

USB DAC

Musical Fidelity V-DAC II (£199)

Improved looks, asynchronous USB input and 24-bit/192kHz upsampling across a range of digital sources sounds like a cutting edge add-on... and all for under £200
Review: **Andrew Simpson** Lab: **Paul Miller**

If it ain't broke, don't fix it' is a rule of thumb one might associate with many a hi-fi manufacturer, but not with Musical Fidelity – a company that isn't afraid of updating its products, it says, in response to customer needs. And which in recent years has carved out a market niche with good value discrete add-on units.

As the Aug '11 USB DAC group test illustrated, the increased popularity of computer and digital audio combined with demand for a better sound than your average PC or Mac can provide, has allowed the standalone DAC market to flourish, with examples for every budget and more connectivity options than you can shake a memory stick at. If your CD player offers a digital output, adding a DAC can also be a cost-effective way of upgrading while retaining the unit for transport duties.

The V-DAC II on test here replaces the earlier V-DAC [*HFN* May '09] and comes with a number of updates – as well as a £40 increase. The original V-DAC was intended to be hidden out of view when in use. Its design and build principles were, according to Musical Fidelity, akin to an F1 racing car: 'Your investment goes on what's under the lid, not what it's housed in,' said Musical Fidelity founder Antony Michaelson. The casework was functional and entirely fit for purpose, but nothing more.

LOOKS COUNT

What MF didn't count on is the degree to which looks *do* matter – to some audiophiles even the smallest accessories are the equivalent of their hi-fi plumage. So in response to this, the V-DAC II replaces the black finish and quirky lettering of the V-DAC with brushed silver aluminium replete with more mature typography and inset grooves that hark back to the X series of old [see boxout]. The cigar-box-like dimensions remain the same and the casework feels solid and well made. Countersinking the black screws that hold it all together is a nice touch (though I would have preferred silver ones to match



BELOW: Asynchronous USB and S/PDIF inputs (on phono and Toslink) are selected via a toggle switch. LEDs indicate power on and signal lock

the casework). Connections and layout on the V-DAC II are almost identical to the earlier V-DAC too, with power provided by a supplied wall wart-type 12V DC transformer and output delivered through a single pair of RCAs. Input options include coaxial and optical S/PDIF connections and, crucially, an asynchronous USB port (replacing the original's standard USB) all of which offer 24-bit/192kHz upsampling.

And I say 'crucial' because asynchronous USB allows the audio data transfer to be governed by the V-DAC II, as its master clock is effectively disconnected from those

within the potentially noisier environment of the PC or Mac.

Lifting the lid reveals a Burr-Brown DSD1796 DAC chip and Burr-Brown SRC4392 asynchronous upsampler, reinforcing MF's claims about where the money's been spent. On the other hand, some of the input labeling is potentially

BOXING CLEVER

Musical Fidelity hit on a rich vein when it first introduced a range of discrete add-on boxes (headphone amps, phono stages, DACs etc) that started with the mostly valve-based X series in 1996. 'The original X series was born out of intuition – no market research was conducted,' says Antony Michaelson, company founder and MD. 'Everyone at MF is a hi-fi enthusiast and we simply asked ourselves what kind of products would we like to see and want to buy.' The gamble paid off, with X series products selling over 200k units during their lifetime – 60k of which were accounted for by the X-10D (a valve-based external line stage for CD players). To date, V series models have sold more than 85k units. Says Michaelson: 'We've designed the electronics to be as damn near perfect as possible while small cases keep material and production costs down.'

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HIGHLY
COMMENDED

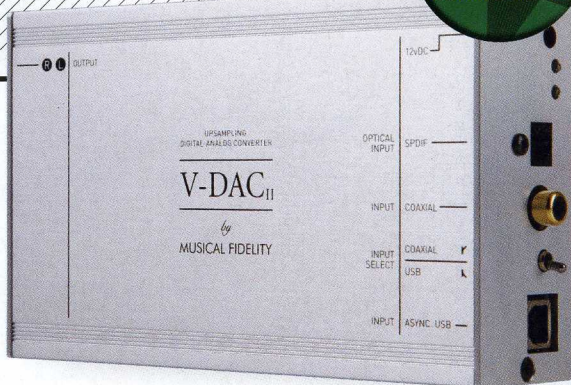
LAB REPORT

MUSICAL FIDELITY V-DAC II (£199)

In short, the V-DAC II marks a significant technical improvement over the original [*HFN* May '09], although the S/PDIF input still offers an advantage over MF's new asynchronous USB receiver. The output level has increased from 2.1V to 2.25V and the A-wtd S/N from 106.7dB to 108.8dB although this falls to 101.5dB via USB, a figure midway between that typically achieved by 16-bit isochronous USB and the best asynchronous implementations from Arcam/dCS. Distortion is markedly reduced in the new DAC [see Graph 1, below], the 0.003% 2nd/3rd harmonics that persisted before (1kHz/0dBFS) now reduced to a mere 0.0002%. Even at 20kHz, distortion has fallen from 0.004% (V-DAC) to 0.0005% (V-DAC II) even though the common digital filter still offers the same 99dB rejection of stopband images.

While MF has evidently tweaked the analogue stage to achieve a far lower THD and better stereo separation (now >100dB from 20Hz-20kHz instead of 70dB), the frequency response of the V-DAC II is unchanged over the mk I at -0.25dB/20kHz with 44.1kHz/48kHz inputs and -1.9dB/45kHz with 96kHz inputs. The response extends to -5.8dB/90kHz with 192kHz inputs over S/PDIF. Musical Fidelity has long had a handle on jitter reduction and so the V-DAC II is no less impressive in this regard, achieving a mere 10psec over S/PDIF and some 60-90psec via the asynchronous USB connection [Graph 2]. Readers are invited to view full QC Suite reports for the S/PDIF and USB inputs of the V-DAC II by navigating to www.hifinews.com and clicking on the red 'download' button. PM

RIGHT: No chance of confusing these outputs – single-ended, fixed level L/R stereo on phonos



confusing. For example, the input selector switch distinguishes between 'USB' and 'coaxial' when it actually switches between USB and both S/PDIF connections (coaxial and optical). Two LEDs on the input panel show mains power and signal lock from a chosen source.

DETAIL RETRIEVAL

Comparing the V-DAC II's lab measurements with those from the August Group Test illustrates the quality of its engineering, this little box offering a lower distortion figure at 20kHz via USB. As it's also cheaper by some margin that's quite an achievement. But how does it sound?

Setting up with a computer was a breeze. I used a selection of CDs fed from the coaxial output of a Cambridge Audio CD player and files streamed losslessly from a laptop via Foobar2000 software. Albums included REM's *Automatic For The People* [Warner 9362-45055-2]; a re-mastered version of Fairport Convention's *Unhalfbricking* [IMCD293/063596-2]; and *Piano Music In A Church* by Endre Hegedus [Tone-Pearl TPRCD1].

Listening back-to-back to the CD player's inbuilt DAC and the V-DAC II highlighted extra levels of detail that the Musical Fidelity unit was able to retrieve. The timbre of Michael Stipe's voice was honestly presented with real emotion and depth, sounding less hard-edged than I am used to. The V-DAC II's sound is less upfront than that of other DACs at around this price point, and the delicacy with which it treated more subtle instrument passages reminded me of a top quality, neutral vinyl front end.

With acoustic guitars in particular, the air and space

around each simple strum gave the impression of hearing a better quality guitar, rather than a change in the hi-fi replay chain.

Differences between the coaxial and USB input were more challenging to detect, demonstrating how evenly the V-DAC II treats the two. Overall, listening to sources through the coaxial input had a little more impact – the Chopin and Debussy and piano pieces with Hegedus, for example, suggested that the

keys were now being struck with more authority, in contrast with the USB input which presented a more laid-back sound. Bass was clearly detailed

and although a touch leaner in this area than with other (more expensive) alternatives, the V-DAC II should bring welcome refinement to boomy sounding digital sources.

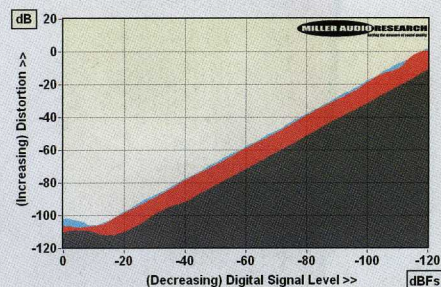
Overall the V-DAC II has a pleasantly analogue-like tonal signature with smooth treble that could provide a welcome tonic to systems otherwise having bright or uncouth-sounding front ends. ⤵

'It reminded me of a top quality, neutral vinyl front end'

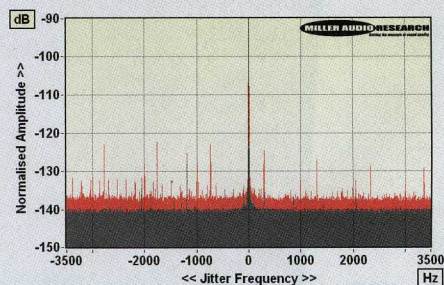
HI-FI NEWS VERDICT

First and foremost the V-DAC II is superb value for money, offering the latest technology in a discrete package with looks that do its quality internals justice. For those wanting to bring warmth and detail to an ageing or budget CD player then this may be just the ticket. And for hi-fi fans seeking an easy starter package to get decent sounds from computer-based audio, the MF would be a hard act to beat.

Sound Quality: 81%



ABOVE: Distortion versus digital signal level over a 120dB dynamic range at 1kHz (black = S/PDIF; red = USB) and 20kHz (blue = S/PDIF)



ABOVE: High resolution jitter plots with 48kHz/24-bit data over S/PDIF (black) and asynchronous USB (red)

HI-FI NEWS SPECIFICATIONS

Maximum Output Level/Impedance	2.25Vrms / 97ohm
A-wtd S/N Ratio (USB, S/PDIF)	101.5dB / 108.8dB
Distortion (1kHz, 0dBFS/-30dBFS)	0.00019% / 0.0040%
Distortion (20kHz, 0dBFS)	0.00052%
Frequency response (20Hz-20kHz)	+0.0dB to -0.25dB
Digital jitter (48kHz/24-bit USB, S/PDIF)	90psec / ~10psec
Resolution @ -100dB (USB, S/PDIF)	±0.7dB / ±0.1dB
Power consumption	4W
Dimensions (WHD)	157x40x95mm