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> [Lotoo PAW S2 Portable USB DAC-AMP User Manual](#)

## LT LOTOO PAW S2

# Lotoo PAW S2 Portable USB DAC-AMP User Manual

Model: PAW S2

## 1. INTRODUCTION

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The Lotoo PAW S2 is a portable USB Digital-to-Analog Converter (DAC) and Amplifier designed to enhance the audio quality from your digital devices. It provides a high-resolution audio output for headphones and earphones, featuring advanced audio processing and a robust output stage for a clear and detailed listening experience.



Image 1.1: The Lotoo PAW S2 Portable USB DAC-AMP.

## 2. PACKAGE CONTENTS

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Please verify that all items listed below are included in your package:

- Lotoo PAW S2 Unit
- USB-C to USB-C Cable
- USB-A to USB-C Adapter
- User Manual (this document)
- Warranty Card



Image 2.1: Contents of the Lotoo PAW S2 retail package. Includes the PAW S2 unit, various cables, and documentation.

### 3. PRODUCT FEATURES

#### 3.1. AKM DAC Chip Implementation

The PAW S2 integrates the AKM4377 DAC chip, optimized for high-resolution audio conversion. This chip contributes to a clean output signal with low distortion and high Signal-to-Noise Ratio (SNR), allowing for detailed audio reproduction.



Image 3.1: Close-up view of the AKM4377 DAC chip integrated into the PAW S2.

#### 3.2. Advanced Architecture

The PAW S2 features a Blackfin DSP and an advanced 2x8 layer HDI PCB design. The analog board utilizes low-noise, low-temperature drift metal film resistors for precise audio processing.



Image 3.2: Exploded view illustrating the internal components and layered PCB design of the PAW S2.

#### 3.3. Highly-Accurate Phase-Locked Loop (PLL)

The device incorporates the AK8142 programmable clock generator IC with an integrated fractional N PLL. This component helps reduce USB and SRC interface jitter, contributing to stable and high-fidelity audio performance.



Image 3.3: Close-up view of the AK8142 chip, responsible for the device's accurate phase-locked loop.

### 3.4. Powerful Headphone Amplifier Output

The PAW S2 features a standalone headphone amplifier. It delivers up to 150mW at 32Ω through the 4.4mm balanced headphone output and up to 125mW at 32Ω through the 3.5mm single-ended headphone output.

### 3.5. Media Control Keys

The device includes media control keys for convenient operation. These keys allow for volume adjustment, menu navigation, and play/pause functionality during music playback.

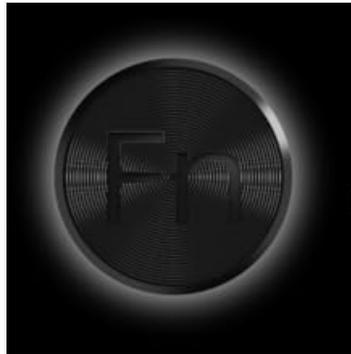


Image 3.4: Detail of the 'Fn' (Function) button, part of the media control keys on the PAW S2.

## 4. DEVICE LAYOUT

The Lotoo PAW S2 features a compact design with essential ports and controls for ease of use.

- **Top Side:** USB-C input port for connection to source devices.
- **Bottom Side:** 3.5mm single-ended headphone output and 4.4mm balanced headphone output.
- **Side Panel:** Function (Fn) button, volume up/down buttons, and play/pause button.



Image 4.1: Bottom view of the PAW S2, showing the 3.5mm and 4.4mm audio output ports.



Image 4.2: Side view of the PAW S2, highlighting the USB-C input port and control buttons.

## 5. SETUP AND CONNECTION

Follow these steps to connect your Lotoo PAW S2 to a source device and headphones:

1. **Connect to Source Device:** Use the provided USB-C to USB-C cable to connect the PAW S2 to your smartphone, tablet, or computer. If your source device uses a USB-A port, use the included USB-A to USB-C adapter.
2. **Connect Headphones:** Plug your headphones or earphones into either the 3.5mm single-ended or 4.4mm balanced output port on the bottom of the PAW S2. Ensure the connector is fully inserted.
3. **Power On:** The PAW S2 will typically power on automatically once connected to a powered USB port.



Image 5.1: The PAW S2 connected to earphones, demonstrating a typical usage scenario.

## 6. OPERATING INSTRUCTIONS

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The PAW S2 offers intuitive controls for audio playback and settings.

- **Volume Control:** Use the dedicated volume up and down buttons on the side of the device to adjust the output volume. Note that on some devices (e.g., iPhone), volume must be adjusted directly on the PAW S2, not the host device. On PCs, you can adjust volume via software, but the maximum volume is limited by the PAW S2's setting.
- **Play/Pause:** The center media control key can be used to play or pause audio playback.
- **Function (Fn) Key:** The 'Fn' key provides access to various settings and menu navigation. Refer to the on-screen display for specific options.



Image 6.1: A hand holding the PAW S2, illustrating the placement of the control buttons for operation.

## 7. MAINTENANCE AND CARE

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To ensure the longevity and optimal performance of your Lotoo PAW S2, follow these maintenance guidelines:

- **Cleaning:** Use a soft, dry cloth to clean the device. Avoid using liquid cleaners or solvents.
- **Storage:** Store the device in a cool, dry place away from direct sunlight and extreme temperatures.
- **Handling:** Handle the device with care to prevent physical damage. Avoid dropping or subjecting it to strong impacts.
- **Cable Care:** Ensure USB and audio cables are not bent sharply or strained, as this can lead to damage and signal issues.

## 8. TROUBLESHOOTING

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If you encounter issues with your Lotoo PAW S2, refer to the following common problems and solutions:

- **No Sound Output:**
  - Ensure the PAW S2 is correctly connected to both the source device and headphones.
  - Check the volume level on both the PAW S2 and your source device.
  - Verify that the audio output is directed to the PAW S2 in your source device's sound settings.
  - Test with different headphones and cables to rule out faulty accessories.
- **Distortion or Poor Sound Quality:**
  - Ensure all connections are secure and free from debris.
  - Try a different USB cable, as some cables may be of lower quality and cause interference.
  - Reduce the volume level if distortion occurs at high volumes.

- Ensure the audio file or streaming quality is high.
- **Popping Sound When Connecting/Disconnecting Headphones:**
  - A slight popping sound can sometimes occur due to electrical transients when connecting or disconnecting audio devices. This is often normal and not indicative of a fault.
  - Ensure the PAW S2 is fully powered on and stable before connecting or disconnecting headphones.
- **Delay or Artifacts When Switching Tracks:**
  - This can sometimes occur with certain software or operating systems. Ensure your audio playback software and device drivers are up to date.
  - Try restarting the playback application or the source device.
- **Device Not Recognized by Computer/Phone:**
  - Ensure the USB cable is securely connected.
  - Try connecting to a different USB port or a different source device.
  - For computers, check device manager for driver issues. Install or update necessary drivers if prompted.

## 9. SPECIFICATIONS

The following table outlines the key specifications for the Lotoo PAW S2:

Feature	Specification
Brand	LT LOTOO
Model	PAW S2
Interface Type	USB
Number of Channels	2
Material	Metal
Product Dimensions	0.4 x 0.8 x 2.5 inches
Item Weight	6.2 ounces
Manufacturer	Lotoo
Date First Available	December 12, 2021

## 10. WARRANTY AND SUPPORT

For warranty information and technical support, please refer to the warranty card included in your package or visit the official LT LOTOO website. Keep your proof of purchase for warranty claims.