

Dynamics

Applicability

This description applies to the Mono and Stereo version of the Dynamics module.

Dynamics is used in the Voice Processing Channel Strip. In block diagrams and Processor layouts, the module may also appear as Advanced Dynamics or Dyn.

Overview

Dynamics is a module for detailed dynamic range control of a voice signal. It combines compressor, expander, upward and downward compression, side-chain filtering, lookahead processing, and soft limiting in one processing stage.

The module is intended for speech and voice processing where dynamic control must be more detailed than a simple compressor or expander stage.

Processing Principle

The module analyzes the signal level and applies gain changes according to the configured compression, expansion, and limiting settings. Downward compression reduces level differences above the selected threshold, while upward compression can raise lower-level signal components toward a reference level.

The expander stage can reduce low-level signal components, and the soft limiter can control peaks at the end of the dynamics stage. Side-chain filters can be used to shape the detector signal that controls the dynamics behavior.

Parameters

Dynamics

Look Ahead Delay (2ms)

Hold (Freeze Processing)

Expander

Enable Expander

Expander Mode

Expander

Expander Ratio

0.5

Expander Range

10

dB

Expander Threshold

-60

dB

Expander Processing Profile

4 Uni

Expander Side Chain Filters

Expander Side Chain HPF Frequency

20

Hz

Expander Side Chain LPF Frequency

20,000

Hz

Expander Gain

dB

0

-1

-2

-3

-4

-5

-6

-7

-8

-9

-10

-11

-12

-13

-14

-15

-16

-17

-18

-19

-20

Parameter - Expander	Description
Expander Enable	Enables or disables the expander stage.
Expander Mode	Selects the expander operating mode.
Expander Threshold	Sets the level below which expansion becomes active.
Expander Ratio	Sets the amount of expansion below the threshold.
Expander Range	Limits the maximum gain reduction applied by the expander.
Expander Processing Profile	Selects the processing profile for the expander.
Parameter - Expander Side Chain Filter	Description
Expander Side-chain Filters Enable	Enables or disables side-chain filtering for the expander.
Expander Side-chain HPF Frequency	Sets the high-pass filter frequency used in the expander side chain.
Expander Side-chain LPF Frequency	Sets the low-pass filter frequency used in the expander side chain.

Compressor

Enable Compressor

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Compressor Side Chain Filters

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Compressor Type

Upward

Compressor Side Chain HPF Frequency

20 Hz

Compressor Mix Dry...Wet

100 %

Compressor Side Chain LPF Frequency

20,000 Hz

Compressor Make-up Mode

Manual

Compressor Make-up Gain

0 dB

Upward

Upward Compressor Reference Level

-18 dBFS

Upward Compressor Range

8 dB

Upward Compressor Ratio

2

Upward Compressor Processing Profile

4 Uni

Downward

Downward Compressor Threshold

-18 dBFS

Downward Compressor Ratio

2

Downward Compressor Knee

6 dB

Downward Compressor Processing Profile

Manual

Downward Compressor Attack

1 ms

Downward Compressor Release

150 ms

Downward Compressor Detector Speed

Link to Attack

Compressor Gain

15 dB

12 dB

9 dB

6 dB

3 dB

0 dB

-3 dB

-6 dB

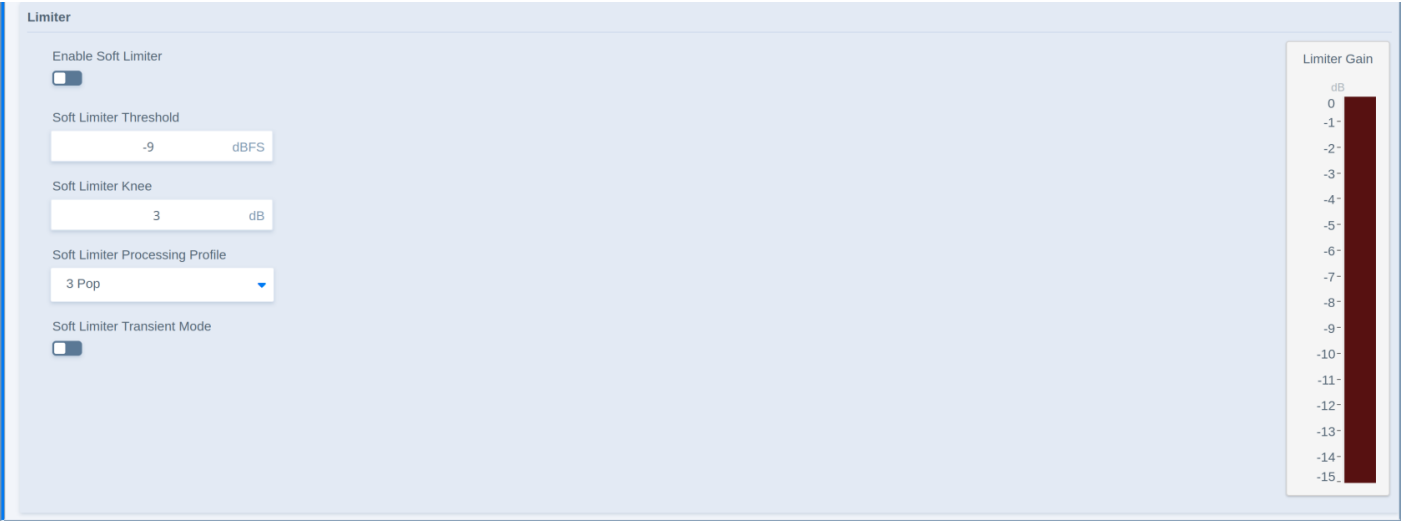
-9 dB

-12 dB

-15 dB

Parameter - Compressor	Description
Compressor Enable	Enables or disables the compressor stage.
Compressor Type	Selects the compressor operating type between a traditional downward compressor and the classic ‘Jünger style’ upward compressor.
Compressor Mix Dry/Wet	Sets the blend between the unprocessed and compressed signal.
Compressor Make-up Mode	Selects how make-up gain is applied after compression.
Compressor Make-up Gain	Adjusts the gain applied after compression.
Parameter - Compressor Side Chain Filter	Description
Compressor Side-chain Filters Enable	Enables or disables side-chain filtering for the compressor.
Compressor Side-chain HPF Frequency	Sets the high-pass filter frequency used in the compressor side chain.
Compressor Side-chain LPF Frequency	Sets the low-pass filter frequency used in the compressor side chain.
Parameter - Upward Compressor	Description
Upward Compressor Reference Level	Sets the reference level used by the compressor. The reference level is the point where the compression response curve crosses with the linear response.
Upward Compressor Range	Limits the maximum compression range. The range parameter works symmetrical (above and below reference level).
Upward Compressor Ratio	Sets the amount of compression by the steepness of the response curve.
Upward Compressor Processing Profile	Selects the compressor processing profile which represent the attack and release timings of the processor.
Parameter - Downward Compressor	Description

Parameter - Compressor	Description
Downward Compressor Threshold	Sets the level above which downward compression becomes active.
Downward Compressor Ratio	Sets the amount of gain reduction above the threshold.
Downward Compressor Knee	Controls the transition around the compression threshold.
Downward Compressor Processing Profile	Selects the processing profile for the downward compressor.
Downward Compressor Attack	Sets how quickly gain reduction reacts to level increases.
Downward Compressor Release	Sets how quickly gain reduction recovers after the signal falls back.
Downward Compressor Detector Speed	Sets the detector response used by the downward compressor.



Parameter - Limiter	Description
Enable Soft Limiter Enable	Enables or disables the soft limiter stage.
Soft Limiter Threshold	Sets the level at which the soft limiter becomes active.
Soft Limiter Knee	Controls the response curve’s transition into soft limiting.
Soft Limiter Processing Profile	Selects the processing profile for the soft limiter.
Soft Limiter Transient Mode	Selects the transient behavior used by the soft limiter. Transient mode speeds up attack to catch transients more efficiently.

Related Processors

- Voice Processing Channel Strip

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