

SPL Kultube Stereo Compressor



SPL's new surround-ready stereo compressor offers clever programme-adaptive compression, as well as decompression and tube-saturation functions.

Photos: Mike Cameron

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Anyone even vaguely familiar with SPL products will know that they never approach equipment design in quite the same way that everyone else does. More often than not, their departure from the norm bears worthwhile and musically interesting results. So, when SPL said they had a new stereo compressor called the Kultube, I was prepared for rather more than just a stereo compressor with a tube in it. And it didn't take long to discover that it had hidden depths.

Housed in a 2U rack case, with familiar 'let's all look at the valve' grille set into the gold front panel, this particular compressor features a pair of multi-pin master/slave link connectors that enable multiple units to be

side-chain linked for multi-channel surround mastering applications. Analogue I/O is via both balanced XLRs and jacks, and there's a slot to take an optional digital I/O card.

The Kultube's circuitry utilises a newly designed gain cell to replace the more usual VCA, claiming to offer a new benchmark in low distortion and transparency, while at the other end of the signal chain is a variable-drive valve circuit designed to put back as much distortion as you like, from the merest hint of warmth to obvious dirt. This tube circuit is designed to maintain a constant output level when the detented Tube Harmonics control is being adjusted so you can hear the effect of the tube 'flavouring' without having to constantly re-adjust levels. Using the digital I/O will obviously limit the audio bandwidth, but analogue-to-analogue, the frequency response of the Kultube extends from 10Hz to 150kHz within 3dB.

The compressor section has switchable hard- or soft-knee operation and what appears to be a perfectly conventional set of Threshold, Ratio, Attack, Release and Make-up Gain knobs. The large moving-coil meter can be switched to show either gain reduction, input level (when the compressor is bypassed) or output level. Only one meter is needed to show gain reduction, because the compressor is dedicated to stereo operation. A button selects the digital input as an alternative to the analogue ins when the optional 24-bit/96kHz digital I/O card is fitted. There's also provision to control the Kultube from an external side-chain key

input fed in via a rear-panel jack and activated by means of the front-panel Key On switch. A Key Listen facility is included, allowing the user to monitor what the compressor side-chain is 'hearing'. This all seems quite normal — until you spot some of the other buttons which tell you that all is not quite what it seems.

Decompression & Progressive Time Control

Firstly, there is a Decompress button that flips the compressor circuit to act as a gentle expander, able to increase the dynamic range of overcompressed material. In this mode the Make-up Gain knob controls 'make-down' gain, where turning it clockwise reduces the output level. The manual suggests that this mode is useful for



Though a soft-knee mode can be found on other units, the decompression is a very unusual extra.

putting life back into overcompressed samples and suchlike. To facilitate more subtle compression, such as you'd use in a mix, or gentle expansion of the dynamic range of a sound source, the Ratio starts out at a gentle 1.2:1.

The expansion function is unusual, but the Progressive Time Control (PTC) buttons are, to my knowledge, something quite new. When both these buttons are out, the Attack

SOUND ON SOUND

SPL Kultube £999

pros

- Easy to set up.
- Very musical compression characteristics.
- Effective tube harmonic enhancement.

cons

- It isn't cheap!
- No high-resolution output metering.

summary

Once again SPL have taken an existing concept and implemented some genuine improvements that are relevant musically as well as technically.

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and Release controls work as normal, but when the buttons are in, their functions change and the attack/release times are dynamically adjusted depending on the dynamics of the input signal.

If this were just a regular automatic attack/release mode, it would be useful, but hardly unique. However, when the PTC button relating to the Attack control is engaged, the knob relinquishes direct control over the attack time and instead governs the degree to which transient sounds are compressed by interacting with the auto circuitry. The manual tries hard to explain exactly what is going on, but never quite succeeds, so I called SPL for a comment and received this explanation from their Managing Director, Hermann Gier.

“Working conventionally, if you set fast attack times to gain more loudness, the compressor will work with fast attacks all

the way through the song, which can cause things like layered sounds, complex mixes and vocals to sound pretty rough or even distorted. This makes it difficult to achieve more loudness without negatively affecting the sound.

“Switching the Kultube’s PTC Attack button on, the compressor will use the

attack time dialled in via the Attack control only when the source requires it, but when the auto circuitry detects that a slower attack time is needed, the attack time is automatically increased accordingly. This helps maintain maximum loudness while reducing the risk of distortion and roughness, yet still allows fast-attack sounds to be compressed appropriately. In other words, with PTC, the attack control sets the fastest attack time that the auto circuitry can use when it encounters fast transients, rather than leaving it to decide everything for you. For example, you could set a longer attack time to allow fast

Optional Digital Converter Board

This board is designed to be installed in place of the blanking plate at the top of the Kultube’s rear panel. Though the option wasn’t available for review, documentation from SPL shows that it offers both stereo A-D conversion and stereo D-A conversion, with a choice of XLR and phono digital I/O connectors and an extra pair of balanced analogue XLR outputs. This means that you can use the A-D conversion for feeding your digital recorder, and the D-A conversion for

feeding the output of your digital mixer to your monitoring system, for example. The card would also allow you to insert the Kultube into a digital mastering chain.

Resolutions of 16 and 24 bits are supported, and the A-D conversion can be carried out at sample rates of 44.1, 48, 88.2 or 96 kHz. In addition, both converters can be clocked either to incoming digital data or to word clock, at sample rates from 32 to 96kHz.

SPL KULTUBE



▶ transients to slip through unprocessed — something a conventional auto circuit can't do."

When the Progressive Time Control button relating to the Release control is active, the release knob sets the average release time, which is then dynamically modified according to the automatic release circuitry. In other words, the actual release time is determined both by the auto circuitry and your choice of release time, which offers most of the benefits of auto and



Progressive Time Control combines the benefits of automatic and manual time-constant adjustment.

manual release-time adjustment simultaneously. From an operator's point of view, this results in a stereo compressor that's very easy to set up, as most of the controls are absolutely familiar.

In The Studio

As a compressor, the Kultube is both predictable and flattering. It's quite hard to get a bad sound out of it, even using the purely manual attack and release settings, and though it does have a larger-than-life sound at more intensive settings, it doesn't choke the signal or rob it of transparency as some lesser compressors seem to do. The hard-knee mode is more assertive than the soft-knee mode, as you'd expect, but even when you overcompress to the point of pumping, the result is still musical and predictable, making it possible to use compression as an effect as well as for controlling levels. It is quite possible to use a single channel of the Kultube to process an individual track via a mixer insert point, but its real strength lies in its ability to handle stereo mixed material in a musically sympathetic way.

Bringing in the PTC buttons makes less subjective difference than you might imagine, especially if you've already manually set the Attack and Release controls

to match the material being processed, but the differences are there if you listen. In addition to taking the guesswork out of setting the attack and release times, the overall density of the sound increases slightly and percussive transients sound a hint crisper. Some sound sources show up these benefits more readily than others, but it's definitely a useful addition, especially when processing complete mixes. As for the decompression mode, I found the ratio needed to be kept below 1.5:1 for natural-sounding results. With a little experimentation it added a welcome degree of life to squashed material.

The Tube Harmonics control can add a huge amount of weight and density to drum loops without appearing to distort the sound. Used on vocals or other discerning sounds, the colouration is more obvious at high harmonic settings, but it's still possible to get the control up to half way or beyond before you realise the sound is being processed. At lower settings everything just sounds bigger and richer as though it's being compressed and enhanced at the same time. Some tube drive facilities do little to improve the sound, but I found this to be amongst the most musical I've heard and I'd definitely use it to death if I had it in my studio full time.



The Tube Harmonics control adds valve distortion products without increasing the overall signal level, so you can easily hear how the sound is really changing.

everything a big, expensively dense sound, without losing focus or integrity. The design also shows a degree of forward thinking in the interfacing department, such as the ability to slave multiple units for surround processing, though I would imagine that most people working in this area would want independent control over the subwoofer dynamics rather than having it linked to the five main speakers.

Is there anything I didn't like? I have no complaints over the sound, but I think a permanent stereo LED output level meter might have been useful, as moving-coil VU meter ballistics aren't ideal when trying to optimise signal levels in a digital system

As for who needs a Kultube, I'd say it would appeal not only to mastering engineers, but also to those serious project studio owners who don't use commercial mastering facilities and who'd like to get their masters 99 percent of the way there at the mixing stage. The tube enhancement is also a godsend for adding weight and life to a song that

was recorded and mixed entirely on digital equipment or to vocalists who feel their voice just doesn't sound solid enough without a little help. You don't have to look too hard to find an excuse to buy one! **SSS**

Kul Or What?

The Kultube isn't a budget compressor, but you only have to use it for a short while to realise why. It is easy to control, musically flattering and flexible enough to handle any kind of material. The PTC is a clever way of extending the usefulness of a typical automatic mode, while the tube enhancement works beautifully to give

Information

- £ Kultube, £998.75; optional digital board, £388.93. Prices include VAT.
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