

Audioengine D2 24-Bit Wireless DAC Fits well with the needs of a 21st Century audiophile. Review By Tom Lyle

http://www.enjoythemusic.com/magazine/equipment/0412/audioengine_d2.htm

June 21, 2012

April 2012

Enjoy the Music.com

World Premiere!
Audioengine D2 24-Bit Wireless DAC
Fits well with the needs of a 21st Century audiophile.

[Review By Tom Lyle](#)

I guess it is natural for a reviewer to desire or otherwise accept expensive and as close to state-of-the-art equipment as possible for review. I'm certainly guilty of this. And can you blame me? Not everyone can afford to purchase the mega-buck equipment that is often produced, and who better than one that has heard more than his share of equipment over the years to share his experience with the rest of the audiophile world? But honestly, it



gives me just as much pleasure to come across gear that almost anyone involved in this pursuit can afford that performs well above what's expected, and at the same time is musically satisfying – that's what it is all about, really.

In the case of the Audioengine D2 wireless digital-to-analog converter, this affordable (no quotes, because it's actually affordable) piece of gear allows us busy audiophiles to enjoy as high as 24-bit/96kHz sample rate music sourced from our computer in any system around the house – without the use of a home network. The D2 is a two unit affair that comes packaged with a "sender" and a "receiver". Audioengine claims bit-perfect PCM stereo transmission routed from either the transmitter connected to a host computer's USB output or via an optical connection from a source connected directly to the receiver. The sender can beam a wireless signal to the one receiver that comes in the standard package, or to as many as three Audioengine D2 receivers. They go on to say that there are many disadvantages to using a wired system, such as jitter, grounding, and cable noise are minimized with a wireless system, not to mention the noise generated by the computer itself. The D2 uses a Texas Instruments USB controller chip, which has found its way into many high-end USB products. The sender can be powered by either a provided power supply which is connected to an AC wall outlet or directly from the USB bus. This USB power is passed through two stages of regulation that Audioengine says ensures high stability and low noise. The receiver uses a PCM1792 DAC because it also has a reputation for having low noise and high sound quality.

In regards to the question whether the D2 USB is isochronous or asynchronous, is that the D2 uses what's called "adaptive mode" in its USB receiver, which will read the data coming from the computer and adjust it so as to not miss any data. Because the transmission between the sender and receiver is wireless, the data becomes asynchronous before it arrives at the receiver. This is a good thing, as the D2 behaves as an asynchronous USB digital-to-analog converter and is 24-bit/96kHz bit-perfect, even in its wireless transmission.

Physical

But let's put aside the D2's technical claims for a bit to discuss the physical. First of all, there are no driver(s) that need to be installed on the host computer for the D2 to function. The Audioengine D2 is in all senses of the term a plug-and-play device. The lengthiest portion of the set-up procedure was walking down the two flights of stairs to the system in which I connected the receiver. I had the D2 up and running in about five minutes, max. The D2 set comes packaged with all the cables one is likely to need to get started – a USB cable to connect the sender to the host, power supplies and cables for both units and even an RCA to RCA interconnect for the receiver to audio system connection. The sender and receiver come packaged with gray "microfiber" drawstring bags.



The front panel of the sender has a volume control on its left-center portion. The D2 incorporates a separate-path wireless channel to transmit volume information, and this volume information never affects the digital audio stream. There is an optical input immediately to the right of the volume control knob for those times when wanting to connect another digital source to the sender. Next to this is the USB input, and then the input for the power supply. The sender can also be powered by the USB input, and since most new computers, that is, those less than three years-old have "clean" USB power and should hear no difference between it and the external supply (as I experienced). The folks at Audioengine said that since there is conditioning and filtering on-board the D2 sender and receiver, the sound should be the same either way it is powered. On the far left on the sender's front panel are two small lighted switches labeled power and pair. The "pair" light blinks when it doesn't sense the receiver, and is solid when it does. The only time I experienced a blinking light is when the receiver was not connected. On the back panel of the sender are two antennae for broadcasting the PCM signals to the receiver.

The receiver has a pair of lighted switches on the far left of its front panel labeled "power" and "pair". In the center there are a pair of gold-plated RCA outputs, then the right of these is the optical digital input, and then the power input. On the rear panel are the two antennae. That's it. The two approximately five-inch by five-inch by one-inch silver-gray boxes are modern looking devices that are far from obtrusive looking, and super-easy to set up. Once they were up and playing music they did so without problem, and never, ever needed to be "reset" or otherwise futzed with. I wish I could say the same thing for the rest of my computer gear.

Host

I connected the D2 sender to my host computer, a 3.20 GHz Dell Studio XPS PC with 8 gig of memory running Windows 7 with 4TB external hard disc space filled with FLAC files, 98% of which are of the standard CD-quality 44.1/16-bit sample rate variety. High-resolution files are increasing in number on my each of my drives as we speak, but since the majority of the



files were burned from my CD collection that started logarithmically growing in size since the 1980s, the huge number of files with this "low" resolution is hardly surprising. The



system where the D2 receiver was situated for most of the review period was located in a common space in our home two floors away from the host computer. As more than hinted at before, the D2 had absolutely no problem broadcasting an uninterrupted signal between the two despite the relatively long distance. The power amps in this system were tubed PrimaLuna monoblocks pumping out 70 wpc (in their ultra-linear mode) first into a pair of Dynaudio 110 two-way stand-mounted speakers, and later on into a pair of the most excellent Talon Hawk 2 two-ways that are bolted onto their dedicated stands. The preamplifier was sometimes a tubed Balanced Audio Technologies (BAT) VK-3iX, and sometimes a solid-state Edge G2 linestage. For comparison's sake I connected the optical output of the D2 to a Benchmark DAC1PRE or a CEntrance DACmini. All the gear is connected to a Panamax M5510-Pro power conditioner, and interconnect, speaker, and power cables were all by DH Labs, except the optical cable which was an inexpensive generic number.

As it is recommended in the D2's manual I let this wireless DAC system break in for a while before being too critical in my assessment of its sound quality. But to be honest I really didn't hear much difference between the sample I was sent when it was fresh out of the box versus its sound a month or so later. I was mightily impressed by not only the sound of the D2, but almost more impressed in regards to how well the darn thing worked. I used quite a few different sources from my computer that included iTunes, Foobar 2000, VLC, and Internet radio streaming on either Firefox or Chrome, and as long as my computer was working, that is, as long as there was music being fed to the USB port music came through the D2's receiver and through the stereo on the first floor. I also fed the D2 signals not only from my Squeezebox Touch but from a disc player as well, and its sound varied little regardless of the source, that is, as long as was comparing source material with the same resolution. In a nutshell, the D2's sound was not as proficient in its frequency extremes as the more than twice-the-price Benchmark DAC1PRE – but the Benchmark is a different type of beast – it is a DAC, headphone amp and preamplifier, not a wireless transmitter and receiver.

The sound of the Benchmark went deeper into the bass, its soundstage was larger and more multilayered, its midrange was more fleshed out and its treble more extended. Was its sound quality more than twice as good as the Audioengine D2? No way – we're talking about the difference in digital processors here, so even though it was not too difficult to hear the differences between the two, these differences were not night and day. And as good as the Benchmark sounds, the Audioengine D2 was not embarrassed by the Benchmark. The Audioengine D2 was quite at home connected to this moderately high-priced system – it was an extremely listenable DAC. I spent weeks with the D2 hooked up to this system playing material of all genres fed from the computer running Foobar 2000 on "shuffle tracks" mode. It was easy not to miss the Benchmark that much, and that says a lot coming from me since I'm quite a fan of this piece of gear.

As I sat in the rather large sweet spot in between the Talon Hawk 2 speakers each and file or disc that I played through the Audioengine D2 (that had decent sound quality to begin with) sounded marvelous. Mahler's *Third Symphony* is quite a challenging listen for many people, so I'm hardly recommending it for the uninitiated. Yet on the standard 16-bit/44.1kHz FLAC sourced from the Telarc CD that was recorded in the late 1990s, Jesus Lopez-Cobos coaxes from the very talented players of the Cincinnati Symphony Orchestra one of my favorite readings of this work. This version doesn't quite fit into what I find the uncomfortable mold of "internationalization" of so many symphonic readings of the last few decades before it, and as a result it makes this interpretation so much more enjoyable. The Cincinnati players, especially the strings and horns (and let's not forget the solo trombone), sound world class on this CD. The Audioengine D2 is able to keep up with the recording in that it passes every important element to the rest of the system, and especially the speakers to create a lifelike representation

(although in miniature) of the large forces that make this lengthy piece so thrilling, and above all Lopez-Cobos and the CSO's picturesque realization of the very complex, slowly unfolding score.

Although the system in which I used to audition the D2 is not nearly state-of-the-art, it is probably more than a bit sophisticated than those that most Audioengine customers are likely going to use with their D2. Even though it was great to hear what the D2 was capable of, sound quality-wise in this setting, most are going to use the D2 for what it was designed for – moving one's music from their computer to another room in the house with a small system. And this is also probably why Audioengine markets some excellent, small self-powered speakers. I'm sure most of these speakers are going to be used in desktop systems, which makes sense as they are perfectly designed for the task, but I found that matching them with the D2 in a room that doesn't normally have music was a magnificent experience. Audioengine was nice enough to send me a pair of the D5+ two-way self-powered monitors to use with the D2.

Without going too much into the D5+'s specifics, they are beautifully made speakers, and at \$399 for the pair quite amazing, really. Their fit and finish is first rate, and I'm not just saying that to be nice, they really are very well constructed little speakers. With a 5 inch woofer, 0.75" silk dome tweeter, and on-board 50 Watt amplifier these approximately 11" x 7" x 8" tykes can fit just about anywhere a "full-sized" speaker can't, and I don't just mean flanking a computer's screen. I can't describe the joy in not just have high-quality audio anywhere in the house I wanted, but access to my entire digital library anywhere in the house that had an AC outlet. I thought the speakers were voiced to vary a bit from perfectly flat, but this was fine by me – the slightly elevated mid-bass and somewhat scooped-out midrange gave the speakers a larger-than-life sound that fit in very well into spaces that were, to say the least, not acoustically perfect. The combination of the D2 wireless DAC and the A5+ powered speakers were about \$1000, and in my book it would be money well spent to have this kind of sound quality combined with the convenience of wireless sound. Moving the three-piece system (the two A5+ speakers and the D2 receiver) anywhere in the house that had an AC outlet worked as reliably as hooking it up to the expensive system. It worked without a hitch each and every time. There are no dead areas with my home network within the house, as I couldn't find any areas within the house that the D2 couldn't receive a good signal from its sender.

Remember

I'm fairly sure that most readers are old enough to remember when the audiophile world was first introduced to using computers as a tool to listen and manipulate our music collections. At the time I wasn't too thrilled with the idea, thinking that the computer I was using then was having enough of a challenge with the task of *computing*, and the prospect of this machine handling the job of playing serious high-end music was certainly not an option. Yet. Yes, the road to being a successful computer audiophile has sometimes been a rocky one, but with time has come faster, more reliable computers and software, inexpensive storage, and most of all inventive audiophile equipment manufactures. Audioengine's \$599 D2 24-bit wireless DAC is truly a 21st Century product that fits well with the needs of a 21st Century audiophile, as well as any listener who wants the convenience of high-resolution multi-room playback, all without the need of a home network. The plug-and-play Audioengine D2 is fun to use, is super reliable, is affordable, and sounds great. Admit it: you want one.

Specifications

Type: 24-bit wireless DAC system

Frequency Response: 10 Hz to 30 kHz (+/- 0.5dB)

Signal to Noise Ratio: >115dB

THD+N: <0.0015%

Crosstalk: <-85dB

Input bit depth: up to 24 bit

Input data rate: up to 192KS/s (optical), 96KS/s (USB)

DAC type: Dual mode USB and optical (S/PDIF) wireless DAC

Inputs: USB/optical (S/PDIF)

Outputs: RCA stereo/optical (S/PDIF)

D/A converter: PCM1792A

Optical Receiver: AK4117

USB Controller: TI1020B

Full Output: 2.0V RMS (RCA)

Output Impedance: 100 Ohms

USB power filtering: 3-stage redundant regulation

Wireless range: >100ft

Wireless receivers supported: Up to 3 (24/96 to each receiver)

Dimensions: 4.75 x 5.5 x1 (WxDxH in inches)

Shipping weight: 4 lbs.

Price: \$599

Company Information

Audioengine USA

Voice:(877) 853-4447

E-mail: support@audioengineusa.com

Website: www.audioengineusa.com