

Clean power

Isotek's Evo3 Mosaic mains regenerator is aimed at improving the power supply to your components to bring better sound. Noel Keywood is impressed with the results.

The Isotek Evo3 Mosaic Genesis power supply is not a mains conditioner – and just as well. In North West London, where I measured and reviewed it the mains waveform is heavily distorted – something a conditioner cannot improve. Instead, this unit is a regenerator, producing an entirely new mains supply inside that is low in distortion, and both voltage and frequency stable, no matter what

the outside conditions. This particular model is priced at £4500 and is aimed at high-end systems. It might seem a lot to pay, but there's quite a lot going on inside the shiny aluminium casework. And its measured performance was outstanding.

Isotek call it "hybrid" because it has two parts, a regenerator section delivering 150 Watts of power and a high-current conditioner section that filters out high frequency noise but doesn't regenerate, purposed for

amplifiers or power amplifiers that draw more than 150 Watts. The rear panel carries three UK 13A socket outlets delivering regenerated power and two delivering up to 10A filtered but un-regenerated. The front has a display panel showing mains input/output condition so it is meant to be seen, hence compact dimensions of 225mm x 225mm, with a depth of 470mm. Weighing 20kgs the unit is quite heavy but it is very well made and finished.



Above the central power-on button lies an attractive display panel that lights with bright blue numerals visible from a distance. Below sit three small buttons. The centre button turns the display on or off, the left button sets it to read input conditions – the quality of the mains going in – and the right button sets it to read output conditions – what is going to the hi-fi. It reads one or the other, not both. I was surprised to find it measures distortion – and accurately too. This is not an easy thing to do. It also displays voltage and power consumption. A frustration here was the fact that it doesn't read in real time (i.e. continuously). It makes a reading at switch on or when polled by pressing a button, so as I switched units on or off in the system the power reading remained unchanged – and wrong.



A complex interior with large heatsink of the 150 Watt high voltage amplifier dominating.

Last month I measured 3% mains distortion, caused by heavy clipping, in one part of North West London, when reviewing Longdog Audio's Garrard 401 turntable regenerator power supply. This month I measured exactly the same condition some miles away where the mains supply, I would have thought, comes from a different station or substation. The waveform clipping is, I suspect, caused by voltage regulation so may be common across the UK. Only a regenerator can eliminate the issue.

Although power supplies within hi-fi products are immune to mains clipping and distortion, leakage currents in their mains transformers pass it to ground where it is picked up by the circuits and this, it would seem, has audible impact. Turntables with synchronous a.c. motors are not immune and nor is my Garrard 401 that is voltage sensitive.

Switching on the Isotek, its measurements of frequency, voltage, distortion and power (output) were absolutely right – assuring. Mains input read 242V and its output read 232V. I was disturbed by the amount of distortion because I assumed this was due to some local problem close to my home, but obviously it is not, since our offices some miles away suffer equally. It was nice to see then, the output waveform measuring

0.07% distortion, a very low value. That's what a regenerator can do. It was just a pity that these things are, in effect, high voltage power amplifiers fed from a clean, stable 50Hz sine wave source so to feed a hi-fi power amplifier they must not be just as big, but a lot bigger – 500 Watts or more – than any power amplifier they feed. Meaning big, heavy and even more expensive – something for the basement.

I connected up our Timestep Evo Technics SL-1210 Mk2 turntable linear power supply, Oppo BD-105D Universal (CD) player (linear power supply), Martin Logan ESL-X hybrid



At top, the regenerated output sockets, and below high current filtered but unregenerated outputs for power amplifiers. This is a UK version fitted with UK type mains sockets. Other versions are available.

electrostatic loudspeakers (polarising supplies) and Icon Audio PS3 valve phono stage. That little lot drew 87 Watts of the 150 available, so the Mosaic was in its comfort zone. A McIntosh MC-152 power amplifier was connected to a high current outlet.



The supplied mains input power lead, fitted with a large, high current three-pin connector.

SOUND QUALITY

What the Isotek did for sound quality was fascinating and beyond my experience of other mains filters and supplies. It was also quite profound. Treble gained a silky smoothness, the background cleared to reveal fine detail though gentle resolution, not through forcefulness, the timbral palette broadened considerably and a sense of deep yet silky resolution prevailed. I was beyond impressed;

I was almost mesmerised at times. In particular, spinning LP – a new 180gm pressing of Neil Young's 'After The Goldrush' (taken straight from the analogue masters) – his strummed acoustic guitar on Tell Me Why expanded in its timbral richness and the depth in which the system could reveal this quality. There was massive air and space, echoes ringing off into left and right speakers, Neil Young sounding more intensely plaintive than ever and – finally but perhaps most importantly – a deep silky smoothness and quiet that let the whole performance flow out naturally in a very analogue manner; there was no jitteriness in the sound. It was smooth, deep in stage depth and assured in rendition. The system suddenly jumped ahead in terms of sophistication, making it easier and more relaxing to listen.

These same effects were even more apparent with CD and – strange to say perhaps – CD became less like CD. By this I mean harshness was brought down, low level resolution (where CD is poor) increased and timbral resolution massively increased, so the piano in Josefine Cronholm's In Your Wild Garden had more a more imposing presence due to stronger resolution of its qualities, timbral and dynamic. It grew, just like Neil Young's guitar, to

having a gripping presence, fulsome and dynamically adept.

Willy DeVille singing Spanish Harlem similarly took stronger form in front of me and I could hear more of this live performance, yet again it was all smoother more svelte and sophisticated, with a deep sense of

background atmosphere.

The Isotek improved every aspect of the system in which I used it, sharpness and laceration receding. It brought in a silky quality, accompanied by deep insight and genuinely strong dynamics, possessing a relaxing delivery at the same time. We even felt the Martin Logan loudspeakers sounded better integrated between bass bin and electrostatic panel. Some of the improvements bordered on weird!

CONCLUSION

Yes, it is expensive, but the Evo3 Mosaic Genesis power supply performed extraordinary feats. It was almost worrying. Measurement showed our (London's?) mains supply is heavily distorted and the Isotek eliminated this issue completely, where a filtered supply cannot. The depth of improvement it brought to our system was extraordinary. This is a product that supports the system you paid for and I found it revelatory in every sense.

MEASURED PERFORMANCE

The Isotek Evo3 Mosaic Genesis regenerated mains power supply delivered 232V out as standard. Since 230V is a target European voltage and common around the world this is a sensible figure for a UK/EU unit.

The UK mains has a stipulated maximum range of 253V – 216V, some homes getting down to 210V or so at the

end of a long and loaded (countryside) supply line. The unit maintained 232V out from 280V input (it didn't blow up) down to 165V input within 0.3% variation – an impressive result. At 200V input, output was still within -0.2% of a 240V input, so it maintains output near perfectly whatever the mains does. The front panel display of input and output voltage was accurate too.

With a mains input of 242V, heavily distorted by peak clipping (London, North Kensington) that produced 3.5% distortion with harmonics up to 1kHz, as our analysis shows, the regenerated output measured a very low 0.1%, the Isotek display recording 0.07% – close enough to our measured figure from a Rohde&Schwarz UPV analyser.

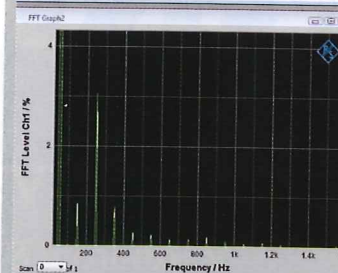
Reducing mains distortion from 3.5% to 0.1% is impressive; the Evo3 also altered the distortion pattern from a spray of harmonics up to 1kHz into low order second and third harmonics; it cleans up well.

Output frequency measured 50.076Hz and held steady at that figure. This helps toward maintaining speed stability in frequency synchronous turntable motors of belt drive turntables.

Under measurement the Evo3 Mosaic held mains voltage steady under all possible circumstances, cleared distortion and locked frequency – impressive. **NK**

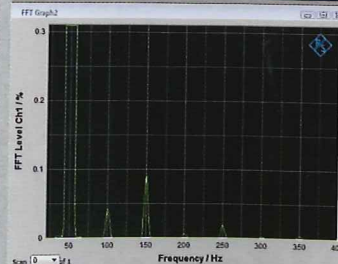
DISTORTION - MAINS INPUT

THD @ 0	Level RMS	Frequency
CH1 3.2994 %	36.561 V	50.067 Hz
CH2 OFF	OFF	OFF



DISTORTION - OUTPUT

THD @ 0	Level RMS	Frequency
CH1 0.1046 %	35.080 V	50.076 Hz
CH2 OFF	OFF	OFF



ISOTEK EVO 3 MOSAIC GENESIS £4500



OUTSTANDING - amongst the best

VERDICT

A high-end mains regenerator that lifts very aspect of sound quality. Even digital became more analogue.

FOR

- improvement in sound quality
- build and finish
- metering

AGAINST

- manual display update

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Mains input distortion of 4.58% (top) and mains output distortion of 0.07% (bottom). These were our conditions; both values can vary.