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Excalibur X4100.4

Excalibur X4100.4 Car Audio Amplifier User Manual

Model: X4100.4 | Brand: Excalibur

INTRODUCTION

This manual provides detailed instructions for the installation, operation, and maintenance of your Excalibur X4100.4 4-Channel Car Audio Amplifier. Designed for superior sound quality, this amplifier offers precise control over audio frequencies and robust power output for an enhanced in-car audio experience. Please read this manual thoroughly before installation and use to ensure proper function and safety.

SAFETY INFORMATION

- Always disconnect the vehicle's battery before installing or servicing any electrical components.
- Ensure all wiring is properly insulated and secured to prevent short circuits and damage.
- Install the amplifier in a well-ventilated area, away from direct sunlight, heat sources, and moisture.
- Use fuses of the specified rating (20A x 2) to protect the amplifier and your vehicle's electrical system.
- Consult a professional car audio installer if you are unsure about any part of the installation process.
- Do not operate the amplifier if it is damaged or malfunctioning.

WHAT'S IN THE BOX

Upon opening the package, please verify that all components are present:

- Excalibur X4100.4 Amplifier
- Fuses (20A x 2)
- High-level input cable
- User Manual
- Mounting Screws

PRODUCT OVERVIEW



Figure 1: Angled View of the Excalibur X4100.4 Amplifier.

This image displays the overall design of the amplifier, highlighting its compact form factor and heat sink fins for efficient cooling.



Figure 2: Top View of the Amplifier. This view shows the sleek top panel of the amplifier, featuring the Excalibur logo prominently in the center.



Figure 3: Control Panel. This image details the various controls on the amplifier, including Crossover (HPF, LPF), Bass Boost, and Gain adjustments for both front and rear channels. It also shows the Protection and Power indicator lights.



Figure 4: Connection Panel. This view illustrates the input and output terminals, including GND (Ground), REM (Remote), +12V (Power), FUSE slots, INPUT (RCA), and SPEAKER

OUTPUT terminals for front and rear channels, including bridge mode connections.

SETUP AND INSTALLATION

1. Mounting the Amplifier

Choose a secure, well-ventilated location for mounting the amplifier. Ensure there is sufficient airflow around the unit to prevent overheating. Use the provided mounting screws to secure the amplifier firmly to a solid surface in your vehicle.

2. Power Connections

- **GND (Ground):** Connect this terminal to a clean, unpainted metal surface of the vehicle's chassis. Ensure a strong, low-resistance connection.
- **REM (Remote):** Connect this terminal to the remote turn-on lead from your head unit. This wire signals the amplifier to turn on when the head unit is active.
- **+12V (Power):** Connect this terminal directly to the positive terminal of your vehicle's battery using a high-gauge power cable. Install an in-line fuse holder (with 20A x 2 fuses) within 18 inches (45 cm) of the battery.

3. Audio Input Connections

Connect your head unit's RCA outputs to the amplifier's INPUT terminals (Front R/L, Rear R/L). If your head unit does not have RCA outputs, use the provided high-level input cable to connect to your speaker outputs.

4. Speaker Output Connections

The Excalibur X4100.4 supports various speaker configurations. Ensure speaker impedance matches the amplifier's specifications (2-8 Ohm for stereo, 4-8 Ohm for bridged). Refer to the diagrams below for common wiring modes:

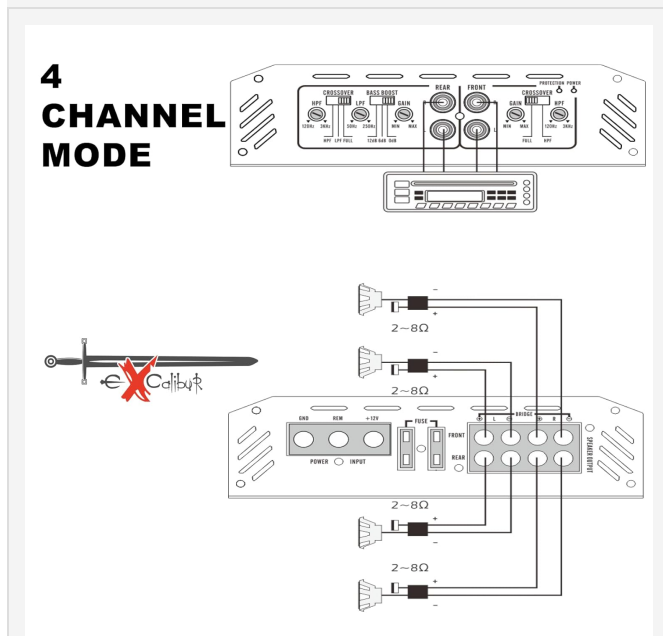


Figure 5: 4-Channel Mode Wiring. This diagram illustrates connecting four speakers (two front, two rear) to the amplifier for a full-range stereo setup. Each speaker should have an impedance of 2-8 Ohms.

2+1 CHANNEL MODE

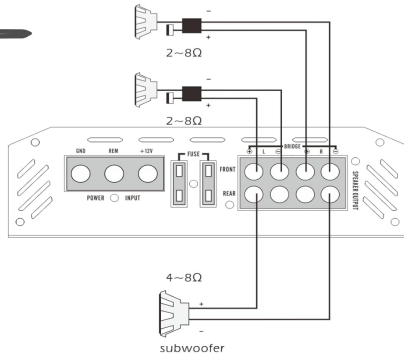
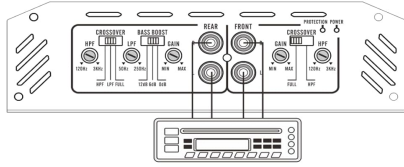


Figure 6: 2+1 Channel Mode Wiring. This configuration allows for two full-range speakers (front) and one subwoofer. The rear channels are bridged to power the subwoofer, which should have an impedance of 4-8 Ohms.

2 BRIDGE CHANNEL MODE

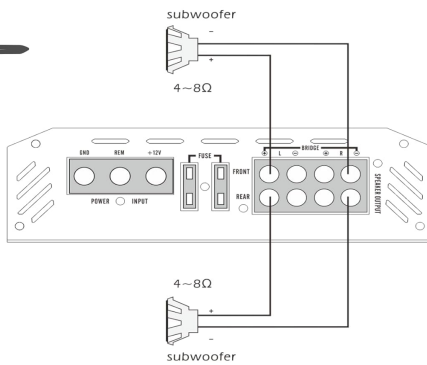
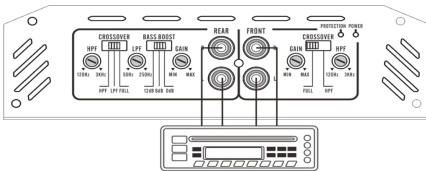


Figure 7: 2 Bridge Channel Mode Wiring. This setup is ideal for powering two subwoofers by bridging both the front and rear channels. Each subwoofer should have an impedance of 4-8 Ohms.

OPERATING INSTRUCTIONS

1. Gain Adjustment (Input Sensitivity)

The GAIN control matches the amplifier's input sensitivity to the output level of your head unit. Start with the gain set to minimum (MIN). Play a familiar track at about 75% of your head unit's maximum volume. Slowly increase the amplifier's gain until you hear slight distortion, then back off slightly. The sensitivity range is 0.2V to 6V.

2. Crossover Settings

The amplifier features independent crossover controls for front and rear channels:

- **HPF (High Pass Filter):** Adjusts the frequency above which signals will pass. Useful for full-range speakers to prevent low frequencies that can cause distortion. Range: 120Hz-3KHz.
- **LPF (Low Pass Filter):** Adjusts the frequency below which signals will pass. Essential for subwoofers to only reproduce bass frequencies. Range: 50-250Hz.
- **FULL:** Bypasses the crossover, allowing the full frequency range to pass through.

For optimal sound, set the HPF for your main speakers and LPF for your subwoofer (if used) to blend seamlessly.

3. Bass Boost

The BASS BOOST control allows you to enhance low frequencies. It is adjustable from 0 dB to 12 dB. Use this feature sparingly, as excessive bass boost can lead to distortion and potential speaker damage.

4. Phase Adjustment

The amplifier includes a phase adjustment (0 or 180 degrees) to ensure proper alignment of sound waves, especially when integrating a subwoofer. Experiment with both settings to find the one that provides the most impactful and coherent bass response.

MAINTENANCE

- **Cleaning:** Use a soft, dry cloth to wipe the amplifier's exterior. Do not use harsh chemicals or abrasive cleaners.
- **Ventilation:** Ensure the amplifier's cooling fins are free from dust and debris to maintain proper heat dissipation.
- **Connections:** Periodically check all power, ground, and speaker connections to ensure they are secure and free from corrosion.

TROUBLESHOOTING

Problem	Possible Cause	Solution
No Power / Power LED Off	Blown fuse; Loose power/ground connection; No remote turn-on signal.	Check and replace fuses (20A x 2); Verify all power and ground connections are secure; Check remote wire connection from head unit.
No Sound / Protection LED On	Speaker short circuit; Overheating; Low voltage; Incorrect impedance.	Check speaker wiring for shorts; Ensure proper ventilation; Verify vehicle battery voltage; Confirm speaker impedance is within 2-8 Ohm range.
Distorted Sound	Gain set too high; Incorrect crossover settings; Poor ground connection; Damaged speakers.	Reduce gain level; Adjust HPF/LPF settings; Improve ground connection; Inspect speakers for damage.
Engine Noise / Whining	Poor ground connection; RCA cables too close to power cables; Ground loop.	Ensure a solid ground connection; Reroute RCA cables away from power cables; Install a ground loop isolator if necessary.

SPECIFICATIONS

Feature	Specification
Model Number	X4100.4
Power Output (Max)	2400 Watts
Channels	4-Channel (Bridgeable)
Power Output (RMS)	4 x 600W (estimated from 2400W max)
Impedance Flexibility	2 & 4 Ohm (Stereo), 4 & 8 Ohm (Bridged)
Bass Boost	0 dB to 12 dB
Low Pass Filter (LPF)	50-250 Hz
High Pass Filter (HPF)	120Hz-3KHz
Subsonic Filter	10-50 Hz
Phase Adjustment	0 or 180 degrees
Input Sensitivity	0.2V to 6V
Total Harmonic Distortion (THD)	≤0.1%
Fuses	20A x 2
Dimensions (LxWxH)	34.3 x 18.4 x 5.5 cm (13.5 x 7.2 x 2.2 inches)
Weight	2.75 kg (6.06 lbs)
Voltage	12 Volts

WARRANTY AND SUPPORT

For warranty information and technical support, please refer to the warranty card included with your product or contact Excalibur customer service through their official website. Keep your purchase receipt as proof of purchase for any warranty claims.

For further assistance, please visit the Excalibur support page or contact your local dealer.