

WADIA 151 PowerDAC mini COMBINATION INTEGRATED AMP/DAC

Tom Martin



The Wadia 151 PowerDAC mini combines a class D integrated amplifier with an advanced DAC in a small package. This combination of functions not only matches Wadia's well-known 170 iTransport (one of the few iPod docks to actually extract digital data from the iPod), but it also presents a very attractive solution for desktop audio (or other small systems) where space is inevitably at a premium. By design, the iTransport and the PowerDAC mini share the same footprint so that the transport can be stacked on top of the amp.

The questions for products like this always represent a combination of “does it sound good?” and “is it a good value?” The answers are slightly complex, but let me summarize by saying that after many weeks with the 151, I want one. You, of course, aren't me, so read on for a more objective view.

FEATURES

The 151 PowerDAC differs in circuit concept from typical integrated amplifiers (including those with a DAC connected), even if they are built around Class D switching amps. The short version of Wadia's idea is that the 151 is a DAC that is powerful enough to drive loudspeakers.

The volume control is done in the digital domain and the signal is only converted to analog by a very simple filter circuit at the output of the 151.

To be more specific, after accepting a digital input, the 151 upsamples it and performs a digital-to-digital conversion from PCM (pulse code modulation) audio signal to PWM (pulse width modulation). A PWM amplification stage (a type of switching amp circuit) creates the voltage swing and current needed for loudspeaker use. A simple passive low-pass filter transforms the pulses into an analog

overview

Consider this amplifier/DAC if: You want a refined, dynamic sound that majors in instrumental separation. Also check this out if desktop space is at a premium.

Look further if: You want flexible input/output capabilities, or you favor a robust, rich sound.

power signal.

Wadia claims this approach is less influenced by potential nonlinearities and noise. Wadia's use of digital volume control is interesting, and is based on some careful thinking about how to address the standard problems with this idea (truncation of bits). Wadia uses a 32-bit digital attenuation system, which is carefully explained on the Wadia site (<http://www.wadia.com/technology/technicalpapers>).

The 151 also uses Wadia's WadiaStream USB 2.0 technology. WadiaStream supports a maximum throughput rate of 12Mbps and the preferred isochronous output scheme, which Wadia says provides bit-accurate data transmission along with good jitter suppression.

The Wadia 151 comes in an attractively simple package. It is a purely digital device, designed to accept a few digital sources and connect to one pair of speakers. The rear panel has one set of five-way speaker connectors, two coaxial RCA S/PDIF digital inputs, one USB digital input, one TosLink digital input, and the standard IEC three-prong connector for an AC power cord.

To be clear, I should mention that the 151 has no analog inputs or outputs. You can, of course, use an outboard A/D device, but the size and expense of this cuts against the grain of Wadia's concept here.

As with many modern products, the 151 is really designed to be operated via remote. The 151's remote has the normal controls for volume, muting and input, as well as phase and sampling rate (confusingly labeled

"Enter"). The control also covers some items like track selection that are needed if you are also using the 170 iTransport. The remote has no LCD to confirm response to your commands.

On the front of the 151 box itself, you'll find a monochrome LCD window and five buttons in a row. The buttons let you control input selection, phase, muting, and volume up and down. This makes the 151 perfectly usable without the remote, though I would have preferred a rotary control for volume.

The 151 box is 8"x 8" x 2" high—the same size as the 170 iTransport and quite similar to the old Mac Mini. While this makes for an attractively small chassis, as mentioned above, the 151 is not designed to be mounted on its side, which would further reduce its desktop footprint.

SONIC CHARACTER

The Wadia 151 has a distinctive approach to music that I think will work exceedingly well in some systems but not as well in others. Because amplifiers do not differ to the degree that speakers do, let me try to outline the 151's sound in several different ways.

To start, the 151 has a very clear sound, which I think reveals the smidge of opaqueness we tend to view as "normal" in other amplifiers, especially in this price range. The 151's clarity comes through where you might expect it, in the midrange. Instruments with strong midrange energy (i.e., most instruments) seem to have a light shining on them. That's partially true because there is no boomy bass or bright treble to overpower

RATINGS

(relative to comparably priced integrated amps)

treble



midrange



bass



soundstaging



dynamics



value



the midrange frequencies. In the same way, the 151 maintains an excellent sense of instrumental separation, a capability that usually requires superior handling of micro-dynamics.

The 151's sense of clarity extends up and down the frequency spectrum. Bass is very tight and many bass instruments (e.g., kick drums, string basses) are delivered with a sense of definition rarely heard except on very high-end rigs. Treble clarity is also exemplary, with cymbals in particular rendered with appropriate definition and decay rather than as a splash of energy. This suggests to me that the D/A circuitry is quite good.

I do think that some listeners will find the 151's approach to frequency balance less than ideal. If you want big, punchy bass or a warm, relaxed sound you should probably look elsewhere. Mid-bass seems slightly too light and controlled on the 151 to be satisfying

specs/pricing

Wadia 151 PowerDAC mini Combination Integrated Amp/DAC

Power: 25Wpc @ 8 ohms, 50Wpc @ 4 ohms

Inputs: Four digital audio (USB, 2xSP/DIF-coax, Toslink-optical)

DAC Maximum Data Rate: USB—24-bit/96kHz, other inputs can accept up to a 24-bit/192kHz

Signal-to-noise: 103dB

Outputs: main speaker taps

Dimensions (H x W x D): 2.7" x 8" x 8"

Weight: 6 lbs.

Price: \$1195

WADIA DIGITAL

(734) 786-9611

www.wadia.com

with those goals. Even judged against the absolute sound, I'd say the 151's bass lacks some depth and air (just as many other amps lack some control when judged this way). And the midrange glow provided by the 151 tilts it to the dynamic and involving side of the flavor spectrum. In this latter sense, it is more like live music than some of the competition.

While we're on the subject of dynamics, it seemed to me that the 151 had adequate power, but nothing more. Wadia only claims 25 watts per channel, of course. I did have to

crank the 151 up pretty far to get satisfying levels with the admittedly low sensitivity Usher S520 speakers in our 1900 cubic foot lab. I also used the PSB Image B4 speaker to similar effect (note that small speakers tend to have low sensitivity). Happily enough, the 151 doesn't sound strained when you push it. In a desktop setting or with more efficient speakers, you'll probably be fine.

The 151's soundstaging is also extremely good. Low-level detail, as mentioned above, is handled well rather than trampled into the dust. As a result you can hear the recording venue quite clearly. This isn't a matter of audio geekery, but rather a characteristic that is required in order for an amp to deliver a sense of depth and air and instrumental color.

In a sense, the 151 reminds me of the choice stereotypically presented by electrostatic speakers. Bass is well defined, but not deep or powerful. Midrange is stunningly clear without being edgy. Treble is smooth and accurate without being bright or edgy. Ultimate volume capability is limited, though quite dynamic within it's volume envelope. The only thing is, electrostatic speakers have traditionally been very expensive—whereas the Wadia 151 really isn't, at least within the grand sweep of audio pricing.

The 151, like any product, raises questions of value. If you assume that a good DAC costs \$400-\$500, then the \$1195 Wadia effectively sports a \$700-\$800 integrated amp. That's not cheap, but it isn't exactly a stratospherically priced single-ended triode product either. My point here is that some people are willing to pay a lot for sonic subtleties and the price



premium that the Wadia extracts for such subtleties is pretty modest.

Another interesting comparison is with the excellent Peachtree iDecco, which Playback Editor Chris Martens reviewed a few issues ago. Compared to the iDecco, the Wadia seems a bit feature-reduced (and at a higher price). The Peachtree, for example, has a headphone amp built in, offers analog inputs, has a switchable tube stage, can be used as a standalone preamp or DAC, and even includes a built-in digital iPod dock (conceptually similar to Wadia's iTransport). Of course, the Peachtree is quite a bit larger (not that it is large) and to my ears has a more conventional sound, with less absolute clarity than the PowerDAC mini, but a more balanced mix of bass/midrange/treble frequencies. You

probably know which kind of buyer you are, so it really isn't absolute value that we're talking about, but which sonic value set fits your needs (and listening tastes) best.

MUSICAL EXAMPLES

On Cat Power's "Lived in Bars" from *The Greatest* [Matador], the cymbals are clean, with superb definition as they decay. Some D/A converters render this as a muddled crash, not a clear strike followed by waves of vibration decaying over time. On this same track, the string bass is very clearly defined, as is the drum, but through the 151 the latter's voice mostly consists of skin sounds, and lacks some fundamental punch.

You can hear similar things on Jack Johnson's "Dreams Be Dreams" from *On and*

On [UMVD]. The cymbal definition is superb, and the bass line is tight, but the air that could be there (this is a bass after all) is reduced relative to the real thing.

On Eleventh Dream Day's "Figured It Out" from *El Moodio* [WEA], the opening quiet section has the performers separated so that you can hear each line distinctly. This sense of real performers holds up even as the electric sound is cranked up and the distortion pedal gets stomped on. The track feels edgy, as it should, without losing control or turning into a fog.

On Hootie and the Blowfish's "Hannah Jane" from *Cracked Rear View* [Atlantic], the vocals are clear, but some lower midrange vocal resonance is missing. Darius Rucker is more of a baritone than the tenor he seems to be here. Clarity, however, is exemplary.

BOTTOM LINE

The Wadia 151 PowerDAC is one of those rare reasonably priced products that gives you more than a glimpse of greatness. It's sound is musically involving and fundamentally solid. Like most such products, it isn't without tradeoffs, but if you value midrange performance and clarity above all else, you'll likely love it. Similarly, if you have a room and system where bass control and heaviness are problems, this is one amp/DAC you have to hear.