

Aletheia PSU-2 balanced power supply

By Alan Sircom

A few issues ago, the Aletheia DAC proved to be an irresistible way of not only turning digits into analogue signals, but transforming the sound of your system in the process. The almost identical looking PSU-2 balanced power supply does the same thing, but with the afterburners engaged.

It's worth spending a little time on the back-story to Aletheia once again. First there was Vertex AQ, making everything from platforms to cables to power products with a mind to taking a systematic approach to designing a hi-fi. Gradually, the Vertex AQ ideas were taken up by other brands and there was a touch of brand morphing going on. Rather than blur the lines, it seems a better way is to develop different brands for different strengths. Vertex AQ continues along the cable-based systematic approach, with its vertical range of shunt filter and acoustic absorption platform-wielding cables and power blocks named after mountains around the world, but it was decided to move the platforms and room treatment devices over to the LeadingEdge Audio brand (we'll be covering LE's products in greater detail soon) while the active electronics moved across to the Aletheia brand, as much as a technology

showcase as products in their own right. This last, far from being yet another me-too electronics brand, is a small range of core products designed to bring out the best in any existing system, rather than necessarily replace components in that system. The first out of the gates was the excellent non-oversampling DAC (which did have major effects on the sound of the rest of the system simply by virtue of being there), but a power supply raises the game still further, because the further you got from actively using the DAC (say, you were playing a turntable), the weaker its effect. The PSU is intended to be used by every component in the chain (even power amps, although the PSU-2 only provides by-pass for high-current devices). ▶





► However, there's more to this than meets the eye. "Not taking the amp feed through the transformer is a benefit in our view," said Steve Elford of Aletheia when discussing the power amp bypass, "because your not 'current pulsing' the transformer with the high current energy being drawn by the amps. This would make the transformer vibrate more, change the shape of the voltage waveform more – and so on." So, perhaps 'bypass' is the wrong way of thinking about the PSU-2. And you do spend time thinking about what it does and how it does it.

The simple way of thinking of this is to raid the Vertex AQ library. The PSU-2 is a Silver Jaya and two Hi-Rez Roraima power cords, one leading to a pair of by-pass sockets, the other leading to a custom wound balanced power transformer feeding four outputs, each with its own in-line Silver Jaya and Hi-Rez Roraima. Only difference is all the modules inside the PSU-2 have a complex 3D labyrinth instead of the standard 2D one found on the Hi-Rez cables and filters out in the wild. And, given the effects of Vertex are consistent and cumulative, feeding this with a Hi-Res Roraima and a few top-grade Jaya's, plus using Roraimas between PSU-2 and each device will help too.

But the simple way is not necessarily the right way of thinking about the PSU-2, because the whole is far greater than the sum

of the parts. There is also a cheaper PSU-1, which removes a lot of the 'Hi-Rez' EMI treatment, employs silver-plated copper wire rather than solid-core silver, and does away with the more complex 3D labyrinths within the modules.

The heart of the PSU-2 is the balanced transformer, in its own poly box resting on soft rubber feet and with its own acoustic absorption module. This is wound 1:1, with a centre-tapped to ground and each end of the transformer producing the 115V live and neutral antiphase outputs. In other words, instead of 230V in, 230V out, the PSU-2 delivers 115V-0V-115V. The transformer electrically isolates the power to the components from the mains to the PSU-2 through magnetic coupling, but the big improvement comes with the common mode rejection of EMI generated by one component interacting with the others in the system, as well as preventing EMI-generating computers, fridges and 'green' lighting from bleeding into the system too. That there's a second line of defence in the shunt filters and acoustic absorption used outside of the balancing transformer is a lot more than simply icing on the cake.

It's worth noting that use of any form of balanced transformer in a single-phase wiring setting is best used in a home that is absolutely up to code from an electrical standard, because the output of a balanced mains transformer means neutral and earth are no longer tied together as they are in a standard electrical system. If you are intending to star-earth the system though, the use of a balancing transformer is possibly not the ideal way to go, because the each power block is effectively its own ground plane. You could create a separate star earth point, but this is not a function of the PSU-2 as it stands. But, in a very real way, it makes you question whether star earthing is all it's cracked up to be, especially in the audio world of 2013 where computers are increasingly encroaching on our systems.

The DAC had a slow burn effect. You heard what it did at the outset, but the real joys of what it did to the system revealed themselves to the fullest extent over time. The PSU2 is the same... but different. Plug it in and BAM! You immediately ramp up your system's performance. It reacts to the music faster, ►

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- ▶ sounds more dynamic, more like the music should sound. It also does some of the hi-fi-related things like opening up the soundstage and improving the overall transparency and all the things we can get OCD about.

The performance is always good, but there’s a distinct bonus for us moderns. If you have a computer in the system (and let’s face it, that’s not an uncommon happenstance today), the improvement is significantly more marked than in a system with a dedicated CD source. The improvement is substantial with conventional turntable or CD and amplifier systems, with marked decreases in noise (not so much ‘limpid pools of inky black pellucidity’, more a neutral starting place to make good music), improved separation of sounds, but also a more accurate rendition of how the music is shaped by the musicians, the engineer and the producer.

So far, so good. But then it also comes with the slow burn effect of the DAC, but even more so. Somewhere over the course of about 24-48 hours, your take on the system’s sound seems to change. It’s akin to learning a language. For the purposes of simplicity, imagine you are learning to read music; at one point in your staring at a stave, you will stop looking at a note and running through that ‘Every Good Boy Deserves...’ mnemonic and just know it’s a G. At one point you stop saying to yourself “that’s a crotchet” and simply register the note as a crotchet. Suddenly, the task (in this case, the task of reading music) becomes a whole lot simpler, because you don’t have to run through an in-head look-up table. And that’s what happens with the Aletheia PSU-2. Music is more ‘right’ because you are doing less work translating the sound of audio into the sound of music (only this time without the nuns or the von Trapp family).

This isn’t something that’s easy to explain in direct terms. It’s not as if it’s a tangible ‘it got more bass’ kind of change. And I’m not sure whether the change over time is as much you attuning yourself to it, as it attuning your system to you. As a consequence, pulling up specific musical examples not only seems irrelevant, but also actively against what the PSU-2 is trying to achieve. What it does, it does to everything. It doesn’t matter what genre, it doesn’t even matter if the music was well recorded or not, there is a sense of musical wholeness surrounding the music that pervades the system with the PSU-2 in place.

The real basis of the design is buried within Aletheia’s own documentation. It claims that there are two aims here with the PSU, “Fundamentally, providing greatly improved power, and preventing systematic interactions between the components within a system”. It’s these systematic interactions that help

define a system’s way of treating a piece of music, but if left untreated, break down the musical structure of a performance.

There is normally a sonic caveat, but not this time. This points the system in the right direction, whatever the system. I’d like to see a huge version that didn’t just pass through the power amps, but that would make the PSU-2 seem like small potatoes, in size, weight and price. But even just with the pass-thru, there seems to be some residual benefit to that end of the system. Elsewhere in this issue, I talk about the ‘blameless’ amplifier; the Aletheia PSU-2 strives to make every amplifier blameless. Not by making everything bland and uniform, but by making it work properly, and work in harmony with itself and its surroundings.

And when it’s gone... you’re quickly back with normal music replay. You get to live the rest of your life as a schnook. +

TECHNICAL SPECIFICATIONS

Balanced mains transformer power supply
 Single IEC mains inlet.
 Four balanced outputs for source components and two bypassed (single-ended) outputs for power amps.
 Balanced outputs deliver nominal +/- 115V in antiphase. The output is not regulated, the antiphase values will always be half the supply voltage.
 Max combined power output of the balanced supply is 300W.
Dimensions (WxHxD): 46x14x38cm
Weight: 12kg
Price: £10,499 (PSU-1, £7,499)

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