


 **ORION**TM
HIGH PERFORMANCE CAR AUDIO



XTR-X3R

**3-WAY ELECTRONIC
CROSSOVER NETWORK**

proud to be **LOUD!**



Congratulations on acquiring the ORION XTR signal processor. ORION XTR mobile electronics represent some of the most sophisticated car audio technologies available today. These high-quality audio products are meticulously designed to provide years of exceptional musical service. Utilizing cutting-edge electronic technologies, Orion aims to deliver an outstanding auditory experience.

The X3R Active Crossover allows you to experience the pinnacle of mobile audio quality. It enhances the natural and open sound of live performances, setting it apart from traditional car audio systems that use passive crossovers. Passive systems often force music through chokes and capacitors, acting as a bottleneck and causing distortion by letting program material pass at varying speeds, with some sounds not making it through at all.

With the ORION XTR-X3R, you'll enjoy every dynamic of the bass and appreciate subtle sounds, such as fingers sliding across guitar strings. The X3R enables precise grouping of amplifiers and speakers into discrete sets, ensuring they function as a harmonious unit. It acts as the conductor of your car audio system, meticulously balancing volume, directing specific musical parts to the appropriate instruments, and synchronizing sounds to arrive at your ears simultaneously. This creates a seamless and immersive musical experience, where all you perceive is the music itself.

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.

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

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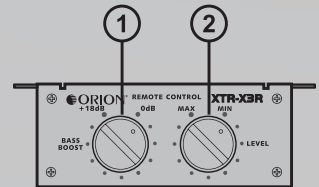
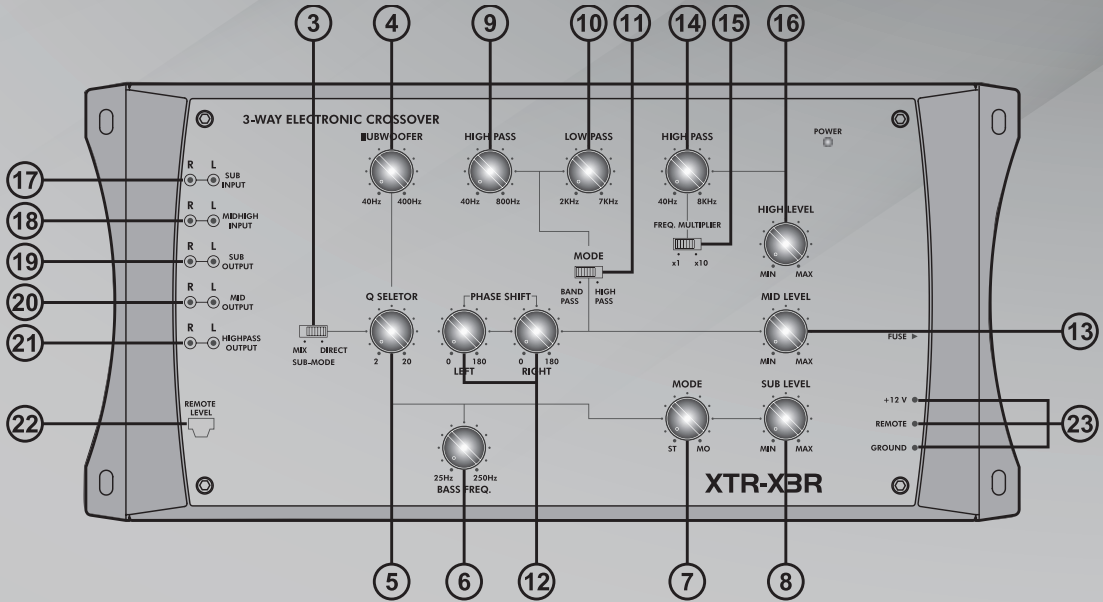
WHAT'S IN THE BOX

- Light illuminated control panel
- Rotary control knobs
- 12dB per octave crossover slopes
- PWM power supply
- Remote bass boost (0-+18dB) and level controls
- Subwoofer mode switch
- Variable subwoofer frequency control 40-400 Hz
- Parametric "Q" control (2-20)
- Variable bass boost frequency control 25-250 Hz
- Subwoofer stereo/mono mode control
- Variable high-pass frequency control (mid-range) 40-800Hz
- Variable low-pass frequency control (mid-range) 2k-7 kHz
- Band pass/ high pass selector
- Left and right mid range phase shift control (0-180)
- Variable high-pass frequency control (40-8 kHz)
- X1, X10 high pass frequency multiplier-switch
- High-pass, mid-range & subwoofer output level controls
- Mid/high & sub RCA inputs
- High, mid & sub RCA outputs
- Max Variable output level controls, 7 volts



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.

FEATURES & SPECIFICATIONS



FEATURES & SPECIFICATIONS



1. BASS BOOST CONTROL

- This control adjusts the bass boost gain (0 to +18dB).

2. BASS BOOST LEVEL CONTROL

- This control sets the subwoofer gain control.

3. SUBWOOFER MODE SWITCH

- Allows subwoofer mode channel to receive signal from either the mix or from low-pass inputs

4. VARIABLE SUBWOOFER FREQUENCY CONTROL 40Hz-400Hz

- By turning the selector you can choose the subwoofer crossover points from 40Hz-400Hz.

5. PARAMETER "Q" CONTROL 2-20

- Allows independent continuous change of the boost frequency bandwidth (Q-factor) for each band from Q=20 (Narrow bandwidth, steep slope) to Q=2 (Wide bandwidth, gentle slope).

6. VARIABLE SUBWOOFER BASS BOOST FREQUENCY CONTROL 25Hz-250Hz

- By turning the selector you can choose the subwoofer crossover bass boost points from 25Hz-250Hz.

7. SUBWOOFER STEREO/MONO MODE CONTROL

- For selection of stereo or mono mode subwoofer output.

8. SUBWOOFER OUTPUT LEVEL CONTROL

- For adjusting the subwoofer channel output level.

9. VARIABLE HIGH-PASS (MID-RANGE) FREQUENCY CONTROL 40-800Hz

- By turning the selector you can choose the high-pass crossover points from 40Hz-800Hz.

10. VARIABLE LOW-PASS (MID-RANGE) FREQUENCY CONTROL 2KHz-7KHz

- By turning the selector you can choose the low-pass crossover points from 2KHz-7KHz.

11. BAND PASS/HIGH PASS SELECTOR

- When this switch is in high pass mode, the low pass filter cannot be used. It can convert rear channel to band pass in fri amp system.

12. LEFT AND RIGHT HIGH & LOW PASS PHASE SHIFT CONTROL 0-180

- Allows you to change the phase of your high and low crossover from 0 to 180 degrees to help compensate for timing difference between Drivers.

FEATURES & SPECIFICATIONS

13. MID-RANGE OUTPUT LEVEL CONTROL

- For adjusting the mid-range channel output level.

14. VARIABLE HIGH-PASS FREQUENCY CONTROL 40-8KHz

- By turning the selector you can choose the high-pass crossover points from 40Hz-800Hz.

15. FREQUENCY MULTIPLIER (x1/x10 HIGH-PASS CROSSOVER)

- This switch changes crossover points from 40Hz-800Hz to 400Hz-8KHz for high frequency highchannel drivers.

16. HIGH-PASS OUTPUT LEVEL CONTROL

- For adjusting the high pass channel output level.

17. SUBWOOFER INPUT PORT

- To be connected to the subwoofer outputs of the source unit.

18. MID/HIGH INPUT PORT

- To be connected to the outputs of the source unit.

19. SUBWOOFER OUTPUT PORT

- To be connected to the subwoofer channel amplifier left/right inputs.

20. MID OUTPUT PORT

- To be connected to the rear channel amplifier left/right inputs.

21. HIGH PASS OUTPUT PORT

- To be connected to the rear channel amplifier left/right inputs.

22. REMOTE CONTROL JACK

- Plug the modular telephone style cord connected to the remote control unit into this jack.

23. POWER TERMINALS

- Use these connectors to deliver power, ground, and remote turn-on control to the unit.

FEATURES & SPECIFICATIONS

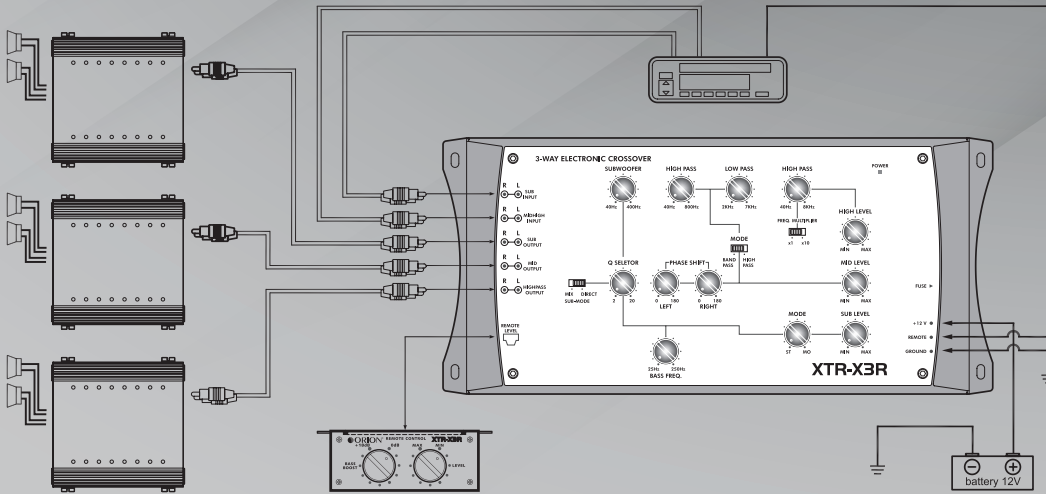
- » **Adjustable Bass Boost Frequency:** 25Hz-250Hz
 - » **Adjustable Bass Boost:** 0-18dB.
 - » **Adjustable Q Control:** 2-20
 - » **Selectable Crossover Frequency**
 - ◇ **High Pass:** 40Hz-8KHz
 - ◇ **Mid High Pass:** 40Hz-800Hz
 - ◇ **Mid Low Pass:** 2KHz-7KHz
 - ◇ **Subwoofer (Low Pass):** 40Hz-400Hz
 - » **Power Supply:** 10-16V DC, negative ground
 - » **Input Impedance:** 10K Ohm
 - » **S/N ratio:** more than 85dB
 - » **Slope Rate:** 12dB/Octave
 - » **Max Output Signal Level:** 7.0V/RMS
 - » **Channel Separation:** 60dB
 - » **Distortion:** less than 0.05%
 - » **Dimensions, WxDxH:** 6x12. 6875x 1.75 Inches | 150x322x45mm
-

REMOTE CONTROL UNIT

BASS LEVEL: THIS CONTROL SETS THE BASS BOOST GAIN FROM 0 TO +18dB

BASS BOOST: This control set the subwoofer

INSTALLATION



SUB MODE SELECTOR

| SWITCH POSITION | VIA INPUT SOURCE | OUTPUT SUBWOOPER |
|-----------------|------------------|------------------|
| DIRECT | FRONT REAR | OFF ON |
| MIX | FRONT REAR | ON OFF |

Subwoofer mode switch: allows sub-woofer mode channel to receive signal from either, the mix of from front inputs, the direct from rear inputs.

SYSTEM ADJUSTMENT

Preliminary Adjustments

Pre-setting the system provides a necessary starting point for fine-tuning the entire audio system to maximum performance. **NOTE: DO NOT MOUNT CROSSOVER UNTIL THE FOLLOWING PROCEDURES HAVE BEEN COMPLETED.**

1. Preset each amplifier input gain adjustment at the amplifier to half of maximum.
2. Before turning the audio system on, preset-adjust the high, mid and sub-woofer output level controls.
3. Slowly turn the volume up and listen carefully for: obvious trouble in sound (distortion, no sound, no hiss, total silence). Turn the system off refer to "Trouble Shooting Guide" at this manual.

INSTALLATION



Your new XTR Series Crossover comes complete with all required mounting hardware.

Mark the location for the mounting screw holes by positioning the Crossover where you wish to install it and use a scribe (or one of the mounting screws) inserted in each of the mounting holes to mark the mounting surface. If the mounting surface is carpeted, measure the hole centers and mark with a felt tip pen.

Before attempting to drill the mounting holes, take note of any wires, lines or other devices in your vehicle which may be located behind the mounting surface! Then drill pilot in the mounting surface for the mounting screws and insert them. Tighten the screws securely.

- ◇ A red 18 gauge stranded or heavier and insulated wire should be connected to the terminal marked + 12V. Wire an in-line fuse holder on this lead as it is the 12 Volts DC wire for the system. This wire should be connected to your vehicle's battery. If a wire is run directly to the battery make sure to install an inline fuse on this wire within 12" from the battery.
- ◇ A black stranded wire of at least 18 gauge should be connected to the terminal marked Ground. This is the ground wire for the X3R and should be attached to the same ground point with the amplifiers in the system. Keeping this ground wire as short as possible improves the electrical circuit and keeps ground related noise problems to a minimum.
- ◇ An orange stranded wire of a least 20 gauge should be connected to the terminal marked Remote. This wire connects to your head unit's remote out or power antenna lead out. This wire should supply 12 Volts DC any time the radio, cd or cassette are playing. This lead must also be connected to any other components in your system that utilize a remote turn-on lead for powering up.
- ◇ Connect all line inputs and outputs using high-quality RCA-RCA cables.
- ◇ Recheck all connections before powering up.
- ◇ Set all level controls to their least sensitive positions and set all crossover controls, switches, etc. to the desired frequency or position.
- ◇ Once the system is powered up, set the volume control on the head unit to about the 2 o'clock position, and then set all the amplifiers' level controls for half output level.

TROUBLESHOOTING

| PROBLEM | POSSIBLE CAUSE |
|--|--|
| 1. There is an audible distortion at a low volume level. | <ul style="list-style-type: none">• Output levels NOT set correctly.• Crossover frequencies NOT set correctly.• Check for shorts on the speaker leads. |
| 2. A whining sound can be heard through the speakers when the audio system is at low volume with the engine running. The whining noise remains unchanged or seems to disappear when the volume level is increased. | <ul style="list-style-type: none">• Check the red power wire. It must be connected directly to the battery.• Check the system's ground point. It must make good contact with chassis ground (bare metal).• The radio and the CROSSOVER must be grounded at the same reference point. |
| 3. There is a "motor boating" type of sound when the engine is running and the audio system volume is set at a reasonably high level. | <ul style="list-style-type: none">• Check the red power wire. It must be connected directly to the battery.• Check the system's ground point. It must make good contact with chassis ground (bare metal). |
| 4. High squeal noise from speakers | <ul style="list-style-type: none">• This is almost always caused by a poorly - grounded RCA patch cord. |

NOISE CHECK

Check the entire audio system for noise before permanently securing the CROSSOVER mounting

1. Start the engine.
2. Turn the audio system on.
3. Rev the engine and vary the VOLUME of the audio system to determine if there is any unwanted noise.

If so, turn both the audio system and the engine off. Do not secure the CROSSOVER mounting screws. Refer to the "Trouble Shooting Guide" at this manual.

4. If the audio system does not have any noise, securely tighten the CROSSOVER mounting screw and double check the wiring cables for safe placement

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 or by emailing Orion at 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.

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