

“ I WAS FLOORED ...
 REMARKABLE ...

among the best systems I've heard at *any* price. ”

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by Vince Hanada

State-of-the-art speaker manufacturer Paradigm Electronics has earned rave reviews over the years for the speakers in their Performance, Monitor, and Reference series. They seem to have not a single poor model in any of their lines. So you might think their speaker designers would put things on autopilot and take an extended vacation. Not the boys and girls at Paradigm—they recently took aim at the highest end of the audio market with the release of their Signature series.

Paradigm learned a lot while designing the Signatures, and much of their new knowledge has trickled down to their Reference line. These major updates have more in common with the Signature speakers than the earlier References. The entire home-theater speaker system reviewed here, assembled around the Studio 60, retails for under \$5000 (US) — a not insignificant sum that buys you a significant set of speakers.

STUDIO 60

The first thing that struck me about the Paradigm Reference Studio 60 was its third dimension. At 17", it's one of the deepest

speakers in its class—the other tower speakers of similar height I had on hand didn't come close. This depth, coupled with a height of 40-1/2" and a width of only 8-1/4", results in an elegantly proportioned design. Adding to the elegance is the smooth "sycamore" finish of light-colored vinyl laminate (vinyl finishes of cherry, black ash, and rosenut are also available). The top of the Studio 60 is rounded and matte black, with a rubbery feel, and the high-set tweeter forms a bump at the top front of the cabinet. Not only does this tweeter configuration add visual character to the enclosure, it also reportedly reduces cabinet interference. The narrow speaker sits on four adjustable outrigger feet, for stability; the grille is flush with the drivers so as not to color their sound.

The drivers used in all Paradigm speakers are designed and manufactured in their Canadian headquarters, and the ones in the Studio 60 show many similarities to the Signature drivers. The tweeter is a

Studio 60



1" aluminum dome mounted to an aluminum die-cast chassis that acts as a heatsink and is rigid to prevent flexing. Next is a 7" midrange unit of yellow, mica-loaded polymer, which has a high stiffness-to-mass ratio for quick transient response with low distortion. At the midrange's center is a prominent aluminum phase plug that, according to Paradigm, contributes to the Studio 60's wide off-axis dispersion. Below that, handling the lowest frequencies, is a 7" bass driver of mineral-filled polypropylene, which is rigid and highly damped.

"... timbral match between the CC-570 and Studio 60s was excellent ... vocals and instruments appear in both front and center channels ... all I heard was a wall of sound across the front ... great reproduction ... smooth and airy ... especially natural ..."

The drivers are isolated from the cabinet with what Paradigm calls IMS/Shock-Mount: rubber gaskets and inserts between the aluminum driver chassis and cabinet. This effectively decouples the midrange and bass drivers from the enclosure—cabinet vibrations were the lowest I've ever felt. Large (3") ports on the speaker's front and back contribute to the good low-frequency response specification. Finally, there are two sets of high-quality binding posts suitable for biwiring or biamping.

STUDIO CC-570

The Reference Studio CC-570 is larger than the other center-channel speaker in the line, the CC-470. The other obvious difference between them is that the CC-570 lacks the conventional midrange-tweeter-midrange driver array of a typical horizontal center speaker. A 1" dome tweeter sits above the 4" midrange driver in the middle of the speaker, this pairing flanked by two black 7" mineral-filled polypropylene woofers. The CC-570 is fairly wide for a center speaker: 26-1/2". The elegant feet that can be affixed to its bottom look the same as those on the Studio 60; they end in small rubber nubs that isolate it from your TV or monitor. Around back are two 2"-diameter ports, one behind each woofer. The CC-570 has the

same high-quality dual gold-plated binding posts as the Studio 60.

"... a topnotch center-channel ... narration — came through strongly and clearly ... every subtle inflection — was evident and sounded natural ... I could easily give up the sweet spot — and still enjoy a dialogue-driven movie ..."

STUDIO ADP-470

Conventional dipole surround speakers have opposed drivers that produce sound-waves out of phase; the result is a diffuse surround soundfield. The drawback of dipoles is that because the bass frequencies, too, are out of phase, they tend to cancel each other out, resulting in weak bass response.

Paradigm uses what they call an "adapted dipole" design for their surrounds, running only the woofers in phase, and only below the crossover point of 150 Hz, for strong bass performance. They feel that this configuration works best overall, having found that direct radiators are too directional and thus too distracting in most home theaters. The Reference Studio ADP-470's subtle wedge shape works well for surround music recordings in which discrete instruments or voices can be heard in the surround channels.

The ADP-470 has two 1" dome tweeters and two 7" mica-loaded polymer woofers, one of each pair on opposite sides of the speaker. The rear panel has holes for wall-mounting hardware and dual gold-plated binding posts.

SEISMIC 12

The Seismic 12 subwoofer's diminutive enclosure, a virtual 14" cube, is chock full of technology. For a small subwoofer to be powerful enough to create the same sound-pressure levels as a larger box, its driver must have a greater peak-to-peak excursion (i.e., the distance the woofer moves in and out) than the larger models'. The Seismic 12's 12" woofer, which fires down at the floor, has an excursion of a staggering 2". To move this cone with sufficient force, the Seismic 12 has a powerful, efficient, class-D digital

switching amplifier (which eliminates the need for massive heatsinks) rated at 1200 Watts. The motor structure behind the woofer is powerful, too—the magnet alone weighs 29 pounds. The Seismic 12 also has two 10" passive radiators that, like ports, extend the bass response.

Around back are toggles for switching the sub on automatically in response to a signal, a volume control, a knob for controlling the subwoofer cutoff frequency, a variable phase-alignment knob, and a bass contour knob for adding bass boost. Knowing that the Seismic 12 will be used with high-end equipment, Paradigm included a balanced XLR connection in addition to the conventional RCA line input. One omission is the lack of a crossover bypass input or switch, meaning that the sub's internal crossover will always be active. When using the Seismic 12, I left its crossover at the highest position and let the crossover in my receiver control the cutoff point, which worked great.

SYSTEM PERFORMANCE

I was floored by the performance of the Paradigm Reference Studio 60-based system. In every aspect of home-theater performance—dialogue intelligibility, timbral match, surround envelopment, dynamics—it was first-class.

Paradigm has created a topnotch center-channel in the Reference Studio CC-570. Cate Blanchett's narration throughout the *Special Extended Edition of The Lord of the Rings: The Fellowship of the Ring* came through strongly and clearly with the CC-570 in place. Every subtle inflection of her accent was evident and sounded natural. An aspect of center speakers about which I am picky is their off-axis performance—most horizontal center speakers sound dull from positions to the sides of the ideal listening seat. Not



CC-570

so with the CC-570—I could easily give up the sweet spot to my wife and still enjoy a dialogue-driven movie such as *Pulp Fiction* (Miramax Collector's Edition).

"... outstanding surround envelopment ... excelled in reproducing diffuse effects ... a good sense of being in the scene, filling in the area behind my listening seat with the sound of beating wings ... I could hear bullet shells falling distinctly in the left rear — a difficult feat ..."

The timbral match between the CC-570 and Studio 60s was excellent. Throughout Harry Connick, Jr.'s *Only You: In Concert* DVD, vocals and instruments appear in both the front and center channels. At no time did the CC-570 sound as though it wasn't the equal of the Studio 60s. With the wide-dispersion design of both the Studio 60 and the CC-570, all I heard was a wall of sound across the front soundstage. Reproducing the trumpet-and-trombone duet in "Bourbon Street Parade," the Studio 60 never sounded harsh in the high frequencies; instead, it was smooth and airy. Connick's piano playing sounded especially natural, an indication of the Studio 60's great reproduction of the midrange frequencies.

Like all other Paradigm ADP surround speakers I've auditioned, the Studio ADP-470 provided outstanding surround envelopment with diffuse effects. A good example of this is chapter 2 of *The Core*, in which a flock of birds is flying chaotically. The ADP-470s gave a good sense of being in the scene, filling in the area behind my listening seat with the sound of beating wings. The



ADP-470

ADP-470s also did well with discrete sound effects. In chapter 3 of *Underworld*, I could hear bullet shells falling distinctly in the left rear surround—a difficult feat for a multidirectional surround speaker. This effect would have been even more precise with a direct-radiating surround speaker, but the ADP-470 handled it well.

The Seismic 12 was a good complement to this system. What I liked most about it was its effortlessness—I felt more than heard the Seismic 12's presence in my room. There is a scene in chapter 3 of *The Core* in which the Space Shuttle re-enters the Earth's atmosphere. The rumbling sound effects throughout this scene played loud enough to shake my walls, but the Seismic 12's lack of boominess or distortion made me want to crank it even louder. When I did, the scene became even more real and visceral. With the Paradigm Seismic 12's power and superb authority, I felt I was entering a whole new dimension of home theater.

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COMPARISON

A home-theater speaker system of comparable price to the Paradigm Reference is the Focus Audio Classic system based on the FC-70 tower speaker. The FC-70's driver array is similar to that of the Studio 60: a 1" dome tweeter above two 5" woofers. Focus Audio's FC-Center has two 5"-diameter woofers flanking a 1" dome tweeter, and the Focus Audio FC-10, here used as a surround speaker, is a direct-radiating bookshelf model with a 1" tweeter above a 5" woofer.

The Focus Audio Classic system sounded as smooth as the Paradigm Reference Studio array. However, I felt that the Paradigm system had more high-frequency "air," a difference I heard especially when listening to Diana Krall's *Look of Love* [SACD,

Verve 314 589 507-2]. On "S'Wonderful," the string section sounded more extended and sweet through the Paradigms. The Paradigms also had deeper bass response, which can be advantageous when listening to music without a subwoofer in place. In terms of the midrange, I was hard-pressed to distinguish the Paradigm Studio 60 from the Focus Audio Classic FC-70—Krall's voice sounded equally good through either.

"The Studio 60 system is remarkable ... well above its price class ... this system's performance was among the best systems I've heard at any price, making Paradigm's price a bargain."

The Focus Audio FC-Center was a great match with the FC-70, but it had the comb-filtering problem that I hear from most center speakers—though not from the Paradigm CC-570. Using the Focus Audio FC-Center, I noticed a dulling of actors' voices in *Pulp Fiction* when I sat off to the sides of the room.

When I compared the ADP-470 and FC-10 surrounds, the former excelled in reproducing diffuse effects, but was edged out by the FC-10 when playing back discrete sounds. The discrete vocals in "Yesterday," from the DTS 5.1-channel version of *Boyz II Men's II* [DTS Entertainment 1001], were present in each speaker. With the Focus Audio Classic FC-10s in place at the surround left and right positions, the vocals were prominent; with the Paradigm Studio ADP-470, they faded a bit into the background.



Seismic™ 12

Because the Focus Audio Classic system doesn't include a subwoofer, I used my Mirage OM-200 sub for comparison. The OM-200 retails for \$1000—not quite in the same price range as the Paradigm Reference Seismic 12. What that extra money seems to buy is deeper and louder output. When I cued up chapter 10, "Creaking Pipes," of *The Haunting*, I heard deeper, more visceral presence with the Paradigm Seismic 12 than with the Mirage OM-200—and the Paradigm produced this from a smaller enclosure.

CONCLUSION

The Paradigm Reference Studio 60/CC-570/ADP-470/Seismic 12 system is remarkable—the advancements trickled down from the Signature line allow it to perform well above its price class. I could not find fault with it in the areas most important to me in a home-theater speaker system: dialogue intelligibility, timbral match, surround envelopment, and dynamics. In fact, this system's performance was among the best systems I've heard at any price, making Paradigm's price a bargain.