

Audiolab 9000N

The third and final component in Audiolab's three-strong 9000 series has landed – an app-driven network DAC with balanced outs. But what, if any, is the Lumin connection? Review: **Mark Craven Lab: Paul Miller**

Arriving to crown Audiolab's top-flight 9000 series, which launched with the 9000A integrated amplifier and 9000CDT CD transport [HFN Aug '23], the 9000N is arguably the most intriguing model in the range. This streaming DAC, priced at £2499, and styled to match, marks a point of departure for the brand as its association with DTS Play-Fi is cut in favour of a new streaming platform and app.

Audiolab's website doesn't shout much about the change, which is understandable as its DTS-equipped 6000N Play and 7000N Play models are still current. Instead, it simply discusses the 9000N's 'incredibly capable and equally stable streaming platform' and a new 9000N-specific app, free for iOS and Android [see boxout, p67]. However, it doesn't mention that this app is a 'reskinned' version of that used to drive specialist brand Lumin's network hardware.

INSIDE STORY

Naturally, this has kicked up quite a stir in some parts of the online hi-fi community – Lumin (and the app) being well regarded – and has led to some declaring that the 9000N is a 'Lumin inside'. Neither company is saying any such thing, of course (the word 'Lumin' is entirely absent from Audiolab's website), and the more prosaic truth is that the 9000N partners an OEM streaming module developed by Lumin's Hong Kong-based parent company, Pixel Magic, with Audiolab's own (digital and analogue) hardware design.

The newly sourced module brings with it streaming service integration (including the hi-res Qobuz and Tidal platforms), TuneIn Internet radio, and UPnP playback, with file handling to 768kHz PCM and DSD512, plus MQA decoding. Furthermore, a firmware update that may be live by the time you read this will bring Roon Ready

RIGHT: Linear PSU [right] has regulation [centre] for separate X MOS-based USB board [top left], Linux-based Ethernet and USB storage solution [top centre] and audio stage with ES9038PRO DAC and OP275G op-amps [top centre]

certification. Apple AirPlay 2, Tidal Connect and Spotify Connect are also present for streaming outside of Audiolab's app.

The 9000N's inputs, beyond Wi-Fi/Ethernet and 12V triggers, are a USB-A port for connection of external drives and USB-B to connect to a PC. That's your lot, so perhaps Audiolab has missed a trick here by not including any coaxial/optical inputs to pair the 9000N with the 9000CDT transport. Anyone opting for a full 9000 series 'stack' would need to route the 9000CDT into the DAC stage of the 9000A amplifier. In practice, both the 9000A and 9000N feature the same ES9038PRO DAC, with its range of digital filters [see PM's Lab report, p69], and while the 9000N has coaxial/optical outputs to passthrough PCM (to 192kHz and non-decoded MQA), the 9000A is arguably that bit better equipped with its BT functionality. The integrated amp also has a pre/power mode that bypasses its volume

control, should you want make use of the 9000N's variable output. Otherwise the 9000N/9000A's balanced XLR connections will be most tempting for audiophiles.

RIGHT ON TRACK

In either its black or silver finish, the slender 9000N looks agreeably swish, but turn it on and it looks even more striking thanks to the same 4.3in LCD display that graces Audiolab's other 9000 series components. This is certainly one of the better displays in the business, being crisp, colourful, well-organised in

terms of its layout and very customisable. For example, there are six different themes, two showcasing 'virtual' analogue or digital VU meters, and one that shows only album artwork and track title.

You will also need to use this display – either in conjunction with the 9000N's remote control or front panel rotary – to make tweaks to settings such as channel

'His 2019 album is weird stuff, but mesmerising'



balance, filter selection, PCM upsampling (to 384kHz) and display brightness, as these aren't adjustable via the app.

Audiolab is also keen to point out that its 9000N can work entirely over Wi-Fi, so offers a WPS button on the unit's rear to bring a level of automation to the setup process. However, whether down to the 9000N or my own WPS router, I couldn't get this to work successfully, so instead of opting for a more time-consuming manual Wi-Fi setup, I went straight for an Ethernet connection. Hard-wired network solutions are typically the choice of Wi-Fi-weary audiophiles anyway [see p75]...

DOWN TO DETAIL

Although styled to complement Audiolab's 9000A, the 9000N can, of course, integrate into any contemporary set-up so for my auditioning I used it in variable output mode into a Primare A35.2 power amplifier [HFN Dec '19] and B&W 705 Signature standmounts. This felt like a very 'modern' system, with no avenue for CD or vinyl playback, but the performance

and usability of Audiolab's networked DAC proved more than a useful antidote. It offers a clear, crisp, detailed presentation of your digital music library, and not without alluring musicality.

For example, Led Zeppelin's 'Since I've Been Loving You' [Led Zeppelin III (Deluxe Edition); Atlantic Records 96kHz/24-bit] was delivered with succinct detail to the opening guitar, followed by an impressive dynamic surge as Jimmy Page flicks his amp to overdrive, but also an inviting, supple side to the track's organ playing. Add in John Bonham's drumming and Robert Plant's anguished vocals and there's a lot going on – all of it presented with a flourish as the 9000N spread out the performers.

'We All Die Young', from American glam metal also-rans Steelheart [Wait; Z Records 44.1kHz/16-bit], is less complicated, and more obviously 'studio-bound' in its production. Gone was the as-live, reverberant feel of the Zeppelin piece, replaced by a sharper, more aggressive sound. Here the 9000N put focus on singer Miljenko Matijevic's throaty (but highly

ABOVE: Seen here in matt black livery, two-tone silver is also an option. The click/stop Select rotary scrolls between USB and network inputs, and navigates the menu via a 4.3in LC display

impressive) vocals and showed no interest in tempering the snarling drive of the chorus. This is theatrical, heart-on-sleeve rock, and it sounded like it.

FILTER FINESSE

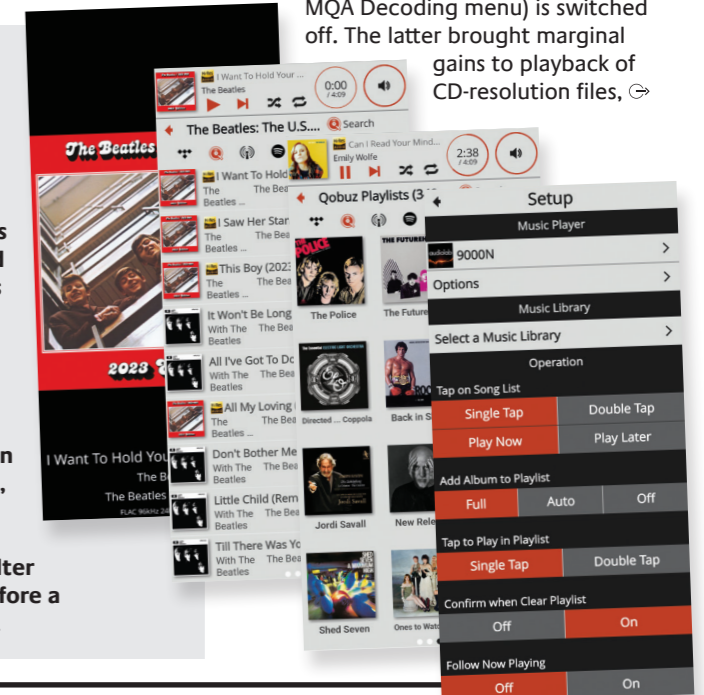
The streamer's digital filter selection brings with it the usual caveat – your time is arguably better spent enjoying your music than used on A/B comparisons – but I did form a preference for the DAC's Linear Phase (Slow Roll-Off) setting, as this added a *souppçon* more bass weight and body to some tracks. For example, the rhythm section on The Allman Brothers' 'Ramblin' Man', streamed in 192kHz/24-bit via Tidal [Brothers And Sisters; Capricorn Records], felt that bit more robust. Note that this is actually the 9000N's default filter (but second on its scrollable list), whereas PCM upsampling (located in the unit's MQA Decoding menu) is switched off. The latter brought marginal

gains to playback of CD-resolution files, ↻

AUDIOLAB APP

The 9000N's Pixel Magic-designed app and streaming platform gives it a leg-up over Audiolab's other network audio products – DTS Play-Fi, which you'll also find on all manner of hardware including soundbars, televisions and AV receivers, is less 'specialist'. The app will also be familiar to some, as outside of a red-and-black colour scheme to complement that of the 9000N's LCD display (there are no other 'theme' options), its settings and functionality are akin to that of the Lumin app [HFN Jul '20]. This includes the size of its text and an interface that's more suited to a tablet (or M1 Mac) than a smartphone.

Music can be played from the Qobuz, Tidal and Spotify platforms, online radio, network shares, and connected USB storage. Here the app impresses with responsive operation, file type/sample rate info and fullscreen album artwork presentation at the touch of a finger. Playlist management, up to 2000 tracks, is also excellent, with the 9000N app making editing and track addition quick and intuitive. Arguably less easy to get to grips with are the app's wider settings, including various options to alter its presentation, as the labelling isn't always obvious – it's therefore a good job that Audiolab has made an online user guide available.



NETWORK STREAMER/DAC



ABOVE: Wired and wireless Ethernet, USB-B (computer) and USB-A (external drive) inputs are good to 768kHz/DSD512 and are joined by optical/coaxial digital outputs (192kHz/24-bit) plus single-ended (RCA) and balanced (XLR) analogue outputs

but direct comparisons are made more awkward by a pause in output once a change is executed, and the track reverting to its beginning.

CROWD PLEASER

On the subject of bass, I'm annoyed I've only recently discovered the work of Serbian bassist Nenad Vasilic, and specifically his 2019 album *Bass Room* [Galileo Music; 44.1kHz/16-bit], where the tracks feature his playing (analogue or electric) and nothing else. It's weird stuff, but mesmerising with it, and gave the 9000N the opportunity to show off its transient ability and deft handling of low octaves. 'Bass Drops', where Vasilic uses his double bass to conjure images of falling rain (I think), enjoyed a wonderful tone and life-like attack and decay.

Another sparse piece, Ry Cooder's 'Theme From Southern Comfort' [*The Ry Cooder Anthology...*; Rhino Records 44.1kHz/16-bit], was equally inviting, the 9000N again shining a light on small details, such as the background hand percussion, and Cooder's slightly off-beat playing.

But just as this streaming DAC has a performance that suits attentive listening, it's not adverse to more 'crowd-pleasing' material. 'Back To December', from

LEFT: Audiolab's system remote caters for the 9000N's input, volume and configuration menu alongside all the functions of the partnering 9000CDT and 9000A CD/amp



Taylor Swift's *Speak Now (Taylor's Version)* re-release [Republic Records 44.1kHz/24-bit], carried tremendous weight to its keyboard backing and sparkle to the acoustic guitar and vocals. There's nothing particularly adventurous about the staging or presentation, but that left the 9000N to just get on with ensuring it sounded poppy and polished.

Meanwhile, Ella Mai's 'Trip' from the album of the same name [Interscope 44.1kHz/24-bit], which begins with just her vocal and piano chords, but then morphs into glitzy R&B with deep, electronic bass, sounded as clean as a whistle despite the overwrought production. Each of these pieces got my foot – both feet – firmly tapping.

PULL FACTOR

At the other end of the spectrum, the 9000N's open, crystal-clear rendition of Lionel Richie and Diana Ross's 24 Carat ballad 'Endless Love' from the compilation album *Back To Front* [Motown 192kHz/24-bit] sent my heart racing, such was the emotional pull of their soaring harmonies. Audiolab's range-topping network player/DAC lets the music fly, unfettered, whichever genre.

HI-FI NEWS VERDICT

Audiolab has rounded out its premium 9000 series with a streamer/DAC of real charm. The modern-looking hardware design, plus excellent display and app, appeal from the off, and its performance is assured – music of any flavour is in its wheelhouse thanks to a clear, detailed and unfussy presentation. A minor niggle? Stack the 9000N with its amp and CD siblings and you'll end up with two 'identical' DACs!

Sound Quality: 87%

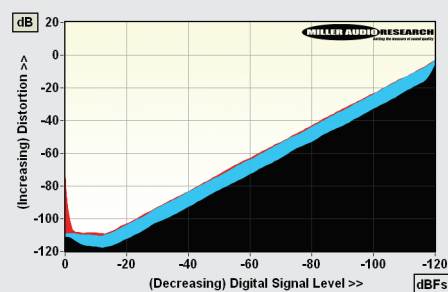


LAB REPORT

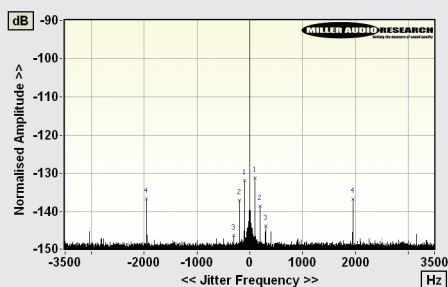
AUDIOLAB 9000N

As with the ES9038PRO-based digital section of the partnering 9000A amplifier [*HFN* Aug '23] the 9000N also offers a choice of five digital filters although these are only enabled when the 'upsampling' option is switched off. With 352.8kHz/384kHz 'upsampling' on, the 9000N defaults to a gentle minimum phase filter offering a $-0.4\text{dB}/20\text{kHz}$, $-9.6\text{dB}/45\text{kHz}$ and $-14.8\text{dB}/90\text{kHz}$ roll-off with 48kHz, 96kHz and 192kHz inputs, respectively. Jitter is fabulously low at $<18\text{psec}$ (PSU-induced) with 24-bit inputs regardless of whether 'upsampling' is engaged or not [see Graph 2, below]. The five digital filters include fast and slow roll-off linear and minimum phase types plus a fast roll-off mixed/hybrid option, these offering responses of -0.0dB , -3.5dB , -0.05dB , -5.0dB and -12dB (re. 20kHz with 48kHz files) traded against stopband rejections of 112dB, 16dB, 93dB, 21dB and 98dB, respectively. With 96kHz media the 45kHz responses are -0.5dB , -5.0dB , -0.2dB , -7.2dB and -23.7dB , respectively.

Low-level resolution is true to $\pm 0.1\text{dB}$ over a full 110dB range (and only $+0.5\text{dB}$ drift at -120dBFS) thanks to the 4.2V peak-level output and very generous 115.0dB A-wtd S/N ratio, all from a 115ohm balanced/XLR source impedance. Distortion settles out at $0.0003\%/1\text{kHz}$ at peak level (re. 1kHz) falling to a lower 0.00005% with upsampling switched off [see Graph 1]. Similarly, peak level digital inputs cause a digital clip of $\sim 0.4\%$ at 20kHz (falling back to 0.00035% -10dBFS) when 'upsampling' is engaged, though this is highly unlikely to occur with typical music data. Otherwise, the 9000N's post-DAC analogue stage offers a fine $>105\text{dB}$ stereo separation and 0.01dB channel balance (all re. 20Hz-20kHz). PM



ABOVE: THD vs. 48kHz/24-bit digital signal level over a 120dB dynamic range (black, Lin. phase fast 1kHz; red, upsampled 20kHz; blue, Lin. phase fast 20kHz)



ABOVE: High resolution 24-bit jitter spectrum with markers indicating PSU-induced sidebands

HI-FI NEWS SPECIFICATIONS

Maximum output level / Impedance	4.22Vrms / 115ohm (XLR out)
A-wtd S/N ratio (USB / Network)	115.0dB / 114.9dB
Distortion (1kHz, 0dBFS/-30dBFS)	0.00005% / 0.0003%
Distortion & Noise (20kHz, 0dBFS/-30dBFS)	0.0003% / 0.002%
Freq. resp. (20Hz-20kHz/45kHz/90kHz)	+0.0 to $-0.4\text{dB}/-9.6\text{dB}/-15\text{dB}$
Digital jitter (48kHz / 96kHz / 192kHz)	18psec / 12psec / 9psec
Resolution (1kHz @ $-100\text{dBFS}/-110\text{dBFS}$)	$\pm 0.1\text{dB}$ / $\pm 0.1\text{dB}$
Power consumption	15W (1W standby)
Dimensions (WHD) / Weight	444x89x333mm / 6.2kg