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› Dioche ZK502L Stereo Digital Audio Power Amplifier Board User Manual

Dioche ZK502L

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User Manual

INTRODUCTION

The Dioche ZK502L is a stereo digital audio power amplifier board designed for DIY speaker projects and audio system upgrades. This module offers high compatibility, versatile usage, and advanced protection features, delivering premium sound quality for various applications.

PRODUCT FEATURES

- **High Compatibility:** Features a terminal block and DC 2.1mm socket, compatible with most laptop power ports. Supports Bluetooth 5.0 and various speakers.
- **Versatile Usage:** Equipped with a filter capacitor for sound processing. Supports stereo audio input and AUX audio input, suitable for DIY speaker projects.
- **Easy Adjustment:** Knob potentiometer for convenient power ON/OFF and volume control. Supports 20W, 30W, or 50W power amplifier boards.
- **Advanced Protection:** Designed with an acrylic protective shell. Features reverse connection protection, overvoltage protection, undervoltage protection, over-temperature protection, and short-circuit protection.
- **Premium Sound Quality:** Delivers clear sound without noise during power-on, song skipping, or pausing. Ideal for upgrading speakers, power amplifier equipment, and car systems.

PACKAGE CONTENTS

Please verify that all items are present in your package:

- 1 x Power Amplifier Board (ZK-502L)
- 1 x Screwdriver
- 9 x Screw
- 4 x Brass Connecting Rod
- 2 x Acrylic Board (for protective shell)
- 1 x Knob (for potentiometer)
- 1 x DC Power Cable

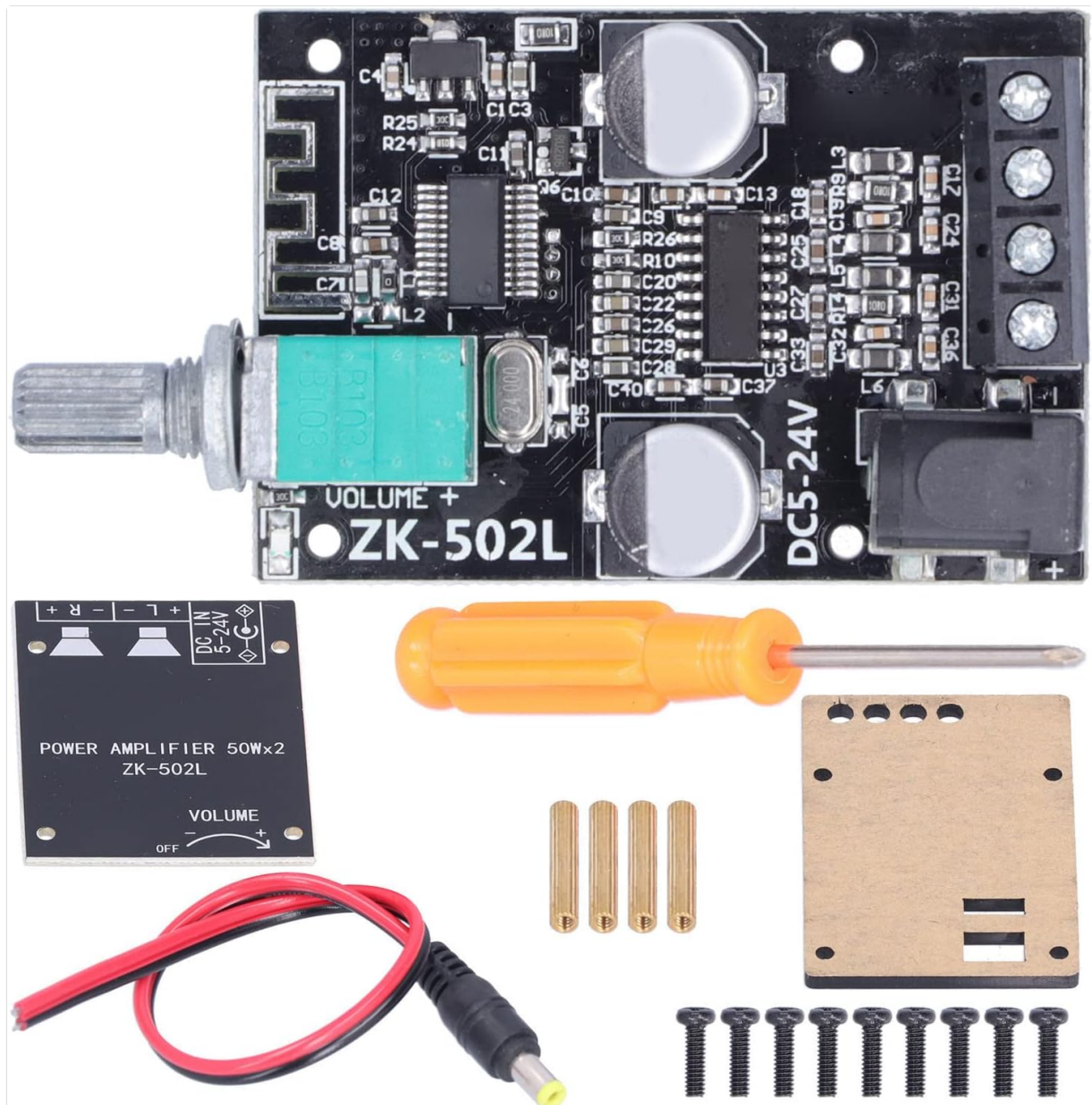


Image: Contents of the ZK502L amplifier kit.

SPECIFICATIONS

Feature	Detail
Item Type	Power Amplifier Board
Material	PCB
Model	ZK-502L
Bluetooth Version	5.0
Input Method	Bluetooth, AUX
Number of Channels	Left and Right Channels (Stereo)
Bluetooth Range	Approx. 15m (49.2ft) unobstructed
Signal-to-Noise Ratio	>90 dB
Adapted Power Supply Voltage	5-24V DC (Recommended: 9V/12V/15V/18V/24V adapters; high power requires higher voltage)
Adapted Speakers	30W-200W, 4Ω-8Ω
Output Power (12V)	8Ω/12W+12W, 4Ω/20W+20W
Output Power (15V)	8Ω/18W+18W, 4Ω/30W+30W
Output Power (19V)	8Ω/32W+32W, 4Ω/45W+45W
Output Power (24V)	8Ω/38W+38W, 4Ω/50W+50W
Protection Mechanisms	Self-recovery overheating protection, self-recovery short circuit protection
Package Dimensions	4.33 x 2.76 x 1.97 inches
Item Weight	2.93 ounces

SETUP INSTRUCTIONS

1. Assembly of Protective Shell (Optional)

Use the provided screws and brass connecting rods to assemble the two acrylic boards around the amplifier module. This provides physical protection for the circuit board.

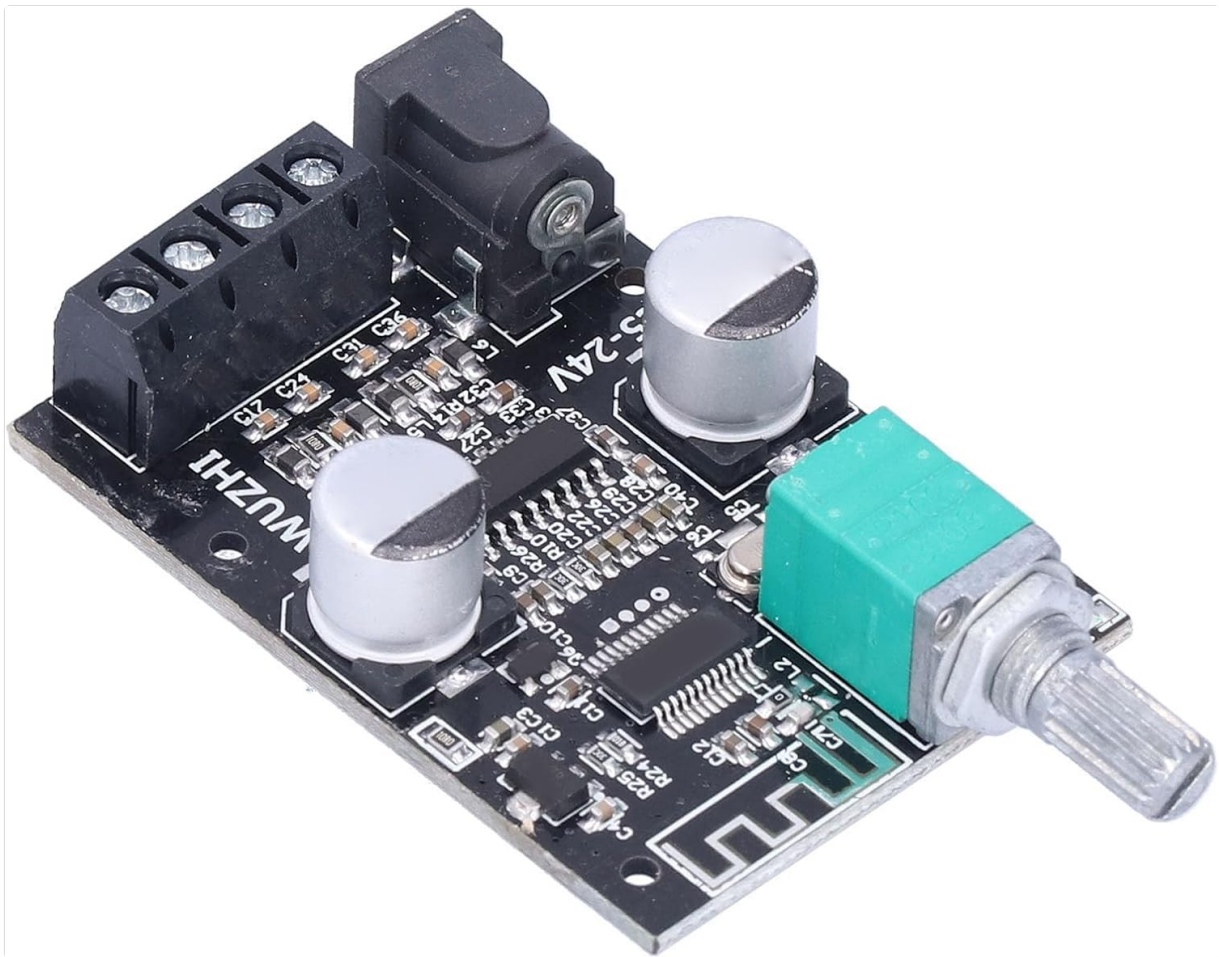


Image: ZK502L amplifier board with assembled acrylic protective shell.

2. Speaker Connection

Connect your 4Ω-8Ω speakers (30W-200W) to the speaker output terminals on the amplifier board. Ensure correct polarity (+ to + and - to -) for optimal sound. The terminals are clearly marked.

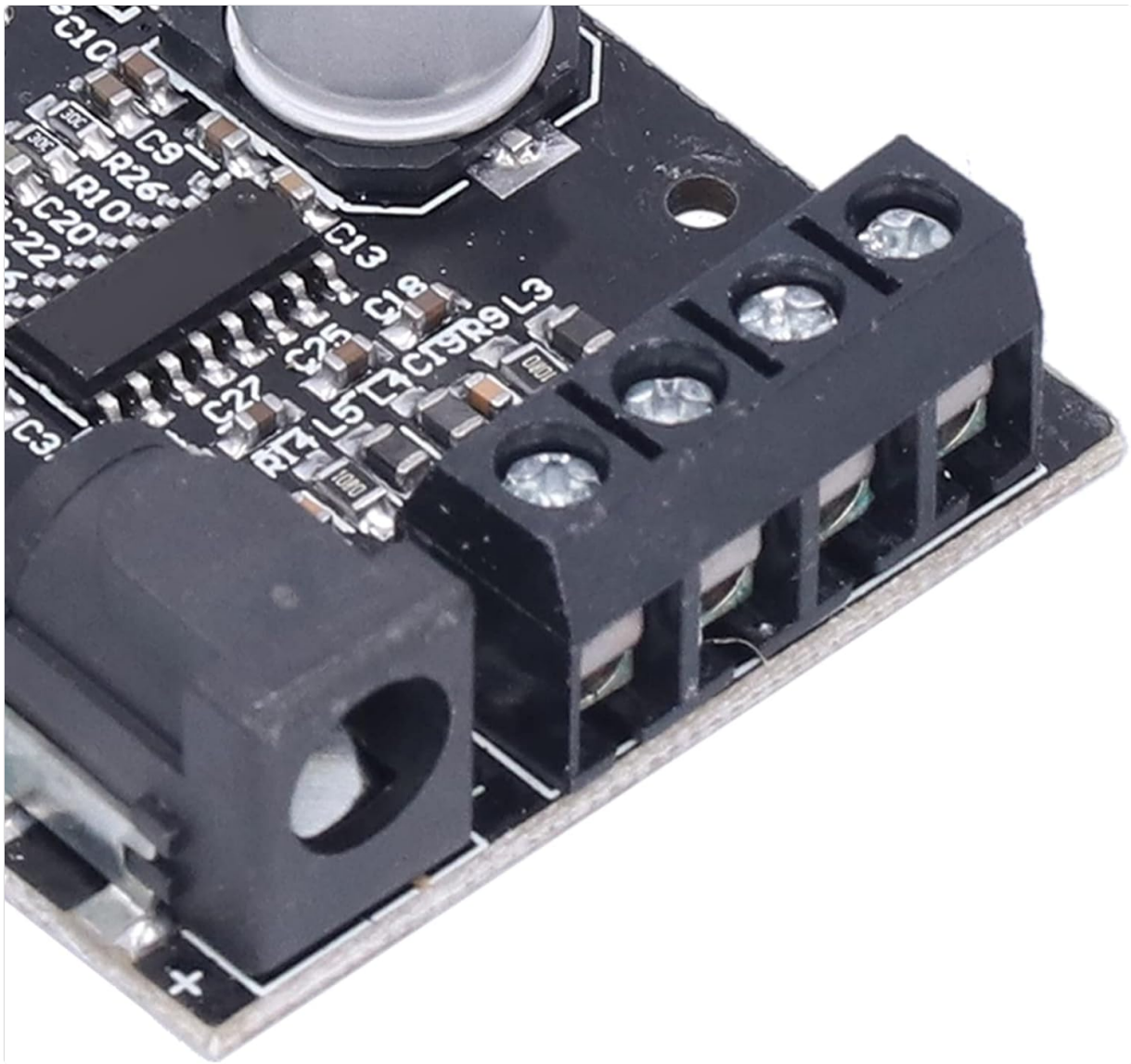


Image: Speaker output terminals and DC power input.

3. Power Supply Connection

Connect a DC power supply (5-24V) to the DC power input jack or the terminal block. Ensure the voltage matches your desired output power and speaker impedance. Higher voltage is recommended for higher power output.

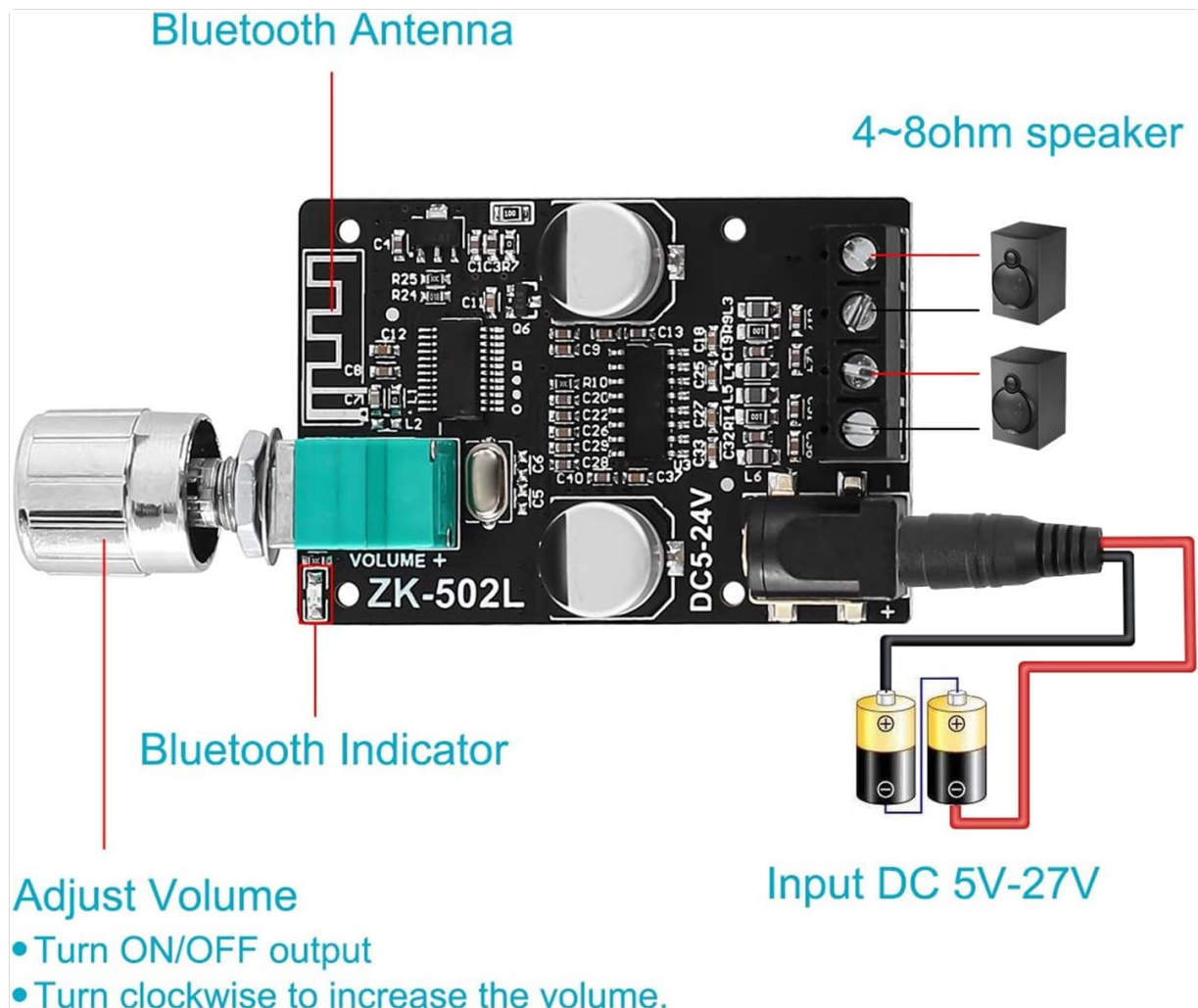


Image: Connection diagram for the ZK502L amplifier board.

4. Audio Input Connection (AUX)

For AUX input, connect your audio source (e.g., smartphone, MP3 player) to the 3.5mm AUX input jack on the board. The amplifier will automatically switch to AUX input when a cable is detected.

Connection Demo

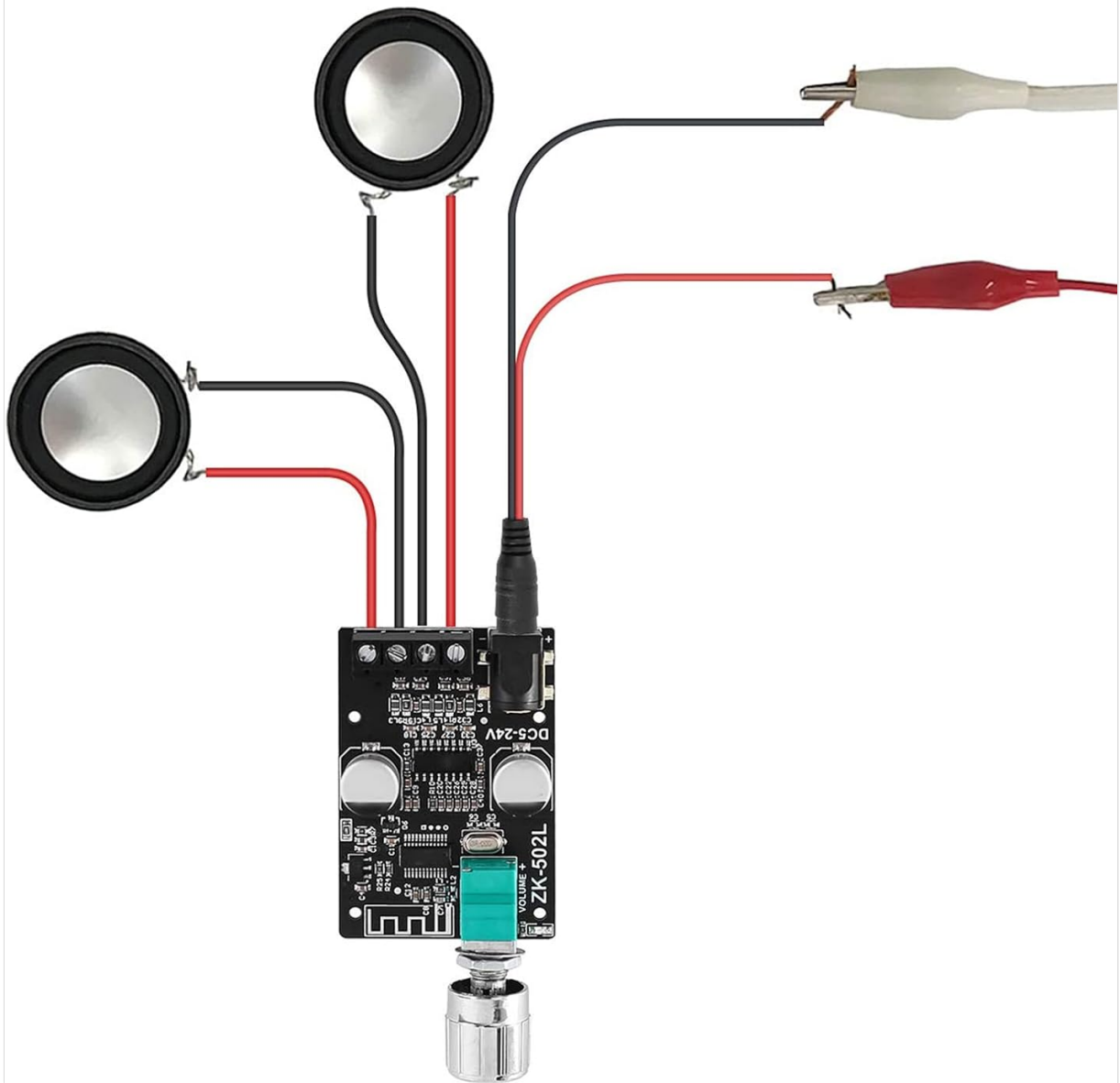


Image: Connection demo with speakers and AUX input.

OPERATING INSTRUCTIONS

1. Power On/Off and Volume Control

The knob potentiometer controls both power and volume. Turn the knob clockwise to power on the amplifier and increase the volume. Turn counter-clockwise to decrease volume and power off the device.

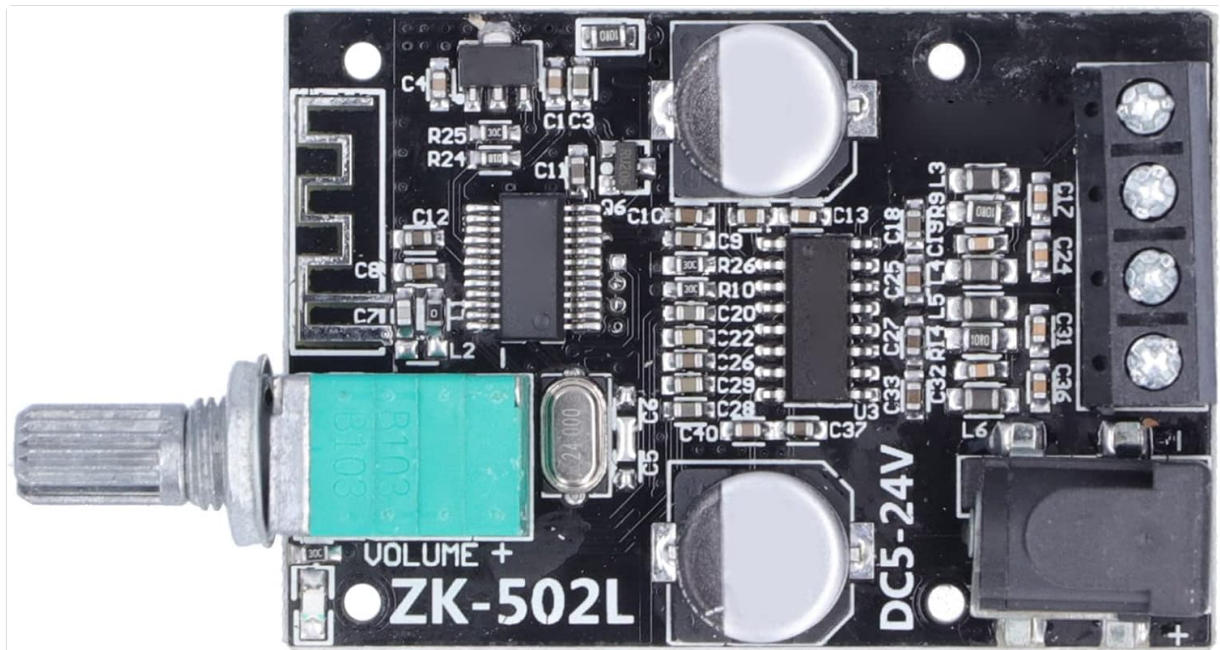


Image: Top view of the ZK502L amplifier board with volume knob.

2. Bluetooth Pairing

Once powered on, the amplifier will enter Bluetooth pairing mode. The Bluetooth indicator LED (as shown in the connection diagram) will flash. On your audio device (e.g., smartphone), search for Bluetooth devices and select "ZK-502L" to pair. Once successfully paired, the Bluetooth indicator will remain solid.

3. AUX Input Usage

If an AUX cable is connected to the 3.5mm jack, the amplifier will automatically prioritize and switch to AUX input. To revert to Bluetooth mode, simply disconnect the AUX cable.

MAINTENANCE

- Keep the amplifier board clean and free from dust. Use a soft, dry cloth for cleaning.
- Avoid exposing the board to moisture, liquids, or extreme temperatures.
- Ensure proper ventilation around the amplifier to prevent overheating, especially during high-power operation.
- Do not attempt to modify the circuit or components, as this may damage the device and void any potential warranty.

TROUBLESHOOTING

No Sound

- Check all power and speaker connections for secure contact and correct polarity.
- Ensure the power supply voltage is within the 5-24V range and provides sufficient current.
- Verify the audio source is playing and the volume is turned up on both the source and the amplifier.
- Confirm Bluetooth is paired correctly or the AUX cable is fully inserted.

Distorted Sound

- Reduce the volume on both the amplifier and the audio source.

- Check speaker impedance; ensure it is within the 4Ω-8Ω range.
- Verify the power supply is stable and provides adequate power for the connected speakers.

Bluetooth Connection Issues

- Ensure the amplifier is in pairing mode (flashing Bluetooth indicator LED).
- Move your device closer to the amplifier (within 15m unobstructed).
- Try unpairing and re-pairing the device from your audio source's Bluetooth settings.
- Ensure no other devices are actively connected to the amplifier.

Overheating

- Ensure adequate ventilation around the amplifier board.
- Check if the speaker impedance is too low or if the power supply voltage is too high for the connected speakers, causing excessive load. The board has self-recovery overheating protection, but continuous overheating should be avoided.

WARRANTY INFORMATION

This product comes with a standard manufacturer's warranty against defects in materials and workmanship. Please refer to your purchase documentation or contact the seller for specific warranty terms and duration. Keep your proof of purchase for any warranty claims.

SUPPORT INFORMATION

For technical assistance, troubleshooting, or product inquiries, please contact the seller or manufacturer directly through the platform where the product was purchased. When contacting support, please provide your product model number (ZK-502L) and purchase details for efficient assistance.