STX Audio STX2000.5D

STX Audio STX2000.5D 5-Channel Class D Amplifier User Manual

Model: STX2000.5D

1. Introduction

This manual provides detailed instructions for the installation, operation, and maintenance of your STX Audio STX2000.5D 5-Channel Class D Amplifier. This amplifier is designed to deliver high-quality audio performance for car audio systems, offering versatile power output for both full-range speakers and subwoofers.

Please read this manual thoroughly before attempting installation or operation to ensure proper use and to prevent damage to the unit or your vehicle's audio system.

Figure 1: STX Audio STX2000.5D 5-Channel Class D Amplifier, showcasing its compact design and included remote bass control.

2. Safety Information

Observe the following safety precautions to prevent injury or damage to the amplifier and other components:

- Always disconnect the vehicle's negative battery terminal before beginning any electrical work.
- Ensure proper grounding. The amplifier requires a secure connection to the vehicle's chassis ground.
- Use appropriate wire gauges for power, ground, and speaker connections as specified in this manual. Undersized wires can overheat and cause damage.
- Install the amplifier in a location that allows for adequate ventilation. Avoid enclosed spaces or areas exposed to direct sunlight or excessive heat.
- Protect all wiring from sharp edges and moving parts. Use grommets where wires pass through metal panels.
- If you are unsure about any aspect of installation, consult a qualified car audio professional.
- Do not operate the amplifier if it is wet or exposed to moisture.

3. Product Overview

3.1 Key Features

- **High Power 5-Channel Output:** Delivers up to 2000 watts max power, with RMS power of 80W x 4 +

200W @ 4 ohms and 130W x 4 + 400W @ 2 ohms, providing versatile power for subwoofers and speakers.

- **High-Quality Design:** Constructed with double-sided FR-4 PCB and SMT components for reliable, high-performance audio and long-lasting durability.
- **Advanced Sound Control:** Features adjustable low-pass (40Hz-180Hz) and high-pass filters (50Hz-1.2kHz) for precise sound tuning, along with bass boost control (0-12dB).
- **Bridgeable Performance:** Supports bridgeable configurations for increased power output, suitable for high-power subwoofer applications.
- **Compact & Efficient:** Over 80% efficiency and thermal protection at 80°C (176°F), with compact dimensions (8.6 x 4.8 x 2 inches) for space-saving installation.

3.2 Amplifier Components and Controls

Familiarize yourself with the various inputs, outputs, and controls on your STX2000.5D amplifier. Refer to Figure 2 for a visual guide.

Figure 2: Top view of the STX2000.5D amplifier, highlighting power terminals, speaker outputs, RCA inputs, and audio adjustment controls.

1. **Power Terminals:** +12V (Power), REM (Remote Turn-On), GND (Ground).
2. **Speaker Output Terminals:** CH1-CH4 (Full-Range Channels), SUB (Subwoofer Channel).
3. **RCA Input Jacks:** FRONT (CH1/CH2), REAR (CH3/CH4), SUB (Subwoofer Input).
4. **Gain Controls:** Adjust input sensitivity for FRONT, REAR, and SUB channels.
5. **Crossover Controls:** LPF (Low-Pass Filter) for SUB, HPF (High-Pass Filter) for FRONT/REAR.
6. **Bass Boost Control:** Adjusts bass level for the subwoofer channel (0-12dB).

7. **Power/Protection Indicators:** LEDs to show operational status.
8. **Remote Bass Knob Port:** Connects the included remote bass level control.

4. Setup and Installation

Proper installation is crucial for optimal performance and safety. If you are not confident in your ability to install this unit, seek professional assistance.

4.1 Mounting Location

- Choose a dry, well-ventilated location away from direct heat sources and moisture.
- Ensure sufficient airflow around the amplifier's cooling fins.
- Mount the amplifier securely to a solid surface using appropriate hardware to prevent movement during vehicle operation.

4.2 Wiring Connections

Refer to Figure 2 for the location of terminals. Use high-quality wiring for all connections.

4.2.1 Power and Ground Wiring

- **Power (+12V):** Connect a fused power cable directly from the vehicle's positive battery terminal to the +12V terminal on the amplifier. The fuse holder should be located within 18 inches (45 cm) of the battery.
- **Ground (GND):** Connect a ground cable of the same gauge as the power cable to a clean, unpainted metal surface of the vehicle's chassis. Ensure a solid electrical connection.
- **Remote (REM):** Connect a remote turn-on wire from your head unit's remote output to the REM terminal. This wire signals the amplifier to turn on and off with your head unit.

4.2.2 RCA Input Connections

- Connect RCA cables from your head unit's pre-amp outputs to the corresponding FRONT, REAR, and SUB RCA input jacks on the amplifier.

4.2.3 Speaker Output Connections

- Connect your speakers to the CH1-CH4 terminals. Ensure correct polarity (+ to + and - to -).
- Connect your subwoofer(s) to the SUB terminals. The amplifier supports bridgeable configurations for the subwoofer channel. Refer to the specifications for minimum impedance.
- Ensure that the total impedance of the connected speakers/subwoofers does not fall below the amplifier's minimum recommended impedance (2 ohms for channels, 2 ohms for sub channel).

5. Operating and Adjustments

After installation, carefully adjust the amplifier settings for optimal sound quality.

5.1 Gain Control Adjustment

- Set all amplifier gain controls (FRONT, REAR, SUB) to their minimum position.
- Turn your head unit volume to about 75% of its maximum level.
- Slowly increase the gain control on the amplifier for each channel until you hear slight distortion, then

back off slightly. This matches the amplifier's input sensitivity to the head unit's output.

5.2 Crossover Settings

- **High-Pass Filter (HPF) for FRONT/REAR:** Adjust the HPF to filter out low frequencies from your full-range speakers. A common starting point is 80Hz. This prevents small speakers from trying to reproduce bass they cannot handle.
- **Low-Pass Filter (LPF) for SUB:** Adjust the LPF to allow only low frequencies to pass to your subwoofer. A common starting point is 80Hz-100Hz. This ensures the subwoofer only plays bass notes.

5.3 Bass Boost Adjustment

- The Bass Boost control (0-12dB) allows you to enhance the low-frequency output of the subwoofer channel.
- Adjust this setting carefully. Excessive bass boost can lead to distortion and potential damage to your subwoofer.
- The remote bass knob provides convenient adjustment of the subwoofer level from the driver's seat.

6. Maintenance

- **Cleaning:** Periodically wipe the amplifier's exterior with a soft, dry cloth. Do not use harsh chemicals or abrasive cleaners.
- **Ventilation:** Ensure that the amplifier's cooling fins remain clear of obstructions to maintain proper airflow and prevent overheating.
- **Connections:** Occasionally check all wiring connections for tightness and corrosion. Loose connections can lead to poor performance or damage.

7. Troubleshooting

If you experience issues with your amplifier, consult the following troubleshooting guide before seeking service.

Problem	Possible Cause	Solution
No Power / Amplifier does not turn on	Blown fuse	Check and replace fuse (ensure correct rating).
	Loose power or ground connection	Verify all power and ground connections are secure.
	No remote turn-on signal	Check remote wire connection and head unit output.
No Sound Output	Loose RCA or speaker connections	Check all RCA and speaker wire connections.
	Gain set too low	Adjust gain controls (refer to Section 5.1).
	Head unit volume too low or muted	Increase head unit volume and check mute settings.

Problem	Possible Cause	Solution
Distorted Sound	Gain set too high Improper crossover settings Speaker impedance too low	Reduce gain controls (refer to Section 5.1). Adjust HPF/LPF settings (refer to Section 5.2). Verify speaker impedance matches amplifier capabilities.
Amplifier Overheating / Protection Mode	Insufficient ventilation Speaker impedance too low Sustained high output levels	Ensure adequate airflow around the amplifier. Check speaker impedance. Reduce volume or gain settings. Allow amplifier to cool.

8. Specifications

The following specifications apply to the STX Audio STX2000.5D amplifier:

Feature	Specification
Model Number	STX2000.5D
Channels	5
Max Power Output	2000 Watts
RMS Power (4 Ohms)	80W x 4 channels + 200W (sub)
RMS Power (2 Ohms)	130W x 4 channels + 400W (sub)
Low-Pass Filter (LPF) Range	40Hz - 180Hz
High-Pass Filter (HPF) Range	50Hz - 1.2kHz
Bass Boost	0-12dB
Efficiency	Over 80%
Thermal Protection	80°C (176°F)
Dimensions (L x W x H)	8.6 x 4.8 x 2 inches (approx. 21.8 x 12.2 x 5.1 cm)
UPC	783501162636

9. Warranty and Support

For information regarding the warranty period and terms for your STX Audio STX2000.5D amplifier, please refer to the warranty card included with your product or contact your authorized STX Audio retailer. Warranty details may vary by region and retailer.

For technical support or service inquiries, please contact STX Audio customer service or visit the official STX Audio website for support resources.