Clip Shifter

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Technologies Utilized

'**VST**' is a Technology and Trademark by Steinberg.

WDL-OL: Enhanced version of Cockos IPlug by Oli Larkin (https://github.com/olilarkin/wdl-ol)

Knobman and **Skinman**: from g200kg (http://www.g200kg.com/index_e.html)

Ubuntu Font Family: (http://font.ubuntu.com/)

Welcome, Thanks, and Contact Information

Thank you for installing and trying Clip Shifter. I hope you find this useful, and I would like to hear your suggestions for future enhancements. Please feel free to contact me with any ideas, problems, preset suggestions, or comments at **matt[*prepositional phrase symbol*]lvcaudio.com**. Please visit lvcaudio.com for additional news about Clip Shifter.

Introduction

Clip Shifter is a plugin designed to provide saturation and clipping effects to your audio. This can be useful for individual tracks, busses, and overall mixes. The sonic characteristics of the clipping distortion can be altered from hard, brickwall-style clipping, to softer saturation with compression. The unique threshold controls for Clip Shifter's clipping can be set to dynamically change based on the transient characteristic of the audio.

Initial Setup

Clip Shifter is provided as a VST plugin for computers running the Microsoft Windows operating system. To install the software, place the 'ClipShifter.dll' file within your VST plugin folder on your computer. Ensure that your audio software recognizes this directory as the location for VST plugins.

Clip Shifter is provided as a 32-bit and 64-bit plugin. The 64-bit plugin should be used with 64-based audio applications.

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User Interface

Clip Shifter is organized into three main sections: Input, Threshold, and Output. The Input and Output section display meter information and provide gain adjustment controls. The threshold section controls the amount, level, and type of clipping. For each of the knobs, the text value is displayed below. Manual entry of values can be entered by clicking on the text field, and typing in the desired value.

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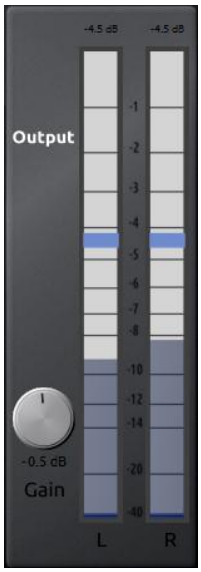
Input

The Input section contains a gain control knob, and a series of meters. The Input Gain is applied to the signal before any clipping is applied. Increasing the gain will typically increase the amount of distortion.

The blue meters within the Input section display information about the audio input, after gain is applied through the Input Gain. The dark blue meter responds similarly to traditional VU meters, with a quicker rise time (0.1ms integration time, and 300ms to decrease -20 dB). The light blue dash responds more closely to a Peak Program Meter, with a slower rise and fall (5ms integration time, and 5 seconds to decrease -20 dB). These meters are approximate, and do not take the place of a more dedicated metering plugin.

The orange meter in the middle displays information about the amount of clipping reduction by applied to the signal. The dark orange meter shows the amount of clipping that is occurring. The responses of the clip reduction meter is a quick rise time, and a slower fall time (5ms integration time, and 1s to decrease -20dB). The light orange dash indicator displays the current threshold for clipping to occur. This is dependent on the settings within the Threshold section and the incoming audio.

Output



The Output section is similar to the Input section, and contains meters and an output gain control. The output gain knob controls the final output of the plugin sent to the host audio program. ***Please note: there is no internal protection from sending signals that are too hot to the host program. Distortion due to inappropriate gain staging can occur, depending on the settings and the host application.***

The metering for the Output section is similar to the Input section, without the clip reduction indicators. The response time of the VU-style meters and peak indicators are the same as the Input section. In addition, a numerical display is shown above each meter. Each number follows the peak dash indicator of each output channel.

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Threshold

The Threshold section controls clipping amount and type of the plugin. The section has two knobs used to set the clipping threshold (Initial and End). These settings are used in conjunction with the Attack Time control to shift the threshold of clipping. After the input signal reaches the level set by the Initial Threshold, the actual threshold of the plugin begins to change toward the amount set by the End Threshold. The quickness of the shift is determined by the Change Time control.

After the signal decreases, the actual threshold of the plugin begins to shift back towards the Initial Threshold setting. The release time works as a multiple of the Attack Time. If a faster release time is desired, the Fast Release button can be enabled. The indicator in the middle of the Threshold section shows where the actual threshold of the plugin is functioning in comparison to the Initial and End settings.

Please note: extremely dissimilar settings between the Initial and End threshold controls can produce unintended audio artifacts. This can include pumping sounds, stuttering, or unpleasant clipping sounds. This is especially true with short Change Time settings. Increasing the Change Time and/or decreasing the difference between Initial and End Threshold can eliminate these sounds. Additionally, higher samplerates will produce fewer artifacts as the plugin attempts to quickly change the threshold between the Initial and End settings.

The Clip Shape controls the type of clipping applied to signals above the threshold. Setting the Clip Shape to 1.00 equates to a brickwall-style clipping. Anything above this threshold is cut. Decreasing the Clip Shape starts to soften the clipping. In addition, softer clipping (i.e., lowering the Clip Shape) will compress the signal. At the minimum setting, almost no clipping or saturation occurs.

The Link button locks the Initial and End thresholds to the same amount, and disables the Change Time. Linking the two controls holds the actual threshold of the plugin to the amount set by the controls. While linked, the Change Time setting has no impact and the meter will not show any change.

The Bypass button disables processing of the plugin. Although the meters continue to work, all controls within the Input, Output, and Threshold section do not have any effect on the audio signal.

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Presets and Uses

Clip Shifter contains a few basic presets; however, experimentation is a necessity. Each audio signal will be different. Using the meters, and or course ears, is required in properly adjusting the controls in order to produce a nice dirty saturated sound. Input Gain, in conjunction with the Initial and End Thresholds, is critical in obtaining a good sound.

Since Clip Shifter can change the threshold of clipping dynamically, interesting results can be produced. Using a lower Initial Threshold (e.g., -6 dB), higher End Threshold (-0.1 dB), and a short Change Time (30ms) results in saturation for the initial transient, but minimal changes to the remainder of the signal.

On audio with a more sustained sound (e.g., synths), weird effects can be produced by applying a high initial Threshold (e.g., -2 dB), low End Threshold (e.g. -30 dB), and a long Change Time (500ms). The resulting sound has minimal clipping at the start, but gradually clips more and more as the sustained signal continues.

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