

## HXP006 PRE-AMPLIFIER MODULE

The HXP006 is a mono high performance audio pre-amplifier. It consists of two separate stages of amplification, the first being dedicated to low signals from magnetic cartridges (moving magnet), microphones etc. It operates at a nominal output level of 100 mV. For use with a magnetic cartridge a connection is made between O/P1 and MAG pins. For use with a microphone or similar low output transducer simply connect O/P1 to MIC. This yields an input sensitivity of 12.5mV, which may be increased through the range to 1mV by making the link a resistor, typical values being as follows:-

Sensitivity	Resistor Value
1mV	62K
2mV	27K
5mV	8K2
10mV	1K5

The output of this stage then feeds the volume control via any required switching.

The wiper of the volume control feeds the second stage I/P2. This stage introduces a partially logarithmic characteristic to the action of the volume control and performs the function of active tone controls. It has been designed to use low value potentiometers thus minimising hum induced in the control wiring. Included in this stage is a 100 kHz filter designed to reduce transient intermodulation distortion (T.I.D) in subsequent amplifiers.

Potentiometers required are:-

1. Volume - 100K linear
2. Bass - 10K linear
3. Treble - 10K linear
4. Balance - 10K linear

For stereo pre-amplification, two HXP006's are required. The balance control arrangement is designed to provide smooth movement of the stereo image with little variation in overall sound output level. The HXP006 O/P2 should be terminated with a 5K1 resistor to 0V when used as a mono pre-amplifier to correct the gain as per the data below.

As with all pre-amplifiers it is necessary to follow well established rules on construction. In most cases a metal housing should be used. The pre-amplifier module should be mounted well away from transformers, the minimum distance being subject to experimentation. Screened wire is essential for the input to the first stage and the wiper connection of the volume control. It may also be required on the high level inputs subject to the nature of the equipment providing the signals.

### SPECIFICATIONS

#### PERFORMANCE - 1ST STAGE

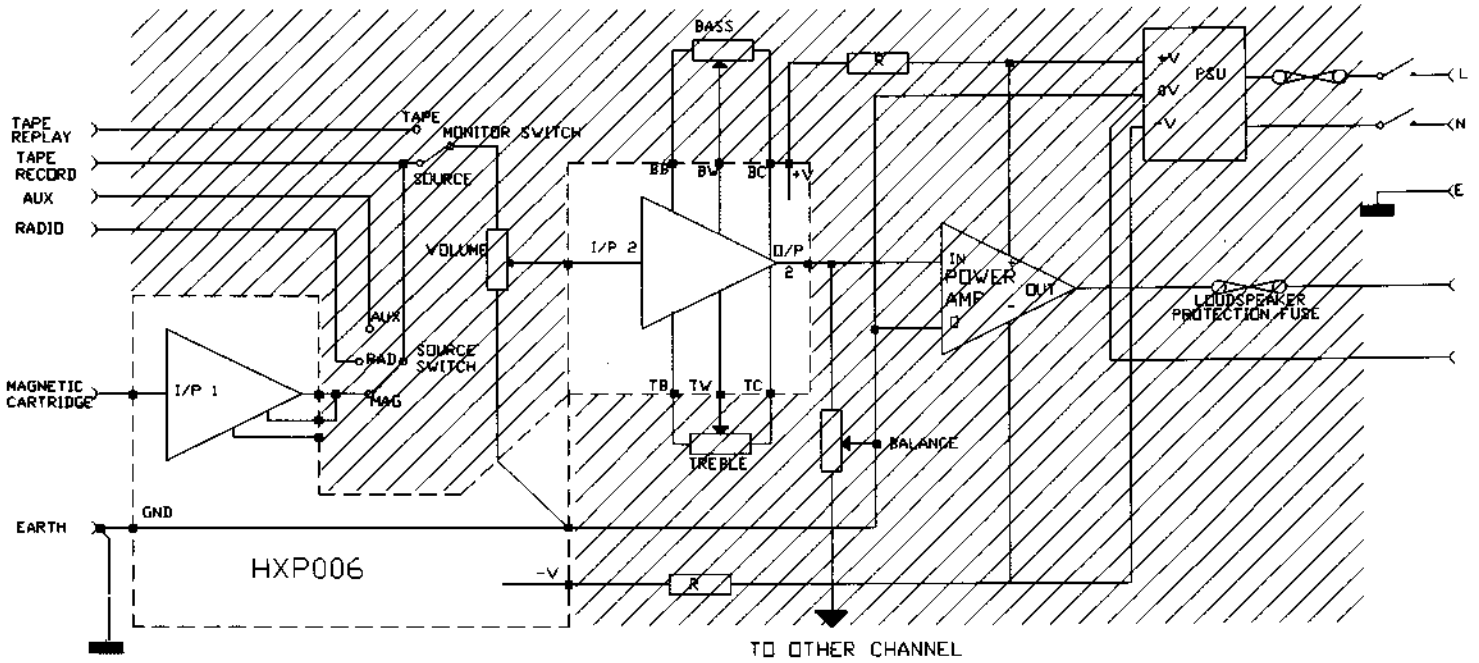
RIAA EQUALISATION (MAG CARTRIDGE)  
 Accuracy: +/- 1dB (30Hz to 20kHz)  
 Overload: > 30dB  
 Sensitivity: 3mV for 100mV RMS O/P  
 Distortion: <0.006%, -84dB (below noise)  
 Signal to noise ratio: > 76dB  
 Input impedance: 47K ohms

#### PERFORMANCE - 2ND STAGE

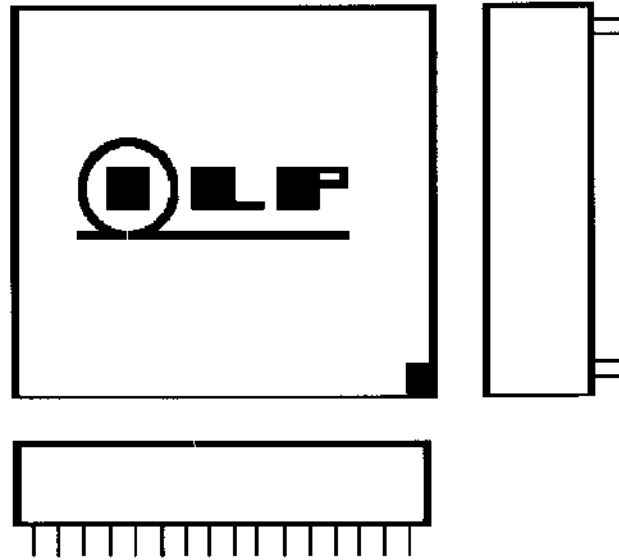
HXP006 BASS AND TREBLE SET FLAT  
 Frequency response: (+0,-3dB) DC to 100kHz  
 O/P: 500mV RMS for 100mV I/P  
 Distortion: <0.005%, - 86dB (below noise)  
 Signal to noise ratio: > 92 dB.  
 Tone control: +/- 12 dB 60Hz and 12kHz

Power supply +/- 15V minimum. All O/P are short circuit protected. Case size: 50mm \* 50mm \* 12mm.  
 Connection is by 16 pins on a 0.1" matrix with pin 1 denoted by the spot on the label.

## SCHEMATIC (shown with associated power amplifier and power supply)



Note 1: The two resistors (denoted by "R") allow the HXP006 to be used on varying supply rails. For supply rails upto 25V-0-25V no resistor is required; for supplies from 25V-0-25V to 35V-0-35V let  $R = 2K2 \frac{1}{4}W$ ; for supplies upto 55V-0-55V let  $R = 3K3 \frac{1}{2}W$ .



Note 2: The small square on the label denotes pin 1.

Note 3: The two pairs of pins on the other side to the 16 I/O pins are for mounting purposes only, they are not electrically connected in any way.

### PIN CONNECTIONS

Pin	FUNCTION	PIN	FUNCTION
1	Ground (GND)	9	Bass Cut (BC)
2	Input 1 (I/P 1)	10	Bass Wiper (BW)
3	Microphone (MIC)	11	Bass Boost (BB)
4	Magnetic Cartridge (MAG)	12	Input 2 (I/P 2)
5	Output 1 (O/P 1)	13	Output 2 (O/P 2)
6	Treble Boost (TB)	14	Negative Voltage (-V)
7	Treble Wiper (TW)	15	Positive Voltage (+V)
8	Treble Cut (TC)	16	Zero Voltage (0V)