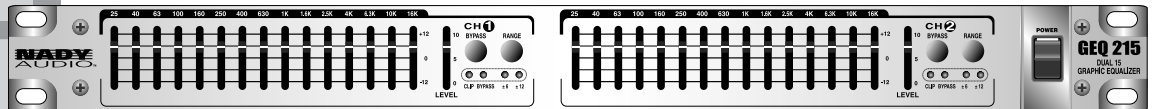


NADY AUDIO™

OWNER'S MANUAL



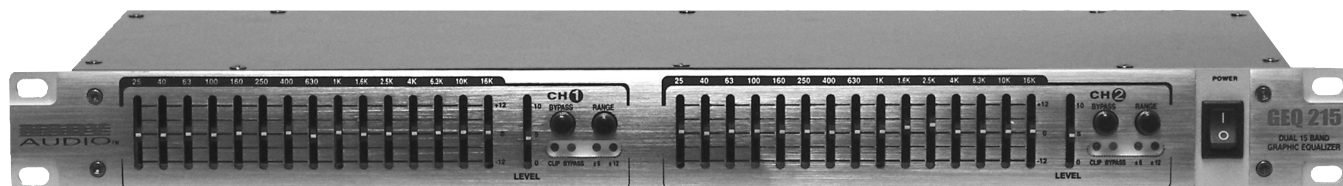
GEQ 215

Graphic Equalizer

EQUALIZERS

GEQ 215

Graphic Equalizer



Congratulations on your choice of the GEQ 215 graphic equalizer — you have purchased one of the finest graphic equalizers on the market today. This unit was developed using the expertise of professional sound engineers and working musicians. You will find that your new NADY AUDIO Equalizers has superior performance and greater flexibility than any other equalizers in its price range. Please read this manual carefully to get the most out of your new unit.

Thanks for selecting NADY AUDIO as your choice in graphic equalizers.

FEATURES

Compact and durable all-steel chassis design, the GEQ 215 provides optimum audio control for all live and recording applications, plus ultimate operating convenience and maximum reliability.

- 2 Channel, Single Rack Space, 15—2/3rd Octave Bands Each Channel
- Active balanced (XLR and 1/4" TRS) and unbalanced (RCA) input/output connectors
- Constant Q bandwidth from each filter with 3% center frequency accuracy
- Parallel filter design for minimal phase distortion
- Ultra low-noise circuitry
- Selectable range, 6dB or 12dB gain
- Center detents on faders
- Variable level control
- Power off automatic bypass function
- Equalizer ON/OFF bypass switch
- Peak (overload threshold) LED
- Shielded internal power supply with AC input and selectable line voltage (~115V/60Hz or ~230V/50Hz)
- Ground lift switch

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Date of Purchase _____

Dealer's Name _____

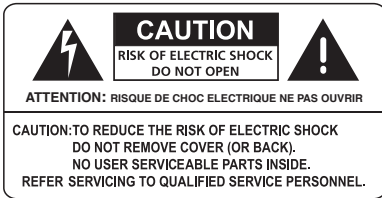
City _____

State _____ Zip _____

Model # _____

Serial # _____

WARNING



An equilateral triangle enclosing a lightning flash/arrowhead symbol is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure which may be of sufficient magnitude to constitute a risk of electric shock.



An equilateral triangle enclosing an exclamation point is intended to alert the user to the presence of important operating and service instructions in the literature enclosed with this unit.

IMPORTANT SAFETY INSTRUCTIONS

When using this electronic device, basic precautions should always be taken, including the following:

1. Read all instructions before using the product.
2. Do not use this product near water (e.g., near a bathtub, washbowl, kitchen sink, in a wet basement, or near a swimming pool, etc.).
3. This product should be used only with a cart or stand that will keep it level and stable and prevent wobbling.
4. This product, in combination with headphones or speakers, may be capable of producing sound levels that could cause permanent hearing loss. Do not operate for a long period of time at a high volume level or at a level that is uncomfortable. If you experience any hearing loss or ringing in the ears, you should consult an audiologist.
5. The product should be positioned so that proper ventilation is maintained.
6. The product should be located away from heat sources such as radiators, heat vents, or other devices (including amplifiers) that produce heat.
7. The product should be connected to a power supply only of the type described in the operating instructions or as marked on the product. Replace the fuse only with one of the specified type, size, and correct rating.
8. The power supply cord should: (1) be undamaged, (2) never share an outlet or extension cord with other devices so that the outlet's or extension cord's power rating is exceeded, and (3) never be left plugged into the outlet when not being used for a long period of time.
9. Care should be taken so that objects do not fall into, and liquids are not spilled through, the enclosure's openings.
10. The product should be serviced by qualified service personnel if:
 - A. The power supply cord or the plug has been damaged.
 - B. Objects have fallen into, or liquid has been spilled onto the product.
 - C. The product has been exposed to rain.
 - D. The product does not appear to operate normally or exhibits a marked change in performance.
 - E. The product has been dropped, or the enclosure damaged.
11. Do not attempt to service the product beyond what is described in the user maintenance instructions. All other servicing should be referred to qualified service personnel.

INSTALLATION

To ensure years of enjoyment from your NADY AUDIO graphic equalizer, please read and understand this manual thoroughly before using the unit.

The GEQ-215 is designed for mounting in a standard 19" equipment rack or one of the many rack type portable cases available on the market. The unit is 1u single rack (1.75") and 5 inches deep.

Install the equalizer in a rack with rack screws (not included). Route the A.C. power cord to a convenient power outlet away from audio lines. The unit may be turned on and off from the front panel power switch or a master equipment power switch. Since the unit draws a relatively small amount of current during idle, the unit may be left on continuously. The equalizer does not generate an unduly large amount of heat and does not need to be specially ventilated or cooled. It should not be subjected, however, to high heat environments.

Although the unit is shielded against radio frequency (RF) and electromagnetic interference (EMI), extremely high fields of RF and EMI should be avoided.

INPUT/OUTPUT CONNECTIONS

The 1/4" phone jack and XLR connector inputs and outputs can be used for balanced and unbalanced connections. CAUTION: Using more than one connector at a time for the INPUT/OUTPUT pair could unbalance balanced lines, cause phase cancellation, short a conductor to ground, or cause damage to the other equipment connected to the equalizer.

For balanced connection, wire the connectors as follows:

XLR JACK	CONNECTION
PIN 1	GROUND
PIN 2	(optional, use as shielding to prevent hum) HIGH (+)
PIN 3	LOW (-)

1/4" TRS JACK	CONNECTION
TIP	HIGH (+)
RING	LOW (-)
SLEEVE	GROUND (optional, use as shielding to prevent hum)

For unbalanced operation, wire the connectors as follows:

XLR JACK	CONNECTION
PIN 1	GROUND
PIN 2	HIGH (+)

1/4" TRS JACK	CONNECTION
TIP	HIGH (+)
SLEEVE	GROUND

RCA JACK	CONNECTION
TIP	HIGH (+)
SLEEVE	GROUND

POWER CONNECTION

The GEQ-215 is designed for operation with 105-130 volts AC at 60Hz or 210-240 volts AC at 50Hz power sources. Power requirements for electrical equipment differ from area to area. In new installations and portable sound systems, or any situation in which the AC power is in question, it is wise to confirm the voltage and select the appropriate line voltage switch before connecting the instrument to power sources.

Check to see that the unit is set to the voltage for your area by referring to the table below:

Europe (except UK): 230V, 50Hz

UK and Australia: 240V, 50Hz

USA and Canada: 115V, 60 Hz

For other areas, please check with local authorities.

If the voltage selector is not set for your area:

Confirm that the power cord is not plugged into a wall outlet. Move the voltage selector switch with a small screwdriver so that the marker is set to the voltage for your area.

PRECAUTIONS

Protecting yourself from electric shock:

- Never touch the plug with wet hands.
- Always pull out by the plug and never the cord.
- Only let a qualified professional repair the equipment. An unauthorized person might touch the internal parts and receive a serious electric shock. Note: Removing the chassis screws and opening the unit will automatically void your warranty.
- Never allow a child to put anything into the equipment.

Protecting your NADY AUDIO Graphic Equalizer:

- Use only a household AC power source. Never use a DC power source.
- If water is spilled on or in the unit, unplug it and call for service.
- Make sure that the equipment is well ventilated and away from direct sunlight
- Avoid damage to the internal circuits and the external surface by keeping the unit away from sources of high heat.
- Avoid using spray type insecticide or solvents near the equipment. It can damage the finish and might ignite suddenly
- To avoid damaging the finish, never use denatured alcohol, paint thinner or other similar chemicals to clean the equipment.
- Place the unit on a flat and solid surface or in a rack.
- To enjoy your NADY AUDIO graphic equalizer for a long time, please read this owner's manual thoroughly.

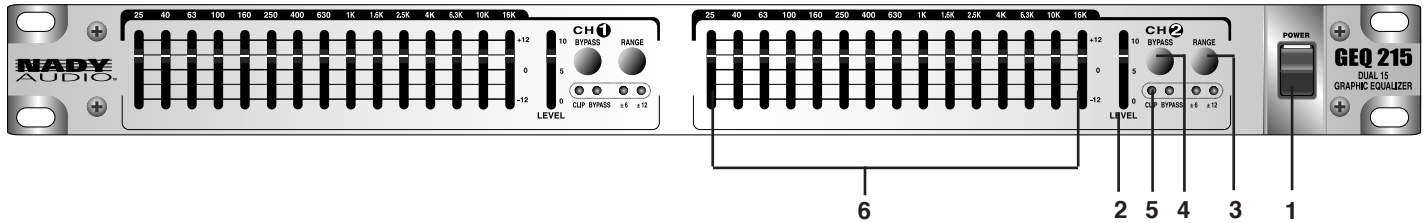
OPERATING INSTRUCTIONS

Before starting to equalize your sound system there is some information you should know and procedures you should follow:

1. Set channel levels to the center detent (0dB-unity gain) on the front panel.
2. Enable the BYPASS switch (Note: The amber LED is ON).
3. Set all slide controls to the center detent or 0dB (unity gain) position.
4. Select the 6dB range switch (green LED ON).
5. Apply signal to the system.
6. Disable the BYPASS switch, amber LED OFF.
7. If the CLIP (overload) LED is on you must turn down the level control.
8. You may now start equalizing your system.
9. Switch the range switch to 12dB (red LED is lit) if the 6dB range does not provide sufficient gain.
 - The GEQ-215 is equipped with a BYPASS switch with an LED indicator. If you disable the BYPASS switch, the LED will turn off and all equalization settings will be restored. In bypass mode, the audio signal will flow through at unity gain.
 - Use the range selection switch to select between a 6dB or 12dB level adjust range. The dual color range LED will indicate green for 6dB and red for 12dB.
 - The level control allows adjustment between OFF (center detent) and +/-6dB.

Note: The unit is equipped with a red overload LED, which illuminates when the signal reaches 5dB prior to clipping. It is normal for the overload LED to flash occasionally, but if the overload LED is on steady you must readjust the level control.

FRONT PANEL CONTROLS & CONNECTIONS



1. Power Switch

To turn the equalizer ON or OFF, press the upper or lower portion of this button.

CAUTION: Always turn on your equalizer BEFORE your power amplifiers are turned on, and always turn off your equalizer AFTER your power amplifiers have been turned off.

2. Level Control

This controls the level of signal to the equalizer. It is capable of +/- 6dB of gain. This control is used to adjust for variation in input level to the equalizer channel, or to compensate for the equalization applied to the input signal.

3. Filter Range Switch & Indicators

The gain range of the filter sliders is switchable (as a group) from +/-6dB to +/-12dB for maximum boost/cut capability. At 6dB the green LED will illuminate and at 12 dB the red LED will illuminate.

4. In/Out Bypass Switch & Indicator

This switch inserts or removes the equalizer channel from the signal path. The amber LED lights when the switch is depressed to indicate that the unit or channel is in the equalizing mode. In the bypass mode, the signal is routed from the input directly to the output. The bypass function is FET switched to prevent switching transients when inserting the equalizer into the circuit path. Use this switch to compare equalized and unequalized material. When there is no power to the unit, the equalizer automatically reverts to bypass.

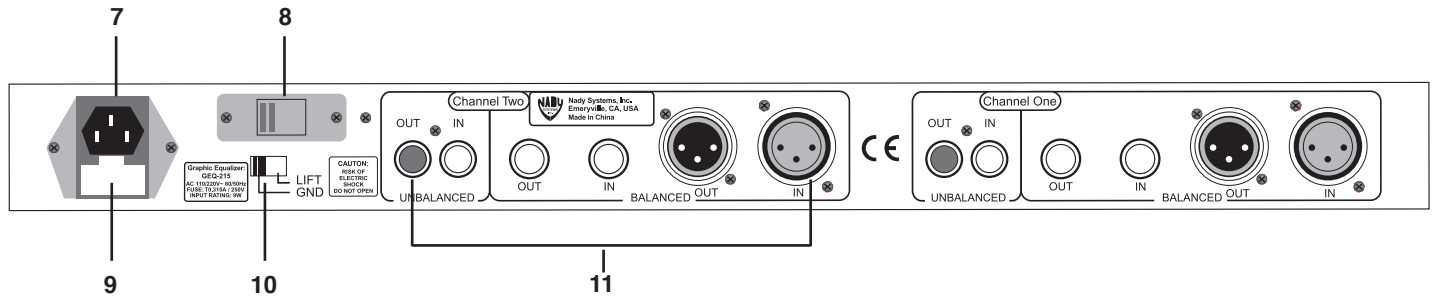
5. Peak/Clip Indicator

This red LED illuminates if any section of the equalizer is within 5dB of clipping. Occasional blinking of this LED is acceptable, but if it remains on more than intermittently you should turn down either the equalizer's level controls or reduce the output level of the preceding component to avoid audible distortion.

6. Filter Level Slider Controls

Each one of these linear potentiometers will boost or cut its noted frequency by either +/-6dB or +/-12dB depending on the filter range selected. When all of the sliders are in center detented position, the output of the equalizer is flat. Each slider is marked with the center frequency of its band pass filter.

REAR PANEL CONTROLS & CONNECTIONS



7. IEC Power Cord Receptacle

This is used to connect the AC power source to your equalizer. Power requirements: 115/230VAC, 50/60Hz

8. AC Voltage Selector

Set this slide switch to match your line voltage supply.

CAUTION: For new installations and portable sound systems, or in any situation in which the AC power is suspect, it is wise to confirm appropriate voltage and line polarity BEFORE connecting the instrument to the power source.

9. Fuse Holder

This fuse holder contains an AC primary fuse. This fuse should be replaced with the same type fuse when this is blown out. If they continuously blow, stop replacing the fuse and refer servicing to qualified personnel.

CAUTION: After checking the AC supply voltage, be sure that the correct fuse is in the fuse holder: 1 Amp for 100-130VAC and for 220-240V AC.

10. Ground-Lift Switch

This switch is used to disconnect the signal ground from the AC power and chassis earth ground. This switch should be put in the LIFT position if the speakers produce humming sounds caused by a ground loop.

11. Input/Output Connectors

See **INPUT/OUTPUT CONNECTIONS** section (page 5) for proper wiring of the XLR, 1/4" TRS and RCA connectors for desired active balanced or unbalanced operation. Paralleling inputs and outputs may be accomplished by using any of the 3 connectors.

Note: while you can use any input connector with any output connector, only one of these connectors is to be used at a time.

TYPICAL SET-UP

The GEQ-215 graphic equalizer may be used wherever modification of the frequency contour of a sound system is needed. A graphic equalizer is a solution to any number of sound problems or creative urges.

SOUND REINFORCEMENT APPLICATIONS

By routing the signal from the mixer to the main power amplifiers (or crossover), the overall frequency of the mix may be altered to do a number of things.

- A. Through the use of a real-time audio spectrum analyzer, a calibrated microphone, and a pink noise source, the audio system may be "TUNED" to make the overall audio spectrum response of the audio reinforcement system and the room environment flatter in its frequency response.
- B. By turning up the audio reinforcement system to the feedback point, then attenuating the oscillating frequency (1/3 octave resolution), then turning the system up to attenuate the 2nd oscillating frequency, and then the 3rd, and so on, you can enable the entire audio system to have much more gain before feedback.
- C. Amplifiers and speakers may be protected by the use of the LOW CUT feature of the equalizer. Wind noise or the loud percussive sound of dropped microphones, etc., could potentially cause damage to the amps and/or speakers. By rolling off the extreme LOW frequencies with the LOW CUT filter, a measure of protection is added to the system without severely affecting the overall sound quality.
- D. In noisy environments, the audio signal may be tailored for better intelligibility and penetration. This is especially useful for public address systems.
- E. Creative use of the equalizer allows shaping of the signal for a more pleasing sound or for special effects. The only limits are those of taste and imagination.

MUSICAL INSTRUMENT APPLICATIONS

- A. Putting an equalizer in line with a musical instrument allows you to modify the sound of the instrument. You can brighten the sound, or add body to a thin sounding instrument, or even give the sound a totally different character.
- B. An equalizer will allow you to eliminate unwanted sounds, like a 60-cycle HUM from a badly grounded amplifier.

STUDIO APPLICATIONS

A graphic equalizer is one of the most useful tools in the sound engineer's bag. NADY AUDIO equalizers offer the features and flexibility to perform where it counts in the studio.

- A. Fix a track that doesn't sound quite right. Put the equalizer in an effects send and return it to the MIX bus.
- B. Create an artificial stereo by splitting a monaural signal and equalizing the split signals differently, then panning one equalized signal to the right and the other signal to the left.
- C. Shape the sound by changing the frequency response of the track.
- D. Special effects, like a telephone sound, can be created by cutting off the LOW end to 200Hz and the HIGH end to 6KHz.

SPECIFICATIONS

EQUALIZER:

Equalizer Control Bands

2X15, 2/3 Octave ISO Spacing From 25Hz to 16KHz

Filter Type

Constant Q

Slider Travel

20mm (Center Detent)

Level Control Range

+/-6dB or +/-12dB (Selectable)

INPUTS:

Type

Active Balanced/Unbalanced

Connectors

3-Pin XLR, 1/4" TRS (Balanced), RCA (Unbalanced)

Impedance

20K Ohms Balanced; 15K Ohms Unbalanced

Maximum Level

+/-18dBV

OUTPUTS:

Type

Active Balanced/Unbalanced

Connectors

3-Pin XLR, 1/4" TRS (Balanced).

Impedance

Typically < 600 Ohms

Maximum Level

+/-16dBV

Clip LED Threshold

5dB (Below Clipping)

Low Cut Filter

40Hz, 12dB/octave

Frequency Response

20Hz - 20KHz, +/- 1dB

THD + Noise

<0.002% (@ 1KHz, all faders at mid position)

Signal to Noise Ratio

93dB (@ 1KHz)

Channel Separation

60dB (1KHz)

Line Voltage

100-130V AC, 50/60Hz

200-240V AC, 50Hz

Power Consumption

Maximum: 15 watts

SIZE:

19"W X 1.75"H X 8.66"D (1U)

(48.2cm X 4.4cm X 12.7cm)

WEIGHT:

6.16lbs. (2.8Kg.)

The specifications above are correct at the time of printing of this manual. For improvement purposes, all specifications for this unit, including design and appearance, are subject to change without prior notice.

ONE YEAR LIMITED WARRANTY

Nady Systems, Inc. warrants to the original consumer purchaser that the unit is free from any defects in material or workmanship for a period of one year from the date of original retail purchase. If any such defect is discovered within the warranty period, Nady Systems, Inc. will repair or replace the unit free of charge, subject to verification of the defect or malfunction upon return to Nady Systems. Please do not return your Nady product to the store where it was purchased as Nady Systems handles your warranty service directly. Communication with our Service Department is the most efficient means of servicing your unit and we are dedicated to keeping you a satisfied customer.

To the extent permitted by law, any applicable implied warranties, including warranties of merchantability and fitness are hereby limited to one year from the date of purchase. Consequential or incidental damages resulting from a breach of any applicable express or implied warranties are hereby excluded. This warranty is in lieu of all other agreements and warranties, general or special, express or implied and no representative or person including a Nady dealer, agent, or employee is authorized to assume for us any other liability in connection with the sale or use of this Nady Systems' product.

Whereas some states do not allow limitations on how long implied warranties last, and do not allow exclusion of incidental or consequential damages, the above limitations and exclusions may not apply to you. This warranty gives you specific legal rights and you may also have other rights which may vary from state to state.

This warranty is subject to the following conditions:

- 1) This system must have been purchased from an authorized Nady dealer and all warranty service must be performed by Nady's service department. Any service not performed by Nady will automatically void this warranty.
- 2) Items not covered: physical damage resulting from improper handling of the unit in transit from the factory by the shipper (Nady Systems is not responsible for such damage and all such claims must be made against the shipping company by the consignee); defects caused by normal wear of the product (expendable parts are typically connectors, cables, potentiometers, switches and similar components); damage or defects caused by abuse, neglect, accident, failure to connect or operate the unit in any way that does not comply with applicable technical or safety regulations, or improper repair, excessive heat or humidity, alteration or unreasonable use of the unit, causing cracks, broken cases/housings or parts; damage caused by leaking batteries; finish or appearance items; items damaged in shipment en route to Nady Systems, Inc. for repair. The warranty is null and void if any Nady serial number has been removed or defaced.

How To Obtain Service:

- 1) If factory service is required, you must contact our Service Department at (510) 652-2411 for a return authorization (RA) number. Make sure the RA number is clearly marked on the outside of your package. (Please note: if an RA number is not included, our shipping department cannot accept your package.)
- 2) Send the unit back to Nady Systems, 6701 Shellmound Street, Emeryville, CA, 94608, freight pre-paid. You must include proof of date and place of purchase (i.e., photocopy of your bill of sale) or Nady cannot be responsible for repair or replacement. Nady Systems, Inc. will not repair, nor be held responsible, for any units returned without proper identification, return address, and RA number clearly marked on the package.
- 3) Per the above, Nady will perform all warranty service and return the unit to you at no charge. Nady Systems will inform the buyer if product sent in does not meet the terms of this warranty and will provide a quote for fixing the unit and/or shipping it back exclusively at the buyer's expense.

SERVICE FOR YOUR NADY AUDIO PRODUCT

In the U.S. If you are experiencing operational problems with your system, please refer to the Support page at www.nady.com for assistance. Should your wireless system require service, please contact the Nady Service Department at (510) 652-2411 for a Return Authorization (R/A) Number and service quote (if out of warranty). Make sure the R/A Number is clearly marked on the outside of the package that you are returning.

If your unit is out of warranty, please enclose a cashier's check or money order (or pay by credit card) per instructions by the Nady Service Department. Ship your unit prepaid to: Nady Systems, Service Department, 6701 Shellmound Street, Emeryville, CA 94608. Include a brief description of the problem you are experiencing. For service of a unit under warranty, please follow the instructions in the following section.

Outside the U.S. For service or warranty matters please contact the Nady distributor in your country through the dealer/store from which you purchased this product.

Do not attempt to service this unit yourself as it can be dangerous and will also void the warranty.

