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What defines the perfect loudspeaker? Thiel Audio founder Jim Thiel would say that a loudspeaker must possess *accuracy*, in the broadest sense of the term. In other words, a loudspeaker should have linear frequency response, low distortion, and perfect time and phase alignment, or *coherence*. Although many loudspeaker designers will cite low distortion and linear response as goals, very few consider time and phase alignment critical to the overall sound. Some believe the cost of implementing such technology far exceeds the payoff, while others think the human ear is insensitive to the difference between coherent and noncoherent loudspeakers.

Thiel's website offers scientific data to the contrary. Their Coherent Source (CS) technology is one of the hallmarks of the Kentucky-based company's design philosophy. Thiel Audio doesn't appear to rely on pseudoscience or unsupported claims. The company claims to be driven by research and development steeped in physics and the scientific method.

Six Thiel speakers costing a total of \$14,700 arrived on my doorstep. The MCS1 (\$2300) and pairs of CS2.4s (\$4400/pair) and PowerPoints (\$1300 each) didn't bear much of a family resemblance (until I looked at their drivers). The SS2 subwoofer (\$4900) handled the low bass, and Thiel's PX05 passive five-channel crossover (\$500) tied everything together.

Coherent construction

Tight tolerances, flawless finishes, and hand-matched Amberwood veneers result in the elegant and sophisticated appearance of the CS2.4, MCS1, and SS2. Hyper-accurate CNC machines cut the MDF parts of each hand-assembled enclosure. The PowerPoint's thick, alabaster-like ABS plastic shell is thermoformed, while its trapezoidal shape keeps the driver's baffle as close to the wall as possible.

According to Thiel, their Coherent Source technology ensures perfect time and phase alignment between a speaker's drivers. The CS2.4 and MCS1 use a 1" aluminum tweeter coincidentally mounted to a 3.5" aluminum midrange cone. Jim Thiel prefers the term *coincident* to *coaxial* because proper time alignment requires that a driver's acoustic center outputs from the same geometric plane. While coaxial drivers share the same axis, coincident drivers share the same axis *and* plane. Thiel designs coincident drivers to be perfectly coherent across their frequency range. The drivers are coupled with a tuned mechanical suspension instead of a traditional crossover, which, Thiel maintains, avoids distortion.

The bass frequencies must also remain in time and in phase with the midrange and tweeter outputs. Because different frequencies travel through air at the same velocity, the arrival times of individual drivers' waveforms will be offset if their acoustic centers are not in the same vertical plane; the result, according to Thiel, is a poorly defined image. The CS2.4's slanted baffle guarantees that the audio waveforms from the 3.5" coincident driver and the robust 8" aluminum woofer arrive at the listener's ears at the same time. And the CS2.4's first-order, phase-corrected crossover ensures that the waveforms arrive simultaneously at the listening position.

The MCS1 center speaker also uses a first-order, phase-correct crossover. However, this speaker's flat baffle relies on two shallow, 6.5", polystyrene-reinforced aluminum woofers to keep low-frequency output in the same plane, and therefore time-aligned, with the coincident driver. The shallow woofers also allow the coincident driver to be flush-mounted to the baffle, thus reducing the effects of cabinet-edge diffraction on sound dispersion.

The PowerPoint surround speaker's coincident driver is a 1" aluminum tweeter coupled to a 6.5" woofer cone. The driver's dispersion emerges at 90 degrees to the center of the tweeter, which, together with the 45-degree baffle, directs output away from the adjoining wall. According to Thiel, this prevents signal cancellation in the critical midrange frequencies.

Although the SS2 subwoofer's two 10" aluminum cones and compact, room-friendly enclosure look conventional for a subwoofer, the SS2 lacks the standard phase, gain, and crossover controls. Jim Thiel's extensive research has convinced him that room boundaries and dynamic compression due to voice-coil heating are the two main things that

affect subwoofer performance; he claims that the crossover and phase controls available on most subs harm the subs' frequency response and integration with a set of main speakers. Thiel's SmartSub technology purportedly addresses all of these issues. A 1000W class-D amplifier supplies the grunt expected from a high-quality sub. The SS2 is designed to work with Thiel's two-channel PX02 and five-channel PX05 passive crossovers, or the SI 1 Integrator electronic controller.

Coherent setup

The CS2.4's four poorly glued floor-spike inserts and the PowerPoint's easy-to-strip Sheetrock mounting anchors were the only problems I experienced during setup. Thiel's Shari Graham had a bottle of adhesive on my doorstep the next day, and assured me that she would discuss my Sheetrock-anchor issue with their parts buyer. Such prompt attention reinforces the benefit of purchasing from a company of Thiel's dedication and experience: Unlike the functionaries who work for many faceless conglomerates, Ms. Graham is empowered to solve customer issues on the spot. I experienced the same high level of customer service from Thiel with a used pair of CS1.2s I bought years ago, *before* I began writing reviews.

I hooked up my Analysis Plus T1 spade lugs to the CS2.4s' gorgeous, well-spaced binding posts. The deeply knurled nuts easily clamped down on the meaty spades. I immediately noticed that the 3.5" drivers performed equally well horizontally and vertically off-axis. Many speakers with a separate tweeter and midrange lose high-frequency sparkle and clarity when listened to from an angle and not at ear height. Thiel's 3.5" coincident driver did not have this problem. The CS2.4s were much easier to place than my CS1.2s had been. I was able to listen to music without sonic degradation while playing on the floor with my son.

The MCS1 center speaker produced the same sort of fantastic off-axis sound. I first mounted the 60-pound speaker to a Thiel-supplied Sound Anchor stand, but my wife and I agreed that the heavy steel stand took up too much floor space and clashed with the room's décor. So we set the MCS1 on a piece of plywood atop our TV. The sound quality and tonal balance remained transparent—the MCS1 produced uniform frequency response no matter where I or it sat.

My living area has its share of sonic challenges. My couch sits up against a wall, which makes placement of surround speakers tricky. I sent digital photos of my room to Thiel, who recommended mounting the PowerPoints on the sidewall within a foot of the rear wall, pointed down toward my listening position. I placed the PowerPoints about 8" from the ceiling, which resulted in an open, nonlocalized surround fill. The SS2 subwoofer took its place at the far end of my couch, firing across the CS2.4s' soundstage.

The SS2 has a single-ended RCA connection for LFE input and a balanced XLR connection for interfacing with the PX05 passive

crossover. Both connections also have a pass-through so multiple SS2s can be daisy-chained. The extremely well-built PX05 crossover takes high-level signals from either the speakers' terminals or an amplifier's output and modulates them into a single, balanced, line-level signal that feeds the SS2. Although the PX05's binding posts are of very high quality, they're too close together for spade lugs; banana plugs worked much better. The LFE signal came directly from my McCormack MAP-1 preamplifier's subwoofer output.

The SS2 has a simple three-button LED interface. One button selects each of the sub's two settings, while the others adjust the settings up or down. The first setting is for LFE level. The second goes to the heart of Thiel's SmartSub design philosophy: boundary compensation. According to Thiel, the SS2's microprocessor-controlled analog signal processing programs the distance between the sub and two surrounding walls, and cancels out the negative effects of a room's boundaries on the bass response. It took me two minutes to measure and input the distances. What I heard after that was miraculous.

Coherent bliss

The Triplets of Belleville is a beautifully crafted animated film with a bittersweet storyline. The film is almost devoid of dialogue, relying instead on gestures and expression to define character and plot. The sound design exhibits the same stellar craftsmanship—detail, ambience, and unexpected dynamics abound. Chapters 6-8 drenched me in the sounds of rain, subtle taps, whispers, and the bark of an annoyed dog as a train rushes by. The Thiel system's universally brilliant high- and mid-frequency reproduction rendered with energy and lush harmonic color this quirky world of a French cyclist and his protective Grandma.

I have heard other systems demonstrate a seamlessly consistent surround image, but I always get the sense that transducers are reproducing the image. The Thiels took this behavior to the next level by creating a 5.1 image that was so lucid, so composed, that I forgot that there were loudspeakers in the room. The six Thiel speakers truly spoke with one voice.

I had no problem suspending my disbelief during the helicopter crash and subsequent shoot-out in chapters 9 and 10 of *Black Hawk Down*. The recently released Superbit version offers an excellent DTS mix that wraps around the listener and drives home the concussive, unpredictable experience of battle. Speakers that lack focus and control can lose their way with such heavily layered soundtracks. But the Thiels never sounded veiled, or lacked definition or impact. Loud, soft, or tightly packed—all sounds remained absolutely clear during even the most chaotic scenes.

The SACD of Peter Gabriel's *Up* [Geffen 493388] is an excellent test of bass-management transparency. The voice, instruments, and bass are sent to discrete channels rather than being mixed to all, making it easy to pick up on any crossover inconsistencies. If the bass doesn't seamlessly transition from a system's main

speakers to the sub, "Growing Up" or "The Barry Williams Show" will reveal that sub's relative position. The SS2 and PX05 did a fantastic job of convincing me that the deep bass was anchored to each speaker.

The PowerPoint surrounds sounded bigger and the CS2.4s delivered more authoritative bass when the SS2 was added. The massive drum strokes on Kodo's "Darajin," from *Mondo Head* [SACD, Red Ink/Sony 56111], appeared from behind me with surprising weight and slam. Experiencing the Thiels' impressive integration was exhilarating with film soundtracks and music alike. I had never heard a speaker system that disappeared quite as the Thiels did, or a subwoofer that performed as transparently as did the SS2.

I was never left wanting for the bracing dynamics of Copland's *Appalachian Spring Suite*, from Eiji Oue and the Minnesota Orchestra's *Showcase* [CD, Reference RR-907CC], or Leonard Bernstein's adoring interpretation of Mahler's Symphony 3 [CD, Deutsche Grammophon 427 328-2]. Brass and cymbals always sounded pure and extended, with a nice balance of shimmer and controlled decay.

The Thiels' utter lack of coloration and outstanding three-dimensional imaging made the hair on the back of my neck stand up on end countless times. Every sound remained anchored in physical space. The well-recorded score of M. Night Shyamalan's *The Village* [CD, Hollywood 162464], and such pop recordings as Seal's newest DVD-Audio release, *Seal IV* [Warner Bros. 47947], sounded wonderfully rich and intoxicatingly sweet through the Thiels, while the system's considerable speed and resolution made me tap my foot to the desperate melodies and pulsating bass lines of synthesizer wizard BT's "Lullaby for Gaia," from *ESCM* [CD, Reprise 46799].

Coherent competition?

I have been very happy with my Canton Ergo home-theater speaker system. At a little over \$5500, the Canton system provides an exciting music and home-theater experience at not much more than a third of the Thiels' price. The three-way Ergo RC-A is an incredible bargain; this big speaker's built-in powered subwoofer gives it a huge advantage when space is at a premium, with none of the integration challenges of a standalone sub. And Canton's exclusive room-compensation circuit makes speaker placement a snap. The subs, coupled with the passive driver's speed, deliver breathtaking dynamic impact.

The Thiels sounded considerably more refined and coherent than the Canton Ergos. Although transparent, the Cantons can get a bit edgy in the upper midrange, a little lightweight in the upper bass. They also sound a bit unfocused in the low mids and upper bass. The Thiels, however, always sounded smooth and natural across their response curve. In terms of imaging, the difference between the two systems is the difference between the accomplished and the merely competent. The Cantons produce a wide but relatively

shallow soundstage; the Thiels countered with unbelievably composed and uniformly dense images that extended both in front and to the rear of the speakers' baffles — no matter how far apart they were placed or how loudly they were played.

Bass was where the two systems almost met. Alone, the CS2.4s produced pure, effortless bass that reached deeper than I would have expected from speakers of their size. With the SS2 sub, that bass had more harmonic weight and was perfectly controlled and extended. The RC-As' built-in subs offer as much detail and control as the CS2.4s, but can't produce quite the level of harmonic integrity or extension of the CS2.4s plus SS2.

The MCS1 and PowerPoint simply outclassed Canton's Ergo CM 500 DC center-channel and Ergo F surround speakers. Thiel's coincident driver enabled the MCS1 and PowerPoints to remain rock-solid off-axis when compared to the Ergo CM 500 DC's smaller midrange-tweeter-midrange design and the Ergo F's standard two-way array. Size gave the MCS1 the edge over the CM 500 DC in terms of bass extension and weight, while the Ergo Fs couldn't muster the PowerPoints' bass detail and refinement.

The Cantons did exhibit a little more high-frequency bite, though by *bite* I don't mean extension or detail, but snap and shimmer. The crash of cymbals and the swell of orchestra were a touch more exciting through the Cantons. Although this could be considered a slight distortion of the music, it did get my blood moving without inducing listening fatigue.

While the Ergo RC-A costs about the same as the CS2.4, keep in mind that the MCS1 is more than twice the price of the CM 500 DC, and a pair of PowerPoints costs about four times as much as a pair of Ergo-Fs. So while it's easy to hear major improvements through the Thiels, the complete Canton system does a nice job of making music with perfectly integrated bass for a much lower price.

Coherence concluded

I spoke to Jim Thiel several times while researching this system, and there was no denying the passion with which he approaches his work. He explained with boundless enthusiasm his unique design philosophy and methodology, describing in great detail every nuance, every nut and bolt. Each question I asked was answered with an overabundance of description. His grasp of science was as obvious as his love of music.

The Thiel speakers reviewed here made beautiful music. Their sound wasn't sweet or warm or exciting; rather, it expressed whatever sweetness, warmth, or excitement was contained in the recording. Thiel's Coherent Source technology has forever changed my perception of what a great loudspeaker system should accomplish, especially in terms of subwoofer integration and the stability of both two-channel and surround-sound images. Is this Thiel system a Reviewers' Choice? Absolutely.

Features:						
<p>Coherent Source design (CS2.4, PowerPoint, MCS1)</p> <p>Coincident driver array (CS2.4, PowerPoint, MCS1)</p> <p>Metal-diaphragm woofers (all)</p> <p>Uniform Resistive Load improves performance with lower-powered amplifiers (CS2.4, PowerPoint, MCS1)</p> <p>Available in a variety of stock and custom finishes (CS2.4, MCS1, SS2)</p> <p>Patented SmartSub technology (SS2)</p> <p>1000W class-D amplifier (SS2)</p> <p>Boundary-compensation circuit</p> <p>Circuitry that compensates for compression distortion due to voice-coil heating (SS2)</p> <p>Choice of Thiel SI 1 Integrator electronic crossover or PX02 or PX05 passive crossover</p>	Model:	CS2.4 Floorstanding Speaker	MCS1 Center-Channel Speaker	PowerPoint Surround Speaker	SS2 Powered Subwoofer	PX05 Five-Channel Passive Crossover
	Dimensions:	41.5"H x 11"W x 14"D	28.5"W x 10"H x 12.5"D	19.75"W x 12.25"H x 5.5"D	23.5"H x 11"W x 20"D	2"H x 7"W x 6.5"D
	Weight:	140 pounds/pair	61 pounds	5 pounds	108 pounds	3 pounds
	Price:	\$4400 USD/pair	\$2300 USD	\$1300 USD	\$4900 USD	\$500 USD
	System Price: \$14,700 USD					
	Warranty: Ten years parts and labor.					
	<p>Thiel Audio 1026 Nandino Boulevard Lexington, KY 40511-1207 Phone: (859) 254-9427 Fax: (859) 254-0075</p> <p>E-mail: mail@thielaudio.com Website: www.thielaudio.com</p>					

COMPANY INFO

Review System	
Speakers:	Canton Ergo RC-A (mains), Ergo CM 500 DC (center), Ergo F (surrounds)
Preamplifier:	McCormack MAP-1
Crossover:	Outlaw ICBM
Amplifier:	Audio Research 150M.5
Sources:	Esoteric DV-50 universal audio/video player
Cables:	Analysis Plus, Stereovox
Monitor:	Mitsubishi WT-46809 rear-projection widescreen monitor with Duvetyne modification and full ISF calibration
Power Conditioning:	Panamax, Shunyata Research

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