"... THE PIÈCE DE RÉSISTANCE ... great speakers ... superb ... beautiful to behold ..."

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"... capable of revealing an unending amount of inner detail ... a deep, layered soundstage replete with beautiful orchestration ... truly enjoyable and convincing ... a fast speaker ... not in the least challenged by transients ... visceral and satisfying beyond reproach."

by Fred Manteghian

Signature S4

Canadian speaker manufacturer Paradigm Electronics is but a 90-minute drive from Niagara Falls, New York, home of the classic heart-shaped-tub honeymoon suite. The few months I spent with the Paradigms were a honeymoon of sorts. An Armenian and a sextet of Canadians—and they said it wouldn't last! Now, after two months the honeymoon may be over—but will the magic go on?

Paradigm speakers have always been an easy recommendation, a short-list "gotta listen," particularly for friends with limited budgets. A decade ago, my brother-in-law was quickly sold on an entry-level Paradigm surround setup that, to this day, graces his great room.

Paradigm went successfully upmarket with their Studio line of speakers, but their new Signature is definitely the pièce de résistance. Besides the aural improvements demanded of the new line, aesthetic considerations were given a high priority as well. The new Signature series offers exemplary wood-work and cabinet designs that are far from the boxy dimensions of Paradigm's previous designs.

Paradigm makes three models that can be used as front left and right speakers. Two of them — the two-driver, 2-way S2 and the three-driver, 2-1/2 way S4 — are intended to be mounted on Paradigm's matching stands: the J-29 for the S2, and the J-23 for the S4. The third model, the six-driver, 3-way S8, is a floorstander that offers more bass extension than the S2 or S4. Since I'd be using the speakers in a home-theater setup, with a subwoofer normally engaged, I was most interested in the middle-of-the-line S4 which is less than half the cost of the S8. A quartet of S4s was assembled to fill out the front mains and rear surrounds of my home theater.

"… a holistic soundstage … chapter four of [the movie] 'Seven' fills the room with the sound of a pouring rain slapping dirt into mud … the Paradigms dragged the cloying wetness of the rundown neighborhood into my home theater … truly enjoyable and convincing …"

For the center channel, Paradigm offers the four-driver, 3-way C3 and the six-driver, 3-1/2-way C5. As the C5 would be overkill in a system employing a subwoofer, I stuck with the C3. The subwoofer, the Signature Servo, replaced my reference subwoofer during the review period. The Signature Servo is the most expensive subwoofer I've ever used.

The S4 has two pairs of binding posts, shorted by metal bars for wiring with single runs of cable. Remove the bars and the speakers can be biamped or biwired. Unfortunately, once again, a manufacturer has chosen a non-standard binding post, this time one that lacks the hexagonal profile required for a binding-post wrench. Instead, these posts are round, and the outer surface is a clear plastic that looks as if it would like nothing better than to crack under the influence of a pair of heavy-duty pliers. I kept the gold-plated jumpers in place for my listening sessions and used single runs of AudioQuest Mont Blanc speaker cable. This medium-girth cable is still thicker and heavier than what many people will use with the Signatures, and the posts responded well enough to tightening by hand, provided I washed my greasy little fingers.

I left the grilles off most of the time, thinking the Signature line's exposed woodwork and drivers far more attractive than the black grilles, but Paradigm makes much of their anti-diffraction grillework. Rather than risk hearing them under less than ideal conditions, I reattached the grilles near the end of the review period, before my most critical listening sessions. I'm hard-pressed to say I *heard* any difference, but I sure *saw* one: Grilles off, the Paradigms are things of beauty. Of course, the grilles do provide a modicum of protection from prying young fingers.

Signature C3

One driver in the S4, a rather standard 7-inch polypropylene cone, handles the bass below 250 Hz. The other 7-inch driver in this 2-1/2-way design is an unusual gold-toned, mica-embedded polypropylene cone with a gold-anodized phase plug (read: pointy dustcap). Since the crossover forgoes a high-pass filter, this second driver must be able to reproduce the midrange while withstanding, if not fully reproducing, whatever bass exists in the music or soundtrack. To further reinforce the S4's low frequencies, a front-firing, die-cast aluminum port extends and evens the speaker's bass performance. Both the S4 and the 3-way C3 center channel use a gold-anodized 1-inch dome tweeter with a neodymium magnet.

The C3 has two of the black, 7-inch polypropylene drivers, of which the S4 has one, these book-ending the vertically aligned tweeter-midrange array. This vertical orientation eliminates most of the comb filtering (at least in the critical midrange and treble) inherent in horizontally aligned center-channel speakers. The C3's midrange driver is a 4-inch, mica-embedded polypropylene cone similar to the more exotic 7-incher used in the S4. Obviously, due to its smaller size, it requires the use of a high-pass filter to protect it from low-frequency damage, hence the C3's "3-way" designation. There are two rear-firing bass ports, although unlike those in the S4, these don't appear to be lined with die-cast aluminum. Doubling the number of bass drivers and ports, coupled with a slightly larger cabinet, means the C3 actually has better low-frequency performance specifications than the S4—a rarity for a center-channel speaker.

The Servo subwoofer uses a single, forward-firing, 15-inch cone driven by a 1200W amplifier capable of 4500W peaks. The magnet structure alone weighs more than 28 pounds, so it's surprising that the Servo's overall dimensions are so manageable and domestically agreeable. The Servo will accept single-ended RCA or balanced XLR connections. In addition to the usual controls for level, frequency cutoff (turned all the way up when connected to a processor with its own crossover), and variable phase (0º – 180º), the Servo also has a Contour control, which varies from flat to a +6 dB boost at 60 Hz, and is designed to compensate for a room's partial null. If your null happens to be at 60 Hz, you're all set. For the price, I'd like to see at least a single-band parametric equalizer.

Signature speakers are available in cherry, rosewood, piano black, or a stunning bird's-eye maple. In a home theater where front projection will be employed, however, you should carefully consider how much light the maple veneer will reflect back onto your screen and into your eyes in a darkened room.

"Dialog was exemplary in all cases … the C3 center providing a very good match to the S4 … superb dialog intelligibility …"

Listening to Santana's second album, *Abraxas* (CD, Columbia/Legacy SBM 65490), 1 could not help but conjecture that Carlos would have loved the S4 speakers and Servo sub. The S4 is a fast speaker, not in the least challenged by transients, as proved by its reproduction of the powerful percussion on "Incident at Neshabar." Santana has a penchant for turning the treble on his guitar all the way up—he likes a sound that's crisp and clear, at least until it hits his grossly overdriven amps, which warm the tone. The Paradigm speakers would fit Carlos' requirements; they reproduced his guitar parts as lovingly as I've ever heard, with pulsating sustain and ringing harmonics intact.

The Servo sub reinforced the bottom end of the S4 with a gut-thumping live feel. Not quite as distinct and aggressive in its attack as my favorite subwoofer (still the one to beat in my book), the Servo was nevertheless capable of laying down an all-enveloping foundation to music —once it had been properly adjusted. My initial setup attempts

were perhaps a bit too casual. An hour spent tweaking the Servo's Level, Phase, and Contour (60 Hz boost) settings proved invaluable in improving integration of the sub and satellites.

I was aided in this process by Santana's "Oye Como Va," whose deliberately behind-the-beat bass line becomes slightly more elongated and exaggerated with the wrong phase setting. The Servo's 15-inch driver was in league with the 18-inch driver in my reference subwoofer when it came to moving masses of air; once dialed in, it also projected a hair more of the nuance necessary to emulate realistic, believable bass. The Servo went from simply powerful bass to bass with a message.

"… high resolution that pulls out the smallest details, from finger cymbals to chair squeaks, and the ability to look into the soundstage and achieve that sense of depth that turns some 2-channel recordings into perennial audiophile faves …"

Chapter Two of *High Fidelity* (DVD, Touchstone 20349) puts John Cusack on an elevated train platform; in this scene, the sounds of traffic down at street level and off in the distance should be accurately depicted. One of the advantages of running identical or timbre-matched speakers front and rear is the prospect of a holistic soundstage where just such a sonic event can occur. The Paradigm rig hit its mark with this scene; the subtle but believable sounds of the city were kept at arm's length while I remained within Cusack's inner circle.

Digging into something darker, chapter four of *Seven* (DVD, New Line Platinum N4997) fills the room with the sound of a pouring rain slapping dirt into mud. The Paradigms dragged the cloying wetness of the rundown neighborhood into my home theater, making me wish Brad Pitt and Morgan Freeman would wipe their feet instead of tracking mud into the crime scene.

Another Brad Pitt movie, with equal numerological significance, *Seven Years In Tibet* (DVD, Columbia TriStar 21819), contains a fantastic, mood-enhancing soundtrack. In chapter 15, the quiet reverence of monks chanting in the distance as Pitt prepares for his meeting with the Dalai Lama lends an air of solemnity to the scene.

At first, I wasn't completely pleased with the system's performance in this scene, expecting a more enveloping surround from this oft-watched chapter. I suspect that, because physical restrictions forced me to put the rear speakers closer than normal to my listening plane—and because I didn't, for the sake of the remaining listening seats, toe them in to any greater degree to compensate I was effectively sitting more off-axis than usual. In addition, I was using higher stands for the rears than for the front, which put the rears in a vertical plane different from the frontchannel S4s. Without reworking the physical setup, however, I got better results by simply reducing the center-channel level a bit and increasing the rear surround level a dB or two. The stronger back wave now established a more reassuring presence and merged more completely with the front.

Trying to compare and contrast with speakers I no longer have on hand is always tricky, but a more expensive speaker at three times the Paradigm S4's price, was my most recent dynamic speaker and still fresh in my memory.

There's no doubt that the the more expensive speakers are in a completely different class, as should be expected of a speaker that sells for thrice the price. However, the Paradigm S4 offered a slightly different set of sonic virtues that made the most of the limitations required to create a truly enjoyable and convincing, if not completely accurate, sonic experience. The Paradigms treble range was more extended than the others' and just a tad more pronounced in the presence region, but that's never a liability with home theater.

The extra upper-frequency energy of the other speaker could be problematic with some pop and orchestral music, violins occasionally sounding thinner than they should. They could also be aggressive in the lower treble, unfavorably so with some recordings, though to a lesser degree than the Paradigms. Finally, by virtue of its nature as a floor-standing speaker, the more expensive speaker didn't have the issues of bass-to-midrange integration that I experienced with the Paradigms. On the other hand, it was surprising how well integrated the Paradigm S4 and Servo sub were, given a little bit of effort and experimentation.

Enjoying a hi-def broadcast of *Star Wars Episode II: Attack of the Clones* on the Fujitsu plasma well before nightfall, a pleasure long denied by my CRT front projector, the Paradigm system proved capable of revealing an unending amount of inner detail. While I sat patiently waiting for battle, the pastoral score accompanying the many (endless, actually) scenes of Anakin courting Padme were skillfully reproduced by the Paradigms. Though I was distracted by the banal on-screen conversation, the speakers nonetheless successfully created a deep, layered soundstage replete with beautiful orchestration. The seismic charges launched in the meteor belt by Jango Fett, the bounty hunter, in the meteor belt cut through me like an ultrasonic saw-they were visceral and satisfying beyond reproach.

In some ways, the Paradigm Signature system could be too revealing, making some Foley effects obvious to a fault. For instance, the thunder and rain welling up in Jango Fett's quarters rushed in with the unsubtle insistence of a sound engineer trying to stuff 100 dB of sound into a 50 dB bag. That's the price you pay, though, for the degree of resolution the Paradigm speakers provide. Dialog was exemplary in all cases, C3 center providing a very good match to S4. The slight upper-frequency energy worked well at establishing superb dialog intelligibility.

Signature Servo

While I was able to meld the Servo subwoofer with the Signature system to great effect, ultimately, in my room, the system had a slight dip between the upper bass and lower midrange, at least relative to the rest of midrange and up. For my tastes, the system seemed to require just a smidge more warmth, something I compensated for by boosting subwoofer output level, though, of course, that did nothing to actually correct the area immediately above the sub's effective range. On the other hand, after two full months of daily use, the speakers had to be considered broken in, but the upper midrange and lower treble still seemed slightly elevated in level.

"The Servo sub reinforced the bottom end of the S4 with a gut-thumping live feel … capable of laying down an all-enveloping foundation to music … Servo's 15 inch driver was in a league with the 18-inch driver in my reference subwoofer when it came to moving masses of air … realistic, believable bass … powerful bass … bass with a message."

When *Attack of the Clones* ended, I couldn't resist cranking up the system during the credits. With the limits I set, I didn't sense much, if any, dynamic compression. My room is large, my listening habits occasionally even larger, but the Paradigms didn't flinch. If I had some concerns with what I ultimately perceived as a certain uptilted tonal quality during the review period, bear in mind that the abundance of hard surfaces in my listening room would easily exacerbate the situation. Also if the upper-bass-to-midrange integration never quite hit sterling, I concede that my room really, any room—could be at fault. Varying speaker placement, subwoofer levels, and crossover frequencies—all the things a speaker owner would do anyway—could ameliorate even this tiny problem.

Overall, the Paradigms are easily recommendable for auditioning. If their sonic palette lures you in, makes you propose, and sends you over the Falls, I'll understand. They're beautiful to behold and built like brick houses. Best of all, they're great speakers. With high resolution that pulls out the smallest details, from finger cymbals to chair squeaks, and the ability to look into the soundstage and achieve that sense of depth that tums some 2-channel recordings into perennial audiophile faves, the Paradigm Signatures will be instantly appreciated for what they get right.

"My room is large, my listening habits occasionally even larger, but the Paradigms didn't flinch … easily recommendable … beautiful to behold and built like brick houses … great speakers …"

MEASUREMENTS

The Paradigm Signatures were measured with their grilles removed. For both speakers (S4 and C3), the grilles slightly reduced the treble level but also made the high-frequency response rougher.

The Signature S4s sensitivity measured approximately 87dB/2.83V/m. Its ported cabinet is tuned to about 32 Hz, and its minimum impedance is 4.4 ohm at 930 Hz; I would rate its nominal impedance at 6 ohm. While its impedance is quite capacitive at 78 Hz (with a phase angle of -73°), the S4's impedance magnitude at this frequency is 11.2 ohm. I would rate the S4 as moderately difficult to drive, though it should cause no difficulties for a competent amplifier of the sort likely to be used with such a high-end speaker.

The S4's pseudoanechoic response at tweeter height, averaged over a 30° forward horizontal angle and combined with the nearfield responses of the woofer and port, is shown in Fig. 1 (violet). The useful bass extends down to about 38 Hz (-10 dB relative to the output at 100 Hz). The on-axis average shows a distinctly elevated response from about 2.4 kHz to just over 15 kHz. The response in this region is relatively smooth, however; the ear may read it as a recessed response in the midrange, centered around 700 Hz, rather than a bright top. The off-axis response is flatter; combined, the on- and off-axis responses may result in a slightly flatter in-room top end than the on-axis response shown here suggests.

Fig. 2 again shows the S4's averaged horizontal front response (violet), plus the vertical responses taken at +15° (red) and -15° (blue) relative to the tweeter. You should audition this speaker with your ears as close as possible to the height of the tweeter height.

The C3 center-channel's cabinet is tuned to about 75 Hz. I would rate its nominal impedance at 5 ohm; the minimum impedance was 3.3 ohm at 98 Hz. The speaker's sensitivity measured about 87dB/2.83V/m. It is also moderately capacitive at 70 Hz, and its impedance characteristics should make it, overall, of average difficulty to drive.

The C3's measured front horizontal response, taken on the tweeter axis and averaged in the same manner as described above for the S4, is shown in Fig. 3 (violet). The useful bass extension is approximately 46 Hz (-10 dB relative to the output at 90 Hz). The on-axis response is fairly similar to the S4's: the same rising top end, the same flatter response off-axis. Notably this 3-way design shows none of the off-axis suckout through the midrange of the sort that afflicts all other 2-way, horizontally configured center-channel speakers we have measured.

The vertical off-axis response of the C3 (Fig. 4) indicates that you should listen to this speaker with your ears positioned at or just below the tweeter height.

The only significant aberration in these measurements is the relatively high tweeter output from both speakers. The curves suggest that they may sound forward in the upper registers. FM did note this in his listening tests. The relatively smooth HF response (apart from the overall elevated level) suggests that it might be corrected by simply padding down the tweeter by 2-3 dB, or using a judicious hand on a treble control, without obscuring the impressive sound that Fred reports.

– Thomas J. Norton

All figures: Violet: pseudoanechoic response on tweeter axis, averaged across a 30° horizontal window, combined with nearfield responses of woofers and port.

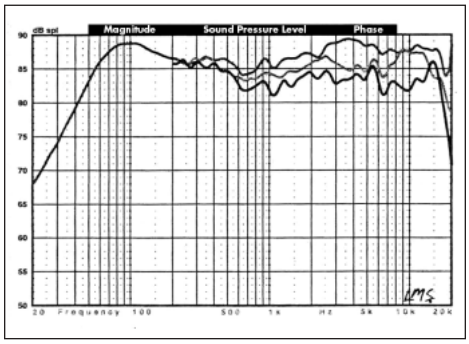

Fig. 1: Paradigm Signature S4, pseudo-anechoic horizontal response at 45° (red) and 60° (blue) relative to tweeter axis.

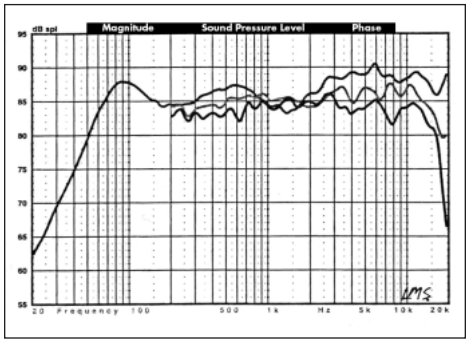

Fig. 2: Paradigm Signature S4, pseudo-anechoic vertical response at +15° (red) and -15° (blue) relative to tweeter axis.

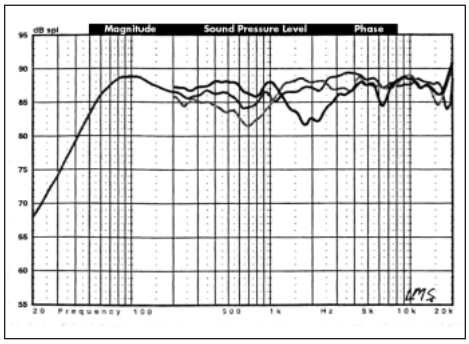

Fig. 3: Paradigm Signature C3, pseudo-anechoic horizontal response at 45° (red) and 60° (blue) to left of tweeter axis.

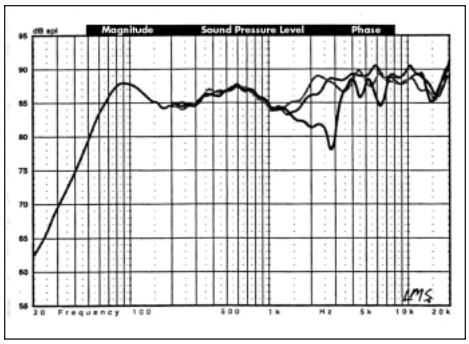

Fig. 4: Paradigm Signature C3, pseudo-anechoic vertical response at +15° (red) and -15° (blue) relative to tweeter axis.