

# Operation Manual

## Digital PA Combination System **PAC-5000A/5600**



**interM**

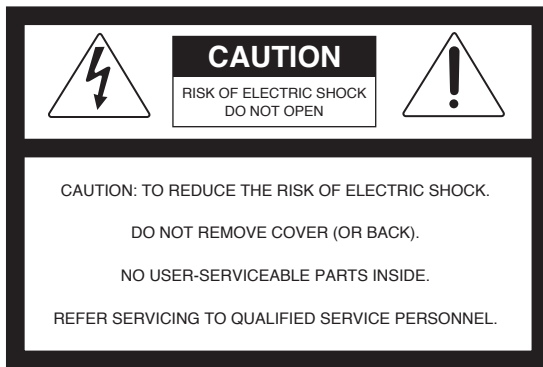
# Welcome

## 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.

## WARNING

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

Attentions: Pour prévenir les chocs électriques ne pas utiliser cette fiche polarisée avec un prolongateur, une prise de courant ou une autre sortie de courant, sauf si les lames peuvent être 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.

\*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.

## 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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## Unpacking

Although your PAC-5000A/5600 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 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

### - BUDGET AND SPACE SAVING INSTALLATION

The System incorporates most of the current PA functions plus Emergency and normal broadcasting abilities thus allowing budget and space saving installation.

### - DUAL BROADCASTING SYSTEM

With two-channel (300W+300W) high power amplifier built-in, dual broadcasting is possible in 24 Zones separated by A/B channels.

### - DIGITAL PROCESSING & DIGITAL AMPLIFIER

Adopting the use of CLASS-D Amplifier to reduce the total weight, power consumption and operating temperature.

### - BUILT IN VARIOUS SOUND SOURCES

The system provides FM Tuner, Media (CD/DRP/USB) player and two AUX (1,2) inputs for flexible usage.

### - LIFE TIME EXTENSION OF CD MECHANISM

Has the ability to copy the music CD to the internal memory (DRP) to extend the life of the CD mechanism.

### - USB HOSTING

MP3/WMA files on the USB memory can be copied to internal memory (DRP) or play directly.

### - REMOTE CONTROL SUPPORT

PAC-5000A: Using RS-232C terminal allows remote control from Windows application on the PC.

PAC-5600: Using a network port for remote control from the web page is possible.

※ However, CD EJECT, TUNER Memory operation including each input level volume cannot be controlled.

### - SYSTEM EXPANSION

System can be expanded up to 4 units via the LINK-IN/OUT terminals while sharing the audio source. (MASTER 1 Unit, SLAVE 4 Units)

### - 24 CHANNEL SPEAKER SELECT (ZONE 1~ZONE 24)

The system provides 24 channel zone selections, which can be divided into two groups for multiple broadcast areas and with system expansion total of 120 channels can be operated.

### - EQ ADJUSTMENT

EQ adjustment is possible with built-in DSP.

### - REMOTE MIC CONNECTION

Maximum of four remote MICs can be connected to one unit of the system, and with installation of key pad one of the four units can be used up to maximum of 120 channels.

### - BUILT IN MONITOR SPEAKER

One can monitor the broadcast content with a built-in monitor speaker.

**- EMERGENCY POWER AND BATTERY CHARGING**

System has battery charge connect terminal for battery charge to provide emergency power.

**- FIRE DETECTION AND EMERGENCY BROADCASTING**

The system provides 24 channel sensor input terminals for automatic fire alarm broadcasting. It also provides the recording function of personalized alarm message.

**- CHIME AND SIREN**

Built-in Chime (4 Scale, 2 Scale) and Sire (Continuous Wave) can be used to broadcast in the event of an emergency. Also users can change the Siren and Chime.

**- INCREASED INPUTS MIC/LINE**

System has 5 MIC/LINE input jacks that can be selected by a switch, phantom power (DC 24V) is also supplied for enhanced compatibility.

**- BUILT IN EM MICROPHONE (CONDENSER MICROPHONE)**

EM microphone is built-in to the front panel making emergency broadcast a simple task.

**- MP3 / WMA SUPPORT**

Unit supports MP3/WMA and CD-DA.

**- PRE-PROGRAMMED BROADCASTING**

Broadcast can be pre-programmed by either PC TIMER or stored source.

PAC-5600: Pre-Program Maximum 50/Holiday Maximum 30 (Stored Source, PC TIMER).

PAC-5000A: Pre-Program Maximum 100 (PC TIMER).

(Pre-Programs can be controlled by broadcasting web pages and Windows applications)

**- RACK MOUNT**

Rack mount bracket is included with the unit.

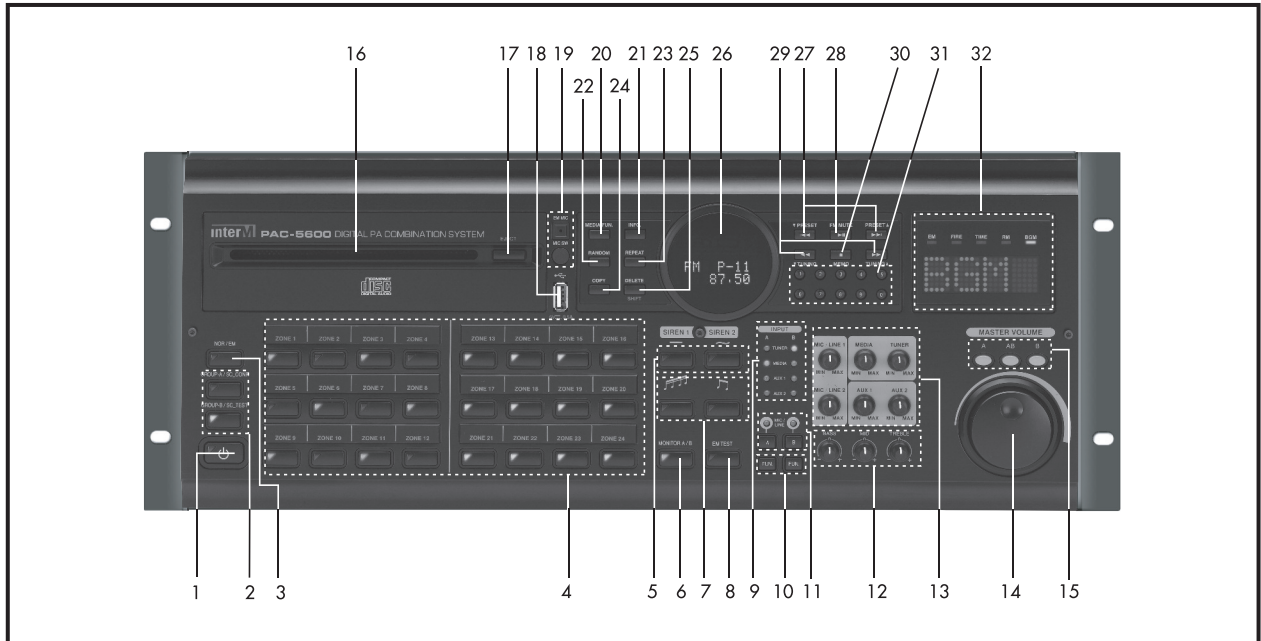
**- SPEAKER LINE CHECK FUNCTION (PAC-5600 ONLY)**

Check connected speaker for functionality.

**- BATTERY CHECK FUNCTION (PAC-5600 ONLY)**

Check the condition of the battery.

## Front Panel



### 1. POWER SWITCH

Switch turns the unit On or Off.

### 2. GROUP SELECT BUTTON (GROUP – A, GROUP – B)

Group A/B speaker zone select/deselect button.

### 3. NOR / EM BUTTON

Normal or Emergency select button.

※ Normal : Green LED, Emergency : Red LED

### 4. SPEAKER ZONE SELECT BUTTON (ZONE 1 ~ ZONE 24)

Group A/B Speaker Zone select button. LED will light when turned on.

※ Group A : Green LED, Group B : Orange LED, Emergency : Red LED

### 5. SIREN BUTTON (SIREN 1, SIREN 2)

Continuous Siren (SIREN 1), Wave Siren (SIREN 2).

### 6. MONITOR SPEAKER SELECT BUTTON (MONITOR A/B)

The Button is used to monitor Speaker Outputs of Group A or B.

1) Press button in succession to change. Group A (Green LED) → Group B (Orange LED) → Off.

2) Hold the button down to change the output level (Low/High).

### 7. CHIME SELECT BUTTON

4 Scale or 2 Scale chime button, useful before and after the broadcast.

※Note: MIC Function must be on to run a chime.

**8. EMERGENCY BROADCAST TEST BUTTON (EM TEST)**

Test button to confirm the broadcast sound in the event of fire. In EM (Emergency) mode press and hold the button down to broadcast stored source and press down again to cancel the playback. You can also select separate speaker ZONE at this time.

**9. BGM INPUT INDICATOR LED**

The LED displays the currently selected BGM input and are divided into groups A and B.

**10. BGM INPUT SELECT BUTTON (FUN.)**

Select desired input source to either Group A or B. Changes in the order of TUNER → MEDIA → AUX1 → AUX2 each time the button is pressed.

**11. MIC/LINE SELECT BUTTON (A, B) AND INDICATOR LED**

MIC/LINE select button. LED will light when pressed.

※NOTE: MIC/LINE 1 has the priority over MIC/LINE 2.

**12. EQ ADJUSTMENT**

Adjusts EQ levels: BASS (100Hz), MIDDLE (1kHz), TREBLE (10kHz).

**13. INPUT VOLUME LEVEL ADJUSTMENT**

Adjusts the input volume levels of MIC/LINE 1, MIC/LINE 2, AUX1, AUX2, TUNER, and MEDIA (CD/USB/DRP).

**14. MASTER VOLUME CONTROL**

Adjust main volume of the system. Depending on the selection (A, AB, B) control method may change.

**15. SELECT VOLUME CONTROL BUTTON (A, AB, B)**

Speaker output level for each Group can be adjusted independently.

- A Button: A Group only
- B Button: B Group only
- AB Button: A and B together

**16. CD SLOT**

Insert CD into the slot.

**17. EJECT BUTTON**

Eject the CD.

**18. USB TERMINAL**

Terminal is to connect the USB. MP3/WMA files can be played and can also COPY the files from USB to DRP.

**19. EMERGENCY MIC (EM MIC) AND OPERATION SWITCH (MIC SW)**

Built-in condenser microphone is used for EM (Emergency Broadcast) during FIRE. In EM mode, hold down the (MIC SW) to operate.



**20. MEDIA FUN. BUTTON**

MEDIA (CD/USB/DRP) select button. Each time the button is pressed, changes in the order of CD → USB → DRP.

- CD Mode: CD Play
- USB Mode: Play files stored in USB
- DRP Mode: Play files stored in the internal memory

**21. INFO. BUTTON**

- Access additional features of the system.
- ※Please refer to the "Additional Information" section.

**22. RANDOM BUTTON**

Play random selections.

**23. REPEAT BUTTON**

Repeat play selected file.

**24. COPY BUTTON**

Start copy CD, USB files to the DRP.

- ※Note : Due to copyright laws, cannot copy files to CD/USB from DRP.

**25. DELETE BUTTON**

Button to delete the files stored in the DRP.

**26. DISPLAY WINDOW**

A window that displays the current operating system information.

**27. I◀◀ (▼PRESET) / ▶▶I (PRESET▲) BUTTON**

- MEDIA (CD/DRP/USB) Track selection button.
- TUNER Select stored radio stations.
- Used to select the system information and additional information.

**28. ▶|| (PLAY / PAUSE) / FM MUTE BUTTON**

- MEDIA (CD/DRP/USB) Play or Pause. Press ▶|| once to Play and once more to Pause.
- In TUNER Mode it is used to MUTE the weak signal stations.

**29. ◀◀ (▼TUNING) / ▶▶ (TUNING▲) BUTTON**

- MEDIA (CD/DRP/USB) Fast Forward or Rewind Button.
- In TUNER Mode, used to seek stations. Press once to move one step or press and hold to tune automatically.

**30. ■ (STOP) / MEMO BUTTON**

- MEDIA (CD/DRP/USB) Stop Play.
- MEMO: In TUNER Mode, used to store stations in Memory.

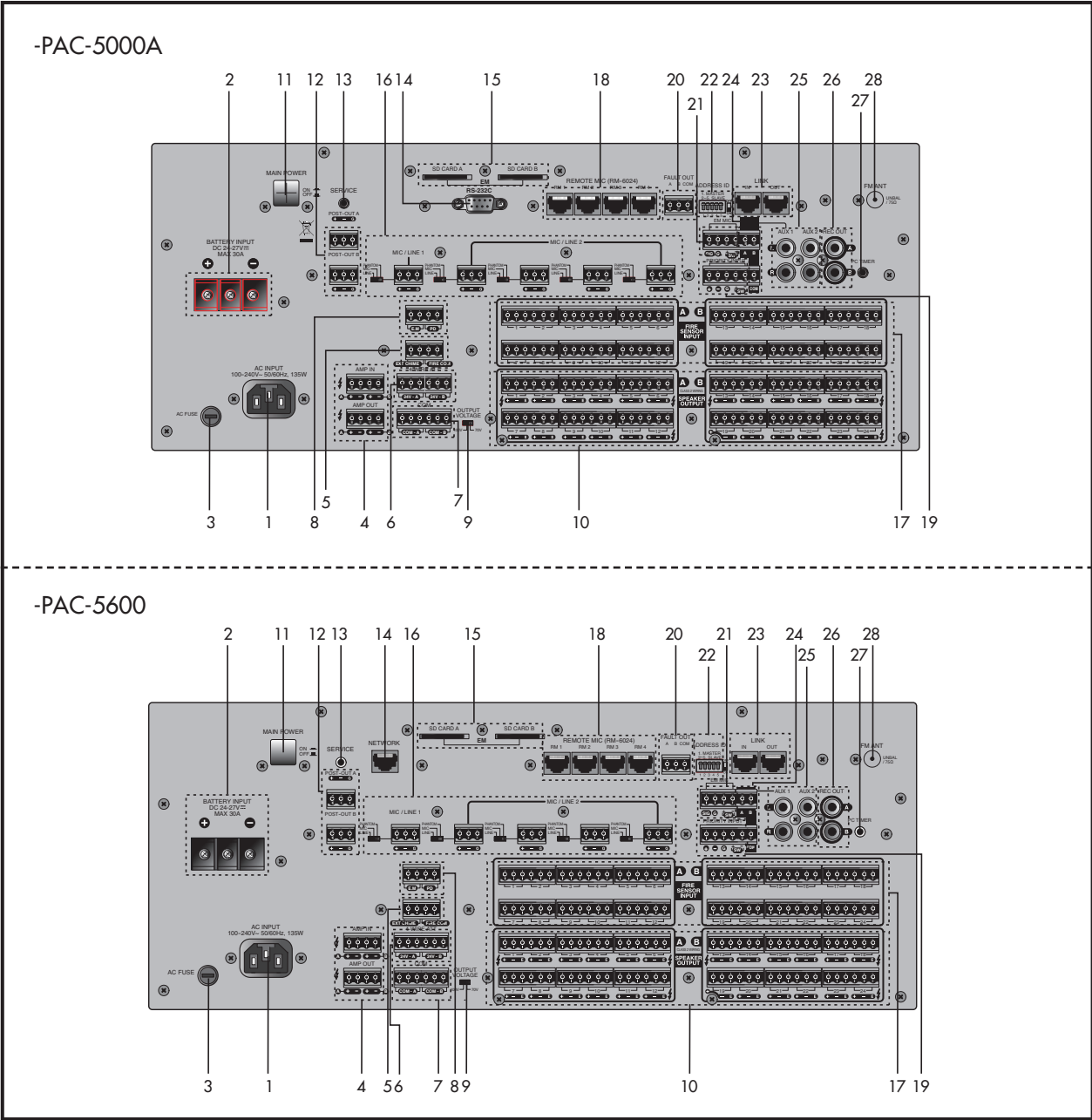
**31. NUMBER BUTTONS (0~9)**

Number buttons are used to enter numbers to search for tracks and to enter radio frequencies.

**32. SYSTEM OPERATION INDICATOR**

Displays the system operations such as Emergency Broadcast (EM), Fire (FIRE), reserved broadcast (PC), remote microphone broadcast (RM) and general broadcast (BGM).

# Rear Panel



### 1. POWER INPUT (AC INLET)

Connect AC Power cable. Before connecting, make sure that the power voltage matches the operating voltage of the device. (100-240VAC~ 50/60Hz)

## 2. DC POWER INPUT AND BATTERY CHARGE TERMINAL

The emergency power supply and battery charging port can connect DC 24V battery.

- Priority is given to AC power when both AC and DC power are both input. DC power is activated when AC is cut off.
- When operating in emergency power mode and the battery voltage is about 20V, system operation indicator "DC" will flash and if the voltage drops below 19V, system will be in standby mode to protect the battery.

※Notices

1. When in standby mode due to low voltage, battery can be recharged (20V) by AC power.
2. Before connecting the battery, please check for proper polarity (+,-).
3. Please note that it may cause electric sparks when connecting the battery.

## 3. AC FUSE

If any problem occurs with the AC power, fuse in the unit will cut the AC power to protect the unit. When replacing the fuse, replace with the same capacity as listed.

## 4. AMP IN/OUT TERMINAL

External amplifier input terminals are located in the back of the unit when separate/additional power amplifier is needed.

※ Note: When using built-in amplifier, input/output terminals must be connected to each other.

### 1) AMP OUT (AMP OUT)

- Connect built-in amplifier (100V/33.3Ω or 70V/16.6Ω) terminals to AMP IN terminals.
- Pay attention to Group A,B and polarity (+, -) connections.

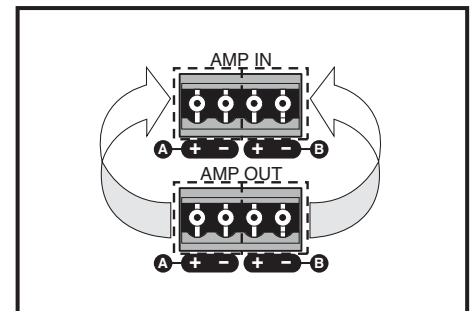
### 2) AMP IN (AMP IN)

- Amplifier out terminal which can be connected to (AMP OUT) or connect to external amplifier. The input can be used for local broadcast through speaker ZONE selection button on the front panel.

### 3) How to Connect

- When using only the built-in amplifier:

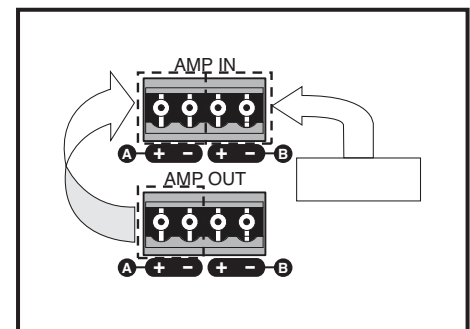
AMP OUT (A, B) to the AMP IN (A, B), while observing correct polarity (+,-).



- When using both Internal and External Amplifier:

Connect an output of the two groups to the amplifier input and the external Amplifier output to the other group input.

※Caution: When connecting an external amplifier, connect HIGH IMPEDANCE output to AMP IN terminal. Do not connect amplifiers rated 1200W or higher. Also, each ZONE output must be 500W or less.



**5. EXT CHIME/ FIRE COM**

EXT CHIME: Terminal to operate the CHIME2 using an external contact.

FIRE COM: FIRE SENSOR common ground input terminal.

**6. 24V – A/24V – B TERMINAL**

Terminal used when 4-wire Attenuator is used. SPEAKER OUTPUT terminals (+, -) and 24V – A(or 24V – B), are used to connect COM port.

**7. COM TERMINAL**

24V – A/24V – B's GND terminal.

**8. CONTROL OUT TERMINAL**

- EM (Emergency)

The terminal is used to control external devices when the broadcasting mode is changed to emergency broadcast (EM/Fire/Pri), and the contact is closed regardless of speaker zone settings.

- PD (Power Distributor)

It is used to control power distributor remotely. By connecting to the remote control terminal of the PD, contact output is made when there is a signal output in any speaker zone, regardless of broadcasting mode (EM/Normal)

**9. OUTPUT VOLTAGE SELECT SWITCH**

100V / 70V output select switch.

※NOTE : Before using the switch, make sure the speaker impedance is proper. (10.3 Please refer to the nominal output impedance information).

**10. SPEAKER OUTPUT CONNECT TERMINAL**

The speaker output terminals of each ZONE (1~24). General Broadcast (2wire), Emergency Broadcast (3wire), ATTENUATOR (4wire) are possible. Terminals are set from left, +, -, and E.

1) Speaker Output Signal

- Normal Broadcast: Connection to (+, -) will produce output.

- EM / FIRE Broadcast: Connection to (+, -)/(E, -) will produce EM broadcast output.

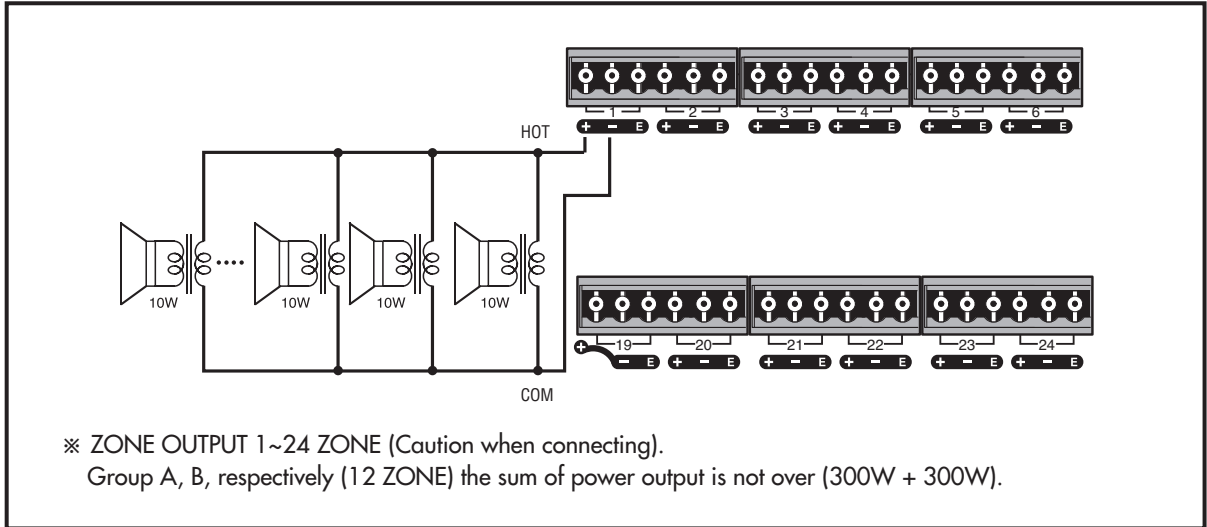
2) Speaker Connections

- When connecting the speakers, disconnect the power cord from the wall outlet. Depending on the type of speakers in use, select the appropriate speaker terminals on rear panel.

3) Rated Power Output and Impedance

Contents		Group A (12 ZONE)	Group B (12 ZONE)
Output/Impedance	100V	100V/33.3Ω(300W)	100V/33.3Ω(300W)
	70V	70V/16.6Ω(300W)	70V/16.6Ω(300W)

HIGH IMPEDANCE Speaker Installation



**11. MAIN POWER SWITCH (MAIN POWER)**

The switch is used to turn On and Off the AC power.

**12. POST OUTPUT Terminal (POST-OUT A/B)**

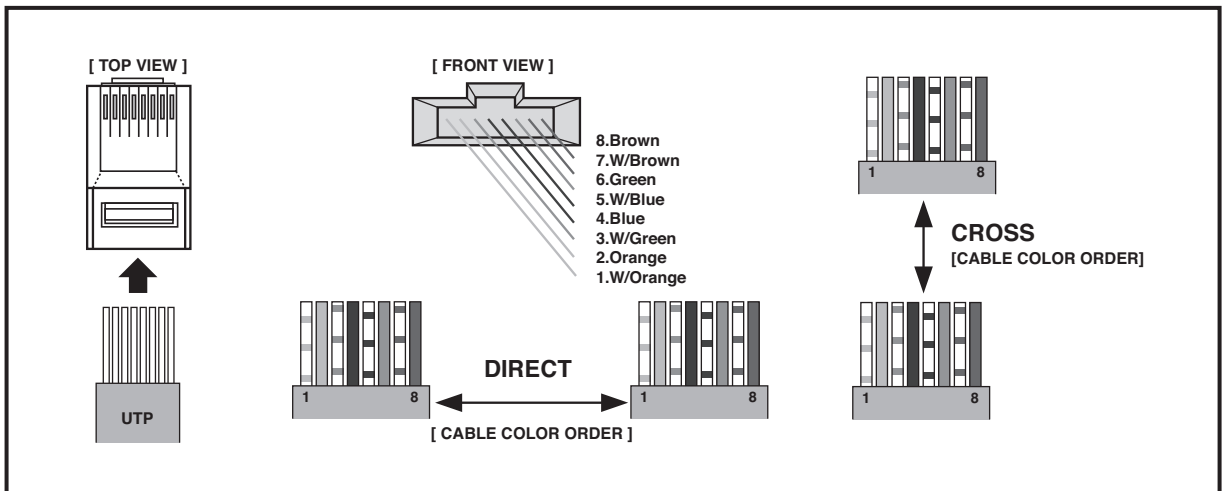
Terminal is used to record sound from this unit and to connect to an external amplifier.

**13. SERVICE TERMINAL**

Used for maintenance/service of the unit.

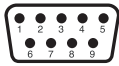
**14. TELECOMMUNICATION TERMINAL**

- PAC-5600: NETWORK Terminal  
Supports 10/100 Base-Tx as a network terminal, remote control is possible by accessing the web page.
- Standard TIA/EIA 568B standard terminated CAT5 cables used to connect the PAC-5600.



- PAC-5000A: RS-232C Terminal

RS-232 SERIAL terminal for remote control access. Remote control is possible with the PC program provided separately.



Pin	1	2	3	4	5	6-9
Purpose	X	Receive	Transmit	X	Ground	X

※For how to use the remote control, please refer to the SOFTWARE MANUAL.

**15. SD MEMORY CARD SLOT (SD CARD 1/2)**

Insert SD memory card with stored emergency broadcast sound source.

※Change the sound according to ones preferences.

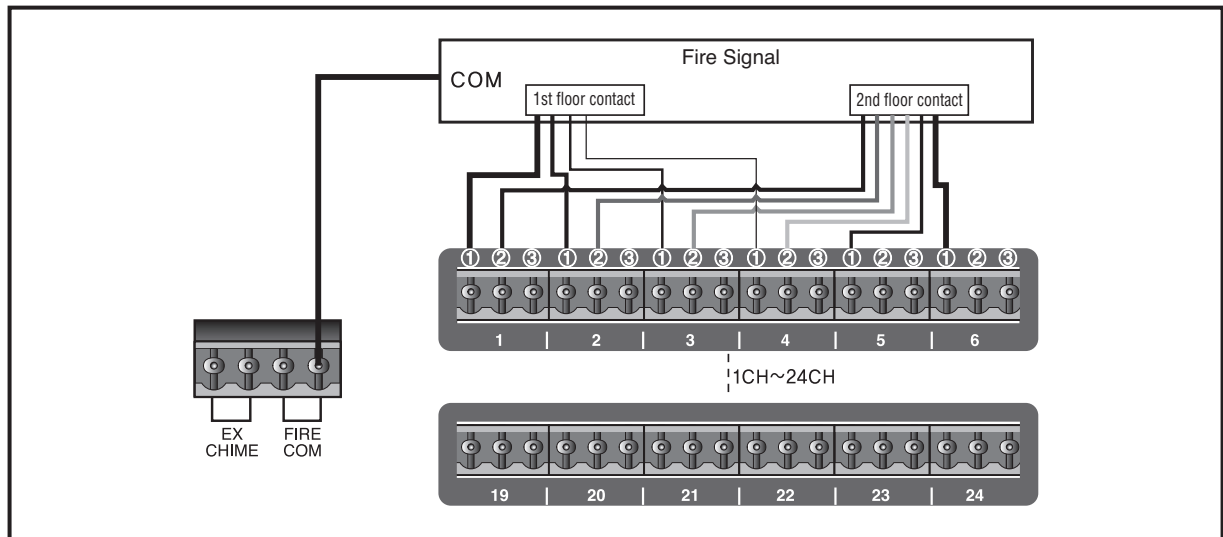
**16. LINE / MIC INPUTS AND INPUT SELECTION SWITCH**

Usage of the input terminal is changed depending on the position selected by the input switch.

- LINE: LINE Input.
  - MIC: Can be used as a general dynamic microphone input.
  - PHANTOM: Condenser microphone input and provides DC 24V to the input terminal.
- ※MIC/LINE 1 input takes priority over MIC/ LINE 2 input.

**17. FIRE SENSOR INPUT TERMINAL**

Contact input terminals working in conjunction with fire receiver to output a fire emergency broadcast. Each area has 3 input terminals to configure a group of upper, lower and or ground floor. (Emergency Broadcast sound source is stored in SD memory card.)



Per diagram when the fire signal is received connect so that the proper channel is activated to send emergency broadcast.

For example: 1st floor 1-4 channels are activated. 2nd floor 1-6 channels are activated. If both 1st and 2nd floors are activated at the same time, 1-6 channels will transmit emergency broadcast.

In the above example case when 1st and 2nd floor are connected to 1-4 channel together ① 1st floor ② 2nd floor are connected. When multiple contacts are connected to same contact take extra care to connect each one independently.

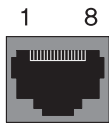
Fire contact Macro functions can be set with web (PAC-5600) or PC program (PAC-5000A). For detailed instructions please refer to the SOFTWARE MANUAL.

※Note: When input comes in during standby mode, emergency broadcast system turns on and broadcasts to pre-selected ZONE speakers.

**18. REMOTE MIC CONNECT TERMINAL (RM 1 ~ RM 4)**

Remote MIC (RM-6024) connect terminal. RM1~RM4 (Max 4 can be connected for use).

\* PIN OUT Detail



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

- RM1 of RM1-RM4 terminal can be expanded up to 120 locations with optional KEYPAD (RM-6012KP).

※Note: When system is in SLAVE MODE, remote MIC function cannot be used.

**19. PRIORITY INPUT TERMINAL**

PRIORITY INPUT terminal that accepts input signals and contact point. SW +, -. When signal is received to the terminal, in order of preference stops the broadcast and broadcasts the signal received in PRIORITY INPUT to all ZONE.

**20. FAULT OUT TERMINAL**

Terminal that sends information of fault in the amplifier or in speaker line. Connect of FAULT OUT terminal will be closed in situations as following.

PAC-5000A: Amplifier protection is activated when a amplifier malfunction is detected.

PAC-5600: When speaker lines are shorted (Please refer to page 24 for more information of SPEAKER LINE CHECK function.)

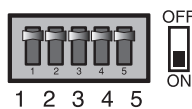
**21. EM MIC / SWITCH CONNECT TERMINAL (EM MIC)**

Terminal is used when external MIC is used instead of EM MIC (built-in front panel). (MIC sold separately)

※ Note: When connecting external microphone, please observe the pin specifications.

**22. ADDRESS SET SWITCH (ADDRESS ID)**

Switch intended to specify the ADDRESS of each set for the expansion of the unit.



SET	DIP SWITCH					ALLOCATED ZONE
	1	2	3	4	5	
MASTER	ON	OFF	OFF	OFF	OFF	1~24 ZONE
SLAVE1	OFF	ON	OFF	OFF	OFF	25~48 ZONE
SLAVE2	OFF	OFF	ON	OFF	OFF	49~72 ZONE
SLAVE3	OFF	OFF	OFF	ON	OFF	73~96 ZONE
SLAVE4	OFF	OFF	OFF	OFF	ON	97~120 ZONE

※ Note: In SLAVE MODE setting, if the numbers are duplicated it may cause abnormal operations.



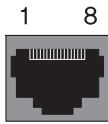
### 23. LINK IN / LINK OUT TERMINAL

The terminal is used to expand the system up to 4 SLAVE units (Total 120 ZONE) can be connected. Configured by MASTER and SLAVE system, SLAVE will share the output of the MASTER unit.

#### 1) LINK IN Terminal

Terminal to receive the sound source and control signals from previous system for system expansion.

\* PIN OUT Specification

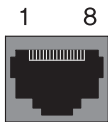


Pin No.	Pin Name	Functions
1	GR-A-IN-	Balanced Group-A-Cold
2	GR-A-IN+	Balanced Group-A-Hot
3	GND	Ground
4	GR-B-IN-	Balanced Group-B-Cold
5	GR-B-IN+	Balanced Group-B-Hot
6	GND	Ground
7	CONTROL-A	RS-485 Data-A
8	CONTROL-B	RS-485 Data-B

#### 2) LINK OUT Terminal

Terminal to send the sound source and control signals to next system for system expansion.

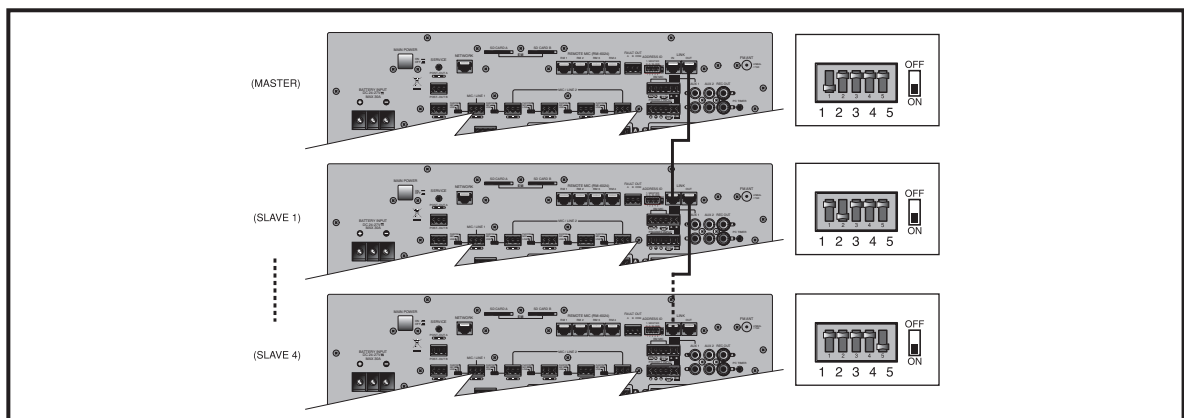
\* PIN OUT Specification



Pin No.	Pin Name	Functions
1	GR-A-OUT-	Balanced Group-A-Cold
2	GR-A-OUT+	Balanced Group-A-Hot
3	GND	Ground
4	GR-B-OUT-	Balanced Group-B-Cold
5	GR-B-OUT+	Balanced Group-B-Hot
6	GND	Ground
7	CONTROL-A	RS-485 Data-A
8	CONTROL-B	RS-485 Data-B

#### 3) System Set up and Connection

- Set the ADDRESS setting switch to the proper usage (MASTER/SLAVE 1~4) of the system. Turn the power off and turn on to apply the settings.
- System set to SLAVE is displayed as "SLAVE (1~4)" in the front display window.
- The system set to SLAVE cannot use its own sources.



**24. AUX1 INPUT JACKS AND CONTACTS**

Ability to use AUX1 as BGM input from an external source input. Priority is same as BGM.

A - COM Contact Input, A group's BGM will be selected to AUX1.

B - COM Contact Input, B group's BGM will be selected to AUX1.

**25. AUX INPUT TERMINAL**

Multiple external source devices (CD, DECK, TUNER, etc.) can be connected and input volume adjustment is on the front panel.

**26. REC OUT TERMINAL**

The terminal for recording the output of Group A,B to the external recording device.

**27. RESERVED BROADCAST INPUT TERMINAL (PC TIMER)**

The terminal to receive audio signals from PC for playback in reserved broadcast.

**28. FM ANTENNA TERMINAL (FM ANT)**

Use the FM antenna supplied with the product, 75Ω coaxial cable can also be connected if the signal is weak and produces noise.

# Operating Method

## 1. Before using the system

- 1) Set all the volumes to minimum level before connecting to a wall outlet.
- 2) Please make sure that the speaker and the input terminals are connected properly.  
In particular, make sure that the AMP input / output jacks on the rear panel are connected properly.
- 3) Confirm the settings of MASTER, SLAVE modes.
- 4) The red LED on power button on the front panel will blink and stop when the main power switch on back is turned on.
- 5) Pressing the power button on front panel will turn on the display window.
- 6) Adjust both the input and main volume to operate the system.

## 2. System Operation

### 1) Dual Broadcasting

System can broadcast to two different areas (Group A and Group B) with unique broadcasts to each Group.

- Input selection by group

Select an input by using the input selection button (FUN) for each group.

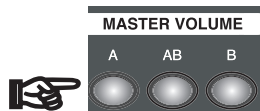
Each time the button is pressed, input changes in the order of TUNER → MEDIA → AUX1 → AUX2.

Example) Group A: TUNER Broadcast, Group B: MEDIA (CD) Broadcast.



- Main Volume Control by Group

Use the mode selection button on the front panel to adjust the speaker output level by Group.



- MIC and Chime Broadcast

- MIC broadcasting can be separate for Group A and Group B.
- Press the MIC/LINE button for a specific group to broadcast to.



- Before pressing the Chime button, adjust the input volume level properly.  
※ Note: For Chime operation, Group must be selected using the MIC/LINE button.

## 2) How to check Emergency Broadcast Sound

- In EM (Emergency) mode press and hold EM TEST button to hear through the main and monitor speakers.

## 3) System Remote Control Method

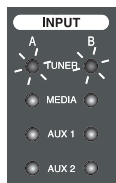
Please refer to the SOFTWARE MANUAL.

※PC Program, Software MANUAL can be downloaded from ([www.inter-m.com](http://www.inter-m.com)).

## 3. FM TUNER Operation

## 1) How to Auto/Manual tune radio frequencies

- Use either Group A or B input button to light the LED on TUNER.



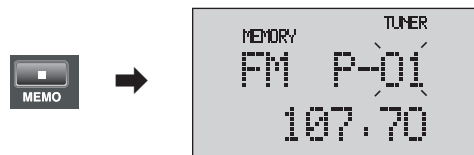
- TUNING ▼ / ▲ (Frequency DOWN/UP). Use Up/Down buttons to find desired frequency.



- Auto Tune : TUNING ▼ / ▲ (DOWN/UP) Holding down the button will automatically find and tune in the stations. Once tuned in "TUNED" will display.
- Manual Tune : TUNING ▼ / ▲ (DOWN/UP) Pressing the button briefly once will increase/decrease the frequency by one step. If possible frequency is found "TUNED" will display and play.

## 2) How to store and recall stored stations

- TUNING ▼ / ▲ (Frequency DOWN/UP). Find or Select desired stations.
- Press MEMO button and MEMORY will display along with preset number.
- Press PRESET ▼ / ▲ button or numbers (0~9) button to select preset location and pressing MEMO button will store the frequency in the preset location.



- Using above steps up to 40 stations can be stored in preset memory.
- Recall the stored stations by pressing the PRESET ▼ / ▲ buttons.

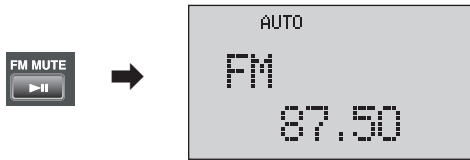


## 3) FM Antenna Installation

Find the best possible location with the best reception for the FM antenna. However, within the city, industrial areas, or high voltage transmission lines will cause excessive noise or weak signal. In this case it is best to install an outdoor antenna with 75Ω connecting cable.

#### 4) FM MUTE Function

No display of TUNED indicates no broadcast or weak/noisy signals. Pressing FM MUTE button will display "AUTO" and bypass all weak or noisy stations.



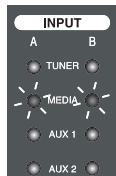
When the normal broadcast signal is received TUNED is displayed and the broadcast is automatically resumed.

※Note: In some cases TUNED display will be lit due to the interference from other equipment such as CDP. In this case, install or move the equipment away from the system.

#### 4. MEDIA (CD/USB/DRP) Operation

##### 1) Input select mode

- Use either Group A of B input button to light the LED on MEDIA.

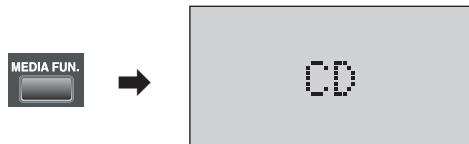


- MEDIA FUN Button. Each time button is pressed, input changes in the order of CD → USB → DRP.

##### 2) Play/Pause Function

- CD

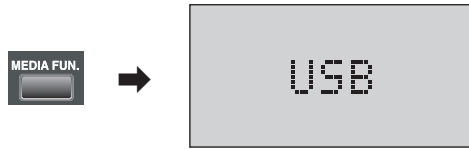
- Able to play CD-DA/MP-3/WMA formats.
- Press MEDIA FUN button to select CD mode.



- When the CD is inserted, reads the CD information and goes to standby mode displaying TOTAL songs available.  
Up to 499 songs is displayed and "NO DISC" is displayed when there is no CD present.
  - ▶|| (Play/Pause) Press once to Play and once more to Pause.
  - ▶|| (Play/Pause) Press again to cancel Pause and resume Play.
- ※Note: IF the disc is in poor condition or is a non-playback format, disc will be ejected automatically.  
In this case it is not the system, please check the disc instead.  
Only the 12cm size disc can be used. 8cm size disc cannot be used.

## - USB

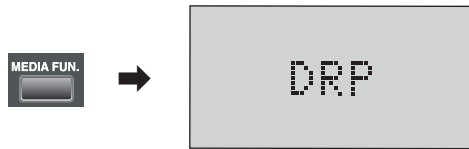
- Plays the files stored in a USB memory device.
- Press MEDIA FUN button to select USB mode.



- When the USB device is inserted in the USB reader, reads the information and goes to standby mode displaying TOTAL number of files available. If there is no USB device "NO USB" will display and "NO FILE" when there is no file to read.
- ►|| (Play/Pause) Press once to Play and once more to Pause.
- ►|| (Play/Pause) Press again to cancel Pause and resume Play.

## - DRP

- Plays the files stored in the internal memory.
- Press MEDIA FUN Button to select DRP mode.



- Once in DRP mode, reads the information and goes to standby mode displaying TOTAL number of files available. If no files are available "NO FILE" will be displayed.
- ►|| (Play/Pause) Press once to Play and once more to Pause.
- ►|| (Play/Pause) Press again to cancel Pause and resume Play.

## 3) REPEAT Function

Each time REPEAT button is pressed mode changes in order of REPEAT 1 → REPEAT GROUP(USB) → REPEAT ALL → OFF.

## - REPEAT 1 Function

Press the REPEAT button once "REPEAT 1" is displayed and selected song is played repeatedly.

## - REPEAT GROUP Function

When REPEAT is double-clicked "REPEAT GROUP" is displayed and USB file folder is played repeatedly.

## - REPEAT ALL Function

Press REPEAT three times "REPEAT ALL" is displayed and the entire disc is played repeatedly.

## - OFF Mode

Disc is stopped after playing the entire disc once without repeat.

## 4) RANDOM Function

Songs are played in random order.

- In stop mode press RANDOM and "RANDOM" is displayed. Press ►|| (Play/Pause) button to play in random order.
- Repeat playback is possible in REPEAT mode.
- Press RANDOM button once more to cancel the mode.

## 5) COPY Function

Ability of copying CD and USB source materials to the DRP(Internal Memory).

## - CD COPY

- Ability to copy the contents of the CD to the DRP. CD playback and COPY is done at the same time.
- Using this feature can greatly extend the life of the CD mechanism as playback is sourced from internal memory.
- Insert CD and press COPY button to switch to the CD COPY mode.
- Press |◀◀ (▼PRESET) / ▶▶| (PRESET▲) to select the folder to be stored.

COPY CD  
TO Fd1

- After selecting the file to COPY, press ▶|| (Play/Pause) (screen shot below). Press ▶|| (Play/Pause) once more to start the COPY function. (New file will over-write existing file.)

ARE YOU  
SURE?



DELETING



COPY 10%  
1/20

## - USB COPY

- Ability to copy the contents of USB to the DRP. No playback during COPY and the files are copied sequentially.
- Insert USB and double-click the COPY button to switch to the USB COPY mode.
- Press |◀◀ (▼PRESET) / ▶▶| (PRESET▲) to select the folder to be stored.

COPY USB  
TO Fd1

- After selecting the file to COPY, press ▶|| (Play/Pause) (screen shot below). Press ▶|| (Play/Pause) once more to start the COPY function.

ARE YOU  
SURE?



DELETING



COPY 10%  
1/26

- ※Notice: 1. When COPY starts the existing files stored in the folder will be deleted.  
2. Playback order will be same as USB stored order. If specific playback order is needed, create a new USB source with playback order before using COPY function.

- Press MEDIA FUN button to switch to DRP mode to verify the COPY content.
- Pressing the ■ (Pause) button during COPY will stop the copy function and save only up to the last completed tracks.

## 6) DELETE (File Delete) Function

Function to delete unnecessary files from the DPR (internal memory).

## - Folder Delete

- Press MEDIA button to select DPR.
- Pressing DELETE button will change to delete mode and "FOLDER1" is displayed.

FOLDER1

- Press ►► (SEARCH UP) button to select folder (FOLDER1~6) to be deleted.
- Select the folder to delete and press DELETE button, as shown below and use |◀◀ / ►►| button to delete only the selected TRACK.

DELETE  
ALL?

DELETE  
TRACK?

- In "DELETE TRACK" mode pressing DELETE button to use numeric(0~9) buttons to select delete TRACK is possible.

TRACK0001

- Select the TRACK to delete and press DELETE button, as shown below, press DELETE once more to delete the TRACK.

ARE YOU  
SURE?



DELETING

## - FORMAT

- In "FOLDER1" mode press ►► (SEARCH UP) button to select the FORMAT as shown below.

FORMAT?

- After selecting FORMAT, press DELETE button, as shown below, and press DELETE to start the FORMAT

ARE YOU  
SURE?



FORMATT  
ING



## 5. Add-on Operation Methods

### 1) System Version Display Function

Display the system version.

- Press INFO button and press |◀◀ / ▶▶| button to verify "VER. #.#.#".

```
Ver 1.0.
  1.1
```

### 2) System IP information display (PAC-5600 Only)

Display units' IP information.

- Press INFO button and press |◀◀ / ▶▶| button to display system IP information.

```
192.168.
  1.99
```

### 3) BUZZER ON/OFF Setting

Able to turn On/Off the BUZZER sound each time a button is pressed.

- Press INFO button and press |◀◀ / ▶▶| button to select "BUZZER ON".
- Use ▶|| button to select ON/OFF option. (Default setting is ON position.)

```
BUZZER
  ON
```

```
BUZZER
  OFF
```

### 4) AUTO PLAY Function Setting

Function to auto-play a CD and stop when the main power is turned on.

- Press INFO button and press |◀◀ / ▶▶| button to select "AUTOPLAY ON".
- Use ▶|| button to select ON/OFF option. (Default setting is ON position.)

```
AUTOPLAY
  ON
```

```
AUTOPLAY
  OFF
```

※NOTE: To use the AUTO PLAY, before powering off, selection must be set to CD.

5) SPEAKER LINE CHECK Function (PAC-5600 Only)

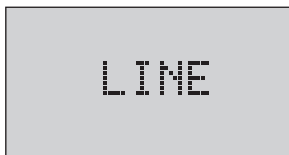
Function to check if the speaker line is connected properly.

- CONFIRM: Test to store the current speaker line connect state.

- Press INFO button and press |◀◀ / ▶▶| button to select "SPEAKER CONFIRM".



- In "SPEAKER CONFIRM" mode, pressing ▶|| will display blinking "LINE" in the system operation indicator and measure impedance value of ZONE1~24 sequentially.



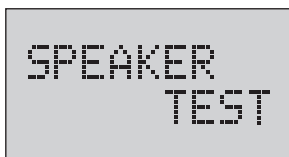
- After the measurement of each ZONE, LED status displays of each ZONE is displayed.

	STATUS	LED COLOR	INFORMATION
1	OPEN	LED OFF	Speakers are not connected
2	SHORT	RED LED ON	Shorted or Output Overload
3	NORMAL	GREEN LED ON	Good working order

- Press ▶|| button to save the settings and return to the original state.

- TEST: Displays the status of the line in comparison to the stored value from CONFIRM test.

- Press INFO button and press |◀◀ / ▶▶| button to select "SPEAKER TEST".



- In "SPEAKER TEST" mode, pressing ▶|| will display blinking "LINE" in the system operation indicator and measure impedance value of ZONE1~24 sequentially.

- After the measurement of each ZONE, LED status displays of each ZONE is displayed.

	STATUS	LED COLOR	INFORMATION
1	OPEN	LED OFF	Speakers are not connected
2	SHORT	RED LED ON	Shorted or Output Overload
3	NORMAL	GREEN LED ON	Good working order
4	ABNORMAL	ORANGE LED ON	Abnormal. Checking is necessary

- Press ▶|| button to save the settings and return to the original state.

- After the line test, in case of SHORT conditioned ZONE, ZONE button will not work. ZONE button will only work in NORMAL status state.

- During CONFIRM or TEST, pressing ▶|| button will cancel CONFIRM or TEST operations.

## 6) Battery Check Function (PAC-5600 Only)

Check the currently connected emergency battery's condition.

- CONFIRM: To check and store the battery condition as a reference.

- Push INFO button and push |◀◀ / ▶▶| button to select "BATTERY CONFIRM".



BATTERY  
CONFIRM

- At "BATTERY CONFIRM" push ▶|| button and "BATT" will flash and start the CONFIRM process.



BATT

- When the operation is complete, it will display "CONFIRM OK" and if process failed, "CONFIRM ERROR" will be displayed.



CONFIRM  
OK



CONFIRM  
ERROR

※ Notice

1. During the installation new battery should be used to perform CONFIRM check.
2. Test the battery after the installation and when the battery is fully charged.
3. Accurate measurement can only be achieved when there was no change (Types of Cable, Length, etc) and no replacement of cable or reconnecting of the battery, otherwise TEST ERROR may occur.

- TEST: at CONFIRM system will compare stored value and display the status of the BATTERY.

- After pressing INFO button select |◀◀ / ▶▶| button to select BATTERY TEST.



BATTERY  
TEST

- Pressing ▶|| during "BATTERY TEST" mode will display blinking "BATT" and TEST will commence.

- Upon completion of TEST following will be displayed.



GOOD



NOT BAD



BAD

	Display	Condition
1	GOOD	The Best Condition.
2	NOT BAD	Periodic CHECK is necessary.
3	BAD	Replace the battery.

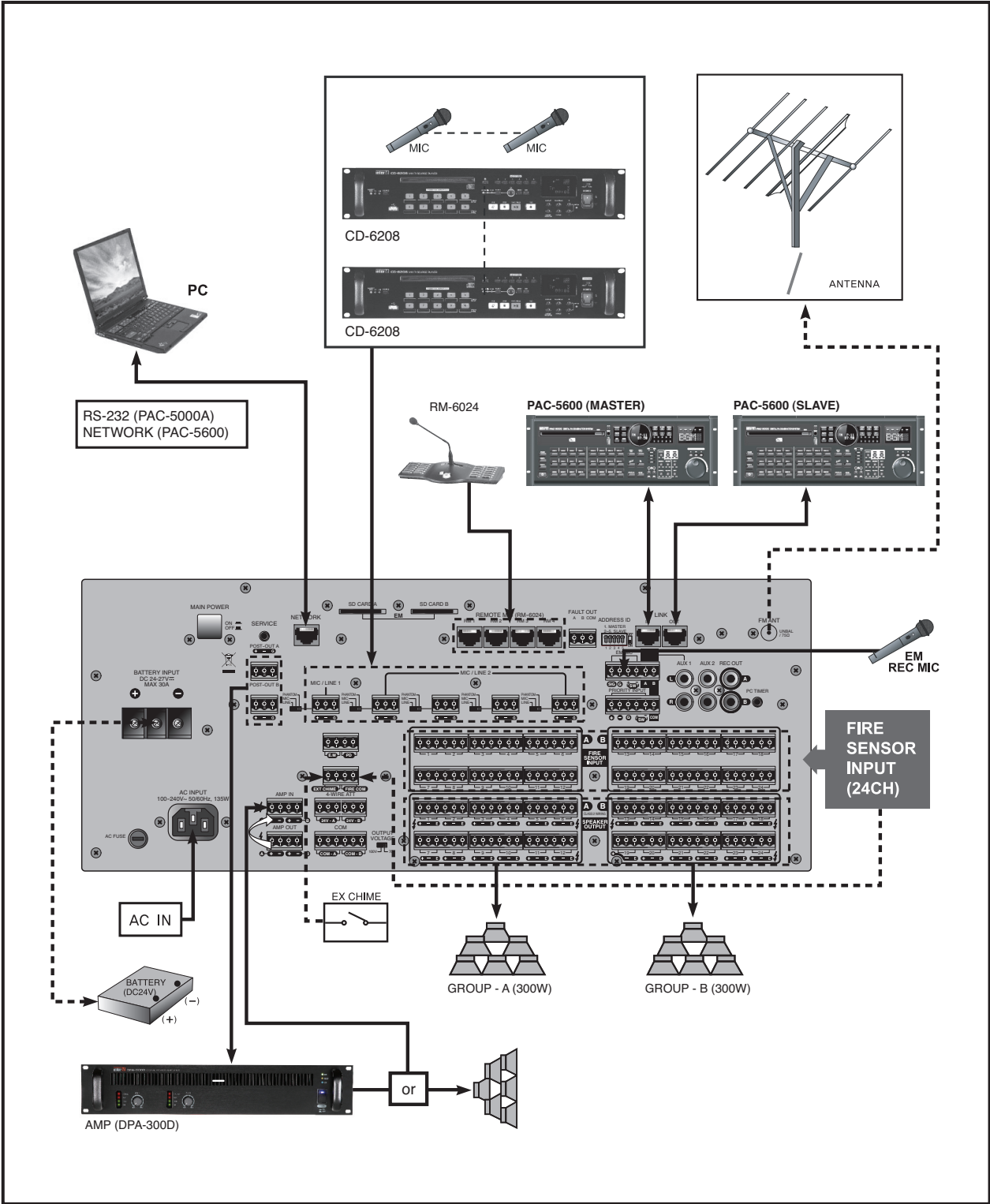
#### 7) System Initialization (PAC-5600 Only)

Reset the IP address and web page settings.

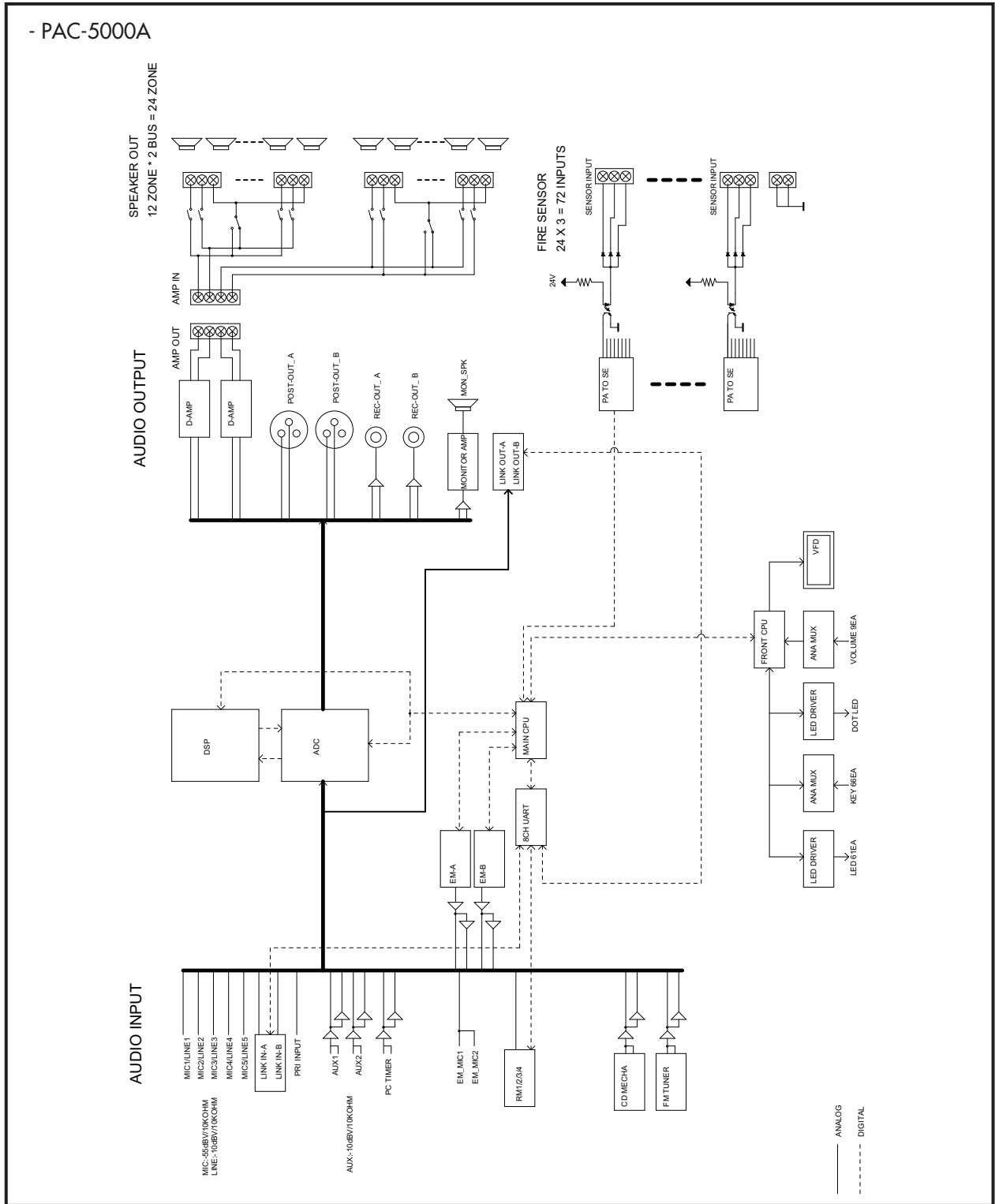
- IP default value: 192.168.1.99

- For web page settings, reservation broadcast, please refer to the SOFTWARE MANUAL for more details.

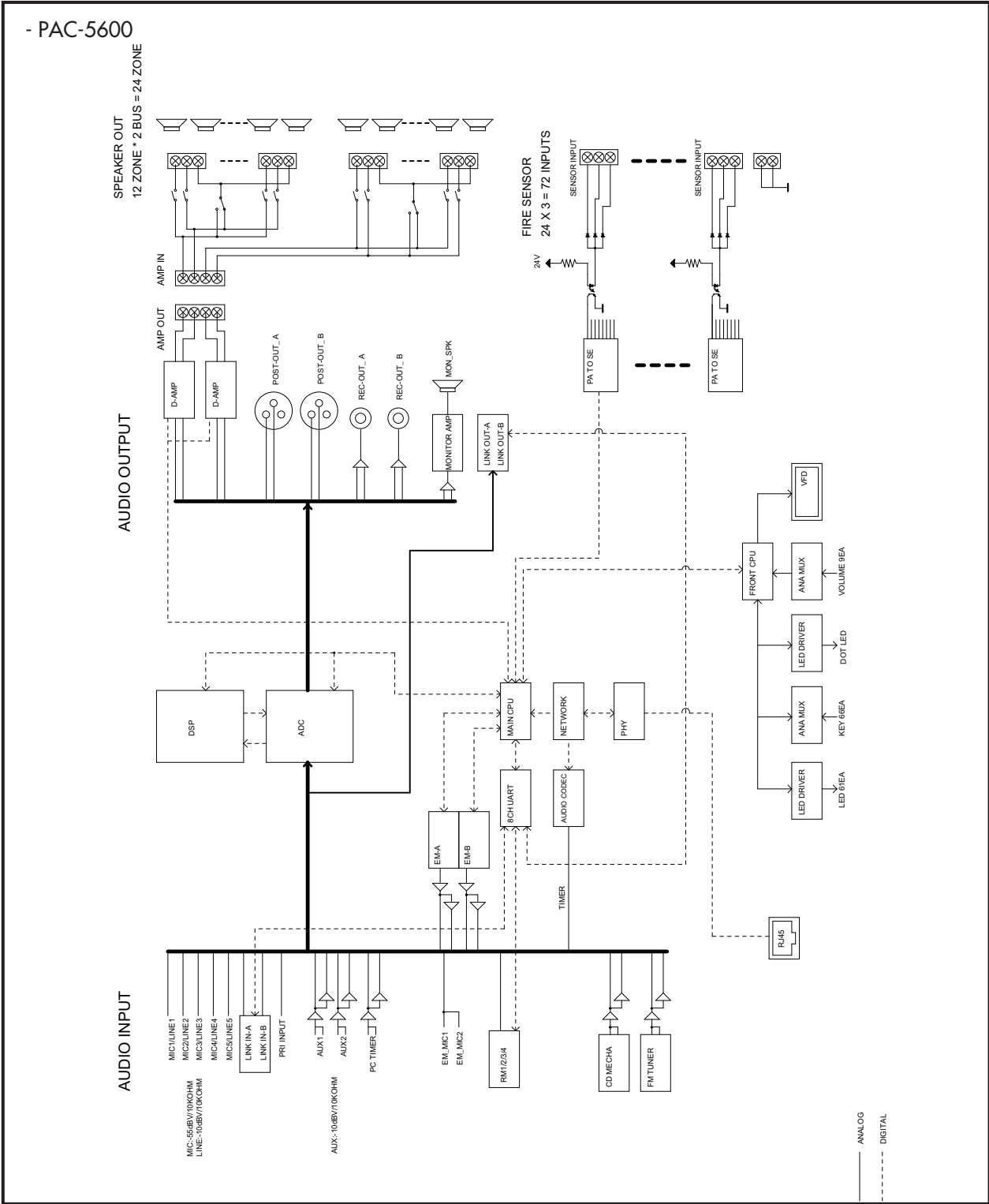
# Connections



# Block Diagram



# Block Diagram



## Specifications

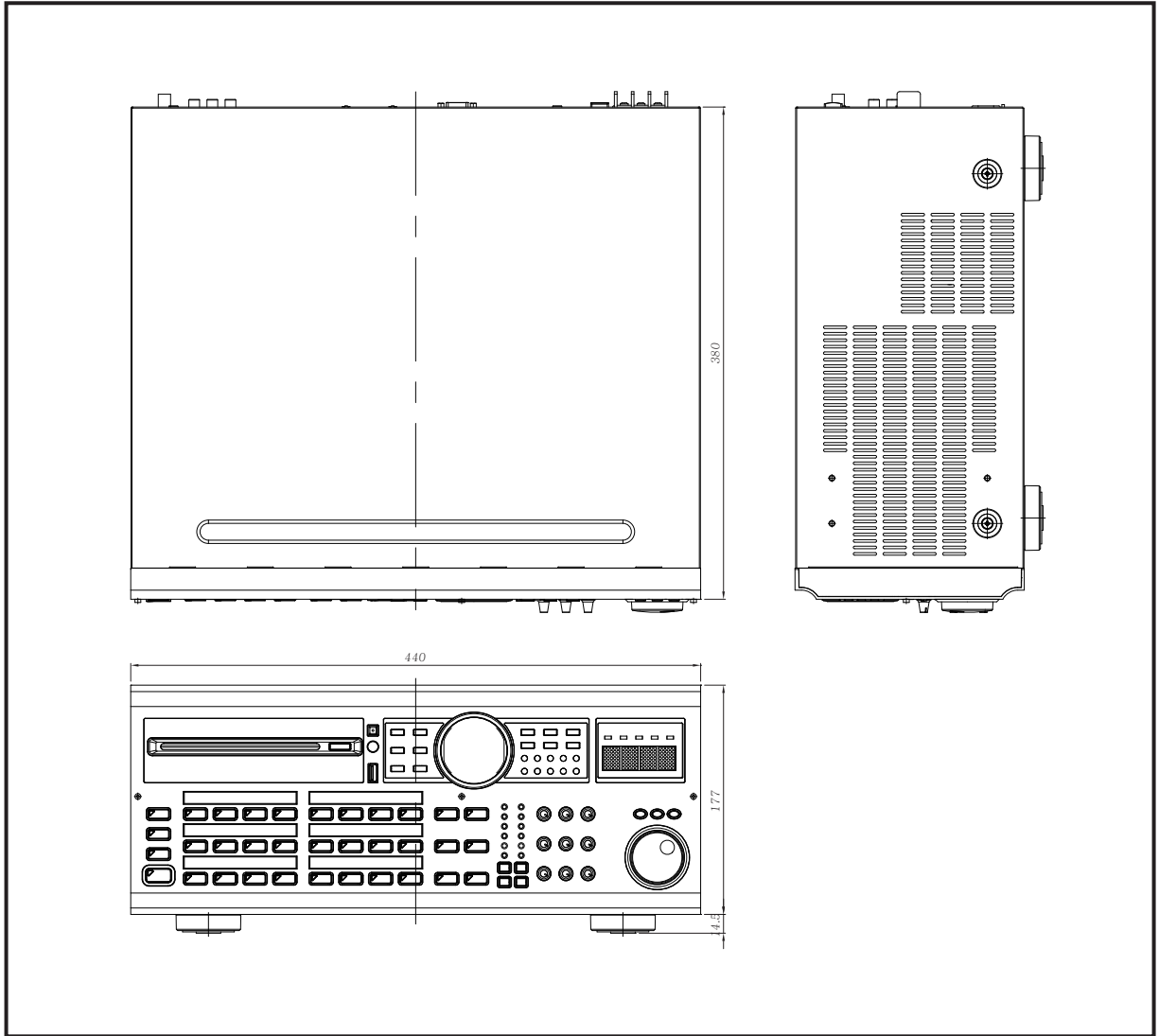
	PAC-5000A	PAC-5600
<b>AUX INPUT (AUX IN @ 1kHz, 100V/33.33Ω, 70V/16.6 Ω LOAD OUTPUT)</b>		
Rated Output (@ T.H.D 1%, GROUP A + GROUP B)	300W+300W	
Input Sensitivity	-10 ± 3dBV	
Signal-to-Noise Ratio (S/N)	>75dB	
EQ Control (100Hz, 1kHz, 10kHz)	±10 ± 3dB	
Frequency Range (1W Power Output, ±3dB)	50Hz ~ 20kHz	
<b>MIC/LINE 1~5 Input (MIC/LINE @ 1kHz, POST OUT)</b>		
MIC Input Sensitivity	-55 ± 3	
MIC Signal-to-Noise Ratio (S/N)	>80dB	
MIC Frequency Characteristics (80kHz LPF, 0±3dB)	50Hz ~ 20kHz	
MIC Phantom Power	24V	
MIC Total Harmonic Distortion (T.H.D)	<0.5%	
LINE Input Sensitivity	-10 ± 3dBV	
LINE Signal-to-Noise Ratio (S/N)	>80dB	
LINE Total Harmonic Distortion (T.H.D)	<0.3%	
<b>CD (TEST CD 0dB, 1kHz @ REC OUT)</b>		
Signal-to-Noise Ratio (S/N)	>75dB	
Frequency Characteristics (80kHz LPF, 0±3dB)	100Hz ~ 20kHz	
<b>TUNER (FM, 22.5kHz MOD @ REC OUT)</b>		
Signal-to Noise Ratio (S/N)	>55dB	
Frequency Characteristics (80kHz LPF)	0±3dB	100Hz
	-3±3dB	12kHz
<b>OUTPUT LEVEL (AUX IN, INPUT -10dB/1kHz)</b>		
REC OUT	-10 ± 2dBV	
POST OUT	0 ± 2dBV	
<b>PC CONTROL INTERFACE</b>		
Data Transmission Method	RS-232	10/100 Base-Tx
Transmission Distance	≤10M	≤500M
Cable Type	USB to 232 cable	Category 5 UTP Cable
<b>LINK IN/OUT, REMOTE MIC (RM 1~RM 4) INTERFACE</b>		
Data Transmission Method	RS-485 Serial	
Transmission Distance	≤500M	
Cable Type	Category 5 UTP Cable	
Priority Control	EM MIC > FIRE > PRIORITY INPUT > EM > PC TIMER > REMOTE MIC > SIREN, CHIME > MIC1 > MIC2~5 > BGM	
Fire Sensor	24 Channel	



	PAC-5000A	PAC-5600
Operating Temperature	-10°C ~ +40°C	
Power Source	AC 100-240V, 50/60Hz, DC 24V	
Power Consumption (1/8W)	135W	
Weight (SET)	11.1kg/24.4lb	11.2kg/24.7lb
Dimension (SET)	482(W)x177(H)x373(D)mm/19(W)x 7(H) x 14.7(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.

## Variations and Options

### Variations

Products supplied through legitimate sources are compatible with local AC power requirements.

### Options

No optional items are available for this product.

## 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.

# interM



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.

**Inter-M Americas, INC.**

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