The Audio Beat

Shunyata Research
Sigma v2 Interconnects and Speaker Cables

by Marc Mickelsonr

Shunyata Research is quietly approaching a milestone, one important for any company but even more so for one in the transitory and competitive field of audio cables: twenty-five years in business. In 1998, Caelin Gabriel launched his company in a way that no business consultant would suggest. He created a single product, the King Cobra power cord, which had a couple of outward features that made it distinctive. First, it was thicker than a garden hose -- something that's not unusual nowadays but was back at the turn of the last century. Second, it made a racket when you picked it up or moved it around, akin to the tinkling of a rain stick. Both of these things were indications of the King Cobra's technology, which was firmly aimed at reducing distortion of all types in the AC that powered audio electronics. Gabriel understood that this noise on the AC line was a new audio frontier, and reducing it would only improve the sound of audio electronics. The King Cobra, and subsequent models, were more single-component noise-reduction circuits than mere power cords. The King Cobra was a big success, but that created a new problem: Gabriel was making each power cord himself, and the construction was labor intensive, each cord requiring nearly an entire day to build by hand. But that challenge, along with strong sales, presented an opportunity to streamline production, which occurred with subsequent models. For a few years, Shunyata Research was engaged entirely in the production of power cords. A couple of years later, the company's first Hydra power conditioner, the one with the distinctive Corian-and-hardwood faceplate, was introduced; then, a year after that, the first Shunyata interconnects and speaker cables were born. From there, Caelin Gabriel expanded his company, eventually branching out beyond high-end audio, with products that are now in use in medical facilities around the world. But the company's backbone remains music reproduction, and in some ways it could be no other way: in addition to other interests, Gabriel is a dyed-in-the-wool audiophile; his fascination with music reproduction is the fuel on which Shunyata Research runs.

Over the years, I've written about many Shunyata Research products, including more than one complete set, or loom, of audio (which Shunyata refers to as "signal") cables. Each has performed exceedingly well, no matter its price point. The Sigma v2 interconnects and speaker cables that I received are the summit of the company's current lineup, which consists of four complete cable lines. Each, however, was designed with the goals of the King Cobra in mind: to eliminate noise and thus maximize the musical signal.

Shunyata's technology has evolved over the years, but one broad part has remained a constant. I first wrote about Zi-Tron a dozen years ago, and it remains at the heart of Caelin Gabriel's cable designs. It neutralizes the electric field generated within the cable's dielectric material. A second conductor carries a signal derived from the main conductor, and the fields generated by the two of them cancel each other. Shunyata touts the effectiveness of this patented cable design (US patent, US8912436B2; China patent, ZL2011800473442,; German patent, 601011046558.9; UK patent, 2622612) to "preserve the integrity of the source signal, even when using very long runs of cable," a point the company has emphasized at shows, where they have run demonstrations of the technology and its measureable effect.

Zi-Tron is only the beginning of the story. New for Sigma v2 are conductors for the speaker cables, called VTX-Ag, that replace the original VTX all-copper conductors. Designed by Caelin Gabriel, these new conductors have an outer hollow-core layer of ultra-pure copper that surrounds an inner conductor of pure silver. Grant Samuelsen, Shunyata's head of sales and marketing, said about these new conductors, " . . . this configuration delivers improved dynamics and a more time-coherent presentation than the older conductors. The outer layer of copper is there to maintain natural tone and timbre.... It strikes a

more ideal balance in sound than copper or the very commonly used mil-spec or silver-plated copper. As far as we know, we are the only company building conductors this way." The VTX-Ag conductors are also used in the Sigma v2 power cords.

Like its predecessor, the Sigma v2 interconnect uses Shunyata's Transverse Axial Polarizer, TAP for short. This is a patent-pending device that modifies the electromagnetic field surrounding each cable. In his review of the original Sigma cables, TAB writer Vance Hiner wrote that each TAP looks "a bit like the barrel of a ray gun." He's right -- Buck Rogers surely could have saved the universe with such an unusual-looking weapon. But TAP isn't for show. A gold-plated copper honeycomb disc is encased in a glass tube and positioned along each interconnect. The first Sigma interconnect had this near the upstream end, but v2 has TAPs near both ends. Shunyata likens the sonic effect of TAP to being like polarized sunglasses, reducing glare by altering the electromagnetic field's deleterious effect on the signal.

Sigma v2 speaker cables come with another patented technology called HARP, which eliminates micro-distortions related to striations (vibrational energy generated by the pulsing signal). The first Sigma speaker cables used one HARP module (they look like tiny circuit boards), but Sigma v2 uses two, one at each end, which doubles the effectiveness of what they do, similar to the dual TAP modules. Shunyata also upgraded the speaker cables with their own carbon-fiber end pieces, which to a small degree lower the vibrational Q of the cables. Says Grant Samuelsen, "HARP and TAP are entirely proprietary tech to us and nothing they do can be replicated by any other means."

All Sigma v2 cables also go through the company's proprietary Kinetic Phase Inversion Process (KPIP), which eliminates the break-in process typical of many high-end cables. Shunyata used to be a proponent of cryogenic treatment -- until the company developed something better. Shunyata says that cables treated with KPIP are more transparent, stable and free of distortion than cables that are broken in by playback alone or other burn-in methods. KPIP treatment also means that new Shunyata cables are at peak performance when you receive them -- no hundreds of hours of break-in required.

Another detail that matters is the elimination of soldering from the speaker cables, which was replaced by a highly specialized sonic welding process that bonds metals together at the molecular level. The result, according to Gabriel, is that

the sonic signature of solder is entirely eliminated. Solder has a "sonic signature"? I can't say that I've done any tests, but there are people whose ears I trust, including Ken Stevens of Convergent Audio Technology, who says it does. In high-end audio, everything matters, and if you consider that solder is used throughout electronics and speakers, then its having a sonic signature seems plausible.

Caelin Gabriel has been working for many years to merge the subjective and objective in audio cables, "in order to take all this out of the realm of spook science," as he put it to me long ago. So much of what's credited as performance with Shunyata Sigma v2 cables -- and really all of Shunyata's products -- is actually the end product of a long journey of original thinking. Caelin and Grant know their audience well -- audiophiles just like them -- and this informs so much of their work and the products that Shunyata produces. As an audiophile, I trust guys like them, because they are guys like me.

I've written in the past about the perils and pitfalls of reviewing audio cables. To summarize, on the one hand, I don't want to change my regimen of critical listening just because the products I'm evaluating are interconnects and speaker cables, not speakers or amplifiers. Sound is sound, after all. I've found, however, that I need to take a careful, repeatable approach to reviewing cables, because I almost never evaluate only interconnects or speaker cables but rather an entire system's worth that includes both of these and sometimes digital cables and power cords. The variables in any audio system -- the number of components -- can be numerous, and this is especially true for those of us in the reviewing trade, because of the ongoing treadmill of equipment coming to and going from our systems. Cables connect it all, so there are more of them in use and therefore more opportunities to affect the sonic end product. For this reason, I don't simply add all of the cables at once, and I don't rely solely on a piecemeal approach either. I do both -- adding single cables until the entire system is wired, then return to an established reference. After my ears have become acclimated, I then add the entire set of cables. And then I repeat. Audio cables are sort of like paint and canvas to a painter: they define the confines of the view and the means of conveying it. For me, it's only through all of the swapping that I can bring my various observations together and create an accurate description of the sound. Slow, steady and deliberate are necessary when it comes to reviewing audio cables.
I used the Sigma v2 interconnects and speaker cables for an extended period of time and with a diverse collection of über-fi electronics and speakers. These included tube, hybrid and solid-state electronics, fixed-baffle and time-adjustable speakers,

with and without subwoofers, and multiple digital and analog sources. Due to the system I had at the time we initially discussed this review, Shunyata sent me multiple pairs of interconnects and speaker cables, along with power cords and even digital cables -- enough wire to go from wall to speakers. Or in the case of that initial system, from wall to speakers and subwoofers: Wilson XVXes and Subsonics. This meant four channels of amplification, multiple digital and analog sources, and an inline crossover. Initially, I used all XLR-terminated interconnects, but when electronics arrived from Convergent Audio Technology, I switched to all single-ended, being sure to allow for ample break-in time. Then the CAT electronics were replaced with something completely different: CH Precision's P10 preamp and M10 amps. Back to XLR cables, and when the Wilson speakers and subs were packed up, replaced with a pair of Stenheim Ultime 3 speakers, which sound best biwired and biamped, the extra speaker cables still came in handy, although I was then short of 20-amp-capable power cords for the CH Precision amps. Shunyata to the rescue with enough power cords to again wire up the system from stem to stern.

I mention all of this because no matter the electronics and speakers in use, no matter the source material, the Sigma v2 interconnects and speaker cables were consistent in terms of their contributions to the system's sound. Considering all of the component and cable swapping I describe above, I must have inserted or removed a Shunyata Sigma v2 cable at least fifty times. I started over from scratch a half-dozen times. Throughout all of this, the sound of the Sigma v2 cables was distinct and all-encompassing. As I came to understand, it was defined as much by what I didn't hear as by what I did. By that I mean that Sigma v2 was by no small measure the most poised audio cables I've used. There was an eerie blackness from which each instrument or singer emerged. They were utterly pure, composed, neutral conduits of the music, allowing it to flow with natural pacing and dynamics along with full-color tonality. They also expertly conveyed the spatial information and recording cues of each recording, the things that define the sonic thumbprint.

The Sigma v2 cables were sonically invisible in the very best sense, displaying the inherent nature of the equipment and presenting the music with an obvious sense of calm and quietude. Some cables, even those that are considered to be in the first rank, overlay the music with their own personality, which may be significant or minor in effect. Not the Sigma v2 cables, which were like air or water -- a neutral substrate for whatever equipment they connected and the signal passing through them. And because they were the one constant with all of the equipment I mention, they were as responsible for the sound produced (and described in my reviews) as the products themselves.

In specific terms, what this translated to, first and foremost, was an obvious sense of speed, spaciousness and snap, a kind of physicality that was not about added tonal density or image fullness, for instance. The music was fast and present, with recordings as diverse as Suzanne Vega's Close-Up Series CDs [Amanuensis 2507] and the mono LP reissue of Kenny Dorham's classic Quiet Kenny [New Jazz/Craft Recordings CR00347] having much the same high energy and color, even though they are very different recordings. This doesn't mean the Sigma v2 cables homogenized recordings, pulling the inherent sound of one toward that of the other, but rather that they unleashed it, displaying all that both recordings have on offer, opening up sonic avenues that are easy to gloss over. The Sigma v2 cables possess true tonal neutrality, without the overlay of whitish scrim that some other "neutral" cables can impart. Tonal color is conveyed but not enhanced, the cables' inherent honesty, in all sonic ways, allowing each recording to proclaim its sonic signature.

Percussive force -- snappy transients, weighty bass with pitch definition and dynamics -- was very obvious with the Sigma v2 cables in use. Some of my favorite recordings, like "Day to Day Thing" from the Neville Brothers Family Groove [A&M AA7502153842], had sternum-crushing force when played at 11. The Neville Brothers also do a pretty good cover of "Fly Like An Eagle" on this album, and it highlighted the Sigma v2 cables' way with soundstaging, which was wall-to-wall wide and also deep and dark, as shown with Quiet Kenny and several other jazz recordings, mono or stereo, of the same vintage. Again, all of this wasn't a matter of giving favors to certain recordings; the Sigma v2 interconnects and speaker cables are too honest for that. Listen to a compressed recording, spatially and dynamically, and you'll know it. The cover of Prince's "Raspberry Beret," from the Hindu Love Gods CD [Giant 7599244062], which pairs Warren Zevon with three-fourths of REM, sounds hashy and dreary, as it always has. Great music, blah (at best) sound, unfortunately.

As I took notes about what I was hearing, I kept coming back to the "purity," the "tonal rightness," of the Sigma v2 cables, and "the effortless way the music flowed" with them in the system. A decade ago, it was easy to find great LPs for a quarter or less each at the many thrift stores in the mid-sized town in which I live. Now the same is possible with CDs, and one gem I found a year ago is the DCC gold two-disc set of Ella Fitzgerald Sings the Cole Porter Song Book [Verve/DCC GZS-(2) 1079/1 &2]. Fitzgerald's enunciation and swing are wonderful on this recording, and beyond wonderful with the Shunyata cables in the system.

As I listened to these recordings through many system changes, I tried to imagine some way to describe what the Shunyata Cables bring to an audio system in quantifiable terms. Caelin Gabriel is all about quantifying, and in that spirit, the best I could come up with, after much thought, was a recording whose sound summarizes, at least for me, what I heard from the Sigma v2 cables. Patricia Barber's Café Blue has become an audiophile warhorse; I have several different copies of it, on CD, SACD and LP. Each is a sonic wonder, hence its popularity among audiophiles. The sound obscures some entertaining and inventive jazz, but it also makes Café Blue that much more powerful. I play it for non-audiophiles, who immediately understand that what they are hearing is sonically superior. In any case, it you know the sound of Café Blue, you will understand and appreciate the delicacy, punch, vividness, atmosphere, beauty and truth that Sigma v2 brings to an audio system. It's all there, in Café Blue and Sigma v2.

Before I end, I want to address one of Shunyata Research's defining principles that gets little or no coverage: how the company prices its products, especially the Sigma v2 cables. They reside at the top of the company's price structure, but based on the actual cost, not a guess as to what the market will bear or as a proclamation of prestige or status. While Sigma v2 cables are surely not budget priced, they are far, far from the current top of the pricing heap for audio cables. While Shunyata could simply inflate the price, the company refuses to do so, instead basing its pricing on the cost of materials and manufacturing, with reasonable profit on top of that. As has become more the fashion in high-end audio, price equals sonic worth in the minds of some audiophiles, perhaps too many audiophiles, putting Sigma v2 at a perceptual disadvantage. They're surely too inexpensive to compete with the platinum-priced offerings from other companies, so the thinking goes, and therefore don't belong a system costing as much as a luxury house, or two even. Nonsense. I used Sigma v2 with some of the best and priciest speakers and electronics currently available, and you've now read what I heard. Perceptual disadvantage? Only in the eye, not the ear, of a particular kind of beholder.

I don't know if the Caelin Gabriel of 1998 had some idea of where he and his fledgling company would be after a quarter of a century, but I have to think he would have been very pleased with the long roster of successful products and patented technologies he has created. Shunyata's power products have overshadowed the company's "signal cables," but Sigma v2 should change all that. They are reference-grade cables with nothing near reference-grade prices. If some audiophiles consider that a sign of compromise, they will be missing out on one of the great cables here and now. As much as any product I've reviewed, Sigma v2 urges the sage advice, Hear 'em before you buy anything else

Associated Equipment:

Analog
TW-Acustic Raven AC and Grand Prix Audio Parabolica turntables; Graham B-44 Phantom Series II Supreme and Tri-Planar U2-SE tonearms; Denon DL-103R, Denon DL-305 and Dynavector XV-1s Mono cartridges; Lamm Industries LP2.1 phono stage; Meridian 562 analog-to-digital converter with Meridian 515 MC phono stage.

Digital
Ayre Acoustics DX-5 DSD "A/V Engine"; dCS Rossini 2.0 digital playback system; CEC TL1 CD transport; Conrad-Johnson Premier 9 and Timbre Technology TT-1 digital-to-analog converters; Genesis Digital Lens data buffer; Audio Alchemy DTI Pro 32 jitter attenuator; Wadia 17 analog-to-digital converter.

Preamplifiers
CH Precision P10, Convergent Audio Technology SL1 Legend Extreme, VTL TL-7.5 Series III Reference.

Amplifiers
CH Precision M10 monoblocks, Krell Showcase 7 multichannel amplifier, Lamm M1.2 Reference monoblocks, Mark Levinson No.434 monoblocks.

Loudspeakers
JMlab Utopia and Mezzo Utopia, Stenheim Reference Ultime Two, Wilson Audio XVX with Subsonic subwoofers and ActivXO crossover.

Power conditioners
Shunyata Research Everest 8000 and Denali D6000/S v2.

Equipment rack and platforms
Silent Running Audio Craz² 8 equipment rack and Ohio Class XL Plus² platforms (under Lamm M1.2 amps).