

EQUIPMENT REPORT



Shunyata Research V-Ray V2 Power Conditioner and CX Series AC Cords

Advancing the Art

Robert Harley

The field of AC power conditioning for audio systems has undergone a radical transformation since the first AC conditioners appeared about 20 years ago. Those early products were developed largely through trial and error, and often did as much harm as good. (Does anyone remember the Tice Power Block?) AC conditioner design was a “black art,” with the designers of the day not fully understanding the phenomena by which AC power affected sound quality.

Today, however, a few very bright and dedicated engineers have conducted fundamental research into AC power for audio systems. They have garnered a much deeper understanding of the role AC power plays in achieving good sound, and consequently, have developed products that are vastly better in every way than the crude attempts of a decade or so ago. The best of these new conditioners are not only much more effective; they also avoid the sonic shortcomings of earlier designs. This isn’t to say that all of

Construction

The V-Ray V2 offers eight AC outlets, each individually filtered and each custom-made to Shunyata's specs. The total power rating is 2400W, with a maximum current of 20A continuous and 50A peak. The all-aluminum chassis houses an aluminum subchassis that contains the 14-element noise filters as well as the buss bars that distribute power to each of the outlets. These buss bars are made from CDA-101 copper, the highest-purity copper available. Each batch of CDA-101 is supplied with papers certifying its purity. This raw CDA-101 copper is cast into the massive seven-pound buss bars, and then machined to the final shape. The subchassis containing the filters and buss bars are filled with a compound called "ZrCa-2000" (this compound was newly developed for the Version II products). This flake-like material absorbs and dissipates high-frequency noise, isolating the filters and buss bars from radiated noise. Internal wiring is Shunyata's own 12AWG wire. All the AC-carrying components are cryogenically treated in-house in Shunyata's Washington state factory.

The top-of-the-line King Cobra CX features 600 CDA-101 copper conductors (equivalent to 5AWG) wound in a dual counter-rotating helix geometry. Anaconda uses 450 conductors (7AWG equivalent), and Python 280 conductors. These three cords are encased in flexible tubes. The two lower-priced cables in the CX series, the \$600 Black Mamba CX and \$750 Black Mamba CX HC (high-current) use the identical cryogenically treated CDA-101 copper and dual counter-rotating helix geometry and are also in flexible tubes.

today's conditioners are worth owning. Although most of today's conditioners are better than their predecessors, only a very few rise to the top as contenders for the state of the art.

Two of those contenders are the Shunyata V-Ray V2 and its associated CX Series power cords. They were developed by Shunyata founder Caelin Gabriel, a man who has certainly done his homework on the subject (see my accompanying interview). Since I first tried Shunyata's AC conditioning system and power cords more than four years ago, they have become indispensable parts of my audio system. The combination was easily the best-sounding AC package I'd heard, rendering greater overall clarity, resolution, ease, and naturalness of timbre. The Shunyata system was so impressive it won our 2006 Product of the Year Award.

That system included the Hydra-8 conditioner for the front-end components and a pair of Hydra-2 conditioners, one for each power amplifier. Since those first products, Shunyata has been busy refining its core designs. The new V-Ray V2 is based on the original Hydra platform, but with some improvements, including a new noise-damping material that encases the critical circuits. Similarly, the new CX Series power cords represent an evolutionary step from the company's earlier cords (see the sidebar for details).

I had the opportunity to replace my original Shunyata system

with the V-Ray V2 along with a complete system of CX cords (King Cobra CX, Anaconda CX, and Python CX). I treated the Shunyata products as one system, listening to the complete older system and then comparing it to the complete new system. I then lived with the V-Ray V2 and CX Series cords in my reference system before I moved (Wilson X-2 Alexandria and Sasha loudspeakers, Spectral SDR-4000 Pro CD player, Spectral DMA-360SS preamplifier, Spectral DMA-360 power amplifiers, Pass Labs XP20 preamp, Pass Labs XA100.5 power amplifiers, Berkeley Audio Design Alpha DAC, dCS Puccini CD player with U-Clock, a PC-based music server for high-resolution playback, an Aesthetix Rhea Signature phonostage, and a Basis 2800 Signature turntable with a Vector 4 tonearm and Air Tight PC-1 Supreme cartridge) and have been using the Shunyata package in my new listening room for the past five months (see Associated Equipment). A complete package of a V-Ray V2 and several CX cords represents a considerable investment. In fact, this is one of the more expensive power-conditioning packages on the market. (Shunyata also makes an entire range of less expensive conditioners and power cords, starting with the \$495 Guardian Pro Model 2 conditioner and the amazing \$99 Venom3 cord. If you want some insight into the sonic benefits of AC cords, the Venom3 will give you more than a taste.) But in the context of a very high-quality system such as the ones in which I've auditioned it, the big Shunyata system's cost is not unreasonable. Moreover, I could make a good argument that the V-Ray V2 and CX power cords are among the most cost-effective upgrades you could buy.

Having experience with the Shunyata AC system along with such an extensive array of products gave me deeper insight into the Shunyata system in particular, and into the benefits of high-level AC conditioning in general. Specifically, what the V-Ray V2 and CX Series power cords do, above all else, is remove a gray pall beneath and behind the music. One doesn't hear this grayness until it is gone, and when it disappears, everything suddenly becomes vivid and clear, with a transparency that will make you not want to go back. This grayness is manifested in several ways, one of which is obscuring music's fine dynamic structure. Without the Shunyata system (stock black AC cords plugged directly into the wall) there was a floor below which the system didn't resolve micro-transient detail. Removing the Shunyata system was like very lightly rubbing an eraser over a picture drawn in chalk; fine detail was obliterated and the "picture" had less contrast. The more experience I have with today's best equipment, the more I've come to recognize that what distinguishes a great system from a spectacular one is in this portrayal of extremely fine information. It's not something one hears overtly as detail, but rather it is perceived as a greater realism of timbre, a fuller and more complete sonic "picture," and a richer and denser portrayal of the sounds of instruments and the spaces in which they are playing. By dropping the noise floor, the very finest layer of information is resolved, and with it, a rich panorama of musical expression unfolds. This heightened resolution extends beyond timbres to the delicate spatial cues that create the soundstage. Connect the Shunyata system and the soundstage opens up with greater dimensionality, depth, air, bloom, and sense of an instrument "lighting up" the surrounding acoustic.

Listen, for example, to the cymbals in the superb Analogue Productions LP of Sonny Rollins' *Way Out West*. With the Shunyata system installed, the cymbals are much more vivid

How I Discovered Differences in Power Cords

I discovered audible differences in AC power cords through Steve McCormack, inventor of Tiptoes, behind-the-scenes contributing designer to some famous products, founder of The Mod Squad, and creator of McCormack Audio and SMC Audio. I was reviewing his first manufactured product, the McCormack DNA-1 power amplifier back in 1990 or 1991. I had been listening to the DNA-1 and comparing it with a similarly priced amplifier when Steve visited to hear the system. I had a good handle on the sound of both amplifiers before Steve arrived, and our listening confirmed the sonic impressions I had of both amplifiers. Steve seemed puzzled, looked behind the amplifiers, and swapped the power cords—Amplifier A got Amplifier B's cord, and vice versa. I couldn't believe what I heard; sonic characteristics I had ascribed to each amplifier were actually characteristics of the AC cords connecting them to the wall. I had not paid attention to which power cord came with each amplifier, and inadvertently switched them when setting up the pair for comparisons. It simply never occurred to me that power cords were important—particularly two stock black cords. None of this was a surprise to Steve, who had selected the power cord supplied with his amplifier by his own listening. Needless to say, that was the last time I ignored the role of power cords in an audio system. **RH**

and tangible, and seem to hang in space in front of a black background. By vivid I don't mean bright, but rather palpable and immediate. With the Shunyata system the cymbals are *right there* in the room with me. Similarly, the tremendous sense of presence from Rollins' sax is heightened by the Shunyata products.

To really grasp just how deeply the Shunyata system lets you hear into the music, you need to audition it with first-rate LP or high-resolution digital sources. Although good CD playback is greatly improved, it lacks sufficient resolution to reveal the extent of the Shunyata's effect. In my comparisons using Reference Recordings 176.4kHz/24-bit HRx files played from my music server into the Berkeley Alpha DAC, the Shunyata allows the system to reveal the incredible wealth of fine detail encoded on these files. The tiny timbral cues, the subtle spatial information that allows the brain to construct a three-dimensional representation of instruments in an acoustic, and fine micro-transient detail, are all better resolved, allowing me to hear these spectacular recordings in their full glory. Taking out the Shunyata system dilutes the sense of realism and musical engagement.

I have the impression that the Shunyata system has less of its own "flavor" than any other AC systems I've tried. Rather, it seems to allow the intrinsic sounds of the components it is powering to express themselves. Some AC conditioners and power cords

impose a "sameness" to the system's sound regardless of the components in the chain. When switching between digital sources (the Meridian 808.3, dCS Puccini/U-Clock, Berkeley Alpha DAC) for example, I can hear more of each component's relative strengths with the Shunyata products in the system. In my view, any change to an audio system that results in hearing a greater change between recordings or source components represents an improvement; the system must be more transparent and true-to-the-source to reveal those upstream changes.

So how do the V-Ray V2 and CX-cords stack up against their predecessors? These new products are incremental improvements over what was already a great system. The fundamental sonic benefits of the Hydra 8 remain, but are taken to a higher level. The lowering of the noise floor and the concomitant increase in resolution of timbral and spatial detail described above are more pronounced with the V-Ray and CX Series AC cords. But the area of greatest improvement with the new products is in bass extension, power, and bottom-end dynamics. The presentation is weightier in the bass and midbass. The greater bass heft didn't manifest itself as increased tonal warmth, but rather in greater dynamic impact. In experimenting with different cords and conditioners, I attribute the improvements in the bass and dynamics more to the new CX cords than to the V-Ray V2, but both the V-Ray V2 and the CX cords contribute to all the areas described. I should add that you get many of the benefits I've described with the Python and Anaconda cords; the King Cobra is incrementally better, but the one-third-the-price Python gets you much of the way there.

SPECS & PRICING

V-Ray Version 2

Outlets: 8

Power rating: 2400W

Price: \$5000 (requires a C-19 20A power cord)

King Cobra CX Power Cord

Price: \$3500

Anaconda CX Power Cord

Price: \$2000

Python CX Power Cord

Price: \$1200

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ASSOCIATED COMPONENTS

New reference system:

Vandersteen Model 7, B&W

802D, and Rockport Altair

loudspeakers; BAlabo BC-1

Mk.II and Audio Research

Anniversary Reference

preamplifiers; BAlabo BA-1

Mk.II, Mark Levinson No.53,

Audio Research Reference

210 power amplifiers; Meridian

808.3 and Meridian Sooloos

system, dCS Puccini/U-

Clock, and Berkeley Audio

Design Alpha DAC digital

front-ends; Basis Inspiration

turntable with Basis Vector

4 tonearm, Air Tight PC-1

Supreme cartridge; Aesthetix

Rhea Signature phonostage;

AudioQuest WEL Signature

and Wild interconnects,

Transparent XL Reference

interconnects; AudioQuest

Wild and Transparent XL

Reference loudspeaker cables;

Billy Bags equipment racks,

ASC Tube Traps



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Conclusion

With the V-Ray V2 and CX Series power cords, Shunyata has elevated what was an outstanding AC power system to what is, in my experience, the state of the art. Their predecessors were already the standard-setters in clarity, resolution, and timbral realism, but now those qualities have been taken to a higher level. Of greater importance, however, is the significant improvement in bass extension and dynamic impact rendered by these new

products. Unlike many AC conditioners, the V-Ray V2 and CX Series power cords have no shortcomings that detract from their spectacular improvements in transparency and resolution. The Shunyata system is now firmly ensconced as an integral component of my reference system. I should warn you, however, that if you audition the V-Ray V2 and CX cords in your own system, there's no going back. **tas**