



Manuals.plus /

› LEAUDIO /

› TRN Black Pearl Portable Hi-Fi Digital Audio Decoder 3.5+4.4 Output Dual CS43131 PCM 384kHz 32Bit DSD256 DAC Headphone Amplifier User Manual

## LEAUDIO Black Pearl

# TRN Black Pearl Portable Hi-Fi Digital Audio Decoder User Manual

Your guide to setting up, operating, and maintaining your TRN Black Pearl DAC Headphone Amplifier.

## 1. PRODUCT OVERVIEW

The TRN Black Pearl is a portable Hi-Fi digital audio decoder and headphone amplifier designed to enhance your audio experience. It features dual CS43131 DAC chips, supporting high-resolution audio formats up to PCM 384kHz/32bit and DSD256. With both 3.5mm single-ended and 4.4mm balanced outputs, it offers versatile connectivity for various headphones and devices.



Figure 1.1: Front and back views of the TRN Black Pearl DAC, showcasing its compact design and rear labeling.

### Key Features:

- **Dual DAC Chip:** Equipped with two low-power, high-performance CS43131 DAC decoding chips for superior audio quality.
- **High-Resolution Audio Support:** Capable of in-depth analysis, supporting PCM up to 384kHz/32bit and DSD64/DSD128/DSD256.
- **Recording Functionality:** Supports recording, allowing capture of more audio details for a clearer sound experience.
- **Dual Output Ports:** Features both 3.5mm single-ended and 4.4mm balanced headphone output jacks for wide compatibility.
- **Multi-Function Buttons:** Simple and intuitive controls for easy operation.
- **8-Band EQ Adjustment:** Supports WALK PLAY APP EQ linkage for flexible sound customization.

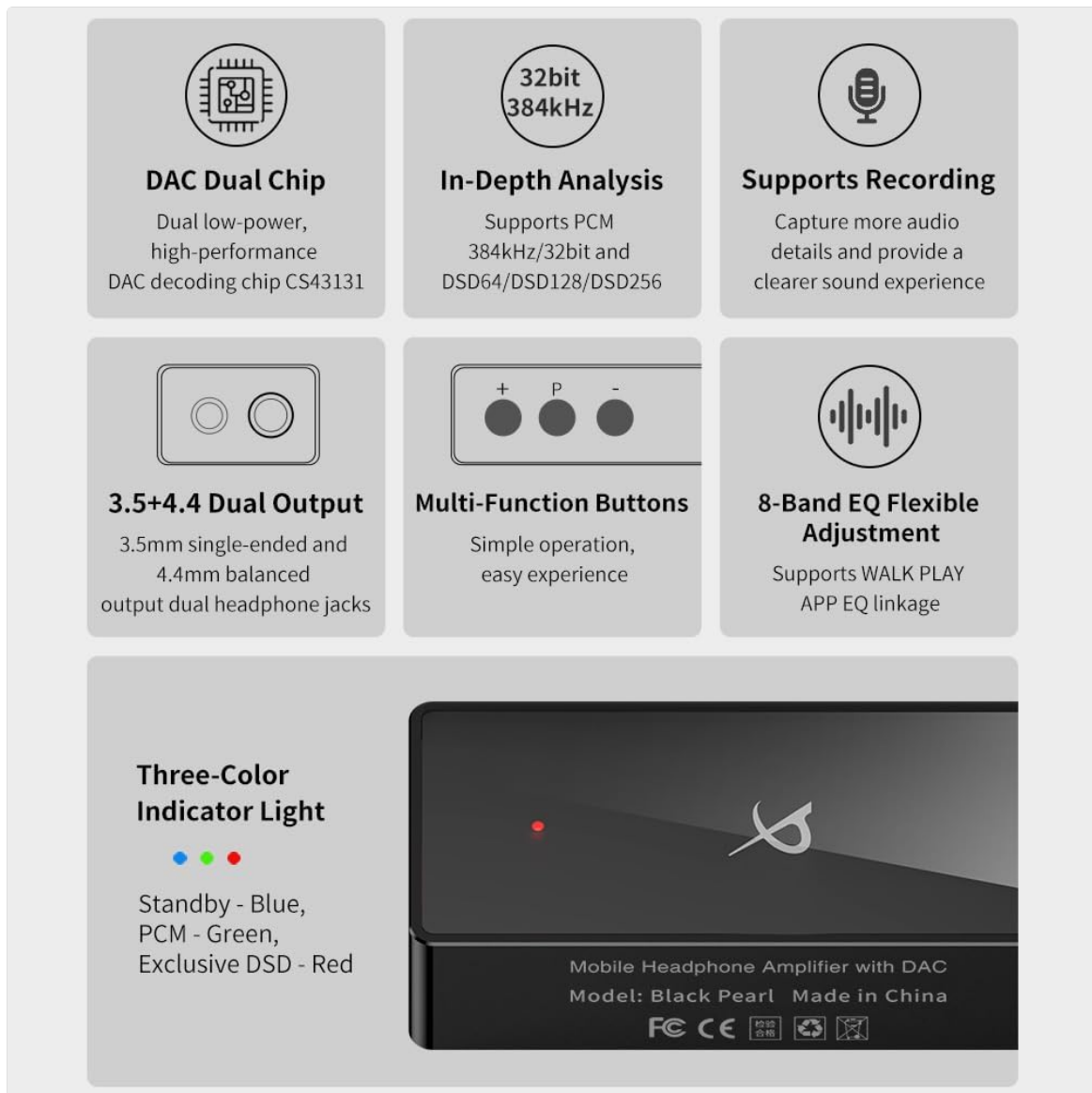


Figure 1.2: Visual representation of the TRN Black Pearl's core features, including its dual DAC, high-resolution audio support, and versatile outputs.

## 2. PACKAGE CONTENTS

Please check the package contents upon unboxing to ensure all items are present and in good condition.

- TRN Black Pearl Portable Hi-Fi Digital Audio Decoder
- USB Type-C Cable (for connection to source device)

# TRN-Black Pearl

## Portable Hi-Fi Digital Audio Decoder



Figure 2.1: The TRN Black Pearl device and its accompanying USB Type-C cable, as typically found in the product packaging.

### 3. SETUP GUIDE

Follow these steps to set up your TRN Black Pearl DAC:

- 1. Connect to Source Device:** Use the provided USB Type-C cable to connect the TRN Black Pearl to your audio source device (e.g., smartphone, tablet, computer). The Black Pearl is compatible with devices supporting USB Audio Class 2.0.
- 2. Connect Headphones:**
  - For standard headphones, plug your 3.5mm headphone jack into the 3.5mm output port on the TRN Black Pearl.
  - For balanced headphones, plug your 4.4mm balanced headphone jack into the 4.4mm output port.
- 3. Power On:** The device typically powers on automatically when connected to a compatible source device. The indicator light will illuminate.
- 4. Driver Installation (if necessary):** For some computer operating systems, you may need to install

specific drivers. Refer to the manufacturer's website for the latest driver downloads.



Figure 3.1: The dual output interface of the TRN Black Pearl, featuring both 3.5mm and 4.4mm jacks for wide headphone compatibility.

## 4. OPERATING INSTRUCTIONS

### 4.1. Indicator Light Status

The TRN Black Pearl features a three-color indicator light to show its current operational status:

- **Blue Light:** Indicates standby mode or PCM audio playback.
- **Green Light:** Indicates PCM audio playback at higher sample rates.
- **Red Light:** Indicates DSD audio playback.

# Three-Color Status Indicator Light



All-metal fuselage



tempered glass



Figure 4.1: The TRN Black Pearl displaying a red indicator light, which signifies DSD audio playback.

## 4.2. Multi-Function Buttons

The device is equipped with multi-function buttons for controlling playback and volume. Specific functions may vary slightly depending on the connected source device and application.

- **Volume Up/Down:** Adjust the output volume.
- **Play/Pause:** Control audio playback.
- **Track Skip:** Navigate between audio tracks.

# Delicate Sound Outstanding resolution



Figure 4.2: Side view of the TRN Black Pearl, highlighting the multi-function buttons for volume and playback control.

### 4.3. Recording and Calling

The TRN Black Pearl supports recording and calling functions when connected to compatible devices and applications. This allows for clear voice communication and audio capture.



Figure 4.3: The TRN Black Pearl connected to a smartphone, demonstrating its capability for recording and making calls.

## 5. MAINTENANCE

To ensure the longevity and optimal performance of your TRN Black Pearl, follow these maintenance guidelines:

- **Cleaning:** Use a soft, dry, lint-free cloth to clean the exterior of the device. Avoid using abrasive cleaners, solvents, or strong chemicals, as they may damage the finish or internal components.
- **Storage:** When not in use, store the device in a cool, dry place away from direct sunlight, extreme temperatures, and high humidity.
- **Handling:** Handle the device with care. Avoid dropping it or subjecting it to strong impacts, which can damage internal circuitry.
- **Connectivity:** Always grasp the plug, not the cable, when connecting or disconnecting the USB or headphone cables to prevent damage to the connectors or ports.

## 6. TROUBLESHOOTING

If you encounter issues with your TRN Black Pearl, refer to the following common troubleshooting steps:

Problem	Possible Cause	Solution
No sound output.	Incorrect connection. Low volume on source device or DAC. Incompatible audio format. No power to the DAC.	Ensure USB cable and headphone jacks are securely connected. Increase volume on both the source device and the Black Pearl. Verify the audio format is supported (PCM up to 384kHz/32bit, DSD256). Ensure the source device is providing power via USB.
Indicator light not on.	No power. Faulty USB cable or port.	Reconnect the USB cable to a different port or source device. Try a different USB Type-C cable.
Distorted sound.	Volume too high. Poor audio file quality. Interference.	Reduce the volume. Try playing a high-quality audio file. Move away from potential sources of electromagnetic interference.

## 7. SPECIFICATIONS

Detailed technical specifications for the TRN Black Pearl Portable Hi-Fi Digital Audio Decoder:

Parameter	Value
DAC Chip	Dual CS43131
USB Type	Type-C USB2.0
PCM Support	Up to 384kHz/32bit
DSD Support	DSD64, DSD128, DSD256
Dimensions	57mm x 23mm x 13mm
Weight	Approx. 25g (Cable not included)
Indicator Light Colors	Blue (Standby/PCM), Green (PCM), Red (DSD)
Output Level (32Ω load)	4.4mm: 320mW, 3.5mm: 125mW
DNR (600Ω load)	4.4mm: 130dB@4Vrms, 3.5mm: 125dB@2Vrms
SNR (600Ω load)	4.4mm: 130dB@4Vrms, 3.5mm: 125dB@2Vrms
THD+N (600Ω load)	4.4mm: -110dB@2Vrms, 3.5mm: -110dB@1Vrms
Operating Voltage	4.5V - 5.25V
Total Harmonic Distortion	-108dB (RL=32Ω single end, 100mW)
Headphones Jack	3.5 mm Jack, 4.4 mm Jack
Connectivity Technology	Wired
Compatible Devices	Devices with 3.5mm or 4.4mm headphone jacks, Android devices
Frequency Range	20Hz - 384kHz

## 8. WARRANTY AND SUPPORT

For warranty information and technical support, please refer to the official LEAUDIO website or contact their customer service directly. Keep your purchase receipt as proof of purchase for any warranty claims.

For the most up-to-date information regarding drivers, firmware updates, and frequently asked questions, please visit the manufacturer's support page.