

# Musical Fidelity MX-DAC

One of a trio of small but substantial add-ons, the MX-DAC joins Musical Fidelity's partnering MX-HPA headphone amp and MX-Vynl phono stage. Is this another steal? Review: Ken Kessler Lab: Paul Miller

Imagine the dilemma when Pro-Ject acquired Musical Fidelity [see PM's boxout, p67]: the overlap with the former's Box range and the latter's MX models created an in-house rivalry in the 'affordable audiophile' sector. Both produce pint-sized ranges with matching phono stages, headphone amps and – of relevance here – beer-budget DACs. Musical Fidelity's MX-DAC, at £499, is a direct challenge to Pro-Ject's Pre Box DS2 Digital [HFN Nov '17] and a few others in the family, but the lineups are distinctive enough to cause no sleepless nights.

Let's dispense with the most important variance: sonic character. They are voiced slightly differently, so I anticipate numerous A/B comparisons between them and others from Cambridge Audio, Chord Electronics, iFi Audio and the like, as well as pocket-money USB DACs such as AudioQuest's DragonFly Cobalt [HFN Oct '19], which exceed any expectations relative to their price brackets. What the MX-DAC offers the music lover with a limited budget is a full complement of inputs, sufficient features, luxurious styling and feel... but above all, genuinely astonishing sound.

## CAPTAIN MARVEL

Before getting anywhere near to a conclusion, I must state that this is now my preferred DAC, cost-wise, between thumb-drive-encased USB DACs and circa-£1200 champions such as the Mytek Liberty. Thus it's best to tell you what the MX-DAC *doesn't* do, things which, for example, the Mytek Brooklyn DAC+ (my reference at, admittedly, more than 4x the price) offers.

The MX-DAC has no remote nor volume control to allow it to serve as a preamp, no cool display, no analogue input, no phono stage, and no headphone output. It is purely a DAC – and that's why it's so cost-effective. Thoughts of fiscal incentives soon disappear. You run your hand over

**RIGHT:** Lifting bonnet and fascia reveals the indicator LEDs [left], XMOS USB receiver [centre right], sample rate converter [centre], PCM1795 DAC [lower left] and balanced out [lower right]

the matte silver finish, noting the clean lines, admiring the chamfering and the fluted sides of the extruded case. You flick the positive-feel on/off toggle, tap the buttons with their crisp action. You observe the high-quality hardware at the back, including XLR balanced outputs, and then you cannot but marvel that all this is delivered in a sub-£500 DAC.

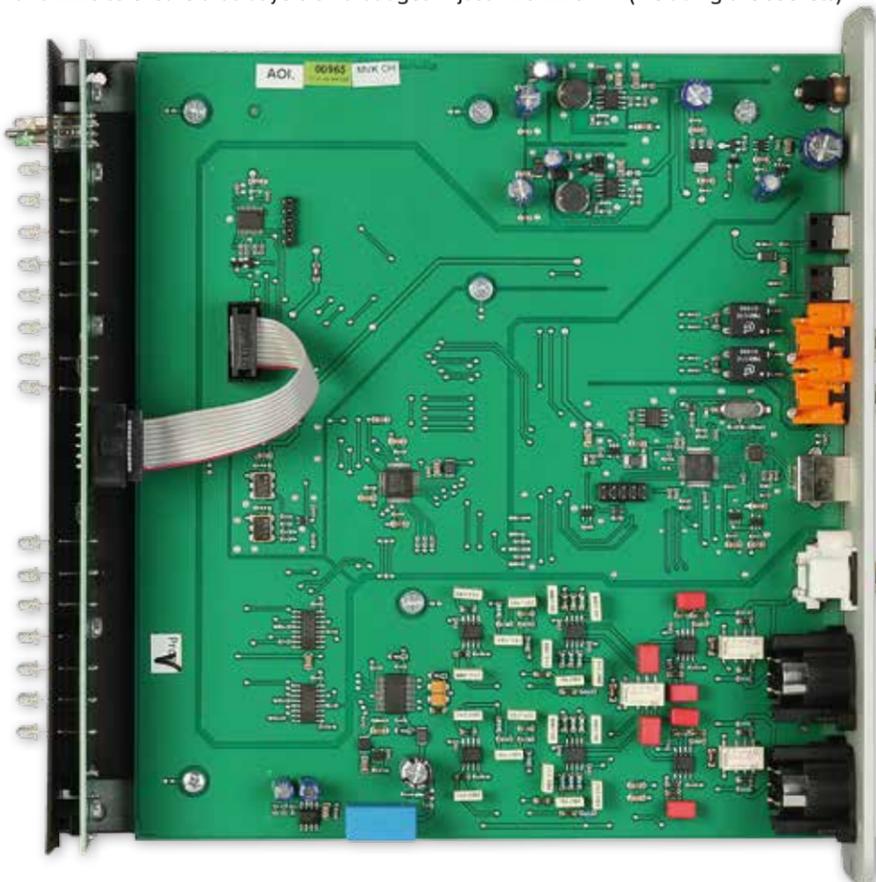
Because of this, the MX-DAC isn't just aspirational: it's actually an enabler for future upgrades elsewhere in one's system, moves that it will survive handily, as I found after inserting it into a system with significantly higher-end Audio Research and Wilson Audio elements.

Across the front are enough controls and LEDs to ensure that buyers-on-a-budget

never feel deprived. At the left you find the on/off toggle, below LEDs indicating power-on and signal lock. Next are six LEDs to identify sampling rates from 44.1kHz to 192kHz, followed by two for DSD activity. The right-hand half of the fascia contains LEDs to indicate which of two filters has been selected – and I found the effects barely discernible, so I did not spend too much time worrying about them [see PM's Lab Report, p69] – followed by five LEDs to identify the selected input. Last are buttons for choosing inputs and 'filters'.

## INPUTS AND SOURCES

Musical Fidelity has managed to fit every type of digital input into a unit measuring just 220x220mm (including the sockets)



bar I²S and Ethernet, the latter typically the preserve of costlier solutions. Arranged left-to-right are XLR balanced and RCA line level outputs, a USB-B input, two each of RCA coaxial and Toslink inputs, the latter with built-in flaps so no worrying about misplacing those awful plugs of yore. Last is the mains input for the 5V/2A wall-wart. As you can imagine, the MX-DAC can be up-and-running without getting near the instruction manual if it isn't your first (digital) rodeo.

For assessing USB, I fed it signals from a desktop Mac computer, using Fidelia and Audirvana Plus software, the in-built Apple players and, in deference to the increasing number of hi-fi enthusiasts who now 'stream' their content, my catalogue of music files stored in the vastness of the amazon.co.uk cloud. I also used a Samsung BD-H5100 Blu-ray player (bought for playing US Zone A discs), which has HDMI as its main output, but also offers coaxial digital. A Sony BDP-S370 BD player was employed too, but regardless of which source I used, the 192kHz LED on the front

of the Musical Fidelity MX-DAC stayed on most of the time.

## KIND OF BLU

Using the Blu-ray audio disc from the anniversary box set of The Band's eponymous second album [Capitol 00602577842832], selecting the stereo 96kHz/24-bit PCM version, I was hit with one of those instant audio epiphanies. So

*'The liquidity of the pedal steel guitar floored me'*

natural, so ripe was the sound of the bass, so satiny the upper frequencies, and so warm were the vocals that I knew I had hit on a track which could sell the MX-DAC even to the most inveterate of hi-fi snobs.

In fact it was all about as unnerving as a sonic surprise gets.

This was because 'Up On Cripple Creek' is a track I've known, loved and used as a sound arbiter for a half-century. What the MX-DAC delivered made me question DACs with five-figure price tags, but that would be to wear a particular *nouveau pauvre* hat I find dehumanising and unattractive. The point of astounding-value hardware is not

**ABOVE:** Squeezed into the same compact casework as the matching MX phono stage and headphone preamp, the MX-DAC has two small buttons for input and filter, indicated (with sample rate) by rows of miniature LEDs

to undermine the existence of the extreme high-end, but to provide a taste of it for a fraction of the cost. Which this unit does.

Listening through Falcon Acoustics LS3/5As [HFN Dec '18], my choice for assessing vocals given the loudspeaker's original *raison d'être*, Levon Helm's slight nasality and inimitable drawl suffered no digital artefacts. They had presence and flow, and those who rank sibilance the most egregious of sins will revel in their absence. The smoothness of the 's' in the song title 'Unfaithful Servant' matched the 45rpm LPs in the same box set. This is one refined, 'grown-up' DAC.

## ON THE AIR

Before moving on to the streamed or downloaded high-res material, I listened to the new mix of The Grateful Dead's *Workingman's Dead* [Rhino 603497846986] but was unexpectedly drawn away from the first of its three CDs – the one with the original album – to the sound of the live bonus discs. 'Me And Bobby McGhee' had so much air and space that the sense of a real hall, filled with an audience and living, breathing musicians, was conveyed almost as convincingly as if it were a surround-sound disc.

(Note that this is no endorsement of surround sound. Not all multi-channel recordings, especially old material rendered as 5.1 mixes, work well. And if you were wondering, one of the two surround mixes in the aforementioned Band box set works fabulously, while the other sucks. And neither of them beats the original two-channel mix.)

Sadly, for those seeking out one of more of these gems, I am unable to identify catalogue numbers of sources for my ↗

## NEW BLOOD

With company founder Antony Michaelson on the cusp of retiring in 2018, the future of Musical Fidelity looked to be in the balance until Heinz Lichtenegger – CEO of Audio Tuning Vertriebs GmbH, parent company of Pro-Ject Audio Systems – stepped into the breach and saved the day. The two company directors had worked closely for many years as Audio Tuning Vertriebs GmbH was already Musical Fidelity's distributor in Austria. Perhaps, and with the benefit of 20/20 hindsight, the outcome might have been predicted. Nevertheless the sale of the brand name and associated intellectual property was completed in May 2018, with MF's worldwide distribution, after-sales support and Far Eastern manufacturing left relatively unchanged. However, while 'Made in Wembley, England' is now replaced by 'Made in Austria' much of the new design thinking still originates from the UK and the pen of Simon Quarry. As the engineer behind some of MF's most iconic products of the past, Simon was persuaded to return and look afresh at what the 'new' Musical Fidelity might achieve. His debut product is the new M8xi integrated amplifier [HFN Jul '20] and winner of EISA's 'High-End Integrated Amplifier 2020-2021' [see p82]. PM

## USB DAC



**ABOVE:** Powered via an external 5V/2A 'wall wart' supply, the MX-DAC offers one USB-B and four S/PDIF inputs (two coaxial/two optical). Analogue outputs are balanced (XLR) and single-ended (RCA)

hi-res downloads, most of which are bonuses that accompanied vinyl box sets from Marvin Gaye, Little Richard, The Rolling Stones, James Taylor, Paul McCartney and others whose LPs benefited from these perks. Suffice it to say, nearly all of the recordings, whether identified as FLAC or another format, triggered the MX-DAC's 192kHz LED. What surprised me was how 'musical' – if that's the right word – the USB input sounded when I compared these downloads with the equivalent CDs via either Toslink or coaxial inputs.

### AMAZING GRACE

This, too, proved revelatory, as I have never been bowled over by USB, which I find at its worst to be tolerable – rarely objectionable but also rarely dazzling. 'I Fall To Pieces' from *The Best Of Linda Ronstadt – The Capitol Years* was identified as 44.1kHz/24-bit by Audirvana Plus (I think this was an HDTracks download) and it had a delicious clarity which suited her mellifluous vocals, as distinctive a set of pipes as country rock has ever enjoyed. As with The Band's Blu-ray, it was sibilance-free and as natural-sounding as you could hope for, but it was the liquidity of the pedal steel guitar that floored me.

Whatever the origins of the recording, the MX-DAC behaved impeccably, revealing a gracefulness rarely associated with the rough-and-ready prospects of budget systems. Again, I am desperate not to sound like some granola-crunching Che Guevara worshipper, nor one spoiled by a life surrounded by high-end treasures, but such sophistication is normally the province of systems of a higher pedigree. Once the current craze for deplatforming and cancellation reaches hi-fi, I will no longer be able to make such observations, but

for the time being, note that the MX-DAC is, and stated in the most politically incorrect terms, operating 'way above its station'.

This track was a perfect showcase for the MX-DAC's admirable image specificity, stage width and even a hint of depth. What ultimately secured my love for this unassuming component, though, was the free download of Albert King's *Born Under A Bad Sign* [Stax 088807234344] which amazon.co.uk provides with many CD and LP purchases. (I am constantly and pleasantly surprised on the rare occasions when I log on to find stuff I didn't know had been added.)

'The Very Thought Of You' is one of my all-time references, thanks to moody saxes, tinkly piano stage right, late-night drumming and King in full-on crooner mode. It's mellow, seductive and soothing – cognac for the ears. The MX-DAC did not disturb that mood. In contrast was Sophie Madeleine's 'Bring Me Sunshine' – 1m 39s of ukulele-driven fun from a CD single, also via amazon. Gentle and sweet, the uke's resonance matching the uke next to my desk: she made me want an MX-DAC. ☺

### HI-FI NEWS VERDICT

DACs are the most vivid examples of price-plummeting due to trickle-down technology. Some 30 years after the first standalone models arrived, we're in a golden age, and somewhat used to being impressed by sub-£999 DACs – but I wasn't prepared for the leap that the MX-DAC achieves. The sound is satisfying, seductive and silky while the features and inputs ensure systemic flexibility. It is a no-brainer purchase.

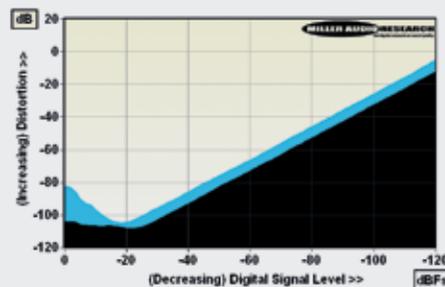
Sound Quality: 87%



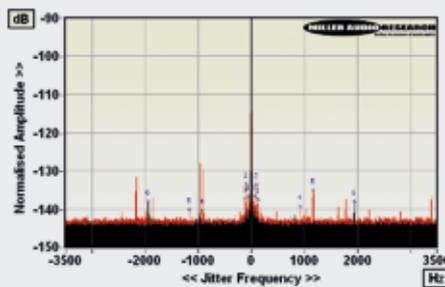
## MUSICAL FIDELITY MX-DAC

It's not uncommon for brands to claim their products are compatible with ultra high-resolution LPCM and DSD streams when the internal DAC only operates to 96kHz or 192kHz. In practice this means that, for example, DXD or DSD256 inputs are accepted but subsequently downsampled... So the fact Musical Fidelity is entirely up-front about the 192kHz and DSD128 handling of its DAC – the choice of PCM1795 complemented by an ARC (sample rate converter) and op-amps all from TI, née Burr-Brown – is very refreshing! The MX-DAC's balanced output offers a healthy 3.8V from a 45ohm source impedance and achieves a wide 111dB A-wtd S/N ratio, supporting an excellent low-level resolution of  $\pm 0.2$ dB over a full 110dB dynamic range. These figures are consistent regardless of USB or S/PDIF input, as is the superb jitter rejection down to  $< 10$ psec across all sample rates [see Graph 2, below].

Distortion, over the top 20dB at least, is largely determined by MF's implementation of the OPA2134 op-amps which yield 0.001% at 0dBfs down to a low 0.0003% at  $-25$ dBfs through bass and midrange, increasing at HF only at the highest output levels [0.012% at 0dBfs/20kHz, see Graph 1]. MF also retains the 'Sharp' and 'Slow' digital filters built into the PCM1795 DAC, although they have no discernable effect with sample rates below 192kHz. Regardless of 'Filter' setting, the response reaches out to  $+0.08$ dB/20kHz with 48kHz inputs and peaks at  $+0.4$ dB/43kHz with 96kHz files. With 192kHz inputs, however, the response peaks up to  $+1.0$ dB/75kHz before dropping away to  $-1.2$ dB/90kHz (Steep filter) or peaks at  $+0.6$ dB/58kHz and rolls away to  $-5.1$ dB/90kHz (Slow filter). So if you think you can hear a difference with CD inputs, think again! PM



**ABOVE:** Distortion versus 24-bit digital signal level over a 120dB range at 1kHz (black) and 20kHz (blue)



**ABOVE:** High resolution jitter spectra using 24-bit data (48kHz, black; 96kHz, red with markers)

### HI-FI NEWS SPECIFICATIONS

Maximum output level / Impedance	3.78Vrms / 45ohm (XLR)
A-wtd S/N ratio (S/PDIF / USB)	111.2dB / 111.1dB
Distortion (1kHz, 0dBfs/-30dBfs)	0.0014% / 0.00025%
Distortion & Noise (20kHz, 0dBfs/-30dBfs)	0.012% / 0.00045%
Freq. resp. (20Hz-20kHz/45kHz/90kHz)	+0.0 to +0.1dB/+0.4dB/+1.0dB
Digital jitter (LPCM / USB)	9psec / 9psec
Resolution @ -100dB/-110dB	$\pm 0.1$ dB / $\pm 0.2$ dB
Power consumption	6W
Dimensions (WHD) / Weight	220x53x215mm / 1.9kg