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# hi-finews

&amp; Record Review

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## Simaudio Moon 180MiND/100D

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OUTSTANDING  
PRODUCT

Simaudio, manufacturer of Moon components, calls its UPnP renderer and partnering control app MiND: Moon intelligent Network Device. While the streaming module is essentially an optional board for the firm's high-end DACs, this dinky little 180MiND network player (think Pro-Ject's Box Series) is designed for adding streaming functionality to any legacy DAC.

As such it has no analogue outputs, but a full suite of digital outputs including AES/EBU (XLR). The control app is a crucial feature since it's the only way to drive it. There is no display, either on the 180 or the company's DACs with MiND module fitted. The app acts as a control point for multi-zone installations where Moon players – and amplifiers connected to them using Simaudio's control bus – can be operated throughout the home. File playback includes ALAC, AIFF and WAV/FLAC up to 24-bit/192kHz. Wi-Fi is built in, limited to CD quality audio. And gapless playback is supported.

The bijou 100D DAC partnering it here sports a legacy USB input (16-bit/48kHz max) alongside 24-bit/192kHz-capable S/PDIF inputs. Signals are processed through an asynchronous sample rate converter and a Burr-Brown PCM1793 DAC and 8-times oversampling filter. Both units are powered via 'wall wart' plug-top supplies.

## MIND CONTROL

In tandem, these Moon components sounded refined and composed. 'Great separation of elements in the recording' and 'sweet treble and firm bass' were comments from the



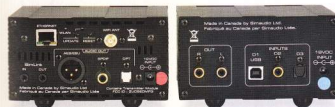
ABOVE: The player has no display so must be driven via the MiND control app. DAC LEDs show sampling frequency

listening panel. *Rain Tree Crow's* dynamic contrasts were served up confidently by the combo, with fine gradation of tone and timbre to the percussion. Similarly, Joni Mitchell's epic opener to her *Don Juan's Reckless Daughter* album sounded highly polished, the image remaining stable even during passages where the bass playing becomes increasingly boisterous and all-pervading.

It didn't sound as finely-etched or vivid as the Pioneer N-30, but it did flesh out the texture and body of instruments – in much the same way as the Stream Magic 6. 'True Love Ways' was brimming with atmosphere, the emotion in the vocal palpable, where the Pioneer appeared 'stark', if more spacious.

The Moon combo got better and better with hi-res files. The Haydn recording sounded beautiful when playing the 44.1kHz version, more richly-textured at 96kHz and simply divine with the 24-bit/192kHz file.

Sound Quality: 83%

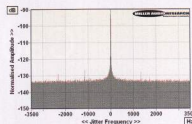


LEFT: The MiND player can connect to any DAC via S/PDIF (Toslink or RCA) and AES/EBU (XLR). The 100D DAC has optical (Toslink) and electrical (RCA) S/PDIF inputs

## HI-FI NEWS LAB REPORT

Small, lightweight and drawing a mere 2W each, this pair of little black boxes pack a hefty technological punch. The 180MiND renders media up to 192kHz and will even accept 32-bit floating point WAV files without pause. The analogue output of the 100D DAC offers a standard 2V from a 96ohm source impedance but the 107dB A-wtd S/N ratio is impressive and levels of ultrasonic interference are vanishingly low. The sub-10psec jitter levels are arguably even more impressive bearing in mind that the 180/100D combo is operating over two digital interfaces – the wired network and its own S/PDIF link (see Graph, below).

Distortion is perfectly low enough and very constant with frequency at 0.0015-0.0023% (re. 0dBFS) while the harmonic spread extends no further than the 6th harmonic. The responses are also very flat, extending to -0.1dB/20kHz with 48kHz media, -0.4dB/40kHz with 96kHz files and -2dB/80dB with the highest rate 192kHz material. Incidentally, there is no significant difference in the 180/100D's noise, distortion, jitter or low-level resolution performance with variable sample rate media. PM



ABOVE: High resolution jitter spectrum with 24-bit/48kHz (black) and 24-bit/96kHz (red) over a wired network

Maximum output level/Impedance	1.98Vrms / 96ohm
A-wtd S/N ratio	106.2dB
Distortion (1kHz, 0dBFS) (-30dBFS)	0.00145% / 0.0018%
Distortion (20kHz, 0dBFS) (-30dBFS)	0.0023% / 0.0054%
Freq. response (20Hz-20kHz/45kHz)	+0.00dB to -0.08dB @ -1.25dB
Digital jitter (48kHz/96kHz/192kHz)	<10psec / <10psec / 17psec
Resolution @ -90dB	±0.4dB
Power consumption	3W / 2W
Dimensions (WxHxD)	127x74x165mm (each)