IsoTek EVO3 Synchro Uni DC offset blocking device

by Alan Sircom

The IsoTek EVO3 Synchro Uni is a small, relatively light brushed aluminium box. It has an IEC output on one side and the plug socket of your country on the other. It is designed to counter the hum and dynamic constraining problems from DC offset plaguing the AC power fed to your system.

The standard version is designed to work with small-to-medium sized components and systems (it has a 10A, 2,300W maximum throughput as standard; owners of D'Agostino Relentless amps or similar should opt for the 16A, 3,680W version). Inside are silver-plated high-purity Ohno Continuous Cast copper conductors held in what IsoTek calls a 'Virtual Air Dielectric'. It comes with a manual of sorts, which basically shows you how to plug it in (unplug existing power cable, attach that to one end of box, add another cable between wall and other end of box) and a series of 'don'ts' that could also apply to Gizmo from *Gremlins* (don't get it wet, don't cover it with curtains, don't feed it after midnight... this last might be subject to some creative license on the part of the journalist). Otherwise, that's it. No switches, no internal parts to mess with, not even a few DIP switches. Just a box.

So what does it do again?

Let's create a convenient set of numbers to best explain this. Imagine a perfect alternating current, which flips between ▶

"It's surprising just how much noise we put up with in audio, especially when the cure is so easy."

▶ +100V and -100V, crossing over at precisely 0V. An amplifier connected to such a current receives a mains power input that is entirely predictable. Now, introduce a constant direct current offset of 5V into the mix; you have an alternating current that goes from +105V to -95V, crossing over at +5V. That amplifier receives a mains power input that overloads by 5% half the time, and as that means either 25 or 30 times per second (depending on country), which causes mechanical hum. It can also damage the integrity of the audio that effectively modulates off that power input. This can mean pushing the amplifier into over-saturated distortion on the upswing and robbing the amplifier of its full dynamic range due to the limitations of the downswing. So, compared to the notional ideal, a mains power input with some form of DC offset can at best contribute to transformer hum, at worst simultaneously make your audio system sound more distorted and less dynamic.

"But," cries the man reading the *Boy's Own Book of Audio Electronics*, 1956 edition, "no one talked about DC offset in the before time, so it's an invented 'problem' designed to separate the credulous from their money!" The difference is we have moved from a world of linear power supplies to a world of cheap-as-possible switch-mode power supplies. In the past, the two main sources of DC offset on the mains were the linear power supply in your TV and your fridge, and they introduced fractions of a volt at most. Today, at least one of those two sports a cheap SMPS that is more likely to introduce an order of magnitude more DC offset as a result, and things quickly multiply if you then add in computers, routers, DECT phone docking stations, anything with a plug-top power supply, and especially phone chargers (perhaps the perfect storm of 'bad' for an audio system, adding more than their fair share of radio frequency and electromagnetic distortion, as well as putting a DC offset into the mains). A quarter of a century ago, the typical DC offset load in a house was negligible enough to be ignored; now it's a question of how much can your system tolerate.

DC offset blocking devices are not new; in fact, the EVO3 Synchro Uni is predated by the EVO3 Synchro, which still exists in the IsoTek catalogue. The main difference between the two is cable options; the EVO3 Synchro includes captive cords at both ends. While these captive cords are of excellent quality, the EVO3 Synchro Uni offers the option of picking your own power cords, whether inside the IsoTek ecosystem (as IsoTek would understandably recommend) or outside. We used it both with a pair of IsoTek EVO3 Premier power cords (to remain within IsoTekWorld) and a pair of Nordost Blue Heaven cords. The EVO3 Synchro Uni results were identical.

There are two kinds of transformer hum; the more subtle hum that raises the noise floor of a system and the obviously mechanical hum that comes from either poor quality control or having a transformer that isn't working true to form (most commonly, this happens when using a product built and tested in a country with very different voltage and AC frequency). Fortunately, the EVO3 Synchro Uni is good at nailing both kinds of hum well. OK, so if you have a very wayward transformer, the best results come from a gentle tap or two from a rubber mallet and then a return to the manufacturer, but for the rest, it's surprising just how much noise we put up with in audio, especially when the cure is so easy. You plug the EVO3 Synchro Uni in between the system and the wall, and the hum goes away. The noise floor gets lower almost every time. And the system gets very slightly cleaner sound and more dynamic most of the time. Unless you live in a cloistered house with a complete absence of 21st Century consumer electronics, these statements hold universally. The only times they won't is if you have some form of power conditioner that blocks DC offset elsewhere in the system. Naturally, when talking about cleaner, more dynamic sound, we are talking about playing music through the system (it took less than a minute of listening to 'Inertia Creeps' from Massive Attack's *Mezzanine* [Virgin] to hear the difference), but the hum differences apply from just listening to the system running quiescent.

The EVO3 Synchro Uni is a perfect introduction to IsoTek, as it offers almost no disruption in your existing system (except for the purchase of a single additional power cord) and offers a noticeable and repeatable performance boost. Who knows, it might be the stepping stone to a lot more IsoTek equipment to shore up your mains... +

PRICE AND CONTACT DETAILS

IsoTek EVO3 Synchro Uni £595
Manufactured by: IsoTek Systems
URL: isoteksystems.com
Tel: +44(0)1279 647039