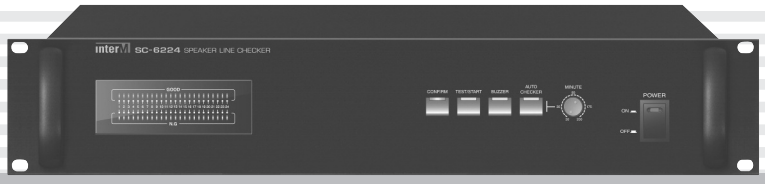
Operation Manual

Speaker Line Checker

SC-6224



*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.

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 SC-6224 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.



Summary

SC-6224 is a speaker line checker, and it detects the errors by measuring the impedance of speaker line connected to PA amp. SC-6224 is the system which measures and indicates the status of speaker line (GOOD, SHORT,NG,OPEN) through LED and buzzer. In case of emergency, it inspects the line automatically with time interval which has been set and notify the operator

Features

- **Check the status of each speaker line with LED.**

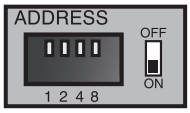
- **Setting the test time interval and automatic test**
  The test time intervals can be set from 5 to 200 minutes by user request.

- **Use of high frequency test signal**
  It uses the high frequency test signal when checking out the speaker line, so it may be inaudible to listener.

- **Speaker impedance measuring error range setting**
  Speaker impedance measuring error range can be set as 10% or 20%.

Equipment Setting and Checking

1. ADDRESS SETTING

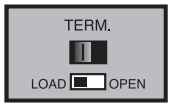


- Set the equipment numbers for each deciding condition using the rear panel DIP switch.
- If the equipment number is not set-up or is incorrect, all Zone Indicator LEDs will blink.
- If the number is already in-use, the system will not function properly.
- Please check the equipment number set-up status.
  Setting should be as below table, and if data number is added to switch which is On, it will be the equipment number.

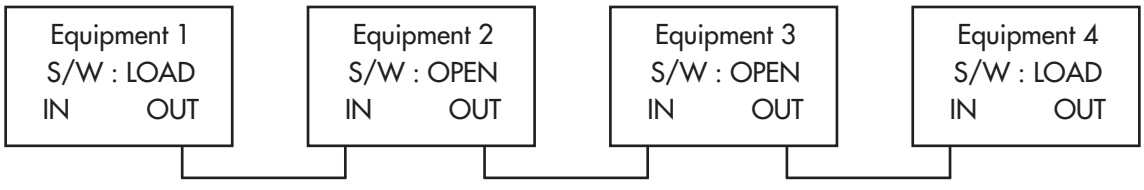
Pin No.		1	2	3	4
Data		1	2	4	8
Address	1	ON			
	2		ON		
	3	ON	ON		
	4			ON	
	5	ON		ON	
	:	:	:	:	:
	12			ON	ON

(Ex: when number 1 and 3 is ON, 1 and 4 is added, so equipment number will be 5.)

2. TERMINATION SWITCH (LOAD/OPEN) SETTING

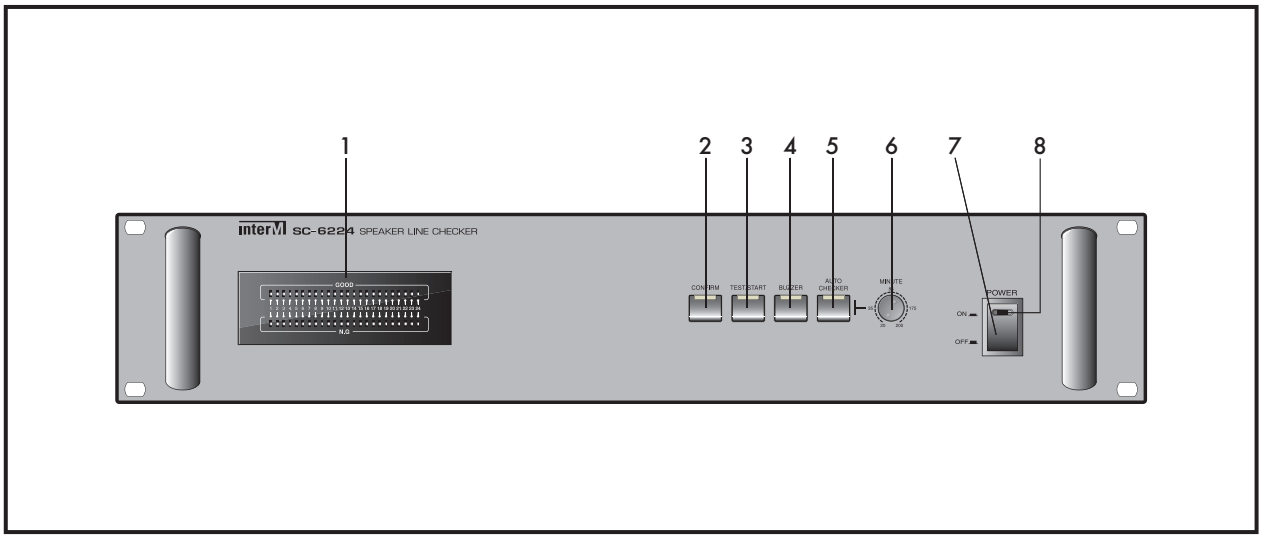


1) For the system linked by using RS-485 communication interface, it is necessary to set the termination switch (LOAD/OPEN) on the rear panel to stabilize data transfer.
2) Set the termination switch to LOAD only for the first and last-numbered equipment units.
   All others must be set to OPEN.



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

Front Panel



1. STATUS LED

The LED displays any default or normal status of speaker line and connection.
Green LED – speaker impedance in normal range
Red LED – speaker impedance out of normal range
Orange LED – speaker line is Short
Blinking Red LED – speaker line is Open
Channel LED OFF – speaker's not connected.

2. CONFIRM BUTTON

If this button is pushed, speaker line impedance of entire 24 channels will be measured and impedance values of each channel will be save in the memory. After measuring the impedance, if speaker is connected, green LED will be on, and if not, LED will be off. However, if speaker is SHORT, yellow LED will be on.

3. TEST/START BUTTON

If this button is pushed, test will be performed for connected channels and status of each channel will be displayed on LED.

4. BUZZER BUTTON

It is the buzzer ON/OFF button which informs the error of speaker line. Buzzer will be generated if there is error when checking out the speaker line while button is on. If button is off, it will not be generated.

5. AUTO TEST BUTTON

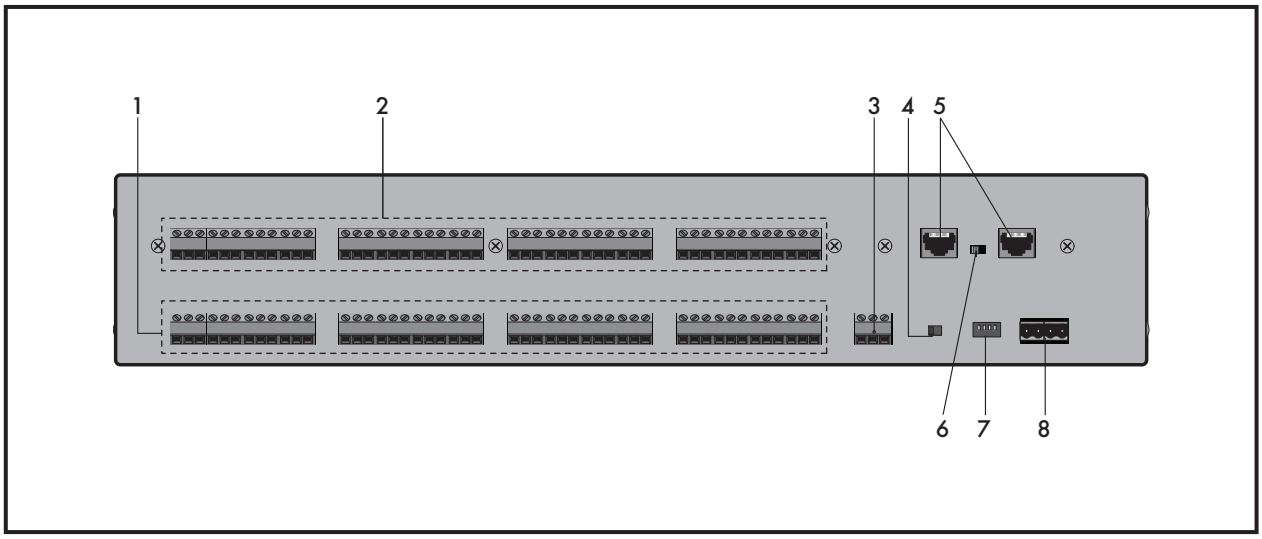
It is automatic test ON/OFF button of speaker line. If button is on, it checks out the speaker line automatically for certain time setting, and automatic check will be cleared when is off. On/off operations of button can be shown as the LED on the button.

6. TEST TIME ADJUSTMENT VOLUME
Depending on positions of volume, automatic test time can be adjusted from 5 to 200minutes. Turn the nob to clockwise, then set time will be increased.

7. POWER SWITCH
It is the power ON/OFF switch.

8. POWER LED
It is the LED displaying the status of power ON/OFF.

Rear Panel



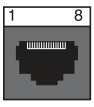
1. CHANNEL OUTPUT TERMINAL
It is the terminal which connects the speaker line of 24 channels.

2. CHANNEL INPUT TERMINAL
It is the terminal which connects the amp output of 24 channels.

3. CONTROL OUTPUT TERMINAL
It is R-channel balance audio output terminal.

4. NARROW / WIDE SETTING SWITCH
It sets up the error ranges for speaker line impedance.
- NARROW : 10%
- WIDE : 20%

5. LINK IN/OUT TERMINAL
It is the communication terminal to monitor the line check result from PC.
Link in is connected to the previous device, and Link out is connected to the next device.



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

6. TERMINATION SWITCH (LOAD/OPEN)
It is the switch which is set for stable data receiving/transmitting of link in/out.
For details of equipment setting, please refer to page 4
※CAUTION : communication error may occur if it is not set correctly.

7. ADDRESS SETTING SWITCH

It is the switch which sets up the role of each system if device is expanded and interlocked.
For details of equipment setting, please refer to page 4.

8. POWER INPUT TERMINAL

It is the terminal which connects the DC power (DC 24V). Caution to polarities when it connects.

Operation Method

- CAUTION TO CONNECTION

1. Turn off all powers of devices to be connected.
2. Connect the amp output line to "CHANNEL INPUT" on the rear panel. Caution to polarity (+/-).
3. Connect the speaker line to "CHANNEL OUTPUT" on the rear panel. If connection is completed, then turn the power of other devices.
4. Connect DC-24V to the DC power input of SC-6224, then push the power switch.

- OPERATIONS

1. Impedance setup and save for each channel

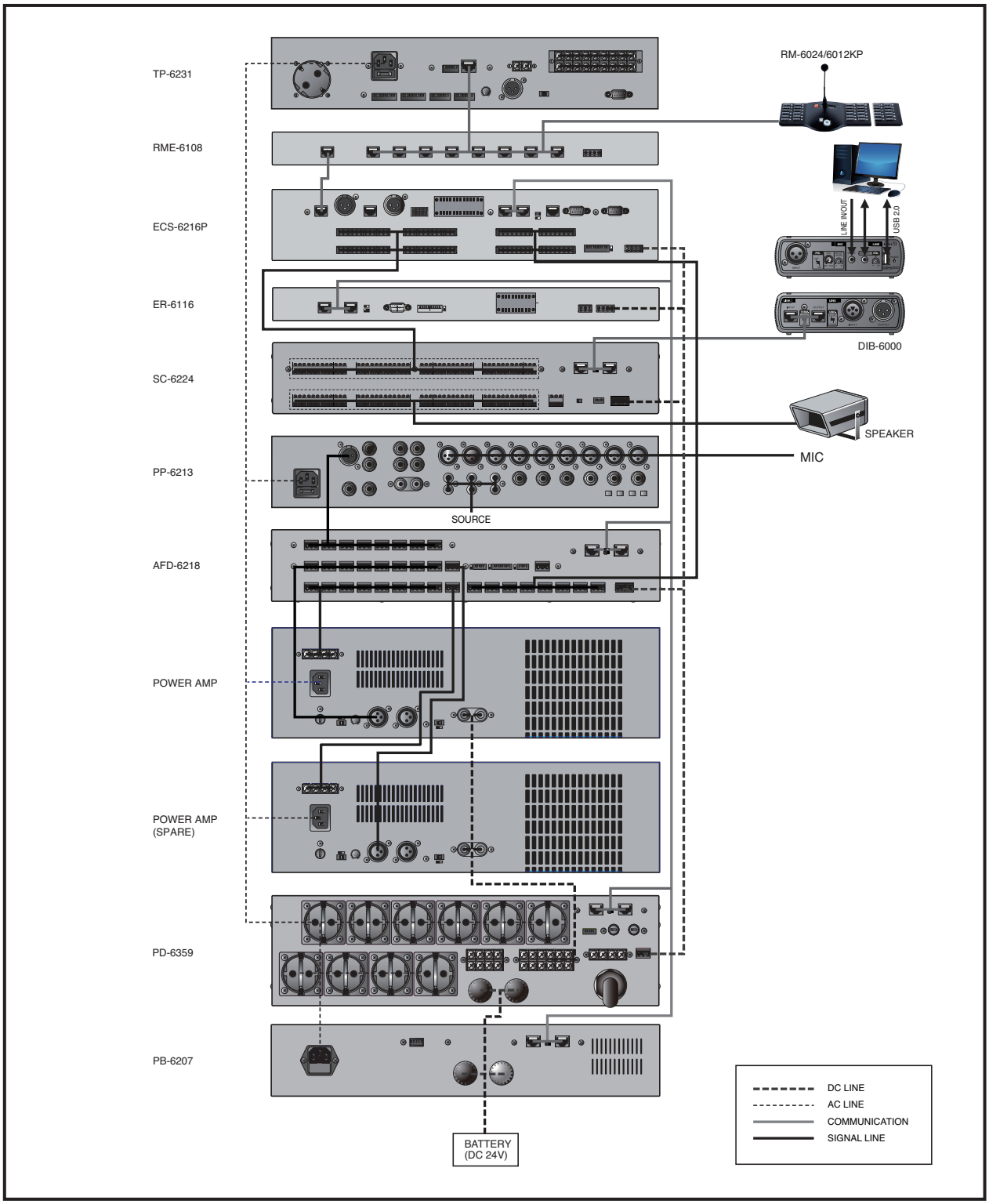
   1) If "Confirm" button on the front side is pushed, impedances of speakers connected to speaker lines from channel 1 to 24 will be measured and default value will be saved. Previously measured default value will be deleted and new measured value will be saved.
   2) LED status will be displayed as follows depending on impedance values has been measured.
      - Green LED : speaker is connected normally.
      - Orange LED : speaker line is SHORT.
      - LED Off : speaker is not connected.

2. Manual Speaker Test
   1) If "TEST/START" on the front panel is pushed, impedance of speaker can be tested manually. This function performs the test about the channel which speaker is connected, compares with saved impedance, and display the result on the front LED.
      - Green LED – speaker impedance in normal range
      - Red LED – speaker impedance out of normal range
      - Orange LED – speaker line is Short
      - Red LED flickering – speaker line is Open

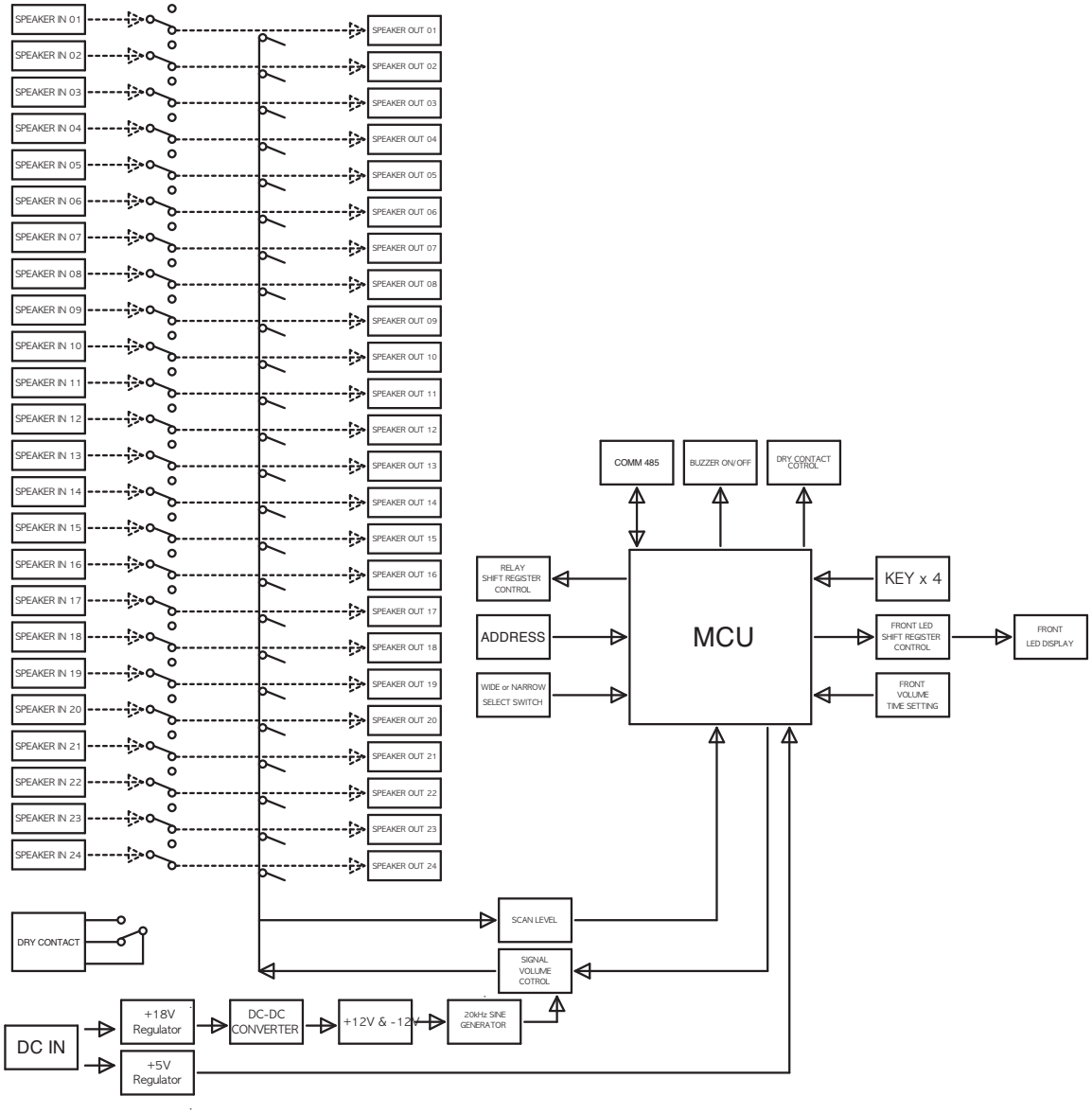
3. Auto Test Mode
   1) It is automatic test ON/OFF button of speaker line. If button is on, it checks out the speaker line automatically for certain time setting and displays the result on each channel's LED. Setup the automatic test mode by pushing "AUTO CHECKER" button on front panel.

   2) If LED is on, it means the automatic mode is set, and check time for automatic mode can be set from 5 to 200 minutes by turning the time adjustment volume on the front panel.
      - Green LED – speaker impedance in normal range
      - Red LED – speaker impedance out of normal range
      - Orange LED – speaker line is Short
      - Red LED flickering – speaker line is Open

Applications



Block Diagram

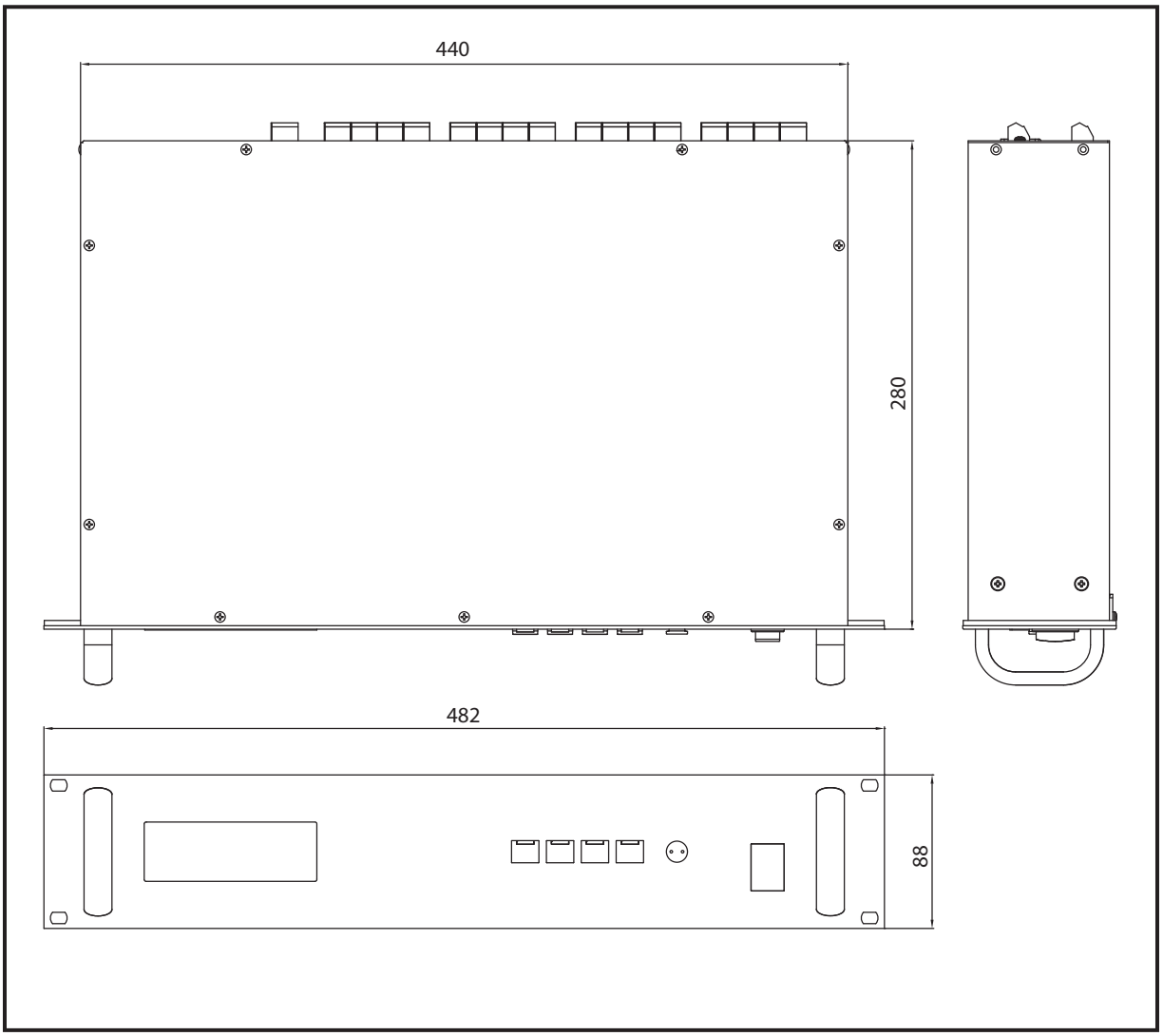


Specifications

	SC-6224
Test Impedance Range	20Ω~3kΩ
Test Duration (per channel)	less than 100msec/channel
Test Interval (selectable)	5min ~ 200min
Number of Channels	24 Channel
Operating Temperature	-10℃ ~ +40℃
Power Source	DC 24V, 750mA
Weight (SET)	4.4Kg/9.7lb
Dimensions (SET)	482(W)x88(H)x280(D)mm/19(W)x3.5(H)x11(D)in
Accessory	
LINK IN/OUT Cable	UTP Cable (500mm)

* 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.

NOTE

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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