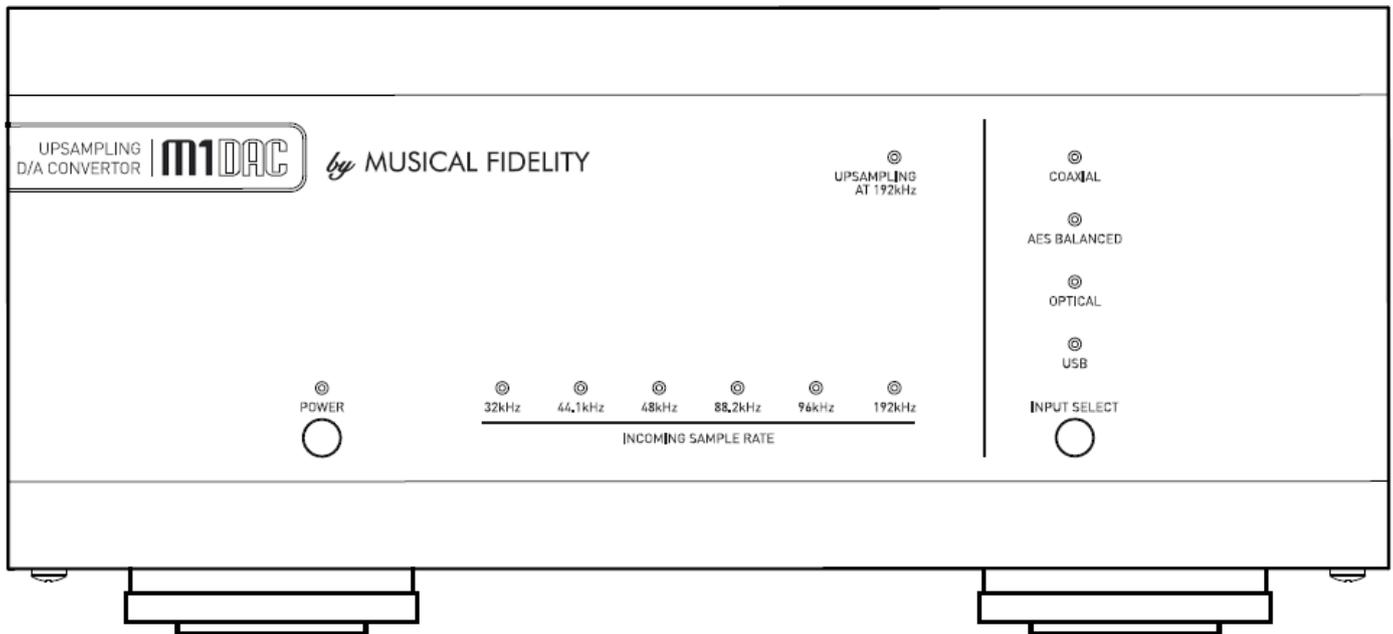


UPSAMPLING D/A CONVERTOR | M1DAC



Instructions for use

Thank you for purchasing the Musical Fidelity M1 DAC.

The M1 DAC consists of a top quality over sampling 24 bit digital-to-analogue converter circuit which upsamples all incoming data rates to 192kHz. This moves the digital artefacts to well outside the audio band, allowing easy removal without detriment to the top end of the audio band. Our well tuned filtering circuit gives immeasurably small jitter, noise and distortion artefacts allowing astounding imaging, detail and transparency, to deliver all music types exactly as the artist originally intended.

The M1 DAC has been carefully designed to be partnered with M1 series, and also matches well with M3 and M6 series products. These combinations will yield one of the best high-fidelity systems available at any price.

Used carefully, it should give many years of outstanding musical reproduction.

Dust regularly with a soft duster or soft brush, but be careful when using cleaning or polishing agents - they may harm the surface finish.

If there are any questions about the audio system, please consult the dealer who is there to help and advise.

Section	Page
Safety Information – Mains plug (UK only), modification warning	3
General advice – Installation precautions	4
Disposal information – EU disposal information	5
Installation – Introduction, cleaning, installation, power connections, audio connections, digital connections	6
Facilities and connections – Illustrations - main unit front & rear panels	7
Operation – SPDIF COAX input – AES balanced input – OPTICAL input – USB input	8
Problems? – Basic fault finding	9
Specifications	10
Manual history	11

IMPORTANT! (U.K. only)

This unit is supplied in the U.K. with mains lead fitted with a moulded 13 amp plug. If, for any reason, it is necessary to remove the plug, please remove the fuse holder and dispose of the plug safely, out of reach of children.

It must not be plugged into a mains outlet.

The wires in the mains lead supplied with this appliance are coloured in accordance with the following code:

Green and yellowEarth
Blue..... Neutral
BrownLive

WARNING – This appliance MUST be earthed

As the colours of the wires of the mains lead of this appliance may not correspond with the coloured markings identifying the terminals in the plug, proceed as follows:

- The wire which is coloured green-and-yellow must be connected to the terminal in the plug which is marked with the letter E or coloured green or green-and-yellow, or by the earth symbol: 
- The wire which is coloured brown must be connected to the terminal which is marked with the letter L or coloured red.
- The wire which is coloured blue must be connected to the terminal which is marked with the letter N or coloured black.
- If connecting to a BS1363 plug, a 13 amp fuse must be used.

WARNING:

ANY MODIFICATIONS TO THIS PRODUCT NOT EXPRESSLY APPROVED BY MUSICAL FIDELITY WHO IS THE PARTY RESPONSIBLE FOR STANDARDS COMPLIANCE COULD VOID THE USER'S AUTHORITY TO OPERATE THIS EQUIPMENT.

Installation, Precautions & User Information

This new M1 DAC is designed and built to provide trouble-free performance, but as with all electronic devices it is necessary to observe a few precautions:

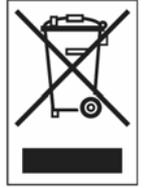
- Heed all warnings shown on the back of the product.
- Only connect the M1 DAC to a mains outlet having the same voltage as marked at the back of the unit.
- Always ensure that when disconnecting and reconnecting your audio equipment the mains supply is switched off.
- Position the mains lead and signal interconnects where they are not likely to be walked on or trapped by items placed on them.
- Do not use near water, or place water-filled containers on the M1 DAC, for example, a flower vase or potted plants. **If water does spill inside, immediately pull out the mains plug from the wall socket and inform the dealer, who should then check the unit before further use. Entry of liquid into the M1 DAC is dangerous, and may cause electric shock or fire hazard.**
- Do not place the unit near direct heat sources such as radiators, direct sunlight or other equipment.
- Do not remove any covers or try to gain access to the inside. There are no user adjustments or fuses to change without qualification. Refer all service work to an authorised Musical Fidelity agent.
*** Note: Unauthorised opening of the equipment will invalidate any warranty claim.**
- Dust regularly with a soft cloth or soft brush but be careful when using cleaning or polishing agents - they may harm the surface finish.

The electronics in modern hi-fi equipment is complex and may, therefore, be adversely affected or damaged by lightning. For protection of the audio system during electrical storms, remove the mains plugs.

If after-sales service is required, to help the dealer identify the M1 DAC please quote the serial number located on the rear panel of the unit.

**DISPOSAL**

The crossed out wheeled bin label that appears on the back panel of the product indicates that the product must not be disposed of as normal household waste. To prevent possible harm to the environment please separate the product from other waste to ensure that it can be recycled in an environmentally safe manner. Please contact local government office or retailer for available collection facilities.

**DISPOSITION**

La poubelle sur roulettes barrées X, qui apparaît en logo sur le panneau arrière du produit, indique que celui-ci ne doit pas être traité comme un déchet domestique commun. Afin de protéger l'environnement, ce produit électronique devra être géré séparément et donc recyclé selon les nouvelles normes Européennes Rohs concernant les déchets d'appareils électroniques. Prière de contacter les services concernés gouvernementaux ou votre point de vente pour l'élimination et l'enlèvement de déchets électroniques équipés de composants électroniques.

**DISPOSAL**

La etiqueta cruzada hacia fuera del compartimiento que aparece en el panel trasero del producto indica que el producto no se debe reciclarse como basura normal de la casa. Para prevenir daños posible al ambiente separe por favor el producto de otras basura para asegurarse de que puede ser reciclada de una manera ambientalmente segura. Entre en contacto por favor a su oficina gubernamental local o a su minorista para las instalaciones disponibles de la colección.

**RIFIUTI**

L'etichetta del cassonetto barrato riportato sul retro dell'apparecchio indica che il prodotto non deve essere smaltito tramite la procedura normale di smaltimento dei rifiuti domestici. Per evitare eventuali danni all'ambiente, separare questo prodotto da altri rifiuti domestici in modo che possa venire riciclato in base alle procedure di rispetto ambientale. Per maggiori dettagli sulle aree di raccolta disponibili, contattate l'ufficio govenativo locale od il rivenditore del prodotto.

**FACHGERECHTE ENTSORGUNG:**

Das auf der Geräteückseite angebrachte Label deutet darauf hin, dass das Produkt nicht mit konventionellem Hauskehricht entsorgt werden darf. Um Schäden und Verschmutzungen an Umwelt und Mensch zu vermeiden, muss das Produkt fachgerecht entsorgt und von anderem Abfall getrennt werden. Wenden Sie sich bei Fragen hierzu an Ihren Fachhändler oder an eine öffentliche Informationsstelle.

**AFVAL**

Het label op de achterzijde van dit apparaat, een afvalbak op wielen met een kruis doorgehaald, geeft aan dat dit apparaat niet samen met gewoon huishoudafval mag worden weggegooid. Om mogelijke schade aan onze leefomgeving te voorkomen dient dit apparaat, gescheiden van gewoon huishoudelijk afval, te worden afgevoerd zodat het op een milieuvriendelijke manier kan worden gerecycled. Neem voor beschikbare inzamelplaatsen contact op met uw gemeentelijke reinigingsdienst of met uw elektronica leverancier.

**HÄVITTÄMINEN**

Yliuksattua jäteastiaa kuvaava tarra tuotteen takalevyssä kertoo, että tuotetta ei saa käsitellä normaalina talousjätteenä. Ympäristön suojelemiseksi on tuote pidettävä erillään muusta jätteestä ja se on kierrätettävä ekologisesti kestäväällä tavalla. Ota yhteyttä laitteen myyjään tai Pirkanmaan Ympäristökeskukseen lähimmän kierrätyskeskuksen löytämiseksi.

**AFSKAFNING**

Logoet med en skraldespand med kryds over på bagsiden af apparatet indikerer at dette produkt ikke må kasseres som normal husholdningsaffald. For at forebygge mulig skade på miljøet, bedes De separere dette produkt fra andet affald, og sikre at det bliver genbrugt på en miljørigtig måde. Kontakt venligst de lokale myndigheder eller din forhandler for oplysning om nærmeste tilgængelige opsamlingssted for elektronikaffald.

**ΔΙΑΔΙΚΑΣΙΑ ΑΠΟΡΡΙΨΗΣ**

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ΠΑΡΑΚΑΛΟΥΜΕ ΝΑ ΕΠΙΚΟΙΝΩΝΗΣΕΤΕ ΜΕ ΤΗΝ ΤΟΠΙΚΗ ΥΠΗΡΕΣΙΑ ΑΝΑΚΥΚΛΩΣΗΣ Η ΜΕ ΤΟ ΚΑΤΑΣΤΗΜΑ ΑΓΟΡΑΣ ΓΙΑ ΠΕΡΙΣΣΟΤΕΡΕΣ ΛΕΠΤΟΜΕΡΕΙΕΣ.

Introduction

Congratulations on the purchase of the new M1 DAC. This unit will give top quality performance when used as a top quality digital to analogue converter, delivering the best performance possible from any digital source. It is designed to upgrade CD players, DAB tuners, Minidisk, and any other source providing digital stereo PCM outputs.

Cleaning

Before cleaning the unit, switch off power at the mains switch and remove the mains plug from the wall socket. Clean the cabinet and remote control unit using a moist cloth. Using solvents, white spirit or thinners is not advised, as they could damage the surface finish.

Installation

Position the M1 DAC on a stable, horizontal surface where there is no risk of it being knocked, or subjected to vibration such as from loudspeakers.

Important note:

In normal operation, the unit dissipates a small quantity of power at all times, and it is important that it is adequately ventilated. The M1 DAC must be protected from humidity – if the unit is moved from a cold place to a warm room, leave the unit for an hour or so to allow sufficient time for the moisture to evaporate.

Please note: Musical Fidelity currently do not make any interconnecting cables, nor do we endorse any particular manufacturer's cables. If necessary, please refer the dealer who can advise on quality cables for any particular setup.

Power Connections

The M1 DAC is supplied with a standard IEC mains cable which plugs into the IEC socket at the back of the unit

Audio output connections

RCA audio outputs: Use good quality RCA phono audio cables (fully connected signal and ground), for optimum signal transfer.

XLR audio outputs: Use good quality XLR audio cables (fully connected hot and cold signals and ground), for absolute optimum signal transfer.

Digital input connections

COAXIAL input: Connect RCA digital source to digital input RCA socket. Use a good quality fully connected (signal and ground) coaxial digital cable, for optimum signal transfer.

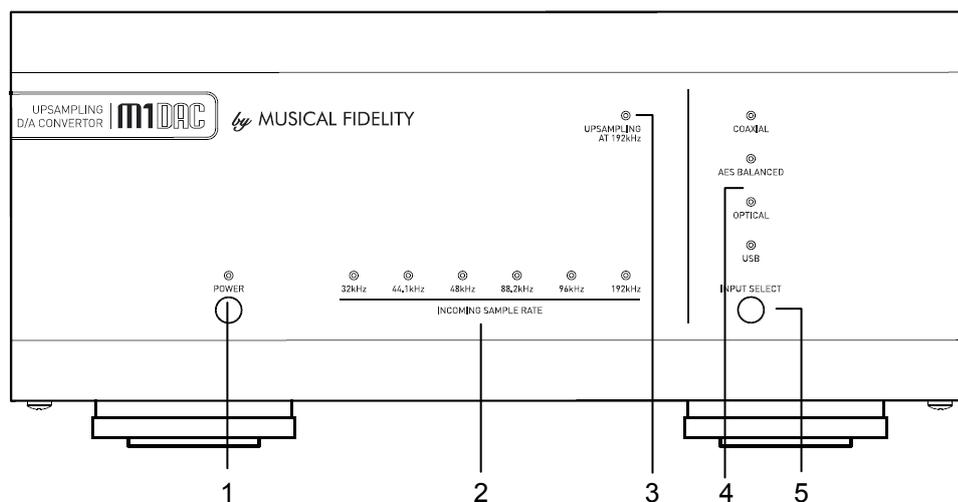
AES BALANCED input: Connect AES/EBU digital source to balanced digital input XLR socket. Use a good quality balanced DIGITAL cable, for optimum signal transfer.

OPTICAL input: Connect optical digital source to optical input socket. Use a good quality "Toslink" cable, for optimum signal transfer.

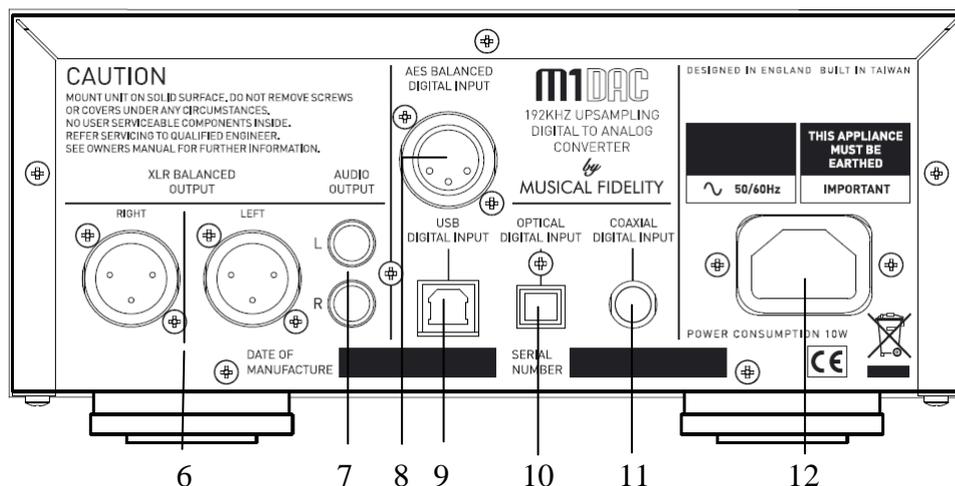
USB input: Connect computer or similar USB "host" source to USB input socket. Use a good quality USB 1.1 or 2.0 "A to B" type cable, for optimum signal transfer.

If connecting to Home Theatre Processor, TV or DVD, or similar Home Theatre sources, it may be necessary to change the digital output of *that* source to "16 bit stereo PCM", or similar, which is the format the M1 DAC will understand. Please refer to the source's manual for information on how to do this.

This is because the M1 DAC does not recognise the information in multichannel (e.g. 5.1 surround sound) digital audio streams.



- | | |
|--|--------------------------------|
| 1 POWER Mains ON/OFF button and LED | 4 INPUT LEDs |
| 2 INCOMING SAMPLE RATE blue LEDs | 5 INPUT selector button |
| 3 UPSAMPLING green signal LED | |



- | | |
|--|---------------------------------|
| 6 XLR BALANCED OUTPUTS right and left | 10 OPTICAL digital input |
| 7 RCA OUTPUTS right and left | 11 COAXIAL digital input |
| 8 AES BALANCED digital input | 12 IEC MAINS INPUT |
| 9 USB digital input | |

XLR Balanced input and output lead connections:



(for reference only, no XLR signal leads supplied)

Pin functions:
Functions:

- 1 Ground (cable shield)
- 2 Normal polarity ("hot" or "+")
- 3 Inverted polarity ("cold" or "-")

COAXIAL input

To use the COAXIAL input, press the input select button on the front panel until the COAXIAL input LED is lit. The “UPSAMPLING at 192kHz” green LED will light if a valid digital signal is present. The incoming sample rate is also indicated by a blue LED in the row below.

N.B. This shows the actual sample rate of the digital data going into the M1 DAC; which is not necessarily the same as the original source material sample rate.

AES BALANCED input

To use the AES BALANCED input, press the input select button on the front panel until the AES BALANCED input LED is lit. The “UPSAMPLING at 192kHz” green LED will light if a valid digital signal is present. The incoming sample rate is also indicated by a blue LED in the row below.

N.B. This shows the actual sample rate of the digital data going into the M1 DAC; which is not necessarily the same as the original source material sample rate.

OPTICAL input

To use the OPTICAL input, press the input select button on the front panel until the OPTICAL input LED is lit. The “UPSAMPLING at 192kHz” green LED will light if a valid digital signal is present. The incoming sample rate is also indicated by a blue LED in the row below.

N.B. This shows the actual sample rate of the digital data going into the M1 DAC; which is not necessarily the same as the original source material sample rate.

USB input

To use the USB input, press the input select button on the front panel until the USB input LED is lit. The “UPSAMPLING at 192kHz” green LED will light if a valid digital signal is present. The incoming sample rate is also indicated by a blue LED in the row below.

N.B. This shows the actual sample rate of the digital data going into the M1 DAC; which is not necessarily the same as the original source material sample rate.

Computer settings for USB

A good quality USB A to B cable is required to connect the unit to the computer.

Plug the B (square) end into the socket in the back of the unit, and the A (rectangle) end into a free USB socket on the computer.

The computer should now detect the new hardware and install a generic driver automatically (No setup or driver disk should be required).

CD, MP3, WAV, AAC, FLAC, and all other audio file types played on any software should now play through the unit. This device has been designed to work with PC Windows 98, ME, 2000, XP, Vista and 7, as well as Apple Macintosh OS X, Snow Leopard and later.

PC users-

Check the computer has picked up the device and is currently using it by clicking: (most Windows versions)

- Start
- Settings
- Control panel
- Sounds and Multimedia
- Audio

Check that “USB audio device” appears under PREFERRED AUDIO DEVICE tab

A second mixer will now be available which will be the default mixer whenever the unit is plugged in. Use this mixer to select the source or adjust levels if required.

Mac users-

Check the computer has picked up the device and is currently using it by clicking: (MAC OS X)

- System preferences
- Hardware
- Sound

Check that “USB audio DAC” is selected under the OUTPUT tab.

If the computer's warning sounds/chimes are to be played through the unit, make sure it is selected under the SOUND EFFECTS tab too.

Note: USB may also be selected as an output in some individual programs.

Please note: This device is a high speed serial data processor, and by its nature, requires a very high volume of USB band width. It will benefit greatly from being the only device connected on its USB 'bus'. Sharing the same bus with other devices may cause unwanted artifacts such as dropouts or temporary loss of signal. This especially includes the use of the unit on a USB hub/splitter alongside other USB components

Basic problem-solving with a DAC is similar to troubleshooting other electrical or electronic equipment. Always check the most obvious possible causes first, such as the following examples:

Problem	Probable Cause	Remedy
No power / display	Power plug is not inserted into socket correctly	Plug in securely into unit's IEC socket.
Excessive hum from system speakers	Audio connector plug not fully pushed in Cable Fault Unsuitable Cable (e.g. cable grounds not connected)	Insert plug securely Check cable is connected at both ends. N.B. some esoteric cables have internal wiring intentionally disconnected/modified. For best results on all inputs analogue AND digital, please use good quality screened coax; signal and screen directly connected both ends.
UPSAMPLING.... green LED will not light	No connection to that input Incorrect input selected Wrong data type sent to DAC	Check connection and cable. Select correct input Check source digital output is set for "16 bit stereo PCM" or similar. This particularly applies to some TVs, most DVD players, and other home theatre type devices that may give a MULTICHANNEL digital output. Refer to the source's manual for further information.
No audio output, or too low level output	Incorrect or missing connections USB Driver not selected (PC or MAC)	Check connections and make sure they are secure. See P.8 <u>PC users</u> or <u>MAC users</u> section
Dropouts in sound	Digital input lead not properly connected Faulty digital input lead Faulty optical lead	Check input lead is fully secured Change lead. Please use a good quality straight-through signal-and-ground phono to phono lead. Optical lead breakage. This can occur if the optical lead is bent into a radius too small. Avoid tight corners in routing optical leads.
No audio output from USB input	USB Cable not connected USB Driver not selected (PC or MAC)	Check connections and make sure they are secure. See P.8 <u>PC users</u> or <u>Mac users</u> section
Not detected when connected to USB	USB Cable faulty USB not working/enabled on computer Correct USB drivers not installed (can happen particularly with factory- preinstalled Windows operating systems)	Check and replace cable Check USB port functions with another device. Please check with the computer manufacturer. Enquire about USB driver or update.
Dropouts in sound (USB input)	Shared USB port with another device Computer busy with another application Computer low on resources	Avoid sharing the USB port with other devices, if possible. At times an application (program) may intervene, sometimes invisibly e.g. a virus scanner. When this happens, computer resources are temporarily used up, and playback may suffer. This is not a fault. Try running fewer applications if possible.

Output

Output impedance 47 ohms
Output, digital 0dB level RCA output - 2.2V r.m.s. nominal (RCA) 4.4V (XLR)

DAC

DAC circuit 24 bit Delta-Sigma (bit stream) dual differential 8x over-sampling to 192kHz
Total correlated jitter <12 picoseconds peak to peak
Linearity <0.1dB down to -96dB
Frequency response 10Hz to 20 kHz -0.1dB max.
Channel separation >105dB 20 Hz to 20 kHz
Signal to noise >119dB "A"- wtd.
Total harmonic distortion <0.0025% 10Hz to 20 kHz

Connections

Line level outputs 1 pair line level RCA (phono), left and right
1 pair line level XLR (balanced), left and right

Digital inputs 1 XLR AES balanced digital input
1 RCA coaxial connector SPDIF 32-192 kbps (16-24 bit stereo PCM)
1 TOSLINK optical connector 32-96 kbps (16-24 bit stereo PCM)
1 USB type 'B' connector for computer/PDA 32-48 kbps

Power requirement

Mains voltages 115/230VAC 50/60Hz (factory pre-set)
100VAC 50/60Hz (alternative)

Consumption 10 Watts maximum

Weight

Unit only, unboxed 3.4 kg (7½ lbs)
In shipping carton & inc. accessories 4.1 kg (9 lbs)

Dimensions

Wide 220 mm (8⅔")
High, including feet 100 mm (4")
Deep (front to back) including terminals 300 mm (12")

Standard accessories

IEC type mains lead (10-Amp type)

Musical Fidelity reserves the right to make improvements which may result in specification or feature changes without notice.



RELEASE	DATE	CHANGES
Issue 1	16 th April 2010	1 st issue
Issue 2	6 th May 2010	Specifications updated