Operation Manual

System Remote MIC Station/
12Key MIC Station Keypad

RM-6024/RM-6012KP



interM

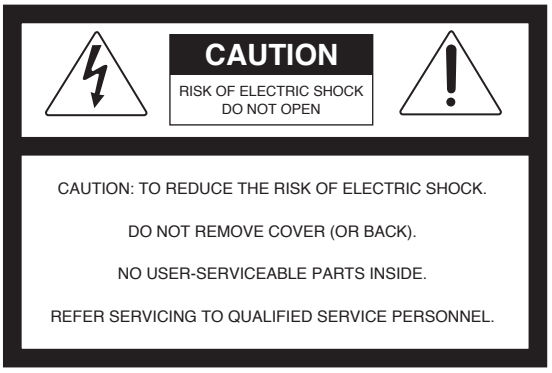
Welcome

A personal welcome to you from the management and employees of Inter-M

All of the co-workers here at Inter-M are dedicated to providing excellent products with inherently good value, and we are delighted you have purchased one of our products.

We sincerely trust this product will provide years of satisfactory service, but if anything is not to your complete satisfaction, we will endeavor to make things right.

Welcome to Inter-M, and thank you for becoming part of our worldwide extended family!



WARNING

To prevent fire or shock hazard, do not expose the unit to rain or moisture.



This symbol is intended to alert the user to the presence of uninsulated “dangerous voltage” within the product’s enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



This symbol is intended to alert the user to the presence of important operation and maintenance (servicing) instructions in the literature accompanying the appliance.

Caution: To prevent electric shock do not use this (polarized) plug with an extension cord, receptacle or other outlet unless the blades can be fully inserted to prevent blade exposure.

Attentions: Pour prévenir les chocs électriques ne pas utiliser cette fiche polarisée avec un prolongateur, une prise de courant on une autre sortie de courant, sauf si les lames peuvent étre insérées à fond sans en laisser aucune partie à découvert.

*WARNING FOR YOUR PROTECTION PLEASE READ THE FOLLOWING-WATER AND MOISTURE: Unit should not be used near water(e.g. near a bathtub, washbowl, kitchen sink, laundry tub, in a wet basement, or near a swimming pool, etc). Care should be taken so than objects do not fall and liquids are not spilled into the enclosure through openings.
*CLASS 2 WIRING (Adjacent to speaker terminal): The speaker output of this apparatus can exceed 10 Watts and could be a shock injury. Connection to speakers should be performed by a skilled person.
*Do not install this equipment in a confined space such as a book case or similar unit.
*This apparatus shall not be exposed to dripping or splashing and no objects filled with liquids, such vases, shall be placed on the apparatus.
*This apparatus shall be connected to a mains socket outlet with a protective earthing connection.
*It has heed to be easy to disconnect the device. To disconnect the device from power, separate AC input cable from inlet or unplug the AC Cord.
*The socket-outlet shall be installed near the equipment and shall be easily accessible.

CAUTION

*These servicing instructions are for use by qualified service personnel only. To reduce the risk of electric shock, do not perform any servicing other than that contained in the operating instructions unless you are qualified to do so.

NOTE

*This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

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"We, Inter-M to apply the appropriate set of E4 & Class A for Electromagnetic Environment Condition."

Unpacking

Although your RM-6024 is neither complicated nor difficult to operate, we recommend you take a few minutes to read this brief manual and familiarize yourself with the important information regarding product features, setup and operation.

As with most electronic devices, we strongly recommend you to retain the original packaging. In the unlikely event the product must be returned for servicing, the original packaging (or reasonable equivalent) is required.

Installation

Environment
Never place this product in an environment which could alter its performance or reduce its service life. Such environments usually include high levels of heat, dust, moisture, and vibration.

IMPORTANT SAFETY INSTRUCTIONS

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11. Only use attachments/accessories specified by the manufacturer.
12. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
13. Unplug this apparatus during lightning storms or when unused for long periods of time.
14. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.



Features

- ZONE MACRO FUNCTION
Zone one Macro Function exists for each button in the Inter-M PC Windows program allowing multiple zones to be bundled into one single button. Maximum 160 zones per button.

- EXPANSION KEYPAD (RM-6012KP)
If an Expansion Keypad (RM-6012KP) is added, a total of 48 macro buttons can be used.
(Up to 2 Expansion Keypads can be connected)

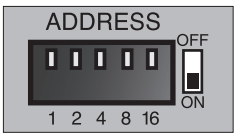
- CHIME FUNCTION
Serves as the notification sound to announce a remote MIC broadcast.

- EXTERNAL AUX FUNCTION
Mixes an external sound source, so with MIC broadcasting, it can offer BGM capabilities.

- RS-422 COMMUNICATION
Allows remote mic (RM-6024) to be located up to a maximum distance of 1Km (3,280 feet) from RME-6108.
Note: It is recommended that remote mic (RM-6024) be located within 500m (1,640 feet) of RME-6108.

Equipment Setting and Checking

1. Address Switch Setting



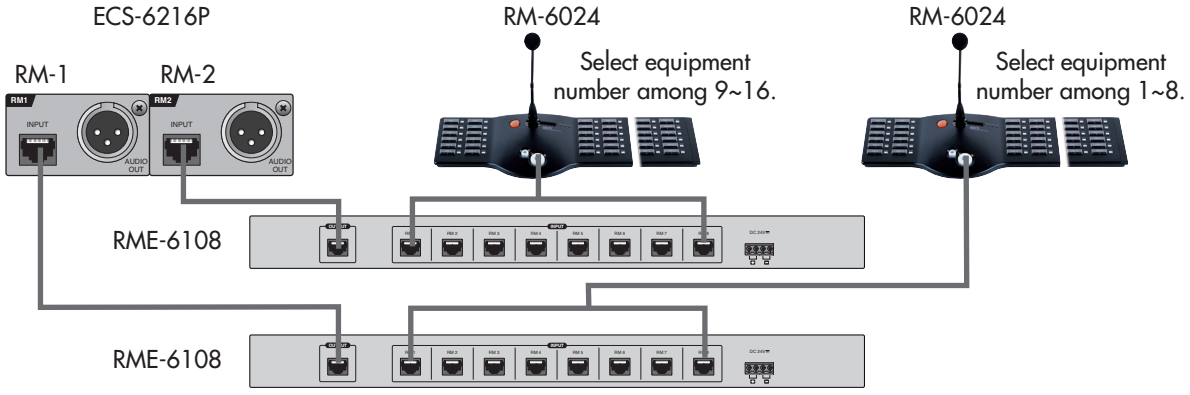
1) Set the equipment number utilizing the rear panel DIP switch.
   - If the equipment number is not set-up or is incorrect, all Zone Indicator LEDs will blink.
   - If the number is already in-use, the FAULT LED will blink.

   Please check the equipment number set-up status.
2) When connecting an RM-6024 directly to an ECS-6216P:
   - The equipment number for the RM-6024 which is connected to RM1 terminal is labeled as "1".
   - The equipment number for the RM-6024 which is connected to RM2 terminal is labeled as "9".



3) When connecting remote mics through an RME-6108 to an ECS-6216P:
   - Choose numbers 1~8 for those remote mics which are connected to an RME-6108 using the RM1 terminal.
   - Choose numbers 9~16 for those remote mics which are connected to an RME-6108 using the RM2 terminal.

   If the above conditions are not followed or any number is used more than once, warning LEDs will blink.

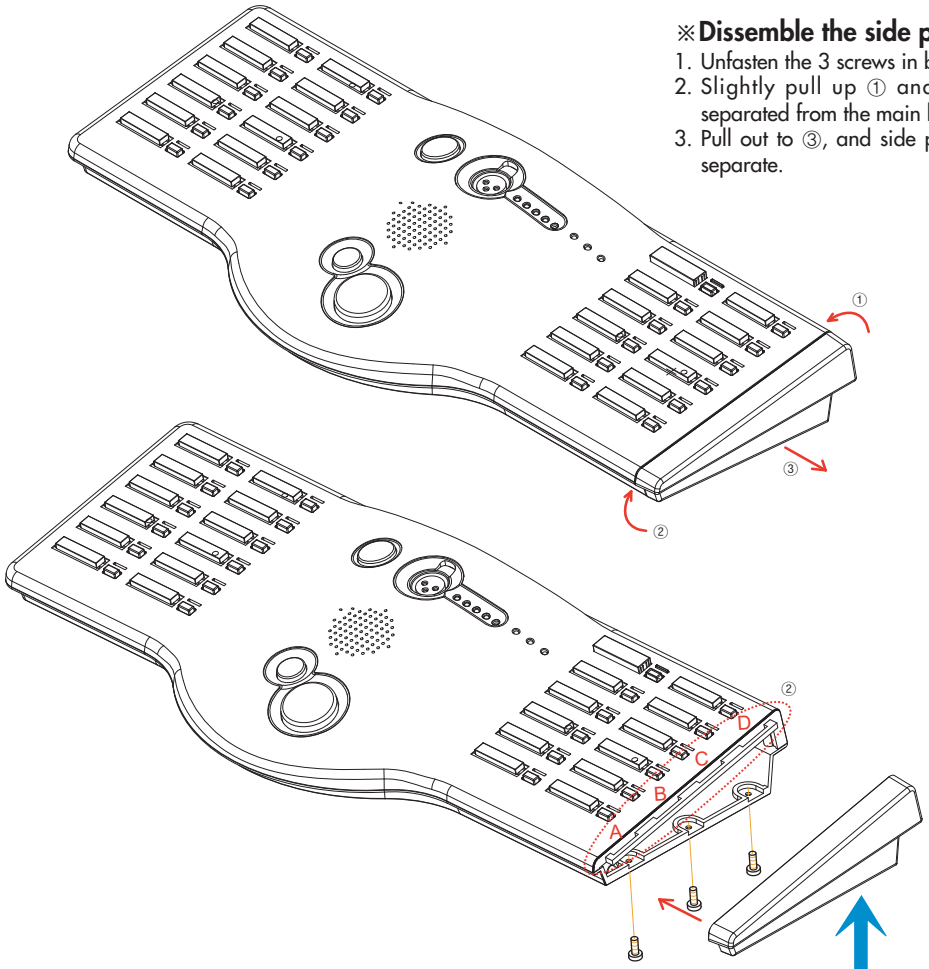


4) The table below shows the set-up method, and if DATA number is added to switch turned ON, it will be the equipment number.

Pin No.		1	2	3	4	5
Data		1	2	4	8	16
Address	1	ON				
	2		ON			
	3	ON	ON			
	4			ON		
	5	ON		ON		
	⋮	⋮	⋮	⋮	⋮	⋮
	15	ON	ON	ON	ON	
	16					ON
	⋮	⋮	⋮	⋮	⋮	⋮

(Ex: When No. 1 and 3 is ON, add 1 and 4 which is actual corresponding number, and then equipment number will be 5.)

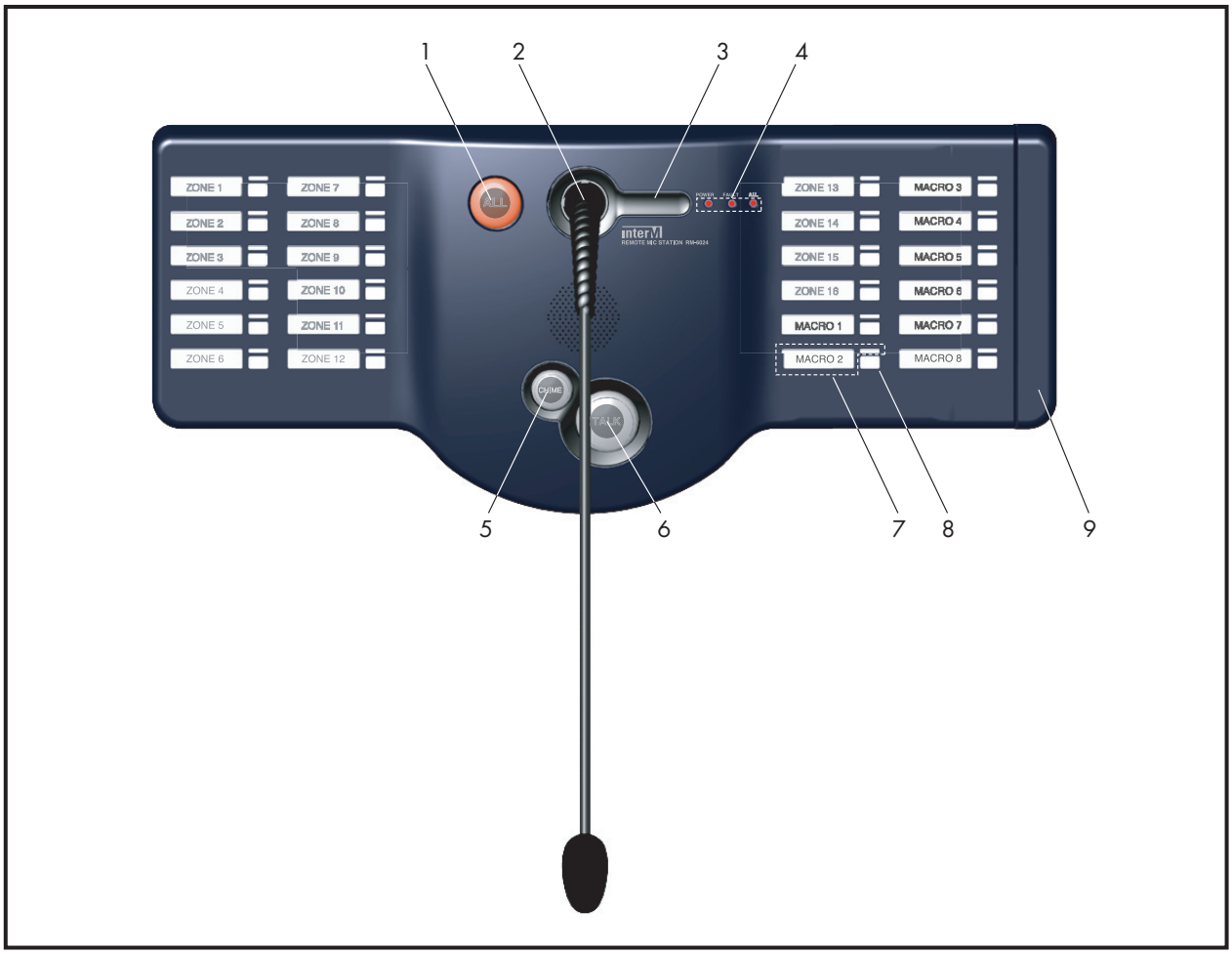
2. Disassemble and Assemble of Side Pad (Required when expanding the keypad.)



3. Assemble the expansion keypad (RM-6012KP)

- After dissembling the RM-6024 side pad, connect the RM-6012KP and internal connector.
- Assemble the RM-6024 and RM-6012KP using same instructions as above for side pad.
- Assemble the dissembled side pad in RM-6012KP.

Front Panel



1. ALL BUTTON

Used when broadcasting to all zones.

2. MIC

Condenser MIC.

3. OUTPUT LEVEL LED

Display the MIC output level.

4. POWER/FAULT/BUSY LED

- POWER LED (GREEN) : displays the power input status.
- FAULT LED (RED) : will be ON if communication error occurs.
- BUSY LED (RED) : will blink if there is any higher priority broadcast.

5. CHIME BUTTON

CHIME button is operated only in TALK mode.

6. TALK ON/OFF BUTTON

Select the broadcasting zone(s), then push and release the TALK button to broadcast.
After finishing the broadcast, push the TALK button again to end the transmission.

7. ZONE DISPLAY LED AND LABEL

- Push the zone selecting button, and then corresponding LED (GREEN) will be ON.
- Zone information can be labeled and inserted.

8. ZONE SELECTION BUTTON

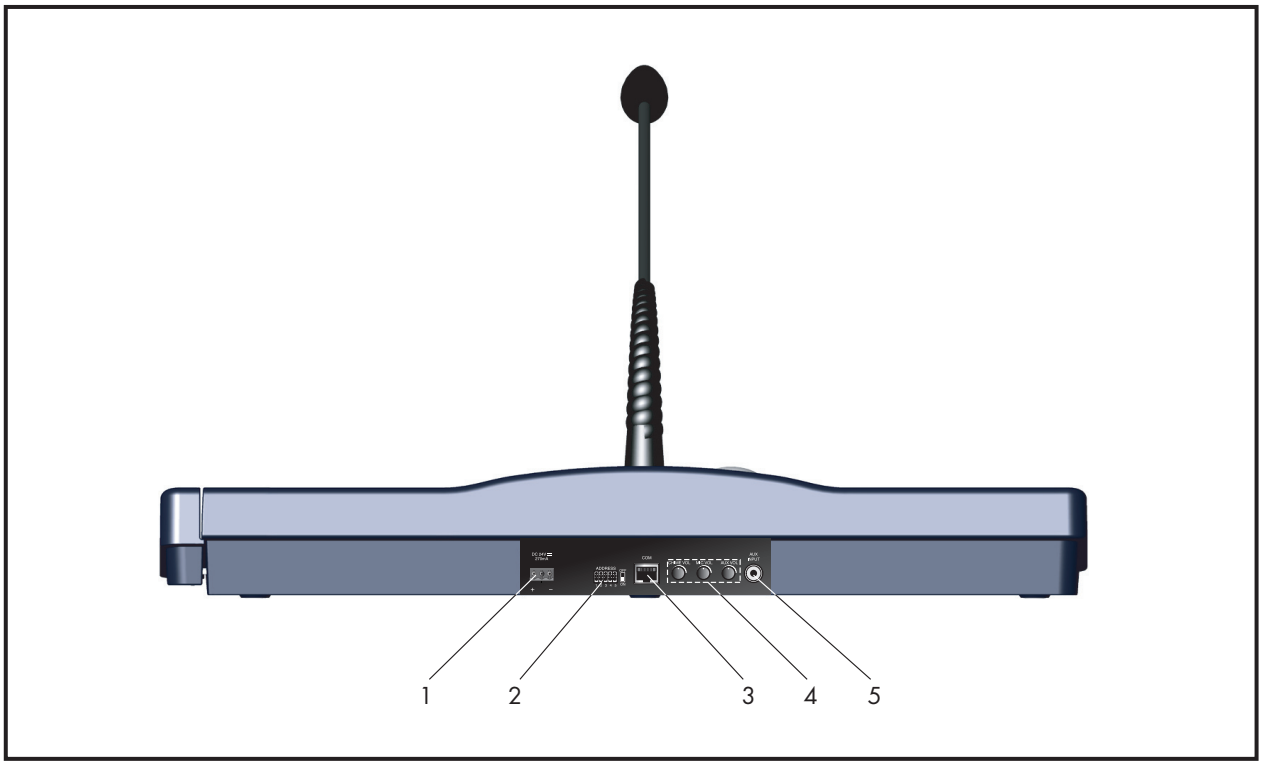
- Used when selecting the broadcasting zone.
- Multiple zones can be combined by using ZONE MACRO function for each button on PC Windows program. (Maximum 160 zones per button)
- If expansion key pad (RM-6012KP) is added, a total of 48 MACRO buttons can be used. (Up to 2 expansion keypads (RM-6012KP) can be connected).

9. SIDE PAD

- After disassembling the side pad, the KEYPAD can be expanded by using RM-6012KP.
- Up to 2 expansion keypads (RM-6012KP) can be connected.

※Caution: When connecting an expansion keypad (RM-6012KP) to RM-6024, power should be off.

Rear Panel



1. DC INPUT TERMINAL

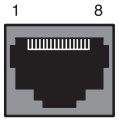
- Power input terminal. Check polarity before connecting DC 24V.
- When connecting to PD (Power Distributor), connect to unswitched terminal.

2. ADDRESS SWITCH

Sets up the equipment number.

3. DATA & AUDIO TERMINAL (RJ-45)

Transmits the communication DATA and AUDIO signal.



PIN NO.	Functions
1	RS-422 Data - TX+
2	RS-422 Data - TX-
3	RS-422 Data - RX-
4	Live Date
5	GND
6	RS-422 Data - RX+
7	Balanced Audio Output - HOT
8	Balanced Audio Output - COLD

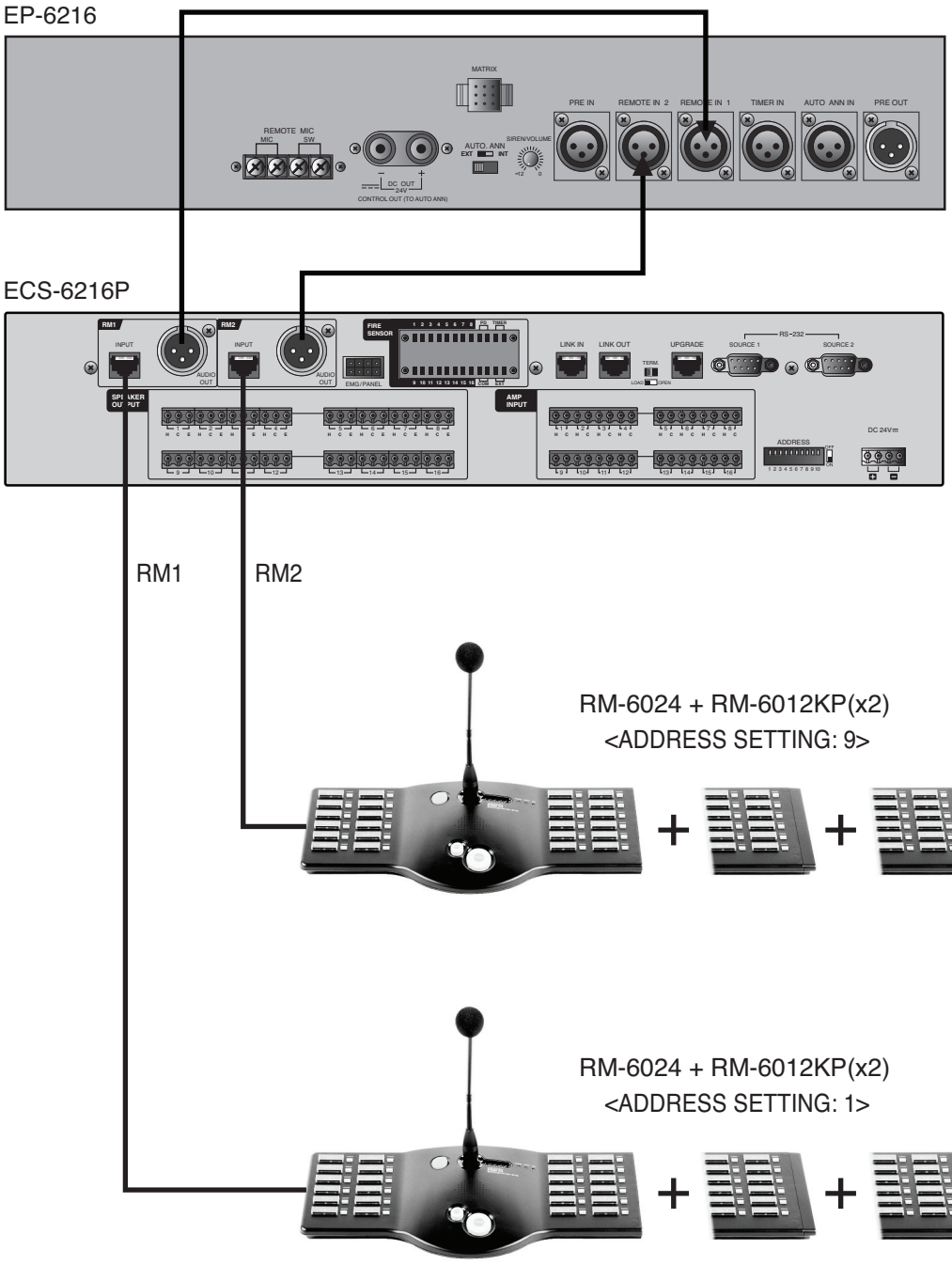
4. MIC/AUX/CHIME VOLUME

- CHIME Volume : adjust the CHIME output level.
- MIC Volume : adjust the MIC volume.
- AUX Volume : adjust the AUX volume.

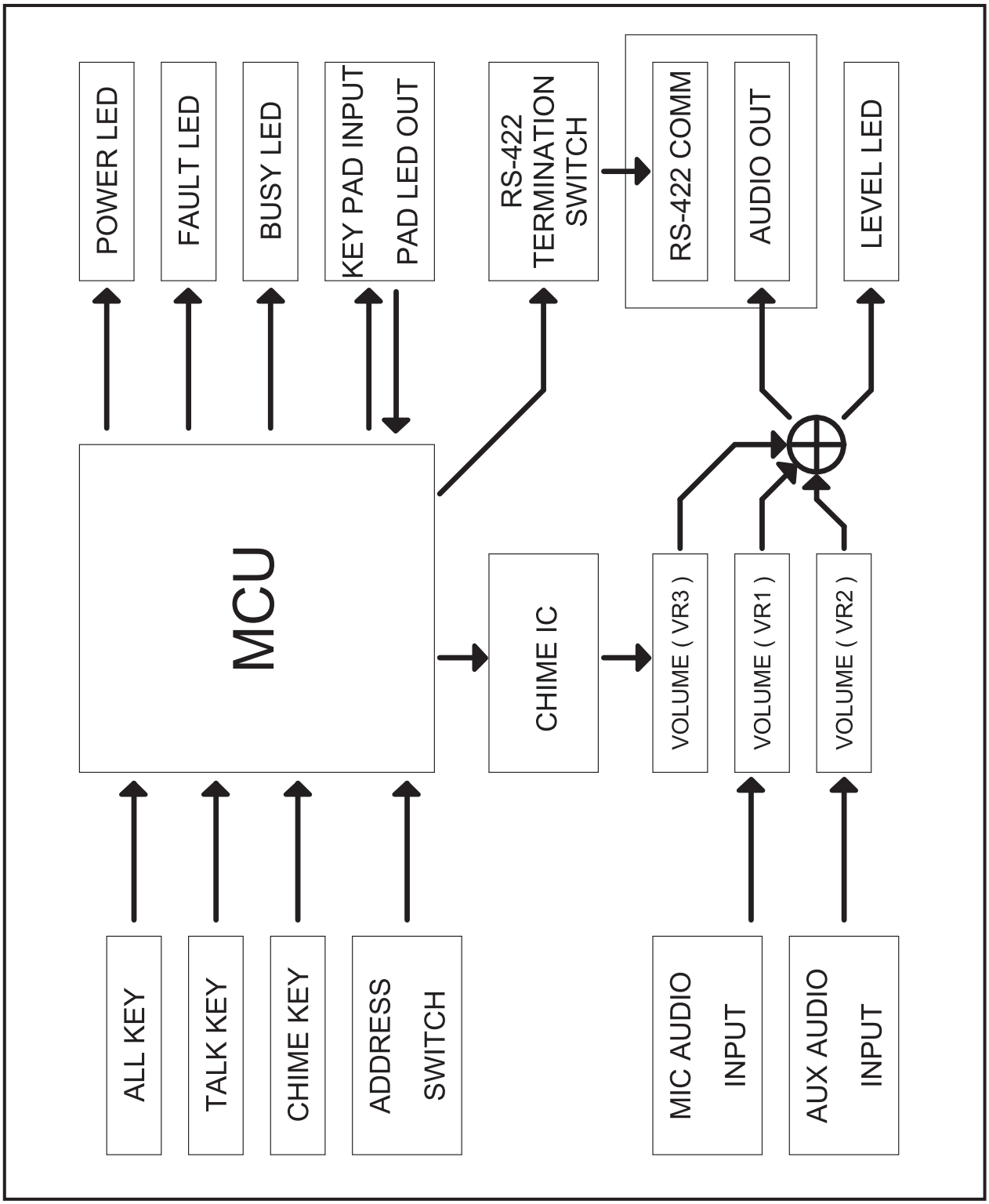
5. AUX INPUT TERMINAL

Used when broadcasting through the RM-6024 with an external sound source. In this case, MIC and AUX sound sources will be mixed and transmitted.

Applications



Block Diagram



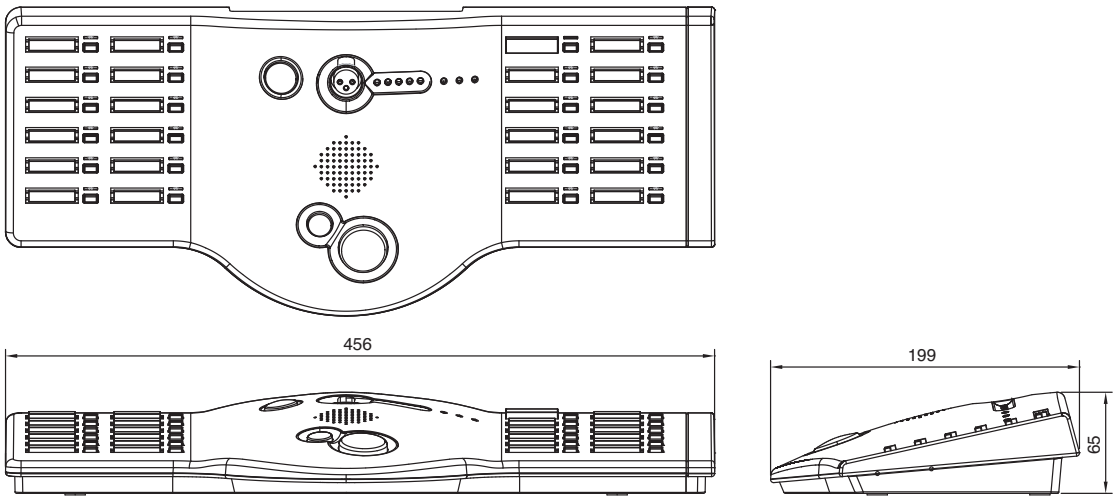
Specifications

		RM-6024
Channel		24CH
Communication Protocol		RS-422(Maximum 1km/3,280 feet)
Audio		
MIC	INPUT SENSTIVITY	-50dB
	THD+N	Less than 0.5%
	FREQUENCY RESPONSE	120Hz ~ 20kHz
	S/N	Better than 50dB
AUX	INPUT SENSTIVITY	-10dB
	THD+N	Less than 0.5%
	FREQUENCY RESPONSE	120Hz ~ 20kHz
	S/N	Better than 60dB
Operation Temperature		-10°C ~ +40°C/14°F ~ 104°F
Power Source		DC 24V
Weight (Set)		1.2kg/2.6lbs
Dimensions (Set)		456(W) x 65(H) x 200(D)mm/17.9(W)x2.5(H)x7.9(D)in

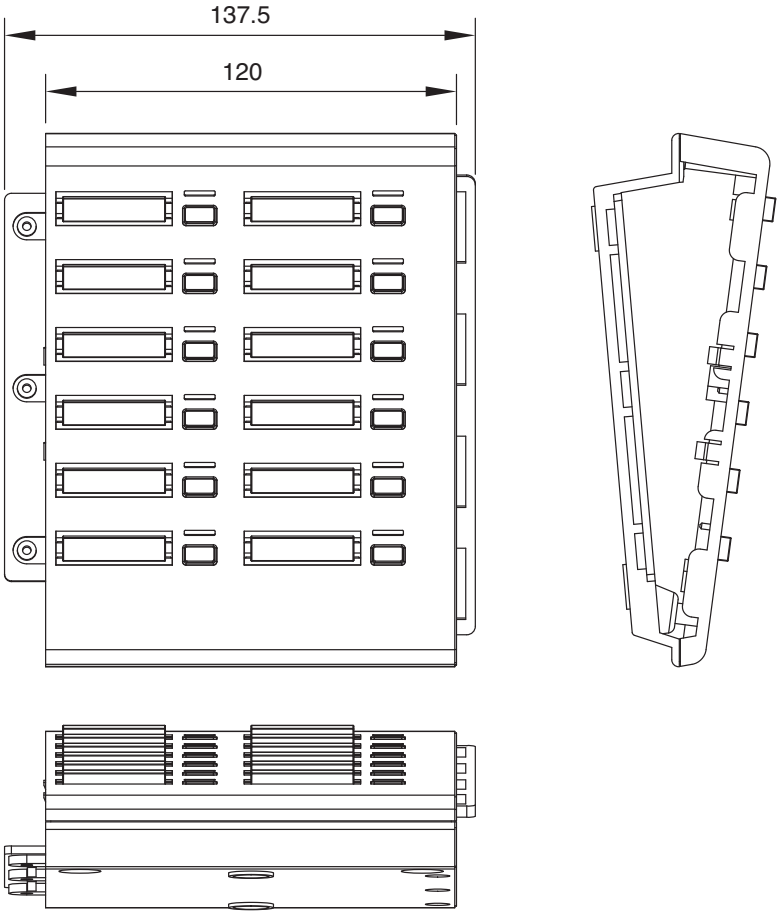
* Design and specification are subject to be changed for the improvement of product quality without pre notice.

※ **DIMENSIONS**

-RM-6024



-RM-6012KP



Service

Procedures

Take steps to insure the problem is not related to operator error or other products within the system. Information provided in the troubleshooting portion of this manual may help with this process. Once it is certain that the problem is related to the product contact your warranty provider as described in the warranty section of this manual.

Schematic

A Schematic is available by contacting your warranty provider.

Parts List

A Parts List is available by contacting your warranty provider.

Warranty

Warranty terms and conditions vary by country and may not be the same for all products. Terms and conditions of warranty for a given product may be determined first by locating the appropriate country which the product was purchased in, then by locating the product type.

To obtain specific warranty information and available service locations contact Inter-M directly or the authorized Inter-M Distributor for your specific country or region.

Inter-M, Ltd. (Korea) began operations in 1983.

Since then, Inter-M has grown to become one of the largest manufacturers
of professional audio and commercial sound electronics equipment in the world.

Inter-M has gained worldwide recognition for its own branded products,
as well as private label manufacturing of electronics sold under other names (OEM).

The company is no longer just a Korean company, but rather a global company
that is truly international in scope, with factories and offices in Korea and China,
and sales and marketing operations located in Japan, Europe, and the U.S.A.

With more than 850 employees around the globe,
Inter-M is well-poised for further growth and expansion.

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