TECH TALK

Innuos NG, by Nuno Vitorino

Innuos is one of the foremost manufacturers of high-end music streamers and servers. We spoke to Nuno Vitorino, Innuos co-founder and Director of Research and Development, about the development of the new Next Generation lines and what the future holds for Innuos' technologies.

What differentiates the NG technologies in the Statement and the new Zen line?
There are differences on both the power and processing areas. On the power side, the ZEN NG has less power rails but introduces the NGaN Gallium Nitride based regulator for the CPU. The main advantage is reducing impendance of the power supply for the processor. On the processing area, the ZEN NG introduce the new PreciseAudio mainboard. This is a custom mainboard that is extensively tuned for audio use as we have complete control over how the mainboard works. Additionally, the new ZEN NG series is based on a Real Time kernel and we used separate isolated processor cores for audio tasks only. This again reduces latency for audio processing.

What are the changes between models in the ZEN range?
Between the ZEN NG and ZENith NG the difference is at the toroidal/rectifier bank (150VA/44000uF on the NG, 400VA/132000uF on the ZENith) and the processor level (four cores and four virtual cores versus eight cores and eight virtual cores).

How are these different from previous ZEN models?
These are very different from the previous ZEN MK3 series, which didn't use the active rectification technology, GaN regulation and a mainboard with a higher latency.

In a hierarchy of importance, where does the case, hardware, implementation, and firmware sit?
They are all related as software and firmware is what controls the hardware and it's how you control the hardware that makes all the difference in audio. Power is the foundation though, network and output implementation, audio processing and finally chassis for EMI and vibration.

Is a server still relevant in a streaming world?
Absolutely! First it enables you to experience the highest levels of high resolution (DXD and DSD) but also enables the concept of having your own music collection that is yours forever. Streaming is great for discovering music but due to commercial agreements, you never know if the music you love will always be available there.

What innovative technologies go into the new ZEN range and will they trickle up and down?
Essentially what I explained earlier, plus the XSM (eXtensible Storage Management). We have trickled down already some of the technologies for the Stream Series such as the active rectification, XSM and real time operating system.

How long did it take to design these products,?
We focus on developing component technologies which we then incorporate on the products. Most of the technologies that are new on the ZEN NG have been in development since 2019.

Is the original ZEN line is still in production? How long do you expect support to last, and does supporting older models influence app design?
For the MK3 line we expect to fully support it for as long as we can make it compatible with the existing servers.

We do not plan a specific obsolescence, and we discontinue support only when the platform can no longer support the features being introduced with the software so that we don't have to keep completely different software versions.

Some prefer the performance of the Statement NG to ZEN NG. When that product eventually ends its production life, will there be a similarly sounding replacement?
The Nazaré will replace the Statement as our flagship server incorporating quite a few new technologies and making a significant step up. We also plan to extend the NET and Flow technologies being introduced with the Nazaré that ZEN NG users can upgrade to make significant improvements. These are currently in development.

What challenges do server makers face today, and what might tomorrow bring?
We feel that even with the Nazaré there is further to go to achieve an even more realistic sound reproduction. But a lot of focus is on the user experience and ensuring that the system is intuitive and simple to use, further merging streaming and local libraries together.

Looking a little further into the future, we also feel that LLM's (Large Language Models) that people generally associate with AI can be integrated to make interaction with music simpler and more natural. +