

Cinénova IR 16

8-ZONES MULTI-SOURCE IR DRIVEN AMPLIFIER USER'S MANUAL



Earthquake Sound Corporation
2727 McCone Avenue. Hayward, CA 94545
Phone: 510-732-1000
Fax: 510-732-1095
www.earthquakesound.com

**EARTHQUAKE
EARTHQUAKE**
S O U N D
Sound That Will *Move* You.

Getting Started

Safety Instructions	4 - 5
Introduction	6
Unpacking	7

Basic Operations

Front & Rear Panel Overview	8
Front Panel Map	9
Rear Panel Map - LOCAL	10
Rear Panel Map - BUS	11
Keypad & Remote Map	12
Special Features	13
Features Explained	14
IR Wiring Configuration Sample	15
Recommended Configuration	16

Specifications

Specifications	17
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Troubleshooting & Maintenance

Troubleshooting & Maintenance	18
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Product Warranty

Product Warranty	19
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Safety First

This documentation contains general safety, installation, and operating instructions for the Cinénova-IR16 Amplifiers. It is important to read this users' manual before attempting to use these products. Pay particular attention to the safety instructions.

Symbols Explained:



Appears on the component to indicate the presence of uninsulated, dangerous voltage inside the enclosure – voltage that may be sufficient to constitute a risk of shock.

CAUTION

Calls attention to a procedure, practice, condition or the like that, if not correctly performed or adhered to, could result in injury or death.

WARNING

Calls attention to a procedure, practice, condition or the like that, if not correctly performed or adhered to, could result in damage to or destruction of part or all of the product.

Note:

Calls attention to information that is essential to highlight.

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The Sound That Will Move You.

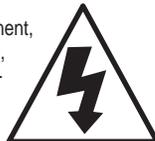
Earthquake Sound Corporation
2727 McCone Avenue
Hayward, CA 94545
Tel: 510-732-1000
Fax: 510-732-1095

Customer Support
tech@earthquakesound.com
Tel: 800-576-7944
Fax: 510-732-1095

Important Safety Instructions

- 1) Read these instructions in their entirety.
- 2) Store this manual and packaging in a safe place.
- 3) Heed all warnings.
- 4) Follow instructions (do not take short cuts).
- 5) Do not use this apparatus near water.
- 6) Clean only with a dry cloth.
- 7) Do not block any ventilation openings. Install in accordance with the manufacturers instructions.
- 8) Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatuses 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 is 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 compatible rack or cart for final resting position.
- 13) Unplug this apparatus during lightning storm or when unused for long period of time.
- 14) Refer all servicing to qualified service personal. 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.
- 15) To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture.

This triangle, which appears on your component, alerts you to the presence of uninsulated, dangerous voltage inside the enclosure - voltage that may be sufficient to constitute a risk of shock.



This triangle, which appears on your component, alerts you to important operating and maintenance instructions in this accompanying literature.



About Cinénova-IR16

The Cinénova-IR16 is the second generation in multi-zone that Earthquake has produced. Thanks to the feedbacks received from custom home installers worldwide, we have managed present you with a truly powerful yet audiophile multi-zone amplifier with the following features:

- Bridgeable output
- Zone IR control with digital pad in each zone (included)
- Décor friendly keypad
- Four (4) built-in IR repeaters
- Rear gain control limiter which limits the output gain of the zone pad.
- Each zone has a LOCAL/BUS input audio selector
- 12V DC trigger
- Individually driven amplifier blocks (each block is driven by a discrete complementary output class A/B stage with selected components)
- Individual power supplies(bifilars) for power isolation, accuracy and better channel separation

There is no other multi-zone amplifier on the market with such features and power. Enjoy.



Over the years, many of you have provided us with design requirements, new product development ideas and tremendous feedback that helped us to improved our products. We are very grateful for your support and feedback.

From all of us here at Earthquake Sound Corporation: Thank you.

A handwritten signature in black ink, reading "Joseph Sahyoun".

*Professor Joseph J. Sahyoun
President & Chief Engineer*

Unpacking system components

Keep the original carton and packing materials for future shipment or storage.

Check for any visual signs of damage. If you encounter any concealed damage, consult your Earthquake Sound dealer before proceeding with unit installation.

Retain the sales receipt as it established the duration of the limited warranty and provided information for insurance purposes.

Cinénova-IR16 included components

- 1 Power cord
- 8 Remote controls
- 8 Keypads (wallplates not included)
- 8 Phoenix speaker terminals
- 8 Phoenix pad connectors
- 1 16-channel Amplifier

System installation considerations

There are several factors to consider before installing the Earthquake Sound Cinénova-IR16 system.

- What are the intended listening zones?
- What system options and accessories might be required for features such as local sources, etc.?
- From where in each zone will the listener prefer to control the system? Where will the remote gains be located? Where will the speakers be located?
- Where will the source equipment be located?

Note: The Cinénova-IR16 must have adequate ventilation above and below for air circulation and heat dissipation. In addition, rack mount locations may require fans and vents.

Connection tips

It is recommended that the Cinénova-IR16 and the source equipment be plugged into a dedicated 20-amp circuit with an isolated ground.

Disconnect all live power cords before making connections to the remote gain.

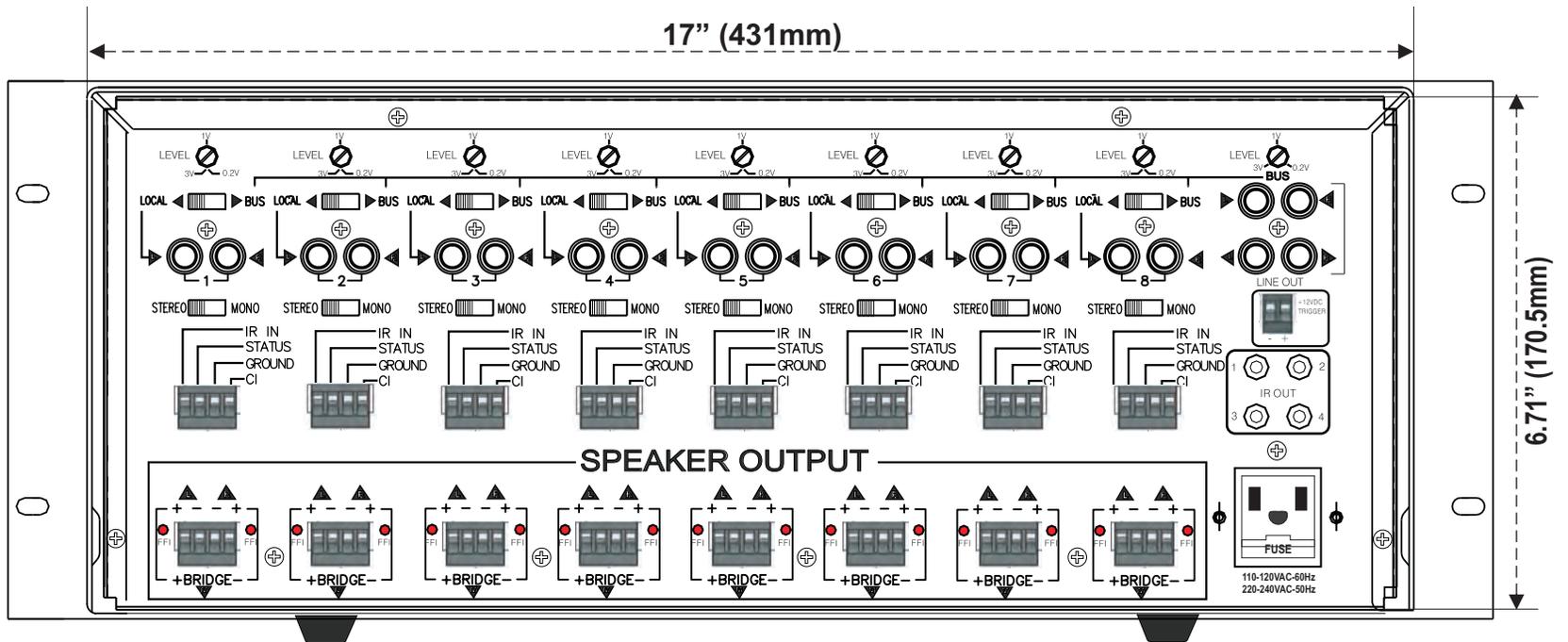
Keep all power cords away from all signal cables to prevent humming from induced noise.

Choose reliable signal cables cords (Earthquake Sound also specializes in high-performance RCA cables and patches).

All speaker wires that are ran through the walls should be twisted type to reduce potential hum noise pick up.

Label both ends of all wires with the corresponding room location.

It is best to use a grounded electrical outlet to power the amplifier. Lack of input ground reference could be unsafe. Consult with your electrical contractor about proper grounding.



Front Panel



① Power/Standby Switch

This red colored LED indicates whether the amplifier is ON or OFF. When the amplifier is ON, this LED will be lit.
 Note: When using the rear 12V DC Trigger (page 11 - feature 11), this front switch must be turned OFF.

② Front Panel Power LED

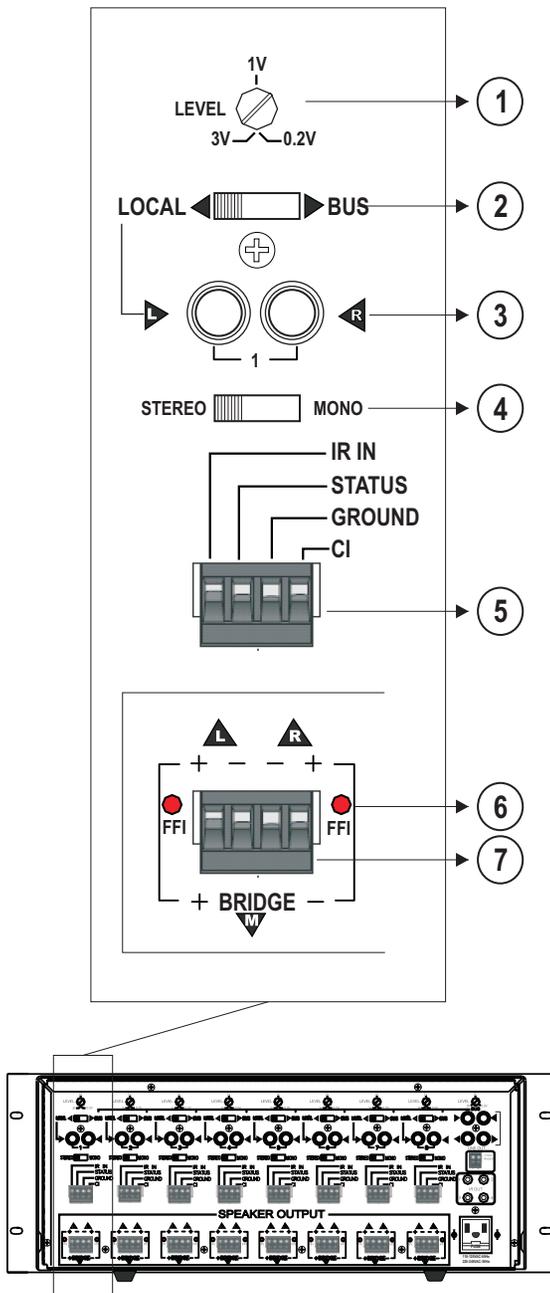
This LED reflects the power status of the whole amplifier. Amplifier will not have any output unless this LED is ON.
 Note: When using another device to turn on the Cinénova IR16 amplifier, this LED will come on when external device sends DC signal (between 5 and 28V DC) to the back of Trigger connector (page 11 - feature 11).

③ Peak LED Indicators

Each LED represents one (1) channel. This particular model has sixteen (16) channels. Thus, there are sixteen (16) LEDs located on the front panel.

(!) Cinénova IR16 can be mounted in a standard rack mount (4 rack spaces).

(!) Mounting Dimensions: 4" center to center vertical and 18.37" center to center wide.



① **Level Controls**

This feature adjusts the maximum desired output of the associated zone to prevent overpowering of small speakers.

Note: This knob is by-passed when its zone selector switch(feature 2) is set to BUS.

② **LOCAL/BUS Switch**

It switches the audio source between LOCAL and common BUS. In LOCAL mode, the zone acts independently from the rest of system by only amplifying the information fed through the associated RCA inputs. In BUS mode, that particular zone will amplify the signal fed through the main BUS input (page 11 - feature 9).

③ **Audio RCA Input**

Individual stereo RCA inputs to drive signal into associated zones. Both RCA's, LEFT and RIGHT, are active when the STEREO/MONO switch is set to MONO (feature 4). Thus, you can use either RCA inputs.

Note: This RCA input also serves as an Auto Signal Sensing whenever there is a signal greater than 12mV present.

④ **STEREO/MONO Selector**

Switches the amplifier's output between STEREO or MONO.

In **STEREO** mode, the LEFT and RIGHT outputs operate independently at 75 Watts per channel at 4Ω speaker load. Level, Gain, Auto Turn ON and MUTE are all common to both.

In **MONO** mode, the LEFT and RIGHT stereo signals are summed internally for a single high power output. You can drive two 4Ω speakers in this mode or a single 4Ω Bridged for maximum power of 150WRMS. Also, if the source is already a mono signal, you may use either RCA, LEFT or RIGHT.

⑤ **Keypad/Zone Connector**

With four (4) removable conductors (IR IN, STATUS, GROUND and CI-Control Input), these screw type connector accepts wire sized from 24 to 12 AWG. We recommend using the CAT5, CAT5E, CAT6 or CAT6E wires.

IR IN – receive all types of IR signal transmitted through the Earthquake Keypad. It allows Volume up/down and mute function at the local amplifier. Also, it allows most IR signal to pass through the four built-in IR repeaters of the Cinénova 16IR (page 11 - feature 12).

STATUS – this connector delivers DC signal to the Keypad's LED status indicator when the associated amplifier is ON.

GROUND – for the Keypad.

CI – Control Input is the communicator line used to control amplifier's ON/OFF (Mute) status manually.

⑥ **Fault Fuse Indicator (FFI)**

This LED indicates the safe operation of the amplifier's internal circuit for the associated zone. Under normal condition, this LED is off. When it is lit, the fuse on the internal circuit of that associated zone is blown, usually due to a shorted circuit. Simply replace with the same size fuse. For your convenience, we've included four (4) additional fuses with every amplifier.

⑦ **Speaker Terminals**

This screw type connector with four (4) removable conductors accepts wire sizes from 16 to 12 AWG. Observe the Polarity printed on the terminal. Observe the printed instruction above and below the Speaker terminal.

8 Common BUS Level Controller

This potentiometer controls the output level on all individual amplifiers that are switched to BUS mode. It also acts as a volume limiter to protect the speakers and amplifier itself.

9 Common BUS Audio RCA Input

This pair of RCA drives a stereo signal into all zones that are switched to BUS mode. It allows one (1) source to control as many as 8 zones' audio out.

10 RCA Line Out

This allows the audio signal applied to the BUS RCA inputs to pass through unaltered to another device in the system.

11 12V DC Trigger

It is the remote turn on option driven by a controlled 12V DC source or an AC/DC converter. The relay operating range is between 5V DC and up to 28V DC. This remote turn on option does not override the auto signal sensing turn on feature of this amplifier.

Note: The front power switch (page 9 - feature 1) must be left in the OFF position in order to for this function to work.

12 IR Outputs

Four (4) amplified IR repeaters to repeat signals and commands fed through individual Earthquake Keypads.

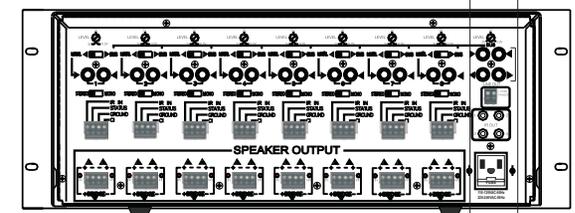
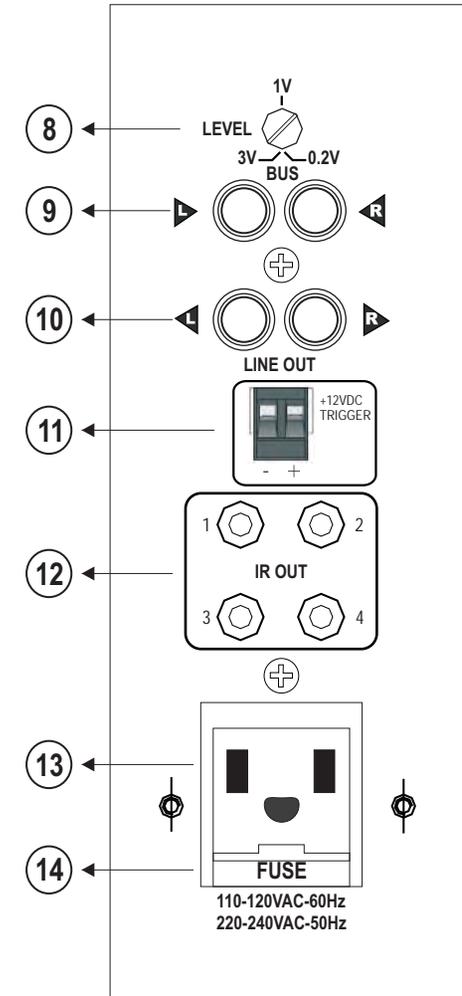
13 Power Connection

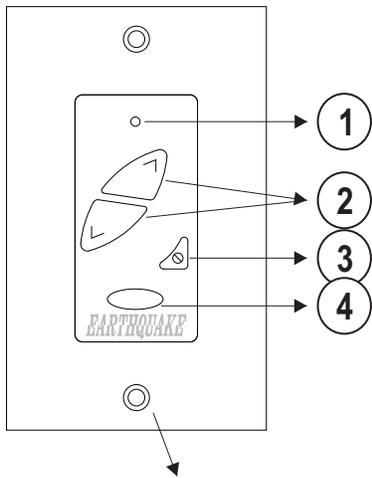
This three (3) prong AC line connector is factory preset to 120VAC. However, other voltages are also available.

14 Main Power Fuse

Always replace the protection fuse with a similar value fuse. Please follow the fuse rating below:

- 115V, T15AL/250V
- 230V, T10AL/250V





Note: Wallplates are not included

① LED Status

This red colored LED indicates whether the amplifier is ON or OFF. When the amplifier is ON, this LED will be lit.

② Volume Up/Down

This allows you to manually control the volume level up or down. The volume increases and decreases at the same rate.

Note: This amplifier will hold the user defined volume setting for up to 3 hours from the last shut down. Otherwise, the amplifier will start with volume position set to minimum to prevent undesired loud music in unattended areas.

③ Mute

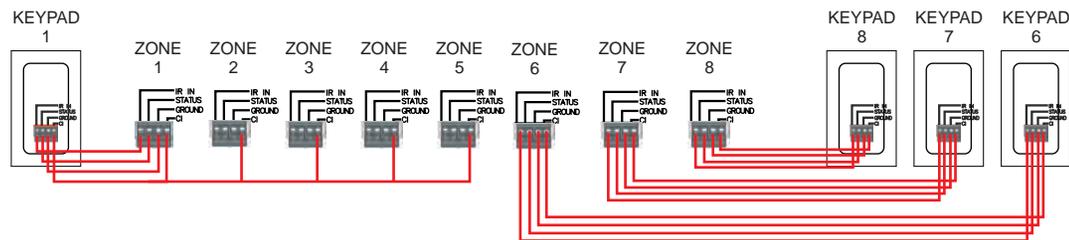
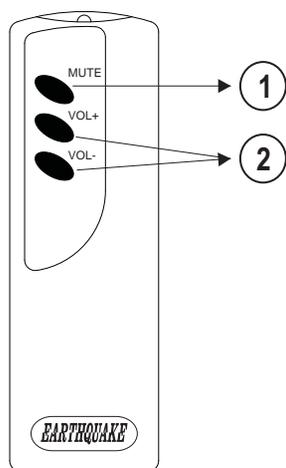
This allows you to mute or un-mute the associated amplifier(s) output.

④ IR Receiver

This feature allows the communication of all IR information between the Keypad and the rest of the system. Coded signal controls the individual volume at each channel while other IR information can pass through unaltered to the rest of the components connected to the provided IR out repeaters (page 11 - feature 12).

(!) NOTE: One Keypad is capable of driving multiple zones. Simply connect the CI wire of those zones in parallel. For example, if you want to use the Keypad from zone 1 to control zone 1 through 5, remove the Keypad connecting wires from zone 2 through 5 and parallel the CI wire of zone 2 through 5 to the CI of zone 1.

(!) NOTE: If a zone is not connected to a Keypad, the speaker output will be muted (no audio output to the speaker) unless you parallel connect that zone's CI wire to another zone's CI.



In addition to the eight (8) Earthquake Keypads, we also provide you with remote controls that have the same functions – Volume Up/Down and Mute. For your convenience, the remote information can be taught to any remote with learning capability.

① Mute

This allows you to mute or un-mute the associated amplifier(s) output.

② Volume Up/Down

This allows you to manually control the volume level up or down. The volume increases and decreases at the same rate.

Special Features

Eight individual power supplies:

The Cinénova-IR16 is designed with 8 individual power supplies(bifilar) for power isolation, accuracy and better channel separation.

Peak LED indicators:

The Cinénova-IR16 is equipped with 16 LED indicators on the front panel. They show the operating status of each channel; the LEDs will illuminate when the maximum recommended output is exceeded. If an LED is illuminated the majority of the time, it indicates that the corresponding channel is over-driven (clipped). The input to the channel must be reduced to eliminate distortion and eventually, damages to the amplifier.

Thermal protection:

Each channel is equipped with a thermal sensor designed to shut the amplifier down when it overheats. Overheating is not typical. It only occurs if the amplifier is over driven with low impedance speakers, or if the amplifier is located in an improperly ventilated space.

Individually selected and matched components:

Components used to construct the Cinénova-IR16 are subjected to an exhaustive selection process; during which, the components are matched and individually tested to exact tolerance. The multi-layer, glass-epoxy, double sided printed circuit boards exceed the standard stringent requirements by 50%.

8-Zones:

The Cinénova-IR16 delivers up to 8-zones, and several other room combinations to better suite the your needs.

Rack mountable:

This amplifier is designed to conveniently mount in commonly used racks.

110V AC and 220V AC selectable:

The Cinénova-IR16 is factory preset to 110-120VAC. However, it can also be set to accommodate 220-240VAC by Earthquake authorized technician(s)/dealer(s).

Remote zone control:

Each of the eight possible zones can be controlled by a wireless IR remote control. Each remote has the ability to control volume's up/down level, mute and also repeat the IR signal to other sources.

Bus input:

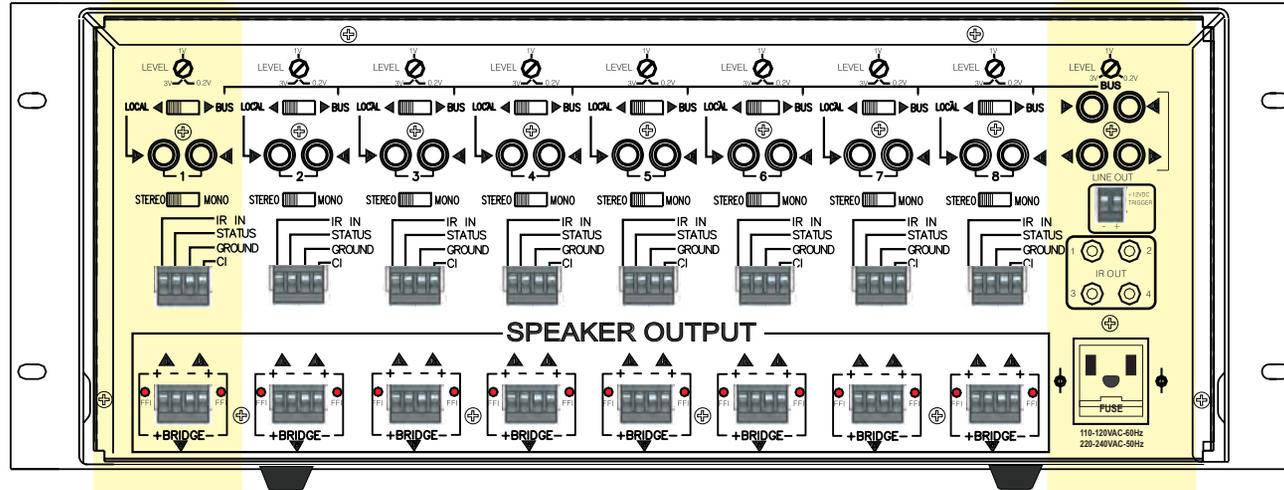
This feature simplifies installation by consolidating several channels for one source. Simply plug the input source RCAs into the BUS input on the unit. Then switch the input source selector to BUS for as many channels are connected to the corresponding input source.

Bridgeable function (minimum impedance = 4-ohm):

The Cinénova-IR16 delivers up to 8-zones, and can be bridged into several different configurations for higher power rooms.

4 or 8-ohm compatible:

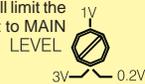
Since speakers are manufactured in several different impedance ratings, Earthquake Sound's Cinénova-IR16 amplifier is designed to be 4 and 8-Ohm compatible.



Amplifier section Explained

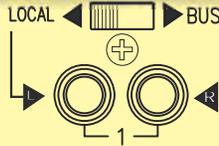
Rear Gain Control Limiter (RGCL)

It controls the front pad maximum output power from over powering small speakers. The module RGCL will limit the output only when the RCA input selection is set to MAIN (not Bus).



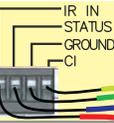
Input Signal Control (ISC)

When switched to LOCAL, individual inputs will drive each individual amplifier. When selecting BUS, the audio input from the BUS will drive the amplifier.



Mono/ Stereo input control

You must switch to MONO when the amplifier STEREO MONO is wired for MONO

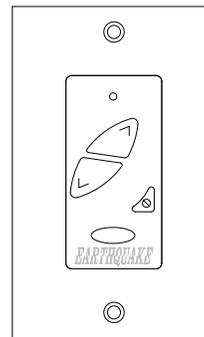
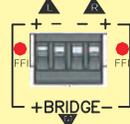


Phoenix type connector

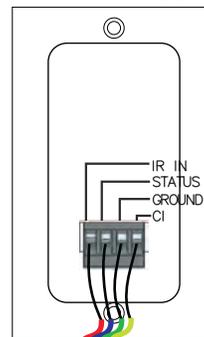
Should be wired using CAT5 or 5e, CAT6 or 6e. This allows zone control via IR. This must be connected to the zone pad.

Speaker output terminal

For stereo applications, please follow the polarity that is shown on top. For MONO follow the bottom polarity. Please note that FFI is a Fault Fuse Indicator. Any amplifier that has the FFI LED light on will require a fuse replacement or possibly service.



Keypad Front view



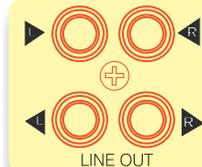
Keypad Rear view

BUS section Explained



Bus Control Limiter (BCL)

It controls the front pad maximum output power from over powering small speakers. The module BCL would limit the output power of any amplifier that uses the bus as a signal source.



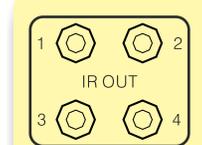
Bus RCA input signal

Stereo input signal RCA that delivers the signal to the bus. It also allows you to daisy chain the signal to additional Cinénova amplifiers.



DC TRIGGER

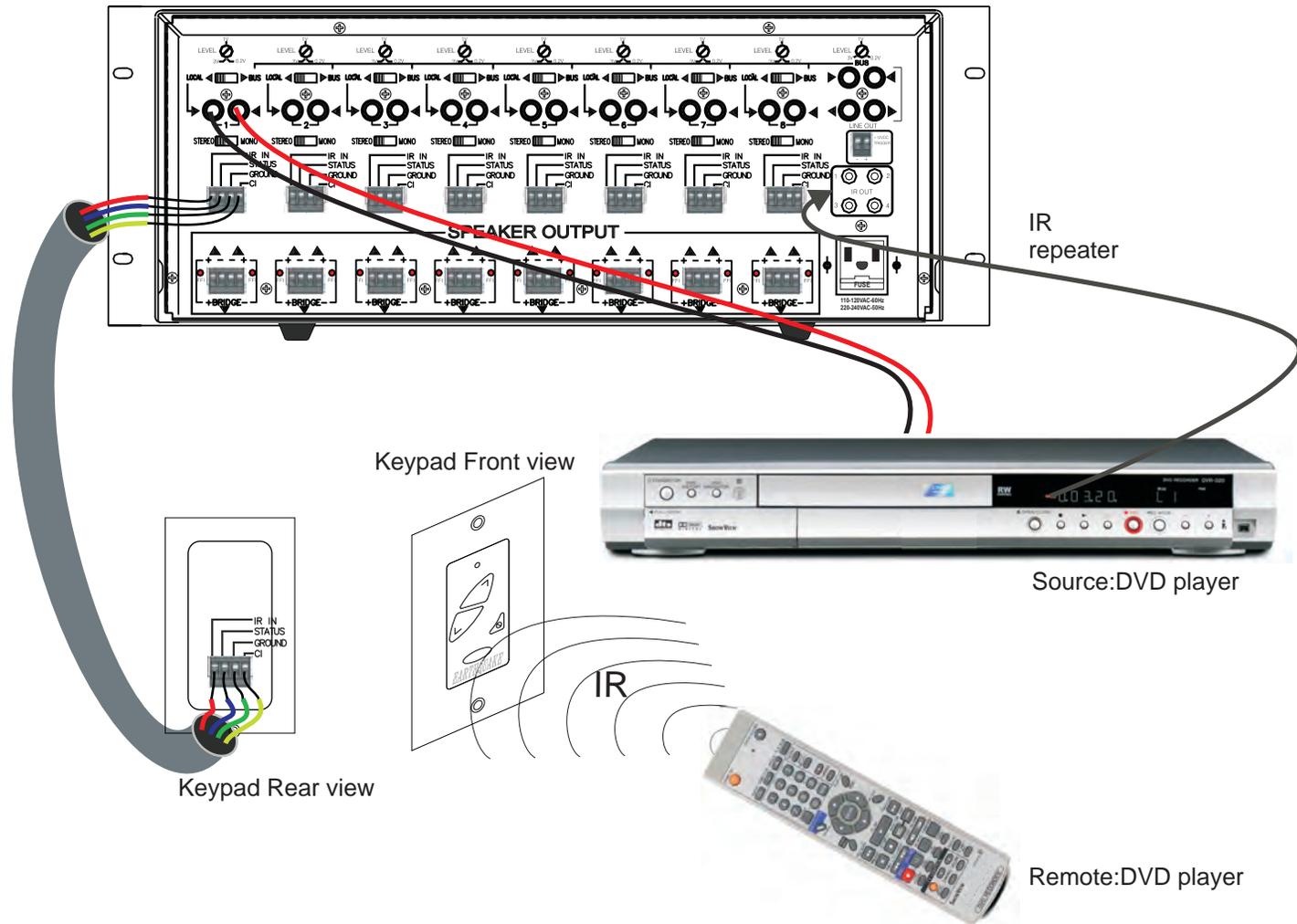
12 Volt DC trigger to be connected to source output 12 volt trigger. For this to operate, you need to switch the front panel switch to OFF.

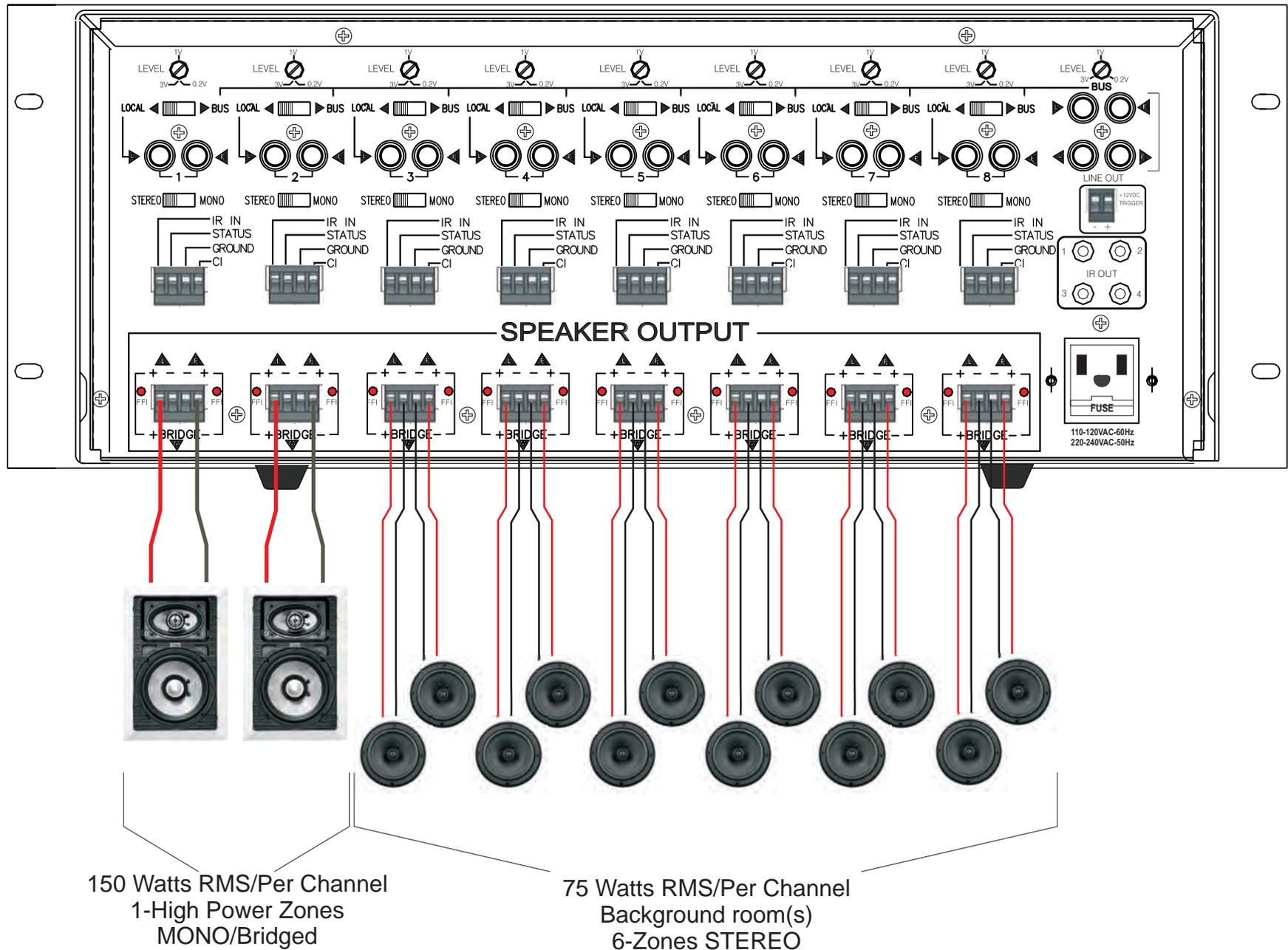


4 IR repeater

The Cinénova-IR16 has four output IR that combine any or all zone IR input. These repeater will repeat the sum of IR signal to control any source input. Please note that you will need to use your source remote, aim it at the pad and it will deliver the IR signal to the source.

The Cinénova 16 IR allows you to connect several sources to the input stage of the amplifier. It also allows you to aim the remote at the zone pad and use the source remote control. As you aim the remote to the pad, the IR signal is transmitted from the pad to the amplifier and thereafter amplified. There are four repeaters on the back of the amplifier that can be connected to the source IR sensor. Once connected, the user can control the source from the room. the illustration below has a DVD player connected to the IR repeater. Please note that the remote in use is that of the DVD player.

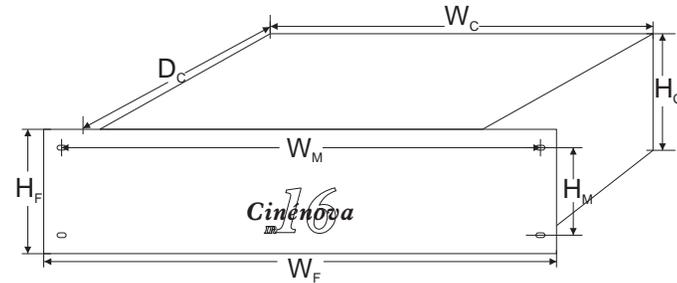




SPECIFICATIONS

- **Number of channels** 16 Channels
- **Power rating per channel**
 (4-Ohm stereo), all channels driven: 75 Watts RMS
 (4-Ohm bridged), 8 channels: 150 Watts RMS
 (8-Ohm stereo), all channels driven: 50 Watts RMS
 (8-Ohm bridged), 8 channels: 100 Watts RMS
- **Frequency response:** 20Hz - 20kHz at -0.3dB
- **Total Harmonic Distortion - THD:** 0.01%
- **Input sensitivity (for rated output power):** 200mV - 3V
- **Input impedance**
 Independent channels 22 kΩ
 Bus Input 70 kΩ
- **Signal to noise ratio:** 92dB
- **AUTO OFF delay time:** 12 minutes
- **Crosstalk:** >86dB
- **Slew rate:** 50V/μ sec
- **Gain:** 29
- **Damping Factor:** > 200 @ 8Ω
- **Remote trigger voltage:** 5.5 - 28 VDC
- **Power requirement:** 15 Amp 120VAC 60Hz / 10 Amp 220VAC 50Hz
- **Fuse ratings:**
 Main power fuse: 115V,T15A/250V / 230,T10A/250V
 Block fuse: 3 AG type, slow blow 5A/250V
- **Weight**
 Net weight: 61.7 lbs / 28 kg
 Gross weight: 66.1 lbs / 30 kg

- **Dimensions**
 Face plate (W x D x H): 19" (482.6mm) x 0.47" (12mm) x 6.87" (174.5mm)
 Mounting (W x H): 18.37" (466.5mm) x 4" (101.5mm)
 Chassis (W x D x H): 16.65" (423mm) x 17" (405mm) x 6.71" (170.5mm)



FOR YOUR RECORDS

Date of purchase: _____

Serial number: _____

Authorized dealer name: _____

Dealer's address: _____

Dealer's phone number: (_____) _____ - _____

Troubleshooting

Humming noise from speakers.

Often humming noise is emanating from equipments that have their ground prong broken.

- a) With the amplifier OFF, unplug all RCAs connected to the amplifier.
- b) Turn on amp and listen to speakers.
If buzz has changed or reduced in level, then the problem is coming to the amp from another source. The rest of the hum you hear is normal and related to the fact that the RCAs are open ended and not connected to any thing.
- c) If above steps do not isolate your problem: **star-ground** all components except amplifier from their chassis to the processor.

Front LEDs are ON all the time

It is normal when running the amplifier to full power that the LEDs flicker. If you see that the LEDs are on constantly without flickering (solid orange) it means that the amplifier is clipping. Reduce volume level to prevent damage to the unit.

Turn amplifier ON and circuit breaker shuts down

This can either be a short in amp or poor circuit breaker in the house. Plug amplifier into another outlet on a different circuit breaker with nothing connected. If the amp turns on then the problem is with your home circuit breaker. If the amplifier still does not power up, please call Earthquake to consult with a technician.

If you are still stuck...

1. Contact an authorized Earthquake Dealer.
2. Contact Earthquake Sound Customer Service at 800-576-7944

Maintenance

The following routine maintenance should be performed on a periodic basis:

- Clean the exterior surfaces of the unit with a soft, dry, lint-free cloth.
- Do not use alcohol, benzene, acetone-based cleaners, or strong commercial cleaners.
- Do not use a cloth made with steel wool or metal polish.
- If the unit is exposed to a dusty environment, a low-pressure blower may be used to remove dust from its interior & exterior.

Note:

Visit www.earthquakesound.com for answers to frequently asked questions and additional troubleshooting information.

Five (5) year limited warranty

Earthquake warrants the original purchaser that all Factory Sealed New Audio Products to be free from defects in material and workmanship under normal and proper use for a period of five (5) years from the date of purchase (as shown on the original bill of sale with serial number affixed/written on it). The five (5) year warranty period is valid only if an authorized Earthquake dealer properly installs the product and the warranty registration card is properly filled out and sent to Earthquake Sound Corporation. If a non-authorized party installs the product, a ninety (90) day warranty period will be applied.

(A) Five (5) years limited warranty plan coverage guidelines:

- **First year:** Earthquake pays for labor, parts, and ground freight (only in US mainland, not including Alaska and Hawaii) (shipping to us is not covered).
- **Second year:** Earthquake pays for labor and parts only, customer must pay freight both ways.
- **Third, fourth & fifth year:** Earthquake pays labor only. Customer must pay for parts and freight both ways.

(B) Warning:

Products (sent for repair) that are tested by Earthquake technicians and deemed to have no problem(s) will not be covered by the five (5) year limited warranty. Customer will be charged a minimum of one (1) hour of labor (at the ongoing rates) plus shipping charges back to customer.

(C) Earthquake will repair or replace - at our option - all defective products/parts subject to the following provisions:

- Defective products/parts have not been altered or repaired by other than an Earthquake factory-approved technician.
- Products/parts are not subjected to negligence, misuse, improper use or accident, damaged by improper line voltage, used with incompatible products or have its serial number or any part of it altered, defaced or removed, or have been used in any way that is contrary to Earthquake's written instructions.

(D) Warranty Limitations:

Warranty does not cover products that have been modified or abused, including but not limited to the following:

- Damages to speaker cabinet and cabinet finish due to misuse, abuse or improper use of cleaning materials/methods.
- Bent speaker frame, broken speaker connectors, holes in speaker cone,

- surround & dust cap, burnt speaker voice coil.
- Fading and or deterioration of speaker components & finish due to improper exposure to elements.
- Bent amplifier casing, damaged finish on the casing due to abuse, misuse or improper use of cleaning material.
- Burnt tracers on PCB.
- Product/part damaged due to poor packaging or abusive shipping conditions.
- Subsequent damage to other products.

A warranty claim will not be valid if the warranty registration card is not properly filled & returned to Earthquake with a copy of the sales invoice. Warranty card is located on the last page of this manual.

(E) Service Request:

To receive product service, contact Earthquake service department at (510) 732-1000 and request an RMA number (Return Material Authorization). Items shipped without a valid RMA number will be refused. Make sure you provide us with your complete/correct shipping address, a valid phone number, and a brief description of the problem you are experiencing with the product. In most cases, our technicians might be able to resolve the problem over the phone; thus, eliminating the need to ship the product.

(F) Shipping Instructions:

Product(s) must be packaged in its original protective box(es) to minimize transport damage. Shipper claims regarding items damaged in transit must be presented to carrier. Earthquake Sound Corporation reserves the right to refuse improperly packed product. Original bill of sale must accompany product returned for service. We encourage you to include with the package a written description of the problem. Ship product to: Earthquake Sound Corp. 2727 McCone Avenue, Hayward, CA 94545. Ph (510) 732-1000. You are responsible for the cost of shipping the product to Earthquake Sound Corporation.

(G) Disputes Resolution:

All disputes - between clients and Earthquake Sound Corporation - resulting from the five (5) years limited warranty policy must be resolved according to the laws & regulations of the county of Alameda -California.

PRODUCT REGISTRATION

This Cinénova-IR16 Power Amplifier can be registered by returning the Product Registration card attached to this manual or by visiting www.earthquakesound.com. Please also retain the bill of sale, which represents proof of purchase and helps expedite warranty issues.

We recommend that you place or write your serial number here for future reference, if necessary.

SERIAL NUMBER



Sound That Will *Move* You.

Earthquake Sound reserves the right to amend details of the specifications without notice

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