

DAV Electronics BG No.4

At a time when a lot of analogue gear is earning its keep as a means of colouring and warming up signals before or after they hit the digits, it's interesting to find an analogue box that majors on cleanliness and purity. **GEORGE SHILLING** checks out the Broadhurst Gardens No.4 limiter/compressor.



A S A FORMER DECCA employee, DAV Electronics' Mick Hinton is well qualified to recreate designs from the legendary Decca Studios' R&D workshop. This model revisits a 1976 stereo mastering limiter circuit, the original of which would have been used for most of the mastering of rock, pop and MOR material passing through the Decca cutting room from that era onwards. This was the device used to ensure maximum level without clipping for vinyl and cassette masters. It was designed to sound as clean as possible and this new version is probably even cleaner and clearer sounding than the original as it benefits from better performing and less noisy modern chips. Considerable additions and improvements are provided over and above the original Decca unit, such as a filter network and a Gain Make Up control on each channel.

The 1U case is lighter than it looks, but lacks the styling refinements afforded by volume manufacturers. This may not matter to the user, but the slightly home-made appearance might not make your clients swoon. Despite the high build quality, it looks like something your inventor uncle might have put together, and indeed, each unit is hand constructed and tested by the designer. This does assure rigorous quality control and exact tolerances. Hinton also saves on costs by declining to provide a manual, arguing that anyone using such a device should find the controls familiar, which is mainly true, although some features deserve explanation. The knobs fit closer to the front panel than those on the BG3 I tested previously, there are no protruding nuts, and although the legending is very small, the knob pointers are clear. The rear panel simply provides balanced-only XLR audio connections and an IEC mains socket.

On the front, the two side-by-side channel controls comprise five stepped knobs and a pushbutton for Limit or Compress. In the centre are buttons for Limiters Off and Stereo Couple, the former seems to kill the feed to the detector circuit, the latter joining the two detectors' signals together — all individual channel controls remain active in Stereo mode. Bi-polar transistors are used for the gain reduction circuits, these being chosen because they are quieter and have lower distortion than FETs. The Limit mode is set at a ratio of 10:1, while Compress is 2:1. The amount of gain reduction is set using the Threshold knob. This is switched with 12 positions, and oddly labelled from 1 to 20dBu. This unusual calibration is carried over from the original Decca unit, where the numbers were set to represent roughly the maximum

output level when the signal was limited. However, the original lacked any Gain Make Up controls and fortunately these are present on the BG4 — 11 positions from zero to 16dB. Gain reduction is shown on each channel's clear LED meter, providing a scale of 8 LEDs from 1 to 12dB, the first four in single dB steps.

Compression and Limiting attack time is fixed and set to a very fast time in order to catch peaks, which it does very effectively. It shapes hard-edged transients pleasantly, especially bass drums, controlling their attack without any nastiness or splat. Release is controlled by a three-position knob, with settings of 0.3S, 1S and 3S. The slowest, at 3 seconds, makes any gain reduction almost inaudible with most sources. Which of the other two settings is more audible depends on the source material and filter settings, but they both tend to enhance the dynamics, especially with pop and rock material, lending dynamic excitement without distortion. The tonal character is very neutral, with huge amounts of gain reduction achieved without colouration or distortion, retaining clarity and sounding un-hyped.

High pass sidechain circuits feature on units such as the API 2500 and the Drawmer 1968, but the concept has been implemented in a slightly unusual way here. The mode is selected by a knob for Low-Pass, High-Pass or Wide-Band modes. Accompanying this is a frequency selector knob with six positions at 100Hz, 250Hz, 500Hz, 1kHz, 2.5kHz and 5kHz. The original Decca unit was permanently full range or 'wide band', but this is undoubtedly a very useful feature. It works particularly well with this unit's fast-attack gain reduction characteristics. Each of the frequencies can be used as High or Low Pass corner frequencies. In High Pass mode, setting the frequency to 100 or 250 allows for the biggest and beefiest dance bass drum to pound away without

the whole track's volume pumping and sucking. Using different frequencies you can almost use the unit as an EQ shaper — particularly when using the slow release. With most programme material the gain reduction can hover around a constant amount and therefore effectively EQ the track without any perceived distortion, and some interesting effects can be achieved using these filters.

In terms of technical performance the BG4 is superb, with exceptionally low noise floor and distortion and excellent headroom — it overloads as gracefully as any analogue circuit when pushed to the limit. However, one thing the BG4 will not tolerate is being connected to an unbalanced circuit — part of the design philosophy invokes the superiority of balanced circuitry, and you will hear something very nasty if you don't disconnect pin 3 on the XLR when interfacing with semi-pro gear.

When so much analogue gear is engineered to deliberately distort and exaggerate 'warmth', with valves and FETs adding crunch, it is refreshing to find a unit designed for a crisp and clear analogue signal. Limiting and compression is achieved without fuss, and choices of settings available are flexible without being over-complicated. Should you not require the filtering, there is a much cheaper alternative in the shape of the BG6 which is brick-shaped like the BG1, and a mere £450 ex VAT. But the filters are great, the BG4 sounds grown-up and effortless, and with recent price reductions in the DAV range it represents splendid value for money at £1234 ex VAT. ■

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PROS	Clean analogue gain reduction; unusually flexible filter sidechain control.
CONS	Looks somewhat home-made; no manual.
EXTRAS	DAV's BG5 is an audio channel unit with a high impedance instrument input with pad and phase switches, a mic amp from the BG1, and a switched 50Hz HPF. There's a two stage EQ with the Bass and Treble stepped circuit from the BG3, an LED output meter and a wide-band only version of the limiter/compressor from the BG4.