Waves Masters Bundle

Also available as part of its Platinum bundle, the Waves Masters package concentrates on getting a few good things really right. Those few things add up to EQ and dynamics and the key phrase is Linear Phase.   **ROB JAMES**

WAVES MASTERS BUNDLE brings together the well known L2 UltraMaximiser and two new plug-ins — a Linear Phase Equaliser and the Linear Phase MultiBand Processor. The latter is an evolution of the familiar C4 MultiBand Processor offering five discrete bands of gain and dynamics. The major advance is the inclusion of linear phase crossovers. This is claimed to result in absolute transparency. When the device is 'in circuit' but idle, the only audible effect should be the processing delay.

By definition, any alteration of a signal is distortion, creative or destructive, sometimes both. But there are times when it is desirable to minimise the side effects of any changes. The majority of equalisers, analogue or digital, have an obvious side effect in that they delay the audio. If the delay was the same at all frequencies this would not present too much of a problem. Unfortunately different frequencies are delayed by different amounts. This results in colouration and reduces the impact of transients, smearing them in the time domain, if you like. Another way of describing this villain of the peace is 'phase shift'. For a clear illustration of the unpleasantness this temporal distortion or phase shift can produce, try this. Use a conventional analogue or digital equaliser (with a high Q value) to put a couple of tight notches in the middle of the presence band of a vocal or some speech. Now compare with the original.

A Linear Phase EQ delays all frequencies by the same amount. This delay will be at least half the cycle length of the lowest frequency you are interested in. The technology behind Waves' linear phase EQ is a sophisticated implementation of FIR (Finite Impulse Response) filters. These are more complex and computationally intensive than the more common (and inherently phase shifting) IIR (Infinite Impulse Response) types.

I used the Masters Bundle with Steinberg's Wavelab 4 as the host application, even better in its latest incarnation. Once past installation and the Pace Interlok copy protection, the familiar Waves interface means almost instant gratification, but it soon becomes apparent a good deal of experimentation and tweaking is needed to really get the best from the Linear Equaliser and MultiBand Dynamics.

Although presets are provided, users will only discover the true benefits if they are prepared to exploit the manifold options available. There are always compromises to be made. These devices present options that enable the user to decide where the compromises will be rather than making the choices for you. Once understood, it is possible to apply quite extreme treatments without egregious artefacts.

The Masters bundle will be an attractive proposition to anyone who has heard the difference phase-linear equalisers can make. Although aimed, as the name implies, squarely at the mastering process, there are many other applications that could benefit; cleaning up dialogue in sound for picture work, for example.

The time spent learning what these subtle instruments are capable of will be amply repaid with cleaner, more dynamic masters. ■
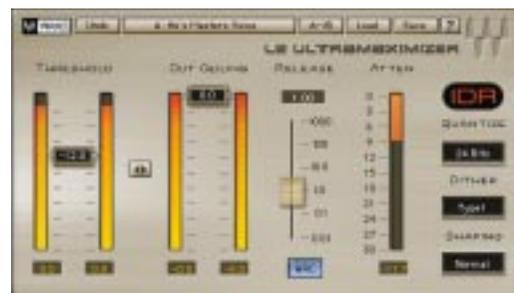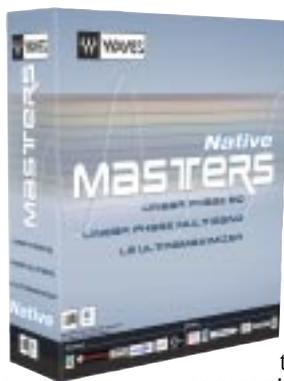
LP MultiBand

The Linear Phase MultiBand processor makes use of FIR filters in its crossovers. The original C4 uses phase compensation to improve filter anomalies. This version goes much further resulting in a subjectively cleaner and less degraded sound when processing is applied

and, to my ears at least, transparency when the process is in circuit but idle. Apart from all the usual multiband processor tricks this one has a real ace; demasking. High-level, low-frequency sounds can often effectively mask quieter high frequencies. The demasking effect comes courtesy of the Linear MultiBand's capability for each band's threshold to be partially determined by the energy content in the band below. The Adaptive control sets the degree of interaction.

I found the effect almost uncanny, allowing things to be pulled up in the mix without affecting the overall tonal balance. I also found the expander/noise gate behaviour to be more transparent and useable than anything I've heard before out side of dedicated hardware costing many times the admission charge here.

Contact

LP EQ

The Linear Phase Equaliser has two 'components', a broadband version with five 'general' bands and one specialised LF band and a dedicated, 3-band LF component. Changes to the main bands are heard in real time but, because low frequency manipulation is especially computationally intensive, changes made in the Low band are only heard when the mouse is released to avoid zipper noise. The dedicated Low band component has 3-bands covering the range from 11Hz to 602Hz and works in a similar manner to the LF band in the general component. The LF bands offer low and high cut, low and high shelf and bell filter options, while the general bands add two further flavours — Variable Slope Precision and Resonant Analogue Modelled. The former uses the Q control to adjust the slope while the latter uses the Q control to specify the degree of resonance overshoot at the top of the slope.

Using extreme boost and cut can result in 'ripples' in the frequency response. The user is given the power to decide what the trade off will be via a choice of three 'Design Implementation Options' (Normal, Accurate and Low Ripple) selected in the Method box.

These visibly and audibly affect the filters behaviour, trading slope angle and depth of cut for more or less stop-band ripple. For example, a narrow notch at 4kHz will reach -30dB using Accurate, -22dB in Normal, and -18dB in Low Ripple. So, clearly, Accurate is the one to use for notches. For a Low-Pass filter the situation is different. Accurate will yield the steepest slope but ripple will occur below -60dB, Normal gives a shallower slope but the ripple occurs at a lower gain of 80dB and at a higher starting frequency. Using Low-Ripple the slope is shallower still but the ripple is pushed still higher in frequency and lower in starting point. The supplied presets cover classic Baxendall and Gerzon designs with other examples as starting points for specific purposes.