USER MANUAL

Welcome

Hello and thank you for your purchase of the CEntrance ***DAC****mini CX*, the Category-Defining 192kHz DAC with Class A Headphone Amplifier.

You are in the possession of a truly unique audio product, the result of over 10 years of Research, Development and Critical Evaluation. We bring you the best in audio technology... Now it's your turn to listen.

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Our History

CEntrance was established in 2000 by Michael Goodman, a musician and a veteran audio engineer with a passion for innovative products. Initially CEntrance licensed technology to other manufacturers, mostly in the pro audio industry. We developed Mixing consoles, MIDI keyboards and Recording products for many of today's famous brands.

By 2006 CEntrance had over 100 consulting clients in its portfolio and felt that our clients kept asking us to design "more of the same". While others would be happy enjoying such cozy market position, we weren't content with having to repeat ourselves. We had a passion for innovation, so time has come to release new products under our own name. DACmini is our the most innovative, integrated product to date.

For more information, including the exciting DACmini development blog, which chronicled the design process in painstaking detail, please visit:

http://www.dacmini.com

Main company website:

http://www.centrance.com

Box Contents

Your DACmini box should contain:

- DACmini 192 kHz DAC with Class A Headphone Amplifier
- 6 ft low-noise USB cable
- World-wide power supply with IEC connector
- Self-stick rubber feet, 4 pcs
- User manual

Defining Features

Robust Technology

CEntrance got its start in the broadcast industry. Our customers are journalists and reporters who travel the world with their equipment – they can't afford to have it fail in the field or be incompatible with local connections. These customers demand the best. We design all of our products to these highest standards of quality and reliability. That's also how we design our power supplies. DACmini is compatible with a variety of power supplies, however, for best results, we recommend using the included Premium, Low-noise External power supply.

Volume Control

DACmini employs the precision stereo analog potentiometer to control headphone volume. Analog control is much superior to digital, since it is free from step-switching artifacts – it works without ticks and pops. We carefully choose our potentiometers for highest tracking linearity, so that you can listen at any loudness level without the uncomfortable inter-channel imbalance, typically found in consumer-level products.

Compatible Headphones

Our portable DACport debuted our new Class-A headphone amp, which is extremely quiet and surprisingly powerful. DACmini takes this circuit to the next level by raising the power supply voltage to +/- 15V, providing enough power to drive even the most demanding headphones. DACmini is equally capable driving in-ear monitors and large, high-impedance headphones, covering the entire range of sensitivities in one smooth rotation of the volume knob, without a need for a separate level switch. Unlike the level-shifting switch needed on noisy headphone amps in the past, the CEntrance low-noise headphone amp simplifies the user experience to one knob, the way it should be. Try any headphones with DACmini. You will be fully satisfied with both the loudness level and audio fidelity, equally spread across the entire volume range.

Setup and Connections

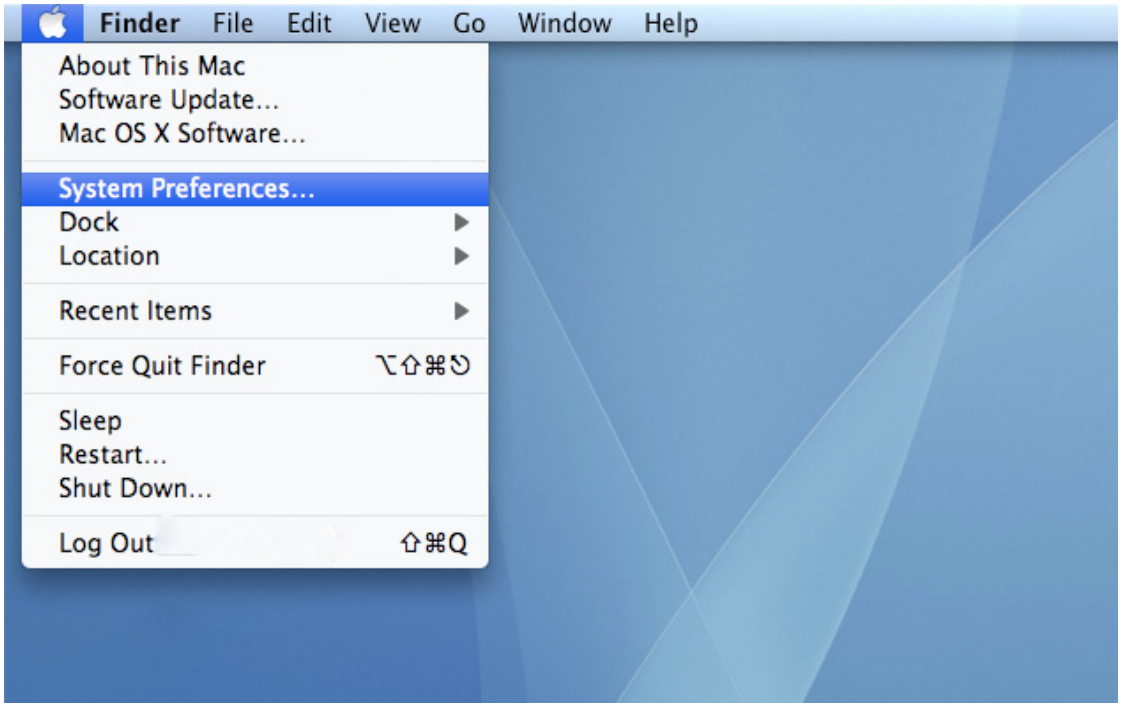
Connections are easy and intuitive with your DACmini. To prevent initial turn-on pops, CEntrance recommends connecting the audio and USB connections first, and then connecting the power supply. For proper power supply sequencing, the power cord should always be the last thing to plug into the unit.

When setting up the computer, make sure your DACmini is selected as the default audio output device:

- In Mac OS X, selection should be automatic, but may also be configured in System Preferences -> Sounds.
- In Windows OS, selection should be automatic, but may also be configured in device manager or inside the audio application.

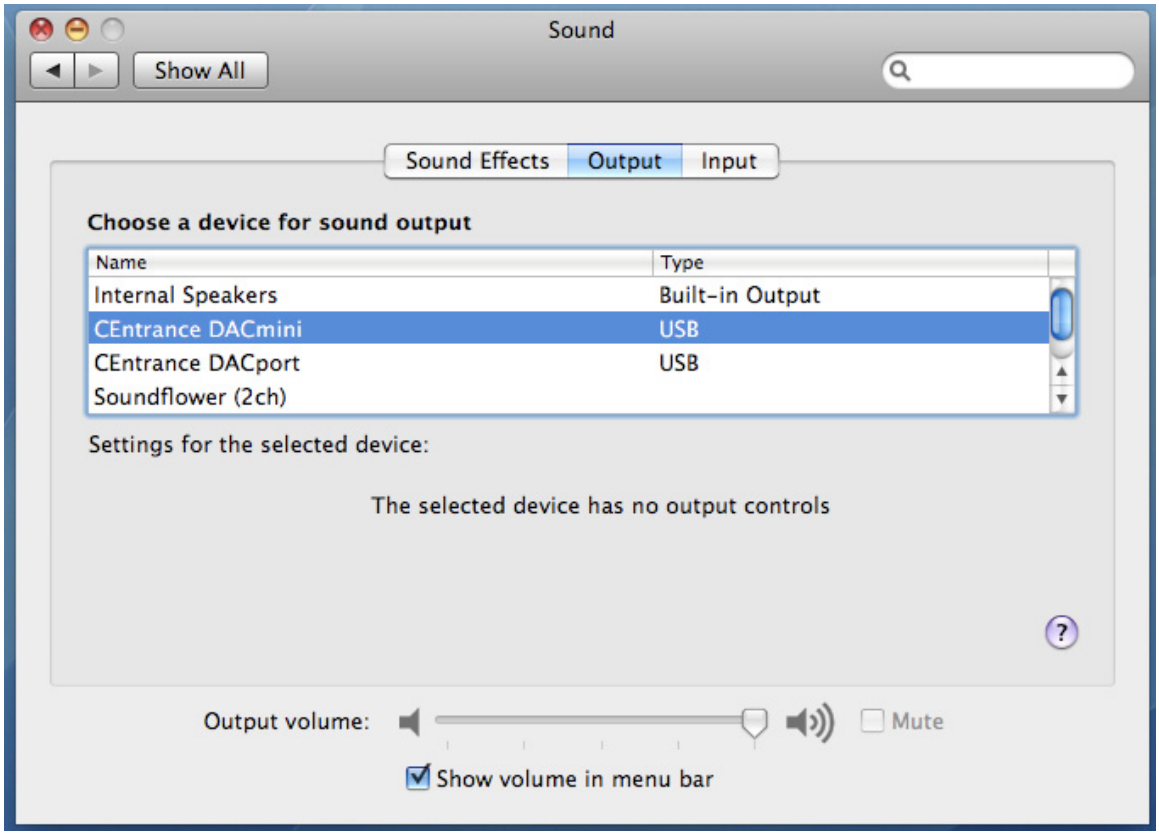
Mac OS X setup

1) Select "System Preferences" from the Apple Menu



2) Select "Sound" from the Hardware Menu

3) Select "DACmini" from the Sounds Menu and you are ready to listen to music!

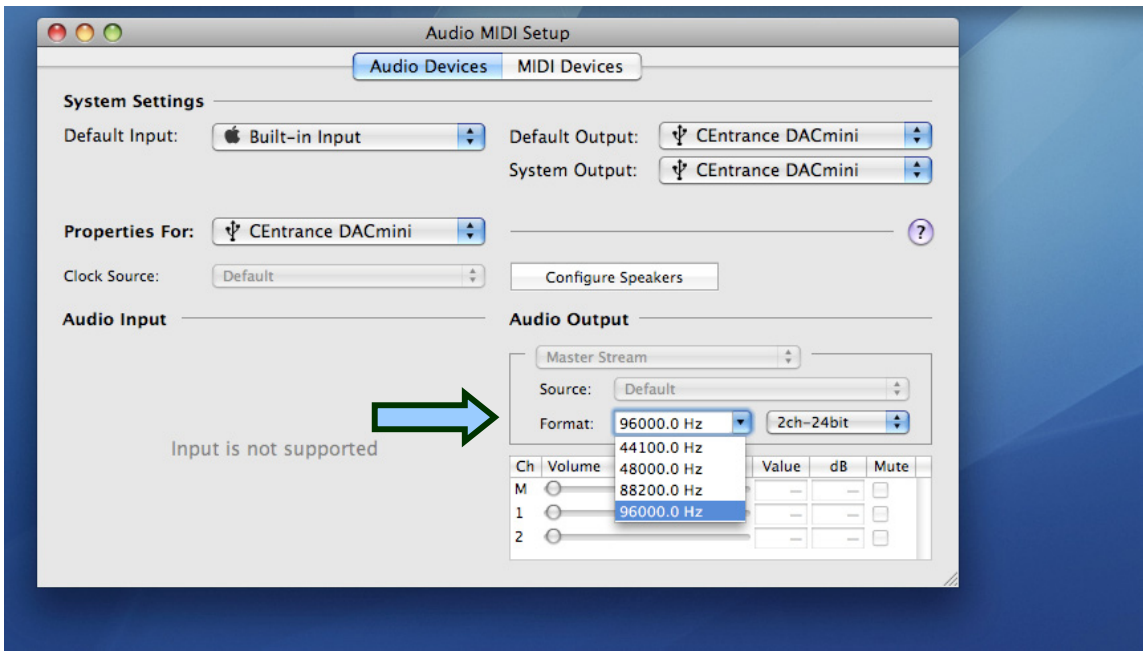


Sample Rate Adjustment

In order to ensure accurate sample rate playback, make sure your playback application has "automatic sample rate switching" enabled. If your application does not offer this feature (such as iTunes), DACmini will default to the sample rate selected in **Audio-MIDI Setup** and your audio may be subject to internal OS SRC.

To Locate "Audio MIDI Setup" go to Applications->Utilities->Audio MIDI setup as shown below.

Select DACmini from the "Properties For" drop-down menu. Sample rate can be adjusted in the "Format" drop down menu.



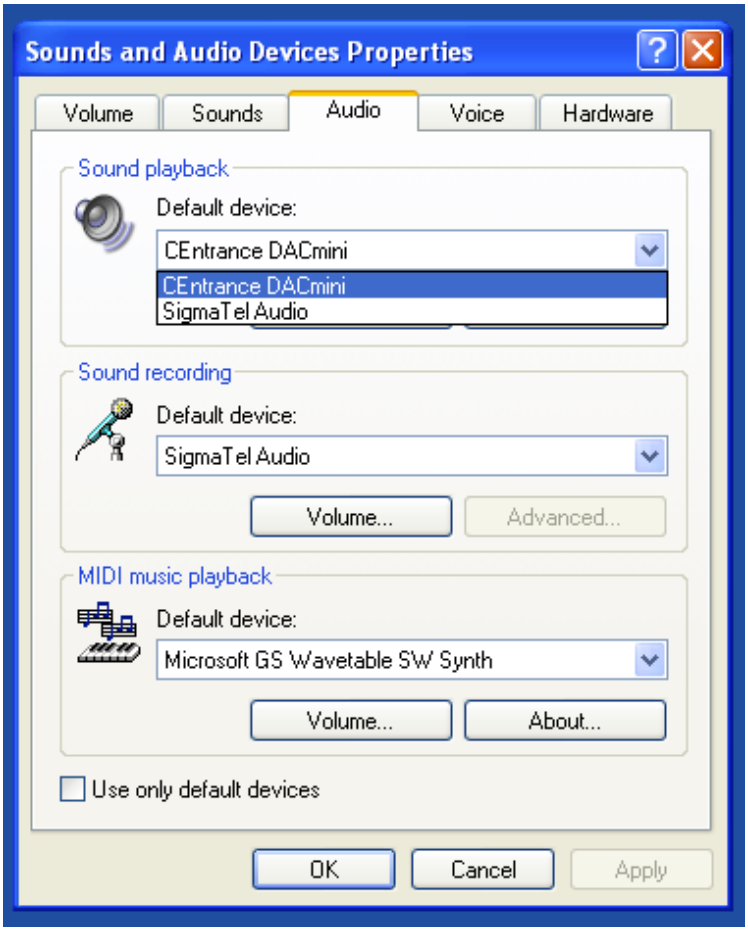
Windows Setup

DACmini is a true plug-and-play device. Less than 30 seconds after plugging into the USB connection you will notice that it is automatically installed and ready for use.

You can ensure DACmini is selected as your playback device in the Windows control panel.

To make sure DACmini is the selected playback device:

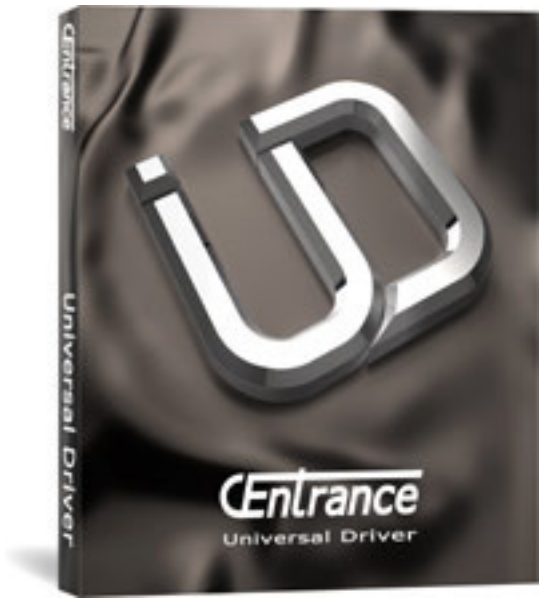
1. Select "Control Panel" from the Windows Start menu.
2. Select "Sounds and Audio Devices"
3. Select the "Audio" tab and make sure CEntrance DACmini is the selected default device for sound playback (see image below)



Switching Sample Rates with Universal Driver for Windows

Driverless 24/96 performance on Mac/PC allows easy access to large and growing collections of uncompressed digital music from such labels as HD tracks, Reference Recordings, etc. However, some people may prefer to download a Windows driver to achieve more control.

Windows will often convert audio sample rates automatically, which is not always preferred in audiophile circles. By the time your audio reaches your DAC it is no longer "bit-perfect" and the difference may be audible. The only way around this limitation is to use a playback application that supports the ASIO format and use an ASIO driver that ensures "bit-perfect" playback from the file source to your DAC.



CEntrance offers a native ASIO driver, called Universal Driver (UD) because it is compatible with all CEntrance products. This driver will adjust to sample rate changes, ensuring bit-perfect playback. Universal driver may be downloaded for free at the CEntrance website:

http://centrance.com/downloads/ud/

Source Selection

Choosing an Input

DACmini is an extremely versatile DAC. It allows you to listen to a variety of digital and analog sources. In order to switch from USB digital input to coax, to optical, to line input - turn the small knob on the front of the unit and the corresponding white LED will indicate the selected input. Release and turn one more time to switch again. You will hear a click with every switch. This is normal – the internal relays are protecting the outputs during the switching transitions.

Powering Up and Down

In order to power down the device continue switching the source selector until no LED is illuminated. DACmini goes into a low-power state when LEDs are off. Turn the source selector again to turn the power back on.

USB Input

Note: DACmini streams audio from the computer even if you have switched away from the USB input. DACmini does not break the USB connection when you select an input other than USB. This is done to minimize configuration delays and prevents USB port confusion.

S/PDIF Input

On its S/PDIF input, DACmini will perform auto-selection of incoming Sampling Rate up to 192kHz, to accommodate a wide variety of sources. We have designed the internal circuitry so well, it should not matter whether you use the Optical or Coaxial S/PDIF input – both are well-buffered and are largely resilient to imperfect cable impedance matching. JitterGuard™ takes care of the rest.

Analog Input

The analog input accommodates a variety of line-level input sources, such as iPod, CD player, DVD player, etc.

Choice of Digital Files

While many customers will prefer to use DACmini to listen to 24/96 FLAC files, it is also exceptionally well-suited for playback of other digital audio file formats (even MP3 files). The reason for this is JitterGuard™, CEntrance's precision, proprietary jitter management algorithm. Most audio quality issues in digital to audio conversion stem from poorly managed jitter – a type of unpleasant distortion, which makes the musical instruments in the mix sound lost and unfocused. DACmini will make your entire music collection shine, regardless of file format.

Using your DACmini

Troubleshooting

In the unlikely event that something is not working well, try these simple troubleshooting steps first.

If this doesn't help, please email info@centrance.com or call us on the phone. We will be happy to help you with setup. Please also feel free to visit our forum and give us your feedback at www.CEntrance.com/forum.

Issue	Solution
No sound to speakers/amp	Make sure digital cabling is connected and the source is playing
	Make sure audio cabling or headphones are connected
	Make sure the power supply is plugged into the wall outlet
	Make sure headphones are not connected to the front of the DACmini
No sound in headphones	Check cabling; check volume knob
Computer doesn't see DACmini or source selector does not respond	With USB cable connected, unplug and reconnect the power cable. This resets the computer connection and restores normal operation.

Environment

Recommended storage ambient temperature range: -10 … +50 °C
Recommended operating ambient temperature range: +10 … +35 °C.

Warm-up

After being turned on for a prolonged amount of time (over 30 min.) DACmini will reach thermal equilibrium and may get a little warm to the touch. This is due to the internal Class-A headphone amp, which needs to run warm to offer the best audio quality. No reason for concern.

Continuous Operation

Many people use their computers continuously, without ever turning them off. You could do the same with DACmini, if you prefer. There is no harm in leaving your DACmini on for an extended amount of time. DACmini power consumption of is comparable to that of a small laptop.

Specifications

Electrical Characteristics		
Line output section	**Line Input**	**Digital Input**
Maximum Output	+20dBV	+6.2dBV
Nominal Output	+6.0dBV	+6.2dBV
Frequency Response, 10Hz - 20kHz	+0,0dB -0.1dB	+0.0dB, -0.15dB
Noise Floor: (A-weighted)	-124 dBV	-107 dBV
S/N Ratio: (A-weighted)	144dB	113dB
THD+N	0.00022%	0.001%
Crosstalk	-128dB	118dB
Output Impedance: 25 Ohms		
Headphone section	**Line Input**	**Digital Input**
Max Output[1], 32Ω load, typical	+13.5dBV	+11.8dBV
Max Output[1], 300Ω load, typical	+18.6dBV	+14.1dBV
Max Output[1], 600Ω load, typical	+19.0dBV	+14.2dBV
Output Impedance: 10 Ohm[2]		
[1] Specified for reference -- to be used with low-sensitivity headphones only. Listening to IEMs or other high sensitivity headphones at this level may damage your hearing. [2] This value is chosen as a dynamic and musical setting. However, a custom mod is available to make the output impedance 1 Ohm. Check with CEntrance.		
Physical Characteristics		
Product size: 164mm x 164mm x 42mm		
Product weight: 950 g		
Shipping box size: 380 mm x 260 mm x 80 mm		
Shipping box weight: 1.7 kg		

Warranty

1 year from the date of purchase. No user-serviceable parts inside. Contact CEntrance if you need service and we will do our best to help.