



Miad Audio LCPQ 4040

Discrete Four-band Equaliser

This Polish company's debut product, an inductor EQ, could be just the thing to apply a little professional polish to your recordings.

HUGH ROBJOHNS

Miad Audio — slightly confusingly labelled as *muad* ('muad') on the hardware itself — are a start-up boutique equipment manufacturer from Poland. At the moment they offer only one product, the LCPQ 4040, which is a very high-quality, four-band, single-channel, parametric equaliser. It features transformer-balanced input and output and passive inductor-capacitor-resistor (LCR) EQ stages, with discrete transistor buffer/gain stages, and a three-year limited warranty.

Overview

As you might expect from a boutique manufacturer, this product is constructed using components from all the top-name

manufacturers and it's built and wired by hand. It features Carnhill line input and output transformers, as well as custom-made five percent tolerance tapped inductors, again made by Carnhill, in all four EQ sections. The rotary frequency-selection switches are from Grayhill, and the section gain controls are (very light-action) Bourns conductive-plastic potentiometers. The passive components include 'red-brick' five-percent tolerance Wima polypropylene film capacitors in the filter circuitry, and Panasonic 'audio-grade' electrolytic capacitors in the discrete-transistor gain stages. In fact, all of the component tolerances have been kept as tight as possible to ensure good stereo imaging when two units are used together.

DC Power for the LCPQ 4040 is connected via a supplied two-metre, six-pin XLR cable, which conveys $\pm 28V$ DC for the audio electronics and $+24V$ DC for the bypass relays and indicator lamp. Separate grounds are maintained for the audio and relay supplies, as well as the chassis, right back to a star point in the supplied external linear power unit (PS230). There will inevitably be some people who dislike the use of an external PSU, but taking the mains transformer out of the rack unit is a good idea in this case

Miad Audio LCPQ 4040 £1399

PROS

- Sublime sound with precise controllability.
- Both global and individual EQ section bypasses.
- LCR filters employed in all four bands.
- Very high-quality, low-tolerance components used throughout.
- One PSU can power two EQ rack units.
- Excellent build quality.

CONS

- Review model had slightly restricted maximum output level.
- Some won't like the use of an external PSU brick.

SUMMARY

A very nicely conceived and built four-band equaliser with passive LCR filtering on each band and copious centre-frequency options. The buffer and gain stages are constructed from discrete transistor circuits, and the audio is transformer coupled in and out.



— it minimises magnetic coupling into the inductors within each EQ band, of course, so it's a case of audio quality having been prioritised over convenience. That said, the external PSU has some advantages when it comes to convenience and price too — the free-standing PSU brick can cater for two LCPQ 4040s via its two six-pin XLR outputs. The IEC mains inlet has an integral fuse-holder and voltage selector (115/230V AC) and the front panel accommodates an on-off rocker switch and a trio of very bright red LEDs, to indicate the status of the three power rails.

The 1U rackmounting EQ unit's case is a very nicely finished aluminium affair with a grey, anodised and engraved front panel. It extends about 300mm behind the rack ears and weighs 3kg. The transformer-balanced (floating) line input and output are connected via proper Neutrik XLRs and the controls are well-spaced, with big OKW knobs, with well laid-out and easy-to-read panel markings. Curiously, the knobs all sit about 6mm proud of the front panel, which looks a little odd, as if the control shafts are too long!

In Use

Using the LCPQ 4040 is very straightforward, starting with an illuminated push-button on the right-hand »

EQ Band Frequency Options

The switched centre-frequency options for each band are:

- LF Shelf (band 1): Turnovers at 45, 65, 100, 180, 330 or 470 Hz, and re-configurable for a bell response.
- LMF (band 2): 180, 220, 270, 330, 390, 470, 560, 680, 820 Hz, 1 or 1.3 kHz.
- HMF (band 3): 1.2, 1.5, 1.8, 2.2, 2.7, 3.3, 3.9, 4.7, 5.6, 6.8 or 8.2 kHz. Both of the mid-range bands can be switched to a narrower bandwidth (Hi-Q).
- HF Shelf (band 4): 3.3, 4.7, 6.8, 10, 15 or 23 kHz, and re-configurable for a bell response.



The DC input accepts a cable from the separate PSU, which can supply power to two LCPQ 4040s.

» side to deselect the bypass relays and switch the unit into operation. Each of the four EQ bands are provided with a grey mode button, a rotary centre-frequency switch (see box), and a rotary gain control providing a sensibly constrained $\pm 12\text{dB}$ range. There is no centre-detent on the gain controls, but each section does have a proper bypass position (Off) on the frequency switch, so the lack of a defined unity-gain point isn't a major concern. The section mode buttons convert the top and bottom bands between shelf and bell modes, and the two middle bands between normal and high-Q (narrow bandwidth) modes. The specifications do not state the specific bandwidth options, but I estimate the mid-band EQ sections to be about 1.3 octaves ($Q=1.1$) in standard mode, decreasing to around 0.7 octaves ($Q=2$) in the Hi-Q mode.

Before getting into the character of the EQ, it's worth mentioning that with all four EQ bands bypassed individually the audio

signal is still routed through the input and output transformers and the transistor gain stages. This allows the LCPQ 4040 to provide some subtle transformer character, if required as a high-quality line preamp stage.

Getting into the EQ itself, the first and over-riding impression is that it is extremely musical and can be adjusted

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very precisely. There are thirty-four selectable frequencies on offer across the four bands, with the two shelf sections overlapping the mid-sections nicely. In contrast, the two mid-bands don't tread on each other's toes too much, maximising the tonal shaping options across the mid-range. Greater precision and control are afforded at the frequency extremes by the option to convert the shelf responses to bells.

In many ways, the LCPQ 4040 feels like a mastering equaliser, purely because of the number and close spacing of the EQ centre frequencies, and although it doesn't have switchable gain settings the constrained gain range and nice control law allow very precise gain adjustments.

This is very much a 'shaping' EQ rather than a 'surgical' one; something that works best when gently enhancing musical sources, rather than trying to correct major tonal flaws. At the low end it can deliver weight and bloom very nicely, while

the high-end boost is fabulously airy, adding gloss and sheen without any hint of harshness or grit. The mid-range section bandwidths are well chosen to allow an instrument's character to be subtly but beneficially enhanced or tamed without becoming obvious.

Verdict

Relatively few modern equalisers employ inductors at all, and the few that do often restrict them to just the low sections, not the high bands, too. To my ears, inductor-based equalisers just sound more natural, and this Miad equaliser certainly confirms that view. All in all, I have to say that I am very impressed with both the engineering and musicality of the LCPQ 4040. **■■■**

Technical Measurements

Running a pair of LCPQ 4040s through a set of standard bench tests using an Audio Precision test unit, I measured very similar figures for both units. Total harmonic distortion was around 0.005 percent at +4dBu, and the signal-to-noise ratio was 87dB (unweighted, ref. +4dBu). Combined, these gave a THD+N figure of about 0.007 percent or -81dB (unweighted, 22Hz-22kHz). The frequency response reached -3dB at 7Hz and 50kHz when terminated with 600 Ω (the HF roll-off extends to nearly 80kHz when connected to a high-impedance destination).

The specifications claim a maximum output level of +21dBu into 600 Ω , but I found the review unit could achieve +23dBu with a 600 Ω termination, delivering only 0.1 percent THD (and 0.3 percent at +24dBu). This result gives a total dynamic range capability of around 109dB (AES17, A-wtd). Both the signal-to-noise ratio and dynamic range figures are around 5dB lower than claimed in the specifications.

If you want more detailed information, you can find plots generated during these tests on the SOS web site.

W <http://sosm.ag/nov15media>

E LCPQ 4040 £1399; PS230 PSU (supplies two EQ units) £329. Prices include VAT.

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