

# LEGENDARY MIC PRE AMPLIFIER



## 80B MIC PRE 500 Series User Manual

# The Mic Pre

Taken from the legendary Trident Series 80B console of the early 1980's, the 500 Series 80B Preamp provides the user with the classic mic preamp in a modern 500 Series format.

## Features include

- High-quality transformer-coupled microphone amplifier
- 48-volt switchable Phantom Power
- High-quality Output transformer
- Electronically balanced Line Input amplifier
- Separate Microphone & Line level controls
- Front facing (Hi Z) 1/4" Line Input
- Variable Low Pass Filter (LPF)
- Variable High Pass Filter (HPF)
- Switchable Phase control (Polarity)
- Output meter LED VU display

The 80B MIC PRE amplifier is of a unique design that is able to handle signal levels from -60dBu to as high as +15dBu without the use of a separate pad switch. Even though such a wide range of signal levels is accommodated, adjustment of the gain is extremely smooth, particularly at the high signal levels where other designs tend to have a cramped level adjustment at the end of the control.

In addition, it exhibits near theoretical minimum noise figures, has an extremely fast transient response, and accommodates a wide range of input levels with a frequency response that extends to above 40kHz. Naturally, best results will be achieved using a high-quality condenser microphone. The microphone amplifier will however also bring out the best in either a dynamic or ribbon microphone. The combination of high gain with low noise is particularly useful when working with ribbon microphones as most models have an inherently low output level.



# Operating The Mic Pre

The microphone input is active when the front panel MIC/LINE switch is in its released state. This will appear white in colour.

When connecting a microphone, set the MIC input level control to minimum (it is good practice to only engage the phantom power +48V switch with the MIC input set to minimum, as this will help avoid any audible connection noises through a speaker system).

Once connected, engage the +48V phantom power switch. Allow up to 30 seconds for the microphone to reach its normal operating level and advance the MIC gain control until a suitable level is achieved. Careful monitoring of the OUT (VU) meter whilst setting the microphone gain will help to avoid any overloading and clipping of the signal. However, the 80B MIC PRE has plenty of overload margin, as the unit is capable of extremely high output levels (up to +27dBu into a balanced load). So, by setting the levels as described, adequate headroom is maintained and there should be no danger of overloading any following equipment.

The phase or polarity (POL) reverse switch is employed when phase interference occurs between multiple microphones. Such interference results when microphones, at various placements pick up the same sound source at slightly different times. When the output of the microphones combine, cancellation occurs at certain frequencies. This effect is known as comb filtering. Switching the polarity on one of the microphones may serve to minimise this effect.

The polarity reverse switch operates on both the MIC and LINE input.

# Operating the Line Input

The line input is active when the front panel MIC/LINE switch is in its depressed state. This will appear green in colour.

Once a signal source is connected to the line input, adjust the LINE gain control to it's midway point. At its midway position in line mode, the unit is designed to give unity, or '0' dB gain. This makes for an easy reference point when using the line level input and a centre detent is provided at the centre point of the gain control for this purpose.

As with the microphone input, careful monitoring of the OUT (VU) meter whilst setting the line input level will help to avoid any overloading and clipping of the signal.

# Operating the Line Input

The Line Input is designed to accept balanced or unbalanced, line level audio signals.

When used with a Radial Lunchbox, the 80B MIC PRE can take advantage of the Radial Omniport which is designed to deliver module-specific functionality that can range from an extra output, key input, or effects insert depending on the module. In the case of the 80B MIC PRE, the line input is in parallel with the Omniport jack, providing an additional line input option that can be used on a Radial Lunchbox instead of the front panel Line jack.

## The low and high pass filters

The filter section of the 80B MIC PRE consists of both a variable 30Hz to 350Hz high pass filter (HPF) and a variable 2KHz to 20KHz low pass filter (LPF). This can be useful for filtering out any unwanted high frequency sounds or low-end rumble for instance.

## Operating the low pass filter

Engaging the LPF switch activates the low pass filter on the 80B MIC PRE. The LPF switch will illuminate red when depressed and denotes the filter is on.

Rotating the low pass filter control knob, will select the frequency at which the low pass filter effects the audio signal. The signal level passing through the low pass filter will remain at 0dBu until the frequency selected on the LPF control knob is reached and frequencies above this point will be cut at a rate of 12dBu per octave.

By switching the switching the LPF in and out, a comparison can be made between filtered and non-filtered audio signal.

# Operating the high pass filter

The high pass filter works in the same way as the low pass filter. Engaging the HPF switch activates the high pass filter on the 80B MIC PRE. The HPF switch will illuminate red when depressed and denotes the filter is on.

Rotating the high pass filter control knob, will select the frequency at which the high pass filter effects the audio signal. The signal level passing through the high pass filter will remain at 0dBu until the frequency selected on the HPF control knob is reached and frequencies below this point will be cut at a rate of 12dBu per octave.

Like the low pass filter, by switching the switching the HPF in and out, a comparison can be made between filtered and non-filtered audio signal.

## Specifications

### Microphone Input to Output

**Gain:** Variable -10dB to +65dB

**Bandwidth Min Gain:** 12Hz to 120KHz (+/- 0.5dB 15Hz to 90KHz)

**Bandwidth Max Gain:** 12Hz to 35KHz (+/- 0.5dB 12Hz to 15KHz)

**Distortion:** THD + Noise = <0.007% 22Hz to 20KHz (+15dBu Output)

**EIN:** Better than -126dBu @+65dB gain with 150 Ohms input load.

**Noise:** >-91dBu (22Hz/22KHz at 20dB gain)

**Max Output:** > +27dBu into 600 Ohms (+29dBu unloaded)

### Hi-Z Line Input to Output

**Input Impedance:** 1MΩ Balanced

**Gain:** +22/- 18dB

**Bandwidth at unity:** > 200KHz

**Bandwidth at Max Gain:** >120KHz

**Distortion:** > 0.018% 22Hz to 22KHz (+15dBu Output) >0.008% (Filtered 400Hz to 22KHz)

**Noise:** >-82dBu (Filtered 400Hz to 22KHz)

**Low Pass Filter:** Variable 30Hz to 350Hz, -12db/Octave

**High Pass Filter:** Variable 2KHz to 20KHz, -12db/Octave

# Warranty

## Trident Audio Developments Limited Warranty Statement

The following outlines the warranty periods for all Trident Analogue electronics. All warranty service requires Proof of Purchase. Proof of purchase is the original Bill of Sale, or Sales Invoice from an authorized dealer.

Trident Audio Developments electronics are covered by a limited warranty against defects in materials and workmanship (parts and labor) for a period of One (1) Year from the date the unit is sold to the Dealer or original purchaser only.

Acceptable registration is met by registering online at <http://www.tridentaudiodevelopments.com/product-registration/>

### The terms and conditions of this limited warranty are:

1. The warranty applies to Trident Audio Developments Electronics purchased from Trident Audio or authorized Trident Audio dealers.
2. The warranty covers any defects in materials and workmanship and is limited to the repair or replacement of the original registered product. In its sole discretion, Trident may either repair or replace the product with a product of the same model or replace the product with a new model of a similar specification when the same model is no longer available.
3. The warranty does not cover any of the following: damage caused by the user: spillages or moisture damage; neglect, abuse or misuse, including but not limited to the failure to use the product(s) for its normal purpose in accordance with the manufacturer's instructions for use. Failure to properly maintain the product in accordance with the manufacturer's instructions, and/or the failure to use the products in accordance with the manufacturer's specifications; normal wear and tear; use of products with incompatible or faulty equipment; unauthorized modifications; repairs conducted by unauthorized persons or service center's; the model and/or serial number being altered, removed or made illegible; accidents; acts of God or any cause beyond the control of Trident Audio Developments. It does not cover damage caused by connecting to an improper power voltage supply, cosmetic defects, such as paint finish, and general wear and tear, as well as certain consumables not covered under warranty such as fuses, faders, pots, switches and meter bulbs. Mechanical components including but not limited to a consumable item; potentiometers, faders and switches are covered by a 90-day warranty. Failure to maintain, damage; neglect, abuse or misuse of any mechanical components in this time will result in a void warranty. Trident recommends regular service of the product and in particular; regular service of the mechanical components such as potentiometers and faders.
4. The warranty is applicable to the original purchaser throughout the warranty period as stated above or until original owner resells product. If a unit is received for warranty repair, and after complete examination and testing, no problem is found with the unit, customer will be charged for time labor plus return shipping costs, presuming initial user error falsely caused the unit to be determined faulty.
5. The warranty does not affect any statutory rights the original purchaser may have in accordance with the law applicable in the jurisdiction where the product was purchased, or any rights the original purchaser may have against the authorized dealer pursuant to their original purchase agreement. This warranty gives you specific legal rights and you may also have other rights, which vary from state to state, and or country to country.



**Safety** - This product is intended for professional use only and it is assumed that the user is familiar with the 500 Series Modular Rack system. Always switch off the rack power before inserting or removing this (or any other) module or damage may occur. Do not expose this product to direct heat, moisture or mechanical shock.



**Environmental** - This product complies with the RoHS directive and contains no lead or other banned hazardous materials. In accordance with the WEEE directive, this product must be disposed of responsibly at its end of life, by means of local authority approved recycling systems.

**RoHS**  
COMPLIANT



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Features and specifications are subject to change without notice