



Dangerous Music BAX EQ

Dangerous makes super-transparent summing boxes and similarly clean-sounding monitor controllers. The foray into signal might seem contrary to its design ethos.

GEORGE SHILLING plays with an EQ.

In the 1950s, Peter J. Baxandall invented an EQ circuit that has become the most widely used and copied design in the history of audio. With his paperwork, Baxandall won a competition run by the organisation that later became the AES. The complex maths, explained in his article in *Wireless World* magazine in October 1952, describe treble, bass and combination circuits, resulting in simple to use EQ. The majority of tone controls on home hifi systems over the years have used Baxandall EQ circuits, and there must have been millions of units made so it's the type of EQ that even your mum has used. And who, as a kid, didn't love adding a bit of treble and bass to, well, everything?

The Dangerous BAX EQ (UK£1520 +VAT) is a deep 1U comprising stereo high and low EQ shelving bands along with high and low filters. As we have come to expect from designer Chris Muth, there is no skimping here, but goodness me, this is seriously heavy. Inside, only the finest components are used, including hand-wired Mogami cable — the manual recommends interconnecting with Mogami 2534 which is particularly good at rejecting RFI. There are no transformers in the audio path; this is designed for transparency.

The front panel features deep Focusrite Red-style knobs with a matt finish and very clear pointers, and all controls are stepped for repeatability and matched stereo setup. At the far right is a red Engage button that is a true hard-wire bypass when switched Out. It

illuminates dimly in this state, and brightly when In, and is also a useful display of power on. The Power rocker is on the rear adjacent to the IEC mains socket with switchable voltage selection. Inside the box is a beefy custom linear power supply, with +/-18V audio rails, and 5V logic for the gas-filled relays. It's interesting to note the use of high quality stacked metal film capacitors for the filters. Audio connection is via two pairs of Neutrik XLRs. On the front there are high and low frequency shelving sections where left and right channels share the frequency selection, but have useful separate boost/cut knobs. Each of these has a range of +/-5dB with half dB steps. The high shelf has eight switchable frequencies at 1.6, 1.8, 2.1, 2.5, 3.4, 4.8, 7.1 and 18kHz. However, these frequency labels are at about an octave below the true shoulder frequency. With such broad curves, Muth seems to have decided that these are better described at the middle of their effective curve, so at 5dB boost there is exactly that amount of boost at the indicated frequency, with the shelf flattening out at about a 6dB boost somewhere above that. The low shelf also has eight positions at 74, 84, 98, 116, 131, 166, 230 and 361Hz, and these



are indeed their true shoulder frequencies. Flanking these are the High- and Low-Pass 2-pole filters (12dB/octave) based on another British designer's work, that of Stephen Butterworth. The low filter has settings at 12, 18, 24, 30, 36, 43 and 54Hz, while the high filter settings are at 7.5, 9, 11.1, 12.6, 18, 28 and 70kHz. The filter selection knobs switch individual filters with a relay, so only the chosen filter is selected.

In the grand scheme of things, 5dB may not seem like much to play with. The curves on the graphs in the manual look pretty dramatic the way they are scaled, but the Baxandall curves have a very wide Q. Strapping the BAX across a recently completed mix and having a quick initial twiddle, the EQ initially seemed incredibly subtle, even less effective than the promised 5dB ranges might suggest. However, settling down to listen more carefully, making use of the filters as well as the shelving bands, a smile soon formed as the results were achieved. The knobs, although switched, are physically easy to turn through their half-dB steps. Small boosts are indeed very subtle, as there is no discernable phase malarkey or distortion occurring, yet appropriate shaping is very quick and easy to achieve.

The Baxandall curves minimise phase delay, and the gentle curves of the bands reach well into the midrange. For mastering where subtle tone-shaping is required,

the BAX achieves this effortlessly and without unduly messing with anything. The BAX leaves everything like reverb tails and stereo imaging intact, while taking the overall tone wherever you want it to go. The shelving should be thought of as a slope rather than a shelf, as even a broad Q shelf will normally level off quickly. Not so the BAX, which is very gradual at the corner frequency, and continues the slope upwards or downwards often only levelling off beyond the audible range. Hence the usefulness of the filters in preventing problems. If you thought an API 550a was good at stopping you from corrupting the sound (and I did) then the BAX brings a whole new level of 'not messing things up'-ness, such is its clean subtlety. It's more transparent than just about any other EQ I've tried, and perhaps does for EQ what the subtle CharterOak SCL-1 does for compression. The BAX also works extremely well in combination with more surgical EQ to gently iron out the creases.

For tracking, it makes sense to engage the filters at all times, even if set to 12Hz and 70kHz, simply to remove extraneous signal before hitting the converters. Recording acoustic guitar or vocals, there is ample boost and cut of treble and bass to cover all tastes once the correct mic and positioning is selected. The lower settings of the low-pass filter also have their

uses, gently removing upper harshness. Overlapping the shelves with the filters is akin to what you might do with a Pultec. The BAX does have a tendency to make things sound better when boosting, partly this is because it is making broad swathes louder — especially when you are boosting more than half of the frequency spectrum! So I did sometimes wish for a master gain to trim down overall level and make sure I wasn't fooling myself.

The BAX has already had the thumbs-up from a number of mastering engineers and that arena is probably where it will prove most popular. If you want power and grunt, or mid-range juicing, then the BAX might not do it, although the high shelf set to lower frequencies certainly brings out some poke. But if you want smooth treble and bass sweetening, then this is a must-try box. Sadly, Baxandall never earned any royalties from all those hifi systems; his competition prize was just a wristwatch. But the BAX is a truly splendid tribute ■

PROS

Subtle EQ; gorgeously transparent; super high quality components and build.

CONS

Too subtle for some applications; may seem expensive for such a simple device.

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