



# Groove Sleuth Adaptors



## Chapter 1 – Introduction

Phædrus Audio Groove Sleuth Adaptors were developed to convert the XLR socket microphone inputs on commercial computer sound cards to non-equalised phono cartridge inputs. The adaptors ensure the phono cartridge and the microphone inputs are presented with the appropriate signal levels and impedances. The 48V phantom-power for microphones is remodelled to power the miniature Groove Sleuth Adaptor preamplifiers. Groove Sleuth Adaptors were designed to work with Pspatial Audio's Stereo Lab software (see Appendix 2). With a wide dynamic range, they offer a very high-quality solution for recording non-equalised needle-drops.

Three versions exist of the Groove Sleuth Adaptors, their roles are as follows:

- Groove Sleuth Adaptor MM - for converting moving-magnet cartridges to a standard microphone input. **Fitted with RED identification pips.**
- Groove Sleuth Adaptor MC - for converting moving-coil cartridges to a standard microphone input. **Fitted with GOLD identification pips.**
- Groove Sleuth Adaptor PHLUX - for converting Phædrus Audio active phono cartridges to a standard microphone input. **Fitted with GREEN identification pips.**

Please ensure you have the appropriate adaptor for your cartridge type.

## Chapter 2 – Safety

### General

Before using any piece of equipment manufactured by Phædrus Audio, be sure carefully to read the applicable items of these operating instructions and the safety suggestions. Keep them for future reference. Follow the warnings indicated in these operating instructions.



RISK OF ELECTRIC SHOCK  
DO NOT OPEN!

THE USER SHOULD NOT ATTEMPT TO SERVICE THE UNIT. ALL SERVICING SHOULD BE REFERRED TO QUALIFIED SERVICE PERSONNEL OR FACTORY ONLY.

Phædrus Audio products should NEVER be connected to the external power supply or in any other way energised when the case is opened and/or the circuit boards are accessible.

### General Safety Instructions

- Do not operate this equipment near any source of water or in excessively moist environments.
- Keep this equipment away from babies, children and pets.
- Do not let objects do not fall, or liquids be spilled, onto the enclosure.
- Situate this equipment away from heat sources or other equipment that produce heat.
- Ensure this equipment has adequate ventilation. Improper ventilation will cause overheating, and can damage the equipment.
- When cleaning this equipment, remove all connections to the unit; including power and gently wipe with a clean lint-free cloth; if necessary, gently moistened with lukewarm or distilled water. Use a dry lint-free cloth to remove any remaining moisture. NEVER use aerosol sprays, solvents, or abrasives on this equipment.

This equipment should be serviced by qualified service personnel or returned to Phædrus Audio when: an object (or objects) have fallen into the enclosure; or liquid has fallen into, or been spilled into the unit; or the unit has been exposed to rain or high humidity; or the unit does not operate normally or exhibits a marked change in performance; or the unit has been dropped, or the enclosure has been damaged

## Chapter 3 - Instructions for Use

### Caution

**Remember 48V phantom-power is a relatively high voltage and there is the risk of electric shock, to you and to your equipment.**

Connect phono leads to the Groove Sleuth Adaptor and plug the adaptor into the microphone input BEFORE energising the phantom-power. Switching on the phantom-power should ALWAYS be last item in the connection sequence. See **Connecting and using the equipment.**

When disconnecting equipment, switching off phantom-power should always be the FIRST item in the disconnection sequence. Allow a few seconds for the phantom-power charge to leak away before dismantling the connections. See **Dismantling the equipment.**

Do not leave this product with nothing connected to the input when plugged into a microphone input with the phantom-power energised.

**NEVER connect a cartridge to a Groove Sleuth Adaptor which is plugged into the microphone input with the phantom-power energised. Connecting a cartridge to an energised preamp in this way can damage the phono cartridge.**

## Connecting and using the equipment

- Do NOT plug in the adaptor to the microphone input straight away. First connect the phono leads from your turntable to the phono inputs of the Groove Sleuth Adaptor.
- Ensure that the phantom-power on the microphone input is not energised.
- Plug the Groove Sleuth Adaptor into the microphone input and switch on the phantom-power.
- After a few seconds, your Groove Sleuth Adaptor is ready to use.
- Set the microphone levels in the normal way, so that sufficient signal level is recorded without overloading.
- If your turntable has a separate ground wire, see Appendix 3.

## Dismantling the equipment

- When disconnecting equipment, switching off phantom-power should always be the FIRST item in the disconnection sequence.
- Allow a few seconds for the phantom-power charge to leak away before dismantling the connections.

## Warranty & Service

If you experience a problem with a Phædrus Audio product, contact [support@phaedrus-audio.com](mailto:support@phaedrus-audio.com). We will diagnose the problem remotely and advise you of the warranty status. If a repair or replacement is required, we will issue a Return Merchandise Authorization (RMA) number and tell you where to send the unit to be repaired. You MUST have an RMA number before you return the equipment to Phædrus Audio's support service. Phædrus Audio will not accept responsibility for loss or damage in shipping or for equipment returned without valid paperwork and/or a valid RMA number. Remember, warranty is void if product serial numbers have been removed or altered, or if the product has been damaged by abuse, accident or unauthorized modification and/or repair. There are no user serviceable parts inside.

PLEASE RETAIN YOUR SALES INVOICE. IT IS YOUR PROOF OF PURCHASE COVERING YOUR LIMITED WARRANTY. LIMITED WARRANTY IS VOID WITHOUT SUCH PROOF OF PURCHASE.

### Phædrus Audio's Limited Warranty

Before using a Phædrus Audio Groove Sleuth Adaptor, please read carefully the specifications and applications information in the manual. Improper installation or operation may cause damage to the component, modify its characteristics and decrease reliability and useful life. Phædrus Audio's Limited Warranty does not extend to any Phædrus Audio product that has been damaged or rendered defective due to accident, misuse, or abuse: and, in no event, will Phædrus Audio be liable for any direct, indirect, special, incremental or consequential damages resulting from any defect in the product or incorrect operation or installation of the product.

For the latest warranty terms and conditions and additional information regarding Phædrus Audio's limited warranty, please see complete details online at [www.phaedrus-audio.com](http://www.phaedrus-audio.com).

## Appendix 1 – Specifications

### Model: Groove Sleuth Adaptor MM

Sensitivity @5cm/s: 5mV RMS

Input load: >47kΩ

Frequency Response: ±1dB: 10Hz to 100kHz

Noise (EIN): 1.0µV A-weighted, 200Ω termination (better than -70dB relative to 5mV RMS)

Headroom: >40dB (relative to nominal level of 5mV RMS)

THD on 5mV RMS signal at 1kHz: 0.003%

Current draw (from 48V phantom): 1.5mA

### Model: Groove Sleuth Adaptor MC

Sensitivity @5cm/s: 0.5mV RMS (Gain = 11dB)

Input load: >100R

Frequency Response: ±1dB: 20Hz to 100kHz

Noise (EIN): 100nV A-weighted (better than -65dB relative to 0.5mV RMS)

Headroom: >40dB (relative to nominal level of 0.5mV RMS)

THD on 0.5mV RMS signal at 1kHz: 0.03%

Current draw (from 48V phantom): 1.5mA

### Model: Groove Sleuth Adaptor PHLUX (PHLUX-II)

Sensitivity @5cm/s: 5mV RMS

Input load: Suitable for PHLUX/PHLUX-II

Frequency Response: ±1dB: 10Hz to 100kHz

Noise (EIN): 1.0µV A-weighted, 200Ω termination (better than -70dB relative to 5mV RMS)

Headroom: >40dB (relative to nominal level of 5mV RMS)

THD on 5mV RMS signal at 1kHz: 0.02%

Current draw (from 48V phantom): 1.5mA. 0.5mA (PHLUX-II Black)

*Phædrus Audio reserves the right to change specifications without notice.*



## Appendix 2 - Stereo Lab

Groove Sleuth Adaptors are designed to work with Pspatial Audio's **Stereo Lab** software suite for the capture and archiving of records from the oldest shellac types to today's high-mass LPs.

In **Stereo Lab**, RIAA equalisation is not implemented using the inaccurate analogue equalisation: instead the EQ is implemented with digital accuracy. Optional rumble-filtering is implemented with a phase-linear filter; in this case, something you could only dream of in analogue domain.

In addition, **Stereo Lab** includes: distortion cancellation algorithms (which compensate for the way the stylus tracks the physical groove) and cartridge-compensation algorithms to compensate for the shortcomings of practical phono cartridges. **Stereo Lab** also includes a unique, world-class "click and pop" filter to reduce the perceptible effects of surface damage.

## Historic Equalisation Needle-drop Mode

For the record collector, **Stereo Lab** also includes a Historic Equalisation mode which implements a comprehensive collection of gramophone-record equalisation curves; enabling the correct de-emphasis of 33, 45 and 78 RPM recordings made with EMI 78 (HMV 78 or Blumlein), BSI 33/78,

Decca 78, Decca 33, NAB, RCA 45, BBC Transcription, Columbia and AES equalisation. Not only is this level of flexibility only available on very expensive hardware phono preamplifiers, but Pspatial Audio have included the results of their own comprehensive and original research (gained after years of record collection and studio remastering) to offer equalisation curves not found on any other equipment.

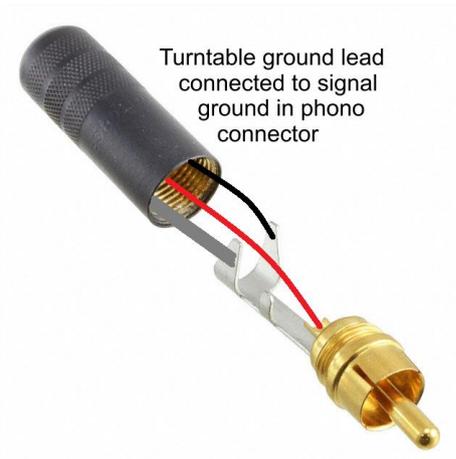
Support for older, encoded surround-sound formats is also included with Quadraphonic and Ambisonics decoding to a modern 5.1 system.

For more information (and to download the software)

<http://pspatialaudio.com/index.htm>



### Appendix 3 – Turntable ground-wire



Some turntables have a thin “ground” wire alongside the phono cables. This wire normally connects to the metal components of the tonearm and to the plate which carries the main turntable bearing.

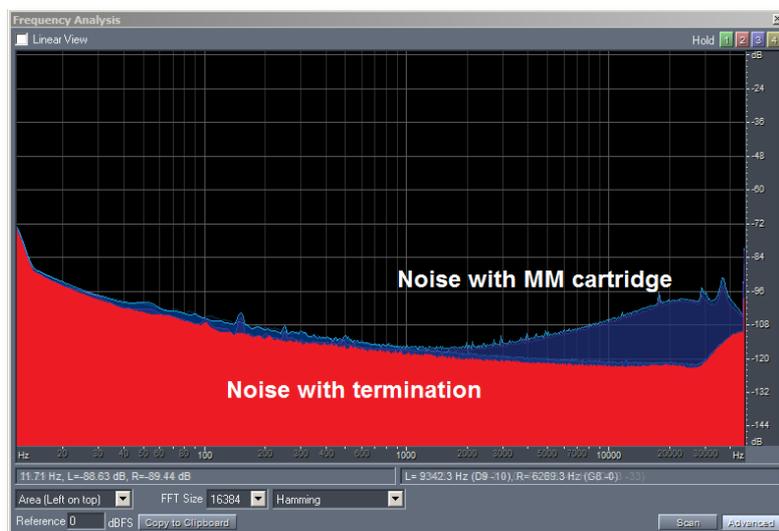
A ground connection to these components is advantageous for a whole range of reasons. Not only does it help with electrostatic screening from interfering AC radiation, it also helps control static electricity build-up on the plastic disc as it plays.

If this wire is not earthed, the record-deck signal via the **Groove Sleuth Adaptors** will often be noisy and “buzzy”.

Because the **Groove Sleuth Adaptors** transform microphone inputs to phono inputs, there is often no immediately obvious connection point for this ground wire. Here are two suggestions (which depend on the complexity and choice of the related equipment):

- If the computer sound-card feeds an amplifier, there may well be a suitable connection for the ground wire on the amplifier itself, perhaps even an earth terminal?
- If the computer is stand-alone, ideally the ground wire should be brought to the screen connection of either the left or right phono plug as illustrated above.

## Appendix 4 – Noise levels with moving-magnet cartridges



If a calibrated 48kHz needle-drop is made with a moving-magnet cartridge and recording levels set so that a peak velocity of 70cm/s registers 0dBFS as displayed on peak reading meters (as in a DAW), the registered noise-level is found to be about -60dB on the meters with cartridge parked. RMS noise is about 10dB below peak reading\*. That's to say, at -70dBFS. Although this noise is typically quite inaudible, it

seems quite high in numerical terms. This is due to the noise generated due to the moving-magnet cartridge having an inductive impedance which rises with frequency.

If the **Groove Sleuth Adaptor** is terminated in 200Ω, the wideband noise falls to about -75dBFS (peak meter), or about -85dB RMS. A spectrogram of noise, terminated and cartridge parked is given. This very clearly illustrates the effect of the moving-magnet cartridge upon noise. Neither moving-coil cartridges or Phaedrus Audio **PHLUX active cartridges** demonstrate this effect, it is a peculiarity of the moving-magnet type. The effect is even more marked at higher sampling-rates.

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\* Assuming noise has a Gaussian distribution; the instantaneous voltage lies within  $\pm 3$  times the RMS voltage for 99.7% of the time.

## Declaration of Conformity

The Manufacturer of the Products covered by this Declaration is

**Phædrus Audio Ltd.**  
**head office address**

The directives covered by this declaration are:

**89/336/EEC Electromagnetic Compatibility directive**  
**73/23/EEC Low Voltage Equipment directive**

The products covered by this declaration are:

**Phædrus Audio GROOVE SLEUTH ADAPTORS**

The basis on which conformity is being declared:

The manufacturer hereby declares that the products identified above comply with the protection requirements of the EMC directive and with the principal elements of the safety objectives of the Low Voltage Equipment directive, and that the following standards have been applied:

**IEC INTERNATIONAL STANDARD 60065 - Audio, video and similar electronic apparatus – Safety requirements**

The technical documentation required to demonstrate that the products meet the requirements of the Low Voltage Equipment directive has been compiled and is available for inspection by the relevant enforcement authorities. The CE mark was first applied in 2019.



Signed:

**Richard Brice . Phædrus Audio**

Date:

September 2019