

Drawmer MX50

Full-Band / Split-Band De-esser

PAUL WHITE forgets his Ps and Qs to concentrate on his Ss and Ts while trying out Drawmer's new MX-series de-esser.

Drawmer's MX range of analogue processors has already established that it is possible for manufacturers to build lower-cost alternatives to their premium range of products without compromising on either audio or build quality (see *SOS* June '97 and March '98 for reviews of the MX30 Dual Gated Compressor/Limiter and MX40 Quad Gate respectively). What's more, the MX processors sometimes offer features not present in the top-notch 'black face' Drawmer range — for example, the Punch setting on the MX40 gate. The latest addition to the MX range is the MX50 dedicated de-esser, which has no counterpart at all in the black Drawmer range.

De-essing is traditionally accomplished by hooking an equaliser into the side chain of a compressor to make it more sensitive to sibilant S and T sounds, but the obvious shortcoming of this method is that the level of the entire signal drops when a sibilant sound is detected. A more satisfactory technique is to reduce the level of just the offending frequency band by means of a dynamic notch filter, leaving the rest of the spectrum untouched, but that approach is generally too costly to be implemented in a budget processor.

The MX50 can emulate basic full-band de-essing, but more interestingly, it also features a split-band compression mode where only frequencies above a split point set by the user are attenuated. This isn't quite as sophisticated as precisely notching out only the sibilant band, but it's a lot better than the full-band method for most musical applications. A further refinement is that very high frequencies (above the normal sibilance range) can be switched to bypass the process.

THE HARDWARE

Housed in the familiar 1U, mains-powered rack case, the MX50 follows the champagne and black styling of the existing MX units and provides two channels of de-essing that may either be used independently or linked for stereo operation. In the linked mode, the left- and right-hand channel control settings are averaged to avoid image shifts. Both balanced XLRs at +4dBu and unbalanced jacks at -10dBv are provided to facilitate connection into both pro and semi-pro systems.

The front panel sports relatively few controls; the first two are the Frequency and De-ess knobs. When the MX50 is in Full-Band mode, Frequency sets the side-chain filter frequency above which sibilance will be detected. In split-band mode, the same knob sets both side-chain detector frequency and the split point above which compression takes place. Sibilance is generally found between 4kHz and 8kHz, but the MX50's lower filter cutoff is variable from 800Hz to 8kHz to cover all voice types. De-ess simply regulates the amount of attenuation to which sibilant sounds are subjected.

When Split-Band is selected, a circuit similar to a crossover splits the audio spectrum into two bands and compression is applied only to the upper band. There's also a Bypass button and a Stereo Link switch, with all buttons having status LEDs. A further button labelled Air operates in either mode to allow frequencies above about 12kHz to pass unattenuated, the idea being to preserve the high-frequency transparency of the signal.

FLOATING THRESHOLD

One of the problems with sibilance is that it tends to vary in level, yet a conventional compressor operates above a fixed threshold set by the user, which may result in some sibilant sounds being processed and others slipping through unchecked. Drawmer have found a way around this (in both split and full-band modes), by using a floating threshold system that adapts to the dynamics and level of the incoming signal over a range of 60dB. That's why there's no separate threshold control. The amount of

pros & cons

DRAWMER MX50

pros

- Minimal side-effects in split-band mode.
- Easy to set up and operate.
- Attractively priced.
- Operates independently of input level.

cons

- No side-chain listen mode.

summary

An affordable, simple-to-use de-esser that does the job with minimal side-effects.

SOUND ON SOUND

de-essing is adjusted using a single control and is variable over a 20dB range, though very low-level signals are left unprocessed, as this tends to sound more natural. A 9-LED bargraph meter shows how much gain reduction is being applied, up to a maximum of 20dB.

OPERATION

The manual rightly states that you should do whatever possible to reduce sibilance at source, either by changing the microphone type or altering its position. However, with many singers, further de-essing is often necessary, and the effect of even mild sibilance can be made worse by compression or by adding bright effects treatments, such as plate reverb. A useful tip here is that if it's the reverb that's making the sibilance unacceptable, just de-ess the reverb feed, not the dry component of the vocal.

Full-band de-essing is easy to set up, but it would have been easier still if a side-chain listen mode had been included to help match the filter frequency to the sibilant material being processed. However, this omission is about the only compromise I could find given the target selling price of this device. Full-band de-essing will always be an imperfect solution, because the entire signal falls in level whenever a sibilant sound is detected. If more than a little de-essing is needed, this can give the voice an unpleasant lisping quality, though the level-independent



threshold system of the MX50 combined with the Air button produces rather better results than you'd expect from simply patching a compressor and an equaliser together. With careful adjustment, it's possible to get quite acceptable results from the MX50's full-band mode, but to be honest, I'm not entirely sure why Drawmer have included it, as the split-band mode always seems to do the best job.

Once split band-mode has been selected, it's again necessary to set the filter frequency so that only sibilant sounds trigger the gain reduction process, but this time, only frequencies above the split point are attenuated. Switching in the Air circuit invariably improves the 'openness' of sounds being de-essed, and largely eliminates the aforementioned top-end dulling syndrome. Personally, I'd be inclined to leave it permanently switched in as it generally produces a better sound.

The audible difference between split and full-band mode is generally quite noticeable at higher settings of the de-ess control, though at lower de-ess settings, the full-band mode works surprisingly well, especially if the Air button is in. Even so, there are very few audible side effects in split-band mode, even when quite heavy de-essing is being applied, and although not all unpleasant vocal artifacts can be tackled this way (some lip and breath noises still get through), the sibilance component of the sound is tackled very successfully.

BRIEF TECHNICAL SPECIFICATIONS

Input Impedance	20k Ω balanced, 4k Ω unbalanced
Maximum Input Level	+21dBu
Output Impedance	50 Ω balanced, 100 Ω unbalanced
Maximum Output Level	+20dBu
Bandwidth	10Hz to 22kHz -1dB
Crosstalk @ 10kHz	-94dB
Crosstalk @ 1kHz	100dB
Filter Range	800Hz to 8kHz
De-ess Modes	Full-Band and Split-Band
De-ess gain reduction	20dB Max
Noise (22Hz-22kHz, worst case)	-104dB RMS
Dimensions	482mm (w) x 44mm (h) x 200mm (d)
Weight (including packaging)	3.2kg

SUMMARY

Not only is the MX50 a very good dedicated de-esser, it is also affordable when you look at what other manufacturers are charging for a comparable product. I must say that I'm a little curious as to why Drawmer included the clearly less effective full-band mode and at the same time chose to omit a side-chain listen mode. For my money, I'd have preferred to have just split-band mode with Air permanently on, and a side-chain listen mode — I can't think when I'd ever want to go back to the full-band mode after hearing how effective the split-band mode is. This comment aside, there can be few de-essers that work as smoothly and unobtrusively as the MX50, and which are so straightforward to

operate. The floating threshold system is also extremely clever, as the input signal can vary over a wide range and still be treated effectively. If you suffer from sibilance problems, this is probably the best budget solution around.

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