FiiO K13 R2R

FiiO K13 R2R Desktop DAC & Headphone Amplifier User Manual

Model: K13 R2R

Introduction

This manual provides detailed instructions for the FiiO K13 R2R Desktop DAC and Headphone Amplifier. The K13 R2R is designed to enhance desktop audio experiences by combining a high-fidelity R2R Digital-to-Analog Converter (DAC) with a powerful headphone amplifier. It features FiiO's proprietary 24Bit R2R resistor ladder DAC, offering distinct sound characteristics. The device supports various audio modes, extensive connectivity options, and customizable sound profiles through its 10-band Parametric Equalizer (PEQ). Additionally, it includes Bluetooth streaming capabilities for wireless audio playback. Please read this manual thoroughly to ensure proper setup and operation of your device.

Package Contents

Verify that all the following items are included in your package:

- FiiO K13 R2R Desktop DAC & Headphone Amplifier
- Quick Start Guide
- AC power cord
- Infrared remote control
- USB data cable
- Headphone adapter (e.g., 3.5mm to 6.35mm, if applicable)

Product Overview

The FiiO K13 R2R is a versatile desktop audio device integrating a Digital-to-Analog Converter (DAC) and a headphone amplifier. It is designed to deliver high-fidelity audio reproduction for various listening setups.

Figure 1: FiiO K13 R2R Front and Top View. This image displays the FiiO K13 R2R unit from a front-top perspective, highlighting its silver finish, front panel controls, and the transparent window on top revealing internal circuitry. An antenna is visible at the rear.

Key Features

- **FiiO Self-Developed Fully Differential 24Bit R2R DAC:** Equipped with a proprietary 4-channel fully differential complementary 24Bit R2R DAC, constructed from 192 ultra-precise 0.1% thin-film resistors. This design aims to provide a distinct analog-like sound signature.
- **NOS/OS Dual Modes:** Offers Non-Oversampling (NOS) mode for preserving the original sampling rate and Oversampling (OS) mode for upsampling to 384kHz, allowing users to select between different audio processing characteristics.
- **Versatile Desktop DAC & Preamp/Headphone Amp:** Features comprehensive connectivity including XLR balanced line out, dual RCA outputs, 4.4mm balanced headphone out, and 6.35mm single-ended headphone out. Supports PCM 384kHz/32bit and DSD256 decoding.
- **10-Band High-Precision PEQ with Auto EQ:** Provides extensive equalization customization across 10 adjustable bands via FiiO's algorithms, accessible through an app or web interface.
- **LDAC Bluetooth 5.4 Wireless HiFi:** Supports LDAC, AAC, and SBC codecs over Bluetooth 5.4 for high-resolution wireless audio streaming.

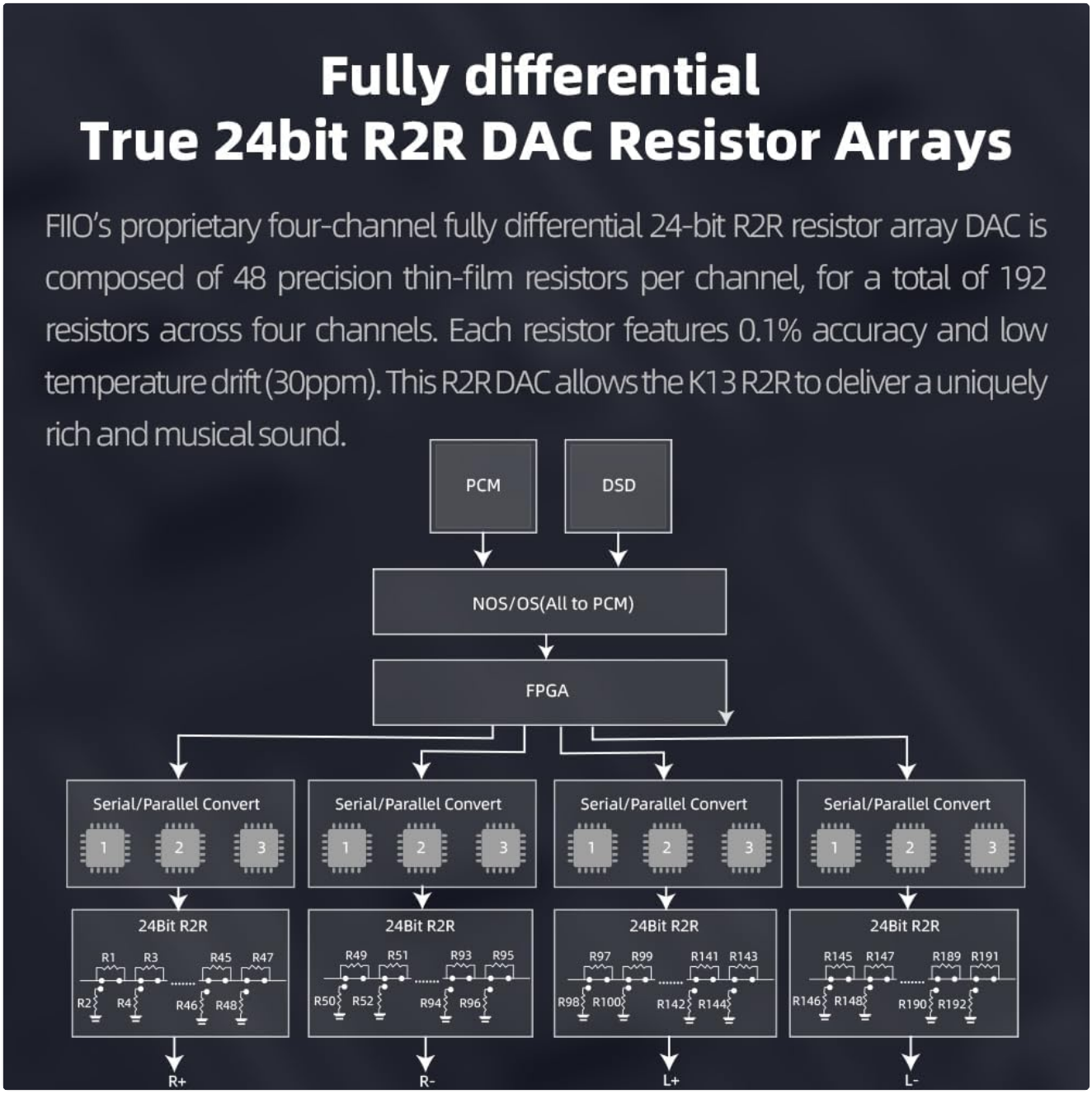

Figure 2: Fully Differential 24-bit R2R DAC Resistor Arrays. This diagram illustrates the internal architecture of the K13 R2R's DAC, showing the arrangement of 192 precision thin-film resistors across four channels for digital-to-analog conversion.

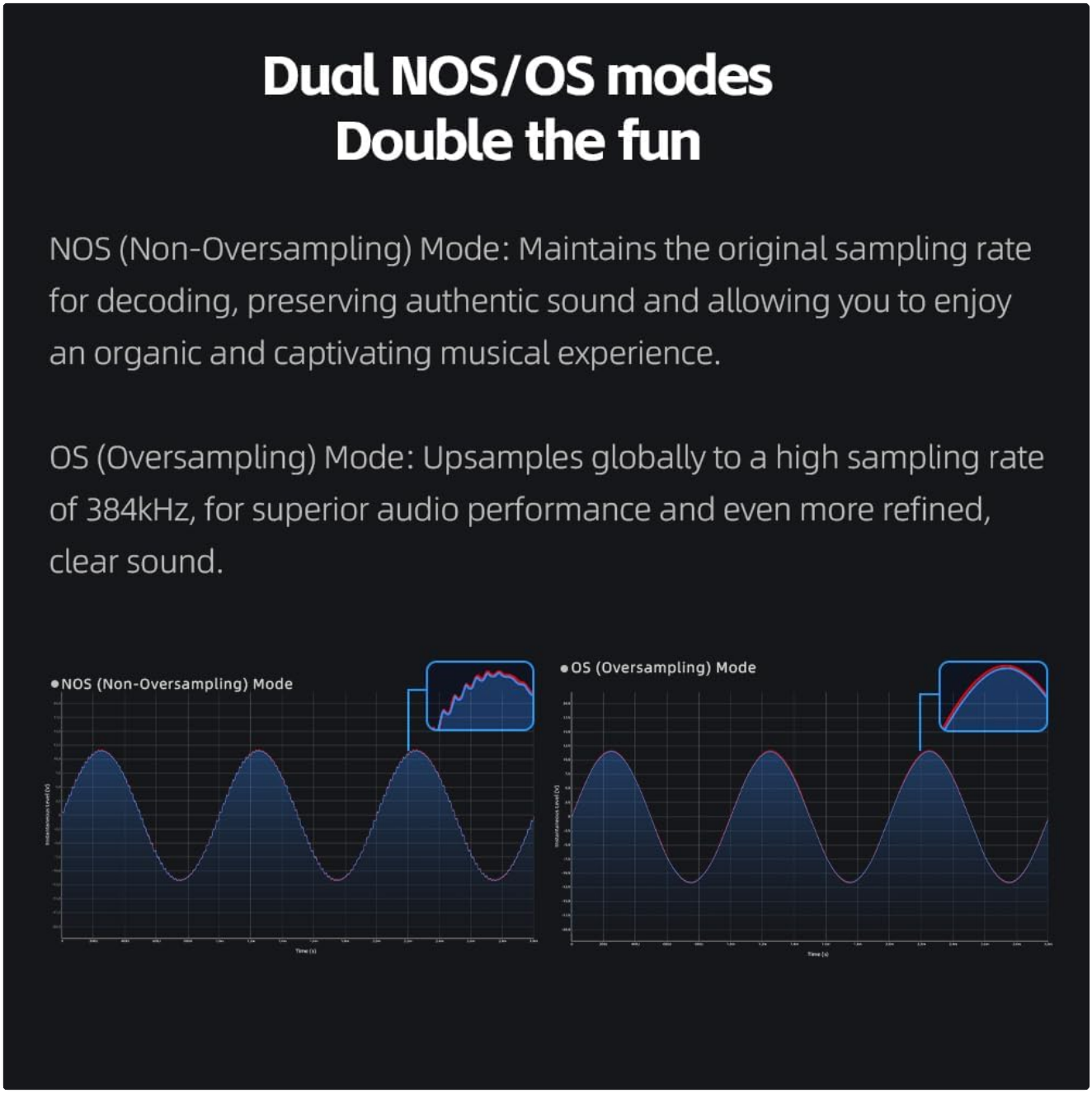

Figure 3: NOS/OS Dual Mode Comparison. This graph visually compares the output characteristics of Non-Oversampling (NOS) mode, which maintains the original sampling rate, and Oversampling (OS) mode, which upsamples to 384kHz for potentially clearer sound.

Figure 4: 10-Band High-Precision PEQ Interface. This image shows the graphical user interface for the 10-band Parametric Equalizer, demonstrating the ability to customize sound profiles across various frequency bands.

Figure 5: Robust Output Power. This image highlights the K13 R2R's balanced output power of 2400mW + 2400mW into a 32Ω load, indicating its capability to drive a wide range of headphones and in-ear monitors.

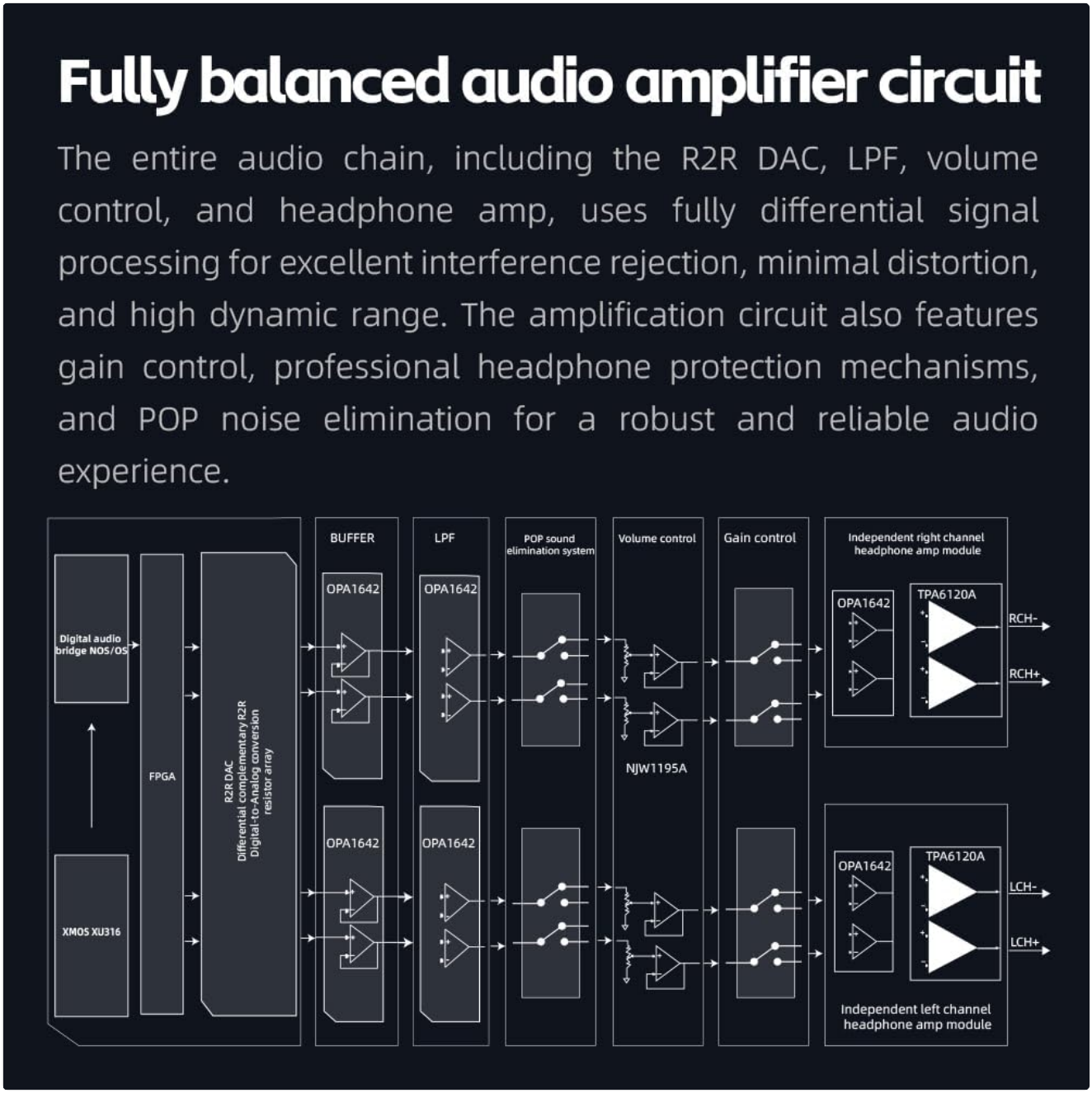

Figure 6: Fully Balanced Audio Amplifier Circuit. This block diagram illustrates the signal path and components within the K13 R2R's fully balanced audio chain, designed for interference rejection and high dynamic range.

Figure 7: Rear Panel Connectivity. This image displays the rear panel of the FiiO K13 R2R, showcasing its various input and output ports, including USB, coaxial, optical, XLR balanced line out, and RCA outputs, along with the power input.

Figure 8: Bluetooth 5.4 Module. This diagram illustrates the integrated Bluetooth 5.4 chip, which enables high-resolution wireless audio streaming with support for LDAC, AAC, and SBC codecs.

Setup Instructions

1. Power Connection

1. Connect the provided AC power cord to the power input on the rear panel of the FiiO K13 R2R.
2. Plug the other end of the AC power cord into a suitable wall outlet.
3. Ensure the power switch (if present) is in the OFF position before connecting to power, then switch ON.

2. Audio Source Connection

The K13 R2R supports multiple digital audio inputs:

- **USB Input:** Connect your computer or other USB audio source to the USB-B input port on the rear panel using the supplied USB data cable.

- **Coaxial Input:** Connect a coaxial digital audio cable from your source device to the COAXIAL input.
- **Optical Input:** Connect an optical digital audio cable from your source device to the OPTICAL input.

3. Output Device Connection

Connect your headphones or speakers to the appropriate output ports:

- **Headphones:** Use the 4.4mm balanced headphone output or the 6.35mm single-ended headphone output on the front panel. Use the provided headphone adapter if necessary.
- **Active Speakers/Power Amplifier:** Connect to the XLR balanced line outputs or the RCA outputs on the rear panel.

4. Driver Installation (for USB connection on Windows)

For optimal performance when connecting to a Windows computer via USB, it is recommended to install the dedicated FiiO USB DAC driver.

1. Visit the official FiiO support website to download the latest USB DAC driver for the K13 R2R (e.g., V5.74.2 or newer).
2. Follow the on-screen instructions to install the driver. Restart your computer if prompted.
3. After installation, select the FiiO K13 R2R as the audio output device in your computer's sound settings.

Operating Instructions

1. Power On/Off

- To power on the device, ensure it is properly connected to an AC power source and press the power button (location may vary, refer to Quick Start Guide for exact placement).
- To power off, press and hold the power button or use the remote control.

2. Input Selection

Use the "MENU/INPUT" knob or the remote control to cycle through available input sources (USB, Coaxial, Optical, Bluetooth).

3. Volume Control

Adjust the output volume using the "VOLUME" knob on the front panel or the volume buttons on the remote control. Start with a low volume and gradually increase to a comfortable listening level.

4. Gain Setting

The K13 R2R features multiple gain settings (e.g., Low, Medium, High) to match the sensitivity of your headphones. Access this setting through the device's menu or the FiiO Control app. For sensitive IEMs, a lower gain setting is generally recommended. For high-impedance headphones, a higher gain setting may be necessary.

5. NOS/OS Mode Selection

The K13 R2R offers two DAC operating modes:

- **NOS (Non-Oversampling) Mode:** Preserves the original sampling rate of the audio signal. This mode is often preferred for a more "organic" or "analog" sound.
- **OS (Oversampling) Mode:** Upsamples the audio signal to 384kHz. This mode can result in improved audio metrics and a clearer, more refined sound.

Switch between these modes via the device's menu or the FiiO Control app to find your preferred listening experience.

6. Parametric Equalizer (PEQ)

The 10-band PEQ allows for detailed sound customization. It can be adjusted through the FiiO Control app or a web interface.

- **Accessing PEQ:** For the web-based PEQ control, search for "FiiO PEQ Control" online to find the correct interface. Connect the K13 R2R via USB to your computer, then select "Connect" -> "USB" -> "FiiO K13 R2R" in the web interface.
- **Adjusting Settings:** Navigate to "Device" on the left panel and select a profile (e.g., User1) to adjust. You can modify individual frequency bands.
- **Global Gain:** When making significant positive gain adjustments to individual bands, it is crucial to lower the "Global Gain" slider (typically the far-left slider) by the same amount as your highest positive gain adjustment. This prevents audio clipping and distortion.
- **Saving Profiles:** After making adjustments, click "Save" and select "Device" as the save location to store your custom EQ profile directly on the K13 R2R.

7. Bluetooth Streaming

To use the K13 R2R for wireless audio playback:

1. Switch the input mode on the K13 R2R to Bluetooth. The device will enter pairing mode, indicated by a flashing light or display message.
2. On your source device (smartphone, tablet, etc.), enable Bluetooth and search for available devices.
3. Select "FiiO K13 R2R" from the list of devices to pair. Once connected, the indicator light will become solid.
4. Begin playing audio from your source device. The K13 R2R supports high-resolution codecs like LDAC for enhanced wireless sound quality.

Maintenance

- **Cleaning:** Use a soft, dry cloth to clean the exterior of the device. Avoid using liquid cleaners, aerosols, or abrasive materials, as these can damage the finish or internal components.
- **Storage:** When not in use for extended periods, store the K13 R2R in a cool, dry place away from direct sunlight and extreme temperatures.
- **Handling:** Handle the device with care. Avoid dropping it or subjecting it to strong impacts. Do not attempt to disassemble the unit, as this will void the warranty and may cause damage.
- **Ventilation:** Ensure adequate ventilation around the device to prevent overheating. Do not block any ventilation openings.

Troubleshooting

No Sound Output

- **Check Power:** Ensure the device is properly connected to power and turned on.
- **Input Selection:** Verify that the correct input source (USB, Coaxial, Optical, Bluetooth) is selected on the K13 R2R.
- **Volume Level:** Confirm that the volume is not set to minimum or muted.
- **Cable Connections:** Check all audio cables (input and output) for secure connections.

- **Source Device:** Ensure your audio source (computer, phone, etc.) is playing audio and its volume is not muted. For USB, confirm the K13 R2R is selected as the default audio output device.
- **Headphone/Speaker Connection:** Ensure headphones are fully plugged into the correct jack, or speakers are properly connected to the line outputs.

Distorted or Crackling Sound

- **PEQ Settings:** If using the Parametric Equalizer, ensure the "Global Gain" has been reduced if you have made significant positive gain adjustments to individual frequency bands. Failure to do so can cause clipping.
- **Source Quality:** Check the quality of the audio file or streaming service. Low-quality audio can sound distorted.
- **Cable Integrity:** Inspect audio cables for damage or loose connections.
- **Driver Issues (USB):** Reinstall the FiiO USB DAC driver if you suspect a software conflict or corruption.

Bluetooth Connection Issues

- **Pairing Mode:** Ensure the K13 R2R is in Bluetooth pairing mode.
- **Distance:** Keep the source device within the effective range of the K13 R2R (typically 10 meters/33 feet) without significant obstructions.
- **Interference:** Move away from other wireless devices that might cause interference.
- **Re-pair:** Try unpairing the K13 R2R from your source device and then re-pairing it.

SPECIFICATIONS

Model	K13 R2R
DAC Type	FiiO Self-Developed Fully Differential 24Bit R2R DAC
DAC Resistors	192 ultra-precise 0.1% thin-film resistors (30ppm low temperature drift)
Sampling Modes	NOS (Non-Oversampling) / OS (Oversampling up to 384kHz)
Decoding Capability	PCM 384kHz/32bit, DSD256
Headphone Output Power	2400mW + 2400mW into 32Ω (Balanced Output)
Headphone Outputs	4.4mm Balanced, 6.35mm Single-Ended
Line Outputs	XLR Balanced, RCA (Dual)
Digital Inputs	USB, Coaxial, Optical
Bluetooth Version	5.4
Bluetooth Codecs	LDAC, AAC, SBC
Equalizer	10-Band High-Precision PEQ with Auto EQ
Dimensions (Package)	11.41 x 9.84 x 2.36 inches
Item Weight	3.3 pounds

Manufacturer	FiiO
Date First Available	September 8, 2025

Warranty and Support

For detailed warranty information, please refer to the warranty card included with your product or visit the official FiiO website. FiiO provides customer support for product inquiries, technical assistance, and warranty claims.
Official FiiO Website: www.fiio.com
Please retain your proof of purchase for any warranty-related services.

Related Documents - K13 R2R

	FiiO K13 R2R Desktop DAC Headphone Amplifier Quick Start Guide Get started with your FiiO K13 R2R, a desktop DAC and headphone amplifier. This guide provides essential information for setup and operation, covering device features, power options, and connectivity.
	FIIO K11 R2R Desktop DAC and Headphone Amplifier Quick Start Guide This guide provides instructions for the FIIO K11 R2R Desktop DAC and Headphone Amplifier, covering interface descriptions, operation, settings, and precautions.
	FIIO K11 R2R Desktop DAC and Headphone Amplifier Quick Start Guide Concise guide for the FIIO K11 R2R desktop DAC and headphone amplifier, covering setup, operation, settings, and compliance information.
	FiiO K17 User Manual: DAC and Headphone Amplifier Guide Comprehensive user manual for the FiiO K17, a flagship-level DAC and headphone amplifier. Learn about its features, operation, connectivity, PEQ functions, streaming capabilities, and firmware upgrades.
	FiiO K11 Desktop DAC/Amplifier Quick Start Guide A concise guide to setting up and using the FiiO K11 desktop DAC/Amplifier, featuring key features, specifications, and basic operation instructions.
	FiiO K15 Complete User Manual: Features, Operation, and Specifications Comprehensive user manual for the FiiO K15 decoding headphone amplifier. Learn about its features, operation modes, connectivity, PEQ functions, firmware updates, and protection mechanisms.