# Disturbance

Version 1.1
www.ugoaudio.com
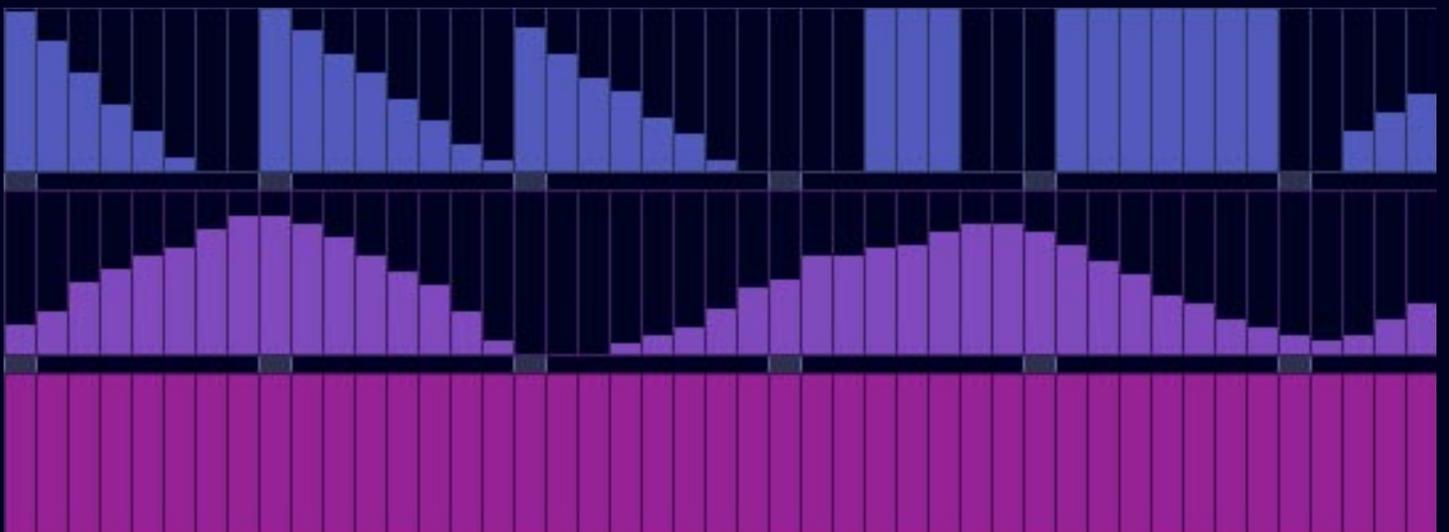
Disturbance Users Guide

Installation

Open the zip and extract the Disturbance folder into your host's VST folder. Yup, that's it. No annoying copy protection, no tricky registration and no troublesome installers.

Overview

Disturbance is primarily intended for the glitching/mangling of drum loops (in wav format.) It is similar to a slicer, but a bit different. It works by chopping up a loop into 64 equal parts (no beat detection), then sequencing their playback. Each slice in Disturbance has its own loop point. If the playback of a step is slower than the length of the slice, that slice will repeat. Since it always chops up the loop into 64 pieces, The initial length of each slice depends on the overall length of the sample. So if you load a 10 second loop, it each of its 64 parts will be longer than if you had loaded a 5 second sample. Thanks to this method Disturbance is capable of some fun playback options. (See below.)

Note that above I said "primarily intended" for drum loops, rather than exclusively intended. Some great results can also be had by loading up melodic loops, synth samples, vocals, or anything else. However, non-percussive material is much more likely to cause audible clicks, especially when in reverse or random playback modes, as well as when using the loop length reduction function.

Disturbance can accept 16 or 24 bit wav files at a variety of sample rates, and at lengths ranging from short hits to several minutes of audio. Pre-exsiting loop points and Acidized formatting will be ignored. The wav files must not require additional external files in order to play, or have any extra data embedded in them. (As is sometimes the case with files built to work only in specific samplers.)

Getting Disturbance to make sound
To hear a sample/loop you have loaded, you must send Disturbance a sustained MIDI note.

File Browser

The file browser is split into two parts. The upper browser lets you select drives and folders, while the lower browser only displays the wav files in the selected folder. Each of these browsers has

a limit to how many files it can display at any given time. Use the "More Folders" and "More Samples" switches to jump to additional pages.

Clicking on a wav file in the lower browser will load the sample. You can also use the up/down arrow keys on your keyboard to load the next/previous sample. Clicking on either a new folder or on the **.** or **..** options in the upper browser will unload the sample. **..** will jump you up one level, allowing you to back out of sub folders. The **.** option just lets you unload the sample while remaining in the same folder.

The other way of loading samples

`D:\Samples\Perimeter Sound Arts\Abstract World Fusion 1 (Perimeter)\AWF1-selections\Selected loops`

Sandwiched between the sequencer display area and the main/effects display is a thin section that shows the full path and file name of the sample currently loaded. On the far left side of this display area there is an icon of a file folder. Clicking on it will open up a standard Windows file browser. So if your host has troubles with the browser on the left (or if you just prefer to use a Windows style browser) you can use this as an alternative.

Note: Using this will not update the browser on the left.

Changing Presets

When changing presets in your host you will notice that your sample selection disappears. This is because the location of the selected sample on your hard drive is tied to the presets. While this method has the above mentioned obvious drawback, the benefit is that when you recall presets you have made yourself, the associated sample will load with it, provided it is still in the same location on your drive. **Note:** The samples themselves are not saved as part of the preset though. Only their location on your drive is stored.

Master Controls

Master Volume - Sets the volume of the plugin.

Velocity - Adjusts how much your key velocity effects the volume.

Hint: holding down the CTRL key while adjusting a slider will allow you to fine tune your setting.

Jitter

This causes the playback point to randomly jump ahead or behind the current position. The frequency/speed of the jumps is adjustable, as is its range.

Range - adjustable from 1 to 8 steps.

Speed - 1/1, 1/4, 1/8, 1/16, and three "jump" modes...J1, J2, and J3. In the normal modes, playback is more smooth because the steps in between the jitter induced glitches still play. In the jump modes the sequencer is still moving playback along, but fewer of those in between steps are played. This results in big jumps between the steps that are played.

Mode - In fixed mode, the jitter will always jump to the distance specified by the range setting. In

random mode, the jitter will jump anywhere within the selected range. For example, if you are in fixed mode and have the range set to 4, the jitter will always jump either 4 steps ahead or behind the current playback point. However, when in random mode the jitter will jump anywhere from 1-4 steps ahead or behind the playback point.

Pitch Shifter

The pitch shifter can be used without the sequencer, and instead can either be set to a fixed increase/decrease, or can be controlled via MIDI input. Note that when the pitch shifter is active but no pitch shifting is set, you will likely still hear a bit of a delay effect.

Octave - causes an octave shift from two octaves down (-2) to 2 octaves up (2). 0 equals no octave shift.

Note - causes a shift in semitones, from 0 to 11.

Fine - Use this control to fine tune your pitch adjustment. If your original sample is already in tune, then you won't need to use this control. However, when using a drum loop as a pitched oscillator, you may need to tweak the tuning to get it to a useful pitch.

MIDI - When activated, the pitch shifter will respond to incoming MIDI notes. This lets you play the pitch shifter, allowing Disturbance to become a synth rather than just a loop utility. With this feature, even drum loops can become melodic instruments. Even pitch bend messages are recognized in this mode.

Portamento - When the MIDI mode is activated, this slider lets you adjust the amount of portamento (glide) between notes that are played legato.

Mix - Adjusts the wet/dry mix for the pitch shifter effect.

Dual Delay

Each of these two delays can be set to different times, allowing you to create BPM synced ping-pong effects.

Delay Volume - sets the volume of the delays

Feedback - sets the amount of feedback for the delays

Stereo Amount - adjusts the width of the delays within the stereo field

Speed - individual speed adjustments for each delay

Dot - allows for dotted note times

Sequencer Features

Sequencer Range Adjustment

At the bottom of the sequencer section you will see a purple bar. Clicking and dragging each end of this bar will allow you to adjust the minimum and maximum step that the sequencer will play within. Press and hold shift while clicking and dragging in the center of the bar will allow you to move the entire bar while retaining its size. Since you can set your start and stop times anywhere you want, you can create odd time grooves or even lock the playback to just a single step.

And now to the top of the sequencer section....

Sequencer Playback Controls

Clock Source

H - locks the clock to your host's tempo.

I - allows you to manually set the tempo that Disturbance's sequencer runs at. To set the BPM, click the display, type in your speed, and then press enter.

M - this turns off the clock and allows you to manually control the playback position with your keyboard's mod wheel (or MIDI CC 1.) When this is active the sequencer range and direction settings will be ignored.

Sequence Playback Direction

Forwards [>] - works as you would expect...it plays the loop forwards, in the normal order.

Backwards [<] - plays the loop in the reverse order. Note though that this is not the same as playing a sample backwards. What you are doing here is playing the *order* of the slices in reverse. In some cases, such as with cymbal crashes, the effect is sort of a choppy version of sample reverse. But with shorter sounds, such as kicks, hats, and snares, the effect is more like hearing the drum pattern played in reverse, rather than sounding like a sample played backwards.

Bounce [<>] - plays the loop forwards once, then backwards, and repeats. The first and last beat is repeated in order to keep the loop in sync.

Random [?] - plays the steps in a completely random order. If you like pure chaos, you'll dig this. (This can be particularly fun with vocal and melodic samples.)

Playback Speed Adjustment

This sets how fast the loop plays back. However, because of the way Disturbance works, slower speeds will result in steps/slices looping before moving on to the next one. The speed ranges from taking as long as 32 bars (32 B) to play the entire 64 steps, to as short as playing all 64 steps in just 1/4th of a bar.

Slice Length Reduction
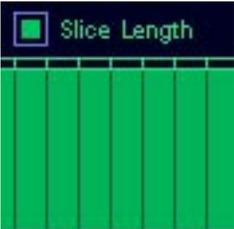
As mentioned earlier, the slices in Disturbance all have their own loop points. When this sequencer is activated, the sliders for each step pull the slice's loop end point back closer to the start, shortening the loop. This can create some cool rolls and glitch effects.

The actual size of the slices depends on the length of the sample. So the shorter your sample is, the smaller the loop point reduction can go. If you use a particularly short sample, the loop can get short enough that it will turn into a pitched glitch.

Note 1: On drum loops, you usually don't notice much in the way of annoying clicks when using this feature. However, when applied to melodic material, you'll probably run into some serious clicking since the loop points do not correspond to clean zero crossing points in the waveform.

Note 2: Also related to clicking...When this sequencer is turned off, there is some overlap between steps. This helps minimize clicking on melodic samples, when played at their normal speed or higher. Slow speeds will click though because you'll hear the slice loop. When this sequencer is turned on, that overlap is removed. So the trade off for using this glitch effect is that the steps are slightly shorter, and more prone to clicking at all speeds.

Filter Sequencer
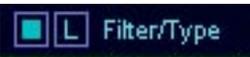
Filter type
L / H - Lets you select from either a low or high pass filter. These have been designed to have a wider range than the typical low and high pass filters. This allows them to better cover the wide frequency range of drum kits.
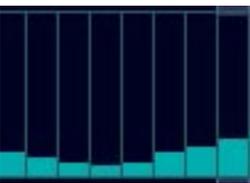
Cutoff
The sequencer sliders adjust the cutoff of the filter. In low pass mode, when the slider is all the way up you will get the clean, unfiltered, sound. In high pass mode, you get the unfiltered sound when the slider is all the way down. This way you can easily mix between filtered and non filtered steps.

Pitch Shifter Sequencer
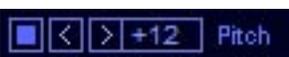
When activated, this turns on the pitch shifter effect and allows it to be sequenced. The two buttons next to this switch let you select various pitch ranges for the sequencer to work within. The options are:

+ 12 - a maximum of one octave up
+/-12 - a range of plus or minus one octave
+ 24 - a maximum of two octaves up
+/-24 - a range of plus or minus two octaves

For the +/-settings, a line will show up in the middle of the display that indicates 0 (no pitch change.) For the settings that are only positive, having the sliders all the way down would produce no change in pitch. However, in this setting you would still hear a light echo type of effect caused by the delays that are used to create the actual pitch shifting effect.

Dirt Sequencer

This is a modulated distortion effect that combines standard distortion, amplitude modulation, downsampling, and filtering. Because of the amplitude modulation, you'll notice that the response of the effect can change a bit depending on your source material. The dirt effect has five different modes:

Basic - the basic distortion sound
Dsmp - adds downsampling to the basic sound
Filter - adds cutoff adjustment for a resonant filter
DS/F1 - combines downsampling and filtering
DS/F2 - same as above, but with greater resonance for the filter

Volume Sequencer

The volume sequencer allows you to adjust the volume of each individual step. In addition to coming in handy when you just need a hit in a drum loop to be a bit more quiet, it can also be used as a gate sequencer by completely reducing the volume of steps.

Reverse Slice

This lets you choose whether or not a slice will play backwards. In contrast to the reverse playback mode for the sequencer, this actually reverses the audio of the slice, rather than the order.

Random Step
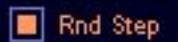
When this is activated for a step a randomly selected slice will be played instead of the current one. This can be handy for randomly adding a little variety into a drum groove. For example, you could set it up so that the first and third snare hits are randomly replaced with another sound from the loop. This way every time the loop plays through, it will sound a bit different.

MIDI CC Assignments

CC	Parameter
01	Mod Wheel
02	Slice Length On
03	Filter On
04	Pitch Sequencer On
05	Dirt On
06	Reverse On
07	Random Step On
08	Jitter On
09	Pitch Shifter On
10	Delay On
11	Volume Sequencer On

Known Bugs

General

The further off of the original timing/speed your playback is from the original sample (either by host tempo change or by changing the speed of Disturbance's internal sequencer) the further off the timing and tone of the playback will sound. Some of this is inherent in the slice/playback process Disturbance uses, but some is also an unfortunate limitation within Disturbance and something I hope to improve upon in time.

Dual core processors + multiple instances

Unfortunately VSTs built with SynthEdit are not properly compatible with dual core processors. Single instances work fine, but multiple instances can cause crashes in hosts that have multi processor support activated. Jeff McClintock, SynthEdit's creator, is aware of the problem and has mentioned that the fix for it will be in the next update (1.1) of SynthEdit. As soon as Jeff releases this fix, I will release an update to Disturbance to solve this problem. In the meantime, there are a few work-arounds for this issue.

1. Make additional copies of the Disturbance dll for each extra instance you expect to need, and give each a new name. (eg: disturbance2.dll, disturbance3.dll, etc.) Hosts consider each an individual instance, and therefore do not run into the multiple instance conflict.

2. Freeze each instance before loading another one, especially if your host has an "unload while frozen" option.

3. Turn off multi processing in your host. Of course this is the least desirable of the three options since it negates the benefit of having a dual core, but it does work.

Project5

Disturbance will not render in sync within Project5. I have yet to find the cause for this, but I am working on it. Becuse of this, I cannot recommend using Disturbance in this host.

Additionally, during playback Disturbance may not reset correctly unless you use Project5's "always reset on stop" function.

Cubase SX/SL
Due to an unfortunate conflict between Disturbance's clock and Cubase's own clock, a few work-arounds are needed to get Disturbance to play and render in sync. Thankfully they are easy ones. This may also affect Cubase 4.

1. For proper playback timing, set Cubase to use a preroll. 0.0.0.100 seems to work fine but just to be on the safe side you may want to give it something longer. Note that a preroll is also necessary during recording. As a result, you will also have to turn off "start recording at left marker" since that would override the preroll.

2. To get Disturbance to render correctly when using offline (non-real time) exporting, set your play-back point so that the time ends in anything other than a zero. For example, instead of starting at 1.01.01.000, start it at 0.01.01.001.

Credits

Disturbance created by Ugo (Chris Sciurba)
www.ugoaudio.com
ugo@ugoaudio.com

This plugin was created with SynthEdit.
VST plugin technology by Steinberg.

This VSTi incorporates SynthEdit modules and prefabs by:

Dave Haupt - www.dehaupt.com
Chris Kerry - www.chriskerry.f9.co.uk
e-phonic - www.e-phonic.com
Kelly Lynch - www.rubidiumhexafluorosilicate.com/synthedit/
Lance Putnum - www.uweb.ucsb.edu/~ljputnam/synthedit.html
Rick Jelliffe - http://extra.schematron.com
Scoofster Modules - http://scp.web.elte.hu/synthedit/

Special thanks to:

- The beta testing team
- Jeff McClintock, for creating SynthEdit
- Steinberg, for creating their VST format
- KVR - www.kvraudio.com
- Jeff Rhodes at Perimeter Sound Arts

Licence Info

1.Do not distribute this VST or install it on other people's computers. This is a single user license so if you know someone who might like this product, please encourage them to buy copy of their own. So feel free to spread the word about how great Disturbance is, but just don't spread the VST itself.

2.You are using this software at your own risk. While I do what I can to prevent trouble, I claim no responsibility for damage to your hardware, software, income, reputation, sleep habits, hat size, or person should something go wrong.

3.You may transfer your license if you wish, but you must arrange it with me first so the new owner can get tech support and updates.