API 2500 BUS COMPRESSOR

Dedicated stereo bus compressors are hard to find and even harder to relinquish.

Text: Greg Walker

▶ After reviewing the 500 series API Lunchbox back in Issue 45 and then (outrageously) having to hand it back, I had to go through the usual withdrawal symptoms associated with losing a fabulous and expensive piece of kit from my desktop. Then, just when I'd reconciled myself to my relatively modest setup and felt my API lust starting to abate, along came another temptress – a sparkling new API 2500 Bus Compressor to rub salt into the wound.

It occurred to me that with the recent surge of interest in analogue summing devices there is sure to be a renewed interest in what can only be described as the cherry on top of such setups – a top-class analogue bus compressor. If you had to write a wish list of features for such an item you'd obviously have 'great sound' at the top of your list, but further down you might start thinking about adding some other features: plenty of control of the basic compression shapes, a versatile range of compression modes and types (soft knee/hard knee etc.), some accurate VU metering would be nice too, an auto make-up gain for when you're feeling lazy (and so you don't fool yourself into thinking your compression settings sound good just because your mix is 2dB louder than the bypassed signal), and, if you're really a thinker, you might be asking for some kind of mediating control over how much linking there is between the left and right channels. Well, the API 2500 just happens to fulfill all these criteria and a few more besides within a typically compact 1U rackmount frame…

NUTS & BOLTS

The API 2500 is a comprehensive bus compressor, which utilises four VCAs to reduce noise and distortion, and features an all-discrete signal path using API 2510 and 2520 amps. It has an unusually broad range of controls (two of them have earned themselves patents), which can be used to perform a variety of compression-related tasks. From left to right there is continuously variable control for compression threshold (+10 to –20dB) and stepped controls for attack time (0.03 microseconds to 30 milliseconds), ratio (1.5:1 to ∞:1) and release time (50 milliseconds to two seconds). A second, continuously variable release control takes over when the stepped control is fully clockwise (for those in-between steps situations).

Next along the line there is the 'Tone' section, which is where things start getting interesting. The first of three push-buttons selects between soft, medium and hard knee compression curves while the second gives you a choice of normal, medium or loud 'thrust' – this is, in fact, an 'inverse pink noise energy curve' filter which, put simply, prevents low frequency build-up in your compressed sounds. This process avoids excessive pumping and provides more punch and clarity at high settings.

The last push-button allows you to choose between 'old' (feedback) and 'new' (feed-forward) compression modes, again with significant sonic differences. LEDs give clear feedback on your settings and a separate LED also shows when audio signal reaches the compression threshold.

The 'Link' section gives you stepped control over the amount of dynamic crosstalk between left and right channels from 100% to 50%. A further counter-clockwise setting completely separates the dynamic processing of the two channels meaning an aggressively panned instrument in the left channel will have no dynamic impact on the right channel's compression – very handy in certain situations. A band-pass/high-pass/low-pass switch can be introduced into the Link circuit, which allows for additional frequency-conscious control of cross-linking artefacts.

The 'Output' section features switches for compression In/Out, Bypass [The In/Out switch disables the compressor action while still passing signal through all the unit's internals (2520s, transformers, VCAs etc), whereas the Bypass uses a relay to literally connect the input XLRs to the output XLRs – Ed.] and Gain, which enables the neighbouring rotary pot to control output volume. When this switch is disengaged the machine goes into auto gain make-up mode á la the 525.

Metering is done by two stylish backlit VUs, which can be switched to show input/output level and gain reduction. Finally, beside the diminutive power switch on the far right is a recessed screw for adjusting left/right slew. The back panel consists of XLR in/outs, jack inputs for side-chain processing (curiously the side-chain process is only available in 'new' compression mode) and IEC power socket for the internally mounted power supply.

LISTENING TEST

The first thing I noticed once I sparked up the 2500 was the reassuring lack of major tonal variation as I wound in more compression. The tone remained relatively transparent and musical under even the most extreme duress. Indeed, this unit sounds somewhat different to its cousin the 525, reminding me more of an 1176 at radical settings (without so much bass build-up) while having that uniquely clear API top end, punch and intelligibility.

Using the 'old' compression type, a soft knee and medium 'thrust' setting with a 2:1 ratio, a quick attack

Percentage control over L/R Link: To compensate for the inherent limitation one set of compressor controls presents, the Percentage Link feature allows semi-indepent compression response, rather than a more typical on/off stereo link switch. Tres Cool.

SECOND OPINION – ADAM McELNEA

I used the 2500 on an old-school Aussie hip-hop act called Def Wish Cast. Although their album pre-masters were well recorded, they tended to lack a hint of low-end balance and punch and required a good deal of level to make them truly commercially competitive. Patch in the 2500 with 4 to 5dB of gain reduction, ratio 3:1, fast attack, medium release. 'Thrust' set to medium, knee soft and mode set to 'Old' and voila, suddenly we have bottom end for days – but not just any bottom end; punchy, deep bottom end. The Thrust function nicely re-balances tracks giving them a definite commercial sound. It's a great way of getting plenty of thick bottom-end without EQ or compression artefacts. Nice one API! Being a compression Nazi I was also thrilled to hear how snappy the compressed signal sounded even with 4 – 5dB of gain reduction. This unit does a superb job of compressing without 'squashing'. Mixes remain punchy with plenty of air between the sounds. Add the colour and vibe of API and you have a device that can make mixes sound like a record.

Highly recommended.

and slow release time on a full stereo mix provided a lovely soft compression with very few noticeable artefacts. The mix sounded smoother and more full-bodied while the transients remained untouched, and apparent volume was noticeably increased. Moving into higher ratio and threshold settings generated a more obvious, rock 'n' roll type compression – and here the medium/hard knee and the medium/loud 'thrust' settings really came into play.

Routing a stereo drum submix through the 2500 I found I could generate a fantastic array of drum sounds with ease – everything from feathery lightness through solid punch to bombastic anarchy was available, with the hard knee/loud thrust settings providing greater emphasis on the attack of transients. This could be further highlighted by switching from the 'old' to 'new' compression mode – a more up-front and conspicuously squashed form of compression, which greatly multiplies the possibilities of the 2500.

I also found some less typical but very interesting effects at extreme settings. A shortish attack time produced a quite radical 'popping' of the transient information, while the very quickest attack times basically nullified the transients altogether, creating a very roomy, almost reverberant effect. I've heard these types of effects from other compressors before but the extreme speed and accuracy of the 2500 makes them far more useable than most.

MISSING LINK?

The stereo link system is another highly useful tool – listening to a passage of unbalanced audio (for example, a drum mix with some hard-panned tom action) quickly showed this to be well worth exploring. However, this function should be used with care as the effect is often different to how you imagine it might sound – I found myself missing the overall dipping effect of linked stereo compression at times – but importantly it makes the 2500 more useful when tracking two individual sources rather than one stereo source (although, of course, your compression settings will have to be the same for both channels – and certainly one set of compressor controls for left and right won't appeal to some). The Link control's associated filter set makes this feature even more useful and the possibilities are once again quite numerous as you can iron out the stereo 'dipping' effects of certain frequencies while leaving others alone.

The metering on the 2500 is also of a very high quality and provides all the information you need when setting input/output and overall gain reduction levels, and of course those who don't already have VU meters in their setups will find them an invaluable tool for general troubleshooting.

The various options for release time and make-up gain settings round out a package which is versatile, to say the least, and oozes class and functionality.

This is a machine that engineers will love playing with – such is the range of dynamic effects available. As far as I'm concerned, it's another big tick in the box for API and another sad gear hangover for this AT reviewer.

NEED TO KNOW

Price
$4500

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Pros
Enormous range of compression effects available.
Typically streamlined controls for easy and quick set-ups.
Comprehensive metering and auto make-up gain option.
Small rack footprint.

Cons
Side chain processing only available in 'new' mode.

Summary
Extremely versatile, classy offering from API, which covers all the standard compression bases and then some. Stereo cross-linking control and 'thrust' options set the 2500 apart from the pack.