


 **ORION**<sup>TM</sup>  
HIGH PERFORMANCE CAR AUDIO



**XEQ-X7**  
**XEQ-X70BTM**

**GRAPHIC EQUALIZER**

**proud to be LOUD!**



Thank you for purchasing this Orion product. Orion products are specifically engineered and designed for the mobile audio environment. This manual contains important information about installation, set-up procedures and integrating your new Orion product into your vehicle. With proper care and installation, your new product will provide you with many years of high performance listening enjoyment. We recommend having an Authorized Orion Dealer install your new product for optimal performance. Before installing your new product, please read through the manual to fully understand the application.

Before making any electrical connections, make sure that you disconnect the battery's ground cable to prevent the possibility of short circuits or damage to your electronic equipment. If your vehicle's stereo (head unit) comes with an Anti-theft code, DO NOT disconnect the battery. If you have the access code for the stereo (head unit), please refer to the vehicle's owner's manual.

# ATTENTION

## FOR ANY QUESTIONS, ISSUES, RETURNS OR WARRANTY

**DO NOT** contact the retailer, we recommend that you contact our service department for any and all assistance at [support@orioncaraudio.com](mailto:support@orioncaraudio.com).

We will do our best to resolve any problem in a professional and timely manner.



**WARNING:** This product can expose you to chemicals including DEHP which is known to the State of California to cause cancer, birth defects or other reproduction harm. For more information go to [www.P65warnings.ca.gov](http://www.P65warnings.ca.gov).

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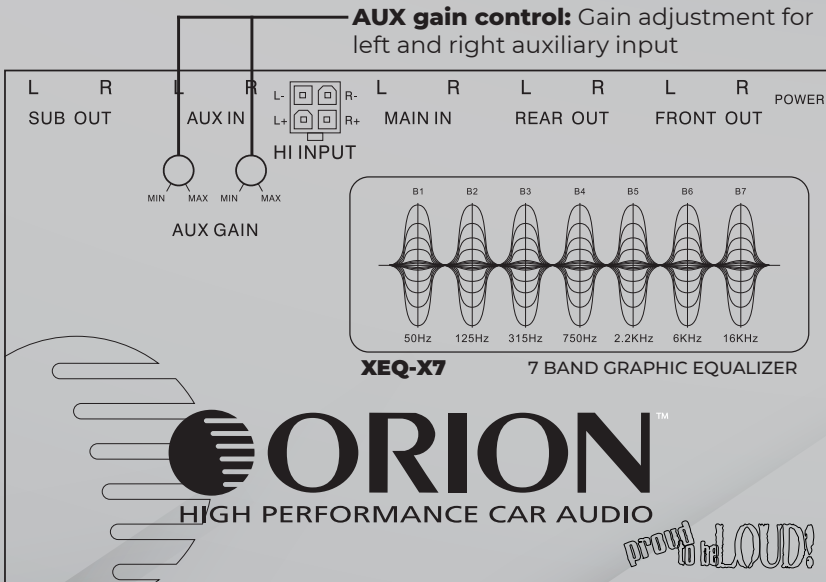
## Specifications

*The technical data and the design of the equipment may change without prior notice for the sake of improvements.*

Frequencies	50Hz, 125Hz, 315Hz, 750Hz, 2.2kHz, 6kHz, 16kHz
Boost/Cut	12dB
S/N Ratio	83dB
Frequency Response	8Hz - 140kHz +/-1dB
Maximum output voltage	8V
THD	0.01%
Input Sensitivity (RCA)	<3.6V
Input Sensitivity (High)	<10.8V
Input Impedance	20K Ohms
Output impedance	1K Ohms
Stereo Separation	73dB/1kHz
Operating Voltage	11V - 15V negative ground
Size (WxDxH)	7" x 4 1/4" x 1"

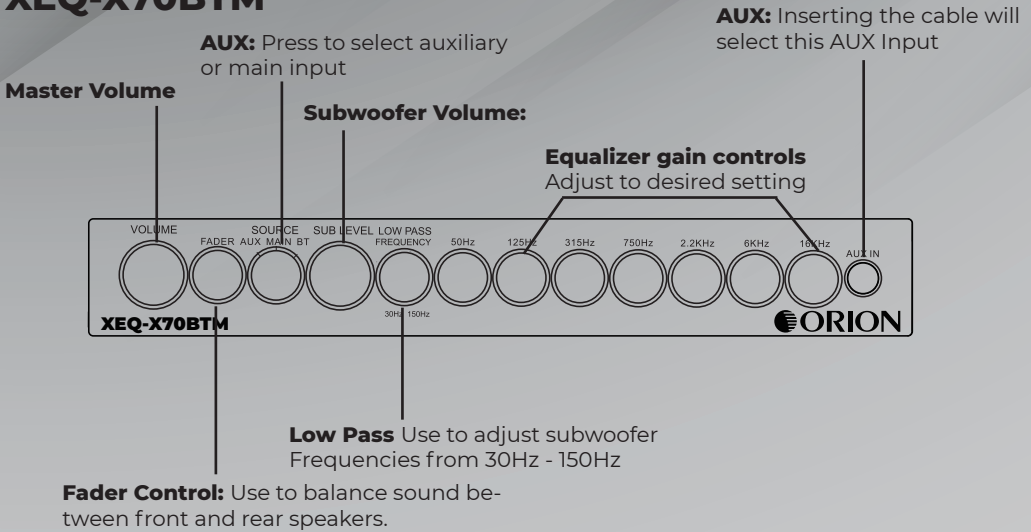
# FEATURES

- Seven equalization bands: 50Hz, 125Hz, 315Hz, 750Hz, 2.2kHz, 6kHz, and 16kHz. Each frequency is variable from -12 through +12dB
- Three stereo RCA outputs to drive front, rear and subwoofer audio amplifiers.
- An auxiliary stereo RCA input for use with portable devices, such as an MP3 player.
- Front panel auxiliary stereo 3.5mm input for the convenient use of your mobile device or favorite media player.
- Separate controls for master volume, subwoofer volume(sub level), front/rear fader, and selection of main or auxiliary inputs.
- Extended frequency response from 20Hz to 30kHz with exceptional 100dB signal-to-noise performance.
- Gold-plated RCA connectors to ensure the best audio signal output.
- ISO mounting holes and removable trim ring for custom installation.
- High Level speaker input for integration with factory radios.

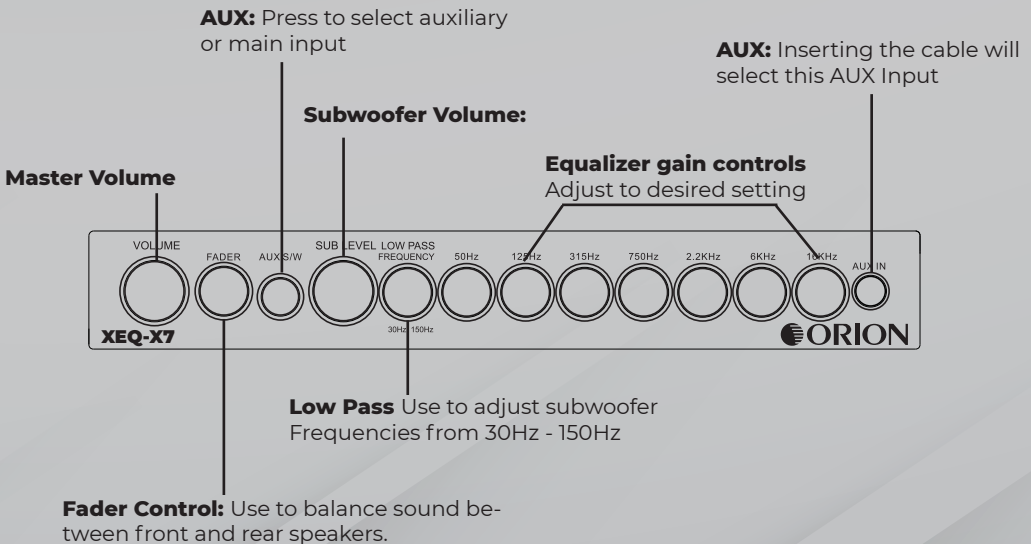


# OPERATIONS

## XEQ-X70BTM



## XEQ-X7





# OPERATIONS

## Setting system volume

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1. Turn the master volume and subwoofer level controls to their minimum settings.
2. Turn the source unit on and increase the volume until you hear distortion.
3. Reduce the volume to just below the distortion point (approximately 80% of full volume).

This is the maximum usable musical signal for the source unit., Turning the volume beyond this point increases noise and distortion without increasing the musical signal.

### **NOTE:**

*Once you set the source unit volume, do not change it. Always use the volume control on the Equalizer as the master (main) volume control. The Equalizer has better electronics, a higher sound to noise ratio, and is more linear than the volume setting on majority of source units available.*

## Adjusting the controls

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The Equalizer provides a graphic adjustment band for each of seven frequency ranges: sub, low, mid, mid-high and high frequency. You can adjust the center of each frequency band to fine tune the acoustical response to your preference.

1. Set all frequencies to the center position. The small dot on the control knob should be set at 12 o'clock.
2. Play your favorite music track and adjust the individual controls to suit your taste. Avoid extreme settings, which can distort musical peaks.
3. Increase or decrease the equalizer gain controls to suit your taste.
4. If your system includes a subwoofer, slowly increase the subwoofer level until you hear a solid bass.
5. If your system includes rear speakers, adjust the fader control to add rear sound. Set it so most of the music come from the front and only fills the rear.

## Connecting an audio or video device

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1. Plug the audio device into the auxiliary RCA input on the back of the Equalizer.
2. Make sure the auxiliary button on the front of the unit is out, ready to receive input from the main RCA input (not the auxiliary RCA input).
3. Turn the equalizer's master volume to a normal listening level.
4. Press the play button on the audio device.
5. Push in the Mode button to change the auxiliary source.
6. Using a flat precision screwdriver, adjust the AUX gain controls located on the top of the unit so that the volume of the auxiliary source matches the volume of the main source.

# OPERATIONS



## Using the front panel 3.5mm input

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1. Reduce the equalizer's volume to minimum before plugging in the 3.5mm cable to avoid any sudden, unwanted changes in the output.
2. Plug the 3.5mm cable into the equalizer AUX input. The equalizer will automatically select this input when the cable is inserted.
3. Turn the equalizer's master volume to a normal listening level.
4. To go back to the main input simply reduce the master volume and gently unplug the 3.5mm cable from the equalizer.

### NOTE:

*Unplugging the source device will not change inputs. You must remove the cable from the equalizer.*

## XEQ-X70BTM ONLY

### Using the Bluetooth Mode

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1. Reduce the equalizer's volume to minimum before connecting a new device to avoid any sudden, unwanted changes in the output.
  2. Change the equalizer's mode to Bluetooth. Go to your Bluetooth settings on your device and search for "XEQ-X70BTM" and select it and connect.
  3. A password will appear and enter "1234"
  4. Turn the equalizer's master volume to a normal listening level.
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## Care and maintenance

Use a soft, dry cloth to gently wipe dust and dirt from unit.

\* Do not use benzene, thinner, car cleaner, or other cleaners. These substances may damage the unit or cause the paint to peel.

## Servicing the equalizer/crossover unit.

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In the event that the equalizer is malfunctioning, never open the case or disassemble the unit. The internal parts are not serviceable by the user. Opening any compartment will void warranty.

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## Whats in the box

1 x Equalizer

1 x Manual

1 x Window Sticker

2 x Mounting brackets

8 x Phillip-head screws



# INSTALLATION

## Mounting precautions

The equalizer can be mounted next to the source unit or under the dash using the mounting brackets. The front panel controls should be easily accessible from the driver's seat. In addition:

- This unit requires additional mobile audio components for proper operation.
- Always use great care when attaching anything to a vehicle. Check clearances in front of, behind, and on both sides of the planned installation before drilling any holes or installing any screws.

## Wiring precautions

*Disconnect the ground (-) terminal on the vehicle's battery.*

### WARNING

To prevent short circuits during installation, always disconnect the vehicle's negative (-) battery lead before making any connections.

- This unit is exclusively for vehicles with 12 volt battery systems.
- A good chassis ground connection is critical to minimize resistance and avoid noise problems. Use the shortest wire possible and securely connect it to the car chassis and the source unit ground.
- When routing RCA cables, keep the cables away from power cables and output speaker wires.
- If you are using a source unit without a remote turn-on lead, the equalizer can be turned on with a switched accessory lead. This accessory power source is located in the factory harness at the back of the radio. This lead turns on and off with the ignition key.
- Do not open the case. There are no user-serviceable parts inside. If you require assistance, consult your Orion dealer or an authorized Orion service center.

## Tools and additional components

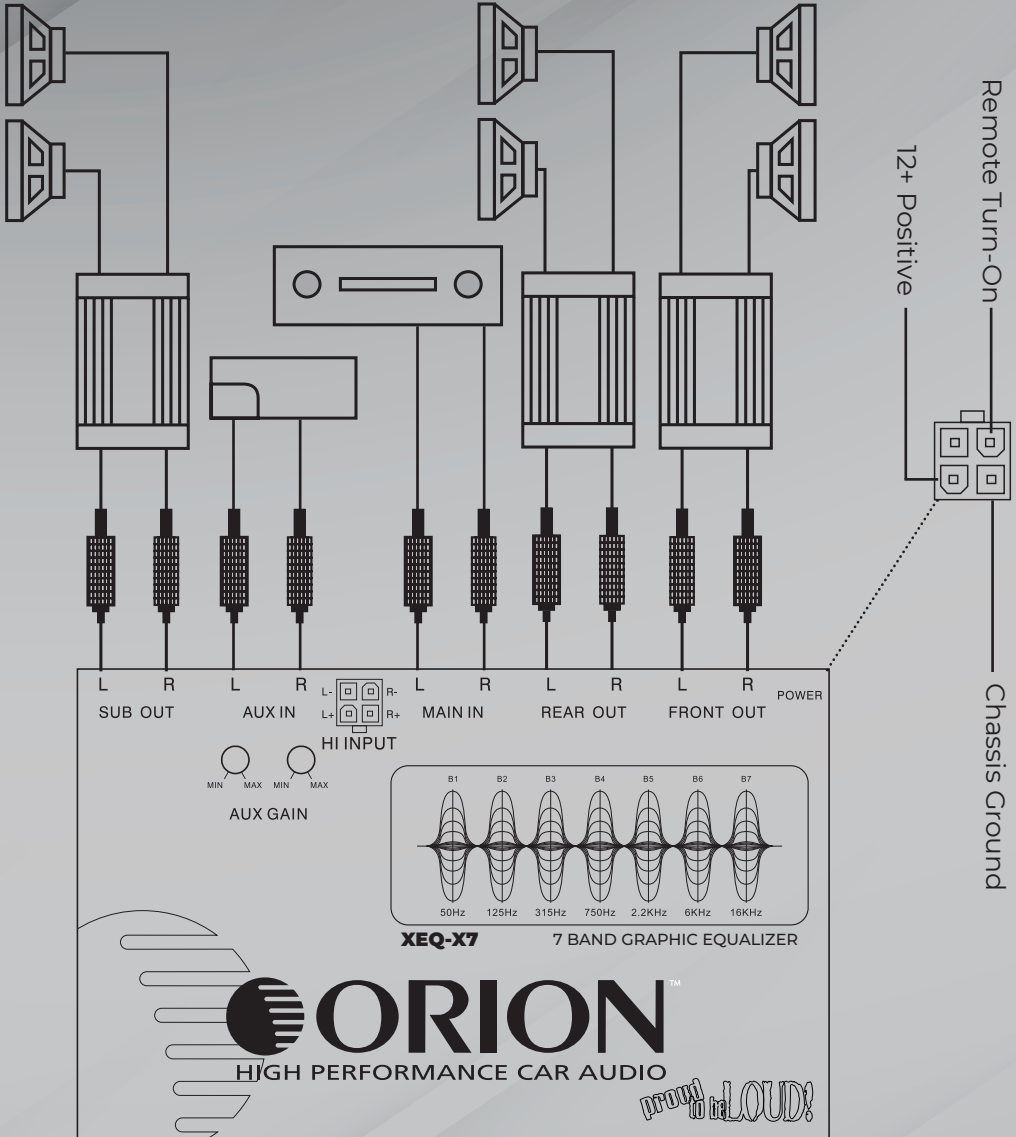
Tools you will need:

- A Phillips-head screwdriver when mounting the unit.
- A precision flat-head screwdriver to adjust the AUX gain controls if you connect a 3.5mm device.
- High-quality RCA input and output cables.

Extra cable can cause signal loss and act as an antenna to introduce noise. Use only high quality RCA cables that are no longer than necessary to make a direct connection with the source unit and amplifiers,



# WIRING DIAGRAM



# TROUBLESHOOTING

## The unit does not work / no light

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- Check the fuse.
- The power wires may not be connected. Check the power and ground wiring, then retest.

## Sound is distorted

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- This source unit volume may be set too high. Reduce the source unit volume.
- Equalizer gain controls are set too high. Turn the equalizer controls to the center position and listen for distortion again. If the problem still occurs, see your authorized Orion dealer.
- Speakers may be damaged. Consult your authorized Orion dealer.

## No Sound coming from the unit

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- The wrong input is selected. Change the AUX mode switch to turn the main inputs on.
- No remote-on. Using a multimeter, check for +12V from the remote-on source.

## XEQ-X70BTM Not connecting

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- Another device may be connected to the unit. Please disconnect the other device by turning off the bluetooth or power it off.

## Glossary

**Crossover:** A device that limits the range of frequencies sent to a speaker or amplifier.

**Equalization:** The process of boosting or cutting sound signal frequencies to improve the quality of the sound. The term comes from the filters used to add back high frequencies at the receiving end of analog transmissions over wires.

**Equalization band:** The frequency range impacted by a specific filter.

**dB:** Decibel, a measurement of the relative difference in power or intensity between two acoustic signals.

**Gain control:** Gain is the amount of amplification (voltage, current or power) of an audio signal expressed in dB.

**Graphic equalizer:** A multi-band variable equalizer that uses mechanical controls to adjust amplitude.

**Hz:** Abbreviation for Hertz, a unit of frequency equal to one cycle per second.

**Octave:** The musical principle of dividing sound frequencies into the eight notes of the musical scale.

**OEM:** Original Equipment Manufacturer

**RCA Input/Output:** Port through which sound travels in and out of the system; "RCA" refers to the type of connector.

**Slope:** How fast the sound changes rated in dBs. The higher the dB number, the faster the frequency drops off.

# WARRANTY

Orion warrants this product against all defects in material and workmanship for a period of one (1) year from the date of original purchase provided it was purchased from an Authorized Orion Dealer.

The conditions of this warranty and the extent of the responsibility of Orion, under this warranty are as follows:

1. DATED PROOF OF PURCHASE IS REQUIRED FOR WARRANTY SERVICE OF THIS PRODUCT. Information about Orion authorized warranty service may also be obtained at [www.orioncaraudio.com](http://www.orioncaraudio.com) or by emailing Orion at [support@orioncaraudio.com](mailto:support@orioncaraudio.com).
2. This warranty will become void if service is performed by anyone other than an approved Orion Warranty Service Center.
3. This warranty does not apply to any product which has been subjected to misuse, neglect or accident, or which has had the warranty seal broken, serial number altered, defaced or removed, or which has been connected, installed adjusted or repaired other than in accordance with the instructions furnished by Orion.
4. This warranty does not cover car static, electrical interference, adjustments or labor costs for the removal or reinstallation of the unit for repair.
5. The sole responsibility of Orion under this warranty shall be limited to the repair or replacement thereof, at the sole discretion of Orion.
6. If it becomes necessary to send the product or any defective part to Orion or an authorized service station, the product must be shipped in its original or equivalent carton, fully insured, with shipping charges prepaid. Orion will not assume any responsibility for any loss or damage incurred in shipping.
7. This warranty is not transferable and protects the original purchaser provided they reside and made their purchase in the United States. International consumers may contact their local retailer or distributor for warranty information.
8. ALL IMPLIED WARRANTIES, EXCEPT TO THE EXTENT PROHIBITED BY APPLICABLE LAW, SHALL HAVE NO GREATER DURATION THAN THE WARRANTY PERIOD SET FORTH ABOVE. UNDER NO CIRCUMSTANCES SHALL ORION BE LIABLE FOR ANY LOSS OR DAMAGE, DIRECT OR CONSEQUENTIAL, ARISING OUT OF THE USE OR INABILITY TO USE THE PRODUCT. BECAUSE SOME STATES DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS OR EXCLUSIONS OR LIMITATIONS OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, THE ABOVE LIMITATIONS OR EXCLUSIONS MAY NOT APPLY TO YOU.
9. THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS AND YOU MAY ALSO HAVE OTHER RIGHTS THAT VARY FROM STATE TO STATE.
10. Should you have any difficulties with the performance of this product during warranty or with any Orion authorized service center, you may contact Orion by emailing us at [support@orioncaraudio.com](mailto:support@orioncaraudio.com).

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