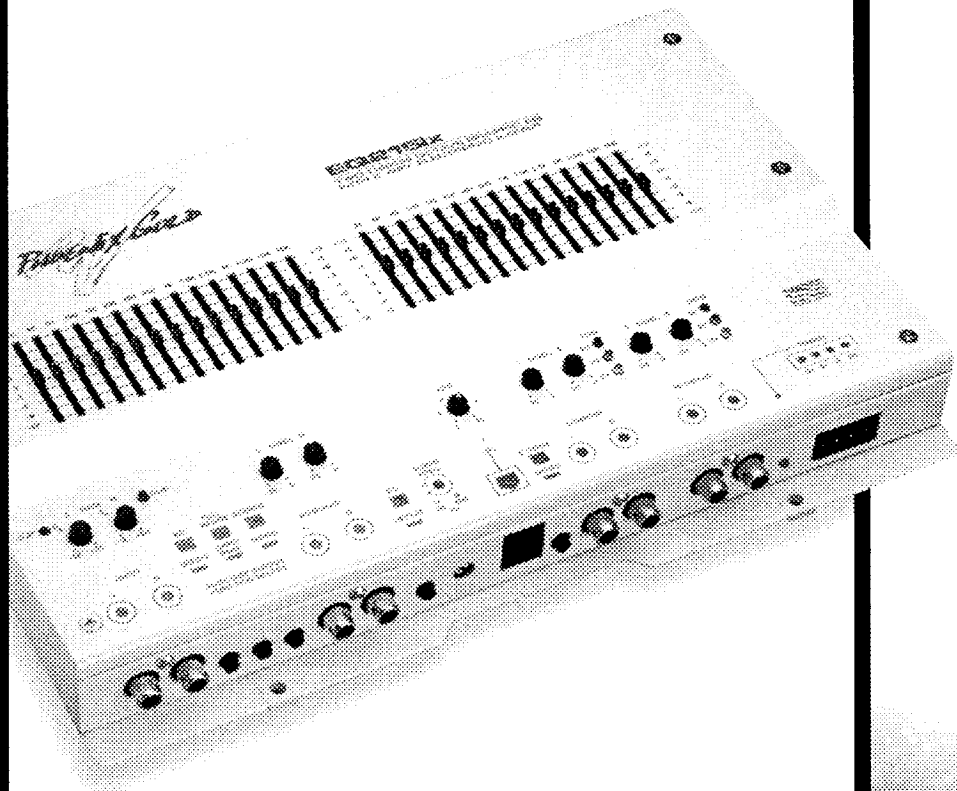


**OWNER'S
MANUAL'S**

EQ215ix

TWO-THIRDS OCTAVE
GRAPHIC EQUALIZER/CROSSOVER



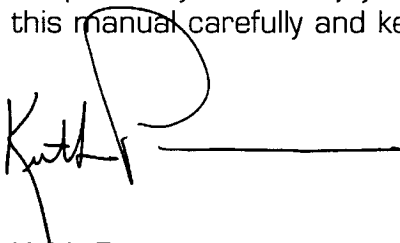
Phoenix Gold
NOLIMITS!



Dear Phoenix Gold enthusiast,

I thank you for purchasing this Phoenix Gold product. By doing so, you have demonstrated a desire to own the finest audio components available for the car and home. At Phoenix Gold, we use state-of-the-art design, engineering and production methods to continually improve the quality, reliability and performance of our products.

The EQ215ix provides precision equalization capabilities for the most demanding audiophile or competitor. Properly installed by an Authorized Phoenix Gold Mobile Electronics Retailer, this equipment will provide years of enjoyment. For proper operation, please read this manual carefully and keep it for future reference.



Keith Peterson

President



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FEATURES

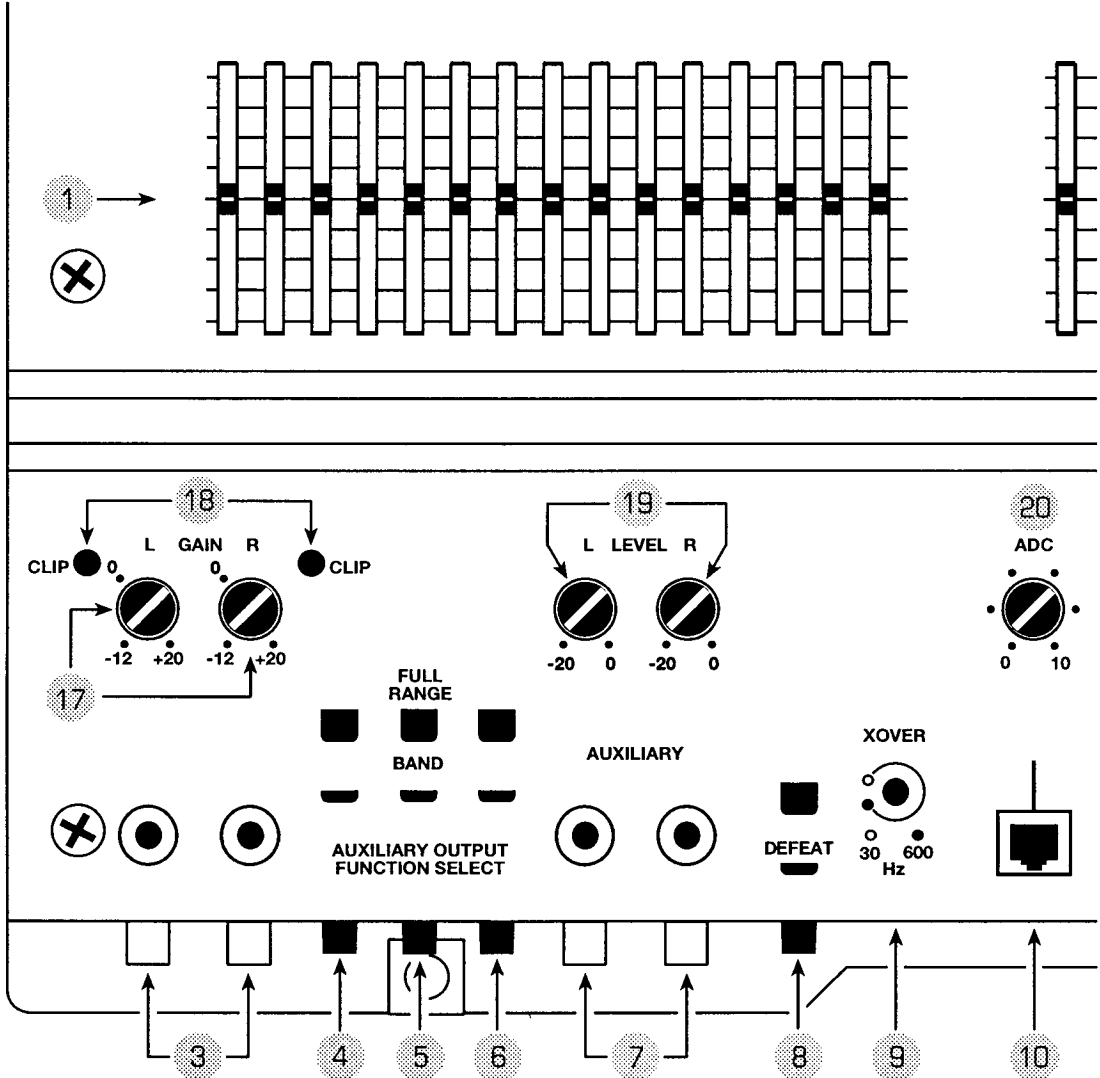
- 15 Independently Adjustable, Sliding Style, High Q Frequency Controls for each Channel with 2/3 Octave Spacing
- Continuously Variable, 24dB per octave, highpass/lowpass Internal Crossover
- Separate Left and Right Auxiliary Output Jacks for Center Channel and Rear Fill operation
- Adjustable Acoustical Delay Circuit (ADC) for Lowpass Output
- 24kt Gold Plated Input and Output Jacks
- Separate Left and Right Input Sensitivity Controls
- Separate Left and Right Highpass Output Level Controls
- Separate Left and Right Lowpass Output Level Controls
- Separate Left and Right Input Clipping LED Indicators
- Separate Tri-Level LED Lowpass and Highpass Output Level LED Indicators
- Pulse Width Modulated Power Supply
- Power-on LED Indicator
- EQ Defeat Switch
- Optional LPL44 Provides Remote Lowpass Level Control
- Quick Disconnect Power Plug
- 3 Second Delayed Remote Turn-on Output
- 2-layer, 24kt Gold Plated Copper, G10 Glass-epoxy Printed Circuit Boards
- Audiophile Grade 1% Metal Film Resistors
- Precision Laser Cut 16 Gauge White or Black Powder Coated Steel Chassis

SPECIFICATIONS

Frequency Response	±1dB, 10Hz to 30kHz
Signal to Noise Ratio (A-weighted)	>105dB ref. to 8 Volts
Total Harmonic Distortion plus Noise @ 1kHz, 1 VRMS	<.02 %
Q, Equalization Controls	2.15
Boost/Cut Range, Equalization Controls	+12dB to -12dB
Center Frequency Spacing, Equalization Controls	2/3 octave
Crossover Frequency Adjustment Range	30Hz to 600Hz
Crossover Slopes, Lowpass and Highpass	24dB per octave
Auxiliary Output Bandpass Frequency Bandwidth	200Hz to 6kHz
Auxiliary Output Bandpass Filter Slopes, HP/LP	12/6dB per octave
Acoustical Delay Circuit (ADC) range	0 to 10ms
Input Impedance	5kΩ
Output Impedance	510Ω
Input Sensitivity	-12dB to +20dB
Input Signal Voltage Range	0.8 volts to 32 volts
Maximum Output Signal Voltage, all outputs	8 volts
DC Operating Range	10 volts to 15.5 volts
Typical DC Current Draw	1 amp
Internal DC Power Fuse	GMC 2 amp
Dimensions, Chassis	11.25"L x 7.95"W x 1.6"H
Dimensions, Overall	11.25"L x 7.95"W x 1.8"H

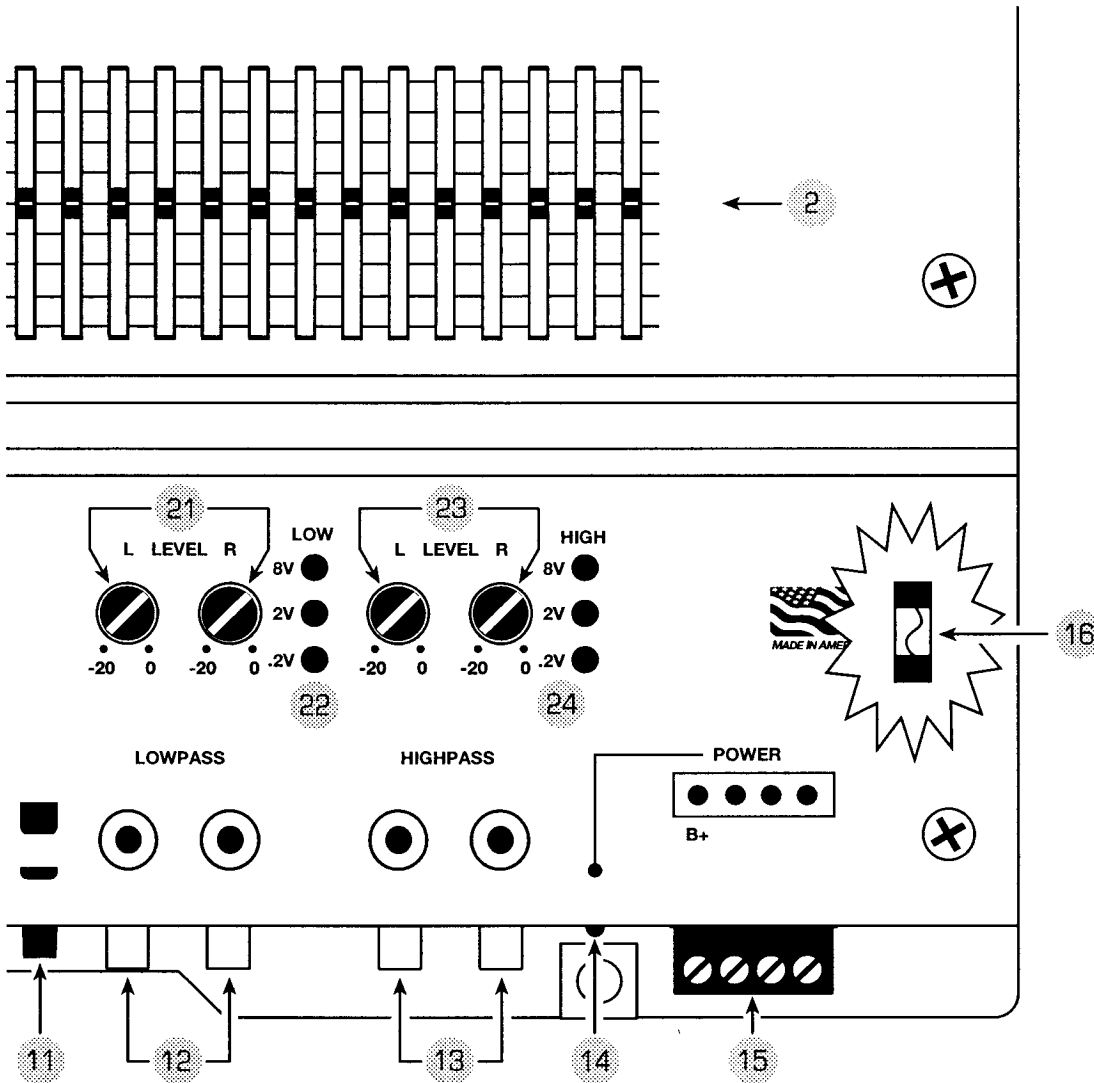
Due to continuous product development, features, specifications, and availability are subject to change without notice.





1. **Left Channel Equalization Controls:** Use these controls to boost or cut various left channel frequencies as much as 12dB. There are fifteen separate frequency bands spaced 2/3 octave apart from 25Hz to 16kHz. A center detent indicates when a control is set to zero.
2. **Right Channel Equalization Controls:** Use these controls to boost or cut various right channel frequencies as much as 12dB. There are fifteen separate frequency bands spaced 2/3 octave apart from 25Hz to 16kHz. A center detent indicates when a control is set to zero.





3. **Input Jacks:** These inputs accept standard RCA style signal cables from the headunit, line driver or other signal processor.
4. **Auxiliary Output EQ/Defeat Switch:** This switch determines whether the Auxiliary Outputs #7 are affected by the Equalization Controls #1 and #2 or if they remain unequalized. This allows an instant comparison of the system's sound quality with and without equalization. This switch does not affect the Lowpass or Highpass Outputs #12 and #13.



5. **Auxiliary Output Bandpass/Full Range Switch:** This switch determines whether the Auxiliary Outputs #7 receive a bandpass signal (200Hz to 6kHz) or a full range signal.
6. **Auxiliary Output Stereo/Mono Switch:** This switch determines whether each Auxiliary Output Jack #7 passes a summed left plus right signal or if they remain stereo.
7. **Auxiliary Output Jacks:** These outputs accept standard RCA style signal cables that connect to an amplifier or another signal processor. Use them for a variety of purposes including center channel, rear fill or as signal for another processor.
8. **Equalizer Defeat Switch:** This switch determines whether the Lowpass or Highpass Outputs #12 and #13 receive an equalized signal or if they remain unequalized. This allows an instant comparison of the system's sound quality with and without equalization. This switch does not affect the Auxiliary Outputs #7.
9. **Crossover Frequency Control:** This control adjusts the crossover frequency for the Lowpass and Highpass Outputs #12 and #13. The frequency is adjustable from 30Hz to 600Hz.
10. **Remote Lowpass Level Control Jack:** This jack accepts the optional LPL44 Remote Lowpass Level Control. This control will allow the driver to adjust the level of the Lowpass Output Jacks #12 from the driver's seat. The level may be attenuated as much as 20dB.
11. **Lowpass Output Stereo/Mono Switch:** This switch determines whether the Lowpass Output Jacks #12 pass a summed left plus right signal or if they remain stereo.
12. **Lowpass Output Jacks:** These outputs accept standard RCA style signal cables that connect to an amplifier or another signal processor. Use these outputs to drive an amplifier for low frequency speakers or another signal processor such as a Bass Cube™.
13. **Highpass Output Jacks:** These outputs accept standard RCA style signal cables that connect to an amplifier or another signal processor. Use these outputs to drive an amplifier for mid range and high frequency speakers.
14. **Power-on LED Indicator:** This LED indicates when the EQ215ix is on. The unit cannot turn on unless it is grounded through the B- terminal and is receiving 12 volts at both the B+ and Remote Turn-on terminals of the Quick Disconnect Power Plug #15.



15. **Quick Disconnect Power Plug:** This Plug is easily removed for servicing wiring connections and contains the following four terminals:

B+ Terminal (Battery Positive): Connect to the power distribution system that is connected directly to the positive battery terminal. DO NOT connect to the vehicle's factory fuse box. Use a 16 gauge cable.

B- Terminal (Chassis Ground): Connect to a clean, solid chassis ground of the vehicle. Use a 16 gauge cable. Keep the cable as short as possible. DO NOT connect directly to the negative battery terminal.

R Terminal (Remote Turn-on): This connection allows the EQ215ix to turn on and off remotely. Connect to a switched 12 volt source such as the "remote out" or "power antenna" wire from the headunit.

Note: Test the power antenna wire with a volt meter to insure it has 12 volts when both the tuner and tape/CD are playing. DO NOT connect this terminal to the B+ cable.

DR Terminal (Delayed Remote Turn-on Output): This output delays the turn-on of amplifiers if they reproduce noises (turn-on pop) generated by preamp components as the system is first powered up. DO NOT connect this output to other signal processors.

Note: There is an inherent voltage drop of about 1 volt when using the DR output. It may be necessary to use a standard automotive relay controlled by the DR output when turning on multiple amplifiers.

16. **Internal Power Fuse:** This fuse is installed inside the EQ215ix to protect the power supply from improper connection (reverse polarity) or a short in the B+ cable. It should never blow from normal operation. If replacement is necessary, use a fuse of the same size and type (GMC 2 amp). NEVER USE A FUSE WITH A HIGHER RATING.
17. **Input Sensitivity Controls:** These controls allow separate left and right input sensitivity adjustments. Input signal may be boosted as much as 20dB or cut as much as 12dB. These knobs ARE NOT volume controls for the equalizer. The EQ215ix may be driven to the proper operating voltage (8 volts) with a wide range of signal levels (0.8 to 32 volts). A signal level lower than 8 volts will require increased sensitivity. A signal level higher than 8 volts will require decreased sensitivity.

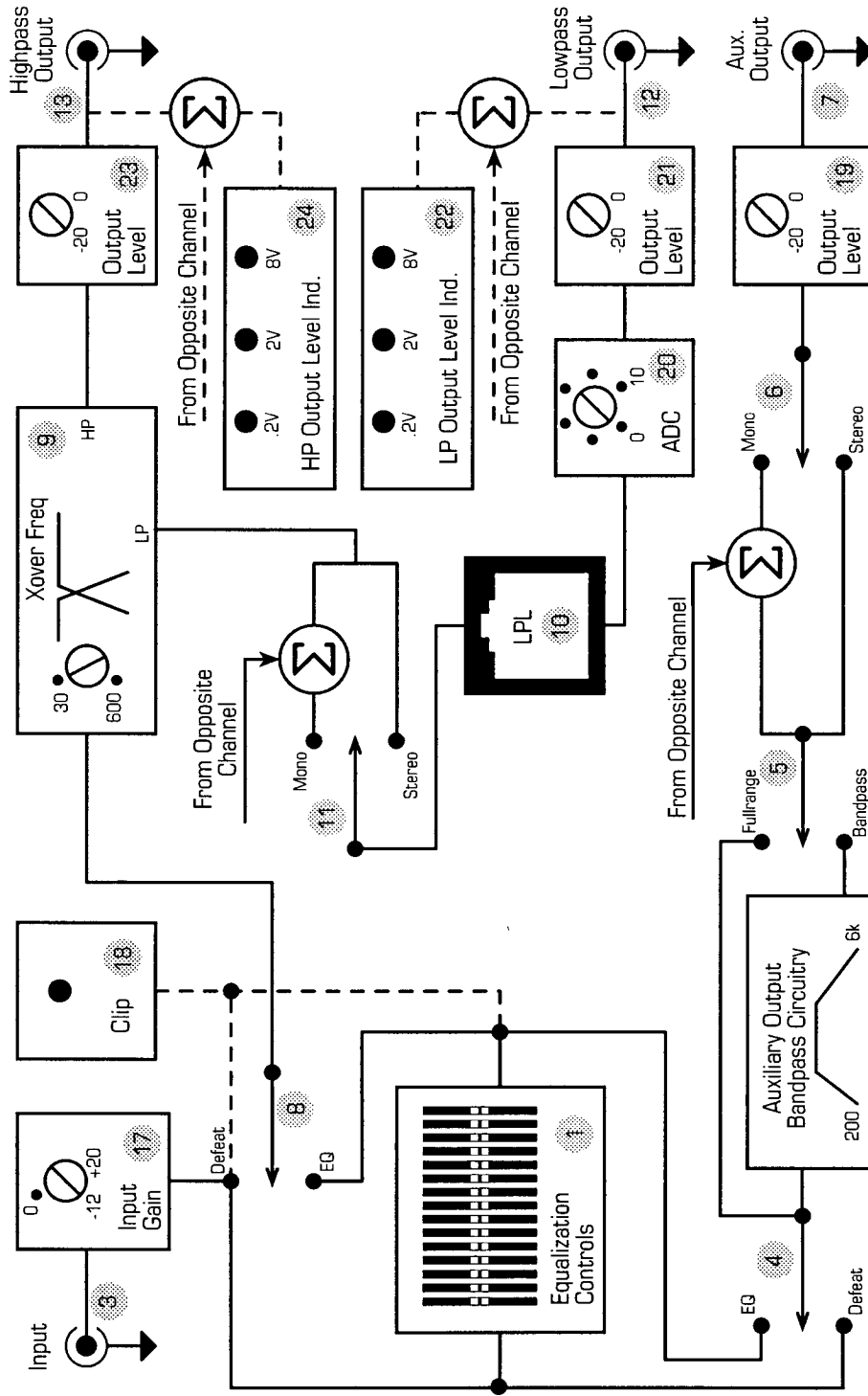


18. **Input Clipping LED Indicators:** These separate left and right LEDs will light when peaks in the musical signal approach 8 volts. They sense signals passing through the Input Sensitivity Controls #17 and the Left and Right Equalization Controls #1 and #2.
19. **Auxiliary Output Level Controls:** These controls allow separate adjustment of the left and right Auxiliary Output Jacks #7. The level may be cut as much as 20dB. With these controls set to maximum, the EQ215ix may pass 8 volts to the next component. The next component in the system determines the amount of output signal required. Consult the manufacturer's specifications to determine the proper input signal level.
20. **Acoustical Delay Circuit (ADC):** This control adjust the amount of delay for the Lowpass Output Jacks #12. The signal may be delayed as much as 10 milliseconds. The primary use for this control is to insure that the bass speakers and midrange speakers are acoustically in phase.
21. **Lowpass Output Level Controls:** These controls allow separate adjustment of the left and right Lowpass Output Jacks #12. The level may be cut as much as 20dB. With these controls set to maximum, the EQ215ix may pass 8 volts to the next component. The next component in the system determines the amount of output signal required. Consult the manufacturer's specifications to determine the proper input signal level.
22. **Tri-level Lowpass Output LED Indicators:** This set of LEDs indicates the level of signal sent to the next component in the system. They sense the peak signal level passing through the left or right Lowpass Level Controls #21.
23. **Highpass Output Level Controls:** These controls allow separate adjustment of the left and right Highpass Output Jacks #13. The level may be cut as much as 20dB. With these controls set to maximum, the EQ215ix may pass 8 volts to the next component. The next component in the system determines the amount of output signal required. Consult the manufacturer's specifications to determine the proper input signal level.
24. **Tri-Level Highpass Output LED Indicators:** This set of LEDs indicates the level of signal sent to the next component in the system. They sense the peak signal level passing through the left or right Highpass Level Controls #23.





SIGNAL FLOW DIAGRAM ONE CHANNEL SHOWN FOR CLARITY



PLANNING

A successful installation must begin with planning. There are several things to consider.

1. Inspect the vehicle's electrical system:

The vehicle's battery and charging system must be in excellent condition. If necessary, have the electrical system inspected and repaired by a qualified technician.

2. Plan the mounting locations for all components:

Choose a location for each component. Consult with a qualified custom installer before attempting any custom work. Trying to modify your vehicle without the proper tools and experience can lead to damaging the equipment or vehicle.

a. Speaker placement: This is the most important consideration for a great sounding system. Try to mount the front left and right mid/high frequency speakers an equal distance from the listening position. The kick panel area is a good location. Low frequency speakers are less critical.

b. Pre-amp components: Easy access to a component's adjustments will make the system easy to adjust while it's operating. Make sure no loose cargo or other items can cause damage or accidentally alter the component's settings.

c. Amplifiers: The primary consideration for amplifier placement is ventilation. Make sure your amplifiers will receive plenty of fresh air to avoid overheating.

3. Plan all system cable routes:

Do not allow system cables to interfere with the mechanical operation of the steering wheel, gas pedal, brake pedal, clutch pedal, trunk hinges, etc.

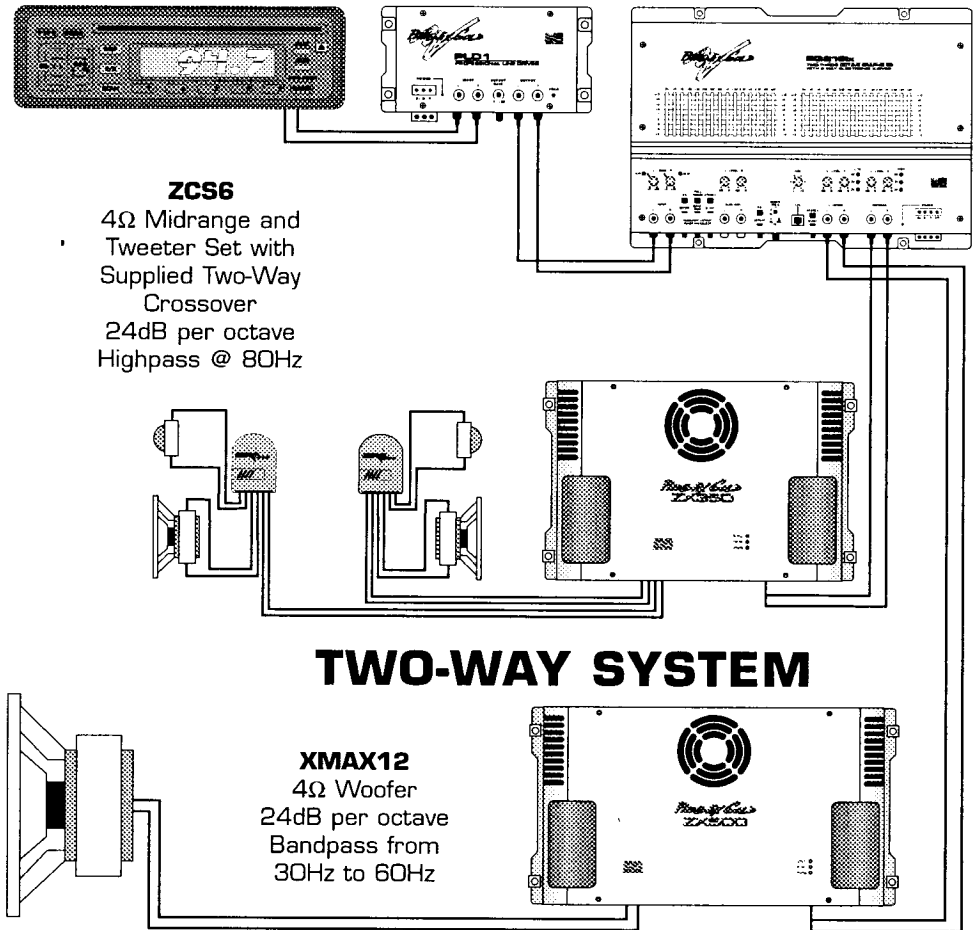
a. Power cables: All main power cables must be fused within 18 inches of the positive battery terminal. Do not route power cables near hot engine components such as exhaust manifolds. Power cables must be protected with grommets when they pass through any metal panels such as the firewall.

b. Signal cables: Do not run signal cables alongside power cables. Make sure to route them away from all other vehicle wiring and electrical components such as computers. Wherever possible, use Phoenix Gold GLX, TRX, or XS series interconnects to maximize noise rejection.



RECOMMENDED EXAMPLES

The following system diagrams offer examples of how to integrate an EQ215ix into a system.



EQ215ix: LOWPASS OUTPUT STEREO/MONO SWITCH: MONO, CROSSOVER FREQUENCY ADJUSTMENT: 60Hz.

The LPL44 controls the volume of the XMAX12.

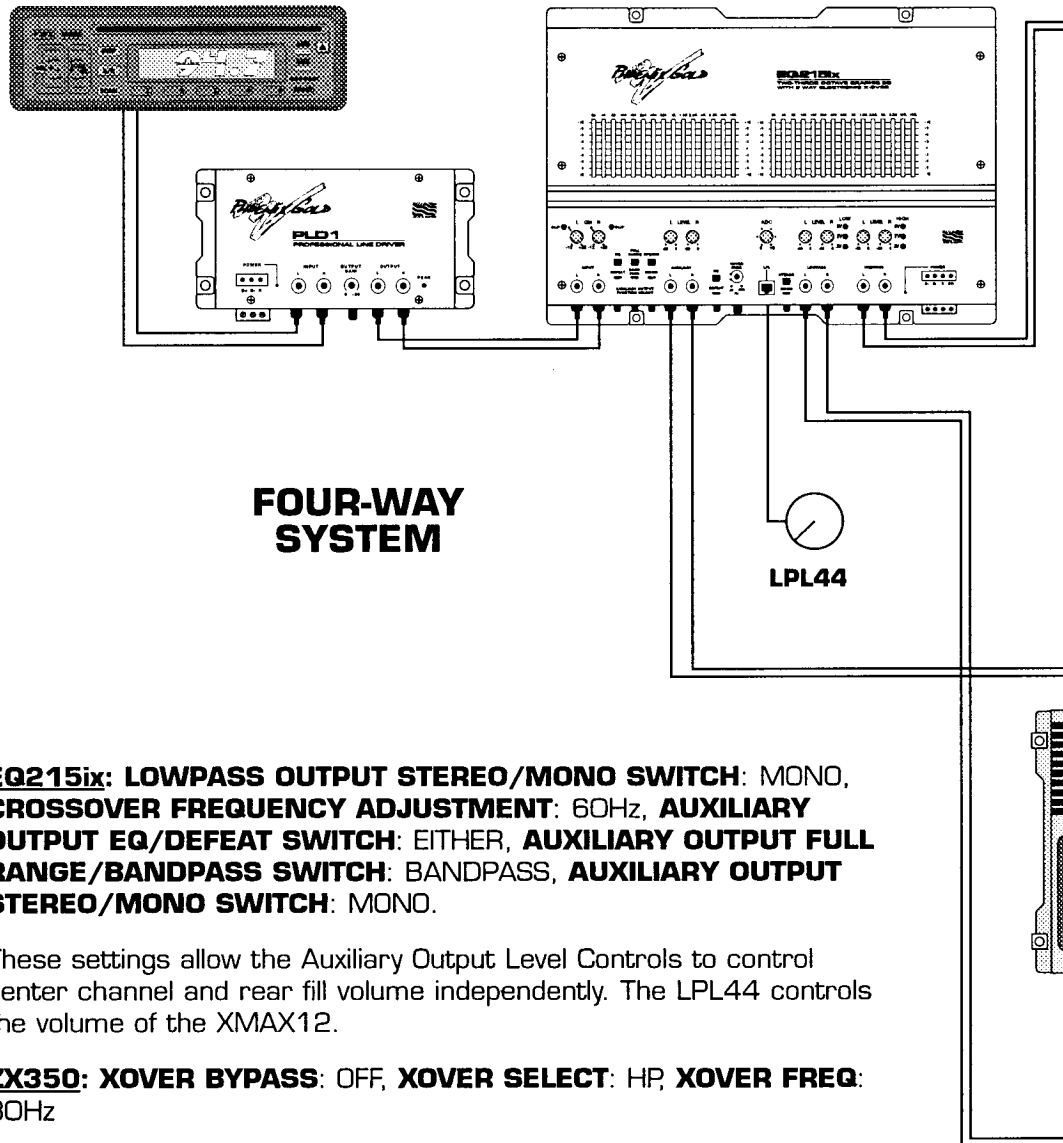
ZX350: XOVER BYPASS: OFF, XOVER SELECT: HP, XOVER FREQ: 80Hz

These settings allow staggered crossover frequencies between the front ZCS6s and the XMAX12.

ZX500: XOVER BYPASS: OFF, XOVER SELECT: HP, XOVER FREQ: 30Hz

These settings provide a subsonic filter for the XMAX12.





EQ215ix: LOWPASS OUTPUT STEREO/MONO SWITCH: MONO,
CROSSOVER FREQUENCY ADJUSTMENT: 60Hz, **AUXILIARY OUTPUT EQ/DEFEAT SWITCH:** EITHER, **AUXILIARY OUTPUT FULL RANGE/BANDPASS SWITCH:** BANDPASS, **AUXILIARY OUTPUT STEREO/MONO SWITCH:** MONO.

These settings allow the Auxiliary Output Level Controls to control center channel and rear fill volume independently. The LPL44 controls the volume of the XMAX12.

ZX350: XOVER BYPASS: OFF, **XOVER SELECT:** HP, **XOVER FREQ:** 80Hz

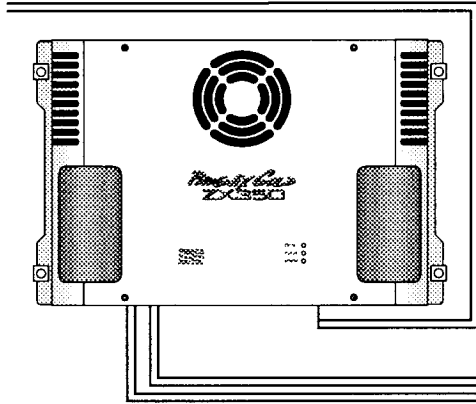
These settings allow staggered crossover frequencies between the front ZCS6s and the XMAX12.

ZX250: XOVER BYPASS: ON.

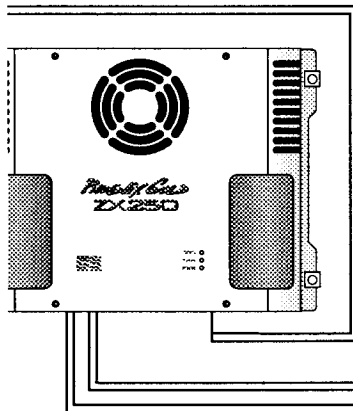
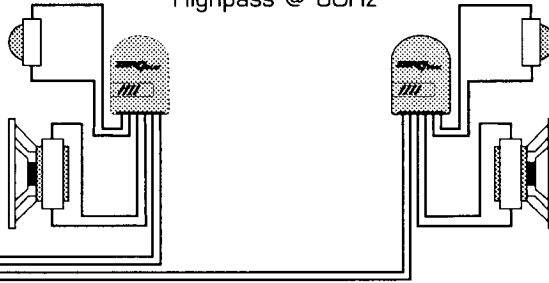
ZX500: XOVER BYPASS: OFF, **XOVER SELECT:** HP, **XOVER FREQ:** 30Hz

These settings provide a subsonic filter for the XMAX12.

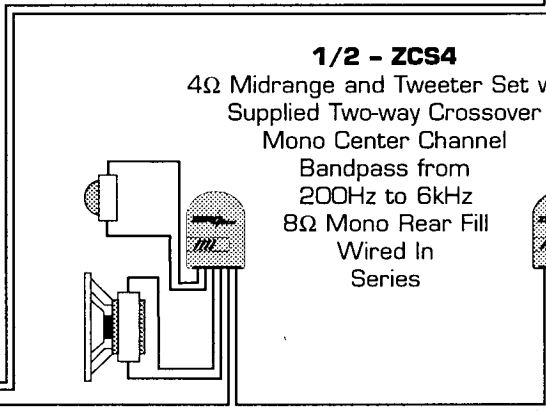
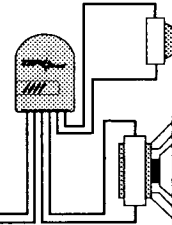




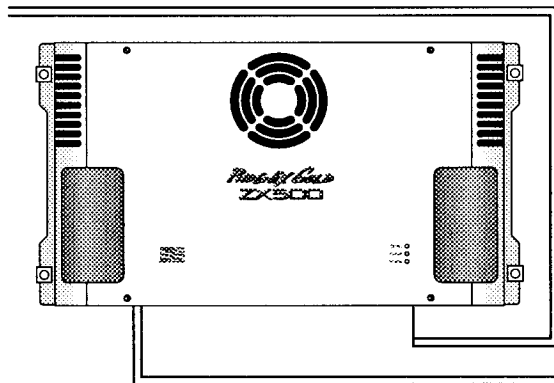
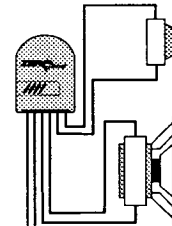
ZCS6
 4Ω Midrange and Tweeter Set with Supplied Two-way Crossover 24dB per octave Highpass @ 80Hz



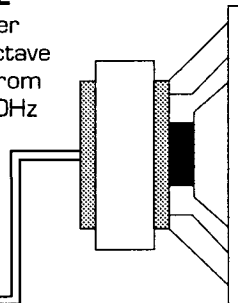
1/2 - ZCS4
 4Ω Midrange and Tweeter Set with Supplied Two-way Crossover Mono Center Channel Bandpass from 200Hz to 6kHz



1/2 - ZCS4
 4Ω Midrange and Tweeter Set with Supplied Two-way Crossover Mono Center Channel Bandpass from 200Hz to 6kHz 8Ω Mono Rear Fill Wired In Series



XMAX12
 4Ω Woofer 24dB per octave Bandpass from 30Hz to 60Hz



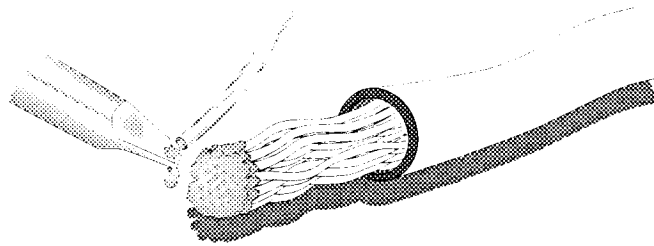
MOUNTING

You can mount the EQ215ix in almost any position. There are only a few precautions to observe.

1. Never mount the EQ215ix where it can get wet. Water damage is not covered by the limited warranty.
2. Do not mount the EQ215ix where debris or cargo can damage it or change the settings. Physical damage is not covered by the limited warranty.
3. Mount the EQ215ix to a flat surface with screws. Make sure the base does not flex or distort.
4. Do not mount the EQ215ix where it may be exposed to excessive amounts of heat.

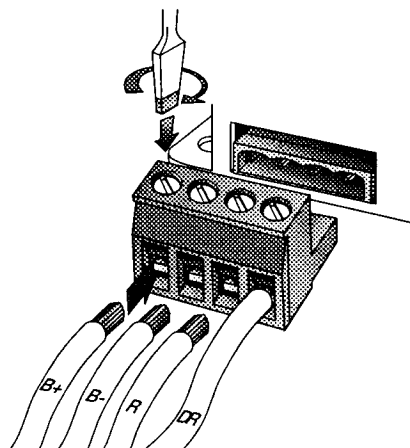
ELECTRICAL

All power connections are made with the removable power connector. Strip 1/4" of insulation from the end of the wire and "tin" the tip with solder.



Insert each wire into the appropriate position in the power connector and tighten the set screw with a flat blade screwdriver.

Note: Use 16 gauge cable for the B+ and B- connection. Use 18 gauge cable for the Remote and Delayed Remote connections.



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Properly tuning the EQ215ix requires the following steps that must be taken in the correct order:

1. Setting system Input Sensitivity and Output Levels.
2. Adjusting the Acoustical Delay Circuit (ADC).
3. Adjusting Equalization Controls.

INPUT SENSITIVITY AND OUTPUT LEVEL SETTING

1. Install the system's power fuses after connecting all power, speaker and signal cables.
2. Set the EQ215ix's Input Sensitivity Controls and all Output Level Controls to their minimum settings (full counterclockwise).
3. Set both EQ/Defeat Switches to the (DEFEAT) position.
4. Set the Auxiliary Output's Full Range/Bandpass Switch and both Stereo/Mono Switches to their appropriate positions for your system configuration.
5. Make a preliminary adjustment to the Crossover Frequency Control. Check the manufacturer's specifications for the proper frequency range of each speaker. It may be necessary to fine tune the crossover frequency later for the best overall sound quality.
Note: Raising the crossover frequency allows higher frequencies to reach the bass speakers while blocking lower frequencies from midrange speakers. Lowering the crossover frequency allows lower frequencies to reach the midrange speakers while blocking higher frequencies from bass speakers.
6. Set the LPL44 (if used) to maximum.
7. Set the ADC Control to 0.
8. Set all other signal processor input sensitivity controls and output level controls to their minimum settings.
9. Set all amplifier input sensitivity controls to their minimum settings.
10. Turn the headunit on with the volume set to minimum.
11. Visually check the EQ215ix's condition. The green Power-on LED should be on. The red Input Clipping LED indicators and Tri-level Output LED indicators should be off.
12. Visually check the power-on indicators (if equipped) of all other system components to verify that they are on.



13. Set the headunit's tone controls, balance and fader to the center (flat) position and turn off any loudness features or other processing effects.
14. Set the volume control of the headunit to approximately 7/8 of maximum (maximum undistorted output). Play a very clear and dynamic recording. Turn on the headunit's repeat track feature.
Note: Do not be alarmed if you don't hear much sound coming from the speakers at this time.
15. Adjust all preamp components between the headunit and EQ215ix for maximum undistorted output as per the manufacturer's instructions. Start with the first component after the headunit and work your way towards the EQ215ix.
16. Turn up the EQ215ix's left and right Input Sensitivity Controls separately until the red Input Clipping LED Indicators flicker on about once a second with the peaks in the music.
Note: The position of the sensitivity controls should be similar but not necessarily identical when set correctly.
17. At this point approximately 800 millivolts is passing through the Highpass, Lowpass and Auxiliary Output Level Controls to the next components in the system. It is possible to send as much as 8 volts to each component by turning up the Output Level Controls. The input signal needs of the next component determine Output Level Control settings.

EQ215ix outputs going directly to an amplifier: Turn up each Output Level Control separately until the speakers reach maximum undistorted output. If this adjustment cannot distort the speakers, then leave the Output Level Control at maximum and use the amplifier's input sensitivity control to reach maximum undistorted output. Repeat this step for each channel. Once you've determined the maximum undistorted output of a channel, you may find it helpful to disconnect the signal input at the amplifier so it won't interfere with listening to other channels.

Note: The idea is to establish the maximum undistorted output of each amplifier channel and its associated speakers independently of the others. When each output is properly adjusted, go to step 18.

EQ215ix outputs going to another signal processor:

- a. Turn up each Output Level Control separately until the next signal processor is receiving the maximum amount of signal it can accept (consult the manufacturer's directions). The Tri-level Output LED Indicators will show the amount of signal sent to the processor connected to the Highpass and Lowpass outputs.



b. Turn up the output level adjustments of the next signal processor according to the input needs of the following signal processor. Repeat this procedure for each processor until the correct input sensitivity is set for the last signal processor.

c. Turn up the output level of the last processor until the speakers reach maximum undistorted output. If this adjustment cannot distort the speakers, then leave the output level control at maximum and use the amplifier's input sensitivity control to reach maximum undistorted output. Repeat this step for each channel in the system. Once you've determined the maximum undistorted output of a channel, you may find it helpful to disconnect the signal input at the amplifier so it won't interfere with listening to other channels.

Note: The idea is to establish the maximum undistorted output of each amplifier channel and its associated speakers independently of the others.

18. Plug the LPL44 into the Remote Lowpass Level Control Jack and turn it to minimum (full counterclockwise).
19. Once the maximum undistorted output for each amplified channel is established, it will be necessary to listen to the overall balance of the system and readjust the level controls for some channels.
Example: If the right channel sounds louder than the left channel, the right channel's output should be lowered until it is equal to the left channel. Compare center channel to front left and right, front to rear fill, etc. until the system is properly balanced. Use the LPL44 to control the Lowpass output level depending on the particular program material as well as the driving conditions (road noise). The idea is that all the channels in the system must be referenced to the weakest amplifier and speaker combination.
20. Listen to several musical selections and fine tune the Crossover Frequency Controls. If the crossover frequency is too high, the bass speakers will sound muddy with too much emphasis in the upper bass region and the listener will be able to tell where the woofers are located. The best results are typically achieved with crossover points as low as 50 to 60Hz. However crossover points this low may allow too much low frequency signal to reach the midrange speakers causing excessive distortion at high volumes. It may be necessary to stagger crossover points apart using an additional crossover network.
21. When all input sensitivity and output levels are set correctly, the



system will reach maximum undistorted output at the volume level set in step 14. If more overall volume is desired, it will be necessary to increase amplifier power or speaker capability or both.

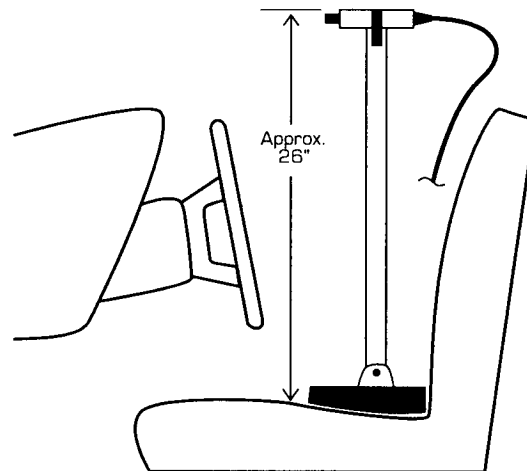
ADJUSTING THE ACOUSTICAL DELAY CIRCUIT

The Acoustical Delay Circuit (ADC) can correct response problems caused by constructive or destructive interference in the crossover region. The crossover region includes frequencies that are reproduced by both lowpass and highpass speakers. The EQ215ix incorporates a very steep 24dB per octave crossover to minimize interaction between speakers at the crossover point. However, when the distance from the listening position to each speaker is different, the signals may arrive slightly out of phase with respect to each other. Constructive interference occurs when the two signals sum together and create a peak in the overall response at the crossover point. Destructive interference occurs when the two signals cancel each other and create a dip in the overall response.

The ADC can delay the lowpass signal as much as 10 milliseconds. This has the same affect as physically adjusting the placement of the lowpass speaker to allow the two signals to arrive in phase with each other.

A real time analyzer (RTA) capable of 1/3 octave resolution will be required to adjust the ADC.

1. Set up the RTA so its display can be seen while adjusting the EQ215ix. Set the response time of the RTA's display to a slow setting (updates once every couple of seconds). Attach the RTA microphone to a stand and place it in the driver's seat as shown below.



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2. Make sure the Equalizer Defeat Switch is still set to (DEFEAT).
3. Play uncorrelated (stereo) pink noise with the headunit's repeat track function turned on and the bass and treble controls set to their flat positions. Turn off any loudness controls or other sound processing effects.
4. Set the volume level for approximately 90dB.
Note: The level must be at least 10dB above any ambient noise that could interfere with RTA readings.
5. Observe the RTA and adjust the sensitivity to center the overall curve in the display area.
6. Turn the ADC Control from 0 to 10 while observing the response curve in the area of the crossover point between lowpass and highpass. The idea is to smooth either a peak or dip in the response by delaying the lowpass output slightly and thus changing the phase relationship between the two signals.

ADJUSTING EQUALIZATION CONTROLS

Space limitations do not allow a complete course on all the aspects of using equalization in the mobile environment. This section is intended as a basic guide to setting the equalization controls. Many factors can combine to affect the way sound is perceived in the mobile environment. An understanding of these factors and how they affect the final sound quality of the system is essential to getting the best possible results.

While it is possible to provide an equalized output for multiple amplifiers and speakers with the EQ215ix, The front mid/high and bass speakers should receive the most attention when equalizing the system. You will have to experiment with equalized or non-equalized center channel and rear fill outputs to see if this helps or hinders the overall sound quality.

A real time analyzer (RTA) capable of 1/3 octave resolution will be required to properly set the equalization controls.

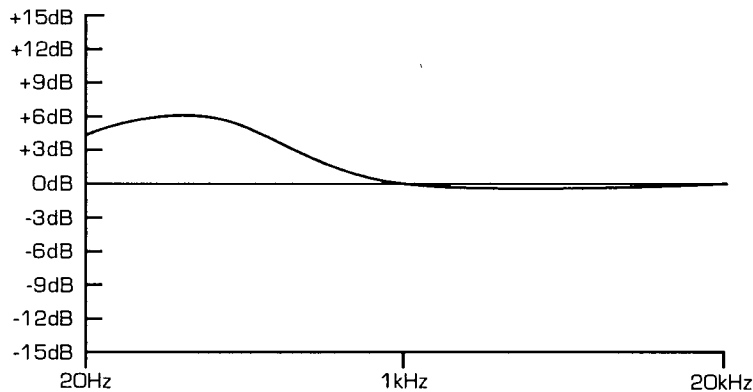
1. Set up the RTA so its display can be seen while adjusting the EQ215ix. Refer to the previous section for proper RTA setup procedures.
2. Set the system up to analyze the left and right speaker systems independently by disabling one channel. If rear fill speakers are used, disable them as well. If a center channel is used, leave it playing while equalizing the left or right front speakers.



3. Adjust all Equalization Controls for the left and right channels to their center position (*0dB*).
4. Set the Equalizer Defeat Switch to (*EQ*).
5. Play uncorrelated (stereo) pink noise with the headunit's repeat track function turned on and the bass and treble controls set to their flat positions. Turn off any loudness controls or other sound processing effects.
6. Set the volume level for approximately 90dB.
Note: The level must be at least 10dB above any ambient noise that could interfere with RTA readings.
7. Observe the RTA and adjust the sensitivity to center the overall curve in the display area.
8. Use the Equalization Controls to achieve a smooth octave to octave curve in the display. There is no single correct response curve for all systems. The example below shows a typical curve for a car audio system.
Note: It is customary to have more output in the base region to overcome low frequency road noise.

Start by cutting the largest peak first and then the next largest peaks in turn. After reducing the peaks, boost the dips to further smooth the curve.

Caution: Apply boost very sparingly. Every 3dB of boost requires double the amplifier power at that frequency.



9. Experiment with the Auxiliary Output EQ/Defeat Switch to see if applying equalization to the center channel improves the overall sound quality.



10. Disable the adjusted channel and reconnect the opposite channel.
11. Repeat step 8 and 9.
12. After both channels are equalized separately, compare the left and right Equalizer Control settings. They should be similar. If the settings required to achieve a smooth curve are very different from left to right, check for out-of-phase speakers, incorrect crossover points, improper sensitivity settings, etc.
13. Reconnect the disabled channel and observe the RTA with both channels playing.
14. Connect the rear fill channel and check the affect it has on the smoothness of the response curve.
15. Fine tune the curve by adjusting both left and right Equalization Controls together.
16. Check the system's sound quality with various music selections and fine tune the Equalizer Control settings based on what you hear. Remember that the RTA is just a guide and should never be the final judge of the sound quality of the system. Use your ears.
17. Recheck the red clipping LED indicators and readjust if necessary (steps 14 through 16 in the Input Sensitivity and Output Level Setting section).
18. Record the Equalizer Control settings in the back of this manual for future reference.



TROUBLE-SHOOTING

SYMPTOM	PROBABLE CAUSE	SOLUTION
No output and Power-on LED is off	No battery, chassis ground, or remote connection	Connect B+, B-, and Remote Turn-on to the Quick Disconnect Power Plug (pages 8 & 15)
No output and Power-on LED is on	No signal from the headunit Faulty input or output signal cables	Check the headunit for proper output Try substituting different signal cables
Distorted sound in all channels	Clipped input signal	Make sure the headunit is not providing a clipped signal (pages 16 - 19)
Distorted sound in individual channels	Input Sensitivity Controls set too high Output Level Controls set too high for the next component	Set the Input Sensitivity Controls to a lower setting (pages 16 - 19) Set the Output Level Controls to a lower setting (pages 16 - 19)
Low frequency distortion in highpass speakers	Crossover frequency set too low	Raise the crossover frequency (page 19)
Low midbass output around the crossover frequency	Improperly adjusted Equalization Controls Improperly adjusted ADC	Readjust Equalization Controls (pages 21 & 22) Readjust the ADC (pages 19 & 20)



EQUALIZATION CONTROL SETTINGS

Left		Right	
25 Hz	_____	25 Hz	_____
40 Hz	_____	40 Hz	_____
63 Hz	_____	63 Hz	_____
100 Hz	_____	100 Hz	_____
160 Hz	_____	160 Hz	_____
250 Hz	_____	250 Hz	_____
400 Hz	_____	400 Hz	_____
630 Hz	_____	630 Hz	_____
1 kHz	_____	1 kHz	_____
1.6 kHz	_____	1.6 kHz	_____
2.5 kHz	_____	2.5 kHz	_____
4 kHz	_____	4 kHz	_____
6.3 kHz	_____	6.3 kHz	_____
10 kHz	_____	10 kHz	_____
16 kHz	_____	16 kHz	_____

Left		Right	
25 Hz	_____	25 Hz	_____
40 Hz	_____	40 Hz	_____
63 Hz	_____	63 Hz	_____
100 Hz	_____	100 Hz	_____
160 Hz	_____	160 Hz	_____
250 Hz	_____	250 Hz	_____
400 Hz	_____	400 Hz	_____
630 Hz	_____	630 Hz	_____
1 kHz	_____	1 kHz	_____
1.6 kHz	_____	1.6 kHz	_____
2.5 kHz	_____	2.5 kHz	_____
4 kHz	_____	4 kHz	_____
6.3 kHz	_____	6.3 kHz	_____
10 kHz	_____	10 kHz	_____
16 kHz	_____	16 kHz	_____



Limited Warranty

Phoenix Gold provides a limited warranty on all electronics (free of manufacturing defects in materials and/or workmanship) to the original consumer/purchaser for a period of eighteen (18) months when installed by an Authorized Phoenix Gold Mobile Electronics Retailer. Returning a copy of the original sales receipt with the warranty registration card extends the period to thirty-six (36) months. The limited warranty period is thirty (30) days if installed by anyone other than an Authorized Phoenix Gold Mobile Electronics Retailer. We will cover parts and labor provided the product was purchased from an Authorized Phoenix Gold Retailer. This Warranty does not apply to any product where the tags and/or serial numbers have been cut, removed, tampered or altered in any manner. This limited warranty is applicable to only the original consumer/purchaser and is not transferable. Electronics that are deemed defective during the warranty period will be repaired or replaced at the discretion of Phoenix Gold. Repaired or replaced product will be covered until the original warranty period expires. Phoenix Gold will not be responsible for any incidental or consequential damages that may result from a defect in the product. Select states may not allow the exclusion or limitation of incidental or consequential damages, so the prior limitations may not apply.

Garantie Limitée

Phoenix Gold vous procure une garantie limitée sur tout ses électroniques pour une période de 12 mois dans le cas où ils ont été installés par un revendeur agréé de Phoenix Gold. Si l'installation a été faite par autrui, la garantie se limite à 30 jours. Les pièces détachées et la main d'oeuvre utilisés pour les réparations seront couverts durant la période de garantie si vous avez acheté le produit chez un revendeur agréé de Phoenix Gold. En cas d'absence du numéro de série, ou un déplacement du numéro de série, la garantie ne sera plus appliquée. La garantie est seulement applicable pour le premier acheteur/consommateur et n'est donc pas transférable. Les électroniques qui sont défectueuses durant la période de garantie peuvent seulement être réparées par des services techniques approuvés par le distributeur officiel de Phoenix Gold afin que la garantie soit applicable. Phoenix Gold ne sera pas responsable pour tout endommagements qui peuvent résulter d'un manquement du produit Phoenix Gold.

Dealer's Name _____

Telephone Number _____

Salesperson's Name _____

Model Number _____ EQ215ix _____

Serial Number _____

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