STEREOPHILE VOL.39 NO.8 AUGUST 2016

FEATURE INTERVIEW

AYRE'S CHARLEY HANSEN ON PONO, PROGRESS & THE QUEST FOR PERFECTION

stereophile

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THE SL-1200GAE 50TH ANNIVERSARY LIMITED-EDITION TURNTABLE
› P.37

PCM, DSD, DXD, USB, APTX—

SIMAUDIO'S MOON EVOLUTION 780D

STREAMING DAC DOES IT ALL!

POWER POP'S BILL LLOYD ON THE BEATLES, BADFINGER & THE WHO

2 SUPER SPEAKERS FROM PSB & SONY

2 GREAT-SOUNDING PREAMPS FROM ROGUE & VTL

3 HIGH-PERFORMANCE TURNTABLES FROM TECHNICS, SONY & GEM DANDY

› AUGUST 2016

TEN THE ENTHUSIAST NETWORK

MICHAEL FREMER

Moon by Simaudio Evolution 780D

D/A PROCESSOR

Simaudio saw disc-based digital audio in its rear-view mirror at least as far back as 2011, when it introduced the Moon Evolution 650D and 750D—two iterations of what it called a "digital-to-analog converter CD transport." These were actually multiple-input CD players, but Simaudio was evidently so eager to distance itself from the spinning disc that it went with a product category that, in spite of its cumbersome, run-on name, drew a clean line between the disc-reading and signal-processing functions—while bestowing upon the former second-class citizenship.

With the new Moon Evolution 780D Streaming DSD DAC ($15,000), Simaudio has altogether eliminated the spinning disc. If you buy a 780D and want to play CDs through it, you'll have to add a CD transport or a player with a digital output (the Moon Evolution 650D and Neo 260D remain in production).

While this may seem extreme to some, for most of us, stepping away from the CD tray can't come fast enough. There's nothing particularly nostalgic or pleasant about inserting a CD in a player—no warm glow produced by removing, from a flimsy-hinged "jewel case," a cold-looking plastic disc and watching it get swallowed. Counting off the seconds on a fluorescent screen isn't as entertaining as, say, watching a stylus course through the grooves on an LP.

The smarter alternative to adding a CD transport to the 780D would perhaps be to add a Meridian Sooloos Digital Music Server and rip your CDs to one of its outboard 4TB Store units, or buy an Apple Mac mini and do similarly, accessing your library via an Apple iPad using the excellent Roon software developed by the former Sooloos team. Once you have instant access to your digital music, you're unlikely to want to go back to manually inserting discs.

Of course, ripping a large library takes time. If you go that route, before ripping your CDs, consider treating them with Essence of Music (essence-of-music.com), a liquid recommended to me by a well-known recording engineer who is no fan of CDs. Essence of Music is claimed to reduce *bi-refringence*, aka *bi-refraction*: the refraction of light in an anisotropic material (an extreme example would be calcite) in two slightly different directions to form two rays. Applying Essence of Music is a time-consuming two-step process, and there are problems of chemical incompatibility with some hybrid SACD/CDs made before 2004—but it really works. (Too late for the more than 3200 CDs I've already ripped to my Sooloos!)

Description

Though housed in an aircraft-grade aluminum case that looks identical to those of Simaudio's earlier CD players, the Moon Evolution 780D offers a far wider range of capabilities. It can decode PCM files of sampling rates up to 352.8 and 384kHz, as well as DSD files at 2.8224, 5.6448, and 11.2896MHz—or DSD, DSD2x, and DSD4x. Given how few recordings are available at such ultra-high resolutions, do we really need the ability to decode them? Well, why not be ready?

The 780D's femtosecond clock is claimed to produce lower jitter and distortion than the clock in the Moon Evolution 750D. Conversion chores are handled by a dual-mono pair of ESS9018 Sabre DACs, each of which contains 16 individual DAC circuits. The 780D features the Moon Hybrid Power (MHP) power supply, which includes, among other components, conductive polymer capacitors, high-speed digital switching, and analog linear regulators; additionally, the 780D has a dozen stages of DC voltage regulation.

The 780D provides nine digital inputs: one AES/EBU,

SPECIFICATIONS

Description Streaming D/A converter. Digital inputs: AES/EBU (XLR), S/PDIF (2 RCA, 1 BNC), S/PDIF (2 TosLink), Bluetooth with Qualcomm aptX audio support and Ethernet RJ45, USB Type B (high-resolution audio). Analog outputs: 1 pair balanced (XLR), 1 pair single-ended (RCA). Sample rates supported: PCM to 32-bit/44.1, 48, 88.2, 96, 176.2, 192, 384kHz; DSD (via USB only) to 2.8224, 5.6448, 11.2896MHz. Frequency response: 2Hz–100kHz, +0/–0.3dB (full range). THD at 1kHz, 0dBFS (A-weighted): <0.0001%. Intermodulation distortion: <0.0001%. Dynamic range: 124dB. Signal/noise: 124dB at full output. Channel separation: 120dB. Intrinsic jitter: 150 femtoseconds RMS. Maximum analog output level at 0dBFS (XLR, RCA): 2.0V. Analog output impedance (RCA): 100 ohms.
Dimensions 18.6" (476mm) W by 3.9" (100mm) H by 16.6" (427mm) D. Weight: 35.2 lbs (16kg).
Serial number of unit reviewed Q9827960.
Price $15,000. Approximate number of dealers: 85. Warranty: 10 years, parts & labor.
Manufacturer Simaudio Ltd., 1345 Newton Road, Boucherville, Quebec J4B 5H2, Canada. Tel: (450) 449-2212. US: Simaudio Ltd., 2002 Ridge Road, Champlain, NY 12919. Tel: (450) 449-2212. Web: www.simaudio.com.

ERIC SWANSON

The 780D sounded "faster"—but not so fast that it missed the music's point.

three electrical S/PDIF (two RCA, one BNC), two TosLink optical S/PDIF, one USB, and one for Simaudio's Moon intelligent Network Device (MiND) music-streamer application, accessible via Ethernet connection or built-in WiFi (more about this shortly). The ninth input doesn't have a rear-panel jack, as it's for aptX Bluetooth connection. Each input can be named and programmed by the user, and selected with scroll buttons on the front panel. Of the inputs described above, the first six are for resolutions up through 24-bit/192kHz. The seventh (USB) is for all of those plus PCM up to 24/384, as well as DSD and DXD. If you already have a recent Simaudio Moon CD player, a simple SimLink connection between player and DAC automatically selects digital input 2 (S/PDIF) when you push the player's Play button. (This can be changed with the Setup menu.)

Also on the rear panel are single-ended (RCA) and balanced (XLR) analog outputs, an input for the supplied WiFi antenna, an RS-232 port, and two inputs for Simaudio's optional external Moon Evolution 820S power supply ($8000)—which, when I reviewed it in 2014,[1] significantly improved the sound of the Moon Evolution 650D.

Unlike some other streaming DACs, the 780D lacks a hi-rez color screen to display album art and other metadata. While the 780D's long, low, old-fashioned, red-character dot-matrix display may seem an unusual choice, I think it was a smart one. Most people will be doing all of their music selecting and information gathering using a handheld device that will no doubt have a larger, higher-rez screen than can easily be built into a front panel. Over time, I think more companies will decide that big displays are a waste of money and faceplate real estate. To the left of the display are four buttons: Standby, Display, and Input Up and Down. To the right of the screen are four more buttons, for navigating the 780D's menus: Setup, Up, Down, and OK.

In ergonomics and appearance, Simaudio's new FRM-3 backlit remote control, with motion detection, is a major improvement over the remotes included with the 650D and 750D CD players.

MiND, which is integrated into the 780D's enclosure—when first introduced by Simaudio, it was an outboard box[2]—supports a number of file formats: AAC, AIFF, ALAC, FLAC, FLAC HD, MP3 (VBR/CBR), OGG Vorbis, WAV, and WMA-9. It also offers vTuner Internet Radio compatibility and support for Tidal along with a UPnP Renderer (Universal Plug & Play) and DLNA 1.5 compatibility.

Setup and Use

The Moon Evolution 780D will present no great challenge to those with experience configuring home-theater receivers and preamplifier-processors; others might suffer various levels of difficulty and frustration, which are best avoided by having the dealer do the work. The writer of the 780D's manual has tried commendably hard to succinctly explain everything in clear, conversational prose, but unless you're well versed in the latest digital developments, prepare to be confused.

For CD playback, I used an AES/EBU cable between

1 See www.stereophile.com/content/simaudio-moon-evolution-820s-power-supply.

2 See www.stereophile.com/content/audio-streams-4.

MEASUREMENTS

I measured the Simaudio Moon Evolution 780D with my Audio Precision SYS2722 system (see the January 2008 "As We See It," http://tinyurl.com/4ffpve4). Source materials were WAV and AIFF test-tone files, played with Pure Music 3.0 on my MacBook Pro running on battery power. Apple's USB Prober utility identified the processor as the "MOON USB DSD HD AUDIO" from "SIMAUDIO LTD," and confirmed that the 780D's USB input operated in the optimal isochronous asynchronous mode. The Audio-MIDI app indicated that the Simaudio DAC operated at all PCM sample rates from 32 to 384kHz, with a bit depth of up to 32 integer. The 780D operated successfully with both DSD64 and DSD128 data fed it via USB.

The maximum level from both the balanced and unbalanced outputs was 2.07V, with correct absolute polarity. Though a little higher than the specified 100 ohms, the output impedance at all audio frequencies was still low, at 246 ohms balanced and 149 ohms unbalanced. The impulse response with data sampled at 44.1kHz (fig.1) was typical of a finite impulse-response (FIR) reconstruction filter, with the symmetrical ringing to the sides of the single sample at 0dBFS mapping the filter's coefficients. This filter gives a very fast rolloff with 44.1kHz data (fig.2, red and magenta traces), with complete sup-

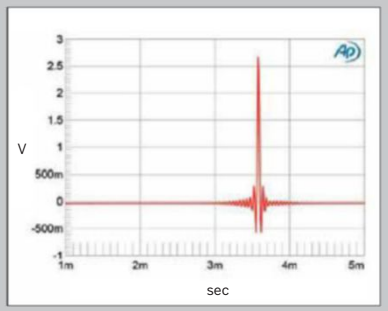

Fig.1 Simaudio Moon Evolution 780D, impulse response (one sample at 0dBFS, 44.1kHz sampling, 4ms time window).

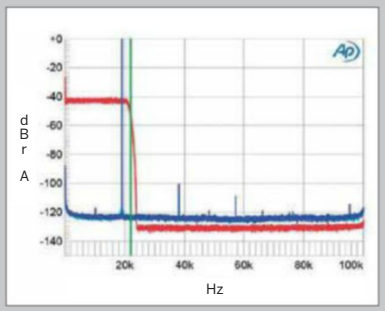

Fig.2 Simaudio Moon Evolution 780D, wideband spectrum of white noise at –4dBFS (left channel red, right magenta) and 19.1kHz tone at 0dBFS (left blue, right cyan), with data sampled at 44.1kHz (20dB/vertical div.).

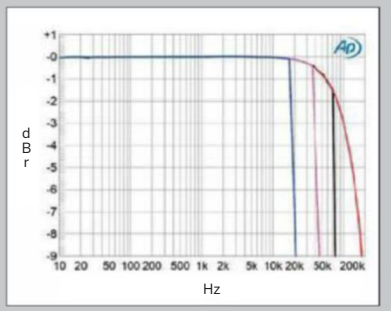

Fig.3 Simaudio Moon Evolution 780D, frequency response at –12dBFS into 100k ohms with data sampled at: 44.1kHz (left channel green, right blue), 96kHz (left cyan, right magenta), 192kHz (left blue, right gray), 384kHz (left blue, right red) (1dB/vertical div.).

the 780D and my 650D CD player, S/PDIF between the 780D and my Meridian Sooloos, and Ethernet to join the 780D to my wired network. (I built this network myself, when the walls of our house were opened during a renovation.) I ran a USB cable from my laptop to the 780D's USB input.

So far, setting up and using the 780D was no different from what it had been for the 650D. I wasn't interested in Bluetooth streaming (though I did end up trying it from my iPhone). What I was really interested in was easy access from my listening chair to the large iTunes library on my office iMac—and, more important, to the music stored on two hard drives I keep on an office shelf. One of these, a 2TB drive, contains the data of hundreds of DVD-Audio discs I've collected but had never listened to, for lack of any convenient way to play them. A friend generously did the ripping for me.

The other, a 3TB drive, contains other stuff I've accumulated over the years. One file—I don't know where I got it, or from whom—is Glyn Johns's second mix of the Beatles' *Let It Be*, and jeez, it should be released in hi-rez (or, better, on vinyl, if the tape still exists). Also on that drive are 75 legally obtained 24/192 master files from Blue Note Records that I promised not to distribute. So I don't. Until now, the only way to listen to either drive was to bring it into my listening room, connect it to my laptop, and run it through JRiver Media Center. It wasn't exactly convenient, so, big surprise, I didn't do it very often.

The Moon Hybrid Power (MHP) supply takes up a lot of space inside the 780D.

Now I was anxious to experience easy access to these many albums via a streaming DAC. But how? My drives don't have Ethernet connectivity (today, many new ones do), and for the purposes of this review I wasn't going to invest in a NAS (Network Attached Storage) drive, though they're getting dirt cheap—a 6TB Western Digital NAS costs around $250!

Because the Moon Evolution 780D's most attractive feature is its ability to stream music via MiND, I found it curious that the instruction manual pretty much ignores this. Instead, the user is told to "visit our website to download

measurements, continued

pression of the aliased image at 25kHz of a full-scale tone at 19.1kHz (cyan, blue traces).[1] Also evident in this graph is that the 780D's harmonic distortion is very low, with the second harmonic lying at –100dB (0.001%).

Fig.3 is a more conventional way of showing frequency response, plotted with data sampled at 44.1, 96, 192, and 384kHz. The ultrasonic rolloff follows the same shape, but with a sharp cutoff just before half the sampling frequency with the three lower rates.

Note also the superb channel matching in this graph: the left and right traces precisely overlay each other. Channel separation was also superb, at >120dB in both directions below 3kHz, and the Moon Evolution's noise floor was both very low in level and free from any power supply-related spuriae.

When I fed the 780D dithered AES/EBU data representing a 1kHz tone at –90dBFS with first 16-bit data (fig.4, cyan and magenta traces) and then 24-bit data (blue, red), the increase in bit depth dropped its noise floor by almost 24dB, suggesting resolution of close to 20 bits. This is state-of-the-art DAC performance. No harmonic-distortion components can be seen, but the 24-bit data unmask what appears to be a spurious tone at close to 5.1kHz. However, this is very low in level. With its high resolution and overall low level of noise, the Moon 780D's reproduction of undithered 16-bit data describing a

1 My thanks to Jürgen Reis, of MBL, for suggesting this test to me.

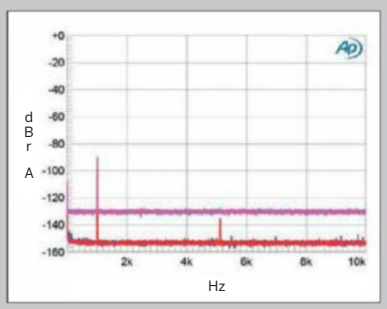

Fig.4 Simaudio Moon Evolution 780D, 44.1kHz data, spectrum with noise and spuriae of dithered 1kHz tone at –90dBFS with: 16-bit data (left channel green, right gray), 24-bit data (left blue, right red) (20dB/vertical div.).

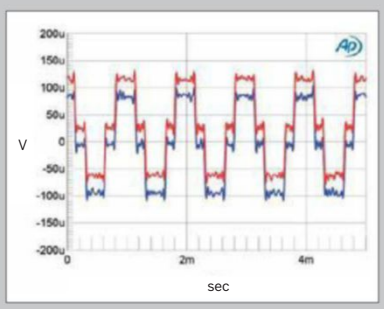

Fig.5 Simaudio Moon Evolution 780D, waveform of undithered 1kHz sinewave at –90.31dBFS, 16-bit data (left channel blue, right red).

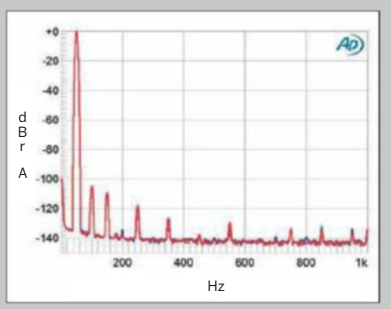

Fig.6 Simaudio Moon Evolution 780D, spectrum of 50Hz sinewave, DC–1kHz, at 0dBFS into 600 ohms (left channel blue, right red; linear frequency scale)

PDF versions of both the 'MiND Setup Guide' and 'MiND App User Guide'." Nor does the manual provide URLs for these downloads—and you'd be mistaken if you think that if you "visit our website" it will be easy to find where to download the PDFs.

Nor does Simaudio provide the exact search term needed to find the MiND app on Apple's App store. I tried every combination of *Sim*, *Moon*, *Sim Moon*, *MiND*, etc. Nothing. Nor could I find where to download the manuals—until I called Lionel Goodfield, Simaudio's head of public relations and marketing. Although he assured me that the dealer would do all of this for the customer, in my opinion that's no excuse for not providing far better instructions.

I downloaded the app and read the manual, but still had no idea how to integrate my hard drives into the network. Another call to Goodfield produced the answer, which was provided (sort of) in the list of MiND streaming capabilities. But really, a product like the 780D needs a manual that holds your hand, not a list of bulleted "capabilities"! I don't care if the dealer does the setup. Better that the customer learns how it all works, and how best to integrate sources into the MiND network. Don't you think?

Using the MiND app with an iPad

Again, I won't try to describe something that's best experienced visually, other than to write that, like magic, all of the files on my two hard drives, plus what's in my iTunes library and available via my Tidal subscription, were easily accessed via the app. Up popped all those 24/96 DVD-A files, 24/192 files, and iTunes 16/44.1 files.

You can search for files by artist, title, composer, genre, style, playlist, etc. If there's album art, it appears. Via my iPad screen I could select a track to play immediately, or put the entire album at the top or bottom of the queue. Everything that's played goes in the queue, where it can be saved and recalled—or the entire queue can be erased.

There were glitches. The Search function didn't produce some albums I know to be on those hard drives. Sometimes, the drives would "disappear," and I'd have to go back to the main computer and remove and reinstall the UPnP Renderer to get them to reappear. There were other problems that probably were solvable but that don't merit

The 780D's rear panel. Note the Ethernet socket.

measurements, continued

sinewave at precisely –90.31dBFS was exemplary (fig.5), with zero DC offset in the left channel (blue), and just 25µV positive offset in the right (red). The three DC voltage levels described by the data are well differentiated. With undithered 24-bit data, the Moon output a well-formed sinewave despite the very low signal level (not shown).

Fig.6 confirms the very low level of harmonic distortion, even into the demanding load of 600 ohms. With a full-scale tone, the second harmonic lies at –106dB (0.0005%), the third at –110dB (0.0003%), and no supply-related spuriae are evident. Intermodulation distortion is also extremely low, though the spurious tone at 5.1kHz again can be seen, along with another at 10.2kHz (fig.7).

Tested for its rejection of word-clock jitter—S/PDIF data fed via 15' of generic TosLink cable—the Simaudio 780D performed superbly well with 16-bit J-Test data (fig.8), with no sidebands visible, and with the odd-order harmonics of the low-frequency, LSB-level squarewave extremely close to the correct levels (green line). With 24-bit J-Test data, whether via TosLink, USB, or AES/EBU (fig.9), the noise floor was very clean, though the low-level tone at 10.2kHz was still present.

I can't quibble: Simaudio's Moon Evolution 780D offers superb measured performance.**—John Atkinson**

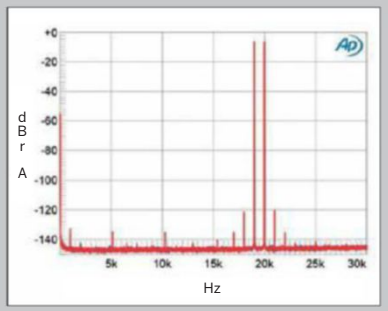

Fig.7 Simaudio Moon Evolution 780D, HF intermodulation spectrum, DC–30kHz, 19+20kHz at 0dBFS into 100k ohms, 44.1kHz data (left channel blue, right red; linear frequency scale).

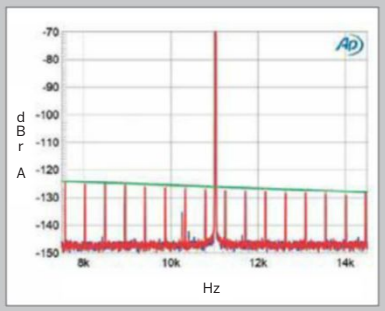

Fig.8 Simaudio Moon Evolution 780D, high-resolution jitter spectrum of analog output signal, 11.025kHz at –6dBFS, sampled at 44.1kHz with LSB toggled at 229Hz: 16-bit TosLink data (left channel blue, right red). Center frequency of trace, 11.025kHz; frequency range, ±3.5kHz.

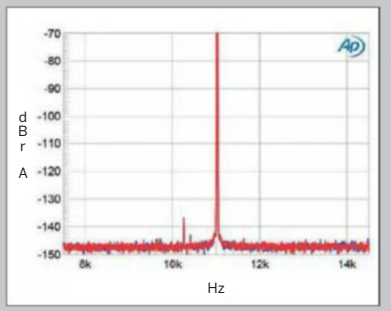

Fig.9 Simaudio Moon Evolution 780D, high-resolution jitter spectrum of analog output signal, 11.025kHz at –6dBFS, sampled at 44.1kHz with LSB toggled at 229Hz: 24-bit AES/EBU data (left channel blue, right red). Center frequency of trace, 11.025kHz; frequency range, ±3.5kHz.

detailed description in the context of a review, especially given the safe assumption that software upgrades will always be forthcoming.

Sound

The Moon Evolution 780D took a long while to break in. It sounded good out of the box, but over time its sound relaxed a bit, loosened and opened up. I'm glad this review was delayed for a month or two: as good as the sound was during the initial listening period, it's since gotten much better.

Between that paragraph and this I selected "Box of Rain," from the 24/96 edition of the Grateful Dead's *American Beauty* (DVD-A, Warner Brothers), and there it was. I still prefer the LP. The bass from the hi-rez file is astonishingly deep and tight, but sounds a bit pushed, and the top doesn't sing as on the original vinyl. This isn't the 780D's fault. It's a computer, after all: garbage in, garbage out—and a lot of garbage went into many of those early DVD-A files, whose mastering engineers were clearly trying to make a point about *bass*. That said, Miles Davis's *Kind of Blue* (24/96, Columbia/Legacy/HDtracks) demonstrated the 780D's sweet, detailed, spacious side.

It's already old news for anyone who already has a streaming DAC, so pardon my enthusiasm, *but*: We're finally getting the convenience long promised by digital audio. Especially exciting was the ability to seamlessly switch between hi-rez 24/192 PCM and DSD. I played a 24/192 rip I'd made of an LP of *The Sound of Jazz*, with Billie Holiday, Count Basie, Red Allen, Lester Young, and others, all recorded in stereo in 1957 (Columbia CS 8040). I've played this file many times, at audio shows and at home, and this was as open, precise, and analog-like *relaxed* as I've heard it—the spaciousness was similar to what I heard from *Kind of Blue*, but with a far more natural spread of instruments and voices across the stage. Billie Holiday sings "Fine and Mellow" backed by Mal Waldron's All-Stars, including Lester Young (her former beau), Coleman Hawkins, Ben Webster, Doc Cheatham, Jo Jones, and others. The edge usually present in Holiday's voice in the digital version, which is not there when I play the LP, was gone, yet the top end—especially the reverb of Columbia's 30th Street Studio—was undiminished, as on the LP: more so than I'm used to hearing from digital playback, and with greater refinement and delicacy than from the already very fine 650D, in comparisons with the 780D. Particularly excellent were the delicacy, sweetness, and textural resolution of the cymbals in "Fine and Mellow."

Among the 780D's strongest suits were the solidity of its soundstaging and its generous reproduction of space. With recordings that include such information, it produced stages of widths, depths, and heights that, a decade ago, seemed impossible from digital sources.

Of course, the 780D's abilities to decode up to DSD4x (DSD256), and to seamlessly switch between PCM and DSD, are major. I played a wide variety of DSD files from my laptop via JRiver, including Jeff Buckley's *Grace* (Columbia), Rod Stewart's *Every Picture Tells a Story* (Mercury), Pink Floyd's *Wish You Were Here* (Columbia), and John Coltrane's *Giant Steps* (Atlantic).

Not that playback was glitchless. More than a few times while playing DSD files, JRiver had a meltdown and went into buffering mode. Spinning rainbow circles ensued, and then the program refused to close, even with a forced quit. Sometimes it *would* quit when forced, but then the only way to open it again was to shut down and restart the computer. None of this was the fault of the Moon Evolution 780D, but it's a reality of computer audio. Maybe my laptop lacked sufficient RAM.

Having instant access to so much great music was a musical power trip that was only intensified by yet another improvement in digital sound. This is not to say that CDs suddenly sounded texturally supple and three-dimensional. Switching between 16/44.1 and 24/96 (and up) files was like removing a glass wall from in front of the speakers.

Sonic Upgrade

Playing the highest-resolution recordings, whether 24/192 or DSD, the Moon Evolution 780D sounded like an evolutionary rather than a revolutionary improvement (though a genuinely major one) over the sound of the 650D. It was easy enough to compare the two—I still have the 650D—by revisiting many of the same files.

I never heard the Moon Evolution 750D, which a few owners and writers described to me as sounding somewhat more detailed than the 650D, but at the cost of being overly analytical, a tad harsh and bright, and almost *too* revealing of less-than-perfectly recorded and/or mastered music; overall, the 650D was said to be more pleasant to listen to. I reviewed the 650D in the November 2011 issue,[3] and now I listened again to many of the recordings I'd used for that

ASSOCIATED EQUIPMENT

Analog Sources Continuum Audio Labs Caliburn turntable & Castellon stand; Kuzma 4Point, Swedish Analog Technologies tonearms; Lyra Atlas & Atlas SL & Etna SL, Ortofon Anna & A95, Miyajima Labs Zero (mono) & Madake cartridges.
Digital Sources Simaudio Moon Evolution 650D CD player & Moon Evolution 820S power supply; Lynx Hilo A/D-D/A converter; Meridian Sooloos Digital Media System; JRiver Media Center, Pure Vinyl, Vinyl Studio.
Preamplification Ypsilon MC-10L & MC-16L step-up transformers; Tru-Life Audio, Ypsilon VPS-100 phono preamplifiers; darTZeel NHB-18NS preamplifier.
Power Amplifiers darTZeel NHB-458 monoblocks.
Loudspeakers Wilson Audio Specialties Alexandria XLF.
Cables Interconnect: Snake River Audio Boomslang (S/PDIF), Stealth Sakra & Indra, TARA Labs Zero Evolution & Zero, Teresonic Clarison Gold, Wireworld Platinum Eclipse. Speaker: TARA Labs Omega Evolution SP, Wireworld Platinum Eclipse 7. AC: AudioQuest (high-current prototype), Shunyata Research Zi Tron Sigma Analog & Sigma Analog HC & Sigma Digital.
Accessories AudioQuest Niagara 7000 power conditioner; Oyaide AC wall box & receptacles; ASC Tube Traps; RPG BAD & Skyline & Abffusor panels; Stillpoints Aperture Room panels; Synergistic Research UEF products (various); Symposium Rollerblocks & Ultra platform; Finite Elemente Pagode, HRS Signature SXR, Stillpoints ESS stands; Audiodharma Cable Cooker; Furutech DeMag record demagnetizer & DeStat; Audiodesksysteme Gläss, Loricraft PRC4 Deluxe record-cleaning machines.—**Michael Fremer**

3 See www.stereophile.com/content/simaudio-moon-evolution-650d-cd-player.

review, including Markus Schwartz & Lakou Brooklyn's superbly recorded and musically engaging *Equinox* (24/96 WAV, Soundkeeper).

The 650D sounded warmer but also "thicker"—as if I were playing an LP of the album with a spherical rather than a line-contact stylus. The 650D sounded "slower," the 780D "faster"—but not so fast that it missed the music's point.

The 780D's reproduction of *Equinox* was remarkably more transparent, with far more precise and delicate initial transients, even using the Moon Evolution 820S outboard power supply with the 650D but *not* with the 780D. In fact, while the 820S produced a big sonic improvement with the 650D, it wasn't really necessary with the 780D—at least, not in my system.

With the best hi-rez recordings, the 780D's transparency and graceful yet superbly detailed transient performance combined with an absence of glare, grain, and other digital artifacts to produce what was among the most transparent, if not *the* most transparent digital sound I've heard. It didn't sound at all thin or forward or bright—at least not on good source material.

Yet in no way would I describe the sound as unpleasantly analytical or lacking in texture. The 24/192 file of Joni Mitchell's *For the Roses* produced, along with delicacy and flow, an in-the-studio immediacy and transparency that I've rarely experienced from a digital source. It rivaled the original LP. And though the sounds were very different, in this case they were different but equal: Even after 44 years of play, the vinyl still had more *there* there, if not the 24/192 file's spooky, in-the-studio transparency.

I imagine that the 750D produced a similar immediacy and transparency, but minus the delicacy and flow, which could be why some people preferred the less-resolving 650D. But given a good recording, the 780D delivered both, without sounding analytical or unpleasant in any way.

However, not even the finest DAC can make me appreciate the sound of 16-bit/44.1kHz CDs. Through the 780D they sounded about as good as they can, but that's not good enough for me to sit down and pay full attention—especially when, at the push of the MiND control, I can hear a high-resolution file. Or I can put on an LP.

From bottom to top, the Moon Evolution 780D bettered the already-pleasing 650D. The 780D is another step forward for digital sound quality, and especially in terms of access and convenience of music. I'm not sure if I'm ready to say that the 780D is "the promise of digital fulfilled," but it's brought us closer.

Conclusions

The price of the Moon Evolution 780D is high. If, like me, you have a wall full of SACDs, it's beyond frustrating to know that all that hi-rez music is still locked out, unable to be decoded by this well-built, well-engineered, superb-sounding, and otherwise versatile DAC. Nor is it (yet) compatible with Roon or MQA. Perhaps Simaudio will say something about these limitations in a Manufacturer's Comment.

But otherwise, Simaudio has upped its digital game in every way. If it meets your needs, and you have the hi-rez digital source material now or plan to get it soon—and if you can afford it—the Moon Evolution 780D Streaming DSD DAC is well worth a listen. ■

ANY CLOD CAN HAVE THE FACTS;
HAVING OPINIONS IS AN ART

MANUFACTURERS' COMMENTS

Simaudio Moon Evolution 780D

Editor: I would like to extend my thanks to both Michael Fremer and John Atkinson for a rock-solid affirmation of the highest order to anyone who has experienced the Moon Evolution 780D's reference-grade performance. Both MF's listening experiences and JA's measurements are true testaments to what the 780D is capable of. When a customer purchases a Moon 780D (or any other one of our products) from an authorized Moon retailer, they are paying for much more than just the product; they receive unparalleled support and service, along with a 10-year warranty (upon registration) and access to a unique two-year trade-up program. In the case of the 780D, as well as of our other streaming DACs, the retailer provides all the support necessary to get you up and running. Unfortunately, when reviewers receive such a component, this type of support isn't readily available and they must contact Simaudio directly, as in MF's case. I managed to get his 780D to successfully stream music via the MiND in a very brief period by playing retailer's advocate." In the end, MF's level of enthusiasm for streaming via the MiND went through the proverbial roof. With regards to Roon and MQA, both of these features are under very serious evaluation for [a] future generation of the Moon Evolution 780D. Finally, MF mentioned his frustration with his "wall full of SACDs" being locked out by this DAC. Without getting into specifics, there exists both hardware and software to easily extract an ISO file from an SACD disc and then create DSD files (in DST or DSF format) on a computer, the end result being a wealth of exceptional-sounding music in DSD. Thank you again, Stereophile!

Lionel Goodfield
Public Relations & Marketing Moon by Simaudio