



MERIDIAN

Explorer

High-resolution USB Digital to Analogue Converter



Meridian's Explorer is a portable, compact and rugged USB DAC designed to deliver best-in-class audio performance. Featuring premium audiophile-grade components throughout, a 6-layer circuit board, an elegant all-metal enclosure, the Explorer delivers the Meridian audio experience from virtually any computer.

Meridian DNA

Explorer embodies Meridian DNA throughout. The design features a sophisticated 6-layer circuit board, and audiophile-grade components are utilised throughout, including resistors, sockets and music grade electrolytics; and polypropylene filter capacitors. The use of direct-coupled outputs further maximises audio quality.

Explorer was designed, and is built, in the UK, in exactly the same way and with the same attention to detail and quality throughout, as any other Meridian product.

Explorer connects to the computer via USB mini B connector and a cable – it does not plug directly into the PC like many other products. The use of a cable (included) instead of plugging direct into the PC minimises the risk of damaging the PC motherboard if the product is accidentally knocked or the headphone cord is pulled.

Explorer connects to virtually any computer with a USB port. Drivers are provided for Windows; Macintosh and Linux operating

systems allow simple plug-in and play operation. On the Macintosh, the Audio MIDI Setup utility is used to set the output sample rate; on Windows, the Sound control panel is used. Explorer requires Macintosh OS X 10.6.4 (Snow Leopard) or later, Linux kernel 2.6.37 or later, or Windows XP SP3, Windows 7 SP1 or Windows 8.

Superior clocking

Explorer features full audio performance at sample rates up to 192kHz, 24-bit resolution. Rather than rely on the notoriously unstable clocking of the host PC, the Explorer is completely asynchronous, using precision on-board low-jitter crystal oscillators for the base sample rates, developed from those used in Meridian's premium home entertainment systems. These oscillators provide the master clocking for the entire playback system, and eliminate all USB interface jitter. 'Isochronous' transfer ensures maximum bandwidth and low latency, the latter being significant when playing videos on the computer, for which audio and video must be in sync.

The DAC design also offers extremely low modulation noise and distortion for the ultimate in audio performance. The interface is USB Audio Class Compliant 2.0 HS, supporting data rates up to 480Mb/s.

Three versatile outputs

Unusually for this type of device, three outputs are provided. A 3.5mm headphone socket delivers up to 130mW of high-quality audio – capable of driving plenty of level for even low-efficiency headphones.

Product highlights

True Meridian quality from a pocket Digital to Analogue Converter

Includes USB DAC, Preamp and Headphone Amplifier

Asynchronous USB Audio Class Compliant 2.0 HS 480Mb/s for best-in-class performance

USB-powered; plugs into any computer with a USB port

Highest resolution on the market (24-bit/192kHz)

6-layer circuit board with audiophile-grade components throughout

192kHz fixed & variable analogue and 96kHz optical outputs

Ultimate playback performance limited only by the source material – makes any file sound its best

Compact, elegant and rugged metal enclosure

Cable connection to avoid motherboard stress

Hand made in the UK

Fully portable, including carrying case & USB cable

Meridian Audio Limited

meridian-audio.com



The volume is controlled from the host PC, but it is implemented in the device, as a 64-step digitally-controlled analogue volume control.

This means that you always hear full digital resolution from the Explorer, whatever the listening level (with the more common digital volume control, the lower the output, the lower the bit-depth, with accompanying increases in distortion).

A second 3.5mm socket is a combination analogue/digital optical type and provides fixed-level analogue (2v RMS) and digital (S/PDIF optical) Toslink outputs for connection to an external audio system.

The analogue output is connected directly to the DAC for bit-precise performance.

Both outputs deliver a full-level signal with no volume control – essential for an audio system where you need to ensure maximum signal to noise ratio and maximum use of digital resolution right through to the audio system's own volume control, which controls the level for all sources in the system. Just as with a CD player, no volume control should be applied at the source in this application.

The optical digital output is set to a maximum sample rate of 96kHz to ensure compatibility with the majority of audio systems. Higher sample-rate source material is downsampled at very high quality before being passed to the output. The entire source resolution (up to 192kHz sampling, 24-bit) is employed to drive the analogue outputs.

A Higher Class of DAC

Explorer is a USB Class 2 audio device, unlike the majority of devices available that are Class 1. The class refers to the version of the USB standard with which the device is designed to be compatible. Class 1 devices work with the older (1998) USB 1.1 specification, which has a maximum transmission speed of 12Mb/s. This low speed forces a limit of 96kHz on the sample rate of the audio stream, and also leaves very little headroom for other activity on the same USB connection. As a result, a Class 1 device must be directly connected to a PC port and not via a hub.

Explorer, however, is a Class 2 device that works with the newer (2009) USB2 specification. This supports a transmission speed of 480Mb/s – 40 times faster than Class 1 – allowing Explorer to play 192kHz audio streams and be more tolerant of where it is connected, removing the need for direct or solitary connection to the PC.

Whether playing back an mp3 or a high-resolution lossless file, Explorer will make any content sound its best, delivering a level of audio quality essentially limited only by the source material.

Three indicators show the status of the Explorer. The LED nearest the headphone socket illuminates to indicate that the unit is operating (44.1/48kHz). The middle LED indicates 88.2/96kHz operation and the third LED 176.4/192kHz operation.

Despite its powerful output and performance capability, Explorer is entirely USB bus powered. It is supplied in elegant presentation packaging and includes a short USB cable (longer cables may also be used) and a soft carrying pouch that stores both Explorer and cable.

Outline Specifications

Inputs

- USB mini type B.

Outputs

- 3.5mm combination analogue/digital jack with mini Toslink digital optical <96 kHz output and 2-ch analogue line out, fixed 2v RMS.
- 3.5mm jack with variable-level headphone output, 130mW into 16Ω.

Construction

- Extruded Aluminium shell with moulded plastic endcaps and rubber foot.

Power

- USB, nominal 5V at <500mA.

Indicators

- Three white LEDs show connected state and audio stream rate.

Implementation

- USB audio class compliant 2.0 HS 480Mb/s bandwidth.
- Asynchronous: device is the clock source for high quality.
- Firmware upgrade via USB.
- Windows drivers provided, no drivers required for Macintosh OS X or Linux.
- Analogue volume control for headphone output, controlled from PC, control law modified to match connected OS.
- S/PDIF output downsamples 4x (192/176.4kHz) to 2x (96/88.2kHz).

OS requirements

- Macintosh OS X 10.6.4 (Snow Leopard) or later
- Windows XP SP3, Windows 7 SP1 or Windows 8
- Linux kernel 2.6.37 or later and ALSA version 1.0.32 or greater

Dimensions (approx)

102 x 32 x 18mm (4.0 x 1.25 x 0.7in).

Weight (approx)

50g (1.76oz).

E&OE. Specifications subject to change without notice. Original measurements use SI units. Dimensions should be confirmed against the original device or dimensioned engineering drawings.