CABLE GUIDE

POWER | ANALOG | DIGITAL

CABLE GUIDE CONTENTS

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SHUNYATA RESEARCH

Shunyata Research was founded by former military scientist Caelin Gabriel in 1997 with the goal of designing power-line and cable systems that would eliminate the deleterious effect noise has on high resolution sound and visual imaging systems. Guided by Gabriel's use of measurement, innovative science and his many patents, Shunyata has grown to become one of the most professionally endorsed cable and power-product manufacturers in the audio/video industry. Shunyata's factory is located across the Puget Sound from Seattle, in Poulsbo, Washington. Shunyata's factory has 18,000 sq. feet of work space and offices to support 18 employees, most of whom have been with the company since its inception. Most Shunyata Research products are hand-assembled in Washington by a team of skilled product technicians, while all products are packaged, stored and shipped at Shunyata's factory. Shunyata Research works with many of the world's finest retailers in North and South America, Asia, Europe and the Middle East. Best known for using credible science and extreme parts customization to deliver products with the absolute highest performance and value, Shunyata Research has proven instrumental in advancing the state of high performance power conditioning and system cabling.

Caelin Gabriel is a former US military research scientist with a background in the research and design of ultra-sensitive data-acquisition systems. These systems were designed to detect extremely low-level signals otherwise obscured by random noise, requiring years of intensive research into the sources and effects of signal and power-line noise interference. Gabriel's subsequent work experience involved development of high-speed networking devices including the 1GB/s fibre-channel interface and the present 100MB/s and 1GB/s ethernet devices. These unique work-related experiences were at the highest levels of government and computer science. This extensive design background led Gabriel to develop the fundamental design concepts for the patented technologies, measurements and custom-designed parts that form the cornerstone of the Shunyata product range. Gabriel holds more than 7 patents, with numerous additional patents-pending. These technical innovations have earned Gabriel's product designs professional endorsements from the world's finest recording studios and more recently, from heart surgeons and hospitals across the United States. Gabriel continues to advance his development of new technologies, part design, and construction, keeping Shunyata Research at the forefront of its field.

ACHIEVEMENTS: A TRADITION OF EXCELLENCE

Due to extreme parts customization, patented science and measurable advances in signal transfer, Shunyata Research products have earned applications within many of the world's finest recording, mastering and film studios, as well as from esteemed surgeons and hospitals that depend on visual imaging and signal resolution. While many high-end cable and power-product companies point to a media review or magazine award as a sign of accomplishment, Shunyata products have earned global recognition and awards from countless media outlets. Cumulatively, these obvious markers for success place Shunyata Research products in a class by themselves.

PROFESSIONAL STUDIO, PRODUCTION & MASTERING ENDORSEMENTS

Recording and Film Studios, Mastering Engineers and Record producers who work at the forefront of their field are meticulous about every detail related to the fidelity of their work. Capturing the essence of a performer or performance is held to the highest standard and every detail is controlled. Shunyata products have been adopted as references within many of the world's most legendary systems. In terms of proven success, there can be no greater compliment than from those who's life's work is related to perfecting their craft.

SHUNYATA RESEARCH PRO APPLICATIONS

Mobile Fidelity (Sebastopol, Ca.), Astoria UK (Pink Floyd), SkyWalker Sound, Sony Music (Japan), Shangri-la Studio (Rick Rubin), Das Boot Studio (James Guthrie), Peter McGrath (Recording Engineer), Phillips Crest National Studio (Hollywood), New Jersey Philharmonic, and many more.

Shunyata Research power cables and interconnects made a remarkable difference in my reference system. These are not subtle tweaks — a far bigger difference than any other cables have made and in many cases, as unbelievable as it may seem, a greater improvement than changing the whole front end. I could not recommend them highly enough.

~ Rick Rubin, Multiple Grammy-Winning Record Producer

We first put the Shunyata products to test on a monitor system that had problems with noise and clarity. The result was less noise with an improvement in overall sound quality. We now use the Hydra's on our Model 2 converters, AES router and main monitor system consisting of B&W 802 speakers and Chord Amps.

~ Clayton Wood, Senior Engineer: SkyWalker Sound USA

We were particularly impressed with the sense of phase coherence that Shunyata products delivered, giving noticeably better imaging, depth and clarity. We tried many different areas of our signal path, all benefited. With digital sources it was almost as if we had switched from 44.1k/16 bit to 96k/ 24 bit. We now run all our analogue machines, workstations and the mixing console from the Shunyata equipment.

~ Andy Jackson, Senior Mastering Engineer: Astoria Studio UK

HIGH-END MEDIA ACCOLADES

Positive reviews and media-awards are meaningful if there is an accumulation of awards from diverse publications over time. Shunyata products have earned a combined 23 media awards demonstrating consistent results over time. Some of the most recognized high-end audio publications, including The Absolute Sound, The Audio Beat, SoundStage!, Stereophile, HiFi Technique (Hong Kong), Audio Stream and HiFi Plus (UK) have given Shunyata Research major product awards, including Product Of The Year, multiple times. Editor's Robert Harley (TAS), Michael Fremer (Stereophile), Marc Mickelson (TAB) and Lincoln Cheung (HiFi Technique, HK) are all regarded as having some of the finest ears in the industry. All of these industry luminaries not only chose Shunyata products, but have used them as their references for more than a decade.


2016
the absolute sound
Editors' Choice
Awards

2015
the absolute sound
PRODUCT
of the
YEAR
award

2015
the absolute sound
Editors'
Choice
Awards

2014
the absolute sound
Editors'
Choice
Awards

2013
the absolute sound
PRODUCT
OF THE YEAR
AWARDS

2012
the absolute sound
PRODUCT
OF THE YEAR
AWARDS

GOLDEN EAR
the absolute sound
AWARDS 2012

SoundStage! Network
Reviewers'
CHOICE
soundstagenetwork.com

2011
the absolute sound
PRODUCT
OF THE YEAR
AWARDS

the absolute sound
2010
editors'
choice
awards

the absolute sound
2009
PRODUCT
OF THE YEAR
AWARDS

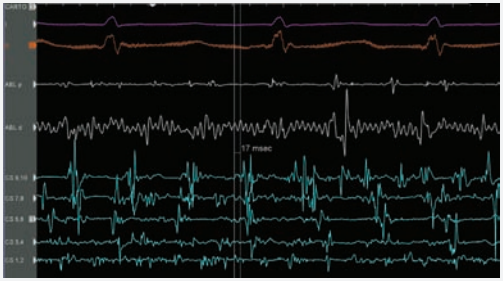
the absolute sound
2008 PRODUCT
OF THE YEAR
AWARDS

AUDIOSTREAM
2015
Product of the Year

MEDICAL APPLICATIONS

Due to the success of Shunyata Research technologies in medical systems, a separate, sister-company has been formed, named Clear Image Scientific®, or CIS. All products under the name of CIS have been medically certified for sale to medical, military and scientific applications.

Similar to the world's finest mastering engineer's, world renowned heart-surgeons and electrophysiology labs strive to stay in control of every variable related to their work, which involves resolution of low-level signals and imaging of the heart. As with all closed-network industries, heart-surgeons share discoveries that are instrumental to better outcomes for their patients. The results gained by using CIS products have been astounding. In many cases where extremely high-measured noise existed, the application of the CIS noise-cancellation system eliminated noise to a point that surpassed the Lab's own ability to measure noise of any kind. These are not subjective results, but measurable, visible reductions in noise-levels leading to shorter, productive surgical outcomes that affect peoples lives.



INTERCARDIAC TRACINGS BEFORE FILTER

Significant 60hz noise on ABL d and baseline noise on all cardiac signals.

INTERCARDIAC TRACINGS WITH FILTER

Noise is completely absent on ABL d heart signal, baseline noise on Cardiac Signal tracings is gone.

Clean and noise-free signals are critically important to successful mapping and ablation cases and the improvements offered by the CIS units in our lab has proven to be invaluable. Thank you!

~ Kent Morris MD

Clinical Cardiac Electrophysiology Norton Health Care, Louisville

With Clear Image Scientific®, the resolution was better by a nice margin than the recording system. Imagine that, signal amplification and processing through the computer was better than through our $75K signal amplifier!

~ Daniel Melby MD

Medical Director, Electrophysiology Lab, Minneapolis Heart Institute

A DESIGN PERSPECTIVE

For years, the term 'cable science' has been considered an oxymoron because little credible science existed to explain why audible differences were apparent in power cords, signal cables and digital cables. Shunyata Research is changing that perception through scientific research, precision measurements, patented technologies and the development of exclusive parts and materials.

Shunyata Research cable designs are based upon several simple design principles. The first and seemingly obvious principle is to 'preserve and protect the signal' — or simply, do no harm. Once the signal has been altered even subtly, it cannot be reconstructed. Cables in your audio system represent the longest path that a signal travels from source to destination. All cables degrade the signal to one degree or another, so care must be taken to preserve the original signal. For example, cables act as simple filters with a capacitive and inductive reactance; however, there are several more subtle forms of distortion that affect the signal, including: dielectric absorption; skin effects; current resonance; and electromagnetic polarization distortion. Taken together, these micro-distortions represent a significant loss of fidelity in sound.

The second principle is critical to the first: power and signal cable systems are surrounded by a sea of high-frequency RFI and EMI interference including radio, television, microwave, cell phones and wifi sources that can damage the signal. One of the primary, but often overlooked contributors to noise and interference are the electronic components themselves. This is a concept we call CCI™ (Component-to-Component Interference). Noise generated by a component's power supply and internal circuits may travel through the power lines via the power cords; or it may radiate between the power cords and interconnects. Shunyata Research cables are designed using specific technologies that will protect the delicate music signal from both conducted and radiated interference.

Unlike the majority of cable designs, every Shunyata Research cable is optimized to be application-specific, using patented technologies and proprietary parts designed to eliminate the noise and micro-distortions that will otherwise compromise the clarity, resolution and fidelity of the entertainment system.

FOUR CABLE LOOMS

Shunyata Research has developed four highly specialized cable looms. Each cable family includes the following types of cables: speaker cable, speaker jumpers, RCA interconnect, XLR interconnect, phono cable, AES/EBU, S/PDIF, clock cable, USB cable and CGC/SGC grounding cables.

Moving from one level to the next confers higher levels of specialization, advanced technologies, construction techniques and conductor materials. We are proud to provide extensive explanations of the technologies, customized parts and specifications that go into the production of the products.

Products from each of Shunyata Research's cable series are designed to complement one-another, ensuring perfect system compatibility and balance.

TECHNOLOGY HIGHLIGHTS

VENOM SERIES signal cables include exotic Ohno (single crystal) copper, VTX™ (hollow core conductors and STIS™ (interchangeable speaker-cable terminals). The award-winning Venom Series power cords feature massive OFE copper conductors, 100% coverage shielding and an array of power-connectors designed using Shunyata's own DTCD™ Analyzer, which ensures superior instantaneous current delivery.

DELTA SERIES builds upon the Venom Series high-quality features with advanced fluorocarbon dielectrics, larger VTX™ conductors, and superior connectors terminated using a high-tech sonic-welding process. The Delta power cords include Shunyata Research's own CopperCONN® connectors made with pure copper contacts. The Delta is also the first in Shunyata Research's NR Series of power cords to incorporate on-board CCI™ noise reduction filters. Finally, the Kinetic Phase Inversion Process — abbreviated KPIP™, makes its first appearance in the Delta Series. KPIP™ is more than just another break-in box; it is a truly transformative conditioning process that goes beyond simple burn-in. KPIP™ not only makes time consuming burn-in a thing of the past; it elevates the performance of the products to which it is applied.

ALPHA SERIES adds to the customization and technologies of the Delta Series with the internationally patented ΞTRON® technology. ΞTRON® measurably reduces dielectric distortion, rendering improvements in perceived coherency and low-level resolution. ΞTRON® technology is one of many reasons why Alpha Series Cables are used as performance references by recording and sound professionals.

As the performance vanguard in the Shunyata Research cable line-up, SIGMA SERIES cables take the term *state-of-the-art* to an entirely new level with the introduction of two new cutting-edge technologies. Sigma Series interconnects include the Transverse Axial Polarizer (TAP) that minimizes a form of micro-distortion identified as electromagnetic polarization. The Sigma Series speaker cables incorporate a proprietary device called HARP that reduces current resonances within the cable, a concept that is somewhat analogous to diffraction in room acoustics.
~ Patents Pending ~

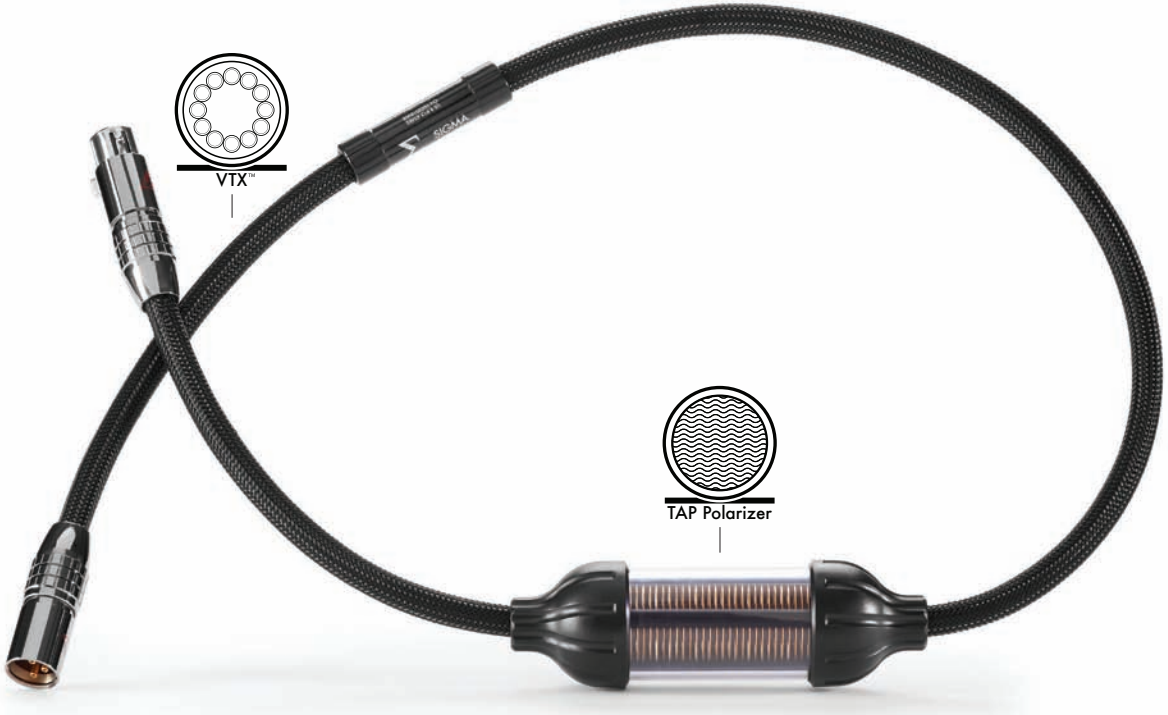
POWER CABLES

Over the past 20 years, Shunyata Research has invested enormous resources into the scientific research, measurement, and materials development of its many power cord models. Shunyata is the only company to have developed its own DTCD™ Analyzer that precisely measures instantaneous current through contacts, wires, switches and breakers. We are also one of the only companies that manufacturers all of its own power wiring, terminals and connectors. Shunyata Research treats the design of its power cords as the most important cable in any entertainment, recording or medical system

A common misconception regarding power cables is that they represent the final link in the transfer of power after traveling through miles of power lines and in-home wiring. The power cable is actually the first two meters of power wiring that the audio component sees — electrically speaking. In effect, the power cord is an extension of the transformer in the component's power supply.

Shunyata Research has developed advanced conductor geometries, electrical contacts, power connectors and junction-to-junction bonding techniques with measurements provided by our exclusive DTCD™ Analyzer. Shunyata Research's NR Series power cords have built-in noise filters that measurably improves CCI™ (Component-to-Component Interference) by reducing conducted power line noise and radiated RFI/EMI interference. Some of the key features of our power cords include: pure OFE (Oxygen-Free Electrolytic) copper; VTX™ 'hollow tube' wires; CopperCONN® connectors made with pure copper contacts; and built-in NR noise reduction filters. Last but not least, Delta, Alpha and Sigma series power cords are conditioned with our proprietary Kinetic Phase Inversion Processor (KPIP™) that improves performance and eliminates burn-in issues.


VTX™
Cu
CopperCONN®
CCI™
99.99
PURE
OFE 101
KPIP™



Shunyata Research recognizes that different cables require different geometries. Beginning with Venom series, Shunyata Research interconnects utilize perfect geometries for single-ended and balanced cable designs.

INTERCONNECTS

Analog Interconnects carry a system's lowest-level signal. Unlike the high-speed signals in digital cables, or the mass-current traveling through power cords or speaker cables, analog Interconnects must be designed to perform a refined, yet simple purpose, which is primarily to preserve and protect the source's original signal. With high levels of RFI, EMI and component-radiated noise ever-present, interconnects require careful consideration be given to isolation from their external environment. Less well known, but equally important factors affecting performance are internally generated micro-distortions such as skin-effect and dielectric absorption, inherent within all signal-carrying conductors.

Shunyata Research scientist Caelin Gabriel, a recognized expert in area of signal-transmission and low-level signal resolution, has developed specialized metal treatments, conductor geometries and patented technologies that addresses both the external and internally generated distortions that interfere with the superior resolution of the original signal. These technologies start with the finest raw material in Ohno Continuous Cast Single Crystal Copper, which is used in all Shunyata Research interconnect models. The Ohno Copper is then wound into hollow core conductors which Shunyata terms VTX™ (Virtual Tube Conductor). VTX™ conductors dramatically minimize conductor distortions known as skin-effect. In the Delta model interconnects, the conductors are made larger and include the finest fluorocarbon dielectrics for improved resolution and for the first time, KPIP™ (Kinetic Phase Inversion Process) is used to pre-condition conductors well beyond what normal break-in accomplishes. From Alpha through Sigma interconnects, Shunyata's most advanced patents and technologies, such as ΞTRON® and the Transverse Axial Polarizer (TAP) are deployed, further minimizing distortion and dramatically improving resolution.

SPEAKER CABLES

Next to power cables, speaker cables are the most critical signal cable links in an entertainment system. This is because speaker cables must transfer the delicate music signal while also conducting very high current into a speaker that presents a dramatically varying low-impedance load. Shunyata has spared no expense in the design of its speaker cables' ability to deliver high current while eliminating the multiple forms of micro-distortion that would otherwise obscure and distort the original music signal. Shunyata Research speaker cables start with ultra-pure OFE copper in a VTX™ 'hollow tube' geometry that maximizes power transfer while minimizing skin effect. As you go up the series ladder, more advanced technologies become available, including; patented ΞTRON® that eliminates dielectric distortion and HARP technology that reduces current resonance modal distortions.

Shunyata Research uses a costly sonic welding process that bonds metals at a molecular level without the use of solder, brazing rods or any other intermediary metals. This process is superior to crimping, soldering, cold soldering and cold welding. There is no better method to join conductors to terminals, which ensures maximum power transfer and a distortion free termination. The result of these accumulated technologies is distortion-free performance rarely experienced, regardless of cost.


ΞTron®
HARP
VTX™
99.99
PURE
OFE 101
Sonic Welding

ArNi™

Precision Matched Z

99.99 PURE
OFE 101

KPIP™

Single-Ended

Balanced (XLR)

DIGITAL CABLES

High-speed digital transmission is very different from audio frequency signal transmission and requires a different knowledge base and design criteria. Audio cable signal transmission is governed by the principles of inductance, capacitance, and resistance. By contrast, high-speed digital signals are governed by a principle known as 'transmission line theory'. The performance of a transmission line is governed by the characteristic impedance of the cable. Certain types of cable require a specific characteristic impedance to achieve optimal performance — for instance, cable TV coaxial cables are 75 ohms, while test equipment cables require 50 ohm cables. Modern audio and entertainment systems may have multiple digital connections, each with potentially different characteristic impedances.

While the characteristic impedance is a critical factor in the optimal performance of digital cables, our research also indicates that the precision with which a digital cable is constructed has a significant impact on its performance. Shunyata Research digital cables are produced using a *Precision Matched Z* concept. This dictates that tolerances of the conductor surface, dielectric extrusion, and the precision of the braided shield are held to smaller variances. To achieve these tight tolerances, the extrusion and braiding machines must be run at one-quarter speed during the manufacturing process. The result is better performance through a reduction of cable-induced 'signal jitter'.

Superficially, digital cables may look the same as analog cables. For example, a S/PDIF cable can be terminated with RCA connectors, much like analog interconnects. Because the terminations appear the same, analog interconnects could be used as a substitute for a digital cable; but since it has not been designed with the correct characteristic impedance, the performance will suffer.


V
VENOM

V
VENOM

PROVEN PERFORMANCE: AFFORDABLY PRICED

The Venom Series design imperative: "Produce products with reference grade materials that transcends their affordable price points". Based on countless reviews, media-awards and ten years of overwhelming commercial success, the Venom Series cables have succeeded in delivering a level of performance that exceeds that of cabling systems that cost three to four times their modest price.

Creating an entire series of products that has achieved this level of success is no mean feat. It requires a massive investment in conductor quality, custom-designed parts and a fanatical attention to the fundamentals of signal and power transfer science. The performance and craftsmanship of the Venom Series cables is peerless regardless of price and yet they are affordable enough to suit any budget.

OFE 101


Ohno


VTX™


ArNi™


STIS™

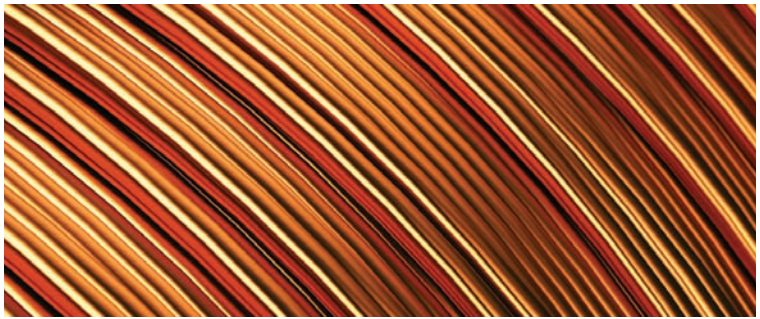
VENOM SERIES CUSTOMIZATION AND SCIENCE

Venom Series signal cables use the world's finest-purity Ohno 'Continuous Cast Copper' in an exclusive hollow-core VTX™ array. The RCA and XLR cables are constructed using completely different cable designs; each respectively optimized for 'single-ended' or 'balanced' signal transmission. Venom signal cable and speaker cables are heavily shielded for superior noise immunity.

Shunyata Research's custom-designed molded connectors stand out as a key-contributor to the performance of the Venom Series power cords. These exclusive connectors were purposefully over-sized to accommodate massive 12 to 10 gauge OFE conductors. The wires are crimped and soldered, assuring maximum transfer of instantaneous current (DTCD®) — a critical and measurable performance advantage of the Venom Series power cords.

Ohno wire, also called PCOCC, is considered by many to be the finest grade of copper available for use in signal cables due to its ultra-purity and the unique continuous casting process.

Ohno wire is extremely costly to produce, using heated molds that cast a wire, forming a single crystalline structure. Ohno is renowned for its particularly 'pure' sonic qualities and is often found in some of the world's most expensive cable designs.



VENOM 14

When other products use small 18 gauge conductors, the V14 features massive 14 gauge conductors and custom connectors that provide superior current delivery with full shielding for RFI/EMI immunity. Nickel-plated solid brass contacts.

WIRE	OFE 14 gauge
TERMINATION	Molded C5, C7, C7P and C13 connectors. Contacts solid brass.

VENOM HC

The Venom HC improves upon the legendary Venom 3's performance with amplifier-friendly 10 gauge conductors. Crimped and soldered terminals for superior DTCD™. The Venom HC is a great choice for power-conditioners, projects and other high-current components. *Custom lengths available.*

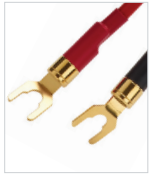
WIRE	OFE 10 gauge
TERMINATION	Molded C15 & C19 connectors.

VENOM EXT

The Venom EXT is essentially a high-end extension cord. It is made from the Venom HC high-current cabling and can be fitted with a variety of custom connectors. *Custom lengths available.*

99.99 PURE OFE 101

WIRE	OFE 10 gauge
TERMINATION	Custom C15, C19, US 5-15R connectors.



VENOM SPEAKER

Designed to be a reference quality speaker cable, with true technologies at an affordable price. According to many reviewers and customer feedback, the Venom Speaker cable has exceeded all expectations.

99.99 PURE OFE 101 · Ohno · VTX® · ArNi® · STIS™

WIRE	10 gauge twisted pair, VTX™ geometry, Ohno copper, shielded
TERMINATION	Standard: STIS™ interchangeable. *Optional: copper or copper/gold terminals.*

VENOM XLR

Ideally designed for balanced connections. Venom Interconnects feature the finest Ohno Continuous Cast Copper and Shunyata Research's exclusive XLR connectors.

WIRE	16 gauge twisted pair, VTX™ geometry, Ohno copper, braided shielding
TERMINATION	Shunyata XLR, gold pins.

VENOM RCA

Designed specifically for single-ended connections. The Venom signal cables have technologies not seen at these price points that will often embarrass twice-the-price competitors. Venom Interconnects feature the finest Ohno copper with silver braided shielding.

WIRE	Coaxial 16 gauge, VTX™ geometry, Ohno copper, silver plated braided shield
TERMINATION	Shunyata RCA, gold pins.

VENOM PHONO

Venom phono cables provide superior shielding from RFI/EMI interference, which is critical to great phono performance. Venom Phono cables feature the finest Ohno copper with silver braided shielding. Includes separate CGC ground cable.

99.99 PURE OFE 101 | Ohno | VTX® | ArNi®

WIRE	Coaxial 16 gauge, VTX™ geometry, Ohno copper, braided shielding
TERMINATION	Shunyata RCA, gold pins.

VENOM AES/EBU

Designed specifically for digital connections. Venom Interconnects feature the finest Ohno continuous cast copper and heavy braided shielding for noise isolation.

99.99 PURE OFE 101 | Ohno | VTX® | ArNi®

WIRE	Ohno 110 ohm twisted pair, VTX™ geometry, Ohno copper, braided shielding
TERMINATION	Shunyata XLR, gold pins.

VENOM S/PDIF

Designed specifically for 75-ohm digital connections. Venom Interconnects feature the finest Ohno continuous cast copper and 100% coverage silver braided shielding.

WIRE	Ohno 75 ohm Coxial, VTX™ geometry, SPC shielding
TERMINATION	Shunyata RCA (75 ohm).

VENOM CLOCK-75

Designed specifically for 75-ohm digital clock connections. Features the finest Ohno Continuous Cast Copper and exceptional silver braided shielding.

WIRE	Ohno 75 ohm Coxial, VTX™ geometry, SPC shielding
TERMINATION	Shunyata RCA (75 ohm).

VENOM USB

The Venom USB cable offers high performance at an exceptionally attractive price. The signal conductors are silver-plated VTX™. Triple shielding with signal and power wires individually shielded. Venom USB cables have been favorably compared to cables up to $1000. (1.5 & 3 meter lengths available)

99.99 PURE OFE 101 VTX

WIRE	90 ohm, 4-conductor, VTX™ geometry, silver plated copper, triple shielded
TERMINATION	Shunyata USB 2.0 A-Male to B-Male (gold pins).

VENOM HDMI

Venom HDMI supports 4K (4320P), 10.2Ghz, ARC, HRC, Dolby TrueHD, Digital Plus, DTS-HD Master Audio, Uncompressed digital video, uncompressed multi-channel digital audio, High-speed ethernet. (1, 2, & 3 meter lengths available)

99.99 PURE OFE 101

WIRE	28 gauge silver plated conductors, multiple shields, RFI filter
TERMINATION	HDMI Type A.


DELTA
SHUNYATA RESEARCH
SHUNYATA RESEARCH

DELTA

COMPLETE CUSTOMIZATION

The Delta Series interconnects inherit all of the fine features from the Venom Series including the exotic Ohno copper conductors. Their performance is notably enhanced with advanced fluorocarbon dielectrics, larger VTX™ hollow-core conductors and superior connectors terminated using Shunyata Research's high-tech sonic-welding process. KPIP™, or Kinetic Phase Inversion Process, makes its first appearance in the Delta Series. KPIP™ is not just another break-in box; rather, it is a truly advanced process that goes beyond simple burn-in and literally conditions conductors, making time consuming burn-in a thing of the past. KPIP™ dramatically elevates the performance of all products to which it is applied. The combined effects of the features found in Delta Series cables delivers a significant improvement in resolution, clarity and coherency. Delta Series cables may represent the sweet-spot in the Shunyata Research line-up with an exceptional price-to-performance ratio.

DELTA NR POWER CORD: MEASURABLE NOISE REDUCTION

The Delta power cables feature ultra-pure OFE copper, woven into Shunyata's own VTX™ hollow-core conductors, which are then connected to Shunyata's exclusive CopperCONN® connectors. CopperCONN® connectors contain pure copper contacts — not the common plated brass and bronze contacts used in the vast majority of power cords at this price-point. The Delta NR is the first in Shunyata Research's NR Series power cables to incorporate 'on-board CCI™ filters' that provide power conditioning to each individual component.

DELTA EF POWER CORD: ULTIMATE FLEXIBILITY

The EF Series are specialty power cables designed for electronics that have obstructed power-inlet entries. Many entertainment systems are installed in custom cabinetry that require exceptional flexibility and compact connectors for easy routing through small openings.

Shunyata Research has created the CopperCONN® EF-C15 power connector that features a compact physical size and yet retains all the capabilities of Shunyata's full-sized CopperCONN® connectors. It has high grip, pure copper contacts and oversized contacts to accept 8 gauge wire without 'downsizing' the wire.

The Delta EF and Alpha EF power cables offer near reference level performance with exceptional ease of use and flexibility.

DELTA NR

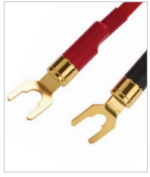
The Delta NR power cord is the most affordable of the NR (noise reduction) power cords from Shunyata Research. NR power cords that have built-in filters that reduce power line noise. Delta NR features VTX™ (hollow-core) conductors and pure copper CopperCONN® connectors. The 10 gauge conductors make it ideal for high-power amplifiers and source components.

WIRE	OFE 10 gauge, VTX™ geometry
TERMINATION	Connectors: C15, C19; Plugs: US, EU, AU, UK and Swiss.

DELTA EF

The Delta EF power cord has the same VTX™ conductors used in the Delta NR and includes CopperCONN® plugs. It features a custom designed and built Shunyata Research connector that is smaller, allowing connections to obstructed AC inlets. Delta EF does not include noise reduction.

WIRE	OFE 10 gauge, VTX™ geometry
TERMINATION	Connectors: EF-C15, C19; Plugs: US, EU, AU, UK and Swiss.



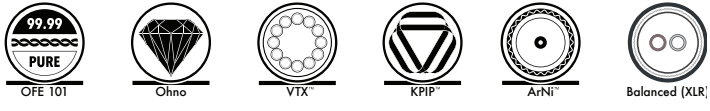
DELTA SPEAKER

Delta Series speaker cables outperform pricier competition with massive 8 gauge, VTX™ (hollow-core), OFE copper conductors. Sonic welded pure copper or gold/copper terminals are available. Shunyata Research's exclusive KPIP™ process eliminates break in.

WIRE	OFE 8 gauge twisted pair, VTX™, shielded
TERMINATION	Standard: STIS™ interchangeable. *Optional: copper or copper/gold terminals.*

DELTA XLR

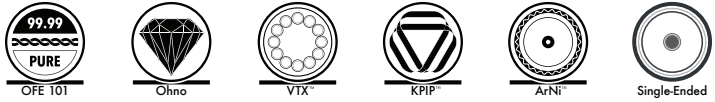
Delta Series interconnects use the finest Ohno Continuous Cast Copper, VTX™ (hollow core) conductors with exotic fluorocarbon dielectrics. Shunyata Research's exclusive KPIP™ process eliminates lengthy burn-in issues.



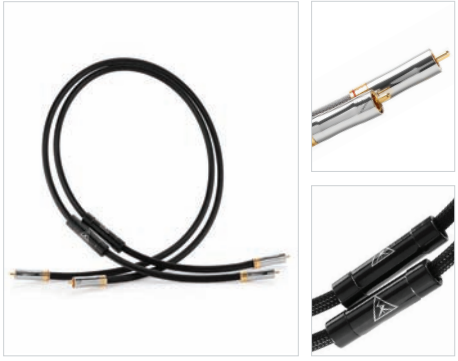
WIRE	Ohno 16 gauge twisted pair, VTX™ geometry, FEP dielectric, braided shielding
TERMINATION	Shunyata XLR, tubular gold pins.

DELTA RCA

Delta Series interconnects use the finest Ohno Continuous Cast Copper, VTX™ (hollow core) conductors with exotic fluorocarbon dielectrics. Shunyata Research's exclusive KPIP™ process eliminates lengthy burn-in issues.

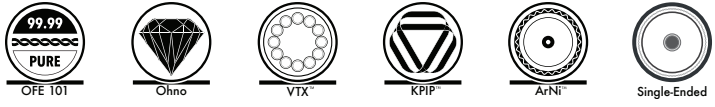


WIRE	Ohno 16 gauge coaxial, VTX™ geometry, FEP dielectric, braided shielding
TERMINATION	Shunyata RCA, gold pins.

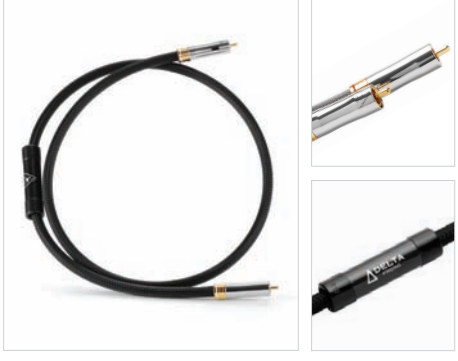


DELTA PHONO

Delta Series interconnects use the finest Ohno Continuous Cast Copper, VTX™ (hollow core) conductors with exotic fluorocarbon dielectrics. Shunyata Research's exclusive KPIP™ process eliminates lengthy burn in issues. A separate CGC Delta grounding cable is included.

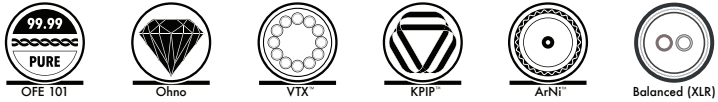


WIRE	Ohno 16 gauge coaxial, VTX™ geometry, FEP dielectric, braided shielding
TERMINATION	Shunyata RCA, gold pins.



DELTA AES/EBU

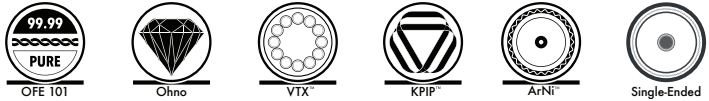
Delta Series AES/EBU features a true balanced, twisted pair design. Braided shielding ensures RFI/EMI immunity. Shunyata Research's exclusive KPIP™ process eliminates lengthy burn-in issues.



WIRE	Ohno 110 ohm twisted pair, VTX™ geometry, FEP dielectric, braided shielding
TERMINATION	Shunyata XLR, gold pins.

DELTA S/PDIF

Delta Series S/PDIF uses the finest Ohno continuous cast copper, VTX™ (hollow core) conductors with expensive fluorocarbon dielectrics. Silver plated braided shields ensure RFI/EMI immunity. Shunyata Research's exclusive KPIP™ process eliminates lengthy burn-in issues.



WIRE	Ohno 75-ohm coaxial, VTX™ geometry, FEP dielectric, braided shielding
TERMINATION	Shunyata RCA (75 ohm).

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ALPHA

ALPHA

PATENTED SCIENCE—
LEGENDARY PERFORMANCE

The internationally patented ΞTRON® technology is perhaps the most compelling of Shunyata Research's technologies, with its ability to measurably lower dielectric distortion and preserve the original signal's integrity. ΞTRON® cables have earned a legendary reputation among reviewers, customers and sound professionals for their ability to eclipse the performance of even the most cost prohibitive cables on the market. Caelin Gabriel's research has evolved a second generation ΞTRON® technology that is making its debut in the Alpha Series interconnects and speaker cables. The Alpha Series' combination of ΞTRON® technology, Ohno Copper, VTX™ hollow-core conductors, sonic welding terminations, and KPIP™ (Kinetic Phase Inversion Process) simply overwhelms competing products in performance, parts quality, and construction.

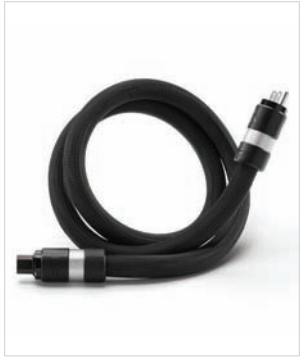
ALPHA POWER CABLES

The Alpha NR and Alpha EF power cables deliver true reference level performance with massive 8-gauge VTX™ conductors and the industry's finest CopperCONN® power connectors. The Alpha NR model adds measurable noise-reduction through the use of Shunyata's own CCI™ Filter-system, while the ultra-flexible Alpha EF provides world-class performance to components with obstructed power entries. Alpha EF and Alpha NR power-cables possess truly unique technologies, metal-treatments and parts customization that simply does not exist in competitive products — and they accomplish this at surprisingly affordable prices.

ALPHA NR

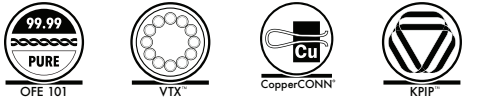
The Alpha NR power cord offers the best price to performance ratio in Shunyata Research's Noise Reduction series. Eight gauge VTX™ (hollow-core) conductors equipped it to handle the highest-powered amplifiers and yet it is incredibly flexible for use on a small CD player. CopperCONN®, pure copper connectors, are the best in the business. KPIP™ eliminates burn-in issues.

WIRE	OFE 8 gauge, VTX™ geometry
TERMINATION	Connectors: C15, C19; Plugs: US, EU, AU, UK and Swiss.

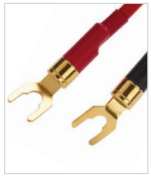


ALPHA EF

The Alpha EF uses the same 8 gauge VTX™ (hollow-core) conductors from the Alpha NR but is extremely flexible with its Tri-Flex, Extreme Flexibility design. The exclusive CopperCONN® EF-C15 allows connections to obstructed AC inlets. KPIP™ eliminates burn-in issues.



WIRE	OFE 8 gauge, VTX™ geometry, Tri-flex
TERMINATION	Connectors: EF-C15, C19; Plugs: US, EU, AU, UK and Swiss.



ALPHA SPEAKER

Alpha speaker cables use 9-gauge VTX™ conductors and ΞTRON® technology for reference level performance. The terminals are sonic-welded ensuring minimum contact junction resistance. KPIP™ eliminates burn-in issues.

WIRE	OFE 9 gauge, VTX™
TERMINATION	Standard: copper or copper/gold terminals. *Optional: STIS™ interchangeable.*

ALPHA XLR

Alpha interconnects feature Shunyata Research's exclusive patented ΞTRON® technology that reduces dielectric distortion. Ohno Continuous Cast Copper, VTX™ (hollow core) conductors with expensive fluorocarbon dielectrics make for a true reference quality interconnect. KPIP™ eliminates burn-in issues.

WIRE	Ohno 16 gauge twisted pair, VTX™ geometry, FEP dielectric, braided shielding
TERMINATION	Shunyata XLR, tubular gold pins.

ALPHA RCA

Alpha interconnects feature Shunyata Research's exclusive patented ΞTRON® technology that reduces dielectric distortion. Ohno Continuous Cast Copper, VTX™ (hollow core) conductors with expensive fluorocarbon dielectrics make for a true reference quality interconnect. KPIP™ eliminates burn-in issues.

WIRE	Ohno 16 gauge coaxial, VTX™, Ohno, FEP dielectric, silver plated braided shield
TERMINATION	Shunyata RCA, gold pins.

ALPHA PHONO

Alpha interconnects feature Shunyata Research's exclusive patented ΞTRON® technology that reduces dielectric distortion. Ohno Continuous Cast Copper, VTX™ (hollow core) conductors with expensive fluorocarbon dielectrics make for a true reference quality interconnect. KPIP™ eliminates burn-in issues. Includes separate Alpha CGC grounding cable.

WIRE	Ohno 16 gauge coaxial, VTX™, Ohno, FEP dielectric, silver plated braided shield
TERMINATION	Shunyata RCA, gold pins.

ALPHA AES/EBU

Alpha AES/EBU cables feature Shunyata Research's exclusive patented ΞTRON® technology that reduces dielectric distortion. Ohno Continuous Cast Copper, VTX™ (hollow core) conductors with expensive fluorocarbon dielectrics make for a true reference quality digital cable. KPIP™ eliminates burn-in issues.

WIRE	Ohno 110 ohm twisted pair, FEP dielectric, Precision Matched Z shielding
TERMINATION	Shunyata XLR, tubular gold pins.

ALPHA S/PDIF

Alpha digital cables are constructed using Precision Matched Z to reduce jitter and signal reflections. Expensive fluorocarbon dielectrics and impedance matched RCA connectors ensure reference performance. KPIP™ eliminates burn-in issues.

WIRE	Silver 75 ohm coaxial, FEP dielectric, Precision Matched Z shielding
TERMINATION	Shunyata RCA (75 ohm).

ALPHA CLOCK-75

Alpha digital cables are constructed using Precision Matched Z to reduce jitter and signal reflections. Expensive fluorocarbon dielectrics and impedance matched RCA connectors ensure reference performance. KPIP™ eliminates burn-in issues.

WIRE	Silver 75 ohm coaxial, FEP dielectric, Precision Matched Z shielding
TERMINATION	Shunyata RCA (75 ohm).

ALPHA CLOCK-50

Alpha digital cables are constructed using Precision Matched Z to reduce jitter and signal reflections. Expensive fluorocarbon dielectrics and impedance matched RCA connectors ensure reference performance. KPIP™ eliminates burn-in issues.

WIRE	Silver 50 ohm coaxial, FEP dielectric, Precision Matched Z shielding
\TERMINATION	Shunyata RCA (50 ohm).

NA

NA

NA

ALPHA USB

Alpha USB cables feature Precision Matched Z conductors. Signal and power wires are heavily shielded for superior noise immunity. Each Alpha USB cable is handmade.

WIRE TERMINATION	Silver 90 ohm coaxial, FEP dielectric, Precision Matched Z shielding Shunyata Diamond USB (90 ohm).

SIGMA

SIGMA

A CONVERGENCE OF SCIENCE AND ART

Sigma Series cables showcase technological innovation and design execution that simply does not exist elsewhere — at any price. Sigma Series cables combine meaningful parts innovations with objective measurement and an artisan's eye for construction quality. Unlike many cost-no-object cable products that have little in the way of discernible science, Sigma Series products incorporate an array of definable technologies that sets the standard for quality and performance in the cable industry .

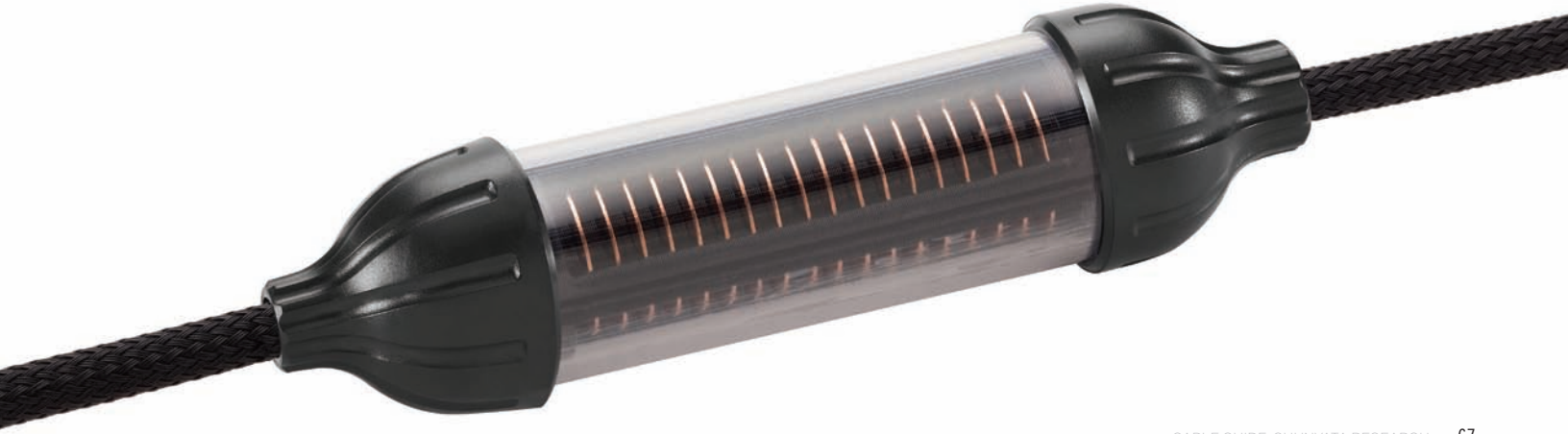
SIGMA NR POWER CABLES

The Sigma NR power cord builds upon the worldwide success of its predecessors with massive 6-gauge (VTX™) hollow-core conductors and Shunyata's own CopperCONN®, solid copper connectors. The Sigma NR's meticulous design and vanishingly low-resistance to peak current (DTCD™) delivers unparalleled performance when used with even the most current-hungry amplifiers. It''s built-in wide-bandwidth noise filtration system reduces power-line and component generated power supply noise, making it an ideal choice for source components, power amplifiers and digital systems. Shunyata's Sigma NR power cord's advanced materials and standard-setting technology raise the performance bar for others to follow.

TECHNOLOGICAL INNOVATION

As the performance vanguard in the Shunyata Research's cable line-up; Sigma Series cables take the term 'state-of-the-art' to an entirely new level with the introduction of two new cutting-edge technologies. The first, integrated in the Sigma Series interconnects and digital cables, is the 'Transverse Axial Polarizer' (TAP). It minimizes a form of 'micro-distortion' identified as 'electromagnetic polarization' that reduces 'sonic glare' while increasing clarity and coherency. The second technology incorporates a proprietary device called HARP that reduces current resonances within speaker cables — a concept that is sonically analogous to the use of diffusion panels to treat frequency irregularities in room acoustics.

~ Patents Pending ~



SIGMA NR

The Sigma NR power cord is the ultimate expression of Shunyata Research's Noise Reduction series. Six gauge VTX™ (hollow-core) conductors equip it to handle the highest-powered amplifiers and yet it is surprising flexible for such a large diameter cable. CopperCONN®, pure copper connectors, are the best in the business. KPIP™ eliminates burn-in issues.

WIRE	OFE 6 gauge, VTX™ geometry
TERMINATION	Connectors: C15, C19; Plugs: US, EU, AU, UK and Swiss.

SIGMA SPEAKER

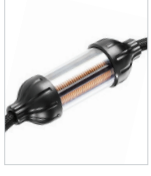
Shunyata Research's Sigma Series is quite simply our highest performing speaker cable. Exclusive HARP technology reduces current resonances with the cable. KPIP™ eliminates burn-in issues.

WIRE	OFE 6 gauge, VTX™
TERMINATION	Standard: copper or copper/gold terminals. *Optional: STIS™ interchangeable.*

SIGMA XLR

Sigma interconnects feature Shunyata Research's exclusive patented-pending TAP Polarizer technology. TAP reduces electromagnetic polarization distortion. ΞTRON® technology, Ohno Continuous Cast Copper, VTX™ (hollow core) conductors with expensive fluorocarbon dielectrics make for a true reference quality interconnect.

WIRE	Ohno 16 gauge twisted pair, VTX™ geometry, FEP dielectric, braided shielding
TERMINATION	Shunyata XLR, tubular gold pins.



SIGMA RCA

Sigma interconnects feature Shunyata Research's exclusive patented-pending TAP Polarizer technology. TAP reduces electromagnetic polarization distortion. ΞTRON® technology, Ohno Continuous Cast Copper, VTX™ (hollow core) conductors with expensive fluorocarbon dielectrics make for a true reference quality interconnect.

WIRE	Ohno 16 gauge coaxial, VTX™, Ohno, FEP dielectric, silver plated braided shield
TERMINATION	Shunyata RCA, gold pins.

SIGMA PHONO

Sigma interconnects feature Shunyata Research's exclusive patented-pending TAP Polarizer technology. TAP reduces electromagnetic polarization distortion. ΞTRON® technology, Ohno Continuous Cast Copper, VTX™ (hollow core) conductors with expensive fluorocarbon dielectrics make for a true reference quality interconnect. Includes separate Sigma CGC grounding cable.

WIRE	Ohno 16 gauge coaxial, VTX™, Ohno, FEP dielectric, silver plated braided shield
TERMINATION	Shunyata RCA, gold pins.

SIGMA AES/EBU

Sigma interconnects feature Shunyata Research's exclusive patent-pending TAP Polarizer technology. TAP reduces electromagnetic polarization distortion. ΞTRON® technology, Ohno Continuous Cast Copper, VTX™ (hollow core) conductors with expensive fluorocarbon dielectrics make for a true reference quality interconnect.

WIRE	Ohno 110 ohm twisted pair, FEP dielectric, Precision Matched Z shielding
TERMINATION	Shunyata XLR, gold pins.

SIGMA S/PDIF

TAP reduces electromagnetic polarization distortion. Sigma digital cables are constructed using Precision Matched Z to reduce jitter and signal reflections. Expensive fluorocarbon dielectrics and impedance matched RCA connectors ensure reference performance.

WIRE	Silver 75 ohm coaxial, FEP dielectric, Precision Matched Z shielding
TERMINATION	Shunyata RCA (75 ohm).

SIGMA CLOCK-75

TAP reduces electromagnetic polarization distortion. Sigma digital cables are constructed using Precision Matched Z to reduce jitter and signal reflections. Expensive fluorocarbon dielectrics and impedance matched RCA connectors ensure reference performance.

WIRE	Silver 75 ohm coaxial, FEP dielectric, Precision Matched Z shielding
TERMINATION	Shunyata RCA (75 ohm).

SIGMA CLOCK-50

TAP reduces electromagnetic polarization distortion. Sigma digital cables are constructed using Precision Matched Z to reduce jitter and signal reflections. Expensive fluorocarbon dielectrics and impedance matched RCA and BNC connectors ensure reference performance.

WIRE	Silver 50 ohm coaxial, FEP dielectric, Precision Matched Z shielding
TERMINATION	Shunyata RCA (50 ohm).

SIGMA USB

TAP reduces electromagnetic polarization distortion. Sigma USB cables feature Precision Matched Z conductors. Signal and power wires are heavily shielded for superior noise immunity. Each Sigma USB cable is handmade.

WIRE	Silver 90 ohm coaxial, FEP dielectric, Precision Matched Z shielding
TERMINATION	Shunyata Diamond USB (90 ohm).

NA

NA

NA


HARP
TECHNOLOGY
Σ
SIGMA REFERENCE
SPEAKER

Shunyata Research uses only the highest purity of copper available for the production of its wire products. **OFE Alloy 101** or C10100 is the highest grade of copper with a minimum 99.99% purity and a conductivity rating of 101% IACS. OFE stands for oxygen-free electrolytic and supersedes the term OFHC (oxygen-free high conductivity). C10100 is the only grade of copper that comes with a written certification of purity. Certified by ASTM F68 C10100.

Ohno wire, also called PCOCC was invented in 1986 by professor Atsumi Ohno of the Chiba Institute of Technology in Japan. Copper wire is created by an extrusion process that pulls a rod of cold copper through a small orifice which creates multiple crystalline boundaries. By contrast, Ohno wire is made by a process using heated molds that cast a wire to form a single crystalline structure. Ohno wire is well known for its exceptionally pure, grain-free sonic qualities.

Shunyata Research's exclusive **VTX™** conductors are made in the shape of hollow tubes. Since current can 'only' travel through the outer rim on the wire, there are no skin effects or random eddy currents. VTX™ conductors are made from pure OFE C10100 or Ohno (single crystal) copper.

KPIP™ (Kinetic Phase Inversion Process) was developed by Caelin Gabriel after years of research into the underlying causes of various effects such as burn-in, wire directionality and the effects of cryogentic treatment. He discovered that there was an underlying core principle that burn-in and cryogenics only "partially" addressed. Once the governing principle was understood it became possible to create a processing technique and machine that could virtually eliminate the need for burn-in and cryogenic treatment.

ArNi® is a type of wire created by Shunyata Research designed to be the finest quality wire available for audio purposes. It begins with the highest purity of copper available – OFE C0100 or Ohno (single crystal). Then it is formed in virtual hollow tubes eliminating skin effects and eddy current distortions. In addition, the wire undergoes our proprietary KPIP™ process.

ΞTRON® is a technology developed by Shunyata Research that prevents dielectric absorption and re-radiation in signal transmission. It requires a special type of conductor that has two signal paths and an electric field compensation circuit that creates a cancellation signal that prevents the insulation from developing a charge. ΞTRON® cables preserve the integrity of the source signal even when using very long runs of cable. Patent US 8,912,436, Patent Ch ZL201180047344.2.

Many audiophile grade connectors are made from brass or bronze. While some may get a plating of silver, gold or rhodium, the majority of the current is carried by the contact's base-metal. **CopperCONN®** connectors contain pure copper contacts which has a much higher conductivity that brass. The difference in performance is clearly audible.

The **STIS™** speaker terminal system was designed to eliminate the high cost and complication of speaker cable termination. The system makes it possible to use the same speaker cable with a variety of different amps and speakers. If a spade is damaged, you can simply replace it without sending it to the factory for re-termination. STIS™ interchangeable terminals have undergone extensive user listening tests to insure that they provide the finest audio performance that is equal or superior to non-replaceable, soldered terminals.

TAP (Transverse Axial Polarizer) is a device that interacts with the electromagnetic field generated by the signal traveling along the signal cable. TAP improves the sonic performance of the cable by modifying the behavior of the electromagnetic wave that surrounds the signal cable. In effect, the TAP blocks longitudinal-oriented waves while passing transverse-oriented waves. The effect in sonic terms is like using polarized sunglasses to reduce reflected sunlight. Correcting polarization micro-distortion reduces what some call sonic glare. ~ Patent Pending ~

Shunyata Research digital cables are produced using a **Precision Matched Z** (PMZ) concept. This means that tolerances of the conductor surface, dielectric extrusion, and the precision of the braided shield are held to minute variances. To achieve these tight tolerances, the extrusion and braiding machines must be run at one-quarter speed during the manufacturing process. The result is better performance through a reduction of cable-induced 'signal jitter'. *(Note: Z means impedance)*

Crimping, soldering, brazing and cold soldering are all inferior methods of joining two wires or terminals together. **Sonic welding** uses high energy sonic waves to literally join two metals together at a molecular level. There is no solder or intermediary metals involved in the process.

HARP was discovered through Gabriel's research into 'current drift' and audio frequency current resonances that occur in speaker cables. Theoretically, a speaker cable may develop current resonances in the audio band, being roughly analogous to standing waves (modals) in room acoustics. The HARP module acts as a current mode diffraction device that breaks up these resonances, improving the perceived resolution and coherency of the system.


TUNE
1950

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