



## Review Update: Moon 340i Integrated Amplifier

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During the summer, MOON by Simaudio made an important update to its Nēo 340i integrated amplifier. The Boucherville, QC company began offering the 340i with a built-in DSD-capable DAC. Previously, the built-in DAC available for the 340i supported PCM playback to 24 bits/192kHz, but not DSD.

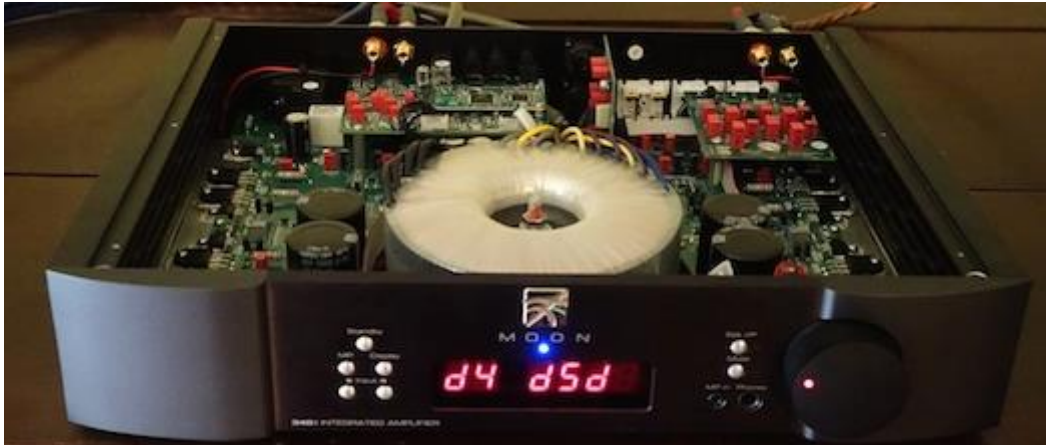
I had been looking forward to this development ever since the launch of the Nēo 430HA headphone amplifier in May 2014. That product has an optional DSD-capable DAC. Wouldn't it be great, I thought, if Simaudio also offered DSD capability on the 340i?

My interest was more than academic. Not only is the 340i the most popular MOON product, it's been sitting in the centre of my music system ever since I reviewed it for *WiFi HiFi* a year ago. [As I stated in my review](#), "Whatever music I was playing, [the 340i] consistently got me closer to it. Not just closer, but more deeply involved." My appreciation of the 340i has only deepened with time and experience.

My primary music source is a Mac Mini, running *Audirvana Plus* music player software. In addition to the Moon 340i, the rest of my system consists of KEF LS50 monitors, a Sunfire Atmos XT subwoofer, and Torus TOT Max power conditioner, with everything connected with Wireworld cabling.

I have a large library of digital music, much of it in high-res. My collection includes more than 200 albums in DSD, a few of them purchased from sites like NativeDSD.com and ChannelClassics.com, but most of them ripped from my SACD collection using a hacked PlayStation 3.

Even before retrofitting the DSD-capable D3 DAC board into my 340i, I was able to play DSD files using the non-DSD D2 board. To do so, I had to select an option in *Audirvana's* Preferences menu to convert DSD to PCM during playback (I chose conversion to 24/176.4). In almost all cases, the sound was audibly better than Apple Lossless files ripped from the CD layers of the same disc: smoother, more refined, less fatiguing. (A few discs in my SACD collection are sourced from 24/44.1 or 24/48 masters; on these, the difference between the DSD and CD layers is minor at most.) But I really wanted to experience my DSD collection files with true DSD playback.



The new D3 board allows this. Employing the ES9018K2M Sabre32 Reference DAC chip from ESS Technology, it supports native DSD playback (up to quad-rate: DSD 256), and PCM to 32 bits/384kHz, over USB.

Even though I was in the midst of a deadline crunch when the D3 board arrived in June, I couldn't wait to install it. It's a two-part process.



The first step is replacing the D2 board. To do that, you pop off the amp's top cover, remove the screws that attach the old DAC board to the amplifier's main circuit board, remove the two jumper cables connecting the DAC and main board, and remove the screws attaching the DAC's jack panel to the amplifier's rear plate. Then reverse the process to install the D3 board.

The second step is updating the 340i's firmware. Simaudio supplied a Windows updating application for that purpose (you can't do this from Mac OS X). You connect a Windows PC (or Mac running Bootcamp) to the RS-232 serial port on the back of the 340i. (You'll probably need a USB-to-RS232 adapter cable. I bought one on Amazon.ca.) Then you run the application. The process worked without a hitch.

Next, I set Moon USB HD DSD Audio as the Preferred Audio Device in *Audirvana's* Preferences menu, and then selected DSD over PCM (DoP, a protocol that fools Mac OS X into streaming DSD, which it doesn't officially support) for DSD playback. The whole installation process took about 20 minutes. Now it was time to listen.

The first recording I played was Michel Camilo's fabulously jazzy performance of Gershwin's *Rhapsody in Blue*, with Ernest Martinez Izquierdo conducting the Barcelona Symphony Orchestra (Telarc, DSD rip from SACD). The string tone was smoother than I remembered it being before the upgrade, and piano was more solid. The overall sound seemed to have more sparkle but less glare. Brass had good bite, and percussion had dramatic snap. Dynamics seemed faster than ever. The overall presentation was big, brassy and jazzy.



A couple of weeks after installing the D3 board, I downloaded Rachel Podger's superb traversal of Vivaldi's *L'Estro Armonico* with Brecon Baroque (DSD, from Channel Classics). The period strings on these marvelous baroque concertos had delicious bite, but weren't in the least wiry; and the theoboro used as a continuo instrument sounded richly resonant. The way this amplifier/DAC combination rendered dynamics highlighted the playful expressiveness of Podger and her colleagues.

I fully expected the D3 board to deliver an improvement with DSD content; and was not disappointed. But the new board has also improved the sound of digital music in PCM, both CD-resolution and high-res files. With the D3 board I've set *Audirvana* to upsample PCM playback, to either 176.4 or 192kHz, using the software's iZotope 64-bit filters. I tried going to 352.8 and 384kHz, but experienced dropouts when I did this (probably because my mid-2011 Mac Mini couldn't keep up).

With the D3 board installed, Carla Bley's piano in "Vashkar" from *Trios* (ECM, CD rip) seemed to acquire greater fluidity and rhythmic swing. Andy Sheppard's soprano sax sounded richer than I remember it, and it soared more beguilingly. Steve Swallow's electric bass had more drive and authority.



I've recently become a fan of the French-American jazz singer Cécile McLorin Salvant. Through the D3-equipped 340i, Salvant's latest album *For One to Love* (Mack Avenue Records, 24/88.2 download from ProStudioMasters) was sheer delight. With its superb dynamics, the amplifier rendered the interpretive touches of this supremely gifted singer beautifully, highlighting her sauciness in "What's the Matter Now?" and her resignation in "Le Mal de Vivre."

These observations call for a slightly cautious endnote. It was of course impossible to do any meaningful back-and-forth comparisons between the D2 and D3 boards, so I had to rely wholly on memory. Moreover, I've made other changes to my system over the past couple of months. I've moved my library to an external Thunderbolt drive (a LaCie 2Big RAID array), replaced the spinning hard drive in my Mac Mini with an solid-state drive that houses the operating system and player software, and upgraded from *Audirvana* 1.5 to 2.2.

Nonetheless, I'm confident in my belief that the D3 add-in DAC delivers important and audible benefits. Not only does it provide native DSD playback, the D3 board improves PCM playback. The sound is smoother with slightly less glare, yet more revealing, with greater solidity. If I had to sum it up in a single phrase, the new DAC unlocks the potential of the 340i, making it sound more like itself than ever.

Improvements like this don't come for free. A fully loaded Nēo 340i, complete with optional D3 DAC, phono preamp and balanced inputs, now retails in Canada for \$5,800, up from \$5,500. (A base 340i, with none of these options, retails for C\$4,700.) Current owners of the 340i can upgrade to the D3 board for C\$900. The upgrade can be performed in the field by a MOON dealer. I highly recommend this upgrade for 340i owners who have DSD files in their digital music collections. It's also worthwhile for people whose digital libraries are PCM-only. And for digital audiophiles looking for an all-in-one DAC-amplifier combination, my recommendation of the MOON Nēo 340i is more enthusiastic than ever.