

Innuos PULSAR streamer

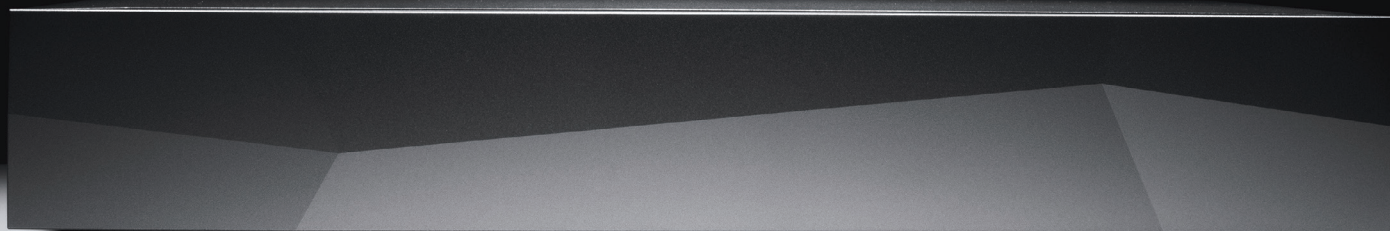
Alan Sircom

Being at the cutting edge of the ripping music server for almost as long as there have been domestically-available music servers could be a double-edged sword for Innuos. The ZEN range and the outstanding Statement (with or without its Next-Gen power supply, tested in Issue 215) make the company one of the biggest names in music servers, particularly those that rip music from CD to hard disc. Which is great... until people stop using CDs as their go-to music carrier. While all the servers in the Innuos

range act as extremely good streamers and high-resolution file servers, there's still that little voice in people's heads that looks at the CD slot and says, "I'm paying for something I don't need." The PULSE range silences that voice.

Non-Ripping Yarns

Like the ZEN series, the PULSE line of streamers and servers comprises three models; PULSEmini, PULSE and PULSAR, tested here. I'm trying to resist calling them 'good, better, best' but the epithets do fit relatively well; the products are designed to meet the budgetary



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» constraints of the user, with each successive model piling on improvements over the last. When you get to PULSAR, the spec sheet gets pretty packed. PULSAR uses Innuos' active rectification capacitor (ARC) board which is a scaled-down version of the ARC6 present on the Statement NG. This is a custom module containing more than 130,000µF Mundorf capacitors. This is well met by a 300VA toroidal transformer, which goes some way to explain why a streamer weighs almost as much as a small stereo power amplifier. It's all designed in collaboration with power supply expert Dr Sean Jacobs. The centre of this magnetically screened toroidal transformer is filled with epoxy resin.

This analogue power supply is uncommon in streamers and servers; even stepping away from essentially re-tasked computers, most server-side products use switch-mode power supplies. These might be light, cheap, plentiful and easy to implement, but if you take your server project seriously, including something that produces RFI and EMI inside the case of your source component is 'not a good look'.

Isolation from interference is a big thing for Innuos, and PULSAR includes a 'Lite' version of its PhoenixUSB reclocker (tested in Issue 184), powered by a custom regulator module. This is a replaceable Digital Output Module with Innuos working on further modules like AES/EBU and i²s. By treating noise like The Enemy (whether an invading force trying to breach the PULSAR through its connectors or the fifth column of internal power supplies), it approaches many of the performance parameters

of Innuos' Statement product. Granted, the two-box masterwork takes these concepts as far as Innuos can, but the PULSAR is a chip off the ol' Statement block.

Even the feet are arranged asymmetrically to support the player and help dampen vibration. The strategic placement of feet sounds like the start of an exceptionally boring dance movie. Still, it is understandable when you think about the unequal load caused by a big transformer and the fact that many parts are potentially resonating at very high frequencies.

Not just a pretty face

PULSAR has the asymmetric front panel common to all Innuos products but subtly redesigned for the PULSE range. This includes the logo and product name inset into the top plate. It's not a product designed for front panel displays (most servers are 'plant room' fodder), but I think it looks elegant and understated on the shelf.

More importantly, the PULSAR is designed to be extremely easy to install and use. Its operating system is held on Single-level Cell SSD (PULSE and PULSEmini house this on a Triple-Level Cell module, with concomitant higher noise) and is designed to allow the PULSAR to run either in Standalone mode (where it acts as a music server) or Endpoint (where an existing server is already established, often in a multi-room system). Aside from downloading the Innuos App and plugging the PULSAR into a network switch, switching between Standalone and Endpoint is the most challenging part of the installation. »



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» PULSAR can reach out to your preferred online music streaming services (through the App itself) or hook up to local NAS (network-attached storage) boxes full of your own music. It does this effortlessly. Whichever way you configure the PULSAR and irrespective of whether you have local or online streamed files, the PULSAR works best when outputting to a USB DAC, as it supports 32bit/768kHz PCM and up to DSD512 through that pathway. It also supports MQA Core Decoding (this requires the latest version of the innuOS operating system).

The PULSE series are streamers and they are currently undergoing Roon-Ready certification. They can be used now as a generic Roon Endpoint but being a streamer, they are not designed to be used as Roon Core; not least because they don't have onboard storage. Roon-Ready is a programme for streamers only, not servers.

However, having used Innuos' Statement for some time without Roon, I'm not missing it too much. The Sense App keeps improving, and the latest version, coupled with innuOS 2.3, makes for a very rich musical experience. It's intuitive, and I find myself flipping from a local disc to stream to internet radio quickly and effortlessly. This means the added value Roon brings to the party isn't quite as vital as it once was. However, Roon's curation and that feeling of swimming through the entire musical canon is still a heady wine.

As there are so many USB and Ethernet ports on the rear of the PULSAR (five USB ports and two LAN sockets) you might think you could go a little wild, installing multiple USB drives, USB DACs in multiple ways and even a NAS drive. However, it doesn't work that way. The PULSAR has a dedicated LAN input for connection to the network, it uses a Network Attached Storage for streaming local files, and it has a dedicated USB for output to a DAC (with the promise of equally high-performance digital outputs at a

liter date). The quartet of USB ports are there to connect a backup drive and for future expansion. It's all in the simple yet deceptively thorough quick-start guide. As such, I used the PULSAR (and the Statement) in Standalone mode, using my Synology NAS, into the outstanding Allnic Audio D-10000 (tested in Issue 221) through USB.

Tough tasks

PULSAR has a challenging set of tasks to achieve. It has to be extremely good in its own right, justifying its place against both pared-down PCs or even Raspberry Pi computers acting as servers. It needs to be distinctly better than the PULSE and PULSEmini, but not so good that it potentially cannibalises sales of the Statement. It gets that balance near perfect.

If anything, the first is the hardest to crack because those who think any server is just a glorified PC will likely discount any claim to improved sonic performance as so much 'fluff'. However, the Sense App pays attention to that argument as it's so easy to use and intuitive that it's hard to argue a more 'homespun' approach. Not having a PULSE or PULSEmini to hand makes testing its sonic improvements harder, but having compared them side-by-side in a few settings beyond my listening room now, that 'good, better, best' hierarchy I didn't want to discuss earlier is kept in very good order. There is a definite performance jump across all three models, with the PULSAR sounding considerably more open and with more potent, full bass than the other two. And then there's the Statement, which I know well. In this setting, the PULSAR gives a surprisingly adept performance and acquits itself very well. The Statement has more space and depth to the sound and is considerably more rhythmically adept, but the PULSAR gets closer to the Statement's stellar performance than it has any right to expect.





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» Comparisons over, how does it sound? It gives the DAC a lot to deal with in a good way. Sure, the DAC itself will shape the sound of a USB streaming server, but the DAC can only process what it's fed, and the feed from the PULSAR is excellent.

As mentioned before, the strength and depth of the bass is the first thing you notice. It's a powerful bass sound, yet not one that comes at the expense of the rest of the frequency range. My usual bass-test track [Trentmøller's 'Chameleon', from *The Last Resort*, Poker Flat Records] can sound strident and with an exaggerated top-end when streamed poorly. Still, here the depth and intensity of bass give you those atavistic thrills, while the mids and top remain unforced and precise.

The more you listen to the PULSAR, the more other aspects of performance unpack themselves. The vocal projection and articulation are first-rate (of course, having a DAC that also excels in those parameters helps). I wrote 'undigital' on the pad several times because the fluid and articulate vocals were more 'there' than one usually hears on streamed sources.

Detail levels are also extremely good but without the edginess that often plagues streamed digital performances. That degree of information on tap is not always good, as there is often too much going on in the high frequencies and not enough taking place in the bass. Innuos has a good sense of balance, making streamed digital richer than usual.

Then there's the beat. I'm always taken aback at how a packetised data source played through a USB output can have such profound differences in the rhythmic quality of a recording. I know the differences are more due to the isolation of signal between two devices than changes to the datastream per se. Still, whatever the reasons behind it, the PULSAR is incredibly taut and bouncy sounding. This isn't just a rock music thing; The Yo-Yo Ma/Chris Thile/Edgar Meyer Bach Trios [Nonesuch] has such a delicate sense of meter that it can so easily sound bland and drab. Still, here it comes alive, and the interplay between cello and mandolin, underpinned by bass, makes you understand why most musicians view Bach as the father of modern music and the precursor to everything from jazz to metal, in a way. All of that's here in this recording, and the PULSAR beautifully renders all of this.

There is a caveat here. Or rather, an observation. The PULSAR sounds good out of the box, but you must be thorough about your network connection to hear its

potential. Like its bigger Statement-shaped brother, the PULSAR takes a big step forward with a well-designed network switch and a set of Ethernet cables designed with audio in mind. While the PULSAR is good at keeping RFI and EMI at bay, giving it a helping hand from the switch onwards makes for an even more potent sound quality and authoritative bass. Hundreds of options are open to the listener, including a switch from Innuos called PhoenixNET (tested in Issue 194).

Saying nothing with style!

The best reviews often say the least. The Innuos PULSAR is a fantastic streamer for those who have left CD ripping behind. It integrates so well with the Sense App that it's almost impossible to separate their performance, and the two make accessing both your own music and that of the outside world effortless and easy. Everything works out of the box and, while it sounds good under almost any setting, works best when some care and attention are paid to the cabling and switch. At this point, it can sound like excellent music-making, regardless of where that music comes from.

I do 'get' why many think spinning discs remain the best way of extracting digital audio, although I also think it's a somewhat old-fashioned idea. However, this 'CD sounds better' view is especially strong when listening to online streamed recordings against ripped CDs and even the CDs themselves. It's one of the reasons devices like the Innuos Statement sound so good. But even the most strident streaming holdout will find something positive to say about the PULSAR. This Innuos server can show you just how far streaming has come. +

Technical specifications

Streaming Inputs LAN

Native streaming services Qobuz, Tidal, TuneIn internet radio

Digital outputs USB, Ethernet

Supported Digital Formats Up to 32-bit/768kHz PCM and up to DSD256 Native DSD via USB output

Control Software Innuos Sense, RoonReady

Dimensions (W×H×D) 42 × 7.6 × 29cm

Weight 10.17kg

Price £4,949, €5,499, US\$6,899, CAN\$8,949

Manufacturer Innuos

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