Moon by Simaudio Neo 230HAD Headphone Amplifier/DSD DAC/ Preamp

Don't Call it Entry-Level

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Most "computer audiophiles" begin their audio journey innocently enough—usually with a better set of earphones, which then require some kind of outboard digital-to-analog (DAC) with a headphone amplifier to drive them to satisfying levels. After a little while they are hooked. Often the next step is a more substantial DAC/headphone amplifier, one that can not only drive headphones but also act as a preamplifier for a room-based system.

This particular upgrade path has not gone unnoticed by Simaudio. Unlike many manufacturers, Simaudio's first headphone-centric offering was the $4300 reference 430HA headphone amplifier, rather than an "entry-level" component. The new $1500 Moon Neo 230HAD remedies this oversight with a compact yet full-featured DAC/pre/headphone amp that is aimed directly at the computer audiophile who is ready to take his first big step into high-performance audio.

Tech Tour

According to the good folks at Simaudio, the Neo 230HAD borrows quite a bit of technology from the company's "big boy" Neo 430HA (reviewed by Robert Harley in Issue 253). The Neo 230HAD uses the same type of transductance analog amplifier, but it has a single-ended circuit with bipolar devices rather than fully balanced differential outputs. The DAC chip used in the Neo 230HAD is the ESS9018 K2M, but a DAC is far more than the chip used. The Neo 230HAD employs one large 10VA toroidal transformer in its power supply along with eight DC voltage stages—four for each channel to ensure proper regulation.

The Neo230 HAD has two pairs of single-ended RCA outputs. One pair is fixed-level while the other is variable, controlled by the front panel volume knob. The front panel has one ¼" stereo headphone output that can generate 200mW into a 300-ohm load and 1W into a 50-ohm load. Accepted formats and bit rates include PCM up to 384/32 and DSD up to DSD256 via the USB

inputs. SPDIF accepts up to 192/24 PCM, but not DSD, while the TosLink can handle up to 192/24 PCM.

Ergonomics and Setup

The Neo 230HAD's chassis is 7 inches wide by 3 inches high by 11 inches deep, which is what used to be referred to as a "half-size" width when rack-mount-sized components ruled the earth. The front panel is curved, which gives the Neo 230HAD less of a boxy look. It is populated by a large volume knob on the right side, a small blue LED above the on/off button in the center, and an input button, two rows of blue LEDs, a ¼" headphone output, and a 3.5mm stereo input on the left side. These rows of LEDs designate the source input as well as the bit-rate of the current program material.

The back panel of the Neo 230HAD has one TosLink, one USB, and two SPDIF inputs, as well as one pair of RCA analog inputs. The rear panel also has two pairs of RCA single-ended analog outputs—one fixed and one variable—and a standard IEC AC connection.

Setup was simple and straightforward. I attached a USB input from my 2015 MacPro desktop and for the initial installation I ran the fixed-level outputs into the input of the Tortuga Audio LDRV3.V2 passive preamplifier. I also used the Neo 230HAD connected directly to a power amplifier via its variable outputs.

Unlike some DACs which offer you several different digital filter options, usually fast, slow, and minimum phase, the Neo 230HAD has no filter adjustments. Its controls are minimalist to the point that instead of giving users the option of having either fixed or variable output on both single-ended outputs, Simaudio chooses to permanently designate one fixed and one variable. Thus, no switch is needed. While I would prefer to see the option of fixed or variable, this solution certainly works. But if you require two variable (one for your power amplifier and one for your subwoofer) or two fixed outputs (one for your preamp

and one for your Stax or balanced headphone amplifier), you will need to use signal splitters for those connections.

The Neo 230HAD comes with the Moon CRM-2 full-function remote control, which also works with several other Moon components. The functions that work include input selection, volume control, and power on/off. As for the rest, such as balance and mute, don't hold your breath waiting for something to happen after you press the remote's buttons.

Very occasionally, when going from PCM material to DSD files, there would be a very short period of noise before the Neo 230HAD locked on the DSD signal. This only occurred for me while using Audirvana+, but I would recommend the "best practices" of not leaving your volume control up when switching between PCM to DSD files.

Performance

Although the Neo 230HAD includes several different devices whose functions are relatively independent—DAC, preamp, and headphone amplifier—most of the time they will be used together, such as when you listen through headphones. And while it's possible to bypass the volume control by using the Neo 230HAD's fixed-level outputs and routing them to a preamplifier or external headphone amplifier (which I did during the review), the whole point of the Neo 230HAD is that it can be used as a one-box component that simultaneously serves as a digital hub, preamplifier, and headphone amplifier for all but the most complex multi-input systems.

When used as a preamplifier the Neo 230HAD was dead silent. The Neo 230HAD also had oodles of gain—at normal, moderately loud listening levels I barely got up to 9 o'clock on a rotary dial that starts at 7 o'clock! Splitting the unbalanced signal into two unbalanced signals so I could run both my main amplifier and subwoofer did not seem to reduce the signal levels one iota.

Through a system that is so transparent that I could clearly hear the NuPrime ST10 power amplifier warm up after being turned off for a day, the soundstage started flat with almost no depth, and gradually, over the next 30 minutes, deepened and expanded to its normal dimensions. I could also hear how little the Neo 230HAD altered the sound, especially on material I was familiar with. A recent guilty pleasure, the cut via Tidal "Dracula" from Bea Miller's *Not an Apology*, has some very deep bass pulses combined with some very rude percussion crashes that can sound either very cool or sorta cruddy depending on your system's high-level dynamic resolution and low bass capabilities. On my nearfield system it can rock, and with the Neo 230HAD in the signal chain, it did.

I connected a wide variety of earphones to the Neo 230HAD's headphone output and I was impressed by how many the Neo 230HAD drove well. With hypersensitive low-impedance in-ears such as the Westone ES5, I could hear a very slight amount of white-noise hiss even when the volume control was turned all the way down, but at normal listening levels this hiss level remained low. With any "regular-sensitivity earphone (between 85 and 95dB)" the Neo 230HAD generated a silent background.

With my most difficult-to-drive headphones, which are currently the Beyerdynamic DT-990, 600-ohm version, the Neo 230HAD had lots of gain left in reserve. The volume control barely cracked 10 o'clock. The Neo 230HAD also proved to be

a good pairing with difficult-to-match headphones such as my newly acquired Sennheiser HD 700.

Summary

A scant few years ago you would have been hard-pressed to find a high-performance entry-level DAC/pre/headphone amplifier from an industry-leading audio manufacturer for around $1500. Nowadays, audiophiles have a lot of options, including three that I have had extensive experience with—the NuPrime DAC-10H ($1795), the Oppo HA-1 ($1199), and the Moon Neo 230HAD ($1500).

Although the Moon Neo 230HAD has fewer adjustments and lacks balanced headphone outputs, its sonics, especially when used as a preamplifier, placed it above the Oppo. The Neo 230HAD was closer to the level of neutrality I've become accustomed to hearing from the Tortuga Audio LDRV3.V2 passive preamplifier. (In comparison, the Oppo HA-1 was slightly warmer harmonics with a more pronounced midbass.) The Neo 230HAD also has a slightly more coherent soundstage with easier to locate depth cues—there was better isolation around each instrument and each voice had less of what, for lack of a better term, I'll call a "noise halo," slightly blurring the edges of each instrument in a mix.

The NuPrime DAC-10H offers quite a bit more flexibility (balanced headphone and analog outputs as well as different gain and filter settings), but sonically I found the Neo 230HAD and DAC-10H to be a sonic dead heat, with both producing hard-to-fault sound. While I would rate the DAC-10H as a somewhat better value because of its features, for many nearfield and desktop systems that added flexibility may be overkill, at which point the Neo 230HAD would be a more cost-effective choice.

Usually at this point in a review of an "entry-level" component reviewers dredge up the phrase "gives you a taste of the high end." The Moon by Simaudio Neo 230HAD gives you far more than a taste—it will fatten you right up. If you don't require a balanced headphone output, the Neo 230HAD may be all the DAC/preamp/headphone amplifier you ever need. **tas**