

dbx 786 mic preamp

The dbx 786 is a dedicated mic preamp for those concerned about faithful sound reproduction. Konrad Skirlis looks into why having one can make the difference.

While most manufacturers seem to be designing gear solely with the semi-pro/home recording market in mind, companies like dbx are making efforts to cater for the professional commercial studios as well. For those on a limited budget, a microphone preamp may not necessarily be at the top of the shopping list – especially when budget mixers provide several mic level inputs that seem to deliver perfectly ‘adequate’ audio quality. Those who have experienced the difference will know that an external preamp can bring out the best in sound reproduction, even with basic microphones.

between +15dB and +65dB in 5dB steps; the ‘fine’ gain control gives additional sweepable ± 5 dB level changes for fine tuning. Maximum overall gain is therefore 70dB, which is great for amplifying low level signals. In addition, the dbx 786 offers +48V phantom power, a 20dB pad, and phase inversion on each channel. A switchable ‘super low Z’ setting optimises the preamp for microphones with very low source impedance, making it suitable for older vintage mic models. All functions are controlled by relays that allow the signal path to be short and clean. Furthermore, the 786 features an EQ circuit called ‘Spectrum’ which is frequency sweepable from

5kHz to 40kHz.

Essentially, this is a variable high frequency circuit that maintains coherent phase while enhancing high frequency content.

The amount of high

A mixing desk brings together various signals of differing levels, ranging from very quiet to very loud. Designing a circuit that is able to handle these extremes with equal aplomb, while still producing a flat response across the entire dynamic range, is certainly a challenge. In general, certain preamps are more suited to high levels, while others are designed for low levels. Manufacturers of ‘affordable’ mixers, who design their preamps for high level signals, compromise the audio quality of channels fed by low level microphones.

This is where a dedicated preamp steps in. It will transform low level mic signals to higher level line signals, thus reducing the need for additional gain from the console and thereby improving overall quality in the process. Bypassing the mixing desk altogether, and recording straight to tape, will further reduce colouration of sound.

Blue healer

The dbx 786 Blue Series solid state mic preamp is a two unit 19-inch rackmount weighing 9.3kg. Cased in quarter-inch aircraft aluminium with a heavy gauge chassis and a blue front panel, the 786 is striking and rugged. It contains solid hand-crafted aluminium knobs, LEDs that have been individually assembled, and custom VU meters with peak indicators. All switches have an associated light (either yellow, green, red or blue) to signify status, which is especially useful in low light conditions.

Gain is controlled by a detented pot and can be set

frequency shelving boost is achieved by adjusting the ‘Detail’ pot, augmenting the selected frequency from $-\infty$ to +16dB. A high frequency EQ button switches the EQ circuit into the audio path while a 12dB per octave button (with LED) adjusts the slope of the frequency cut/boost curve.

The signal path consists of a transformer-coupled input stage, utilising the ‘dbx M8’ mic preamp module. The custom designed output stage is also transformer-coupled and boasts the capacity to drive 1,000 feet of Belden 8451 cable (150 ohm termination load) with levels exceeding +30dBm – providing loads of headroom as a result. This capacity to drive long line, along with its low distortion level, has meant that large concert operators are finding the 786 very useful in the live arena.

The 786 is constructed with quality electronics, using gold-plated Neutrik XLRs and Jensen JT16-A transformers. In fact, these transformers are Jensen’s best, with a high input common-mode rejection which helps eliminate induced common-mode signals from sources such as RF transmitters. Under the bonnet you’ll also find precision metal film resistors, temperature stable polypropylene capacitors, high grade glass epoxy circuit boards and board-to-board connectors with gold/palladium/nickel contacts. The 786 is entirely DC coupled from input to output, and the design aims to provide a minimal signal path where the amplified signal routes directly to a high output drive circuit. Furthermore, the frequency response is flat across the audio band from 20Hz to 20kHz without



any phase shifts. The 786 responds well to both low and high frequency square wave inputs, helping to keep the output sound as defined as the source.

All external connections are via the rear panel on balanced XLRs for signal inputs and outputs. Additionally, an Unbalance switch caters for unbalanced signals, while the Ground switch references the centre tap of the output transformer to the chassis ground.

Neutral Gear

Setting up the gain structure is a straightforward task. The large gain control brings up the bulk of the level while the 'fine' control adjusts it perfectly. This is important, as levels tend to change between performances and accurate settings can therefore be set between different setups. Furthermore, the gain control is linear in 5dB steps, making level changes a breeze. I tested the system with a number of dynamic and condenser microphones, all of various abilities. Using these mics through my console has previously produced acceptable results, but I was pleasantly surprised at the difference the 786 made. It actually improved the sound of all my mics when compared to the results from the mic pres on an affordable mixer. With the balanced output routed directly to a recording system, the clarity and depth were further improved. The 786 provided a clean and quiet signal that added a new dimension to the performance of the microphone. The amplification was designed to be perfectly neutral, and in practice no discernible colouration was introduced to the sound. In stereo, sonic clarity was maintained when a matched pair of microphones were used.

Allowing the Spectrum to be boosted beyond 20kHz provided more 'air' in my recordings, giving a smoother high frequency response. I found the associated Detail control to be symmetrical – giving equal variation in both cut and boost functions. Together these controls shaped the amount of high frequency adjustments in a

clear and focused manner. You won't find a high pass filter on this unit to remove rumble and sub bass from the audio, but I found that this omission didn't compromise the effectiveness of the unit – condenser microphones generally have their own roll-off switch and if they don't, this task can just as easily be performed during mixdown. Bear in mind that the 786's 'mission statement' is to capture the full range of the audio spectrum for both high and low frequencies. However, the lack of muting, which can be useful in live situations for cutting the signal without changing settings, may be seen as a disadvantage – in the studio though, this omission may not matter.

Absolute Accuracy

The 786 is a precision microphone preamp with a solid construction designed to provide true mic reproduction without sound colouration. The components and design match the best of microphones and recorders on the market. Crisp and clean response ahead of what can be obtained using a standard console gives the 786 a distinct advantage. If you're looking to improve your current recordings, the 786 is a worthy investment. In cases where the recorded sound has to be as accurate as possible, the 786 will achieve this. Depth and clarity will be improved beyond the technical boundaries of a standard console. For anyone with a growing microphone collection, consider trying the 786 to bring out the best in what you already have.



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