Signature Series

Maximum Resilience Broadcast Audio

# ADDA 1, DAC 1 & ADC 1

# ANALOGUE/ DIGITAL AUDIO CONVERTERS

Analogue to Digital and Digital to Analogue (ADDA), Digital to Analogue (DAC) & Analogue to Digital (ADC) audio converters.

# User Guide

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Glensound
Keeps Working

# 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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## IMPORTANT SAFETY INSTRUCTIONS

Read this safety sheet prior to installation or initial use. This generic safety sheet covers multiple product configurations across our range. The full operating & installation manual and model-specific technical specifications are available online at: www.glensound.com

| | |
|---|---|
|  DANGEROUS VOLTAGE: This symbol is intended to warn that dangerous voltages within the product are present and constitute a risk of electric shock. |  IMPORTANT INSTRUCTIONS: This symbol is intended to highlight that there are important operating, installation, and maintenance instructions in the literature accompanying this unit. |
|  **THIS UNIT MUST BE EARTHED (Class I Mains Models):** English: This symbol highlights that the equipment must have a valid earth connection with the protective earthing conductor. Danish: *Apparatets stikprop skal tilsluttes en stikkontakt med jord som giver forbindelse til stikproppens jord.* Finnish: *Laite on liitettävä suojakoskettimilla varustettuun pistorasiaan.* Norwegian: *Apparatet må tilkoples jordet stikkontakt.* Swedish: *Apparaten skall anslutas till jordat uttag.* |  **CAUTION – SHOCK HAZARD: DISCONNECT ALL POWER SOURCES:** This symbol warns that the product can be energised simultaneously from more than one power source (e.g., dual AC mains supplies, external DC power, and/or PoE). Care must be taken if accessing internal components. Ensure that ALL connected power supplies are fully disconnected. |

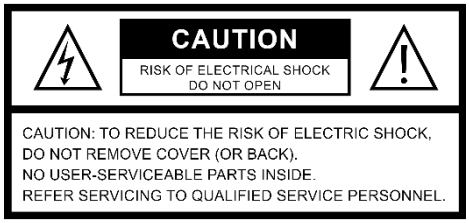
1. Read & Keep Instructions: Read these instructions, keep these instructions, heed all warnings, and follow all instructions.

2. Indoor Use & Moisture: Unless otherwise specified in the model-specific manual, this product is intended for indoor use only. Do not use this apparatus near water, and do not expose this product to rain or moisture.

3. Ambient Temperature: The intended ambient operating temperature of this product is 0°C to 40°C (or 0°C to 50°C where specified in the model-specific technical specifications in the online user manual).

4. Cleaning & Heat Sources: Clean only with a dry cloth. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.

5. Cable & Cord Protection: Protect all power cords and network cables from being walked on or pinched, particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.







6. Attachments & Lightning: Only use attachments/accessories specified or supplied by the manufacturer. Unplug this apparatus during lightning storms or when unused for long periods of time.

7. Servicing & No User-Serviceable Parts: The product contains no user-serviceable parts and must not be disassembled or modified in any way. Doing so could result in personal injury and/or product failure. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as when a 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.

8. Professional Environment: This equipment is not suitable for use in locations where children are likely to be present.

**POWER SUPPLY & DISCONNECT INSTRUCTIONS (APPLICABLE BY MODEL CONFIGURATION)**

9. Simultaneous / Redundant Power Sources (Mains, DC & PoE): Depending on the model, this product may be powered by a single source or simultaneously by multiple redundant power sources (dual AC mains inlets, an AC mains inlet, an external DC power input, and/or Power over Ethernet [PoE]). Disconnecting a single power lead will NOT isolate the unit if another power source remains connected. To completely de-energize the equipment, unplug ALL connected AC mains cords, DC barrel jack/external DC connectors, and PoE RJ45/etherCON network cables.

10. AC Mains Disconnect Devices (Single or Dual IEC Inlets): Where AC mains inlets are fitted, the mains plug(s) and rear-panel IEC appliance coupler(s) serve as the disconnect device(s). On dual-mains models, both mains' cords must be unplugged to isolate the unit from AC mains power. The socket-outlet(s) used for mains power must be installed near the equipment and be easily accessible.

11. Plug Grounding & Polarization (AC Mains Models): 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 a third grounding prong provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.

12. Approved Detachable Earthed Mains Cords (Class I AC Mains Models): Use only approved detachable 3-core earthed mains cords (minimum H05VV-F 3G0.75 mm² with IEC 60320-1 C13 connector) rated for the country of installation: • United Kingdom: Use a BS 1363-1 approved molded plug fitted with a 5 A ASTA-approved BS 1362 fuse. • European Union: Use a CEE 7/7 (Schuko/French) earthed plug. • Denmark: When connecting to wall socket-outlets in Denmark, use an approved 3-pin earthed plug complying with DS 60884-2-D1 (Standard Sheet DK 2-1a) to ensure protective earthing is maintained. • USA/Canada: Use a UL-listed / CSA-certified 3-conductor grounding power cord [minimum 18 AWG, SVT/SJT] with a NEMA 5-15P plug. • All other regions: Use a nationally safety-approved 3-core earthed mains cord rated for the country of installation.

13. Internal Primary Fusing & Neutral Fusing Warning (AC Mains Models – Service Personnel Only): Internal primary fuse(s) are located between the Live terminal of the IEC inlet and the Live input of the power supply and should only be changed by a qualified service engineer using a correctly rated replacement as specified in the product handbook. WARNING – Neutral Fusing: Because the AC mains plug may be reversible in some electrical distribution systems, the internal primary fuse may be located in the neutral conductor. Always disconnect all AC mains power cords completely from the IEC inlet(s) to de-energize all phase conductors before opening the enclosure or servicing the unit.

14. Power over Ethernet (PoE) Models: Unplugging the RJ45 / etherCON network cable disconnects PoE power from the unit. The Ethernet cable intended to be connected to the unit is for indoor building routing only and must not exit the building structure without appropriate primary surge protection.

15. External DC / USB Power Input Models: Connect only the manufacturer-supplied AC/DC power adaptor (where provided), or a safety-approved external DC or USB power supply complying with BS EN IEC 62368-1 (classified as ES1 and PS2/Limited Power Source [LPS]) that matches the voltage, minimum current rating, and pin polarity marked adjacent to the DC/USB input connector or specified in the product manual. The external power adaptor plug and the DC/USB input connector serve as the DC disconnect devices and must remain readily accessible; unplugging the DC/USB connector disconnects external DC power only and will not isolate the unit if AC mains or PoE remains connected.

**INSTALLATION, THERMAL, MECHANICAL & OPTICAL SAFETY (APPLICABLE BY MODEL CONFIGURATION)**

16. Ventilation & Sealed Heatsink Enclosures: Do not block any ventilation openings; install in accordance with the manufacturer's instructions. On models where the aluminum enclosure acts as the units heatsink, do not cover the unit or speaker grille with soft furnishings, cloths, or curtains, and allow free airflow around the housing.



17. 19-Inch Equipment Rack Installation (Rack-Mount Models): Rack-mounted models are designed for stationary installation in a standard 19-inch equipment rack. Secure the unit to the front rack rails using all four mounting holes on the integral rack ears with appropriate rack screws (e.g., M6 screws and cage nuts). Ensure that ventilation openings on the chassis are not obstructed by rack walls or cabling.

18. Carts, Stands, Brackets & Tip-Over Hazard: 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.

19. Optical SFP Transceiver Modules (Where fitted): Any optical SFP transceiver modules installed in this product must be certified Class 1 Laser Products in accordance with IEC/EN 60825-1. Do not look directly into open optical ports or fiber-optic cable ends while the equipment is energized.



**Disposal (WEEE):** the crossed-out wheeled bin symbol means this product must not be disposed of with household waste. Take it to an approved electrical and electronic equipment recycling point, or contact Glensound for advice.
**Declaration of conformity:** Glensound declares that this product complies with the applicable UK and EU legislation. The full declaration of conformity is available at www.glensound.com.
**Manufacturer:** Glensound Electronics Ltd, The Design Buildings, 6 Brooks Place, Maidstone, Kent, ME14 1HE, UK · Tel: +44 (0)1622 753662 · Email: sales@glensound.com · www.glensound.com

# CE

This equipment manufactured by Glensound Electronics Ltd of Brooks Place Maidstone Kent ME14 1HE is CE 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.

# ADDA 1, DAC 1 & ADC 1 Analogue & Digital Audio Converters
# Handbook Contents

Issue 1,

Description Page No.

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## OVERVIEW

This handbook covers three products with the ADDA 1 basically being a product that combines both the DAC 1 and the ADC 1 in one unit.

Signature DAC 1 is a single stereo digital to analogue audio converter.

Signature ADC 1 is a single stereo analogue to digital converter.

Signature ADDA 1 is a bi-directional analogue/ digital converter containing 1 x DAC 1 and 1 x ADC 1.

The Glensound Signature Series converter range are professional audio digital and analogue converters. They are manufactured using high quality components and low noise audio circuits to provide many years of trouble free use.

The primary job of the converter range is to interface analogue and digital audio equipment together.

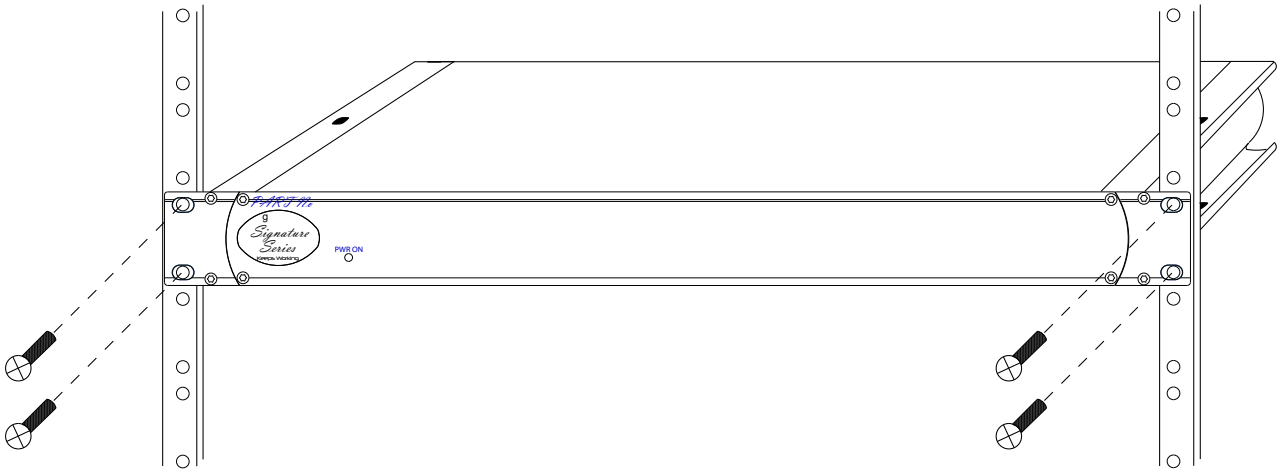
Although traditionally a broadcast manufacturer, Glensound's products are equally at home in professional and high end home studios, industrial installations and live pro sound environments. The converter range can therefore be used in a number of applications.

The converter range are powered from internal switch mode mains power supplies fed from filtered IEC mains plugs suitable for use Worldwide. They have an internal fuse for safety. The units can also alternatively be powered from external +/-12V DC power sources (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 seemlessly 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 permananetly mounted or stood (using the supplied feet) on top of desks or worktops.

### INSTALLING SIGNATURE SERIES IN A 19" RACK



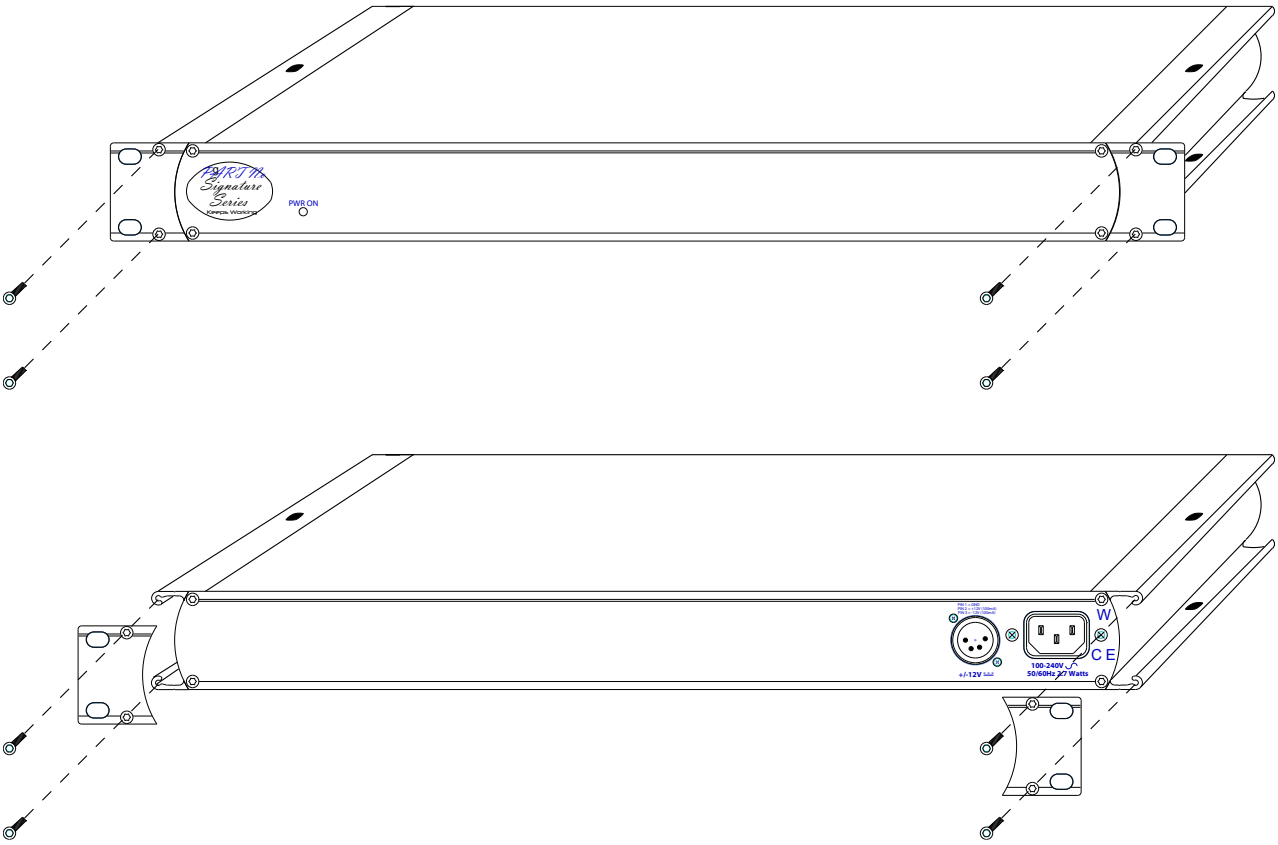

Firmly hold the signature subrack within the 19" rack and locate in 1RU of space. Use the supplied 6mm rack screws to securly attach the unit to the rack.

### INSTALLING ADHSIVE 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 sticky feet as per the above drawing.

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

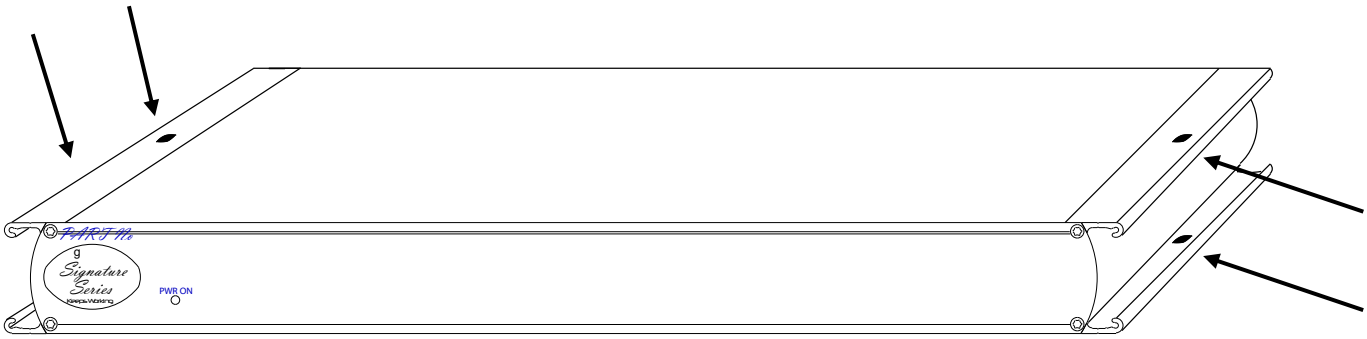



First remove the 4 silver button head screws that fix the rack ears onto the front of the unit as shown in the top picture above.

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.

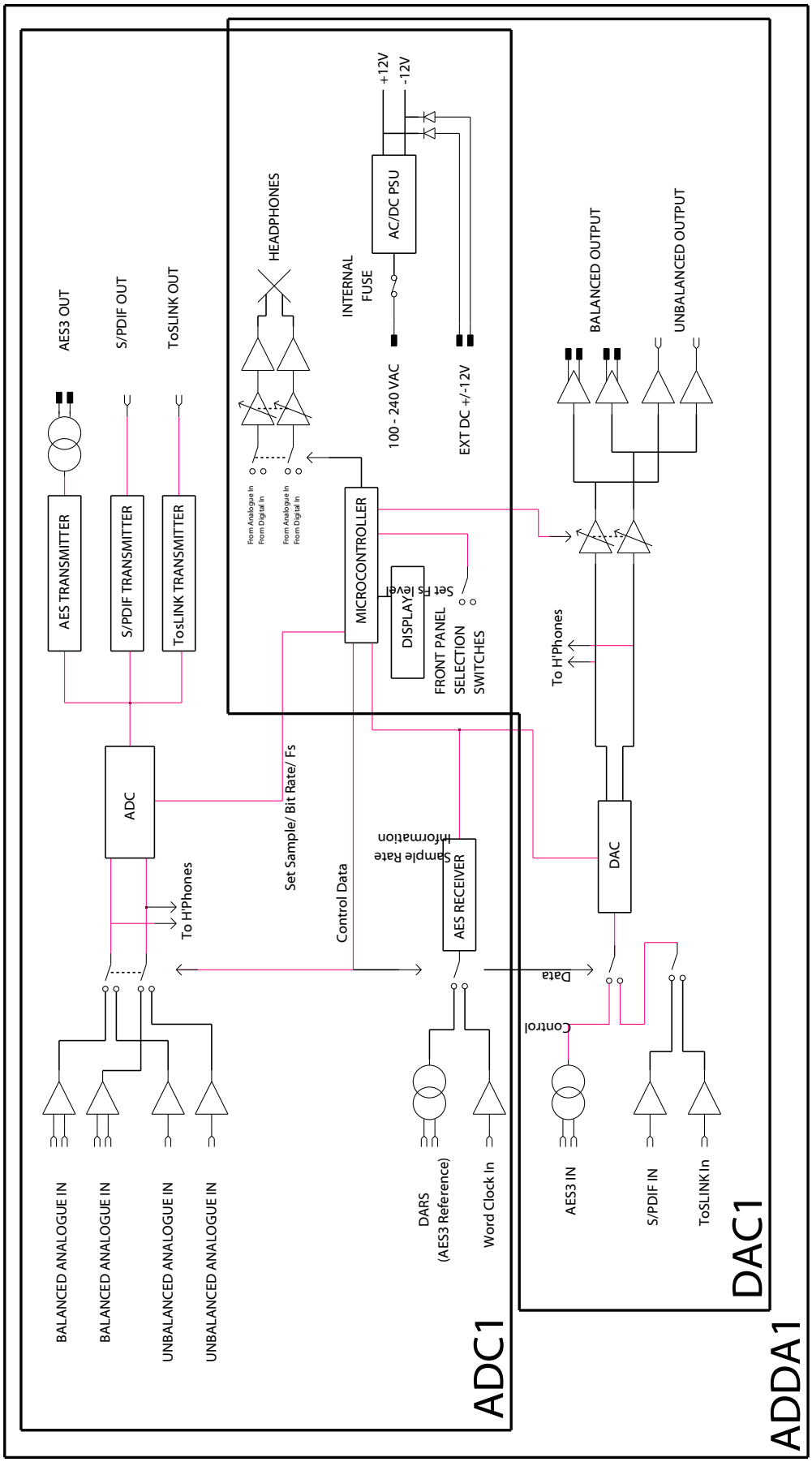
## USING THE MOUNTING HOLES FOR PERMANENTLY ATTACHING THE UNIT ABOVE OR BELOW A WORKTOP/ DESK




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**

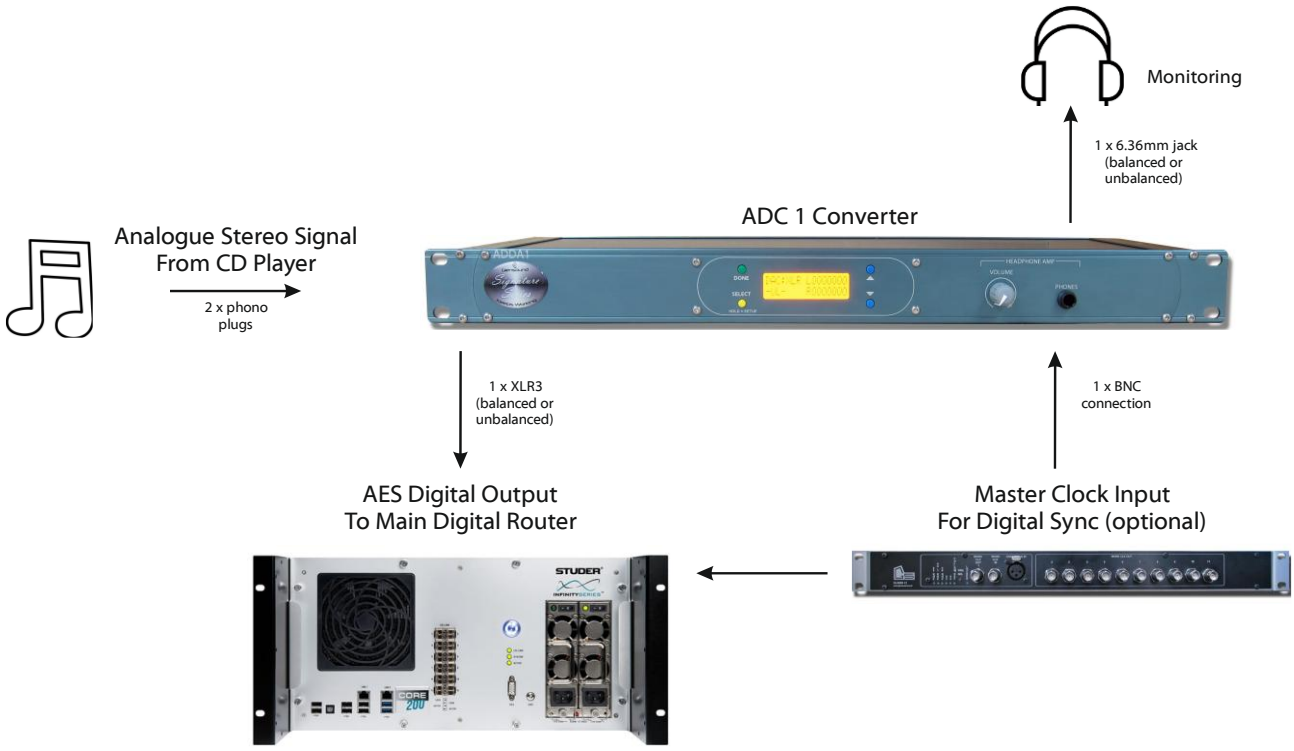
## AUDIO BLOCK DIAGRAMS

## 1. Combined ADDA/ ADC/ DAC



## EXAMPLES OF USE

## 1. ADC1 Radio Station Analogue to Digital Conversion



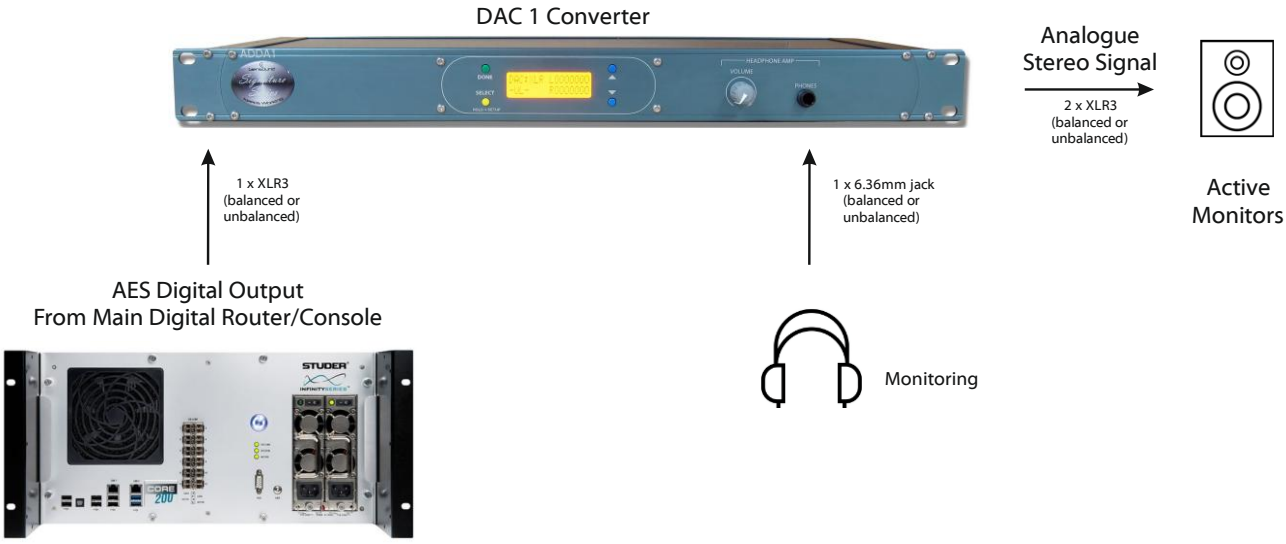

A radio station may be largely digitally linked, with all router and mixer connections via AES. If there are no analogue inputs on the system then the Signature ADC 1 can be used to link the CD player into the digital console.

The stereo analogue outputs from the CD player connect into the 2 x phono analogue inputs on the Signature ADC 1.

To maintain digital clock rates throughout the station, an optional link can be made to the station master clock for the digital clock reference. Without this, the digital clock sampling frequency rate can be set on the front panel from 44.1 kHz to 192 kHz.

The single XLR output connects the stereo digital AES signal into the master routers digital input for use and routing throughout the stations digital infrastructure.

## 2. DAC1 Connecting Active Monitors to a Digital System




If a broadcast facility largely contains digital connections and you need to connect monitors to a studio, you will need a suitable analogue output. The Signature DAC 1 can be used to convert the system AES signal into an analogue output for active studio monitors.

An AES output from the master router or console is connected into the DAC 1 via a single XLR connector.

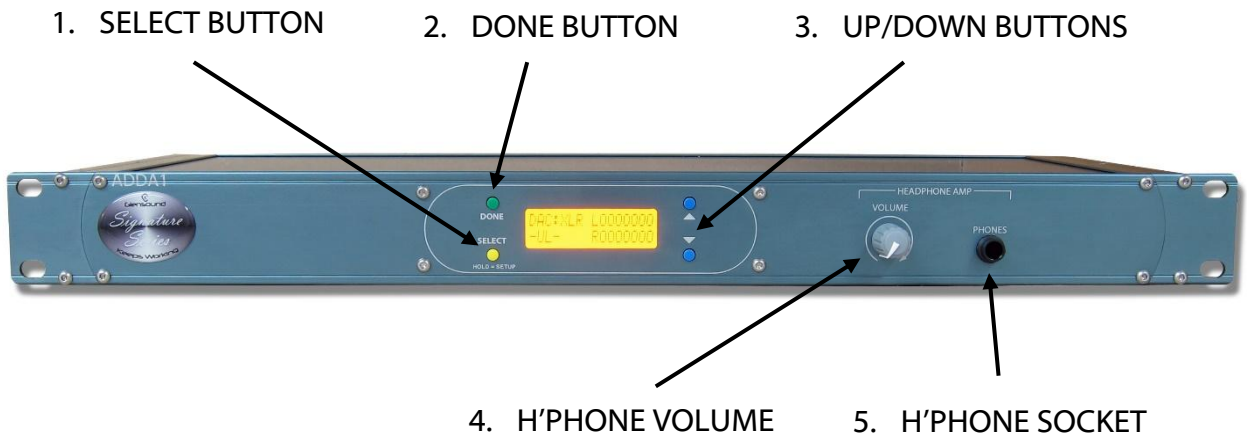
Two analogue XLR connections are taken from the DAC1 and connected to the active monitors.

A 6.35mm jack socket can be used to connect headphones on the front panel for monitoring.

## USER CONTROLS & CONNECTIONS

Note: Picture & description is for the ADDA1 but facilities and control scale down to the ADC1 and the DAC1.

## FRONT PANEL




### 1. Select Button

This a dual function button.

Pressing and holding the button for about 5 seconds makes the unit enter setup mode, whereby parameters can be altered.

Once in setup mode pressing this button sets the current configuration as shown on the LCD display and automatically moves to the next setup option.

### 2. Done Button

Pressing this button exits the setup mode.

### 3. Up/ Down Buttons

These buttons perform dual functions.

A. In normal use pressing these buttons toggles the display to show the settings of the ADC and DAC inputs on the LCD display to the left of the simple level indicators.

B. When in setup mode pressing the buttons alters the available parameter for the current menu setting. The number of available steps up and down varies for each menu depending on available options.

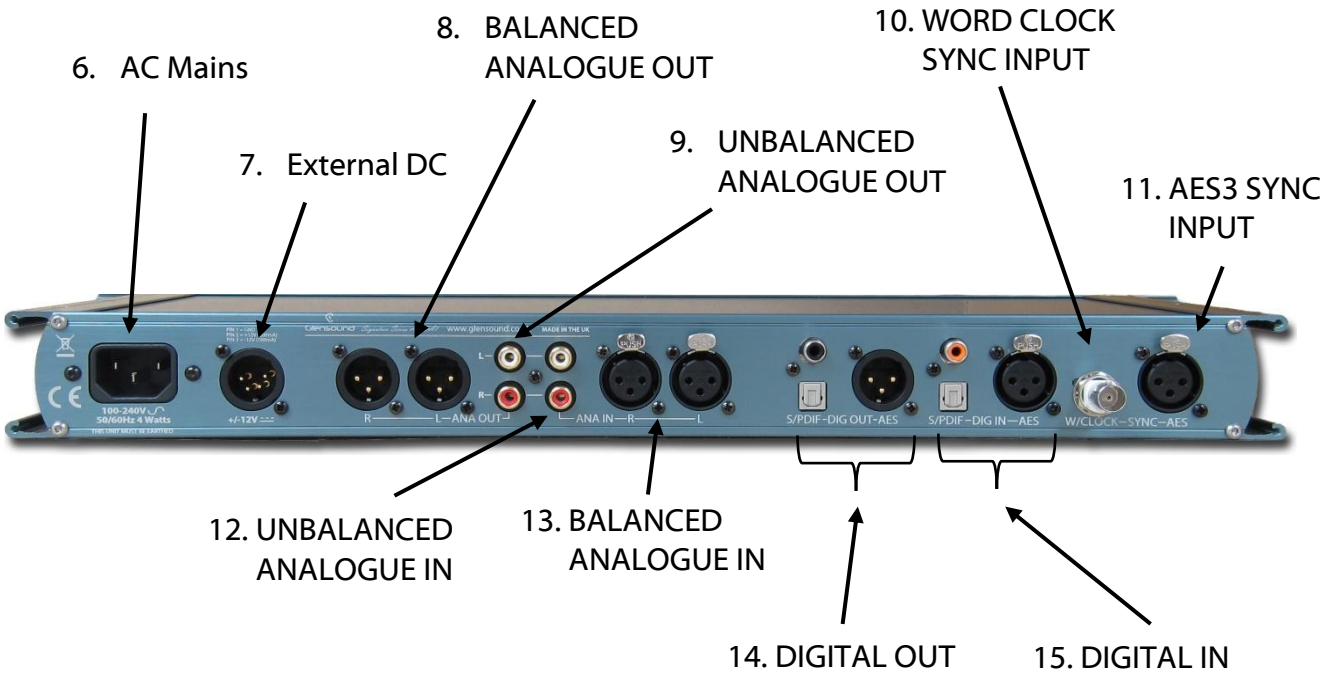
## 4. Headphone Volume

This rotary volume control adjusts the audio output level of the headphone circuit. Turning it clockwise increases the output level and turning it anti-clockwise reduces the output level.

## 5. Headphone Output Socket

This 3 pole 6.35mm (1/4") TRS (Tip Ring Sleeve) jack socket provides the physical output connection of the internal headphone amplifier.

## REAR PANEL




## 6. Mains In

This AC input accepts a wide range power supply, suitable for use Worldwide. If used in conjunction with the external DC supply then a seamless redundant power supply will be provided.

## 7. External DC Input

This DC input can be used instead or as well as the mains input. It requires a +/- 12V power source (such as our PS1). If used in conjunction with the mains input it will seamlessly provide a redundant power source.

## 8. Balanced Analogue Outputs 2

One pair of balanced stereo Neutrik XLRs providing the audio outputs of the DAC so the digital input is the audio source. The outputs are electronically balanced with wide band low noise circuitry. These outputs have the same source as the unbalanced analogue audio outputs. The output level in relationship to digital full scale can be set in the settings.

## 9. Unbalanced Analogue Outputs 2

One pair of unbalanced stereo RCA (Phono) connectors providing the audio outputs of the DAC so the digital input is the audio source. The outputs are electronically balanced with wide band low noise circuitry. These outputs have the same source as the balanced analogue audio outputs. The output level in relationship to digital full scale can be set in the settings.

## 10. Word Clock Sync Input

This BNC input can be connected to external word clocks to allow the output sample frequency of the analogue to digital converter to be synced with the external word clock reference frequency.

## 11. AES (DARS) Clock Sync Input

This balanced digital audio input can be connected to external digital sources to allow the output sample frequency of the analogue to digital converter to be synced with the external source frequency. This input could come from a digital output from a device that is required to be used as the master clock. This type of digital clock input is sometimes referred to as DARS (Digital Audio Reference Signal).

## 12. Unbalanced Analogue Input

This stereo pair of unbalanced analogue inputs are on RCA phono connectors. They feed the input to the analogue to digital converter (ADC). A setting in the menu selects if this unbalanced input or the balanced input is used as the source of the ADC.

## 13. Balanced Analogue Input

This stereo pair of balanced analogue inputs on Neutrik XLR connectors. They are electronically balanced with low noise wide band audio circuits. They feed the input to the analogue to digital converter (ADC). A setting in the menu selects if this balanced input or the unbalanced input is used as the source of the ADC.

## 14. Digital Outputs

There are 3 digital outputs all of which share the same audio source (the balanced or unbalanced analogue inputs). The 3 outputs are:

A) Balanced AES3 on XLR
B) S/PDIF (Sony /Philips Digital Interface Format on RCA Phono
C) Toslink (Toshiba Link) optical interface

## 15. Digital Inputs

There are 3 digital inputs only one of these inputs will be routed to the digital to analogue converter (DAC), this can be set in the setup menu. The 3 intputs are:

D) Balanced AES3 on XLR
E) S/PDIF (Sony /Philips Digital Interface Format on RCA Phono
F) Toslink (Toshiba Link) optical interface

## MENU & SETTING OPTIONS

Note: Options are described for the ADDA1 but facilities and control scale down to the ADC1 and the DAC1.

### ENTERING SETUP

To enter setup press and hold the yellow 'SELECT' switch for about 5 seconds.

### MOVING BETWEEN MENUS

There are 11 different menus whose parameters can be set. To move to the next menu just press the yellow 'SELECT' switch.

### ALTERING THE PARAMETERS OF THE SELECTED MENU

Once you've selected the menu that you wish to alter, pressing the blue up/ down arrow buttons toggle through all available options for that menu.

Once you've selected the setting that you want pressing the yellow 'SELECT' switch sets that setting and moves the menu to the next item.

### LEAVING SETUP

To leave setup press the green 'DONE' button at any time.

## DAC Output Level




This sets the analogue output level in reference to digital full scale (0dBFS). There are 4 options of 0dBFS equalling:

A) +18dBu
B) +12dBu
C) +6dBu
D) 0dBu

## DAC Input Source




This sets the digital audio input that is fed into the internal D/A converter. There are 3 options:

A) Bal XLR (the AES3 input via balanced XLR) (Max input frequency 192K)
B) Unbal Phono (The S/PDIF input on RCA Phono) (Max input frequency 192K)
C) Optical (The Toslink optical input) (Max input frequency 96K)

## DAC De-emphasis




If your digital audio source was originally mastered with pre-emphasis (normally the high frequency boost) then enabling de-emphasis removes this during the D/A process.

## DAC Ident Tone




Turning on the DAC Ident tone (enabling it) adds a 1kHz tone @ 0dBu to the analogue output. This can be useful for fault finding.

## ADC Input Level




This sets the full scale (0dBFS) digital output level in reference to analogue input level. There are 4 options of 0dBFS equalling:

E) +18dBu
F) +12dBu
G) +6dBu
H) 0dBu

## ADC Input Source




This sets which analogue input source is routed to the AD converter. There are 2 choices:

A) Bal XLR (The stereo balanced XLR inputs)
B) Unbal Phono (The stereo unbalanced RCA Phono inputs)

## ADC Clock Source




This control sets what clock source is used as a reference for the ADC. The digital output will be locked to the selected source. There are 4 options.

A) Master (The internal clock is used as the reference)
B) Slave (The external Sync (Word Clock, AES Sync or DAC input) is used as the reference)
C) Auto (If an external clock is present then this is used as the reference, if not then the internal clock is used (The frequency of the internal clock can be different to that of the external clock))
D) Auto Lock (The external clock is used as the reference. If the external clock is not present then the internal clock is set to the last known frequency of the external clock)

## ADC Master Rate




This sets the output sample frequency of the internal clock. There are 6 options:

A) 44.1kHz
B) 48kHz
C) 88.2kHz
D) 96kHz
E) 176.4kHz
F) 192kHz

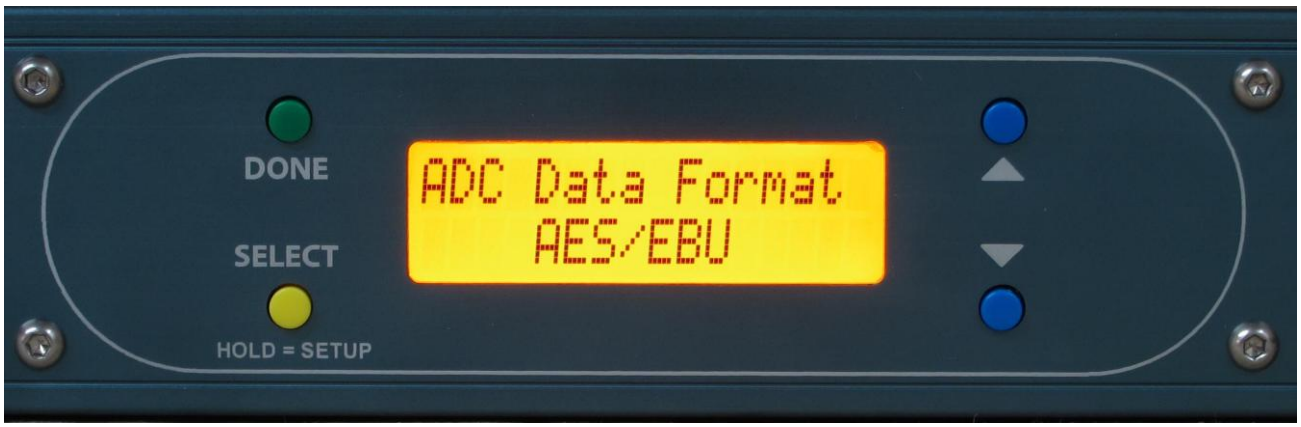
## ADC Sync Source




This sets which of the 3 possible external reference clock sources the device should use.

A) AES Sync (The balanced AES input (DARS))
B) BNC Wordclock (the wordclock input on the BNC conector)
C) DAC Input (the digital input that is the source of the DAC)

## ADC Data Format




This allows the digital output type of the ADC to be set. There are just 2 options:

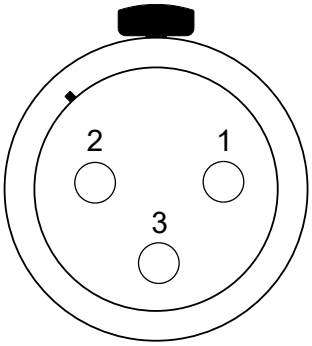
A) AES/EBU
B) S/PDIF

## ADC Ident Tone




Turning on the ADC Ident tone (enabling it) adds a 1kHz tone @ 0dBu to the digital output. This can be useful for fault finding.

## WIRING INFORMATION



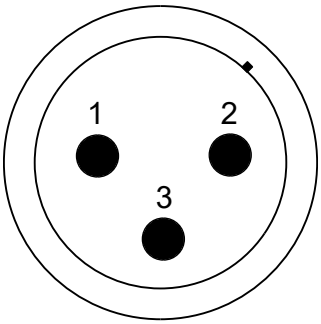

XLR SOCKET (FEMALE)

**STANDARD XLR AUDIO PINOUTS:**

**1: Ground/ Earth**

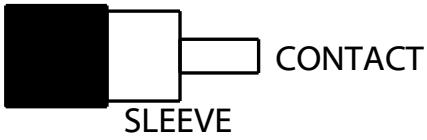
**2: INPHASE/ POSITIVE/ MIC +**

**3: MATE/ NEGATIVE/ MIC -**




XLR PLUG (MALE)

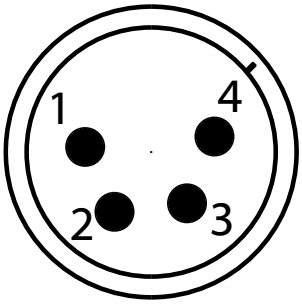
**UNBALANCED RCA PHONO**




RCA PHONO PLUG (MALE)

**CONTACT: Signal**

**SLEEVE: Common/ Earth**




4 PIN XLR PLUG (MALE)

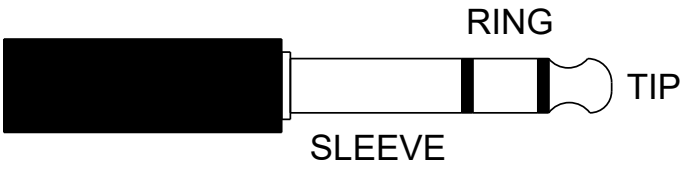
**EXTERNAL DC INPUT:**

**PIN 1: GND**

**PIN 2: +12V**

**PIN 3: -12V**

**STANDARD HEADPHONE WIRING:**




**TIP: A/ LEFT Ear**

**RING: B/ RIGHT Ear**

**SLEEVE: Common/ Earth**

# SPECIFICATIONS

## AUDIO INPUTS - ANALOGUE

**Maximum Input Level**
+24dBu

**Input Impedance**
20k ohm balanced, 10k ohm unbalanced

**Balanced Input Type**
Sophisticated electronically balanced (can be wired unbalanced) on 2 x Neutrik XLR connectors

**Unbalanced Input Type**
2 x Gold plated RCA phono sockets

## AUDIO INPUTS - DIGITAL

**Sampling Frequency Rates**
44.1kHz to 192kHz

**Resolution**
Up to 24 bit

**0dBFs Equivalents**
+18dBU, +12dBu, +6dBu, -0dBu

**Physical Inputs**
- AES/EBU balanced XLR
- S/PDIF RCA phono
- TOSlink optical

**Digital Sync**
Input 1: Word clock TTL on BNC
Input 2: DARS (AES/EBU) Neutrik XLR 3 pin socket

## AUDIO OUTPUTS - ANALOGUE

**Output Impedance**
110 ohms

**Balanced Output Connectors**
Neutrik 3 pin XLR plugs

**Unbalanced Output Connectors**
Gold plated RCA phono sockets

**Noise**
-108dBFs

**Frequency Response**
>-0.5dB 15Hz to 22kHz @48k sampling

**THD+Noise**
0.001% @ 1kHz

## AUDIO OUTPUTS - DIGITAL

**Internal Clock Frequency Rates**
44.1kHz, 48kHz, 88.2kHz, 96kHz, 176.4kHz, 192kHz

**Resolution**
24 bit

**0dBFs Equivalents**
+18dBu, +12dBu, +6dBu, 0dBu

**Noise**
-108dBFs

**Frequency Response**
>-0.5dB 15Hz to 20kHz

**THD+Noise (ref +8dBu)**
- 100Hz = 0.008%
- 1kHz = 0.006%
- 10kHz = 0.009%

**Physical Outputs**
- AES/EBU balanced XLR
- S/PDIF RCA phono
- TOSlink optical

## HEADPHONE OUTPUT

**Output Gain Range**
+10dB to off

**Headphone Impedance**
100-1000 ohms

**Maximum Output Level**
+18dB into 600 ohms

## POWER

**Mains Input**
Filtered IEC, 100 to 240VAC
47 - 63Hz

**AC Consumption**
4 Watts @ 230VAC

**DC Input**
4 Pin Neutrik XLR plug +/- 12V

**DC Consumption**
+12V=200mA, -12V=100mA

**Internal Mains Fuse**
**20mm 1A Anti Surge**

## PHYSICAL

**Size**
445 x 163 x 44mm (LxDxH) no rack ears
482mm 19" (1RU) with rack ears

**Weight**
1.35kg

**Mechanics**
All aluminium construction, anodized and laser etched

**Shipping Carton**
Rugged export quality cardboard carton
610 x 420 x 130mm LxDxH

**Shipping Weight**
2.8kg

E & OE