Common Cable Myths Explained

Myth #1: Cables are the most important component in your system.

There is only one segment of people this is true for, the cable manufacturers. Are cables important? Absolutely. Are they the most important thing in your system? Absolutely not.

Typically, the biggest "bang for your buck" in improving your system can be had with either upgrading loudspeakers, or buying a better display. Cables are important to tie your whole system together, but just like a $1,000 set of tires won't make a Pinto do 150 mph, $1000 worth of cables won't make your system look/sound like a $100,000 one.

It is important to buy the appropriate cabling for your system. Typically, this is between 10%-15% of your budget. Any more might be "over-cabling" a bit, any less may be causing a bit of a bottleneck in your signal transmission. Have an extra $500 to spend on your system? Put it towards buying $500 better loudspeakers, not $500 better cables.

Myth #2: Only super-expensive cables are any good.

Ultra-expensive cables do utilize some absolutely astounding science and engineering in their design. In this realm we see silver plating of center conductors, helix braiding, lots and lots of conductors, etc. etc. Do most of these techniques make a measurable difference in your system? Yes, many of them do. Can you actually see or hear it? Usually, not a chance.

Speaking on the audio side of the world, you can have ultra-expensive cable manufacturers pumping some massive technological advance that makes a whole 1/10 dB (decibel) difference in the audio.

The reality is, some of the best ears in the world can only hear a difference of 1 dB (ten times the difference above). So, unless you will be bringing your dog into the room to A/B your system for you, save your sanity by going with quality and common sense.

Myth #3: The cables that came with my equipment are just fine. All "high end" cables are just snake oil.

Will the cables come with your system work? They sure will. Will they work well? Well, that is another story.

It has been our experience that the choice of "stock" cables is driven by one thing. Cost. If a manufacturer can save $.50 per unit by putting in cheaper cables, that will quickly add up to major savings.

The truth is, most stock cables are manufactured as cheaply as possible. Although there are some exceptions, the rule of thumb is that you can achieve pretty profound audible/visible enhancement by going with quality cables for your system.

Myth #4: All of your cables, especially speaker cables, need to be the same length.

This is probably one of the most common myths we hear. We have no idea who started it, but our guess is that its main purpose was to sell lots more cable than people needed.

The fact of the matter is, cable signals travel pretty near the speed of light. Using speaker cables as an example, it would literally take length differences miles long before you could hear any kind of "delay". Since speed is on your side, simply buy cables only as long as you need. If you have a 3' speaker cable on one side and a 20' speaker cable on the other, please take our word that you will NEVER hear a difference (not to mention you probably saved yourself a bunch of $$$).

Myth #5: Cryogenic Treatment improves cables.

We know we will probably upset a lot of esoteric cable fans out there, but the reality is that the science this is based on is completely false.

The theory supporting cryogenic treatment for cables has to do with molecular realignment. The argument is that when cables are manufactured, the molecules are arranged in a random pattern. By cryogenically freezing your cables (and letting them slowly return to room temperature), you will realign your molecules, allowing for better electron flow.

OK, now for the truth. This is impossible. Cables are SOLIDS, and the molecules cannot realign themselves (it is like asking a fly in an ice cube to please rise to the top of the cube, while frozen). The only way to really realign molecules would be to run almost as much current as it would take to melt your cables, which would destroy all insulation on the cable, thus ruining the cable.

Myth #6: Cables need to break-in before being at their utmost.

This myth is similar to Myth #5. Basically speaking, the logic goes that you need to introduce a signal to your cables to get the molecules to realign. As with myth #5, it would take so much "juice" to be run through your cables that the

conductors would practically melt in order to rearrange the molecules. Our favorite has been "break-in service" offered by some companies where only one end of the cable is plugged in. We don't know whether to laugh or cry about this.

Another quick note on break-in, we have found it quite common for manufacturers to use the "break-in" period to get people out of their return window. In addition, it is a fact of life that if you have had an item in your system for several weeks; you are likely to not want to go through the effort of tearing apart your system to return something. Also, in our opinion, the phenomenon of break-in has to do with the break-in of your brain, rather than the equipment. Your brain naturally likes what is familiar, and if you re-train your bring to like a new sight/sound, you will most likely favor this new sight/sound.

Myth #7: A high-end digital cable (e.g. HDMI, DVI, Optical, and Digital Coax) will improve the sound/video quality of my system.

Especially at short (e.g. 1M) lengths, this is simply not true. The beauty of a digital signal is that you either have signal, or your don't. All of the things that we have gotten used to with regard to "quality" of analog cables, simply do not apply. A digital signal is simply a stream of 1's and 0's. If enough 1's and 0's make it from one end of the cable to the other to decode into audio or video, the signal comes through. If enough do not, there will be no signal.

This is why you will never see us pumping the performance superiority of our digital cables on shorter lengths. It is simply not true. For a 1M DVI Cable the performance of our cable compared to someone else's should be identical.

However, we do stray from the pack on our digital cables on two things. First, all of our cables come with a lifetime warranty, as well as the best in the industry service and support that we are famous for. Two, our digital cables really shine on longer lengths. Up to about 3M, all digital cables are basically the same. However, once you go beyond three meters, the differences start to really show. All of our digital video cables are GUARANTEED to be FLAWLESS at any HDTV resolution at any length. We build our digital cables to not only provide outstanding performance on short runs, but to also flawlessly pull off lengths that few (if any) other cables in the world can.

Myth #8: Silver plating makes cables better.

This is another touchy subject, so we will just deal with facts without interjecting too much opinion.

Silver plating the conductors of cables has become very popular, since you can allegedly get the gain of using silver conductors without the cost of pure silver conductors. Since silver is a better conductor than copper, this makes sense. This

gain is typically explained by the phenomenon of "skin effect". Basically speaking, skin effect happens when signals only use the outside (or "skin) of a conductor as they ride down the wire. So, the argument is that if your signals are only using the "skin" of the wire, silver plating is a great thing since your signal will ride down the plating, and you will not have the added expense of using silver for the core of the wire, since it is not used anyway.

That all sounds nice, but as usual, the truth is going to really wreck a great story. The fact of the matter is that skin effect does exist. In fact, it is based on the signal frequency. That is, the higher the frequency of the signal, the less the "skin depth" (how far the signal goes into the conductor) will be. So, once you reach a certain threshold, silver plating will be great because the skin depth of the signal will be the same as the depth of the plating.

However, there is a problem. In order for this to be a reality, the frequency of the signal will need to be well north of 1 GHz (billions of hertz) to make this a reality. In consumer audio and video, the highest frequency application is HDTV video, which is about 33 MHz (millions of hertz). As you can see, even the highest frequency application is still 20 times too low of a frequency to take advantage of silver plating. As another example, analog audio (e.g. Audio Interconnects) only run in the KHz (thousands of hertz).

OK, so what happens when you run a signal whose frequency is too low to take advantage of skin effect? What happens is you have the signal using two different conductor materials for its transmission. You have one part of the signal (usually the highest frequency portion of the signal, typically the highest treble in audio) using the silver plating and the rest of the signal uses whatever the core is made out of. So, you have two different conductors handling different parts of the signal. Since silver is a better conductor than copper (most typically used as the core, but we have seen silver plated steel conductors), the portion of the signal that is using the silver will get an artificial boost. In audio terms, this is called a high-pass filter. That is, the high portion of the signal is passing through fine while the lower portion of the signal (e.g. midrange and bass) is being cut. With this type of situation, what you usually end up hearing is audio that is biased towards the highs (this is usually called "bright" or "tinny").

However, this is not necessarily bad. It just totally goes against our philosophy of how to build a great cable. If you find that your system is lacking in high-end energy (it just sounds dead or dull), then one of these cables may make your system sound better to you. Conversely, though, if your system is balanced or already sounds a little "bright " to you, silver plated cables could be a nightmare.

Our philosophy about cable building is simple. The cable should not have a visible/audible character of its own. With our cables, you hear what your system sounds like, not what your cables sound like. With silver plated cables, the cable

is literally acting like a tone control in your system, and this is simply not the way we think cables should be built.

Myth #9: Teflon (or Air) is the only decent cable insulation.

This is getting more into the esoteric side of the world, but still an important item to bring up. For quite some time now, Teflon has been touted as the ultimate cable insulator, and if you used cables without Teflon, you used crap.

The fact of the matter is that Teflon is a pretty darn good insulator. In fact, aside from air, it is about the best insulator you can use.

So, you may be asking yourself, "If Teflon is so good, why don't you use it?" The answer is that much like Myth #2, just because something is better, does not mean you can tell that it is better.

Teflon does have a lower dielectric constant than polyethylene (commonly used as an insulator), which does make it a better insulator. However, just like with Myth #2, the audible/visible difference between Teflon and polyethylene is non-existant. Teflon is better by such a small amount that it is literally impossible to tell the difference. Considering that Teflon is significantly more expensive than polyethylene, you will not find it as an insulator in our cables. * At Cobalt Cable, we design cables around improvements you can actually see and hear, not improvements that require a calculator to prove.

* - One footnote. We do use Teflon as an insulator in most of our connectors. However, we do this for thermal reasons, not performance reasons. We solder almost all of our connectors, and we have simply found that Teflon is more durable than any other insulator we have tried.

Myth #10: I need cable stands to keep my cables off of the floor.

We saved this one for last because we find it to be the most entertaining (after working with cables for five years, though, we do have an unusual sense of humor). The basic premise is that running your cables (especially speaker cables) along the floor is very, very bad and will introduce all sorts of electromagnetic fields and take the "life" out of your connection

There are all sorts of these devices out there that claim they will make your system better. Our favorite are "brilliant pebbles" which consist of a jar of rocks which when placed on top of your system, will make your system sound better. Rocks? Yes, rocks. Expensive rocks.

Our stance is this; there is no small accessory that you can add to your system that will be the missing link between you and audio/video nirvana. What we advise is to build a system by doing some research, taking the time to listen and demo as

much as you can, buy the appropriate accessories for YOUR system, then sit down to enjoy a great show in the peace and quiet of your own home.