

## TWO CHANNEL MICROPHONE PREAMPLIFIER





## *Instructions for use and installation*

### **Welcome**

At DACS we are very pleased that you have chosen to purchase one of our products. We take pride in our work and are sure that this MicAmp will give you years of exemplary service. If you have any suggestions or comments about this product please call, fax, write or e-mail us with your thoughts. Thank you.

### **Introduction**

The MicAmp is an ultra low noise microphone amplifier. It uses three super matched pairs of transistors for the main gain stage, giving low noise performance and very fine detail, even at very low input levels. The frequency response is flat down to below 1Hz at the bottom (DC for non phantom powered microphones) and does not start its tailored high frequency roll-off until above 45kHz. The CMRR is hand trimmed at mid and high frequencies to very high tolerances.

Each channel has an eight position self cleaning rotary switch to set gain in 6dB steps from 20dB to 62dBd. There is then a gain trim from 0dB to +10dB, and a three position bass roll off filter giving a flat response and two cut-off points at a nominal 80Hz and 30Hz. The cut-off point and slope of the filters have been chosen to give a smooth response while removing very low rumble (30Hz) and more mains type noise (80Hz). In addition they have no effect above their cut-off frequency. The balanced output is a fully floating servo type output, with hand trimmed balance set to +/-1% accuracy delivering up to +22dB into 600R.

Working with the MicAmp is straightforward. Settings are easily repeatable due to the stepped gain and detailed scaling on the trim control. There is ultra fast protection on the input so that any fault condition immediately triggers the protection circuitry preventing damage to the amplifier circuitry.



3. (Non Phantom) Input for Microphones that do not require power eg valve mics, dynamic mics
4. (Phantom) Input with 48V phantom power on pins 2 and 3

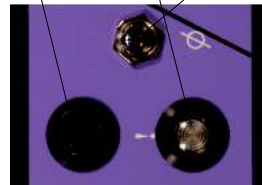


2. Electronically balanced output for unbalanced operation connect either pin 2 or 3 to 0V

1. IEC inlet factory set to 240V for 110V supply remove fuse holder and rotate so that 110V legend is on top/correct way up

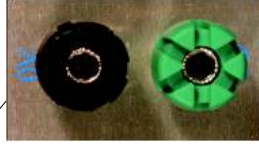


9. Unique tri segment LED meter - PPM ballistics variable intensity LED illumination - Green illuminates at -15dBm, Yellow at +5dBm and Red at +13 dBm



10. Ultra bright overload light illuminates when clipping occurs (overload ca +22dBm) and remains on for a few seconds

11. Phase reverse switch, Up for in phase, down to reverse



5. Audio 0V, isolated from mains earth



6. Stepped gain in 6dB steps from 20dB to 62dB

7. Gain Trim allowing extra gain of 10dB scale to the hour and half hour for easy repeatability (6 o'clock = 0dB, 3 o'clock = +10dB)

8. Bass roll off filter - flat and 30Hz or 80Hz the filter curve has been selected to minimise the effect of frequencies above cut off point



12. Power Switch



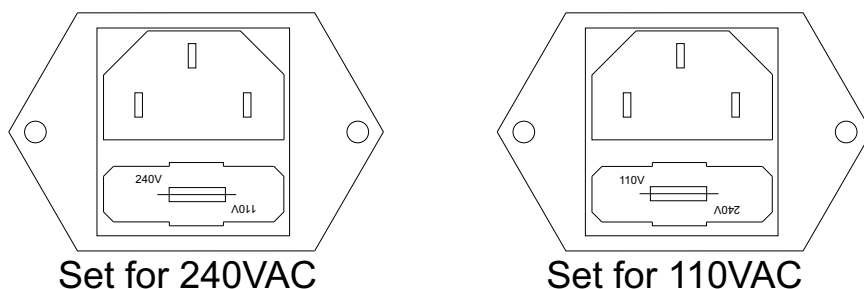
## Using the DACS HeadLite

### Installation

#### 1 Connecting the Power

The unit will accept 240 VAC and 110 VAC mains supplies. The IEC inlet's fuse holder is used as a selector as shown in Fig 2. The factory setting is for 240 VAC.

*Figure 2*



#### 2. Outputs

The output from the DACS MicAmp is a fully floating electronically balanced output designed to drive down long 600 lines. It will run balanced or unbalanced, and can provide signal levels in excess of +22dBm when running balanced or unbalanced. To run unbalanced connect either pin 2 or pin 3 to 0V. NB The output will not run unbalanced satisfactorily if one leg is left floating and not connected to 0V.

#### 3. & 4. Inputs

The DACS MicAmp has two microphone inputs, one for phantom powered (48V) microphones and one for non phantom powered microphones. The non-phantom powered input by-passes the input capacitors, and avoids the signal degradation caused to low microphone voltages by switching the signal. The microphone amplifier stage has a minimum gain of 20dB. Before connecting microphones, ensure that the MicAmp's gain is set to 20dB, and that any loudspeakers are turned down.

## 5. Earthing

The signal 0V is separate from the mains earth. The mains earth is connected to the case of the device. If you wish to connect the signal earth to the mains earth or a technical earth, this may be done by running a wire from the earth tag. **This connection should only be made by qualified personnel, if it is necessary. If in doubt please call us.**

## 6. & 7. Setting Gain

The gain for the MicAmp is set using the stepped GAIN control in 6dB steps and then trimmed between 0dB and +10dB using the continuously variable TRIM control. The scaling on the trim control allows accurate repetition of settings. The main lines may be thought of as hours (0dB is 6 o'clock, and +10dB is 3 o'clock) while the secondary lines are half hours. The settings may then be remembered or noted down as times, making it easy to repeat them accurately. Optimum gain settings vary, but see below for operating levels and overload indication.



## 8. Roll Off

The bass roll off is designed to minimise the pick up of unwanted rumble and to have little or no effect on the signal above the roll off frequency. The slope and cut off frequency were selected to minimise very low earth borne rumbles (30Hz cut-off) and more buzzy mains type noises (80Hz cut-off). The filter has no effect on frequencies above the cut-off, and causes no 'bumps' in the frequency response.

## 9. & 10. Metering

The signal level and condition is shown by the unique tri-segment LED meter and the ultra bright overload LED. The segments of the LED meter illuminate increasingly brightly as the signal level increases, with the Green LED illuminating first to indicate that signal is present, the Yellow LED illuminates at +5dBm achieving full brightness at +13dB when the Red LED begins to illuminate. The Overload LED (!) illuminates when the signal clips, and remains on for a few seconds.



## 11. Phase Reversal switch

This gold plated contact switch reverses the signal phase when it is down. It has no other effect.

## 12. Power switch

This switches the power on and off, and is illuminated when AC mains is present. This switch is connected before the fuse, so when it is illuminated this indicates that mains is present. If the unit does not work, the fuse may be blown. The unit comes with a spare fuse in the fuse carrier. Replacement fuses should be T100mA.





## Specifications for MicAmp

Distortion	THD+N @ 1kHz <.0005% (DC-40kHz)
Self Noise	-133dB (DC-40kHz)
Cross talk	<90dB
Frequency response	Flat <1Hz to ca 45kHz, tailored roll off
CMRR	50Hz typically 70dB @ 20dB gain, 120dB @ 62dB gain, 20kHz typically 61dB @ 20dB gain, 110dB @ 62dB gain

<sup>1</sup>Some of the factors which make the DACS MicAmp sound so good (“...great detail, depth and clarity in the sound with a wonderful easy quality to it” as Calum Malcolm told us) are not easily translatable into performance figures. The three ultra low noise super matched pair transistors on the input stage have a lot to do with it. The microphone is connected directly to the input transistor array, giving the correct load without the addition of other components which degrade the signal. They are current devices, so there are always lots of electrons moving around. We believe that this is the reason why, even at very low levels there is never any graininess in the sound, and that it is always clear, open and detailed. The noise performance may most usefully be expressed in comparison with an NE5534, the low noise IC used in most professional applications. The MicAmp's noise is typically 16dB less, even at maximum gain.

### Compliance to European Standards

This MicAmp complies with the following standards (see Declaration of Conformity):

Radiated Emissions to Specification EN50081-1  
Conducted Emissions to Specification EN50081-1  
Electro Static Discharge to Specification EN50082-1  
Fast Burst Transients to Specification EN50082-1



*Other Fine Hand Crafted Audio Products from DACS Ltd*  
**Clarity from DACS Ltd**  
**A new philosophy, a new range of devices**

**DACS'** range of high performance studio and stage devices embody our philosophy. We believe in simplicity, but above all else, Clarity; sonic Clarity and functional Clarity. The range initially includes the **DACS HeadLite**, a four channel headphone amplifier. Our recently launched (aug 2006) Eighth, an eight channel volume control, won the Pro Audio Review PAR Excellence award.

For many years **DACS** has manufactured custom equipment for professionals the world over using a number of our own high performance audio *building block* circuits. The performance of these circuits has been honed over the years out in the field, and developed through fulfilling the changing professional requirements of their many customers in widely divergent sectors of the industry.

**DACS** has crystallised these years of experience to bring you this range of elegantly simple high performance units, all hand made throughout. Where they benefit performance we use expensive components and time consuming processes, but do not spend prodigiously on 'cosmetics'. Though we are bucking the trend towards *downsizing* work-forces and automating manufacturing processes these units are very competitively priced. This is achieved by a combination of good design, good organisation, low overheads, and the use of standard housings and other components where possible.

These visually striking, well engineered devices will last well into this century achieving levels of performance that digital technology, and much analogue technology, aspires to today.

YOU are what make your studio world class.

Our equipment is designed to help you continue to produce fine music well into this century.

<sup>1</sup> We are proud to announce that the MicAmp won the Studio Sound Audio Industry Recognition Award in the Outboard Pre-amp category. This was voted for by registered readers of Studio Sound worldwide.