



Not just a quality headphone amplifier – but a DAC and preamp as well. Jon Myles puts the Moon Neo 430HA to the test.

Reach For The Moon

Nowadays headphone amplifiers come in all shapes and sizes – from units no bigger than a paperback book with minimal controls to larger, more feature-packed devices offering all sorts of various options.

Take one look at Simaudio's new Moon Neo 430HA and there's no doubting which category it fits into. Measuring the same size as many a decent integrated amplifier (42.9 x 8.9 x 35.1cm W/H/D) and weighing in just shy of 9kgs the Neo is a heftily-built unit aimed squarely at the discerning headphone connoisseur. Rated at 667mW into 600Ohms and

8Watts into 50Ohms Simaudio says the Moon is capable of driving any headphone you care to pair it with.

And unlike some of the more minimalist examples of the headphone amplifier breed it also comes with just about every feature you could want. These include balanced outputs on a single four-pin and dual three-pin XLRs, XLR and RCA analog inputs, selectable gain setting, an analogue crossfeed circuit that blends together small amounts of music from both channels in an effort to reduce listener in recordings with extreme channel separation as well as RCA analog line outputs that let you use the 430HA

as a preamp. There's also RS232 and IR control ports for use in custom installations as well as a fully-featured remote control.

And if that's not enough for you, the Neo can also be specified with a factory-fitted DAC module, as in our review sample. This adds £600 to the price taking the total cost to £3300. The module is based around the highly-regarded ESS Sabre32 DAC – which we rate as one of the best of its kind – and features two S/PDIF, one Toslink and one USB input. File sizes of up to 24/192kHz can be handled by the electrical S/PDIF input while the USB can process 32/384kHz PCM as well as DSD64,

128 and 256.

So, thus equipped the Neo is capable of becoming the hub of an extremely flexible hi-fi set-up – handling just about any digital source as well as acting as a preamp and headphone amplifier. The only thing missing would be Bluetooth – although that might not be high on the list of priorities for anyone spending this sort of money on a headphone amplifier.

Inside the case the Moon employs dual toroidal power transformers to ensure there's plenty of power on tap with seven separate voltage regulation stages and a bank of 16 capacitors to provide extra headroom when needed.

Build quality is excellent, while in operation the Neo is a joy to use. Discrete silver buttons on the fascia give access to all the various operating functions while a large display panel gives details of volume level, input connection and incoming digital sample rate when the DAC module is fitted. Alternatively the remote control can be used for power on, volume, input and mute.

So, as you can tell from all the above, the Neo lacks for little on the specification front – but does it translate into a similarly impressive sound?

SOUND QUALITY

Simaudio says the Neo needs a significant break-in period - and sure enough it showed significant improvements after 100 hours of use. They also advise you leave it powered up at all times to ensure optimal performance.

I used a variety of headphones including Oppo PM-2s (see review this issue), a variety of Philips models, Grado and AKGs as well as running the Neo into a Sugden Sapphire FBA 800 power amplifier driving Tannoy DC10 Ti loudspeakers.

Starting off with the Oppo PM-



Twin toroidal transformers give the Moon Neo power to drive even the most insensitive of headphones.

2s and listening to the San Francisco Symphony's recording of Jongen's 'Symphonie Concertante' on CD via the analogue inputs and the low organ notes reverberated in my head. The PM-2s have a slightly warm sound to them but the Neo seemed to grip them so tightly it brought out masses of detail.

The ambience of the venue was clearly evident while there was not the slightest hint of stress or distortion even with the volume pushed up near its limit.

Playing the same piece through the headphone stage of an Oppo BDP-105D digital disc player – which in itself is no slouch – showed just how much extra the Moon was bringing to the party. Bass was deeper and more atmospheric, strings smoother and the flow of the music simply more organic.

Those qualities were again evident on John Coltrane's

'Interstellar Space'. Here you get a lifelike tone to Coltrane's tenor saxophone as well as real insight into his subtle phrasings and timing. Rashied Ali's cymbal work also shimmers without veering into splashiness. I could hear his drumstick tapping on the metal in a palpable way.

As this late Coltrane collection does have a rather pronounced left/right mix, I switched in the analogue crossfeed circuit for a while. It did, indeed, alleviate some of the stark channel separation but ultimately seemed to contribute to a subtle reduction in detail and presence. Consequently, it was left off for the rest of the listening but it's an interesting feature which may pay dividends for some users.

Switching to using the Neo as a digital hub and preamp and things were not quite as impressive. Despite being built around an ESS Sabre DAC

The balanced headphone connections are neatly hidden behind a sliding panel while the bright display gives input information, volume and sample rate information.





Inputs include both balanced XLR and unbalanced analogue RCA, while the DAC module adds optical digital Toslink, S/PDIF and USB type B. Fixed and variable analogue outputs allow for connection to a power amplifier or recording device.

the Moon doesn't seem to quite harness the impressive qualities of this device (see our Measured Performance).

Daft Punk's 'Random Access Memories' (24/88) via a MacBook Pro with the Moon feeding the Sugden Class A amplifier was crisp and lively but seemed to lack the absolute depth and vibrancy that keeps your feet tapping.

Instead there seemed a slightly mechanical nature to the sound that drained some of the emotion from the music. Playing the same track via the Oppo BDP-105D - which also utilises a similar Sabre DAC - showed the Moon seemed to be stripping the music of some of its natural flow.

The Neo also doesn't offer any of the various user-selectable filter options which the Sabre

DAC can bring into play - which seems an oversight in what is an otherwise feature-packed unit.

Having said that, taken as a standalone headphone amplifier the Moon Neo is an impressive unit and one that is capable of bringing the best out of even the most insensitive of headphones.

However, I'd question spending the extra £600 for the digital section when better alternatives are available out there in the shape of standalone DACs like Audiolab's M-DAC for a similar price.

CONCLUSION

An impressive headphone amplifier with plenty of power and a pleasing, natural sound.

The optional DAC upgrade turns the machine into a fully-fledged digital hub but unfortunately falls short of the best at this price-point.

"there was not the slightest hint of stress or distortion even with the volume pushed up" near its limit."

MEASURED PERFORMANCE

Analogue frequency response of the 430HA from phono or XLR input to headphone or line output extended flat past 80kHz, so the full benefit of high sample rate digital will not be lost by the analogue electronics. Gain was x3(10dB)/x6(16dB) through either phono or XLR input, not the 14dB/20dB quoted.

From a 0dB digital input it delivers a maximum output level of 7V from its rear Variable output, as well as the front headphone output, but Fixed is set to 2.2V. Modern insensitive headphones

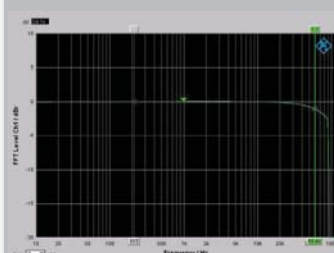
need around 2V absolute max, but 6dB less - 1V - will do. Maximum output from an analogue input was 10.6V, so there is plenty of overload headroom.

Frequency response of the electrical S/PDIF digital input extended to 60kHz (-1dB) with 192kHz sample rate digital, and the USB was similar. However, the optical input worked to 96kHz sample rate maximum so will go silent with Astell&Kern players outputting 192kHz via optical.

For an ESS Sabre32 equipped product, distortion was unusually high, measuring 0.4% with 16 bit (CD) and 0.22% with 24 bit. With noise and spurious products present, EIAJ Dynamic Range via S/PDIF inevitably measured a poor 97dB, slightly less than CD (102dB). The Sabre32 when used singly usually measures out at 123dB, so Moon aren't getting the best from it by far. USB measured 96dB EIAJ Dynamic Range.

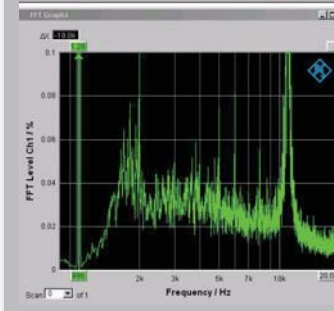
The 430HA measured well via analogue but its digital side was below par, dynamic range compromised by noise and spurious products, at all sampling rates, via optical, electrical and USB inputs. NK

FREQUENCY RESPONSE



DYNAMIC RANGE (37.16+60)dB

THD%	Level (dB)	Frequency
0%	-37.166 dB	997.00 Hz
0%	OFF	OFF
0%	OFF	OFF



Frequency response (-1dB)	
CD	4Hz-21kHz
24/192	4Hz-60kHz
Distortion	16bit/24bit
0dB	0.001 0.0007
-60dB	0.41 0.22
Separation (1kHz)	112dB
Noise (IEC A)	-113dB
Dynamic range	97dB
Output (phono/XLR)	2.2 / 7V

**SIMAUDIO MOON
NEO 430HA
£3300 WITH
DAC/£2700 AS
STANDARD**



EXCELLENT - extremely capable

VERDICT

Will drive almost any headphones and is deliciously smooth and detailed. Optional DAC upgrade fails to impress, however.

FOR

- exceptional detail
- bass performance
- flexibility

AGAINST

- poor DAC
- price

Renaissance Audio
+44 (0)131 555 3922
www.renaissanceaudio.co.uk