Introduction

Congratulations on your purchase of this API 500-series compatible SSL E-Signature Dynamics module.

This module has been specifically designed to operate in an API 500-series rack such as the API lunchbox® or equivalent. In common with many such modules, the nominal input/output level is +4dBu.

Your new module comprises a compressor/limiter and an expander/gate, the design of which returns faithfully to the circuit and key components which defined the sound of the original SSL E Series channel strip. A true RMS converter is used in the side chain whilst the gain element is an all discrete design identical to the Class A VCA chip used in the original.

The compressor contains additional switching options to defeat the over-easy curve and to use a linear release instead of the more usual logarithmic curve. The result is a compressor with three distinct voicings, all of which contributed to the many classic records tracked and mixed on early E Series consoles.

As well as replicating the feel of the classic E Series dynamics, this module provides, with the exception of access to a 'link' bus, the same facilities as the SSL X-Rack XR418 E Series Dynamics module.

Operation

Please refer to the illustration opposite.

The IN button ❶, located centre left, switches the entire module in and out of circuit.

The two vertical rows of LEDs ❷, located centre right, provide an indication of dynamics activity. The row of green LEDs to the left show Gate/Expander activity whilst those to the right indicate operation of the Compressor/Limiter.

Compressor/Limiter

Dynamics 'IN' switch

Dynamics activity

Gate/Expander
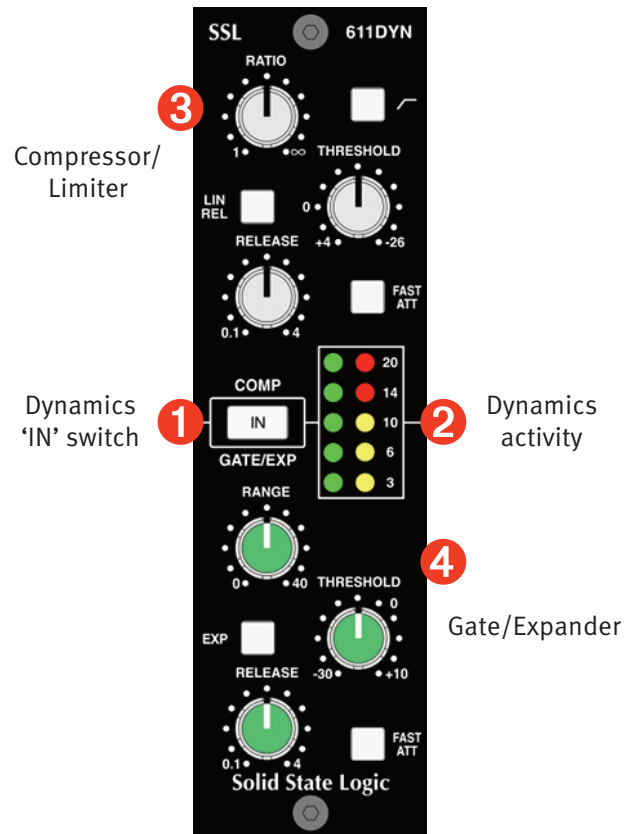
Compressor/Limiter ❸

RATIO	When turned to 1:1, the compressor/limiter section is inactive. Turning the control clockwise increases the compression ratio, giving a true limiter at the fully clockwise position. The compressor normally has an 'over-easy' characteristic – pressing the ⌐ button replaces this with a 'hard knee' characteristic, providing an alternative for some instruments.
THRESHOLD	Whenever a signal exceeds the level set by this control, the compressor will start to act at the ratio set by the RATIO control. The THRESHOLD and RATIO controls also provide automatic make-up gain, so as you lower the threshold and introduce more compression, the output level is increased, maintaining a steady output level regardless of the amount of compression.
LIN REL	Changes the release curve from logarithmic to linear. This also raises the threshold by 6dB.
FAST ATT	Provides a faster attack time (3mS for 20dB gain reduction). When off the attack time is slower and less aggressive (30mS for 20dB gain reduction).
RELEASE	Sets the time constant (speed) with which the compressor returns to normal gain settings once the signal has passed its maximum.

Gate/Expander ❹

This section can act as a 20:1 Gate or as a 2:1 Expander when the EXP button is pressed.

RANGE	Determines the depth of gating or expansion. When turned fully anti-clockwise, this section is inactive. When turned fully clockwise, a gate depth or range of 40dB can be obtained.
THRESHOLD	Determines the level at which the gate opens or the level below which gain reduction begins (EXP selected), adjustable from +10dBu to −20dBu. Variable hysteresis is incorporated in the threshold circuitry which increases as the threshold is lowered. This is very useful in music recording as it allows instruments to decay below the open threshold before gating or expansion takes place.
FAST ATT	Normally, a controlled linear attack time of 1.5ms per 40dB is provided. Press this button to select a fast attack time (100µs per 40dB). The attack time is the time taken for the Gate/Expander to 'open' once the signal level is above the threshold. When gating signals with a steep rising edge, such as drums, a slow attack may effectively mask the initial 'THWACK', so you should be aware of this when selecting the appropriate attack time.
RELEASE	This determines the time constant (speed), variable from 0.1 to 4 seconds, at which the Gate/Expander reduces the signal level once it has passed below the threshold. Note that this control interacts with the RANGE control.