DAJUNGUO X400HS

DAJUNGUO X400HS 2.1 Channel Bluetooth 5.0 Amplifier Board User Manual

Model: X400HS

1. Introduction

The DAJUNGUO X400HS is a versatile 2.1 channel Bluetooth 5.0 amplifier board designed for various audio applications, including DIY speaker projects, home theater systems, and audio upgrades. This unit features dual TPA3223 amplifier chips, delivering a robust 200W + 200W + 400W output for left, right, and subwoofer channels, respectively. It operates efficiently with a wide DC input voltage range of 12-42V.

The X400HS offers multiple audio input options, including Bluetooth 5.0 for stable wireless streaming, a 3.5mm AUX input for wired connections, and a USB port for direct playback of audio files from a USB flash drive. Comprehensive control is provided through six independent knobs, allowing precise adjustment of subwoofer frequency and volume, left/right channel treble, bass, and volume, as well as a master volume control.

2. Product Features

- **High Power Output:** Dual TPA3223 amplifier chips provide 200W + 200W for left/right channels and 400W for the subwoofer channel.
- **Wide Voltage Input:** Compatible with 12-42V DC power input, requiring 10A or above for optimal performance.
- **6-Knob Control:** Independent controls for Subwoofer Frequency, Subwoofer Volume, Left/Right Treble, Left/Right Bass, Left/Right Volume, and Master Volume.
- **Multiple Audio Inputs:** Supports Bluetooth 5.0, 3.5mm AUX, and USB playback (MP3, WAV, FLAC, APE up to 32GB FAT32).
- **Physical Mode Switch:** Dedicated switch for easy selection between Bluetooth, AUX, and USB input modes.
- **Comprehensive Protection:** Built-in safeguards against short-circuit, over-current, over-temperature, and reverse polarity.
- **Smart Control:** Multifunction knob for one-touch play/pause, track skipping, and factory reset. Features power-on memory.
- **DIY Friendly:** Compact design with pre-soldered IPEX antenna and standard 5.5x2.5mm DC jack for easy integration into custom setups.

3. Product Overview and Connections

Familiarize yourself with the layout and connection points of the X400HS amplifier board.

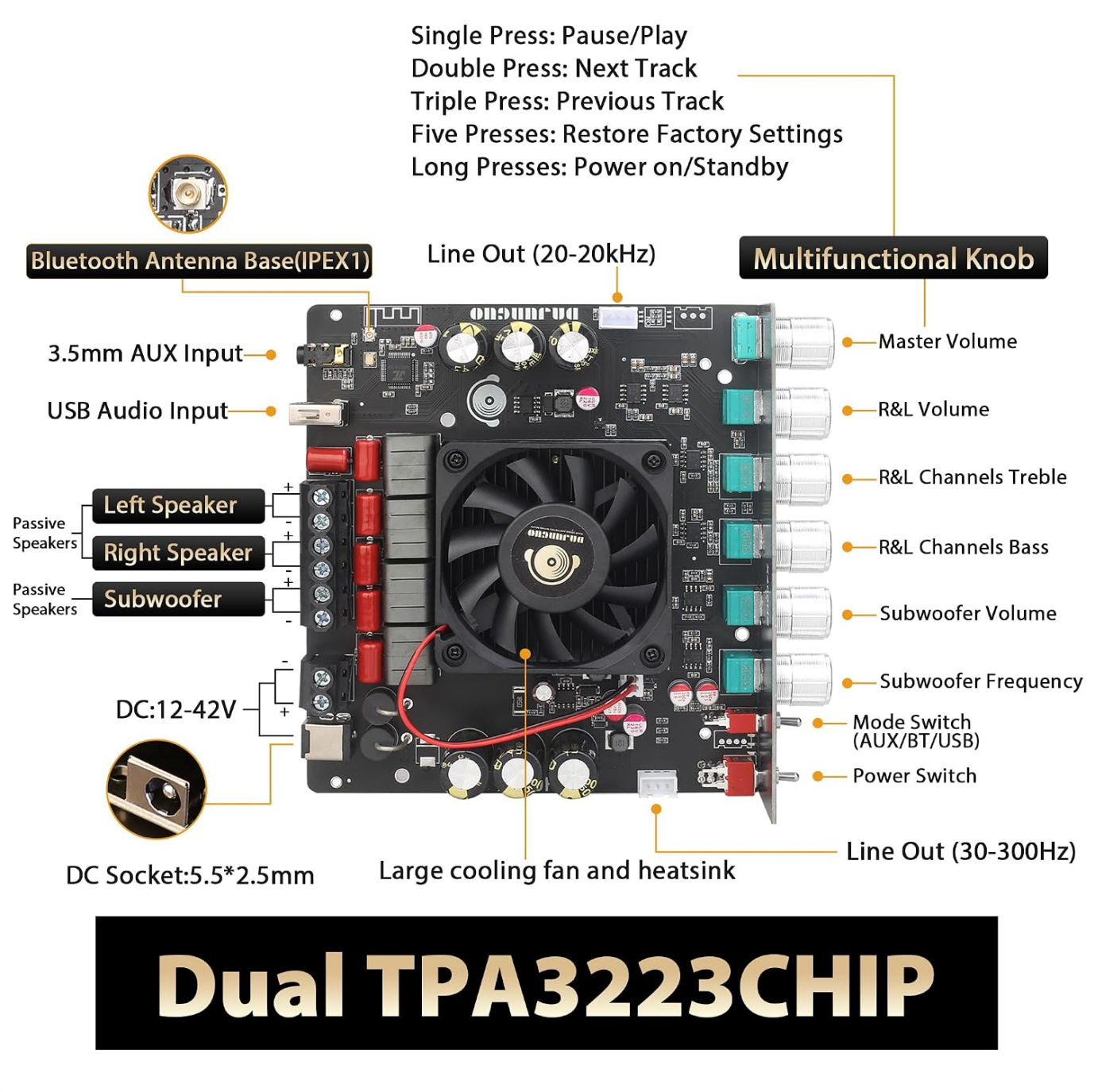


Figure 1: Front and Rear Panel Overview with Labeled Controls and Ports. This diagram illustrates the location of the Bluetooth antenna base, 3.5mm AUX input, USB audio input, DC 12-42V power input, speaker output terminals (Left, Right, Subwoofer), Multifunction Knob, Master Volume, L&R Volume, L&R Treble, L&R Bass, Subwoofer Volume, Subwoofer Frequency, Mode Switch, and Power Switch. It also highlights the large cooling fan and heatsink.

Figure 2: Available Audio Input Methods. This image details the 3.5mm AUX Input, Bluetooth Input, and USB Audio Input, indicating that USB flash drives must be FAT32 formatted and up to 32GB.

Power Output Table(Test Conditions：1khz)				
Model:X400HS		DC12-42V/10A or Above		
DC Voltage	Channel	8Ω	4Ω	2Ω
12V	R & L	10W+10W	20W+20W	\
	Subwoofer	10W	20W	30W
24V	R & L	30W+30W	70W+70W	\
	Subwoofer	30W	70W	150W
36V	R & L	80W+80W	160W+160W	\
	Subwoofer	80W	160W	350W
40V	R & L	100W+100W	200W+200W	\
	Subwoofer	100W	200W	400W
If the input voltage is 40V, the speaker impedance for the left and right channels must be greater than or equal to 4Ω，the speaker impedance for the subwoofer must be greater than 2Ω				

Figure 3: High-End Components for Hi-Fi Sound. This image shows close-ups of the Bluetooth chip (supporting AAC/SBC decoding), the external Bluetooth antenna base for extended range, and the upgraded DC jack designed to prevent spark generation.

4. Setup Instructions

1. **Power Supply Connection:** Connect a DC power supply (12-42V, 10A or above) to the DC 5.5x2.5mm jack. Ensure the power supply matches the voltage and current requirements for your speaker setup to prevent damage and ensure optimal performance.
2. **Speaker Connection:** Connect your passive speakers to the designated terminals. Connect left and right speakers to the L&R Channel outputs, and your subwoofer to the Subwoofer output. Pay close attention to polarity (+/-). Refer to the specifications section for recommended speaker impedance.
3. **Bluetooth Antenna:** Attach the provided Bluetooth antenna to the IPEX antenna base for optimal wireless signal reception.
4. **Initial Power On:** Flip the power switch to the "ON" position. The indicator light will illuminate.

5. Operating Instructions

5.1 Input Mode Selection

Use the physical **Mode Switch** located on the front panel to toggle between input sources:

- **AUX:** For wired connections via the 3.5mm AUX input.
- **BT (Bluetooth):** For wireless audio streaming.
- **USB:** For playing audio files from a USB flash drive.

Figure 4: Input Mode Toggle. This image shows the amplifier in a setup with speakers, highlighting the input mode toggle switch (ON/OFF, AUX, BT, USB) and its corresponding indicator lights for clear status.

5.2 Bluetooth Pairing

1. Switch the input mode to **BT**. The Bluetooth indicator light will blink, indicating it is in pairing mode.
2. On your audio device (smartphone, tablet, etc.), enable Bluetooth and search for available devices.
3. Select "X400HS" from the list of devices to pair. Once connected, the Bluetooth indicator light will remain solid.

5.3 USB Playback

1. Insert a USB flash drive (formatted to FAT32, maximum 32GB) containing supported audio files (MP3, WAV, FLAC, APE) into the USB Audio Input port.
2. Switch the input mode to **USB**. The amplifier will automatically begin playing audio from the USB drive.

5.4 Knob Controls

Adjust the following knobs to fine-tune your audio experience:

- **Master Vol:** Controls the overall output volume of the amplifier.
- **L&R Vol:** Adjusts the volume of the left and right stereo channels.
- **L&R Treble:** Controls the high-frequency response of the left and right channels.
- **L&R Bass:** Controls the low-frequency response of the left and right channels.
- **Subwoofer Vol:** Adjusts the volume of the subwoofer channel.
- **Subwoofer Freq:** Sets the crossover frequency for the subwoofer, determining which low frequencies are sent to the subwoofer.

5.5 Multifunction Knob Operations

The Multifunction Knob provides quick control over playback and settings:

- **Single Press:** Play/Pause audio.
- **Double Press:** Skip to the next track.
- **Triple Press:** Go to the previous track.
- **Five Presses:** Restore factory settings.
- **Long Press:** Power on/Standby.

6. Maintenance

To ensure the longevity and optimal performance of your X400HS amplifier board, follow these maintenance guidelines:

- **Cleaning:** Use a soft, dry cloth to clean the surface of the amplifier. Avoid using liquid cleaners or solvents, as they may damage the components.
- **Ventilation:** Ensure the amplifier is placed in a well-ventilated area. Do not block the cooling fan or heatsink. Proper airflow is crucial to prevent overheating.
- **Storage:** When not in use for extended periods, store the amplifier in a cool, dry place away from direct sunlight and extreme temperatures.
- **Connections:** Periodically check all cable connections to ensure they are secure and free from corrosion.

7. Troubleshooting

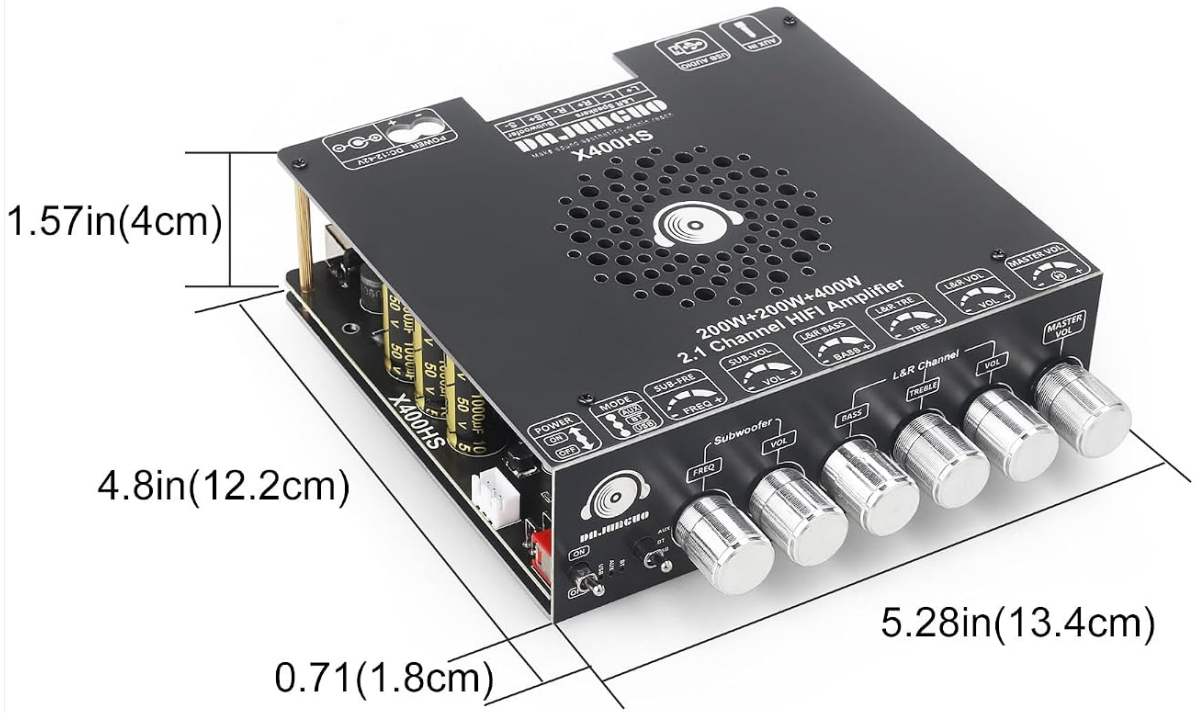
If you encounter issues with your X400HS amplifier board, refer to the following troubleshooting steps:

Problem	Possible Cause	Solution
No sound output	• Power not connected or switched on. • Incorrect input mode selected. • Volume knobs set too low. • Speaker wires loose or incorrectly connected. • Audio source not playing or muted.	• Check power supply and power switch. • Verify the correct input mode (AUX, BT, USB) is selected. • Increase Master Vol, L&R Vol, and Subwoofer Vol. • Ensure speaker wires are securely connected with correct polarity. • Check audio source device for playback and mute status.

Problem	Possible Cause	Solution
Distorted sound	• Input signal too high. • Volume set too high. • Speaker impedance mismatch. • Inadequate power supply.	• Reduce the volume on your audio source device. • Lower the Master Vol on the amplifier. • Ensure speakers meet the recommended impedance (4-8Ω for L&R, 2-8Ω for Subwoofer). • Verify power supply meets 12-42V DC, 10A or above.
Bluetooth connection issues	• Not in Bluetooth mode. • Device not paired. • Too far from the amplifier. • Interference.	• Switch input mode to BT. • Ensure the amplifier is in pairing mode (blinking light) and re-pair your device. • Move your audio device closer to the amplifier. • Minimize other wireless devices nearby.
USB playback not working	• Incorrect USB format or size. • Unsupported audio file type. • USB drive not properly inserted.	• Ensure USB drive is FAT32 formatted and max 32GB. • Verify audio files are MP3, WAV, FLAC, or APE. • Re-insert the USB drive firmly.

8. Specifications

Detailed technical specifications for the DAJUNGUO X400HS amplifier board.



Audio Input	Bluetooth+AUX+USB
Input Voltage	DC 12-42V/10A or Above
Chip	Dual TPA3223 Chip
Bluetooth Version	5.2
USB Decording Format	WAV FLAC APE MP3
Adapted Speaker	L&R Speaker:4-8Ω； Subwoofer:2-8Ω
Output Power	L&Rchannels⩽200W;subwoofer⩽400W
Product Size	5.51*5.28*1.57in(140*134*40mm)
Product Weight	456g(excluding packaging)
Bluetooth Audio Decoding	AAC、SBC

Figure 5: Product Dimensions and Key Specifications. This image provides a visual representation of the amplifier's dimensions (5.51 x 5.28 x 1.57 inches) and a table summarizing audio input, input voltage, chip type, Bluetooth version, USB decoding formats, adapted speaker impedance, output power, product size, product weight, and Bluetooth audio decoding.

Feature	Specification
Audio Input	Bluetooth + AUX + USB
Input Voltage	DC 12-42V / 10A or Above
Amplifier Chip	Dual TPA3223 Chip
Bluetooth Version	5.2
USB Decoding Format	WAV, FLAC, APE, MP3
Adapted Speaker Impedance	L&R Speaker: 4-8Ω; Subwoofer: 2-8Ω

Feature	Specification
Output Power	L&R Channels ≤200W; Subwoofer ≤400W
Product Dimensions (L x W x H)	5.51 x 5.28 x 1.57 inches (140 x 134 x 40mm)
Product Weight	456g (excluding packaging) / 1.23 pounds
Bluetooth Audio Decoding	AAC, SBC
Manufacturer	DAJUNGUO
UPC	607606794724

8.1 Power Output Table (Test Conditions: 1kHz)

Figure 6: Power Output Table. This table details the power output (in Watts) for the X400HS amplifier board across different DC input voltages (12V, 24V, 36V, 40V) and speaker impedances (8Ω, 4Ω, 2Ω) for both R&L channels and the Subwoofer channel. It also includes a note regarding minimum speaker impedance requirements at 40V input.

DC Voltage	Channel	DC12-42V/10A or Above		
		8Ω	4Ω	2Ω
12V	R & L	10W+10W	20W+20W	\
	Subwoofer	10W	20W	30W
24V	R & L	30W+30W	70W+70W	\
	Subwoofer	30W	70W	150W
36V	R & L	80W+80W	160W+160W	\
	Subwoofer	80W	160W	350W
40V	R & L	100W+100W	200W+200W	\
	Subwoofer	100W	200W	400W

Note: If the input voltage is 40V, the speaker impedance for the left and right channels must be greater than or equal to 4Ω, and the speaker impedance for the subwoofer must be greater than 2Ω.

9. Warranty Information

This DAJUNGUO X400HS amplifier board comes with a standard manufacturer's warranty. Please refer to the product packaging or contact your retailer for specific warranty terms and conditions. The warranty typically covers defects in materials and workmanship under normal use.

10. Support

For technical assistance, troubleshooting, or any questions regarding your DAJUNGUO X400HS amplifier board, please contact DAJUNGUO customer support through the retailer's platform or the official brand website. When contacting support, please have your product model (X400HS) and purchase information readily available.

Example: How do I reset this device or fix this error?

Details

Model number, symptoms, what you tried, or the section of the manual you are using.

Submit question