# DFPC Original

## High Performance Skin-Filtering Power Cable

**The DFPC Original** addresses the very source of distortion before it can even enter your components. Our elegant Skin-filtering solution, based entirely on the natural flow of electricity in a wire, enables this unique cable to function as a filter while not distorting dynamics.

**FEATURES**

- Employs LessLoss Original Skin-filtering Technology
- Three conductors
- Total: 18 mm² (4.5 AWG)
- Bend radius: 6 inches
- Lightweight design: 700 grams
- Oyaide 079 connectors

**YES**

- Quiet background
- High resolution
- Neutral tembre
- Pinpoint accuracy on realistic soundstage
- Relaxed listening experience

**NO**

- compromised dynamics
- listener fatigue
- performance bottleneck
- bloating image out of proportion
- headache after prolonged listening

> *Best and Affordable!* — Stereo Times

## **Long power lines** The deceptive theory

It may seem unclear just how a mere power cord can influence the sound of an audio system, especially after the power has travelled a disproportionately long distance along the city grid. The confusion lies in the misunderstanding about how low frequencies travel when compared to how high frequencies travel. As it turns out, high frequencies suffer from attenuation much more readily than low frequencies, which is why the last six feet of the power line have more influence in your system's sound quality than all the other unshielded kilometers of wire before it.

## **Long lines** Are not the culprit of bad electricity

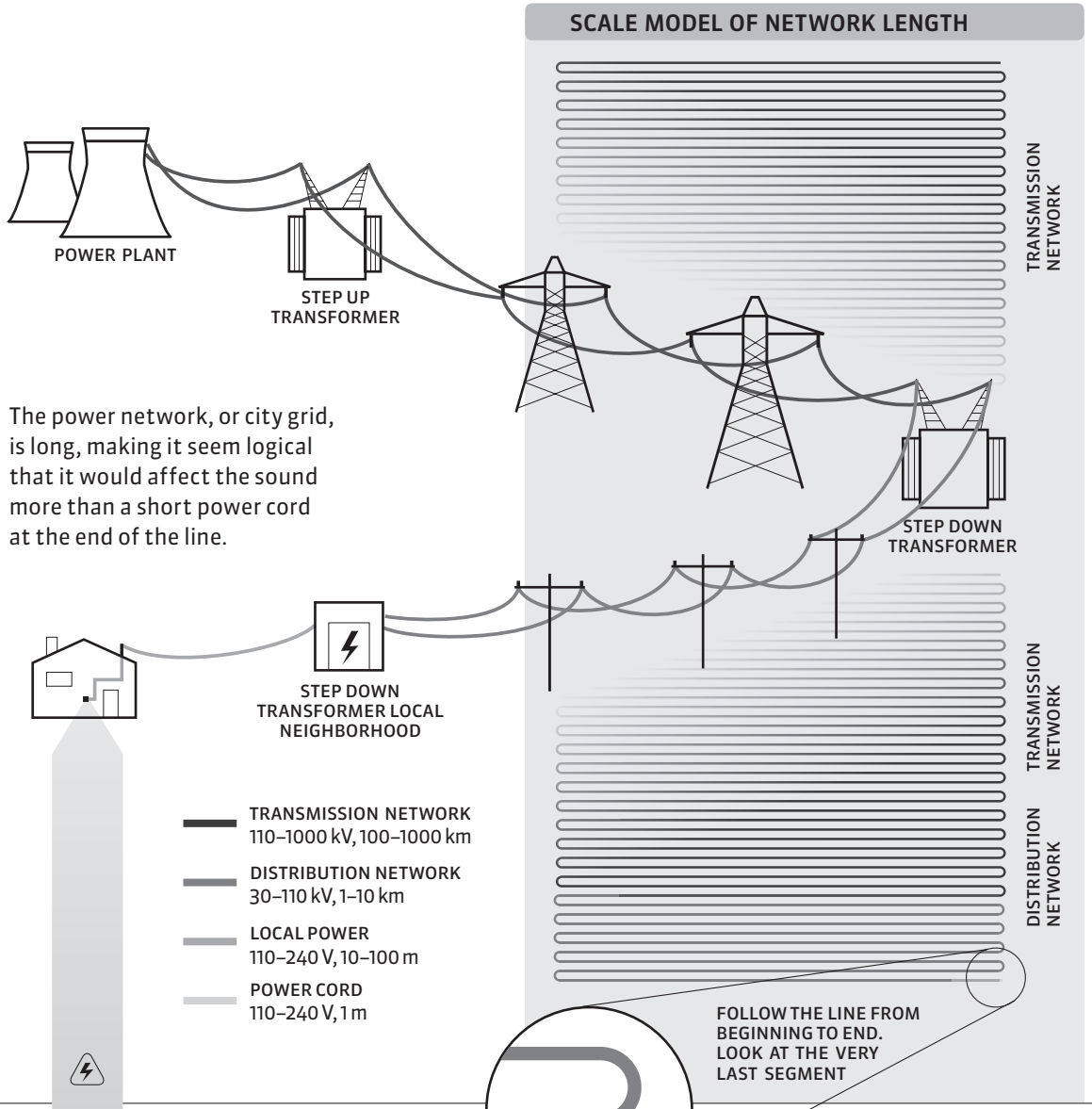
Although it is tempting to think this way, the above logic is flawed, because it does not take into consideration which frequencies travel in which way in a wire. Nature determines this, not audiophiles, nor engineers. The way nature has prescribed alternating current flow is that the higher the frequency, the less distance it travels in a wire. The higher the frequency, the more rapidly it suffers attenuation along the way.

That is why, in high frequency communication lines, where we seek successful long distance data transmission, there must be positioned re-amplifiers along the line at certain crucial distances. The higher the frequency, the more of these stations are necessary. Otherwise, we'd lose the signal altogether.

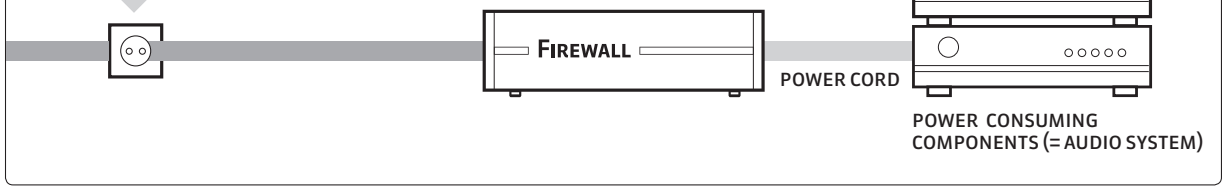
And that is also why, even with impedance matched lines, industrial manufacturers of high frequency communications cables are required to publish attenuation / distance data. The less attenuation over distance, usually, the more expensive the cable product. Why? Because it is inherently difficult to keep HF signals from attenuating over long distances.

## COMMON CONFUSION ABOUT HIGH FREQUENCY NOISE TRANSMISSION

*"A power cord cannot possibly have an effect on the output audio signal. The electricity has travelled **hundreds of miles** along all sorts of power lines, gone through multiple transformer stages, entered the house through a breaker panel, and now you say the last 6 feet are important?!*




The power network, or city grid, is long, making it seem logical that it would affect the sound more than a short power cord at the end of the line.



# **Attenuation** What's really going on

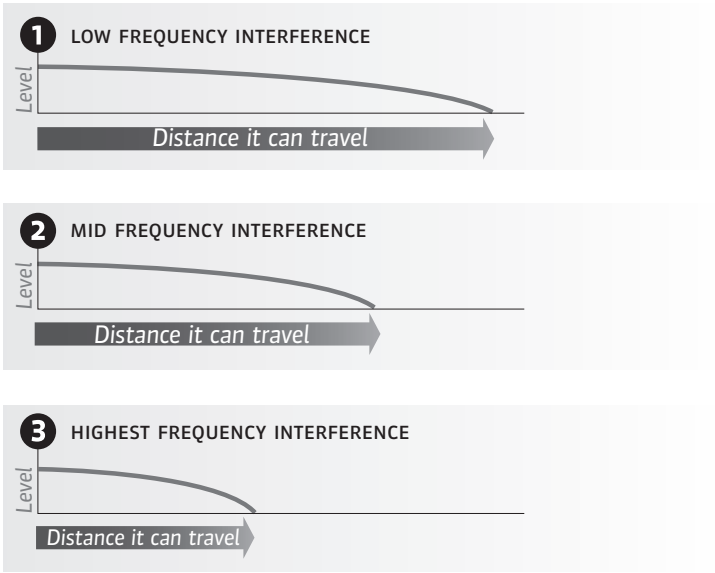
The higher the frequency, the larger the attenuation of that frequency per unit distance along the line. Hence, it follows logically that whatever high frequency garbage enters the line 100 miles from your home will have least impact on your gear, because it will have been attenuated (made smaller) by the natural law of attenuation, well before it enters your power cords connected to your stereo.

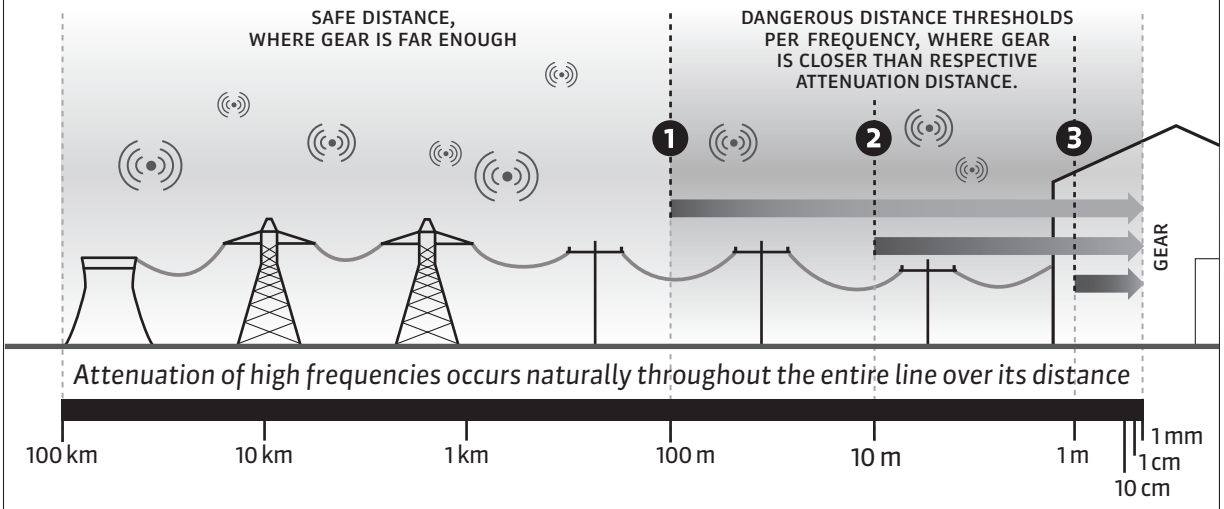
By the same logic, it follows that the last 6 feet of the power line have the largest impact on high frequency noise content, and it is for this reason that right here, right before your gear, you are able to influence the quality of the power most readily.

**ATTENUATION OF HIGH FREQUENCIES**

## Attenuation over distance per frequency

The higher the frequency, the shorter it can travel along a wire, due to naturally occurring attenuation.

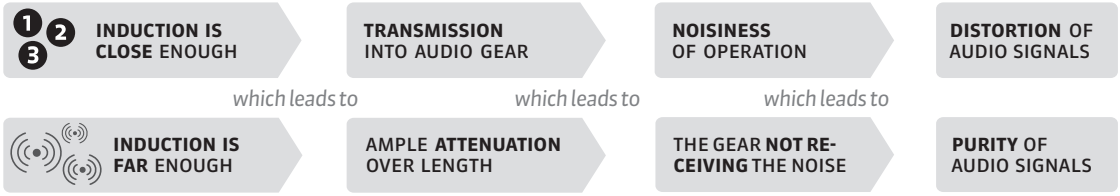


## What's really going on

While high frequency induction can and does occur at any place along the entire length of the power line, it is only the place which is at or nearer than the dangerous distance thresholds, unique for each frequency, that the noise is of significant consequence (because only the noise induced here will get into the gear). Naturally occurring self-attenuation takes care of most of the other noise induced over the long length of the line. The higher the frequency, the closer the corresponding threshold of influential distance. Because lower frequencies have a more distanced threshold of influence, and because the higher frequencies are attenuated over a shorter distance, it follows that the area of the power line closest to the gear is therefore the area infested with the most noise altogether. This occurs not because the power line is long, but because there was high frequency induction into it at a close enough distance for the gear to have received it.

## The demystification of the “long power line argument” is as follows:




If you were to connect an audiophile power cord somewhere in the power line 100 miles from your home and called your friend who works in the power company to run an A/B test with you, you would never hear any difference in your stereo system.

However, placing the same power cord where it counts, which is connected to your gear, one will indeed hear the difference it makes because of the effect it has on the high frequency noise which was induced only close to the end of the line, before it had an ample distance to travel in order to become attenuated through the natural order of this process.

If a power cord does not filter out unwanted high frequency noise, it cannot claim much other superior functionality than that of those "little bit better" run-of-the-mill ones available at your local hardware store. If it does filter out noise, then the rest of the story revolves around the methods employed to achieve this. Just how it filters, and how this influences the quality of the timbre and dynamics of your sound system, defines its added value.

The method of Skin-filtering, developed by LessLoss Audio, is the most elegant way to tackle the problem of HF induction and transmission. This method is in strict accordance to the two naturally occuring phenomena of attenuation over distance, and to the high frequency Skin Effect, first accurately described mathematically in 1883.

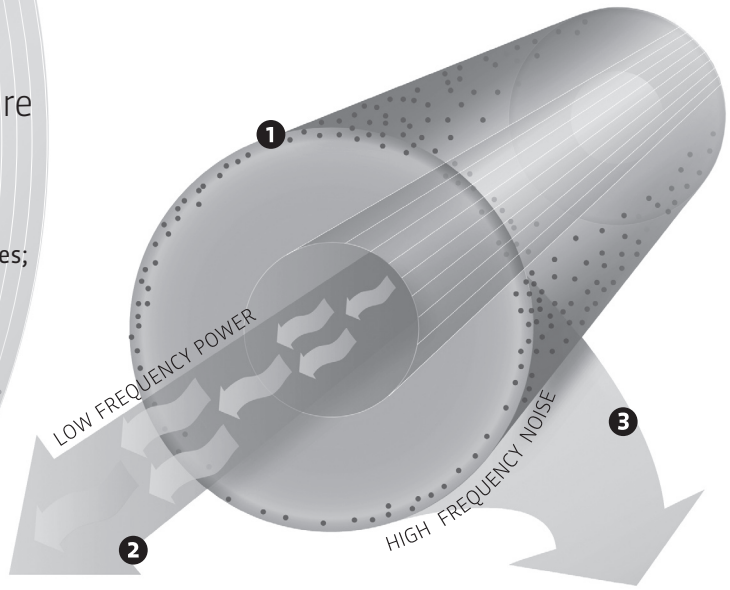
The LessLoss DFPC Skin-filtering method is based only on the way that nature has prescribed that alternating currents travel down a wire. The same law and general tendency of attenuation applies whether the line is made of silver or copper or aluminum, or indeed of any alloy made by smelting any combination of metals in any proportion. Silver plating, on the other hand, was a method developed to increase the distance that high frequencies can travel, in a cost effective manner, for the communications industry.

We offer something the reverse of good for high frequencies, and the reverse of bad for low frequencies, all in the same wire. This equates to what can more visually be described as a completely different wire when viewed from the perspective of low vs. high frequencies. This is what makes the **DFPC Original** so special and so highly effective.

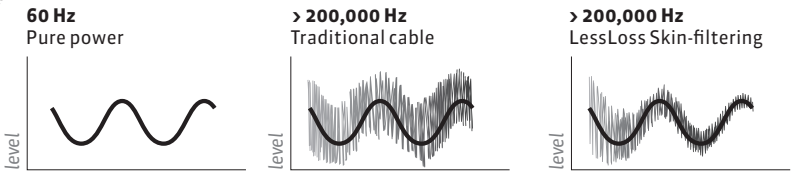
# **Skin-filtering method** The elegant approach

## LessLoss Skin-Filtering: Based on the Laws of Nature

By specially treating the wire surface where noise resides, ❶ we render it conductive only to the necessary low frequencies, ❷ but not to high ones; thus supressing ❸ these noisy high frequencies to levels so low that they are effectively eliminated as a source of noise pollution.




SKIN EFFECT SKIN DEPTH, COPPER




## The Skin Effect

As frequency rises, current concentrates at the skin of the conductor

**COMMON RADIO FREQUENCY BANDS**

- AM radio
  0.09–0.05 mm/535 kHz–1.7 MHz
- Garage door, alarm
  0.010–0.009 mm/40–50 MHz
- TV stations, FM radio
  0.0089–0.0045 mm/54–220 MHz
- Cell phones
  0.0023–0.0022 mm/800–900 MHz
- GPS navigation
  0.00188–0.00166 mm/1.23–1.58 GHz
- Bluetooth, WiFi, microwave
  0.00132 mm/2.5 GHz

**NO ATTENUATION**

- Antenna effect
- Distorted signals
- Artificial sound
- Harsh highs

**RAMPED IN ATTENUATION**

- Less noise
- Pure signals
- Natural sound
- Clean highs

*(not to scale)*

**SKIN EFFECT FACTS**

- All high frequency AC currents exhibit Skin Effect
- Skin Effect is a natural phenomenon
- Caused by circulating eddy currents
- Mathematically described by Horace Lamb in 1883 and Oliver Heaviside in 1885

Because high frequency attenuation is a natural given, it is easier to understand that the LessLoss DFPC Skin-filtering power cable is the audiophile's best and most efficient tool to be used in conditioning the power for his audio component. LessLoss power cords feature enhanced HF attenuation along their entire length, all the way up to the IEC input plug to your gear, without compromising dynamics.