

DollaTek XY-P15W Stereo Bluetooth Digital Power Amplifier Module User Manual

Model: XY-P15W

1. Introduction

The DollaTek XY-P15W is a compact stereo Bluetooth digital power amplifier module designed for audio enthusiasts and DIY projects. It features Bluetooth 5.0 connectivity, allowing wireless audio streaming, and delivers various power outputs depending on the voltage and speaker impedance. This manual provides essential information for proper setup, operation, and maintenance of your amplifier module.



Image 1.1: Top view of the DollaTek XY-P15W Bluetooth Amplifier Module, showing the main components and terminal blocks.

2. Product Features

- **Working Voltage:** DC 8V to 24V
- **Bluetooth Version:** 5.0 for stable wireless connection
- **Transmission Distance:** Up to 15 meters (unobstructed line of sight)
- **Channels:** Two channels (stereo output)
- **Output Power:** Varies based on voltage and speaker impedance (e.g., 16W*2 @12V 4Ω, 20W*2 @20V 8Ω)
- **Protection Mechanisms:** Reverse power protection, short circuit protection, self-recovery overheat protection

3. Component Overview and Connections

Familiarize yourself with the various connection points and indicators on the amplifier board before proceeding with installation.

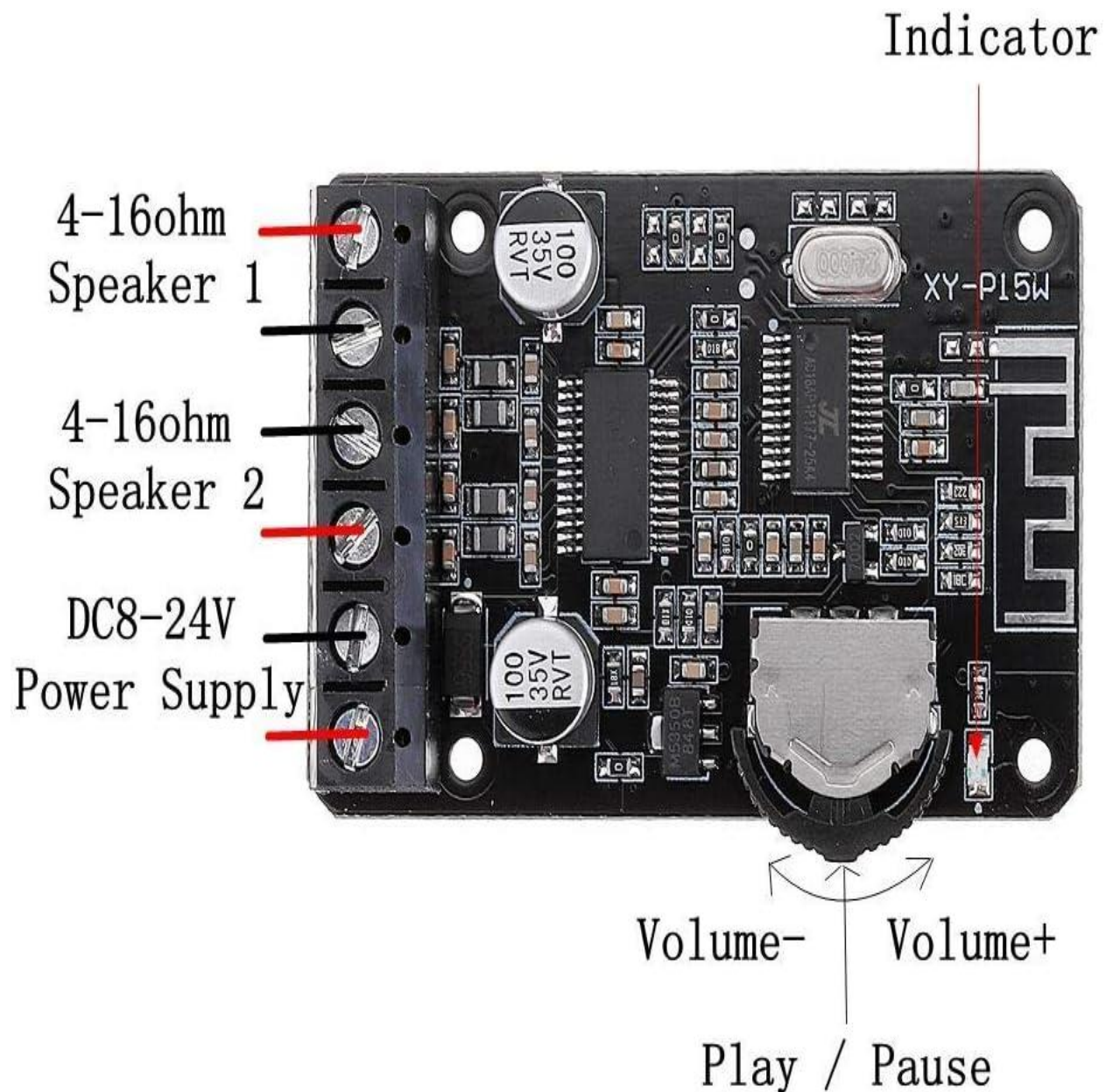


Image 3.1: Labeled diagram of the DollaTek XY-P15W module, indicating power input, speaker outputs, volume control, and Bluetooth indicator.

- **Power Supply (DC 8-24V):** Connect your DC power source to these terminals. Ensure correct polarity (+ and -).
- **Speaker 1 (4-16Ω):** Connect your first speaker to these terminals (SPK1+ and SPK1-).
- **Speaker 2 (4-16Ω):** Connect your second speaker to these terminals (SPK2+ and SPK2-).
- **Volume Control:** The rotary encoder allows adjustment of volume (Volume- / Volume+) and acts as a play/pause button when pressed.

- **Indicator:** A small LED light that indicates the Bluetooth status.

4. Setup Instructions

4.1. Power Supply Connection

1. Ensure your power supply is within the recommended range of **DC 8V to 24V**.
2. Connect the positive (+) terminal of your power supply to the '+' terminal on the amplifier board's power input.
3. Connect the negative (-) terminal of your power supply to the '-' terminal on the amplifier board's power input.
4. **Caution:** *Exceeding 26V DC will damage the chip. Ensure correct polarity to prevent reverse power protection activation or damage.*

4.2. Speaker Connection

1. Connect your speakers to the designated SPK1 and SPK2 terminals.
2. Ensure the speaker impedance is between **4 ohms and 16 ohms**.
3. Connect the positive (+) wire of Speaker 1 to SPK1+ and the negative (-) wire to SPK1-.
4. Connect the positive (+) wire of Speaker 2 to SPK2+ and the negative (-) wire to SPK2-.
5. **Note:** *The speaker cable length should ideally be within 1 meter to minimize signal loss and interference.*
6. **Important:** *The rated power of the speakers should be 30W or above to prevent speaker damage, especially at higher output levels.*

4.3. Initial Power On

Once all connections are secure, apply power to the module. The Bluetooth indicator LED should light up, indicating the module is ready for pairing.

5. Operating Instructions

5.1. Bluetooth Pairing

1. Power on the amplifier module. The Bluetooth indicator will typically blink, signifying it is in pairing mode.
2. On your audio source device (e.g., smartphone, tablet, computer), enable Bluetooth and search for available devices.

3. Select "**XY-P15W**" from the list of available devices to connect.
4. Once successfully paired, the Bluetooth indicator LED will typically stop blinking and remain solid. A confirmation tone may also be heard.
5. **Note:** *The module supports one Bluetooth connection at a time. To connect a different device, disconnect the currently paired device first.*

5.2. Volume Control and Playback

- **Volume Adjustment:** Rotate the encoder knob clockwise to increase volume and counter-clockwise to decrease volume.
- **Play/Pause:** Press the encoder knob once to play or pause the audio playback.

6. Specifications

Feature	Detail
Working Voltage	DC 8V ~ 24V
Bluetooth Version	5.0
Transmission Distance	15 meters (unobstructed)
Number of Channels	2 (Stereo)
Output Power (1KHz)	• 16W*2 @12V 4Ω • 10W*2 @12V 8Ω • 15W*2 @16V 8Ω • 20W*2 @20V 8Ω • 30W*2 @24V 8Ω (requires heat sink)
Adapter Speaker Impedance	• 4Ω (8-12V power supply) • 8Ω (8-24V power supply) • 16Ω (8-24V power supply)
Module Protection	Reverse power protection, Short circuit protection, Self-recovery overheat protection
Dimensions	Approximately 4.33 x 2.64 x 0.24 inches (11 x 6.7 x 0.6 cm)
Item Weight	Approximately 0.46 ounces (13 grams)

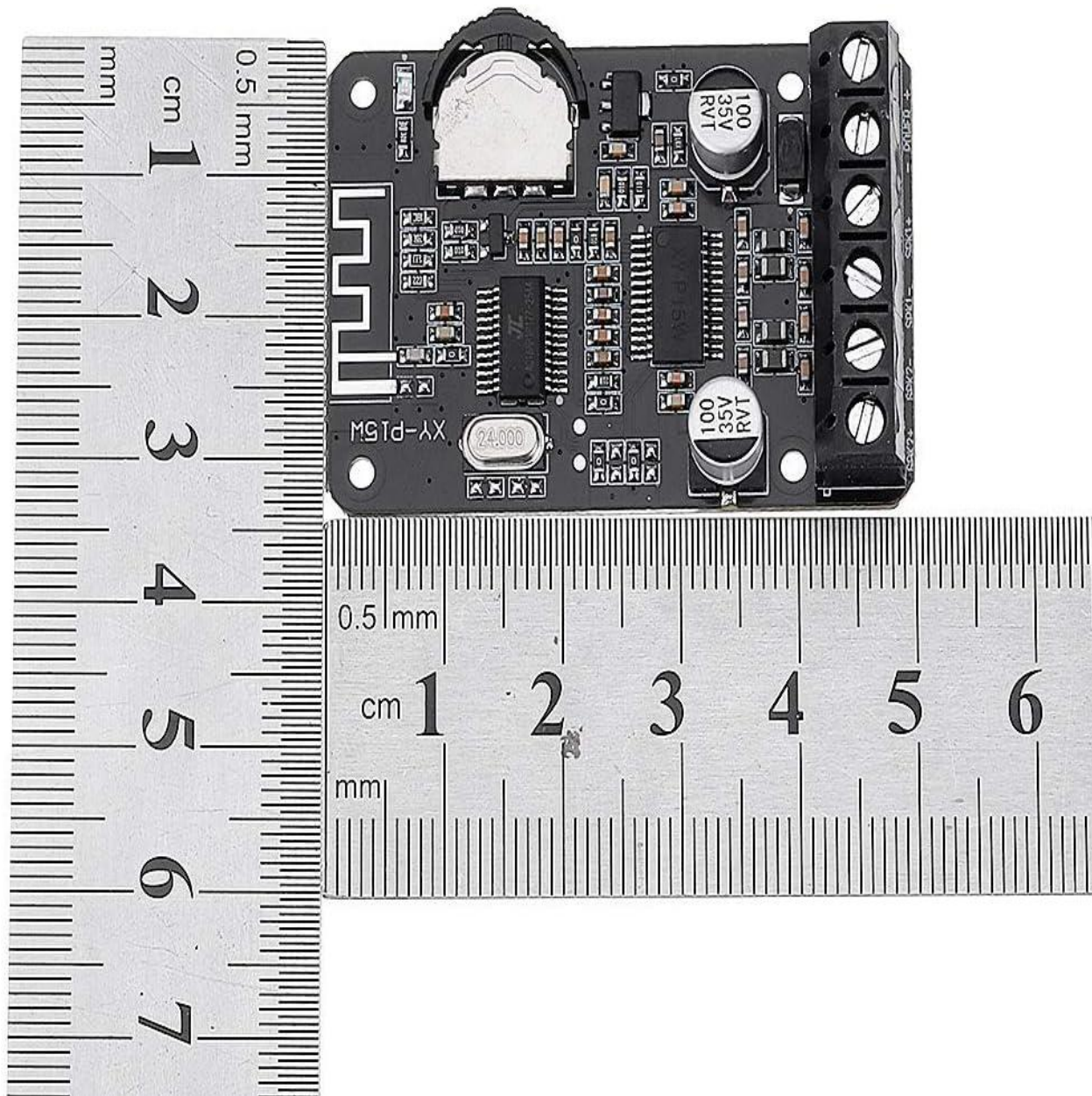


Image 6.1: DollaTek XY-P15W module shown with a ruler for size reference.

7. Important Precautions

- **WIFI Interference:** Keep the amplifier board as far as possible from strong WIFI signals (e.g., routers) to prevent interference.
- **Power Supply Voltage:** The recommended power supply voltage is DC 8V to 24V. Voltages exceeding 26V will cause permanent damage to the chip.
- **Speaker Impedance and Voltage:**

- When connecting a 4Ω speaker, the power supply should not exceed 12V.
- When connecting an 8Ω speaker, the power supply should not exceed 24V.
- **Supply Current:** A supply current of 2A or more is recommended for optimal performance.
- **Heat Dissipation:** If the module's working power exceeds 20W per channel (20W*2), it is necessary to add a heat sink to prevent overheating.
- **Speaker Cable Length:** Keep speaker cables short, ideally within 1 meter, to maintain audio quality and minimize interference.
- **Static Electricity Protection:** Electronic components are sensitive to static electricity. Before handling the amplifier board, discharge any static electricity from your hands to prevent damage to the chip, especially the Bluetooth component.
- **Speaker Rating:** It is recommended to use speakers with a rated power of 30W or above to avoid burning out the speakers, particularly at higher volume levels.

8. Troubleshooting

- **No Power / No Indicator Light:**
 - Check power supply voltage (DC 8-24V) and current (2A or more recommended).
 - Verify power supply polarity. Reverse polarity protection may prevent operation.
 - Inspect power connections for loose wires or shorts.
- **No Sound / Distorted Sound:**
 - Ensure speakers are correctly connected to SPK1 and SPK2 terminals with correct polarity.
 - Check speaker impedance (4-16Ω) and ensure it matches the power supply voltage guidelines.
 - Verify Bluetooth connection is established and the indicator is solid.
 - Adjust volume on both the module and the source device.
 - Ensure speaker cables are not too long (ideally under 1 meter).
 - If distortion occurs at high volume, reduce volume or check if speakers are adequately rated (30W+).

- **Bluetooth Connection Issues:**

- Ensure the module is within the 15-meter transmission range and there are no major obstructions.
- Keep the module away from strong WIFI signals.
- Disconnect any previously paired devices from the module.
- Restart the module and your source device's Bluetooth.
- Clear the Bluetooth pairing history on your source device and try pairing again.

- **Module Overheating:**

- If operating at higher power outputs (e.g., 30W*2 @24V 8Ω), a heat sink is required.
- Ensure adequate ventilation around the module.
- Reduce the output power or operating voltage if overheating persists.

9. Maintenance

- Keep the module clean and free from dust and debris. Use a soft, dry cloth for cleaning.
- Avoid exposing the module to moisture, extreme temperatures, or direct sunlight.
- Ensure proper ventilation, especially if operating at higher power levels.
- Regularly check all connections for security and integrity.

10. Warranty and Support

For warranty information and technical support, please refer to the retailer or manufacturer's official website where the product was purchased. Keep your proof of purchase for any warranty claims.