Network-attached player/DAC
Made by: Simaudio Ltd, Quebec, Canada
Supplied by: Renaissance Audio, Scotland
Telephone: 0131 555 3922
Web: www.simaudio.com; www.renaissanceaudio.co.uk
Price: £13,500

Simaudio MOON 780D v2

This flagship DAC from Canada, complete with a raft of in-house digital and power supply technologies, and very slick control app, is a complete network music solution

Review: **Andrew Everard** Lab: **Paul Miller**

When is a DAC not a DAC? When it turns into a multifunctional network-connected music player, that's when! Increasingly, the lines between products that exist to convert digital inputs into analogue audio and full-blown network players are becoming blurred. So, just as there are players provided only with digital outputs – network transports or bridges [see p52] to be paired with an outboard DAC – so we now have DACs with network capability built-in. Add an app running suitable UPnP control software, and you have a complete streaming solution.

For the network neophyte, all that can be a bit confusing, but a 'DAC with benefits' perfectly describes Simaudio's MOON 780D v2. Available in black, silver or two-tone black/silver, this £13,500 unit is the Canadian company's reference DAC, complete with a built-in streaming section developed in-house.

Neither is this the only streaming DAC in the company's range. For those with more restricted budgets, there's also the lower-spec 680D, yours for £8900, and the entry-level 280D MiND2, at £2950. Oh, and the digital-output-only MiND2 'network transport' at just £1950, and the 390, which combines streamer, DAC and analogue preamp. You pays yer money, and takes yer choice…

ALL IN THE MIND

With so many network products in the range, you can see the sense of Simaudio developing its own streaming solution, unsurprising called MiND2. The acronym stands for 'MOON intelligent Network Device', and this provides not only access to music stored on network computers and NAS drives, but also a range of online services. The second generation of MiND – older models using the original version can be upgraded to MiND2 – adds access to Tidal Masters with MQA, Qobuz Sublime+ and Deezer Hi-Fi, and also allows synchronised multiroom playback using multiple MiND2-equipped devices, as well as Roon-ready certification.

The 780D v2 comes with a conventional FRM-3 system remote handset [p43], which is a hefty, backlit and stylish metal affair or, if you were feeling particularly masochistic, you could operate the unit using the octet of little front panel buttons straddling the prominent display. However, to access the streaming services on offer, you're really going to need the company's MOON MIND2 Controller app [see boxout, p41].

As well as its Ethernet connectivity, the 780D v2 also has Wi-Fi and Bluetooth with aptX, but I'd still swerve the former if you're streaming high-bitrate audio, and the latter on the grounds of sound quality. A decent network or USB hook-up always wins the day. To that end, the 780D v2 will accept audio from a computer via its asynchronous USB-B port, handling files at up to 384kHz/32-bit and DSD256, the latter in native form. MQA decoding is included and it also has two optical, three coaxial and an AES/EBU input. All of these are limited to 192kHz/24-bit.

Analogue outputs are on RCAs and balanced XLRs, and there's also another pair of XLR sockets – one four-pin, one five – to allow the 780D v2 to be used with the company's 820S offboard power supply, which will set you back a further £7200.

SPEAKING CLOCK

The 820S uses two custom toroidal transformers to feed separate supplies to the digital and analogue circuitry, and is designed as a universal upgrade for a range of MOON units. Not that the 780D v2 stints on the power supply front as standard, using the company's own 'MOON Hybrid Power' to supply the juice. The latter

RIGHT: Screened PSU [left] feeds 12 separately regulated supplies for the Stream 810 Wi-Fi board [blue], the network adapter [brown, underneath] and main audio board with its pair of ES9018S DACs [daughter PCB, right]

combines high-speed switching and linear PSUs with 'M-LoVo' (Moon Low Voltage) regulators, I2DCf (Independent Inductive DC filtering) and conductive polymer capacitors, with the whole thing being designed for extremely low noise.

Meanwhile the dual-mono balanced design uses a pair of ESS9018S Sabre DACs governed by a 'femtosecond-grade' master clock by way of tackling jitter [see PM's Lab Report, p43]. Incidentally, the dual DACs and high-accuracy (and rather expensive) clock set this flagship model apart from the somewhat more affordable 680D, which uses one DAC chip in stereo and a 'picosecond-accurate' clock – otherwise just about everything is the same.

The rest of the 780D v2 is all about Simaudio's customary build quality, which could be described as 'truck-like' only if the truck in question ran on tracks and had a big gun in a swivelly bit on top. Everything here has a reassuring sense of solidity and durability, and is finished to an exceptional standard. And that's about it, beyond the ability to go into the menu and re-label the digital inputs, or disable unused inputs to make flicking through them faster. It's also possible to alter the information shown on the display when music is playing, dim the display (which is rather startling at full brightness) or turn it off completely, so it only lights when something is changed and then goes dark again.

OPEN SOURCE

Big and magnificent the 780D v2 may look, but its sound is something of a slow burn: this isn't a unit to rock you back on your heels with the first few notes, but what you do get is complete confidence and a beautifully open and superbly focused soundstage. And that holds true whether you're playing music via the digital inputs or making use of this network player's streaming functionality.

> 'Snowflakes seemed to blizzard out of the speakers!'

That was made clear with the recent *Bach: Redemption* set by soprano Anna Prohaska [Alpha Classics ALPHA658; 192kHz/24-bit], recorded with a small ensemble in the quest for period accuracy. So whether with the spare musical forces of most of the album, or the jazzy bonus arrangement with which it concludes, the effect is of very real performers at work in a well-resolved church acoustic. Prohaska's remarkable voice is handled with delicacy and care, and the instrumentation and small chorale on a few of the tracks have not a smidge of artifice about them.

ABOVE: The 780D v2 can (just) be operated using the four little buttons either side of the display, or the supplied remote handset, but the MiND Controller app makes things much easier

That this is a component to seduce rather than stun becomes ever clearer as you delve deeper into its capabilities and your music collection, whether playing files over the network, directly from a computer using USB, or streaming via Tidal or Qobuz in hi-res. Even with comparatively low-resolution streams – such as the odd Radio 3 live jazz session in 320kbps via the 780D v2's TuneIn feature – the sense of 'rightness' in the sound is maintained.

REAL SNAP

However, it's really with uncompressed music that this player/DAC shines. With Bob Dylan's latest album *Rough And Rowdy Ways* [Columbia; 96kHz/24-bit download], the 780D v2 gets right into the character of the voice from the off, and makes clear the world-weary lyrics, while at the same time chugging out the blues of 'Goodbye Jimmy Reed' in toe-tapping style. Again, it's a sound all about realistic-sounding instruments and confident music-making, with not a hint of hi-fi histrionics about. Sounding this good without making a huge fuss about it is a clever trick, and it's ⇨

MIND2 APP

There are those manufacturers who'll tell you there's no point in developing a bespoke app to control their products: they'll refer you to a number of third-party UPnP/DLNA apps available for your phone or tablet that will pass muster. As you might expect from the amount of proprietary tech under the lid of the 780D v2, Simaudio would beg to differ, and its MOON MiND Controller app (for Android and iOS) has been developed as an integral part of its MiND streaming solution. As well as allowing the user to access music, this app can also act as a complete system controller, thanks to the (again proprietary) SimLink remote control connection between products in the company's range, for which a cable is supplied with every Simaudio product, easily extendible as it uses standard 3.5mm plugs. The operation is slick and reliable, and the screens very clearly laid out and easy to navigate, whether you're playing music from network storage, streaming from online services, or simply adjusting the volume on a connected Simaudio amplifier.

ABOVE: Wired and wireless network inputs (and a BT antenna) join another seven digital inputs – USB-B, three coax and two optical S/PDIF, plus AES/EBU. Single-ended and balanced outputs on RCA/XLRs are joined by ext. PSU inputs and 3.5mm triggers

a sleight of hand carried off with considerable style here.

Move back to the less dense – and more audiophile – sound of the 15th anniversary reissue of *Yuko Mabuchi Plays Miles Davis* [Yarlung Records YAR78690-15 DSD; DSD256], and the gloriously crisp live recording sparkles. Mabuchi's Steinway is perfectly weighted, and planted solidly in the soundstage, surrounded by the accompanying bass, drums and trumpet.

There's a real snap and drive to the quartet's take on 'Milestones', while 'So What' has an easygoing swing, the 780D v2 making clear the doubling of the bass line by Mabuchi's left hand and the bass of Del Atkins, while Bobby Breton's drums patter and shimmer and JJ Kirkpatrick's trumpet soars. It's a delicious, and very live, sound.

TRULY THRILLING

But don't be fooled into thinking this is one of those hi-fi components only really suited to hyper-clean recordings of the kind used for hi-fi demonstrations which, after all, just about any decent system can play well. Push it harder with the full-on attack of parts of Arabella Steinbacher's *Four Seasons* [Pentatone PTC 5186746; DXD], combining Vivaldi's familiar warhorse with Piazzolla's less-known work on the same theme, and it does a fabulous job with the tango rhythms of the Piazzolla, both with the stabs of strings and the rumble of the basses of the Munich Chamber Orchestra. Then it goes on to drive hard with Steinbacher's 'take no prisoners' charge through the Winter section of the Vivaldi, delivering it in truly thrilling fashion as those snowflakes seem to blizzard out of the loudspeakers!

Up the scale of the musical forces to a full symphony orchestra – in this case the Oslo Philharmonic under Petrenko playing Rimsky-Korsakov's *Russian Easter Festival Overture* [Lawo Classics LWC1198; DXD] – or some charging rock, and the ability of the 780D v2 to deliver low-end power and grip while laying open all that's going above, however complex, is never in doubt.

Possessing all the grunt needed for even larger orchestral forces while having the ability to rock hard and fast, and yet do all this while delivering glorious finesse and detail, and without any sign of work going on behind the scenes, makes the 780D v2 very much a class act.

LEFT: The heavyweight all-metal MOON FRM-3 remote caters for its amps, players and DACs. For the 780D v2 it offers current/elapsed time, display brightness and mute, plus playback for the D8 MiND input

HI-FI NEWS VERDICT

The grand illusion here is that while the 780D v2 doesn't seem to be doing much, and its sound won't shake you to the core on first exposure, extended listening reveals its true maturity, resolution and power. With its wide-ranging capability, superb build and one of the best apps in the business, it makes an extremely strong case for itself. Understated, yes, but it's one of the best network players around.

Sound Quality: 88%

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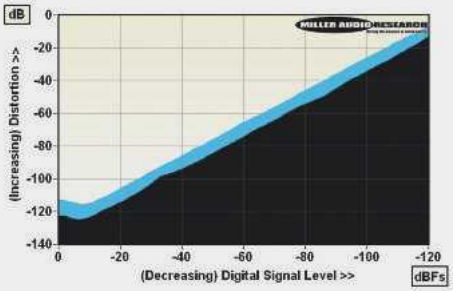
LAB REPORT

SIMAUDIO MOON 780D V2

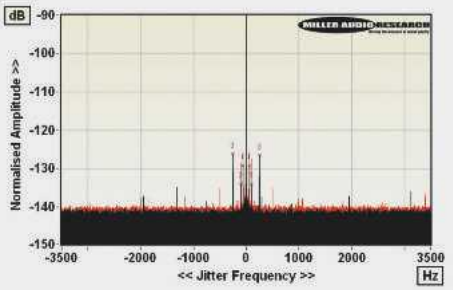
Version 2 it may be, but the 780D still employs the tried-and-tested Sabre ES9018S DACs from ESS in preference to the newer 9028 and 9038 Pro versions. And for good reason, as its performance is absolutely 'top-drawer', from the vanishingly low distortion that falls to just 0.00005% over the top 30dB of its dynamic range [see Graph 1, below] and the very wide 110.6dB A-wtd S/N from a modest (by balanced XLR standards) 2.4V peak output. There is one minor 'bug' – peak level digital inputs at high frequency (~20kHz) cause the device to clip and THD jumps to 0.5%, but falls right back to 0.0003% at –1dBFs/20kHz. This only occurs at 48kHz sampling, not at 96kHz, 192kHz, *etc*, and is largely of technical/academic interest.

Of more practical/subjective impact, perhaps, is Simaudio's choice of slow roll-off minimum phase digital filter (one of several options within the ES9018S) that trades zero pre-ringing and limited post-ringing for poor stopband rejection at low sample rates (just 11dB at 48kFs) and roll-offs of –0.5dB/20kHz, –9.7dB/45kHz and –6.1dB/90kHz with 48kHz, 96kHz and 192kHz media, respectively. This choice of filter is a very good compromise for higher sample rate files (88.2kHz+).

Meanwhile the wide S/N ratio assists in delivering the 780D v2's excellent low-level resolution – good to within ±0.1dB over a 100dB dynamic range before deviating slightly to ±1dB between –100dBFs and –110dBFs. Digital jitter is typically well suppressed by the ESS DACs, and so it is here with just 33psec, 19sec and 10psec recorded with 48kHz, 96kHz and 192kHz/24-bit test files [see Graph 2, below]. Finally, while the analogue output stage has a moderate 120ohm source impedance, the careful layout still confers a wide 130dB stereo separation. **PM**



ABOVE: Distortion vs. 96kHz/24-bit digital signal level over a 120dB dynamic range (1kHz, black; 20kHz, blue)



ABOVE: High resolution jitter spectrum via network (black, 48kHz/24-bit; red, 96kHz/24-bit with markers)

HI-FI NEWS SPECIFICATIONS

Maximum output level / Impedance	2.369Vrms / 120ohm
A-wtd S/N ratio	110.6dB
Distortion (1kHz, 0dBFs/–30dBFs)	0.00009% / 0.00065%
Distortion & Noise (20kHz, 0dBFs/–30dBFs)	0.00025% / 0.0011%
Freq. resp. (20Hz-20kHz/40kHz/75kHz)	+0.0 to –0.2dB/–9.7dB/–6.1dB
Digital jitter (48kHz / 96kHz / 192kHz)	33psec / 19psec / 10psec
Resolution (re. –100dBFs / –110dBFs)	±0.1dB / ±1.0dB
Power consumption	15W (14W standby)
Dimensions (WHD) / **Weight**	476x102x427mm / 18kg