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## AUDIOENGINE B1 BLUETOOTH MUSIC RECEIVER REVIEW

October 8, 2014



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Today we are going to review a Bluetooth music receiver and it's from Audioengine. The company released the **Audioengine B1 Premium Bluetooth Music Receiver** early August and this product has been getting all the positive response so far. The B1 is basically a small HiFi audio component that lets you easily connect any device to your speaker via Bluetooth. But this is not your typical ordinary Bluetooth music receiver.

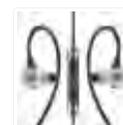
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Most similar devices out there don't have a high quality audio output. Some are also (very) imbalanced or produces unwanted noise from the background. The B1 not only eliminates the need for long cables but it also eliminates the frustrating audio output quality you might experience from other Bluetooth devices. Will this be your next audio gear? Find out in my Audioengine B1 review below.

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## Audioengine B1 Music Receiver Review

If before setting up your home audio entertainment system was a pain because you have to route long cables from your audio player to your speakers, well not any more. The Audioengine B1 Bluetooth Music Receiver basically supports all type of Bluetooth-enabled devices. Unlike other devices, the B1 features HiFi Bluetooth with A2DP, AVRCP and aptX coding, an advanced Bluetooth audio codec that provides a much higher quality sound. According to its specs sheet, it has an operational range of up to 100ft, and it is fully backwards compatible with Bluetooth v1.0.

The B1 is built with a low noise and high fidelity AKM4396 DAC, making it possible to stream a 24-bit audio from the receiver to your music system. According to the company, the B1 is essentially an upsampling 24-bit Bluetooth DAC and will pad all bit depths internally to 24-bits, thus achieving a higher signal-to-noise ratio. Due to the AK4396A's high signal-to-noise specs, the fact that digital signal is converted (upsampled) to 24-bits and the added benefit of triple redundancy power source conversion and filtering, the B1 presents impressive low noise and low distortion characteristics with a noticeable improvement over other Bluetooth devices.

Of course, for you to fully enjoy the superior audio quality that it can produce your audio source shouldn't be some poorly encoded MP3 file and your speakers should be good as well, like the company's A5+ or A2+ speakers. It's not a magical device that can convert your poorly encoded MP3 to a high quality 24-bit lossless audio.

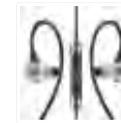
The Audioengine B1 is very easy to use and doesn't need additional driver, software or app for you to stream high quality music. It doesn't include an AMP feature, so you will



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need to preamp your audio first, or preferably connect the B1 to another DAC/AMP via its RCA analog outputs or via the Digital Optical (SPDIF) port. I'll discuss more of its features as we take a closer look on the B1 below.

## Audioengine B1 Music Receiver Specifications

<b>Bluetooth receiver type</b>	Bluetooth 4.0 audio with aptX codec
<b>Supported Bluetooth profiles</b>	aptX, A2DP, and AVRCP
<b>Inputs</b>	Bluetooth
<b>Outputs</b>	Stereo analog RCA, Digital optical (SPDIF)
<b>Required power</b>	5V, 200mA
<b>Operation range</b>	up to 100ft (30m) typical
<b>Full-scale output</b>	2.0V RMS
<b>Output impedance</b>	57 Ohms
<b>D/A converter</b>	AKM AK4396
<b>Power filtering</b>	3-stage redundant regulation
<b>SNR</b>	SNR (DC to 20 kHz), >100dB
<b>THD+N</b>	(1 kHz FS 96 kS/s) <0.02%
<b>Frequency response</b>	10Hz - 20kHz (+/-0.5dB)
<b>Crosstalk</b>	>-86dB
<b>Input bit depth</b>	24-bit (upsampled)
<b>Input data rate</b>	Determined by Bluetooth
<b>Latency</b>	~30 milliseconds (ms)
<b>Product dimensions</b>	3.5 x 4.0 x 1-inches
<b>Shipping weight</b>	1.0lbs (0.5kg)
<b>Shipping box dimensions</b>	11 x 7 x 3-inches

## Environmental Requirements

Operating temperature: 32° to 105°F (0°C to 40°C)

Storage temperature: -4° to 115°F (-20°C to 46°C)

Relative humidity: 5% to 95% non-condensing

# A Closer Look on the Audioengine B1



The Audioengine B1 comes in a nice simple box. Some of its features are listed behind the box. Despite having a simple packaging, the product itself and its accessories are secured, thanks to the padding inside.



Aside from the B1 itself, the box also includes a quick start guide, an Audioengine product line pamphlet, a 1m RCA audio cable, a power adapter with a detachable USB to micro USB cable, and a microfiber bag.





The B1 features a nice, simple and clean design. Its housing is made of aluminum giving it that premium look and feel. It's very sturdy and solid, and it doesn't easily break in case you accidentally dropped it. In front of the B1 are its antenna and a tiny power/pair LED indicator.



You cannot retract the antenna and it is also not removable. But the antenna can be tilted horizontally to the left or to the right.



The product itself is small and very light, it measures 3.5" x 4.0" x 1" inches only. I wasn't able to take a look inside the B1 so I don't have photos of the components used. But most definitely Audioengine is using high quality components otherwise, it won't produce fantastic sound quality.





On the back of the Audioengine B1 you will see a 5V DC in micro USB port, an Optical Audio Output port, and an RCA analog output port. I just wish Audioengine also threw in a Toslink cable together with the package, aside from the RCA cable.

## Testing and Sound Quality

In testing the Audioengine B1 Bluetooth Music Receiver, my audio sources were my desktop PC, a laptop and an iPhone 5. Most of the music that I listened to during the test is in FLAC (lossless) format, while some are MP3 files encoded in 320kbps bit rate.

Although it's basically intended to be connected to a home entertainment speaker/system, I used the [German Maestro GMP 8.35 D Monitor](#) and [B&W P7](#) headphones while listening to the tracks. These headphones are very balanced, detailed and doesn't need additional AMPs. Since these two headphones are very transparent I would be able to hear if there are unwanted noise, sound distortion or any abnormalities.

I used the German Maestro GMP 8.35 D to listen to most of the tracks, including Chesky Records' The Ultimate Demonstration Disk. Meanwhile, I used the B&W P7 for tracks where bass was deep and strong.

For comparison purposes, I also used JDS Labs O2+DAC Combo. The O2+DAC is connected to the same source (PC and Laptop), and the two headphones is connected directly to the device one at a time. This way, I will have an idea whether sound quality was reduced or not since the audio is transmitted via Bluetooth.

Pairing the Audioengine B1 was very



easy. I simply turned on the Bluetooth and it immediately detected the device. However you can only pair 1 device at a time. You can't pair the B1 with another device if it's already paired with the first device. When the pairing is disconnected, it immediately becomes available to be paired with another source. There's no on/off switch, so once you connect the power, it's immediately available for pairing.

I didn't test the Audioengine B1 for 1 day only. I tested it for several weeks, and until now I am still using it. During my test, the sound that it produced was very clean and I could not hear any unwanted noise or hissing. And despite the source being streamed via Bluetooth, the original sound quality from the source was still the same. In fact, I was able to notice that the sound was even better and this is most probably thanks to its built-in DAC feature.

The music coming from the iPhone 5 was better when I streamed it via the B1 to my headphones, compared to connecting the headphones directly to the iPhone 5. The mids and highs are very present and the bass it produced was exactly how it was meant to be. Both the GMP 8.35 D Monitor and P7 were able to produce the highly accurate and detailed sound that I was expecting.

Next, I compared how the sound quality that the Audioengine B1 produced would fare if compared to a wired DAC/AMP. For this test I used my laptop, the O2+DAC Combo, and the same two headphones. Again, I was surprised to find out that I could barely notice any difference in terms of sound quality. Well there are some differences between the O2+DAC and B1 but its case to case basis or it depends on the type of music you are listening too. Of course the O2+DAC has the advantage over the B1 since it has a built in Amplifier, still the result of listening from the B1 is impressive.

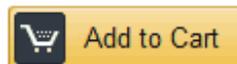
I also did test if ever there was a delay in the signal from the source to the speakers via the B1. For this test, I played some movies from my iPhone 5 but I streamed its audio via the B1 to my desktop speakers. I was happy to find out that I didn't notice any delay at all. The audio sounds like it's perfectly sync with the video, as if my desktop

speakers were part of the iPhone 5.

Currently, I don't connect my Altec Lansing speakers directly to the back of my CPU anymore. My motherboard, the Gigabyte GA-Z97X Gaming G1 WiFi BK, features a WiFi and Bluetooth connectivity; and I just simply stream the audio from my PC to the speakers via the B1.

## Price and Availability

The Audioengine B1 Bluetooth Music Receiver is very much available. Currently it has a retail price of [\\$189.00 with free shipping here](#). The company is offering a 3-year warranty for the B1. Not only that, if you purchased the B1 from their online store, you can return the product within 30 days of purchased in case you are not completely satisfied with the product. But seriously, if you need a HiFi Bluetooth music receiver, I doubt that you will be unsatisfied with this product.



## Audioengine B1 Review: Conclusion

After using the Audioengine B1 for several weeks, I didn't find anything wrong about the product. I didn't encounter any hiccups or degradation of sound quality even when the receiver is farther from the source. This small aluminum box is simply a "magical instrument" that would easily replace those long audio cables, connecting your source and speakers, without any loss in audio quality. This is simply a great wireless Bluetooth DAC, and you really can't complain about its price. I've seen wired DACs from other companies that are priced higher than the B1, and they probably offer the same audio quality.



Are there any cons in the B1, you might ask? I couldn't think of any cons right now. I don't think price is a con either, like I said there are other DACs out there that are priced higher than this one. Perhaps it would be great to see some improvements in future versions. Improvements like built-in rechargeable battery or better yet an amplifier as well.

The Audioengine B1 Bluetooth Music Receiver is truly a fantastic Bluetooth DAC. If you are looking for a "bridge" that would wirelessly connect your audio source to your speakers, HIFI entertainment system or headphones without any loss in quality, no hissing sound or any problems that would ruin your audio session, then look no further because the B1 is your solution. It's one of the best, if not the best, Bluetooth DAC music receiver currently in the market that will not disappoint. A fine product like this surely deserves The PC Enthusiast's Editor's Choice award.

