Daakro ZK-1602T

Daakro ZK-1602T Bluetooth Amplifier Board User Manual

Model: ZK-1602T

1. INTRODUCTION

This manual provides detailed instructions for the proper setup, operation, and maintenance of your Daakro ZK-1602T Bluetooth Amplifier Board. Please read this manual thoroughly before use to ensure optimal performance and longevity of your device.

2. PRODUCT OVERVIEW

The Daakro ZK-1602T is a 2.0 channel Bluetooth amplifier board designed for home DIY wireless speaker projects. It features dual TDA7498E HiFi chips, providing 160W + 160W output power. The board supports both Bluetooth 5.0 and AUX audio inputs and includes controls for treble, bass, and volume.

Image 2.1: Daakro ZK-1602T Bluetooth Amplifier Board with included screwdriver.

2.1 Key Features

- **Dual TDA7498E HiFi Chip:** Utilizes original imported TDA7498E chips for high-resolution, low-distortion, and high-fidelity sound.
- **2.0 Channel Configuration:** Provides 160W output for both left and right channels.
- **Dual Audio Input Modes:** Supports Bluetooth 5.0 for wireless connection and AUX input for wired audio sources.
- **Wide Voltage Range:** Operates on DC 12V to 24V, compatible with various power sources.
- **Speaker Compatibility:** Suitable for 20-200W, 4-8Ω speakers.
- **Comprehensive Protection:** Includes over-voltage, under-voltage, over-temperature, short-circuit, and reverse connection protection.
- **Treble and Bass Control:** Independent knobs for sound customization.

2.2 Components and Controls

TDA7498E HiFi Amplifier Board

Right channel output •------   •------ Left channel output

Power input •------   •------ AUX input

Treble control •------   •------ VolumeMode
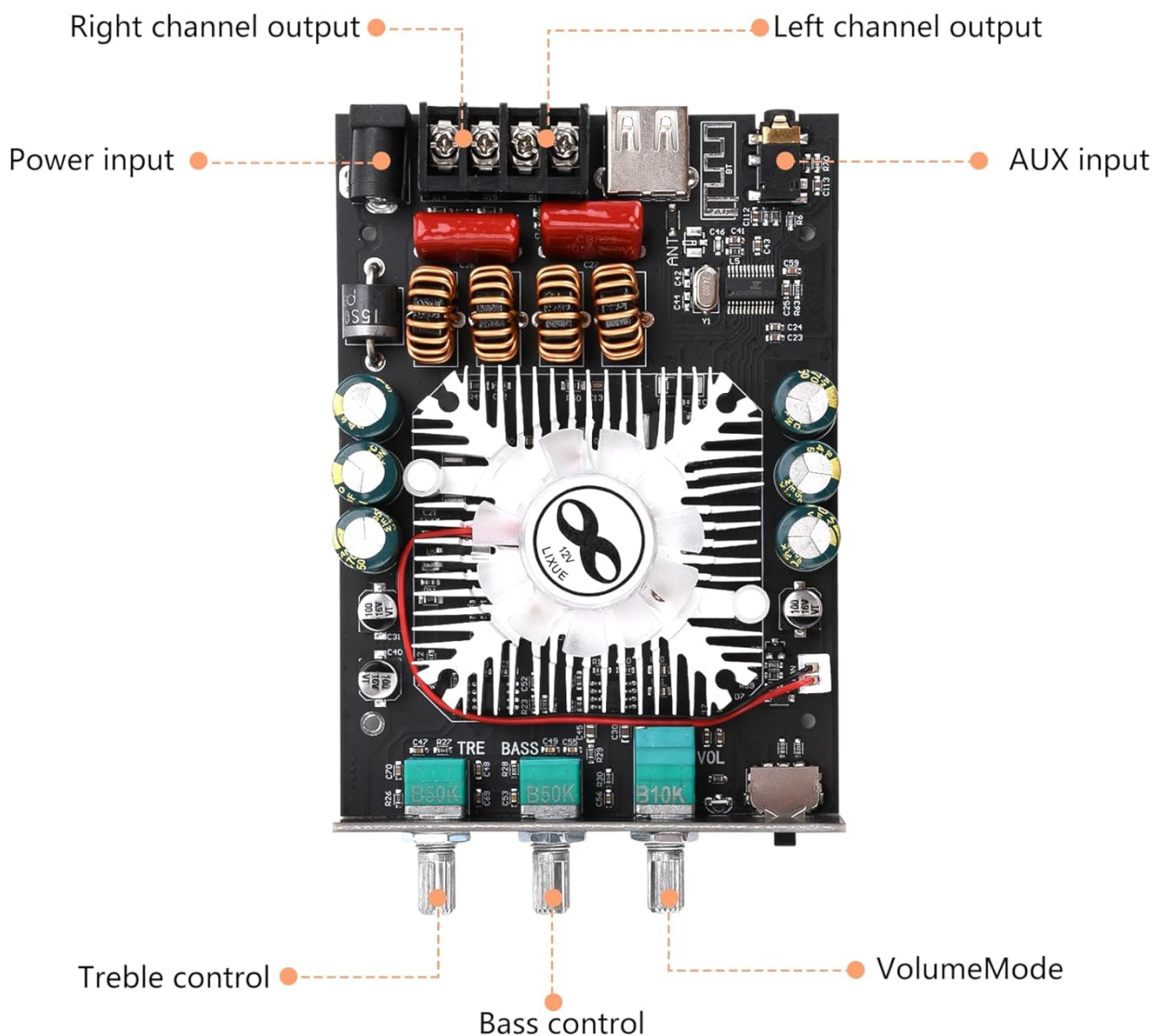
Bass control

Image 2.2: Labeled diagram of the amplifier board showing power input, AUX input, left/right channel outputs, treble control, bass control, and volume/mode control.

- **Power Input:** DC 15-36V terminal.
- **AUX Input:** 3.5mm audio jack for wired connection.
- **Bluetooth Input:** Wireless audio connection.
- **USB Input:** For USB audio playback.
- **Speaker Output:** Left and Right channel terminals (+R, -R, +L, -L).
- **TRE (Treble) Control:** Adjusts high-frequency sound.
- **BASS Control:** Adjusts low-frequency sound.
- **VOL (Volume) / Mode Control:** Adjusts overall volume and switches input modes.

3. SPECIFICATIONS

Feature	Specification
Model Number	ZK-1602T

Feature	Specification
Output Power	160W + 160W (2.0 Channel)
Amplifier Chip	Dual TDA7498E
Input Voltage	DC 15-36V
Audio Inputs	Bluetooth 5.0, AUX (3.5mm), USB
Speaker Impedance	4-8Ω
Speaker Power Range	20-200W
Product Dimensions	6.1 x 3.7 x 1.97 inches
Weight	8.78 ounces

3.1 Power Output Comparison Table

The actual output power varies based on input voltage and speaker impedance. Ensure sufficient audio input and power supply for optimal performance.

Compact Design
Small but Power

Image 3.1: Power Output Comparison Table.

Input Voltage	Speaker Impedance	Output Power (@1KHz)
12V	4Ω	30W+30W
12V	8Ω	10W+10W
15V	4Ω	50W+50W
15V	8Ω	20W+20W
19V	4Ω	70W+70W
19V	8Ω	30W+30W
24V	4Ω	160W+160W
24V	8Ω	50W+50W

4. SETUP INSTRUCTIONS

Follow these steps to correctly set up your ZK-1602T amplifier board.
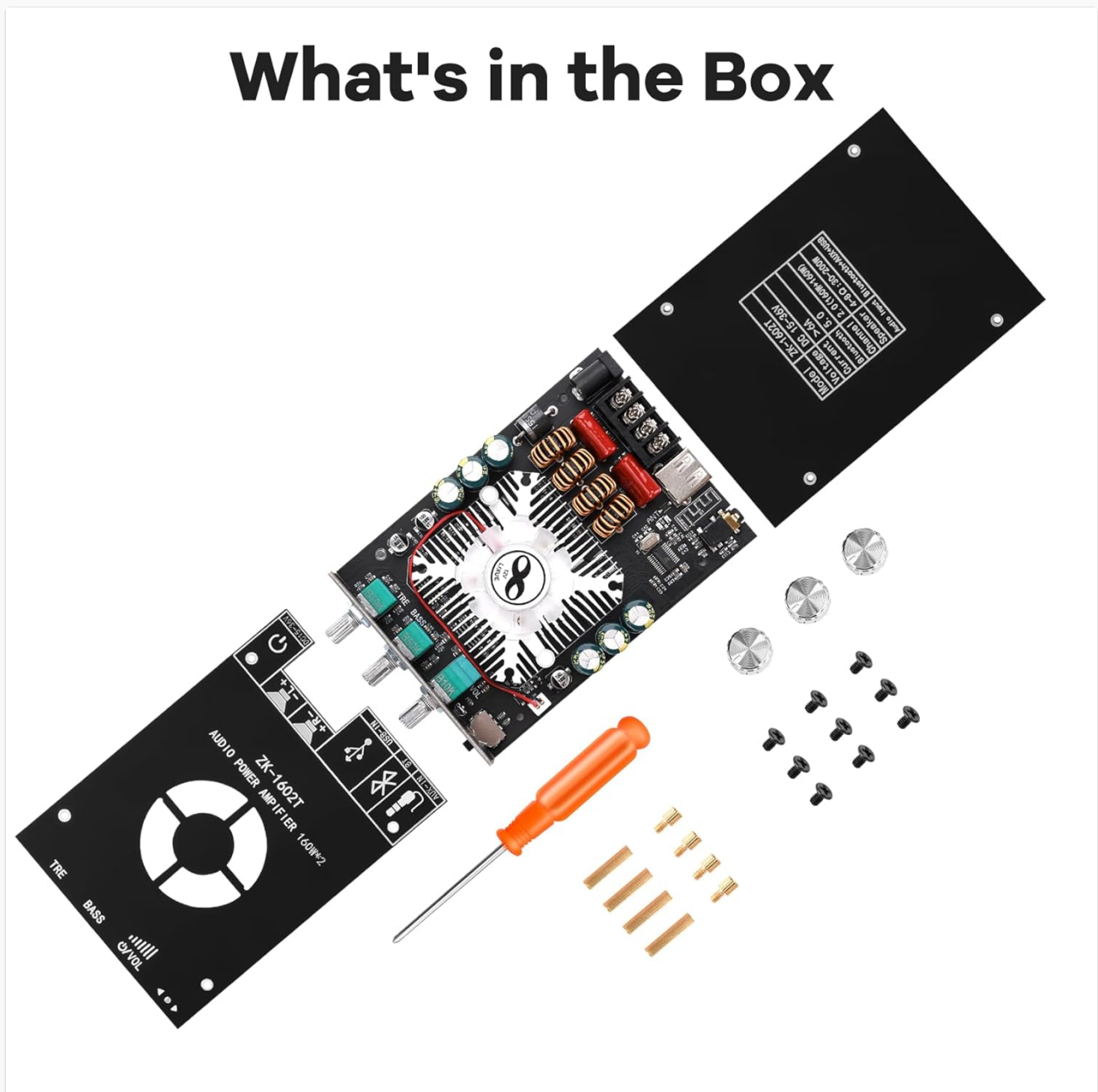
4.1 What's in the Box

Image 4.1: Contents of the product packaging.

- ZK-1602T Amplifier Board
- Screwdriver
- Knobs (for Treble, Bass, Volume)
- Mounting hardware (screws, standoffs)

4.2 Power Connection

1. Ensure the amplifier board is powered off before making any connections.
2. Connect a DC power supply (15-36V) to the DC IN terminal on the board. Observe polarity: positive (+) to positive, negative (-) to negative.

3. It is recommended to use a power supply with sufficient current capacity for your speakers (e.g., 19V or 24V for higher power output).

4.3 Speaker Connection

1. Connect your passive speakers to the speaker output terminals.
2. Connect the left speaker to the +L and -L terminals.
3. Connect the right speaker to the +R and -R terminals.
4. Ensure correct polarity for each speaker (+ to +, - to -) to avoid phase issues.
5. The board supports speakers with an impedance of 4-8Ω and power ratings of 20-200W.

4.4 Audio Input Connection

Image 4.2: Connection diagram for audio inputs and speakers.

The ZK-1602T supports multiple audio input modes:

- **Bluetooth 5.0:**

a. Power on the amplifier board. The Bluetooth indicator light will flash, indicating it's in pairing mode.

b. On your audio source device (e.g., smartphone, tablet), enable Bluetooth and search for available devices.

c. Select "ZK-1602T" from the list to pair. A confirmation tone will sound, and the indicator light will remain solid once connected.

d. The Bluetooth connection range is approximately 16.4 feet (5 meters).

- **AUX Input:**

  a. Connect your audio source (e.g., TV, laptop, MP3 player) to the 3.5mm AUX IN jack using an audio cable.

  b. The amplifier will automatically switch to AUX mode or you may need to press the Volume/Mode knob to select AUX input.

- **USB Input:**

  a. Insert a USB drive containing audio files into the USB-IN port.

  b. The amplifier will automatically switch to USB mode or you may need to press the Volume/Mode knob to select USB input.

5. OPERATING INSTRUCTIONS

5.1 Power On/Off

Press the power button located near the DC input to turn the amplifier board on or off.

5.2 Volume Control

Rotate the **VOL** knob clockwise to increase volume and counter-clockwise to decrease volume.

5.3 Mode Selection

Press the **VOL** knob to cycle through available input modes: Bluetooth, AUX, and USB.

5.4 Treble and Bass Adjustment

Image 5.1: Treble, Bass, and Volume control knobs.

- Rotate the **TRE** knob to adjust the treble (high frequencies).
- Rotate the **BASS** knob to adjust the bass (low frequencies).

6. MAINTENANCE

To ensure the longevity and proper functioning of your amplifier board, follow these maintenance guidelines:

- **Cleaning:** Use a soft, dry cloth to clean the surface of the board. Avoid using liquid cleaners or solvents, as they may damage components.
- **Environment:** Operate the board in a dry, well-ventilated area. Avoid exposure to extreme temperatures, humidity, or direct sunlight.
- **Handling:** Handle the board with care to prevent damage to electronic components. Avoid dropping or subjecting it to strong impacts.
- **Ventilation:** Ensure the cooling fan and heatsink are free from dust and obstructions to maintain proper heat dissipation.

7. TROUBLESHOOTING

If you encounter issues with your ZK-1602T amplifier board, refer to the following common problems and solutions:

Problem	Possible Cause	Solution
No sound output	- Incorrect power connection - Loose speaker wires - Incorrect input mode selected - Low volume setting - Faulty audio source/cable	- Verify power supply is connected correctly (15-36V DC) and powered on. - Check all speaker wire connections for tightness and correct polarity. - Press the VOL knob to cycle through input modes (Bluetooth, AUX, USB). - Increase the volume using the VOL knob. - Test with a different audio source or cable.
Distorted sound	- Volume too high (amplifier or source) - Improper speaker impedance/power matching - Weak power supply - Damaged speakers	- Reduce volume on both the amplifier and the audio source. - Ensure speakers are within the recommended 4-8Ω and 20-200W range. - Use a power supply with adequate voltage and current (refer to Section 3.1). - Test with different speakers.
Bluetooth not connecting	- Amplifier not in pairing mode - Device too far from amplifier - Bluetooth interference - Previous connection issues	- Ensure the Bluetooth indicator is flashing (pairing mode). If not, cycle input modes. - Move your device closer to the amplifier (within 16.4 feet/5 meters). - Turn off other Bluetooth devices nearby. - Forget the device on your audio source and try pairing again.

Problem	Possible Cause	Solution
Amplifier overheating	- Poor ventilation - Overloading speakers - Short circuit	- Ensure the board has adequate airflow and the fan is unobstructed. - Reduce volume or check speaker impedance. - Immediately disconnect power and check for any short circuits in wiring.

7.1 Protection Mechanisms

The ZK-1602T includes built-in protection features:

- Over-voltage protection
- Under-voltage protection
- Over-temperature protection
- Short-circuit protection
- Reverse connection protection

If the amplifier stops working unexpectedly, these protections may have been triggered. Disconnect power, check for the cause (e.g., short circuit, overheating), and reconnect power once the issue is resolved.

8. WARRANTY AND SUPPORT

Daakro is committed to providing high-quality audio products and customer satisfaction.

8.1 Warranty Information

This product comes with a **30-day warranty** from the date of purchase, covering manufacturing defects. Please retain your proof of purchase for warranty claims.

8.2 Customer Support

For any questions, technical assistance, or warranty inquiries, please contact Daakro customer service. We offer 24-hour online customer service to ensure 100% customer satisfaction.
For more information, visit the Daakro Store on Amazon.