BSS Audio

Dual Compressor/De-Esser/Limiter

DPR-402

Our experience of the audio engineer's situation on the road and in the studio has shown us that compressor / limiters and de-esser combinations frequently prove so inflexible that they create as many problems as they solve. We have applied our audio design skills to solve these problems, and the result - the BSS DPR-402 - is much more than an ordinary compressor / limiter.

A quick look at the front panel shows that as a result each of the two channels combines a full range of signal level control facilities a dedicated and tuneable de-esser section; a compressor section with comprehensive control of all main parameters and an AUTO mode option for general use; a fully informative LED metering section that never leaves the engineer 'in the dark'; and finally a calibrated and variable peak limiter section.

Unlimited Uses

The double side-chain and subtractor architecture of the DPR-402 makes it predictable enough for conventional programs, and flexible enough for unlimited effects. Among the facilities, it offer are: loudness control for recording, mixdown, live sound reinforcement and clubs; peak amplitude control in disc cutting; split band and peak amplitude control for broadcast feeds; dynamic sibilance control on individual mikes or even on post-mix production, where remarkable results are obtained from narrow-band de-essing.

But the DPR-402 really shows its colours when its internal filters are configured to dynamically compress OR expand individual parts of the audio band- leaving the rest of the spectrum unmodified. The endless possibilities range from low frequency expansion and narrow band resonance control to general dynamic equalisation to create enhancement effect. Further possibilities include dynamically controlled mixing, gating and ducking for new and novel sounds.

The Double Side Chain

The circuit design secret that makes the DPR-402 so successful is the use of an extra side-chain. Because of this, only the subtractor circuit and the gain control lie in the signal path. The sophisticated control circuitry - including a voltage control amplifier - lies parallel to the signal path, controlling the subtractor while its components have no adverse effect on the signal. This not only ensures a cleaner, purer signal, but forms the basis of entirely new possibilities in signal processing.

- It gives hard or soft knee compression for general purpose loudness control during recording, mixdown or live-sound reinforcement.

- It adds a peak-limiting stage to normal compression to provide the protection needed for disc cutting and broadcast feeds.

- In reverse mode, it expands previously compressed recorded material, and is also used for producing effects.

Music often suffers when compressed over its full range. To overcome this, the innovative technology of the DPR-402 introduces a new flexibility in signal compression, not only giving control of threshold levels but making it **frequency selective.**

Compressing selected levels and frequencies can reduce noise and distortion problems while leaving other significant signal elements at full strength to maximise artistic effects.

Sophisticated De-Essing

The DPR-402 provides two main de-essing options to suit different program material and means of reproduction.

Broadband de-essing adds to normal compressor performance the ability to compress the whole signal when HF signals exceed the preset de-ess threshold level, or for greater precision in demanding applications it can be set by the main compressor controls.

HF - only de-essing, the other main option, uses all the compressor control circuitry to create a dedicated, frequency-selective de-esser channel compressing high frequency signals while leaving low frequency content unmodified.

Develop new skills to do what other compressors cannot do

- Combine selective de-essing sibilance control with compression or expansion.

- Control loudness in a way suited to AM/FM broadcast processing.

- Use the frequency-selective loudness control to enhance a frequency spectrum without additional equalisation.

- Preset LF loudness to maintain club safety limits.

- Obtain automatic level-controlled mixing of program sources for special effects.

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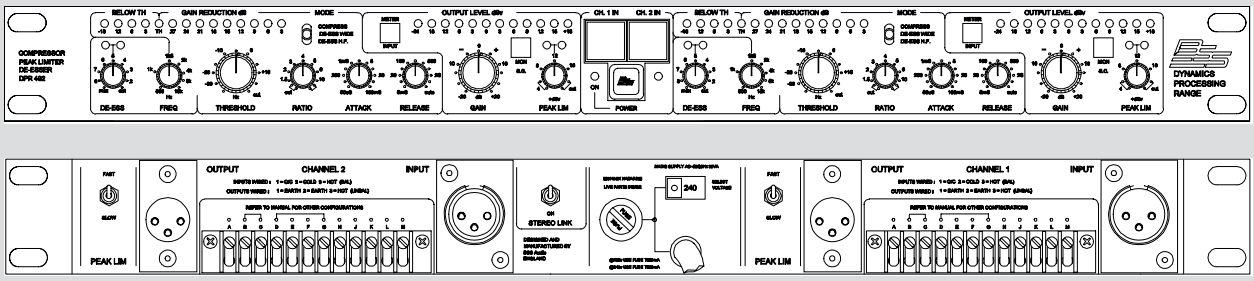

TECHNICAL SPECIFICATIONS

Input Section

IMPEDANCE	10KOhm, electronically balanced.
MAX INPUT LEVEL	+20dBv.
INPUT CMRR	> -50dB 30Hz-20Hz.
INPUT CONNECTOR	XLR3-31 or equivalent. Wired as pin 1 o/c, pin 2 cold, pin 3 hot.

Output Section

IMPEDANCE	Less than 1 Ohm unbalanced, current limited.
MAX OUTPUT LEVEL	+20dBv into 600 ohms.
OUTPUT GAIN	+20dB continuously variable.
OUTPUT CONNECTOR	XLR3-32 or equivalent. Wired as pin 1 earth, pin 2 earth, pin 3 hot.

System Performance

FREQUENCY RESPONSE	+1dB 25Hz-20kHz. Ultrasonic filter -3dB@ 30kHz.
NOISE	Equiv. input noise -86dBv 22Hz - 22kHz, -82dBv CCIR weighted.
DISTORTION	Unity gain, + 10 dBm output, below threshold: THD 0.03% 20Hz-20kHz. IMD 0.01%SMPTE, 10 dB compression. Threshold 0dB. 1kHz, 5 sec rel. time setting: 2ND HARMONIC 0.15%. 3RD HARMONIC 0.05%.IMD 0.25% *Harmonic distortion in this type of equipment will increase with reduced frequency and shorter time constants.*
CROSSTALK	< -85dB 20Hz -20kHz.

Compressor

THRESHOLD	-30 to +20 dBv cont. variable.
RATIO	1:1 continuously variable to infinity:1.
MAX. VCA RANGE	30dB.
ATTACK TIME	11 steps 50µsec-80msec.
RELEASE TIME	10 steps 5ms to 5 sec and AUTO.

Attack times are measured at 63% of final gain reduction with step signal 8dB above threshold. Release times are measured at 63% of open gain or removing a signal 8dB above threshold.

AUTO TIME CONSTANT

A two part program-dependent time constant. Typical attack time is 200 µsec on fast transients, release time 10msec for 63% recovery from a 10dB 4msec response, and 1 sec for a 10dB 40 msec response.

De-esser

THRESHOLD RANGE	-30 to +20 dBv continuously variable.
RATIO	Infinite, at and above twice the set frequency.
FREQUENCY RANGE	800Hz to 15kHz continuously variable.

Frequency is that at which 3dB of gain reduction occurs for 10dB of signal overdrive above threshold. 10dB of gain reduction will occur at and above twice this frequency.

Peak Limiter

THRESHOLD RANGE	+4dBv to +20dBv continuously variable.
RATIO	20:1.
ATTACK TIME	Fast setting 150µsec, Slow setting 750µsec.
RELEASE TIME	Fast setting 100msec, Slow setting 500msec.

Dimensions and Power

SIZE	482 x 44 x 228mm 19in x 13/4in x 9in overall.
WEIGHT	4.5kg (10lbs) packed.
ELECTRICAL SUPPLY	120-220V +105-20% 50/60Hz 15VA.

In keeping with our policy of continued improvement, BSS Audio,reserves the right to alter specifications without further notice.This product was designed developed and produced by BSS Audio, Hertfordshire, England.

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