

stereophile

ONLINE AUTHORITY:
WWW.STEREOPHILE.COM

SEPTEMBER 2016

A ROUNDED MAN CANNOT BE EXPECTED
TO FIT INTO A SQUARE HOLE

MUSIC IN THE ROUND BY KALMAN RUBINSON

THIS ISSUE: JL Audio's
E-Sub e110 powered
subwoofer

Affordable Stereo Subwoofing

In January, I reviewed JL Audio's Fathom f113v2 subwoofer,¹ which features, among other improvements over the original Fathom f113, a better multiband equalizer. The significance of this relates to the great influence exerted by room dimensions and acoustics on a loudspeaker's performance.

The matter of room acoustics itself relates to the Schroeder frequency: a transition point, usually between 200 and 300Hz, above which a room will exhibit a high density of reflections that are analyzed statistically, and below which that room will display a limited number of discrete modal reflections. (Thus, it should not be confused with the number of times that Beethoven's music appears in Charles Schulz's comic strip "Peanuts.") Above the Schroeder frequency, the sound is dominated by densely overlapping modes whose properties are easily addressed with such physical correctives as wall treatments. But in the frequencies below the Schroeder or *critical* frequency, the room's influence is dominated by discrete modes that depend on the room's dimensions and are more amenable to electronic correction. (Physical acoustical correction within this range would require the careful placement of structures whose own dimensions are mathematically related to sizable wavelengths—not easy to achieve, unless one has a dedicated listening room.)

Since subwoofers always operate below the critical frequency, JL Audio's enhancement of the equalizer in their v2 range of Fathom subs is to be applauded; otherwise, owners



JL Audio's E-Sub e110 subwoofer is made in the USA.

Below the Schroeder frequency, the room's influence is dominated by discrete modes.



of analog systems would have to buy a standalone equalizer. However, many of us multichannel fans have systems that already include room-EQ capabilities, and while these vary greatly in convenience and capability, we might not want to buy a sub with its own EQ, thus

adding unnecessary complexity and cost. In my Manhattan system, I prefer to use Dirac Live for all playback, as my serious listening is to files via my Baetis server and exaSound multichannel DAC. In my weekend system, in Connecticut, I use Dirac Live to play files, and Audyssey MultEQ XT32Pro for discs.

So when my reliable Paradigm Reference Servo-15 subwoofer developed a hum, and I decided not to ship the 80-lb, 16-year-old sub home to Canada for evaluation and repair, I faced the issue of replacing it.² All things pointed to getting a powered sub or subs capable of excellent bass extension that, more important, would integrate acoustically and aesthetically with my system. And there was no need for it to have built-in equalization.

¹ See www.stereophile.com/content/music-round-76.

My experience with JL Audio's Fathom line led me to get two of their E-Sub e110 subwoofers (\$1499.99 each in Black Ash finish). The E-Subs, one step down from the Fathoms, have slightly less impressive specifications for extension and power than the Fathom f113. The f113 has a claimed frequency response of 20–86Hz, $\pm 1.5\text{dB}$, and -3dB at 18Hz; the E-Sub e110, 25–116Hz, $\pm 1.5\text{dB}$, and -3dB at 23Hz. The f113's built-in power amp is rated at 3000W RMS (short term), the e110's at 1200W RMS. However, the e110's smaller size opens up more placement options, its lower weight makes it easier to move, and the use of two will mitigate some of the differences in FR and power between it and the f113. In fact, the use of multiple subs, carefully positioned and set up and equalized, is a growing trend supported by research efforts³ to produce flat, spatially uniform bass response in real rooms.

I was surprised to find that each e110's double-boxed carton was nearly as large as the f113's, even though the e110 measures only 14.24" high by 13.5" wide by 16.51" deep and weighs 52.7 lbs (compared to the f113's 19.25" by 16.5" by 19.25" and 133 lbs). I moved the old Paradigm Reference Servo-15 out of the room (with considerable effort), then placed one e110 to each side of my center Monitor Audio Silver 8 speaker, at the front of the room, so that the JLAs would be equidistant from my main listening position. The e110's construction and finish were of high quality, and an excellent match for the Silver 8s.

Each e110 has a 10" driver, a pair of RCA inputs, and a pair of RCA outputs. With the sub's crossover engaged, the output jacks provide a 24dB/octave, Linkwitz-Riley-filtered high-pass signal; when the crossover is defeated, they provide a buffered version of the same signal that appears on the e110's input jacks. Controls include level, filter defeat, filter frequency, polarity, and variable phase, but I defeated the filter and left the polarity and phase at 0°. All I needed was the level control—Audyssey and Dirac Live would handle everything else, including EQ.

I began with Audyssey, because its first step in calibration is a handy subwoofer-level routine. Using the test tones and the e110s' level controls, I carefully set each e110 to 75dB, $\pm 0.5\text{dB}$. Audyssey may retrim the two sub levels during its calibration process, but because the server output to the Marantz AV8802A surround-sound processor is 5.1, Dirac Live on the

server cannot. Measurements taken with Dayton Audio's Omnimic microphone-plus-software system showed that each e110 had an in-room response with a deep trough (at 53Hz right, 60Hz left), a broader hump (44Hz right, 42Hz left), and a smooth rolloff below about 6dB/octave, even though the left sub was about 4' from a corner and the right sub about 4' from an open doorway (fig.1).

The combined output of both e110s (green trace) was almost an algebraic sum of their individual responses. This is important, because Audyssey calibration (with nine measurement positions, using the array recommended by Dirac) applies the same correction to both subs. Looking at fig.2—the results for the two e110s operating together, before and after calibration by Audyssey—you can see that the deep trough was reduced to less than 5dB, and the broad hump replaced by a nominally flat response from 30Hz down to below 20Hz. Useful response was maintained to below 15Hz. Pretty impressive for a pair of 10" drivers!

Unfortunately, Audyssey didn't set the sub levels properly—a complaint I've often heard from others, but not something that had troubled me till now. It was immediately apparent by ear that the bass was very lean, and Omnimic confirmed that the subs needed 5–6dB more drive. That corrected, the e110s were getting the sub-40Hz bass from all five channels (plus LFE, where it existed), and it all seemed so right and so familiar. It sounded just like running the main speakers full range . . . until it didn't.

Any of a number of organ recordings revealed clean, deep sounds I hadn't heard from the Monitor Silver 8s sans subs—at least, not with the power and weight they had now. The sub-Saharan subject of the title track of Béla Fleck's *Flight of the Cosmic Hippo* (CD, Warner Bros. 26562-2) threw his weight around, and organ pedals in the second movement of Saint-Saëns's Symphony 3, with Christoph Eschenbach and the Philadelphia Orchestra (SACD/CD, Ondine ODE 1094-5),

Many multichannel fans have systems that already include room-EQ capabilities.

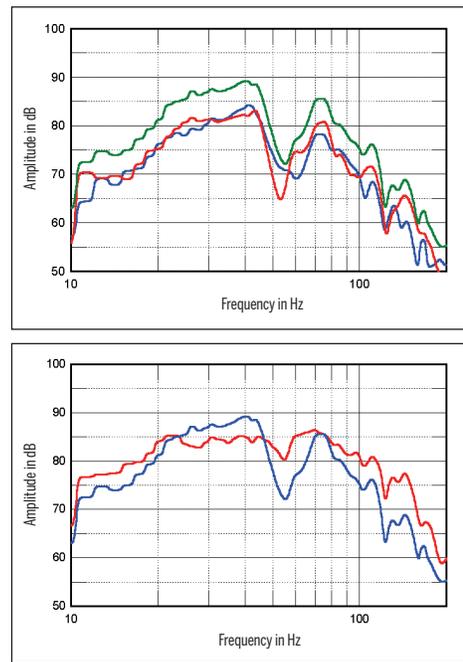


Fig.1 (top) JL Audio E-Sub e110, in-room response of individual subwoofers (left channel, blue, right, red) and summed response (green) (5dB/vertical div.). **Fig.2** (bottom) JL Audio E-Sub e110, in-room summed response before (blue) and after (red) calibration by Audyssey (5dB/vertical div.).

were firmly supported. Kick drums had palpable kick, and the overall balance of symphony orchestras was appropriate. For example, in the first movement of Manfred Honeck and the Pittsburgh Symphony Orchestra's recording of Tchaikovsky's Symphony 6, *Pathétique* (see sidebar, "Recordings in the Round"), the lower strings provided a rich carpet, unobscured even by the bursts of brass.

The JL Audio E-Sub e110s meshed better with my system than had the 15" sub they'd replaced, and my ears couldn't identify them as discrete sources of sound; often, I needed to get up to feel, with my hands, where all that firm, clean, deep bass could be coming from. It seemed as if the five main speakers themselves had been endowed with greater capabilities. And, of course, in a sense, they had.

On the other hand, these two 10" subs didn't "load" the room as had their far larger predecessors. This might seem predictable, but a good part of the reason was that the e110s

² I still have a Paradigm Studio SUB 15 subwoofer, which I reviewed in the January 2010 issue: www.stereophile.com/musicintheround/music_in_the_round_40. While the SUB 15 includes Paradigm's Perfect Bass Kit EQ, I haven't used that facility for a while.

³ Todd Welti and Allan Devantier's original paper for Harman International Industries, "Low-Frequency Optimization Using Multiple Subwoofers," *JAES* Vol.54 No.5, May 2006, is available at <http://mkloudspeakers.com/pdf/todd-welti-white-paper.pdf>. A less formal presentation is available at <http://tinyurl.com/hkl4qay>.

seemed much freer of resonant behavior. Indeed, the two 13" JLA Fathom f113s in my Manhattan system are equally tight and integrated with the rest of the system, yet provide more encompassing bass than the e110s. I intend to pursue this by supplementing the two e110s with the Paradigm Studio SUB 15 subwoofer—or, perhaps, with another e110 or two. (Maybe I could hide them behind the sofa...)

JL Audio's E-Sub e110 is a compact subwoofer that offers deep, powerful bass. Most important, with the use of a competent room equalizer it's easy to integrate into any system, to provide welcome and gratifying low-frequency extension. And two were even better. ■



The e110's construction and finish were of high quality.

CONTACTS

JL Audio, Inc.

10369 N. Commerce Parkway
Miramar, FL 33025-3962
Tel: (954) 443-1100
Fax: (954) 443-1111 (General)
Fax: (954) 443-1108
(Technical Support)
Web: www.jlaudio.com

RECORDINGS IN THE ROUND

BRAHMS: SERENADE 1, VARIATIONS ON A THEME BY HAYDN

Jan Willem de Vriend, Hague Philharmonic Orchestra

Challenge Classics CC72692 (SACD/CD, DSD64 download from www.nativesd.com). 2016.

Brahms's Serenades for orchestra are, to me, analogous to Tchaikovsky's Suites for orchestra: both were freer expressions of the talents that their composers applied to their symphonies, and in some ways are more revealing of their personal characters. Brahms's first Serenade is as important to me as are his more frequently performed Haydn Variations, and it's wonderful to have both so ably performed and so spectacularly recorded as here. I was completely taken by Jan Willem de Vriend's ardent reading of the Serenade's opening phrases, which continue in an engaging sweep through the entire work; the result ranks with Stokowski's classic treatment. While de Vriend's Haydn Variations don't quite match his work in the Serenade, it's still a fine performance, if a notch below, say, Szell and Solti. The richness and breadth of the multichannel sound is beyond question.

TCHAIKOVSKY: SYMPHONY 6, PATHÉTIQUE

DVORÁK: RUSSALKA FANTASY (ARR. HONECK-ILLE)

Manfred Honeck, Pittsburgh Symphony Orchestra

Fresh! Reference FR-720SACD (SACD/CD, DSD256 download from www.nativesd.com). 2016.

I have effusively praised the previous efforts of Manfred Honeck, the Pittsburgh Symphony, and the Sound-mirror recording team, and this is yet another winner. The Pathétique doesn't



lack for recordings in any format, but this one rises to the top in recording quality, and the performance is outstanding. Honeck's pacing seems at first a bit deliberate, and at no time does he approach the intensity of Mravinsky or Markevitch. Yet his approach allows for a wider range of contrasts of tempo and dynamics, the latter well beyond what those much earlier recordings could have encompassed. That's not to say that the performance is exaggerated in any way; it's appropriately dramatic and completely satisfying—and the accompanying Russalka Fantasy, by Dvorák, is a delight.

WALTON: CELLO CONCERTO, PASSACAGLIA FOR CELLO SOLO

HINDEMITH: CELLO CONCERTO, SONATA FOR CELLO SOLO

Christian Poltera, cello; Frank Shipway, Sao Paulo Symphony Orchestra

BIS BIS-2077 (SACD/CD). 2014. The Walton Cello Concerto is what attracted me to this release. The music has long spoken to me directly and clearly; I'd imprinted on the recording by Piatigorsky with Munch and the Boston Symphony (RCA Living Stereo), and had enjoyed several others over the years. Now I'm won over—especially in the last movement—by the extraordinary eloquence of cellist Christian Poltera and conductor Frank Shipway, and given the sound quality of this recording, I expect that feeling will endure. Walton's Passacaglia is intense

and compact. The Hindemith was new to me, but it's archetypally big Hindemith: busy and, at times, boisterous. The solo sonata has more heart and delicacy. The BIS engineers have captured an impressive clarity and richness of instruments and hall.

IBERT: ORCHESTRAL MUSIC

Escales; Sarabande pour Dulcinée; Ouverture de fête; Féérique; Divertissement; Hommage à Mozart; Donogoo-tonka: Suite symphonique "Paris"; Bacchanale.

Neeme Järvi, Suisse Romande Orchestra

Chandos CHSA 5168 (SACD/CD). 2016.

In recent months the indefatigable Neeme Järvi has released on SACD musical surveys of the music of Offenbach, von Suppé, Saint-Saëns, Chabrier, Massenet, and Fucik, and each has been well played, well recorded, and entertaining. I judge his Ibert collection to be much more than that. The most familiar works, *Escales* and *Divertissement*, stand up to all competition. While the Suisse Romande strings can't match those of Philadelphia, Järvi's panache—a word I'd never thought applied to him—equals Ormandy's. Järvi's *Divertissement* is, to use another surprising label, witty, and reminds me of a concert performance of it by Charles Dutoit and the New York Philharmonic that actually provoked laughter. The less familiar works are flavorful and charming, and Chandos's recording is deliciously transparent.

—Kalman Rubinson