



# AUDIO MATRIX RIO200 I/O Remote Module User Manual

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## AUDIO MATRIX

**AUDIO MATRIX RIO200 I/O Remote Module**



## PRODUCT INFORMATION

### SPECIFICATIONS

- **Product Name:** Audio Matrix RIO200 I/O Remote Module
- **Model Number:** NF04946-1.0
- **Product Type:** Remote Audio I/O
- **Analog Channels:** 2 x Inputs, 2 x Outputs
- **Converter:** Built-in A/D and D/A converters
- **Signal:** Digital audio AES3 signals
- **Matrix Compatibility:** MATRIX-A8
- **RJ45 Port:** For cable insertion
- **Phoenix Terminal:** For cable insertion
- **Maximum Cable Length:** 100 meters (CAT 5e)

## PRODUCT USAGE INSTRUCTIONS

### Installation

1. Pass cables through the inner wall rear case.
2. Insert the cable into the RJ45 port.
3. Insert the phoenix terminal into the dedicated port.
4. Fix the panel with screws.
5. Clip the decorated frame.

### Software Control

## **ID Modification**

To modify the device ID:

1. Right-click on the DeviceID position.
2. A function menu will pop up.
3. Click on "Change DeviceID".
4. Enter the desired number (4-bit) in the text box.
5. Click "OK" to save and apply the changes.

**Note:** Assigning an ID to each device is necessary for the system to function properly.

## **Device Rename**

To rename a device:

1. Double-click on the device block.
2. Click on "CHANGE DEVICE NAME" in the shown dialog.
3. Another window will pop up.
4. Enter the desired name in the textbox.
5. Click "Submit" to save the changes.

**Note:** The device name can only consist of alphabets, numbers, and common symbols.

## **FAQ (Frequently Asked Questions)**

### **Q: What is Audio Matrix?**

A: Audio Matrix is a system that contains multiple signal inputs and outputs. Each input can be assigned to any output, similar to a matrix in mathematics. It allows for easy parameter control and configuration backup and restoration.

### **Q: What devices are part of the MATRIX SYSTEM family?**

A: The MATRIX SYSTEM family consists of the following members:

- MATRIX A8 – Server host
- MATRIX D8 – Server host (8 analog I/O for A8, 8 digital I/O for D8)
- RVC1000 – Remote volume control with a link port
- RVA200 – Remote volume control with additional outputs
- RIO200 – Remote analog inputs and outputs
- RPM200 – Remote paging station

## **SAFETY RELATED SYMBOLS**

- The symbol is used to indicate that some hazardous live terminals are involved within this apparatus, even under normal operating conditions.
- The symbol is used in the service documentation to indicate that a specific component shall be only replaced by the component specified in that
- Documentation for safety reasons.

- Protective grounding terminal.
- Alternating current /voltage.
- Hazardous live terminal.
- **ON:** Denotes the apparatus turns on.
- **OFF:** Denotes the apparatus from turning off, because Of using the single pole switch, be sure to unplug the AC power to prevent any electric shock before you proceed with your service.
- **WARNING:** Describes precautions that should be observed to prevent the danger of injury or death to the user.
- Disposing of this product should not be placed in municipal waste and should be a separate collection.
- **CAUTION:** Describes precautions that should be observed to prevent danger to the apparatus.

## WARNING

### • Power Supply

Ensure the source voltage matches the voltage of the power supply before turning ON the apparatus.

- Unplug this apparatus during lightning storms or when unused for long periods Of time.

#### • External Connection

The external wiring connected to the output hazardous live terminals require installation by an instructed person, or the use of ready-made leads or cords.

### • Do not remove any Cover

- There are maybe some areas with high voltages inside, to reduce the risk Of electric shock, do not remove any cover if the power supply is connected.
- The cover should be removed by the qualified personnel only.
- No user-serviceable parts inside.

### • Fuse

- To prevent a fire, make sure to use fuses with specified standards (current, voltage, type). Do not use a different fuse or short-circuit the fuse holder.
- Before replacing the fuse, turn OFF the apparatus and disconnect the power source.

### • Protective Grounding

Make sure to connect the protective grounding to prevent any electric shock before turning ON the apparatus. Never cut off the internal or external protective grounding wire or disconnect the wiring Of the protective grounding terminal.

### • Operating Conditions

- This apparatus shall not be exposed to dripping or splashing and that no objects filled with liquids, such as vases, shall be placed on this apparatus.
- To reduce the risk Of fire or electric shock, do not expose this apparatus to rain or moisture.
- Do not use this apparatus near water.
- Install under the manufacturer's instructions. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat. Do not block any ventilation openings.

- NO naked flame sources, such as lighted candles, should be placed on the apparatus.

## IMPORTANT SAFETY INSTRUCTIONS

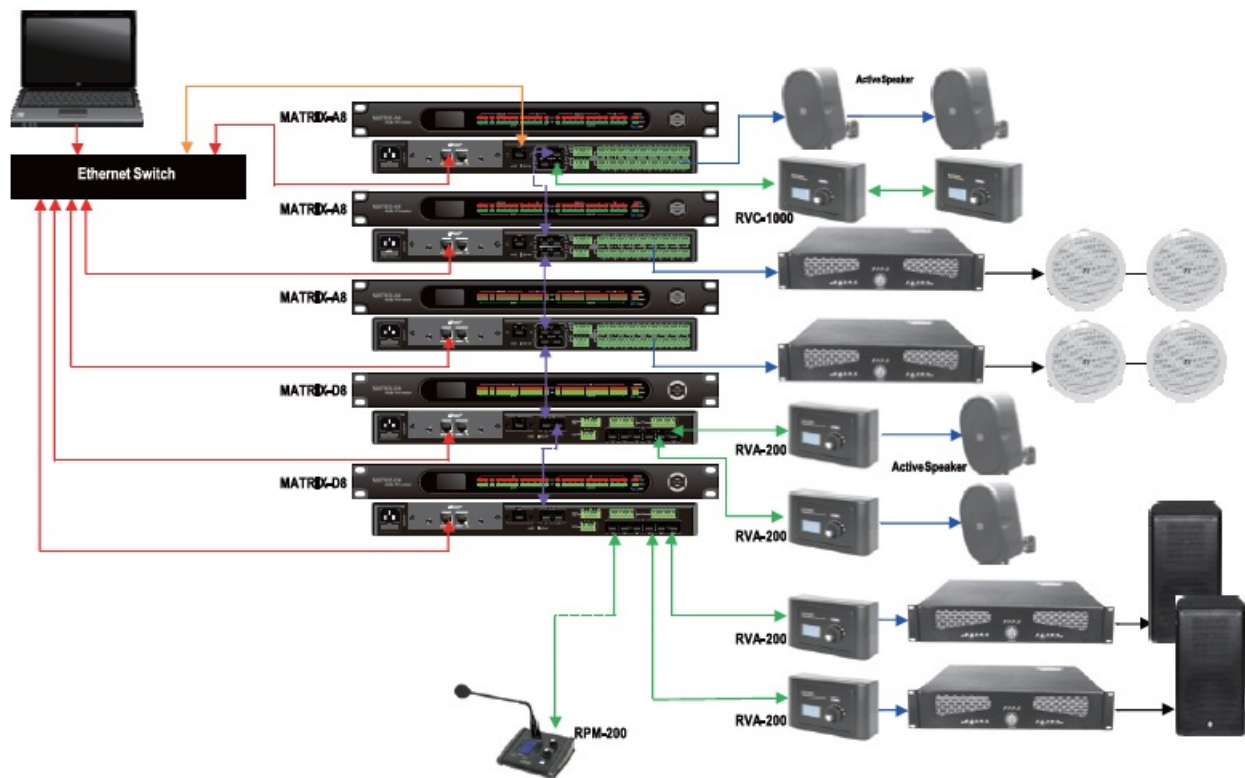
- Read these instructions.
- Follow all instructions.
- Keep these instructions.
- Heed all warnings.
- Only use attachments/accessories specified by the manufacturer.
- **Power Cord and Plug**
  - Do not defeat the safety purpose of the polarized or grounding-type plug.
  - A polarized plug has two blades one wider than the other. A grounding-type plug has two blades and a third grounding prong. The wide blade or the third prong is provided for your safety.
  - If the provided plug does not fit into your outlet, consult an electrician for the replacement of the obsolete outlet.
  - Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
- **Cleaning**
  - When the apparatus needs cleaning, you can blow off the dust from the apparatus with a blower or clean it with a rag, etc.
  - Don't use solvents such as benzol, alcohol, or other fluids with very strong volatility and flammability for cleaning the apparatus body.
  - Clean only with a dry cloth.
- **Servicing**
  - Refer all servicing to qualified personnel. 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.
  - Servicing is required when the apparatus has been damaged in any way, such as a 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.
  - The mains plug is used as the disconnect device, the disconnect device shall remain readily operable.

## FOREWORD

- Thanks to purchasing the product of our company, please read this manual carefully before any operation.
- **Note:** This guide contains all the information needed for the product. There might be some differences between the item and its description; please refer to the real product for the features.

## AUDIO MATRIX

Audio Matrix is a system that contains multiple signal inputs and outputs; each input can be assigned to any output like a matrix in mathematics. Parameters controls are available for all the inputs and outputs, and are easily changeable; all the configurations can be backed up and restored, easy to copy and to extend. Audio Matrix gives the ability to build complex audio setup in one device providing an instinctive operating interface for both professionals and beginner.



## SYSTEM PREVIEW

Audio Matrix is a system that combines the hardware with software. The core device is Matrix A8 or Matrix D8. The major features are listed below:

1. 12 INPUTS and 12 OUTPUTS
2. In the case of extension links, the maximum goes up to 192 inputs and outputs.
3. Broadcast different zones simply by paging unit control.
4. A remote control unit can assign the volume in different zones separately.
5. Control signals are transferred individually with dedicated wires separated from the audio stream, avoiding conflicts and improving flexibility and reliability.
6. The transmission for the audio stream is based on AES/EBU protocol, while the control signal uses an RS-485 format.

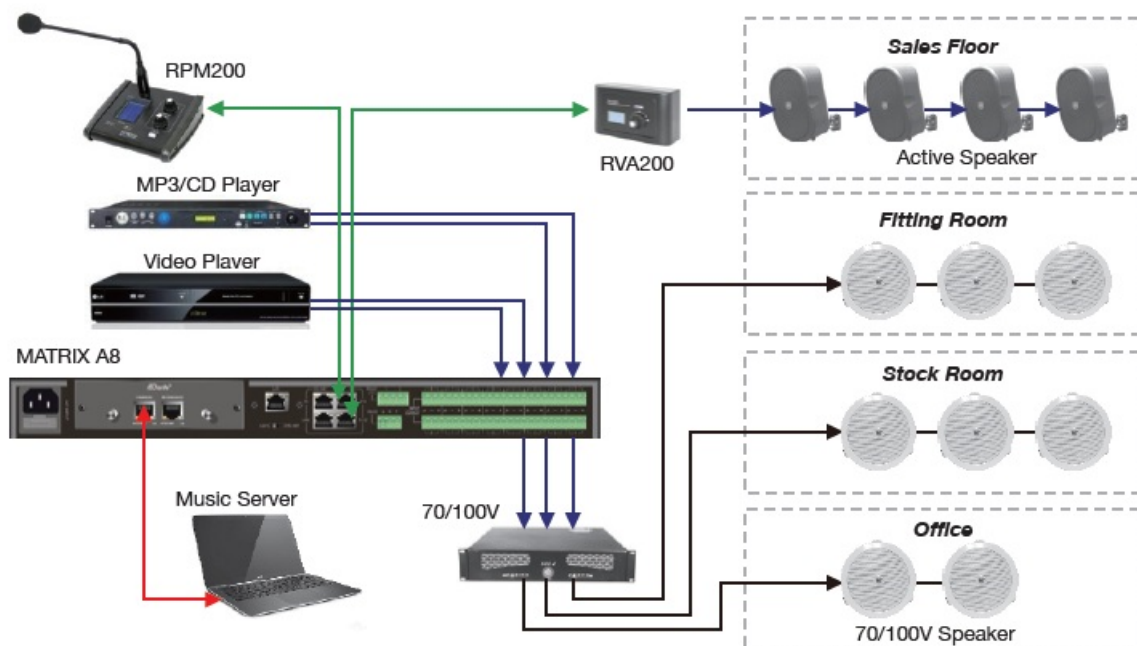
### There are six members in the MATRIX SYSTEM family:

- MATRIX A8 — Server host;
- MATRIX D8 — Server host (Compared to A8, 8 analog I/O for the A8, 8 digital I/O for D8);
- RVC1000 — Remote volume control with a link port;
- RVA200 — Remote volume control with additional outputs;
- RIO200 — Remote analog inputs and outputs;
- RPM200 — Remote paging station.

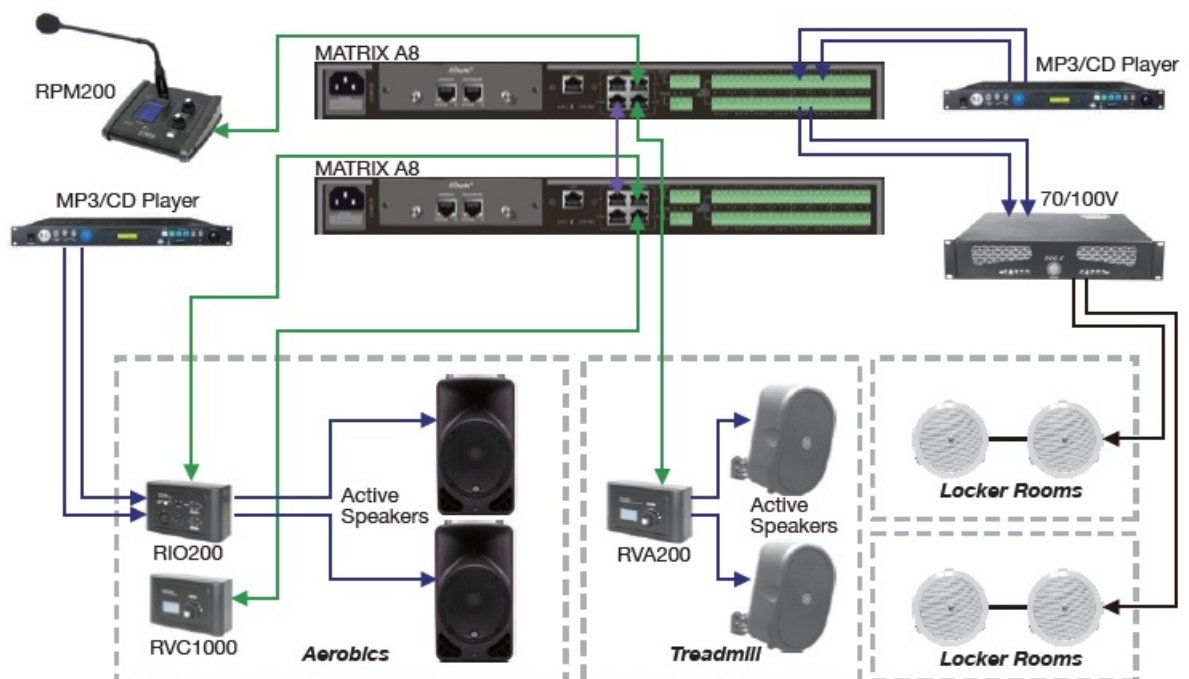
By using a combination of the above six devices, most of the broadcasting or routing requirements can be fulfilled. This system fits perfectly for schools, middle and small companies, supermarkets, bars and restaurants, health clubs, small libraries ... The friendly and quick implementation of primary and advanced parameters makes easy the design of professional as well as simple applications.

Here are some common examples:

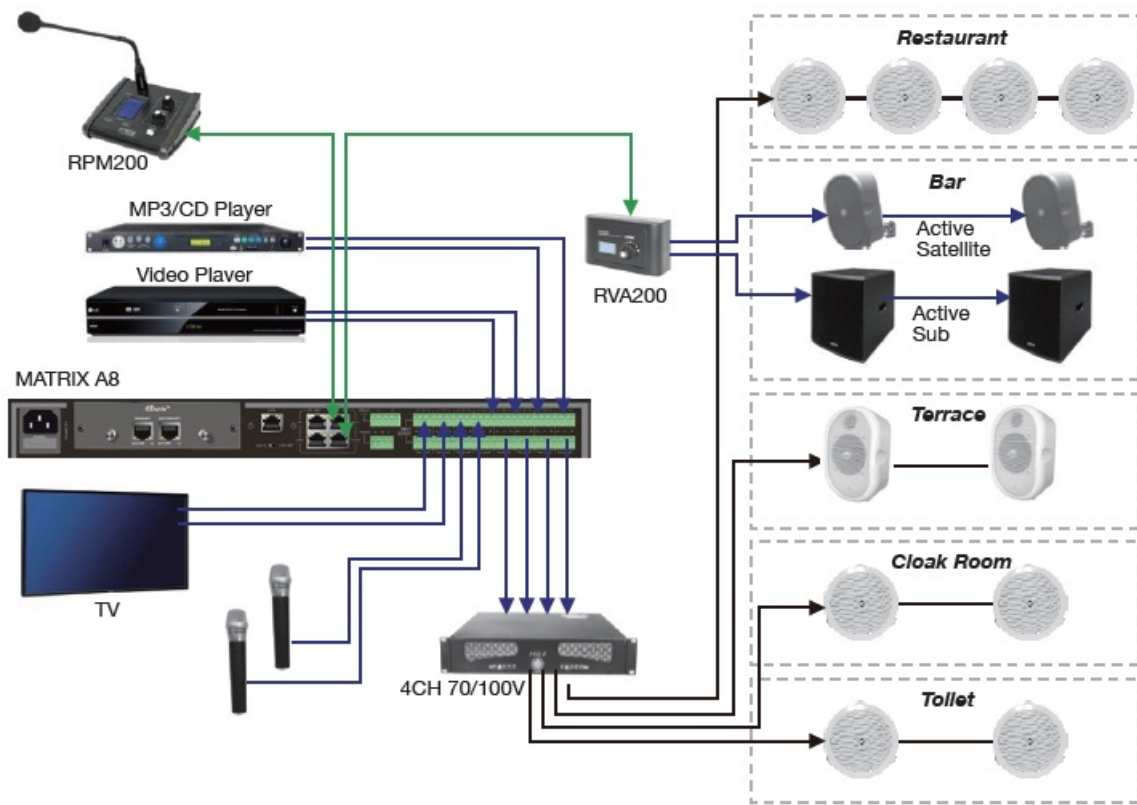
## RETAIL STORE



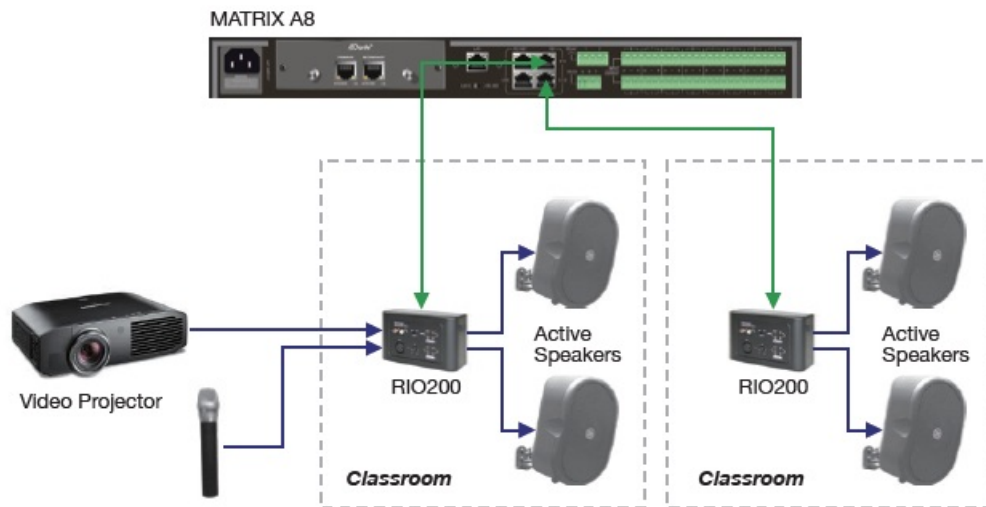
## HEALTH CLUB



## RESTAURANT



## SCHOOL



## BASIC OPERATION

### RIO200 — I/O Remote Module

The RIO200 is a remote input and output module providing 2 x analog channels IN and 2 x analog channels OUT. The device includes built-in A/D and D/A converters processing digital audio AES3 signals from and to the MATRIX-A8.





- **a. 2 Channel Inputs**

A & B analog line Inputs are assigned to channels 9/10 or 11/12 of MATRIX-A8.

- **b. Microphone Input**

XLR connector for MIC. If connected, it replaces the A channel input.

- **c. Microphone volume**

Button to adjust the MIC input level.

- **d. Phantom power**

48V switchable phantom power for electret MIC.

- **e. Signal indicators for the Inputs**

Channel A (MIC) and B input signal status indicators for signal presence and clip.

- **f. Signal indicators for the Outputs**

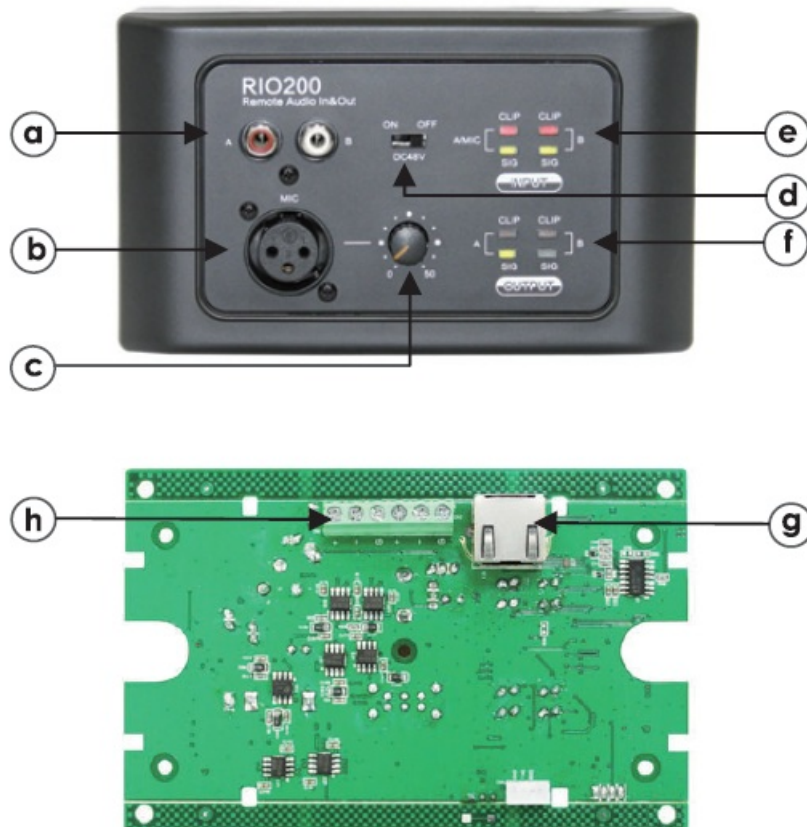
Channel A and B input signal status indicators.

- **g. RD Port**

Connection to MATRIX-A8. The maximum CAT 5e cable length is 100 meters.

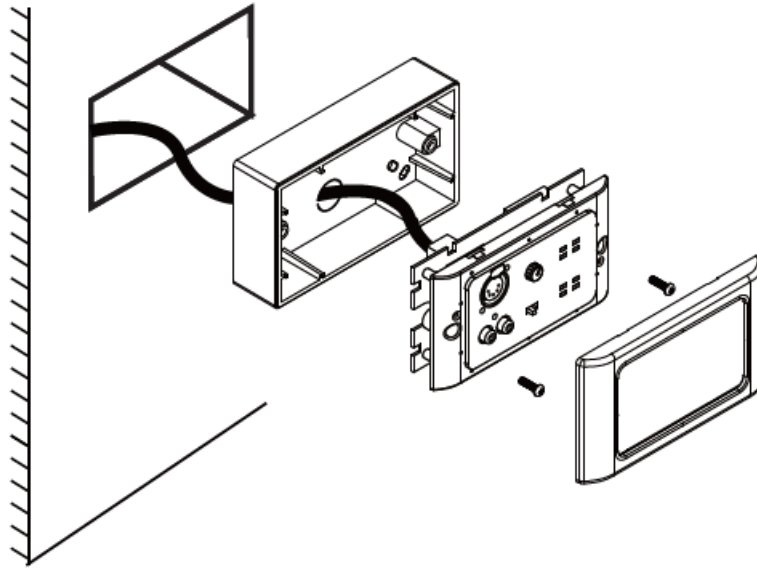
- **h. 2 Channel Outputs**

2 channel analog line Outputs assigned to RD port 9/10 or 11/12 of MATRIX-A8.



## INSTALLATION

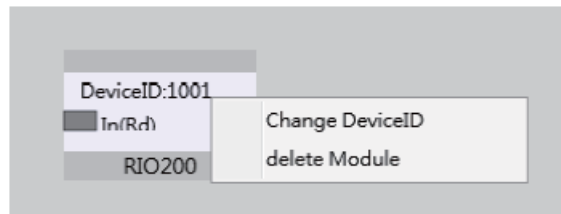
Pass cables through inner wall rear case, insert the cable to the RJ45 port, and insert the Phoenix terminal to the dedicated port; then fix the panel with screws and clip the decorated frame.



## SOFTWARE CONTROL

Please use a high-rated network cable to connect the Ethernet port of the PC and the LAN port of the server host device. Then run MatrixSystemEditor, make sure the IP is linked rightly by the remarks given by dialogs. At the main interface, you can drag the device in the left column to the right area, it is the operation to add a device. Please make sure the device you added is physically linked, or there will be no effects even if all settings are saved. Double-click for specific operation, here we add a RIO200.

If the device is connected properly, the gray rectangle in the left middle will turn green.



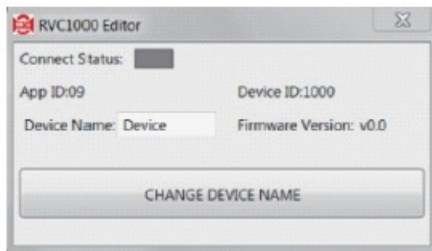
### ID modification

- Right click on the "DeviceID" position, the function menu popped up as shown; click "Change DeviceID", then enter the number(4 bit) you wanted in the text box, finally click OK to save and to take effect.
- **Note:** The first time to use the whole system, initial work to assign ID for each device is necessary for its functioning.



## Device rename

Double click on the device block, and then click the “CHANGE DEVICE NAME” on the shown dialog, another window popped up, enter the name you wanted to textbox and click “Submit” button to save. (Please make sure the name can only consist of alphabets, numbers, and common symbols.)



## SPECIFICATIONS

### RIO200 — Remote Audio I/O

#### Inputs

- Active Balanced
- **Connectors:** 3-pin female XLR, RCA
- **Input Impedance:** 5.1 k $\Omega$
- **THD+N:** < 0.01 % typ 20-20k Hz, 0dBu
- **Maximum Input:** 20.0 dBu
- **Frequency Response:** 20Hz~20KHz, 0dB $\pm$ 1.5dB
- **Dynamic Range:** -126dB max, A-weighted
- **Crosstalk:** -87dB max, A-weighted

#### Outputs

- Active Balanced
- **Connectors:** Euroblock 2 x 3-pin, 5 mm pitch
- **Impedance:** 240 Ohm
- **Maximum Output:** +20.0 dBu
- **Frequency Response:** 20Hz~20KHz, 0dB $\pm$ 1.5dB
- **Dynamic Range:** -107dBu max, A-weighted
- **Crosstalk:** -87dB max, A-weighted

#### Indicators

- **Signal:** -30dBu Green LED, peak-reading
- **Overload:** +17dBu Red LED, peak-reading

#### Ports

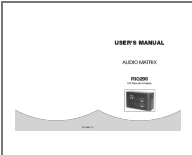
- **RD net to Matrix:** RJ45, 100 m CAT 5e cable (150 m with ground connection)

Dimensions

- **L x H x D:** 147 x 86 x 47 mm

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Documents / Resources

	<p><a href="#">AUDIO MATRIX RIO200 I/O Remote Module</a> [pdf] User Manual RIO200 I O Remote Module, RIO200, I O Remote Module, Remote Module, Module</p>
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References

- [User Manual](#)