NVX xbbr2

NVX XBBR2 X-Series 2-Channel Bass Restoration Processor User Manual

Model: XBBR2

1. Introduction

The NVX XBBR2 is an advanced 2-channel bass restoration processor and line output converter designed to enhance the low-frequency response of your car audio system. It features parametric bass controls, impedance matching, and various turn-on modes, making it compatible with both factory and aftermarket head units. This manual provides detailed instructions for installation, operation, and troubleshooting to ensure optimal performance and longevity of your device.

Figure 1.1: NVX XBBR2 Bass Restoration Processor and Remote Level Control.

2. Safety Information

Please read all instructions carefully before installation and use. Failure to follow these guidelines may result in damage to the unit, your vehicle, or personal injury.

- Always disconnect the vehicle's negative battery terminal before beginning any electrical work.
- Ensure all wiring is properly routed and secured to prevent pinching or short circuits.
- Use appropriate gauge wiring for power and ground connections as specified in the installation section.
- Do not expose the unit to moisture or extreme temperatures.
- Consult a professional car audio installer if you are unsure about any part of the installation process.

3. Package Contents

Verify that all items are present in the package:

- NVX XBBR2 Bass Restoration Processor
- Wired Remote Bass Level Control
- Remote Control Cable (RJ11)
- Mounting Hardware (Screws)
- Small Screwdriver
- User Manual (this document)

Figure 3.1: Wired Remote Bass Level Control and Cable.

Figure 3.2: Mounting Hardware and Screwdriver.

4. Product Features

The NVX XBBR2 offers a range of features designed for superior audio processing:

- Active 2-channel Bass Restoration Processor with Parametric Bass Controls
- Preamp (RCA) and Speaker-level Inputs (Works with both Factory and Aftermarket Systems)
- Provides up to 9.5 Volts of output
- Auto turn-on via DC offset or Audio detection
- Load selection switch (20, 60, or 20K ohms) to prevent factory radio shut-down
- Wired remote bass level control included

Figure 4.1: High Output Voltage and Remote Bass Control.

Figure 4.2: Parametric Bass Controls for EQ Processing.

Figure 4.3: Auto Turn-On and Load Select Switches.

5. Controls and Connections

Familiarize yourself with the various controls and connection points on the XBBR2 unit.

Figure 5.1: Labeled Diagram of XBBR2 Inputs and Outputs.

5.1. Input Section

- **High Level Input (L+, L-, R+, R-)**: Speaker-level inputs for connecting directly to a factory radio or amplifier's speaker outputs. These inputs can handle up to 225 Watts.
- **Low Level Input (L, R)**: RCA inputs for connecting to an aftermarket head unit's preamp outputs.
- **Load Select Switch (20KΩ, 60Ω, 20Ω)**: Adjusts the input impedance to prevent factory radios from shutting down due to sensing an incorrect load.

Figure 5.2: High and Low Level Input Terminals.

5.2. Output Section

- **Output (L, R)**: RCA outputs to connect to your amplifier's input. Provides up to 9.5 Volts of output.
- **Gain Knob (Min/Max)**: Adjusts the overall output level of the processed signal.
- **Clip LED**: Illuminates when the output signal is clipping, indicating distortion. Adjust the Gain knob down if this LED is consistently lit.
- **Remote Port**: RJ11 port for connecting the wired remote bass level control.

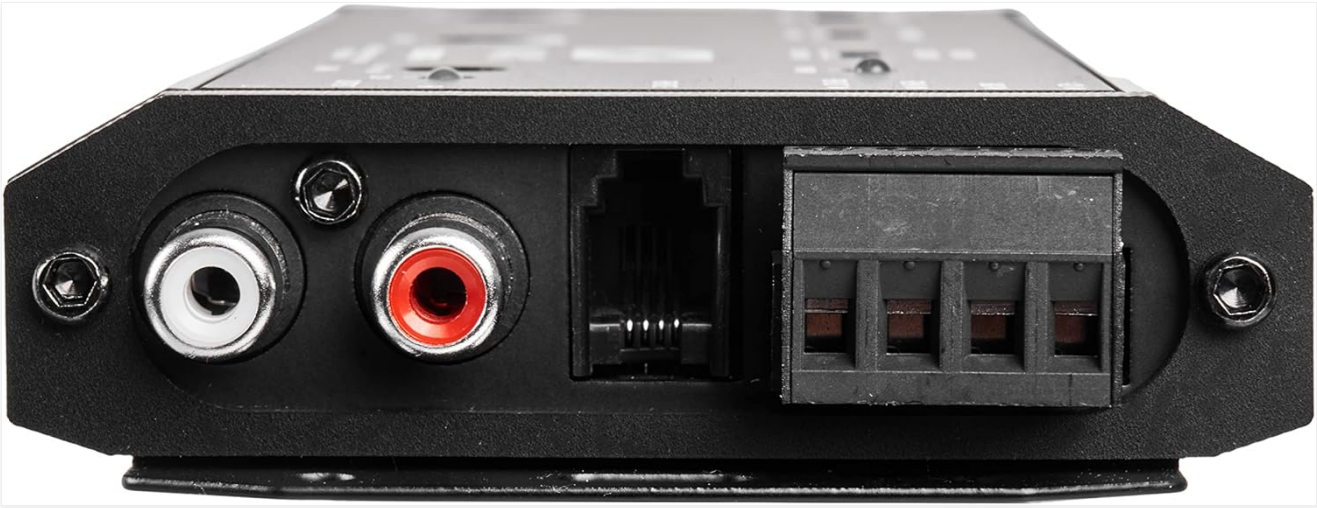


Figure 5.3: RCA Output and Remote Port.

5.3. Power and Control Section

- **+12V**: Main power input (connect to constant +12V from battery).
- **GND**: Ground connection (connect to vehicle chassis).
- **REM IN**: Remote turn-on input (connect to head unit's remote output or ignition).
- **REM OUT**: Remote turn-on output (provides a 12V signal to turn on an amplifier).
- **Turn On Mode Switch (AUD, DC, REM)**: Selects how the unit turns on. *AUD* for audio signal detection, *DC* for DC offset detection on speaker-level inputs, *REM* for traditional remote wire turn-on.
- **Ground Isolation Switch (200Ω, ISO, GND)**: Helps eliminate ground loop noise. *200Ω* adds resistance, *ISO* isolates grounds, *GND* directly connects grounds.
- **Power LED**: Illuminates when the unit is powered on.

Figure 5.4: Power, Ground Isolation, and Output Controls.

5.4. Bass Restoration Controls

- **Wide Knob**: Controls the width of the bass restoration frequency band. Adjusts how broad or narrow the restored bass frequencies are.
- **Sweep Knob**: Selects the center frequency of the bass restoration. Allows you to choose which specific low frequencies are enhanced.

Figure 5.5: Top View with Wide and Sweep Controls.

6. Setup and Installation

Proper installation is crucial for the performance and safety of your XBBR2. It is recommended to have this unit installed by a qualified professional.

6.1. Mounting Location

Choose a dry, well-ventilated location away from direct heat sources and moisture. Common locations include under a seat, in the trunk, or behind the dashboard. Ensure there is enough space for wiring and air circulation.

6.2. Wiring Connections

1. **Power (+12V)**: Connect the +12V terminal to the vehicle's positive battery terminal using an appropriate gauge power wire (e.g., 14-18 gauge). Install an in-line fuse (not included) as close to the battery as possible.
2. **Ground (GND)**: Connect the GND terminal to a clean, unpainted metal surface on the vehicle's chassis. Ensure a solid, low-resistance connection.
3. **Remote Input (REM IN)**: Connect the REM IN terminal to your head unit's remote turn-on output. If using speaker-level inputs and auto turn-on, this connection may not be necessary.
4. **Remote Output (REM OUT)**: Connect the REM OUT terminal to the remote turn-on input of your amplifier(s).
5. **Input Connection**:
    - *For Factory Radios (Speaker Level)*: Connect the vehicle's speaker wires directly to the XBBR2's High Level Input terminals (L+, L-, R+, R-). Ensure correct polarity.
    - *For Aftermarket Radios (Preamp Level)*: Connect RCA cables from your head unit's preamp outputs to the XBBR2's Low Level Input (L, R) RCAs.
6. **Output Connection**: Connect RCA cables from the XBBR2's Output (L, R) RCAs to your amplifier's input.
7. **Remote Bass Control**: Plug the wired remote bass control cable into the Remote port on the XBBR2. Mount the remote control in an accessible location for easy adjustment.

6.3. Initial Switch Settings

- **Load Select**: Start with 20KΩ. If your factory radio shuts down or experiences issues, try 60Ω or 20Ω.
- **Turn On Mode**: Select *REM* if using a dedicated remote wire. If using speaker-level inputs without a remote wire, try *AUD* (audio detection) or *DC* (DC offset detection).

- **Ground Isolation**: Start with *ISO*. If you experience ground noise (hissing, whining), try *200Ω* or *GND* to find the quietest setting.

7. Operating Instructions

Once installed, the XBBR2 allows you to fine-tune your bass response.

1. **Power On**: Turn on your head unit. The XBBR2's Power LED should illuminate.
2. **Set Gain**: With your head unit volume at about 75-80% of maximum, slowly increase the XBBR2's Gain knob until the Clip LED briefly flashes on the loudest bass notes. Then, back off the Gain slightly until the Clip LED rarely or never illuminates. This sets the maximum clean output.
3. **Adjust Bass Restoration (Wide & Sweep)**: Play music with a good bass presence.
    - **Sweep Knob**: Rotate the Sweep knob to select the desired center frequency for bass enhancement. Experiment to find the frequency that best complements your music and speakers.
    - **Wide Knob**: Adjust the Wide knob to control the bandwidth of the bass restoration. A wider setting will affect a broader range of frequencies around the Sweep point, while a narrower setting will focus on a more specific frequency.
4. **Remote Bass Control**: Use the wired remote bass level control to adjust the overall bass output from the XBBR2 conveniently from your listening position. This control acts as a master volume for the bass restoration effect.

8. Maintenance

The NVX XBBR2 requires minimal maintenance to ensure long-term performance.

- Keep the unit clean and free of dust and debris. Use a soft, dry cloth for cleaning.
- Ensure all connections remain secure. Periodically check wiring for any signs of wear or corrosion.
- Do not block the ventilation openings on the unit, if any, to prevent overheating.

9. Troubleshooting

If you encounter issues with your XBBR2, refer to the following common problems and solutions:

Problem	Possible Cause	Solution
No Power (Power LED off)	Blown fuse; loose power/ground/remote connection; incorrect Turn On Mode.	Check in-line fuse; verify all power, ground, and remote wires are securely connected; ensure Turn On Mode switch is set correctly (REM, AUD, or DC).
No Sound Output	Incorrect input/output connections; Gain set too low; amplifier not turning on.	Verify RCA and speaker-level connections; increase Gain knob; check amplifier's remote turn-on connection from XBBR2's REM OUT.
Distorted Sound (Clip LED constantly on)	Gain set too high; input signal too strong.	Reduce the XBBR2's Gain knob; if distortion persists, check the input signal level from the head unit.
Engine Noise / Whining Sound	Ground loop issue.	Adjust the Ground Isolation switch (try 200Ω, ISO, or GND) to find the setting that eliminates the noise. Ensure a good chassis ground connection.

Problem	Possible Cause	Solution
Factory Radio Shuts Down	Incorrect Load Select setting.	Adjust the Load Select switch (try 20Ω, 60Ω, or 20KΩ) to match your factory radio's requirements.

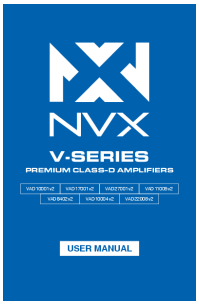
10. Specifications

Specification	Value
Model Number	XBBR2
Number of Channels	2
Maximum Output Voltage	9.5 Volts
Maximum Supply Voltage	30 Volts
Output Power	21 Watts (This value seems to be from a general spec, not directly applicable to a processor's output power, which is voltage-based.)
Mounting Type	Freestanding
Item Weight	1.04 pounds (0.47 kg)
Package Dimensions	8.98 x 6.38 x 2.13 inches (22.8 x 16.2 x 5.4 cm)
Color	Black, Silver
UPC	810021844572

11. Warranty and Support

NVX products are designed and manufactured to the highest quality standards. For warranty information, technical support, or service inquiries, please visit the official NVX website or contact their customer support directly. Keep your proof of purchase for warranty claims.
You can find more information and support at the NVX Amazon Store.

Related Documents - xbbr2

	[NVX XLCA2 2-Channel Digital Bass Enhancer Owner's Manual] Owner's manual for the NVX XLCA2 2-Channel Line Output Digital Bass Enhancer, detailing features, specifications, functions, signal connections, warranty, and introduction.
	[Crestron DM NVX AV-over-IP System Design Guide] A comprehensive design guide for the Crestron DM NVX AV-over-IP system, detailing endpoint and network design, installation procedures, and case studies for digital video and audio distribution over Ethernet.
	[NVX XDSP28 Bluetooth Digital Signal Processor User Manual] Comprehensive user manual for the NVX XDSP28 Bluetooth Digital Signal Processor, covering installation, control panel functions, audio processing, troubleshooting, and warranty information.
	[.AV Framework Software for Crestron Virtual Control: Operations Guide] Operations Guide for Crestron's .AV Framework™ Software, detailing setup, configuration, and operation of enterprise room solutions with Crestron Virtual Control. Learn to deploy scalable AV systems without programming.
	[NVX XC-Series Subwoofers User Manual and Specifications] User manual for NVX XC-Series subwoofers, including detailed specifications, enclosure recommendations, and warranty information for models XCW121, XCW122, XCW151, and XCW152.
	[NVX V-Series Premium Class-D Amplifiers User Manual] Explore the NVX V-Series Premium Class-D Amplifiers with this detailed user manual. Learn about installation, features, specifications, and warranty for models like VAD10001v2, VAD8402v2, and VAD22008v2. Optimize your car audio system with NVX's high-performance amplifiers.