REX DAC

WARRANTY REGISTRATION FORM

Unit Serial Number: _____

Customer Name: _____

Address: _____

_____

Date of Purchase: _____

Purchased From:

Dealer Name: _____

Address: _____

_____

IMPORTANT NOTE:

In order to receive the full five year product warranty, please mail this completed form together with a copy of your sales receipt to Balanced Audio Technology at the address below - within **thirty days** of purchase. *Failure to do so will result in the product having a warranty of only one year from the date of manufacture.*

B a l a n c e d   A u d i o   T e c h n o l o g y

REX DAC
Balanced Digital to Analog Converter

Owner's Manual

Introduction

Thank you for your purchase of the Balanced Audio Technology REX DAC. Please read this owner's manual to obtain the full benefit of the REX DAC in your system. It will provide you with the needed safety information and operating procedures for this exceptional unit.

WARNINGS:

To prevent the possibility of serious injury, electrical shock or fire:

DO NOT operate with the cover removed.

DO NOT expose to rain or moisture.

DO NOT defeat the ground power-plug.

DO NOT replace fuse with anything other than the same type and rating as supplied by the factory.

Package Contents

Included in the box should be the following:

Description	Quantity
REX DAC	1
Power Cord	1
Spare Fuse*	1
Torx Wrench (T-15)	1
Spare Top Cover Screws	5
User's Manual	1
VK-R4 Remote Control	1

* *See Fuse section for specification*

Save all the packaging material in a safe dry area for the unlikely event that you need to return the REX DAC to the factory for service.

Reseating Tubes

Normally, reseating tubes upon delivery is not required. However, if any tubes have *noticeably* drifted out of position due to high transportation stress, it will be advisable to reseat the tubes. Use the supplied Torx wrench to remove the top cover. Reseat the tubes in their sockets and reinstall the top cover.

NOTE: Should tube replacement be needed, only properly matched tubes from the factory should be used.

Physical Placement

It is recommended that you provide for at least 6" of free space around the unit for proper ventilation.

Mount the unit on a hard surface with proper ventilation underneath.

Do not stack the REX DAC on top of other units, nor vice versa.

Connecting the REX DAC to Your System

All connections can be found on the rear panel of the REX DAC.

Inputs:

The REX DAC has six inputs:

AES
Coax 1
Coax 2
Toslink 1
Toslink 2
USB

These can be selected via either the front panel controls, or the VK-R4 remote control.

Outputs:

Two balanced output connectors are located on the rear panel.

Operating the REX DAC

Turning the REX DAC On:

After connecting the REX DAC to the power line, briefly press the Standby button.

When you turn the REX DAC On, it will automatically go through a gentle power-on sequence. This sequence takes 50 seconds, during which time the blue Standby LED will be flashing. After this time, the Standby LED will turn OFF and the unit is ready to play.

The REX DAC output is muted during this sequence, which is indicated by the blue LED above the Mute button. The unit will automatically un-mute at the end of the warm-up cycle. At this point, select your source and the REX DAC will be ready to play.

Placing the REX DAC in and out of Standby Mode:

The REX DAC features a Standby switch on the left side on the front panel.

When you are finished playing music, simply place the REX DAC in Standby mode by pressing this switch. The blue Standby LED will turn ON. To turn the unit back on, simply press the switch again and the unit will automatically go through the standard power-up sequence. After the blue LED stops flashing you can play music.

Turning the REX DAC OFF

Press and hold the Standby button to turn the REX DAC off. All front panel indicators will be turned OFF. It will automatically mute.

Front-panel REX DAC controls

STANDBY Button and LED

The Standby button is used to turn the unit ON and OFF and to switch the preamplifier into its Standby mode. The LED indicates the status of the unit's power circuitry and has four states:

LED OFF	*with*	Display OFF	DAC is in OFF state
	with	Display ON	DAC is in ON state
LED Flashing		DAC is going through its Power-ON routine	
LED ON		DAC is in STANDBY mode	

When the unit is plugged into a power line, it will stay in the OFF state until the Standby button is pressed. The LED will then start blinking and the unit will go through a 50second warm-up sequence. At the end of that sequence it will turn ON.

Pressing the button again will switch the unit into its Standby mode.

The REX DAC can be turned OFF by *pressing and holding* the Standby button.

MUTE Button and LED

The Mute button disables the REX DAC output. It is recommended that the Mute be engaged any time the signal cables are changed or any other system configuration changes are being made. This function is also accessible via the VK-R4 remote control.

> LED OFF   DAC output is live
>
> LED ON   DAC output is muted

Note that the REX DAC has two mute modes: manual and automatic. When the unit is powered up it automatically self-mutes until the proper operating points of the circuitry are reached. It will then automatically go into Play mode. Turning the REX DAC OFF even for short time, will make the unit reset its power sequencing circuit and mute its output. *It will then require 50 seconds for the unit to become operational again.*

INPUT selection buttons **1** through **5**

These allow the user to select any of six available inputs to be played. The input name selected will be indicated on the unit front panel display as well. This function is also accessible via the VK-R4 remote control.

Please note that the button 4 will toggle between the two TosLink inputs, indicated as Tos1 and Tos2.

FUNCTION Button

This button allows you to provide custom names for each source input. Pressing the function button will cause the first character to blink. Each character can be changed by using the Up and Down buttons on the VK-R4 remote control. Once the proper character is found, a push on the Function button will lock it and move the programming to the next character. A long push on the Function button will save the selection and exit the programming mode.

DISPLAY Brightness *(via VK-R4 remote control)*

> The REX DAC display can be dimmed or turned completely OFF by simply pressing the DISPLAY button on your VK-R4 remote control.
>
> Each press will reduce the brightness of display and LED indicators in steps from full ON to OFF, and then one press back to full ON. The LED indicators will dim but never turn completely OFF. With the display OFF, issuing any remote control command that would normally require a display change (i.e.: source selection) will automatically turn the display back ON for short period of time.

Fuse Protection:

A blown fuse in the REX DAC is an indication of a serious problem. If a replacement fuse fails as well, no further attempts should be undertaken. Please contact the factory for professional service.

The proper fuse ratings are as follows:

> For 100-120 VAC Units: 2A 250V Slow Blow
>
> For 200-240 VAC Units: 1.0A 250V Slow Blow

Factory supplied fuses should be only replaced with the same type and rating.

Servicing

The Balanced Audio Technology REX DAC should require no service other than changing tubes to maintain its high performance. The six vacuum tubes used in the REX DAC are quality 6C19s rated for approximately 5000 hours of use. Please direct any further service inquiries to the factory.

Cleaning

To remove dust, occasionally wipe the front and top surfaces of your REX DAC with a damp soft cloth. If fingerprints appear, you may use a mild, non-alkaline soap solution. Do not use abrasive cleaners, as they may damage the fine finish of the unit.

Connecting the REX DAC to a Windows or Apple Computer

Specifications:

Supported PCM audio resolutions: all sample rates up to 384 kHz and word lengths up to 24 bits.

Supported DSD audio resolutions:

       2.8224   MHz or single DSD as on SA-CD
       5.6448   MHz or double DSD
       11.2896 MHz or quad DSD

Connection protocol and method: USB 2.0 / Audio class 2.0 compliant, asynchronous mode where the REX DAC generates a high precision clock master and the computer is clock slaved.

Windows PC configuration

PC requirements: Windows 8/10 with ASIO compatible playback and/or recording software such as Foobar 2000 or JRiver Media Center, etc.

In order for your computer to communicate with the REX DAC using a Windows PC, custom driver software needs to be installed. No such driver installation is needed for an Apple computer.

Windows driver software installation and first time connection:

This manual will provide Windows examples for connecting the REX DAC to Foobar2000 software as well as JRiver Media Center software. Such examples are for instruction only and do not constitute an endorsement by BAT. The principle for connection will be the same for other Windows playback software.

Windows configuration steps:

Important: Do not connect the REX DAC to your computer yet.

1. Launch your favorite internet browser and navigate to the downloads page on our website **http://balanced.com/download-manuals**.

2. Click on USB Windows Driver to download the latest driver: **akdesigndrv_usb_audio_driver-2.0.zip** for PC.

3. Unzip this driver to a convenient location.

4. Double click on: **akdesigndrv-2.0.exe** and follow the instructions on your screen. This will install the driver necessary to communicate with
the REX DAC via USB.

5. Once the driver is installed, power on the REX DAC.

6. Connect your USB cable between REX DAC and your PC.

7. The computer will take a moment to enumerate or identify the REX DAC on its USB bus and will notify you when it is installed successfully.

8. Confirm the driver installation in device manager, where it will show up as:

AKDesign USB Audio under the Sound, Video and Game Controllers tab.

Note that the device will not be listed in the Sound Control panel.

9. Configure your playback software to receive and send audio data from and to the ASIO interface. Depending on your software this may be identified as "AKDesign USB ASIO" or simply as ASIO.

Configuration Examples

Foobar2000 example

1.1. Open the Foobar2000 webpage at **http://www.foobar2000.org/download** to download the following:

> **Foobar2000 v1.3.17.exe**
> **foo_out_asio.fbk-component**

You'll find these by scrolling down the webpage to **Get add-on foobar2000 components.** Click on this and scroll down to **ASIO support 2.1.2.**

1.2. Double click on the **foobar2000_v1.3.17.exe.** Click **Run**, **Accept terms and conditions**, and follow the default installation instructions on your screen. After installation is complete **foobar2000** will open on your screen. Close it.

1.3. Double click on **foo_out_asio.fbk-component** Click **Yes** on the warning sign and foobar2000 will pop up. Click **Yes** when the restart message pops up.

1.4. Turn on the **REX DAC**. Select the **USB** input and plug the DAC into the USB port of your computer. Windows will show a message in the right bottom corner of your display that device is being configured.

1.5. Open Foobar2000 and go to **Library - Configure - ASIO**.
In **ASIO drivers** window (see picture bellow) Select **AKDesign** and click **OK**.
*(If **AKDesign** driver is not listed run **akdesigndrv-2.0.exe** one more time.)*
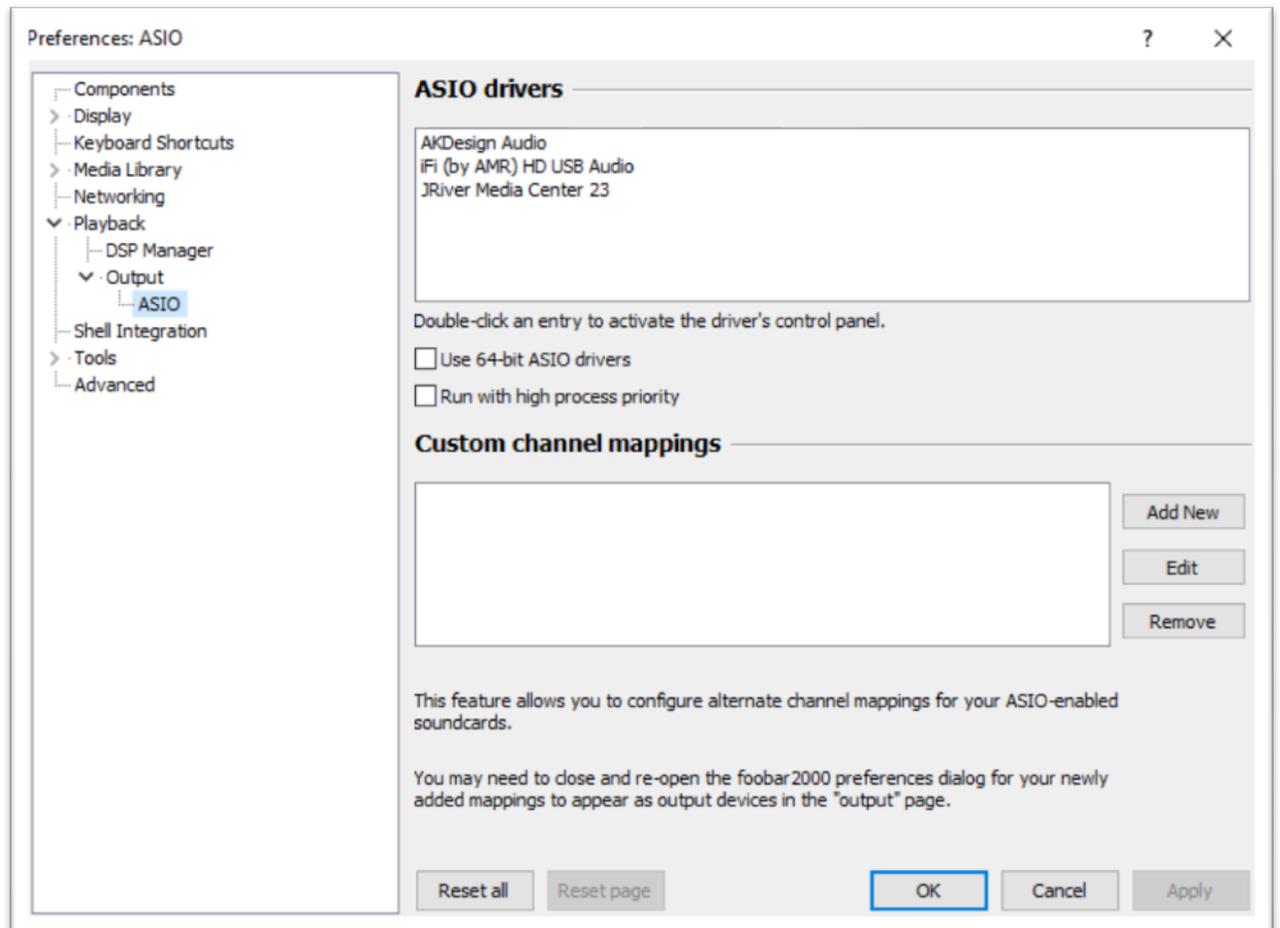
 Done

JRiver Media Center example

2.1. Open webpage **www.jriver.com/download.html** and choosethe appropriate download for the operating system on your computer.

Note: JRiver Media Center is licensed software. In order to install the license has to be purchased.

2.2. Install software following the prompts from Jriver on your display.

2.3. Turn on the **REX DAC** and plug it into the **USB** port of your computer.

2.3. Open JRiver Media Center. Choose **Player** on the top toolbar. Scroll down to **Playback options** and click on it. A new window will open. Choose **Audio** on the left pane and **Audio Device** on the right (see picture below)
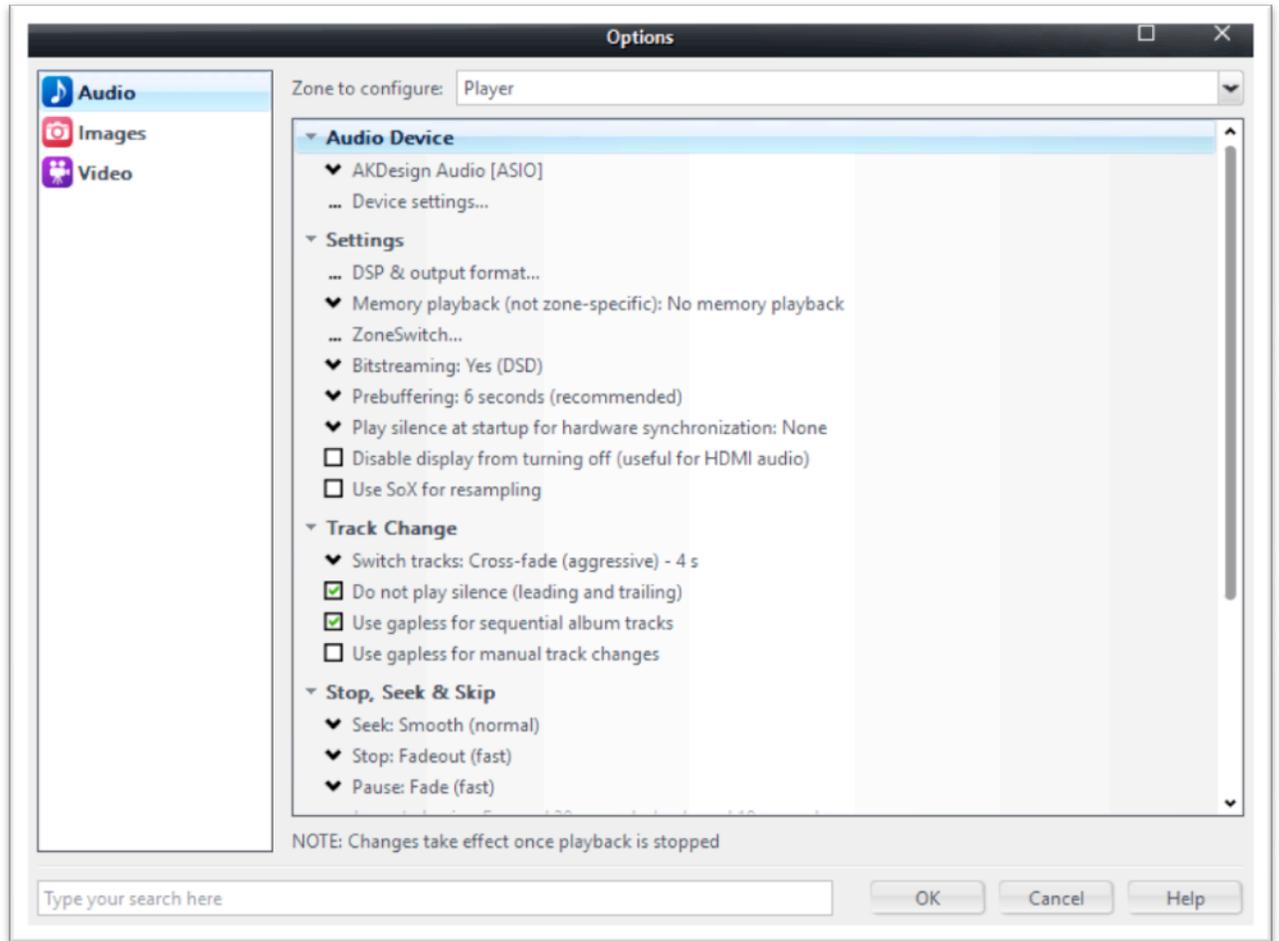
Click on down arrow and choose **AKDesign Audio (ASIO)** click **OK**.
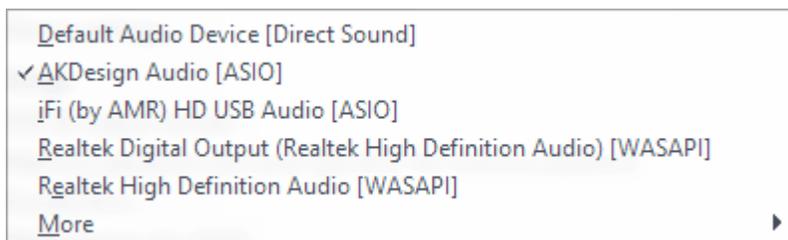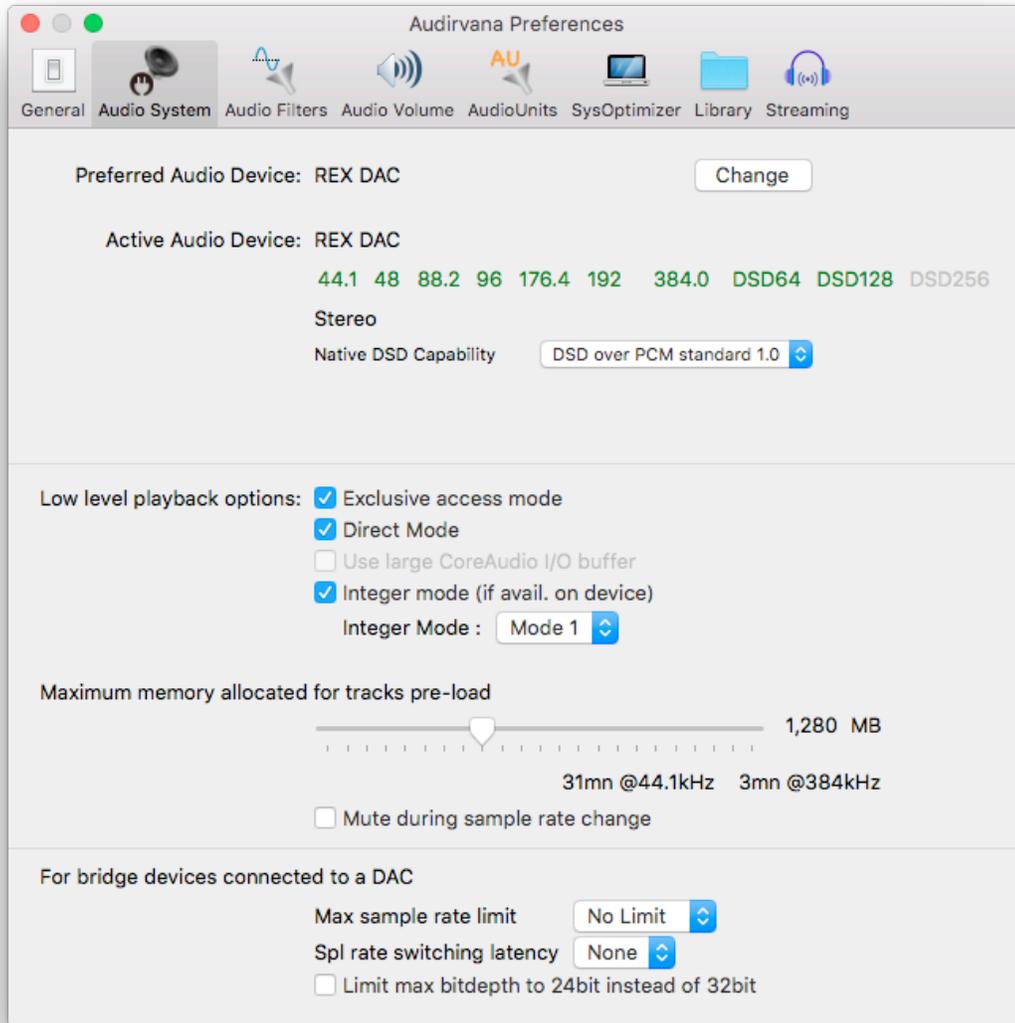

Done

Apple Mac Configuration Steps

Mac requirements: OS X (10.6.6 or later). Without additional software, this platform only supports PCM format. For DSD playback, the DoP mechanism can be used, but it requires playback software such as Audirvana that can implement DoP.

The REX DAC does not require a driver to work within the Apple environment. You will simply need to configure the REX DAC as the preferred device for sound output. From the Mac's main window, click on the **Apple logo** in the top left corner. Now select **System Preferences,** then **Sound** and you will see the following screen:
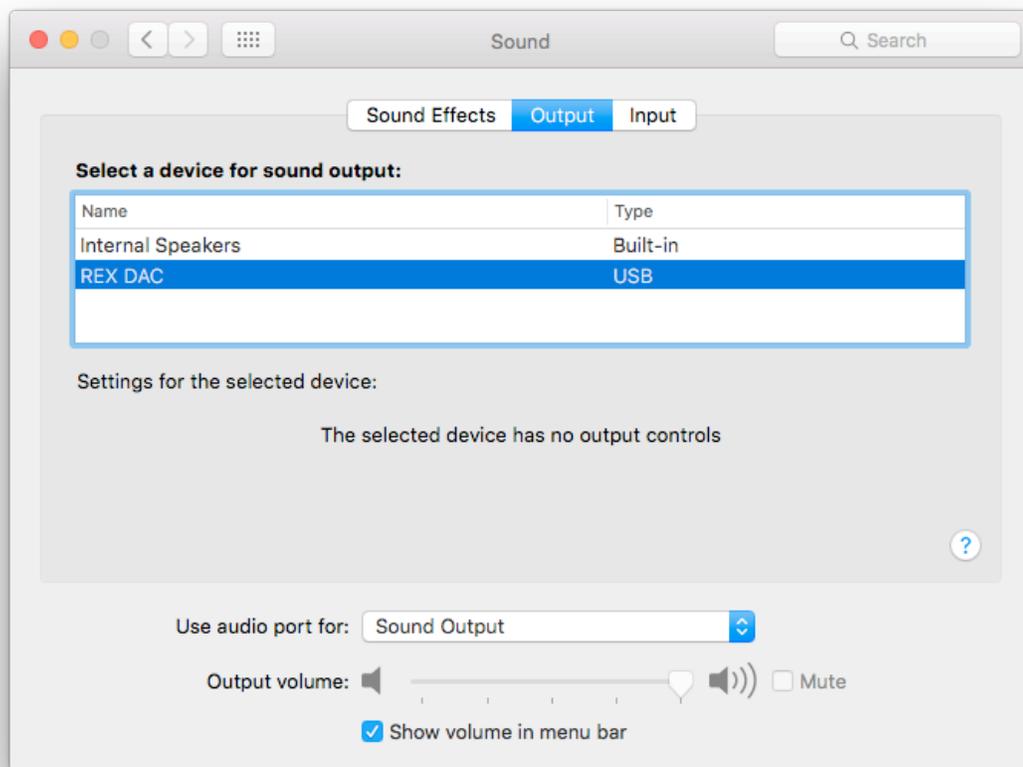
Select the REX DAC as the device for sound output.

Finally, confirm within your preferred software that the REX DAC is properly configured in the audio system settings. Here, we show Audirvana software as an example:

Done.

Final note:

Computers that sleep or hibernate may revert back to the internal speakers for sound output when they awake. Changing your sleep or hibernate settings can prevent this problem. If the PC or Mac has lost connection to the DAC, you may need to power cycle the REX DAC so that it can be recognized again.

Five Year Limited Warranty

Terms and Conditions

1. Limited Warranty
Upon receipt of the attached warranty registration form, Balanced Audio Technology warrants the purchased product to be free from manufacturing, materials, and workmanship defects for **five years** from date of original purchase, excepting vacuum tubes, subject to the following conditions. **Failure to return the enclosed registration form within 30 days from original purchase will result in a warranty period of one year from the date of manufacture.**

2. Vacuum Tubes
Vacuum tubes (including replacements under warranty) are warranted for one year from the date of the original REX DAC purchase.

3. Limited to Original Purchaser
This warranty is for the sole benefit of the original purchaser of the covered product, and may not be transferred to a subsequent purchaser of the product.

4. Conditions and Limitations
This warranty is subject to certain conditions and limitations, as follows. This warranty is void and inapplicable if the product has not been used in accordance with the instructions found elsewhere in this manual, or if it has been misused or abused, damaged by accident or neglect, or in transport once in possession of the purchaser. The warranty is also void if the product has been repaired, modified, or tampered with by anyone other than Balanced Audio Technology or its specifically authorized agents.

5. Remedy
If this product contains a materials, manufacturing, or workmanship defect that cannot be repaired at the dealership where the product was purchased, it must be packed in original packaging and returned to Balanced Audio Technology via insured freight, at the owners expense. If replacement packaging materials are required, they will be supplied by the factory at a nominal charge. **Returned products must be accompanied by a written description of the defect, and a return authorization number (available from the factory via phone or fax).** Upon receipt of defective product, Balanced Audio Technology agrees to repair the product without charge for parts (except vacuum tubes if the unit is more than one year old), or labor. The product will then be returned via prepaid, insured freight, with carrier at the sole determination of Balanced Audio Technology. This constitutes the purchasers sole remedy.

6. Design Changes
Balanced Audio Technology reserves the right to modify its products or change specifications at any time without obligation or liability to previous purchasers.

7. Miscellaneous
Any implied warranties relating to the above product shall be limited to the duration of this warranty. This warranty does not extend to any incidental or consequential costs or damages to the purchaser. This warranty gives you specific legal rights. You may also have other rights which vary from state to state.