

Signature Series

Maximum Resilience Broadcast Audio



HA1M

Two Input Headphone Amplifier

Two mono inputs to one stereo headphone amp

User Guide

GlenSound

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GlenSound Electronics Ltd

Thank you for choosing a new GlenSound product.

All rights reserved.

Information contained in this manual is subject to change without notice, if in doubt please contact us for the latest product information.

If you need any help with the product then we can be contacted at:

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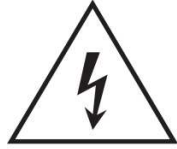
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Technical enquires: techinfo@glenSound.co.uk

Sales enquires: sales@glenSound.co.uk

IMPORTANT SAFETY INSTRUCTIONS



This symbol is intended to warn that dangerous voltages within the product are present and constitute a risk of electric shock.

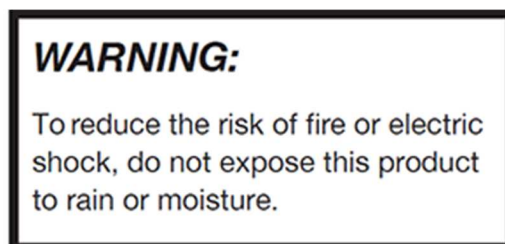
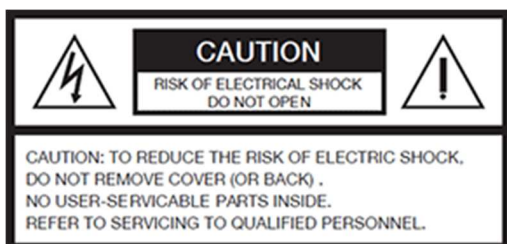


This symbol is intended to highlight that there are important operating & maintenance instructions in the literature accompanying this unit.

- 1) Read these instructions
- 2) Keep these instructions
- 3) Heed all warnings
- 4) Follow all instructions
- 5) Do not use this apparatus near water
- 6) Clean only with a dry cloth
- 7) Do not block any ventilation openings. Install in accordance with manufacturer's instructions
- 8) Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat
- 9) Do not defeat the safety purpose of the polarized or grounding type plug. A polarized plug has 2 blades with one wider than the other. A grounding type plug has 2 blades and third grounding prong. The wider blade or the 3rd prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet
- 10) Protect the power cord from being walked on or pinched, particularly at plugs, convenience receptacles and the point where they exit from the apparatus
- 11) Only use attachments/ accessories specified/ supplied by the manufacturer



- 12) Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/ apparatus combination to avoid injury from tip over
- 13) Unplug this apparatus during lightning storms or when unused for long periods of time
- 14) 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
- 15) Do not attempt to modify this product. Doing so could result in personal injury and/ or product failure





IMPORTANT: MAINS PLUG WIRING INSTRUCTIONS

This Signature unit is supplied with a moulded mains plug fitted to the AC mains lead.

Mains wiring colours/ connections:

The Green/ Yellow or Green wire must be connected to the terminal in the plug marked 'E' or with the Earth Symbol.

The Blue or Black wire must be connected to the terminal in the plug marked 'N' (Neutral).

The Red or Brown wire must be connected to the terminal in the plug marked 'L' (Live).



THIS UNIT MUST BE EARTHED



THIS UNIT IS FITTED WITH AN INTERNAL MAINS FUSE.

The fuse is located internally between the Live terminal of the IEC plug and the Live input of the power supply. The fuse should only be changed by a qualified service engineer. If replacing the fuse care should be taken to fit a correctly rated replacement. The fuse rating can be found in the technical specifications page of this handbook.



This equipment manufactured by GlenSound Electronics Ltd of Brooks Place
Maidstone Kent ME14 1HE is  marked and conforms to:

Low Voltage Directive: EN60065

Emissions: EN55103.1

Immunity: EN55103.2

WASTE ELECTRICAL AND ELECTRONIC EQUIPMENT REGULATIONS 2006 (WEEE)

GlenSound Electronics Ltd is registered for business to business sales of WEEE in
the UK our registration number is:

WEE/JJ0074UR

RoHS2 DIRECTIVE

EC directive 2011/65/EU restricts the use of the hazardous substances listed below
in electrical and electronic equipment.

This product conforms to the above directive and for this purposes, the maximum
concentration values of the restricted substances by weight in homogenous
materials are:

Lead	0.1%
Mercury	0.1%
Hexavalent Chromium	0.1%
Polybrominated Biphenyls	0.1%
Polybrominated Diphenyl Ethers	0.1%
Cadmium	0.01%

PRODUCT WARRANTY:

All equipment is fully tested before dispatch and carefully designed to provide you with trouble free use for many years.

We have a policy of supporting products for as long as possible and guarantee to be able to support your product for a minimum of 10 years.

For a period of one year after the goods have been despatched the Company will guarantee the goods against any defect developing after proper use providing such defects arise solely from faulty materials or workmanship and that the Customer shall return the goods to the Company's works or their local dealer.

All non-wear parts are guaranteed for 2 years after despatch and any defect developing after proper use from faulty materials or workmanship will be repaired under this warranty providing the Customer returns the goods to the Company's works or their local dealer.



HA1M Headphone Amplifier

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Issue 1,

Description

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OVERVIEW

The GlenSound Signature Series HA1M is a professional two mono input headphone amplifier. It is manufactured using high quality components and low noise audio circuits to provide many years of trouble free use.

Although traditionally a broadcast manufacturer, GlenSound's products are equally at home in professional and high end home studios, industrial installations and live pro sound environments. The HA1M can therefore be used in a number of applications.

It features two electronically balanced mono inputs on Neutrik XLRs each with its own front panel gain control, one advanced signature stereo headphone amplifier and one electronically balanced 'mix' output. The advanced signature headphone amplifier features a unique facility which provides consistent audio output levels into both high and low impedance headphones. This advanced stereo headphone amplifier can also automatically accept mono headphone jacks meaning that mono earpieces can be used directly without needing to re-wire cables.

It is possible to connect the balanced audio inputs & outputs to domestic style unbalanced audio circuits and the preset gain controls provide sufficient output level adjustment to allow this.

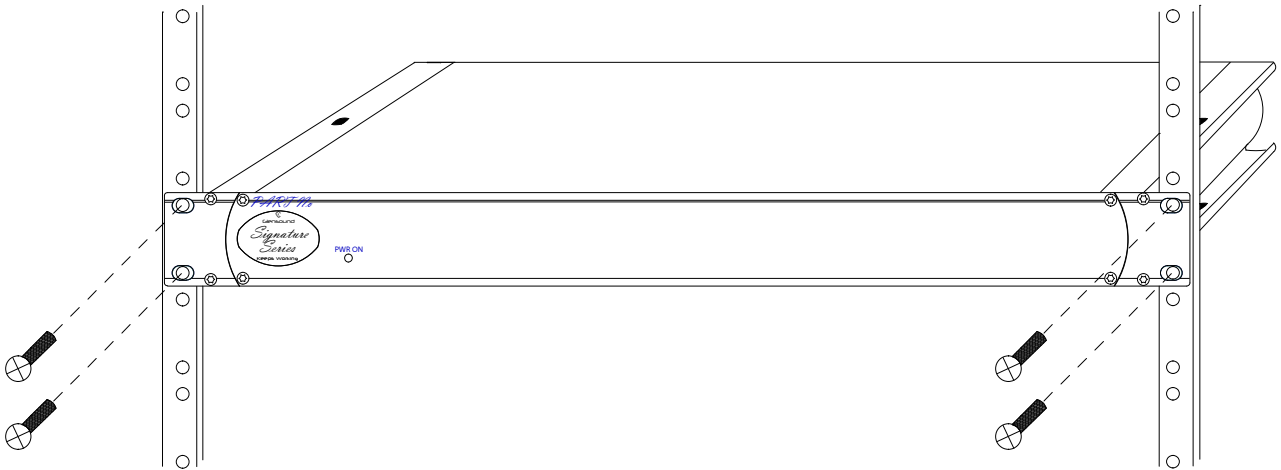
For added flexibility the HA1M has a front panel 'mono' switch. Using this switch mixes both the left and right inputs together and then sends the mono mix to both left and right outputs of the stereo headphone amplifier.

The HA1M is powered from an internal switch mode mains power supply fed from a filtered IEC mains plug suitable for use Worldwide. It has an internal fuse for safety. The unit can also alternatively be powered from an external +/-12V DC power source (such as the Signature Series PS1). If both mains and external DC power sources are present then, if one power source were to fail the unit would continue to work seamlessly from the other source.

PHYSICAL INSTALLATION

The GlenSound Signature Series have been designed to be highly versatile for installation and can be installed in 19" racks with either their front or rear panels facing the front of the rack. They can also be mounted underneath desks or work tops and can be either permanently mounted or stood (using the supplied feet) on top of desks or worktops.

INSTALLING SIGNATURE SERIES IN A 19" RACK



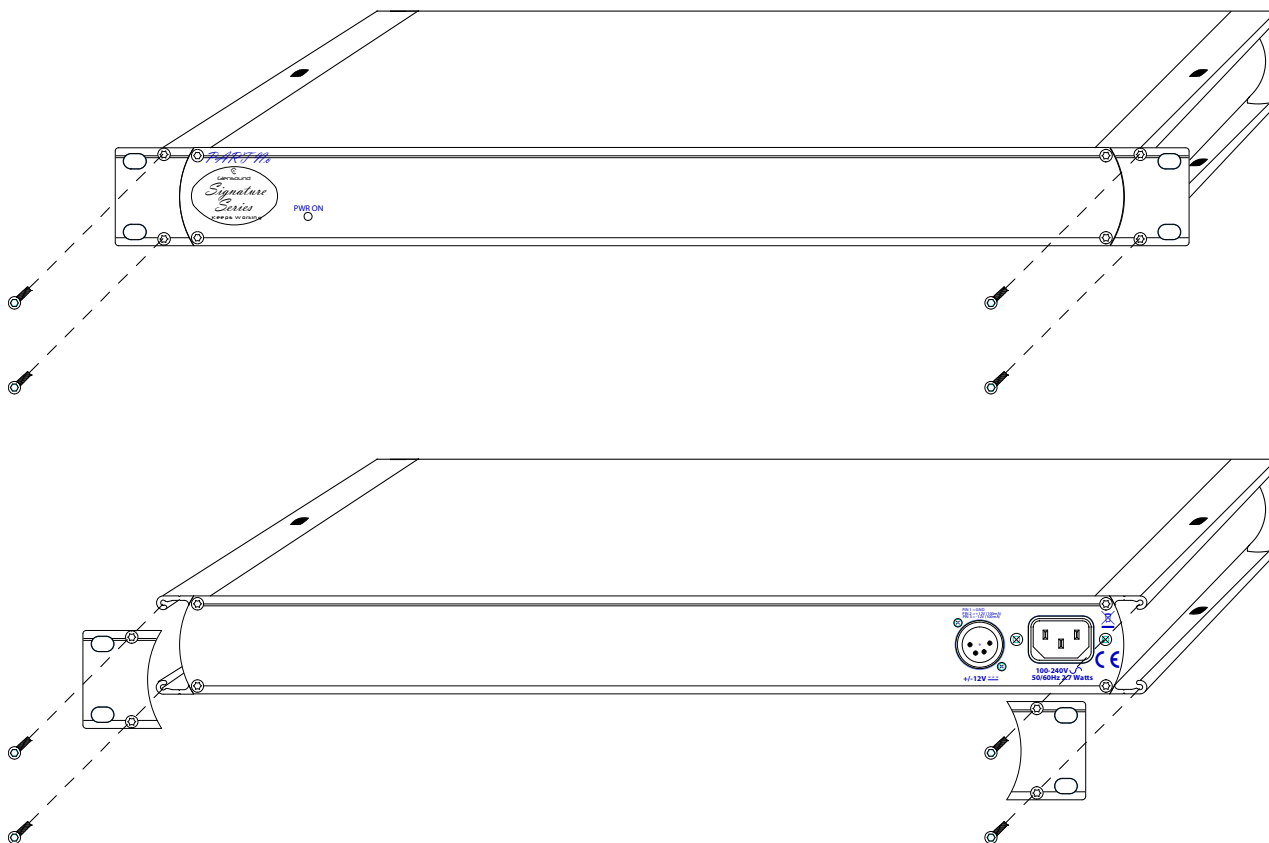
Firmly hold the signature subrack within the 19" rack and locate in 1RU of space. Use the supplied 6mm rack screws to securely attach the unit to the rack.

INSTALLING ADHESIVE FEET FOR NON PERMANENT TABLE TOP MOUNTING



Remove the front rack ears (if they are not required), turn the unit upside down and attach the supplied 4 adhesive feet as per the above drawing.

SWAPPING RACK EARS TO ALLOW THE REAR TO BE INSTALLED AT THE FRONT OF A RACK

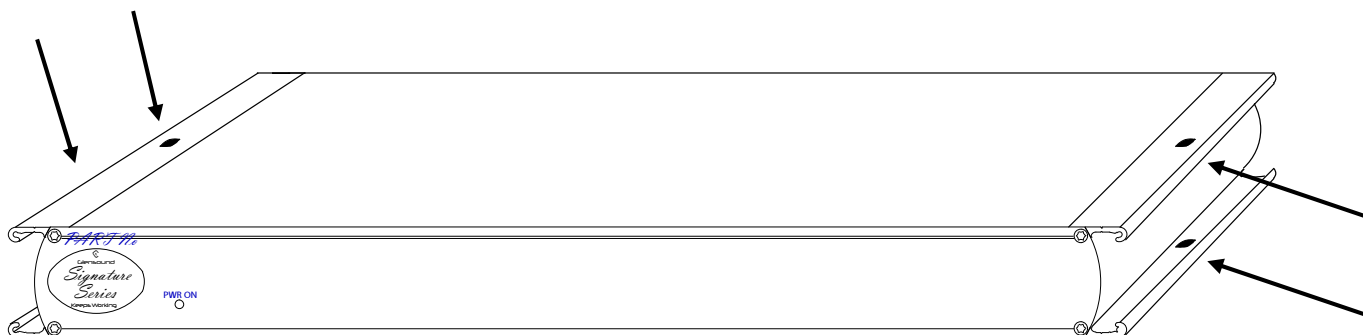


First remove the 4 silver button head screws that fix the rack ears onto the front of the unit as shown in the top picture above.

Remove the rack ears and turn the unit around for access to its back panel.

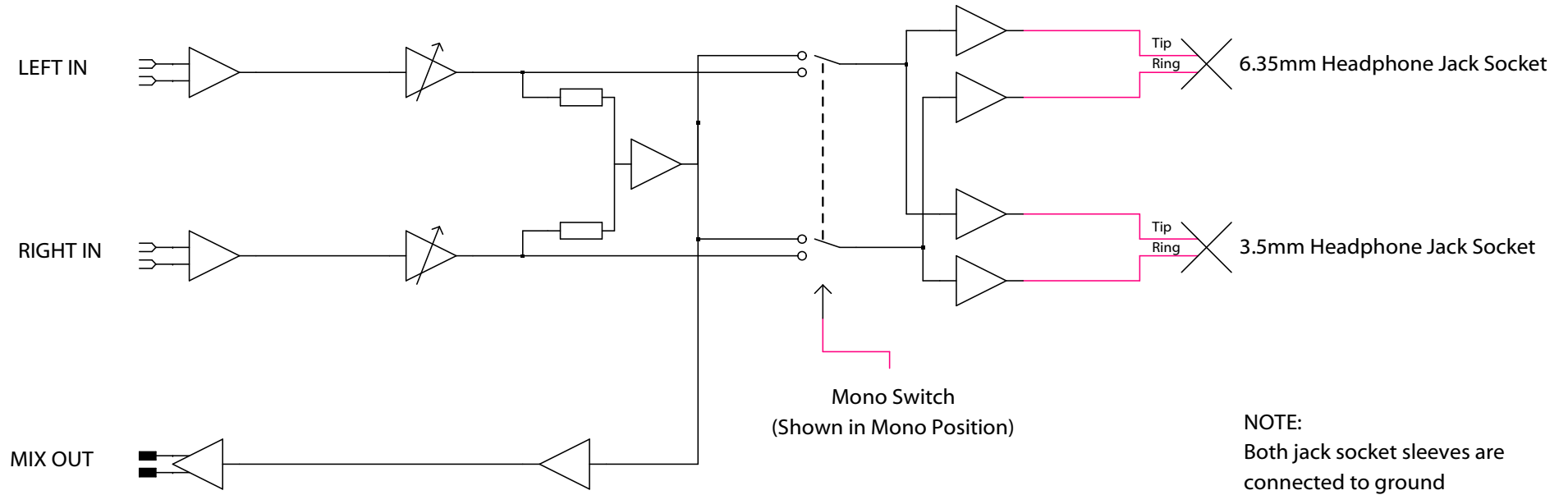
Re-fit the 2 rack ears using the same 4 silver button head screws that were removed from the front as per the bottom picture above.

USING THE MOUNTING HOLES FOR PERMANENTLY ATTACHING THE UNIT ABOVE OR BELOW A WORKTOP/ DESK

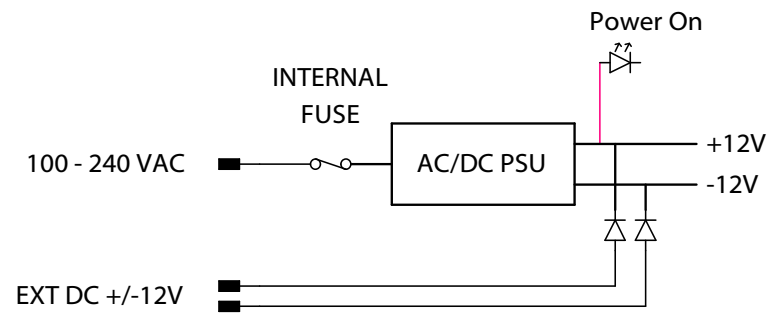


Use either the top or bottom mounting holes as indicated above to use suitable screws to attach the signature unit to a worktop or bench. ****PLEASE ENSURE THAT YOU USE SUITABLE FIXINGS****

AUDIO BLOCK DIAGRAM

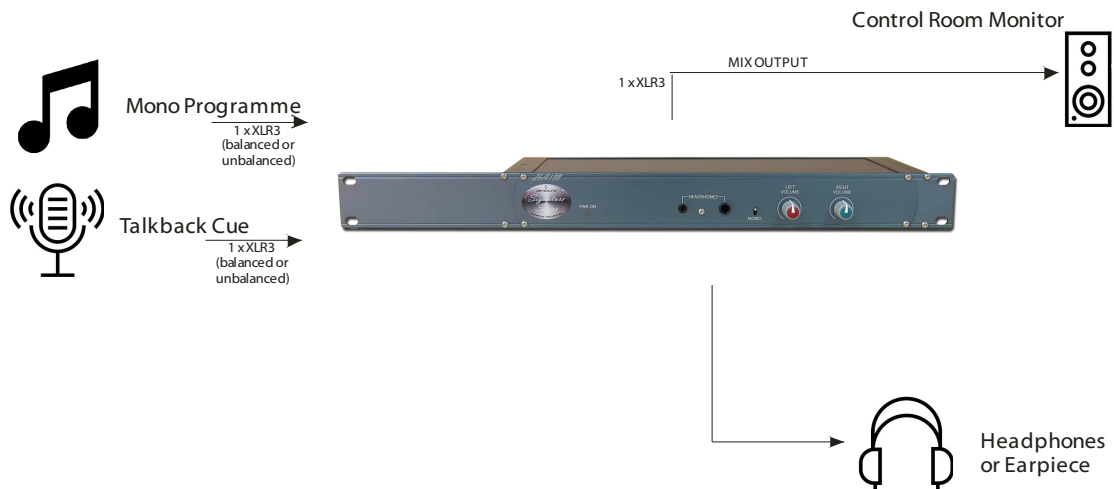


NOTE:
Both jack socket sleeves are connected to ground



EXAMPLES OF USE

1. Presenter Programme & Cue Monitor



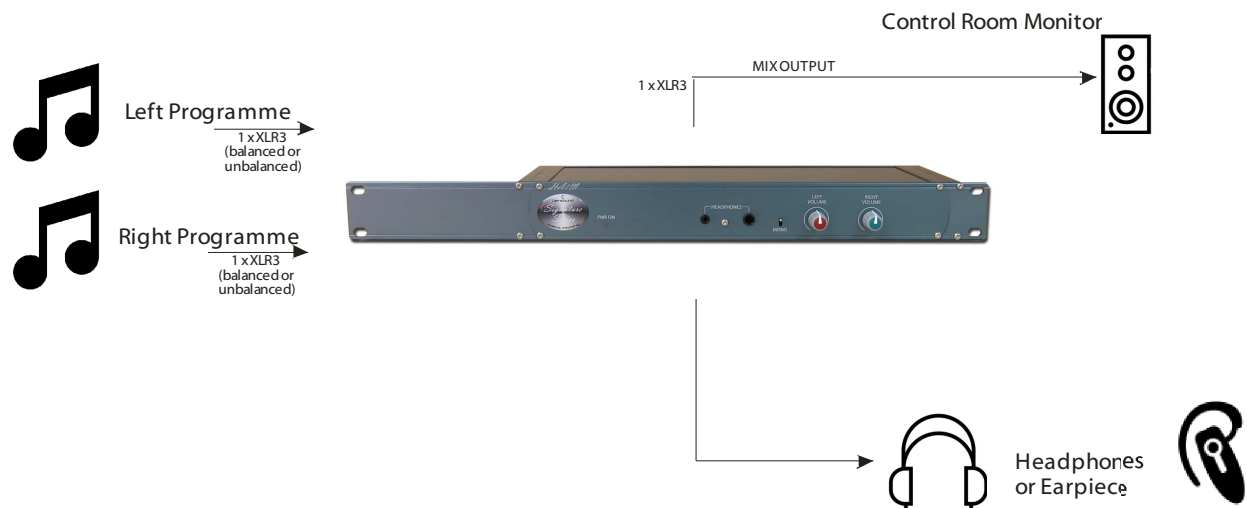
An On Air presenter either in TV or Radio will often be required to take cue feeds from a director or producer and simultaneously monitor the programme audio.

In this situation both the mono programme and mono talkback cue feeds are fed into the HA1M, one source into the left input and the other into the right input. The presenters' stereo headphones are connected via the front panel headphone socket and the individual input level controls allow the presenter to adjust the volume that he/ she monitors each of the 2 sources. In this case the presenter would monitor cue in one ear and programme in the other. If the front panel mono switch was operated then the presenter would hear both cue and programme in both ears.

An alternative but similar scenario would be if the presenter was using a mono earpiece instead of stereo headphones. In this case the front panel mono switch would need to be on. Because the HA1M has sophisticated headphone amplifier circuits it is quite safe to connect the mono earpiece jack to either of the front panel headphone sockets on the HA1M.

In both of the above examples the line level mix output on the rear of the HA1M could be used for feeding an auxiliary monitoring position in a control room.

2. Stereo Programme Monitor



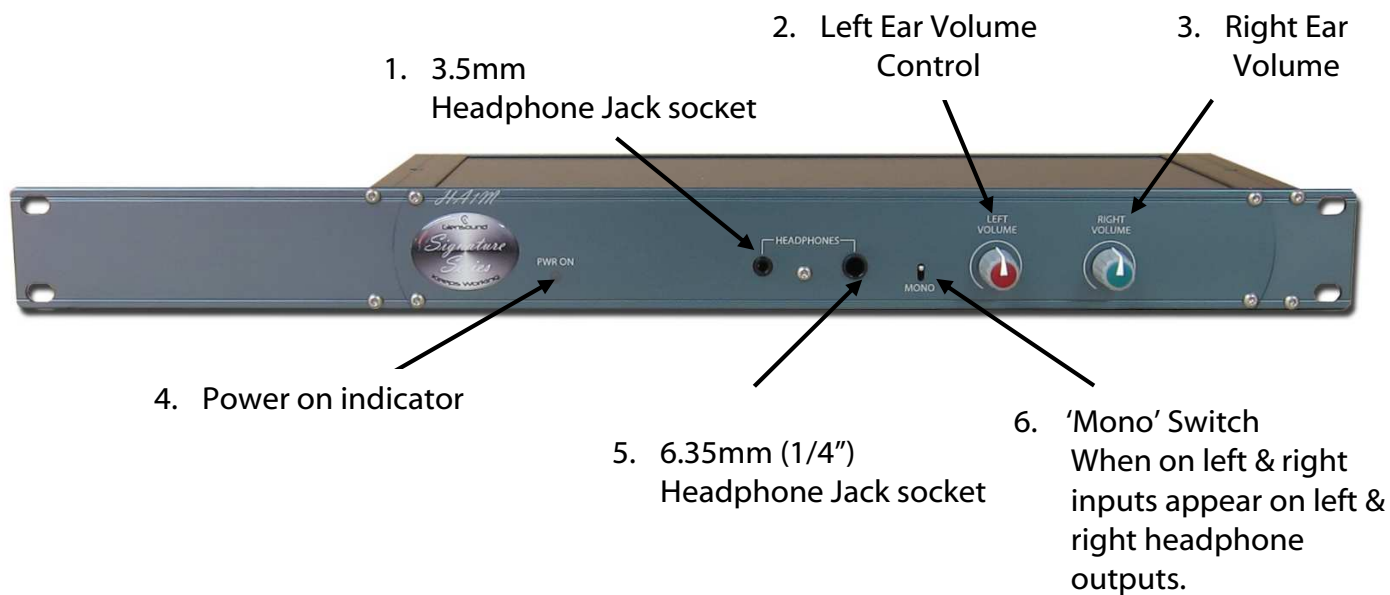
A fairly common requirement for TV, Radio & pro sound environments is for an operator/presenter to monitor a stereo audio feed.

The HA1M has 2 audio inputs so allows the monitoring of a stereo programme/ audio feed from the internal headphone amplifier with the ability to individually adjust the volume/ level of the left and right stereo inputs.

In this scenario the left and right audio inputs would be connected on the 2 rear panel XLR audio inputs and the operators' headphones (or earpiece) would be plugged into either the 6.35mm or 3.5mm front panel jack sockets.

The mono mix output would allow a control room loudspeaker or another headphone amplifier to monitor the same audio mix as the operator.

FRONT PANEL USER CONTROLS & CONNECTIONS



1. 3.5mm Headphone Jack Socket

This is the output of the headphone amplifier presented on a standard 3.5mm TRS (tip Ring Sleeve) jack socket. It is driven from separate output amplifiers to the 6.35mm headphone output so different impedance headphones can safely be used on each output. Although the HA1M is a stereo headphone amplifier mono earpieces/ single ear headphones with mono jacks can safely be used.

2. Left Volume Control

This rotary potentiometer adjusts the audio level (volume) of the left input to the headphone amplifier. Turning it clockwise increases the level and anti-clockwise decreases the level.

3. Right Volume Control

This rotary potentiometer adjusts the audio level (volume) of the right input to the headphone amplifier. Turning it clockwise increases the level and anti-clockwise decreases the level.

4. Power on Indicator

When on this bright blue LED indicates that power is applied and the HA1M is on.

5. 6.35mm (1/4") Headphone Jack Socket

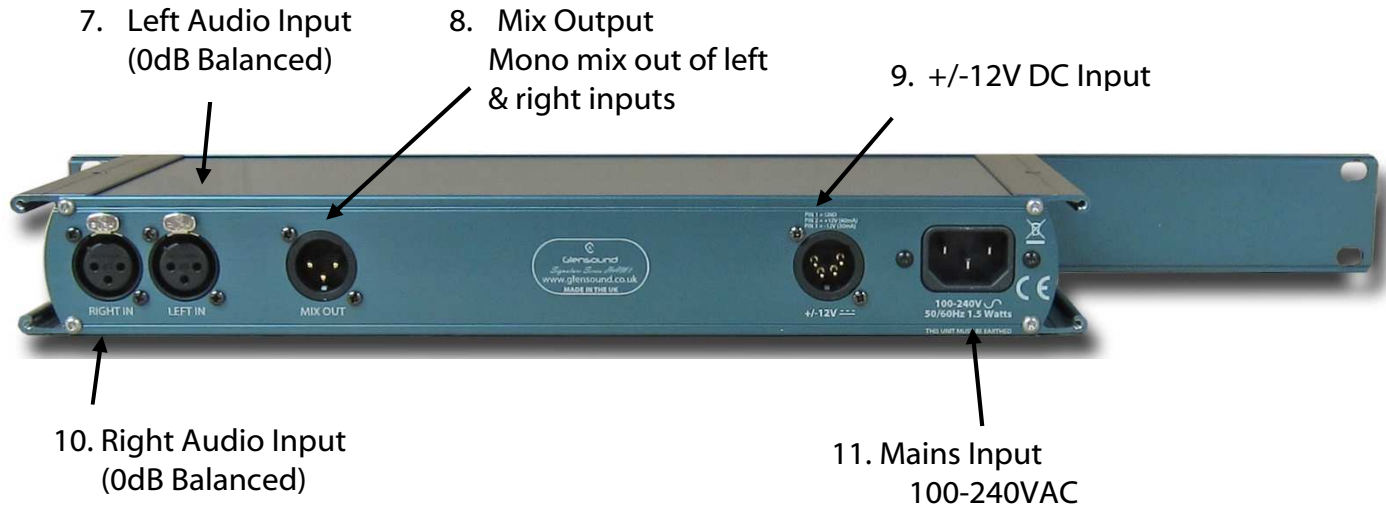
This is the output of the headphone amplifier presented on a standard 6.35mm TRS (tip Ring Sleeve) jack socket. It is driven from separate output amplifiers to the 3.5mm headphone output so different impedance headphones can safely be used on each output. Although the HA1M is a stereo headphone amplifier mono earpieces/ single ear headphones with mono jacks can safely be used.

6. Mono Switch

When in the 'up' position this switch sets the headphone amplifier to work as a standard stereo headphone amplifier where the left audio input is routed to the left headphone output and the right audio input is routed to the right headphone output.

When in the 'down' position marked 'mono' this switch mixes the left and right audio inputs together and then routes this mono mix to both the left and right headphone outputs.

REAR PANEL CONNECTIONS



7. Left Audio Input

This standard 3 pin XLR provides an electronically balanced line level audio input to the headphone amps left audio channel. This input can be wired unbalanced if required.

8. Mix Output

This audio output is a line level electronically balanced (can be wired unbalanced) output. The audio output is a mono mix of the audio that is being sent to the headphones and it is affected by the positions of the left and right volume controls.

9. +/-12VDC Input

This DC input can be used to power the HA1M from an external DC source (such as the Signature PS1). If both a DC input and a Mains input are present then the 2 power sources will provide redundancy and if one fails the other will automatically take over.

10. Right Audio Input

This standard 3 pin XLR provides an electronically balanced line level audio input to the headphone amps right audio channel. This input can be wired unbalanced if required.

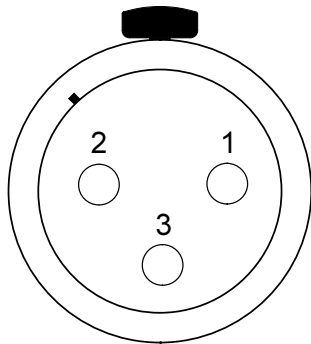
11. Mains Input

This wide voltage range mains input (100 – 240 VAC) can be used to power the HA1M. If both a Mains & DC input are present then the 2 power sources will provide redundancy and if one fails the other will automatically take over.



WIRING INFORMATION

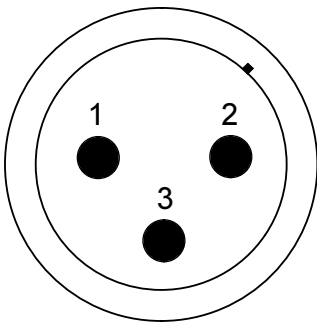
1. Standard wiring info



XLR SOCKET (FEMALE)

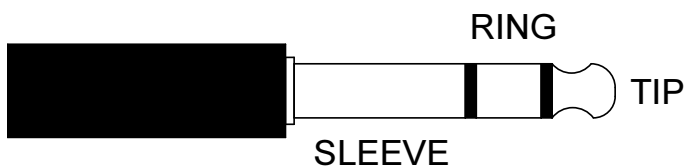
STANDARD XLR AUDIO PINOUTS:

- 1: Ground/ Earth
- 2: INPHASE/ POSITIVE/ MIC +
- 3: MATE/ NEGATIVE/ MIC -



XLR PLUG (MALE)

STANDARD HEADPHONE WIRING:



- TIP: A/ LEFT Ear
- RING: B/ RIGHT Ear
- SLEEVE: Common/ Earth

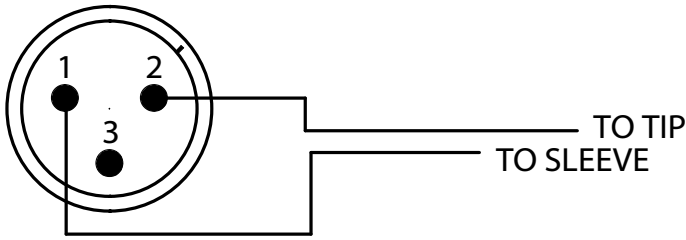
HEADPHONE WIRING NOTE:

The *Signature Series* range of products feature sophisticated headphone amplifiers whose stereo outputs can be connected directly to mono headphone jacks without damaging the headphone internal amplifiers.

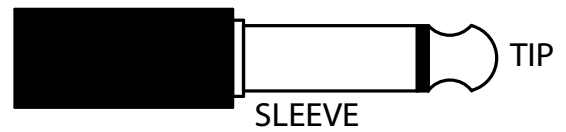
2. Connecting to unbalanced devices

The input & output circuits of the *Signature Series* can be connected to unbalanced (domestic style) devices. The wiring diagrams below show a mono jack plug as the unbalanced end of the cable but this of course could easily be a different type of connector such as an RCA Phono or 'D' type connector.

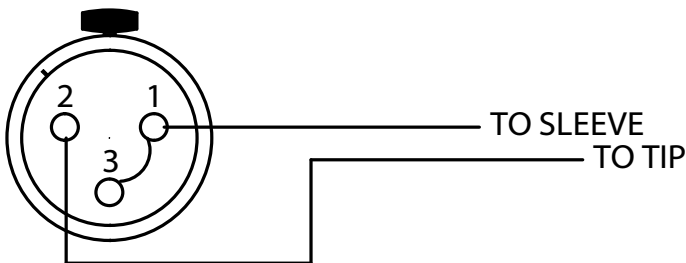
BALANCED OUTPUT ON SIGNATURE UNIT



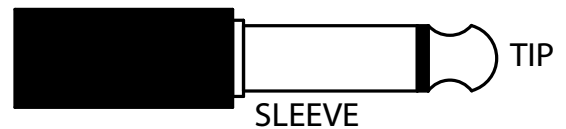
UNBALANCED INPUT OF EXTERNAL DEVICE



BALANCED INPUT ON SIGNATURE UNIT



UNBALANCED OUTPUT OF EXTERNAL DEVICE



Signature Series

Maximum Resilience Broadcast Audio



SPECIFICATION

AUDIO HEADPHONES

Frequency Response

>-2dB 20Hz to 20kHz

Maximum Output Level

+20dB into 1KOhms +7dB into 32Ohms

Distortion

<0.015% THD @ 100Hz & 10kHz
Reference to +8dBu output

Noise

>-89dB @ line up unweighted
RMS (22Hz to 22kHz)

Output Type

Sophisticated Electronically balanced can accept mono or stereo jacks and automatic level correction for low or high impedance headphones

Headphone Impedance

32 - 1000 Ohms

Crosstalk

>-85dB @ 1kOhms >-55dB @ 32 Ohms

AUDIO MIX OUT

Frequency Response

>-2dB 20Hz to 20kHz

Maximum Output Level

+24dBu

Distortion

<0.02% THD @ 100Hz, 1kHz & 10kHz
Reference to +8dBu output

Noise

>-90dB @ line up unweighted
RMS (22Hz to 22kHz)

Output Type

Electronically balanced can be wired unbalanced

Output Impedance

50 Ohms

AUDIO GENERAL

Maximum Input Level

+20dBu

Front Panel Pot Gain Range

-70dB to +10dB

POWER

Mains Input

Filtered IEC, 100 to 240VAC
47 - 63Hz

AC Consumption

1.5 Watts @ 230VAC

DC Input

4 Pin Neutrik XLR plug +/- 12V

Internal Mains Fuse

20mm 1A Anti Surge

PHYSICAL

Size

336 x 123 x 44mm (LxDxH) no rack ears
482mm 19" (1RU) with rack ears

Weight

0.94kg

Mechanics

All aluminium construction, anodized and laser etched

Shipping Carton

Rugged export quality cardboard carton
610 x 420 x 130mm LxDxH

Shipping Weight

2.35kg