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› DAJUNGUO ZK-3002T TPA3255 Bluetooth Digital Amplifier Board User Manual

DAJUNGUO ZK-3002T

DAJUNGUO ZK-3002T TPA3255 Bluetooth Digital Amplifier Board User Manual

Model: ZK-3002T | Brand: DAJUNGUO

1. INTRODUCTION

Thank you for choosing the DAJUNGUO ZK-3002T Bluetooth Digital Amplifier Board. This high-performance 2.0 channel audio amplifier utilizes the advanced TPA3255 chip, delivering a powerful 300W+300W output. Designed for versatility, it features multiple input methods including Bluetooth, AUX, and USB, along with independent treble and bass adjustment for precise sound control. This manual provides essential information for proper setup, operation, and maintenance of your amplifier board.

2. KEY FEATURES

- **TPA3255 HIFI Chip:** Equipped with the TPA3255 chip, offering a peak output power of 300W+300W. Supports a wide voltage input range of 18-50V DC.
- **Multiple Input Methods:** Seamlessly switch between Bluetooth (JL 5.3, up to 10 meters range), AUX (3.5mm audio port), and USB input (supports FAT32 format for flash drives).
- **Powerful Heat Dissipation:** Features a thickened heat sink and a large, silent cooling fan to ensure efficient heat dissipation, enabling prolonged usage without performance degradation.
- **Treble & Bass Control:** Independent external potentiometers allow for precise adjustment of high-frequency and low-frequency audio, providing a more layered and impactful sound experience.
- **Protection Mechanisms:** Includes built-in protection against input undervoltage, overheating, overcurrent, and short circuits. **Note:** This board does not feature input anti-reverse protection; ensure correct polarity during power connection.

3. PACKAGE CONTENTS

- 1 x ZK-3002T Amplifier Board

4. SETUP AND INSTALLATION

Follow these steps to correctly set up your amplifier board.

4.1 Component Overview and Connections



This image illustrates the main components and connection points on the ZK-3002T amplifier board. Key areas include the 18-50V DC power input, left and right speaker terminals, USB flash drive port, 3.5mm LINE IN input, and two expansion ports. The connections for the external Bass, Treble, and Main Volume potentiometers are also clearly marked. Note the location of the three 0 Ohm resistors (R38, R32, R30) which need to be removed when using Expansion Port 1 and 2.

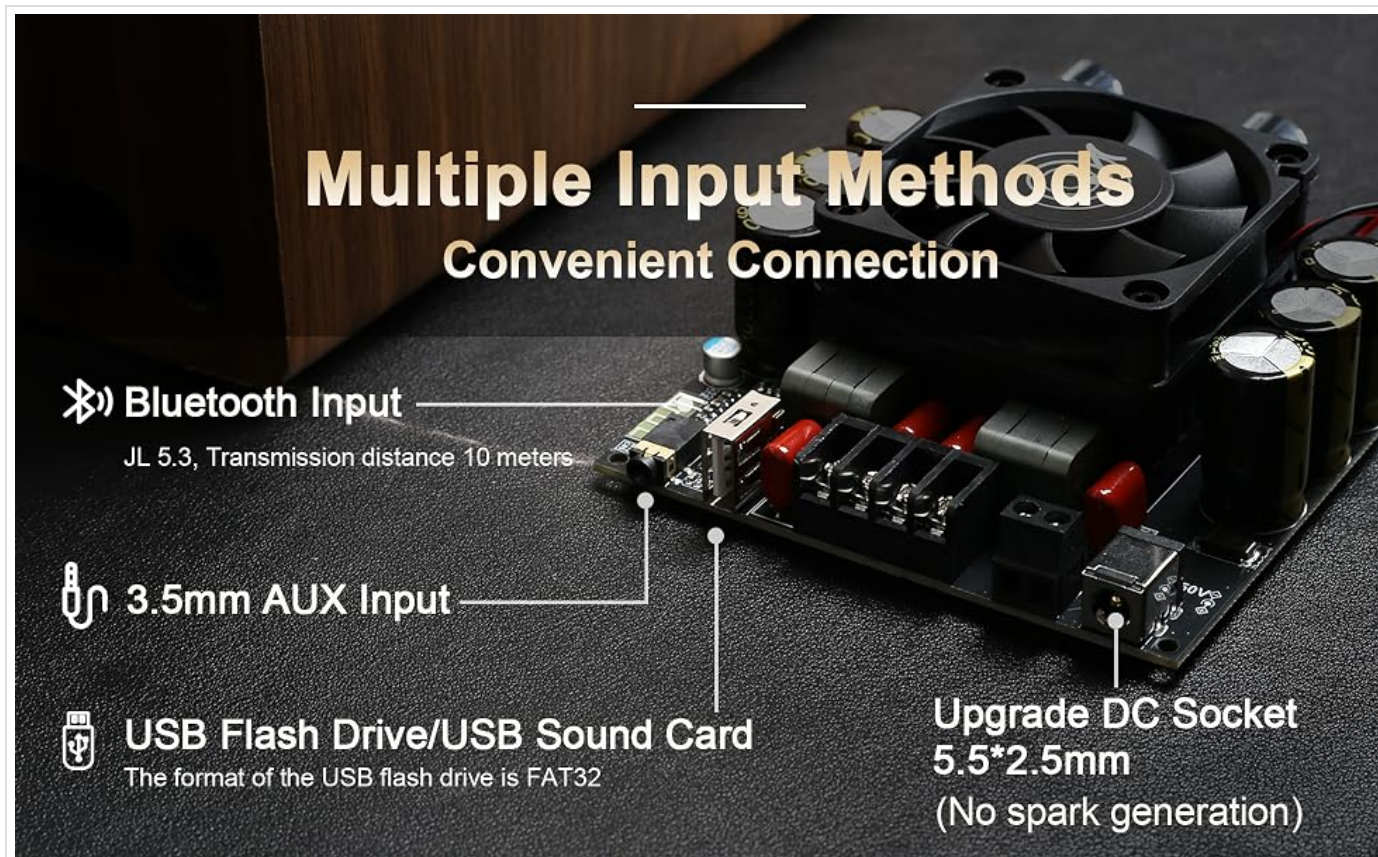
4.2 Power Supply Connection

- The working voltage range is 18-50V DC. The maximum limit is 53V.
- It is recommended to use a DC power supply with a voltage of 36-48V and a current of 10A or above for optimal performance.
- Connect the power supply to the designated **Power Input 18-50V DC** terminal (either the 5.5-2.5 DC mother base or the 2P wiring terminal). Ensure correct polarity as the board lacks anti-reverse protection.

4.3 Speaker Connections

- Connect your left speaker to the **Left Speaker** output terminals.
- Connect your right speaker to the **Right Speaker** output terminals.
- Ensure speaker impedance is compatible with the amplifier's output.

4.4 Audio Input Connections



The ZK-3002T amplifier board supports various audio input methods for versatile connectivity. This image highlights the Bluetooth input (JL 5.3 with a 10-meter transmission distance), the 3.5mm AUX input for wired connections, and the USB Flash Drive/USB Sound Card input. The USB input supports FAT32 format for flash drives. An upgraded DC socket (5.5*2.5mm) is also shown, designed for spark-free connection.

- **Bluetooth Input:** Power on the board, and it will automatically enter Bluetooth pairing mode. Search for "BT-AUDIO" on your device (e.g., smartphone, laptop) and connect.
- **AUX Input:** Connect your audio source (e.g., TV, MP3 player) to the **LINE IN Input (3.5mm audio port)** using a 3.5mm audio cable.
- **USB Input:** Insert a USB flash drive (formatted to FAT32) into the **USB Flash Drive** port. The board can also function as a USB sound card when connected to a computer via USB.

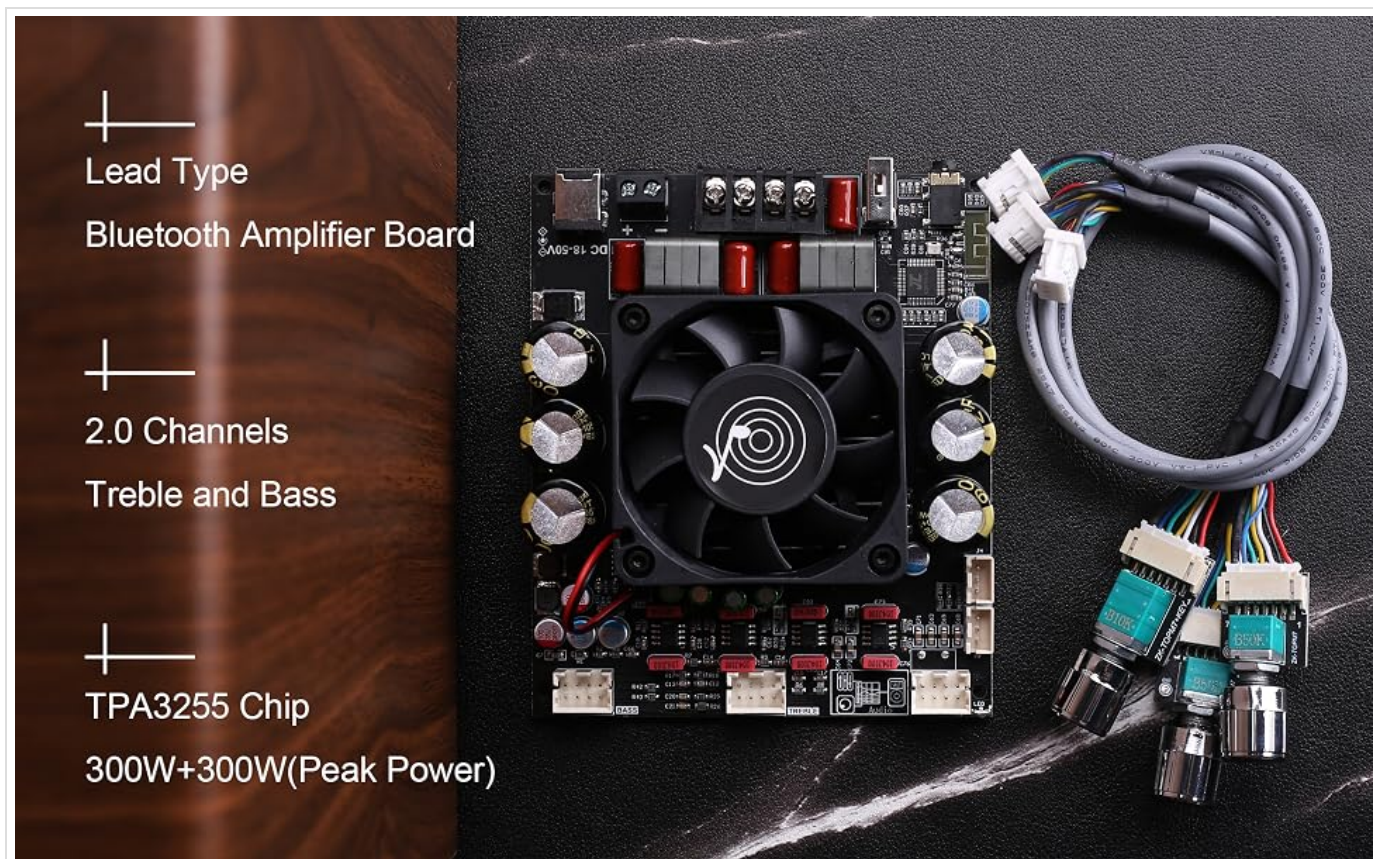
4.5 External Potentiometer Connection

Connect the external potentiometers for Bass, Treble, and Main Volume to their respective ports on the amplifier board as indicated in the component overview diagram.

4.6 Expansion Ports and Gain Adjustment

- **Expansion Port 1:** Connects to the audio input of a MIC front stage board reverb or a pure rear stage amplifier input port.
- **Expansion Port 2:** Connects to a MIC front stage board reverb output or a Qualcomm decoding board audio output.
- **Important Note:** When utilizing Expansion Port 1 and Expansion Port 2, you must remove the three 0 Ohm resistors labeled R38, R32, and R30 on the board.
- **Gain Adjustment:** The amplifier's gain can be adjusted by changing the R and L resistors. A higher resistance value generally results in greater gain. The factory default resistance value is 13K.

4.7 External Antenna Installation (Optional)



This diagram provides instructions for installing an optional external 2.4G antenna. Step 1 shows moving capacitor C6 (2.7PF) from its original position to C88. Step 2 illustrates welding the IPEX connector antenna base, emphasizing attention to its direction. Step 3 demonstrates inserting the 2.4G antenna (IPEX 1st generation connector) into the newly installed base.

For improved Bluetooth range and stability, an external 2.4G antenna can be installed:

1. Move capacitor C6 (2.7PF) from its original position to the C88 position.
2. Weld the IPEX connector antenna base onto the designated pads, ensuring correct orientation.
3. Insert a 2.4G antenna (IPEX 1st generation connector) into the newly installed base.

5. OPERATING INSTRUCTIONS

5.1 Power On/Off

Connect the appropriate DC power supply (18-50V) to power on the amplifier board. Disconnect the power supply to turn it off.

5.2 Input Selection

The amplifier board will automatically detect and switch to the active input source. For Bluetooth, ensure your device is paired. For AUX or USB, simply connect the source.

5.3 Volume Control

Use the **Main Volume** external potentiometer to adjust the overall output volume.

5.4 Tone Control

Adjust the **Treble** and **Bass** external potentiometers to customize the high and low frequencies of your audio output.

5.5 Bluetooth Pairing

When powered on, the amplifier board enters Bluetooth pairing mode. On your audio device, search for Bluetooth devices and select "BT-AUDIO" to connect.

6. SPECIFICATIONS

Feature	Specification
Amplifier Chip	TPA3255
Output Power	300W + 300W (Peak)
Channels	2.0
Input Voltage	18-50V DC (Recommended: 36-48V DC, 10A+)
Bluetooth Version	JL 5.3
Bluetooth Transmission Distance	Up to 10 meters
Input Methods	Bluetooth, AUX (3.5mm), USB (Flash Drive/Sound Card)
USB Flash Drive Format	FAT32
Dimensions (L x W x H)	5.35 x 3.93 x 1.49 inches (136 x 100 x 38 mm)
Item Weight	9.2 ounces (260 grams)
Protection Features	Input Undervoltage, Overheating, Overcurrent, Short Circuit
Mounting Type	Surface Mount



A detailed view of the amplifier board's heat management system. It features a thickened heat sink and a silent, long-life cooling fan, designed to ensure efficient heat dissipation and prevent overheating during prolonged operation. This component is crucial for maintaining stable performance.

7. TROUBLESHOOTING

- **No Sound:**

- Check if the power supply is correctly connected and providing the required voltage (18-50V DC).
- Verify that the audio input source is properly connected and playing.
- Ensure speaker wires are securely connected to the correct terminals.
- Check the Main Volume potentiometer and ensure it is not set to minimum.

- **Distorted Sound:**

- Reduce the input volume from your audio source.
- Ensure speaker impedance matches the amplifier's capabilities.
- Verify the power supply is stable and within the recommended voltage range.

- **Bluetooth Connection Issues:**

- Make sure the amplifier board is powered on and in pairing mode (usually indicated by a blinking LED).
- Ensure your device's Bluetooth is enabled and searching for new devices.
- Keep the device within the 10-meter Bluetooth range.
- Try unpairing and re-pairing the device.

- **Overheating:**

- Ensure the amplifier board has adequate ventilation and is not enclosed in a confined space.
- Check if the cooling fan is operating correctly.
- Reduce the output volume or check for short circuits in speaker wiring.

8. SAFETY INFORMATION

- Always use a power supply within the specified voltage range (18-50V DC). Using an incorrect voltage can damage the device.
- Ensure correct polarity when connecting the power supply, as the board does not have anti-reverse protection.
- Avoid short circuits between terminals, especially speaker outputs and power inputs.
- Do not expose the amplifier board to moisture, water, or extreme temperatures.
- Handle the board with care to prevent damage from static electricity.
- Keep the device out of reach of children.

9. WARRANTY AND SUPPORT

For any questions, technical assistance, or warranty inquiries regarding your DAJUNGUO ZK-3002T amplifier board, please contact the seller or manufacturer directly through your purchase platform. Please provide your order number and a detailed description of the issue for prompt support.

ASK A QUESTION ABOUT THIS MANUAL

Ask about setup, troubleshooting, compatibility, parts, safety, or missing instructions. Manuals+ will review the question and use this page's manual context to help answer it.

Name

Anonymous

Email

you@example.com

After a successful submission, we securely hash the supplied account or form email before sending it to Microsoft Advertising for conversion attribution. [Privacy details](#).

Question

Example: How do I reset this device or fix this error?

Details

Model number, symptoms, what you tried, or the section of the manual you are using.

Submit question