

AUDIO

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I have only one niggling objection to this speaker from Thiel: It should not have as bland a name as 7.2. Its predecessor, the CS7, was an outstanding performer, but the CS7.2 is much better. Its sound is sweeter, cleaner, and more dynamic. Most important, the CS7.2 delivers a warmth and natural sweetness in the midrange that I have not heard from previous Thiel designs (although the CS6 comes close). Moreover, it does so without losing any upper-midrange or treble detail.

Somehow, I suspect, most audiophiles are going to forgive Thiel for not choosing a name for the CS7.2 that is as dramatic as the improvement it brings in sound quality. The 7.2 will quickly generate audiophile buzz and a reputation for being a reference monitor whose sound truly deserves attention.

I have used Thiel speakers in my reference systems for years, but the CS7.2 is a breakthrough. It projects one of the most realistic soundstages I have heard. In fact, the 7.2 presents the best of both worlds in high-end dynamic designs. Although it may not be as physically large and complex as some of its competitors, it provides much of the deep bass extension and power of the biggest models. Yet it supplies a level of point-source sound that few large three- and four-way monitors can approach. Its imaging and coherence equal that of the finest small monitors.

However, the CS7.2 is priced at the reference level: \$13,500 per pair. But unlike many speakers in this sphere of price and sonic performance, it needs only one amplifier per speaker, and you can achieve excellent results even when using just a single set of cables.

Visually, too, the 7.2 is a loudspeaker you can live with. As with most Thiels, the woodwork is impeccable and the styling restrained. Numerous curves and soft edges enable it to blend in with both

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THIEL CS7.2 SPEAKER



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modern and classic furniture. And you needn't remove the grille cloth to get the best sound. Moreover, the 7.2's narrow profile and curved front make its height (55 inches) and size (14 inches wide x 19 inches deep) relatively easy on the eyes. At 168 pounds, the 7.2 is, admittedly, not a speaker you casually move around, but it's easy enough to position until it's spiked.

The Thiel's enclosure is extremely heavy for its size. Its internally braced walls are made of 1-inch-thick fiberboard. Spikes, or "stabilizer pins," anchor the CS7.2 to the floor. All of these features are said to reduce cabinet vibration, energy storage, and coloration. The 7.2 uses the familiar Thiel sloping front baffle to achieve proper phase alignment. Rather than being made of reinforced concrete, like the CS7's, the

7.2's baffle is cast from a composite material of 80% mineral and 20% polyester, not to enhance sound quality but to better resist cracking. The baffle is as much as 2 inches thick, has a mass of 60 pounds, and is shaped to reduce cabinet-edge and driver-cavity diffraction.

As for technical features, the CS7.2 places the same emphasis on improved time, phase, and step response as its predecessor. Phase response is specified at $\pm 10^\circ$, Thiel's step-response graph is exceptionally smooth, and time error at frequencies above 300 Hz is claimed to be less than 0.5 millisecond. This may help explain the CS7.2's combination of apparent speed, integration, and driver-to-driver coherence. Certainly, the CS7.2 rivals the best electrostatics and ribbons I have heard in these respects, and it is coherent over a much wider listening area

than any electrostatic I have auditioned to date. But do bear in mind that you need to be at least 7 feet away from the 7.2 to hear it at its best.

The CS7.2 has new drivers (it's a four-way system) and a new crossover, all built by Thiel. (Of the earlier CS7's drivers, Thiel made only the woofer.) I suspect that much of the CS7.2's improved sound quality is due to its new 1-inch dome tweeter and 3-inch upper-midrange driver. (There is also a 6-inch lower-midrange driver.) The tweeter is mounted coaxially in the upper midrange, using a unique configuration of a radially magnetized, ring-shaped neodymium magnet about four times the size of the normal disk-shaped tweeter magnet. The tweeter uses the same basic moving system developed for the Thiel CS6 (which I use as one of my references). It has a large, rolled rubber suspension, a short aluminum voice coil, and a long magnetic gap to provide high output and low distortion. The voice-coil former is made of Kapton to eliminate eddy-current distortion, and a copper pole sleeve is used to reduce distortion from inductance. All are engineering tricks that Thiel has adapted from its woofer designs and represent a major change relative to past Thiel tweeters.

The CS7.2's 3-inch upper-midrange driver has the same type of three-layer diaphragm as the CS6; it comprises two aluminum layers with a thick polystyrene layer between them. (The diaphragm is heavier than usual, but Thiel compensates by using a larger magnet.) This aluminum sandwich is said to provide exceptional stiffness and to move cone resonances well beyond the driver's operating range; that reduces the potential for resonance-induced coloration or a loss of clarity from stored energy. It also enables the outer aluminum layer to be shaped optimally for mounting the tweeter, circumventing a problem of many coax designs, in which the tweeter's response is adversely affected by its placement in the neck of a larger cone.

Incidentally, these engineering details should tell you that there is nothing antiquated about dynamic driver technology relative to electrostatic or ribbon drivers. In fact, the step, impulse, and square-wave responses of the most advanced dynamic speakers are typically superior to those of ribbon and electrostatic units.

The technical features also reflect Thiel's concern with two basic design challenges that confront a lot of the

competition. Many audiophiles have found that metal drivers sound hard and tend to ring; consequently, a number of top speaker designers I know prefer to use silk-dome tweeters. In the older CS7, for example, Thiel overcame this hurdle by ensuring that the tweeter resonances occurred outside the driver's operating range and by inserting a notch filter—of the appropriate frequency and Q—into the crossover.

Coaxially mounted tweeters confer certain advantages in terms of soundstage coherence and imaging, but they introduce the potential problem of diffraction from the cone driver. If the tweeter is suspended in front of the cone, the diffraction can be significant; if

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it's mounted in the throat of the driver, it suffers from a horn-loading effect imposed by the cone. Thiel, however, largely resolves this quandary by using a very shallow cone that provides a more nearly ideal operating environment for the tweeter. The tweeter's response is not significantly changed by the movement of the smallish, upper-midrange cone because the cone has very little excursion, unlike the large-excursion woofers in older coaxial designs. (Doppler distortion is not relevant because the tweeter does not move with the midrange driver.)

The CS7.2's 12-inch woofer, whose rear output is coupled to a passive radiator below it, doesn't seem to be all that different from that of the CS7. The only improvement Thiel claims for the 7.2's bass is that the speaker has a higher impedance that should enable most amplifiers to reproduce more natural dynamics. The 7.2's impedance curve is smoother than in some past Thiels—with minor dips to 3 ohms at about 3 kHz and from 8 to 10 kHz—so it is relatively easy to drive. I didn't find any amp or speaker cable that presented problems.

Nevertheless, the change in bass sound is important. The CS7's deep bass was very good, but it never quite had the

power and life (or "slam") to match its midrange and treble. By contrast, the CS7.2's bass is powerful and deep. This speaker does an excellent job of reproducing all but the deepest organ pedal tones and synthesizer music. To hear what I mean, try the opening passage of any good recording of "Thus Spake Zarathustra" or Jean Gillou's performance of Bach's Toccata and Fugue in D Minor on The Great Organ of St. Eustache, Paris (Dorian DOR 90134).

When compared to other full-range speakers near its size, the CS7.2 does an outstanding job of reproducing two brutally demanding sets of bass test tones: the $\frac{1}{3}$ -octave bands of pink noise, from 20 to 200 Hz, on Alan Parsons and Stephen Court's Sound Check (Mobile Fidelity SPCD 15) and "Shake, Rattle, and Roll," track 18 on the Gold Stereo and Surround Sound Set-up Disc (Chesky Records CHE151).

When a speaker is claimed to have a -3 dB bandwidth of 23 Hz to 20 kHz and a frequency response of 25 Hz to 18 kHz, ± 1.5 dB, I normally assume it is hyperbole—or true only at a sound level so subdued that it is of little practical value with music. The CS7.2 cannot provide the levels of deep bass output you'd get from a true subwoofer, but it can drive a room into vibration at frequencies of 25 to 28 Hz; indeed, the 7.2's deep bass performance is likely to be determined more by the listening room's size and boundaries than by any of its own intrinsic limitations. It also delivered the flattest response I have yet measured using test tones (from 300 to 30 Hz) on track 18 of Chesky's Gold Stereo and Surround Sound Set-up Disc. And it did so at SPLs of about 90 dB.

Track 18, incidentally, is a good starting point for determining room placement and the speaker's distance from your room's front wall. Like many speakers, the CS7.2 should be positioned several feet away from the side walls, although beyond 30° off axis its midrange dispersion is narrow enough to work well in moderately sized listening rooms. Finding the right distance to the front wall, however, is more difficult because the Thiel's bass goes so deep and because room colorations tend to dominate the bass with a speaker this good. Nothing works better for fine-tuning the location of the CS7.2s than listening for the tightest and deepest sound with recordings of organ, bass viol, and cello. Nevertheless, you can get good initial feedback by using an SPL meter and the aforementioned track 18.

I would advise toeing the CS7.2s in so they face the listening position but remain fairly widely separated. If they are properly set up, the 7.2s provide excellent depth and much of the apparent soundstage size and dynamics that I normally associate with large dipole and planar designs. There should be no hole in the middle and only minimal changes in sound with head movements. You should get excellent three-dimensional imaging that is stable and of natural size. In addition, there should be a sweet spot large enough for two or three people—this is a user-friendly speaker. Thiels have always been good in this respect, but the CS7.2 is the best yet.

I'm not implying that the Thiel CS7.2s are particularly hard to position: You can put them in virtually any reasonable location and still get good results. They have superb musical timbre from the low bass to beyond audibility, and you are more likely to hear the impact of room colorations than any inherent colorations in the Thiels.

A properly placed pair of CS7.2s reproduces vocals and individual acoustic instruments in ways that are natural and musically "right." Once you get them placed for proper bass balance, string and piano performance is superb. The CS7.2 really lets you hear the differences between a Stradivarius and a Guarneri or a Steinway and a Bösendorfer. The brass sound is equally good, and woodwinds are lovely. There is remarkably little coloration of baritone or soprano voices; the sibilants in female vocals are particularly natural.

In fact, the CS7.2's upper octaves are so sweet and musical they can seem a bit soft until you start listening to the timbre of acoustic instruments and vocals that contain a lot of upper-midrange and treble energy. Only then do you realize that the new drivers in the CS7.2 have as much resolving power as any ribbon or electrostatic design. For example, try the percussion detail on The Modern Jazz Quartet's *Blues at Carnegie Hall* (Mobile Fidelity UDCD 596) or the JVC XRCD recording of Ernie Watts's *Classic Moods* (JVC XRCD-0054). For that matter, try listening to some of the new Chesky and Classic Records 96-kHz/24-bit recordings with any good D/A converter that has 96-kHz/24-bit playback capability.

The Thiel CS7.2s won't add space or depth to the sound. They are not romantic or euphonic. But with proper setup they are capable of throwing such

a convincing soundstage that you should make every effort to follow my directions on placement and spacing. The CS7.2s are never going to produce front-of-the-hall sound; they don't have the right timbre or dynamic contrasts. However, they do provide an excellent illusion of sitting mid-hall, and they convey an outstanding sense of natural acoustic space. Indeed, soundstage width and depth will be as natural as the recording permits. This is one speaker that really shows off the virtues of simple miking and mixing techniques that preserve ambience and acoustic perspective. In terms of transient response and transparency, the CS7.2 is revealing

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AT FREQUENCIES OF
25 TO 28 Hz.**

without losing its musicality. There are some speakers, for example, that convey a great deal of detail and information but sound really musical only with the best audiophile recordings. This is particularly true of models that slightly accentuate the upper midrange in a bid to add more apparent detail. The CS7.2s avoid this flaw and circumvent any ringing of the sort that sometimes affects ribbon and dome tweeters. A good demonstration of the CS7.2's ability to preserve musicality and to resolve the character of individual instruments can be found on the L'Archibudelli and Smithsonian Chamber Players recording of the Mendelssohn-Gade Octets for Strings (Vivarte SK 48307). These musicians play five Stradivarius instruments, and the special character of Strads comes through quite clearly. Judy Collins' vocal sibilants on *Judith* (Elektra 111) are a particularly demanding test, and they provide another example of the 7.2's ability to reproduce lots of detail yet still preserve musicality. The CS7.2s clearly reveal the differences between cartridges, CD players and transports, amps and preamps, and cables. I currently use the Kimber Select speaker cables as a reference, but I also use products from AudioQuest, Discovery Cable, Goertz, and Wireworld.

Differences between cables really are a matter of nuances and of subtleties in low-level resolution. The CS7.2s still got the best out of my various speaker cables yet clearly revealed the nuances and sonic differences among them.

I don't mean that the CS7.2s are perfect or that Jim Thiel shouldn't get around to designing the 7.3 several years hence. While the CS7.2s are unequivocally great speakers, my wish list might include more power and slam in the bass, subwoofer-like ultra-low bass, greater efficiency, and slightly more dynamic life. (And, as long as I'm asking for the impossible, why not a built-in widescreen projector and automatic digital room correction?)

In the real world, however, the CS7.2s represent a superb mix of design choices that really enhance the musical listening experience. They have few rivals, even at prices up to \$17,000 per pair.

So if you are looking for a reference-quality speaker, you absolutely must audition the CS7.2. And if you think you already know the "Thiel sound," you're wrong. You still need to hear the 7.2. And you needn't worry about falling in love. If you lack the \$13,500 in loose change for a pair of CS7.2s, much of the sound quality I have described can be found in the CS2.3 for \$3,300 a pair or the CS6 for \$7,900 a pair. Indeed, a mix of these Thiels would be one hell of a combination for home theater! A