

Snake oil and cables manufacturing

Everything influences everything. There is no such thing as a vacuum, even in a vacuum. Signal does not travel through conductors like water through a hose; rather, signal in its relationship with the conductor unleashes a host of primary, secondary and tertiary interactions in the conductor, the dielectric materials and the space surrounding the cable. Cables generate their own autoimmune disease whereby stray signal may re-enter the signal path out of phase. Shields couple magnetically with conductors and each other. Materials interact triboelectrically, and generate static by the very fact that everything is always in motion and that charge imbalances are unavoidable. Nothing is at rest, even at rest. Noise permeates the ether, high frequency signals and pulses abound and conductors are excellent antennas. In case you hadn't noticed, the universe is conspiring to smear signal. Whew, I need to take a breath.

Actually, your cable needs to take a breath. It needs to be freed from the influences that keep it in a confused state. This is not a simple matter. There is not one simple solution such as cotton dielectric, or twisted pairs or 14 nines whatever; rather, one has to address the above problems with a number of solutions working in concert. Taking this approach one can have great successes but also great failures. I love the part in the 6moons interview with Caelin Gabriel of Shunyata Research where he says he has a warehouse full of power cord designs. Every designer has a closet or a roomful of misses and near misses. Each failure and each new experiment teaches us something about the nature of the materials we are working with and how they interact. We can't predict how a new configuration will behave with certainty, but the results of the latest experiment will invariably open new ground for inquiry.

One of our aims at PranaWire is to use as few synthetic materials as possible. This is not based on our preference for ecologically sound manufacturing practices, although that is definitely a good enough reason in itself, but because the complexity of my designs requires that the materials employed interact well with each other. For example, PVC may have desirable dielectric properties, but it has very poor triboelectric properties when placed in proximity with silver, for instance. Of course, glass fibers will also have the same poor results and they might be considered as a natural material. As the complexity of the design increases, the chances of generating undesirable results grow exponentially. All of my designs to date make some use of synthetics, as, in a practical sense, they are unavoidable

Different designers use different "metaphors" to describe what they are doing. One may claim that all benefits are derived from addressing skin effect; another may claim that it is vibration damping that is paramount. Yet another will say that maintaining symmetry of field surrounding the conductor is what needs to be addressed. This is, of course, an oversimplification. The main point is that the language used to describe what is going on is useful to the designer as "metaphor" and strictly speaking may not be what is happening on an objective, "scientific" level. This kind of "voodoo talk" drives some people crazy and, as a result, they tend to dismiss exotic cables out of hand. Since the maladies afflicting conductors not only influence the behavior of a design individually, but also interact with each other, generating complexities of behavior we may never be able to measure, the language we use and devise can be useful in negotiating this labyrinth.

Ultimately, there is no objective measurement that can tell us whether a design is fully correct. One person's "accurate" may be the antithesis of another person's "accurate" yet both designs may "measure" the same. This is a truism in audio. No one claims that a wine is "accurate"; rather, oenophiles discuss the range of subtle flavors and aromas they are able to perceive. I remember the embers of herbs winking red and flickering out on hot rocks in a Native American sweat lodge ceremony I attended - brief lives that gave rise to a special smell I'd never before encountered, but which awoke in me a memory a recognition that was ancient and for which I was grateful. This is the kind of moment we look for in sound. The critical mind is suspended, and

we are left with sheer enjoyment and gratitude.

The future of hifi cables industry and the future of your firm

We will keep making the best cables we know how and will continue to improve on them. I don't think that we will fully dispense with cables in the near future, nor should we want to. New technologies come and go. The latest departure from traditional analog cable design always seems like the promise of the future, but to date has always left something to be desired and has degraded the signal in some subtle way. I think we are in an exciting time for cable design as there are many new materials available. I have the privilege of working with the very finest connectors in existence today. They have improved considerably from even a few years ago. Still, new modalities of connection may yield even greater benefits in the future.

The advent of room temperature superconductors will not rid us of the necessity of protecting the signal and the field it generates. If anything it may require even more rigorous taming of all the negative influences that abound as its superior conductivity may unleash as yet unforeseen influences and interactions.

From an Interview with Joseph Cohen of PranaWire
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