

Audioengine A5+ Speakers and Wireless Audio Adapter

<http://www.silentpcreview.com/article1258-page2.html>

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UNPACKING THE A5+

The Audioengine A5+ came double-boxed, with a reasonably tough plain brown outer carton.



Our sample of the new Audioengine A5+ came double-boxed in a brown carton, with this colored retail box inside.

The speakers are well-protected with closed-cell foam end caps as well as soft drawstring bags.



Well protected for shipping.



The rear view of the satin black finish A5+, plus the other contents of the package: mini-jack audio cable, 2m; RCA to RCA audio cable, 2m; 16AWG speaker wire, 3.75m; detachable power cord; setup guide. Note the slot vent across the top portion of each speaker's back panel.



The rounded-corner enclosures are made of MDF and have a nice solid heft and feel, with a good satin black finish. A dense cushioned pad is fixed to the bottom panel, which also has a 1/4" threaded insert for stand mounting. A stand with such hardware is not offered at the Audioengine web store at this time,

however.



Finally, the front view. The left speaker features a volume control, an LED light on the far left showing power status, and a similar round white disk which is the IR receiver.

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LISTENING & USE IMPRESSIONS

In an Audio-only HiFi

The Audioengine A5+ speakers were hooked into my main audio-only system.

- The signal source is mostly CD or higher quality digital audio files (some 24/96) from my home network streamed via a [SqueezeBox Touch](#).
- The bit-perfect digital signal from the Squeezebox is converted to analog by a [Benchmark DAC1](#) 192-kHz 24-bit D/A audio converter via the coax S/PDIF connection.
- The output of the Benchmark DAC1 feeds the **AV5105** — a high quality 100 w/ch stereo power amplifier from [Linn](#).
- A pair of [NHT 2.9](#), a fairly large (over 3 cu. ft.), 78-lb, 4-way speaker system one step down from the brand's then-top 3.3 model. Sold for \$2,500/pr in its day, the NHT 2.9 has a claimed 26Hz-26kHz, ± 3 dB frequency range.

No exotic cables are used, but the interconnects are high silver content wire with good quality phono plugs. Speaker cables are Linn multistrand dipole (about 12 gauge) terminated with banana plugs.

The Benchmark DAC1 is a well recognized, top performing D/A converter. The NHT 2.9 speakers and Linn amplifier are older and probably nowhere near "real high end", but the system still sounds excellent, capable of convincing musical realism at fairly high volume. The room is quite large and lively, 30' x 13' with an 8' ceiling — a living room that extends into the dining area. The NHT 2.9 speakers are about 7' apart, 1.5' in front of a wall that is mostly sliding glass doors to the front deck, and the listening area is about 10' in front of the speakers.

The Audioengine A5+ were connected via 8' long, high silver-content RCA coax leads from the output of the Benchmark DAC1 D/A converter. The A5+ speakers were placed atop the NHT 2.9 speakers (which puts them slightly high for a seated listener), over 2' out away from the glass wall behind them. The provided 16 gauge zip cord was used initially, but it was too short and hung between the two speakers like a sloppy clothesline, so it got replaced quickly with longer audiophile quality solid-core speaker cable.

The remote control is handy, especially for someone who is assembling a minimalist system around the A5+ speakers (just add any signal source). For my purposes, I set the A5+ volume at full, and simply used the remote control of the Squeezebox, which has access to the program material as well as volume. I did use the A5+ remote to put the speaker into sleep mode when not in use, which saves getting up and going to the back of the left speaker to turn the power switch off.

The sound of the Audioengine A5+ from the very first notes was open, warm, detailed and smooth. This was apparent at first listen without any warmup or break in. The positive initial impression was strengthened over time as the power to the speakers was left on continuously for about a week, playing music as often as possible at volumes both low and high. By the end of the week, I was confident that any break-in was done. There was little sense of much change during this period. If pressed, I might point to greater air in the spatial imaging and increased authority in the bass.

That bass, by the way, is one of the truly impressive aspects of this system: It has surprising depth and impact, and it is distinctive, detailed and well-balanced. It easily lets you hear differences between similar instruments or styles of play, even at fairly high volume, and in both complex as well as simple arrangements. It's very impressive for speakers this small. Visitors assumed the big NHT 2.9 speakers were playing, and invariably took double takes when told it was just the small speakers actually producing the sound.

The rest of the frequency spectrum is well integrated with that bottom end, with excellent clarity and extension. Singing voices figure highly in my favorite music, and the A5+ reproduces them extremely well. Ditto all kinds of percussive sounds, from the shimmer of cymbals to tomtoms, or the attack of piano notes. Imaging and spatial ambiance is well projected, with a big soundstage between, behind and in front of the speakers.

The system can play quite loudly without strain in this large room, with peaks well above 90 dB from 3 meters away, which is approaching 100 dB at the standard one meter distance. (Measured using our [high resolution audio measurement system](#).) This is probably loud enough for most of us, short of an all-out rocking party.

Over a couple more weeks of listening, I experimented with positioning, and the A5+ speakers ended up a bit closer to the wall (~16"): the imaging got slightly less dramatic, but the overall tonal balance improved, with the bass retaining their proper weight to higher volumes.

Compared to...

NHT 2.9: Good as the A5+ bass is, it cannot match the much larger NHT speakers' 10" bass drivers, driven by the 100W/ch Linn amplifier. Weight, impact and overall realism of the bass as well as ambient recording space was better on the NHTs, as was the clarity at higher volumes. The imaging of the A5+ was somewhat better on less complex material, and the midband was similarly detailed. Extension of the high end was similarly good on both speakers, but the overall "air" was a touch better on the A5+. In complex music, the A5+ fell behind, especially as the volume rose. Overall, it's an amazing performance considering the cost and size differences.

Paradigm MilleniaOne: These passive speakers are even smaller than the Audioengine A5+, and by themselves without a subwoofer, the MilleniaOne's weaker bass response is immediately noticeable, and the slightly warmer overall presentation of the A5+ is better balanced. The A5+ cannot match the imaging, transparent quickness, high end extension, and sheer resolution of the MilleniaOne speakers, however. Add the matching MilleniaSub to the MilleniaOne, and there really is no contest, though the margin of the win is nowhere near the price difference: \$399 for the A5+ versus \$2,500 — \$1,800 for the MilleniaSub/One speakers plus ~\$700 for a used Linn AV5105 amplifier.

Audioengine A2: The little brother of the family is a neat mini, but the new A5+ stomps all over it in just about every way. It presents a much bigger window to the music and delivers it far more authoritatively. The A5+ is a serious contender for an audio enthusiast on a budget; the A2, in comparison, is a compromise in most ways. If you have the room for them, spent the extra \$200 on the A5+.

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LISTENING IMPRESSIONS (continued)

In a Home Theater AV Setup

An **Anthem MRX 500** 7-channel AV receiver and a Samsung 59" plasma TV reside in my small 10' x 12' media room. Sources include a Shaw HD PVR (for cable programming), a home-built HTPC running Windows 7 and XBMC 11.0, and a Samsung Bluray player. Most of the video material is 720p and 1080p files ripped from Bluray and stored on a home server on the gigabit wired network. Normally, a pair of home-made 2-way transmission line tower speakers with Focal 7" mid/bass and 1" dome drivers are used with one Audioengine A2 speaker (passive right one) for the center channel. The towers were removed from the room for this review.

The simplest way to inject the A5+ speakers into the existing system was to connect them via RCA coax cables to the preamp outputs of the Anthem MRX 500 receiver. The speakers were placed atop the low (16" tall) equipment cabinets under/in-front of the TV. No effort was made to decouple the speakers from the hollow core wood panel of the cabinet top; I figured the speakers should be used as intended, with that damped pad already adhered to its bottom. The Audioengine A2 center speaker was left in place, but generally not used for this review.

There were no real surprises: The Audioengine A5+ speakers sounded great with the very first movie I tried, *The Adjustment Bureau* from 2011. Even without the center speaker, the vocals came through with great clarity and intelligibility, while both music and sound effects had excellent impact. I'd expected the speakers to have more oomph in this smaller room, and the expectation was borne out, but I did not expect the prodigious amount of bass that the A5+ delivered in this room. This was decidedly different than in the living room, where the A5+ bass was quite nicely balanced.

After a couple of weeks in the media system, the hefty bass quality was well confirmed with lots of video programs as well as music. It was fun to have with lots of movies, but part of me knew the effect was exaggerated overkill, and it was less suitable with some music. I decided to run the ARC ([Anthem Room Correction](#) PDF) program through the MRX 500 receiver, which would conveniently provide a frequency response test of the A5+ speakers in that system/room, and see/hear how the room equalization might change the already excellent but sometimes bass-heavy sound I was getting.

The ARC results showed the A5+ did indeed have boosted bass in this room/system, as much as 5~6 dB over the midband (400~1,000 Hz) level. Curiously, I had not heard much of the effect of the apparent dip at roughly 100~300 Hz. I had no quibble with the rest of the ARC results, it pretty much confirms what I was hearing: Smooth response to beyond 10 kHz, with fairly rapid falloff beyond. The 10~20 kHz drop in response explains one of the major differences between the A5+ and the Paradigm MilleniaOne: The latter extends flat out to 20 kHz and beyond. See the ARC results for the Millenia speakers below.

Did the ARC correction improve the sonic performance of the A5+? Well, mostly, but as mentioned, the uncorrected performance of the A5+ was very good:

- With most music, yes, but this is not the main function of the media system.
- With most movies, yes. Despite the fact that speech was already quite intelligible before, the taming of the bass and the subtle smoothing of midband response (200~1200 Hz, roughly) made everything a bit smoother and more natural sounding. In a few movies, the reduction in bass output at 50~100 Hz made me aware of the lack of anything significant below that frequency, and thoughts about a subwoofer to fill the gap... but this was rare.

In the main audio only room/system, the balance of the A5+ was so right that there was no point dragging the Anthem receiver out there for the ARC treatment.

Atop a Desktop, Flanking a Monitor

The promotional photo at the start of this article shows the A5+ in such a setup, and some people do listen to music, watch online videos and play games at their computer desk, so this can be considered a fairly standard application these days. It does not rank high in my priorities. Such a near-field position makes for a pretty unnatural sonic experience and I just don't have much time for playing game. Still, it was tried.

The sound, fed from a high quality [Asus Essence STX card](#) in my desktop PC, was excellent, which is no surprise given the experience in previous settings. As with other speakers, the mechanical coupling of the A5+ to the desktop itself caused bass resonances, which could be off-putting. This effect is probably worse with the A5+ than with other small speakers I've tried in the past simply because there is a lot more bass output. It's too bad that Audioengine neglected to send me [a set of their angled desktop stands](#), which are supposed to help mitigate the problem. (Too bad, too, that I didn't pursue them for a set.)

OTHER NOTES

Power Consumption: A quick check was done with our AC power meter, which confirmed (within 10%) Audioengine's spec of 10W in idle, 6W in mute, and 4W in sleep. There's really no way to get maximum power readings; the demands of audio are too dynamic for any of our power meters to do justice. Suffice it to say I'd be surprised if the long term power draw of the A5+ exceeded 20W in any normal usage.

Remote Control: I did mention how handy it is earlier, and here's a photo of the little thing.



Audioengine A5+ remote: Handy and functional.

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AUDIOENGINE WIRELESS AUDIO ADAPTER W1

A pair of small, high quality speakers with a built-in amplifier has many uses, since it isn't hampered by the need for an external amplifier with a cable running to each speaker. With the USB power port and the stereo mini-jack input built into the back of the A5+, you don't even need a dock for your portable MP3 player to share the music with everyone else in the room.

You still need some kind of cable to run the signal from the source and the A5+ speakers, and if the source is less portable than a personal MP3 player, then that cable can be a nuisance. A common challenge with home theater sound systems, for example, is running the cables from the central receiver to five, six or seven speakers in the room. If you're building the room from scratch or seriously remodeling, then those unsightly cables can be run right into the walls, with discreetly placed jacks on the walls as needed. But in the typical setup, the AV system is not built in, it's an add-on, and those unsightly cables have very low WAF. Even with the A5+, a pair of long RCA cables or a single long mini-plug cable (not recommended for sound quality) is needed to get the signal to it.

Enter Audioengine's Wireless Audio Adapter. The samples I have are of the first model, W1 (or AW1). They come as a sender/receiver pair with some accessories, as shown in the photo below. What this innocuous pair of gadgets do is to eliminate the need for any cables between the Audioengine A5+ speakers and any audio electronic signal source up to 100 feet away.



Audioengine W1 (AW1) Premium Wireless Audio Adapter set is composed of USB powered radio sender and receiver, two stereo mini-plug cords, a mini-plug to RCA female Y-adapter, and a USB power supply.

Extensive technical details are provided on the [W1 product information pages](#), but here's a summary of the most salient points:

- 1. AW1 provides CD-quality HD stereo sound with no reduction in audio quality.*
- 2. It's plug-n-play, connects in seconds, with no software to download or install. It works with any audio gear, with or without a computer, and plays all music formats from any media player, without batteries.*
- 3. Interference-free audio quality is preserved while sharing the RF spectrum with other common wireless transmission technologies such as WLAN, Bluetooth, microwave ovens, cordless telephones, and others. Latency is <20ms and signal-to-noise ratio is 91 dB.*
- 4. The AW1 consists of 2 parts: 1) The "**Sender**" transmits audio from your computer through USB audio or from any product with 3.5mm mini-jack or RCA audio outputs.*

2) the **"Receiver"** connects audio to any product with mini-jack or RCA analog audio inputs. Hop feature works with up to 8 receivers or daisy-chain up to 8 Sender/Receiver pairs

5. Power for the Sender and Receiver is provided from either a USB computer port, the included AC power adapter, or from any other USB AC charger (such as an iPod charger, for example). Another USB power source is the Audioengine A5 (or A5+) powered speakers, equipped with a ComboPort(r) USB charger on top of the left speaker.

6. Uncompressed PCM audio is transmitted in the very-crowded 2.4GHz range, but with a closed protocol specifically designed for audio. The key features that make AW1 better than most wireless systems currently on the market are the ease of setup, fixed lowlatency, audio quality, lack of dropouts, and high interference tolerance.

For many folks stumbling though the myriad of confusing audio products in this new digital age, the Audioengine Wireless Audio Adapter could be a godsend.

FIRST TEST: PC to A5+ Speakers

The W1 transmitter was plugged into a USB port in the HTPC computer. As promised, there was no setup, the device simply got recognized by Windows 7 as a USB Composite Device in about 10 seconds.

The W1 receiver was plugged into the USB power port on the back of the A5+ speaker. A mini-plug cable was run from the jack on the W1 to the input in the A5+. All other inputs to the speaker was disconnected. The distance between the sender and receiver was only a meter, but this was just a first test.





Audioengine W1 sender plugged into USB port on computer.



W1 receiver powered by USB port on A5+ speaker, with mini-plug lead from it into the mini-input on A5+. The RCA phono jacks were unplugged before testing.

A song was selected on the computer... and without any drama, it began playing via the A5+ speakers. The sound quality was very good; I could not detect any obvious change from the sound via the RCA phono leads that I'd been using for weeks.

Several varied tunes later, I switched back to the wired connection and listened to the same music. Differences were subtle, a slight softening and coarsening of the sound, but I would not consider it serious, not in this hour-long first take. I can confidently say the fidelity is good enough for most people who choose to use the W1 (for convenience or because hard wire is not an option). Other factors, such as speaker positioning or the quality of the original recording, are likely to impact the sound far more than the W1 adapters.

The A5+ speakers were then moved into the living room, and set up atop the big NHT 2.9 speakers. Now, there was a wall and about 15' between sender and receiver. Again, there was excellent sound. I tried using my mobile phone and a cordless phone, walking all around the two parts of the W1 while the music was playing... and heard no interruptions or degradation. Obviously, the W1 would work fine for sending signals to a subwoofer, or self powered rear or side speakers in my media room. A <20ms delay would hardly be noticed in this application. This began to feel like a revelation.

SECOND TEST: Squeezebox Touch to A5+ Speakers

The Squeezebox Touch in the main audio system is hard-wired to the gigabit network. A USB port on the Touch is meant to be used as an input source for external USB storage devices. There is a [DIY method to modify this port to make it a digital output for a USB DAC](#), but I haven't made such a modification. This means the Audioengine W1 sender can be powered by the Touch USB port, but it

then needs to be wired via its mini-plug input to the analog output of the Touch. I tried the headphone output first, and did not get any signal; there may have been an impedance or level mismatch. I then tried a mini-plug to phono Y-adaptor into the Touch phono output jacks, and this worked.

The A5+ speakers were in the TV room still, and the Touch was on the opposite side of the house, about 35' away, with an interior wall between them. There was no degradation or interference in the signal.

I then tried switching the Squeezebox Touch to its 802.11g adapter, to access the wifi network via the router (and repeater) working downstairs. This did not work well. With the W1 sender plugged right into the Touch, there was too much RF interference. The music stuttered too often to be usable. There's some question about whether it was the Squeezebox losing connection with the router or the W1 sender losing connection with the receiver; the former seemed to be the bigger issue.

Later, with the Squeezebox back on the wired gigabit network, the A5+ speakers were moved to the sun deck at the back of the house, plugged into an outdoor wall AC outlet and placed on a picnic table. The W1 receiver was still plugged in the A5+ speaker.

The distance was now around 60' — it's a Vancouver Special, a relatively narrow, long house — and there was also a wall and a set of french doors between the sender and the receiver. I was surprised that the signal played without any degradation. I spent part of the sunny afternoon experimenting with positioning the A5+ on the deck for best sound. Projecting the music outdoors, they need a solid wall fairly close behind them for bass reinforcement. At one point, I placed the left A5+ speaker about 10' from the french doors, which put another exterior wall between sender and receiver. This exceeded the range of the W1 adapters, and the sound did get a bit intermittent again. So the limit here was about 70' + interior wall + exterior wall. Not bad at all! My impression was that as long as the range was not exceeded, the sound quality remained the same, regardless of distance.

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FINAL THOUGHTS

The **Audioengine A5+** represent an uncommonly good value in today's fractured consumer audio marketplace, and a bonafide entry-level high end product. The integration of all the various components in the A5+ is outstanding, especially at the \$399 asking price. Some of the most challenging engineering tasks involve optimizing and balancing multiple objectives within many limitations. The A5+ is a perfect example of such a challenge well met. There are very few products I've encountered which balance price, performance, functionality, convenience and size with such aplomb.

Used with an MP3 player, the A5+ with its wireless remote makes an instant, compact, high quality audio system that is all many apartment dwellers seek. Connect it to a PC with a high quality sound card, and a collection of CD quality (or better) music files, and you move straight into an entry level audiophile system. Place a HDTV between them, with a Bluray player and/or a PC, and you get instant home theater. Use them as an extension to your main sound system to expand the music into other parts of the house, a task that's made so much simpler by the Audioengine Wireless Audio Adapters.

Considered purely for its sonic qualities, the A5+ plays well above its league. Its slightly warm quality, good transparency, excellent imaging, amazing bass and big volume capacity are enough to compete against pricier, bigger speakers with and without built in amplifiers. The icing on the cake is its

versatility and relative indifference to placement to deliver this performance. A prima donna the A5+ is not.

The **Audioengine Wireless Audio Adapter** set is also a great addition for the modern music lover. Again, versatility, functionality and simplicity are key: It works with very little fuss to send an audio signal from one component to just about any other, within its 100' range. About the only quibble I have is that a couple of very short cables should also be included; there's no need for one used on an A5+ to be more than a few inches long. I also wonder how the dongle (the actual device dangles from its USB plug) will stand the test of time and abuse. Unfortunately, the W1 set has just been discontinued, to be replaced with the W3, coming next month, in May 2012. Audioengine says, "The main difference between W3 and the now-retired W1 is that while the W1 can only 'hop' between multiple receivers, the W3 can transmit to up to 3 receivers simultaneously. In addition, the W3 provides greater resistance to interference from other Wi-Fi devices."

Our thanks to [Audioengine](#) for the A5+ and Wireless Audio Adapter samples

Audioengine A5+ and Wireless Audio Adapter receive the SPCR Editor's Choice Award



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Product	Audioengine A5+ speaker system & Wireless Audio Adapter W1 set
Manufacturer	Audioengine
MSP	\$399/pair; \$99 set

The first Audioengine product was the A5, released in 2005. This well-engineered, compact, powered speaker pair quickly earned many accolades from reviewers, and firmly established Audioengine as a player in the consumer audio scene of the new millenia.

By the time SPCR got around to examining audio gear, the A5 had been reviewed so well and so widely that Audioengine preferred to send us a sample pair of their second powered speakers, the tiny A2. [We reviewed it favorably](#) back in 2008; it was an excellent product. In October 2011, Audioengine announced a follow-up to the A5: The A5+, which retains the size, look and shape of the original, and adds customer-requested upgrades and features, the most visible of which is a wireless remote for power and volume control.

The A5+ size and shape is a near-classic <1' tall monitor, in the tradition of the Rogers LS3/5A and the Linn Kan (if anyone remembers these things)... and hundreds of small box speakers that have appeared in the markets over the past 40 years since mini-speakers became popular. Unlike those classics of yore, the A5+ has a built-in electronics, requiring AC power but no external amplifiers. Its

look is modern, eschewing any type of speaker grill and traditional wood veneers alike. The cones of the drivers are exposed, while black, white and carbonized bamboo are the finish options. In all three cosmetic options, the A5+ is fairly pleasing to the eye.



*The A5+ in bamboo finish on a desktop with what appears to be an Apple iMac, in a company promotional photo. **Note:** Bamboo veneer is subject to heat to produce darker shades. It has the green quality of being extremely renewable (reaches full growth in just 6~7 years) and it is tougher than most traditional hardwoods.*

Full specifications are provided on the [manufacturer's product page](#). There's really no need to repeat them here, but these details seem noteworthy to me:

- The left speaker contains all the electronics, including a heatsink on the back, so it is heavier, 15.4 lbs vs. 9.6 lbs for the right.
- Frequency response is claimed to be 50Hz-22kHz +/-1.5dB, very good for small speaker. I expect some electronic equalization is used within to tailor the response; this is one of the natural advantages of a speaker system whose crossover, drivers, enclosure and amplifier are integrated.
- The type AB amplifiers have 150W total peak power output and 50W RMS/ch. This is a surprisingly high figure, given the small size of the speaker.
- Idle power is 10W, and there is a sleep mode, which draws 4W.
- The mid/bass driver is a 5" kevlar cone, while the tweeter is a 20mm silk dome; no slouches. All parts are designed specifically for this system.
- The remote control is a small IR device with basic functions: Volume up/down, sleep, mute. It's all you need.
- A USB power port allows devices like MP3 players to be charged.

- RCA jacks for variable output allow a subwoofer to be connected.
- Both RCA and mini-plug inputs are provided.
- All the necessary parts are included.
- 30 Day Audition, money-back guarantee (assuming like-new condition in original packaging) is nice, almost mandatory for a product sold mostly online. There's also a 3-year warranty.

Overall, it's a promising package for \$399.