



Meridian Prime
Headphone
Amplifier
User Guide

MERIDIAN

Important safety instructions

- Read these instructions.
- Keep these instructions.
- Heed all warnings.
- Follow all instructions.
- Do not use this apparatus near water.
- Clean only with a dry cloth.
- Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
- Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
- Only use attachments/accessories specified by the manufacturer.
- Unplug this apparatus during lightning storms or when unused for long periods of time.
- Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

WARNING: TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPARATUS TO RAIN OR MOISTURE.

Use only with the mains power adapter supplied with the unit, or with the Meridian Prime Power Supply available separately. Replacements are available from your Meridian dealer.

Safety warnings

- Do not expose the unit to dripping or splashing.
- Do not place any object filled with liquid, such as a vase, on the unit.
- Do not place naked flame sources, such as lighted candles, on the unit.
- To avoid overheating leave at least 10cm around the equipment to ensure sufficient ventilation.
- Do not position the unit in direct sunlight, near heat sources such as a radiator, or directly on top of heat producing equipment, such as a power amplifier.
- To avoid interference do not position the unit near strong electrical or magnetic radiation, such as near a power amplifier.

Use with USB 1.1, 2, 3 only.

Power rating: 5V 2.5W max.

Radio interference

FCC Warning: This equipment generates and can radiate radio frequency energy and if not installed and used correctly in accordance with our instructions may cause interference to radio communications or radio and television reception. It has been type-tested and complies with the limits set out in Subpart J, Part 15 of FCC rules for a Class B computing device. These limits are intended to provide reasonable protection against such interference in home installations.

EEC: This product has been designed and type-tested to comply with the limits set out in EN55013 and EN55020.



Copyright

Meridian Audio Ltd
Latham Road
Huntingdon
Cambridgeshire
PE29 6YE, England

Copyright © 2013 Meridian Audio Ltd.

Visit us on the Web:
<http://www.meridian-audio.com>

Part no: Prime (P88423)

This guide was produced by: Human-Computer Interface Ltd,
<http://www.interface.co.uk/>

Listening safety

The Meridian Prime Headphone Amplifier may generate high volume levels in sensitive headphones. To avoid damage to hearing, make sure that the volume is fully turned down before turning on the unit.

Once you have placed the headphones over your ears, gradually raise the volume to a comfortable listening level.

Never listen at high volume levels for prolonged periods as permanent hearing damage or hearing loss may occur. If the music is uncomfortable to listen to, so loud you cannot hear external sounds, or you experience ringing in your ears after listening, then it is too loud.

Connections

The Meridian Prime Headphone Amplifier is supplied with the following accessories:

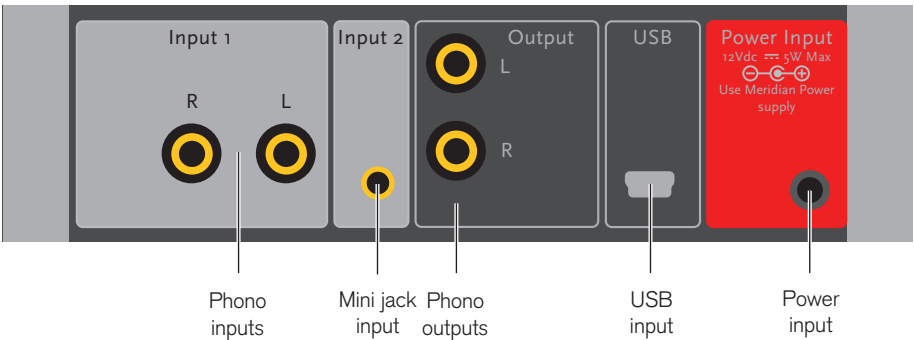
- Power supply.
- This manual.

If any of these items are missing please contact your retailer.

NOTE: You should retain the packaging in case you need to transport the unit.

Connections

The following diagram gives details of the back panel connections:



Inputs

Use this connection	To connect to this
Input 1 L and R	The output of an analogue preamplifier, or a fixed source such as a CD player, using phono leads.
Input 2	The output of an analogue preamplifier, music player, computer, or mobile phone, using a 3.5mm mini-jack lead.
USB input	The USB connector of a computer, using a USB-A to mini-USB lead.

Outputs

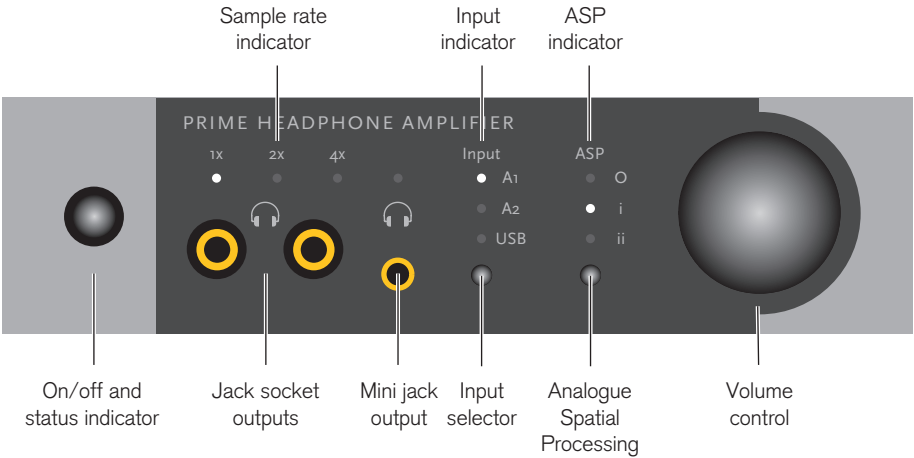
Use this connection	To connect to this
Output L and R	The line input of a power amplifier, or active loudspeakers, using phono leads.

Power input

Connect the Meridian Prime Headphone Amplifier power input to the power supply provided.

Alternatively you can power the Meridian Prime Headphone Amplifier from the matching Meridian Prime Power Supply. For more information see the application *To use the Meridian Prime Headphone Amplifier in conjunction with the Meridian Prime Power Supply*, page 7.

Front panel



Outputs

Use this connection	To connect to this
Jack socket outputs	One or two pairs of headphones fitted with a ¼" jack plug.
Mini jack output	A pair of headphones or earphones fitted with a 3.5mm mini-jack plug.

Controls

Control	Description
On/off	Push to switch between standby and on. The indicator glows blue when the Meridian Prime Headphone Amplifier is in standby, and white/green when it is operating.
Input selector	Push to select between A1, A2, and USB, as shown by the Input indicator.
Analogue Spatial Processing	Push to select between O, i, or ii, as shown by the ASP indicator.
Volume control	Rotate clockwise to increase the volume.

Using the Meridian Prime Headphone Amplifier

Connecting headphones

- Connect headphones to either of the jack socket outputs or to the mini-jack output on the front panel.

You can connect multiple pairs of headphones at once.

You can also connect a single pair of headphones to both jack sockets simultaneously, with a suitable balanced cable, to drive the left and right phones separately for highest quality.

Disabling the audio outputs

For headphone listening you can turn off the rear audio outputs:

- Hold down the power button on the front panel until the power light changes from white to green.

Sample rate

When using the USB input the sample rate indicators show the current sample rate: 1x (44/48kHz), 2x (88/96kHz), or 4x (176/192kHz).

Analogue Spatial Processing

- Push the Analogue Spatial Processing button to select between O, i, or ii, as shown by the ASP indicator.

Most stereo recordings are mixed with the intention of playback over two loudspeakers. When we listen to loudspeakers each ear does not receive a pure copy of the corresponding channel; instead, just as with live sounds, each ear hears a mixture of all the sound in the room. The ear further from a loudspeaker receives its sound slightly later than the nearer ear, and the sound is also shadowed by the head, causing a roll-off of higher-frequencies.

When we listen with headphones, simply playing the recording directly so that each loudspeaker signal is fed to the corresponding ear can often be unnatural. The impression depends on the recording, but there is often too much separation; sounds happen close to each ear and the sound image feels 'in the head'.

The Analogue Spatial Processing (ASP) built into the Meridian Prime Headphone Amplifier provides two carefully designed options which blend the left and right signals to emulate listening to loudspeakers. The processing modes i and ii both provide blend, but with progressively increasing amounts of delay, representing different loudspeaker angles. The O setting is a pure bypass, and the left and right are fed directly with no crosstalk.

We find this processing very natural and it can move the image out of the head and provide a more coherent sound. You should experiment with the choices on different types of recording.

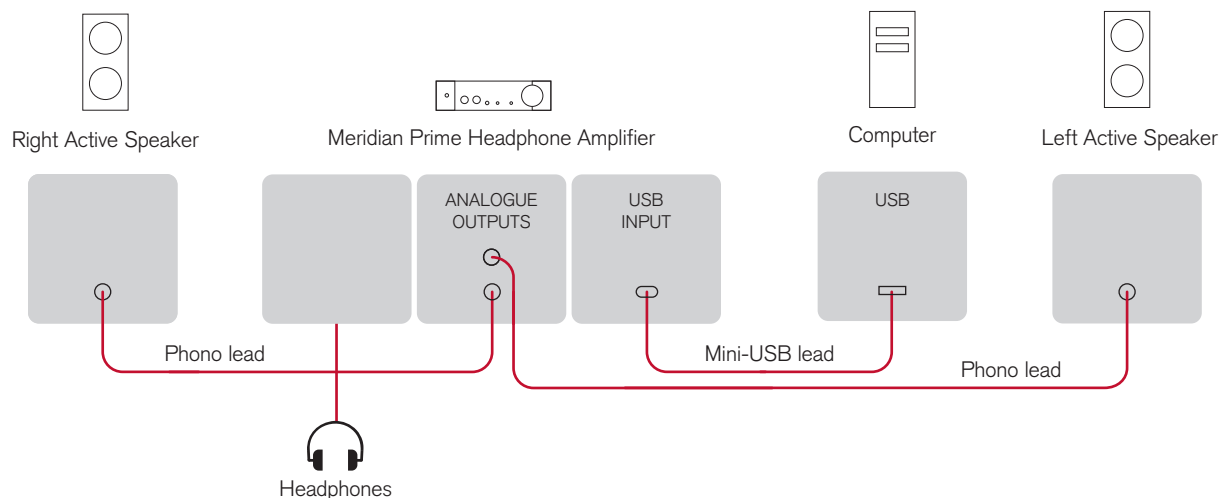
Applications

To use the Meridian Prime Headphone Amplifier to connect headphones or active loudspeakers to a PC

- Connect the analogue outputs from the Meridian Prime Headphone Amplifier to the line input on each active loudspeaker, using phono leads.
- Set up the computer to use the USB output; see *Setting up*, page 8.

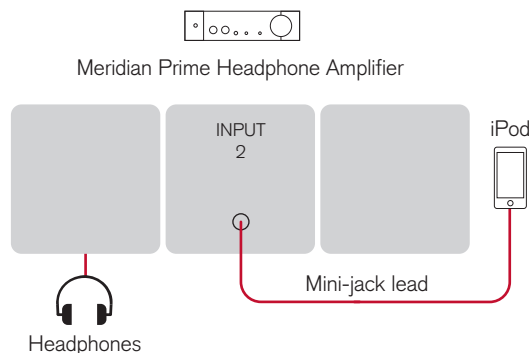
- Connect one of the USB connectors on the PC to the USB socket on the Meridian Prime Headphone Amplifier, using a USB-A to mini-USB lead.
- Press the Input selector button to select USB.

When listening through headphones connected to the Meridian Prime Headphone Amplifier you can turn off the analogue outputs; see *Disabling the audio outputs*, page 5.



To use the Meridian Prime Headphone Amplifier to connect headphones to an iPod or other music player

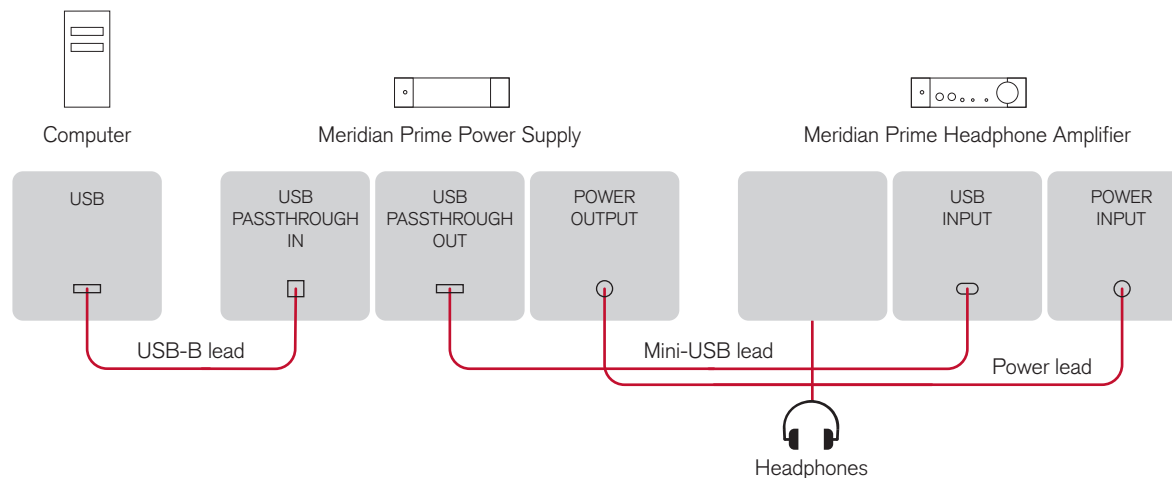
- Connect Input 2 on the Meridian Prime Headphone Amplifier to the headphone output of the iPod, using a mini-jack lead.
- Press the Input selector button to select Input 2.
- For highest quality turn the Meridian Prime Headphone Amplifier volume control to minimum and the volume control on the iPod to maximum. Then gradually turn up the Meridian Prime Headphone Amplifier volume control to adjust the volume.



To use the Meridian Prime Headphone Amplifier in conjunction with the Meridian Prime Power Supply

The Meridian Prime Power Supply optionally provides an extremely low-noise stable power source for both the analogue and digital sections, which will help deliver the highest possible audio performance from the Meridian Prime Headphone Amplifier.

- Connect one of the five 12V outputs from the Meridian Prime Power Supply to the Power Input of the Meridian Prime Headphone Amplifier, using a power lead.



Optionally, when using the USB input:

- Set up the computer to use the USB output; see *Setting up*, page 8.
- Connect one of the USB connectors on the PC to the USB Passthrough input on the Meridian Prime Power Supply, using a USB-A to USB-B lead.
- Connect the USB Passthrough output from the Meridian Prime Power Supply to the USB input on the Meridian Prime Headphone Amplifier, using a USB-A to mini-USB lead.
- Press the Input selector button to select USB.

Setting up

Setting up for Mac OS X

Configure the Meridian Prime Headphone Amplifier

- Connect the Meridian Prime Headphone Amplifier via USB.
- Open **System Preferences**.
- Click **Sound**.
- Select the **Output** panel.
- Select **Meridian Prime Headphone Amplifier** from the list.

Optionally for best sound quality

- Select the **Sound Effects** panel.
- Set **Play sound effects through** to **Internal Speakers**.
- Open the **Audio Midi Setup** utility (found in the **Applications/Utilities** folder).
- Select **Meridian Prime Headphone Amplifier** and select the desired bit/sample rate.

Setting up for Windows XP

NOTE: DO NOT connect the Meridian Prime Headphone Amplifier before running the driver install application.

Install the USB2 driver

- Download and save the driver .zip file to a suitable location such as the Desktop.
- Double click the .zip file and open the enclosed folder.
- Run the driver installer by double-clicking setup.exe and follow the installer instructions, connecting the Meridian Prime Headphone Amplifier when requested.
- Click **Continue Anyway** if Windows warns about the Meridian Prime Headphone Amplifier not passing Windows Logo testing.
- Click **Finish** when done.

Windows will then show a **Found New Hardware Wizard**.

- Select **No, not this time**, then **Next**.
- Select **Install the software automatically**, then **Next**.
- Click **Continue Anyway** if Windows warns about the Meridian Prime Headphone Amplifier not passing Windows Logo testing.
- Click **Finish** when done.
- Restart the computer.

Configure the Meridian Prime Headphone Amplifier

- Connect the Meridian Prime Headphone Amplifier.
- Open the **Sounds and Audio Devices** control panel (**Start → Control Panel → Hardware and Sound → Sounds and Audio Devices**).
- Click the **Audio** tab.
- Select **Meridian Prime Headphone Amplifier** from the default device list in the **Sound playback** box.
- Click **Apply**.

Optionally for best sound quality

- Connect the Meridian Prime Headphone Amplifier.
- Open the **Sounds and Audio Devices** control panel (**Start → Control Panel → Hardware and Sound → Sounds and Audio Devices**).
- Select **Meridian Prime Headphone Amplifier** from the default device list in the **Sound playback** box.
- Click the **Sounds** tab.
- Select **No Sounds** from the **Sound Scheme** drop-down list and click **Apply**.

Setting up for Windows 7/8

Install the USB2 driver

- Download and save the driver .zip file to a suitable location such as the Desktop.
- Connect the Meridian Prime Headphone Amplifier to the computer via USB ignoring any Windows driver installation notifications.
- Double click the .zip file and open the enclosed folder.
- Run the driver installer by double clicking the setup application.
- On the next window, allow the installer to make changes to the computer.
- Click **Install** to start the driver installation and follow the installer instructions.
- Click **Finish** when done.
- Restart the computer.

Configure the Meridian Prime Headphone Amplifier

- Connect the Meridian Prime Headphone Amplifier.
- Open the **Sound** control panel (**Start → Control Panel → Hardware and Sound → Sound**)
- Click the **Playback** tab.
- Find **Meridian Prime Headphone Amplifier** in the list, right click and select **Set as Default Device**.
- Click **Apply**.

Optionally for best sound quality

- Connect the Meridian Prime Headphone Amplifier.
- Open the **Sound** control panel (**Start → Control Panel → Hardware and Sound → Sound**).
- Click **Meridian Prime Headphone Amplifier** in the list.

- Click the **Sounds** tab.
- Select **No Sounds** from the **Sound Scheme** drop-down list and click **Apply**.
- Click the **Playback** tab.
- Double click **Meridian Prime Headphone Amplifier** in the list.
- Click the **Enhancements** tab.
- Set **Disable all enhancements** and click **Apply**.
- Click the **Advanced** tab.
- If not already set, set both options in the **Exclusive Mode** box.
- Select the desired bit/sample rate in the **Default Format** drop-down list box and click **Apply**.

Support

For more detailed support please visit:

www.meridian-audio.com/support

Specifications

Analogue inputs

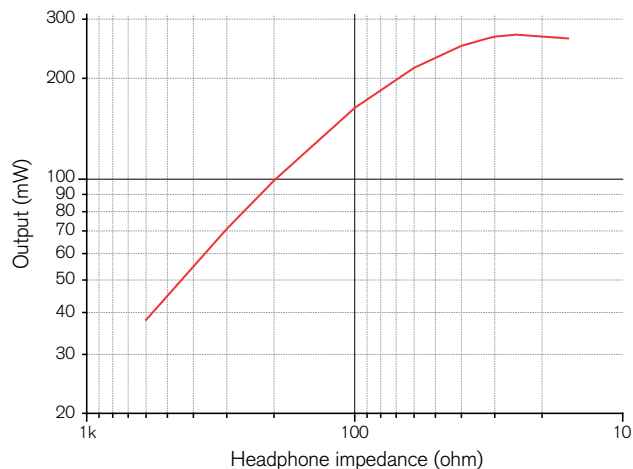
- 1 x 3.5mm: gain 12dB; 500mV rms in for 2V rms out.
- 1 x phono stereo: gain 3dB; 1.4V rms in for 2V rms out.
- Analogue inputs overload capability >40dB.

Digital input

- 1 x USB: asynchronous, 44.1kHz to 192kHz at up to 24bit, jitter <90ps p-p.

Outputs

- 1 x phono pre-out: maximum output 3.1V rms @ 1kHz, THD less than 0.001% @ 1kHz up to 3V rms, crosstalk below -70dB @ 1kHz. Output can be disabled.
- 2 x $\frac{1}{4}$ " phone jacks: Maximum output 3V rms off load, THD below 0.002%, output impedance < 100m Ω , power output 250mW up to 42 Ω (see graph), short-circuit protected.



- 1x 3.5mm phone jack: maximum output 3V rms off load, THD below 0.002%, output impedance 2.2 Ω , short-circuit protected.

Audio performance

- Output noise (input A) < -100dBV CCIR or A weighted.
- Frequency response: +0/-1dB DC to 70kHz, +0/-3dB DC to 200kHz.

Headphone compatibility

- Suitable for impedances in the range 16 Ω – 1k Ω or more. Suitable for open, closed, in-, on- or over-ear models.
- Recommended sensitivity higher than 80dBspl/mW or 96dBspl/V.

Controls

- Volume with precise tracking and 70dB range.
- Input switch.
- Analogue Spatial Processing (O/i/ii).
- Power including rear output mute.

Processing

- Analogue out-of-head processor on phone jack outputs only.

Power

- 12V DC.
- Consumption less than 0.5W standby.
- Under 1W in quiescent.

Weight

- 0.9kg (20lbs).

Dimensions

- Width 160mm (6.3in).
- Depth 150mm (5.9in) plus connections.
- Height 50mm (2.0in).

