

Musical Fidelity Nu-Vista DAC

The miniature nuvistor 'tube' continues its inexorable march through Musical Fidelity's latest separates, defining the flagship products in its range. Now it's the turn of the DAC
 Review: **Jamie Biesemans** Lab: **Paul Miller**

Since Heinz Lichtenegger acquired Musical Fidelity in 2018, the company has appeared truly revitalised, particularly at the upper end of its range. Working with the UK design team, the Pro-Ject boss has resurrected the nuvistor tube-based Nu-Vista line with a slew of new models. And Lichtenegger is a big believer in separates – just in case the many pocket-sized boxes Pro-Ject produces hadn't made that clear – so while on the one hand the EISA Award-winning Nu-Vista 800.2 integrated amplifier [HFN Aug '23] provides a one-stop solution, there's also Musical Fidelity's Nu-Vista PRE/PAS pairing [HFN Mar '23], the Nu-Vista Vinyl 2 phono stage [HFN Feb '24], and now the Nu-Vista DAC.

There's also a separate, outboard power supply slated for the Nu-Vista range, and it's hardly a secret that a Nu-Vista CD player is next up, considering the manual of this £9999 DAC explicitly mentions it, in relation to its I²S input [see PM's Interview sidebar, p51]. I also get the distinct impression there will be more, but whatever the future brings the Nu-Vista range has you covered now if you desire to 'go big' with your system building. The Nu-Vista DAC is a good match for the Nu-Vista 800.2 integrated too, adding flexible digital connectivity to Musical Fidelity's flagship analogue amplifier.

A FAMILY AFFAIR

DACs can often be anonymous boxes dutifully converting streams without bothering anyone. The Nu-Vista DAC isn't one of those, though. Like its brethren, its size and design make it a 'presence' in the room. You won't slip this 21.5kg unit into a random hi-fi rack, as its footprint is large. Just to make it clear that this isn't your run-of-the-mill D/A converter, you can peek inside and see its eight nuvistor triode

RIGHT: PSU transformer [top left] feeds HT supplies [main PCB and see p51] for the two pairs of nuvistor 'tubes' [right] per channel in addition to the X MOS USB/Altera DSP/ES9038Q2M DAC-based digital stages [far right]

valves surrounded by a red glowing light while the unit is starting up (then yellow, followed by blue after ten minutes or so).

The Nu-Vista DAC's finely crafted chassis is shared with the series' other models. Available in brushed black or silver, it's a sizeable enclosure (483mm wide and 510mm deep), but with a front panel that angles away from the listener at the top and bottom. When installing the DAC, you can choose which feet to use – rubber ones are in place, but there are felt and spike options included.

A front-panel display on the Nu-Vista 800.2 integrated amp shows off a large VU meter; here a similar display indicates the nature of the audio stream you're listening to. 'PCM' or 'DSD' is shouted in a huge font,

with bitrate and selected filter presented next to it. Various MQA-related labels are possible too, including (new for me) OFS – which stands for Original Frequency Spectrum, ie, a previously decoded MQA stream. Overall, this display is simple but effective, and you can choose whether it shows black text on a white background, or vice versa.

Flanking the screen are large dials to change input or adjust the volume level, the DAC supporting both fixed and variable output over its unbalanced RCA and balanced XLR outputs. The second of these controls, together with buttons below, is also used to access the device's settings menus. There's more to be found here than you might expect, including

'PCM or DSD is shouted in a huge font'



seven digital filters hardcoded into its ESS Hyperstream II DAC chip(s) for use with PCM audio, plus Musical Fidelity's own 'Optimal Transient' filter [see PM's boxout, below]. Like the brand's more affordable M6x DAC [HFN Jul '22], and many more besides, the Nu-Vista DAC panders to audiophiles who desire to experiment.

HEROIC HANDSET

I remember being irked by the remote control bundled with Musical Fidelity's M8xi integrated amplifier [HFN Jul '20], but critical words are not required here. The new Nu-Vista series gets a bulky, milled aluminium handset [see p53], making for an impressive piece of gadgetry which can also be used to exercise your arm

muscles while listening to *The Dark Side Of The Moon*. More importantly, it's actually useful, even when the DAC is being used in fixed output. Flicking through filters and engaging reclocking and upsampling is all part of this model's attraction, and using the remote is faster than changing settings via the DAC's display, allowing you to more easily compare filter types, etc.

The core of the Nu-Vista DAC is formed by two ES9038Q2M DAC devices. Although strictly speaking these are meant for mobile products, there's nothing wrong with using them in high-end hi-fi, especially in the dual differential configuration here. ESS's

ABOVE: Pictured here in its silver livery, the Nu-Vista DAC's two huge rotaries govern source selection [left], volume and navigation [right] of the comprehensive configuration menu

Hyperstream II platform supports playback of virtually all hi-res material out there, including MQA and up to 768kHz PCM and DSD512. As usual, this is through the Nu-Vista DAC's USB-B port; the optical, coaxial and AES/EBU inputs are more limited, but do cater to DSD64 and 384kHz MQA.

The dual ESS DAC configuration – and Super Silent power transformer – is also

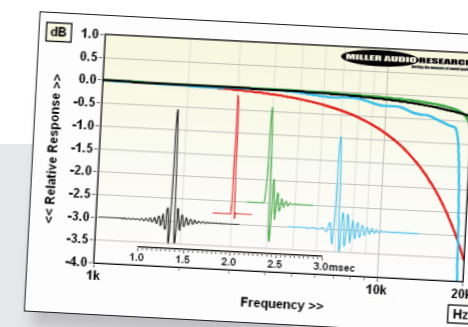
present downrange in Musical Fidelity's M6x DAC, but is improved upon here with a proprietary clock, separate PSUs for the analogue and digital stages, and a custom oversampling bypass mode active when playing 705.6/768kHz PCM. Neither should we forget this model's

nuvistor tube output stage, which is what the Nu-Vista family in general and this DAC specifically is all about.

There are four of these tubes per channel, making for a balanced Class A output with, says MF, 'ultra-low distortion and unfathomably low noise'. The inclusion of the nuvistor triodes is also a compelling argument for not waiting around too long to acquire a Nu-Vista DAC. Heinz Lichtenegger says the company has ample NOS stocks, but the fact is they are no longer manufactured.

CHARACTER BUILDING

Company hyperbole aside [and see PM's Lab Report, p53] the Nu-Vista DAC has serious sonic appeal. It combines exceptional detail with subtlety and a smooth delivery, always seeming to convey the character, atmosphere and feel of your music. Set up with Primare PRE35/A35.8



DIGITAL DANCING

Not only does the Nu-Vista DAC employ an X MOS micro and Altera CPLD to process DSD/MQA streams via USB, with reclocking, there's plenty of spare overhead to accommodate a 'bypass' upsampling mode in addition to a custom 'Optimal Transient' filter algorithm. The latter [red traces, inset Graph] was first seen in the Audiolab M-DAC [HFN Sep '12] courtesy of roving designer John Westlake and joins seven other filter choices that come 'pre-packaged' with the ES9038 DAC. 'Optimal Transient' is very close to a 'NOS' filter, trading zero pre/post ringing (no time domain distortion) for little or no stopband rejection (just 1.6dB) and a mid-treble roll-off of -0.9dB/10kHz to -3.5dB/20kHz with CD sources. The advantages of this filter are best realised with higher – 88.2kHz upwards – sample rate files/streams. The 'Upsampling' mode bypasses the named digital filters but is still a filter in its own right with the properties of a medium-tap minimum phase design [green traces]. It offers a limited 12dB stopband rejection and response that reaches out to -0.6dB/20kHz, -11.3dB/45kHz and -13.2dB/90kHz with 48kHz, 96kHz and 192kHz media, respectively.

The remaining (ESS) filters include two linear phase types [the black traces are Linear Phase Fast] that offer a constant group delay, yielding a time-coherent output, and two minimum phase options that free the impulse response of any unnatural, acausal pre-ringing but increase post-ringing and incur a non-linear group delay. Both 'Fast' versions offer a 75-83dB stopband rejection and similar -0.4dB/20kHz, -2.2dB/45kHz and -5.6dB/90kHz responses and are ideal for low sample rate (CD/48kHz) file types. The Apodising and Brickwall options are linear phase with their own 'twists' in the time/frequency domains while 'Corrected Phase' [blue traces] is equivalent to the 'Hybrid' option seen on competing outboard DACs with ESS converters. PM

USB DAC



ABOVE: Also available in a matt black chassis with silver rotaries, the display can be inverted with dark text on a bright background to achieve a further aesthetic and operational contrast

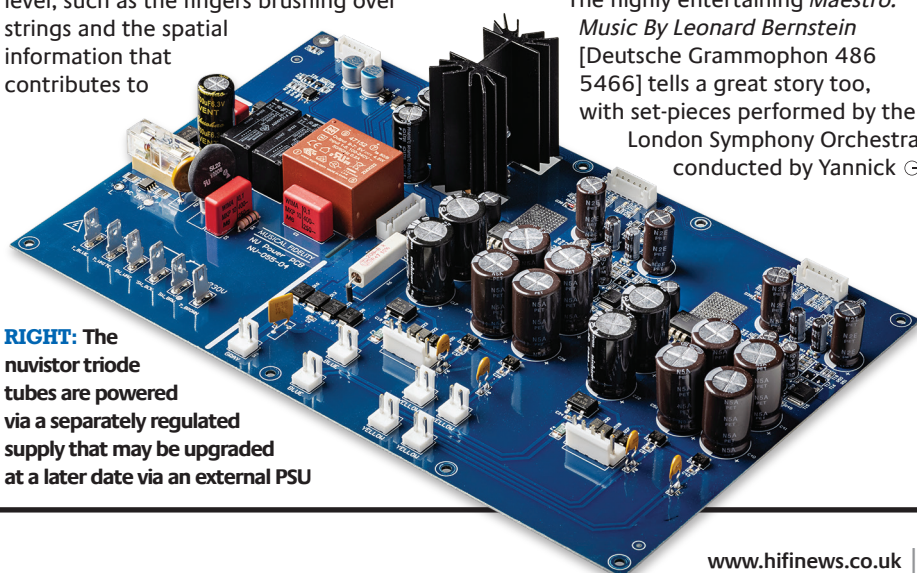
amplifiers [*HFN* Dec '19 & May '22] and Focal Sopra N°2 floorstanders [*HFN* Sep '15], it wasted no time in grabbing my attention and not letting go.

On *Why Does The Earth Give Us People To Love?* [September Recordings SEP-009; 48kHz/24-bit], the music seems to take second place to the singing of Kara Jackson. Then again, the former National Youth Poet Laureate knows how to craft a song that balances orchestration with storytelling. There are plenty of subtle layers to the nearly eight-minute-long 'Rat', for example, which this DAC easily revealed, in this case fed by an iFi Audio NEO Stream [*HFN* Mar '23] over USB (using I²S over HDMI failed because their implementations are different – it's not a standard in the strictest sense of the word).

SPACE INVADER

The song begins with an acoustic guitar riff, and the Nu-Vista DAC found all the detail you'd expect from a device at this level, such as the fingers brushing over strings and the spatial information that contributes to

RIGHT: The nuvistor triode tubes are powered via a separately regulated supply that may be upgraded at a later date via an external PSU



'I learnt from my chair, ready to emulate Bernstein'

a 'live' ambience on a recording. Then there was the added smoothness that sets Musical Fidelity's nuvistor-based DAC apart from more clinically minded converters, making for a markedly more intimate listening experience. I was particularly impressed by the character it brought to the airy violin in the background, making this song just a bit more pensive.

I listened to the album again, letting Roon resample the PCM stream to DSD64.

While this sounded a bit smoother with the Nu-Vista DAC, it did show that creating and transporting a DSD stream requires ample computing and network resources. Even with a Mac mini with Core i7 processor and a gigabit network, occasional dropouts marred the experience. But when all was in working order the Nu-Vista DAC took it up a notch in terms of timing and overall presentation. The same was true when upsampling to 768kHz via Roon and utilising the DAC's Oversampling Bypass mode.

The highly entertaining *Maestro: Music By Leonard Bernstein* [Deutsche Grammophon 486 5466] tells a great story too, with set-pieces performed by the London Symphony Orchestra conducted by Yannick ↻

HEINZ LICHTENEGGER

The founder of Austria's Audio Tuning Vertriebs GmbH (incorporating Pro-Ject and Musical Fidelity among other brands), Heinz Lichtenegger is 'very happy to now have a complete lineup, though we have no plans at present to build a partnering loudspeaker!'. *HFN* is still anticipating the outboard Nu-Vista PSU which, promises Heinz, 'has multiple outputs to service both the Nu-Vista Vinyl 2 and the Nu-Vista DAC'.

The PSU will follow MF's long experience with choke regulation and will likely be based on the supply we saw to accompany the PRE PSU [*HFN* Mar '23]. Furthermore, the Nu-Vista PSU, like the analogue stage of the Nu-Vista DAC, springs from the pen of MF designer Simon Quarry while the DAC's digital build is assisted by Canor in Slovakia. The 'Optimal Transient' digital filter is clearly a speciality of consultant John Westlake who, Heinz reminds us, 'was involved in the DAC design, having already worked with Pro-Ject and Canor in the past'.

Next to come is the Nu-Vista 600.2 integrated amplifier, slated for mid-year, while the close of 2024 should see 'the Nu-Vista CD transport / player, which will have the option of a plug-in DAC', explains Heinz. 'This card will not be at the level of the Nu-Vista DAC, probably using the same ES DAC but without the dual-mono nuvistor output stage. It will have a solid-state output but these will still be on RCAs and XLRs while the digital outs will include coaxial, optical and AES/EBU.'

And sister brand Pro-Ject is never far from Heinz's mind: 'We will have a new-look turntable for €1500'. PM

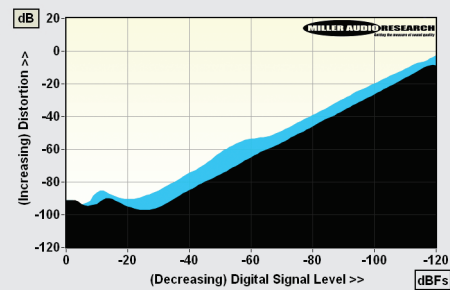


LAB REPORT

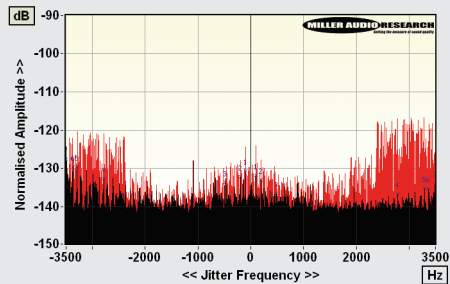
MUSICAL FIDELITY NU-VISTA DAC

There is one parallel between Audiolab's ES9038PRO-based 9000N network DAC [p66] and the ES9038Q2M-based Nu-Vista DAC tested here – both units clip at 0dBfs (full digital scale) with the 'Upsampling' mode switched on, the latter also needing to be switched off before the digital filters are enabled [see boxout, p49]. The Nu-Vista DAC uses a 'low power consumption' version of the ES9038 – more typically targeted at portable devices – which has a lower specification, however the uniform ~0.004% distortion (20Hz-20kHz/0dBfs) is set by the 7586 nuvistors rather than the DAC. So too is the 102dB A-wtd S/N ratio and the increase in output impedance from a low ~12ohm midband figure to a significant 1.1kohm at 20Hz – expect some cable/amplifier sensitivity at very low frequencies. Under ideal conditions, the Nu-Vista DAC has a very slight LF roll-off amounting to -0.05dB/40Hz and -0.5dB/10Hz.

Low-level resolution is true to ±0.2dB over a 100dB range (and -0.5dB adrift at -110dBfs) while distortion just nudges below 0.001% over the top 30dB of the DAC's dynamic range [see Graph 1, below]. MF's '<100 femtoseconds' (<0.1psec) specification for correlated jitter refers to the clock and not the DAC whose datalines are potentially subject to modulation from any number of local sources. In practice, figures of 25-75psec are more realistic – this is still excellent, but the correlated sidebands [see Graph 2] are joined by low-level spurious that increase the *brighter* the display setting [red spectrum, Graph 2]. Mute that big display for minimum interference! Finally, the Nu-Vista DAC's analogue stage offers a good >90dB stereo separation and 0.08dB channel balance (all re. 20Hz-20kHz). PM



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



ABOVE: High resolution 24-bit/48kHz jitter spectrum with display off (black, with mkr) and display on (red)

HI-FI NEWS SPECIFICATIONS

Maximum output level / Impedance	4.02Vrms/12-1115ohm (XLR)
A-wtd S/N ratio	101.9dB
Distortion (1kHz, 0dBfs/-30dBfs)	0.0045% / 0.00095%
Distortion & Noise (20kHz, 0dBfs/-30dBfs)	0.0039% / 0.0019%
Freq. resp. (20Hz-20kHz/45kHz/90kHz)	-0.0 to -0.4dB/-11dB/-13dB
Digital jitter (48kHz / 96kHz / 192kHz)	75psec / 25psec / 30psec
Resolution (1kHz @ -100dBfs/-110dBfs)	±0.2dB / ±0.5dB
Power consumption	38W (1W standby)
Dimensions (WHD) / Weight	483x188x510mm / 21.5kg



ABOVE: The Nu-Vista DAC offers USB-B (768kHz/32-bit and DSD512), AES/EBU, coaxial and three optical inputs (192kHz/24-bit and DSD64) alongside RCA and balanced XLR outputs. The I²S (on HDMI) input is reserved for future use while the five-pin XLR sockets are included to service the outboard Nu-Vista PSU upgrade

Nézet-Séguin interspersed with dialogue from the recent Bradley Cooper biopic. 'Chichester Psalms: Psalm 23' commenced with beatific chorales which the MF DAC painted on a large stage with real depth and height, plus an enticing 'organic' warmth. It had me leaning out of the listening chair, ready to emulate Bernstein's conducting antics.

FULL SPEED AHEAD

This track also introduced some impactful dynamics, as did the following 'Candide Overture'. Sudden changes of gear, with brass and percussion producing dramatic blasts, were handled without hesitation by the Nu-Vista DAC – those nuvistor valves don't make this unit listless at all.

That could have been a concern if you buy into the preconception that valves equal warmth equal sluggishness, but there's nuance and pace here. Yes, there's a touch of warmth too – a boon in this instance, as it nicely complemented my Focal Sopra N°2s – but it isn't to the detriment of the playback of complex, fast-tempo works.

In fact, this blend of rich warmth and speed of delivery blew some

much-needed life into A Humdrum Star, the fourth album from the British 'nu-jazz' band GoGo Penguin [Blue Note download; 88.2kHz/24-bit]. There's no

SILVER SERVICE

faulting this trio's skill as musicians, but the over-clean production makes some tracks, including the rapid-paced 'Raven' and 'Bardo', sound a bit dull otherwise. There's something to be said for a DAC that does more than slavishly convert digital data into analogue signals. Because we're still waiting for the arrival of the Nu-Vista CD, I attached a Pro-Ject CD Box RS2 T CD transport [HFN Sep '19] to the Nu-Vista DAC via an optical connection. Marc Ribot's 'Happiness Is A Warm Gun' on *Saints* [Division One 83461-2], an album some 20 years old but still not yet available via streaming services, hints at what the marriage between a Nu-Vista CD player and DAC might deliver.

This isn't a straightforward cover of the Lennon-McCartney classic, but a demonstration of the artistry of one of the foremost guitarists around, able to nimbly hop from sweet harmonics to off-key notes. The beauty of the piece lies in its rich minimalism: as contradictory as that might sound, it's exactly that intense detail which the Nu-Vista DAC communicates so brilliantly. ♪

HI-FI NEWS VERDICT

Combining a trusted digital design with a nuvistor tube stage, the Nu-Vista DAC delivers a precise but – importantly – rousing performance. This sets it apart from more straightforward implementations, merging artisan thinking with the fine build quality demanded of a flagship model. It's an obvious partner for existing (or future) Nu-Vista separates, and also a very capable converter in its own right.

Sound Quality: 87%



LEFT: Solid alloy remote offers control over all inputs, volume, upsampling, reclocking and digital filters