



ONEaudio ONEmicro 2.0 DECT Wireless Personal Loudspeakers

Doug Blackburn

As they say on Monty Python's Flying Circus... and now for something completely different. Hmmm, where to start? Imagine your home theatre system with no cables connecting anything. Audio, video, data... everything done without cables. These little loudspeakers may just be the foreshadowing of that day in the foreseeable future. DECT (Digital Enhanced Cordless Telecommunication) is nothing new. Standards for this technology were published between 1988 and 1992. Most of the world adopted it for cordless telephones (not cell phones), with the United States having a modified version due to some differences in available radio frequencies. What is new is using DECT for wireless audio. As implemented in ONEaudio products, up to 16 ONEaudio loudspeakers can be driven by a single ONEaudio DECT USB dongle or base station. DECT allows far better temporal matching between multiple loudspeakers than is possible with Wi-Fi or Bluetooth, which is why ONEaudio chose DECT over Wi-Fi or Bluetooth for this product. The tiny ONEmicro loudspeakers contain their own 5-watt, high-efficiency amplifier, battery, DECT send/receive circuit, and charging circuit.

Recharging the battery in the ONEmicros requires connecting them to an ordinary USB battery charger, the same type cable and charger used for charging smart cell phones. The batteries will power the ONEmicros for 10 to 25 hours, depending on playback volume. A surprising amount of technology is packed into the tiny ONEmicros. I didn't track battery life, but they certainly did not require charging very often. The custom-designed and manufactured drivers feature dual voice coils that help reduce amplifier power requirements. The amplifier modules themselves are designed for maximum sound quality and

minimum power consumption. ONEaudio manufactures four different sizes of wireless DECT loudspeakers—the ONEmicro is the smallest, while the ONEclassic is the largest, an average-sized, two-way, stand-mounted "bookshelf" type loudspeaker with a clear acrylic enclosure and full wireless operation with dual amplifiers (one amplifier for each driver). With a retail price of \$3,550, the ONEclassic is getting into "serious" audio component prices. ONEaudio will be releasing a three-way floorstanding model with dual 8-inch drivers later this year. Battery life in the three-driver (MTM) ONEmedi model is up to 60 hours because the larger size of that next-to-largest model allows for a much larger battery.

I intentionally used "personal" in the title of this review because these tiny loudspeakers can't really produce "room-filling" sound unless you are in a tiny room. ONEaudio recommends 50 to 120 square feet. That is really small by U.S. standards. But I had no trouble using the ONEmicros in a room with over 350 square feet with the ONEmicros placed 3 feet or so away from me. I achieved SPLs of around 80 dB without obvious distortion. That actually sounded louder than you might think. It was actually so loud, I was a bit freaked out by the ONEmicros making that much sound, being as small as they are. Beyond SPLs in the low 80s, the little loudspeakers begin to compress the sound, and distortion rises quickly. Most of the time, 65 to 70 dB or so was plenty of playback volume for casual listening while using the computer. The ONEmicros are a huge sonic upgrade over the sound system built-in to any computer I've come across. The sound quality certainly doesn't equal a small pair of \$200 bookshelf loudspeakers that have to be connected to some kind of amplifier to produce sound. But they are somewhat surprising, considering the tiny size. I have a single Bluetooth loudspeaker that's sort of in the same size range as the ONEmicros. It sold for \$50 but doesn't



Q: What **sounds better** than a short cable?

A: No **cable** at all.

This core concept is one everybody knows. Two components directly connected with no cable in between will produce the best possible sound your gear is capable of. The moment cable is added, no matter if it's zip cord or the most expensive you can buy, detail and dynamics are sacrificed.

Testing vs. Comparing

Most companies judge cable performance by comparing one cable to another. This method has no frame of reference for what is being lost, and only shows how they vary from each other. Wireworld scientifically tests its cables during development against a direct connection, refining design and materials to achieve detail and openness that most closely matches the reference. We call this method the Audio Cable Polygraph.

Robert Harley of *The Absolute Sound* says this method provides "illuminating insight into exactly how each cable affects the sound."

Here to Stay & Built to Last

Wireworld has been in business over 23 years and designer David Salz had been developing our testing method and refined geometries for over three decades. It can be difficult to tell what is real and what is not with so many fly-by-night brands popping up making grandiose claims. But the truth is in the test. If you're still skeptical because you consider sound quality subjective, then the physical and aesthetic quality is something you will appreciate.

Robert Archer of *CEPro* says, "I am impressed with the materials, secure and sturdy terminations, the feel, build quality and bulletproof construction."

When you're ready to graduate from 'flavor-of-the-month' to pure high fidelity, cable up with Wireworld.



Other cables filter your music.
Wireworld cables let the most music through.

Technology that channels musical expression.

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sound nearly as good as the ONEmicros. The ONEmicros take up almost no space and don't need anything to drive them except the dongle that comes in the box and charged batteries. I actually enjoyed using them with the computer for casual listening while writing reviews. No need to run the whole home theatre system just to have some entertaining tunes playing in the background at a level that doesn't distract from the main task.

The ONEmicro 2.0 system came with two ONEmicro loudspeakers, two USB charging cables, no chargers, and the USB dongle. The ONEmicros are just 2-3/8 inches in diameter and 2 inches tall. My smart phone is wider than the diameter of these little loudspeakers. In fact, I can put both of the ONEmicro loudspeakers on top of the cell phone and there's room to spare (the phone is 2-3/4 inches by 5-1/2 inches). The finish on the review samples was satin white, but a few pastel colors are shown on the ONEaudio Web site as well. The cylindrical housing of the ONEmicros feels like steel tubing. Each ONEmicro is solid-feeling chunk, with a fairly sturdy perforated grille protecting the upward-firing single driver. The cylindrical sides feel like they are covered with a thin rubber coating, similar to the rubberized finish on the trim of some luxury cars. The bottom feels like it is coated with a grippier and somewhat thicker rubber that keeps the ONEmicros from sliding around. There are two recessed buttons on the bottom surface that have dual functions... they are on/off switches as well as volume controls. A thin band around the outside of the ONEmicros illuminates with blue light when they are on and playing or ready to play. When you connect the ONEmicros to a charger that thin band turns red. I did try charging and playing music at the same time, and both the blue and red lights were illuminated in the thin ring around the ONEmicros. The dongle looks like a small USB memory stick. Initially, I didn't think the dongle worked in my USB 3.0 ports because I would plug it in but no new audio device would appear in the list of Playback Devices in Windows. As it turns out, the ONEmicro loudspeakers have to be turned on before the ONEdongle appears as a Playback Device, so you can select it instead of the internal sound system in the computer or some other external device you might have connected. USB 2.0 ports also worked fine with the ONEdongle. The ONEdongle has no extendable antenna. In my room, range from the ONEdongle to the ONEmicros was more limited than I expected. I could get up to 10 feet from the dongle in my room with no problem as long as there was a clear line of sight from the dongle to the ONEmicro loudspeakers. I didn't have the space in the room to move any farther than that from the ONEdongle without walls getting in the way, so I can't comment on the full line-of-sight range between the ONEdongle and ONEmicros. With the ONEmicro 10 feet from the ONEdongle, sound was fine as long as the ONEmicro was high enough that there was a clear line of sight to the ONEdongle. Lowering the ONEmicro to the floor behind two rows of upholstered theatre seating, the audio signal would begin breaking up. Any wall in the house would cause interference that caused the audio signal to cut in and out even if the distance to the dongle was no more than 10 feet. ONEaudio says the range should be much larger than what I experienced; over 150 feet in an open area and over 90 feet indoors. Obviously, I didn't come close to that with ONEmicros that had perhaps 4 hours of use on the battery at the time I investigated the range question. This house is constructed with conventional drywall and wood stud walls, nothing unusual. There is a Wi-Fi router with three antennas emitting 2.4 and 5 GHz Wi-Fi in this room plus a satellite TV DVR with an antenna linking it wirelessly to smaller satellite tuners in other rooms. But these items would be fairly common in many U.S. homes.

To use the ONEmicro loudspeakers, the ONE dongle was connected to a USB port on a Windows 10 laptop computer. ONEaudio loudspeakers are also compatible with Android, iOS, and Mac OS, though, a USB adapter cable is required to use the ONEdongle with phones. The ONEmicros were both turned on with the power buttons

SPECIFICATIONS



Features

- Sturdy steel tube body
- Strong perforated metal grille protects upward firing driver
- Blue LED indicates "in use" while red LED indicates charging
- System can operate with 2 to 16 ONEmicros
- White satin rubberized finish. Inquire about availability of other colors.
- Dual voice coil driver, 50mm diameter
- DECT ONEdongle USB adapter included in the box
- Compatibility: Windows, Mac OS, Android, iOS

Specifications

- Dimensions (In Inches): 2.44 diameter, 2.05 high
- Weight (In Pounds): 0.66 each
- Amplifier Power: 5 per each ONEmicro (watts)
- Battery capacity: 1,000 mAh
- Charging time for full battery charge: 4 hours with 0.5 Amp charger; up to 14 hours with lower-power computer USB port
- Playing time with full charge: 20 hours at default volume level, 10-12 hours at maximum volume
- Frequency response: 85-19,000 (Hz) sitting on a desktop or table-top
- Warranty: 1 year
- MSRP: \$199 per pair with dongle

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on the bottom. Then I selected the ONEdongle as the Playback Device (right click on loudspeaker icon on the Windows Task bar and select Playback Devices). With J River Media Center 21 software open, I used Options-Audio to select the ONEmicro audio device instead of the DAC I would normally use, and I was playing music through the ONEmicros as soon as Media Center 21 started playing. If you place the ONEmicros on a desk close to your elbows, you get an effect like wearing headphones. The music seems to exist inside your head. For a more conventional listening experience, you need to have the ONEmicros at least 2 feet in front of you. If you pause the music to make lunch or take a phone call, the ONEmicros will have powered-down while you were away and you'll have to grab each one and press and hold the power button to get them to come on again. When you turn them on, the loudspeaker announces in a female voice in English, "I am on the left" or "I am on the right." When you are done using the ONEmicros, pick any one of them up and hold the off button on the bottom and all of the ONEmicros you are using will turn off at the same time, a convenient feature. Or you can just walk away and let them turn themselves off after a period of inactivity.

As I write this, listening to Alan Parsons' (the famed recording engineer responsible for so much great music including Pink Floyd's *Dark Side Of The Moon*) album *A Valid Path*, I am surprised by how realistic drops of water at the beginning of one of the tracks sound via the ONEmicros. I'm also blown away by the bass these little babies produce. The bass extension is certainly nothing fabulous until you remember how tiny they are. Then it becomes a pretty big deal. They also create a surprisingly good stereo image when you get them far enough in front of you and especially if you tilt them a bit towards your ears instead of leaving them firing straight up.

Using the ONEmicros for online videos like episodes of Jay Leno's *Garage* that were made quite a few years before the TV show started, is a realistic alternative to firing up the whole home theatre system to watch. I can attest to the fact that lightly muffled internal combustion



engines at full song sound pretty darn good through the ONEmicros. Movie sound quality is OK, but as you might expect, action movies are not really the forte of the ONEmicros because of the limited low-frequency extension. But that could be a great thing if your teenager is watching one of the *Fast & Furious* movies in another room. You may appreciate the modest bass extension. Gaming with the ONEmicros is interesting. If you use headphones or loudspeakers but wish there was an alternative that didn't require a "big" audio system or headphones, the ONEmicros might be all you need. You can arrange them to produce the same "in your head" effect you get from headphones with great intelligibility of speech that allows you to hear what's going on very well while still remaining focused on the game. ONEaudio even offers a 6.1 surround system if having surround sound is a gaming advantage, and it can be with some games. You won't be weighed down by headphones that can get uncomfortable after a while. A stationary microphone can eliminate the need for the mic boom on a headset as well. And you'll still be able to hear, "Dinner will be ready in 10 minutes!"

Running test tones to see where the low frequencies begin to roll-off indicated that there was still pretty good output at 125 Hz, though, it was a bit down in level from 150 Hz. 100 Hz was down in level quite noticeably but was still at a high enough level to be useful. At 80 Hz, the ONEmicros were still pumping out some sound, but it was far lower in level than 100 Hz. I wouldn't call the output level at 80 Hz "useful" but it was definitely audible. ONEaudio lists the frequency response as 85-19,000 Hz. That seems relatively reasonable given what I heard. Listening to an acoustic bluegrass band, Balsam Range, I find I can still hear the acoustic bass player pulling on the bass strings, though, it did sound like some of the acoustic bass

notes went MIA. Not surprising really when you consider the "working surface" of the driver in the ONEmicro is close to 2 inches in diameter.

Sound to the ONEmicros is modestly compressed when you send stereo music, but the more ONEmicros you add to a single loudspeaker network, the more compression is required to get audio to the maximum 16 ONEmicros that can operate in a single loudspeaker network. I found the compression with a stereo pair of ONEmicros was inconsequential when the source was streaming video programming, streaming audio, or lossless CD-quality music.

Conclusion

Retail is \$199 for the ONEmicro 2.0 kit that includes a pair of ONEmicro loudspeakers, a ONEdongle USB adapter, and two charging cables. Yes, you could get some small bookshelf loudspeakers for that price, but you'd need an AVR or something else to drive those loudspeakers via the USB output from your computer. You get everything you need for playback in the ONEmicro 2.0 kit. This interesting product may be providing a glimpse of the future of wireless home theatre systems. If you want more bass, ONEaudio offers a pair of ONEmicros with a ONEwoofer 6+6 for just \$300 more. The ONEwoofer 6+6 has two 6-inch drivers in a compact enclosure. The ONEsurround.micro system is \$875 with six ONEmicros and one ONEwoofer 6+6. I have to admit, I wasn't all that excited when Editor Gary told me these were on the way to review. It's nice to be surprised by something that looks kind of cool, feels substantial, is packed with technology, and doesn't cost an arm and a leg. **WSR**