

## WONDOM BDM8-A

# WONDOM TPA3255 BDM8-A 2x300W Class D Amplifier Board User Manual

Model: BDM8-A

## 1. INTRODUCTION

This manual provides essential information for the proper installation, operation, and maintenance of your WONDOM TPA3255 BDM8-A 2x300W Class D Amplifier Board. This high-power, dual-channel stereo amplifier board is designed for HiFi audio applications, utilizing the TPA3255 chip for efficient and powerful sound reproduction. Please read this manual thoroughly before use to ensure optimal performance and safety.

## 2. SAFETY INFORMATION

- **Power Supply:** Use a DC power supply within the specified voltage range of 18V to 48V. Exceeding this range can damage the board.
- **Polarity:** Ensure correct power polarity connections. Incorrect polarity will cause damage.
- **Heat Dissipation:** The amplifier board generates heat during operation. Ensure adequate ventilation and do not obstruct the cooling fan.
- **Connections:** Make all connections (power, audio input, speaker output) before applying power to the board. Avoid hot-plugging.
- **Handling:** Handle the board with care to avoid damage to components. Avoid touching exposed circuitry while powered.
- **Environment:** Do not expose the board to moisture, extreme temperatures, or corrosive environments.

## 3. PACKAGE CONTENTS

Verify that all items are present in your package:

- 1 x WONDOM TPA3255 BDM8-A Amplifier Board

- 1 x 3.5mm Line Input Cable

**Note:** A power supply is not included in the package and must be purchased separately. The BDM8-A does not include Bluetooth functionality or a volume control module.



Image: Packing list showing the amplifier board and included 3.5mm line input cable, along with board dimensions.

#### 4. PRODUCT OVERVIEW

The WONDOM BDM8-A is a high-performance Class D audio amplifier board featuring the TPA3255 chip. It delivers 2x300W of power, making it suitable for demanding audio applications. Key features include:

- **High Power Output:** 300W + 300W
- **Wide Supply Voltage:** Operates with DC 18V-48V
- **Efficient Design:** Utilizes the TI TPA3255 HiFi Class D chip
- **Cooling System:** Integrated fan cooling for stable operation
- **Channel Configuration:** 2.0 Channel Stereo

# 300W + 300W HIFI Digital Amplifier Board

Wide Supply Voltage

DC18-48V

TI TPA3255

HIFI CLASS D CHIP

300W+300W

Fan Cooling



Image: Top-down view of the WONDOM BDM8-A amplifier board, highlighting its components.

## 5. SETUP INSTRUCTIONS

Follow these steps to correctly set up your amplifier board:

### 5.1. Identify Ports

Familiarize yourself with the various connection points on the amplifier board.

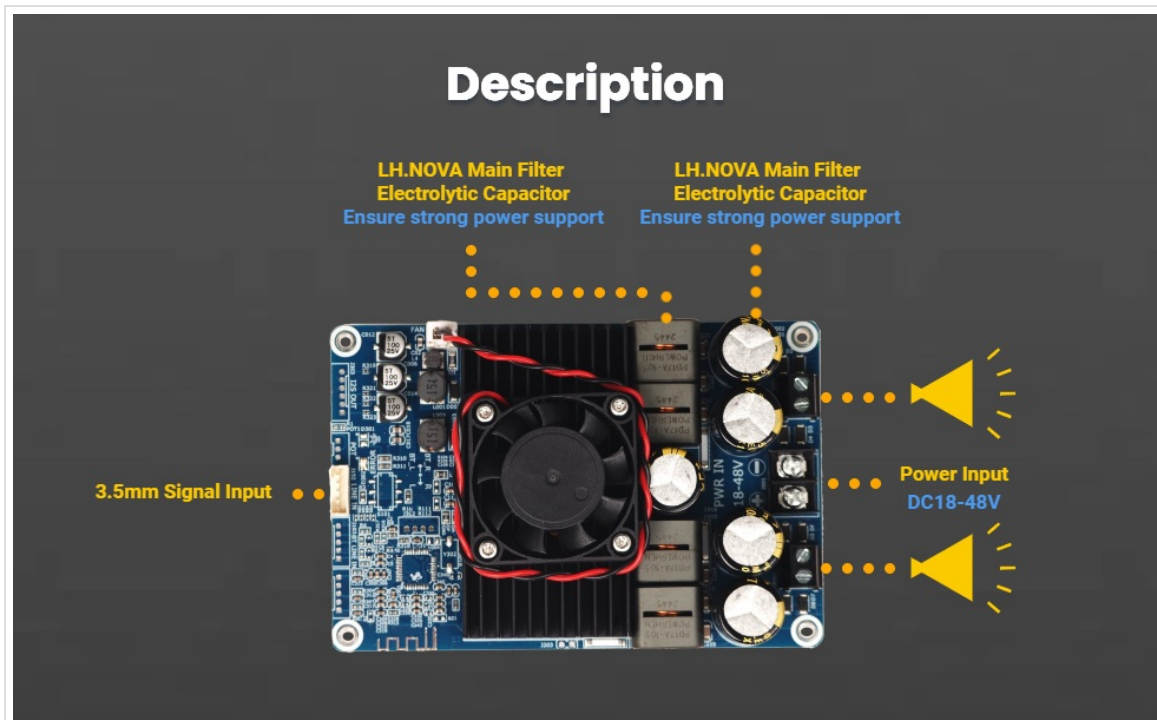


Image: Detailed diagram of the BDM8-A board, indicating the 3.5mm signal input, main filter capacitors, and power input.

### 5.2. Connect Audio Input

1. Locate the **3.5mm Signal Input** port on the board.
2. Connect your audio source (e.g., smartphone, DAC, pre-amplifier) to this input using the provided 3.5mm line-in cable.

### 5.3. Connect Speakers

1. Identify the **Speaker Output** terminals. These are typically screw terminals for bare wire connections.
2. Connect your passive speakers to the corresponding left and right channel outputs. Ensure correct polarity (+ to + and - to -) for each speaker.
3. The board supports 2.0 channel stereo output.

### 5.4. Connect Power Supply

1. Locate the **Power Input DC18-48V** terminals.
2. Connect a suitable DC power supply (18V-48V) to these terminals. Pay close attention to the positive (+) and negative (-) polarity markings to avoid damage.
3. Ensure the power supply is off or unplugged before making the connection.

Your browser does not support the video tag.

Video: An official video from Sure Electronics demonstrating the port introduction and connections for the BDM8-A amplifier board.

## 6. OPERATING INSTRUCTIONS

1. **Power On:** After all connections are securely made, plug in your DC power supply or switch it on. The board should power up.
2. **Audio Playback:** Start playing audio from your connected source. The amplifier will output sound through the connected speakers.
3. **Volume Control:** Please note that the BDM8-A board does **not** have an onboard volume control. Volume must be adjusted from your audio source (e.g., phone, computer, pre-amplifier).
4. **Power Off:** To turn off the amplifier, disconnect or switch off the DC power supply.

## 7. MAINTENANCE

- **Cleaning:** Keep the amplifier board clean and free from dust. Use a soft, dry cloth or a brush to gently remove dust. Do not use liquid cleaners.
- **Fan Check:** Periodically check the cooling fan for obstructions or excessive noise. Ensure it spins freely to maintain optimal heat dissipation.
- **Connections:** Occasionally check all wire connections to ensure they remain secure. Loose connections can lead to poor performance or damage.

## 8. TROUBLESHOOTING

- **No Sound:**

- Ensure the power supply is connected and providing the correct voltage (18V-48V DC).
- Verify that the audio source is playing and its volume is turned up.
- Check all audio input and speaker output connections for proper seating and polarity.
- Confirm speakers are functional.

- **Distorted Sound:**

- Reduce the volume from your audio source. Overdriving the input can cause distortion.
- Ensure the power supply is adequate for the desired output power. A weak power supply can lead to distortion at higher volumes.
- Check speaker impedance compatibility with the amplifier.

- **One Channel Not Working or Kicking Out:**

- Inspect the speaker wire connections for the affected channel. Ensure they are secure and not short-circuited.
- Test with a different speaker or audio source to isolate the problem.
- Ensure the power supply is stable and sufficient. Fluctuations can affect channel stability.

- **Overheating:**

- Ensure the cooling fan is operating correctly and not obstructed.
- Provide adequate airflow around the amplifier board.
- Reduce the output power if operating in an enclosed space without sufficient ventilation.

## 9. SPECIFICATIONS

| Parameter              | Value  |
|------------------------|--|
| Brand                  | WONDOM                                       |
| Model                  | BDM8-A (TPA3255)                             |
| Number of Channels     | 2.0 (Stereo)                                 |
| Output Power           | 2 x 300W                                     |
| Maximum Output Power   | 600W   |
| Minimum Supply Voltage | 18 Volts (DC)                                |
| Maximum Supply Voltage | 48 Volts (DC)                                |
| Mounting Type          | Surface Mount                                |
| Material Type          | Printed Circuit Board, Electronic Components |
| Included Components    | 3.5mm line in cable                          |
| UPC                    | 843577103664                                 |

### Audio Performance Data

# Audio Performance

| Parameter          | Conditions                                | Output    | Min. | Typ.   | Max. | Units |
|--------------------|---|-----------|------|--------|------|-------|
| Efficiency         | 2x150W @36V, 4Ω, 1kHz                     |           | -    | 85     | -    | %     |
| Amp Gain           | Line in                                   | OUT1      | -    | 27.53  | -    | dB    |
|                    |   | OUT2      | -    | 27.47  | -    | dB    |
| SNR                | Line In 2x150W @4Ω, A-weighting           | OUT1      | -    | 95.0   | -    | dB    |
|                    |   | OUT2      | -    | 94.5   | -    | dB    |
| THD + N            | Line In 1W @4Ω, 1kHz                      | OUT1      | -    | 0.0048 | -    | %     |
|                    |   | OUT2      | -    | 0.0050 | -    | %     |
| Output Noise Level | Line In A-weighting, Input Connect to GND | OUT1      | -    | 235    | -    | uV    |
|                    |   | OUT2      | -    | 257    | -    | uV    |
| Input Impedance    | Line In @ 4Ω, 1kHz                        |           | -    | 20     | -    | kΩ    |
| Input Sensitivity  | Line In, 2 x 150W @ 4Ω, 1kHz              | OUT1&OUT2 | -    | 1      | -    | V     |
| DC Offset          | -   |           | -    | 15     | -    | mW    |

Image: Table detailing the audio performance parameters of the amplifier board.

## Performance Graphs

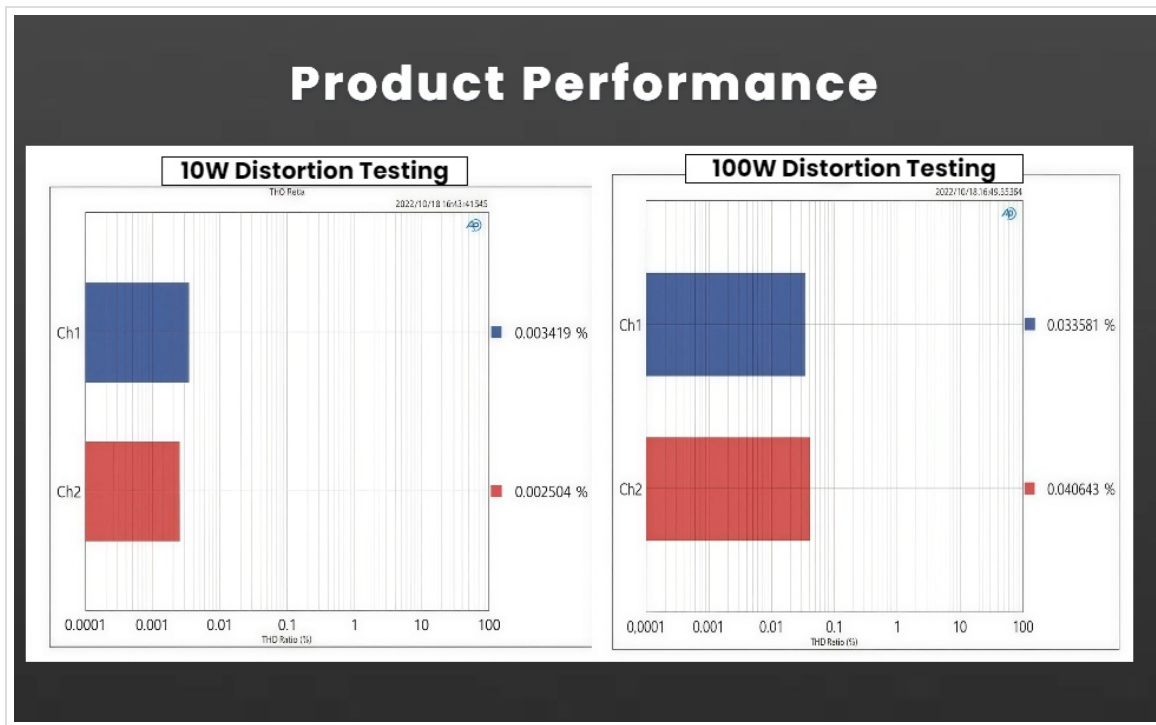


Image: Graphs illustrating 10W and 100W distortion testing results.

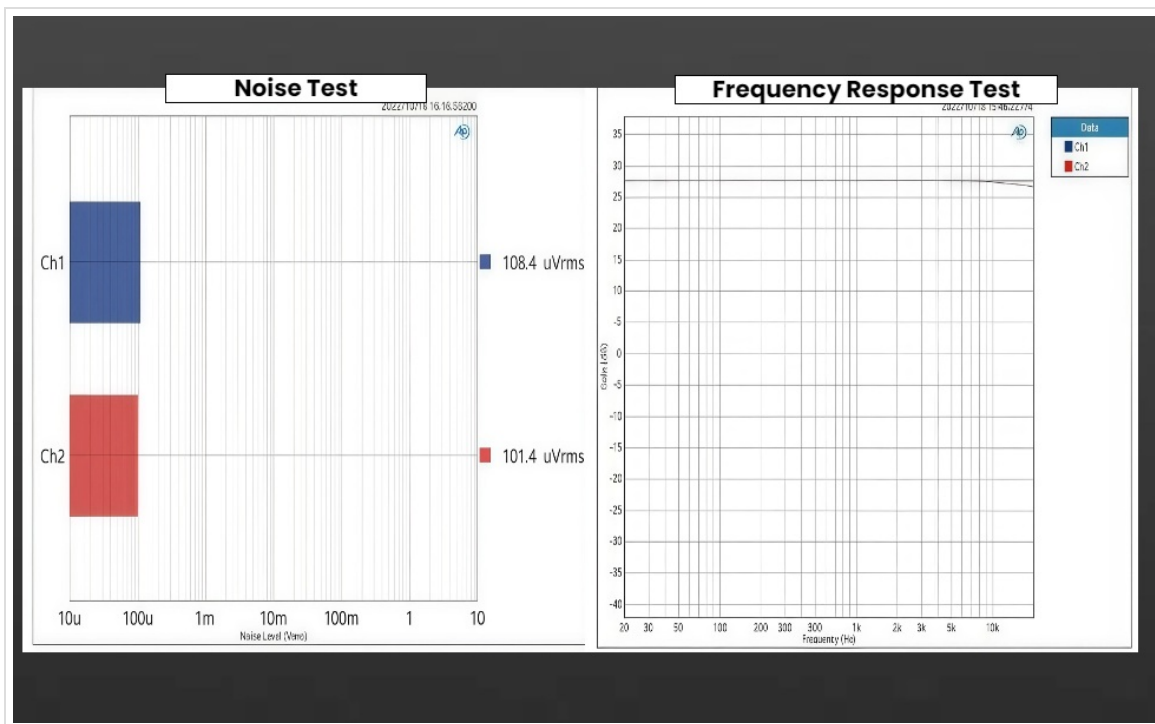


Image: Graphs displaying noise test and frequency response test results.

## 10. WARRANTY INFORMATION

The WONDOM TPA3255 BDM8-A Amplifier Board comes with a **1-Year Manufacturer Warranty**.

This warranty covers defects in materials and workmanship under normal use. It does not cover damage caused by misuse, accident, unauthorized modification, or improper installation.

For warranty claims, please retain your proof of purchase and contact the manufacturer or authorized reseller.

## 11. SUPPORT

For technical assistance, troubleshooting, or further inquiries regarding your WONDOM TPA3255 BDM8-A Amplifier Board, please contact WONDOM customer support or visit their official website.

Refer to your purchase documentation for specific contact details.