

# DacMagic 200M

Manual Generated: 12/08/2021 - 08:10

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## DacMagic 200M

Last updated: February 22, 2021 04:34. Revision #1032  
dacmagic 200m

This guide is designed to make installing and using this product as easy as possible. Information in this document has been carefully checked for accuracy at the time of printing; however, Cambridge Audio's policy is one of continuous improvement, therefore design and specifications are subject to change without prior notice.

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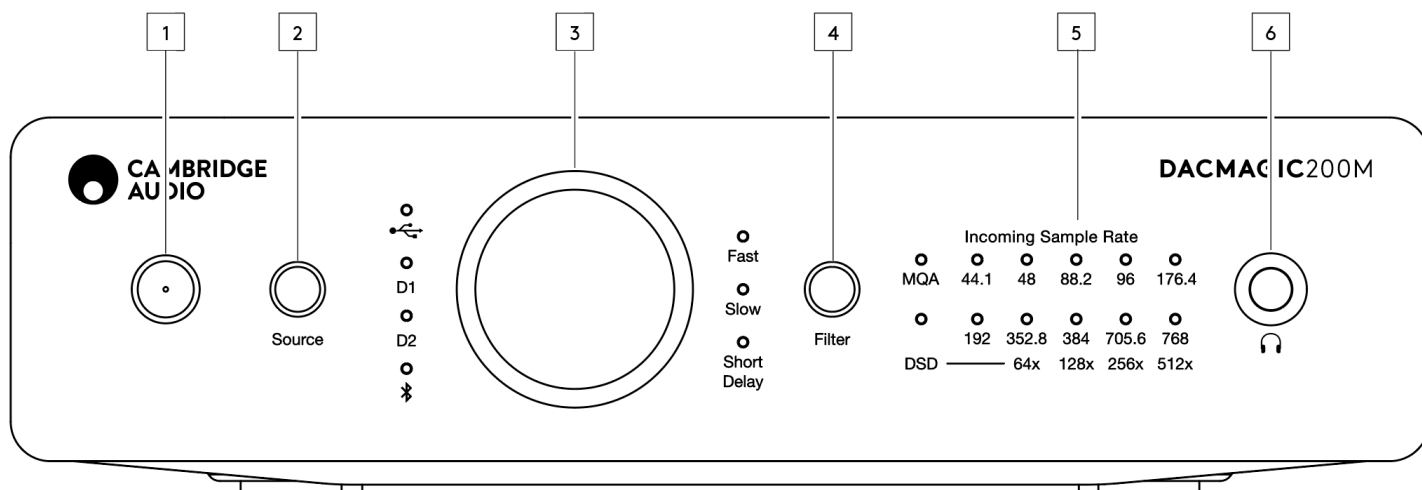
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## Front panel controls

Last updated: February 8, 2021 12:39. Revision #1033  
dacmagic 200m / front panel controls



### 1. Standby/On

### 2. Source

Press to select between USB, Digital Inputs 1 and 2, and Bluetooth. The corresponding LED will light up to show which source has been selected.

### 3. Digital volume control

### 4. Filter

Press to select between three different filter modes: Fast, Slow or Short Delay, see later section for details. The corresponding LED will light up to show which filter has been selected.

### 5. Incoming sample rate

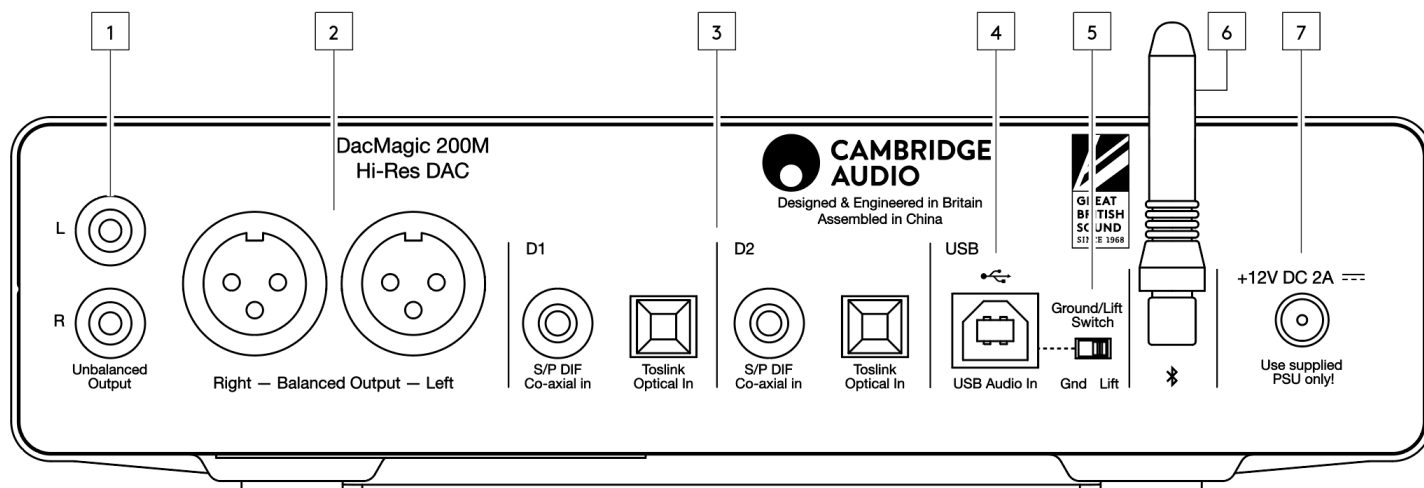
In the presence of an incoming digital stream, the relevant LED will light up to indicate the incoming digital sampling frequency. MQA has the following variants: Green means MQA, Blue means MQA studio. Magenta indicates that the unit is rendering an MQA stream or file. DSD will light up when native DSD or DoP streams are detected.

### 6. Headphone connection

## Rear panel connections

Last updated: January 26, 2021 10:52. Revision #1034

dacmagic 200m / rear panel connections



#### 1. Unbalanced audio outputs

#### 2. Balanced audio outputs

#### 3. Digital inputs 1 and 2

#### 4. USB Audio In

For connecting to PC/MAC computers.

**Note:** Class 2 USB Audio only. Windows-based PCs require a Cambridge Audio USB driver to be installed before connection.

#### 5. Ground/Lift Switch

**Ground** - This is the default position if no issues are experienced with USB connection. USB host and DacMagic 200M use a common ground for highest link reliability.

**Lift** - Lifting the USB host ground can be useful if electronic hum is heard through the speakers. The switch should otherwise be left in the Ground position.

#### 6. Bluetooth Antenna

Used for wireless streaming Bluetooth audio directly from most phones, tablets and laptops. See Bluetooth section for details.

## 7. DC 12V 2.0A power adaptor socket.

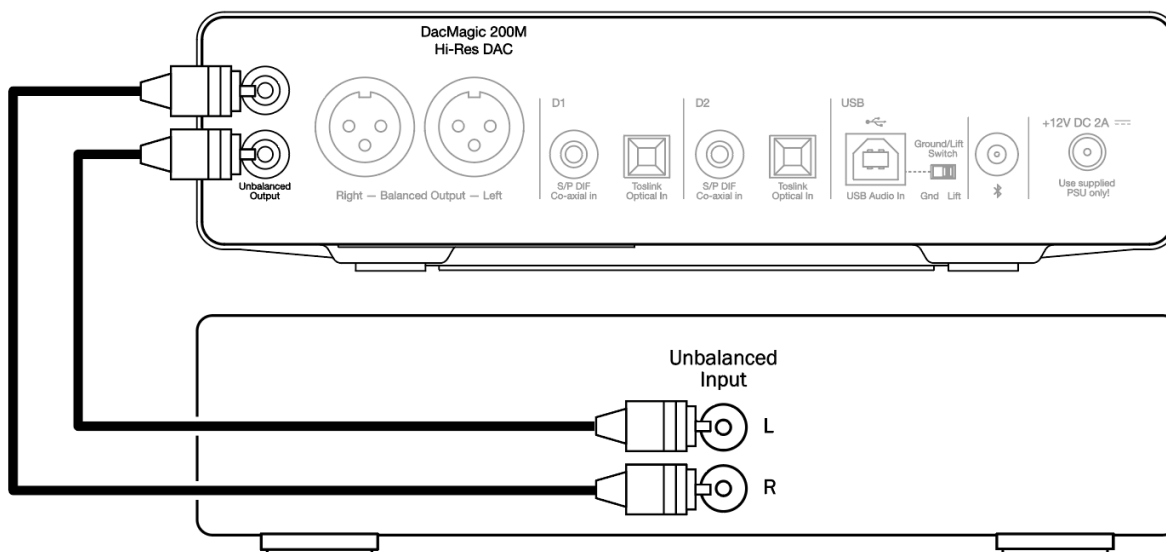
### Audio output connections

Last updated: January 26, 2021 10:54. Revision #1035  
dacmagic 200m / audio output connections

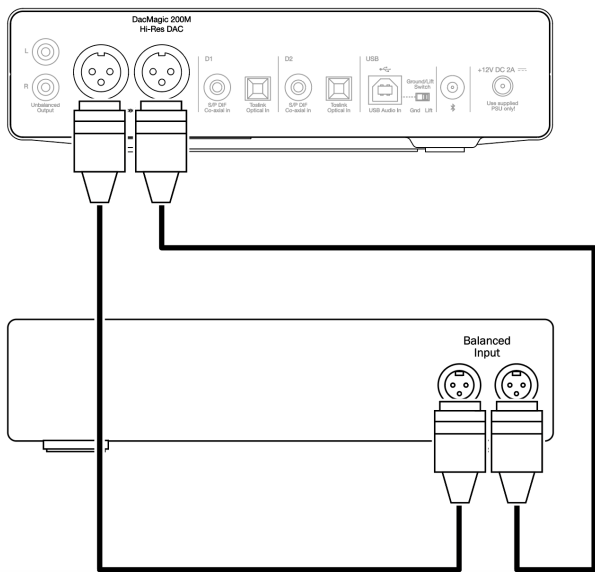
**Note:** Do not turn on the unit until all connections have been made.

You can use either the unbalanced (RCA/Phono) or balanced (XLR) outputs of the DacMagic.

#### Unbalanced connections



#### Balanced connections



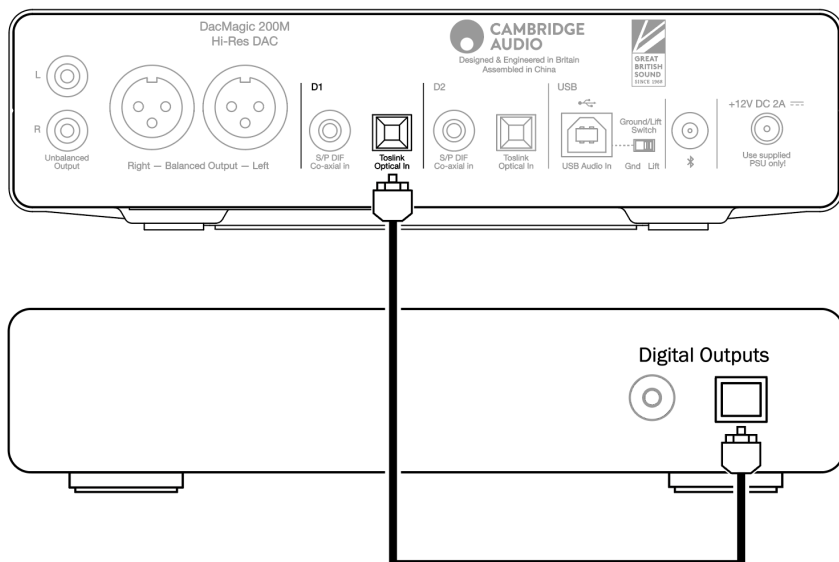
The XLR output is preferable for long connections if your amplifier features balanced XLR inputs. It can better reject noise and interference in the cable. It is possible to use the RCA phono connections and the XLR balanced connections at the same time, e.g. for connecting to different amplifiers or multi-room operations.

### Digital audio input connections

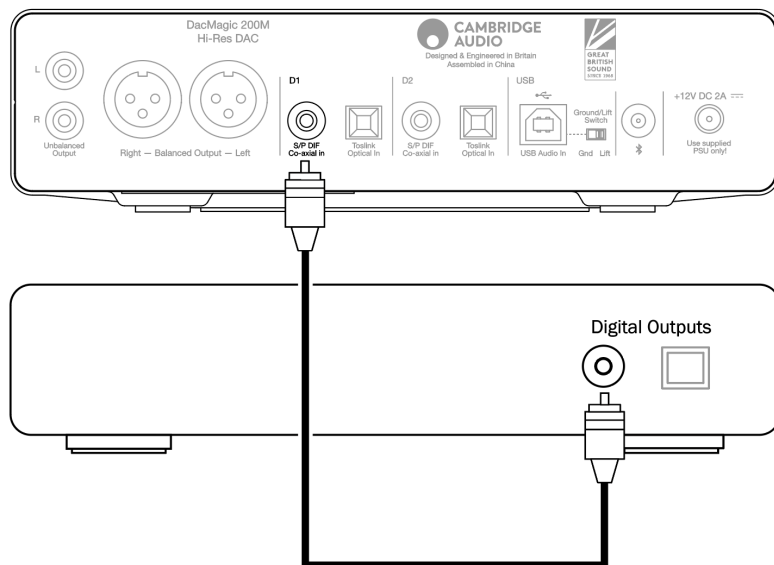
Last updated: January 22, 2021 12:48. Revision #1036  
 dacmagic 200m / digital audio input connections

**Note:** Do not turn on the unit until all connections have been made.

### TOSLINK connection



## Co-axial connection



Connect your digital source to Digital Input 1 or 2. Either S/P DIF co-axial or TOSLINK optical types can be used. Optical is best to avoid ground loop noise, but some optical cables may not work correctly at 192kHz.

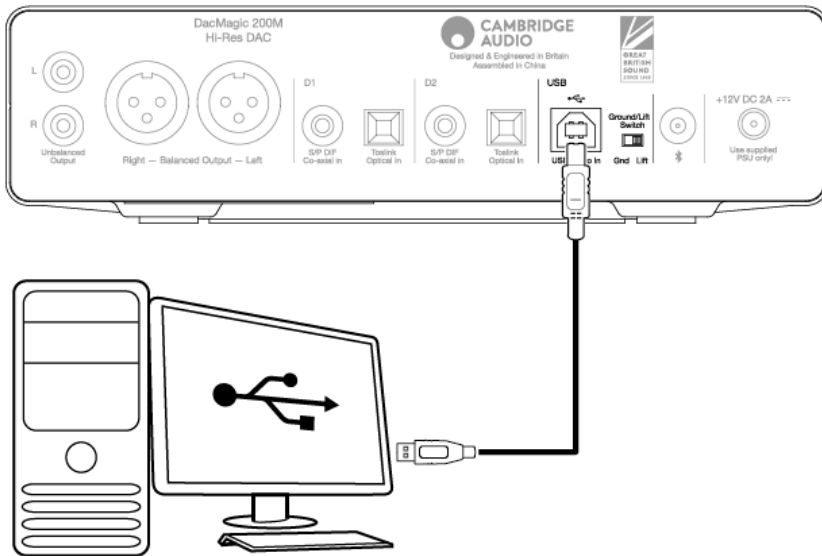
**Important Note:** Only connect one co-axial OR optical cable to each digital input. The unit will not operate if both connections are made (even if only one is active).

## USB connections

Last updated: March 2, 2021 10:28. Revision #1057  
dacmagic 200m / usb connections

**Note:** Do not turn on the unit until all connections have been made.

### USB Connection



Class 2 USB Audio only. Windows based PCs require a Cambridge Audio USB driver to be installed before connection.

**Note:** Use a certified high-speed USB 2.0 'A-B' cable.

## Master Quality Authenticated (MQA)

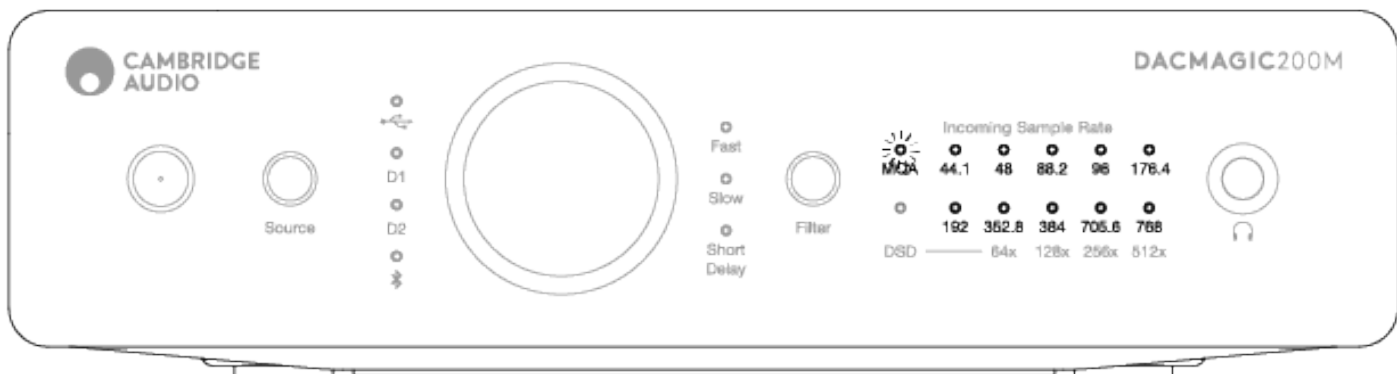
Last updated: February 23, 2021 10:44. Revision #1038  
dacmagic 200m / master quality authenticated mqa

MQA is an award-winning British technology that delivers the sound of the original master recording. The master MQA file is fully authenticated and is small enough to stream or download.

Visit [mqa.co.uk](http://mqa.co.uk) for more information.

DacMagic 200M includes MQA technology, which enables you to play back MQA audio files and streams, delivering the sound of the original master recording.

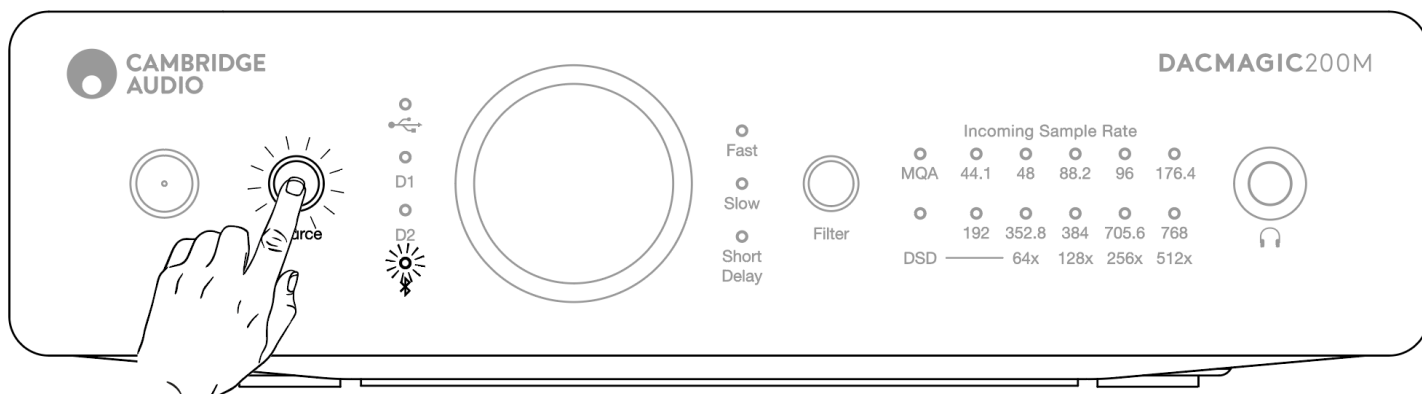
The MQA LED glows green or blue to indicate that the unit is decoding and playing an MQA stream or file, and denotes provenance to ensure that the sound is identical to that of the source material. It glows blue to indicate it is playing an MQA Studio file, which has either been approved in the studio by the artist/producer or has been verified by the copyright owner.



The MQA LED glows magenta to indicate that the unit is rendering an MQA stream or file. This delivers the final unfold of the MQA file.

## Bluetooth

Last updated: March 9, 2021 04:54. Revision #1225  
dacmagic 200m / bluetooth



Selecting this allows the DacMagic 200M to receive wireless Bluetooth audio from most phones, tablets and laptops.

### Pairing

To pair a new BT device with the DacMagic 200M you need to:

- Make sure any previously paired BT device is turned OFF (this product will auto-connect to the last paired device)
- Turn on Dac Magic 200M and select BT as a source
- Activate BT on the source device
- Scan for available devices on the source device and select 'DacMagic200M'

### Unpairing

To unpair a device, you can select 'Unpair' in the phone's device list, or perform a factory reset on the DacMagic 200M, as this will delete all previously paired devices.



**Note:** Your device can only be paired and connected to the DacMagic 200M while the Bluetooth source is selected.

#### Paired LED status

Once your device is paired, below are the LED status of the type of codec that is being received.

**SBC Codec** is represented with a solid light.

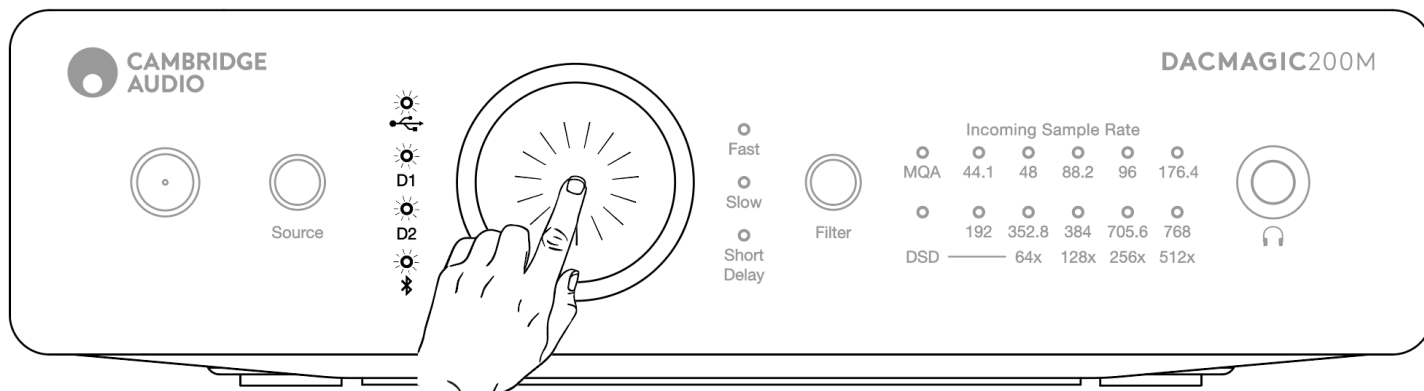
**aptX Codec** is represented with a 2 seconds solid light followed by a very short light off interval.

## Auto Power Down (APD)

Last updated: January 19, 2021 10:23. Revision #1040  
dacmagic 200m / auto power down apd

The product will automatically switch to standby mode after inactivity of 20 minutes. To enable or disable this function, see below instruction:

**Important note:** Make sure that the DacMagic 200M is in the Standby state, before performing any APD functions.



**APD OFF** - Press and hold down the Volume knob for 5 seconds, and wait for the Input LEDs to blink 2 times.

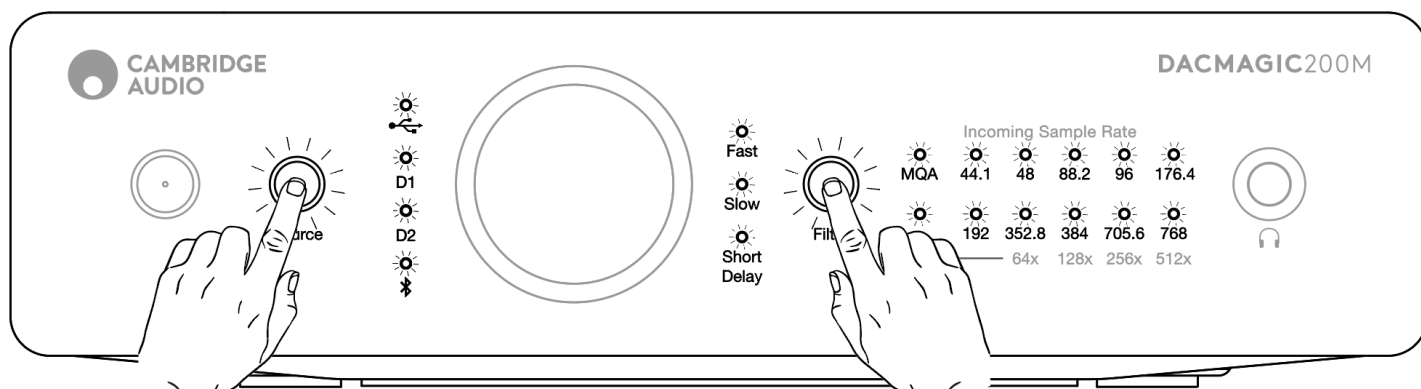
**APD ON** - Press and hold down the Volume knob for 10 seconds, and wait for the Input LEDs to blink 5 times.

## Advanced settings

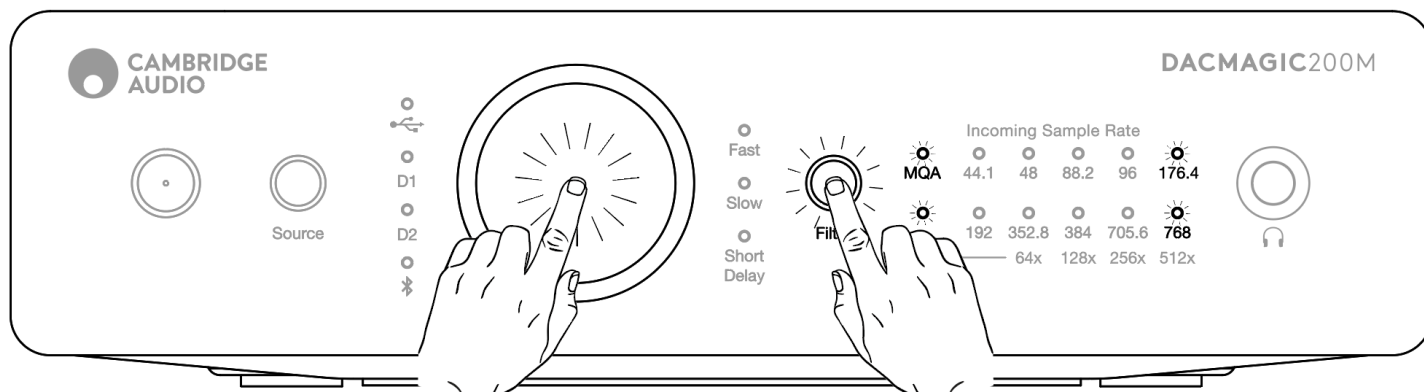
Last updated: February 8, 2021 01:05. Revision #1041  
dacmagic 200m / advanced settings

Important note: Make sure that the DacMagic 200M is in the Standby state, before changing any settings.

**Factory reset:** All user-stored settings (input, volume and output mode) will be erased and replaced by the unit's default settings.



Short press both Source and Filter buttons. All LEDs will light in sequence, one by one.



Fixed/variable out mode is toggled by short pressing the Volume knob and the Filter button at the same time:

RCA/XLR output set to fixed mode - MQA/DSD light up for 5s.

RCA/XLR output set to variable mode - 176.4/768 LED's light up for 5s.

**Note:** Headphone output is always variable.

**Check MCU SOFTWARE version:** Double press Source button first and then double press the Filter button.

For example, if the MCU version is V2.1, then the front panel LED should be showing:

MQA LED - Blink 2 times

44.1k LED - Blink 1 time

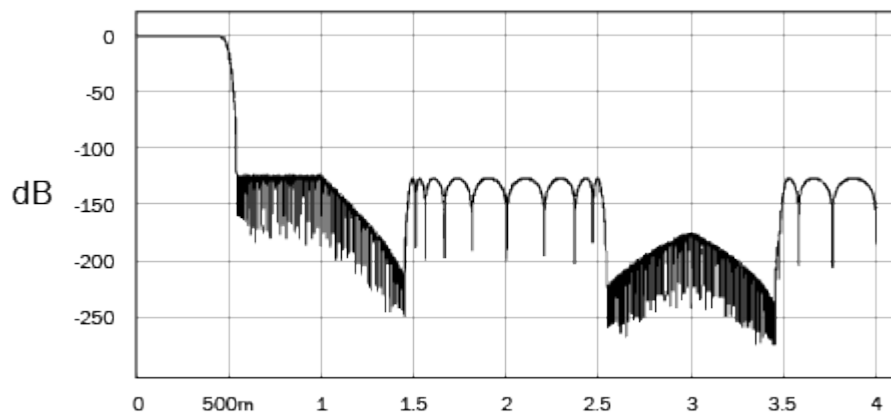
## Filters

Last updated: July 20, 2021 02:52. Revision #1794  
dacmagic 200m / filters

The DacMagic 200M has three different digital filter functions: Fast, Slow and Short Delay. All three filters are highly sophisticated audiophile topologies, optimised specifically for audio playback. In our opinion, these filters offer excellent sound quality but differ subtly in optimisation, hence we've made all three available to you.

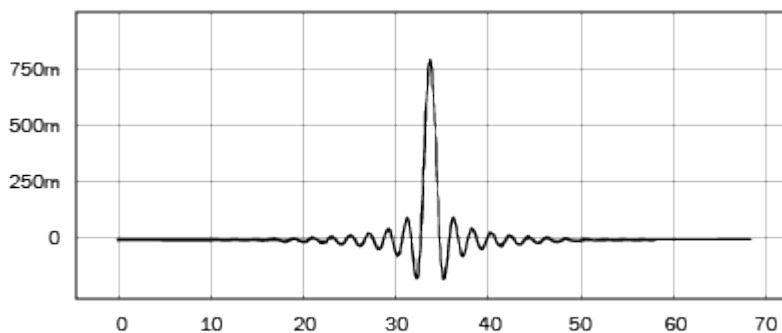
Note: For clarity, all diagrams show the theoretical response of the digital filter itself, excluding any analogue filtering at the DAC output or the anti-aliasing filter applied during recording and/or mastering of the digital source.

### Fast Filter

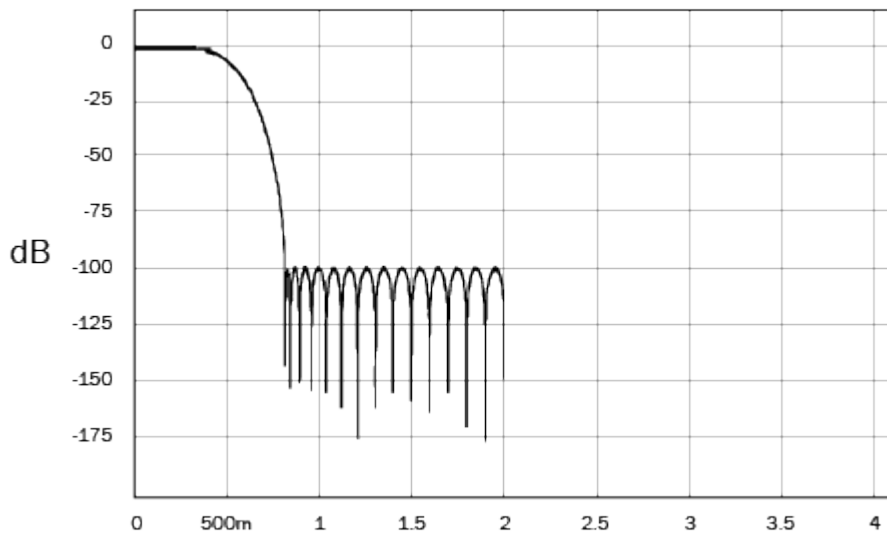


The Fast (Linear Phase) filter is a highly regarded audio filter offering low ripple in both the pass and stop bands, and what is known as constant group delay. Constant group delay means that audio signals of all frequencies are always delayed by the same amount when passing through the filter. All audio is therefore fully time-coherent at the output.

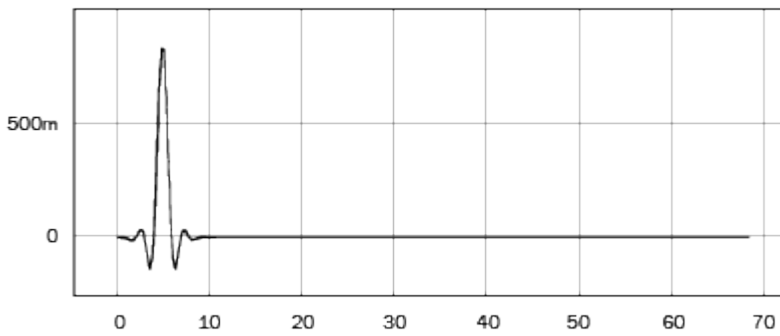
The trade-off with this type of filter is that its impulse response will exhibit some pre-ringing. In other words, when excited with a theoretical impulse, the output has both a small amount of pre- and post-spike amplitude ringing (albeit well damped).



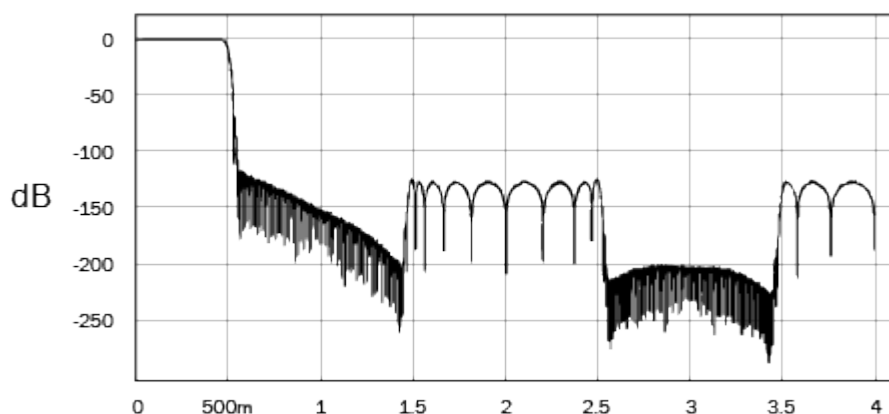
### Slow Filter



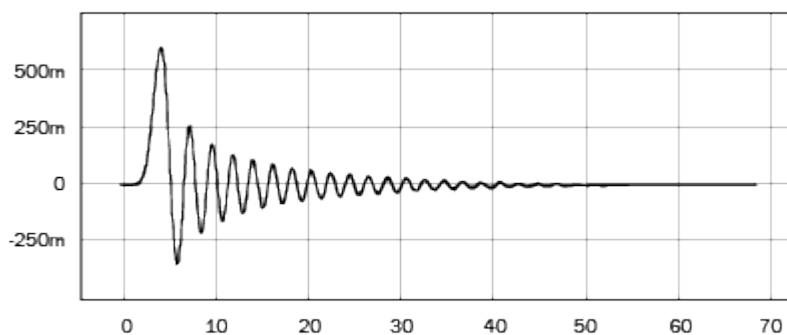
Our Slow filter has a linear phase and is a compromise between some very high frequency roll off and the minimized level of pre/post impulse ringing. Stop band attenuation is less than other filter types, but there's no phase shift and the impulse response is the cleanest.



### Short Delay Filter



The Short Delay (minimum phase) filter is another highly regarded audio filter that offers even lower ripple in the pass and stop bands. Unlike the Linear Phase filter, group delay is not constant; however, phase shift is low and the particular benefit with this filter is that the impulse response exhibits no pre-ringing.



We encourage you to experiment with the filters to determine which sound best to your ears and using your source equipment/programme material. The DacMagic 200M remembers and recalls the selected filter type at power up.

**Note:** when reproducing MQA contents, the filters selection is disabled.

## Technical specifications

Last updated: January 20, 2021 02:13. Revision #1042  
dacmagic 200m / technical specifications

### DIGITAL TO ANALOGUE CONVERTERS

Dual ESS ES9028Q2M DACs

### DIGITAL FILTER

Selectable, Fast - Slow - Short delay

### FREQUENCY RESPONSE

10Hz to 50KHz ( $\pm 1$ dB)

THD+N @ 1KHZ 0DBFS

<0.0005% (A-Weighted)

**SIGNAL TO NOISE RATIO**

>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**

v4.2, A2DP profile, SBC and AptX codecs

**HEADPHONE OUTPUT**

THD+N

< 0.001% at 1kHz 0dBFS @ 100mW into 32 Ohm

S/N

> 115dB (A-Weighted)

**MAX OUTPUT POWER**

>300mW @ 32 Ohm, >65mW @ 150 Ohm

**FREQUENCY RESPONSE**

10Hz - 50KHz ( $\pm 1$ dB)

**RECOMMEND HEADPHONE IMPEDANCE**

10 Ohm to 600 Ohm

**MAX POWER CONSUMPTION**

12W

**COLOUR**

Lunar Gray

**DIMENSIONS (HXWXD)**

52 x 215 x 191mm; (2.0 x 8.6 x 7.6")

**WEIGHT**

1.2Kg/2.6lbs

## Troubleshooting

Last updated: January 18, 2021 02:50. Revision #1043  
dacmagic 200m / troubleshooting

### **There is no power**

Ensure the supplied AC adaptor is connected securely to the PSU socket on the rear panel.

Ensure that the correct mains transformer is being used and that it complies with the local electrical supply.

Ensure the mains plug is fully inserted into the wall socket and is switched on.

### **There is no sound**

Ensure that the amplifier is set correctly. Check that the interconnects are inserted correctly. Check that the correct digital input is selected (Incoming Sample Rate LED should be on).

### **A low hum or buzzing sound can be heard**

Power cords or lighting placed near this product. Analogue inputs are not securely connected.

For USB try selecting the 'Lift' position by moving the Ground/Lift switch.