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WONDOM KAB9 8 x 50W Configurable USB Codec Input Audio Amplifier Board User Manual

Model: KAB9**Brand:** WONDOM

1. INTRODUCTION

The WONDOM KAB9 is an advanced 8 x 50W audio amplifier board designed for versatile audio system applications, including game machines and kiosks. It offers high reliability and performance, building upon Sure Electronics' established product platform. The KAB9 features four amplifier chips, each configurable into PBTL mode for 1 x 100W output, allowing for flexible system configurations.

This manual provides detailed instructions for the setup, operation, and maintenance of your KAB9 amplifier board, ensuring optimal performance and longevity.

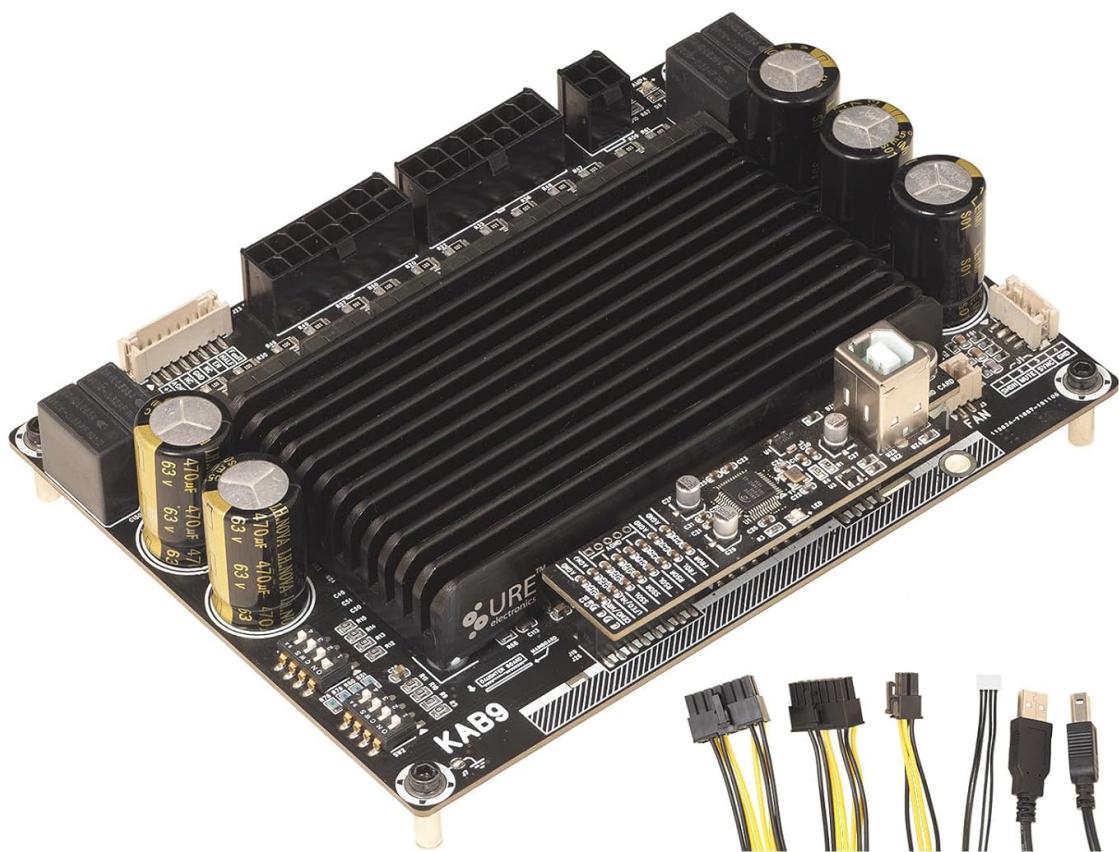


Figure 1: WONDOM KAB9 8 x 50W Audio Amplifier Board with included accessories.

2. PRODUCT FEATURES

- **8 x 50W Audio Amplifier:** Provides robust audio output for various applications.
- **Higher Output Power with Fan Installed:** Capable of 8 x 100W peak output when equipped with a cooling fan.
- **Independent PBTL/BTL Configuration:** Four stereo amplifier chips can be independently configured for PBTL mode (1 x 100W).
- **Multiple Output Modes:** Supports configurations such as 8.0, 7.1, 6.1, 5.1, 4.2, and 4.0 audio systems.
- **External Plug-and-Play Modules:** Designed to support daughter boards, including a 7.1 USB codec module for digital audio input.
- **7.1 USB Codec as Audio Input:** Enables high-quality digital audio input, minimizing ground noise.
- **Five Level Gain Adjustment:** Gain can be adjusted via an on-board switch.
- **Control Features:** Includes Shutdown, Mute, and Synchronize control options.
- **Protection:** Equipped with overcurrent protection.
- **Compact Size:** Dimensions of 6.0 x 4.5 x 1.8 inches.

8x50W/100W, Suitable for Multiple Audio Systems

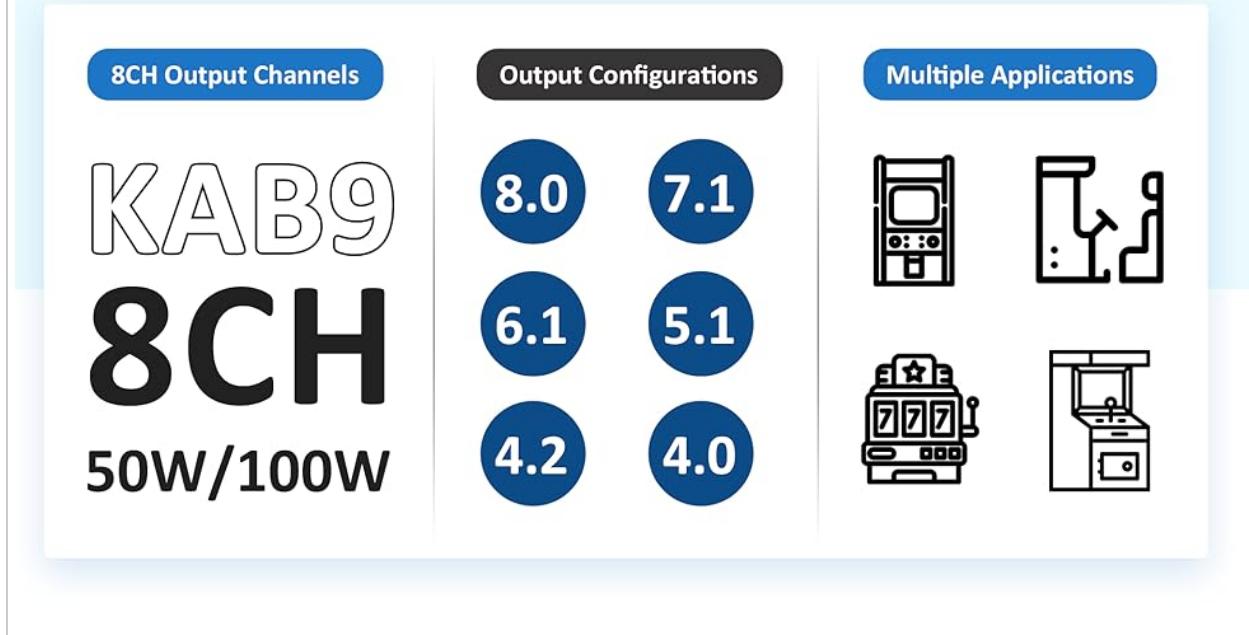


Figure 2: KAB9 output channel configurations for various audio systems.

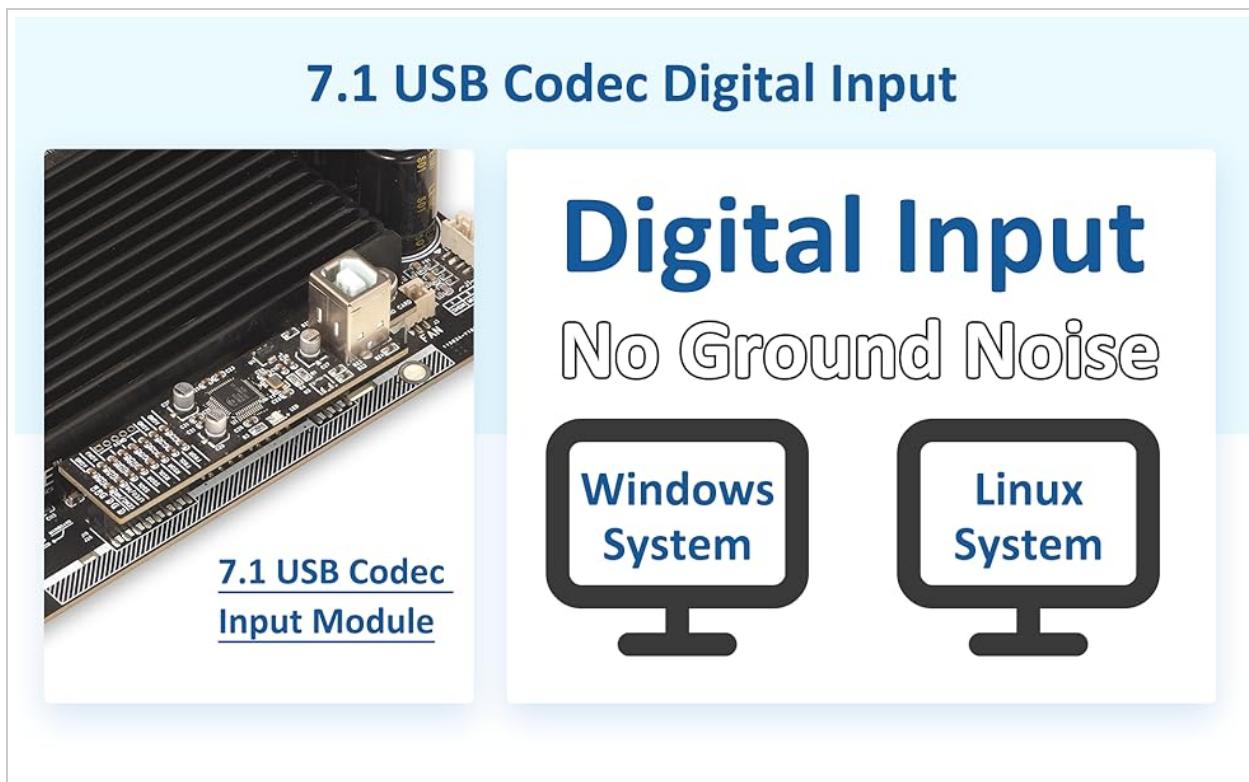


Figure 3: KAB9 supports 7.1 USB Codec Digital Input, compatible with Windows and Linux systems, reducing ground noise.

3. SETUP AND INSTALLATION

3.1 Package Contents

Please verify that all components are present in your package. Refer to the packing list provided with your purchase. Typically, the package includes the KAB9 amplifier board and necessary connection cables.

3.2 Power Supply Connection

Connect a suitable DC power supply to the designated power input terminals on the KAB9 board. Ensure the voltage and current ratings of your power supply meet the requirements specified in the 'Specifications' section to prevent damage.

3.3 Speaker Connections

Connect your speakers to the output terminals. The KAB9 supports various configurations (8.0, 7.1, 6.1, 5.1, 4.2, 4.0). Ensure correct polarity for each speaker connection. Refer to the board's silk screen for channel assignments.

3.4 Audio Input Connections

The KAB9 supports differential input. For digital audio, connect the 7.1 USB codec module (if purchased separately) to the dedicated daughter board interface. This module provides a high-quality digital input, effectively avoiding ground noise.



Figure 4: Angled view of the KAB9 board, highlighting power and speaker output connectors.



Figure 5: KAB9 amplifier board with the 7.1 USB Codec Input Module connected.

3.5 Configuration Switches

The KAB9 features on-board switches for configuring the output modes and gain levels. These switches allow you to select between various channel configurations (e.g., 8.0, 7.1, 6.1, 5.1, 4.2, 4.0) and to set individual amplifier chips into PBTL (Parallel Bridge-Tied Load) mode for higher power output (1 x 100W). Consult the detailed diagram in the product documentation for specific switch settings for each configuration.

4. OPERATING INSTRUCTIONS

4.1 Powering On/Off

Once all connections are secure, apply power to the board. The power indicator LED will illuminate. To power off, disconnect the power supply.

4.2 Audio Input Selection

If using the 7.1 USB codec module, connect it to your host device (e.g., PC, kiosk system). The system should automatically detect the audio device. Select the KAB9 as your audio output device in your operating system's sound settings.

4.3 Gain Adjustment

The KAB9 offers five levels of gain adjustment via an on-board switch. Adjust the gain to match your audio source and speaker sensitivity for optimal sound quality and to prevent distortion.

4.4 Output Mode Selection

The desired output configuration (e.g., 8.0, 7.1, 6.1, 5.1, 4.2, 4.0) is set using the physical switches on the board during setup. Ensure these are correctly set before applying power and playing audio.

4.5 Control Functions

The board includes pins for Shutdown, Mute, and Synchronize control. Refer to the KAB9 datasheet for detailed pinout and control signal specifications for integration into custom systems.

5. MAINTENANCE

To ensure the longevity and reliable operation of your KAB9 amplifier board, follow these maintenance guidelines:

- **Cleaning:** Keep the board free from dust and debris. Use a soft, dry brush or compressed air for cleaning. Avoid using liquids or solvents.
- **Environment:** Operate the board in a dry, well-ventilated environment. Avoid exposure to extreme temperatures, humidity, or direct sunlight.

- **Cooling:** For applications requiring 8 x 100W peak output, a cooling fan is recommended. Ensure the fan is properly installed and functioning to prevent overheating.
- **Handling:** Handle the board by its edges to avoid touching components, especially when powered.

6. TROUBLESHOOTING

If you encounter issues with your KAB9 amplifier board, refer to the following troubleshooting steps:

- **No Audio Output:**
 - Verify that the power supply is correctly connected and providing the correct voltage.
 - Check all speaker and audio input connections for proper seating and polarity.
 - Ensure the correct audio input source is selected on your host device.
 - Confirm that the gain switch is set appropriately.
- **Distorted Audio:**
 - Reduce the input audio level from your source device.
 - Adjust the gain switch on the KAB9 board to a lower setting.
 - Ensure speaker impedance matches the amplifier's specifications.
- **Ground Noise/Hum:**
 - If using analog input, try isolating the power supply or using a ground loop isolator.
 - The 7.1 USB codec module is designed to avoid ground noise; ensure it is properly connected and functioning if you are using digital input.
- **Overcurrent Protection Triggered:**
 - This feature protects the amplifier from excessive current draw. Disconnect power, check speaker connections for shorts, and ensure speaker impedance is within the specified range. Reapply power after resolving the issue.

7. SPECIFICATIONS

Feature	Specification
Model Number	KAB9
Brand	WONDOM
Output Power	8 x 50W (Standard), 8 x 100W Peak (with fan)
Number of Channels	8
Configurable Modes	8.0, 7.1, 6.1, 5.1, 4.2, 4.0
Input Type	Differential Input, 7.1 USB Codec (via external module)
Gain Adjustment	Five levels via switch
Protection	Overcurrent Protection

Feature	Specification
Dimensions (L x W x H)	6.0 x 4.5 x 1.8 inches (15.24 x 11.43 x 4.57 cm)
Weight	168g / 0.37lbs ($\pm 10\%$)
Mounting Type	Surface Mount

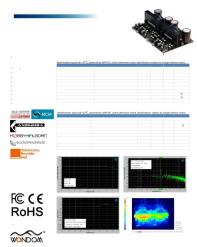
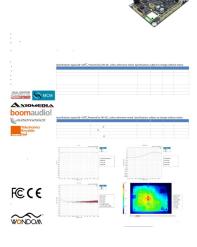
8. WARRANTY AND SUPPORT

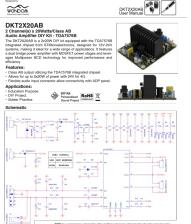
WONDOM products are manufactured by Sure Electronics Co., Ltd. For warranty information, please refer to the terms and conditions provided at the time of purchase or contact your vendor directly. For technical support, product inquiries, or assistance with troubleshooting beyond the scope of this manual, please visit the official WONDOM website or contact Sure Electronics customer service.

You can find more information and support resources by visiting the [WONDOM Store on Amazon](#).

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Related Documents - KAB9

	<p><u>WONDOM GAB8 10x50W Class D Amplifier Board User Manual</u></p> <p>Comprehensive user manual for the WONDOM GAB8 10x50W Class D audio amplifier board, featuring TPA3244 technology, USB Type-C audio input, and configurable 7.3/5.3 speaker systems. Includes specifications, connection guides, performance data, and setup instructions.</p>
	<p><u>Wondom IRS2092 1x3000W Class D Audio Amplifier Board (AA-AB31341) - Technical Specifications</u></p> <p>Detailed specifications, features, electrical and audio performance data, model selection guide, and connection diagrams for the Wondom IRS2092 1x3000W Class D Audio Amplifier Board (AA-AB31341).</p>
	<p><u>JAB2v2 2x30W Class D Audio Amplifier Board with Bluetooth 5.0 apt-X HD</u></p> <p>Detailed specifications, features, and performance data for the WONDOM JAB2v2 2x30W Class D Audio Amplifier Board (AA-JA32472), featuring Bluetooth 5.0 apt-X HD, integrated DSP, and versatile connectivity options.</p>

 <p>WONDOM JAB2 (AA-JA32472) 2x30W Class D Audio Amplifier Board with Bluetooth</p> <p>Explore the WONDOM JAB2 (AA-JA32472), a 2x30W Class D audio amplifier board featuring Bluetooth 4.0 APT-X, detailed electrical specifications, performance graphs, and connection diagrams for DIY audio projects.</p>	
 <p>WONDOM DKT2X20AB 2 Channel 20W Audio Amplifier DIY Kit User Manual</p> <p>User manual for the WONDOM DKT2X20AB 2x20W Class AB Audio Amplifier DIY Kit, featuring the TDA7576B chipset. Provides detailed information on product specifications, installation, board layout, electrical parameters, warranty, and component checklist for DIY enthusiasts.</p>	
 <p>WONDOM GAB8 10x50W Class D Amplifier Board User Manual</p> <p>Comprehensive user manual for the WONDOM GAB8 10x50W Class D audio amplifier board, featuring TPA3244 technology, USB Type-C audio input, and configurable 7.3/5.1 speaker systems. Includes specifications, connection guides, performance data, and setup instructions.</p>	

Documents - WONDOM – KAB9

Game Machine Audio Amplifier Series

8CH 50W Class D 8.0 / 7.1 / 5.1 / 4.2 / 4.0 Configurable Audio Amplifier Board for Kiosks (AA-KA32473)

Overview:
An audio amplifier specially designed for game machine applications on the basis of standard products platform. WONDOM KAB9 inherits Sure Electro...
KAB9 supports different input. In addition, KAB9 can support multiple input methods through connecting with an external plug-and-play module. KAB9 can avoid ground noise and ensure high-quality audio playback. In future, we will develop various input module to extend more functions and possibilities with KAB9.

Distributors:
    

Key Features:

- 8CH 50W Class D Amplifier
- Independent PTP1, PTP2, PTP3
- 4x50W for 8.0, 4x25W for 7.1, 4x12.5W for 5.1, 4x6.25W for 4.2, 4x3.125W for 4.0
- Only one board can be configured for 8.0, 7.1, 5.1, 4.2, 4.0 speaker systems. The KAB9 is capable of delivering a peak output power of 50W if it is equipped with 8 channels.

Electrical Specifications

Specification typical at +25°C, unless otherwise noted. Specifications subject to change without notice.				
	8.0	7.1	5.1	4.2
Number of Channels	8	7	5	4
Max. Output Power	8x50W	7x50W	5x50W	4x50W
Normal Power Requirement	40W	30W	20W	15W
Operating Voltage	12V	24V	24V	24V
Operating Frequency	10Hz - 20KHz	10Hz - 20KHz	10Hz - 20KHz	10Hz - 20KHz
Power Consumption	10W	10W	10W	10W
Standby Power	0.5W	0.5W	0.5W	0.5W
Shutdown	Yes	Yes	Yes	Yes
Control	IR Remote	IR Remote	IR Remote	IR Remote
Standby Power	0.5W	0.5W	0.5W	0.5W

Applications:

- Game Machine Application
- Racing Simulator
- Video Conference Application
- Home Theater
- Home DIY

Electrical Specifications

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Standby Power	0.5W	0.5W	0.5W	0.5W

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WONDOM Audio Solution for Self service Equipment and Game Machine Applications store sure
electronics files 4 Amplifier Board List KAB Series 2 x 2W 4Ohm Class D SNR 1W@4Ohm THD 1% 84
dB N 1kHz 0 22 % |||

OEM Brochure Audio Solutions for Game Machine www.wondon.com Wonderful Meeting With Melody Content ... 8 x 50W 4Ohm High Performance Class D Audio Amplifier Board SNR 50W 4Ohm, THD=1 - 95 - dB **KAB9** - 850 THD N 1W 4Ohm, 1kHz 50W 4Ohm, 1kHz - 0.009 - 0.02 Frequency Response -3dB ...

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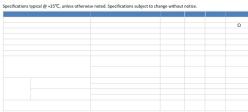
Game Machine Audio Amplifier Series 8CH 50W Class D 8.0 / 7.1 / 5.1 / 4.2 / 4.0 Configurable Audio Amplifier Board for Kiosks AA-KA32473 Overview: As an audio amplifier specially designed for game machine applications on the basis of standard products platform, WONDOM **KAB9** inherits Sure Electron...

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As an audio amplifier, specially designed for game machine applications on the basis of standard products platform, WONDOM KAB9 inherits Sure Electronics' consistent high reliability and high performance. It also has customers' requirements into consideration, so using four AMP chip on KAB9 as 8 x 50W, all of which supports separate configuration via I2C mode - 1 x I2C. This means KAB9 can support 8 channels output, 4 channels input, 4 channels output, 4 channels input, 2 channels output, 2 channels input and so on. Only one board can be configured for several applications, greatly improving system flexibility. The switching is conveniently controlled via I2C, and the power consumption is very low, only 1.5W for 1 channel output, and 12W for 8 channels output, 12W if it is equipped with a fan.

KAB9 supports differential input. In addition, KAB9 can support multiple input methods through connecting with an external plug and play module. At present, we have developed a 7.1 USB sound module for joint use with KAB9, which can avoid ground noise and ensure high-quality audio playback. In future, we will develop various input module to extend more functions and possibilities with KAB9.



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Administrator 8CH 50W Class D 8 0 7 1 5 4 2 Configurable Audio 2021 09 15 — Parameter Conditions

Min Typ Max Units Number of Channels Minimum Load Impedance 3 Ω Efficiency x 50W@4Ohm 1kHz

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Game Machine Audio Amplifier Series 8CH 50W Class D 8.0 / 7.1 / 5.1 / 4.2 / 4.0

Configurable Audio Amplifier Board for Kiosks AA-KA32473 Overview: As an audio amplifier specially designed for game machine applications on the basis of standard products platform, WONDOM **KAB9** inherits Sure Electro...

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