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Denon DNP-2000NE

Following hard on the heels of Denon's DCD/PMA-1700NE SACD player/amplifier, this new network-attached DAC brings a host of streaming options – including HEOS
 Review: **Jamie Biesemans** Lab: **Paul Miller**

Our review of the Denon PMA-1700NE amplifier [*HFN* May '23] included the observation that the Japanese brand was missing a standalone streamer. A glaring oversight, it seemed at the time, as Denon in all other respects is a believer in offering similarly dressed separates for a neat hi-fi stack. So while you could pair the PMA-1700NE (or another PMA series amp) with a DCD series CD player or a Denon turntable, if you wanted to listen to your Tidal playlists you had to look elsewhere. The introduction of the £1399 DNP-2000NE closes the loop.

Manufactured at Denon's Shirakawa factory, and sporting the sturdy chassis and metal faceplate to complement other Denon components, this streaming DAC isn't only meant to be a companion for the PMA-1700NE. As the different model number hints, it could be combined with other Denon amplifiers, such as the older PMA-1600NE or '2500NE [*HFN* Aug '16].

Denon makes this clear by providing a third colour option next to the traditional black and silver – for a £200 premium, the DNP-2000NE is also available in the luxurious Graphite Silver colourway found on the brand's PMA-A110 and DCD-A110 models [*HFN* Dec '20], launched to celebrate its 110th anniversary. Owners of these limited (but still available) birthday units can add the streamer and retain the seamless look of their system.

FOUR IS THE MAGIC NUMBER

At the heart of the DNP-2000NE are four low-power ES9018K2M chips in a quad DAC arrangement. These are not the latest or greatest designs from ESS, but as PM's Lab Report shows [see p77] that doesn't mean the unit underperforms, helped by the differential deployment per channel and Denon's 'DAC Master Clock' technology. However, don't set off looking

for a broad offering of digital filter options, as Denon prefers a fixed filter, and its own Ultra AL32 processing. This upsamples the digital stream, and is a stalwart of other Denon products, including the CD/SACD-playing DCD-1700NE [*HFN* May '23].

SCREEN PARTNER

Perhaps to make up for being a bit 'late to the game', the DNP-2000NE is more than purely a network audio player with a built-in DAC. A plethora of digital inputs allows easy connection of external digital sources, including a computer via USB-B. This supports 384kHz/32-bit PCM and 11.2MHz DSD, and such files are also playable over your home network, via Ethernet or in-built Wi-Fi, bandwidth permitting. Optical and coaxial connections are also provided for both source hardware and to use the DNP-2000NE as a digital transport.

Something of a surprise on a DAC at this price is the HDMI ARC port. This means the unit can bridge the gap between your

television and stereo system, making it an option for anyone with a legacy amp to improve TV sound, if output as PCM. It's quite clever: you can use the supplied IR control cable to link the DNP-2000NE with a compatible Denon amplifier, and then drive the latter's volume via your TV's remote, even if you're connected to the fixed line output from the streamer. Using the DNP-2000NE's variable output, meanwhile, you can drive active speakers – the HDMI CEC protocol will govern the DSP volume control in the '2000NE.

MULTIPLE CHOICE

Regards the unit's streaming functions, these are myriad – few manufacturers these days provide only one option because audiophiles want to use their preferred service or software, and not be forced to use a brand-specific app. Denon endows the DNP-2000NE with Apple AirPlay 2, and support for streaming over (two-way) Bluetooth and UPnP. In short, owners can



RIGHT: Two mains transformers [top] feed separate PSUs for the wireless/BT PCB [bottom], X MOS and Burr-Brown digital input receivers [bottom right], 'Ultra AL32' DSP [top left] and analogue stage with four ES9018K2M DACs [left]



access just about any streaming service or their own network-stored music files. Spotify Connect is onboard too, and the DNP-2000NE leverages HEOS, the in-house app-driven streaming and multiroom platform that has been a feature on Denon hardware (including wireless speakers and soundbars) for almost ten years [see boxout, below].

Something missing from the specification sheet is Roon Ready status, which has become a feature of many network audio players targeting the 'above entry-level' crowd. Through AirPlay 2, the DNP-2000 does have 'Roon Tested' status, but this doesn't deliver total control nor the streaming of high-resolution material. Additionally, quite a few modern streamers, such as Auralic's Aries G1.1 [HFN Jun '23], can function as a media server if you attach storage. This isn't possible with the DNP-2000NE, but it will playback hi-res

'It delivers the pristine classics, and Friday night playlist'

file formats (FLAC, ALAC, WAV, AIFF and DSD) from the USB port on the front-panel, adjacent to its 6.35mm headphone output.

SONIC SYNERGY

While the DNP-2000NE is a streamer ready for all kinds of configurations, it's nevertheless a 'natural' fit with a PMA-1700NE amp and DCD-1700NE CD/SACD player, which were the models I used for the majority of my listening sessions. Together with DALI Rubicon 2 standmount loudspeakers this made for an elegant hi-fi system, and one with a good synergy between the Denon separates.

Offering a detailed performance, the DNP-2000NE proved entirely complementary to the direct and powerful presentation of Denon's amplifier when streaming Kjartan Sveinsson's *Der Klang Der Offenbarung Des Göttlichen* [Society

ABOVE: The smoothly contoured fascia matches most of Denon's recent separates. USB drives are supported via the USB-A port but album text, not artwork, is shown on the display

of Sound 101; 48kHz/24-bit]. Part one (or rather 'Teil 1') of this stirring opera composed by the Sigur Rós keyboardist and performed by the German Film Orchestra Babelsberg builds from a snail's pace to a crescendo that hits ever-higher notes. The string section never seems to stop edging further up the scale, which might otherwise be an invitation for some harshness or artificiality to rear its head.

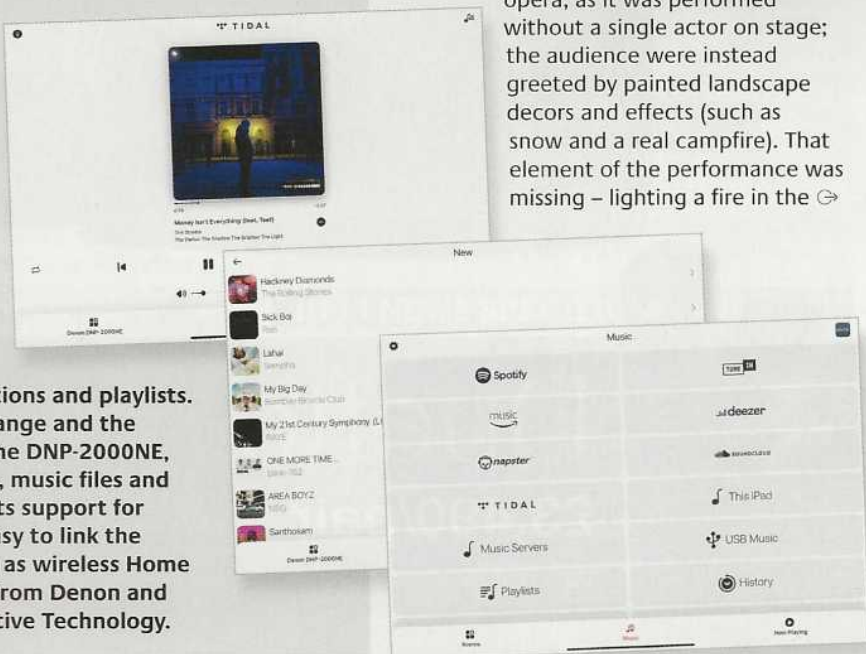
That wasn't case here as the DNP-2000NE impressed with a natural-sounding and airy presentation. Neither did Denon's DAC lose track of the finer detail of the background percussion, which Sveinsson deploys to evoke the crashing of waves, even though – mercifully with this track – it softens up a bit on the high-end, ensuring the final few bars did not grate.

There's a lot of spatial detail on offer during Teils II, III and IV, which add choral singing to the mix. It's quite an unusual opera, as it was performed without a single actor on stage; the audience were instead greeted by painted landscape decors and effects (such as snow and a real campfire). That element of the performance was missing – lighting a fire in the

HEOS HUB UPDATE

The HEOS multiroom, multi-service streaming/controller app has, on the face of it, hardly changed since its introduction in 2014 [see screenshots, right]. Stung, perhaps, by the rich experiences offered by the likes of Sonos, Roon or brand apps like Auralic's Lightning [HFN Nov '23], there has been work done behind the scenes, focusing on stability. Platform growth introduced a lot of sub-optimal code, we're told, and clearing that up was the priority until this year. The clean-up operation has paved the way for a major v3.0 redesign that'll turn up in early 2024. One big change is the appearance of a Home screen showing favourite sources, stations and playlists.

In terms of functionality there will be little change and the app will still function as a complete remote for the DNP-2000NE, letting you select and control streaming services, music files and physical inputs. One clear advantage of HEOS is its support for hi-res formats, including DSD streams. It's also easy to link the DNP-2000NE to up to sixteen HEOS devices, such as wireless Home speakers, streaming amplifiers and AV receivers from Denon and Marantz, and audio devices from Polk and Definitive Technology.



DENON DNP-2000NE

Tested via its fixed, single-ended output, the DNP-2000NE offers a 2.22V maximum output (re. 0dBfs) from a moderate 96ohm source impedance. The 110dB A-wtd S/N ratio is very generous just as its low-level linearity is impressively precise, with errors of just ± 0.1 dB over a 100dB dynamic range and ± 0.4 dB over a 110dB range. This 'clean' performance is testament not only to Denon's analogue stage, but also to its choice of ES9018K2M DACs, a pair employed in differential fashion per channel. All ESS DACs include proprietary jitter suppression, realised here in figures of <30 psec for all sample rates. In fact the ± 50 Hz, ± 100 Hz, etc, sidebands resolved in the jitter test [see Graph 2, below] are indistinguishable from a very low level PSU modulation. At higher levels (~ 500 psec) this type of jitter typically has a warming or fattening influence over low bass detail, but is unlikely to exert any influence here.

Distortion is also as low as might be expected from pairs of ES9018 DACs – as low as 0.00025% over the top 30dB of its range through the midrange and 0.0005% at 20kHz [see Graph 1]. A regular feature of Denon's 'digital' products is its 'Ultra AL32 processing' which, not unlike Ed Meitner's MDAT2 adaptive filter algorithm [HFN Sep '21], switches coefficients depending on whether the music is transient-rich or inherently steady-state. In the latter case its response is flat to within ± 0.1 dB to 20kHz but with dynamic signals a slow roll-off linear filter type bites above ~ 17 kHz to yield -2.6 dB/20kHz (all 44.1/48kHz data). With 96kHz files it reaches -4.0 dB/45kHz, and with 192kHz data it rolls away to -12.3 dB/90kHz. As a result, the DNP-2000NE does not behave like a 'plain vanilla' ES9018 implementation. PM



ABOVE: Digital ins include 2.4GHz/5GHz wireless (inc BT) and wired Ethernet, USB-B (384kHz/32-bit and DSD256 as DoP), HDMI ARC, two optical and one coaxial S/PDIF (192kHz/24-bit). Optical and coaxial digital outs are included above fixed and variable analogue outputs on RCAs

listening room is against house rules – but enjoying this music streamed via HEOS on the DNP-2000NE, it was easy to imagine how immersive the performance must have been.

RICH PICKINGS

Comparing the 'virtual' stream of *Mettavolution* by Rodrigo y Gabriela [Rubyworks 538471642; 44.1kHz/24-bit] with the disc version spinning on the DCD-1700NE, there was little difference to be noted – the player uses a Burr-Brown DAC, but both have been similarly tuned. And just as the DCD-1700NE does for discs, the DNP-2000NE is adept at conveying music streams with a sense of emotion. The twang of the strings or the patting of the guitar body on the album's title track were not presented as too dry, but lifelike and with rich harmonics.

The above might suggest that the DNP-2000NE lacks subtlety, so I should be clear that while it doesn't appear to strive for ultimate resolution, it does deliver a coherent performance with a high level of detail and, above all, rhythmic panache. These are fine qualities for a multifunctional product that might not only be called upon to play

pristine audiophile classics, but also deliver the Friday night playlist.

The obvious role for the DNP-2000NE is as a network streamer, but listening via its USB-B port is also worthwhile. It's not that this offered a

LEFT: Denon supplies its RC-1248 system remote control with the DNP-2000NE, bringing input selection, volume, mute and access to the configuration menu [see HEOS boxout, p75]



night-and-day improvement, but sampling Cowboy Junkies' *Songs Of The Recollection* [PRPCD160; 44.1kHz/24-bit] via Roon on a MacBook added a smidge of extra openness and a sweeter tone to the slide guitar on 'No Expectations'. Overall, switching back and forth between streaming via rooExtend/UPnP, and my MacBook via USB, it was hard to put a finger on specifics, but the performance felt just a bit tighter with the latter.

YES, BOSS

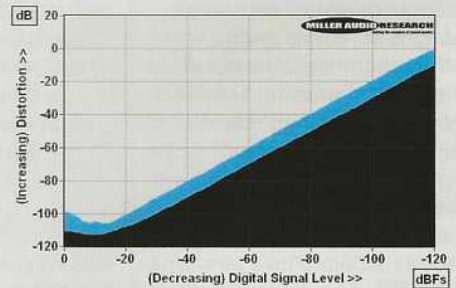
What about that HDMI input? Well, there's a lot of good music content to be found on your smart TV. One of my favourites is *Bruce Springsteen's Letter To You*, a sweet and poignant Apple TV documentary covering the recording of the artist's 2020 album of the same name, and touching upon Springsteen coming to terms with his advancing years.

I've watched it many times in its Dolby Atmos incarnation, but in stereo through the DNP-2000NE and the rest of the Denon separates it was equally delightful – crisp, enveloping and intense. Everything about the production – the black and white imagery, Springsteen's voice-over, the excellent recording of the band – is made to pull you in. The well-featured DNP-2000NE was up to the challenge. ☺

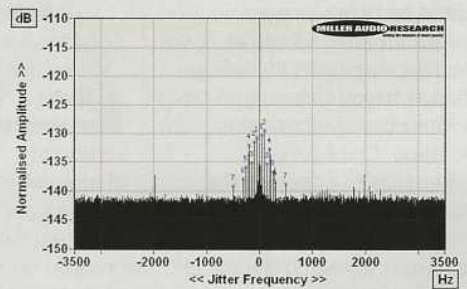
HI-FI NEWS VERDICT

Sure to satisfy Denon owners keen to add streaming to their setup, the DNP-2000NE offers a lot at an agreeable price, from app control to HDMI connectivity – but thankfully the brand hasn't focused solely on functionality. Effort put into the underlying electronics reaps performance rewards, whether heard via streaming or USB. This is a fine-sounding and versatile unit that deserves broader attention.

Sound Quality: 85%



ABOVE: Distortion vs. 48kHz/24-bit digital signal level over a 120dB dynamic range (black, 1kHz; blue, 20kHz)



ABOVE: High resolution 48kHz/24-bit jitter spectra with markers showing minor PSU-induced sidebands

HI-FI NEWS SPECIFICATIONS

Maximum output level / Impedance	2.22Vrms / 96ohm
A-wtd S/N ratio (S/PDIF / Network)	109.9dB / 109.8dB
Distortion (1kHz, 0dBfs/-30dBfs)	0.0003% / 0.0006%
Distortion & Noise (20kHz, 0dBfs/-30dBfs)	0.0013% / 0.0007%
Freq. resp. (20Hz-20kHz/45kHz/90kHz)	+0.0 to -0.1dB/-4.0dB/-12dB
Digital jitter (48kHz / 96kHz)	30psec / 15psec
Resolution (1kHz @ -100dBfs/-110dBfs)	± 0.1 dB / ± 0.4 dB
Power consumption	21W (2W standby)
Dimensions (WHD) / Weight	434x107x374mm / 9.7kg