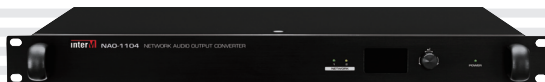


Operation Manual

Network Audio Output Converter

NAO-1104



interM

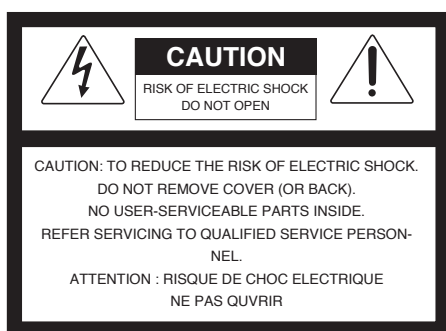
Welcome

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 ou une autre sortie de courant, sauf si les lames peuvent être insérées à fond sans en laisser aucune partie à découvert.
Pour déconnecter complètement l'appareil du réseau d'alimentation, déconnecter le cordon d'alimentation de la prise murale.
La prise du réseau d'alimentation doit demeurer aisément accessible.

*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 that 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.

*Warning : To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture and objects filled with liquids, such as vases, should not be placed on this apparatus.

*This apparatus shall be connected to a mains socket outlet with a protective earthing connection.

*To completely disconnect this apparatus from the AC mains, disconnect the power supply cord plug from the AC receptacle.

*The mains plug of the power supply cord shall remain readily 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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Unpacking

Although your NAO-1104 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.



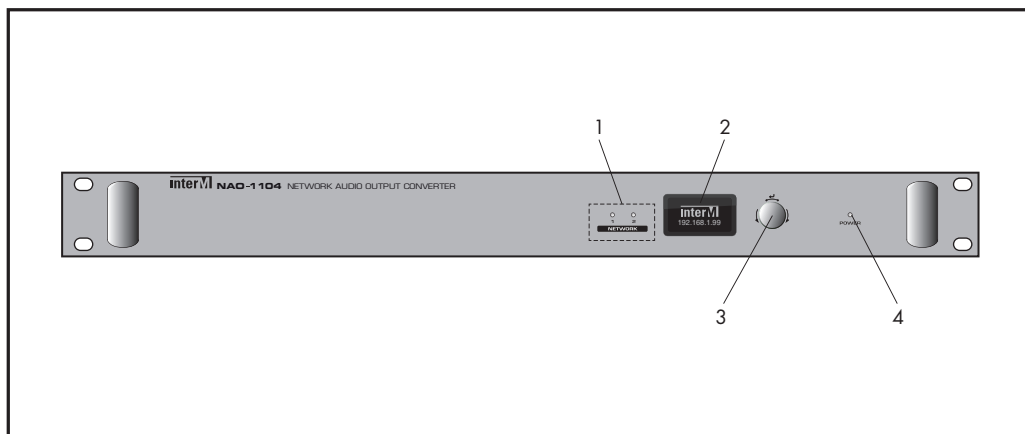
Features

- **Matrix system for PA broadcasting**
It is a PA broadcasting system using an audio matrix and remote microphone.
- **Use AC/DC power**
AC 120V~240V 50/60 Hz, DC +24V power connection is possible.
- **RACK installation space saving**
The compact design of 1U size enables efficient use of space during rack installation.
- **4 channel contact output**
External device can be controlled through 4 contact outputs.
- **Play sound source**
The user can play a sound source using an audio matrix.
- **AoE device linkage**
It can work with an audio input device that supports Inter-M AoE protocol.
- **4 channel audio output**
It can receive 4-channel AoE digital audio signals and output them as analog audio signals.

Contents and Accessories

- 1.AC cord x 1EA
- 2.4P Euro Terminal (5.08mm) x 1EA
- 3.2P Euro Terminal (5.08mm) x 1EA
- 4. User Manual x 1EA
- 5.3p Euro Terminal (3.5mm) x 4EA
- 6.8p Euro Terminal (3.5mm) x 1EA
- 7. Screws for rack mounting x 4EA

Front Panel



1. NETWORK STATUS LED

This LED indicates the operating status of networks 1, 2.

2. OLED DISPLAY

Network status information is displayed through the OLED Display.

- IP Address, Subnet mask, DNS Server, Mac Address

※ If there is no operation of the display control switch for 30 seconds, OLED turns off and turns on when operated.

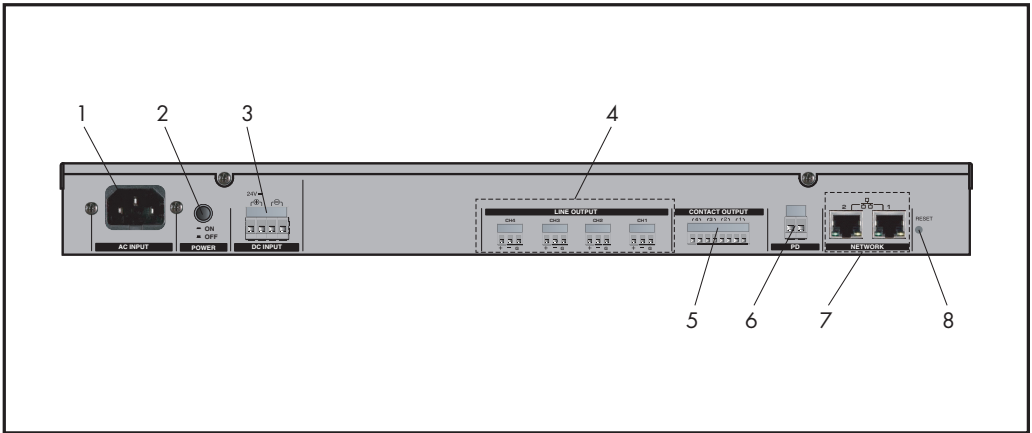
3. DISPLAY PANEL CONTROLLING SWITCH

By turning the display control switch, the user can check the desired information.

4. POWER LED

The green LED lights up when the instrument is powered on.

Rear Panel



1. AC INPUT TERMINAL

It is an AC power supply terminal. Do not forcibly bend, pull, twist, heat, or cut the power cord. Doing so may damage the cord and cause fire or electric shock.

2. AC POWER SWITCH

A switch that turns the instrument's AC power on and off.

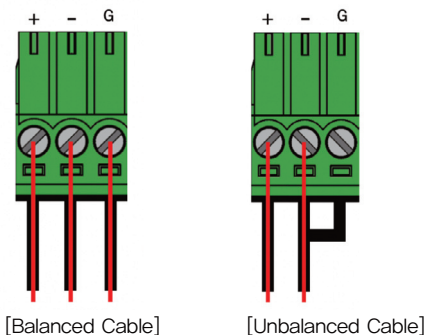
3. DC 24V INPUT TERMINAL

It is an emergency spare battery (DC 24V) connection terminal. If an AC power failure occurs, the device operates with the connected spare battery. When DC 24V power is applied to the device, the device always operates regardless of the power switch.

4. AUDIO OUTPUT TERMINAL

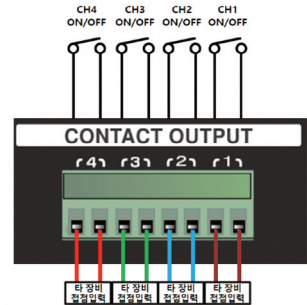
It is the terminal to output the audio signal.

- Refer to the figure below for how to connect.



5. Contact output terminal

DRY CONTACT OUTPUT for PD control in distributed areas.
Outputs up to 4 channels of contacts. Normal Open (OPEN when product power is cut off and contact output is set to OFF) When the output is ON, it is shorted.



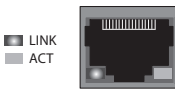
6. PD CONTROL CONTACT OUTPUT TERMINAL

It is a DRY CONTACT OUTPUT to turn on the amplifier by controlling the power of the remotely located PD. LINE OUTPUT When any one of the 8 channels outputs an audio signal, the contact output turns ON.

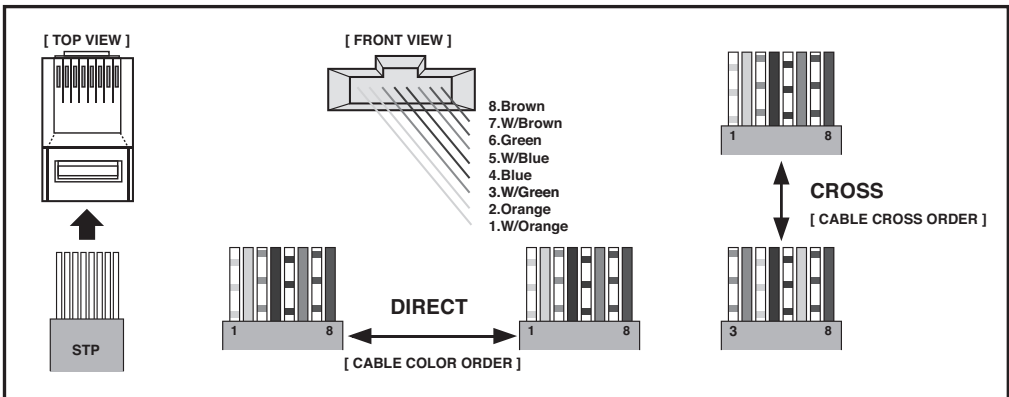
7. NETWORK CONNECTION TERMINAL

Can be chained. When the network is connected, the device can be controlled through the PC program and web page.

※ For setting method, refer to the software manual. The manual can be downloaded from the website (www.inter-m.net).



<100 Base-T>		<1G Base-T>	
PIN NO	Function	PIN NO	Function
1	TXP	1	MX(0)+
2	TXN	2	MX(0)-
3	RXP	3	MX(1)+
4	NA	4	MX(2)+
5	NA	5	MX(2)-
6	RXN	6	MX(1)-
7	NA	7	MX(3)+
8	NA	8	MX(3)-

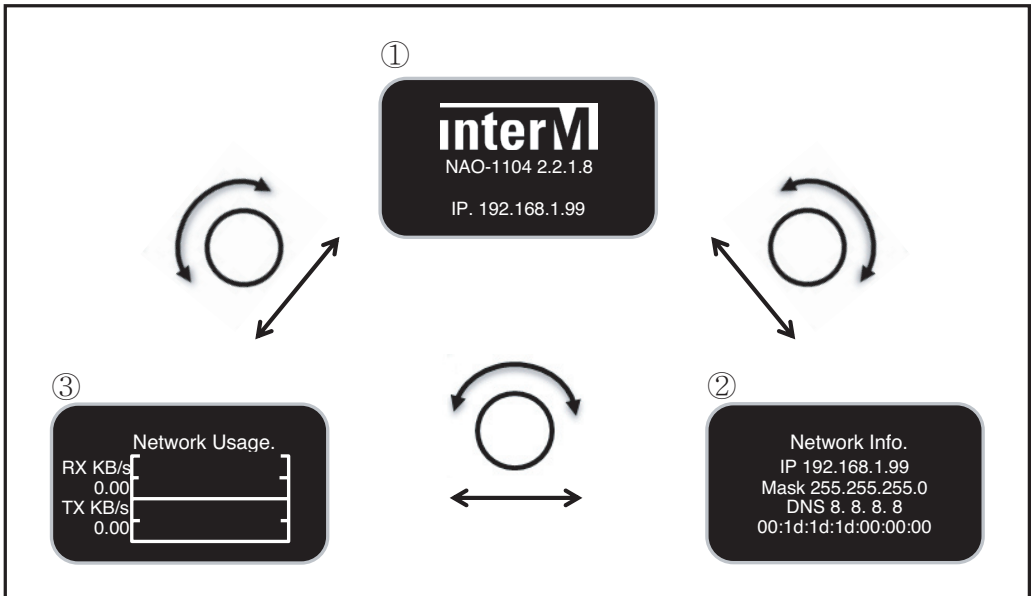


8. FACTORY RESET SWITCH

If the user press and hold this button for 10 seconds or more, the settings of the device will be initialized to the factory default settings.

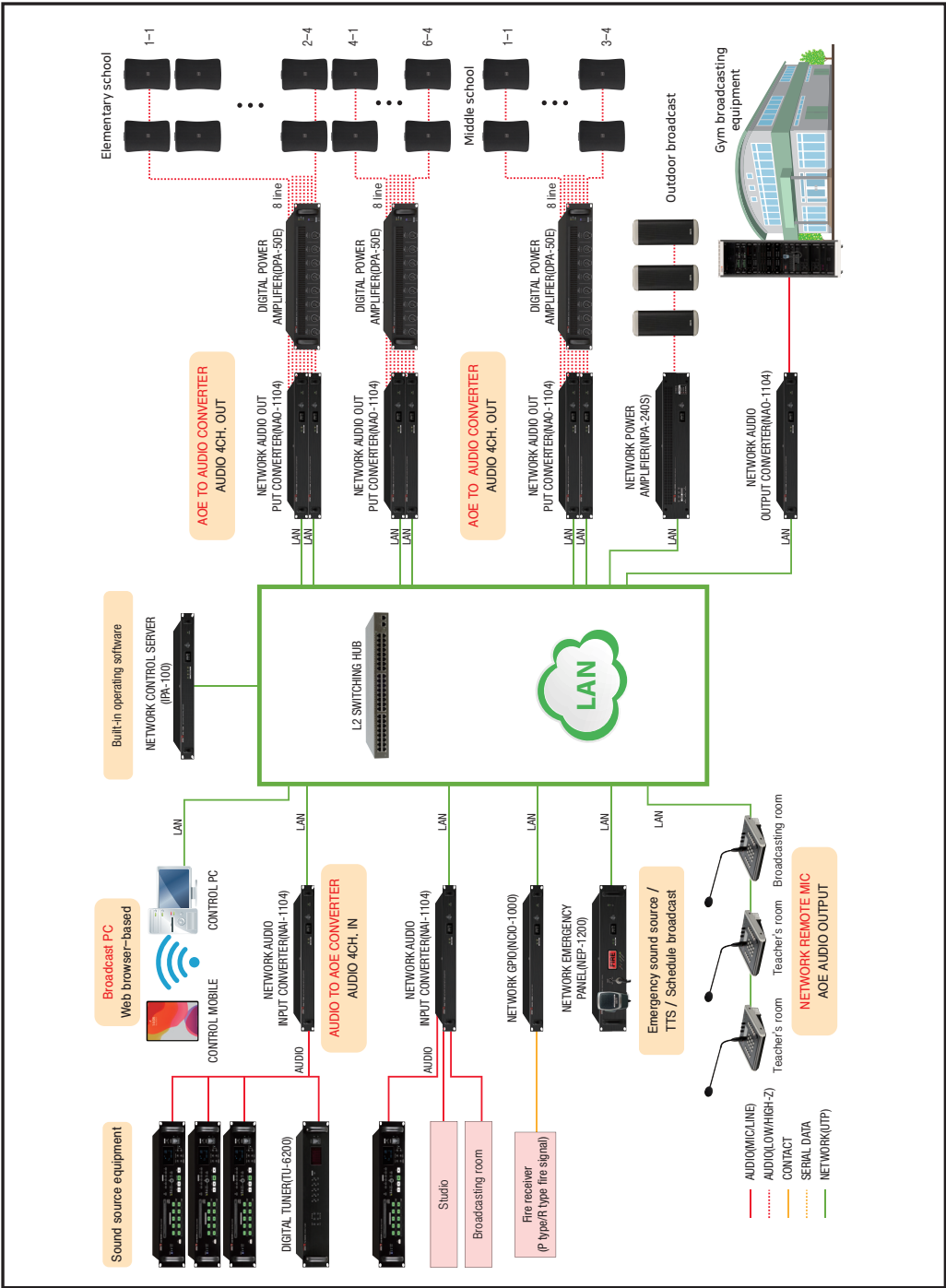
※ Never cut off the power of the device while FACTORY RESET is in progress.

Operation

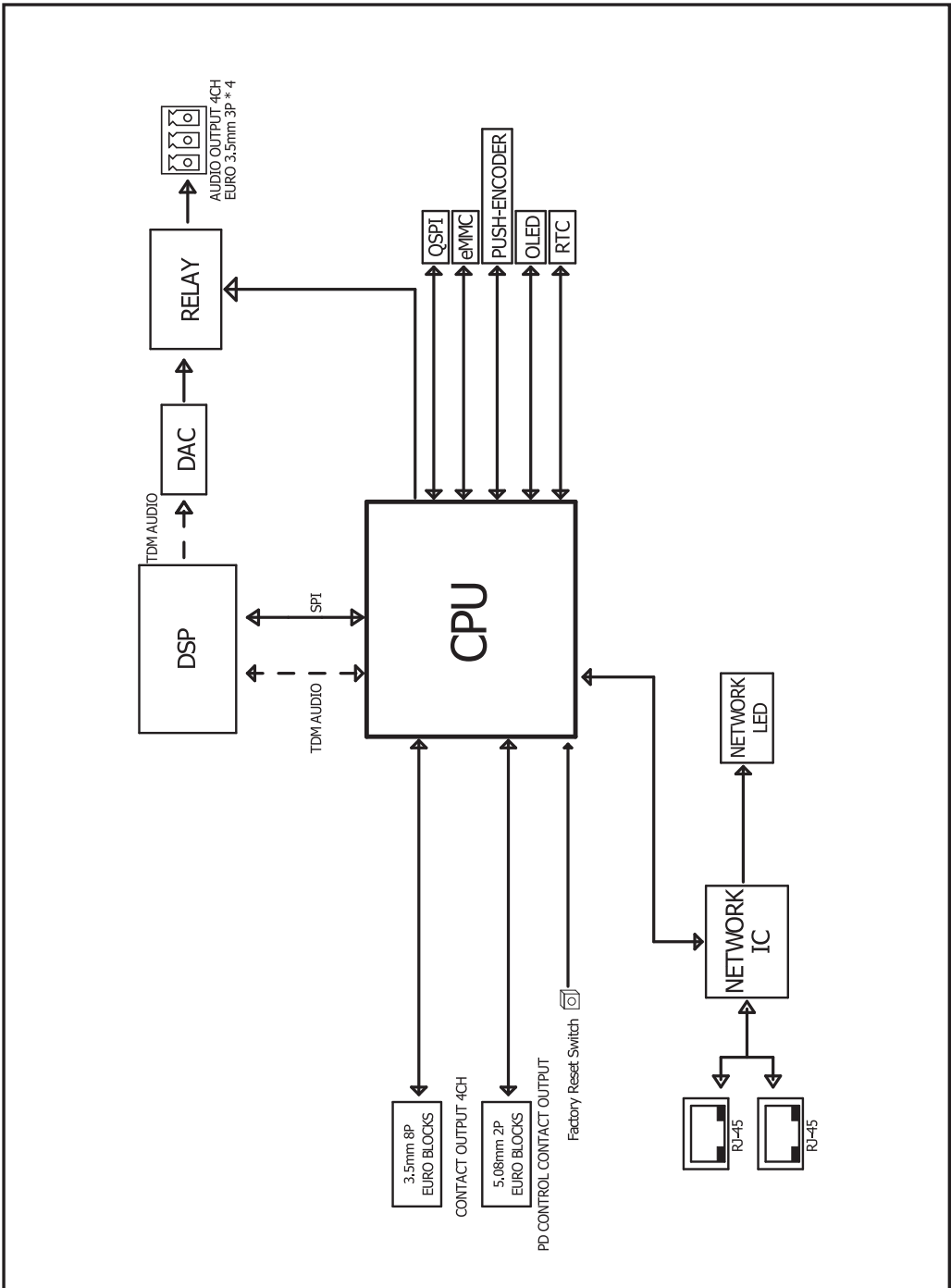


- ① It is the standby screen of the device. Model name, IP ADDRESS Network information is displayed.
- ② Turn the front panel control switch to the right on the standby screen or turn the switch to the left on the Network Usage screen to display Network Info (IP ADDRESS, SUBNET MASK, DNS, MAC ADDRESS). Turning the switch to the left on the Network Info screen displays the standby screen.
- ③ Network Usage (RX/TX data rate) appears when the user turn the display window control switch to the right on the Network Info screen or turn the switch to the left on the standby screen. Turning the switch to the right on the Network Usage screen brings up the standby screen.

Applications



Block Diagram

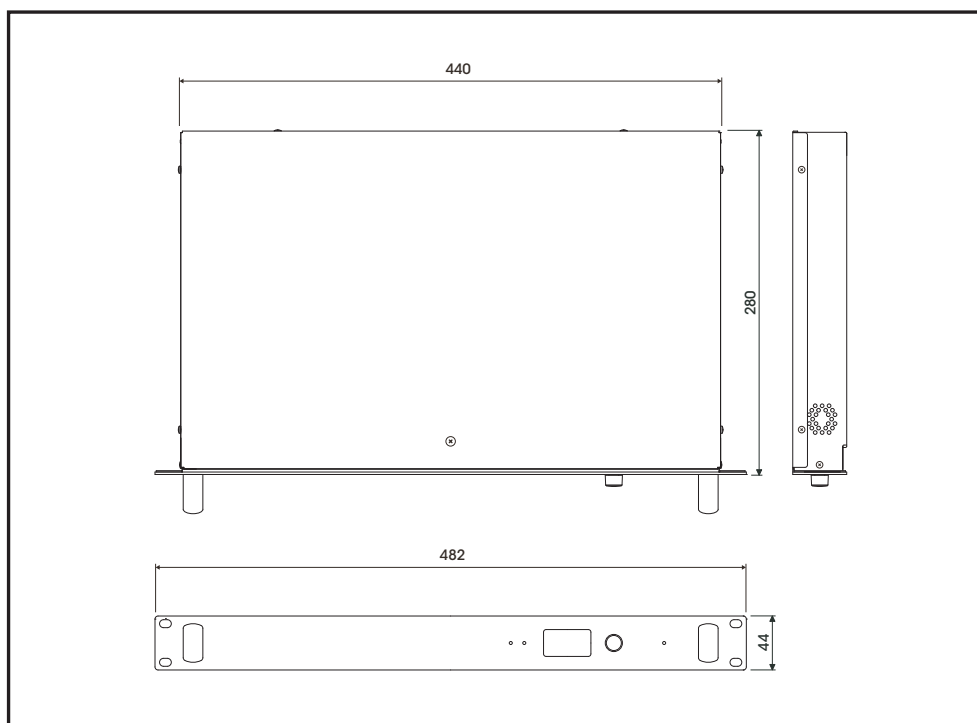


Specifications

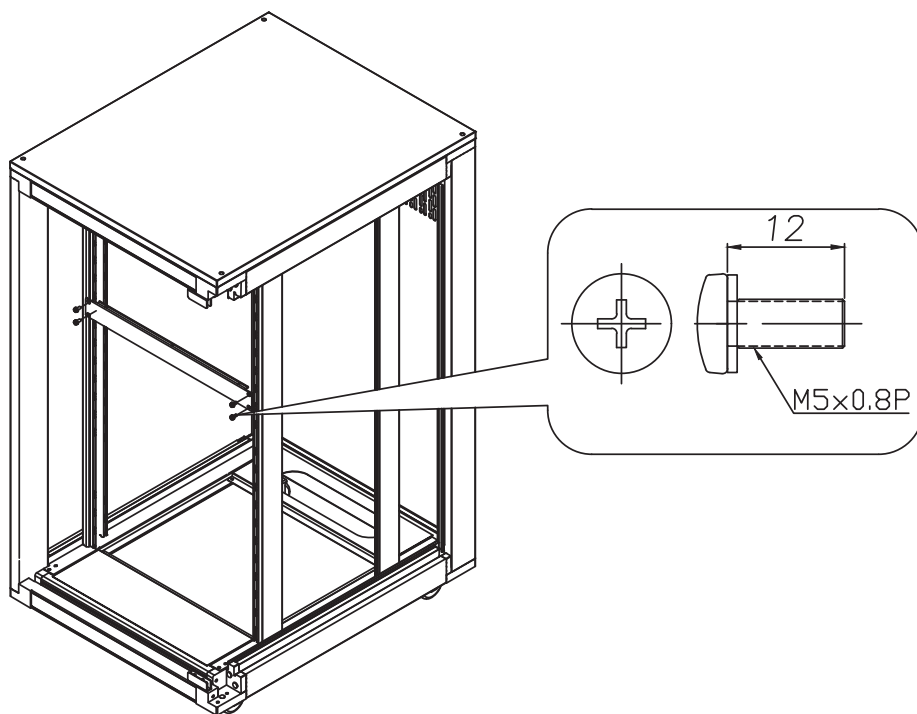
	NAO-1104
Audio input sensitivity	LINE: 0dBV MIC: -60dBV
Rated Output Power	0dBV
Phantom power	+24V / 14mA
THD @ OUTPUT 1kHz, Output 0dBV	LINE: Less than 0.04% MIC: Less than 0.2%
S/N @ OUTPUT 1kHz, Output 0dBV, A-WTD	LINE: More than 70dB MIC: More than 65dB
Frequency Response	LINE: 20Hz~20kHz MIC: 20Hz~20kHz
Network communications	100/1000 base-T (RJ-45)
communication distance	MAX 100m
Contact	4CH OUTPUT
Operating Temperature	-10℃ ~ +40℃
Operating Power	AC 120-240V~, 50/60Hz, 0.4A DC +24V, 800mA
Power Consumption	20W
Weight (SET)	3.1Kg/6.8lb
Dimensions (SET)	482(W) x 44(H) x 280(D)mm/19(W) x 1.7(H) x 11(D)in

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

※ DIMENSIONS



Instructions for use of screws



This product can be used on a table or fixed to a rack.

However, be sure to observe the installation precautions below when using it in a rack.

1. Place the product in an empty area of the rack.
2. Using the included mounting screws, tighten the 4 mounting holes so that there are no voids and fix them.
3. Please proceed with the wiring for the operation of the product, and apply the power last.
4. Disassemble in the reverse order of the above procedure.
5. In case of fixing by not using the included screws or screws of the same size, or using insufficient number of screws the manufacturer is not responsible for any safety accidents caused by this.

Accessories included for fixing the product

- Specification: SCREW M5x0.8P, L=12
- Quantity: 4pcs

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.



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 Corporation

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