



Hsu Research CCB-8 Two-Way “Bookshelf” Loudspeaker

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Most people know Hsu Research from their long history of high-performance subwoofers sold direct to customers at very attractive prices given the performance capabilities. But for a good number of years now, Hsu has also been selling a small bookshelf loudspeaker, the HB-1, now in its MK2 iteration, for \$159 each in satin black or \$189 in rosenut wood veneer. This small loudspeaker features a 6.5-inch woofer and a horn-loaded tweeter. I liked HB-1 for the price, but there is some pretty strong competition in this price range (around \$300 per pair). Hsu’s newest loudspeaker is the CCB-8, and it is even more radical than the HB-1 and considerably more expensive, though, still affordable. The CCB-8 is also in a very competitive market segment where there are some impressive competitors. The CCB-8 sells for \$369 each or \$699 for a pair in satin black. Rosenut wood veneer models are priced at \$449 each or \$859 per pair. Hsu offers a 30-day satisfaction guarantee, a seven-year warranty is provided to the original owner, and a pair of CCB-8s ships for \$65 (plus extra shipping charge outside 48 states).

Why is the CCB-8 so radical? At first glance it looks like a single-driver loudspeaker, but it’s actually a coaxial two-way design. Coaxial means the tweeter and woofer share the same acoustic axis. To achieve that, a fixed-position horn tweeter mounted on the back of the woofer’s magnet fires forward from the center of the 8-inch woofer, using the woofer cone as part of the horn. The time differential between the tweeter and woofer is compensated for in the crossover. This is an ideal driver configuration for home theatre because properly designed coaxial

loudspeakers have uniform dispersion in every direction... up, down, left, right, and even diagonally. That means every seat in the room gets nearly the same sound with no acoustic lobing or comb filtering effects, which are especially problematic for three-driver horizontal center-channel loudspeakers. The Center Channel version of the CCB-8 is identical to the “regular” model, except it lays down on the long dimension to rest on a stand or shelf above or below the video display. To achieve that, all Hsu had to do was rotate the recessed binding post assembly 90 degrees. This means every channel with a CCB-8 will be a sonic match. That means every seat in the room gets sound much closer to the sound achieved at the main seat. For this review, I used three CCB-8 loudspeakers for front left and right and center channels.

To help with low-frequency extension, the CCB-8 has two rear-mounted ports. Just a few days before the submission deadline, Hsu announced, and shipped me, two foam port plugs for each CCB-8. The idea being that you can experiment with two ports open, one port open and one port closed, or both ports closed. This provides some of the variable tuning capability Hsu has been including with most of their subwoofer models for quite a while. I didn’t have time to experiment with the port plugs for this review due to their arrival just before the submission deadline, but I will see about doing a brief follow-up for the next issue describing the effects of the port plugs.

Each CCB-8 has a pair of conventional multi-way, gold-plated binding posts. I used banana plugs with no trouble, but spades, bare wire, and pins will work also. The front panel is flat except for the magnetically mounted circular and slightly domed grille that protects the driver from potential damage. There is a slight change in treble sound with the grille removed, so you may want to experiment with your CCB-8s to decide if you prefer the grille on or off. Just be aware that with the grille being removed, the woofer cone and surround are subject to damage from being poked by a foreign object, fingers, or pets. The back panel of the CCB-8 is also flat, with the only features being the recessed mount for the binding posts and the two ports with tapered plastic inserts to improve airflow and reduce port noise when strong bass is present. The four corners on the sides of the CCB-8 are pleasantly rounded. The physical size of the CCB-8 makes it a little larger than a medium-sized bookshelf loudspeaker, but not as large as some of the bigger bookshelf loudspeakers. I used 28-inch stands with them and thought that worked fine. The CCB-8 loudspeakers were among the easiest to position that I’ve ever used. There was no need to fuss with placement once I confirmed that the left and right loudspeakers were the same distance from the main seat and that the center channel was centered under the projection screen. The only real concern for placement is trying to keep the loudspeakers from being too close or too far from room boundaries. Too far from boundaries, and bass extension may suffer, but that’s not much of an issue if using these loudspeakers with a subwoofer. Placement too close to walls will interfere with spaciousness of the sound and can make bass response lumpy. And, as with all loudspeakers, best results tend to be achieved when the distance to the side wall, floor, and wall behind the loudspeakers are all different by at least six inches. There are no “feet” on any side of the CCB-8, in either “regular” or “center-channel” configuration. For stand mounting, I used four blobs of a “tak” adhesive that is a lot like rubbery chewing gum, though, it never dries out and remains stuck to loudspeakers and stands quite well while minimizing vibrations transmitted into the stand. I’ve seen the “tak” adhesive sold in several colors including yellow (Fun Tak), light blue (Blu Tak), and brick red (Borden), but there may be other colors out there. Every brand I have tried has performed the same, so no need to search for one specific brand. You can find this material with other glues and glue sticks at office supply stores and sometimes at home improvement centers. For the center-channel model (the only difference is that the

factory rotates the loudspeaker terminals 90 degrees, but Hsu says owners can rotate the loudspeaker terminals in the regular CCB-8 if they ever need to use a “regular” CCB-8 on its side). I put fairly tall feet made from lead shot and black RTV adhesive (mixed together and molded in Teflon-coated muffin/cupcake baking pans) under the loudspeaker.

Hsu recommends sitting 15 degrees off axis for the most critical listening. At 15 degrees off axis, Hsu says the frequency response is 50 Hz to 20,000 Hz +/- 2 dB. Hsu says the sensitivity of the CCB-8 measures 94 dB at 1 meter for a 2.83-volt input in half space. This puts the sensitivity on the high end of dynamic loudspeakers and on the medium-low end of horn loudspeakers. Most dynamic loudspeakers have sensitivity specs in the 87 to 91 dB range. What this means in the real world is that each 3 dB of sensitivity means the amplifier power requirement for any given sound-pressure level is either half or double (depending on whether 3 dB higher or 3 dB lower). So a loudspeaker with 88-dB sensitivity will use four times more amplifier power to achieve the same sound-pressure level (SPL) as a loudspeaker with 94-dB sensitivity. Combining the high sensitivity with Hsu’s recommendation to use 8-Ohm settings in AVRs or amplifiers to drive the CCB-8 means these should be very easy loudspeakers to drive with an AVR. I did briefly confirm that and found the CCB-8s would indeed play quite loudly when powered by a high-end AVR. However, a lower-end 5.1-channel AVR (MSRP under \$600) was revealed to not sound as good as a more expensive 9.2-channel AVR (\$2,200). That speaks to the resolving power of the CCB-8. They have no trouble letting you know when the sound changes, either from differences in recordings or changes in the quality of amplification. To be clear, the CCB-8s did not sound “bad” with the lower-cost AVR, they just didn’t sound as good as they did with the more-expensive AVR.

Movie/Surround Sound

The CCB-8s were great when listening to movies. Dialogue was very precise with something going on with initial transients, speed perhaps that gave dialogue an extra measure of intelligibility I’m not used to hearing at this price point. I hate to say that dialogue was “crisper,” but that’s kind of close to what you hear. The initial transients sound very similar to someone speaking in real life. Small variations in pitch and breath are reproduced especially well also. This all makes it easy to hear and understand dialogue, even when spoken with thick accents from different U.S. regions or by people speaking English as a second language. The CCB-8 does a very good job of making each element in a complex sound mix clear and distinct. Scenes like the beach combat sequences from *Edge Of Tomorrow* have so many different sounds going on that you can focus on different elements each time you view those scenes. You can’t take it all in on one hearing because of the complexity, but the CCB-8 does let you isolate and follow various sounds with ease. *Hidden Figures* is very dialogue driven and was a pleasure to experience with the CCB-8s providing all the up-front sound. Pitch and accent differences of each actor/actress were clear and distinct, revealing the quality of the sound mixing beyond what is possible with less-capable loudspeakers. *Fantastic Beasts And Where To Find Them* was a treasure trove of sound mixing with period sounds mixed with dialogue, a wide range of public and private spaces, and sounds of the fantastic beasts adding a lot of interest to the entire movie experience. The acoustic environment for each different space in the movie was easy to hear and accept as being “real.” Subtle sounds, even when other louder sounds were going on, remained clearly audible.

SPECIFICATIONS



Features

- Unique two-way coaxial driver with 8-inch woofer and horn-loaded tweeter
- Gold-plated multi-way binding posts
- 2 rear-mounted ports
- Can be used for all channels in a home theatre system, including center channel
- Available in satin black or rosenut veneer
- Uniform dispersion in all directions for great sound at every seat
- 94 dB sensitivity
- Nominal 8-Ohm impedance
- Easily driven by the amplifiers in AVRs but sound great with out-board amps too

Specifications

- Dimensions (WHD In Inches): 10.5 x 15 x 12 without grille, 12.5 D with grille
- Weight (In Pounds): 22
- Recommended amplifier power: 10 to 400 (watts)
- Sensitivity: 94 dB at 1 meter for 2.83-volt input in half space
- Frequency response Both Ports Open: 50 Hz to 20,000 Hz +/-2 dB
- Warranty: 7 years to first owner
- Suggested retail price: \$699 per pair, \$369 each (satin black); \$849 per pair, \$449 each (rosenut veneer)

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Stereo Music Sound

Music helps reveal more of why the movie sound produced by the CCB-8s is so impressive. I hear more detail in almost every sound from every album I sampled. Acoustic guitar played with strummed chords sounds very lifelike with especially clean, clear transients each time a string is strummed. Furthermore, instead of one strum sounding like a homogenized note, the CCB-8 made each strum sound like six strings vibrating separately to produce an overall chord/note sound. Cymbals had a very realistic shimmer, with a great detail within each “tssshhhhh.” Violins had to be very poorly recorded to sound harsh. With good recordings, the warmth of the wood body and rosined bow are nicely balanced with the sharper sound from the strings giving the violin a lifelike sound quality. Decay of sounds was quite nice also, and even with these low-level sounds I could hear more detail in the decays than I’m used to hearing in this price range. Wood blocks, single drum kicks, triangles, and a wide range of other sounds on Brian Wilson’s 2015 album *No Pier Pressure* were clearly studio manipulations (probably with digital reverb), but this decay sound was quite attractive and interesting. The transient attack on the wood block sounds was also noteworthy. The sound of a grand piano is difficult to capture on recordings, but when they get it right, playback of grand piano sound can be disappointing. But not with the CCB-8s. On Cat Stevens’ *Tea For The Tillerman* title track, the grand piano does indeed sound grand and dynamic, as it does in real life.

The one thing the CCB-8 didn’t do initially that I do hear from conventional dynamic loudspeakers is produce, at times, a significant sensation of front to back depth, mostly within the center third of the soundfield. There has been a lot of discussion over the years about whether this is audible over conventional loudspeakers (including planar magnetic and electrostatic loudspeakers) because of some anomaly related to the design of this type of loudspeaker—or whether horn loudspeakers can’t or don’t do the “depth trick” like

dynamic loudspeakers can do. This sense of depth is not present on all that many recordings. Perhaps 20 percent of recordings I have produce some depth effect, with maybe one fourth of those producing a wide-high-deep soundfield in my listening room with conventional dynamic loudspeakers. This effect is inconsequential for movie sound since the use of all the channels can produce any sense of depth and large space that the soundtrack calls for. I am not certain which presentation (depth or no depth) is "right," so I am simply reporting what I heard initially. This "no depth" presentation happened with the left CCB-8 aimed slightly to the left of my left shoulder and the right CCB-8 aimed slightly to the right of my right shoulder. Dr. Hsu said that in some setups, the CCB-8s need to be aimed so that the acoustic axes cross in front of the listener(s) rather than crossing behind their heads. So I went back and experimented and found that with the acoustic axes crossing about 34 inches in front of my head, the CCB-8s produced a credible sense of depth, on par with what I hear from conventional dynamic loudspeakers with offset drivers, planar magnetics, and electrostatics. With this new toe-in I revisited some recordings I know to have a big sense of depth, like The Chieftains' *Long Black Veil*. "The Coast Of Malabar" is one of my go-to tracks for judging the presence or lack of depth. On the CCB-8s the sound is B---I---G, as it should be, with a very good sense of depth. Other tracks in my collection and from a CD-R provided by Dr. Hsu also confirmed that depth effects were present with this modified aiming of the left and right CCB-8s. It is possible this may have something to do with the large, hard projection screen between the loudspeakers, so you may or may not experience the same thing in your room when setting up two or more CCB-8 loudspeakers. Those who will never listen to music on the CCB-8s will not need to worry about this. The CCB-8s also do something I don't encounter very often. The center image remains centered when your listening position is well to the left or right of center. Last time I heard this effect, it came from a very expensive pair of German MBL Radialstrahler loudspeakers that featured three omni-directional drivers. The midrange and woofer looked rather "football-on-end" shaped and were driven from one "point" and were fixed at the other

"point." This centering ability is a significant advantage for any multi-person listening and it is missing entirely from every conventional dynamic loudspeaker I've experienced... aside from those Radialstrahlers and from a few omni-directional loudspeaker models sold by a Canadian company named Mirage.

One thing I can't tolerate in loudspeakers is the overemphasis of sibilants and other high-ish frequencies, like the sound fingerprints make sliding over "wound" guitar or bass strings. [Some metal guitar/bass strings are made with a straight center wire and a second wire wrapped around the center wire in a very tight spiral, when fingerprints drag over the texture of the "wound" strings you hear a very characteristic sound.] I can confirm that those problems are entirely absent with the CCB-8 loudspeakers. Sibilants are often an artifact of the microphone chosen for the vocal performance. Some microphones produce unnaturally prominent sibilants that could have been avoided by choosing a different microphone for the vocals. So your loudspeakers should produce sibilants when they are present in the recording, but not over-emphasize them. And when the recording has no vocal sibilants, the loudspeakers shouldn't add any audible sibilants. The CCB-8s did this correctly. They neither under- or over-represented sibilants. In all, the sound is very well balanced from bottom to top.

Conclusion

The CCB-8 loudspeaker, as with other Hsu Research subwoofers and loudspeakers, provides an awful lot of performance for a modest amount of money. Those who value wide and uniform dispersion, an easy-to-drive combination of sensitivity/efficiency and impedance, fantastic transient performance, lots of detail, excellent value for money, and that seven-year warranty should seriously consider the CCB-8 loudspeaker. On top of that, being a two-way coaxial design with a horn-loaded tweeter, if not unique, is certainly unusual, especially in this price range. That can make for interesting conversations with audio buddies who may not realize such a loudspeaker exists. Highly recommended. [WSR](#)

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