

Art of noise

MD and founder of IsoTek power conditioning products Keith Martin talks to **Daniel Sait** about the company's approach and the advantages offered by its solutions for hi-fi and AV equipment

Explaining that his route into the audio industry began with a mail order business selling records, Keith Martin says that it was not long before this expanded into accessories as well. He recalls: "We began to supply some brands of accessories, but in terms of power protection and performance enhancement, we felt there was nothing on the market that really hit the spot, certainly nothing designed from the ground up, specifically to do the job. My background before this was in industrial and graphic design, working with companies like Virgin and BMQ Music. The problem, as we saw it, was that nobody was designing a product for the hi-fi industry that was created specifically for the purpose of protecting equipment and making it sound better."

Martin adds: "When we started, generally speaking most of the products in the market were re-purposed from another use. Most were simple toroidal isolation transformer



based, but these products did not address the fundamental issues as we saw them. We took our time and designed a product we were happy with, taking a full 18 months to bring it to market and launching in 2001. Called the SubStation, our first release allowed customers to pick the right filter module for their system and we built more or less to order. It was a great product and even won an award from (*HFC* sister mag) *Hi-Fi News*, but it needed refinement in order to make it a more commercial proposition. Our next product delivered what we had learnt from the initial launch, but based on a more practical chassis built around a fixed circuit board so we could produce a single product that would work for most systems. Oh, and we also halved the price."

Where do we go from here?

The desire the company had, and still has, to keep on developing is underlined by Martin's reaction to that first award win. He remembers, "I was happy, but then I wasn't as well. It's a bit like David Bowie having his first success with the single *Space Oddity* in 1969. With something that good, where do you go from there? It was quite a challenge, but we were determined to keep improving and adding value to what we built."

That drive to improve appears to have paid off as the number of awards IsoTek has

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received since it was formed in 2001 is plentiful and not easily counted.

Martin enthuses: "We pour a huge amount into research and development. Not all the projects see the light of day, but we learn something from all of them and this is what enables us to bring new and ever improving propositions to the hi-fi and AV market."

One of the company's latest creations is the Smart Power range. The Smart Power family enables you to manage power usage, control connected electronics, set start-up dates and times to turn on/off audio or AV systems, save power when not in use or warm up a system ready for use when the owner gets home. The systems deliver power management via RS232, LAN and wi-fi using IsoTek's purpose-designed,

INTRODUCING SUPER NOVA

For a company like IsoTek, creating reference-level products is a natural part of its development and ambition. The latest expression of this ambition came earlier this year with the release of the Super Nova in Germany.

Showcased for the first time at the High-End show trade exposition, held in Munich each year, the Super Nova comes as an addition to IsoTek's Ultimate Series and is the most sophisticated (passive) front-end source component power cleaning system the company has ever developed.

The Super Nova is designed for primary components that typically have a constant current draw, so the likes of CD players, music servers, DACs, preamplifiers and phono stages are the primary beneficiaries of its abilities.

Each of the eight power outlets has its own dedicated power cleaning system and each output is rated at 100,000A (1,840 joules) of protection, giving an impressive over 800,000A combined.

Priced at £9,995, the Super Nova features ground filtering, which is fully compliant with certification and safety standards; this is further clamped with an electronic protection circuit, which the company says additionally helps to increase the functional lifetime of each connected component as well as being totally protected against power surges and voltage spikes. For more info on the Super Nova see the boxout overleaf.



easy-to-use app. They are equally suitable for both a technically capable user or those who have employed the services of a professional AV installer.

Martin explains: "The Smart Power line once again came from the ethos of building something specific for a given purpose. We felt the market really needed a product like this and looking around, it seemed to us, that there was a gap in the sector."

"It took a total of four years to develop the concept fully and we learnt a lot along the way. For example, we now use processing chips as much as four times as fast as the ones we specified at the start. We wanted to deliver speed and reliability in equal measure."

"Ultimately our aim was to deliver the right performance and pricing, improve the performance of every system the products

A BRIEF HISTORY OF ISOTEK

2001-2019

Since 2001 IsoTek has provided a wide-range of mains conditioning solutions, here's a rundown...



2001

IsoTek kicks things off with the SubStation mains conditioner

2002

First generation of iconic Mini Sub power conditioner is unveiled

2004

IsoTek restructures with new production facilities and an improved design team

2004

The GII Mini Sub mains conditioner launches to great critical acclaim



2004

IsoTek collaborates with Nordost to create the Thor power conditioner



2005

Titan arrives, introducing IsoTek's innovative high current Direct Coupled Design circuit

2006

Sigmas launches, incorporating technology trickled down from Titan



2007

Arrival of Mira TV filter heralds new EVO3 generation of products

2009

EVO3 Aquarius replaces GII Mini Sub – a critical component in IsoTek's range



2011

IsoTek unleashes Super Titan – the world's most powerful mains conditioner

were connected to, and offer an interface that made it easy to control every aspect of the system. The concept is actually simple – deliver clean, controlled power to improve operation and performance – but it's insane how complicated some of these products are inside. However, we have done the work, so buyers don't have to, and we have made them simple to use."

Among the challenges for the Smart Power range is combating Differential Mode Noise (DMN). This is the phenomenon created in any electrical system if you have anything with a switch mode power supply, which is common in modern components. They are designed to make products more efficient, but they create a lot of mains distortion resulting in noise.

Perfect isolation

Martin explains: "Imagine the amount of noise in a hi-fi system. With boxes often in close proximity, the potential for DMN is huge. Removing this as much as possible gives immediate enhancements. Isolation is key. Some products have their output sockets in series, which means any interference is passed to the whole system. Ours never do that, with all of the outputs completely isolated. We also use the highest-grade components, such as the 99.9999% oxygen-free copper, silver-plated wiring. We use science to get the results we want."

Keith has a great line in analogies for why you would want to use IsoTek: "Imagine it how you like, it could be buying a racing car and then driving it across muddy fields instead of a race track, or purchasing a fine bottle of Champagne and drinking it out of plastic mugs. Either way you get the idea; the power is the foundation of any system and it should be the first thing you think about. Think of yourself as an architect. You

"It took four years to develop the concept fully and we learnt a lot along the way"

don't specify the furnishings for the penthouse at the start of the project, you design the foundations, the part of the project that allows everything else to perform as it should."

I ask Martin what he thinks will be the most noticeable improvements to any system once IsoTek is installed and doing its job properly to protect the products and deliver performance enhancements?

He enthuses: "Immediately, you will notice a quieter noise floor with cleaner sound and better images. You get an expanded soundstage, more detail, more emotion, not edgy and thin like some systems can be. It's

DESIGN DETAILS

The Super Nova design includes a sophisticated new choke, which allows a series connection that quadruples the inductance in order to give a vast increase in filtering at a constant 10A if needed. In turn, this provides a typical load of 25-40W, a massive power reserve.

In addition, two specialised radio frequency chokes combined with capacitances produce a high level of classical (Pi filter) design filtration. Furthermore, there is the unique Nova adaptive gate system, designed to produce the optimum resistance capacitance barrier for eliminating differential mode cross-contamination.

IsoTek says that, unlike some power cleaning concepts, Super Nova not only adjusts to the connected load and creates the ultimate barrier to differential mode noise cross-contamination, but enables each connected component to benefit from an ideally regulated and clean power supply. Super Nova can be combined with Super Titan for the ultimate full system power solution.

All internal wiring features silver-plated ultra-pure OCC (Ohno Continuous Cast) copper with IsoTek's VAD (Virtual Air Dielectric) technology and all PCB circuits feature 2oz copper. IsoTek argues these qualities are significant in themselves, however when they multiply by eight times and comply exactly with IsoTek standards – which is total isolation of each output socket from mains noise – they achieve the ultimate isolation technology.

like getting glasses or contacts for the first time. You have got used to the way things look, it's only when your prescription arrives that you realise what the world looks like and what you've been missing."

So, what exactly is the bottom line? According to Keith Martin: "There is no such thing as an ideal environment for equipment, we have to create it. IsoTek products are the building blocks from which to begin any new system or enhance an existing one. A product like our Smart Power Delta can deliver all of the advantages we have talked about to no less than 16 products and deliver all the easy-to-understand information from our app from anywhere online" ●



2012

The Genesis full mains sine wave generator comes to market



2013

The Discovery Range, including the Polaris power bar and Premier power cable, debuts

2017

IsoTek's most sophisticated power cable, the Ascension, launches



2019

IsoTek's Smart Power custom installation line is introduced