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MOON by Simaudio Neo 430HA Headphone Amplifier

By Robert Harley, July 06th, 2015



The lowly headphone amplifier has come a long way. That ¼" jack on the front panels of a few preamps used to be an afterthought—a cheap op-amp circuit thrown in for convenience. But some of today's standalone dedicated headphone amps boast the same level of design and build-quality as any other high-end component.

The new Neo 430HA from Moon by Simaudio is a prime example. This \$3500 headphone amp sports many of the same technologies and circuits found in the company's other outstanding products. In fact, the 430HA is a distillation of that company's core circuit designs, which have proven themselves over many years.

The 430HA also exemplifies the increasingly rich feature set of headphone amplifiers. The Canadian-built product has one balanced and two unbalanced pairs of inputs, and balanced and unbalanced headphone jacks. The balanced headphone outputs appear on a four-pin XLR as well as dual three-pin XLR. The unbalanced output is provided on the familiar ¼" TRS (tip, ring, sleeve) jack. A sliding door conceals the three XLR jacks. A fourth input, this one on the front panel, is an 1/8" jack marked "Media Player" to accommodate a portable-audio device. Two line-level outputs are also provided, one fixed and one variable, allowing the 430HA to function as a preamplifier. This feature is particularly useful if you choose the optional DAC (\$800), turning the 430HA into the central hub of your system. Digital inputs include two SPDIF, and one each USB and TosLink. The USB input can accommodate PCM rates up to 384kHz/24-bit as well as quad-rate DSD.

The front-panel display indicates the selected input and the volume level. When fitted with the optional DAC, the display can also show the incoming sample rate and which digital input is selected. Front-panel buttons include standby, gain (14dB or 20dB), input select, mute, and "Xfeed." This latter button engages a circuit that adds a little bit of the left channel to the right channel, and vice versa. Such a "crossfeed" circuit ameliorates the impression of hearing images inside your head, rather than projected in front of you. The penalty is a slight loss of transparency and resolution. Some listeners find the crossfeed effect disconcerting, while others wouldn't listen without it. Many of these front-panel controls are duplicated on the supplied remote control. The 430HA's casework isn't quite as lavish as that of Moon by Simaudio's top preamps and DACs, but it's still excellent.

The 430HA drove three headphones for this review, the PSB M4U 2 (\$399), Grado SR-80 (\$99), and Audeze LCD-X (\$1695), the latter in balanced mode. As I've spent a lot of hours with an Astell&Kern AK100, PSB M4U2 headphones, and an \$800 portable headphone amplifier, it made sense to start by

listening to the AK100 and PSBs, substituting the 430HA for my known headphone amp. Granted, the Moon is more than four times the price, but it would nonetheless put the 430HA's performance into perspective.

To say that the 430HA improved the sound would be a colossal understatement. I was shocked by how much better the PSB headphones sounded in every sonic criterion when driven by the 430HA. With the Moon powering the 'phones, clarity and transparency increased, revealing much more detail. Instrumental lines that had been only hinted at previously were now fully fleshed out, their musical contribution now readily apparent. Fine detail was also better conveyed, particularly in the treble. The 430HA was simultaneously more open and more highly resolved in the top end, but also smoother and more relaxed. Instrumental timbres took on added richness, completely free of grain and edge. Vocals had a silky liquidity that was particularly appealing.

The 430HA's rendering of bass was spectacularly great, going much lower in the very bottom end and revealing more tonal and dynamic nuances in the bass and midbass. On Jeff Beck's *Performing This Week...Live at Ronnie Scott's*, Vinnie Colaiuta's big kickdrum that serves as this music's rhythmic anchor was conveyed with an almost physical sense of impact. Through my previous headphone amp, the kickdrum sounded like a pencil on an oatmeal container by comparison. The sound quality of headphones, particularly their dynamics and bass, is largely dependent on the amplifier driving them. If you think freestanding loudspeakers sound different with different power amplifiers, headphones exhibit an order of magnitude more sound-quality variability.

Another massive improvement was in the presentation of air around instruments and the sense of reverberation. The 430HA's rendering of space was outstanding, turning what had been a flat, dry canvas into a richly detailed, open, and dimensional one. Snare beats, for example, would light up the acoustic and decay into silence rather than just sounding like pops. On solo piano pieces I could hear the room surrounding the piano, so well resolved was the low-level decay through the 430HA.

The 430HA's outstanding sound quality was fully revealed when driving the Audeze LCD-X planar-magnetic headphones, with the 430HA fed from the balanced outputs of a Berkeley Alpha DAC Reference decoding hi-res files. This combination was absolutely sensational; the sense of space, transparency, transient speed, resolution of fine detail, and bottom-end depth and clarity rivaled six-figure loudspeakers driven by six-figure electronics. I never would have thought the headphone experience could be this riveting. I had been listening to the LCD-X for a couple of months driven by my portable headphone amplifier, and thought they were exceptional. But it took the 430HA to show me just how exceptional these 'phones can sound.

The DAC section is an excellent addition for the \$800 asking price. Fed via an Audience Au24 USB cable from a MacBook Pro running Pure Music, the 430HA's DAC had none of the chalky midrange heard in some USB implementations. The tonal balance was smooth and uncolored, with good resolution of detail. The DAC also had an open and transparent spatial rendering for its price. I liked that the DAC had a relaxed and engaging sound with a somewhat laid-back midband. This quality imparted a refinement and sophistication often lacking in sub-\$1k DACs. In reviewing the 430HA I found myself the guinea pig in an inadvertent experiment. A few weeks before receiving the 430HA, I had bought the CD *Juice* by Medeski, Scofield, Martin & Wood based on Bill Milkowski's review in *TAS* Issue 249. I had listened to the disc perhaps six or eight times in the first two weeks after buying it, but only through the AK100, PSB M4U 2 headphones, and my portable headphone amplifier. I hadn't gotten around to ripping it to my MacBook in the main system. I had surprisingly never listened to Medeski, Martin, & Wood before, and found myself enjoying this popular trio's collaboration with guitarist John Scofield. But when I listened to this disc through the 430HA for the first time (still with the AK100 and PSB headphones), it was far more appealing. The sonic qualities described earlier were manifested musically in a way that took me from somewhat liking the disc to really liking it. The difference in sound quality changed my appreciation for the musicianship, compositions, and the disc's entire feel. On the opening track, the playfulness with which Scofield's guitar licks weaved in and around the New Orleans funk-blues melody played by Medeski on the organ, only hinted at previously, was now vividly alive. I hadn't paid much attention to Martin's bass playing before, but now that I could hear the instrument's pitches and dynamics, I was enthralled by his performance. I hadn't realized what a vital contribution he made to the music. Similarly, Wood's drumming had been interesting, but

after switching to the 430HA I could hear a wealth of nuances and dynamics that gave me a far greater appreciation for his playing. For example, his subtle rhythmic excursions on the calypso-inflected groove on the track “Louis the Shoplifter” suddenly came to the fore. I was now hearing the full contributions of four guys making music together and could hear how much fun they were having. The music was much more joyous, inventive, exuberant, and engaging now that I could hear exactly how everyone was playing. The 430HA revealed entirely hidden dimensions in an album I thought I knew—all from upgrading the headphone amplifier.



Conclusion

The Neo 430HA is an outstanding product in features, design, build, and sound quality. It literally transformed the sound of my headphones, and in the process, elevated my engagement with the music. If you're serious about 'phones, and haven't heard a first-rate headphone amplifier, take your cans to a Moon dealer and listen to what the 430HA can do for the listening experience.

Specifications

- Circuit configuration: Fully balanced differential
- Outputs: Four-pin balanced and dual three-pin (one each); one 1/4" TRS unbalanced
- Output impedance: 1.25 ohms
- Output power: 667mW into 600 ohms, 1.33W into 300 ohms, 8W into 50 ohms
- Gain: 14dB or 20dB, selectable
- Input impedance: 22k ohms
- Inputs: One stereo balanced on XLR jacks, two stereo unbalanced on RCA jacks, one 1/8" jack
- Preamplifier outputs: Two pairs unbalanced, one fixed level, one variable level

Optional DAC specs:

- Inputs: RCA (x2), USB, TosLink
- PCM compatibility: Up to 384kHz/32-bit (352kHz and 384kHz via USB only)
- DSD compatibility: Up to quad-rate (via USB only)
- Dimensions: 16.88" x 3.5" x 13.8"
- Weight: 17 lbs.