

Stereo Headphone Amplifier Box

Precision stereo balanced (differential) or unbalanced (single ended) line inputs to stereo headphone output

The Stereo Headphone Amplifier Box takes balanced or unbalanced line level left and right stereo inputs and drives standard stereo headphones over the wide impedance range of 30 Ohms to 1 kOhm. Input sensitivity is nominally 50 mV to 5 Volts RMS and a mono/stereo selection switch is provided.

The use of close tolerance (0.1%) components in the transformerless differential input design ensures high common mode rejection performance. A high efficiency headphone driver produces maximum output from the 9 volt supply while keeping quiescent power consumption to a minimum for extended battery life. An external DC input socket allows for mains operation from a standard 9 volt adaptor. The high input impedance provided is intended to bridge and not terminate the line being monitored thus minimising any loading effects. Extensive filtering of the audio lines and comprehensive screening provides excellent protection from radio frequency interference.



The high performance of the unit offers a quality stereo headphone monitoring facility suitable for portable or permanent installation in educational, live music recording, multimedia, public address and industrial situations.

Typical modes of operation

To monitor balanced stereo lines connect the two (differential) signal lines for each channel along with the screens to each of the left and right input sockets using the pin numbers defined in the specification. Unbalanced (single ended) inputs can easily be accommodated by grounding one of the balanced input lines and using the other signal line and ground as an unbalanced input (see specifications).

The headphones are plugged into the 0.25 inch jack socket although a wide range of adaptors are readily available for use with alternative connectors. The socket is wired for use with standard stereo 3 pole plugs and a two pole plug should never be used. The volume is adjusted by way of the rotary control mounted on the top of the box.

The front panel mono/stereo slide switch can be used to combine the left and right inputs resulting in an identical mono output signal to each of the stereo headphone ear pieces.

Variations in use

For monitoring mono line sources the signal can be connected to either the left or right input, and with the mono/stereo switch set to mono, both headphone ear pieces will be driven by the single input.

The versatility of the Stereo Headphone Amplifier Box means that it can be used as a general purpose test instrument for tracing line faults or for quick operational checks. The high input signal level capability means that even speaker lines up to about 50 watts nominal power level can be monitored without danger of hearing damage by overdriving the headphones.

Typical Performance Specification

| | |
|----------------------------|---|
| Frequency Response | +0.2/-1 dB from 20 Hz to 20 kHz; -3dB 50 kHz |
| Noise | <-70 dBu (Note 1) |
| Distortion | <0.2% |
| Maximum Gain | 28 dB |
| Common Mode Rejection | 60 dB |
| Input Common Mode Clipping | >+16 dBu |
| Input Impedance | 60 kOhms bridging |
| Input Clipping Level | +20 dBu |
| Output Impedance | <50 Ohm for 30 Ohm to 1 kOhm headphones |
| Output DC offset | <10 mV |
| Output Clipping Level | +10 dBu |
| Channel Separation | 60 dB at 1 kHz |
| Channel Balance | 1 dB |
| Connectors | |
| Stereo Inputs | XLR 3 pin female or 0.25 inch 3 pole A gauge jack combination socket |
| Headphone Output | 0.25 inch 3 pole A gauge jack socket |
| Pin Connections | |
| Inputs | PIN 1 (sleeve) GROUND; PIN 2 (tip) SIGNAL; PIN 3 (ring) RETURN. To unbalance connect PIN 3 to ground |
| Headphone Output | SLEEVE: COMMON; RING: RIGHT SIGNAL; TIP: LEFT SIGNAL |
| PP3 Alkaline Battery Life | 50 Hours |
| External DC Connector | 2.5 mm centre pin positive (Note 2) |
| Dimensions | Width 80mm, Height 45mm, Depth 135mm |
| Weight | 300gm including battery |

Notes to specification

- 1) Measurements of dBu are dB with respect to 0.775 Volts
- 2) The unit may be operated from an external supply between 6 and 12 Volts DC at 15 mA quiescent, 100 mA peak. The recommended voltage is 9 Volts. The supply should be floating and regulated.
- 3) A fitted belt clip is available to special order.

Operating Controls

Front Panel

| | |
|----------------------|--------------------------------------|
| Mono/Stereo Selector | Two position slide switch |
| Connectors | Stereo line inputs; Headphone output |

Rear Panel

| | |
|----------------|--|
| Battery Holder | PP3 externally accessible |
| Power on/off | Two position slide switch with LED indicator |
| Connector | External DC supply |

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