

**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.

**Warranty** - This product is warranted free from defects in material or workmanship, for a period of one year from date of purchase. During this period, PMI Audio Group will repair or replace this product by prior arrangement free of charge, providing the product is determined to be defective and has been returned, freight prepaid, in its original or similarly protective packaging, to a PMI Audio Group Service Center. PMI Audio Group is not obligated to provide the Purchaser with a substitute unit while repairs are carried out.

**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.



For full disclosure of Warranty, Registration, and Specifications, please go to  
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SERIES  
80B

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500 SERIES 80B® EQ

**OWNERS  
MANUAL**





## THE EQUALISER

For those not familiar with the difference between a shelving and peaking equaliser, the differences are as follows. A shelving equaliser boosts (or attenuates) all frequencies equally, above or below a certain point. The frequency specified for a shelving equaliser circuit is usually at the point where it effectively reaches its 'shelf' state. A 'high shelf' EQ boosts/cuts high frequencies and a 'low shelf' type boosts/cuts low frequencies. This type of circuit is very popular in hi-fi systems but is also actually highly musical, when applied in a recording environment. In contrast, a peaking equaliser is one that, as its name implies, has a centre frequency that is boosted or attenuated more than others. The frequency range over which it reaches its peak and then falls down is known as the bandwidth (or 'Q'). Because this type of design reaches a peak and then falls away, it is possible with this type of circuit to 'home in' on particular frequencies and make adjustments without affecting those around them. This can be particularly useful when working with instruments such as bass guitars and snare drums. By incorporating both shelving and peaking equalisers into the design of the 80B, it is possible to get the best of both types of design.

## OPERATING THE EQUALISER

Begin with all **boost/cut controls** - those with centre detents, set to their mid way ('0') positions. Adjust the **low and high mid frequency sweep controls** to their minimum positions (fully anticlockwise). The 50Hz high pass 'Filter' button should be in the out position. Set the frequency select buttons controlling the high and low shelving sections, to **120Hz and 12kHz** respectively. Lastly, set the 'EQ' button to the 'in' position (the associated LED will illuminate).

Rotation of the **high frequency shelving control** in a clockwise direction emphasises high frequencies, while turning the control in an anti-clockwise direction from centre attenuates high frequencies.

Operating the **'frequency select' button** in the high frequency section introduces a subtle change of emphasis to the affected high frequencies, as the shelving 'knee' is changed from **12kHz to 8kHz**. Likewise, rotating the **low frequency shelving control** in a clockwise direction will emphasise low frequencies, while turning the control in an anti-clockwise direction from centre attenuates low frequencies. Adjusting the 'frequency select' button in the low section introduces a subtle change of emphasis on the affected low frequencies by altering the shelving point from **120Hz down to 60Hz**.

The **'low mid' and 'high mid' equaliser sections** are peaking filters. Adjustment of their parameters is achieved by use of the boost/cut knob and its associated frequency sweep knob. Boost or cut of a given frequency is performed by moving that control from its centre detent position: clockwise for boost, anti-clockwise to cut. The frequency to be boosted or cut is selected by the frequency sweep control knob. The range of frequencies of the 'low mid' control extends from **100Hz up to 1.5kHz**.

For the **'high mid' sweep**, the frequency range begins at 1kHz (overlapping with the low mid section) and continues **up to 15kHz**.

The Series 80B 500 Series EQ incorporates a classic four band equaliser which is identical to that employed in the Trident Series 80 console. It consists of frequency switchable high and low pass shelving sections, coupled with two swept low and high mid range bands and a **switchable 50Hz, 12dB** per octave filter. Both swept midranges have been carefully chosen for maximum effect on music programme and a good degree of overlap is provided.

Finally, selecting the **'Filter' button** introduces a smooth, **50Hz, 12dB/octave** roll-off to effectively eliminate 'rumble' caused by, among other things, someone's feet moving about near a microphone stand, nearby traffic noise and AC systems. The amount of boost (accentuation) or cut (attenuation) that is applied to the audio signal is entirely dependent on the programme content and it is not our intention to advise on this. Application of equalisation is a very subjective matter and is best learned by experiment. The **equaliser bypass button 'EQ'** is a useful facility for comparing the signal before and after the application of equalization.