

Big Ego and Little Ego DACs

Frequently Asked Questions (FAQ)

Emotiva Big Ego and Little Ego USB DACs

The Emotiva Big Ego and Little Ego are audiophile-quality USB PCM DACs. The Big Ego and Little Ego plug into an available USB port on your computer, and replace the internal sound card with a true audiophile quality component, engineered to deliver the absolute best sound quality possible from any type of digital audio file your computer can play. Both the Big Ego and Little Ego support all of the popular sample rates and bit depths up to 32/384k, and both have a headphone output that's powered by a built-in high quality headphone amplifier. The Big Ego also has a separate line level audio output so you can connect it to both your headphones and your stereo at the same time, and an optical digital output for connecting it to an external digital audio device, like the digital input on a pre/pro or desktop DAC.

An IMPORTANT NOTE about Volume Controls

The Big Ego and Little Ego both have a high quality digitally controlled analog volume control that controls the level on their headphone output. The precise way this volume control interacts with your computer will depend on the computer and operating system you have, the player software you are using, and how you have your system configured. Most player programs have their own volume control which is separate from the computer's "system" volume control, and some players offer several choices in terms of how the two interact. In most situations, you will achieve the best audio quality by leaving the volume control in your player program set to 100% and using the system volume control, which connects to and operates the high quality volume control in your Ego DAC directly.

NOTE: When you switch from one player program to another, or switch between a player program which controls your computer's system volume and one which does not, the output level on your Ego DAC may jump suddenly to the level you have set in the new program, or may reset itself to 100%. You may also find that the volume setting on your Ego DAC may jump to 100% when you disconnect the DAC from the computer and reconnect it. (This happens because the operating system has reassigned the default sound device, and so the system volume control no longer controls the Ego, and can happen with both Apple computers and Windows 10 computers.) If you have very efficient headphones that are capable of playing very loudly, or headphones that are easily damaged by loud music, you may wish to unplug them from the Ego DAC or remove them from your ears when switching programs until you become familiar with how your particular computer will act in these situations.

Q: What's a DAC?

A: The term DAC is short for “digital to analog converter”. A DAC is simply a device which converts digital audio into analog audio. The term can be a bit confusing because it is used in several different ways. It can be used to refer to a separate audiophile component for converting digital audio into analog audio, like the Big Ego and Little Ego DACs; or it can be used to refer to a section of circuitry, like the DAC section of your CD player; or it can be used to refer to the actual chip that does the conversion, like the Analog Devices AD1955 DAC chip.

Q: Why do I need an Emotiva Big Ego or Little Ego?

Q: Doesn't my computer already have a DAC inside?

Q: I thought my sound card was a DAC; why would I want another one?

A: The DAC sections of most computers don't sound very good – for several reasons. Most computers really weren't designed as audiophile source devices, so getting the best sound quality simply wasn't a priority; the audio circuitry inside a computer has to share space on the circuit board and in the cabinet with lots of noisy digital circuitry and a power supply that was really designed to power a computer and not an audio component; and, with most computers, once the sound makes its way out of the DAC, it gets passed to a low-cost headphone amplifier which often doesn't sound very good. Because of these limitations and disadvantages, the audio circuitry built into many computer motherboards is pretty bad, and even most medium to high priced sound cards aren't very good by audiophile standards. In contrast, the Ego DACs were designed as audiophile sound devices, and a lot of engineering knowhow went into making sure they sound like real audiophile components, and give you the best possible sound from your computer audio.

Q: What are the differences between the Big Ego and Little Ego?

A: Both the Big Ego and Little Ego use similar high-quality DAC chips and headphone amplifiers. (The DAC chip in the Big Ego is a tiny bit better, but they're actually pretty close, and the headphone amp is the same in both.) The main difference is that, in addition to the headphone output, the Big Ego has a separate line output, and a separate digital audio (Toslink) output, both of which are handy if you want to leave the Big Ego hooked up to both your stereo and your headphones at the same time.

Q: What devices can I use the Ego DACs with?

A: The Ego DACs are basically designed to work with any modern “computer device” which can be used with an external USB sound card, which includes:

- 1) All modern Apple computers
- 2) All modern Windows computers (Windows XP, Vista, 7, 8.0, 8.1, and Windows 10)
- 3) Many Linux computers (as long as they support USB Audio Class 1 or 2)
- 4) Some Android tablets and phones (as long as they support UAC1 or UAC2)
- 5) Apple iPhone 5 and iPhone 6 (with the lightning to USB camera adapter)

Q: What kinds of audio files can I play on my Ego DAC?

A: Since the Ego DAC acts as a sound card for your computer, it can play virtually any audio file that your computer, and the player software you're using, can play; this includes both digital audio files and the audio tracks on most videos. If the file is a stereo PCM file, it will be sent directly to the Ego DAC; if the file is encoded in a compressed format like MP3 or FLAC, the player software will decode it and send it to the Ego DAC as PCM; and, if the file is in a surround sound format, most players will automatically convert it to stereo before sending it. (The Ego DAC itself does not play DSD or bitstream surround sound files, so you shouldn't configure your player to send these directly to the Ego; instead, you should configure your player to decode these files and send the results to the DAC as PCM.)

Q: What sample rates do the Ego DACs support?

A: The Big Ego and Little Ego both support all standard sample rates and bit depths up to 32/384k. (44.1k, 48k, 88k, 96k, 176k, 192k, 352k, 384k at bit depths of 16 bits, 24 bits, or 32 bits)

Q: Do the Ego DACs support DSD files?

A: The Big Ego and Little Ego are PCM DACs, and *DO NOT* play bitstream DSD or DOP files directly. However, virtually all player software will convert DSD files to PCM and send them to the Ego DACs as PCM for playback.

Q: Do the Ego DACs require a separate power supply or "wall wart"?

A: The Ego DACs are powered by the USB port they're connected to. (The USB ports on all Windows and Apple computers deliver plenty of power to run the Ego DACs. With some phones which supply limited USB power, you may need to use a powered USB hub to provide enough power to run your Ego DAC.)

Q: Do the Ego DACs require drivers on my computer?

A: You will *NOT* have to install drivers to use the Ego DACs with an Apple computer. Because Windows doesn't include built-in UAC2 drivers, you will need to install drivers if you want to play high-res files at sample rates above 24/96k. However the Ego DACs include a special driverless mode that will allow you to play files up to 24/96k on Windows computers without installing any drivers.

Q: Do the Ego DACs work with (or require) USB 3.0 ports?

A: The Ego DACs require USB 2.0, which virtually all modern computers have, but will also work just fine on USB 3.0 ports – which are backwards compatible. (USB 2.0 and USB 3.0 are hardware specifications for various USB ports, and are not the same as USB Audio Class 1 and 2 - UAC1 and UAC2).

Q: Do the Ego DACs have any special connection requirements?

A: We've tested the Ego DACs with a wide variety of USB hardware and cables, and we haven't found any they won't work with, but a few guidelines may be useful. Try to use good quality USB 2.0 cables; avoid really old USB 1.0 cables, and avoid "audiophile USB cables" – many of which fail to meet basic USB data cable standards and so may not work properly. The Ego DACs will usually work with long USB cables, and through USB hubs, but, if you have any problems, try a short cable (six feet or under), and try connecting your Ego DAC directly to the USB port on your computer.

Q: What types of headphones will the Ego DACs work with?

A: The headphone amplifiers in the Ego DACs deliver about 2 VRMS of very quiet, very low distortion audio output, which is enough power to drive the vast majority of normal headphones to satisfying listening levels. However, the Ego DACs do not deliver enough power to drive very low efficiency planar headphones, and do not deliver enough voltage to drive headphones that are both very high impedance and low efficiency to loud listening levels. Also, as with any high quality headphone amplifier designed to drive typical headphones, a tiny amount of background noise may be audible with high efficiency IEMs. If you have unusual requirements, we suggest you use a separate specialty headphone amplifier, connected to the line output on a Big Ego.

Q: The Little Ego doesn't have a line output; can I still connect it to my stereo or separate headphone amplifier?

A: The line output on the Big Ego delivers the absolute best sound quality. However, the headphone outputs on both the Big Ego and Little Ego are very good, and you can use either to connect to your stereo.

Q: Can I use the Ego DACs with powered monitors?

A: The Ego DACs work great with powered monitors. With most powered monitors, which lack convenient level controls, your best choice is to connect the headphone output of the Ego to the input of your monitors.

Q: Can I connect one of the Ego DACs to the Coax or Toslink output of my CD player?

Q: Can I connect one of the Ego DACs to the HDMI or analog output of my Blu-Ray player?

Q: Can I use an Ego DAC to play files directly from a USB stick or USB hard drive?

A: The Ego DACs were designed to be used with a computer or computer-type device that is able to recognize an external USB sound device. The inputs on the Ego DACs must be connected to the USB output on a computer or computer-based device. CD players and Blu-Ray players don't generally have the type of output which you can connect to an Ego DAC, and the Ego DACs cannot be used by themselves to play digital audio files. Since the Ego DACs have only digital inputs, you cannot connect the analog output of another player to them. You need a computer to play the files *through* the Ego DAC.

Q: What are "digital filters" and why do the Ego DACs have three of them?

A: Almost all modern DACs use a process called oversampling to get the best possible audio conversion quality. As part of this process, extra audio samples are generated between the ones present in the original file using a process called interpolation, and part of this process includes a digital filter. This digital filter does have a subtle but noticeable effect on the sound, and the Ego DACs offer you three different ones to choose from. Choose the filter that makes metallic sounds like cymbals, and voice, sound most natural to you. (If you don't notice much difference, then just use Filter #1, which is the most accurate.)

Installation and Operation

Q: Do I need to install drivers to use my Ego DAC?

Q: What is driverless mode, why would I want to use it, and how do I use it?

A: With Apple computers, the necessary UAC2 drivers are already built into the operating system, so the Ego DACs will play files up to 32/384k with no need to install extra drivers. Windows computers have UAC1 drivers built in, which allow the Ego DACs to play files up to and including 24/96k without installing any extra drivers. If you wish to play high-res files up to 32/384k on the Ego DACs via Windows, you'll need to install the UAC2 drivers we supply. You will find them available for download on the Resources tab of the Big Ego and Little Ego product pages.

To switch your Ego DAC into “driverless mode”, which allows you to play files up to 24/96k without additional drivers, all you need to do is to hold down the filter select button while connecting the Ego DAC to your computer. The small red LED near the USB connector will light when you are in UAC1 driverless mode. (Driverless mode is useful for connecting your Ego DAC to a company computer, or one at a friend's house, where installing your own DAC drivers would be inconvenient or impossible. Because UAC1 is more universal than UAC2, you may find that many devices that run on Linux or Android may support it.)

Q: My Ego DAC keeps switching out of driverless mode when my computer goes to sleep.

What can I do?

A: Driverless mode is really intended to be something you use temporarily, so the Ego doesn't remember that setting when you turn it off. If you turn your computer off and on again, or if your computer goes to sleep, the Ego will switch back into normal (UAC2) mode unless you hold the button down *while the power is applied*. (So, if you aren't holding the button down when the computer wakes up, then the DAC will switch back to normal mode.) To switch the Ego back into driverless mode, simply unplug it, then reconnect it while holding the button down.

Q: How do I change sample rates on my Ego DAC?

Q: I bought and downloaded some high-resolution files but, when I play them, my Ego says they're only 44k; what's going on?

A: The Ego DACs always play your files at the sample rate they receive them – which is what shows in the display. (The sample rate is controlled by your computer and player program.) By default, Apple and Windows computers always re-sample whatever files you play through them to a single fixed sample rate – which you pick in the computer configuration. In order to play high resolution files at their native resolution (the sample rate they were recorded at) you need a player program that supports that capability. On Apple computers, most audiophile player programs refer to this as “bit perfect mode”; some popular programs that support it include jRiver Media Center, Amarra, Audirvana, and iTunes (but only if you add the BitPerfect plugin). On Windows computers, this is referred to as WASAPI mode, and popular programs that support it include jRiver Media Center and Foobar2000.

Q: When I play 256k MP3 files, or 256k AAC files from the iTunes store, the Ego still shows them as 44k; what's wrong?

A: When we talk about PCM audio files, we typically talk about sample rate, which is the actual number of values stored per second (with 16/44k files the sample rate is 44k; with 24/192k files the sample rate is 192k). When we talk about compressed files, which include AAC and MP3, we are talking about bit rate, which is something different. When your player program plays that MP3 or AAC file, it converts it to a normal PCM file, usually at the default sample rate the computer is set to. (Since 44k PCM is actually higher quality than 256k AAC or 256k MP3, you aren't losing any quality because of this conversion.)

Q: What does Headphone Blend Mode do?

A: The Headphone Blend Mode applies special processing to reduce the separation between the left and right channels at certain frequencies. Many people find that this makes the experience of listening to headphones more like listening to speakers, and reduces or eliminates the "sound in your head" feeling they get with headphones.

Q: How do I change filters?

A: To change filters, or to select and unselect the Headphone Blend Mode, start by pressing the Filter Set button. The blue Set LED will flash, and one or more of the blue LEDs above it will light steadily. The steady LEDs will indicate which filter is currently selected. Press the Filter Set button again repeatedly to cycle through the available options. When the filter you want is selected, simply stop pressing the button; the DAC will return to normal operation in a few seconds – and the LEDs will return to showing the sample rate. Filter settings for Filter #1, Filter #2, and Filter #3 are retained when power is removed; the Headphone Blend Mode setting is discarded when power is removed (it returns to HP Blend Mode off). Filter #1 is the most accurate, but many people find one of the other two to sound "more natural".

Q: Do I need an external power source or powered hub to use an Ego DAC with my computer?

A: The Ego DACs get their power from the USB port on your computer, and most computers will have no trouble powering them. (They have similar power requirements to a USB memory stick. If you plug several USB devices into a hub, and the single USB port into which you plug that hub cannot supply enough power, then you may need to supply power directly to the hub.) The USB ports on some phones and adapters don't supply sufficient power for the Ego DACs, so with them you may need a powered hub.

Q: I've read about various "hub tweaks" and "replacement hubs" – like the Schiit Wyrd and others that cost a lot more. Do they really help and, if so, which ones should I consider?

Q: Do fancy "audiophile USB cables" really sound better?

A: The Ego DACs are designed to give you exceptional sound quality with standard USB cables and hubs. We do not endorse any fancy cables or other audiophile USB accessories, and are not aware of any that will specifically improve the performance of the Ego DACs. (Some audiophile USB cables actually fail to meet USB data standards, and so may not work at all, or may actually degrade the signal.) However, we can't rule out the possibility that some tweaks may produce an improvement under certain specific conditions.

COMPUTER AND SOFTWARE COMPATIBILITY

Apple Computers:

The Ego DACs works well with every recent Apple computer we've tried.

Windows Computers:

We've tested the Ego DACs with Windows XP, Windows 7, Windows 8.0, Windows 8.1, and Windows 10. They worked well with every version we tried. With Windows, the Ego DACs will support up to 24/96k in driverless mode without installing external drivers, and up to 32/384k using the UAC2 drivers we provide. You can get the drivers on the Resources tab at the bottom of the product page. We've tested the drivers with Windows 7, Windows 8.0, Windows 8.1, and Windows 10, and they installed and worked correctly. There are no special requirements or security settings.

Linux Computers:

Support for UAC1 and UAC2 varies in different Linux builds. We don't have Ego drivers for Linux, so you'll need to choose a Linux distro that has UAC1 and/or UAC2 support built in. (Many of them do, but we haven't tried any yet.)

Chrome Book Computers:

We haven't tried the Ego DACs with a Chrome Book, although we've received one or two reports that they play properly, but the volume control doesn't work correctly. We don't specifically support the use of our Ego DACs with a Chrome Book, but it will probably work.

iPhone 5 and iPhone 6:

We tested the Ego DACs with the iPhone 5 and iPhone 6 using the Lightning to USB Camera Adapter. They worked fine with both, but the iPhone was unable to provide enough current to power the DACs, and so a powered hub was required.

Android Tablets and Phones:

Many modern Android devices now support UAC2, and the Ego DACs should work with most of them (although we only tried a few). You may also find that some older Android devices that lack UAC2 support do support UAC1 driverless mode. You will probably need a powered hub to use an Ego DAC with most phones.

Player Programs:

We are not aware of any software incompatibilities with our Ego DACs. However, we have noticed that some particular combinations of computer and software may cause the volume setting to behave oddly. (One example is that on some Apple computers, when you Pause iTunes, then click Play, the Volume jumps to 100% - but then returns to normal when you pop up the system volume control. It appears that iTunes resets the volume control when you pause it, but then fails to update the setting until the volume control is actually accessed.) We haven't noted any specific quirks with jRiver and Foobar2000 so far.