

Empirical Labs Lil FrEQ

The Lil FrEQ is designed to do for EQ what the Distressor did for compression. Brad Watts FrEQs out.

Empirical Labs certainly got things right when it released the EL8 Distressor back in 1996. The über-crunching dynamics processor has won many a heart since then thanks to its ability to cover a number of compression bases. Today, the Distressor has pretty much earned its place in compression history – both for emulating its forefathers such as the Teletronix LA-2A and Urei 1176, as well as bringing its own individual sound to the lineage. It's not easy to produce a 'classic' – something that every studio on earth feels obliged to own – especially in the crowded world of compression. Nonetheless, the Distressor has achieved this feat with apparent ease and is now widely considered a 'modern classic'. Not one to rest on the laurels of a single product, Empirical Labs has since released the Fatso tube emulator, and now, the subject of this latest test drive, the Lil FrEQ.

FrEQ-uent Flyer

Empirical Labs claims the Lil FrEQ to be the most powerful piece of analogue EQ ever made – a bold claim and one that I can't really verify, not having heard or used every single EQ circuit ever built. I can, however, vouch for the fact that the Lil FrEQ is an extremely versatile EQ unit and right up there with the best the world has to offer. In all, there are eight sections of equalisation in the FrEQ: four full param-

these silver wonders may eventually drive you up the wall. [According to Dave Derr of Empirical Labs, the Q controls on the Lil FrEQ have since been made smaller to rectify this problem –AS]

To the left of the FrEQ's myriad EQ controls, the front panel also features an instrument input that allows the unit to act as a sophisticated and powerful DI. The instrument pre offers distortion levels below 0.0009% and a dynamic range of 112dB. Frequency response extends down to 50Hz. Jammed between the DI and the large input gain dial is a single LED clipping indicator that monitors each EQ section for overloading and is labelled 'BAD!' – just in case you thought clipping was good.

Round the back, typical I/O comprises balanced XLR and TRS jacks plus an isolated transformer output. The 'hot' pin can be changed from pin 2 to pin 3 internally.

FrEQ Test

My first test of any EQ or preamp normally begins with this question: does an electric guitar sound any good through it? I initially spent a very short hour playing guitar through the FrEQ and was more than impressed by the tone it produced. The unit is very smooth and astoundingly musical; a very forgiving and fun box of filters that inspires you to explore a multitude of sonic landscapes – in keeping with the



rics; a high-pass section; high and low shelves and a de-essing circuit. Each individual section has a dedicated switch to engage or bypass its controls – the high and low shelving filters constitute a 'section' in themselves, and thus share a single bypass button between them. Alternatively, you can bypass the lot with a 'global' bypass button. Input and output gain controls use the same large white Distressor-style knobs that 'go past 10'. While on the subject of knobage, you can't help but notice the very '70s 'silver era' aluminium knobs. Although these controls may look terrific, they are a little cramped, so if you're even slightly ham-fisted

Empirical Labs philosophy.

The four parametric bands provide bandwidth adjustment from 0.1 through to two octaves and 14dB of boost and cut, and each band generously overlaps its neighbour's frequency range. LF runs from 40Hz to 600Hz, low-mid from 100 through to 2.7kHz, high-mid from 400Hz to 10kHz and HF from 900Hz to 20kHz. All of these are quite broad sweeps, so prepare yourself for some minuscule tweaking (thankfully the front panel frequency markings are also refreshingly accurate). For extremely broad strokes kick in the shelving EQ. Empirical Labs likes to refer to this



section as 'old style' tone controls. These are gentle 10dB boost/cut shelf filters – spot on for adding a little bit of 'glow' to a sound. Think Rola speakers and you're on the money – very cool.

Further control comes along with the 'coloured' third-order high-pass filter. This switches in at 30Hz and follows through 80, 100, 140, 200, 270 and 330Hz. I never thought I'd say this of a simple high-pass filter but it actually sounds very good. You can cut the bottom out of vocals without losing 'soul' – again, very nice. At the other end of the spectrum there's a very effective de-essing circuit, which offers only the simplest of adjustments – frequency and threshold. When the blue LED-augmented 'DS' button is switched in, the section acts as a de-esser, when switched out the circuit functions as a high-frequency limiter. This offers a very useful 'softening' effect and no doubt borrows its initial design from the Fatso. Dynamic Time Constants are set internally to an attack time of approximately 0.5 milliseconds and a release of 0.04 of a second.

As with the rest of ELI's machinery, the Lil FrEQ uses military-spec parts: metal film Vishay/Roederstein resistors for a top-class signal path. The overall spec is ridiculously high with a published frequency response of 5Hz to 140kHz on the transformerless I/O. The transformer outputs response covers 10Hz through to 110kHz. The dynamic range covers 120dB from maximum output (0.1% clipping) to minimum output. Distortion levels are incredibly low: between 0.00056% and 0.005% depending what sections are in use. The de-essing section for example will bring a THD of <0.005% with it.

First Among FrEQuals?

There are a lot of filters in this 'little' EQ unit. All of them sound gorgeous and are a hoot to work with. Like the Distressor, the Lil FrEQ will likely become a staple for all EQ situations. I dressed up a number of tracks with it over the course of the last month – everything from bass through to vocals. Destined to be a winner. I just wish they had a stereo version.

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• Front End Audio
Phone: (08) 8370 0499
Email: sales@frontendaudio.com.au
Web: www.frontendaudio.com.au

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