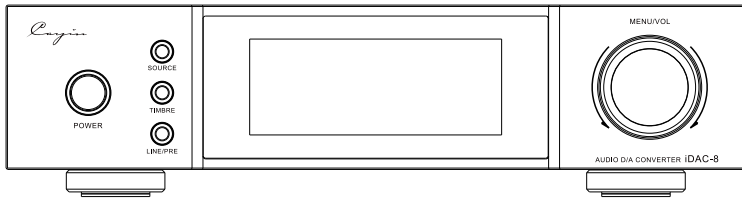


*Cayin*®

## iDAC-8 HI-FI AUDIO D/A CONVERTER



**User's Manual**

We would like to express our sincere gratitude to you for selecting the Cayin iDAC-8 HiFi Audio D/A Converter. To assist you in comprehending its features, as well as becoming acquainted with its operation, we have prepared this manual. We highly recommend that all customers thoroughly review this manual before commencing usage of the device.

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Attention:

- ◆ Please make sure the serial number on the package, warranty card and the chassis are intact and identical. In case of damage, missing or nonidentical serial number, Cayin reserves the right to refuse warranty service for the machine.
- ◆ Without prior permission from our company (Zhuhai Spark Electronic Equipment Co., LTD), any form of reproduction, transmission, distribution, or storage of the contents of this document is strictly prohibited.
- ◆ The user manual is a documentation of the product based on the specification at the time of print. Cayin reserves the right to change product specification without prior notice.

## Package Content-----

Please inspect the product package before opening it to ensure it is free from any physical damage or water stains.

You should find the following items when opening the package:

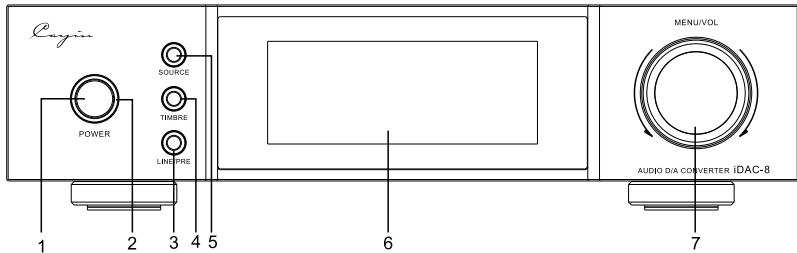
- 1.iDAC-8 HIFI Audio D/A Converter × 1 Unit
- 2.User Manual × 1 Piece
- 3.Replacement Fuse × 2 Pieces
- 4.USB Cable × 1 Piece
- 5.Warranty Card × 1 Piece
- 6.Power Cord × 1 Piece

If maintenance services are required, please complete the warranty card and submit it to the authorized dealer within two weeks or mail it back to our sales department. We will provide you with comprehensive and attentive after-sales service. It is recommended to save the packaging and packing materials for future shipment use.

## Product Features-----

- ◆ OLED Dot Matrix display screen for a premium visual experience.
- ◆ High-performance toroidal power transformer and voltage regulation circuit.
- ◆ Digital/analog conversion with AKM's flagship AK4191 alongside two AK4499EX chips.
- ◆ Support USB Audio, I<sup>2</sup>S/ DSD, Coaxial, Optical and AES/EBU Digital Inputs.
- ◆ Equipped with Single-ended RCA and Balanced XLR output. Both support timbre selection between Vacuum Tube and Solid-state.
- ◆ Selectable between LINE Output and PRE Output (Preamplification Output) Mode.
- ◆ Both single-ended RCA and balanced XLR support LINE and PRE outputs, both of which can be connected to integrated amplifiers and power amplifiers for use.

## Front Panel Functional Description -----



### 1. POWER On/Off:

Press down the button to power on the DAC. Press it again, and the button will return to its original position, powering off the DAC.

### 2. Power Indicator:

Indicates the working status of the DAC

- a. Indicator flashing: in the process of initialization.
- b. Indicator consistently on: device in normal working condition.

### 3. Line Out/Pre Out:

Press to select between Line Out and Pre Out.

### 4. Timbre Selection:

Select between Solid State and Vacuum Tube Mode.

\*It takes approximately 15 seconds for the vacuum tubes to warm up to desirable working condition.

### 5. Source:

Press to select input source. Press repeatedly to cycle through the following options: USB AUDIO, I<sup>2</sup>S, AES/EBU, COAXIAL BNC, COAXIAL RCA and OPTICAL.

### 6. OLED Display:

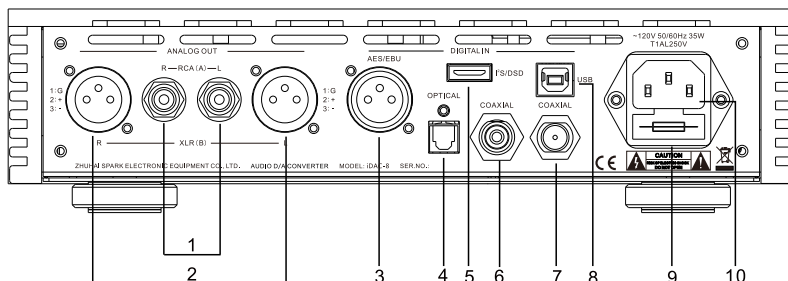
Display the current working status of the DAC.

### 7. MENU/VOLUME

Press and hold the "MENU/VOL" key to enter the menu;

In PRE working mode, rotate the "MENU/VOL" knob to adjust the volume.

## Rear Panel Functional Description -----



### 1. Analog Out

**Single-ended Connector (RCA):** Connect the single-ended output of the DAC to the single-ended input of an amplifier with a pair of RCA cable. Please make sure the left and right channels are connected correctly.

### 2. Balanced Connector (XLR):

Connect the balanced output of the DAC to the balanced input of an amplifier with a pair of XLR cable. Please make sure the left and right channels are connected correctly.

### 3. Digital In

**AES/EBU:** Connect the AES/EBU digital input of the DAC to the AES/EBU digital audio output of a DAP with a standard 110ohm AES/EBU (XLR) cable.

### 4. OPT (Optical):

Connect the optical input of the DAC to the optical digital output of a DAP with a Toslink (optical) cable.

### 5. I<sup>2</sup>S:

Use a Type A HDMI cable to connect the HDMI-A port with the HDMI port of an audio device that supports I<sup>2</sup>S.

### 6. COAXIAL 2:

Connect the RCA coaxial input of the DAC to the Coaxial digital output of a DAP with a standard 75ohm coaxial cable.

### 7. COAXIAL 1:

Connect the RCA coaxial input of the DAC to the Coaxial digital output of a DAP with a standard 75ohm coaxial cable.

### 8. USB AUDIO:

Connect the USB port of the DAC to the USB port of a computer with a USB cable (provided in the product package).

### 9. Power Supply Modules

**FUSE:** If replacement is required, please use a fuse of the same specification.

### 10. Power Input Socket:

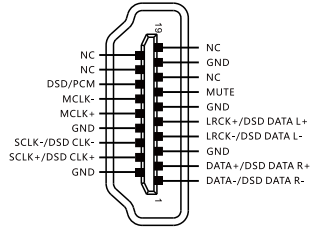
Connect to AC power supply.

## I<sup>2</sup>S Interface Definition-----

The I<sup>2</sup>S connector on this unit adopts the standard 19-pin HDMI-A connector, however, the pinout is customized by our company for better compatibility with Cayin's Transports and DAPs that feature I<sup>2</sup>S. We cannot guarantee that it is compatible with I<sup>2</sup>S connectors of the other brands, nor standard HDMI connectors.

The following is the definition of the HDMI connector pinout for this unit:

Type-A



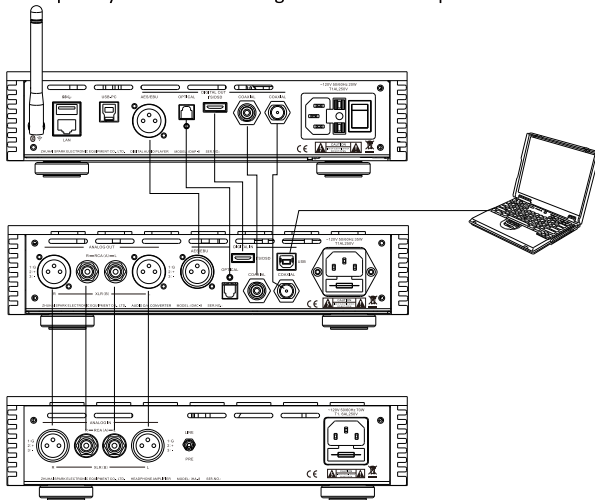
## Setup of the machine -----

### 1. Connect to the power source

Please verify that the AC voltage marked on the rear panel of the device matches with the power supply voltage in your area, after confirming that, connect the power cord to the device's power socket.

### 2. Connect to audio source

The connection diagram demonstrates the audio cable connection of this unit to an iDAP-8, a computer, and an iHA-8 headphone amplifier as a complete system. You may refer to this example if you are connecting iDAC-8 to other products.



- (1) Connect the coaxial input of the iDAC-8 to the coaxial output of iDAP-8 with a standard 75 ohm coaxial cable. You can either connect the optical input of the iDAC-8 to the optical output of iDAP-8 with a Toslink (Optical) cable. Alternatively, you can connect the AES/EBU input of the iDAC-8 to the AES/EBU output of the iDAP-8 with a standard 110 ohm AES/EBU (XLR) cable. In addition to the above methods, you can also use a type-A HDMI cable to connect iDAP-8 and iDAC-8.
- (2) Connect to a computer: Connect the USB port of the iDAC-8 (Type-B) to the USB port (Type-A) of a computer with a USB cable (provided in the product package).
- (3) Connect to headphone amplifier: use a pair of XLR3 cable to connect the balanced audio output of the iDAC-8 to the balanced audio input of the iHA-8. Alternatively, use a pair of RCA cable to connect the single-ended audio output of the iDAC-8 to the single-ended audio input of the iHA-8, please make sure the left and right channel is connected correctly.

#### Attention

- Please make sure that the AC voltage of the device matches with your local power supply voltage.
- To avoid damage to your headphone amplifier and headphones due to high volume of noise during connection, please turn off the power of each unit before connecting.
- It takes approximately 15 seconds for the vacuum tubes to warm up to desirable working condition, the DAC will be muted during this period of time and thus there will be no audio output from the DAC.
- Please make sure all cables in the audio system were correctly connected before turning it on.

#### 3. Install driver

If you prefer to use the iDAC-8 with a windows-based computer, you will need to install the USB audio driver on your computer before you can use the DAC as an external USB soundcard for your computer. You can install the driver from the following url: <https://en.cayin.cn/download>

- (1) Please follow the procedure to install the driver:
- (2) Double click the "Cayin USB Audio Driver.exe" to activate the driver installation process.
- (3) Click the corresponding buttons according to the program's prompts until the installation is complete.
- (4) Once the driver has installed successfully, you should be able to see the name "Cayin iDAC-8" at the Device Manager interface of your computer.
- (5) Select "Cayin iDAC-8" as audio output device in your computer playback software.

Note: The USB audio driver is only needed for Windows 7/8/8.1/10. No USB audio driver required for macOS.

## Basic Operation-----

#### 1. Turn on the device.

Please make sure the AC voltage of your local power supply match the voltage of the DAC.

Turn on the iDAC-8 by pressing down the POWER button on the front panel, the power indicator will start to flash and the display screen will light up.

The initialization process will take approximately 15 seconds, after which the power indicator will stop blinking and remain illuminated.

Note: Please do not remove any audio cable or USB cable when the DAC is running, as this may damage the amplifier and other devices.

## 2. Source Selection

- To select input source, press the SOURCE button repeatedly to cycle through the following options: USB AUDIO, I2S, AES/EBU, COAXIAL BNC, COAXIAL RCA, OPTICAL. The screen will display the current input source.
- When you turn off the DAC, it remembers the previous settings. When you turn it on again, it will revert to the previously selected source.

### 2.1 Using USB decoding

- (1) Before you proceed with USB decoding, please confirm again that appropriate driver has been installed in your computer (if needed), otherwise, USB decoding might not work properly.
- (2) Connect the USB port of the DAC (Type-B) to the USB port (USB-A) of the computer with a USB cable (provided in the product package). Press the SOURCE button repeatedly until USB AUDIO is selected.
- (3) Once the USB AUDIO is selected, the screen will display the bit rate and sampling frequency for your reference.

Please setup your playback software such as Foobar2000 in your computer correctly, otherwise the system might not be able to output the unaltered raw bitstream to the DAC for decoding, you may need to install a plug-in for foobar2000 such as ASIO or WASAPI in order to do this.

### 2.2 Using I<sup>2</sup>S Digital Input

- After the HDMI cable is connected, press the SOURCE button on the front panel to select I<sup>2</sup>S input.
- Once the I<sup>2</sup>S is selected, the screen will display the bit rate and sampling frequency for your reference.

### 2.3 Using Optical, Coaxial and AES/EBU input

- Once the Optical/coaxial/AES/EBU cable is connected, you can select among OPTICAL, COAXIAL BNC, COAXIAL RCA and AES/EBU by press the SOURCE button repeatedly.
- Once the DAC is locked into certain digital connection, the screen will display the bit rate and sampling frequency for your reference.

## 3. Timbre Selection

### 3.1 Select Vacuum Tube Mode

- Press the "TIMBRE" button on the panel to select the tube mode, it takes approximately 15 seconds for tubes to be warmed up, after which it will enter the tube output mode as the display screen will show the "TUBE" icon.
- The present options will be stored upon shutdown.



### 3.2. Select Solid State Mode

- Press the "TIMBRE" button on the panel to select the transistor output mode, after which the display screen will show the "TRANS" icon.
- The present options will be stored upon shutdown.

## 4. Preamp Output and Line Output Selection

### 4.1 Select Preamp Output

- Press the "LINE/ PRE" button on the panel to select the preamp output, the display screen will show the "PREOUT" icon. The volume can be adjusted at this time.
- The present options will be stored upon shutdown.

### 4.2. Selection of Line Outputs

- Press the "LINE/ PRE" button on the panel to select the line output, the display screen will show the "LINE OUT" icon.
- The present options will be stored upon shutdown.

## 5. Volume Control

- Under the state of preamp output, rotate the "VOL" volume knob to adjust the volume level, the adjustment range is between 0-100.
- The present options will be stored upon shutdown.

## 6. Filter Settings

Long press the "MENU" key on the panel to access the filter setting interface, then short press the "MENU" key to select PCM filter and DSD filter.

### 6.1 .PCM Filter Settings

- Once the PCM Filter screen is displayed, rotate the Volume knob left or right to select the filter for PCM.
- You can choose between "Sharp Roll- Off ", "Sharp Roll-Off", "Short Delay Sharp Roll-Off", "Short Delay Slow Roll-Off ", "Super Slow Roll-Off" and "Low Dispersion Short Delay" filters.
- The present options will be stored upon shutdown.

### 6.2 .DSD Filter Settings

- Once the DSD Filter screen is displayed, rotate the volume knob left or right to select the filter for DSD.
- You can select between "Narrow Bandwidth" and "Wide Bandwidth" filters.
- The present options will be stored upon shutdown.

## **Safety Notice -----**

1. Please make sure the AC voltage of your local power supply match the voltage of the device. Cayin is not responsible for accidents such as damage or fire caused by incorrect input voltage.
2. Unplug the power cord if you are not going to use the DAC for an extended period of time, and take proper care of the machine.
3. Please be careful when transporting in order to avoid damage to the machine.
4. If moisture presents inside the iDAC-8, it may not function properly, please do not operate the machine until the internal moisture is cleaned.

Moisture could be caused due to the following reasons:

- \*Device is in a room where the heater has just been turned on;
  - \*Moving the device from a cold environment to a warm environment;
  - \*The machine is moved from a cool environment, such as an air-conditioned room or car, to a hot and humid place.
  - \*Opening the cover may expose you to electric shock or other hazards.
5. This machine is strictly prohibited from water drops or splashing, do not place objects containing liquids on or around the machine to avoid electric shock or damage to the machine.
  6. Repairs should only be carried out by qualified service personnel. Do not disassemble the unit by yourself, as handling of the unit by non-professionals may cause further damage to the unit.
  7. Before cleaning this product, please unplug the power cord. Wipe the case with a soft, clean cloth, do not use volatile solutions or other corrosive cleaning solutions.
  8. The machine should be placed at a flat surface, make sure all four feet are evenly stressed.
  9. Do not place any flammable material on or around the DAC.
  10. High temperature may cause component parameter changes, under extreme condition may even damage the unit, please avoid using the product under direct sunlight or high temperature.
  11. The machine will become hot during operation, please keep the DAC at a well-ventilated environment and do not cover the DAC with other items.
  12. Please Contact your nearest authorized dealer for after-Sales service if the machine is not working properly.



This product is designed to work at altitude of 2000m or below and in non-tropical climate.

Leave sufficient space around the power socket for unplugging the power cord.

## Specification-----

Specification		Solid State	Vacuum Tube
Output Level	RCA	2.2VRMS (LINE) 6.0VRMS (PRE)	2.2VRMS (LINE) 6.0VRMS (PRE)
	XLR	4.2VRMS (LINE) 12VRMS (PRE)	4.1VRMS (LINE) 10VRMS (PRE)
Frequency Respond	RCA	20-20kHz ( $\pm 0.1$ dB, $F_s=192$ kHz) 20-50kHz ( $\pm 0.2$ dB, $F_s=192$ kHz)	20-20kHz ( $\pm 0.1$ dB, $F_s=192$ kHz) 20-50kHz ( $\pm 0.2$ dB, $F_s=192$ kHz)
	XLR		
THD+N (A-Weighted)	RCA	0.0007%	0.05%
	XLR	0.0006%	0.8%
S/N (A-Weighted)	RCA	118 dB	110dB
	XLR	126 dB	126 dB
Dynamic range (A-Weighted)	RCA	120 dB	113 dB
	XLR	126dB	126 dB
Attenuation-to-crosstalk ratio (A-Weighted)	RCA	-116dB	-105 dB
	XLR	-121 dB	-122 dB
Note: The above parameters are tested in LINE OUT mode			
USB Input	USB-B Port	PCM 16-32Bit, 44.1k-768kHz DSD64-DSD512 (Native Mode), DSD64-DSD256 (DoP Mode)	
I <sup>2</sup> S Input	HDMI-A Port	PCM 16-32Bit, 44.1k-768kHz DSD64-DSD512	
SPDIF Input	XLR Coaxial	PCM 16-24Bit, 44.1k-192kHz; DoP64	
	Optical Port	PCM 16-24Bit, 44.1k-176.4kHz; DoP64	
Dimension		270*215*70mm (feet included; knobs, rear panel socket bumps not included)	
Weight		Approximately 4.6kg	
Input Power		~220V 50Hz	
Maximum Power Consumption		35W	

## Troubleshooting

To ensure optimal performance of the machine, it is essential to adhere to proper maintenance procedures and operate it correctly. Incorrect operation may lead to abnormal functioning of the machine. Should any issues arise with the unit, please perform the following checks. It is possible that the problem may originate from other equipment; therefore, please also inspect the other devices and relevant connections. If the problem persists, kindly reach out to your nearest authorized dealer or Cayin's marketing department for further inspection and assistance.

Problem		Cause	Solution
No sound output after power on	Power Indicator is OFF	Power is not connected	Make sure power cable is properly connected to a power outlet
		The fuse is blown	Replacement of fuses of the same specification
	Power Indicator is ON	No signal input	Make sure the correct source was selected from the front panel. Check whether the source equipment is functioning properly.
		Audio cable is not connected properly	Connect audio cable properly
Decoding is not working properly when using coaxial input		Poor contact between coaxial cable and socket	Reconnect the coaxial cable
		Coaxial cables not complying with standards (75 $\Omega$ )	Replace the coaxial cable with compliant ones
		No coaxial signal input	Check whether the audio source has coaxial signal output
Decoding is not working properly when using AES/EBU input		Poor contact between AES/EBU cable and socket	Reconnect the AES/EBU cable
		AES/EBU cable not complying with standards (110 $\Omega$ )	Replace the coaxial cable with a compliant cable.
		No digital signal input	Check whether the audio source has AES/EBU signal output
Decoding is not working properly when using optical input		Poor contact between optical cable and socket	Reconnect the optical cable
		No optical signal input	Check whether the audio source has optical signal output
Abnormal audio output when USB Audio is used		USB port problems	Change the USB port. If you are using a desktop computer, you should use the USB port on the rear panel of the PC
		Computer is busy	Optimize applications running in the background of your computer during audio playback
		Computer processing capabilities or hardware failed to meet audio playback requirements	Upgrade the computer if possible
The computer does not recognize the device when the USB cable is connected		USB cable not complying with USB 2.0 standards	Replace the USB cable with a proper USB2.0 cable
		USB driver has not been installed correctly	Reinstall USB driver
		USB driver error	Restart computer