User Manual for

GROOVE SLEUTH SOLUTION
PHONO PREAMPLIFIER

Version 1.2 (October 2025 – **Groove Sleuth SOLUTION**)

computing better sound.

Introduction

Phædrus Audio's **Groove Sleuth SOLUTION (GS-SOLUTION)** functions as a multipurpose tool. It's the vinylistas' Swiss Army Knife.[1]

The **Groove Sleuth SOLUTION** acts as an RIAA preamplifier for moving-coil, moving-magnet, and **PHLUX** active cartridge types, whilst simultaneously providing a computer soundcard with a non-equalised output for software processing.

The **GS-SOLUTION** also functions as an adapter for **PHLUX active** and moving-coil cartridges, so that they may feed a standard moving-magnet level phono input. All the various functions are selected by means of small "piano" switches on the unit.

Powered from a standard USB 5V supply, and using state of the art circuit techniques, the diminutive **GS SOLUTION** is a complete phono preamplifier solution for the living room, the studio, and the desktop.

Needle-drops and Stereo Lab

The **Stereo Lab** app' has a wide feature set, but it devotes a large part of its functionality to software digital signal processing analogue records. See http://pspatialaudio.com/index.htm

For **Stereo Lab** to process needle-drops[2], it needs recorded files of the "raw" signal, direct from the pickup, unfettered by analogue equalisation. And that is where the **Groove Sleuth SOLUTION** preamplifier comes in. In addition to being a high-quality RIAA phono preamplifier, it also provides an output *without* equalisation, so that the signal fed to the computer is the closest version of the signal direct from the phono cartridge itself, but at a suitable amplitude for digitisation. The computer soundcard is always presented on the 3.5mm stereo jack socket next to the phono connectors.

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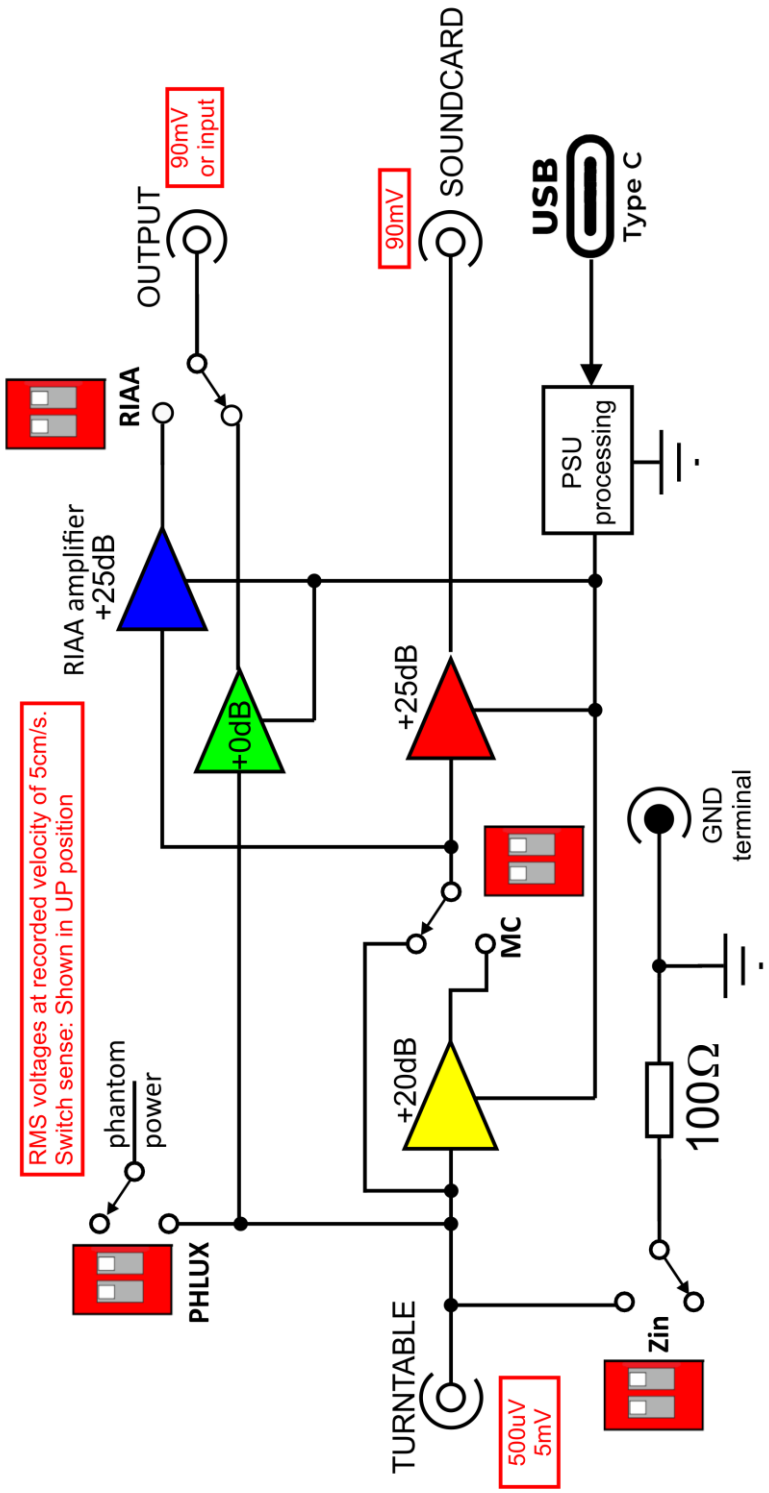
[1] Inspired by the versatility of a Swiss Army Knife — but built exclusively for vinylistas. Not affiliated with, or endorsed by, Victorinox AG.

[2] A *needle-drop* means a version of a music album that has been transferred from a vinyl record to a digital audio medium.

Facilities diagram



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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.

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

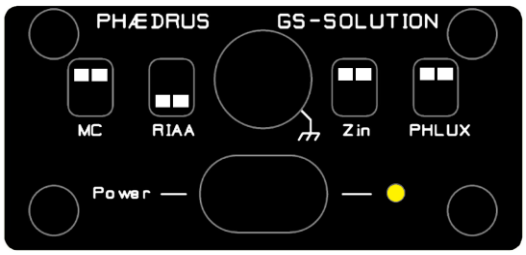
- Do not operate this equipment near any source of water or in excessively moist environments.
- Keep this equipment away from babies, children and pets.
- Do not let objects do not fall, or liquids be spilled, onto the enclosure.
- Situate this equipment away from heat sources or other equipment that 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.

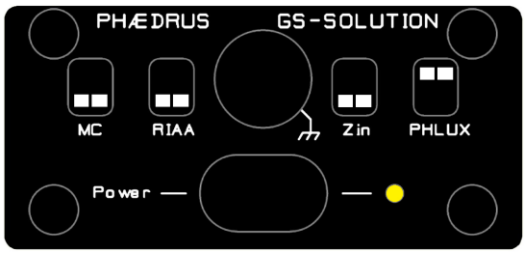
Instructions (switches)

This page details how the various operational modes of the **GS-SOLUTION** are selected.

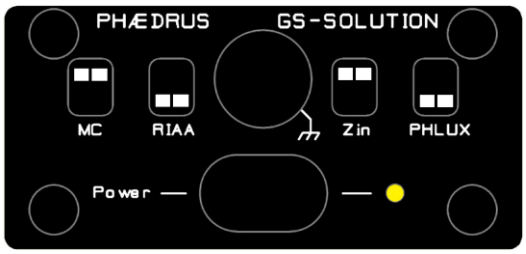
RIAA preamplifier for moving-magnet cartridges



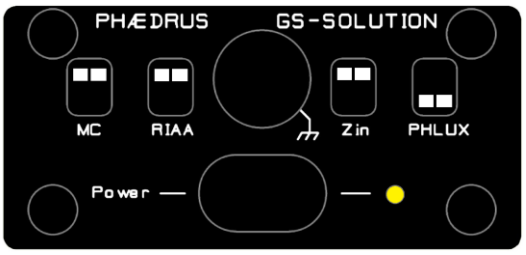
RIAA preamplifier for moving-coil cartridges



RIAA preamplifier for PHLUX active cartridges

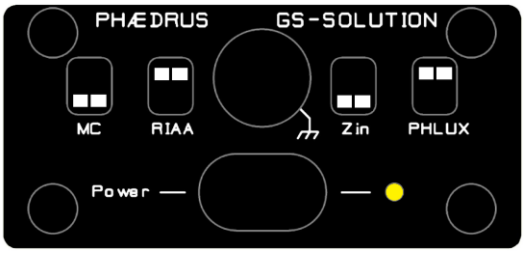


PHLUX adaptor

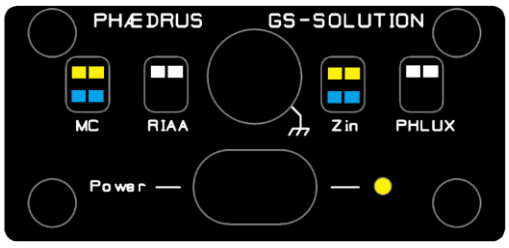


to adapt standard moving-magnet input to PHLUX active cartridges

Moving-coil adaptor (SUT)



MM/MC THRU



adds soundcard output to existing MM or MC setup

The switches may be operated when power is applied. However, it is not recommended to operate the switches whilst monitoring the output of the unit. Keep volume controls (faders) down as you change configuration.

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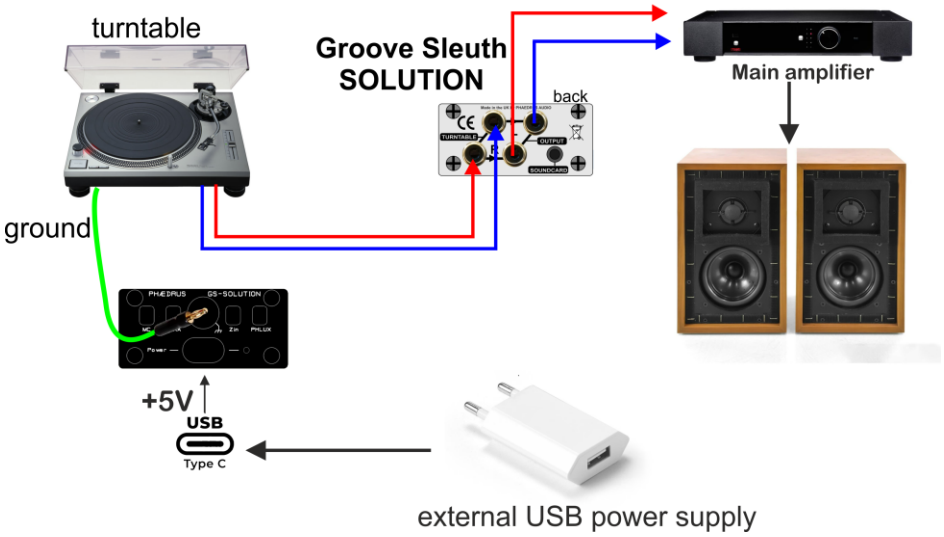
Wiring up the GS-SOLUTION as an RIAA preamplifier

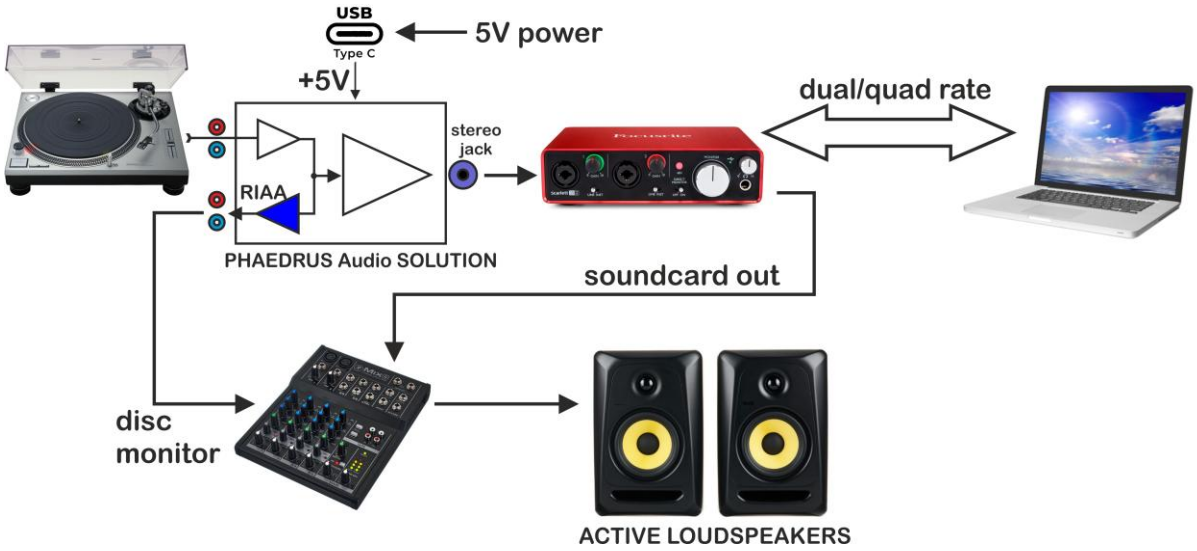


Power
USB power is connected via the USB Type-C connector.

Ground
Some turntables have a thin "ground" wire which connects to the metal components of the tonearm and to the plate which carries the main turntable bearing. If this wire is not earthed, the record-deck signal will often be noisy and "buzzy". This wire should be connected to the 4mm jack on the **GS-SOLUTION**. You may need to purchase a (4mm) banana plug to mate with this connector to be sure of making a solid and reliable connection. The socket is a 4mm type and has a tin-plated brass insert designed to accept a wide range of 4mm plugs.

Wiring up the GS-SOLUTION for needle-drops

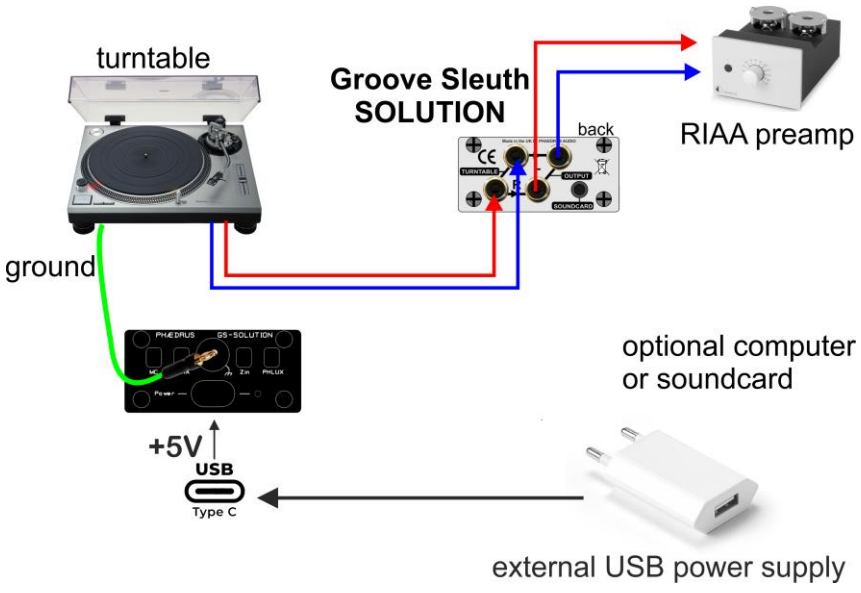
The **Groove Sleuth SOLUTION** is connected to your turntable and the line-level inputs of your soundcard as illustrated.



Levels should be set on the interface in the normal way, and you will find that the **Groove Sleuth SOLUTION** delivers audio at a sufficiently high level for all commercial soundcards, both internal and external.

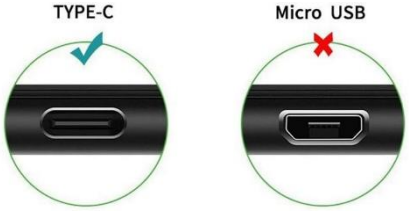
Wiring up the GS-SOLUTION as a PHLUX-Bridge or a moving-coil SUT

Alternate roles for **Groove Sleuth SOLUTION** are: as a base-station to the **PHLUX** active phono cartridges; and as a step-up-transformer (SUT) for moving-coil cartridges, so that they may feed a moving-magnet input.. Connections are made as illustrated below.



Power Supply (USB)

Today, USB power – usually presented via a USB Type-A connector – is ubiquitous. It is available, either via the computer hosting the DAW, or via stand-alone plug top power supplies, as illustrated.



Power is applied to the GS-SOLUTION via a USB Type-C connector.

Note that the USB Type-C connector is not the same as the Micro USB connector.

GS-SOLUTION preamplifier incorporates advanced power supply processing which filters any power supply noise and thereby achieves the excellent noise and dynamic range figures it does (see *Specifications*). The current load on the USB supply due to the **GS-SOLUTION** preamplifier is very light, less than 10mA. The preamplifier may therefore be powered from USB 1.1, 2.0 ports (white plastic inside), or first or second-generation USB 3.0 & 3.1 ports (blue or red plastic inside).

Some customers may wish to use an external, linear power supply type. There are several manufacturers of this type of supply, and they deliver high-quality and low noise 5V DC at very reasonable cost (one is illustrated). An alternative – to keep away from mains power completely – is to use a USB Power bank. If you want to arrange your own PSU, be aware that USB power is specified to be 5V ±5% (4.75V to 5.25V) and these limits must be respected.

Specifications

GS-SOLUTION Preamplifier
Size: 80 x 64 x 32mm (aluminium chassis)
Preamplifier Supply: 5V ±5% via USB Type-C connector.
Power consumption: <0.05W; compatible with European Eco-Consumption directives. The unit may remain energised all the time.

MM & PHLUX
Sensitivity: 5mV RMS (-44dBu) nominal @ 5cm/s
Gain (to computer output): 25dB (× 18)
Gain (to OUTPUT): 0dB
Gain (to OUTPUT, RIAA selected): 25dB @ 1kHz
Frequency response: 2Hz to 100kHz (-3dB)
Crosstalk: Lower than -60dB (1kHz)

Distortion: 0.02% THD nominal output level
Equivalent input noise (EIN): 320nV (-128dBu), A-weighted in 20kHz. Input shorted
Max input: 53mV RMS (21dB above nominal level)
RIAA accuracy: ±½ dB

MC
Sensitivity: 0.5mV RMS (-64dBu) nominal @ 5cm/s: or PHLUX-II active cartridge
Gain (to computer output): 44dB (× 160)
Gain (to OUTPUT): 0dB
Gain (to OUTPUT, RIAA selected): 44dB @ 1kHz
Frequency response: 2Hz to 100kHz (-3dB)
Crosstalk: Lower than -60dB (1kHz)
Distortion: 0.1% THD nominal output level
Equivalent input noise (EIN): 240nV (-130dBu), A-weighted in 20kHz. Input shorted
Max input: 5mV RMS (20dB above nominal level)
RIAA accuracy: ±½ dB

Phædrus Audio reserves the right to change specifications without notice.

Notes:
1. The left and right channels are completely independent and there is no requirement for each channel to be identical. However, it's difficult to see how this would yield useful operational modes. Usually both switches should be operated together.

Warranty and service

If you experience a problem with a Phædrus Audio product, contact 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 Authorisation (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.

We will also issue instructions as to how the equipment must be marked to avoid unnecessary customs charges. Where these instructions are ignored, Phædrus Audio will re-charge these taxes or refuse to accept delivery of the goods.

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 (see Phædrus Audio Limited Warranty for details). There are no user serviceable parts inside.

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

Phædrus Audio's Limited Warranty

Warranty service conditions are subject to change without notice. For the latest warranty terms and conditions and additional information regarding Phædrus Audio limited warranty, please see complete details online at www.phaedrus-audio.com.

Appendices

Appendix 1 - Declaration of Conformity
The Manufacturer of the Products covered by this Declaration is

Phædrus Audio
Maidstone
Kent
UK

The directives covered by this declaration are:
2014/30/EU Electromagnetic Compatibility directive
2014/35/EU Low Voltage Equipment directive

The products covered by this declaration are:
Groove Sleuth SOLUTION non-equalising phono preamplifier

The basis on which conformity is being declared: The manufacturer hereby declares that the products identified above comply with the protection requirements of the Emoving-coil 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: 2005. - 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 2025.

Signed:

Richard Brice, Technical Director Date: November 2025

Appendix 2 – Disposal: meaning of the dustbin symbol

Protect our environment: do not dispose of electrical equipment in domestic waste. Please return any electrical equipment that you will no longer use to the collection points provided for their disposal. This helps the potential effects of incorrect disposal on the environment and human health. This will contribute to the recycling and reutilisation of electrical and electronic equipment. Information where the equipment can be disposed of can be obtained from your local authority.