MUSICAL FIDELITY

roon tested *pending

DSD Direct Stream Digital

Hi-Res AUDIO

MQA

M6x DAC

New DAC architecture in Dual Differential Mode, Super Silent Power Transformer and Roon Tested.
Made in the EU!

General Description

Our M6x DAC is a new milestone in the history of Musical Fidelity DACs.

Its predecessor, the M6s DAC was one of the first to use the critically acclaimed ESS 32-bit HyperStream II DAC architecture. With the M6sR DAC, we continued to improve the firmware and added a few other quality of life improvements. DSD was now easier to use, we had full Roon Support and in- & outputs were updated to keep up with the fast moving digital audio landscape. And the other big thing: the M6sR DAC was now being made in the EU!

Technical Talk

With the M6x DAC we went even further. Building on our knowledge and experience with Sabre ESS chips, we upgraded them to the newer ES9038Q2M, and now use two of them in dual differential mode for a pristine dual mono design. The inclusion of a Time Domain Jitter Eliminator results in superb SNR and THD+N performance with unbelievablely detailed transient response. Other advances in the DAC section include upsampling and re-clocking. Upsampling can independently be switched on or off.

The 16-core XMOS and CPLD MAX II Altera processors ensure there is always enough headroom for these operations, the new digital filters and the MQA processing.

The single ended RCA and balanced XLR outputs each have their own output buffer. Via the XLR plugs you can enjoy a fully-differential amplifier design enabling a fully balanced output.

Both output stages deliver superior audio quality, exhibit very low noise, large output voltage swing and high current drive. The excellent gain bandwidth and very fast slew rate produce exceptionally low distortion.

Super Silent Power Transformers

The M6x DAC displays our continued development of our Super Silent Power Transformers. Industrial grade power sockets with EMI filter and DC blocker stop interferences and eliminate transformer hum. The encapsulated toroidal transformer with low core saturation is ideal for audio applications and especially perfect for digital audio due to its extremely low electromagnetic radiation.

Correct PCB Design & Layout

Digital to analogue converters, compared to analogue amplifiers, present their own design challanges. They work in different domains, have their own requirements and need to be treated as such. Power requirements are unique and solutions designed for amplifiers will not show similar results when paired with digital circuitry.
We have always held circuit board design and layout up to the highest of standards at Musical Fidelity. We are not believers of flashy board design just for the sake of looks. The design & layout need to be custom-tailored to each application, measure well AND sound as envisioned. Only then have we done our job. At this point, we have given the listener a palpable sense of the recording venue that places the performers in a real-time holographic space in their own homes.

Headphone Amplifier

The built-in headphone amplifier's current-feedback AB architecture delivers high bandwidth, extremely low noise, and up to 128dB of dynamic range. Three key features make current-feedback amplifiers outstanding for audio. The high slew rate prevents odd order distortion anomalies. Current-on-demand at the output enables the amplifier to respond quickly and linearly; when large amounts of output power are suddenly needed, the amplifier can respond extremely quickly without raising the noise floor of the system and degrading the signal-to-noise ratio. Gain-independent frequency response allows the full bandwidth of the amplifier to be used over a wide range of volume settings.

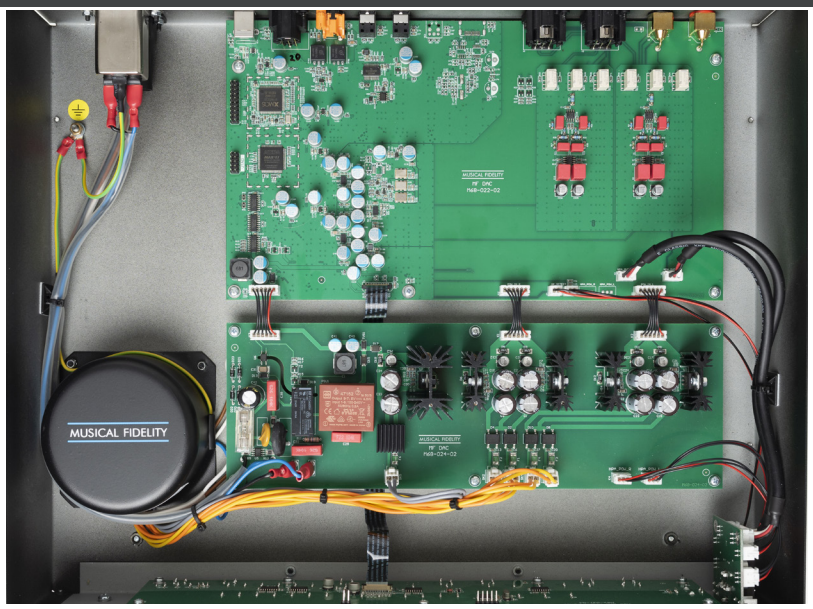
Mechanically Sound

Paying close attention to every aspect of the M6x DAC, we get incredible technical parameters and effortless sound quality full of grace and transparency. The mechanical construction is uncompromisingly rigid and solid in typical Musical Fidality tradition. Front panel and side panels are milled from extruded aluminium profiles. The exterior doesn't only look clean, stunning and indestructible, it also protects the internals against outer electromagnetic fields, and in the same way, the rest of your HiFi gear against electromagnetic fields generated by the M6x DAC. Not using a big display on the front panel only increases this effect, as the cut out needed for it would drastically complicate things.

Musical Fidelity for the Sake of Music

Therefore, musical purists who are simply looking to feel that hypnotic sensation of communication between listener and artist: they will find it here. Besides maximising sound performance, the deliberate decision against a big display with flashing colours allows you to experience the music and only the music. Unpack the M6x DAC, carefully cable it up, just leave it at its standard settings and feel the immediate musical integration: the whole sound is sweet and clear; the treble is completely grain free and extended. The bottom end sounds endless with tactile bass dynamics.

As you get reintroduced to your music library, you might, at some point, want to discover what else is possible and hear it from different stages. It is then, when the customizability and settings turn the M6x DAC into a powerful tool for experts, which elevates it into a league of its own. Explore the sound stage with upsampling or without, and see if you are drawn in deeper. Choose between 7 different digital filters and a complete oversampling bypass, disabling those filters. Full MQA decoding is performed on the M6x DAC hardware. The USB Class 2.0 input takes PCM sample rates up to 768 kHz and 32 bit. DSD support goes up to DSD256 via DoP and native DSD512. The S/PDIF inputs accept stereo PCM sample rates up to 192 kHz / 24 bit and include full MQA support!



M6x DAC

SPECIFICATION

DAC:

- DAC Circuit: 32 bit Hyperstream II
- DAC Chip: 2x ES9038Q2M (dual differential)
- Total correlated jitter: <12 picooseconds peak to peak
- Linearity: <0.4dB down to -130dB
- Frequency response: -0,1dB at 10Hz, 0dB at 1kHz, -0,4dB at 20kHz
- Channel separation: >130dB at 10kHz @ 0dBFS
- Signal to noise: >120dB "A"- wtd 1kHz @ 0dBFS
- Total harmonic distortion: < 0,0005% at 1kHz @ 0dBFS

Digital Inputs

- 1x Coax, up to 24bit 192kHz (stereo PCM + MQA)
- 2x Optical, up to 24bit 192kHz (stereo PCM + MQA)
- 1x AES/EBU, up to 24bit 192kHz (stereo PCM + MQA)
- 1x USB Audio Class 2.0, 'USB B'; up to 32 bit 768kHz (stereo PCM + MQA), DSD 256 (stereo DoP), DSD512 (stereo native)

Analogue Outputs

- 1 pair line level RCA fix/var @ 2V RMS at 0dBFS
- 1 pair line level XLR fix/var @ 4V RMS at 0dBFS
- Output impedance: < 10 ohms
- 1 Headphone out 6.3mm jack variable

Headphone Amp

- Power: 1.5W / channel into 32 Ω
- Output impedance: Min. recommended 16Ω headphones
- THD: < 0,005% at 1kHz @ 0dBFS
- Signal/noise ratio: >115dB "A" wtd
- Frequency response: +0.1, -0.4dB 20Hz to 20kHz

General Information

- Dimensions (WxHxD): 440 x 100 x 390mm
- Main voltages: 230V/115V Internally set or 100V optional
- Max. Consumption: 20W, <0.5W in standby
- Weight: 6.9kg