USER GUIDE
CONVEX

CONVEX // CREDITS

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⚠️ *This symbol refers to important technical info*

💡 *This symbol refers to a tip, idea or side note*

SETUP:

⚠️ *This is a **VST3** plugin. Verify that your DAW is compatible with **VST3** prior to installation.*

⚠️ *Prior to updating an earlier version of the plugin, back up your relevant DAW sessions accordingly to ensure your old projects stay intact.*

⚠️ *Convex is a **stereo** plugin; be sure that you are instantiating it on a stereo track.*

1. Unpack the CONVEX .zip file

2. Via the CONVEX_INSTALLERS folder, run the installer for your system.

   a) **Windows Users**: now that our plugins are in a single format on Windows (VST3) the installer no longer necessitates destination options. The plugin files will automatically be installed in the correct system subfolders.

   b) **Mac Users:** Note that there is a separate installer for the factory presets, which you should run if you wish to install the presets on your system. If you encounter a preset installation error, we are aware of this potential issue and we have put together comprehensive instructions on how to resolve this. Please download them here: MAC PRESET HELP

3. Launch your AU/VST3 DAW and instantiate CONVEX on a **stereo** track.

4. Load some audio onto the track and check out the factory presets to get a sense for how the plugin sounds and works.

If you require tech support, you may reach us at: glitchmachines.sales@gmail.com

CONVEX DESCRIPTION:

Convex is a multi-effects processor designed to facilitate the creation of contorted artifacts, syncopated patterns and skewed digital textures. Based around three classic effects; multimode filter, pitch shifter and delay, Convex generates dynamic variations of the input signal by crossfading between two instances of each effect and modulating their key parameters using an extensive array of control modules.

Driving its core are 4 LFOs with optional tempo sync and 2 envelope followers which can have their output inverted or combined using the onboard mod mixers, multipliers and inverters. Convex features 70+ factory presets that showcase the plugin's broad range of special effects. From mellow dub delays to mind-blowing glitch sequences, Convex brings a broad range of exciting effects to your audio arsenal.

CONVEX PLUGIN OVERVIEW:
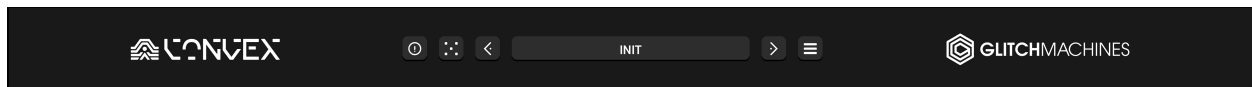

INTERFACE:

Convex is divided into 3 sections:

• Upper section: Filter, Pitch and Delay DSP effects and Output

• Center section: Envelopes, LFOs, Mixers, Multipliers and Inverters

• Footer section: MIDI, Presets, Global Randomizer, Config Menu and Panic Button
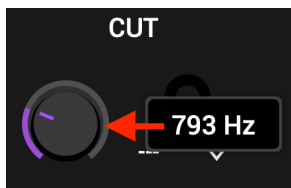
COLOR CODING:

The 4 UI colors are designated to the following sections / functions:

- PURPLE : Audio Processing
- GREEN : Modulation Source
- BLUE : Audio Output
- LIGHT BLUE : Targeted Parameters

VALUE OVERLAY:

Parameters that may require precise adjustments have been equipped with a parameter value overlay. As you adjust the relevant parameter, a small overlay will appear, displaying its value. To reveal the current value of a parameter without changing its value , click on the corresponding knob.

SCALABLE INTERFACE:

You may scale the Convex interface by dragging the bottom-right corner of the window until you reach the desired proportions. This setting is automatically saved and the plugin will launch with the set dimensions until altered.

Should the interface ever exceed the boundaries of your screen, you can trash the preferences to reset its dimensions. To do this, navigate to the preferences via the Config Menu option and trash the corresponding file before relaunching the plugin.

TOOL TIPS:
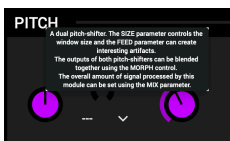
Hover your mouse over a module's header label to reveal a tooltip explaining the functionality of the module.

The Initialize Parameters option in the Config Menu allows you to quickly reset your patch.

Holding the Control/Command (Mac/Win) key gives you finer control over a parameter.

*Double clicking a knob will set it to its default value.*

BASICS:

Convex is an audio processor, so you will need some audio to feed through it before you can hear anything. Place the plugin on an Audio track, with some audio (such as a loop) loaded onto the track. Upon playback of the loop, you will begin to hear Convex affecting the audio in various ways depending on the preset you've selected.

Convex is capable of processing any audio signals within your DAW, including real-time processing of incoming audio. This makes it possible to process your hardware synths, modular systems, guitar, vocals, or just about anything else you can think of. Try placing Convex in an FX chain with our other processors for vast creative possibilities!

MODULATION:

Complex modulation routings are at the heart of Convex. Key parameters can be modulated via the LFOs, env followers, mod mixers, mod multipliers and mod inverters.
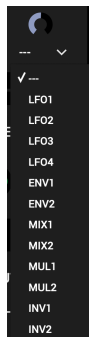
Each parameter that can be modulated has a small crescent knob and a mod source menu next to it : this applies to the cutoff, filter crossfade, pitch, pitch crossfade, pitch mix, delay time, delay crossfade, delay mix, LFO rate, mixer's 'mix' parameters and master output.

The modulated parameter's current value is used as the floor value for modulation. The modulation depth knob then represents the range in percent that will be used for modulation : between the current parameter value and the maximum parameter value.

💡 *Parameters that are targeted for modulation will automatically turn light blue to indicate that the respective parameter has an active modulation assignment.*

FILTER MODULE:

This module combines two multimode filters with the ability to crossfade between them, allowing you to set up interesting modulations between the outputs of both processors.

💡 *Depending on the **PRE** parameter of the Delay Module, the filter will either process the plugin input or the delay module output.*

💡 *The filters can be bypassed by setting the mode to **"NONE"**.*

MODE : Click & drag the filter curve icon to set the mode for each filter. Available modes are lowpass, highpass and bandpass.

CUT : This parameter lets you adjust the cutoff frequency in Hertz. It also determines the floor value for filter cutoff modulation. You can set the modulation source and depth using the modulation controls at the right of each cutoff knob.

RES : This parameter controls the emphasis of the filter cutoff frequency.

CROSSFADE : This control crossfades between the output of both filters. It can also be modulated.

DRIVE : This distortion effect can add a more aggressive and gritty character to your patch by saturating the output of the filter module.

The die button at the top-right of the module is the Local Randomizer. Clicking this button will set the Filter Module's parameters to random values.

PITCH MODULE:

This module combines 2 pitch shifters with the ability to crossfade between them. It processes the output from the filter module.

⚠️ *While altering the **SIZE** parameter does tend to produce interesting effects, it's not possible to internally modulate this parameter because it is susceptible to unwanted audible artifacts.*

💡 *You may, however, still modulate the **SIZE** parameter from within your DAW, using either MIDI or Automation.*

PITCH : Available for each pitch shifter, this parameter lets you set the pitch offset from the original signal in the range -24 to +24 semitones. It can also be modulated.

SIZE : Available for each pitch shifter, this parameter lets you adjust the buffering length of the effect.

FEED : Available for each pitch shifter, this parameter controls the amount of signal fed back to the effect input. High values will result in interesting pitch artifacts.

CROSSFADE : This control crossfades between the output of both pitch shifters. It can also be modulated.

MIX : This control allows you to adjust the balance between the original signal and pitch shifted signal at the module's output. It can also be modulated.

The die button at the top-right of the module is the Local Randomizer. Clicking this button will set the Pitch Module's parameters to random values.

DELAY MODULE:

This module combines 2 delay lines with the ability to crossfade between them. It either processes the output from the pitch module or the input of the plugin depending on the **PRE** parameter status.

SYNC : The metronome icon allows you to synchronize the delay time to your host's clock. When pressed, the rate knob will be replaced with various possible beat divisions.

TIME : This parameter sets the delay time in milliseconds or, if the **SYNC** parameter (metronome icon) is active, in beat divisions. It can also be modulated.

FEED : Available for each delay line, this parameter sets the amount of output signal that is fed back to the delay line input.

PRE : If this parameter is active, the delay module will be placed between the plugin input and the filter input. Otherwise the delay module will process the pitch module's output and be placed just before the **OUT** module.

CROSSFADE : This control crossfades between the output of both delay lines. It can also be modulated.

MIX : This control allows you to adjust the balance of the original signal and delayed signal at the module's output. It can also be modulated.

 The die button at the top-right of the module is the Local Randomizer. Clicking this button will set the Delay Module's parameters to random values.

OUTPUT MODULE:
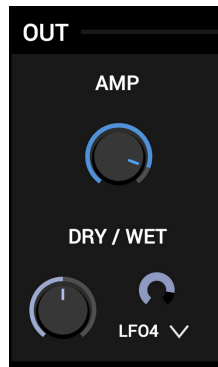
This module gives you access over the amplitude and mix of the plugin's output.

The signal that comes either from the Delay module or from the Pitch module (depending on the **PRE** parameter) can be scaled using the **AMP** control.

You can then set the balance of the unprocessed and processed signal using the **DRY/ WET** knob. This parameter can also be modulated.


LFO MODULES:

RATE : This control lets you set the frequency of the LFO either in Hertz, or in beat divisions if the **SYNC** button is active. This parameter can also be modulated.

SYNC : The metronome icon allows you to synchronize the LFO to your host's clock. When sync is active, the rate knob will be locked to various possible beat divisions.

WAVE MENU : This menu lets you choose the waveform of the low frequency oscillator. Simply click&drag the waveform icon to select the desired shape.

ENVELOPE FOLLOWERS:

The envelope follower modules track the changes of amplitude in the input signal and output a smoothed version of these, suitable for controlling other parameters.
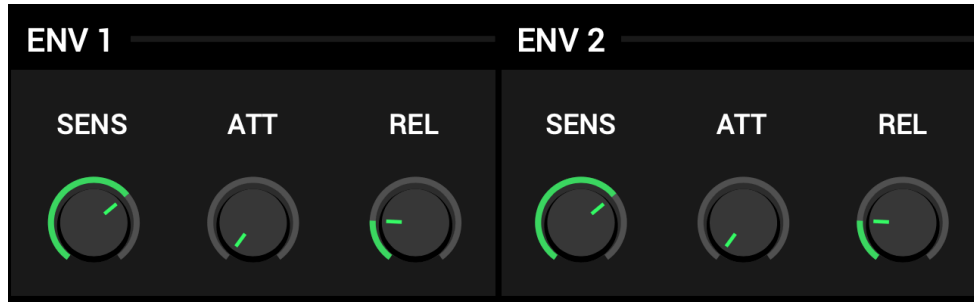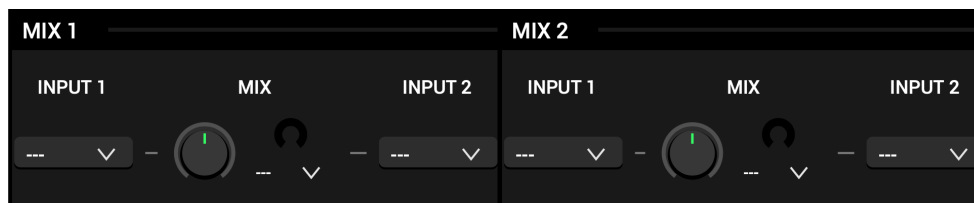

SENSITIVITY : This parameter adjusts the gain of the input signal. This will act on the range of the envelope.

ATTACK : The attack time of the envelope in milliseconds.

RELEASE : The release time of the envelope in milliseconds.

MODULATION MIXER MODULES:

You can use these modules to get the mean of two signals or to crossfade between two modulators. Simply use the dropdown menus to select the two modulators of choice.

The crossfade is calculated according to the **MIX** parameter which can itself be modulated for evolving modulation shape mutations.

Keep in mind that you can achieve all sorts of complex modulations with these mixers by mixing the outputs of other mixers or outputs of cross-modulated LFO's, etc.

MODULATION MULTIPLIER MODULES:

MULT 1		MULT 2	
INPUT 1	INPUT 2	INPUT 1	INPUT 2
--- ∨ — --- ∨		--- ∨ — --- ∨	
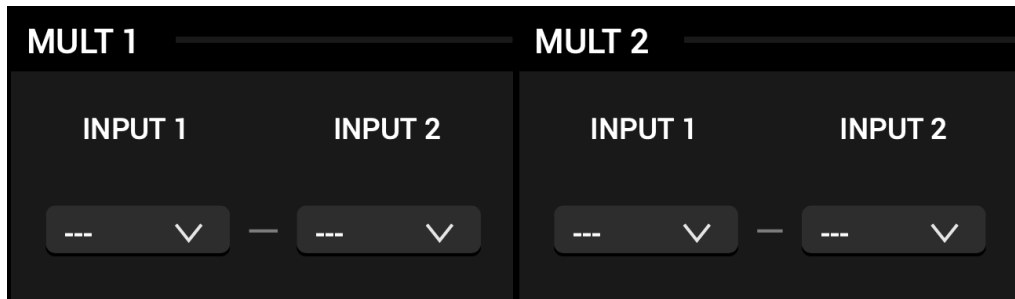
The Multipliers work in a similar way to to ring modulation, but in Convex they are used for control signals.

The multipliers let you convolve two modulators in order to use the resulting signal to modulate another parameter.

They are very powerful, yet simple to implement : select the 2 signals that you want to convolve together using the menus and the module will output their product.

💡 *These modules are especially useful in generating evolving modulation shapes.*

MODULATION INVERTERS:

| INV 1	INV 2
INPUT	INPUT
--- ∨	--- ∨
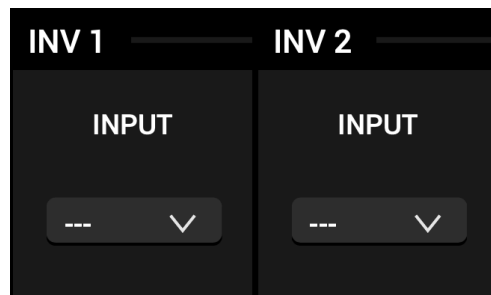
These modules are especially useful, as they allow you to invert the modulation signals from the Envelopes, LFOs, and Modulation Mixers. This makes it possible to modulate 2 parameters in synchronized yet opposite directions by assigning a modulator to one parameter, and the inverted version of the same modulator to another parameter.

Use the drop down menu in each inverter, to select the parameter you wish to invert.

The inverted output can then be assigned as a modulation source to the parameter of your choice.

FOOTER:
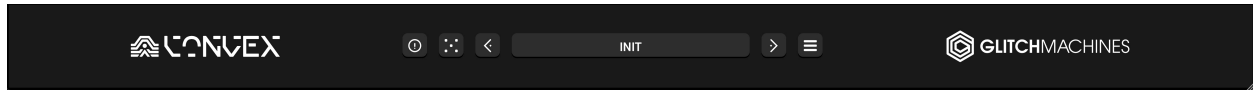
PRESETS:

You can navigate through the presets either by clicking in the drop-down menu, or by using the navigational arrows to increment/decrement though the list.

SAVE PRESET… : Opens a dialog box that will allow you to save the current preset on your hard drive using the extension ".cxp".

⚠️ *Only presets saved in the default folder (where the dialog box opens by default) will appear in the menu.*

⚠️ *Due to significant changes in the source code, factory & user presets, project states and automation from previous versions of Convex are incompatible with newer versions.*

RANDOMIZE & PANIC:

  = RANDOMIZE

Clicking the die icon will set most parameters to random values. This is useful when creating your own presets, as the plugin will generate unforeseen results which you can use as fresh starting points for new patches.

💡 *Don't forget that you can further fine-tune randomized patches with the help of the local randomizers in the DSP modules.*
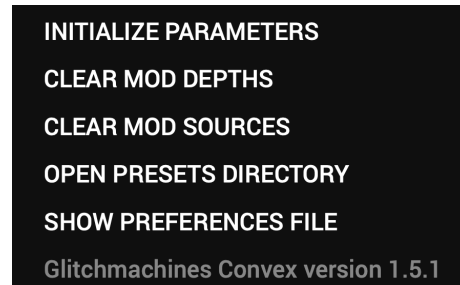
💡 *MIDI CC85 is mapped to the Randomizer, allowing you to automate randomization*

  = PANIC

If you end up with uncontrollable feedback, clear the delay lines using the Panic button.

CONFIGURATION MENU:

INITIALIZE PARAMETERS
CLEAR MOD DEPTHS
CLEAR MOD SOURCES
OPEN PRESETS DIRECTORY
SHOW PREFERENCES FILE
Glitchmachines Convex version 1.5.1

☰   = CONFIGURATION MENU

The Config Menu gives you access to several important settings:

INITIALIZE PARAMETERS: Initializes all parameters back to default settings

CLEAR MOD DEPTHS: Sets all modulation depths back to 0%

CLEAR MOD SOURCES: Sets all modulation sources to NONE

OPEN PRESETS DIRECTORY: This is a helpful shortcut that will open your OS file browser and automatically take you to the correct preset folder in your system.

SHOW PREFERENCES FILE : This option will pull up your OS file browser, from where you can access the preferences file that stores the plugin's configuration options. This is useful if you should ever need to reset Convex's User Interface to its default proportions. In that case, simply trash the corresponding preferences file and relaunch the plugin in your DAW.

Thanks for purchasing CONVEX!

Please check out the rest of our products at our website: https://glitchmachines.com