



LESSLOSS
AUDIO DEVICES



DYNAMIC FILTERING
POWER CABLE





DYNAMIC FILTERING **POWER CABLE**

BATTLING JITTER TO THE EXTREME, we have found it beneficial to externally filter the mains power before it even enters a component. After two years of experimentation with many standard outboard power filtering methods, it was evident that extreme amounts of capacitance are required. Combinations using transformers and much capacitance yielded better results. But the transformers needed so much headroom in terms of power handling that the project was quickly overtaking grand proportions, bordering on impractical implementation with several expensive transformers larger than most audio devices themselves.

In the end we admit that, although extreme filtering was producing the desired background blackness, it was reducing true musical dynamics. Developing the last link, the mains cable itself, we found that it was possible to achieve even better audible results by doing the filtering in the cable itself. Transformers (due to hysteresis and voltage losses) and capacitors (due to resistive losses) were not as effective. There are only three wires involved. Our solution uses a true, non-floating, and highly conductive ground connection for the cleanest possible audio — and filters it!

INDUCTANCE USING TRANSFORMERS

INDUCTORS EXHIBIT SIGNIFICANT dissipative effects, due to the long lengths of wire used to make them, and due to the magnetic losses of the core material. They also tend to generate “coupling” effects with interference from ambient electric or magnetic fields. It is impossible to create the ultimate transformer-based power filter, since the filtering of EM interference is intricately tied to the inductance of

any surrounding EM field, the strongest of which is actually the one made by the transformer itself. To alleviate this, mumetal is used to block the magnetic field surrounding the transformer. Even in this “perfect” scenario, there are intrinsic losses due to hysteresis, causing compromises in the speed of energy transfer through a transformer. It is typical to see a 10 Volt voltage drop across a 1:1 transformer.

“The power cord is outstanding. It took my system to another level.”



CAPACITANCE USING CAPACITORS

IDEALLY, A CAPACITOR SHOULD BE A purely reactive component, containing absolutely no power dissipative effects. Capacitors are generally purer reactive components than inductors. They tend to dissipate less power than an equivalent inductor. And, they are less prone to transmitting or receiving EM interference than inductors, because their electric fields are largely contained between their plates. The source of capacitor loss is usually the dielectric material used. Dielectric materials react to changing electric fields by producing

heat. This heating effect represents a loss in power, and is equivalent to resistance in a circuit. In high end audio, this effect is undesirable, since we strive for the component to behave as a purely reactive circuit element. Electrolytic capacitors are, for example, notorious for their lossiness, due to both the characteristics of the microscopically thin dielectric film and the electrolyte paste used. Other materials are used to try to alleviate this lossiness in more expensive capacitors, such as paper and oil.

HIGH FREQUENCY BANDS ARE UNPREDICTABLY DESTRUCTIVE

THE LESSLOSS DYNAMIC FILTERING Power Cable is a very unique solution to power filtering. It filters the electromagnetic bandwidths which are most destructive to high quality playback. Lower harmonics in the mains are not as detrimental to electronic audio purity as the higher harmonics. Input transformers and standard filtering schematics work very well to alleviate the effects of lower frequency interference, but are hopelessly incapable of dealing with high frequency interference. Therefore, this noisy interference should not enter the audio devices at all. At extremely high

frequencies, even the enclosures themselves act as resonators. Unpredictable reflections and resonations occur within the gear, not unlike the concept of exciting room modes in the physical science of acoustics.

We want to avoid any and all bottlenecking of the power itself while at the same time attenuating all the unwanted high frequency energy before it even enters the destination gear. The elegant solution LessLoss offers is based on a few known properties of AC electromagnetic signal propagation — skin effect and resistance.

“ I still find it hard to believe a power cord could be equal to or even greater than a serious interconnect upgrade, but it is!



**LESSLOSS FILTERING
POWER CABLE
SOLUTION**

“ Power cable is outstanding, excellent... Great soundstage, excellent definition, black background as promised.

THE CABLE IS TO HAVE MINIMAL resistance for the power to be infinitely available. Some power cable manufacturers mention the speed of their cable as a percentage of light speed. For engineers with formal education, this is funny. The formal unit for this measurement is the cable's resistivity per unit length. An increase of this parameter is an indication of loss incurred. We want to achieve a high conductivity, but we do not want to aid the propagation of induced high frequencies into our gear.

We want to inhibit their propagation completely. In other words, the problem is thus reduced to a very simple dilemma: when raising the conductivity of the power carrying cable, we must be able to do so without raising the conductivity of radio frequencies as well. We must find a way to separate the effectiveness of the cable into low and high frequency performance categories. The low frequencies must experience no resistivity, and the high frequencies must experience high attenuation.

This is where the skin effect comes in handy. We utilize very much metal for our conductors. This provides our cable with low resistance. The conductivity of the cable is very high with a metal cross sectional area of 4.72 mm^2 per conductor, of which there are three in each cable. The power frequency is 50 or 60 Hz. As this frequency is low, the very large diameter of the wire represents no loss, since such a low frequency is not affected by any skin effect current concentration. However, the higher frequencies, which we want to filter out,

remain at the skin. And it is precisely here where it is possible for us to filter only the undesired electromagnetic fluctuations while leaving the 50 or 60 Hz energy cycle completely alone. The attenuation of this low frequency does not even take place. In fact, the porous conductive material mated to the skin of the cable actually enlarges the effective cross sectional area of one conductor assembly to a whopping 6 mm^2 , bringing the entire cross-sectional area of this three-wire cable to 18 mm^2 . This is between 5 and 4 AWG.



“ Within the first few moments of the initial audition it was clear that this cord was indeed something special. The determination of different, and than “better or worse” had proven to be easy and almost immediate.

The pure and fundamental improvements heard upon insertion of the LessLoss were very real and perhaps worthy of the proclamation of “the best ever.” And it was very exciting.

...nothing short of groundbreaking in its performance... The elation of hearing a power cord make the kind of positive improvements heard... I was knocked out...

Oh, Man! The clarity and precision was unheard of. And without a single negative. Dynamic expression had been unleashed. The Big Rig had become something better, more musically truthful than any system I had ever heard...anywhere... anytime.

They are superbly constructed with a three wire braid and beautifully polished terminals. Superbly high class in every way. My feeling right now is that the LessLoss is the best power cord made regardless of price. And I don't know anyone who has auditioned and tested more power cords than I have.

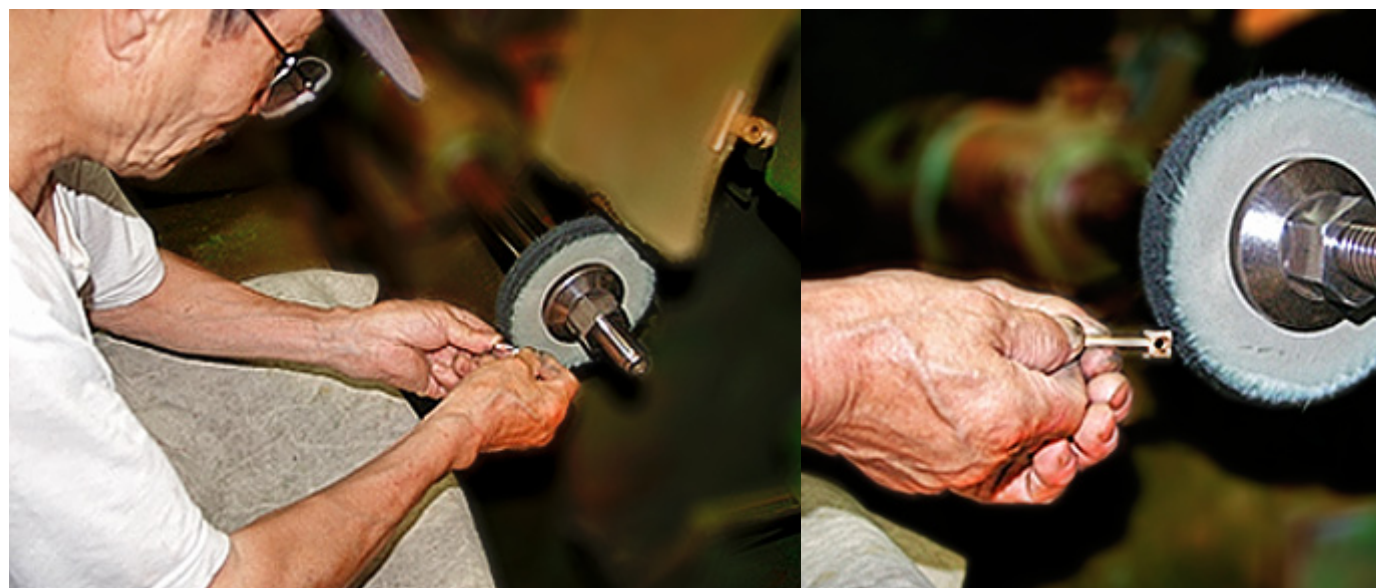
—MARTIN G. DEWULF » BOUND FOR SOUND / MAY 2007 ISSUE #177

“ Good is a product of the ethical and spiritual artistry of individuals; it cannot be mass-produced.
—ALDOUS HUXLEY

“ I challenge the honest hearted audiophile not to hear a difference once one [LessLoss Dynamic Filtering Power Cable] is placed in his or her system. Even modest systems benefit from this most extraordinary power cord in ways that are undeniable and imminently audible by even the most tin eared amongst us.

The LessLoss power cord somehow strips the music of layers and layers of artificiality and electrical artifact leaving behind the music while revealing the quality of the componentry itself. In some cases it's like seeing the wood grain for the first time. This cord works well in all applications.

—MARTIN G. DEWULF » BOUND FOR SOUND / NOVEMBER 2007, ISSUE #182



The hand made LessLoss power cable is complemented by hand polished Oyaide connectors from Japan.

“ In my honest opinion, better power cables than these are not available! LessLoss power cables are MORE than a system upgrade.

OYAIDE POWER PLUGS FROM JAPAN

OF AN ASSORTMENT OF MORE THAN 20 different types of power plugs from all over the world, we carefully considered the aspects of design which yielded audible sound differences between them. Several models of Wattgate, Furutech, Oyaide, and other lesser known competitors were compared against each

other using the same cable design. The winner by a longshot was the dark ruby colored Oyaide model 079 (double polished and double gold-plated). This goes for both the wall socket end of the power cord as for the IEC power connector end.





**TRULY DEDICATED
TO ACHIEVE
AUDIOPHILE RESULTS**

THE CONTACT PINS ARE MADE OUT OF de-oxidized phosphorous bronze and machined out of a single piece for the best possible conductivity.

No nickel plating is used between the bronze and the gold. Instead, the surface is highly polished by hand—twice. There are two layers of gold and two polishing processes involved to yield the mirror-like finish that only a dedicated company such as Oyaide achieves. The rhodium plating of the lesser models, due to its being less conductive, sounds a bit harsh. Switching to the gold gives the true warmth back to the sound, without a trace of false muddiness.

The body of the connectors are made of high density PBT with 30% glass particle filler mixed in for a resulting high resonance absorption factor while maintaining good rigidity and stability when

used in warm climates with warm gear.

Regarding the IEC connectors, it is the pressure of the contact surface area which defines much of the quality. This was found through our own experimentation to be as audible in the ground connection(!) as it is in the two power connections. Oyaide does not compromise on metal costs. The very generous thickness of metal used results in a spring action of the IEC plugs which is so strong that even hundreds of connections in and out do not compromise their grip. And they are polished to a perfection which the dedicated audiophile will appreciate.

Does this sound unnecessary? Nobody would go to this trouble if it weren't audible. For more detailed information please see the manufacturer's website: www.OYAIDE.COM

“ In my years of audio and all the cords I tried, LessLoss cords made a difference you can hear for the better, and it's not subtle.





LessLoss power cables are effective with video applications as well. Color clarity and focus are improved.

“ First-rate all the way!
The cables are sensational,
and the price is a steal.
Liudas and Vilmantas
at LessLoss are
perfectionists pursuing
their love for the art
of music reproduction.

AUDIO AND VIDEO APPLICATIONS

THE TWO-YEAR DEVELOPMENT OF this unique power filtering solution was very successful. We are happy with the elegance of the final solution and the effectiveness and immediate apparentness of the results. Please keep in mind that this power cable is in no way limited to providing only audio equipment with ultimately clean mains power. This power cable has helped a lot of web designers and graphics artists at their computers. Filtering the

power to their monitors and computers has saved them from red-eyed, overstrained eyes in the evening after a long day's work at the monitor. The images are more in focus, the colors are deeper, greener, bluer, and you can forget pixel shadows. CRT monitors as well as LCD monitors benefit from the effective filtering of this cable, as does any audio equipment, be it a source, a preamp, or an amp. 🐜

SPECIFICATIONS

Standard length: 2 meters

Custom lengths: 1 m and 1.5 m same price, 2.5 m and 3 m extra price

Cross sectional conductive area is 6 mm² per conductor.

Total cross sectional conductive area is 18 mm² (between 5 and 4 AWG)

Very flexible design: bend radius about 6 inches. Easy to install.

Oyaide model 079 double hand polished double gold plated power plugs on both IEC and wall socket ends.

Oyaide model C-279 20A IEC plug available upon request.

Hand made quality and attention to detail.

Generous rebates offered for orders above one single unit.

LESSLOSS AUDIO DEVICES

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“Excellent product!
Delivery of the power
cords was received
within 2 days of shipping.
LessLoss kept me
informed on the status
of my order. Very good
communication and
feedback to my inquiries.