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## LessLoss Firewall 640x Power Conditioning Module

### Different than others

While my first article on the products of the Lithuanian audio manufacturer LessLoss in 2014 mainly focused on the remarkably innovative and exceptionally high-performing power cables, the range appears to have continued to grow in the following years. As a result, in addition to power cables, interlinks, speaker cables, digital cables, device feet, mains and room (electrical fields) cleaners and even a real ladder DAC have now been added to the range. Nevertheless, power supply still remains the spearhead of the LessLoss philosophy. Not so strange when, according to owner Louis Motek, the most direct quality gain can be achieved with this. As with every product from this manufacturer, the Firewall 640x discussed here also appears to be a very different and special product. Visually, it is stylishly finished in beautiful oak, but underneath it is equipped with very different techniques than the competition.

For those who have been following the products of this brand for some time, the Firewall 640x is the successor of the Firewall 64x, Firewall mk 2 and finally the original Firewall module. But aren't we mostly familiar with the term Firewall from the IT world? That's right and that's why we need to see the meaning more fictitious with this 640x. With a computer and network, a Firewall stands between the computer and the connection point and decides which network traffic is allowed to proceed and which traffic is considered dangerous. Essentially, a firewall distinguishes the good from the bad and the reliable from the unreliable. The Lessloss solution does not do this in this way of course, but it does remove the negative effects that high-frequency pollution from the mains has on your audio (or video) system.

### Out of the box thinking

Unlike almost all competitors who often use active components, this latest Lessloss generation incarnation does not work with capacitors or coils. Instead, the proven skin-filtering technology is consciously applied, but in its most refined form, on which, for example, the power cables of this brand are also based. What is new is that this technique has become increasingly more efficient as a result of advancing insight. Even to such an extent that this last generation hardly resembles its predecessors. In fact, skin filtering makes optimal use of the way in which an electrical alternating current naturally moves through a wire. The higher the frequency, the more it will concentrate on the outer shell of the conductor creating circulating eddy currents. With the LessLoss solution, the outer shell is deliberately not conductive and the core is. As a result, the high-frequency contamination remains neatly on the non-transporting outer shell and the low-frequency current in the transporting core remains unaffected. In short, a well thought-out way to optimally use the laws of nature for the ultimate goal of cleaner electricity. Now back to the new Firewall 640x. The characteristic oak housing is still present and again still equipped with the well-known C14 entrance. But the other side is visibly different and in my test products provided with about 20 cm long piece of topline Lessloss C-Marc power cable fitted with their most advanced modified Schuko C13 plug. The oak casing is also a very conscious choice. Also because no metal variant can deliver this kind of performance, even when rubber damping or other resonance-reducing measures are in place. According to Louis, the aluminum that is so often used is actually unsuitable as a housing due to its typical material resonances and partly responsible for the artificially etched 'hi-fi' sound so often heard.

## Operation

Now back to the LessLoss Skin filtering. A patented noise reduction technology that works very differently from the usual cap-and-coil filtering methods. What started as a new idea about implementing skin filtering by using the naturally occurring skin effect of current running through a wire has been perfected ever since that early stage. The latest generation uniquely employs field structuring around the conductor. Starting with the copper for the conductor, the patented copper processing creates a specific raw material that undergoes absolutely no stress or forces other than those required for this design. So no typical standard processing here, which could lead to a kind of nice 'house sound' when choosing different ready-made metals. No, Lessloss breaks new ground here and goes more fundamentally into the nature of the material itself. This creates an extremely pure (99.9999999999999999%!) copper conductor that has a physical malleability closer to lead (or even butter) than industrial copper. Another difference is that standard copper, even soft annealed, can withstand considerable pressure. The specific material chosen by Lessloss does not do that at

all and must therefore be handled with extreme care. Yet the core of this patented Firewall technology that this Lithuanian company has been constantly working on for more than ten years in this latest generation lies in something completely different. For these latest designs, technology has been significantly scaled up and Direct Metal Laser Sintering (DMLS) is being used for the first time at this brand. A recent technology that was first introduced to the market in 2000 and is also known as Laser Powder Bed Fusion (LPBF). In other words, this is an Additive Manufacturing (AM) technique designed to melt metal powders using a laser with a high power density and process them into desired material composition and any shape (including 3D).

### Direct Metal Laser Sintering (DMLS)

For its steadily expanding Firewall collection, the Lithuanian company uses the most advanced AM system called Direct Metal Laser Sintering (DMLS). Components can thus be built up layer by layer and it becomes possible to realize shapes and constructions that cannot be cast or otherwise machined. When you look at the photos and see the copper bars surrounded by the patented DMSL construction, it immediately becomes clear that this is not a standard design. Because laser technology can go much further down to the smallest level of detail, resulting in a very sensitive precision part. That is why it is also cast in fully transparent resin. Louis Motek: 'We were unable to supply this product and provide reliable long-term results in the exposed form as shown below. With simple use, it would quickly bend or break and lose its physical integrity. To describe what you can't see for yourself is that a computer process causes the 3D CAD file data to be cut into many ~ 20 micrometer thick layers. The thin layers are selectively melted, one at a time, by the laser located in a tightly controlled atmosphere of argon gas. This is not a simple desktop editing. Oxygen content should be kept below 500 PPM to avoid explosion. The powerful ytterbium fiber laser beam is literally hundreds of watts strong. The laser energy is intense enough to allow full welding of the particles and to form solid metal, without creating a porous internal structure.'

special plug

As mentioned in a previous paragraph, the Firewall module (14 cm long, 6.5 cm wide and 3.5 cm high with 20 cm long C-Marc cable) is equipped with the most advanced LessLoss-modified C13 plug. The modified design has a much tighter grip than the standard version which, according to Lessloss, provides better electrical contact and more control over the sound. A lengthy cryogenic treatment process should provide a relaxed and natural rendering in which details appear natural rather than forced. The clear housing was not chosen by chance either, because according to Louis, dyes all have their own influence on the sound. In short, a solution that is completely in line with the acoustic color-free Skin-filtering process applied by Lessloss.

## Entropic Process

Lessloss has christened the last new facet, but certainly no less important, 'Entropic Process'. Phew, these kinds of terms don't exactly make a test any easier because it can come across as very 'floating' to some, but I'll make a valiant attempt. In short, entropy is a measure of the uncertainty (or ignorance) in observing a series of events. New information arises when an event occurs that was previously uncertain as to whether it would actually happen. Hi, are you still there? In the case of Lessloss, this actually means that very tedious learning process. You know the annoying phenomenon that your music with a new product sounds worse for a certain period and then suddenly sounds much better again, and that during a period that is difficult to predict. In order to put an end to this once and for all, the brand has devised a process that makes their products sound maximum and stable from the first note. So if you choose this option, you are immediately freed from this annoying phenomenon. When I quote Louis' words verbatim, he says: 'If you listen to an entire system equipped with Entropic Process power cords and then switch to our C-MARC™ hand-braided 'super-cord' power cables without the new Entropic Process methodology, then everything instantly becomes a less round and holographic, more etched and thick, less defined by an overarching musical motif and the music sounds more like a separate set of notes without experiencing a whole. Natural acoustics lose some of their organic conviction as a result, and you experience much more of an audio system than music played in a real acoustic space. These are just some general sonic differences, but on an emotional level it really is like losing touch with the musicians. With Entropic Process power cables, everything becomes so personal and involved that your first reaction is immediately unconscious that it should actually be done that way.'

## Versions

As is now customary for Lessloss, this new Firewall module is also available in different versions. From the basic Firewall submodule for 'do it yourself' applications (is the actual contents of the standard version packed in an oak box), an affordable entry-level plug-and-play version with C14 entrance, standard cable and high-end C13 plug. Up to version with C14 entrance, high-end C13 plug and the C-Marc state of the art cabling.

## Preparation

Because I was also able to extensively test the two previous generations during previous tests, I am already somewhat prepared for which way the display will probably go. However, we should certainly not lump this last generation with the previous generation. That starts with the better heavily modified C13 plug, the 20 cm Lessloss C-Marc cable and the technologically much more advanced construction and choice of materials. Everything to take the display to an even higher level. To substantiate this, the listening room is, as usual, through the various intertwined tests, again packed with beautiful new equipment. Besides my own reference set consisting of the Master Contemporary C loudspeakers, Zanden 6000 integrated (tube) amplifier, North Star Design 192 mk II CD drive with the accompanying Extremo DAC and in the streaming area the Grimm MU1 with Mola Mola Tambaqui DAC, there are many more more beautiful and intriguing products available. From Sweden, for example, the Giella headphone amplifier/preamplifier and Tundra 2 power amplifier from the still unknown but wonderfully puristic brand Lejonklou are guests. Further toppers are the impressively high-solving American Mark Levinson No. 5206 front and No. 5302 power amplifier and the test range is concluded in style with the Brinkmann Marconi mk 2 preamplifier from Germany, called Nyquist mk 2 streamer/DAC and associated power amplifiers 'Mono'. After all, cabling is an ever-changing composition of brands such as Nirvana Audio, Siltech, AudioQuest, Kemp Elektroniks and Essential Audio Tools.

## Listen

With this third generation Firewall, Louis Motek and his team have gone further than ever. Unfortunately, this is also immediately reflected in significantly higher prices. This means that they are no longer the products that it started with years ago and that you could just buy in the sense of 'nice to try out without financial risk'. We have really passed that stage with this Firewall 640x. But what do you get in return? From the first notes I immediately get the answer I wanted and Sanne Rambags on vocals, Sjoerd van Eijk on piano and Koen Smits on trumpet, a personal tribute to the unexpected natural gems that the Netherlands harbors. On their latest album Mudita – Nature of the Netherlands, the many Dutch nature parks are in the spotlight because of the national theme year “Ode to the Dutch Landscape”. In addition to beautiful natural beauty, as we are used to from this company, this also produces beautiful tranquil musical masterpieces. The great thing about this is that each nature reserve is assigned its own musical atmosphere, so that as a listener you sometimes feel as if you are in a kind of expansive helicopter view, at other times while strolling through dense bushes. What the Lessloss Firewall 640x brings to all this is a startling increase in ease, tranquility, fluency, relaxation and integrity. In other words, you are

closer to the actual intent of the music itself and much less concerned with reproduction. Significant strides have clearly been made here. Much older and of a completely different order are the albums Dire Straits with Dire Straits from 1978 and Pop Pop by Rickie Lee Jones from 1991. For guitarist Mark Knopfler's band 'Dire Straits' is their debut album and that is in a positive sense of all sides very clearly visible. Because what a wonderfully good energy, eagerness, spontaneity and synergy can still be heard here. Still, I prefer the lesser-known and wonderfully floating Six Blade Knife. It is basically a well-arranged song in which each instrument is beautifully assigned its own place in the whole. But what is also striking is that the song also sounds fantastic technically on recording and the Firewall 640x shows very well that the blow with the brushes on the snare drum and the bass lines played by John Illsley sound completely natural and more importantly, that all band members really audibly playing together! That seems common, but it isn't. Rickie Lee Jones' album has very different virtues and I thought I knew it well. But with the Firewall 640x really new insights arise. It sounds more intimate, involved and colorful and when I equip all the devices in my chain with these wooden cabinets, there really is a next level insight into this still beautiful album. Magnificent.

Concerns resolved?

Nevertheless, during my testing of the previous generations of Firewalls, despite all the positive qualities, I eventually got the impression that certain display aspects were subtly homogenized. In other words, especially in complex music that contains many upper harmonics or complicated rhythm patterns, the structure and signature were clearly perceptibly changed and somewhat flattened out in a certain way. Fortunately, all the hard work of the development team has paid off, because the latest generation clearly handles this differently. It already starts with the fact of being able to disconnect even further from so-called 'hi-fi' listening and thus make even better contact with the intention of the performers. But it is above all the almost complete disappearance of the previously observed rounding that strikes me the most. With that, the only serious 'disadvantage' of the predecessors has been neatly parried and that is very clever. What remains is that it can take some getting used to to let go of the more emphatic musical outline that typifies every 'standard' hi-fi set and to get a more relaxed and natural 'softness' in return. But don't get me wrong, because this Firewall 640x makes music anything but soft and soft. No, what I mean has more to do with the observation that most hi-fi equipment applies a subtle (or less subtle) 'hard' edge along the contours. Think of it as a make-up eye-liner. The Lessloss 640x removes this line and thus shows the person or in this case the music in a more natural way. Of course, the operation differs per device and setting, but what it really comes down to is that the mains pollution is dealt with in a more natural way and as a result you can get closer to the performers. As far as I'm concerned,

the strength of this product lies in more and deeper musical satisfaction in the long term.

## Conclusion

It is downright clever and intriguing how Louis Motek and his team time and time again, with almost insatiable hunger, an increasing level of knowledge and enormous motivation, manage to improve their existing designs time and time again. Anyone who has been acquainted with Lessloss products before will immediately recognize the hand of the master here as well. But on a much higher and more refined level. This is another one of those rare products where you miss them when you take them off the chain. In other words, the effect is so casual and natural that it works more under the skin than it is thick on top. It is also clearly a long-term solution that you will appreciate more and more and where the 'magic' takes more and more possession of the user, as it were. A fact which is caused on the one hand because the audio set will perform more easily and smoothly, but also because of the increased naturalness with fewer artefacts that invites longer listening sessions. Perhaps the best thing is that you tackle mains pollution in a completely different way. The beloved reproduction of your own beloved audio system remains completely intact and recognizable. Only then further stripped of clutter in the mains and in terms of tuning with an intriguing ear for the best aspects that get even better.

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Prices:

LessLoss Firewall Module 640x – Self Install Only \$320

LessLoss Firewall Module 640x – Plug and Play Regular Version \$654

LessLoss Firewall module 640x – plug and play state-of-the-art version \$1,272-