

## Soundstream ST2.500D

# Soundstream ST2.500D 2-Channel 500W Max Class-D Amplifier User Manual

Model: ST2.500D

## 1. INTRODUCTION

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Thank you for choosing the Soundstream ST2.500D 2-Channel 500W Max Class-D Amplifier. This manual provides essential information for the proper installation, operation, and maintenance of your amplifier. Please read this manual thoroughly before attempting installation or operation to ensure optimal performance and safety. The ST2.500D is a high-efficiency Class-D amplifier designed to deliver powerful and clear audio performance for your vehicle's sound system. Its compact design allows for versatile installation options.

## 2. SAFETY INSTRUCTIONS

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Observe the following safety precautions during installation and operation:

- Always disconnect the vehicle's battery negative terminal before starting any electrical work.
- Ensure all wiring is properly routed and secured to prevent damage or short circuits.
- Use appropriate gauge wiring for power and ground connections as specified in this manual.
- Install the amplifier in a location that allows for adequate ventilation to prevent overheating.
- Avoid installing the amplifier in areas exposed to moisture or excessive vibration.
- If you are unsure about any part of the installation process, consult a professional car audio installer.
- Do not operate the amplifier if it is damaged or malfunctioning.

## 3. PACKAGE CONTENTS

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Verify that your package contains the following items:

- Soundstream ST2.500D 2-Channel Amplifier
- Mounting Hardware (screws)
- User Manual (this document)

## 4. FEATURES

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The Soundstream ST2.500D amplifier includes the following key features:

- 2-Channel Class-D Topology
- 500W Max Power Output
- Compact Design for Easy Installation
- Variable Crossover Network
- High-Level and Low-Level Inputs
- Protection Circuitry (Thermal, Overload, Short Circuit)

## 5. SETUP AND INSTALLATION

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Proper installation is crucial for the performance and longevity of your amplifier. If you are not confident in your ability to install this product, seek professional assistance.

### 5.1 Mounting Location

Choose a mounting location that is dry, well-ventilated, and protected from direct sunlight or excessive heat. Ensure there is sufficient space around the amplifier for air circulation. Common locations include under seats, in the trunk, or behind panels.



An image showing the Soundstream ST2.500D 2-Channel 500W Max Class-D Amplifier, a compact silver unit with black accents, suitable for various mounting locations.

### 5.2 Wiring Connections

Follow these steps for wiring your amplifier:

1. **Power (BATT+):** Connect a heavy-gauge power cable (e.g., 8 AWG or 4 AWG depending on system power) directly from the positive terminal of the vehicle's battery to the amplifier's BATT+ terminal. Install an inline fuse holder within 18 inches (45 cm) of the battery.
2. **Ground (GND):** Connect a heavy-gauge ground cable of the same length as the power cable from the

amplifier's GND terminal to a clean, unpainted metal surface of the vehicle's chassis. Ensure a solid electrical connection.

3. **Remote (REM):** Connect a remote turn-on wire (typically 18 AWG) from your head unit's remote output to the amplifier's REM terminal. This wire turns the amplifier on and off with your head unit.
4. **RCA Inputs (Low-Level):** Connect RCA cables from your head unit's pre-amp outputs to the amplifier's RCA input jacks.
5. **Speaker Outputs:** Connect your speakers to the amplifier's speaker terminals. Ensure correct polarity (+ to + and - to -) for each speaker. For 2-channel operation, connect one speaker per channel. Refer to the amplifier's specifications for minimum impedance requirements.

## 5.3 Initial Setup and Adjustments

After all connections are made, proceed with initial adjustments:

- **Gain Control:** Start with the gain control set to minimum. Play a familiar piece of music at a moderate volume on your head unit. Slowly increase the amplifier's gain until you hear distortion, then back it off slightly.
- **Crossover (LPF/HPF):** The ST2.500D features a variable crossover. Adjust the Low-Pass Filter (LPF) or High-Pass Filter (HPF) according to the type of speakers connected. For full-range speakers, you might use HPF to protect them from low frequencies. For subwoofers, use LPF.
- **Bass Boost:** Use the bass boost sparingly, if at all, as excessive boost can lead to distortion and speaker damage.

## 6. OPERATING INSTRUCTIONS

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Once installed and configured, the amplifier operates automatically with your vehicle's head unit. When the head unit is turned on, the remote wire signals the amplifier to power on. When the head unit is turned off, the amplifier will power down.

- Ensure your head unit's volume is at a reasonable level before turning on the system.
- Avoid prolonged listening at extremely high volumes to prevent hearing damage and potential damage to your audio equipment.
- If you notice any unusual sounds or smells, immediately turn off the audio system and investigate the cause.

## 7. MAINTENANCE

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The Soundstream ST2.500D amplifier requires minimal maintenance. Follow these guidelines to ensure its longevity:

- **Cleaning:** Periodically wipe the amplifier's exterior with a soft, dry cloth to remove dust. Do not use harsh chemicals or abrasive cleaners.
- **Ventilation:** Ensure that the amplifier's cooling fins are free from obstructions to allow for proper heat dissipation.
- **Connections:** Occasionally check all wiring connections to ensure they are secure and free from corrosion.

## 8. TROUBLESHOOTING

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If you experience problems with your amplifier, refer to the following troubleshooting guide:

Problem	Possible Cause	Solution
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Problem	Possible Cause	Solution
No Power / Amplifier Not Turning On	<ul style="list-style-type: none"> <li>• Blown fuse (inline or amplifier)</li> <li>• Loose power or ground connection</li> <li>• No remote turn-on signal</li> <li>• Vehicle battery low</li> </ul>	<ul style="list-style-type: none"> <li>• Check and replace fuses if necessary.</li> <li>• Verify all power, ground, and remote connections are secure.</li> <li>• Check head unit's remote output.</li> <li>• Charge or replace vehicle battery.</li> </ul>
No Sound Output	<ul style="list-style-type: none"> <li>• Loose RCA or speaker connections</li> <li>• Incorrect gain setting</li> <li>• Speakers damaged</li> <li>• Amplifier in protection mode</li> </ul>	<ul style="list-style-type: none"> <li>• Check all RCA and speaker wiring.</li> <li>• Adjust gain setting.</li> <li>• Test speakers with another amplifier.</li> <li>• Check for short circuits in speaker wiring; ensure proper impedance.</li> </ul>
Distorted Sound	<ul style="list-style-type: none"> <li>• Gain set too high</li> <li>• Poor ground connection</li> <li>• Incorrect crossover settings</li> <li>• Speaker impedance mismatch</li> </ul>	<ul style="list-style-type: none"> <li>• Reduce gain setting.</li> <li>• Ensure a clean, solid ground connection.</li> <li>• Adjust LPF/HPF settings.</li> <li>• Verify speakers meet amplifier's impedance requirements.</li> </ul>
Amplifier Overheating	<ul style="list-style-type: none"> <li>• Insufficient ventilation</li> <li>• Speaker impedance too low</li> <li>• Playing at excessive volumes for extended periods</li> </ul>	<ul style="list-style-type: none"> <li>• Relocate amplifier or improve airflow.</li> <li>• Check speaker impedance.</li> <li>• Reduce volume.</li> </ul>

## 9. SPECIFICATIONS

The following are the technical specifications for the Soundstream ST2.500D amplifier:

Feature	Detail
Model Number	ST2.500D
Brand	Soundstream
Channels	2-Channel
Amplifier Class	Class-D
Max Power Output	500W
Voltage	12 Volts
Maximum Supply Voltage	12 Volts
Mounting Type	Surface Mount
Package Dimensions	7.17 x 6.06 x 1.54 inches

Feature	Detail
Item Weight	1.21 Pounds

## 10. WARRANTY AND SUPPORT

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Soundstream products are designed and manufactured to the highest quality standards. This product is covered by a limited warranty against defects in materials and workmanship. The specific terms and duration of the warranty may vary by region and retailer.

For detailed warranty information, technical support, or service inquiries, please contact your authorized Soundstream dealer or visit the official Soundstream website. Please retain your proof of purchase for warranty claims.