COERCIØN

Coercion User Manual

Vain Audio 2024

About Coercion

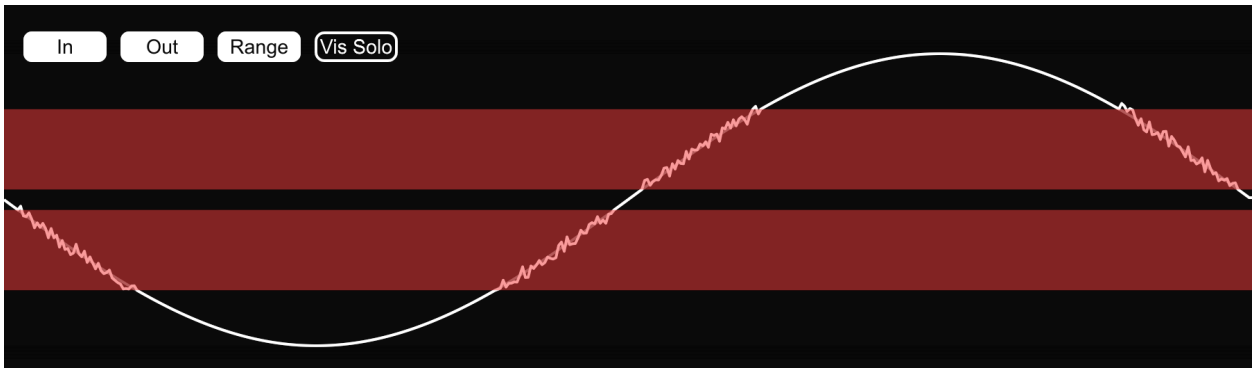
Coercion is a modular waveshaping plugin. There are 10 individual waveshaping modules that each affect your sound in a different way. The parameters for each of these modules can be controlled using the macros found in the bottom left of the window. By layering modules together and utilizing macros to affect the tonality of each module you can sculpt a truly unique sound.

Basic Concepts

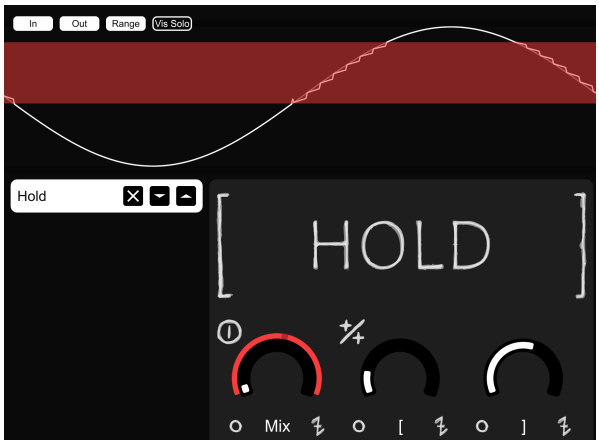
There are a few basic concepts that are important to understand in order to effectively use Coercion's distortion modules.

Ranges

Each module's effect can be restricted by adjusting the range sliders located next to the mix slider labeled as '[' (range start) and ']' (range end). These controls allow for finer grained control over the algorithms in each distortion module. The below figure shows how the Noise module is applied to an incoming signal. The samples that fall within the selected range (red highlight) have a layer of noise applied over them. The samples outside of the range are completely dry.



The bipolar(+/-)/unipolar(+/+) processing toggle changes how the range is applied. When set to bipolar there are two processing ranges that are reflections of one another over the zero crossing. Adjusting the range start slider forces the samples closer to the zero crossing to bypass the module's processing. Similarly, by adjusting the range end slider, you can bypass the module for incoming samples that are farther from the zero crossing. Unipolar mode creates a single processing range that is independent of the zero crossing. The below figure demonstrates how the unipolar/bipolar toggle affects the range.

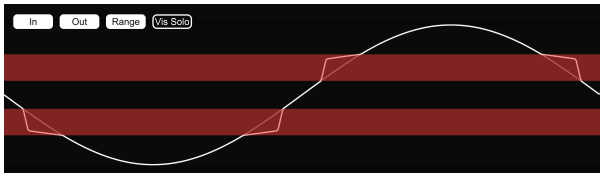
Unipolar	Bipolar
	

Mapping

Some modules support mapping their effect to the selected range by toggling the Map to Range button:

Mapping is supported by modules such as the Shaper module and the Demolish module that translate an incoming value in the full range. When mapping is disabled, the range behaves as an enable/disable for the effect that is applied to the entire signal. When mapping is enabled, the effect is applied only to the selected range.

Mapping enabled



Mapping disabled

Macros

Each macroable parameter has two controls alongside the main slider. These controls allow you to adjust the currently selected macro's effect on the parameter and to choose a different macro.

Macro Selector	Macro Adjuster
	

Clicking the macro selector will show a popup window allowing you to select a different modulation macro. Clicking and dragging on the macro adjuster will adjust how much the selected macro affects the parameter. A helpful visual will appear along the outer edge of the slider to illustrate its effect on the parameter.

Presets

The Coercion installer will place plugin preset files (.coerce) into the directory:

C:\ProgramData\VainAudio\Coercion\Presets

Presets must be in this directory for Coercion's preset browser to find them. User presets are intended to be saved in the **\User** sub directory.

Loading Presets

The folder icon directly to the right of the save icon brings up the preset selection window. This window scans the Coercion presets directory and creates a tree for you to select presets from. Click a preset to load it.

Saving Presets

To save a preset, click the floppy disk icon next to the preset name under the Coercion logo. This will bring up a file dialog that allows you to name your preset as well as change which directory it is saved in. The file browser is designed to work with any level of nested subdirectories. Feel free to use directories within the **\User** directory to organize your preset files.

Modules

Adding Modules

In its initial state coercion has no modules loaded. This does no processing and is generally not useful for anything. Press the button labeled '+' in the bottom left to add a distortion module. There is no hard limit to the number of modules that can be added to an instance of Coercion. The only limitation comes from your hardware.

Each module has a unique way of transforming the sound. Some are extremely basic and some are more complex. The goal of Coercion is to provide a set of basic building blocks that allow users to build custom complex distortions.

Multiply

The multiply module multiplies incoming samples in the selected range by a constant factor. Use the slider to adjust the multiplicator value.

Constant

The constant module replaces each sample in the range with a constant value. Use the slider to adjust the replacement value.

Shift

The shift module applies a constant shift to samples in the range. It is easiest to think of this as adding or subtracting a constant value from the incoming signal.

Stretch

The stretch module morphs the selected range to a new output range. Adjust the Start and End parameters to determine the output range.

Demolish

The demolish module applies waveshaping algorithms to the incoming signal. Soft clip, hard clip, crush, and tube distortion modes are available. This module has a mapping toggle.

Filter

The filter module applies a lowpass, highpass, or bandpass filter to incoming samples. Be cautious using the range functionality with this module, filters can become unstable and misbehave when there are gaps in the incoming signal.

Shaper

The shaper module allows you to draw a shaping curve on an XY graph. The input of the signal is on the X axis, the output is on the Y axis. Double click to add a new point to the curve. Click and drag a point to adjust it. Double clicking an existing point deletes it. Pre and post gain can also be applied. This module has a mapping toggle.

Hold

The hold module is a basic sample and hold effect. Adjust the length slider to change the hold length.

Noise

The noise module adds white noise to the incoming signal. Adjust the noise slider to change the variability of the noise added to the signal.

Snap

The snap module distributes incoming samples evenly between the selected range. Adjust the stages slider to change how many stages the incoming signal is distributed into. This module has a mapping toggle.

Advanced Options

Select the gear icon to access Coercion's settings page.

This page allows you to load the initial preset, change the accent color, and adjust normalizer settings.

Normalizer

In its default configuration Coercion normalizes the incoming audio signal, processes it, and then denormalizes it. This allows the plugin to have the same effect on a signal regardless of the signal's amplitude. It may sometimes be necessary to adjust the parameters of the normalization process in order to work with some types of sounds. Sounds with a high level of variability in their amplitude such as drums may require different normalizer settings than sounds with consistent amplitude such as leads.

Normalizer Threshold

The threshold of the normalizer prevents quiet signals from being processed. If you are processing a noisy signal it is best to raise the threshold to prevent noise from being boosted and processed.

Normalizer Sample Window

The sample window determines how quickly the normalizer reacts to changes in the amplitude of the incoming signal. A longer sample window can cause the normalizer to be sluggish. Because of this it is recommended to keep the sample window short.

Normalizer Smoothing

The smoothing parameter works to slow how quickly the normalizer reacts to changes in signal amplitude. It behaves similarly to the sample window in that long values cause sluggish reactions. The benefit of the smoothing parameter is that it prevents clicks from propagating through the processing modules when the audio signal changes amplitude rapidly.

Acknowledgments