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› DAJUNGUO ZK-AM100F 2.1 Bluetooth Amplifier Board User Manual

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DAJUNGUO ZK-AM100F 2.1 Bluetooth Amplifier Board User Manual

Model: ZK-AM100F | Brand: DAJUNGUO

1. INTRODUCTION

The DAJUNGUO ZK-AM100F is a versatile 2.1 channel Class D Bluetooth amplifier board designed for audio enthusiasts. It features a powerful 50W*2 for stereo channels and 100W for the subwoofer, operating on a DC 12-24V power supply. This amplifier board also includes a karaoke function with microphone inputs, offering a comprehensive solution for various audio applications. Multiple input methods such as Bluetooth, AUX, USB Sound Card, and U-Disk are supported, providing flexible connectivity options.



Image 1.1: Overview of the ZK-AM100F 2.1 Bluetooth Amplifier Board with Karaoke Function.

2. SETUP AND INSTALLATION

Careful assembly and connection are crucial for optimal performance. Follow these steps to set up your ZK-AM100F amplifier board.

2.1 Component Identification

Before starting, identify the main components:

- **Main Board:** The central amplifier circuit board.
- **Microphone Board:** Connects microphones and provides echo/volume controls.
- **50K Potentiometers:** Four wires for various audio adjustments (Subwoofer Frequency, Subwoofer Volume, Stereo Treble, Stereo Bass).
- **Main Potentiometer:** For Music Volume control.
- **Knobs:** For adjusting the potentiometers.

Dual Classic TPA3116D2 Chip

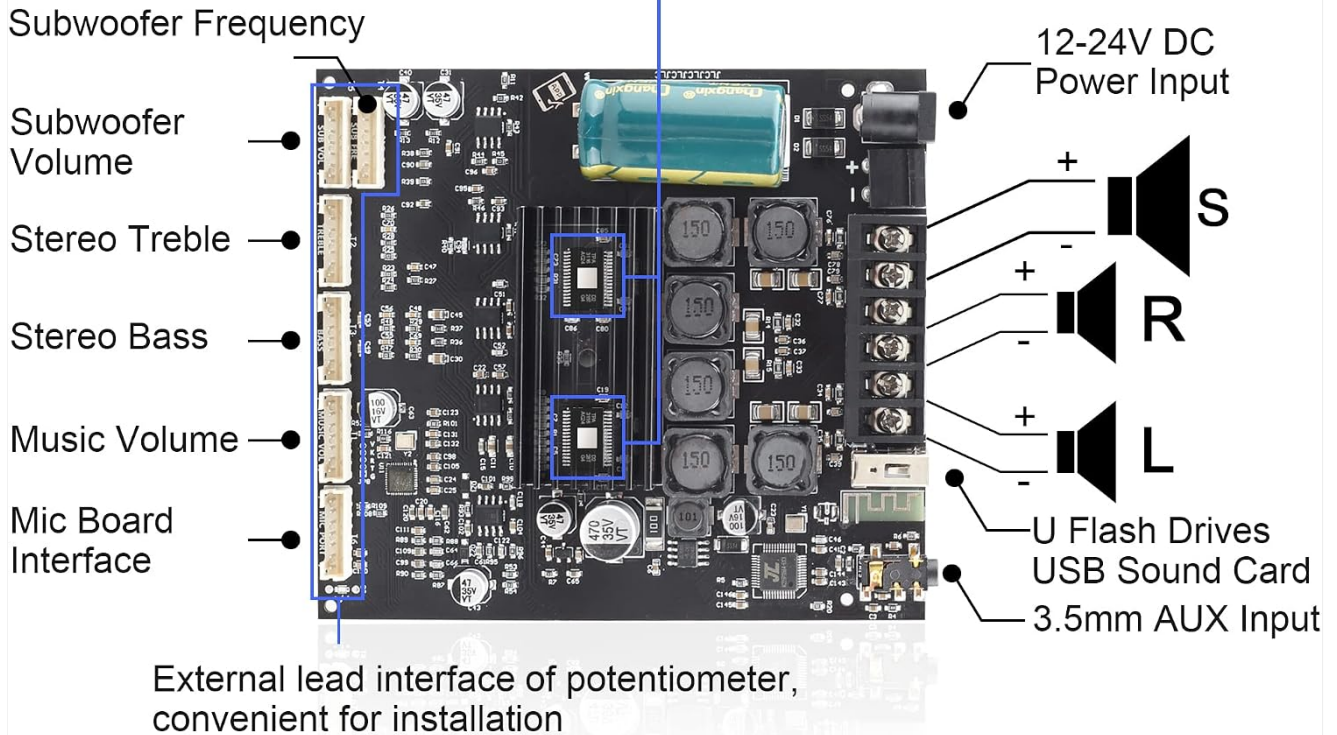


Image 2.1: Individual components of the ZK-AM100F amplifier kit, including the main board, microphone board, potentiometers, and knobs.

2.2 Wiring Connections

1. **Connect 50K Potentiometers:** Plug the four 50K resistance potentiometers into their respective ports on the main board. These are for Subwoofer Frequency, Subwoofer Volume, Stereo Treble, and Stereo Bass.
2. **Connect Main Potentiometer:** The main potentiometer, which controls the overall Music Volume, must be plugged into the port labeled "MUSIC VOL" on the main board.
3. **Connect Microphone Board:** The microphone board, which includes controls for Mic Volume and Echo Modulation, must be plugged into the "MIC PORT" on the main board.
4. **Install Knobs:** Securely attach the provided knobs to all potentiometers on both the microphone board and the main board's external lead interfaces.



Image 2.2: Diagram illustrating the connection points for the potentiometers and microphone board to the main amplifier board.

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Video 2.1: This video demonstrates the assembly process of the ZK-AM100F amplifier board, showing how to connect the various components and install the control knobs.

2.3 Power and Speaker Connections

- **Power Input:** Connect a DC 12-24V power supply ($\geq 8A$ recommended) to the designated power input terminal on the main board. **Do not connect to AC power.**
- **Speaker Output:** Connect your L&R channel speakers (20-50W, 4-8 Ω) and subwoofer (20-100W, 3-8 Ω) to the corresponding output terminals on the main board.

3. OPERATING INSTRUCTIONS

The ZK-AM100F offers multiple audio input methods and comprehensive control over sound output.

3.1 Audio Input Methods

The amplifier supports the following input sources:

- **Bluetooth (BT 5.1):** Pair your device with the amplifier via Bluetooth. The transmission distance is up to 15m (barrier-free).
- **AUX Input (3.5mm):** Connect external audio devices using a 3.5mm audio cable.
- **U Flash Drives:** Insert a USB flash drive containing audio files.
- **USB Sound Card:** Connect to a computer via USB to use the amplifier as an external sound card.
- **MIC Input:** Connect microphones for karaoke functionality.

MULTIPLE CONNECTION METHODS



U FLASH DRIVES



USB SOUND CARD



BLUETOOTH



3.5MM AUX INPUT

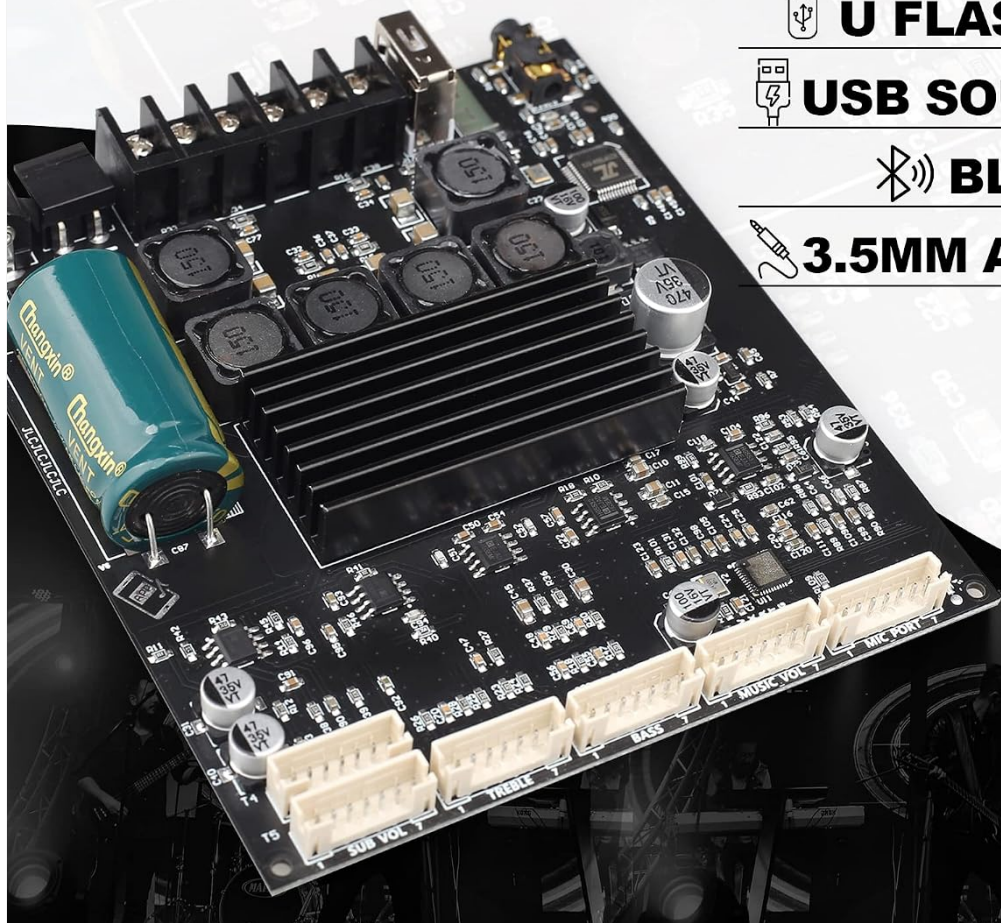


Image 3.1: Visual representation of the various input methods available on the ZK-AM100F amplifier board, including Bluetooth, USB Sound Card, 3.5mm AUX, and U Flash Drives.

3.2 Volume and Tone Controls

Adjust the sound using the following controls:

- **Music Volume:** Controls the overall music playback volume. This knob also functions as a multi-function button: click for pause, double-click for next track, long press for On/Off.
- **Subwoofer Frequency:** Adjusts the cutoff frequency for the subwoofer.
- **Subwoofer Volume:** Controls the volume level of the subwoofer.
- **Stereo Treble:** Adjusts the high-frequency response of the stereo channels.
- **Stereo Bass:** Adjusts the low-frequency response of the stereo channels.
- **Mic Volume:** Controls the volume of the connected microphones.
- **Echo Modulation:** Adjusts the echo effect for the microphones.

3.3 Karaoke Function

The ZK-AM100F supports dual microphone inputs (6.35mm ports) for karaoke. It features intelligent anti-howling,

DSP reverberation, and echo modulation for an enhanced vocal experience.



Image 3.2: Illustration highlighting the karaoke features, including intelligent anti-howling, DSP reverberation, dual microphone support, and echo modulation.

The microphone board supports various microphone types:

- **Wireless Microphones:** Requires a separate receiver. Two sets of receivers can be inserted simultaneously, or one receiver for two wireless microphones can be used. Using a wireless microphone with a receiver is recommended to reduce background noise.
- **Wired Microphones:** Supports capacitive and dynamic microphones directly via the two 6.35mm mic inputs.



WIRELESS MICROPHONE

1. Support wireless microphone (A receiver is required), capacitive microphone, and dynamic microphone.
2. Two sets of receivers can be inserted at the same time, or a one on two wireless microphone can be selected.
3. It is recommended to use a wireless microphone with a receiver to reduce the background noise.



WIRE MICROPHONE

1. Two mic inputs, sing as you like
2. Support wireless microphone (with receiver), capacitive microphone, and dynamic microphone.



Image 3.3: Details on microphone compatibility, showing support for both wireless (with receiver) and wired (capacitive, dynamic) microphones.

4. MAINTENANCE

To ensure the longevity and optimal performance of your ZK-AM100F amplifier board, follow these maintenance guidelines:

- **Cleaning:** Use a soft, dry cloth to gently wipe the surface of the board and components. Avoid using liquid cleaners or solvents, as they can damage the electronics.
- **Dust Prevention:** Keep the amplifier in a clean, dust-free environment. Dust accumulation can lead to overheating and component failure.
- **Ventilation:** Ensure adequate airflow around the heat sink to prevent overheating. Do not obstruct the heat sink.
- **Connection Integrity:** Periodically check all connections (power, speakers, potentiometers, microphone board) to ensure they are secure and free from corrosion.
- **Storage:** If storing the amplifier for an extended period, disconnect it from power and store it in a cool, dry place.



Image 4.1: Close-up view of the large heat sink on the ZK-AM100F amplifier board, essential for thermal management.

5. TROUBLESHOOTING

If you encounter issues with your ZK-AM100F amplifier board, refer to the following common problems and solutions:

Problem	Possible Cause	Solution
No sound output	- Incorrect power supply voltage or current. - Loose speaker connections. - Input source not selected or improperly connected. - Volume levels too low.	- Ensure power supply is DC 12-24V and $\geq 8A$. - Check all speaker wire connections for tightness and correct polarity. - Verify the audio input source is properly connected and selected. - Increase Music Volume and individual channel/subwoofer volumes.
Bluetooth connection issues	- Device too far from amplifier. - Interference from other devices. - Amplifier not in pairing mode.	- Move the Bluetooth device closer to the amplifier. - Turn off other Bluetooth devices nearby. - Ensure the amplifier is discoverable.
Microphone not working	- Microphone not properly connected. - Mic Volume too low. - Incorrect microphone type for input.	- Check microphone cable and connection to the MIC PORT. - Increase Mic Volume. - Ensure microphone is compatible (wired: capacitive/dynamic; wireless: requires receiver).
Distorted sound	- Volume too high. - Improper speaker impedance. - Poor audio source quality.	- Reduce volume levels. - Ensure speakers match recommended impedance (4-8Ω). - Try a different audio source.

6. SPECIFICATIONS

Key technical specifications for the ZK-AM100F amplifier board:

Feature	Detail
Brand	DAJUNGUO
Model	ZK-AM100F
Amplifier Chip	TPA3116D2 (Dual)
Bluetooth Version	5.1
Bluetooth Transmission Distance	15m (barrier-free)
Audio Input	Bluetooth, AUX, U Flash Drives, USB Sound Card, MIC
Audio Output	L&R Channel 50W + Subwoofer 100W
Adaptive Power Supply	DC 12-24V, ≥8A (Do not connect to AC)
Adaptive Speaker (L&R)	20-50W, 4-8Ω
Adaptive Speaker (Subwoofer)	20-100W, 3-8Ω
Outer Lead	6 pcs 7P shielded wires 35cm
Protection Mechanism	Input anti-reverse connection, Over temperature, Over-current, Short circuit
Characteristic Function	Dual mic input, Support APP, Modify BT name/password, Volume adjustment of prompt tone
Product Size (Power amplifier board)	3.93 x 4.40 x 0.7 inches
Item Weight	220 Grams

WITH KARAOKE FUNCTION DUAL TPA3116D2 CHIP



- Amplifier Chip: TPA3116D2
- BT Version: 5.1
- BT Transmission Distance: 15m(barrier-free)
- Audio Input: BT+AUX+U Flash Drives+USB Sound Card+MIC
- Audio Output:L&R Channel 50W+Subwoofer 100W
- Adaptive Power Supply: DC12-24V, $\geq 8A$ (Do not connect to AC)
- Adaptive Speaker:
L&Rchannel 20-50w,4-8 Ω ; Subwoofer 20-100W,3-8 Ω
- Outer Lead:6 pcs 7P shielded wires 35cm
- Dual Volumead Justment :
 1. Background music volume adjustment,withmultifunction button (Click :pause, Double-click:Next, Long press: On/Off)
 - 2.Mic volume adjustment.
- Protection Mechanism:Input anti-reverse connection,Over temperature,over-current, short circuit.
- Characteristic Function:Dual mic input,Support APP.Modify BT name password setting, volume adjustment of prompt tone,etc.
- Product Size:3.93x4.40x0.7in(Power amplifier board);

Image 6.1: A visual summary of the ZK-AM100F amplifier board's key features and specifications.

7. WARRANTY AND SUPPORT

For warranty information and technical support, please refer to the product packaging or contact DAJUNGUO customer service directly. Keep your purchase receipt for any warranty claims.