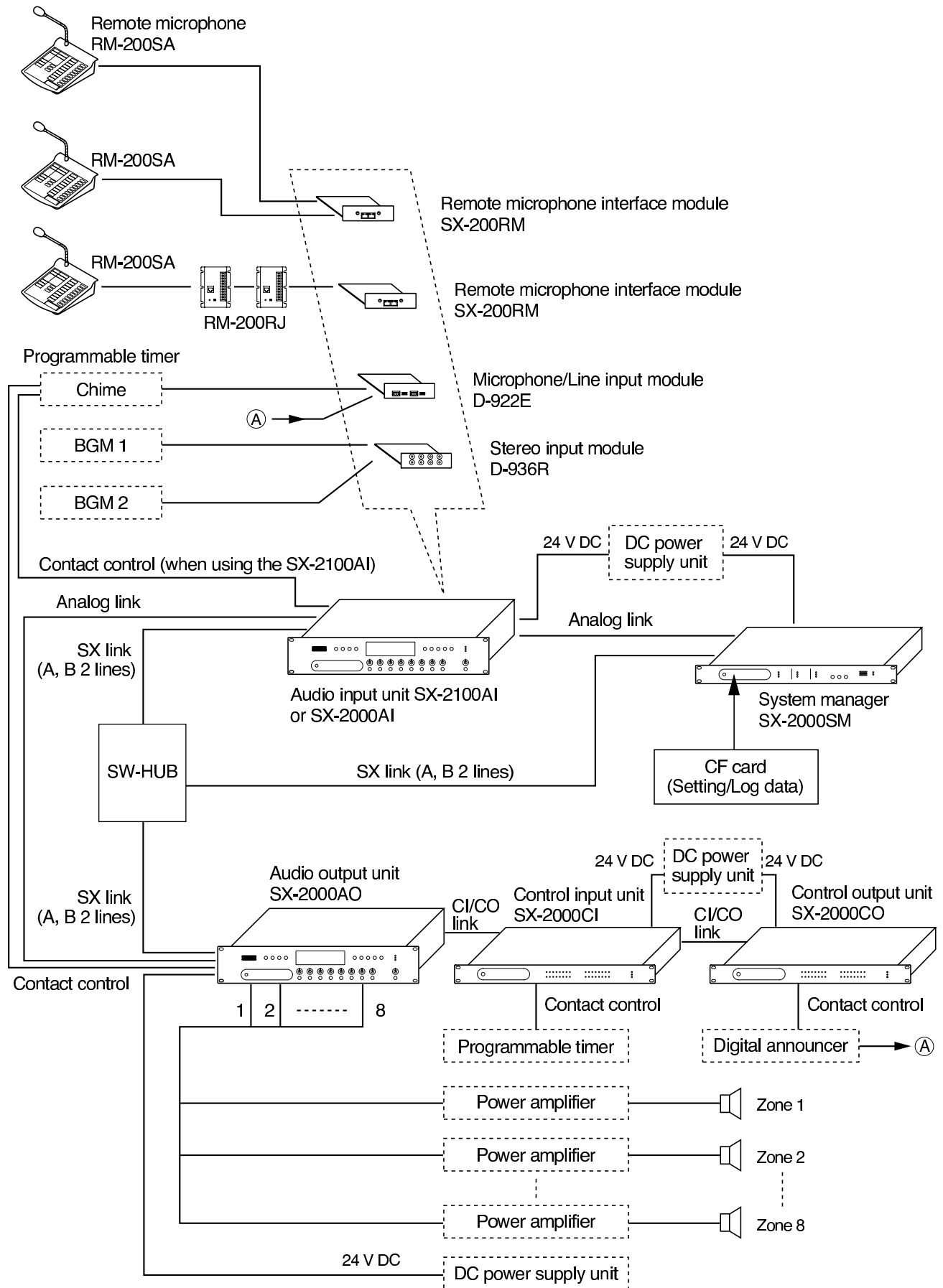
* Available when an analog link is connected.

4. SYSTEM FEATURES

- Emergency broadcasts can be implemented by using the settings made among 32 EV messages, 4 Emergency Sequences, and 128 Emergency Broadcast Patterns.
- Using the dedicated software program, functions such as broadcast start conditions, broadcast channels (input sound source signal routing), and broadcast priorities can be set with no need to change equipment connections.
- Surveillance function that continuously monitors such status at the major points from input to output of the system as each unit operation, cable connections or communications between the units, and power supply, and that alerts the operator by indicators, buzzer, or contact outputs in the event of operation error or equipment malfunctions.
- Backup batteries assure the system operation during power failures.
- Local audio inputs are provided for the SX-2100AO, enabling local broadcast to be made from each SX-2100AO.
- General urgency broadcasts can be made even during system malfunctions or failures (when Analog Link connection is made).
- System equipment operation logs and failure logs are recorded on a CF card and can be confirmed on a PC screen.
- Input and output equipment, such as broadcasting sound sources (including remote microphones and BGM players) and amplifiers can be combined, depending on their types and quantities, for most appropriate system configuration. The system can be designed for a minimum configuration of 2 inputs and 8 outputs, expandable up to 64-input/256-output*¹ configuration in units of 2 inputs or 8 outputs.
^{*1} When the system is configured with 1 SX-2000SM, 8 SX-2000AIs or SX-2100AIs, and 32 SX-2000AOs or SX-2100AOs.
- Up to 16 channels of broadcasts can be simultaneously made.
(Up to 8 channels of EV messages can be simultaneously broadcast.)
- One each of SX-2000CI with 32 control input channels and SX-2000CO with 32 control output channels can be connected to the SX-2000AO or SX-2100AO.
- Up to 64 RM-200SF Fireman's Microphones or RM-200SA Remote Microphones (Up to 8 units per SX-2000AI or SX-2100AI) can be connected. Up to 5 RM-210 Remote Microphone Extension units can be connected per RM-200SF, and up to 4 RM-210 units per RM-200SA.
- Control inputs and outputs permit broadcasts to be started by external equipment or external equipment to be controlled when broadcasts are started. Control inputs and outputs can be expanded from 16 inputs and outputs (minimum) to up to 1416 inputs and outputs*² depending on the system scale.
^{*2} When the system is configured with 1 SX-2000SM, 8 SX-2100AIs, 32 SX-2000AOs or SX-2100AOs, 32 SX-2000CIs, and 32 SX-2000COs.
- SX-2000 system's operation statuses and logs can be confirmed by establishing an online connection between the SX-2000SM and PC.
- Input level indicators, output level indicators and monitor speakers are provided for input and output signal monitoring.
- Key lock function prevents mistaken operation of front panel keys.
- Dual power system prevents the system from crashing if the power supply line is broken or power supply unit fails.

5. SYSTEM CONFIGURATION EXAMPLES

5.1. General-purpose Broadcast



5.2. Emergency/General-purpose Broadcast

