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Instant digital audio upgrade

Digital audio is brilliant, but it needs to be analogue audio before you can hear it. And the way it ends up sounding depends entirely on how you convert the digital audio files stored on your computer, on CD or from your favourite streaming service.

DacMagic 200M performs the digital-to-analogue conversion perfectly every time, letting all kinds of audio systems sound better than ever before.



Demonstration Tracks

At Cambridge Audio we use our ears constantly, both as passionate music lovers and audio professionals looking for test examples. We test our products with all types of content and the following suggestions are our picks for a great demo experience for your customers.

1

BURNING DOWN THE HOUSE

by TALKING HEADS

Speaking in Tongues (1983)



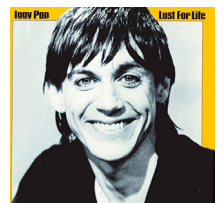
The main purpose of MQA is to get closer to the artist's vision than ever before so why not get close to one of the best. David Byrne's gang are on top form on this 1983 single. Listen out for Talking Heads' trademark idiosyncratic grooves and playful use of instrumentation.

2

LUST FOR LIFE

by IGGY POP

Lust For Life (1977)



How many different instruments can you count before the vocal kicks in on "Lust For Life"? We think we're up to about 16 but there could well be more. MQA and the DacMagic 200M reveal rich layers of instrumentation you may not have picked up before on this David Bowie produced 70's anthem.

Great British Sound

What does 'British Sound' mean? To us it's about removing any barriers that might distort or alter the original recording and not adding any of our own flavour. What you hear from our products is a pure and unfiltered 'British' sound – just as the artist intended.



1 Artist approved audio

In a very short space of time, MQA has become three letters on much of the audio industry's lips. And it's now included on a Cambridge Audio device for the very first time – the new DacMagic 200M.

MQA BUILT-IN

Whilst small, easy to stream MP3 files have been around for a long time, the files themselves deliver only 10% of the original studio recording.

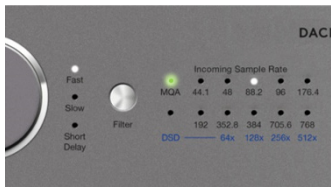
MQA stands for Master Quality Authenticated and it's a clever method of ensuring that what gets laid down in the studio streams its way to playback devices around the world with nothing missing. In fact, it's the TIDAL streaming service's method of choice for delivering better than CD quality streams.

Using specialist equipment to capture the original recording, MQA folds the original hi-res file (be that WAV, FLAC etc) to make it small enough to stream – a process MQA themselves refer to as Music Origami.

These files will then play back on any device that can decode the container, but only devices with an MQA decoder on-board will 'unfold' the file to reveal the entirety of the originally recorded track.

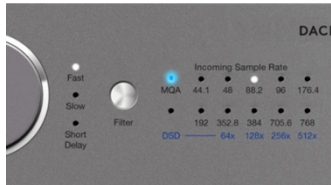
HOW DO I KNOW I'M GETTING MQA?

The MQA indicator LED on the front panel of the DacMagic 200M will indicate when an MQA file is being processed.



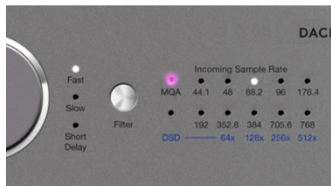
GREEN

Signifies the output as an MQA File.



BLUE

Signifies MQA Studio. Approved in the studio by the artist/producer or verified by the copyright holder as accurate to the original recording.



MAGENTA

The MQA stream is pre-decoded and the unit is operating as a renderer. Turn on MQA passthrough in your TIDAL settings to allow the DacMagic 200M to complete the unfolding process rather than the source device.

2 Powerful processing

At the heart of the DacMagic 200M is a pair of extremely high-quality ESS Sabre digital-to-analogue converters. They can deal with digital music of any kind stored on CDs, smartphones, computers - or anywhere else, for that matter.



DUAL ESS SABRE DACS

The end output from any audio chain is only as good as the weakest component. That being said, the actual digital to analogue converter chip (DAC for short) plays an integral role in the process.

Using in a dual mono configuration twin DACS process separate left and right channels, handling digital signal inputs with precision, superb dynamic range and ultra-low distortion.

We chose the ES9028Q2M chip-set for the DacMagic 200M due to its jitter-free, ultimate audio clarity.

UP TO 32BIT/768KHZ PCM

Whilst files of this size are very rare indeed, rest assured that when you do get the opportunity to have a listen, your DacMagic 200M will be up to the challenge. You'll need to connect to the USB Type B input though.

DSD SUPPORT

Compared to 16 bit PCM which has over 65,000 values that can be applied to each sample (44,100 per second in the case of CD), DSD (Direct Stream Digital) has just two values - 0 and 1. Whilst that doesn't sound like much, there's a little more to it.

DSD has a sampling rate of over 2.8 million times a second – that's 64 times the speed of CD, hence DSD64 (DSD128 is 128 times the speed and so on). Each 0 or 1 simply tells the waveform to go either up (1) or down (0) from the last sample point. It's popular amongst some audio enthusiasts who claim the format is as close to analogue as digital gets.

Whether you choose to listen to PCM or DSD files, you can be sure that DacMagic 200M is going to treat the information with the respect and integrity that your music deserves.

3 Well connected

It's possible to get digital audio files into DacMagic 200M in any number of ways. Digital optical, digital coaxial and USB inputs mean CD players, games consoles, laptops or any other digital equipment can be easily hooked up. But of course there's more...

INTEGRATED APTX BLUETOOTH

No dongles required! Integrated aptX Bluetooth means that as well as wired components, your compatible phone or tablet can also take advantage of the DacMagic 200M's powerful digital processing.

AptX Bluetooth transmits music at a 'CD-like' 16-bit/44.1kHz. It uses compression, which helps to reduce audio-coding delays and minimise latency issues. AptX has a compression ratio of 4:1 and a data rate of 352kbps compared to SBC Bluetooth at 320kbs.



DEDICATED HEADPHONE AMPLIFIER

As well as being able to slip seamlessly into (and improve) any hi-fi system with a digital source, the DacMagic 200M is a brilliantly simple system upgrade for anyone seeking to enhance the performance of their headphones.

As well as using traditional class A/B amplification, the output impedance of the DacMagic's 6.3mm headphone socket has been reduced, delivering more power, less distortion, less noise and tighter audio control.



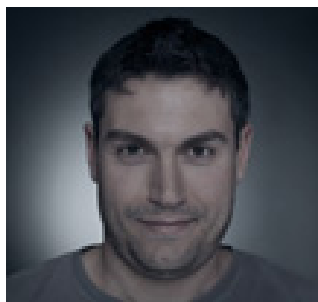
BALANCED OUTPUTS

Balanced XLR outputs, should you choose to connect the DacMagic 200M to your amplifier that way, provide a high-quality option free from analogue signal degradation.



Inside Story

We're located in London SE1, right on the doorstep of some of the most creative, exciting developments in the music industry and our products are designed and engineered in-house. Outside work we're musicians, sound engineers and above all music lovers.



FRANCESCO BETTUCCI
ELECTRONICS ENGINEER

"The goal for the DacMagic 200M was to improve upon the DacMagic Plus - a widely appreciated product, but one that has been on the market for a while now. Technology moves fast, new hi-res audio formats are available and the customer expects Bluetooth as standard.

With a standalone DAC, you can dedicate more components (and space) just for digital to analogue conversion, while in integrated products there's always compromises.

We're really pleased with the performance of the ESS digital to analogue converters we chose for this project. Two ES9028Q2M chips working in a dual mono configuration

allow us to achieve first class performance and great soundstage recreation. Plus, they keep the DacMagic 200M as an affordable hi-fi upgrade just like its predecessor.

For the output stage we used a number of Wima caps which are German made capacitors widely acclaimed by hi-fi enthusiasts and often used as a gear upgrade.

The CPU in the DacMagic 200M is also a significant upgrade over the Plus. Rated for 1000MIPS (millions of instructions per second) where conventional USB products use CPUs that are rated for 500MIPS. This allows for much faster USB operation and significantly reduced jitter."

Stacking Up

	CAMBRIDGE AUDIO DACMAGIC PLUS	CAMBRIDGE AUDIO DACMAGIC 200M
DAC	2 x WOLFSON WM8740	2 x ESS ES9028Q2M
MQA SUPPORT	NO	YES
DSD SUPPORT	NO	YES
BLUETOOTH	VIA DONGLE	INTEGRATED
INPUT FREQUENCIES SUPPORTED	UP TO 192 KHZ	UP TO 768 KHZ
HEADPHONE OUTPUT POWER	120MW @ 32 OHM	300MW @ 32 OHM



Technical Specification

DIGITAL TO ANALOGUE CONVERTERS	Dual ESS ES9028Q2M DACs
DIGITAL FILTER	Selectable, Fast – Slow – Short delay
FREQUENCY RESPONSE	<0.0005% (A-Weighted)
THD+N @ 1KHZ 0DBFS	>115dB (A-Weighted)
CROSSTALK @ 10KHZ	< -110dB
OUTPUT IMPEDANCE	<50 Ohms (unbal), <100 Ohm (bal)
MAX. OUTPUT LEVEL (UNBALANCED)	2.1V rms (fixed or variable – user selectable)
MAX. OUTPUT LEVEL (BALANCED)	4.2V rms (fixed or variable – user selectable)
DIGITAL INPUT WORD WIDTHS SUPPORTED	16bit (Bluetooth) 16-24bit (Optical, Coaxial) 16-32bit (USB)
DIGITAL INPUT SAMPLING FREQUENCIES SUPPORTED	44.1kHz to 96kHz PCM, DoP64 (Optical) 44.1kHz to 192kHz PCM, DoP64 (Coaxial) 44.1kHz to 768kHz PCM Native DSD 64x to 512x, DoP 64x to 256x (USB)
MQA COMPATIBILITY	Full decoding (Core + Renderer)
BLUETOOTH	v5.0, A2DP profile, SBC and AptX codecs
MAX POWER CONSUMPTION	12W
COLOUR	Lunar Grey
DIMENSIONS (HXWXD)	52 x 215 x 191mm; (2.0 x 8.6 x 7.6")
WEIGHT	1.2kg/2.6lbs

Headphone Output

THD+N	< 0.001% at 1kHz odBFS @ 100mW into 32ohm
S/N	> 115dB (A-Weighted)
MAX OUTPUT POWER	>300mW @ 32ohm, >65mW @ 150ohm
FREQUENCY RESPONSE	10Hz - 50kHz (±1dB)
RECOMMEND HEADPHONE IMPEDANCE	32 Ohm to 600 Ohm