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Neodio Origine S2

This French company's 'ecosystem' is founded on an extensive range of power and audio cables, but the brand's design philosophies also extend to an amp and CD player
 Review: **David Price** Lab: **Paul Miller**

The world of high-end audio just wouldn't be the same without products like the Origine S2 from Neodio. It resides in that rarefied section of the hi-fi market where designers get to see their dreams fulfilled in large and beautifully appointed products. Head honcho Stéphane Even has energetically embraced the chance to make leading-edge, premium hi-fi products. As well as purveying expensive cables and isolating feet, his company makes the £15,000 CD player/DAC you see before you, alongside its companion A2 integrated amplifier.

Even's background in specialised industrial sensors, and abiding interest in vibration and electromagnetics, has certainly informed the design of this player. So when he launched Neodio back in 2000 it was with the purpose of designing products to minimise 'interference inside and outside the audio product'. It's a philosophy that extends from his range of premium interconnects to his electronics.

With the Origine S2 CD player/DAC, Even has naturally paid careful attention to the power supply and the layout of the digital and analogue circuits, with isolation, simplicity and careful routing being key here. For this reason, there is a 2cm gap between the S2's proprietary clock PCB and the DAC board and DAC chip itself, he says.

PRIME TIME

Careful component choice is also evident – including precision resistors with non-magnetic terminations – and the cabling is designed to mechanically decouple the different boards. Most interesting of all, though, is the eschewal of a conventional crystal clock in favour of what Even calls an 'analogue clock' [see PM's boxout, p57].

You would expect the Origine S2's casework to have a 'hewn from granite' feel, and so it proves. It's very heavy for a

silver disc spinner at 25kg, and large too at 460x172x405mm (whd). The casework, meanwhile, is beautiful brushed aluminium with a brushed copper coloured inset band, which is a clever way of making an otherwise bland black box look striking, in a 'retro-futuristic' kind of way. The chassis is designed to be rigid, and is very well damped by a mixture of hard and soft materials. Even the rear panel is decoupled from the main internal boards, and three large and distinctive feet are fitted, comprising a proprietary mechanical damping technology.

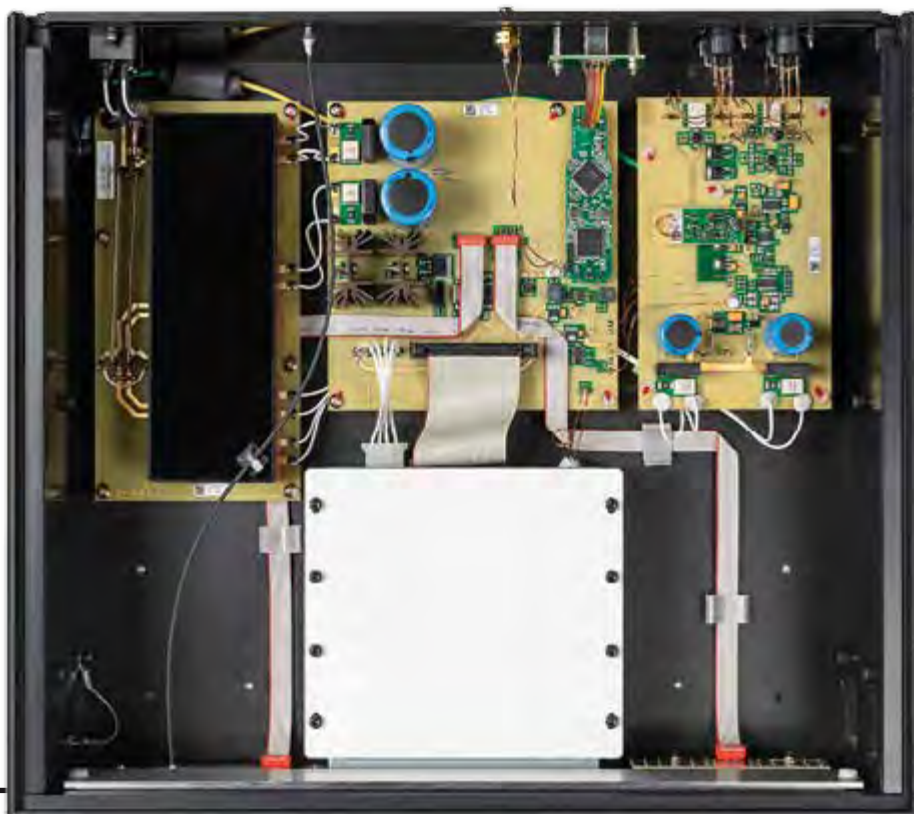
Inside, the layout is clean and sparse, dominated by the centrally mounted optical disc drive in its own custom casing. The company says this DVD-ROM mechanism has been specially adapted to run with Neodio's own control software. As a result, the feature set is relatively sparse, with transport controls limited to track skip, search, stop and pause – there's

no direct numerical track entry facility on the remote. The fascia-mounted buttons, fashioned from hard plastic, are perhaps a little small and fiddly but, like the bright white LED display, are as much about visual drama as functionality.

BUILT TO SATISFY

Format support is limited for although it features the DSD-capable CS4398 DAC, the machine itself does not handle DSD files or spin the SACD layer of hybrid discs. This won't be a problem for most prospective purchasers, but in Far Eastern markets like Japan, it's an issue. Furthermore, PCM fans are limited to 192kHz/24-bit via the player's rear panel digital inputs.

For all its idiosyncrasies, this machine is made to an extremely high standard and is most satisfying to use – aside from the slightly longer-than-expected time for the mechanism to read the CD's table of contents. The unit comes with a classy



RIGHT: Neodio uses a modified DVD ROM drive [bottom] with transport control, decoding and a Xilinx USB input hosted together [centre PCB]. The screened PSU [left] and Cirrus Logic-based DAC board [top right] are physically isolated



aluminium system remote control that also commands the matching integrated amp.

MIDBAND MAGIC

This is certainly a quite distinctive-sounding CD player/DAC, whose key strength is its midband performance. This is exceptionally spacious and detailed, even by the lofty standards of top rivals. Indeed, few machines I have heard achieve the same degree of intricacy that the Origne S2 delivers, especially from humble CD.

And the player is seriously accomplished in other respects too. Its bass is highly impressive while there's an engaging and easy rhythmic nature to its presentation that never fails to please.

Play Wings' 'London Town' [from the album of the same name, Parlophone

TOCP-655 10], and the Origne S2 reveals clearly the warm and sumptuous sound of this mid-'70s Abbey Road recording without coming over as too opaque and 'fluffy'. In fact, the player was able to cut right into the recorded acoustic, laying

bare the delicious detail originally caught on tape in a manner that was frequently thrilling.

For example, it imparted vast amounts of textural detail, the vibrancy of the backing violins being clear to hear

as they shimmered with harmonics. As for the electric organ, so often buried in the mix when the song is heard on many other CD players, this could be picked out easily as it played all the way through the track. Vocals had great clarity too.

'Close-miked
lead vocals
had power and
immediacy'

ABOVE: With no visible fasteners, the S2 has a purposeful look. Perforations in the copper 'go faster' stripe reveal a white display and conceal the CD drawer. Control buttons lie to the right

Paul McCartney's close-miked lead singing was beautifully resolved, and the machine revealed the dramatic contrast present between his lead performance and the echo-tinged backing vocals.

BAGS OF WALLOP

What also strikes you is this player's soundstaging abilities. In a sense this is related to the Origne S2's strong midband performance in that it's part and parcel of the machine's superbly transparent nature. 'London Town' is an expansive recording with super production values, and here it sounded exceptionally panoramic.

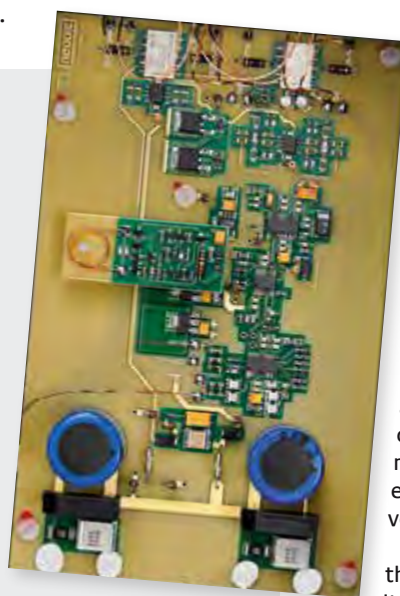
Moving to Pink Floyd's 'Us And Them' [from *Dark Side Of The Moon*; Capitol Records CDP 0777 7 46001 2 5] only confirmed the machine's prowess in this respect. The various instruments in the mix appeared to be hard-panned further left and right than is usual. Also, within this soundscape, they were located most precisely. For example that famous saxophone solo was virtually nailed to a part of my listening room just to the left of my right loudspeaker. This was all presented as part of a bigger, cohesive whole, with wonderful reproduction of all those tape effects and random, babbling voices that the album is famous for.

At the two frequency extremes, the Origne S2 also impressed me. It boasts a superb bottom end, one that is strong, firm and extended.

Goldie's 'Inner City Life' [from *Timeless*; FFRR – 828 646-2] features vast tracts of ➔

TICK TOCK...

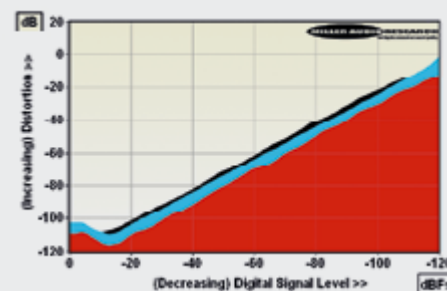
Thirty-five years ago when CD was in its infancy, and key components were very costly, it was not unusual for manufacturers of budget players to use a 'ceramic resonator' instead of a crystal oscillator in its master clock. Nowadays crystal oscillators are very affordable, offering a precise frequency – typically $\pm 50\text{ppm}$ – by which, in particular, data is clocked into the DAC chip. Common native frequencies include 16.9344MHz and 24.576MHz which are integer multiples of audio's 44.1kHz, 88.2kHz... and 48kHz, 96kHz... base sample rates. However, Stéphane Even, Neodino's head honcho, believes the possibility of a crystal's susceptibility to microphony renders it less suitable for the role than a tuned LC resonator circuit [Neodino's so-called 'analogue clock' is visible on the daughter board in the centre of our inset picture]. Tuned to 25MHz here, the absolute frequency accuracy of this clock is still off by +616ppm. The Red Book CD standard is $\pm 200\text{ppm}$, although a fixed frequency error is less important than *stability*, because it's the latter that can bring jitter to the D/A conversion process [see Lab Report, p59]. PM



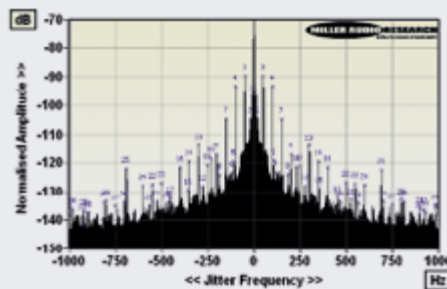
NEODIO ORIGINE S2

The S2's core digital (audio) chips are sourced from Cirrus Logic and include the CS8416 input receiver, CS8421 sample rate converter and 'legacy' CS4398 DAC (launched in 2002). This is a tried-and-tested 192kHz/24-bit DAC that, in conjunction with an analogue filter/output stage based on video-bandwidth op-amps, brings a very solid foundation to the Origine S2. Full o/p is 4.6V from a 100ohm source impedance, with a wide 114.3dB A-wtd S/N ratio and distortion that drops as low as 0.0001% through bass and midrange and 0.00015% at 20kHz (all -10dBFs). THD is fractionally higher via CD than the 24-bit inputs, but 0.00033% vs. 0.00012% at 1kHz/0dBFs is of academic interest only! The post-DAC filtering also removes high, odd-order harmonics so THD via CD appears lower at 20kHz [blue trace, Graph 1] than at midband (1kHz) frequencies [black trace].

One of the CS4398's linear-phase digital filters is employed, the superb 124dB stopband rejection traded for the inevitable pre-ringing artefacts that I've discussed at length before in these lab reports. The frequency responses peak slightly at HF to reach +0.5dB/20kHz with CD and 48kHz media. With 96kHz/192kHz inputs the responses exceed +1dB from 33kHz-40kHz, though this is unlikely to exert any subjective impact. Unlike, it must be said, the moderate level of jitter [see Graph 2]. Possibly because Neodio uses unscreened wire links between its digital and analogue boards [see pic, p56], with an unscreened LC resonator/clock source [boxout, p57], jitter is consistent at ~2600psec from CD, USB and S/PDIF inputs with principal sidebands at $\pm 10/20$ Hz and $\pm 50/100$ Hz. Experience suggests this will correlate with an added warmth or bloom to the sound. PM



ABOVE: Distortion vs. digital signal level over a 120dB dynamic range – 48kHz/24-bit LPCM (1kHz, red) versus 16-bit CD (1kHz, black; 20kHz, blue)



ABOVE: High resolution (zoom) jitter spectrum – the Origine S2's key sidebands all fall within ± 1 kHz

HI-FI NEWS SPECIFICATIONS

Maximum output level / Impedance	4.63Vrms / 104ohm (XLR)
A-wtd S/N ratio (USB / CD)	114.3dB / 114.3dB
Distortion (1kHz, 0dBFs/-30dBFs)	0.00012% / 0.00032%
Distortion & Noise (20kHz, 0dBFs/-30dBFs)	0.00067% / 0.00038%
Freq. resp. (20Hz-20kHz/45kHz/90kHz)	+0.0 to +0.5dB/+0.8dB/-8.4dB
Digital jitter (48kHz / CD)	2640psec / 2650psec
Resolution @ -100dB (USB / CD)	± 0.5 dB / ± 0.3 dB
Power consumption	10W (1W standby)
Dimensions (WHD) / Weight	460x172x405mm / 25kg



ABOVE: The S2 sits on a trio of Neodio's proprietary 'B1' feet, designed to provide a degree of damping. Digital inputs include S/PDIF and USB-B with single-ended and balanced analogue outputs on RCAs and XLRs, respectively

synthesised bass which this player handled effortlessly and dextrously. It had great reserves of wallop, yet was able to show how the sub-bass modulated up and down with impressive speed and 'bounce'. Up top, meanwhile, the treble was almost as capable. There was plenty of detail and atmosphere along with a lovely spacious feel.

SUPPLE AND FLUID

When it came to dance-orientated recordings this player proved very capable indeed, if not quite up in the very top tier of machines. High-end CD players and DACs should always sound supple and fluid, and this was certainly the case here, for the Origine S2 has an almost flowing, lilting quality to the way it reproduces music.

Imagination's 'Flashback' [from *Body Talk*; RCA ND74322] showed this in spades. Things never came over as hurried, yet the track managed to entrance me all the same. This comes back to the player's general sense of authority

and resolution. It carried the close-miked lead vocal with power and immediacy, doing a great job at conveying the singer's phrasing. Appropriately, this contrasted starkly with the backing vocal overdubs with all their added reverb.

Even with early classical music, this quality was clear to hear. The Holland Baroque Society/Rachel Podger's reading of the

allegro of Vivaldi's Concerto 1 in C major [*La Cetra*; Channel Classics CCS SA 33412] for example, was simply a joy. The *allegro* had plenty of pep, revealing the expressiveness of the playing.

It was also fascinating to compare the sound of the built-in CD mechanism with the same (ripped) disc delivered over S/PDIF. Via the player's digital input the Vivaldi Concerto's recorded acoustic became subtly wider and deeper. There's the sense that the Origine S2's internal drive pushes the music slightly towards the listener, giving a more immediate and apparently impressive sound. This is augmented by an ever-so-slight change in the tone, the upper midband and treble seeming to be fractionally better lit via the internal drive.

This was most obvious on the sound of Rachel Podger's violin which had a more sparkly and etched feel, while the hi-hat cymbals on the Goldie track sounded more tinselly and lustrous. The Origine S2 also proved an excellent performer via its USB input with hi-res material via Audirvana. Herbie Hancock's 'Rockit' [*The Very Best Of*; Columbia 467974 2] was a sparky, feisty listen with oodles of detail and punch. ☺

HI-FI NEWS VERDICT

As distinctive a digital front end as we've seen and heard, Neodio's Origine S2 deserves to win friends and influence people. In sound quality terms, it's deeply impressive and never less than great fun to listen to. It is beautifully built too, and has an exotic feel to the way it works. Trouble is, it's very expensive, so considerations of value for money become hugely subjective – one to add to the 'must hear' list!

Sound Quality: 85%



LEFT: Partnering remote governs CD, USB, S/PDIF input selection, basic track access and phase invert. There are no switchable digital filters