Common Source Devices

In addition to being able to drive a wide variety of headphones without sacrificing performance, the RNHP is also capable of receiving a wide array of signals with its 3 separately calibrated inputs. Here are some common examples:

"A" +4dBu Line (XLR or TRS) Devices

Studio Audio Interfaces (Line or Monitor Out)
Headphone Mixers (Line Output or send low level HP out)
Mixing Consoles (Line or Monitor Out)
Professional Turntable Mixers (Line or Monitor)
Professional Stereo Digital to Analogue Converter
Professional Cameras
Studio Monitor Controller

"B" RCA Devices

CD Players / DVD Players
Stereo Tuners
Preamplified Turntables
Prosumer Recording Devices / Cameras

"C" 3.5mm Stereo Devices

Phones
Mobile Music Players
Computers
DSLR Cameras
Handheld Recording Devices
Any 3.5mm headphone output

Maximum Input Levels

XLR I/P: +22.8 dBu @1kHz, RCA I/P: +14.7dBu @1kHz, 3.5mm I/P: +3.3dBu @1kHz

Output Power:

As measured with headphones, Z=44 Ω: 3.617 VAC RMS @1kHz = 300mW RMS

Total Harmonic Distortion

0.002% Typical , .005% Worst Case with minimum load and maximum output

Output Impedance

.08 Ω @ 1KHz, 16-150 Ω load, 0dBu input

Frequency Response

+/- .2dB from 10Hz to 120KHz

Noise

With typical headphones, Z=44 Ω, BW 22Hz – 22kHz

XLR Input: -101.9dBV, RCA Input: -100.9dBVdBu, 3.5mm Input: -88.8dBV

Power Supply Requirements

24VDC @ 0.25Amp (6 watt) minimum.   Use with supplied power adapter, as this has been carefully selected for best output power and noise performance

RNHP:
Precision Headphone Amplifier
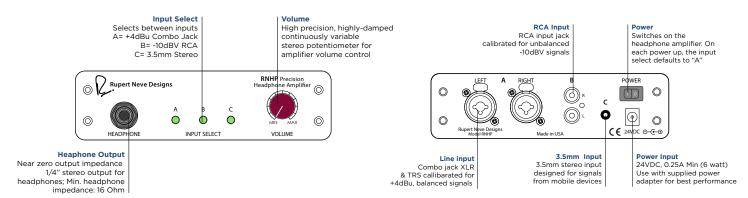**User Guide**

RUPERT NEVE DESIGNS

RNHP: Precision Headphone Amplifier

Thank you for your purchase of the RNHP: Precision Headphone Amplifier. Everyone at Rupert Neve Designs hopes you enjoy using this tool as much as we have enjoyed designing and building it.

Front / Back Panel

Input Select
Selects between inputs
A= +4dBu Combo Jack
B= -10dBV RCA
C= 3.5mm Stereo

Volume
High precision, highly-damped continuously variable stereo potentiometer for amplifier volume control

RCA Input
RCA input jack calibrated for unbalanced -10dBV signals

Power
Switches on the headphone amplifier. On each power up, the input select defaults to "A"

Rupert Neve Designs

RNHP Precision Headphone Amplifier

A   B   C

MIN   MAX

HEADPHONE   INPUT SELECT   VOLUME

LEFT   A   RIGHT   B   POWER

C

Rupert Neve Designs
Model RNHP   Made in USA

CE   24VDC

Heaphone Output
Near zero output impedance 1/4" stereo output for headphones; Min. headphone impedance: 16 Ohm

Line input
Combo jack XLR & TRS calibrated for +4dBu, balanced signals

3.5mm Input
3.5mm stereo input designed for signals from mobile devices

Power Input
24VDC, 0.25A Min (6 watt) Use with supplied power adapter for best performance

RNHP Overview

The RNHP is designed to deliver precise, extremely reliable amplification to any pair of headphones. Based on the headphone amplifier in our model 5060 Centerpiece, the RNHP is a dedicated 24V, reference-quality headphone amplifier with calibrated +4dBu Line, RCA and 3.5mm stereo inputs, housed in a rugged, VESA mountable steel chassis. With effortless, wide-open sonic performance and the ability to drive any pair of headphones without compromise, the RNHP allows you to perform, mix and enjoy your music with a new level of clarity.

Usage Notes

We recommend powering up the RNHP with the headphones disconnected to remove the load on the amplifier during the power on cycle.

Performance Monitoring and Unconscious Adaptation: One of the most critical roles for the RNHP is for encouraging the very best performances from musicians. With many integrated headphone amplifiers, non-linear frequency response, noise, distortion and lack of headroom can be quite problematic when actual headphones are connected. While to many, these amplifiers may seem "good enough", this overlooks the power of unconscious response. To understand why, one needs to realize that the human brain and hearing system are interconnected both consciously and unconsciously. While the conscious mind says "that sounds good enough", the unconscious mind reacts to the cues fed back to it in ways that even experienced artists can't overcome.   A prime example of this power can be observed with speech jamming applications, which make people unable to speak fluidly due to slightly delayed feedback of the voice (download one yourself to experience it). Although the effects on a performer of a skewed frequency response or running out of headroom are subtle by comparison, a collection of subtle emotional nuances in a performance can be what separates a good performance from a sensational performance. As music lovers and music creators, our goal is to empower artists to perform and react to those nuanced emotions whenever possible.

The Challenge of Reliable Performance with Headphones: Unlike static loads, the reactive load impedance that headphones present can vary greatly depending on frequency, far more so than even loudspeakers. The result of this reactivity is that the frequency response, noise and distortion of many amplifiers will suffer when compared to the same amp with an ideal resistive load. When using headphones for critical listening, mixing or deciding how to place microphones in the studio, these shifts can provide a false account of the source material. The RNHP is designed with a near Zero Ohm output impedance to minimize these issues in both individual headphones and when comparing multiple pairs of headphones.   This performance is imperative for those who need to trust the decisions they make with headphones.

VESA Mount: The RNHP may be mounted with any VESA 100 compatible mount. This may include pole mounts, wall mounts, table mounts, or articulating arm mounts. These mounts can help to ensure the RNHP is always in the perfect position.

Multiple Line Feed: In some situations where you only have one pair of outputs but need to feed the RNHP and another device such as speakers, a second headphone amplifier, or a 2-track recorder, we recommend using a splitter cable from the Left and Right line outputs to feed both devices from the same stereo pair.

High Power Headphone Amplification & Hearing Loss: The RNHP is designed with an abundance of headroom and power so that it can perform comfortably during tracking sessions with high dynamic range and loud ambient volumes. This is to say that the RNHP can make your headphones very loud if it is turned up too high, and that could cause permanent hearing damage. Please be kind to your ears when using the RNHP.