SECRETS of Home Theater and High Fidelity

A SECRETS Cable Review

Product Review

Slinkylinks Silver Conductor Air Dielectric Speaker Cables from New Zealand

July, 2004

John E. Johnson, Jr.

Specifications:

- Eight 0.25mm Silver Conductors
- Air Dielectric; Each Conductor in its Own PVC Tubing
- Typical Surface Area of Conductor Touching PVC Wall: 4% (96% in Contact Only with the Air)

Slinkylinks

www.slinkylinks.net

Slinkylinks takes a very simple approach: (1) Use silver as the conductor. Silver is a better (about 7% better) conductor than copper, and although they both oxidize, copper oxide is non-conductive while silver oxide is a very good conductor (e.g., silver oxide batteries); (2) Keep the conductors very thin. This minimizes the skin effect. In the case of the Slinkys, the conductors are only 0.25mm thick (250µ), which is about the size of a human hair. For the RCA unbalanced interconnects, two conductors are assigned to the + and two are assigned to the -. For the XLR interconnects, two are for one hot lead, two for the other, and a fifth silver conductor lies between the smaller tubes and the outside sleeve, assigned to the -. With Slinkylinks speaker cables, there are eight conductors, four each for the + and -; (3) Use air as the dielectric. Teflon is good, but air is better. So, how do you keep the conductor from touching something when it is suspended in air? You don't. You accept the 4% conductor surface area touching the surrounding insulation. You have to suspend each conductor in its own plastic tubing though; (4) Don't use metal shielding, because such shielding has capacitance that can smear the sound. Of course, this means you have to be careful where you lay the cables, so that they don't pick up any stray hum fields.

By using silver, since the silver oxide is conductive, the dielectric is still the air, whereas with copper conductors suspended in air, the non-conductive copper oxide becomes the dielectric. Dielectrics tend to store energy and re-release it back into the conductor a fraction of a second later, smearing the sound. So, the lower the dielectric constant, the better. Air has a dielectric constant of 1 (defined as 1, with all other dielectrics compared to air).

So, it sounds simple doesn't it? Well, it is simple. Sometimes the simple things are the last to show up. Fortunately, it also keeps things relatively inexpensive to manufacture. No extrusions. No complicated windings. Just thin silver wire in plastic tubing. In this case, Slinkylinks have spiraled the conductors inside the tubing so there is a little slack when you bend the cables to install them.

While the Slinkylinks interconnects are shipped in a metal can, the speaker cables are too big for this, and arrive coiled in conventional packaging.

The Tests

I tested a 20 foot pair of Slinkylinks speaker cables, and also put in two pairs of 1.5 Meter XLR balanced Slinkylinks (the ones I reviewed previously). One pair connected a Classé CDP-10 Balanced Output CD Player to a Balanced Audio Technology VK-5i Balanced Preamplifier, and the second pair connected the preamp to a Balanced Audio VK-75SE Balanced Power Amplifier. The power amplifier was connected via the Slinkylinks to a pair of Magnepan MG1.6/QR speakers. The Slinkylinks came with banana plugs (my preferred connector) which are of the type that provide spring tension contact along their entire surface.

I have seen a couple of reviews of this product elsewhere, and they said the cables sounded bright at first. Although I did not hear this when I tested the Slinkylinks interconnects, I did hear it when the Slinkylinks speaker cables were added to the system. It was actually a sense of more clarity rather than harshness, although it could be mistaken for harshness because it is so dramatically different. It did seem to smooth out over time, but I think this is just the brain getting used to more detail in the music. However, if your particular system tends to be somewhat bright to begin with, as some CD players tend to be, this change could be irritating until you get used to having the additional clarity.

The bass sounded a bit thin, but again, I think this was just a psychological effect due to having more upper frequency detail by comparison. It really was that dramatic a change.

I turned on the hi-fi system one evening after putting in the Slinkylinks speaker cables (that was the only change), put on some classical music, and began some listening while my wife was reading next to me. This was the first time she had heard the system since I put in the Slinkylinks (I do listening tests during the day by myself for the most part). She did not know I had added anything, but immediately pointed out the increased detail and asked what I had changed in the system.

With these cables, we have begun bench testing to gather data on the reactive impedance factors - capacitance and inductance - as well as resistance. We use a high-precision LCR meter for this, and lay the cables out on the floor as straight as possible, with no coiling. The opposite ends of the cables are open when testing for capacitance, and shorted when testing for inductance and resistance.

The resulting data are located in a table where you can see not only the numbers for the current cable, but the data for other cables that will be added as we review them. In this case, I went back and measured a few previously cables that I still had on hand so there would be some comparisons for the Slinkylinks.

Here is the table.

Notice that the Slinkylinks have lower capacitance and inductance than the other cables. This is a good thing. The lower the better. The general trend in thinking is that it is better to have low capacitance for interconnects, while for speaker cables, it is better to have lower inductance. The Slinkylinks are low for both factors. For the other two cables, one has lower capacitance, while the other has lower inductance.

The tradeoff for the low capacitance and inductance with the Slinkylinks is that they have higher resistance. The reason for this is the very small conductors. In fact, the resistance is more than 10 times higher than the other two cables. It shows that there is always a price to pay for any particular design.

The higher resistance means that for the 20 foot cables I was using, the total resistance for each cable approached 1 Ohm. This could be significant for any power amplifier that has comparatively high output impedance, and for speakers with low impedance. Again, that is the tradeoff.

There really is quite a bit of difference among these three cable designs, so, electrically, there is no question that cables do differ. How much the differences in reactive impedance (capacitance and inductance) and resistive impedance (resistance) affect a change in noticeable sound quality remains for the debates.

Conclusions

The idea that cables make any difference in the sound continues to be a controversial topic everywhere, including our own forum. Many years ago, I didn't think they were an important factor. However, that has changed for me. Although most cables have subtle differences in sound that are not easy to pick up and may be only effective in high-performance audio systems - perhaps the main reason for the controversy - Slinkylinks have a more obvious difference that probably just about anyone would be able to hear. Because of the large increase in detail, some may mistake this for brightness and not like it. Personally, as I move towards my 60th

year, I appreciate all the detail I can get, and I really enjoyed having them in my hi-fi system.

- John E. Johnson, Jr. -