Operation Manual

Emergency Combination System

ECS-6216P/S



* Rack mount products in the Western Hemisphere(North America, South America, and the Caribbean) do not have handles installed due to customer preference.

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!





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

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

*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 ECS-6216P/S 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

- INTEGRATED SYSTEM
System consists of EMERGENCY SWITCHER, MATRIX, RELAY GROUP, SPEAKER SELECTOR, and TERMINAL BOARD functions.

- BROADCAST CONTROL DEPENDING ON PRIORITIES
It controls the priority broadcasting by connecting to emergency panel (EP-6216) and remote MIC (RM-6024).
It switches to remote or emergency broadcasting due to priorities of emergency signals or outside remote signals (remote MIC broadcasting signals) even if during general broadcasting.

- AUTOMATIC FIRE DETECTING FUNCTION
With 16-channels corresponding to fire contact point signals, fire alarm broadcasting will be transmitted automatically.

- MANUAL CONTROL OF EMERGENCY AND GENERAL BROADCASTS
It can broadcast to desired channels by manually selecting emergency or general broadcasting.

- DISPLAY BROADCASTING STATUS
It displays the priority and broadcasting status on LED, so user can verify the broadcasting status without any effort.

- MEMORY/SAVE FUNCTION
Fire/RM Macro information will be saved in internal PC memory allowing for normal operation in event of PC error.

- CHANNEL EXPANSION AND RS-485 COMMUNICATION INTERFACE
Long distance transmission is available and system can be expanded to 160 Zones by utilizing ECS-6216S.

- INSTALLATION TIME AND SPACE
Since it is an integrated system, it is easy to install and can save installation labor, time and space.

Equipment Setting and Checking

1. Address Setting



1) Entire system uses only one ECS-6216P; if expansion is needed, additional ECS-6216S units must be added.
2) The equipment numbers for each wiring condition is set by the rear panel DIP switch.
※Caution: ECS-6216P should be setting as No. 1.
3) The table below shows the setting methods; the ON switch setting/number will be the equipment number.

DIP Switch		1	2	3	4	5	6	7	8	9	10
Equipment No.	1	ECS-6216P									
	2		ECS-6216S								
	3			ECS-6216S							
	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮
	10										ECS-6216S

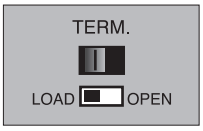
※Caution: If an equipment number is not set, all zone indicator LEDs will be blink. If the number is already in-use, communication will be impossible. In case of above cases, please check the equipment number set-up status.

4) Zone allocation is as follows.

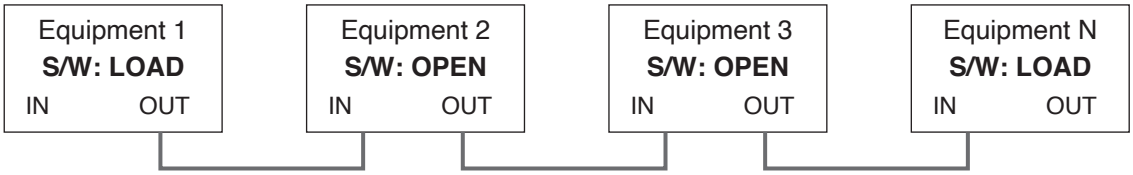
Equipment No.	1	2	3	4	5	6	7	8	9	10
ZONE Allocation	1~16	17~32	33~48	49~64	65~80	81~96	97~112	113~128	129~144	145~160

.

2. TERMINATION Switch (LOAD/OPEN) Setting

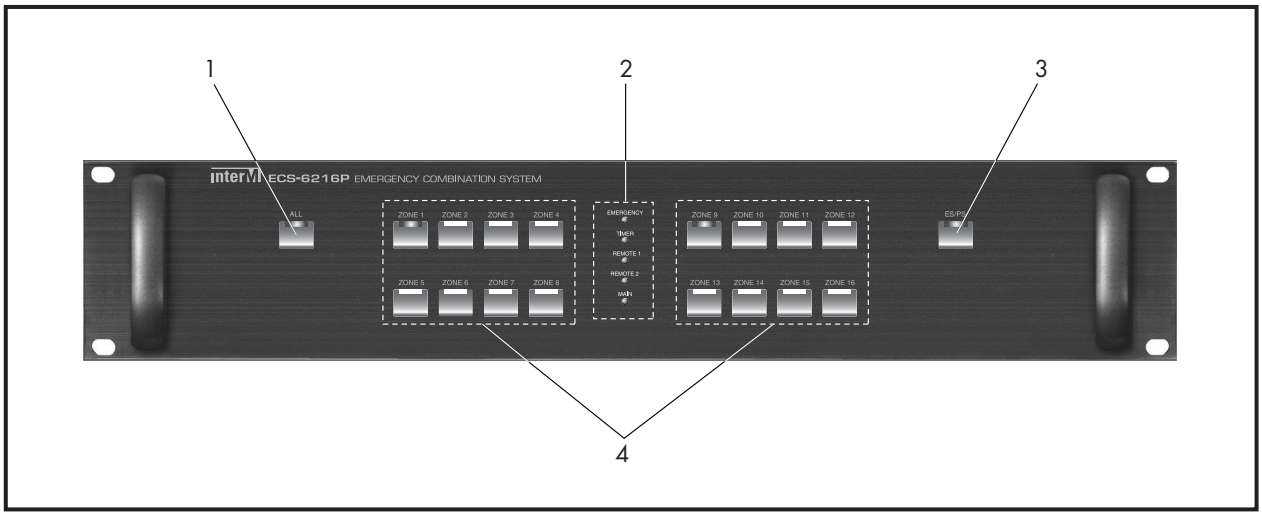


1) For the system linked by using RS-485 communication interface, it is necessary to set the termination switch (LOAD/OPEN) on the rear panel to stabilize data transfer.
2) Set the termination switch to LOAD only for the first and last-numbered equipment units. All others must be set to OPEN.



※Caution: Communication error may occur if setting is performed incorrectly.

Front Panel



1. ALL BUTTON

Button used when selecting the all zones (1~16).
In case of emergency broadcasting (ES), red light will be ON, and green for general broadcasting (PS).

2. BROADCASTING STATUS LEDS

Displays which broadcast is being transmitted according to broadcasting priorities.
Broadcasting priority displays are Emergency > Timer > Remote1 > Remote2 > Main (BGM).
Detailed operations of priority is as follows:

Priority	Operations	PC Display	ECS-6216P/S LED	Remark
1	Emergency broadcast	EM	EMERGENCY	EM mode switch, EM MIC broadcasting
2	Fire broadcast	FIRE		Fire Sensor input
3	Civil broadcast	EM		When inputting EXT terminal contact point of ECS directly
4	PW TIMER broadcast	TIME	TIMER	When using PW-6242A device (Speaker ALL)
5	RM1 broadcast	RM1	REMOTE1	When using the PW equipment instead of PC TIMER (Speaker ALL)
6	RM2 broadcast	RM2	REMOTE2	
7	PC TIMER broadcast	TIME	MAIN	
8	PC MIC broadcast	BMG		Clint PC
9	MP3, CDP, TUNER			

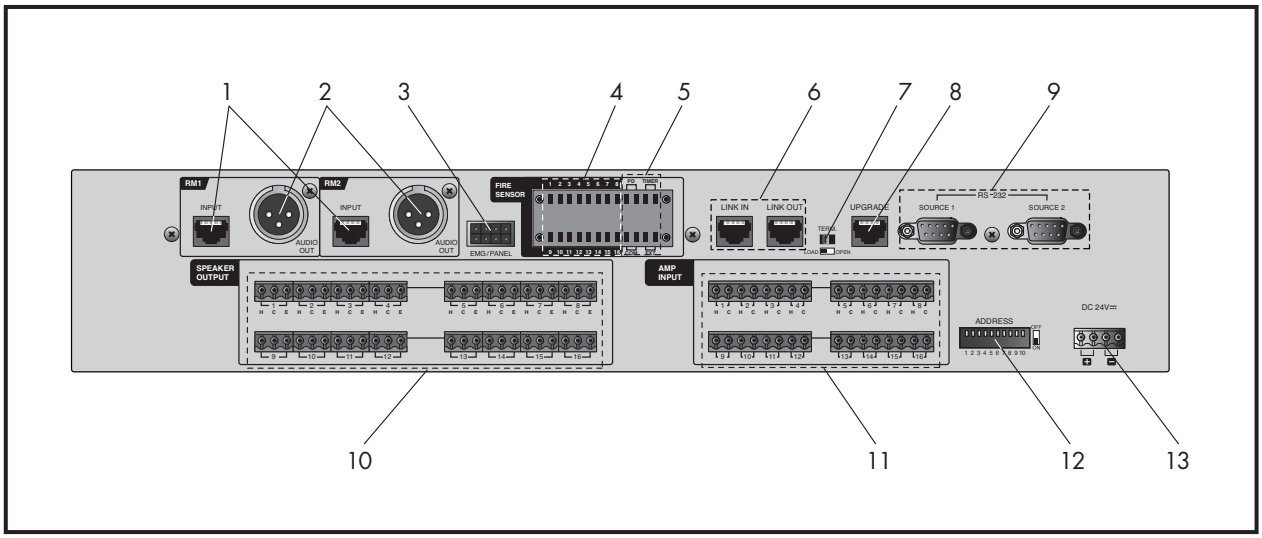
3. ES/PS SELECTING BUTTON

Emergency System (ES) or Public-address System (PS) selection button.
LED will be red in case of emergency broadcasting (ES), and green for general broadcasting (PS).

4. SPEAKER ZONE SELECTING BUTTON (1~16)

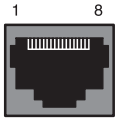
LED will be ON for the zone selected by each individual zone selection button.
LED will be red in case of emergency broadcasting (ES), and green for general broadcasting (PS).

Rear Panel



1. RM 1,2 COMMUNICATION TERMINAL (EXCLUSIVE FOR ECS-6216P)

Terminal that connects the RM-6024(REMOTE MIC) or RME-6108(RM EXTENDER).
<PIN OUT Specifications>



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

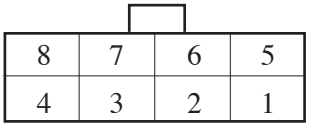
2. RM1 AND RM2 AUDIO OUTPUT TERMINAL (EXCLUSIVE FOR ECS-6216P)

Terminal that outputs the voice signals from remote MIC input terminal (RM1, RM2).

3. EMERGENCY PANEL (EP) CONNECTING TERMINAL (EXCLUSIVE FOR ECS-6216P)

Connects to the emergency panel (EP) manufactured by Inter-M to control the priority. (EM/FIRE/TIMER/RM1/RM2).

<PIN OUT Specification>



PIN NO.	Functions
1	COM
2	DC 24V
3	DC +24V
4	EM SUM
5	TIMER SUM
6	RM1 SUM
7	RM2 SUM
8	FIRE SUM

4. FIRE SENSOR INPUT TERMINAL

Connects to the sensor output of a fire receiver to transmit the emergency and evacuation broadcasts.

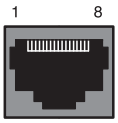
1) With MACRO function, it can select and memorize the multiple zones to be broadcast for each input channel. However, it can only be used with the Windows program provided by Inter-M. The setting information is downloaded from a PC to the ECS unit and saved in its memory. (Refer to System Operation Manual)
2) A maximum of 160 zones can be selected and saved in one input channel. For example, if zones 1, 2 and 3 are set to channel No. 1, emergency broadcasting will be simultaneously transmitted to zones 1, 2 and 3 when a fire sensor is received on channel No. 1.

5. PD, TIMER, EXT, COM TERMINAL

1) PD Contact Point Output Terminal
   Used to control the power distributor.
   Contact point will be transmitted when one speaker zone is ON or there is one fire sensor input.
   It is connected to remote SW terminal of power distributor (PD).
2) TIMER Contact Point Terminal (Exclusive for ECS-6216P)
   Connects to timer equipment (PW), manufactured by Inter-M.
   If PC TIMER function is not used or PC is not connected:
   - When contact point is input from TIMER, broadcasting mode will be converted to TIMER, and all speaker zones will be ON.
   However, if PC TIMER on PC Windows program is operated, contact point input by PW operation will be ignored by priorities. (PC TIMER has priority)
3) EXT Terminal (Exclusive for ECS-6216P)
   If PC TIMER is used and PW product is not used, the TIMER audio input terminal not being used in EP can be used for other purposes.
   System operation will be all ZONE ON in EM mode and has a higher priority than TIMER and lower than FIRE broadcasting.
4) COM Terminal
   Connects to COM terminal of fire panel.

6. LINK IN/OUT TERMINAL

Connect LINK IN terminal to previous equipment, and connect LINK OUT terminal to next equipment.



PIN NO.	Functions
1	RS-485 Data - A
2	RS-485 Data - B
3	RS-485 Data - Z
4	NA
5	GND
6	RS-485 Data - Y
7	NA
8	NA

※ Same for all IN/OUT terminals.

7. TERMINATION SWITCH (LOAD/OPEN)

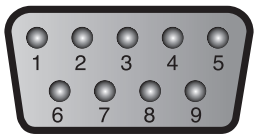
Switch being set for stable data receive/transmit of LINK IN/OUT.
Refer to Equipment Setting and Checking (page 4) for detailed setting methods.
Caution: Communication error may occur if setting is performed incorrectly.

8. UPGRADE TERMINAL (ISP)

Utilized for software upgrades and is not used otherwise.

9. RS-232 SOURCE DEVICE CONTROLLING TERMINAL (EXCLUSIVE FOR ECS-6216P)

Used to control Inter-M source devices (CD, TUNER) with Windows program.
1) Connectable source devices: Inter-M products equipped with RS-232 communication terminal
2) Maximum recommended communication distance is 12M(40 feet).
3) PIN OUT Specification



Pin No.	1	2	3	4	5	6~9
Purpose	Not Used	Receive	Transmit	Not Used	Ground	Not Used

10. SPEAKER OUT TERMINAL

Connects to each channel's speaker. It consists of 3-wire type.
1) In PS mode, it is transmitted only through HOT terminal.
2) In ES mode, it is transmitted through both HOT/EM terminals.

11. AMP IN TERMINAL

Connects with output of AMP.

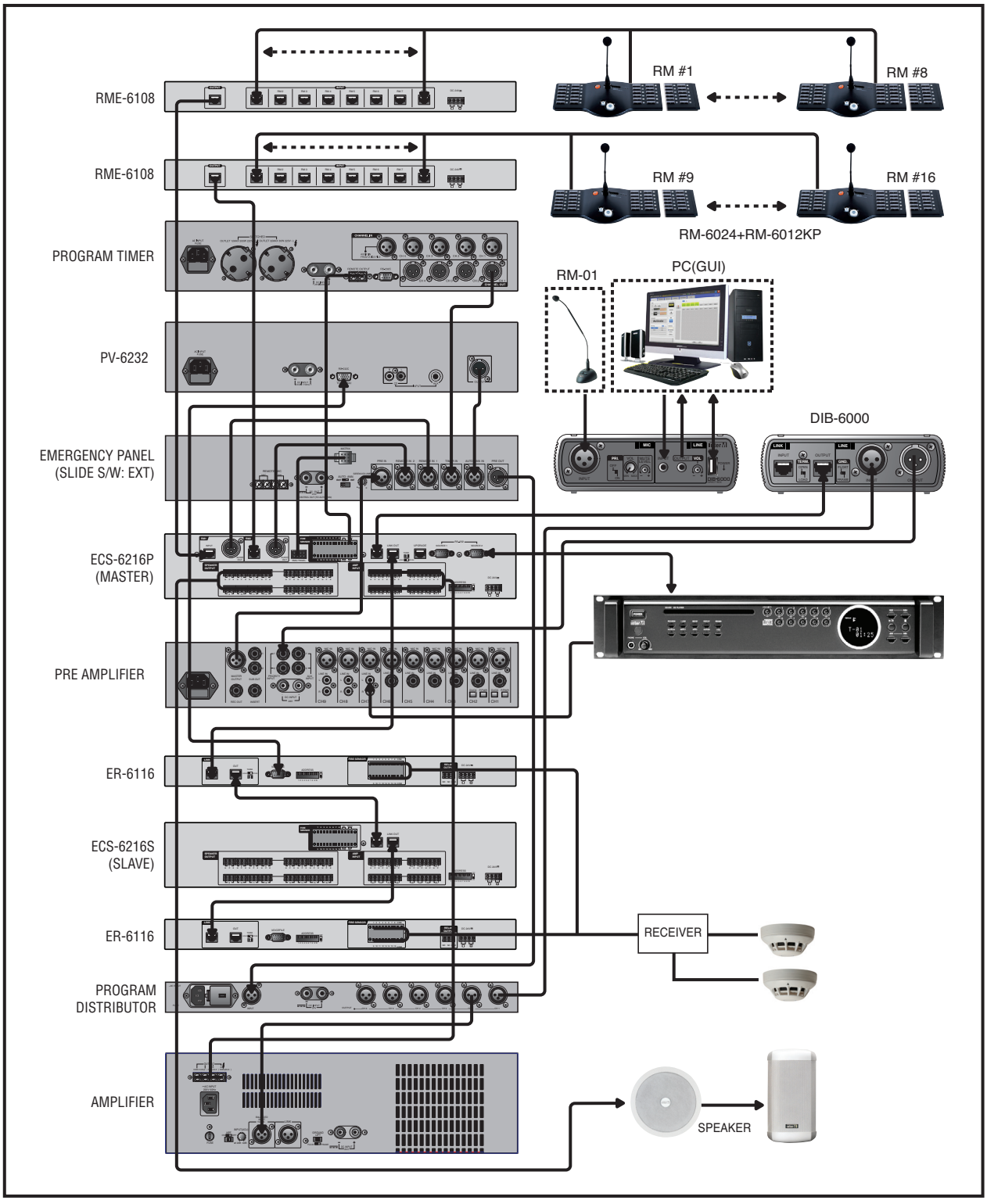
12. ADDRESS SWITCH

Sets the role for each system when equipment is expanded and linked.
Refer to Basic Setting and Checking (Page 4) for setting methods.

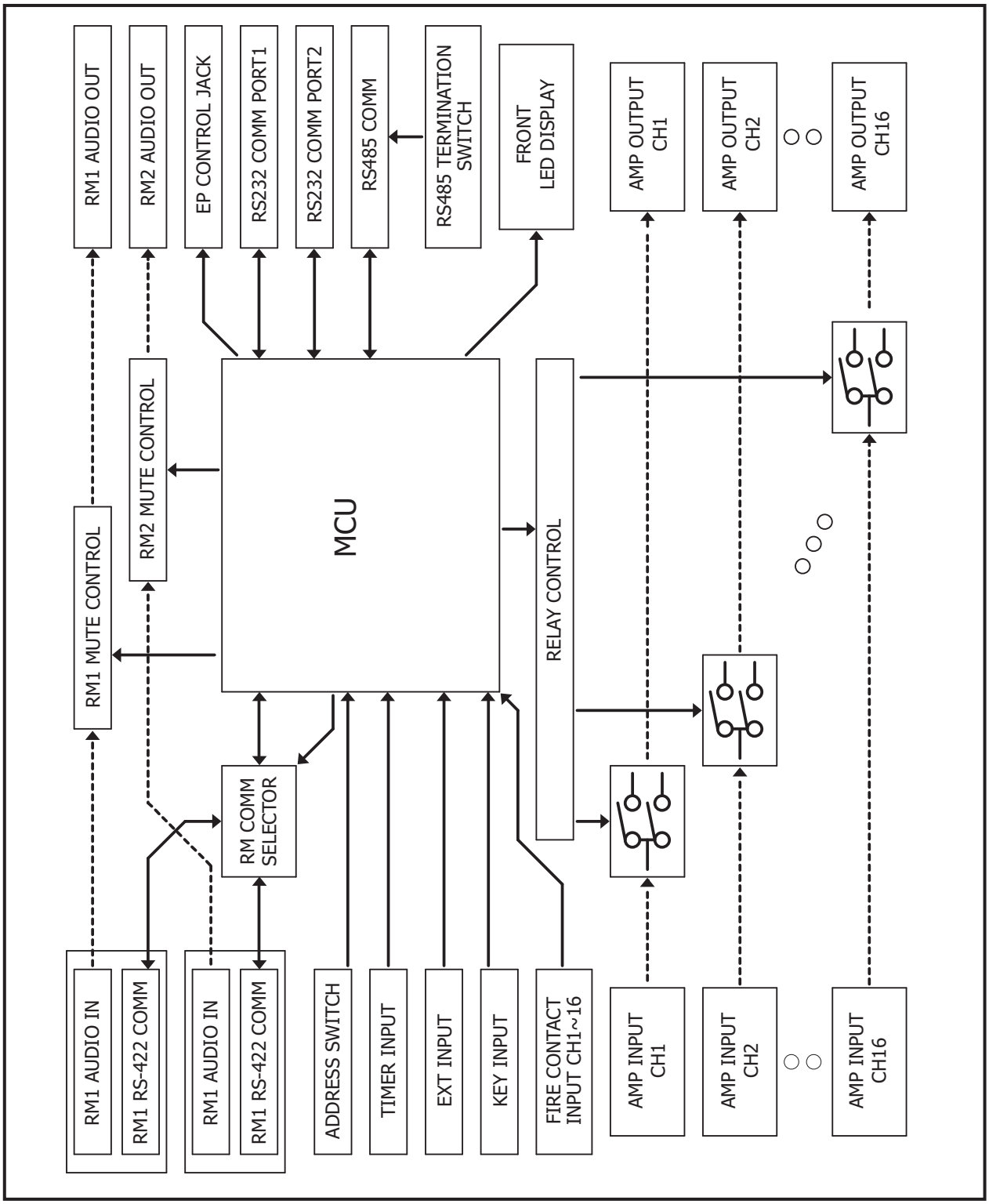
13. POWER INPUT TERMINAL

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

Applications



Block Diagram

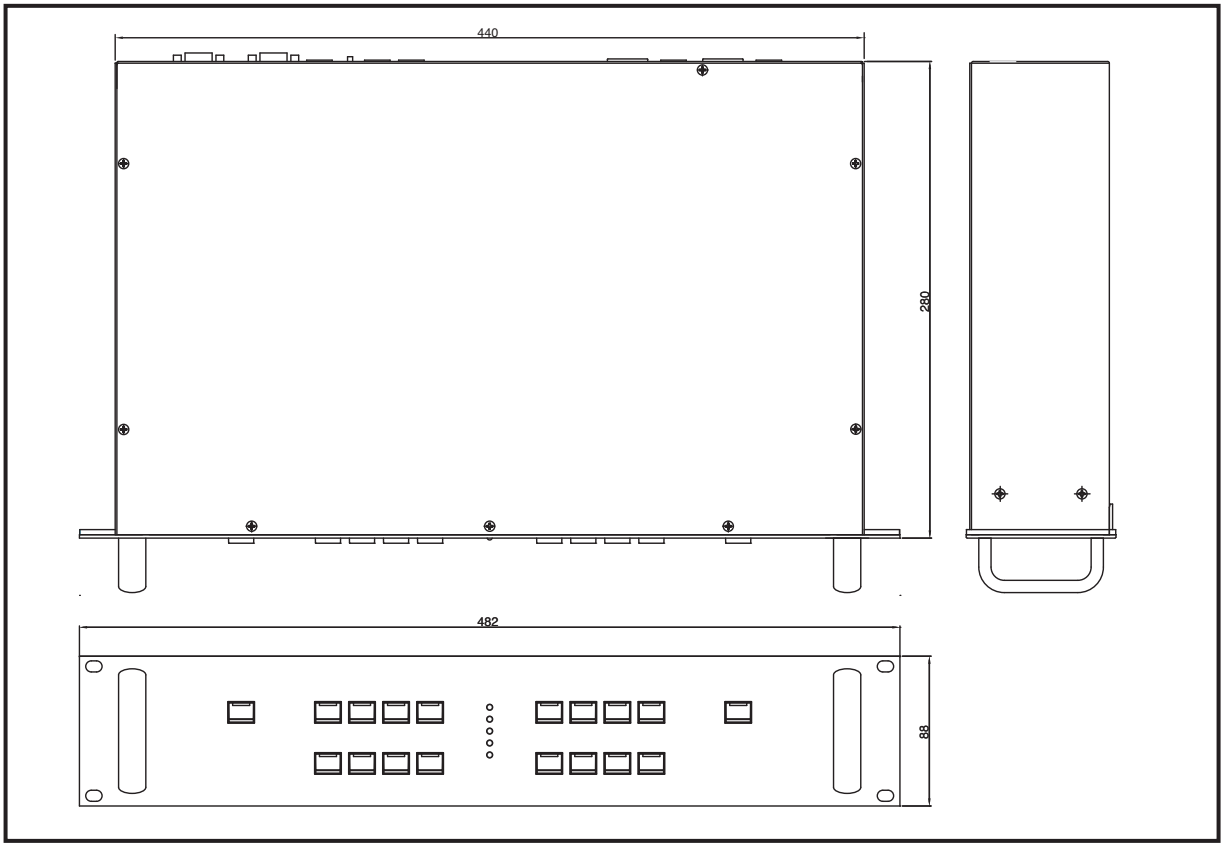


Specifications

		ECS-6216P/S
Priority		Emergency>Timer>Remote 1>Remote 2>Main
Channel		16CH
Communications Protocol	LINK IN/OUT	RS-485 (Maximum: 1km/3,280 feet)
	RM INPUT (RM1, 2)	RS-422 (Maximum: 1km/3,280 feet)
SOURCE		RS-232 (Maximum: 12m/40 feet)
Fire Sensor		Dry Contact
Operating Temperature		-10°C ~ +40°C/14°F~104°F
Power Source		DC 24V, 900mA
Weight (Set)		4.3kg/9.5lbs
Dimensions (Set)		482(W)x88(H)x280(D)mm/19(W)x3.5(H)x11(D)in

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

※ **DIMENSIONS**



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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