operation manual

audient

8CH VARIABLE IMPEDANCE MIC PRE

ASP008

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Contents

IMPORTANT SAFETY INSTRUCTIONS 5
UNPACKING 7
MAINS POWER SUPPLY 7
VOLTAGES 7
FUSES 7
MECHANICAL INSTALLATION 7
ANALOGUE INTERFACES 8
PIN CONVENTIONS 8
ANALOGUE INTERFACES (CONT) 9
DIGITAL INTERFACES 10
DIGITAL INTERFACES (CONT) 11
SAMPLE RATE 14
FORMAT 14
LOCK 14
VARIABLE IMPEDANCE: WHAT IS IT AND WHAT DOES IT DO? 15
SPECIFICATIONS 17
WARRANTY 18

Thank you for buying this Audient product.

The ASP008 features eight ultra high quality microphone preamplifiers using an 8 transistor discrete Class A front end with extended bandwidth and a noise floor close to the theoretical Johnson limit. Carefully chosen close tolerance components are used to achieve high CMRR at all gain settings and distortion is minimised to less than 0.001% at 20dB gain and +10dBu output.

This outstanding technical performance delivers a mic amp with incredible transparency and detail without colouration or other unwanted artefacts.

Each Mic amp also features switchable input impedance, allowing the user to explore the subtle variations in microphone character that are determined by output termination.

All channels include an XLR input, 'soft start' 48V phantom power, switchable input impedance, 25-250Hz hi-pass filter as well as line input selection. Channels 1 and 2 also feature a 20dB attenuator and a high-impedance Instrument/DI input on a front panel mounted jack. LEDs provide indication of signal present and overload. Digital output options are available in addition to the standard balanced analogue outputs, making the ASP008 an ideal "front-end" for any DAW or ProTools system .

We have designed this equipment to provide you with the best possible tool to deal with today's demanding requirements. We have taken a great deal of pride and care in the manufacture of this equipment so that it will provide consistent and reliable performance. Please take a little time to study the contents of this manual so that you can be sure of getting the best performance from this equipment.

IMPORTANT SAFETY INSTRUCTIONS

CAUTION	ATTENTION
RISK OF ELECTRIC SHOCK DO NOT OPEN	RISQUE DE CHOC NE PAS ENLEVER

WARNING

THIS EQUIPMENT MUST BE EARTHED
DO NOT EXPOSE TO RAIN OR MOISTURE

Please read all of the following instructions and save them for later reference before attempting to connect the ASP008 to the AC power source.

IMPORTANT SAFETY INSTRUCTIONS

EARTH	**This unit is connected via its power cord to the mains safety earth. NEVER OPERATE THE UNIT WITH THIS EARTH CONNECTION REMOVED.**
COVERS	**DO NOT remove the covers. Refer servicing to qualified personnel only.**
VOLTAGE	**ASP008s are set to operate only at the voltage indicated on the rear panel.CHECK that the correct voltage is available before connecting the AC mains supply.**
FUSES	**CHECK that the fuse fitted is the correct type for the local mains voltage. ALWAYS replace fuse with the correct type.**
MOISTURE	**DO NOT expose the unit to rain or moisture. If the ASP008 should become so exposed REMOVE the mains power immediately.**
CABLES	**PROTECT the mains power cord from damage though impact or abrasion.**
HEAT	**ALWAYS site the ASP008 away from sources of heat including direct sunlight and ensure adequate ventilation around the unit.**

Unpacking

Your ASP008 has been carefully and meticulously tested and inspected before despatch.

Please check for any signs of transit damage. If any signs of mishandling are found please notify the carrier and your dealer immediately.

Your ASP008 Series Mic Pre packing should contain an ASP008 rack unit, and a mains power cable, along with this manual.

Mains power supply

Voltages

The ASP008 will be set and marked for either 230V or 115v operation. 230V models will operate without performance degradation from 210V to 250V. 115V models will accept from 105V to 125V. Do not attempt to operate the unit outside the relevant range defined above.

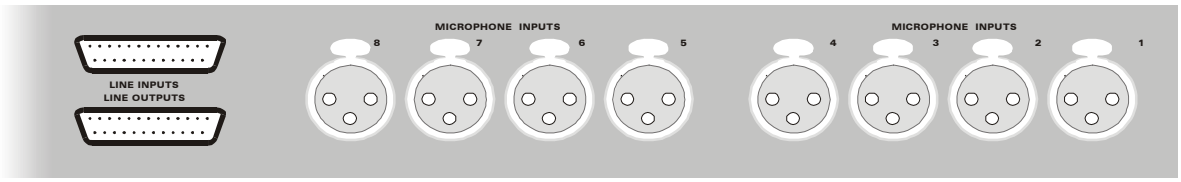
For 100V operation please contact your dealer.

Fuses

Please note that the fuse ratings for the two voltage ranges are different, 20mm T250mA for 230V units and 20mm T500mA for 115/100V models. Always replace fuses with the same type. The mains fuse is very unlikely to fail under normal use and caution should be excercised if a failure should occur. Check for the correct mains voltage, condition of the mains cord and integrity of the mains supply before replacing the fuse.

Mechanical Installation

The ASP008 rack unit is convection cooled to avoid the noise nuisance of fans, so care should be taken not to obstruct the unit's ventilation holes. Adequate air flow must be provided within rack cases above and below the ASP008 to prevent the unit from overheating.



Analogue interfaces

The ASP008 has been designed and developed to provide highly robust system integration interfaces, allowing worry-free system hook-up under the most demanding situations.

Inputs and outputs are implemented using advanced electronically balanced topologies and are fitted with extensive RFI rejection networks.

Pin conventions

Electronically balanced microphone inputs are provided on 3pin XLR female connectors with Pin 2 Hot and Pin 3 Cold. Pin 1 is permanently connected to the ASP008 chassis and thereby to the safety earth.

Line level inputs and outputs are provided on 25 pin D Sub female type connectors with 4-40 screw thread jack posts. Wiring is in accordance with the Tascam™ DA88 convention. Pin allocations are shown in detail on the next page

Additionally, Channels 1 and 2 have front panel mounted unbalanced high impedance jack inputs to allow instruments to be directly connected to the ASP008.

To unbalance the outputs of the ASP008 the -ve Pin should be connected to its adjacent 0v pin at the output of the ASP008.

Similarly, inputs from unbalanced sources should be connected via twin screened cables with the -ve Pin connection tied to the screen at the unbalanced source.

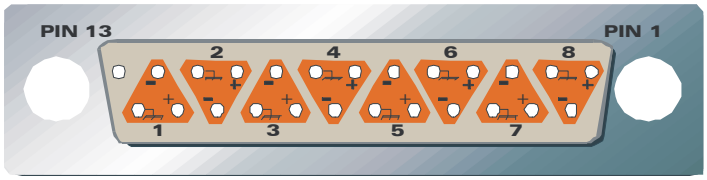
Analogue interfaces (cont)

CHANNEL NUMBER	+VE SIGNAL	-VE SIGNAL	SCREEN
	D-SUB PIN		
1	24	12	25
2	10	23	11
3	21	9	22
4	7	20	8
5	18	6	19
6	4	17	5
7	15	3	16
8	1	14	2
Note: All undesignated pins are unconnected. All screen connections are joined inside the unit and connected to metalwork earth.			

In order to maintain optimum EMC performance it is important that screens are properly connected at both ends of cable runs. In this way the electromagnetic shield provided by the equipment chassis and the cable screens will be optimised to reject interference. It is recommended that only high quality braided screen cables are used to avoid compromising EMC performance.

Important : When preparing your D-SUB interface cables please note that the maximum shell size that can be accommodated is 18 x 60mm.

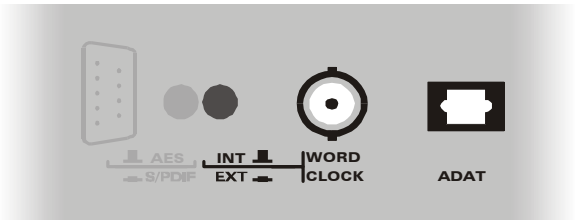
WIRING SIDE OF FREE MALE CONNECTOR



Digital interfaces

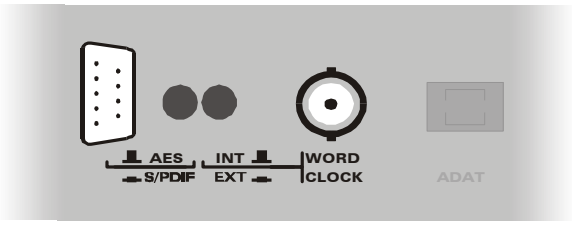
Two optional digital interface cards are available for ASP008, either one can be factory or retrofitted to all units. A cover plate is fitted to the rear of the chassis when neither of the options is installed.

ADAT™



This card provides ADAT™ digital outputs at either 44.1 or 48kHz sample rates (selectable on the front panel) for all 8 channels on a single 'light pipe ' output connector. The outputs can be set to 16/ 20 or 24 bit depth using the front panel controls

AES/SPDIF



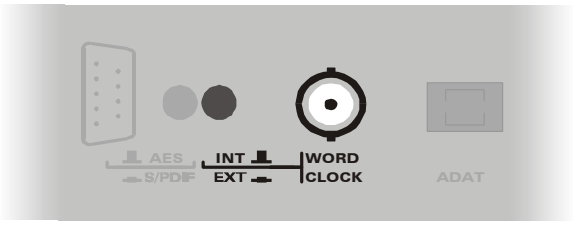
Uses a 9-Pin female D-sub type connector to provide the required 8 digital outputs (in 4 pairs - pair 1 carries channels 1/2 etc) at 44.1/48/88.2/96kHz sample rates (selectable on the front panel). Separate fan-out cables are available with XLR terminations for AES and RCA-phono connections for SPDIF.

AES format is selected when the associated switch is in its normal (released) state. Depressing this switch will set the outputs to SPDIF format.

The outputs can be set to 16/20 or 24 bit depth using the front panel controls

Digital interfaces (cont)

Word Clock



A BNC along with an INT/EXT function select switch is provided on both digital output cards. With the switch released the ASP008 will run off its internal clock generator. Depressing the switch allows a master word clock to be connected via the BNC enabling the ASP008 converters to be sync'd to an external source. The front panel mounted LOCK led will illuminate when the unit is locked.

Note that the external word clock frequency must coincide with the clock rate set on the front panel to ensure correct synchronisation.

Pin configurations for AES outputs

CHANNEL NUMBERS	SIGNAL (XLR PIN 2)	GROUND (XLR PIN 3)	SCREEN (XLR PIN 1)
	D-SUB PIN		
1+2	9	5	1 -SHELL
3+4	8	4	1 -SHELL
5+6	7	3	1 -SHELL
7+8	6	2	1 -SHELL

Pin configurations for S/PDIF outputs

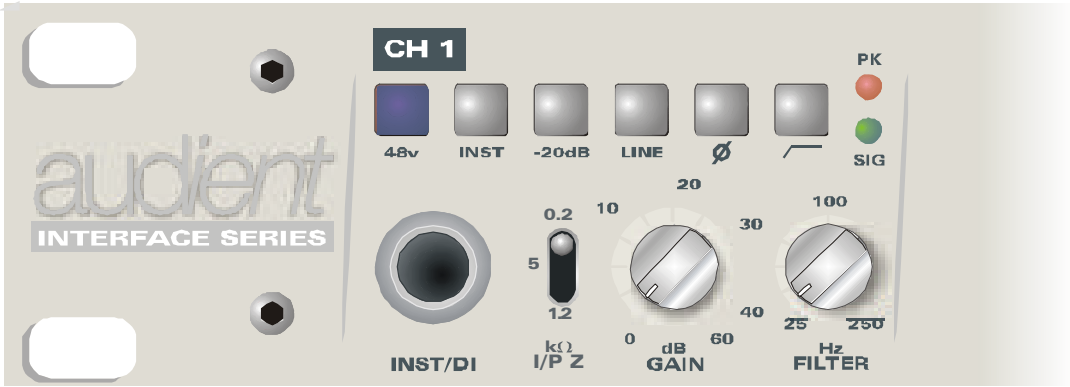
CHANNEL NUMBERS	PHONO SIGNAL PIN	PHONO GROUND PIN	SCREEN
	D-SUB PIN		
1+2	9	5	1 -SHELL
3+4	8	4	1 -SHELL
5+6	7	3	1 -SHELL
7+8	6	2	1 -SHELL

48V applies phantom power to the microphone input of this channel. It is not good practice to switch phantom on while monitoring a channel, however a proprietary 'soft start' feature is incorporated to minimise the potentially damaging transients if phantom is switched 'live'.

INST (channels 1 and 2 only). This is a high impedance 1/4" jack input that allows the direct connection of a guitar without the need for an external DI box.

-20dB (channels 1 and 2 only). Inserts a 20dB pad on the microphone input to enable very high output sources to be connected without risk of overload. With the PAD inserted the available gain is between -20dB and 40dB.

LINE connects the electronically balanced D-Sub input to the channel. Gain range is -20dB to +40dB. Note that this input selection overrides the INST input.



Ø inverts the phase of the input signal. This can be particularly useful when using multiple microphone techniques.

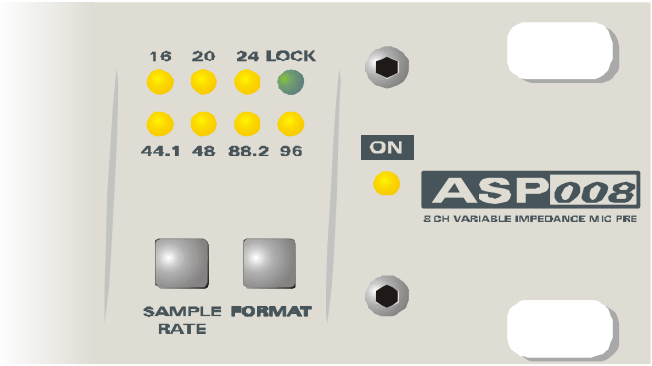
⁄— Switches in the 12dB per octave high-pass filter adjustable using the rotary control from 25Hz to 250Hz.

I/PZ adjusts the impedance of the microphone input Three settings are provided 200,1200 and 5000 ohms.

GAIN 0 to 60dB of gain is available (-20dB to 40dB with PAD or LINE selected).

SIG illuminates to show that a signal at a level above -25dBu is present on this input.

PK lights when a signal level above +16dBu is detected.



Sample rate

Sample rates of 44.1/44/88.2 and 96kHz are supported. The desired rate can be selected by repeatedly pressing the Sample Rate select switch to step through the available settings as indicated by the 4 yellow LEDs. The chosen selection is retained in memory and restored after power down.

Format

ASP008 digital outputs can be set to 16/20 or 24 bit formats by repeatedly pressing the Format select switch. The selected bit format is displayed on 3 yellow LEDs and is retained in memory and restored after power down.

Lock

This green LED illuminates when the ASP008 external clock input has been selected and the converters have successfully sync'd to the external clock source.

Variable Impedance: What is it and what does it do?

Traditionally, in order to get the maximum signal transfer between microphone and pre-amp, the recommended practice has been to ensure that the input impedance of the pre-amp is at least 5 times the source impedance of the microphone. In other words, a typical 200 Ohm microphone needs a 1kOhm input impedance. The mic is essentially working without any load and is able to generate its maximum output voltage, optimising the signal to noise ratio and usually providing the flattest frequency response (or at least the frequency response the manufacturer intended). However, subtle changes in tonal quality and microphone performance can be invoked by deliberately making the microphone work harder by loading it with a different impedance.

The timbral changes caused by this can range from inaudible to quite dramatic, involving a complex and interactive range of effects including level, frequency response, and transient response.

The results will generally be most noticable on older ribbon and dynamic microphones, which are transformer coupled. The loading on the transformer usually causes frequency response and level changes, sometimes ironing out resonances. At the same time, the increased damping of the magnetic circuit in which the ribbon or moving coil vibrates causes changes to transient response. This is similar to the well known effect that different amps can have on electric guitars, where the sustain is affected. Basically, the loading on the guitar pickup "stiffens" the magnetic field in which the string is vibrating, opposing the movement of the string.

Capacitor microphones tend to be less affected, especially modern transformerless types that have a lower source impedance. The electronics in these microphones isolates the effect of the loading from the capsule. Older transformer coupled types tend to be better candidates for tonal manipulation, as they have a more complex source impedance.

It is difficult to predict what the effect will be on any given microphone. Generally, a higher input impedance (less loading) will give a more transparent, wide range sound, while a lower input impedance (more loading) will increase warmth and reduce level. The ASP008 provides a choice of three impedances, 200 Ohm, 1.2kOhm, and 5kOhm. Don't be afraid to experiment. This is a technique that can easily extend the use and application of your microphone collection. Remember, it's the sound that's important, not the theory!

Specifications

Maximum I/P level	+21.5dBu
Maximum O/P level	+27.5dBu
THD	Typically better than 0.007% at 1kHz any gain setting
EIN	Better than -127.5dB @ 60dB gain/ref 150 ohms
Frequency Response	-0.3dB @10Hz to -3dB @300kHz at unity gain
CMRR	Better than 75dB at 1kHz and 60dB gain
Dimensions	480mm x 278mm x 44mm
Weight	4.5Kg
Power consumption	40 watts

In keeping with our policy of continuous improvement Audient plc reserves the right to alter specifications without prior notice. E & OE

Warranty

Your ASP008 comes with a manufacturer's warranty for one year from the date of despatch to the end user.

The warranty covers faults due to defective materials used in manufacture and faulty workmanship only.

During this warranty period Audient will repair or at its discretion replace the faulty unit provided it is returned carriage paid to an authorised Audient service centre. We will not provide warranty repair if in our opinion the fault has resulted from unauthorised modification, misuse, negligence, act of God or accident.

We accept a liability to repair or replace your ASP008 as described above. We do not accept any additional liability. This warranty does not affect any legal rights you may have against the person who supplied this product – it is additional to those rights.

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