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> Topping Centaurus Full Balanced R2R DAC - USB/Bluetooth/Optic/Coaxial/AES/IIS to RCA/XLR Digital-Analog Audio Converter, DSD512 PCM768kHz Desktop Decoder Preamp Support 12V Trigger/PEQ (Black) User Manual

## AOSHIDA Topping Centaurus

# TOPPING Centaurus R2R DAC User Manual

Model: Topping Centaurus | Brand: AOSHIDA

## 1. PRODUCT OVERVIEW

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The TOPPING Centaurus is a high-fidelity, full balanced R2R Digital-to-Analog Converter designed for discerning audio enthusiasts. It incorporates an advanced 8-channel R2R architecture, supporting high-resolution audio formats up to DSD512 and PCM768kHz. The Centaurus offers a comprehensive suite of features including multiple input/output options, customizable sound profiles, and a user-friendly interface, making it a versatile centerpiece for any audio setup.

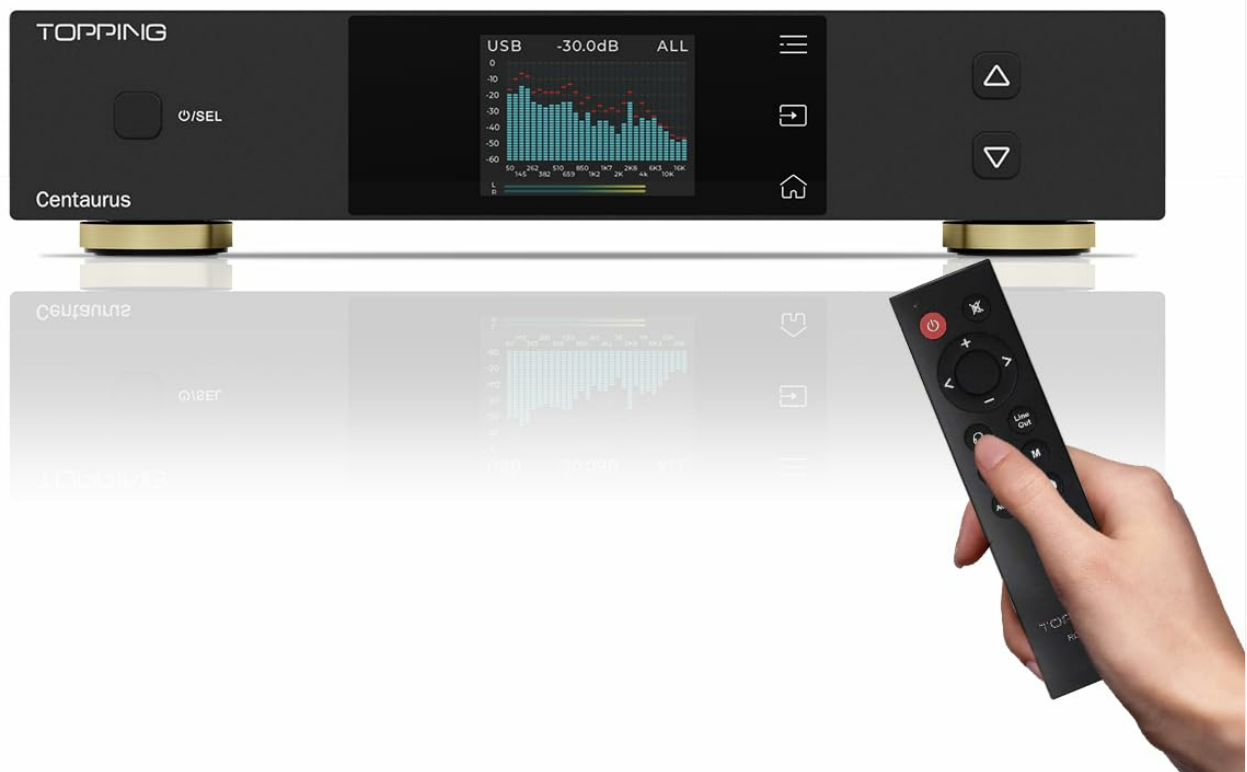


Figure 1.1: Front view of the Topping Centaurus R2R DAC with its remote control.

## Key Features:

- **Fully Balanced 8-Channel R2R Design:** Utilizes 8 resistor arrays for precise digital-to-analog conversion, with 'Vector Step Resistance Network' for DSD and R2R structure for PCM, powered by CPLD for high sound fidelity.
- **Three Sampling Modes:** Offers NOS (Non-Oversampling) for authentic sound, OS (Oversampling) with adjustable rates for enhanced performance, and Best mode for automatic optimal rate selection.
- **10-Band High-Precision PEQ Adjustment:** Customize frequency, gain, and bandwidth with a new PEQ algorithm and desktop software, supporting curve import and multiple profile saving.
- **Versatile Connectivity:** Features USB, Optical, Coaxial, AES, and IIS inputs, along with RCA single-ended and XLR balanced outputs.
- **Adjustable Output Levels:** RCA outputs at 2.1Vrms (4V Mode) or 2.6Vrms (5V Mode), and XLR outputs at 4.2Vrms (4V Mode) or 5.2Vrms (5V Mode).
- **Preamp Mode:** Allows adjustable output volume for direct connection to power amplifiers or active speakers, saving the need for a separate pre-amplifier.
- **12V Trigger:** Enables seamless power synchronization with other compatible audio devices.
- **Aurora UI:** Intuitive user interface for personalized experience, including selectable background colors and display

modes (FFT, VU meter, playback information).

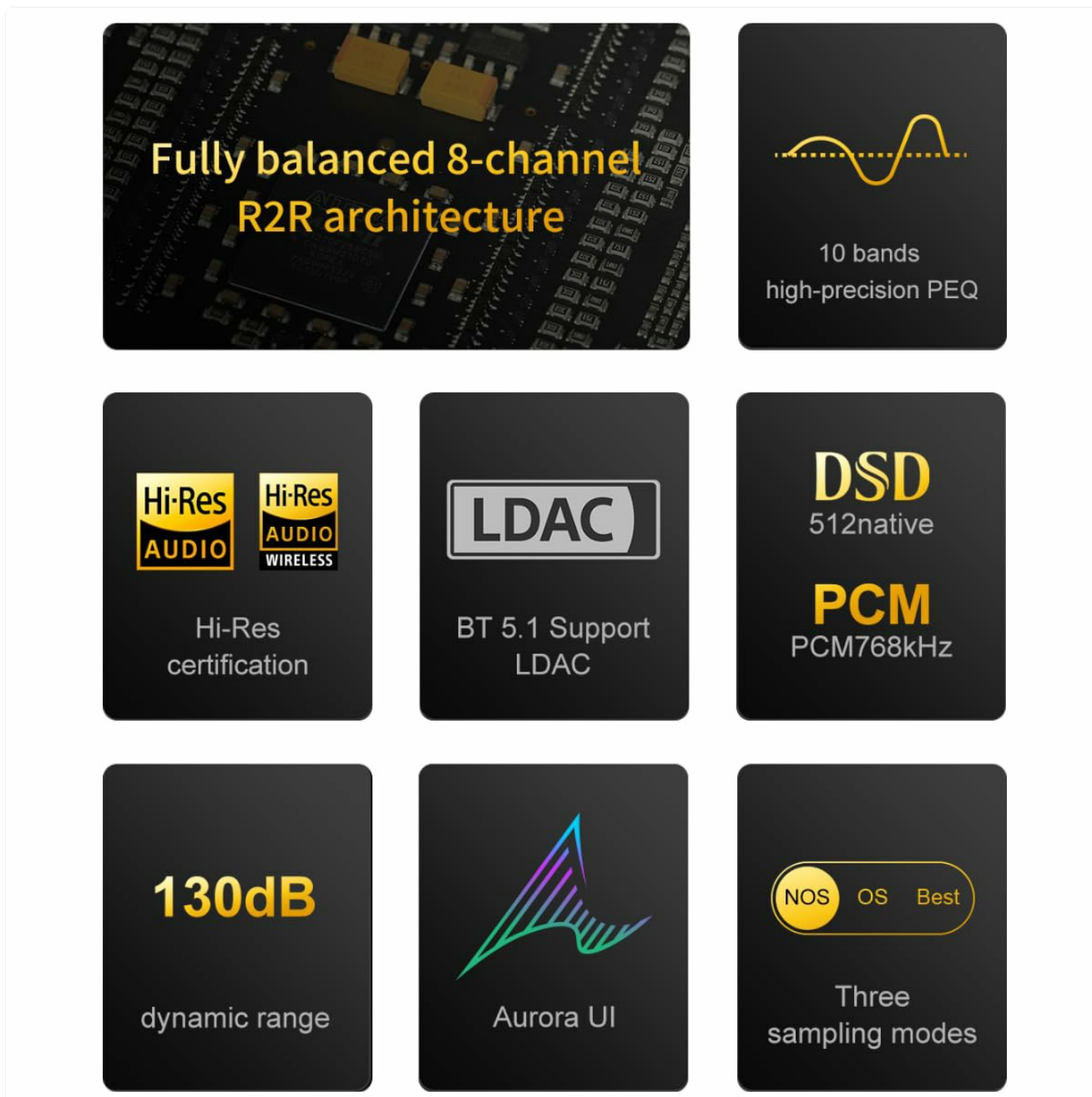


Figure 1.2: Visual representation of the Topping Centaurus's core features.

## 2. WHAT'S IN THE BOX

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Upon opening the package, please ensure all the following items are present:

- TOPPING Centaurus DAC Unit
- Remote control
- USB cable
- AC power cable
- Product Information Card
- Bluetooth Antenna

## 3. SETUP

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### 3.1 Initial Connection

Before powering on the device, ensure all necessary audio and power connections are securely made. Connect the AC power cable to the unit and a suitable power outlet. For digital audio input, choose from USB, Optical, Coaxial, AES, or IIS. For analog audio output, connect your amplifier or active speakers to either the RCA or XLR outputs.



Figure 3.1: Top and rear panel view illustrating connection ports.

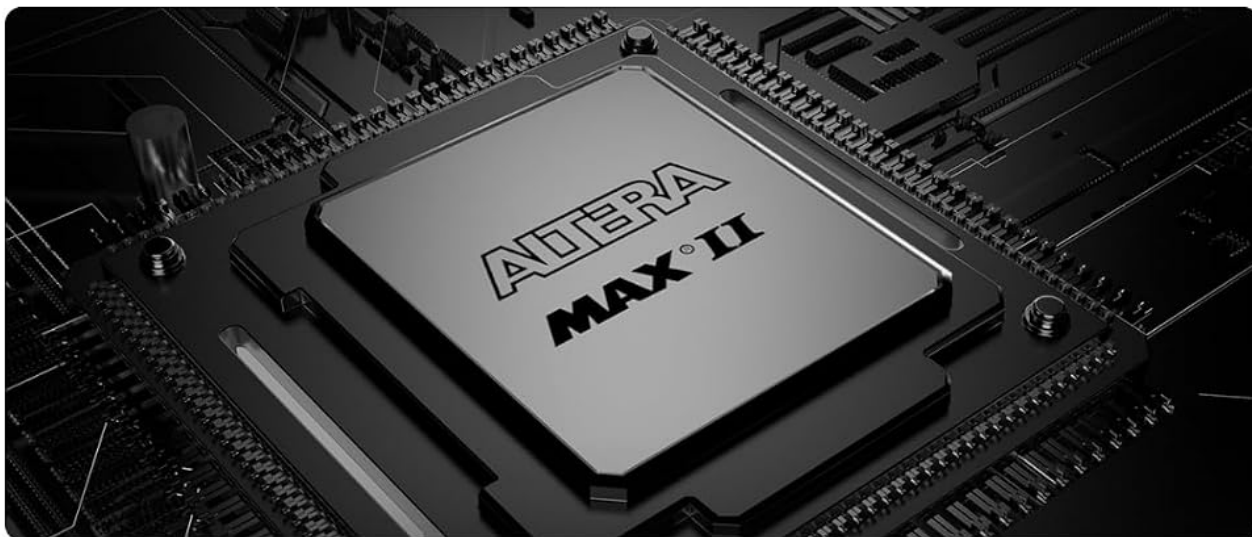
### 3.2 12V Trigger Connection

The Centaurus DAC is equipped with a 12V Trigger input and output. This feature allows for synchronized power control with other compatible devices. Connect a 12V trigger cable from your source device's trigger output to the Centaurus's 12V Trigger input, or from the Centaurus's 12V Trigger output to another device's trigger input for coordinated power on/off functionality.

## Ultra Low Jitter

We achieved incredible jitter rejection using CPLD to process the clock signal and optimize the digital signal.

In the jitter test commonly used by current measurement websites, the TOPPING Centaurus has excellent jitter performance, with jitter as low as -150dB.



## 12V Trigger

TOPPING Centaurus is equipped with 12V Trigger input and output, which support being triggered by other devices, as well as actively triggering other devices to switch on and off synchronously.



Figure 3.2: Detail of the 12V Trigger ports on the rear panel.

## 4. OPERATING INSTRUCTIONS

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### 4.1 Power On/Off

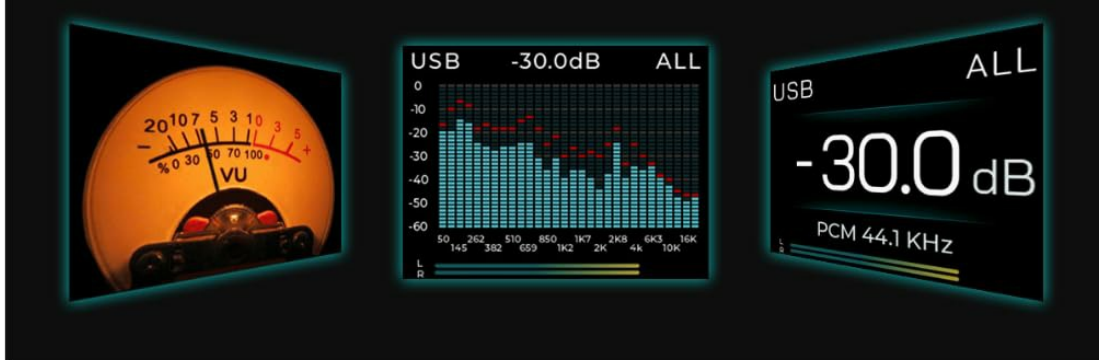
Press the power button on the front panel or use the remote control to turn the unit on or off. The display will illuminate upon power-on.

### 4.2 User Interface Navigation

The Centaurus features a 2.0-inch full-color screen and three touch buttons for navigation. Use the buttons to browse menus and adjust settings. The intuitive Aurora UI allows for easy personalization of your listening experience.

## Color jump out at you

Choose from 9 background colors at will FFT, VU or playback information display can be switched according to your requirements.



## 2.0 inches full color screen and 3 touch buttons

Make quick and efficient adjustments to your settings  
An experience changed from this moment

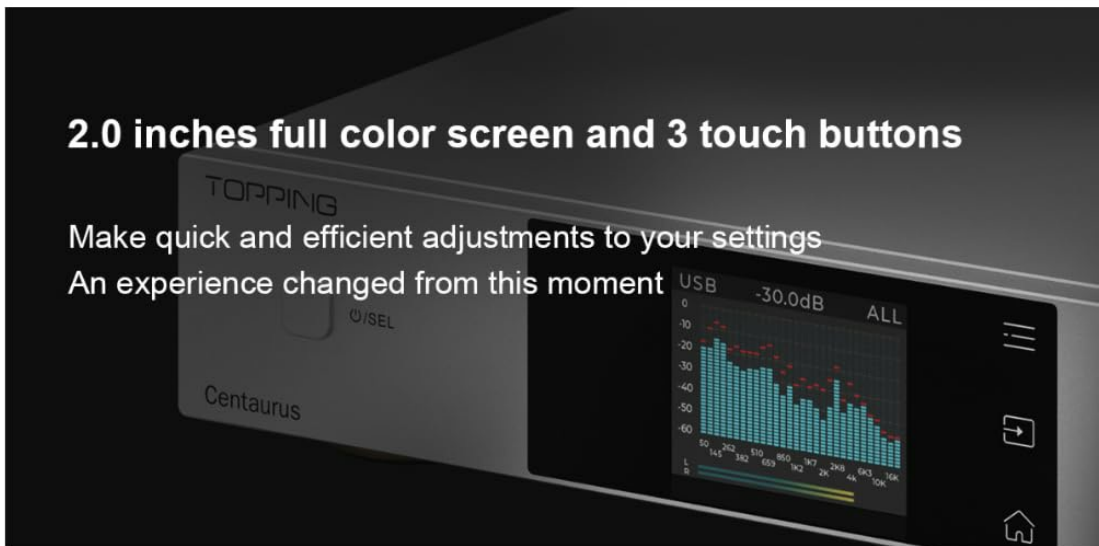


Figure 4.1: Front panel display and controls.

### 4.3 DAC Mode vs. Preamp Mode

The Centaurus DAC operates in two primary modes: DAC Mode and Preamp Mode. In DAC Mode, the output level is fixed. In Preamp Mode, the output volume can be adjusted directly from the unit, allowing it to function as a pre-amplifier for direct connection to a power amplifier or active speakers.

## Directly Connect Active Speaker To Adjust Volume

In addition to the fixed output level DAC mode, TOPPING Centaurus also has a "preamp" mode. In preamp mode, you can adjust the output volume of TOPPING Centaurus, then connect it directly to a pure amplifier or active speaker.



Figure 4.2: Direct connection to active speakers using Preamp Mode.

### 4.4 Sampling Modes

Navigate to the 'Advanced' settings in the UI to select your preferred oversampling mode: NOS (Non-Oversampling), OS (Oversampling), or Best. Each mode offers a distinct sonic characteristic.

### 4.5 PEQ Adjustment

The 10-band high-precision PEQ (Parametric Equalizer) allows for detailed sound customization. Access PEQ settings through the UI to adjust frequency, gain, and bandwidth for each band. You can also import curves and save multiple profiles.

### 4.6 Bluetooth Operation

The Centaurus supports Bluetooth 5.1 with LDAC. To enable or disable Bluetooth, navigate to the 'Advanced' settings in the UI. Once enabled, pair your Bluetooth device with the Centaurus.

### 4.7 USB Mode Selection

The unit supports both USB Audio Class (UAC) 1.0 and UAC 2.0. UAC 1.0 allows for driverless operation with devices like

gaming consoles. UAC 2.0 typically offers higher resolution audio. You can switch between these modes in the 'Advanced' settings.

Video 4.1: A demonstration of the Topping Centaurus R2R DAC's physical appearance and user interface navigation, including various settings and display options.

## 5. CONNECTIONS

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The Centaurus DAC provides a wide array of input and output options to integrate seamlessly into various audio systems.

### 5.1 Digital Inputs

- **USB:** For connecting to computers or other USB audio sources.
- **Optical (TOSLINK):** For digital audio signals from TVs, CD players, etc.
- **Coaxial:** For digital audio signals from CD players, streamers, etc.
- **AES (Audio Engineering Society/European Broadcasting Union):** Professional digital audio interface.
- **IIS (I<sup>2</sup>S):** For ultra-high-spec digital audio signals, often used with dedicated digital transports.

### 5.2 Analog Outputs

- **RCA (Single-Ended):** Standard analog audio output for connecting to amplifiers or active speakers.
- **XLR (Balanced):** Professional-grade balanced analog audio output, offering superior noise rejection for longer cable runs and compatible equipment.



TOPPING Centaurus offers versatile RCA single-ended and XLR balanced outputs, enabling selective or simultaneous channel use for flexible, efficient audio connectivity across multiple systems.

TOPPING Centaurus features XLR 4V/5V and RCA 2V/2.5V outputs, offering compatibility with more devices and pushing performance to extreme levels for superior audio quality.



Figure 5.1: Rear panel showing comprehensive input and output options.

## 6. MAINTENANCE

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To ensure the longevity and optimal performance of your TOPPING Centaurus DAC, please follow these maintenance guidelines:

- **Cleaning:** Use a soft, dry cloth to wipe the exterior of the unit. Avoid using liquid cleaners, aerosols, or abrasive materials.
- **Placement:** Place the unit on a stable, flat surface with adequate ventilation. Avoid direct sunlight, heat sources, and areas with high humidity or dust.
- **Handling:** Handle the unit with care. Avoid dropping or subjecting it to strong impacts.
- **Power:** Disconnect the power cable from the wall outlet if the unit will not be used for an extended period.

## 7. TROUBLESHOOTING

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If you encounter any issues with your Centaurus DAC, please refer to the following common troubleshooting steps:

- **No Power:** Ensure the AC power cable is securely connected to both the unit and a working power outlet. Check the power switch on the rear panel.
- **No Sound Output:** Verify that the correct input source is selected on the DAC. Check all audio cable connections (RCA/XLR) between the DAC and your amplifier/active speakers. Ensure the amplifier/speakers are powered on and set to the correct input. If in Preamp Mode, check the volume level.
- **Distorted Sound:** Check cable connections for looseness or damage. Ensure the source audio file is not corrupted. Try adjusting the sampling mode or PEQ settings.
- **Bluetooth Connection Issues:** Ensure Bluetooth is enabled in the DAC's settings. Try unpairing and re-pairing your device. Ensure your device is within range.
- **Remote Control Not Working:** Check the battery in the remote control. Ensure there are no obstructions between the remote and the DAC's IR receiver.

If the issue persists after attempting these steps, please contact customer support for further assistance.

## 8. SPECIFICATIONS

Detailed technical specifications for the TOPPING Centaurus R2R DAC (LineOut/USB In@96kHz):

Parameter	RCA Output	XLR Output
THD+N (A-wt) @1kHz	<0.00005%	<0.00005%
THD+N (No-wt, 90kBw) @20Hz-20kHz	<0.0005%	<0.0005%
SNR (A-wt) @1kHz	126dB	130dB
Dynamic Range (A-wt) @1kHz	126dB	130dB
Frequency Response	20Hz-20kHz ( $\pm 0.6$ dB), 20Hz-40kHz ( $\pm 2.2$ dB)	20Hz-20kHz ( $\pm 0.6$ dB), 20Hz-40kHz ( $\pm 2.2$ dB)
Output Level (0dBFS)	2.1Vrms (4V Mode), 2.6Vrms (5V Mode)	4.2Vrms (4V Mode), 5.2Vrms (5V Mode)
Noise (A-wt)	<1.2uVrms	<1.4uVrms
Channel Crosstalk @1kHz	-121dB	-130dB
Channel Balance	0.3dB	0.3dB
Output Impedance	50 $\Omega$	100 $\Omega$

### General Specifications:

- **Item Model Number:** Topping Centaurus
- **Manufacturer:** TOPPING
- **Package Dimensions:** 14.57 x 9.45 x 3.54 inches
- **Item Weight:** 4.41 Pounds
- **Number of Channels:** 8
- **Interface Type:** Coaxial, Optical, USB, AES, IIS
- **Mounting Type:** Desktop

## 9. WARRANTY AND SUPPORT

For warranty information and technical support, please refer to the Product Information Card included in your package or visit the official AOSHIDA website. Additional protection plans may be available for purchase to extend coverage beyond the standard manufacturer's warranty.

- **2-Year Protection Plan:** Available for purchase.
- **3-Year Protection Plan:** Available for purchase.
- **Complete Protect:** Monthly plan covering eligible past and future purchases.

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