

Drawmer DC2476

Drawmer is a mastering unit with some interesting surprises. William Bowden gets ringside for a closer look.

The DC2476 is part of Drawmer's Masterflow range of products, the other members being the DC2486 twin screen mastering processor (the DC2476's big brother) and the DC2496 analogue to digital converter. The DC2476 is a 1U high silver-fronted rack unit containing a chain of six DSP modules specifically tailored to mastering applications. The signal is split into three bands for processing inside the unit via user-definable crossover points, then recombined at the output stage.

in any one of the 128 internal memory locations, with an additional 50 factory presets also available. Furthermore, you can load entire chains or just single effect Blocks from other Patches. If this isn't enough, the front panel also has a PCMCIA slot for SRAM cards, i.e. portable memory. Included with the unit are two (Mac and PC) Midi to RS422/232 interfaces, so you can download new operating systems off Drawmer's web site as they become available. Very progressive.



The front panel sports a 6cm by 3cm backlit LCD. Compact but informative, it shows a small view of the effects chain at the top, and lower down it shows the various DSP modules and their associated parameters. LED PPM-style metering appears in three sections: input (-50dB to 0dB), output (-70dB to 0dB), and a three-band 10-segment LED set which shows the action of expansion, limiting and gain reduction. Navigation is accomplished by a large rubbery four-way button and a combination pushbutton/alpha wheel. There is also a Chain/Parameter button next to the four-way button. This toggles between states, allowing you to zoom around the effects chain and select parameters in the effects themselves. Nine other smaller buttons take care of Bypass, Compare, FX Solo and the like, while a group of six LEDs inform you of the unit's operating status. The FX Solo, FX Bypass and Bypass Unit buttons have dedicated status LEDs as well.

Getting your signal into and out of the box can be accomplished either digitally or via analogue. Digital access to the DC2476 is via a single pair of AES/EBU I/O (XLR), and S/PDIF I/O (coaxial). The analogue side is covered by electronically balanced XLR L/R inputs and outputs (switchable between -10dB and +4dB). Sample rates for the A/D range from 32k all the way to 96k, and you can run the entire unit at 44.1k or 48k depending on the resolution of your digital source. There are three types, levels and shapes of output dither available (i.e. nine combinations), a digital fader, as well as selectable 16-bit and 24-bit word lengths. You also get wordclock I/O (50 ohm BNC) and Midi in/out/thru. Various chains and parameters can be named and stored

Tactical Advantages

In terms of what the box does, it's organised in a familiar manner for a mastering processor, with its own distinct flavour. Between the input and output controls the DSP chain is as follows: dynamic EQ – equaliser – expander – compressor – limiter and stereo adjust – tube drive. Let's look at each effects module in turn.

Dynamic EQ shares something in common with auto-wah pedals and de-essers, in that a chosen frequency is selectively boost or cut according to a preset threshold. This DSP module is very flexible. It consists of a single parametric EQ with a frequency range of 64Hz up to 8kHz (variable in semitone increments), variable bandwidth (0.25 of a semitone to three octaves) and 12dB (and they mean 12dB!) of boost or cut. It's a shame the bandwidth doesn't extend higher because, when dealing with Dolby-stretched vocals or cymbals, 8kHz can be well below the problem area, but full marks are due for its flexibility in the lower range. In operation you can dynamically add or subtract from a chosen area and the threshold is floating. This can be great for bringing out low level areas such as kick drums, but watch out, both of Drawmer's de-essing preset Patches seem to boost the top end as well, and this isn't what you'd usually expect. Some customisation is required because of the extent to which it's program dependent. The 'FILT' setting helps here by allowing you to listen to the band you've selected in isolation, much like a tune control on many de-essers.

Surprisingly, within the dynamic EQ section also lurks a full bandwidth compressor. The attack time ranges from 100 milliseconds down to 64 microseconds, which

is very swift indeed. In practice this compressor is very powerful, usually allowing the extraction of an extra 3dB to 4dB of gain without savaging the signal – a very useful inclusion. After all, you don't always want to split everything into three bands, like when you're attacking clicks on samples or troublesome transients. There's a responsive and informative gain reduction meter inside the module showing compressor action. The most interesting effects in this algorithm were obtained when I used the compressor and dynamic EQ together (the compressor is before the EQ, but change one and you'll probably want to adjust the other) and altering even only a couple of variables gave rise to many possibilities.

Stereo Adjust is another handy feature. It is located in the three-band split area of the signal chain and allows you to widen or reduce the width of your stereo image over the three bands. In Stereo Adjust the bands are displayed as horizontal blocks: high, mid and low (all three bands are referred to in this way throughout the three-band section). A line in the middle of the blocks indicates mono, faint lines indicate normal, and boundary lines on the outside indicate expanded stereo. Selecting one or all of the bands allows you to widen the image (the blocks move outward) or reduce the image (they move inward towards the mono line). I found this module great fun to play with. For example, I could set my two crossover points reasonably close to each other in the bottom end of the frequency range and have the subs in mono, expand the lower mids and keep the tops in normal stereo. Or, I could set the high and low bands to expanded stereo, the mid band to mono, and then just play with the crossover points – with the sounds changing from mono to stereo depending on how they were 'collected' by the crossover. The mono compatibility of the expanded stereo was very good as well – nothing was cancelled to any great degree – so even very wide guitars or synths will in all likelihood survive AM radio or mono club PAs.

Killer Punch

The Tube section on this unit is unique to Drawmer and, I'd say, a credible secret weapon. It sounds nothing like the Digital Radiance Generator on the Finalizer and I'm not sure it really sounds like valves either, but it has a certain engaging quality. I suppose it sounds more like a full-band exciter/enhancer, although nowhere near as harsh as most I've encountered – certainly gives the likes of Aphex something to think about! This module just seems to have an instant presence, depth and sheen about it. I found my favourite 'virtual tube' was the high band. It always sounded the sweetest on a variety of crossover positions. The low tube wasn't bad either but I found it performed best with the lowest crossover setting available. The mid tube needed more care, but small touches could really bring out vocals and punch. Pushing the 'tubes' into saturation can have its rewards. In the upper range they start to sound grainy and harsh – especially male vocals in the mid band. Everything became less defined, and distortion of

a distinctly un-tube like nature appeared, but if going over-the-top is your style, then this unit can definitely go with you. However, subtle use yielded remarkable results, and with this algorithm alone Drawmer have really come up with something special.

Compression and expansion has always been a tricky area. Some people look to compressors for a certain sound while others look only for a certain action. The DC2476's forte is in its action. Both its expander and compressor are extremely powerful and flexible, utilising a seamless mixture of program adaptive sensing and user control. Both are capable of achieving huge level changes or virtually transparent subtlety, while it was very easy to turn the expander into a super quick gate if desired. Having variable release times on the bands enabled comprehensive decay characteristics to be set up with ease. Drawmer's use of 'bootstrapping' – that is raising the low level signals rather than squashing the peaks – seemed to make relative band levels easier to manage and distortion less of a problem.

Conclusion

I really enjoyed the 2476. Looking to one single box for all the crucial mastering processes is not something I recommend, but, with the right decisions, real improvements can be made. I did have a few operational niggles with the review unit, many of which have been ironed out in subsequent software upgrades.

The power switch is located on the back of the unit, which I fail to understand, while input adjustments are in 1dB steps which I'd suggest isn't fine enough in the 'professional' realm – perhaps a software update guys? I examined most of the effects in isolation using the excellent FX Solo/FX Bypass buttons, mainly because I found the supplied preset patches were too over-the-top – I suspect in many applications that the FX Solo/FX Bypass mode will prove invaluable.

The three-band signal processing is hugely powerful and it is best to tread carefully when using it. Contrary to popular belief, multiband compression is not *de rigueur* for mastering, and the power of this new breed of mastering processors means it's all too easy to squash the life out of a recording. However, in experienced hands, the DC2476 can truly work miracles. It doesn't have a Wizard function on board and the supplied manual could have been more comprehensive but the brilliant navigation system will soon turn you into that wizard. In short, the DC2476 packs enough power to make it a true heavyweight contender.



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