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FiiO K13 R2R

FiiO K13 R2R Desktop DAC & Headphone Amp User Manual

Model: K13 R2R

1. INTRODUCTION

The FiiO K13 R2R is a high-fidelity desktop Digital-to-Analog Converter (DAC) and Headphone Amplifier designed to deliver exceptional audio performance. It features a proprietary 24-bit R2R DAC, powerful output capabilities, versatile connectivity, and advanced sound customization options. This manual provides essential information for setting up, operating, and maintaining your FiiO K13 R2R.



Figure 1: FiiO K13 R2R Desktop DAC & Headphone Amp (Black)

Key features include a fully differential 24Bit R2R DAC, NOS/OS dual modes for flexible listening, versatile desktop DAC and preamp/headphone amp functionality, 10-band high-precision PEQ with auto EQ, and LDAC Bluetooth 5.4 wireless HiFi support.

2. WHAT'S IN THE BOX

Please check the contents of your FiiO K13 R2R package:

- Quick Start Guide
- AC power cord*1
- Infrared remote control*1
- USB data cable*1
- Headphone adapter*1



Figure 2: Package contents of the FiiO K13 R2R.

3. PRODUCT OVERVIEW

Front Panel

The front panel of the FiiO K13 R2R features essential controls and output ports for easy access and operation.



Figure 3: Front view of the FiiO K13 R2R, showing the display, headphone outputs, and control knobs.

- **Menu/Input Knob:** Rotate to navigate menus or adjust settings. Press to confirm selection or switch input sources.
- **Display Screen:** Shows current input, sampling rate, volume level, and menu options.
- **6.35mm Single-Ended Headphone Output:** Standard headphone jack.
- **4.4mm Balanced Headphone Output:** Balanced headphone jack for enhanced audio performance.
- **Volume Knob:** Rotate to adjust the output volume.

Rear Panel

The rear panel provides a comprehensive array of input and output connections for integration into various audio systems.



Figure 4: Rear view of the FiiO K13 R2R, detailing the various input and output ports.

- **Balanced XLR Output (L/R):** For connecting to balanced amplifiers or active speakers.
- **RCA Line Out (L/R):** For connecting to unbalanced amplifiers or active speakers.
- **Coaxial Input:** Digital audio input.
- **Optical Input:** Digital audio input.
- **USB IN (Type-C):** For connecting to a computer or other USB audio sources.
- **DC IN (12V):** External DC power input option.
- **AC Power Input (100-240V):** Main power connection.
- **Bluetooth Antenna:** For wireless Bluetooth reception.

Internal Architecture Highlights

The FiiO K13 R2R incorporates advanced internal components for superior audio fidelity.

Specially-designed power supply DC/AC dual power supplies

The built-in 30W switching power supply is protected by an alloy nickel-plated shielding cover, which significantly boosts its anti-interference capabilities and ensures a cleaner power supply. Additionally, it also features an external DC power input*, allowing you to pair it with a higher-performance linear power supply for a different sound experience.

*Supported external DC power supply specifications are 12V-2.5A (or greater than 2.5A) with a 5.5*2.1mm connector.

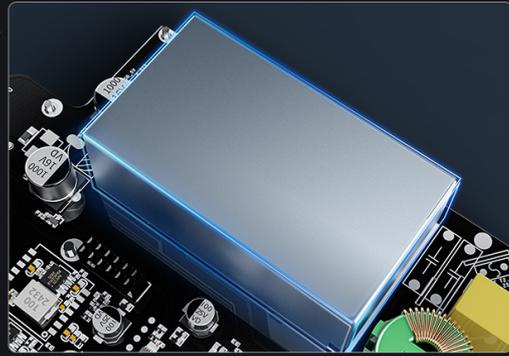


Figure 5: Diagram illustrating the fully differential 24Bit R2R DAC resistor arrays.

- **Fully Differential 24Bit R2R DAC:** Composed of 192 ultra-precise 0.1% thin-film resistors for a unique analog-like timbre.
- **Specially-designed DC/AC Dual Power Supplies:** Built-in 30W switching power supply with alloy nickel-plated shielding, plus an external DC power input option for cleaner power.
- **ELNA RA3 Audiophile-grade Electrolytic Capacitors:** Ensures a pure, stable power supply for warm and natural sound.
- **Fully Balanced Audio Amplifier Circuit:** Utilizes fully differential signal processing for excellent interference rejection, minimal distortion, and high dynamic range.

4. SETUP

Power Connection

1. Connect the provided AC power cord to the AC Power Input on the rear panel of the K13 R2R.
2. Plug the other end of the AC power cord into a suitable wall outlet.
3. Alternatively, for an external DC power supply, connect a 12V-2.5A (or greater) supply with a 5.5*2.1mm connector to the DC IN port.

Audio Connections

Choose the appropriate connection method based on your audio source and output devices.

- **USB Connection:** Connect your computer or other USB audio source to the USB IN (Type-C) port using the provided USB data cable.
- **Optical/Coaxial Connection:** Connect your digital audio source (e.g., CD player, TV) to the Optical Input or Coaxial Input ports.
- **Headphone Output:** Connect your headphones to either the 6.35mm Single-Ended or 4.4mm Balanced Headphone Output on the front panel. Use the provided adapter if necessary.
- **Line Output:** Connect the Balanced XLR Output or RCA Line Out to your amplifier or active speakers.

Bluetooth Pairing

The FiiO K13 R2R supports high-resolution Bluetooth 5.4 streaming.

1. Ensure the Bluetooth antenna is securely attached to the rear panel.
2. Power on the FiiO K13 R2R.
3. Press the Menu/Input knob to cycle through input modes until 'BT' (Bluetooth) is selected on the display.
4. On your mobile device or Bluetooth player, enable Bluetooth and search for available devices.

5. Select 'FiiO K13 R2R' from the list to pair. Once connected, the display will indicate a successful Bluetooth connection.

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Video 1: This video demonstrates Bluetooth receiver functionality using a similar FiiO product (K9 Pro). The pairing process for the K13 R2R is similar.

5. OPERATING INSTRUCTIONS

Basic Operation

- **Power On/Off:** Press the power button (usually integrated with the Menu/Input knob or a dedicated button) to turn the device on or off.
- **Volume Control:** Rotate the Volume Knob on the front panel to adjust the output volume for headphones or line outputs.
- **Input Selection:** Press the Menu/Input knob to cycle through available input sources (USB, Optical, Coaxial, Bluetooth). The selected input will be shown on the display.

NOS/OS Dual Modes

The K13 R2R offers two distinct operating modes for audio processing:



Figure 6: Illustration of NOS (Non-Oversampling) and OS (Oversampling) modes.

- **NOS (Non-Oversampling) Mode:** Preserves the original sampling rate for a pure, natural, and organic sound.
- **OS (Oversampling) Mode:** Upsamples audio to 384kHz for improved audio metrics, delivering finer and clearer sound.
- To switch between modes, navigate through the device's menu using the Menu/Input knob.

10-Band High-Precision PEQ

Customize your sound with the integrated 10-band Parametric Equalizer (PEQ).

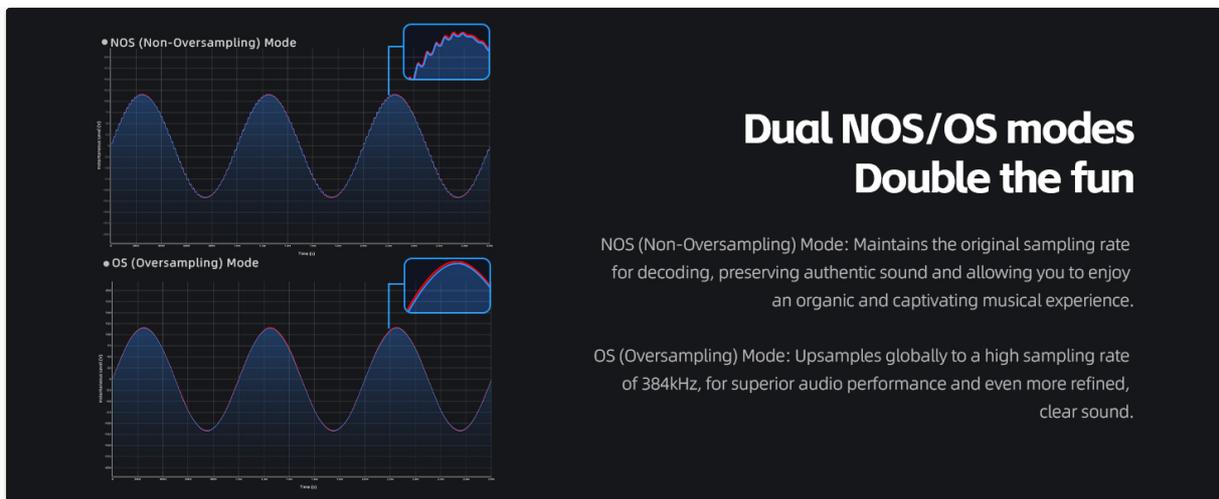


Figure 7: Example of the 10-band high-precision PEQ interface.

- The PEQ can be accessed and customized via the FiiO Control app or a web interface.
- Adjust 10 frequency bands to tailor the sound to your preference or correct headphone response.
- Access presets like vintage PEQ or share EQ profiles.

6. MAINTENANCE

- **Cleaning:** Use a soft, dry cloth to clean the exterior of 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 damage from drops or impacts.

7. TROUBLESHOOTING

- **No Sound Output:**
 - Check all cable connections (power, input, output) are secure.
 - Ensure the correct input source is selected on the K13 R2R.
 - Verify the volume level is not set to minimum or muted.
 - Test with different headphones or speakers to isolate the issue.
- **Bluetooth Connection Issues:**
 - Ensure the K13 R2R is in Bluetooth pairing mode.
 - Move your mobile device closer to the K13 R2R to improve signal strength.
 - Forget the device on your mobile device's Bluetooth settings and attempt to re-pair.
- **Distorted Audio:**
 - Check the audio source quality.
 - Ensure the volume is not set too high, causing clipping.
 - Verify that the correct sampling rate is being used.

8. SPECIFICATIONS

Feature	Specification
Model Number	K13 R2R

Feature	Specification
DAC Type	FiiO Self-Developed Fully Differential 24Bit R2R DAC
Output Power	Powerful 2400mW Output
Bluetooth Version	Bluetooth 5.4 (LDAC, AAC, SBC codecs)
Decoding Support	PCM 384kHz/32bit, DSD256
Equalizer	10-Band High-Precision PEQ
Outputs	XLR Balanced Line Out, Dual RCA Outputs, 4.4mm Balanced Headphone Out, 6.35mm Single-Ended Headphone Out
Power Supply	Dual Power Supply (Built-in 30W, External DC 12V-2.5A option)
Item Weight	3.24 pounds
Package Dimensions	12.24 x 9.53 x 2.52 inches

9. WARRANTY AND SUPPORT

For warranty information, technical support, and further assistance, please refer to the official FiiO website or contact their customer service directly. Keep your purchase receipt for warranty claims.

Official FiiO Website: www.fiiio.com