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Thiel CS1.6 Loudspeaker

A New Benchmark in High-End Performance

Tom Miiller

Reality check—\$2,390 is a lot of money. This may not seem so in the rarefied world of high-end audio, but to most folks on the street, \$2,390 for a pair of loudspeakers represents a monumental investment for a “luxury” item.

Within that context, what should we make of the new \$2,390 Thiel CS1.6 loudspeaker? The answer is as simple as it is profound—Thiel has established a new benchmark in speaker performance that substantially reduces the entry price to *ne plus ultra* performance. It’s worth \$2,390, even to music-lovers not looking for that last scintilla of performance.

As a replacement to the venerable CS1.5, which was a market favorite during its nine-year run, the CS1.6 is not just an update. Designer Jim Thiel has redefined what is possible for roughly two grand. Before the CS1.6, I found the “elbow” where increasing price in loudspeakers bought only small improvements was somewhere in the \$4,000-\$5,000 range. That is, you could pay more than \$5,000, but the improvements came in rapidly diminishing propor-

tions; a great \$5,000 speaker (think Aerial 10T) achieves most of what a \$60,000 design does (incremental improvements are, of course, musically significant and financially justifiable—but this is the point that separates the average music lover from the hardcore enthusiast).

The Thiel CS1.6 reduces the price-performance elbow to,

well, \$2,390. Excluding the bottom octave, which it will *not* do, this new Thiel possesses tonal, dynamic, spatial, and transient resolution comparable in most ways to the world’s best speakers. And the critter is wicked sexy looking, sort of a Mini-Me version of Thiel’s flagship CS7.2.

Once upon an audio adventure, I named the CS1.5 the Best Value in audio. Thus, when Thiel’s press release heralded the CS1.6, my interest was piqued and my expectations were raised. Most notable was the sensitivity specification: 90dB @ 2.8V/1m. Jim Thiel’s designs have almost always been of a lower sensitivity (the CS1.5 was an 86dB design), partly owing to his first-order crossover designs.

This review is a first look because we got the speakers two weeks beyond the normal deadline, barely in time (though Thiel had logged 50 hours of break-in on them before shipping) for some meaningful listening. As with any of the great products, it took no time whatsoever to recognize that this new Thiel was extraordinary. And while I am confident in my observations, further listening with a wider range of associated equipment will reveal more of the speaker’s character.

The New Design

Thiel’s primary technical objective here was to overcome the sensitivity limitation inherent in first-order crossovers without abandoning his well-established crossover approach. One



way to achieve higher sensitivity is to reduce the amount of moving mass in the diaphragm, which unavoidably reduces diaphragm stiffness and increases distortion, especially at louder levels.

In an effort to overcome these penalties, Thiel designed an innovative voice coil that was dramatically wider (three inches) than conventional voice coils in 6.5-inch woofers. Thiel found that the wider coil's energy was being spread more widely and evenly across the diaphragm, raising sensitivity and increasing stiffness. Because the voice coil was so wide, the magnet had to be installed inside it instead of in the conventional exterior location. Consequently, Thiel used a higher quality neodymium magnet that would fit inside the voice coil. And with the magnet installed within the voice coil, the speaker is self-shielding, meaning that it can be used close to CRT-based video display devices.

Although Thiel ended up not significantly reducing the moving mass of the diaphragm, he achieved the desired sensitivity improvement and pushed the first resonant mode of the woofer up to 9kHz, well above the crucial upper midrange. The CS1.6 is a two-way design that crosses over from the woofer to the tweeter at 3kHz; thus, the 9kHz resonant mode (distortion) is far above the crossover point, significantly reducing the audibility of the distortion. Moreover, a 9kHz resonance originating from a 6.5-inch driver has limited dispersion, reducing its audibility to anyone not sitting on axis with the driver.

The most notable visual characteristic of the CS1.6 is its long (roughly 20 inches) vertical slotted port. By using this arrangement with a surrounding taper that disperses air across a six-inch-wide area, Thiel maintained the efficiency of the port, with or without grille cloth.

The tweeter of the CS1.6, says Thiel, has more in common with its cost-no-object siblings than it does with tweeters commonly found in the two-grand range.

Thiel incorporated the techniques he employs in the CS7.2 tweeter: a short-coil/long-gap configuration with a copper-stabilized motor system. The result according to Thiel is that the CS1.6 tweeter is capable of significant excursion, meaning that it is both lower in distortion and capable of higher levels. Thiel even uses a high-quality polystyrene-foil bypass capacitor in the crossover, improving treble dynamics and purity.

Finally, the cabinet is a substantial upgrade over the CS1.5. The baffle is two-inch thick MDF, permitting Thiel to round the baffle away from the tweeter, reducing diffraction effects and improving spatial resolution. The rest of the cabinet is made of one-inch thick MDF. All together, the CS1.6 weighs 38 pounds.

Quiet Graces and Emphatic Moments

I wish one sentence could convey the entirety of the CS1.6's sonic beauty. I can't think of one, so I'll start by telling you what it did for me: It relaxed me in a way no hi-fi has since I worked with the Audio Artistry speakers. The CS1.6 has the physiological restorative capabilities of live music; it untied tension knots and pulled at emotional strings. It found quiet graces within the music and brought them gently but insistently to my attention. The simple interweaving lines in the "Allegretto" movement of Beethoven's *Symphony No. 7* [DG 431 76802] unfolded in a stately, inevitable progression that drew me hypnotically from one line to the next. Throughout this movement, the CS1.6 easily kept the instrumental groups separated timbrally and spatially.

Easily. That's one word that helps to describe the CS1.6. Everything it does, it does easily. A key indicator of quality is that the speaker requires only a smidge of volume before it becomes musically satisfying. The CS1.6 fills out tonally at volume levels much closer to live levels and its resolution of transient information is so penetrating, you can hear everything

at levels that won't threaten your hearing. Live music, as you may know, rarely reaches 100dB at the audience.

Julian Bream's guitar, as he performs Rodrigo's *Concierto de Aranjuez* [BMG 6525-2-RG] is both lyrically mournful in the tailing shape of the notes and emphatic in its leading transient speed. The CS1.6 did not soften the leading edge, and just as quickly released that hard transient to make way for the more nuanced and emotional shape of the note. This bespeaks an exceptional level of true dynamics, especially in the tweeter.

Intrinsic in the CS1.6's effortless sound is its top-to-bottom coordination. The lower frequencies are correctly placed in time relative to the middle and treble frequencies. The consequence is a stunning level of intelligibility, both in instrumental and human voices. The CS1.6 is nearly magical in the way it presents the female voice. Whether it was Janis Ian [*Breaking Silence*; Morgan Creek 2959-20023], Jennifer Warnes [*Famous Blue Raincoat*; Classic Compact Discs RTHCD 5052] or Bonnie Raitt [*Road Tested*; Capitol 7243 8 3370-52], this speaker presented each voice with unsurpassed clarity and body. Each voice was distinctive, as were the production values of each recording. The Ian is soft; Warnes' production is more pop and slightly hard; Raitt's live performance has a trace of sibilance that the CS1.6 neither hid nor exaggerated. Moreover, it easily handled Warnes' demanding dynamic range.

Given its excellent intelligibility, the CS1.6 would also be adept in a home theater (indeed, with its short-ish stature, I'd use it as a center channel).

Dynamics, Tonality, Space

As I mentioned above, there is no bottom octave. Achieving the desired sensitivity nearly ensured this result, and this is, after all, a two-way design. But the bass produced by the CS1.6 (solid to 50Hz) is of the highest quality. Pitch definition and timbre resolu-

tion are superb. But if you truly desire that sense of hall volume and the low lows, then you'll need a subwoofer (Thiel's got a dandy). The CS1.6 captured the rolling violence of the tympani in Berlioz' "The March to the Scaffold" [*Symphonie Fantastique*; Telarc CD-80271], but it could not convey the sheer force of the instrument, nor could it recreate the shudder issuing from yet another infamous Telarc bass drum. Nevertheless, the CS1.6 has just enough bass extension and power to be musically satisfying on most music.

So often we scratch and claw for the ability to play really loud. But what we really need is a speaker that can resolve dynamic differences into the lowest noise floor and confidently reach undistorted peaks that convey a realistic range. The CS1.6 will not rise at light speed to skull-crushing levels as will the behemoths that inhabit the \$50,000 strata. And yet, its low-level resolution is so sublime, I never found the speaker constrained on peaks. Indeed, I was tickled to hear it handle Wilhelm Kempff's piano on Bach's *Choral Preludes* [DG 439 672] in a dynamically credible fashion. A real piano can fill a room with sound that no speaker system can hope to match, yet the CS1.6 conveyed the sensation of powerful clarity that defines the instrument.

Jim Thiel and his designs have been at the front of one of audio's most difficult debates: What is accurate treble? One side maintains it is necessary to roll off the treble to replicate the sound of live treble. The other camp, in which Thiel resides, holds the position that the speaker should be neutral, that is flat, at all frequencies, including the tre-


ble. I have long preferred speakers that roll off the high treble, but I'm not sure that is technically correct. What I have learned over the years is that treble distortions are the most pernicious and difficult to root out of a system. In distorted circumstances, flat treble response will be harder to take than reduced response.

What I hear in the CS1.6 is a continuation of Thiel's adherence to flat treble. And I also hear a significantly cleaner presentation of that treble. Consequently, the higher frequencies integrate better and are easier to listen to. It is still a little strong on top, but there's no denying how informative the treble's harmonic contribution is to defining instrumental timbre. The CS1.6 exhibits enough improvement in this area that I'm leaning toward the side of flat treble, especially since I've heard several new-generation power amps that radically reduce treble distortions (I'll be getting several with which to test this theory).

Regardless of the argument, the CS1.6 has treble performance characteristics rarely heard at any price. When orchestral bells or chimes are struck, the CS1.6 cleanly reproduces the first wave and then, in the sustaining decay, the sound floats through and above the soundstage and propagates throughout the room, just as it would in the concert hall.

Finally, the CS1.6 soundstage transcends the usual limitations of small speakers. Probably because of the lowered diffraction from the rounded baffle, its expansive soundstage sounds much larger than the speakers. And within that stage resides the signature Thiel image-focus and separation. If you want more than this in a soundstage,

you'll need to add the subwoofer and go surround.

Certainly, the Thiel CS1.6 is not a perfect loudspeaker. But its imperfections are more in the nature of limitations. It won't plumb the bottom octave or scale the highest dynamic peaks. But with its increased sensitivity comes effortless, natural resolution. I have not heard a speaker anywhere near this price that possessed such a low noise floor. I just don't see the point in spending more than \$2,390 if this is what you get—unless you invest in a state-of-the-art woofer that will elevate the entire system into the performance stratosphere. My advice: Buy the CS1.6 and spend your money on the best sources and electronics you can afford. The Thiel CS1.6 is an instant classic. 

SPECS

Recommended power: 50–300 watts
Sensitivity: 90dB @ 2.8V/1m
Phase response: Minimum +/-10 degrees
Impedance: 4 ohms (3 ohms minimum)
Bandwidth: 48Hz–20kHz (-3dB)
Dimensions: 9 x 11.5 x 35.5 inches
Weight: 38 lbs.

ASSOCIATED EQUIPMENT

Onkyo SR-D2.0 DVD player; Theta Casanova Processor/Preamp; Bryston 9B-ST power amplifier; BEL The Wire and The Cable interconnects and speaker cable

MANUFACTURER INFORMATION

THIEL AUDIO

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Price: \$2,390 per pair

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