

Audioengine HD3 Wireless Powered Speaker Review - Home Theater Forum and Systems - HomeTheaterShack.com

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The HD3 is another typical product from Audioengine. This is a company for which I have reviewed numerous products, and I have developed an expectation level when a new product arrives from the team out of Austin, Texas. That expectation is that their products will be value-packed, fun to work with, and good-if-not-great-sounding. So when I unboxed and started working with the HD3, my early reactions were mostly along the line of - "typical" - meaning, *looks like another great little product from Audioengine.*

The HD3, at \$399 per pair direct from [Audioengine](http://Audioengine.com), is small, dense with oodles of cool features to play with and figure out, sharp looking, versatile, and yes, sounds a lot better than a product deserves to sound at the price point.

Description

The HD3 drivers, a 2.75 inch kevlar woofer/midrange and a 0.75 inch silk tweeter, are custom designed for use in the HD3. No accidents here, no lucky breaks, the good sound they produce is on purpose and by design from the ground up. The box is ported by a front-panel slot, which allows more flexibility of placement by minimizing the possibility of boomy bass if placed close to a wall or boundary.

The left HD3 contains all of the active electronics for both speakers. The right is passive, connected to the left by a supplied 16-gauge 2-m cable with banana plugs pre-installed. The left unit has a power/volume control on the front

panel, along with a headphone jack and a Bluetooth pairing button and indicator. The left and right speakers can be reversed if that suits your needs.

The rear panel of the left speaker contains dual RCA inputs and outputs, a screw-on Bluetooth antenna receptacle, an 1/8-inch TRS signal input jack, banana jacks for connection to the right speaker, and a power connector. The power unit is terminated with an uncommon 3-conductor connector. A switch for subwoofer use cuts off the lower bass and allows a sub to take over below 100 Hz.

The built-in PCM 5102 DAC upsamples all signals to 24-bits, achieving a higher signal-to-noise ratio and lower noise floor. The on-board triple-redundancy power source further improves conversion and filtering. Amplifiers are class A/B monolithic, can supply 15W RMS / 30W peak per channel, and have very low idle and sleep consumption levels.

The headphone output is rated with a 2-ohm output impedance, which means better control of those models that have variation in their load impedance and stronger drive capability. Gold plated connectors on the speakers and cables guard against corrosion and ensure reliable contact.

At present, a promotion is in place which includes 90 days of Tidal - for new Tidal customers only - completely free. Audioengine products purchased directly from the factory are shipped by ground for free, have a 30-day audition period, and are covered by a 3-year warranty.

Specifications

General

- Type - 2.0 powered multimedia speaker system
- Amplifier type - Dual analog class A/B monolithic
- Power output - 60W peak power total (15W RMS / 30W peak per channel), AES
- Drivers - 2.75" Kevlar woofers, 3/4" silk dome tweeters
- Inputs - 3.5mm stereo mini-jack, stereo RCA, USB, Bluetooth
- Outputs - RCA variable line-out, 3.5mm mini-jack headphone out
- Mains voltages - 110-240V 50/60Hz auto-switching
- SNR - 95dB (typical A-weighted)
- THD+N - <0.05% at all power settings
- Crosstalk - <50dB
- Frequency response - 65Hz-22kHz ± 2.0 dB
- Freq. response w/bass reduction switch selected - 100Hz-22kHz ± 2.0 dB (-5dB down)
- Input impedance - 5K ohms unbalanced

Headphone amp

- Type - OPA2134
- Full-scale headphone output level - 2.0V RMS
- Output impedance - 2 ohms
- Recommended headphone impedance range - 10 ohms to 10K ohms

USB

- Connector type - Micro-USB
- USB device class - USB 1.1 or above
- Internal D/A converter - PCM 5102
- Input bit depth - 24-bits, upsampled
- Input data rate - 44.1KHz/48KHz
- Protection - Output current limiting, thermal over-temperature, power on/off transient protection
- Dimensions (each) - 7"(H) x 4.25"(W) x 5.5"(D)
- Weight (left speaker) - 1.8Kg/4lbs
- Weight (right speaker) - 1.5Kg/3.4lbs
- Shipping weight - 4.5kg/10lbs per pair
- Shipping box dimensions - 11.6 (29.5cm)H x 11.75 (30cm)L x 8.8(22.5cm)W
- Materials and construction - 18mm thick MDF cabinets with real wood veneer
- 3/4" (20mm) silk dome tweeters with neodymium magnets
- 2.75" Kevlar woofers with advanced voice coils

Power Consumption

- Idle: 10W
- Mute: 6W
- Sleep: 4W

Unboxing

Everything comes in a single small box, the glossy printed product box, with its fitted foam spacers for protection, including compartments for the cables and accessories. The speakers, the power supply, and the cables and antenna, are enclosed in gray plush bags. The product carton fits in a standard cardboard carton, a second layer, the whole quite strong and safe for shipping. Grille covers are given the additional protection of a layer of light foam sheet, and they snap into place on the speakers magnetically.

The hand-built cabinets are simple but very clean and solid. Those I received have a satin-black painted finish that will work anywhere in your home or office. If you want a more polished appearance, I have seen their wood-grain finishes and they are also first-rate with cherry and oak veneers available. I absolutely LOVE the signature gray velour bags that Audioengine supplies with their products for protection. I can find their products on my storage shelf (if they ever end up there, which is not often, they are almost always in use) in a snap, and the attractive gray material becomes mentally anchored in such a way that every glimpse or touch of that fabric reminds one that the gear in those bags is the good Audioengine stuff.

Setup and Variations

First I plugged into my Asus i7 Windows 7 64-bit laptop for a USB audio test. As is par for many devices of this type, no special USB drivers are needed. The HD3 is recognized by Windows and works with built-in USB drivers. This configuration keeps the signal in the digital realm until the HD3 converters turn it into music. The process is lossless, of course, and involves upsampling of all input signals to 24 bits at native bit rates up to 48 kHz. Using an expensive DAC to feed the HD3 through an analog input is always an option, but it is hard to believe that the price/performance value of the HD3 as a system could ever be approached in this way.

When I switched to Electronic Dance Music (EDM) tracks during evaluation, the low frequencies stood out with even boldness that made me think that the HD3 sound way bigger than they should. Their tiny two-way face-print promises point source soundstage and imaging (SS&I) performance. When they were first hooked up, they stood side-by-side pointed at an angle nowhere near to on-axis. Once those sounds were flowing and they were spaced and aimed, the size of the soundstage was surprising, with a centered kick drum that managed to give a decent thump against the solar plexus.

At some point one has to get serious about optimal placement. As I finally did this, I found that a wider spacing with the ear just above the tweeter axis and slight negative toe-in (toe-out?) gave an excellent soundstage, the speakers quite hidden therein, locatable but not obviously so, with good imaging. It is worth noting that I was standing behind the speakers facing toward the listening position at the moment this placement was determined, and could tell from there that it was going to sound good, as though the room itself was in on the game, which it always is. A final tiny distance tweak made a big difference in the precision of the imaging, spread the soundstage even further, and allowed the little HD3 to finally completely disappear, as though they had planned to all along. Then with no thought about it at all, I leaned forward about two feet to reach my laptop for a second and - WOW - the whole soundstage just blossomed. All of this with about 10 minutes of placement effort.

I often favor near- and mid-field speaker placement, especially in odd-shaped or untreated rooms, and a fellow-reviewer likes to throw little jabs my way about speaker proximity to the LP. In the case of the HD3, the weight and footprint make them an easy choice where one is not quite sure just where they will end up. They are versatile and will reward the listener with performance way beyond their class. I wished I still had a pair of the Audioengine HD6, which I reviewed awhile back, for comparison. I almost think I ended up enjoying the HD3 even more than I did the HD6.

Running a USB signal into the HD6 and from the dual RCA analog outputs to an external pair of power amps and my reference speakers, and inserting a 1/8" plug in the headphone jack to cut off the speaker signal in the HD3, I got a good listen to the internal DAC itself. It operates as a USB 1.1 device, handling bit rates up to 48 kHz natively, and upsampling to a 24-bit depth. The high-frequency clarity lacks a little of the crisp sparkle I listen for on cymbals, high percussives, and sibilants, but when paired with the silk dome tweeters, there was a silkiness in the high treble range that was pleasant and easy to relax into. With the Bluetooth / aptX in play, the HD3 put out near-CD sound quality that I prefer over MP3 sound quality. The listener who adopts a pair of HD3 will be well rewarded by making the move to lossless tracks, if he has not yet done so.

A quick headphone check turned into several hours of listening, always a pretty good sign that the device under test is doing a stellar job of delivering clean, true sound. I ran through seven models of headphones on the HD3 headphone output. There is plenty of drive power, even for my 250-ohm Beyerdynamic DT 880 Premium favorites. The Sennheiser HD 600, the AKG K 702, the Oppo PM-1, all were good matches with the HD3, all driven with ease and all sounding excellent.

Evaluation

Warren Zevon

Knockin' on Heaven's Door

The full sound strikes me as a good voicing choice by the engineers at Audioengine. There is a temptation - some manufacturers cannot resist it - to bump up the bass just above 100 Hz for the purpose of making the speakers sound bigger than they do. But a little can go a long way in speaker voicing, and the AE team has given us a sense of fullness without being untrue to their +/- 2 dB claim for frequency response over the range from 65 Hz to 22 kHz.

Deadmau5

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When I started up this EDM artist's tracks, it was a full minute in with foot/heel tapping and getting pulled right into the experience before I realized that the bass was much stronger than it should be for these little speakers. Some

measurements will definitely be in order to see just how this was accomplished. In the meantime, dance, dance, dance is what the HD3 insisted upon. And so I did. There is no record of what *that* looked like! EDM sounds absolutely huge with these speakers, although max volume will be limited by their size, drivers, and amp power. I thoroughly enjoyed these tracks with the HD3.

But I had a hard time deciding which impressed me more, the solidness of the bass or the silky clarity of the highs. Early on, I started paying attention to tweeter performance, looking for a flaw of some kind, and I have to say, I did not find one. The synthesizer tones with their rich harmonic structures reach high and beg for smooth clarity, the proper job of any tweeter in my book. I was not expecting the HD3 to shine in this role the way they did, nor to contribute to such a seamless soundstage as they did.

The convenient front panel headphone jack, an expected feature for a desktop speaker set, sent clean power to several sets of headphones in their turn.

Mutemath

Vitals

This is a new favorite album, with strong EDM overtones and detail defined in layers that beg for a broad soundstage to let them air out properly. In two months I have listened to this album 30+ times, all but a handful of them with headphones, and know its deeper details quite intimately so playing it on speakers once in awhile puts me into a heightened state of expectation for exploring those details in a real soundstage. The HD3 do this with a confidence that almost says “not fair” to most other small speakers in the class. It is hard to get them to disappoint. On *Stratosphere*, especially, I was completely drawn into their performance and for a few minutes the HD3 were many times their actual size. One other aspect of this album that absolutely defies logic is the nature of Rob Meaney’s vocal recording. There is a syllable-by-syllable ultra-broad dynamic range and simultaneously a seemingly ultra-compressed quality in that none of those syllables is ever lost or covered up by other parts of the recording. A vocalized word can sound like it is being belted out and barely whispered at the same time. I still have not figured it all out. “It’s a mystery!” seems to be the only valid - although unsatisfying - explanation. The challenge for the HD3 is to keep that mystery intact via their smooth and flat frequency response through the vocal delivery range. All I can say is the HD3 did just that. Another “not fair” point for the HD3, the little monsters. On *Safe If We Don’t Look Down*, the background cymbal strikes sound so clear and natural through those silk tweeters that one might be tempted to look for a more expensive tweeter hidden behind the grill cloths.

Only in a few passages of the evaluation listening did I feel the HD3 upper mids were not quite as clear as they might have been. It was noticeable only on *very* dense tracks, and then only occasionally. About the time I would start to pay attention to it, it would be gone. With so many points in their favor, the HD3 are hard to fault for falling one or two strides short of \$399 perfection.

Blotted Science

The Machination of Dementia

Ray Jarzombek’s complex instrumental guitar work is just plain fun and the little HD3 made it even more fun than usual. The HD3 manage to get you to forget about the lowest bass for most music, even performing well enough that you are pulled into the music and forget that the lowest bass is not there.

The Civil Wars

The Civil Wars

Nothing beats well-recorded centered vocals for an imaging test. The Civil Wars are often called upon for this purpose in my evaluations. These tracks showed what the HD3 could do with imaging and also showed that they could pull you into a recording’s inner detail, reminding one that stringed instruments can be very percussive and a string pluck can strike you like a drum beat.

Lady Antebellum

I Need You Now

Any solid, well recorded, song will sound good on the HD3. I sampled many little passages of different tracks from varied genres and in no case did they fall on their face or even stumble.

Conclusions

The Audioengine HD3 are a big, fun surprise in a dense package. With Audioengine's 30-day trial policy, free ground shipping to and from Austin, applicable taxes covered, and a 3-year warranty, you simply cannot go wrong with the HD3 for an application where their size and power range are called for. The HD3 are highly recommended.
