GS-SW012

2 Input Reference Microphone Amplifier for Comparison of Microphones

PRODUCT DETAILS

6 BROOKS PLACE, MAIDSTONE, KENT, ME14 1HE. ENGLAND.
Visit our Website at www.glensound.com

TEL: +44 (0) 1622 753662
FAX: +44 (0) 1622 762330

Glensound Electronics Ltd

Thank you for choosing a new Glensound product.

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:

Glensound Electronics Ltd
1 – 6 Brooks Place
Maidstone
Kent
ME14 1HE
United Kingdom

Telephone: +44 (0) 1622 753662

Fax: +44 (0) 1622 762330

EMAIL ADDRESSES

General enquires: office@glensound.co.uk

Technical enquires: techinfo@glensound.co.uk

Sales enquires: sales@glensound.co.uk

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.

CE

EU DECLARATION OF CONFORMITY FOR:

GS-SW012

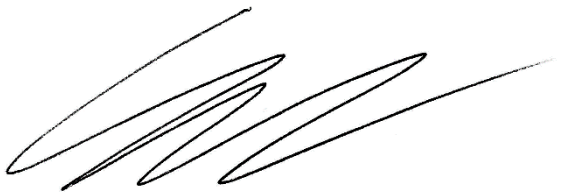
2 Input Reference Microphone Amplifier

This declaration of conformity is issued under the sole responsibility of the manufacturer.

This equipment is manufactured by Glensound Electronics Ltd of Brooks Place Maidstone Kent ME14 1HE is CE marked and conforms to the following Union harmonisation legislation:

Low Voltage Directive:	EN60065 and EN62368-1:2014
Emissions:	BS EN55032:2015
Immunity:	BS EN55035:2017

Signed for and on behalf of Glensound Electronics Ltd.



Gavin Davis, Managing Director
Maidstone, Kent, England

Date: 16/04/2020

RoHS DIRECTIVE

RoHS 2 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 these 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%

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

GLENSOUND GS-SW012

Handbook Contents

Issue 1

Description Page No.

Contents

OVERVIEW

GS-SW012 features two low noise reference microphones amplifiers designed for testing and comparing microphones.

There are two headphone monitoring amplifiers enabling two users to listen to the microphone inputs. A front panel switch selects which of the two inputs is being sent to the outputs. Rather than providing a coarse direct switch between the two inputs when the front panel select switch is operated a quick and clean cross fade is performed between the two microphone inputs.

The microphone inputs use the very latest digitally controlled microphone amplifiers and gain is accurately controlled in 1dB steps. The output of the microphone amplifiers is fed into a low noise and wide dynamic range analogue digital converter (ADC), before being fed into a DSP for cross fade and headphone level control.

The maximum input level of the microphone amplifiers has been carefully set to be able to handle +16dB, however as there are no internal compressors or limiters to prevent unwanted artifacts for reference monitoring an analogue pad is inserted automatically when the input gain is set to +10dB (or lower) providing a further 14dB of input attenuation bringing the minimum gain to -4dB and the maximum microphone input level to before clipping +30dB.

In addition to the two headphone outputs, a balanced analogue XLR audio output is also provided to allow external reference loudspeakers or recording equipment to be used.

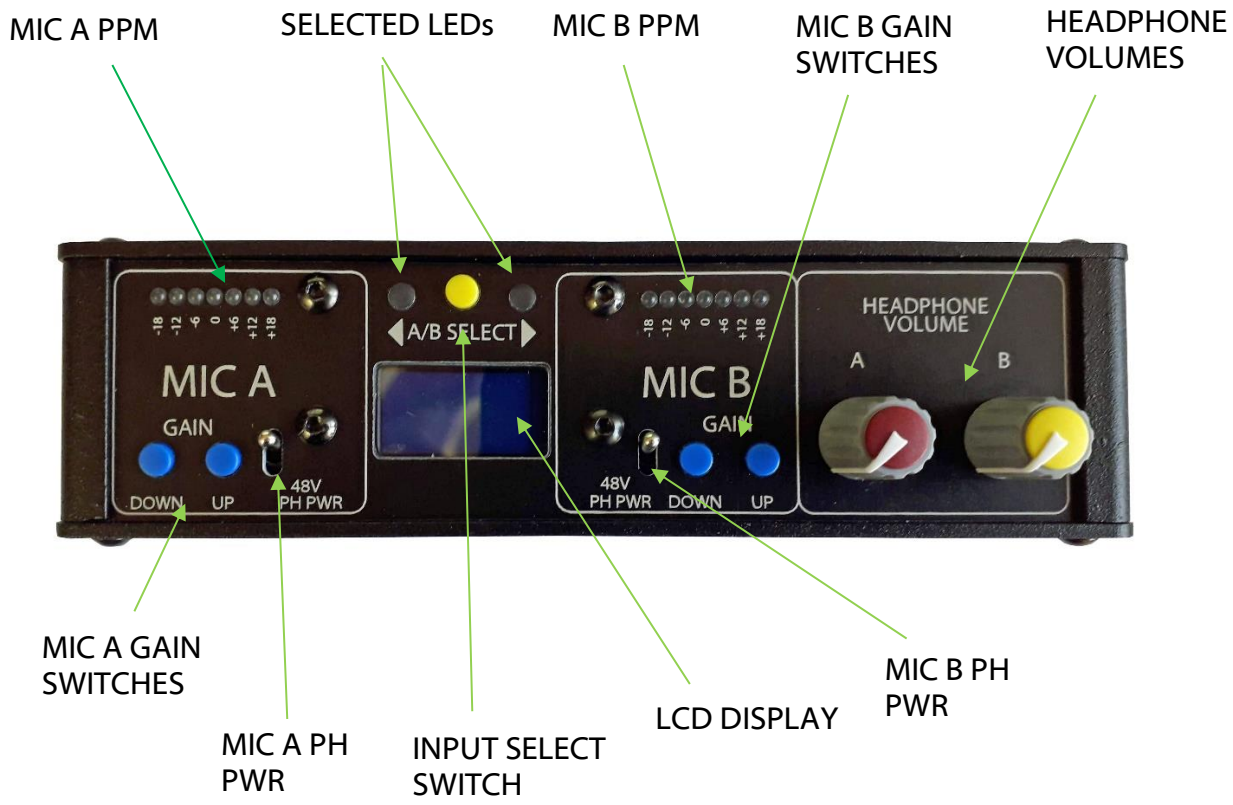
A small front panel LCD screen is provided to show the gain settings of the two microphone inputs. This LCD also provides indication if the input pad is enabled on an input or not.

48V phantom power is provided by a low noise DC:DC circuit and can be turned on/ off for each of the two inputs by front panel self indicating toggle switches.

Each of the two inputs has its own 7 LED PPM meter providing accurate level indication of the amplifiers output. The meters have a range of -18 to +18dB with a resolution of 6dB. This is sufficient for the user to allign the levels from two different microphones.

GS-SW012 PANEL LAYOUT

Front Panel



Front Panel Features

1. **MIC A PPM**

   These 7 LEDs provide a visual indication of the A microphone input's output level. The marked scale is in dB and the ballistics follow a PPM style.

2. **SELECTED LEDS**

   These two bright yellow LEDs provide a visual indication of which of the two microphone inputs is currently selected and being routed to the headphone and XLR outputs.

3. **MIC B PPM**

   These 7 LEDS provide a visual indication of the B microphone input's output level. The marked scale is in dB and the ballistics follow a PPM style.

4. **MIC B GAIN SWITCHES**

Pressing these switches adjust the B microphone's input gain up or down in 1dB steps. The current actual gain being applied to the B microphone input will be displayed on the LCD display.

Once the minimum gain of 10dB is reached the unit automatically silently switches in a 14dB hardware pad on the input and changes the mic amps gain to compensate. This allows a minimum gain setting of -4dB. When the pad is switched in the letter 'P' will appear next to the gain setting on the display.

5. **HEADPHONE VOLUMES**

These two rotary level controls each adjust their own headphone output volume. Turning the control clockwise increases the output level and turning them anticlockwise reduces the level.

The gain of the headphone outputs is set such that with volume control set in its centre position the gain is 0dB. With the volume control turned fully clockwise the gain is 10dB and with it turned fully anticlockwise the gain is -40dB.

6. **MIC A GAIN SWITCHES**

Pressing these switches adjust the A microphone's input gain up or down in 1dB steps. The current actual gain being applied to the A microphone input will be displayed on the LCD display.

Once the minimum gain of 10dB is reached the unit automatically silently switches in a 14dB hardware pad on the input and changes the mic amps gain to compensate. This allows a minimum gain setting of -4dB. When the pad is switched in the letter 'P' will appear next to the gain setting on the display.

7. **MIC A PH PWR**

This switch turns on/ off 48V phantom power to the A microphone's input. When the switch is in the down position then phantom power is turned on.

8. **INPUT SELECT SWITCH**

Pressing this switch toggles the headphone and analogue outputs between the A/B microphone inputs. The LEDs next to the switch indicate which microphone input is currently active.

Rather than providing a coarse direct switch between the two inputs when this front panel select switch is operated a quick and clean cross fade is performed between the two microphone inputs.

If this switch is pressed and held for more than three seconds then both microphone inputs will be turned on together. When in this mode then the next time the select switch is pressed the unit will revert to the A microphone input.

9. **LCD Display**

   The small backlit liquid crystal display (LCD) is used to show the gains of the two microphone inputs.

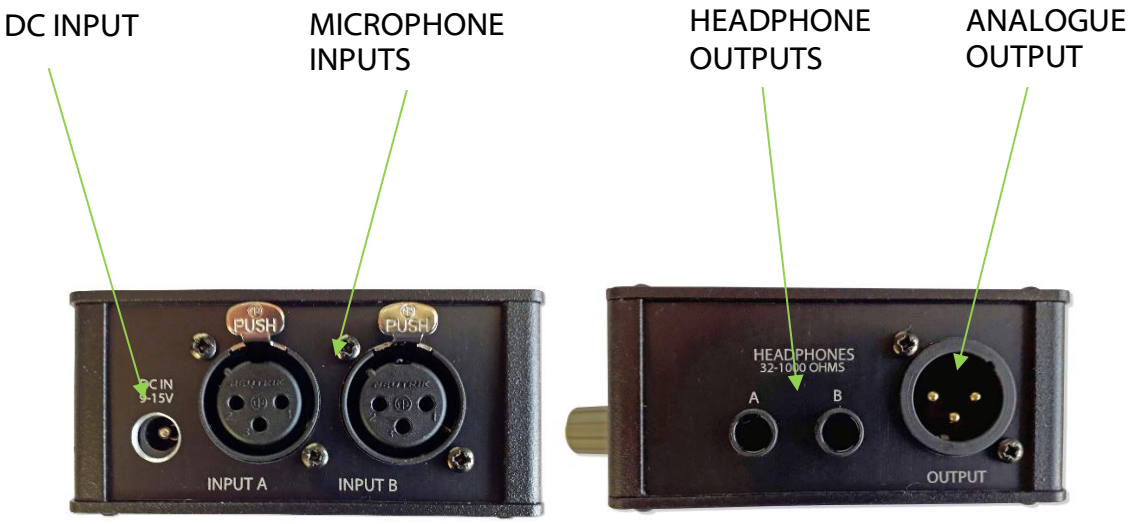
   After a period of inactivity the back light dims but will automatically resume full brightness when any of the gain switches are pressed.

   The gain levels are shown in dB and refer the amount of gain being applied to the microphone input.

10. **MIC B PH PWR**

    This switch turns on/ off 48V phantom power to the B microphone's input. When the switch is in the down position then phantom power is turned on.

Side Panel



Rear Panel Features

11. **DC INPUT**

    This is a 2.5mm barrel connector with centre +Ve. It can accept input voltages between 9 and 15V DC and the external power supply should provide at least x Watts.

12. **MICROPHONE INPUTS**

    Two Neutrik XLRs are provided for the two microphone inputs. The inputs are electronically balanced, rf filtered and protected against external phantom power signals.

13. **HEADPHONE OUTPUTS**

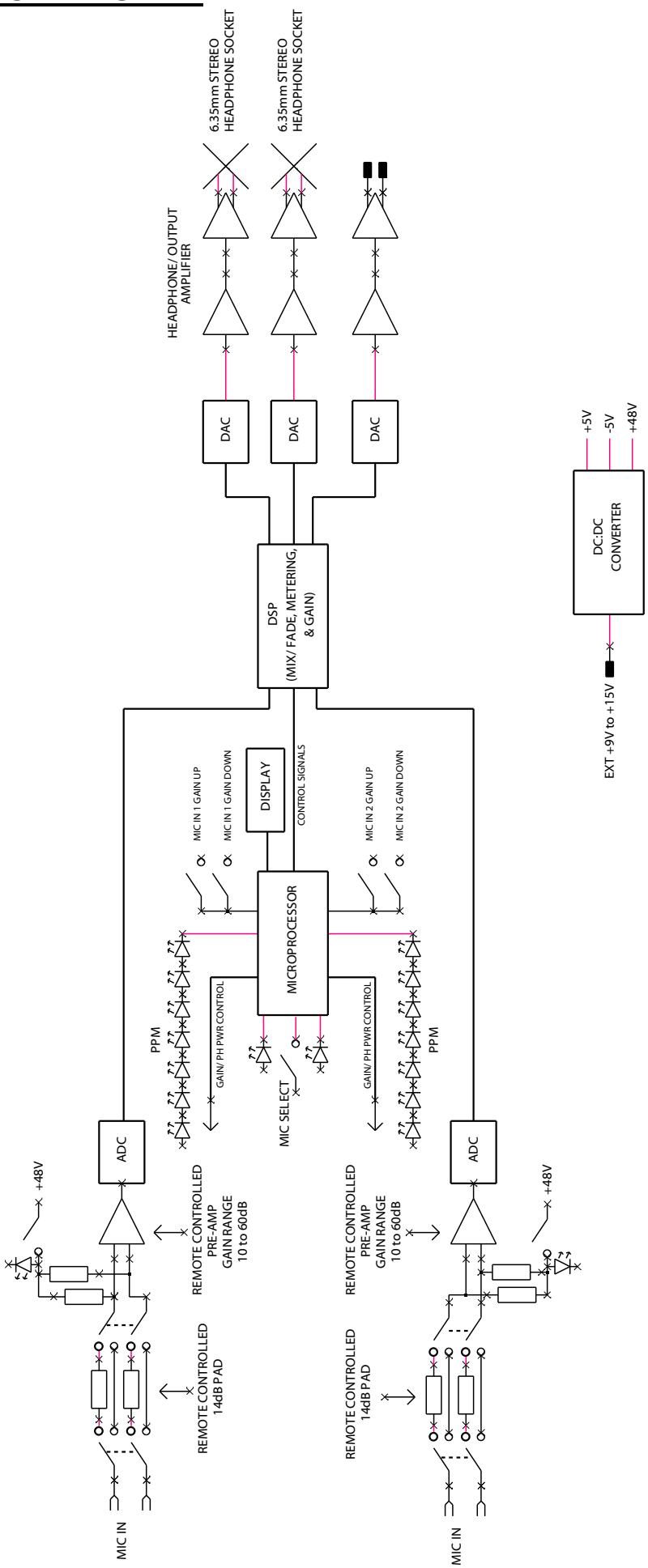
    The two headphone outputs are driven from their own amplifiers. Each output is stereo, with the currently selected microphone routed equally to the left & right ears.

    The sockets are standard 6.35mm tip ring sleeve and are suitable for connecting to headphones with impedances of between 32 and 1000 Ohms.

14. **ANALOGUE OUTPUT**

    This electronically balanced audio output provides an analogue output signal of the currently selected microphone.

AUDIO BLOCK DIAGRAM



SPECIFICATIONS

LINE OUTPUTS

Maximum Output Level
+18dB

Output Impedance
<50 Ohm

Interchannel Crosstalk
>101dB @ 0dB with1kHz tone

Output Type
Electronically balanced (can be wired Unbalanced)

HEADPHONE OUTPUTS

Maximum Output Level
+18dB (into 600 Ohms)

Headphone Impedance
32 - 1000 Ohms

Volume Pot Range
-40 to +10dB (0dB at 12 O'clock)

Circuit Type
Auto-sensing output, provides correct volume pot position for both high and low impedance headphones.

POWER

Connector
2.5mm Barrel Centre Positive

Input Voltage
+9 to +15V DC

Consumption
Total unit consumption <5 Watts

INCLUDED ITEMS

Power Supply
External Switch Mode

Handbook
A5 paper handbook (download also available)

MIC INPUTS

Frequency Response
-0.2dB 50Hz to 20kHz

Input Gain Range
+65 to -4dB
Note: 14dB Pad inserted when gain reaches +10

Input Gain Resolution
1dB steps

Maximum Input Before Clipping
+30dBu

Input Impedance
>2k4 Ohm

Equivalent Input Noise
125dB (22Hz - 22kHz Terminated 150 Ohms)

Distortion (ref 0dBu output with 2dB gain)
0.006 @ 100Hz
0.003% @ 1kHz
0.004% @ 10kHz

Phantom Power
+48 Volts

PHYSICAL

Size
150 x 100 x 40mm (W x D x H) (inc controls)

Weight
0.35 kg

Mechanics
All aluminium construction, anodized and laser etched front & rear panels

Shipping Carton
Rugged export quality cardboard carton
610 x 420 x 120mm LxDxH

Shipping Weight
3kg

ENVIROMENTAL

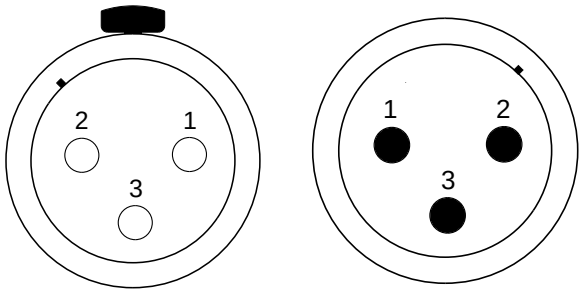
Operating Temperature
0 to +50 °C (32 to 122 °F)

Storage Temperature
-20 to +70 °C (32 to 158 °F)

Relative Humidty
0 to 95% non-condensing

WIRING INFORMATION

Standard XLR Pin Outs



XLR SOCKET (FEMALE) XLR PLUG (MALE)

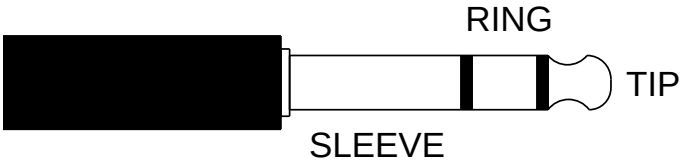
STANDARD XLR AUDIO PINOUTS:

1: Ground/ Earth

2: INPHASE/ POSITIVE/ MIC +

3: MATE/ NEGATIVE/ MIC -

Standard Headphone Wiring



STANDARD HEADPHONE WIRING:

TIP: A/ LEFT Ear

RING: B/ RIGHT Ear

SLEEVE: Common/ Earth