

# DacMagic 100

Manual Generated: 23/04/2024 - 18:54



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# DacMagic 100

Last updated: April 23, 2024 06:14. Revision #12545



Users Manual

## Introduction

Last updated: May 9, 2022 11:13. Revision #4481

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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## What's included with the DacMagic 100?

Last updated: June 7, 2022 08:18. Revision #4560

**Inside the box of your DacMagic 100 you will receive:**



1. DacMagic 100 Digital to Analogue Converter
2. 12V Power Supply
3. USB Type 'B' Cable
4. Quick Start Guide
5. Safety Instructions

## Front panel controls

Last updated: June 6, 2022 10:46. Revision #4546



- 1. Standby/On** - Switches the unit between on, and low power standby where the DacMagic 100 is off, and the PSU draws < 0.5W.
  - 2. Source** - Select incoming audio source. Toggle between USB, S/P DIF 1, S/P DIF 2, and TOSLINK as indicated by the corresponding LED.
  - 3. Incoming Sample Rate** - The sample rate of incoming digital audio between 44.1kHz, and 192kHz will be shown via the corresponding LED.
- Note:** For 32kHz audio the DacMagic 100 will operate, however no LED will be lit.

## Rear panel connections

Last updated: June 6, 2022 10:46. Revision #5893



### 1. Audio Output - Single-ended conventional stereo RCA outputs for connection to the line-level input of an amplifier.

**2. Digital Inputs** - The DacMagic 100 offers three digital inputs:

**S/P DIF 1 & 2 co-axial:** To obtain best results we recommend the use of a high quality 75 ohm digital RCA interconnect cable (not one designed for normal audio use).

**TOSLINK optical:** Connect equipment via a high quality TOSLINK fibre-optic interconnect cable, specifically for audio use.

**Note:** This unit only accepts two-channel LPCM/Stereo PCM digital audio, and can not be used with Dolby Digital 5.1, or DTS signal. If connecting a DVD/BD player, a smart TV or similar device please ensure that the output is set to two-channel PCM.

**3. Ground/Lift Switch** - When connected to a PC via USB, and with the switch set to 'ground', the DacMagic 100 will ground itself via the USB connection. Setting the switch to 'lift' will ground the device via an internal network to reduce any potential hum due to ground loops.

**4. USB Audio In** - The use of this type-B USB socket allows the connection of a computer running either Microsoft Windows, Mac OS, and some Linux operating systems for audio playback.

**Note:** Always use a certified cable for USB Audio, preferably one that displays an official mark. For USB Audio 2.0 the cable should be 'Hi-Speed USB' certified. USB connections longer than 3m may result in inconsistent audio performance.

**5. DC 12V 2A Power Adaptor Socket** - Once all audio connections have been made, connect the supplied power adaptor to the DacMagic 100 here.

This product utilizes APD (Auto Power Down), and by default will automatically switch to standby after 60 minutes of inactivity.

**Note:** Use the supplied power supply unit ONLY.

## Getting connected

Last updated: June 6, 2022 10:47. Revision #5894

### Initial setup

1. Connect your chosen digital audio source(s) to the input(s) on the DacMagic 100 via:

**TOSLINK optical** - which offers high quality transfer over shorter distances.

OR

**S/P DIF coaxial** - which can be used for longer connections.

OR

**USB audio** to connect to a PC, or Mac.

2. Connect the audio outputs of the DacMagic 100 using RCA cables to the line-input of your amplifier.
3. Using the appropriate plug for your region, connect the supplied power adaptor to the DacMagic 100.
4. Power on the unit and select the input source that you wish to listen to using the source button located on the front panel.

#### **If there is no power to the unit, please follow the steps below**

1. Check that the supplied 12V PSU is securely connected to the power adaptor socket on the rear of the DacMagic 100.
2. Confirm that the PSU is securely connected to the mains socket, and that the socket is switched on.

#### **If a hum or buzzing sound can be heard after setup, please see the following steps**

1. Check that all connections between Source(s) > DacMagic 100 > Amplifier are secure.
2. Move unit away from any nearby lighting, or mains cables that could cause interference.
3. If connected via USB, switch 'Ground Lift' switch to 'lift'.

## Audio output connections

Output connection to AXA35





## Digital audio input connections

Connection to CXC via S/P DIF coaxial



Connection to CXC via TOSLINK optical



Connection to TV via TOSLINK optical



## USB audio connection



**Note:** The DacMagic 100 is not designed to work with mobile devices such as phones, and tablets. Whilst there may be instances where connection is possible, this is not a function that is fully supported.

## Further USB audio information

Last updated: October 13, 2023 04:06. Revision #10932

### USB class 1.0 and USB class 2.0 functionality

The DacMagic 100 supports two USB Audio protocols:

- USB Audio Class 1.0 which works over USB 1.1 ports and above and supports up to 24-bit/96kHz.
- USB Audio Class 2.0 which requires a USB 2.0 or 3.0 ports and supports up to 24-bit/192kHz.

To change USB class:



1. With the DacMagic 100 in standby, press & hold the Source button on the front panel of the unit.
2. Press the Standby/On button to power up the unit.
3. At this point one of the two S/P DIF source LEDs will light up; S/PDIF 1 represents USB 1.0, and S/PDIF 2 represents USB 2.0.

### Use with Windows PCs

Your DacMagic 100 will arrive ready to plug-and-play in USB Audio Class 1.0 mode.

For use in USB Audio Class 2.0 mode, the Cambridge Audio USB Audio 2.0 Driver will need to be installed. Information regarding this can be found here:

<https://www.cambridgeaudio.com/gbr/en/driver-updates>

From this page, download the relevant .zip folder containing the correct driver version for your operating system. And then unzip the folder.

This folder will contain an installer for the driver, and a .pdf containing installation steps, and information regarding the use of the driver.

### Use with Macs

USB Audio Class 1.0, and 2.0 are compatible with MAC OS-X 10.5 (Leopard) and above without the need for extra drivers.

## Use with Linux

Due to the many configuration options and range of target hardware, we cannot say that Linux is officially supported by the DacMagic 100.

However, most recent Linux distros are supporting USB Audio Class 2.0 natively, so the DacMagic 100 should work without any specific action required.

## Auto Power Down (APD)

Last updated: June 6, 2022 10:48. Revision #4551

Your DacMagic 100 comes with APD (Auto Power Down) enabled as default, and after 60 minutes of inactivity the unit will automatically switch to standby.

### To disable Auto Power Down (APD)



1. Turn the DacMagic 100 on using the Standby/On button.
2. Once switched on, press, and hold the Source button for approximately 5 seconds.
3. At this point the 'Incoming Sample Rate' LEDs will begin to flash. This indicates that the APD function has been disabled.

To re-enable the APD function, please repeat the same process.

## Frequently asked questions

Last updated: October 13, 2023 04:19. Revision #10933

### Why doesn't my DacMagic 100 recognise the digital signal from my DVD player, or Sky Box, etc?

Our DACs will recognize and up-sample a two-channel PCM digital input signal.

You will need to make sure that the digital output from the DVD player (or another source component) is set to output two-channel PCM, rather than other signals such as bitstream, Dolby Digital, DTS or multi-channel, etc.

### How do I install the latest USB audio driver for the DacMagic 100?

To install the latest USB Audio driver for your DacMagic 100, please follow the following steps:

1. Download the correct driver for your Windows operating system from <https://www.cambridgeaudio.com/gbr/en/driver-updates>
2. Unzip the downloaded folder, and double click on the application file to run the installer.
3. Run the installer and follow the on-screen instructions.
4. Allow the installation to progress, click next, and then finish to complete the installation.
5. Confirm the installation by opening the CA Control Panel and checking the driver version.

### Can the DacMagic 100 decode/playback MQA content?

Master Quality Authenticated is an audio codec using a sophisticated compression algorithm, and a form of file authentication intended for high-quality audio streaming and file download. This allows the listener to receive digital audio at the original studio quality.

The DacMagic 100 does not support MQA as it lacks the required MQA decoder. However, Cambridge Audio does offer a range of MQA certified devices such as the DacMagic 200M, EVO 75, and EVO 150.

### How do I select the correct speaker properties on my PC/Mac to ensure I am receiving Hi-Res audio?

To ensure that the DacMagic 100 is receiving Hi-Res audio, you may need to adjust some of the sound settings on your PC or Mac.

## To adjust the settings on PC

1. With the DacMagic 100 connected, use your PC's search function to locate 'Sound Settings'. This will open a user interface such as below:



2. Select 'CA USB Audio' as your output device.
3. Open the Sound Control Panel.



4. Highlight the device named 'CA USB Audio', then click 'Properties'.
5. In the advanced tab you will be given the option to change the Windows output sample rate. If you are using your DacMagic 100 in USB Audio Class 1.0 mode, set this to '24-bit, 96000Hz'.
6. If you have the Cambridge Audio USB 2.0 Driver downloaded, and are using the DacMagic in USB Audio Class 2.0 mode, set the output sample rate to '24-bit, 192000Hz'.
7. Apply these settings, and click OK



## To adjust settings on Mac

1. With the DacMagic 100 connected to your Mac, open the 'System Preferences', and navigate to 'Sound'.
2. In the 'Sound' interface, select the DacMagic 100 as the selected sound output device.



3. Next, open 'Finder' and navigate to 'Applications'. Then open the folder named 'Utilities'.



4. Within the utilities folder, open 'Audio MIDI setup'. In here select the DacMagic 100, and you will be given the option to modify the output sample rate.
5. If your DacMagic is operating in USB Audio Class 1.0 mode, set the output sample rate to 96,000Hz.
6. If your DacMagic 100 is operating in USB Audio Class 2.0 mode, set the output sample rate to 192,000Hz.





## Technical specifications

Last updated: June 15, 2022 08:12. Revision #4640

### D/A converters

Wolfson WM8742 24-bit DAC

### Frequency response

20Hz to 20kHz ( $\pm 0.1$ dB)

### THD @ 1kHz 0dBFS

<0.0025% 24-bit

### THD @ 1kHz -10dBFS

<0.0025% 24-bit

### THD @ 20kHz 0dBFS

<0.0025%

### S/N ratio

-113dB

### Total correlated jitter

<130pS

### Crosstalk @ 1kHz

< -130dB

### Crosstalk @ 20kHz

< -112dB

### Output impedance

<50ohms

### Max output level (unbalanced)

2.3V rms

### Digital input word widths supported

16/24-bit

### Digital input sampling frequencies supported

32kHz, 44.1kHz, 48kHz, 88.2kHz, 96kHz, 192kHz

### USB 1.0

24-bit 44.1kHz, 48kHz, 96kHz

### USB 2.0

16/24-bit 44.1kHz, 48kHz, 88.2kHz, 96kHz, 192kHz

### Max power consumption

5W

### Dimensions (H x W x D)

46 x 106 x 130mm

### Weight

0.5kg/1.1lbs