



Digitally Steerable Line Array Loudspeaker Systems

iCONYX Gen 5

USERS MANUAL

Assembly & Installation Instructions

IC8-RN • IC8-RD

IC16-8-RN • IC16-8-RD

IC16-RN • IC16-RD

IC24-16-RN • IC24-16-RD

IC24-RN • IC24-RD

IC32-24-RN • IC32-24-RD

IC32-RN • IC32-RD

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. The apparatus shall not be exposed to dripping or splashing and no objects filled with liquids, such as vases, shall be placed on it.
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. Caution—High touch current. Please ensure proper grounding of the unit by first checking that your building's power outlet ground pin is properly connected to earth (grounded) before connecting the power cord.
10. 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 is provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
11. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
12. Make sure the power cord remains readily accessible at all times.
13. The AC Power Cord is the AC Mains disconnect.
14. Only use attachments/accessories specified by the manufacturer.
15. This equipment is not suitable for use in locations where children may come in close contact.
16. Disconnect this apparatus during lightning storms or when unused for long periods of time.
17. 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.

This electronic equipment is for professional use and may have high leakage current. The unit should always be properly connected to the AC Mains including proper and permanent connection to Ground. The included cover for the connections pocket must be installed with all supplied screws. Do not use substitute screws. In the event of gasket damage, contact Renkus-Heinz for replacement parts.

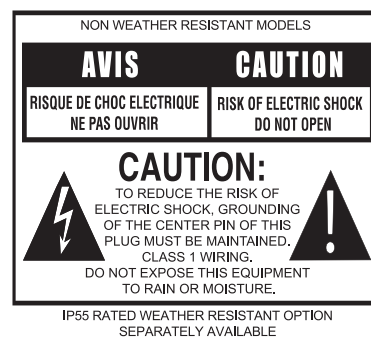
This equipment must be connected to an earthed mains socket-outlet.

Laite on liitettävä suojamaadoituskoskettimilla varustettuun pistotasiaan.

Apparatet må tilkoples jordet stikkontakt.

Apparaten skall anslutas till jordat uttag.

Apparatets stikprop skal tilsluttes en stikkontakt med jord som giver forbindelse til stikproppens jord.



Explanation of Graphical Symbols



The lightning flash with arrowhead symbol, within an equilateral triangle, 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 humans.



The exclamation point, within an equilateral triangle, indicates the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.

Erklärung der graphischen Symbole



Der Blitz mit nach untenzielendem Pfeil in einem gleichseitigen Dreieck weist den Benutzer auf das Vorhandensein einer unisolierten, "gefährlichen Spannung" im Gehäuse hin, die stark genug sein kann, einer Person einen gefährlichen elektrischen Schlag zu versetzen.



Das Ausrufezeichen in einem gleichseitigen Dreieck weist den Benutzer auf wichtige Betriebs- und Wartungsvorschriften in den beiliegenden Unterlagen des Gerätes hin.

CAUTION

**RISK OF ELECTRONIC SHOCK:
OPEN ONLY IF QUALIFIED AS
SERVICE PERSONNEL**

To reiterate the above warnings: servicing instructions are for use by qualified personnel only. To avoid electric shock, do not perform any servicing other than that contained in the Operation Instructions unless you are qualified to do so. Refer all servicing to qualified personnel.

VORSICHT

**GEFAHR EINES ELEKTRISCHEN SCHLAGES:
NUR VON QUALIFIZIERTEM WARTUNGSPERSONAL
ZU ÖFFNEN**

Eindringliche Warnung:
Wartungsvorschriften dienen nur der Benutzung durch qualifiziertes Personal. Zur Vermeidung eines elektrischen Schlages keine anderen als die in den Betriebsvorschriften beschriebenen Wartungsarbeiten ausführen, es sei denn Sie sind dafür qualifiziert. Wartungsarbeiten auszuführen.

IMPORTANT

Your Iconyx Gen5 Steerable Column Loudspeaker contains no user-serviceable parts and all service should be referred to qualified service personnel.

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INTRODUCTION

Congratulations on your purchase of a Renkus-Heinz, RHAON II Empowered, digitally steered Iconyx Gen 5 loudspeaker system.

We hope you enjoy it.

Your Iconyx Gen 5 loudspeaker was carefully tested and inspected before leaving our factory and should have arrived in perfect condition. Please carefully inspect the shipping carton(s) and loudspeaker(s) for any noticeable damage, and if any damage is found, immediately notify the shipping company. Only you, the consignee, may institute a claim with the carrier for any damage incurred during shipping. Be sure to save the carton(s) and all packing material for the carrier's inspection. It is also a good idea to save the carton and packing material even though the loudspeaker arrived in good condition. If you should ever need to ship the loudspeaker, it should be shipped in its original factory packaging.

Technical Support

If you have any questions about Renkus-Heinz loudspeakers or encounter a problem designing, installing, setting up or operating a Renkus-Heinz system, please call our technical support staff at +1 949-588-9997 and ask the operator for technical support. Hours of operation are Monday through Friday from 8:00 AM to 5:00 PM US Pacific Time.

The latest information is always available online at <http://www.renkus-heinz.com> under the Service and Support heading. You will also find a support request form there.

About RHAON II

Your Iconyx Gen 5 digitally-controlled, steerable column loudspeaker is RHAON II Empowered. RHAON II ("rayon two"), the Renkus-Heinz System Manager Software, combines digital audio distribution with precise control and supervision of Renkus-Heinz self-powered loudspeakers. RHAON II uses standard Ethernet hardware and on-board DSP (digital signal processing) to allow self-powered Renkus-Heinz loudspeakers to respond to user input in real time.

IMPORTANT

If you will be controlling/supervising your RHAON II empowered system with a laptop, do not close the laptop's lid or allow your laptop to go to sleep (hibernate) during operation.

General Information

Your RHAON II empowered loudspeaker's amplifier/DSP stores all configuration settings, including the input source selection, in non-volatile memory (settings will remain through a power cycle). Analog Input 1 has been pre-selected at the factory so you can use the loudspeaker as an ordinary self-powered loudspeaker out of the box. Just connect a line level audio signal to Analog Input 1 and connect the AC power. If the loudspeaker was previously put into its standby power mode or another input was selected, it will be necessary to connect it to a computer running RHAON II to change these settings or press the RESET button next to the RJ45 port (see page 11).

You will need a computer with a NIC (Network Interface Card) and Windows-based RHAON II software to change the input selection, beam steering or any of the other DSP settings. Once your DSP settings are stored in non-volatile memory, the computer can be disconnected from the network. You will need to connect a computer only when you want to change the settings or when you want to view the status of connected loudspeakers.

Renkus-Heinz engineering has programmed the on board DSP to optimize the loudspeaker's performance and to ensure its safe operation. Replace the amplifier module only with another unit that has been factory programmed for the same loudspeaker. Contact our Technical Support Department for details and assistance.

ASSEMBLY INSTRUCTIONS

Multi-module Iconyx arrays can be operated as either individual Master & Aux devices or in an array of all Master devices. As a Master & Aux device, the module with the Ethernet and audio connections is the Master and all the other modules are Auxes controlled by the Master module. In an All Master Array, the array acts as a single device.

To simplify shipping and handling, Iconyx Gen 5 loudspeakers are constructed from 8-channel modules and need to be assembled in the field. The assembly hardware is packed with the modules in cardboard boxes that double as carton fillers. The ones containing the hardware are marked "Hardware" to prevent the hardware from being accidentally discarded.

If you purchased an IC8-RN, all you need to do is remove the loudspeaker and its hardware box from the carton and install it.

If you purchased an IC16-8-RN, all you need to do is remove the loudspeaker and its hardware box from the carton and install it.

If you purchased an IC16-RN or an IC24-16RN, you should have received two cartons and will need to assemble them into a single unit. Each carton will include a hardware box.

If you purchased an IC24-RN or an IC32-24-RN, you should have received three cartons and will need to assemble them into a single unit. Each carton will include a hardware box.

If you purchased an IC32-RN, you should have received four cartons and will need to assemble them into a single unit. Each carton will include a hardware box.

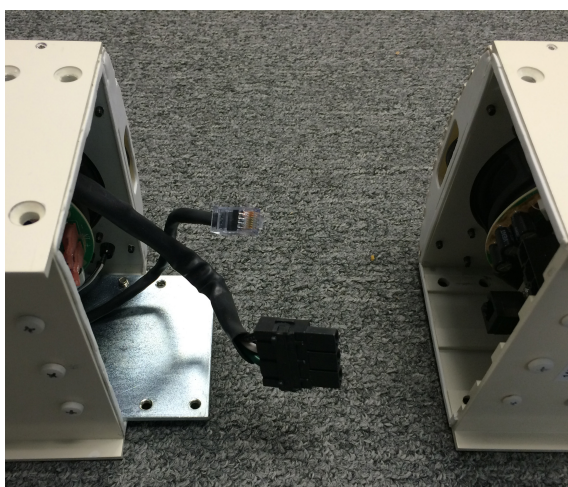
The cartons and loudspeaker modules will be marked to show the module's position in the finished column array; for example, top, bottom, center, etc.

Hinge hardware is included with the loudspeakers. Note that the hinges can be installed on either the right or the left side of the wall bracket to allow the column to swing to either the right or to the left away from the wall.

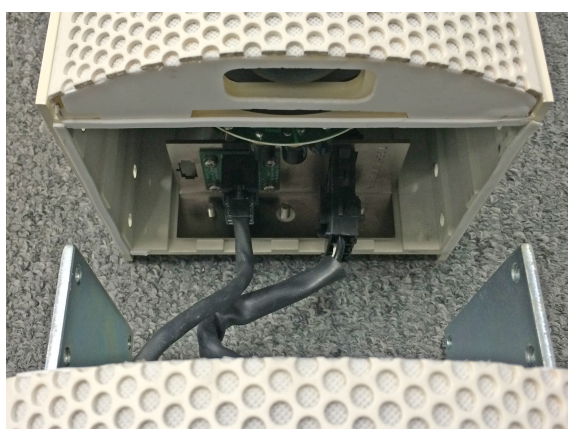
1. Prepare an assembly area. Modules are 3 or 6 ft. (1 or 2 meter) long, so a flat surface with enough space to assemble the complete array is required. Cover the assembly area with a heavy cloth or some other soft material to prevent damaging the finish on the cabinets while assembling them. Avoid resting the modules on their grille. The modules are heavy and may deform the grille. Instead, rest the modules on their sides or back.
2. Place the modules in their respective positions in the assembly area.
3. Note: If you purchased IC8-RN modules in the past and now want to turn them into larger arrays by purchasing IC8-RS Aux modules, all the modules must have the same Firmware version. Contact RH Technical Support for firmware updates.
4. **Before proceeding any further carefully check to make sure none of the modules are connected to AC mains power. If they are, disconnect them. Removing a module's top plate exposes terminals that carry AC power between the modules and poses a shock hazard if the unit is connected to the AC power line.**
5. Remove the top of the lower module and the bottom of the top module, and the tops and bottoms of any intermediate modules and their mounting brackets.
6. To remove an end cap, remove the eight #3 Phillips machine screws from each side of the cabinet and lift the end cap and its mounting brackets out of the cabinet. It may be necessary to loosen the top hex bolts.
7. Use the same eight #3 Phillips machine screws to install the two heavy joining plates. The joining plates will be packed with the hardware. Leave the screws loose. The joining plates need to be a little loose to slide easily into the other cabinet. Align the two modules to be joined on a tabletop or on the floor so that the top of the lower one and the bottom of the upper one are close to one another, about 4 in. (10 cm) apart.
8. There are only two connections to be made between Gen 5 Iconyx modules. An RJ45 connection that carries control data & audio and a locking power connector. Each only fits one way in its socket. Make sure the connectors are fully seated with their locking tabs in place. If necessary, use a flashlight to check because if the connectors are not seated properly, you may have to disassemble the column again in order to reseat them.
9. Align the two modules and slide them together, making sure the holes in the heavy joining plates align with the holes in the modules and that the cables do not get pinched. Install the remaining screws into the joining plates and tighten all the screws. The assembly is now complete.



Remove the end caps



Line up modules and install joining plates



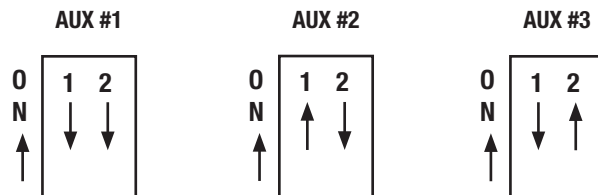
Make connections and slide the modules together

Address Number Verification

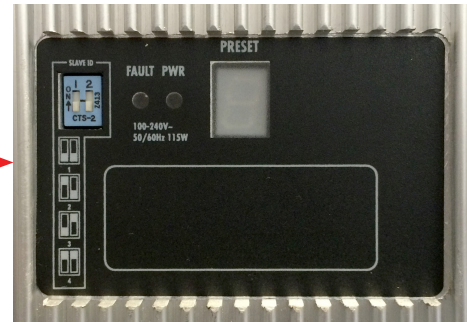
Next verify that the Aux modules are properly identified. The settings were set at the factory, but it's always a good idea to check them. This is accomplished with the DIP switches located on the rear of each Aux module. Set the switches in accordance with the illustrations shown below.

Normally the Master module (ID 0 in RHAON II) is assembled at the bottom of an array and the other modules will be Aux IDs 1, 2 & 3 in ascending order. However, the modules can be put in any order. For example, the Master may be installed on top to allow for a cable drop near the top of the array. The DIP switch ID settings on the Auxes must match the column order in RHAON II and both must match the vertical order of the modules. Refer to the section on Column Order in the RHAON II User Manual.

If power was connected to the Array before setting the DIP switches, it will need to be disconnected and reconnected before the DIP switch settings will take effect.



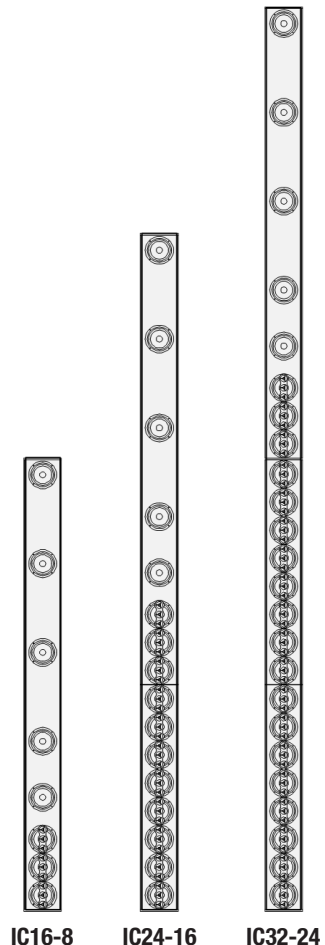
Aux
Setup DIP
Switches
and Legend



Hybrid Model Assembly Order

For all standard Iconyx models; IC8, IC16, IC24, IC32, the Master/Aux units can be installed anywhere along the length of the array as long as the physical order is matched in RHAON II. This is because all of the modules within a standard Iconyx model are the same style base module, the IC8. However, Iconyx Hybrid Models; IC16-8, IC24-16, and IC32-24, are built from two distinct base modules, the IC16-8 and the IC8. Special care needs to be taken when assembling Iconyx Hybrid Models, see below:

- The IC16-8 can be a Master or an Aux. Iconyx Hybrid models with Masters and Auxes will always feature the IC8 module as the master, and the IC16-8 module as the Aux. IC16-8-RS Aux modules always needs to be installed installed ABOVE the IC8-RN or IC8-RD Master modules.
 - The IC16-8-RD is only a single Master module and does not need further assembly.
 - The IC24-16-RD is built from an IC8-RD Master module and an IC16-8-RS Aux module, the IC16-8-RS Aux module will always need to go above the IC8-RD Master module.
 - The IC32-24-RD is built from 1x IC8-RD Master Module, 1x IC8-RS Aux Module, and 1x IC16-8-RS Aux Module, the two IC8 base modules can be installed in whatever order is required, but the Aux IC16-8-RD needs to go above both the IC8-RD Master and the IC8-RS Aux.



IC16-8

IC24-16

IC32-24

INSTALLATION

General Information

Iconyx Gen 5 was designed to be easy to install on either a flat surface, such as a wall, or suspended from a ceiling. For installation in a recess or wall or in an alcove, see our application note on flush mounting. The amplifiers are convection cooled and their heat sinks require at least an inch (25 mm) of separation from the nearest surface.

The included hinge kits allow wall mounted arrays to be rotated 90 degrees away from the wall to provide easy access to the rear ports during installation and for any testing or service. They also provide the separation needed for cooling.

The actual installation should be made either by, or under the close supervision of, someone experienced in installation techniques, and rigging related to the type of mounting surface or wall.

Wall Mounting Information

The following instructions assume that the array(s) will be mounted using the included HK series hinge kits.

HK series hinge kits come standard with Gen 5 arrays and will be packed in one of the cartons. Each mounting plate has a pin that may be moved to provide for either “right” or “left” swing away from the wall. IC8-RN columns will have two hinge sections; all others will have three hinge sections.

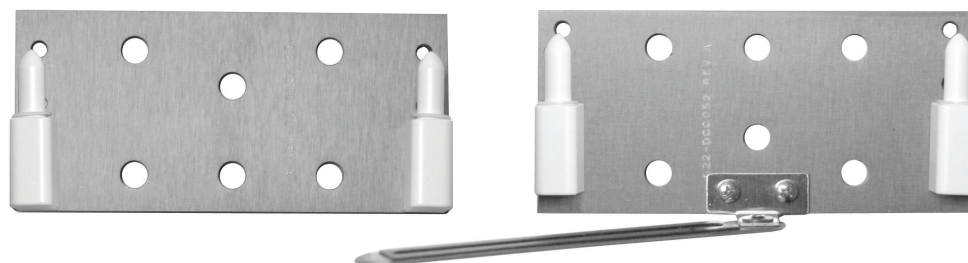
The female hinges are attached to the column and the male hinges to the wall. The photos below show the male mounting plates with pins in both positions for illustrative purposes.

Notice that one of the wall mounting hinge plates has a metal strap attached to it. This hinge plate can go on the top or bottom. The metal strap attaches to the top or bottom of the array after it is hung and is used to lock the column array in place.

Hint: To simplify the mounting many installers will first cut a “backing plate” the size of the column out of heavy plywood and mount the hinge plates on it. It’s a lot easier to align the hinge sections on a piece of plywood than it is on the wall. Then, when the alignment is perfect they mount the “backing plate” to the wall. After that, it’s usually a comparatively easy task to hang the column array on the backing plate.

After the column array is hung on the wall, remove the machine screw from the center of the end cap at the end with the restraining strap and use it to attach the strap.

In outdoor or weatherized applications, if the restraining strap is used at the top, it must be sealed with silicone caulk to prevent water ingress.



IMPORTANT WALL MOUNTING INSTRUCTIONS

WARNING: THIS APPARATUS MUST BE SECURELY ATTACHED TO THE WALL IN ACCORDANCE WITH INSTALLATION INSTRUCTIONS. FAILURE TO FOLLOW INSTALLATION INSTRUCTIONS MAY RESULT IN INJURY.

To ensure proper air movement for the cooling of the amplifier, we recommend a minimum of 24 in. to 36 in. (65 cm to 100 cm) of clearance in front of the loudspeaker and 1 in. to 2 in. (25 mm to 50 mm) of clearance from the other loudspeaker cabinet surfaces.

Installation should only be performed by skilled and qualified personnel who are experienced in mounting heavy loads to the intended wall construction type.

These loudspeakers are designed to be securely mounted using the included Renkus-Heinz HK series hinge kits and are not intended to be free-standing:

Models: IC8-RN, IC16-8-RN & IC16-RN

Hinge Kit Model: HK-IC8R &16R

Models: IC24-16-RN, IC24-RN, IC32-24-RN & IC-32-RN

Hinge Kit Model: HK-IC24R &32R

These loudspeakers have not been evaluated for safety requirements using other mounting kits.

Renkus-Heinz is not responsible for the quality or effectiveness of an installer's mounting of this heavy load to the wall type encountered during installation.

Hardware Required

Models IC8-RN, IC16-8-RN & IC16-RN

Eight – Size M6, or 1/4 in. fasteners suitable for mounting a heavy load to the desired wall

One – Renkus-Heinz, Hinge Kit Model HK-IC8R &16R

Models IC24-16-RN, IC24-RN, IC32-24-RN & IC-32-RN

Twelve – Fasteners suitable for mounting a heavy load to the desired wall

One – Renkus-Heinz, Hinge Kit Model HK-IC24R &3 2R

Tools Required

- Drill and bits suitable for use on the desired wall type
- Socket Driver
- 12 mm or 7/16 in. socket
- Phillips #2 screwdriver or socket driver

Wall Mounting Procedure

Each HK series hinge consists of two parts, a male mounting plate and a female mounting plate. The female hinge plates should be attached to the loudspeakers. The male mounting plates attach to the wall. The proper number of mounting plates are included for the size of loudspeaker ordered.

Each male mounting plate is provided with six mounting holes. At least four fasteners in each male mounting plate, suitable for the wall's construction, are needed to fully satisfy mounting needs and safely secure Iconyx loudspeakers to the wall.

1. Determine the desired height of the loudspeaker and mark the location of the male mounting plates.
2. Mark points on the wall where mounting screws will be positioned.
3. Using an appropriate drill bit, drill holes at the marked points.
4. Secure the mounting plate to the wall with fastener suitable for the wall's construction.
5. Repeat until all male mounting plates are installed.
6. **NOTE: The male mounting plate with an attached slotted locking strap can go in the top or bottom location. The components of the mounting plate must be rearranged to fit when used in the top location.**
7. The female mounting plates come pre-attached to the loudspeaker.
8. Lift the loudspeaker onto the hinge pins.
9. Secure the loudspeaker by attaching the metal locking strap to its top or bottom using the machine screw provided.
10. Installation is complete.

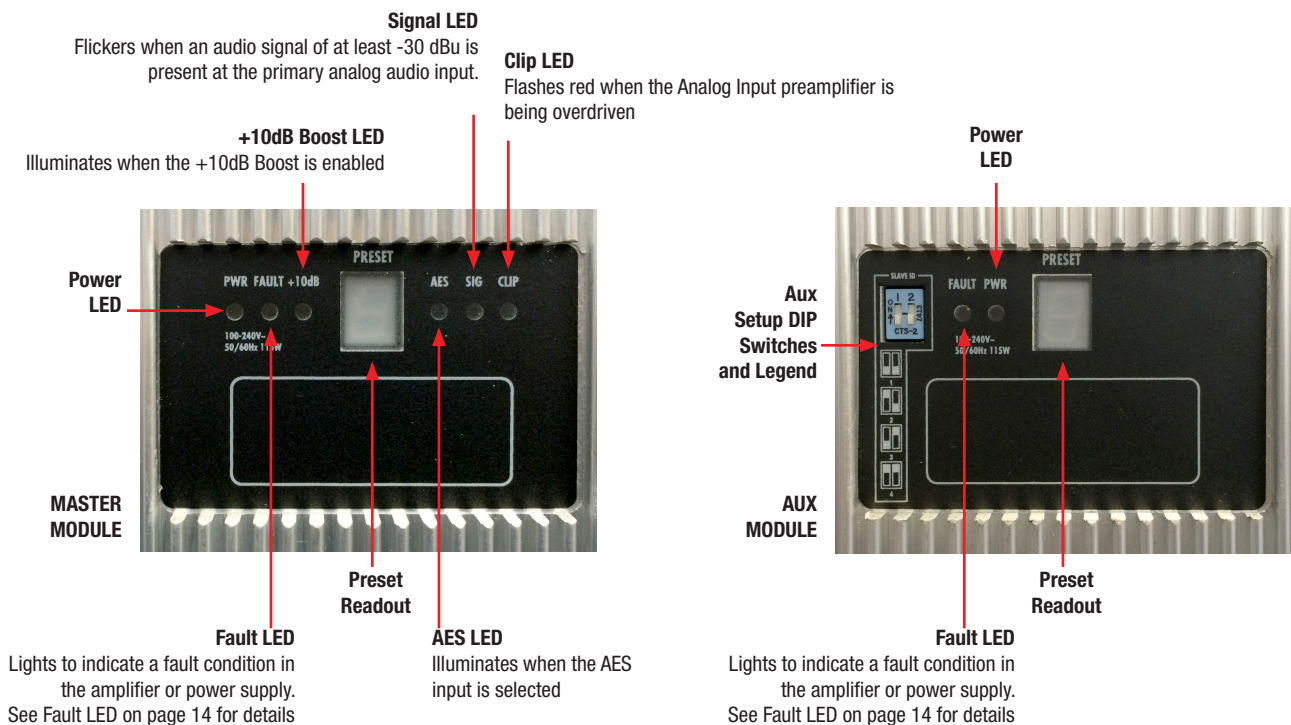
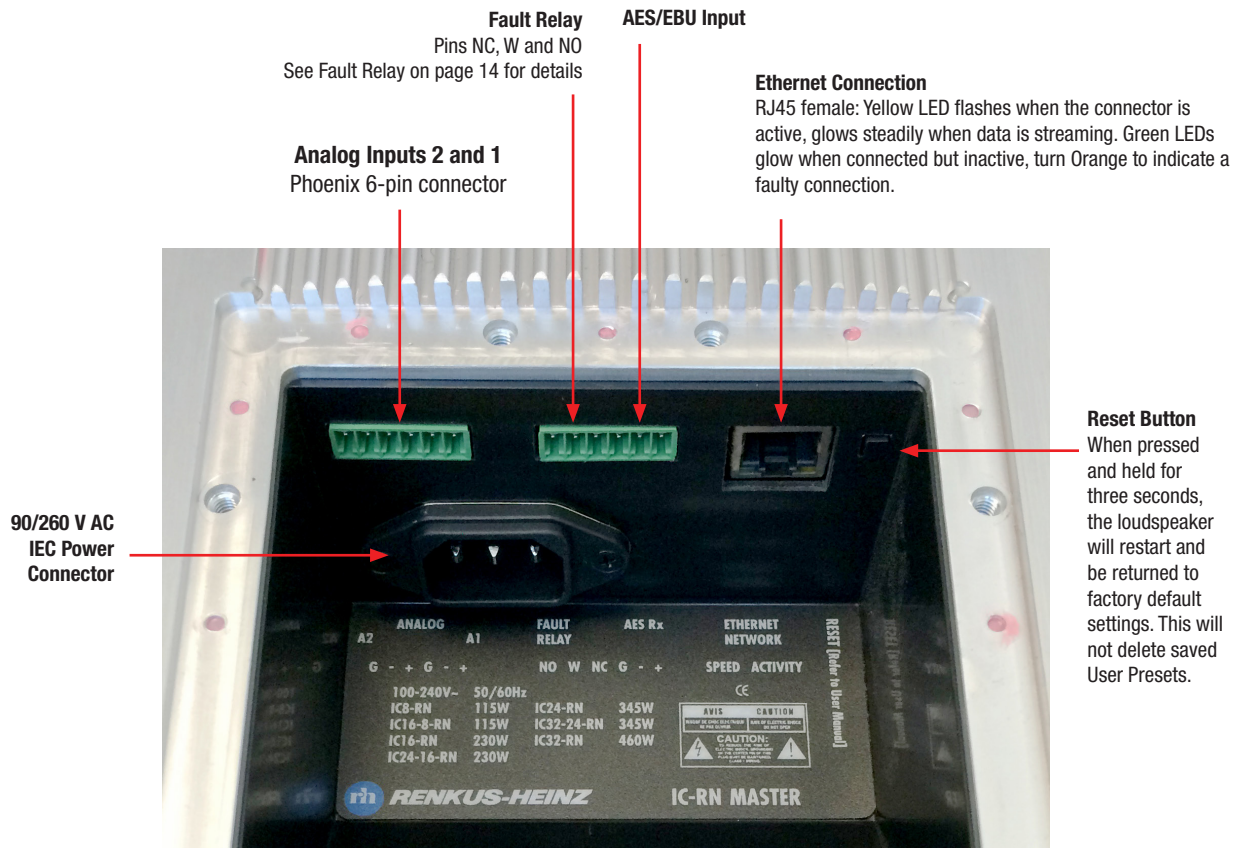
Suspension Mounting (Flying)

The end caps of the column array are attached to the main frame with four M6 machine screws. Removing these screws and replacing them with eye bolts provides up to four attachment points for flying. We recommend using all four. If only 2 are used the column will not hang straight. It will either tilt up or down.

Tripod Stand Mounting

If you plan to use your Iconyx Gen 5 IC8-RN, IC16-8-RN or IC16-RN mounted on a heavy-duty tripod stand using the ICTRIPODKITR, be aware that you must mount the top mounting bracket to the array before attaching the tripod socket to the bracket. Otherwise you will not have access to all the bracket mounting screws.

Hardware Connections & Indicators



FERRITE CLAMP INSTALLATION

The included ferrite clamps are required to be installed, as shown below, to reduce radio frequency interference.

1. Form a loop in each analog audio cable and the power cable (Pic 1).
2. Using a small clamp for audio cables and a large clamp for the power cable, insert two runs of the loop into the clamp. The clamp on the audio cable should be approximately 3 inches (80mm) from the connector (Pic 2).
3. Press the clamp to close it and engage the plastic locks (Pic 2).
4. With all the ferrite clamps installed and the cables connected, the original rear panel service cover must be installed with all the originally included screws.



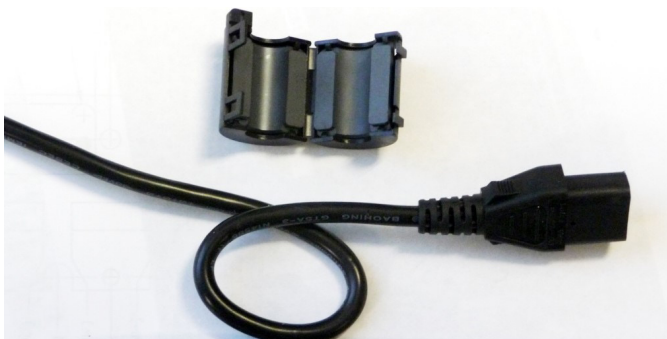
Pic 1



Pic 2



Pic 2



Pic 1



Pic 2

Network Connectivity, -RN units

Gen 5 Iconyx are connected and controlled with RHAON II software via a normal Ethernet network. Standard Ethernet star topology is used with off-the-shelf switches. Each Gen 5 Iconyx array is a node on the network and connects to the network switch via a home-run CAT5e or CAT6 Ethernet cable. The maximum cable run supported on copper Ethernet is 100 meters. Gen 5 -RN units may be controlled via Wi-Fi if a Wi-Fi access point is connected to the network switch. The units do not have direct Wi-Fi connectivity on board, they must connect to the switch via copper.

Note that -RN units are connected and controlled using the AVDECC standard. This communication is all Layer 2; -RN units do not receive and do not need an IP address.

Network connections are necessary only for initial setup and beamsteering. If the arrays are easily accessible, it's common to set up a temporary network for control during installation and not have a fixed network in place all the time.

For details on network setup, RHAON II and beamsteering, see the RHAON II manual.

Network Connectivity, -RD Dante units

Gen 5 Dante Iconyx are connected and controlled with RHAON II software and Dante audio is transmitted via a normal Ethernet network. Standard Ethernet star topology is used with off-the-shelf switches. For Dante audio transport, Gigabit switches are recommended. You must disable EEE or “Green Ethernet” functions in the switch. If you can't disable EEE, use a different switch. RHAON II and Dante share the same Ethernet network, only one network connection is necessary.

Each Gen 5 Iconyx array is a node on the network and connects to the network switch via a home-run CAT5e or CAT6 Ethernet cable. The maximum cable run supported on copper Ethernet is 100 meters. Gen 5 -RD units are available with a single-mode fiber optic input option that can extend the working cable distance to 5 kilometers.

Important: Wi-Fi may not be used with Dante units.

Primary and Secondary Network Ports

Each -RD Iconyx has two network ports, primary and secondary. These ports can be configured as a two-port Gigabit switch, or for redundant networking. As shipped, the ports are set as a two-port switch, allowing Iconyx -RD units to be “daisy-chained.” We recommend that this feature be used sparingly, passing control and audio to a local subwoofer, for example. It would not be recommended to daisy chain units down a long corridor as any failure would affect multiple arrays. Each daisy chain connection is a switch hop and may increase your network diameter and increase latency.

The ports can be reconfigured for redundant network operation using Dante Controller. In this case, a second, redundant network would be connected to the secondary port. (This must be a complete, separate, redundant network.) If the primary network fails, the unit will switch to the secondary network. This switch over is normally instantaneous and silent. All Renkus-Heinz Dante units are Dante Domain Manager compliant.

Dante Audio Routing

To select a Dante audio flow, in RHAON II, Source Select, select either Dante Rx 1 or Dante Rx 2 as the main audio source, Figure 1. Then, in Dante Controller, connect the flows from the Dante sources, Figure 2.

For more information about Dante audio networking and to download Dante Controller go to www.audinate.com.

For details on network setup, RHAON II and beamsteering, see the RHAON II manual.

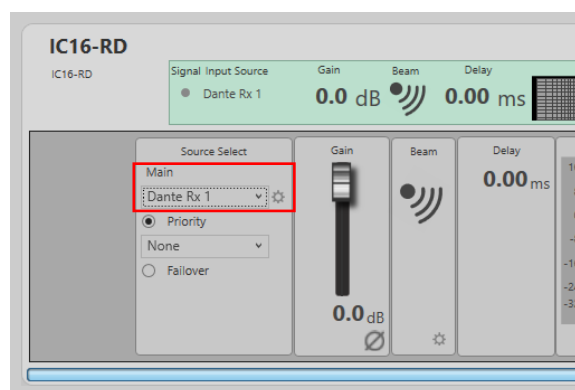


Figure 1

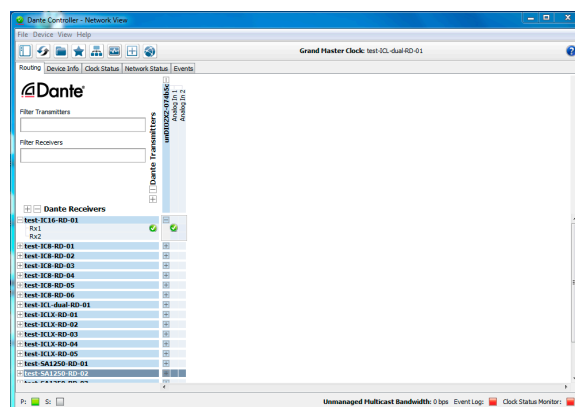


Figure 2

FAULT RELAY/FAULT LED

Normally Open (NO) and Normally Closed (NC) relay contacts on the Master Module of a Gen 5 Array can be used to report a failure to an external monitoring system, triggering a failure indication on a hard-wired monitoring device. An isolated relay will change state to report any of the following three fault conditions:

- Amplifier temperature is above 185° F (85° C) or below 10° F (–12° C)
- Voltage is incorrect, indicating a DC power supply failure
- Amplifier processing error

Any of the above faults will cause the relay to switch. The installer can choose to monitor for a closed circuit by wiring the external monitoring system to the wiper and NO contact, a fault will close the circuit.

Conversely, if the external monitoring circuit is in the form of a fixed loop, wiring to the wiper and the NC contact, a fault will open the circuit.

Note: The default state of the Fault Relay can be changed in RHAON II Preferences.

The Fault Relay contacts handle up to .5 Amp @ 28 Volts AC or DC. The detection circuit functions with or without the array being connected to a RHAON II network.

In addition to the relay action, there are Fault LED indicators on the rear panel of Gen 5 Master and Aux Modules. This LED will illuminate when that Module is in a fault condition.

SERVICING AND TROUBLESHOOTING

Iconyx Gen 5 steerable column arrays contain no user-serviceable parts. All service should be referred to qualified service personnel.

An Iconyx array may be serviced in the field by qualified personnel without being removed from its mounting position. The transducers can be replaced from the front of the column by removing the grille to expose the transducers and their mounting screws. The digital amplifier/DSP and associated power supply that are the heart of each module is one single assembly that can easily be taken out and replaced from the rear.

General

Your Iconyx Gen 5 array was factory tested before it left our factory and barring shipping damage should be in perfect operating condition.

Nevertheless, it is always a good idea to run a quick check on each module/array before taking it out to the job site and installing it.

If you should run into a problem at the site, it's then more likely that the problem is in the network or the system wiring and not in the loudspeakers.

Preset 00 is a testing preset with all channels set to "Flat" allowing a technician to check every channel in the unit without any beamsteering or EQ. Preset 00 also sets Analog 1 as the input so it's a simple matter to connect a line level analog signal to an array and check its performance.

Hum & Noise

The most common sources of system hum are the program source or an improper or poor ground on an audio signal line. Check the program source to make sure the hum isn't originating there. Carefully check all the audio connections to make sure they are properly made. Unplug the input cable at the input to the loudspeaker, if the noise stops, the loudspeaker is reproducing a noise generated elsewhere. Unplugging the cable at the mixing console or system DSP does not achieve the necessary troubleshooting step, as the cable run is still suspect.

Troubleshooting Network Connectivity

Some common symptoms of network connectivity problems include:

Red Network Error indicator in a Device's Zone view

Cannot use a Device (add to Devices or Zones) that appears in Network Discovery

Errors when writing beams

Solutions to the above problems may include the following cable work:

Check for split pairs. A split pair cable will drop packets even if the cable is only 2 meters long. The wiring example diagrams shown below represent an incorrect split pair and correct wiring.

Re-make the RJ45 connector. A marginal or corroded crimp will cause dropped packets.

Check the cable length. The Ethernet standard for unshielded twisted pair copper cables is a maximum 100 meters (330 feet).

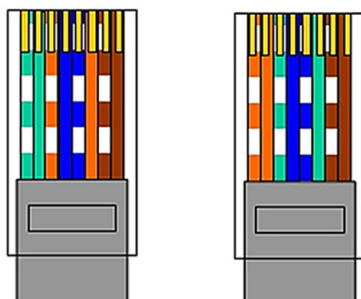
CORRECT WIRING

Pins 1 & 2 = 1 pair

Pins 3 & 6 = 1 pair

Pins 4 & 5 = 1 pair

Pins 7 & 8 = 1 pair



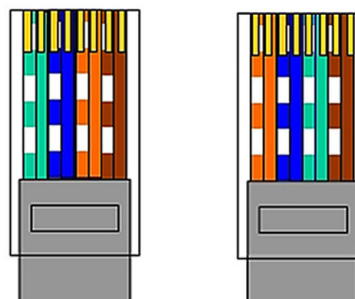
INCORRECT WIRING (Split Pair)

Pins 1 & 2 = 1 pair

Pins 3 & 4 = 1 pair

Pins 5 & 6 = 1 pair

Pins 7 & 8 = 1 pair



Suspected Transducer Failure

Defective transducers can be hard to locate in steerable column arrays because the transducers are so close together. If one is bad, it's hard to tell which one it is. The digital steering reduces the drive to some of the transducers making it difficult to determine if a certain transducer has failed or is just being driven at a much lower level than other transducers. No movement of the cone of a transducer is not positive proof that the transducer is bad. It could be that beam steering is limiting the drive to the transducer or restricting its use to a narrow frequency band.

In Iconyx arrays, Preset 00 is set to send an equal signal to all transducers. To check for a defective transducer, select Preset 00, remove the grille from the module(s) and use your fingertips to feel for cone vibrations while using the internal pink noise generator.

Note that it is also possible, and likely more convenient, to perform the open coil test available in RHAON II. The test must be enabled in RHAON II Preferences then will appear in the Active Zone view for each array.

Always recall Preset 00 before performing this test. The test will cause the loudspeaker to emit a loud tone for several seconds.

Refer to the RHAON II User Manual for more information.



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