

# Joe Reynolds of Nordost

## **Hi-Fi+: When, how, and why did you start making audio cables?**

**JR:** Nordost started manufacturing the original Flatline Speaker Cable in 1992 in Massachusetts. We decided to develop a very durable, flat FEP cable, which derived from a design originally made for the aerospace industry, and specifically tailor it for a hi-fi audio application. Originally, our unique design was simply meant to solve common installation problems. The flat and thin nature of our cable made it perfect for under carpet and in-wall installation. However, after research and testing, we discovered that our precision FEP manufacturing process drastically lowers the capacitance of our cables (five times lower than most of the popular brands on the market). Our dealers and distributors were quick to appreciate the sonic benefits of Nordost cables.

## **Mechanical construction, wiring geometry, or materials science – which considerations are more important in your cable designs, and why?**

Nordost cables stress the importance of both mechanical construction and wiring geometry. Over the years we have developed several proprietary technologies, such as Micro Mono-Filament. The use of Micro Mono-Filament creates a separation between the insulation and conductor so that 80% of the conductor is suspended in air (85% when using Dual Mono-Filament). This

unique geometry gives our cables far greater bandwidth and speed. This, along with precise manufacturing techniques, which can be seen just by looking at our power cords and speaker cables, are the key to great cable performance.

## **How have your cable designs evolved over the years?**

Over the years we have evolved our designs to improve upon the mechanical and electrical performance of our cables. We started out with extruded FEP, which has progressed to Micro Mono-Filament and even Dual Mono-Filament designs. Also, as time went on, we started to pay a lot of attention to the resonance of the materials we use, by incorporating mechanically tuned lengths. You can see the results of our efforts across our range of cables, but especially in our reference series, where we have taken our design philosophy even further, extending it to our own, proprietary HOLO:PLUG® connectors.

## **Which is more important for overall system performance: power cords, interconnects, or loudspeaker cables? Why?**

At Nordost we have always maintained that the most important cable in your system is the power cord, or more specifically, the power cord that feeds your distribution device. Ensuring that your sound system is receiving “clean” AC, with the least



amount of electromagnetic interference and radio frequencies as possible, is the key to great sound. Acuity, a research facility in the UK, has done extensive research for us, measuring the performance improvements in amplifiers and CD players while using Nordost power cords and QRT products. These are the improvements that we constantly demonstrate at shows and dealer events around the world. After power, I would place the most importance on interconnects, followed by loudspeaker cables.

**For best results with digital audio, would you recommend USB, I<sup>2</sup>S, Ethernet, or traditional coaxial S/PDIF connections? Why?**

For best results with digital audio, I would recommend a traditional S/PDIF connection since this cable can be controlled most precisely in terms of impedance. Nordost is able to control the impedance of our digital cables to a very tight tolerance of plus or minus 1%.

**How do you answer those who argue that specialised digital cables don't and can't make a difference since digital audio is 'all ones and zeros' anyway?**

As the only specialized manufacturer of HDMI and 4K UHD cables in North America, Nordost has put a lot of R&D into digital transmission. We have found that when digital cables are being used, it isn't numerical 1s and 0s, but analog square waves that represent 1s and 0s that are actually being transferred. The "less square" a wave is, the harder it is for a DAC to make

a distinction between the so-called 1s and 0s, which results in timing errors. In order to achieve sharp analog square waves, the cable must have a large bandwidth and be capable of high transmission speeds. Therefore, quality cable design makes a tremendous audible impact in digital cables.

**Do any of your cables use in-line 'boxes' of any kind? If so, what's inside those boxes and why do you use them?**

No, we do not use in-line boxes in any of our cables. Nordost does not believe in putting network filters, which act as tone controls on the music, in-line with audio signals. The frequency range of human hearing is 20 to 20,000 Hz. However, we are still aware of frequencies that extend from either end of that spectrum. Filtering-out these peripheral signals impacts the tonal balance that you are meant to experience from the music that you are listening to. When you filter something, you tend to filter out a lot of "the good" along with "the bad". Nordost aspires to deliver the music in its pure, intended form, rather than imparting our own signature onto the sound.

**For speaker cable terminations, do you prefer spade lugs or banana plugs (or perhaps something else)? Why?**

In our Leif and Norse 2 series we advise our customers to use Nordost's gold-plated, Z-plug banana when possible. The design of this connector not only achieves a full 360° of contact when it's inserted into a binding post, but the mass of the connector itself matches the mass of the conductors of



the cable. However, for our Valhalla 2 and Odin 2 ranges, we have developed a new, proprietary HOLO:PLUG® spade connector, which has mechanical properties that enhance the performance of our reference speaker cables.

**Do you recommend bi-wiring for loudspeakers? Why or why not?**

For many years, bi-wired speakers were very fashionable and, in turn, we sold a lot

of bi-wire loudspeaker cables. In fact, the flat ribbon design of our speaker cables lead very well to the construction of bi-wire cables. However, we stopped making bi-wire loudspeaker cables when we discovered that bi-wired cable tends to introduce frequency phase shifts to the signal. Today, Nordost has a better solution. We recommend connecting one set of speaker cables to the binding posts of the loudspeaker, and replacing the standard metal connecting strip with our

Norse or Reference Bi-Wire Jumpers. These mechanically tuned jumpers produce great results for bi-wired loudspeakers.

### **What is the reasoning behind cable lifters or risers? Do you recommend using them?**

The reason for using cable lifters is to lower the capacitance of the cable by suspending it away from the floor. Using lifters can also reduce microphonic effects that may be induced onto the cables. We are currently developing a new product called the Sort Lift, which will present a unique solution to address this problem.

### **Given the choice, would you prefer to work with components that used balanced or single-ended connections? Why?**

This is not an either/or choice. Technically, properly balanced interconnects will always have a lower noise floor than single-ended interconnects. In the real world however, this is not always the case, since certain products don't use truly balanced circuitry. We use both types of systems in our sound rooms and with good care in setup we can get fantastic sound from either type of system.

### **Has the vinyl revival meant developing new tonearm cables for the modern world?**

Yes, the vinyl revival has dramatically increased our tonearm cable business. Nordost technologies, including our proprietary Micro Mono-Filament design, produce fantastic results with delicate cartridge signals. We have developed special low-mass 5pin Din terminations for both MoonGlo® (used in our Leif and Norse 2

series) and HOLO:PLUG® (used in our Reference and Supreme Reference Series) connectors. We also supply Micro Mono-Filament internal tonearm cables, which are currently being used by manufacturers of high quality tonearms such as VPI. The amount of musical detail that this upgrade reveals is amazing.

### **Does your firm offer, or plan to offer, specialised cable for personal audio applications? If so, what challenges do you face in bringing high-end audio cables to the headphone world?**

The Heimdall 2 Headphone Cable is the first designated personal audio cable that Nordost has offered. It is available in a wide variety of terminations to accommodate the most popular brands of headphones. When we began with this project, it was a challenge to produce a cable that was not only technologically advanced, but was extremely delicate, as well as durable. There was also the hurdle of making our design compatible with the myriad of connectors that are being used in the personal audio market. Now that we have perfected our first headphone cable, we will be able to add to our line. In fact, we introduced a Blue Heaven Headphone Cable at CES in January 2016.



Some enthusiasts believe in choosing 'coherent, single-brand cable looms' while others argue that it's best to 'choose the right cable for each component'. Setting commercial considerations aside, which approach do you favour and why?

I think we were the first company to espouse the philosophy of a single brand cable loom. It makes perfect sense to have all of the cables throughout a system employing the same design philosophy and working in the same way. If, for example, you place a high-end interconnect cable between a CD player and an amplifier, then use a generic cable further down the listening chain, you will not be able to hear the full potential of the system. A full loom of one cable brand makes sense; a full loom of Nordost cables makes even more sense.

If you are at liberty to say, what new cable development projects will you tackle next?

We have a number of new cables in development for this coming year, including: two high performance Ethernet cables in our Leif and Norse 2 series, digital cables (both S/PDIF and AES/EBU) in our Tyr 2 range, and the Blue Heaven Headphone Cable. +

