

Daakro ZK-502MT

ZK-502MT Bluetooth Amplifier Board User Manual

Model: ZK-502MT | Brand: Daakro

1. INTRODUCTION

The Daakro ZK-502MT Bluetooth Amplifier Board is a versatile 2.0 channel audio amplifier designed for DIY home audio projects. It features dual HiFi amplifier chips, providing clear and high-fidelity sound. With support for both Bluetooth 5.0 and AUX inputs, it offers flexible connectivity options for various audio sources. This manual provides detailed instructions for setup, operation, and maintenance of your ZK-502MT amplifier board.



Image 1.1: The ZK-502MT Bluetooth Amplifier Board, including a screwdriver and a DC power adapter.

2. KEY FEATURES

- **Dual HiFi Amplifier Chip:** Utilizes two HiFi amplifier chips with PurePath technology for ultra-high resolution, low distortion, and high-fidelity sound.
- **2.0 Channel Configuration:** Supports left and right channel output, each providing 50W output power for an immersive sound experience.
- **Dual Audio Input Modes:** Seamlessly switch between Bluetooth 5.0 for wireless connectivity and traditional AUX input for wired audio sources.
- **Wide Application:** Compatible with a wide input voltage range from 9V to 24V DC and suitable for 20-200W, 4-8Ω speakers.
- **Comprehensive Protection:** Built-in protection mechanisms include over-voltage, under-voltage, over-temperature, short-circuit, and reverse connection protection.
- **Treble and Bass Control:** Independent knobs for adjusting treble and bass to customize your audio output.

3. WHAT'S IN THE BOX

Upon opening the package, please verify that all the following components are included:

- ZK-502MT Bluetooth Amplifier Board
- Top Plate with Control Labels
- Bottom Plate
- Screwdriver
- DC Power Adapter Connector
- Heat Sink
- Mounting Hardware (Screws, Standoffs)
- Control Knobs (Volume, Treble, Bass)

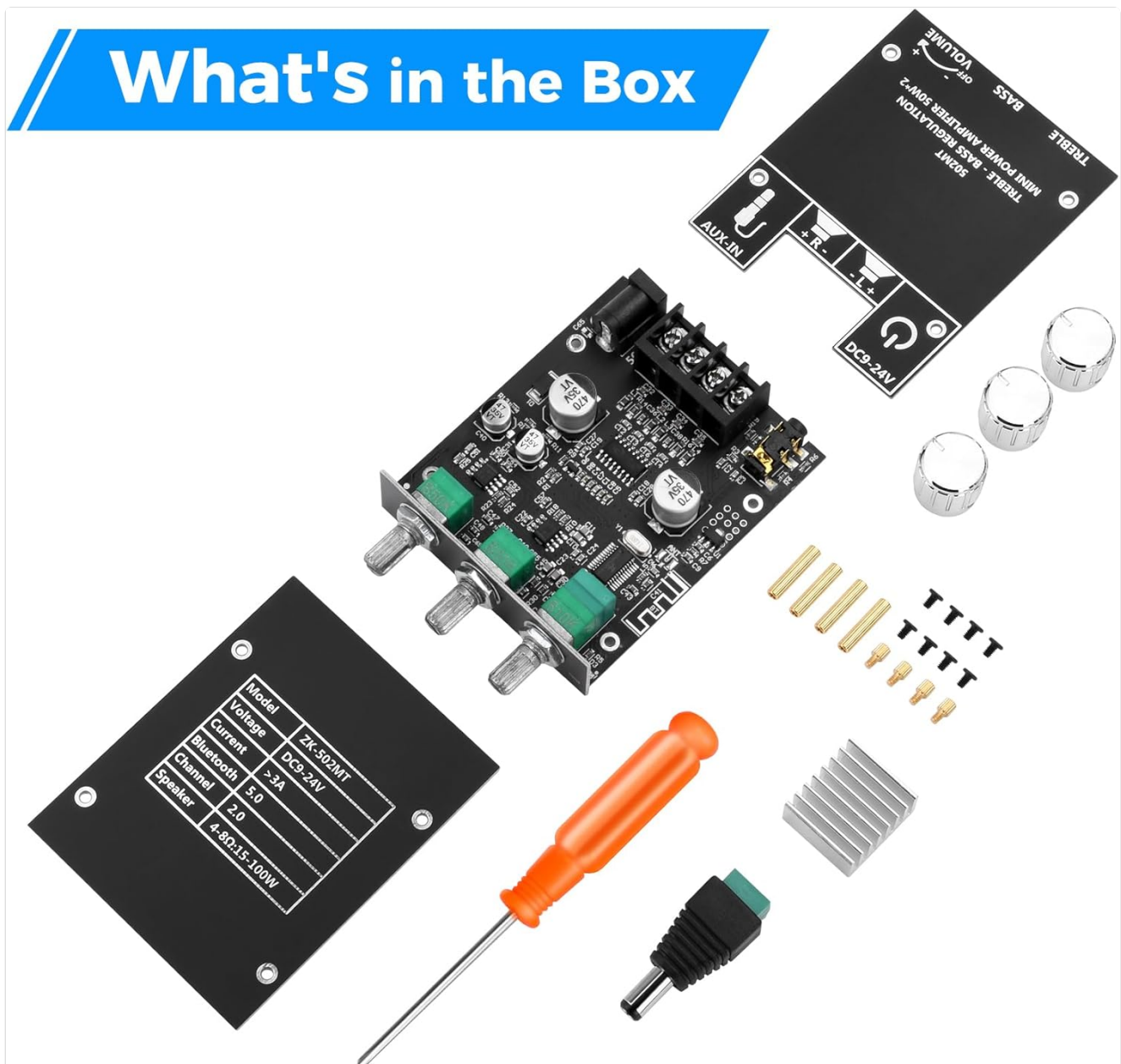


Image 3.1: All components included in the ZK-502MT package.

4. SETUP GUIDE

Follow these steps to properly set up your ZK-502MT Bluetooth Amplifier Board.

4.1 Component Assembly

1. **Attach Heat Sink:** Secure the provided heat sink to the main amplifier chip on the board. Ensure good contact for optimal heat dissipation.
2. **Assemble Casing:** Use the provided standoffs and screws to attach the top and bottom plates to the amplifier board. The top plate has labels for controls and ports.
3. **Install Knobs:** Place the three control knobs onto their respective shafts for Volume, Bass, and Treble.

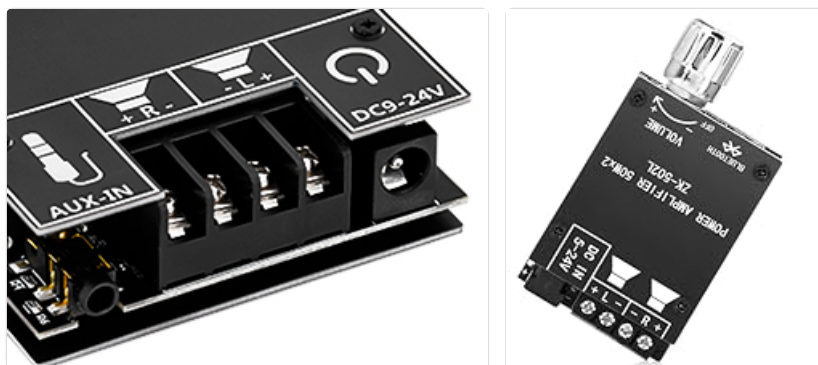


Image 4.1: Proper installation of the heat sink and control knobs.

4.2 Speaker Connection

Connect your speakers to the amplifier board using the screw terminals. The board supports 2.0 channel output (Left and Right). Ensure correct polarity (+ and -) for each speaker.

- Connect the positive (+) terminal of your left speaker to the 'L+' terminal on the board.
- Connect the negative (-) terminal of your left speaker to the 'L-' terminal on the board.
- Connect the positive (+) terminal of your right speaker to the 'R+' terminal on the board.
- Connect the negative (-) terminal of your right speaker to the 'R-' terminal on the board.

The amplifier board is suitable for 20-200W, 4-8Ω speakers.

Domestic HiFi Amplifier Board

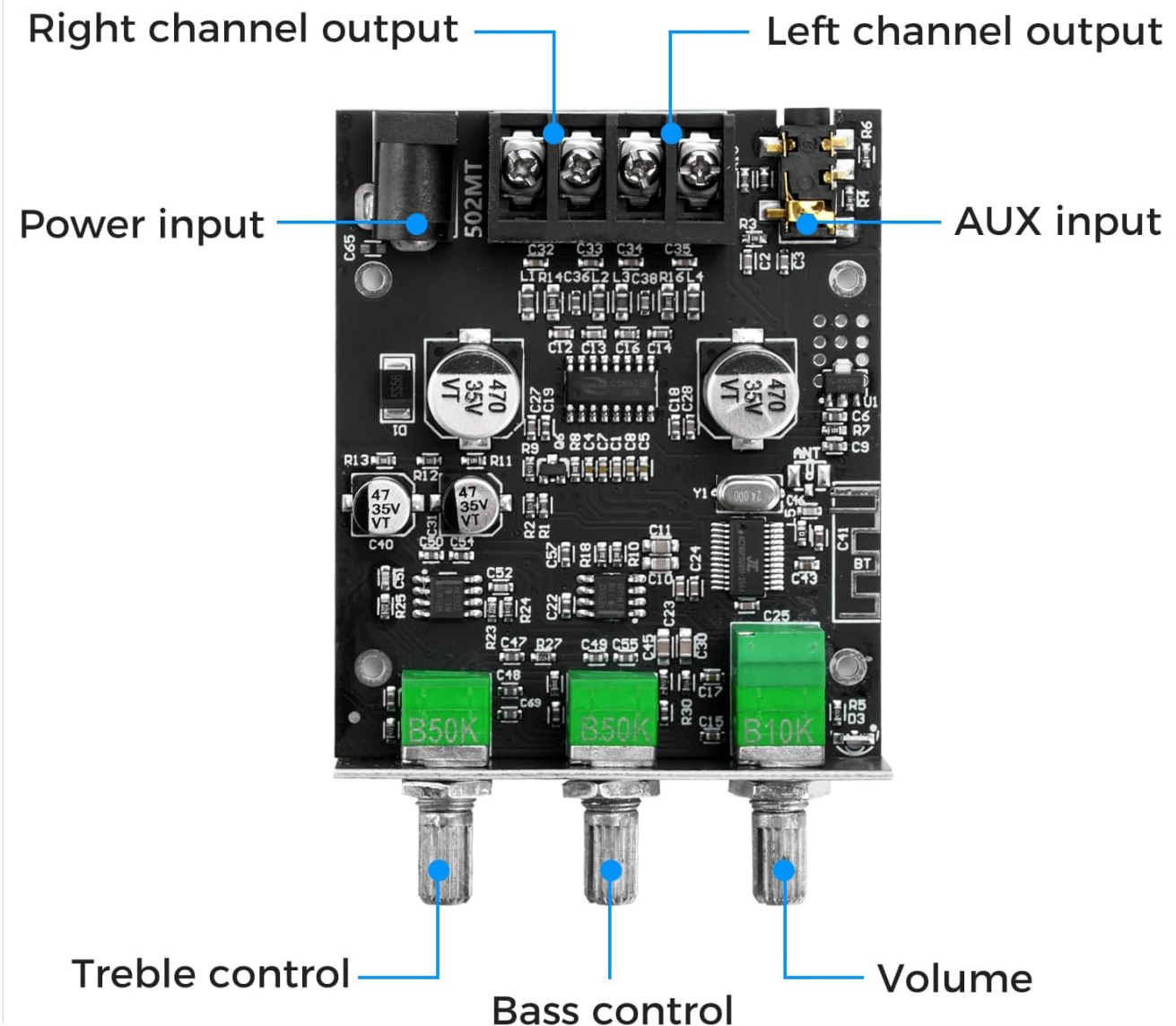


Image 4.2: Connection points for speakers, power, and AUX input.

4.3 Power Connection

Connect a DC power supply (9V-24V) to the power input terminal. The board includes a DC power adapter connector for convenience.

- Ensure your power supply voltage is within the 9V to 24V DC range.
- Connect the power supply to the DC-IN port on the amplifier board.
- The board has built-in reverse connection protection, but always double-check polarity before powering on.



Image 4.3: Detail of the power input and speaker terminals.

5. OPERATING INSTRUCTIONS

This section details how to operate your ZK-502MT amplifier board.

5.1 Power On/Off

- To power on, ensure all connections are secure, then connect the power supply to a power outlet. The power indicator LED will illuminate.
- To power off, disconnect the power supply from the outlet.

5.2 Volume, Treble, and Bass Control

The amplifier board features three rotary knobs for audio adjustment:

- **Volume:** Rotate the "VOLUME" knob clockwise to increase volume and counter-clockwise to decrease.
- **Bass:** Rotate the "BASS" knob clockwise to increase bass frequencies and counter-clockwise to decrease.
- **Treble:** Rotate the "TREBLE" knob clockwise to increase treble frequencies and counter-clockwise to decrease.

5.3 Audio Input Modes

The ZK-502MT supports two audio input modes: Bluetooth and AUX.



Image 5.1: The amplifier board supports both Bluetooth and AUX input modes.

5.3.1 Bluetooth Mode

1. Ensure the amplifier board is powered on.
2. The board will automatically enter Bluetooth pairing mode. A voice prompt or indicator light may confirm this.
3. On your audio source device (e.g., smartphone, tablet, computer), enable Bluetooth and search for available devices.
4. Select "ZK-502MT" from the list of devices to pair. No password is required.
5. Once paired, a confirmation sound will be heard, and you can begin playing audio wirelessly.



Image 5.2: Bluetooth connectivity range of the ZK-502MT.

5.3.2 AUX Input Mode

1. Connect a 3.5mm audio cable from your audio source device (e.g., MP3 player, TV, laptop) to the "AUX-IN" port on the amplifier board.
2. The amplifier board will automatically switch to AUX input mode when a cable is detected.
3. Begin playing audio from your source device.

6. TECHNICAL SPECIFICATIONS

Feature	Specification
Model Number	ZK-502MT
Brand	Daakro
Number of Channels	2.0 (Stereo)
Output Power	50W + 50W (Total 100W)
Input Voltage Range	DC 9V - 24V
Speaker Impedance	4-8Ω
Speaker Power Compatibility	20W - 200W
Bluetooth Version	5.0
Audio Inputs	Bluetooth, AUX (3.5mm)
Dimensions (L x W x H)	3.54 x 2.36 x 0.83 inches (9 x 6 x 2.1 cm)
Item Weight	4.2 ounces (119 grams)

Compact Design

Small but Power

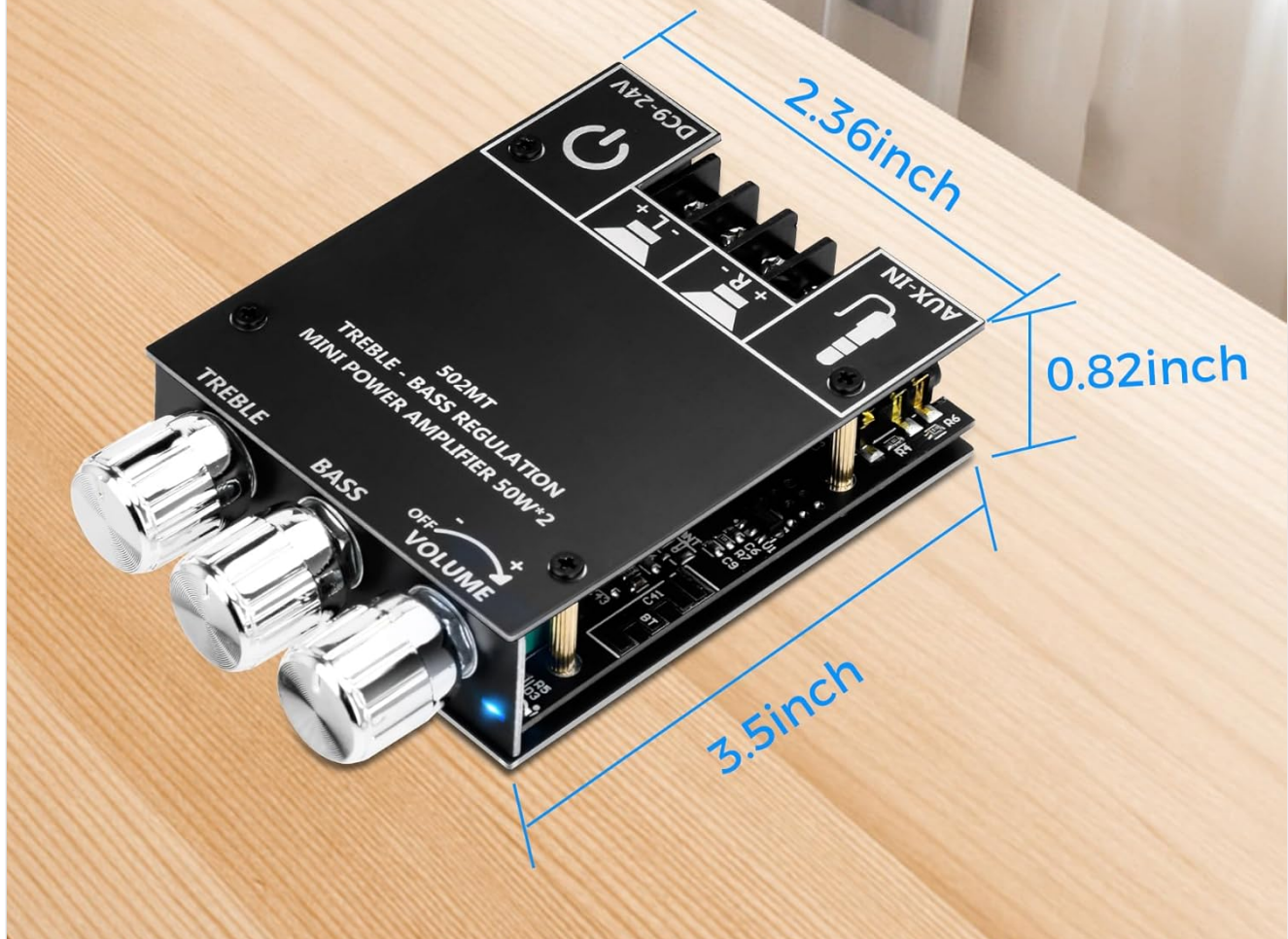


Image 6.1: Physical dimensions of the ZK-502MT amplifier board.

Power Output Comparison Table

Input Voltage	R&L Channel Output(@1KHZ)	
	Speaker Impedance	Output Power
12V	4Ω	20W+20W
	8Ω	12W+12W
15V	4Ω	30W+30W
	8Ω	18W+18W
19V	4Ω	40W+40W
	8Ω	30W+30W
24V	4Ω	50W+50W
	8Ω	40W+40W

Image 6.2: Power Output Comparison Table for different input voltages and speaker impedances.

7. TROUBLESHOOTING

Problem	Possible Cause	Solution
No sound output	<ul style="list-style-type: none">◦ Incorrect speaker wiring.◦ Low volume setting.◦ Incorrect input mode selected.◦ Faulty audio source or cable.◦ Power supply issue.	<ul style="list-style-type: none">◦ Check speaker polarity (+/-) and ensure secure connections.◦ Increase the volume knob on the amplifier and your audio source.◦ Ensure the correct input (Bluetooth/AUX) is active.◦ Test with a different audio source or cable.◦ Verify power supply is connected and within 9-24V DC range.

Bluetooth not connecting	<ul style="list-style-type: none"> ◦ Amplifier not in pairing mode. ◦ Device too far from amplifier. ◦ Bluetooth interference. ◦ Previous connection issue. 	<ul style="list-style-type: none"> ◦ Ensure amplifier is powered on and ready for pairing. ◦ Move your device closer to the amplifier (within 16.4 feet/5 meters). ◦ Turn off other Bluetooth devices nearby. ◦ Forget "ZK-502MT" on your device's Bluetooth settings and try pairing again.
Sound distortion or poor quality	<ul style="list-style-type: none"> ◦ Volume too high. ◦ Incompatible speakers. ◦ Insufficient power supply. ◦ Poor audio source quality. 	<ul style="list-style-type: none"> ◦ Reduce volume on both amplifier and audio source. ◦ Ensure speakers are 4-8Ω and within 20-200W power rating. ◦ Use a power supply with adequate current (e.g., 12V 5A or 24V 3A for higher power output). ◦ Test with a high-quality audio source.
Amplifier board gets hot	<ul style="list-style-type: none"> ◦ High volume or prolonged use. ◦ Inadequate ventilation. ◦ Heat sink not properly installed. 	<ul style="list-style-type: none"> ◦ This is normal under heavy load, but ensure it's not excessively hot. ◦ Ensure the board has sufficient airflow. ◦ Verify the heat sink is securely attached to the chip.

8. MAINTENANCE

To ensure the longevity and optimal performance of your ZK-502MT amplifier board, follow these simple maintenance guidelines:

- **Cleaning:** Gently wipe the surface of the board with a soft, dry cloth. Do not use liquid cleaners or solvents, as they may damage the electronic components.
- **Dust Removal:** Periodically use compressed air to remove dust from the heat sink and other components to maintain proper cooling.
- **Storage:** If storing the amplifier board for an extended period, disconnect it from power and store it in a cool, dry place away from direct sunlight and excessive humidity.
- **Handling:** Always handle the board by its edges to avoid touching sensitive components or causing static discharge.

9. WARRANTY AND SUPPORT

Daakro is committed to providing high-quality products and excellent customer service.

- **Warranty:** This product comes with a **36-month warranty** from the date of purchase, covering manufacturing

defects. Please retain your proof of purchase for warranty claims.

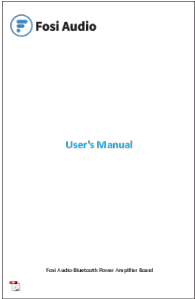

- **Customer Service:** For any questions, technical assistance, or warranty inquiries, please contact Daakro customer support.
- **Online Support:** Visit the official Daakro Store on Amazon for more information and support resources: [Daakro Amazon Store](#).



Image 9.1: Daakro After-Sales Support information.

Related Documents - ZK-502MT

	<p>Daakro AV-735A Audio Amplifier Instruction Manual</p> <p>Comprehensive instruction manual for the Daakro AV-735A audio amplifier, detailing front and rear panel functions, remote control operation, wiring instructions, usage guides, and troubleshooting FAQs.</p>
	<p>DFRobot Bass Treble Bluetooth Amplifier 50W*2: Product Overview and Operation Guide</p> <p>Comprehensive guide to the DFRobot Bass Treble Bluetooth Amplifier 50W*2, detailing its features, specifications, operation instructions, and shipping contents. Includes independent bass and treble control, Bluetooth 5.0, and protection mechanisms for DIY audio projects.</p>
	<p>Fosi Audio Bluetooth Power Amplifier Board User Guide</p> <p>This comprehensive user guide provides detailed introductions, product parameters, and installation instructions for Fosi Audio's range of Bluetooth power amplifier boards, including models ZK-1002, ZK-1002L, ZK-502C, ZK-502L, ZK-502T, ZK-1002T, and ZK-TB21. Learn how to connect your devices via Bluetooth or AUX, understand product specifications, and troubleshoot common issues.</p>
	<p>Wuzhi Audio ZK-152, ZK-152T, ZK-302, ZK-302T, ZK-LT21 Series Bluetooth Audio Amplifier Board Module Specifications and Manual</p> <p>Comprehensive guide to Wuzhi Audio's ZK-152, ZK-152T, ZK-302, ZK-302T, and ZK-LT21 series Bluetooth audio digital power amplifier board modules, covering features, specifications, and installation.</p>

 The image shows the front cover of a user manual. At the top left is the Fosi Audio logo, which consists of a blue circle with a white 'F' and the text 'Fosi Audio' next to it. In the center, the words 'User's Manual' are printed in a blue, sans-serif font. At the bottom, there is a small, faint image of the amplifier board and the text 'Fosi Audio Bluetooth Power Amplifier Board'.	<p>Fosi Audio Bluetooth Power Amplifier Board User Manual</p> <p>User manual for Fosi Audio Bluetooth Power Amplifier Boards (ZK-1002, ZK-1002L, ZK-502C, ZK-502L, ZK-502T, ZK-1002T, ZK-TB21), detailing product descriptions, parameters, package contents, installation guides, connection methods, troubleshooting Q&A, warranty information, and a comparative overview.</p>
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