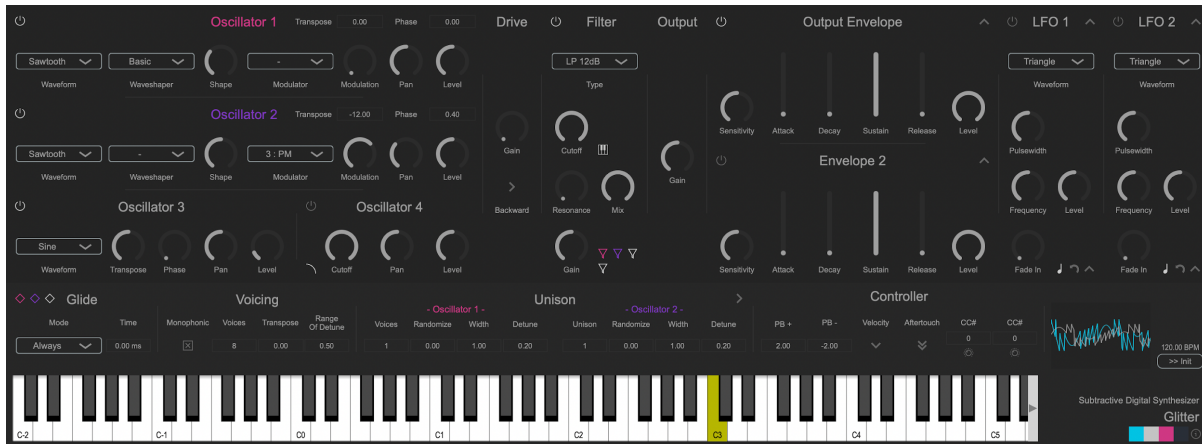




Subtractive Digital Synthesizer Glitter

Operation Manual 1.0.0

Target Software Version : 0.9.1

Website : <http://fabric70.com/>

Mail : fabric70@hotmail.co.jp

1. Introduction.....	4
2. Components.....	5
3. Setup.....	6
4. Functional Specification.....	7
4.1 Oscillators.....	7
4.1.1 Parameters.....	7
4.2 Drive.....	10
4.2.1 Parameters.....	10
4.3 Filter.....	11
4.3.1 Parameters.....	11
4.4 Output.....	13
4.4.1 Parameters.....	13
4.5 Envelopes.....	14
4.3.1 Parameters.....	14
4.6 LFOs.....	15
4.6.1 Parameters.....	16
4.7 Glide.....	18
4.3.1 Parameters.....	18
4.8 Voicing.....	19
4.8.1 Parameters.....	19
4.9 Unison.....	19
4.9.1 Parameters.....	20
4.9.2 How does Range Of Detune work in Unison?.....	21
4.10 Controller.....	22
4.10.1 Parameters.....	22
4.11 Information.....	24
4.11.1 Parameters.....	24

1. Introduction

Glitter is a polyphonic synthesizer designed based on the subtractive synthesis method used in analog synthesizers.

It is equipped with a variety of modules, including waveshapers, oscillator modulation, unison, and modulators that allow access to almost all parameters, and has functionality that is comparable to that of popular synthesizers.

These modules are also designed according to exemplary algorithms, and we hope that those who want to learn synthesizers with a textbook in hand will also find them useful.

2. Components

When a note-on occurs, Oscillators 1-4 generate an audio signal. The generated signal passes through Filter and Output and is output as an actual sound wave. By default, Oscillators 1-4 are connected to Filter, but they can also be routed directly to Output.

The Output Envelope, Envelope 2, LFO 1, and LFO 2 are not used to control the audio signal itself, but rather to control the time parameters of other modules such as Oscillators 1 - 4 and Filter. These can be freely connected to any module.

3. Setup

Download Glitter from the website.

<http://fabric70.com/glitter.html>

Mac

If you are using it as an Audio Unit, please move Glitter.component to the following path.

~/Library/Audio/Plug-Ins/Components/

If you are using it as VST3, please move Glitter.vst3 to the following path.

~/Library/Audio/Plug-Ins/VST3/

Windows

Move Glitter.vst3 to the following path:

C:\Program Files\Common Files\VST3

If you would like to use the presets, move Fabric 70 Laboratory from the Presets folder included in the download folder to the following path.

Mac

~/Library/Audio/Presets

Windows

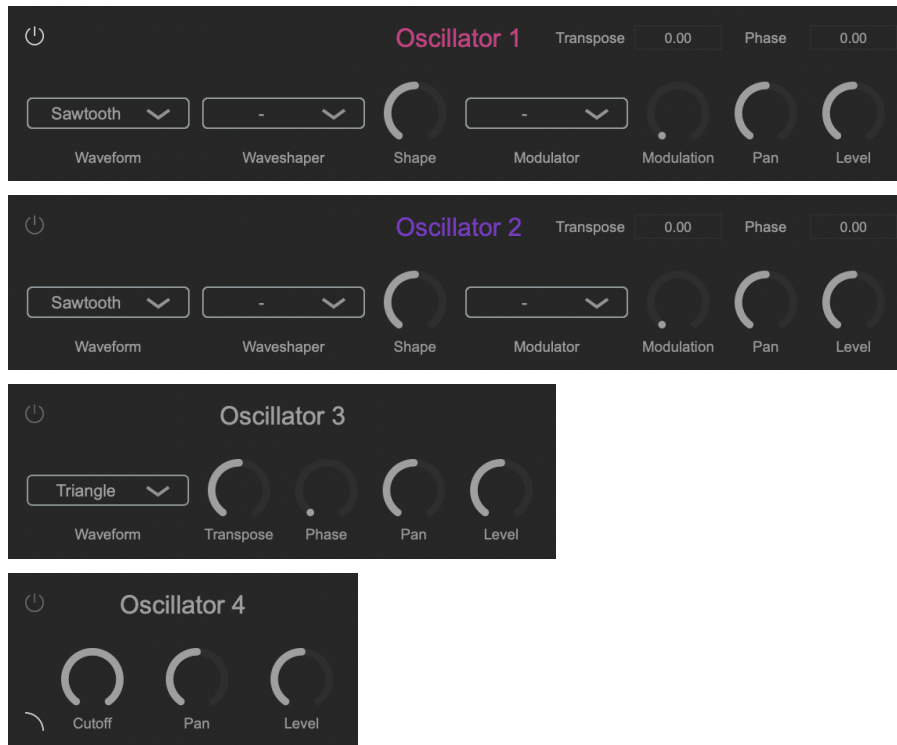
C:\Program Files\Common Files\VST3

Now you're ready to go, just open your DAW and insert Glitter into an instrument track.

4. Functional Specification

We will explain the functions included in each section of Glitter.

4.1 Oscillators



This is the section that will be the sound source.

Glitter features four oscillators. Oscillator 4 is unique in that it generates and outputs noise.

4.1.1 Parameters



Power

Power. Does not function when off.

Waveform

You can select a waveform from the following four types.
Oscillators 1 - 3 are common.

His

A waveform without harmonics.

Triangle

Like Square, this waveform contains odd harmonics, but in smaller amounts.

Sawtooth

Because it contains all harmonics, it is the most commonly used waveform in subtractive synthesis like this software.

Square

This waveform contains odd harmonics. By using the Waveshaper described in the next section, the duty ratio can be changed continuously.

Transpose

Controls the pitch of the oscillator. ± 1 is a semitone, ± 12 is an octave.

Phase

Controls the start angle of the audio signal.

Waveshaper

This is the setting for the waveshaping function, which changes the shape of the audio signal. By utilizing this function and the oscillator modulation described in the next section, you can create a variety of waveforms.

You can choose from the following three types.

Basic

The audio signal is given a curved shape change in opposite directions to the left and right of the center per cycle.

Synchronize

This is commonly known as oscillator sync, and it essentially distorts the basic waveform by synchronizing the frequency of one oscillator with another, resulting in a dramatic change in tone, but this software uses calculations to achieve this effect with a single oscillator.

Pulsewidth

Changing the angle between two points in the phase creates a change in shape.

Shape

Controls the shape-changing effect.

Modulator

This setting allows you to use the audio signal output from another oscillator (adding or multiplying). You can choose from the following two types of oscillator modulation.

n PM

Phase modulation.

A modulation effect is created by adding the audio signal generated by another oscillator to the phase angle before the audio signal is generated.

n RM

This is ring modulation.

It creates a modulation effect by multiplying an audio signal by an audio signal generated by another oscillator.

Modulation

Controls the effect of the modulation.

Pan

Controls the positioning of the sound.

0.5 outputs the center, 0 outputs only the left channel, and 1 outputs only the right channel.

Level

Controls the output level of the oscillator.

Since the Output section is responsible for the output level of the final audio signal, the role of this function is to adjust the output level relative to the other oscillators.

**Filter Type**

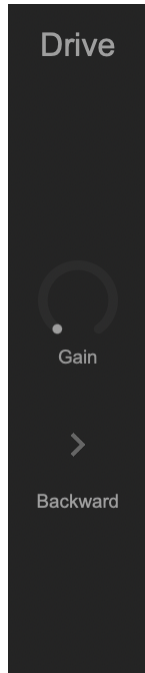
These are the low-pass and high-pass filters built into Oscillator 4.

It has the characteristic of attenuating the cutoff frequency by 6dB, and when used in combination with Cutoff, it is possible to change the high or low frequency components.

Cutoff

Controls the cutoff frequency.

4.2 Drive



This is a soft clip section that adds a natural distortion effect to the audio signal.

4.2.1 Parameters

Gain

Controls the level of the audio signal. Amplification causes the signal to reach the threshold level before clipping begins.

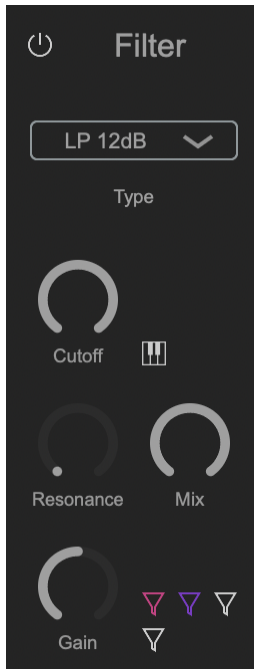
Backward

Controls the order in which the soft clip processes are performed.

When this function is off, soft clipping is applied to the audio signal received from the Oscillator section, but when it is on, soft clipping is applied to the audio signal that has passed through the Filter process.

This soft clip any peaks that increase when you increase the Resonance effect in the Filter section, so turn it on when you want stronger distortion.

4.3 Filter



This section allows you to cut out unnecessary frequency bands from the audio signal generated by the Oscillator, or to increase or decrease specific frequency bands to create the desired sound.

4.3.1 Parameters



Power

Power. Doesn't work when it's off.

Type

You can choose from the following types:

LP 12dB

LP 24dB

This is a low-pass filter.

Attenuates signal components above the cutoff frequency.

BP 12dB

A bandpass filter that retains signal content that falls within a band surrounding the cutoff frequency, and attenuates signal content above and below this frequency band.

HP 12dB

HP 24dB

This is a high-pass filter.

Attenuates signal components below the cutoff frequency.

Notch 12dB

It is a notch filter.

Attenuates the band around the cutoff frequency.

Peak 12dB

This is a peak filter.

Amplifies or attenuates the band around the cutoff frequency.

Allpass 12dB

It is an all-pass filter.

Changes the phase of the input signal near the cutoff frequency.

LS 12dB

This is a low shelf filter. It amplifies or attenuates the frequency band below the cutoff frequency.

HS 12dB

This is a high shelf filter. It amplifies or attenuates the frequency band above the cutoff frequency.

Cutoff

Controls the cutoff frequency.

Resonance

Controls the level of the band around the Cutoff frequency.

When Notch, Peak, or Allpass is selected, this adjusts the width of the affected band.

Gain

Controls the level of a specific band.

Use with Peak, Low Shelf, and High Shelf.

Peak amplifies or attenuates the frequency band around the Cutoff, Low Shelf amplifies or attenuates the frequency band below the Cutoff, and High Shelf amplifies or attenuates the frequency band above the Cutoff.

**Keyfollow**

When on, Cutoff follows the note number.

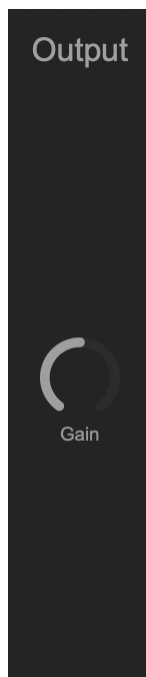
Mix

Controls the mix ratio between the filtered and original signal.

**Target**

Each oscillator has its own filter section, and you can choose whether or not to pass the signal through it. If you turn off the filter, the audio signal from the oscillator will skip this section and go directly to the Output section.

4.4 Output



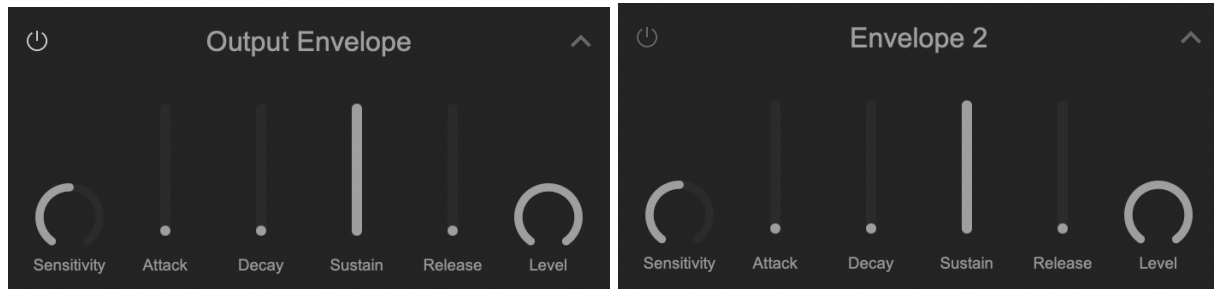
outputThis section controls the signal level.

4.4.1 Parameters

Gain

Controls the final level of the audio signal being output.

4.5 Envelopes



This section applies standard changes to parameters over time after note-on. The Output Envelope is directly connected to the Output section, so the output volume follows the Output Envelope settings.

4.3.1 Parameters



Power

Power. Doesn't work when it's off.

Sensitivity

Applies velocity to the envelope output level.

Attack

Controls the time it takes for the envelope to start and reach its maximum level.

Decay

Controls the time it takes to reach Sustain from the maximum level.

Sustain

Controls the level that is maintained during note-on after passing through the Decay.

Release

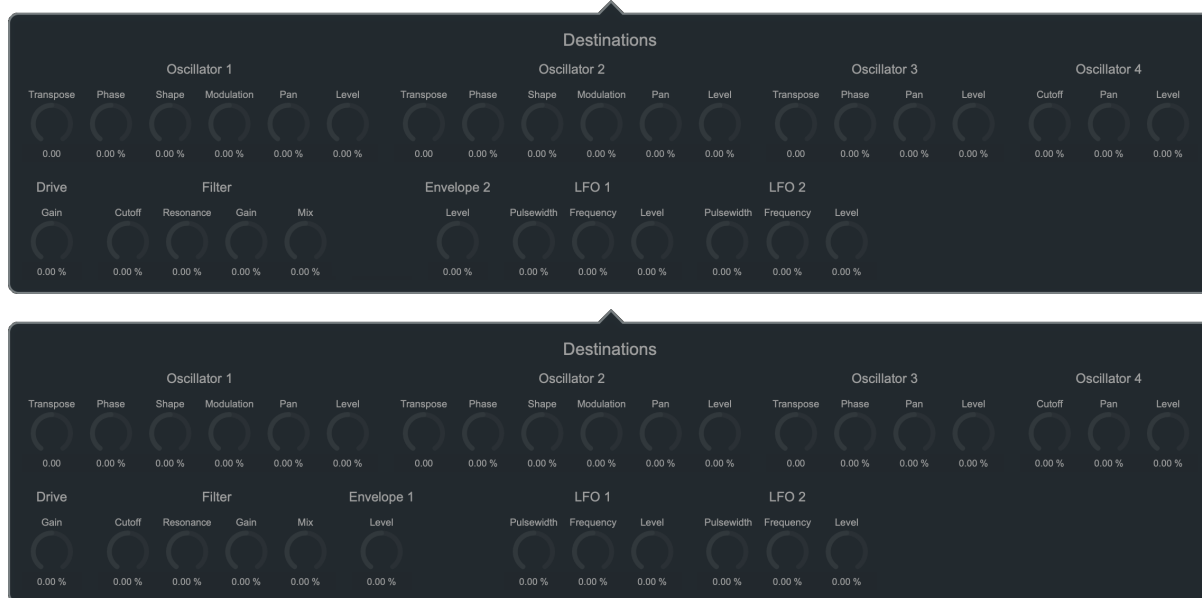
Controls the time it takes for the level to drop to zero after note-off.

Level

Controls the final output level of the envelope.

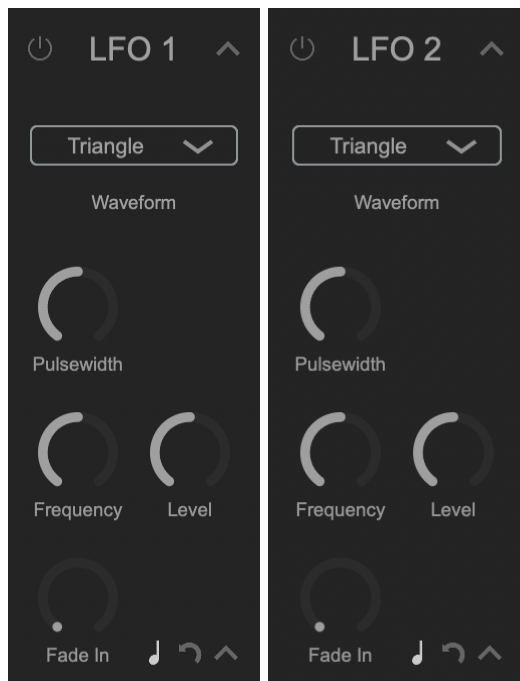


Destinations



You can select which parameter the time-dependent change output from the envelope section will be applied to.

4.6 LFOs



This section applies standard changes to parameters using oscillator signals.

4.6.1 Parameters

**Power**

Power. Doesn't work when it's off.

Waveform

There are six types to choose from:

His

It's a sine wave.

Triangle

It is a triangle wave.

Ramp Up

It is a straight line waveform that slopes upward to the right.

Ramp Down

It is a straight line waveform that slopes downward to the right.

Pulse

It is a pulse wave.

Pulsewidth controls the ratio.

Random

It outputs a random value every cycle.

Pulsewidth

Controls the ratio of the width of the waveform signal per cycle output from the LFO when it is divided into left and right halves.

Frequency

Controls the LFO frequency. If Synchronize (described below) is on, the cycle is controlled as a percentage of the DAW BPM.

Fade In

Controls the time it takes for the LFO to reach maximum amplitude after note-on.

Level

Controls the output level of the oscillator.



Reset Point

Controls the start angle of the signal output by the LFO with note-on. This is effective when Reset (described below) is on.

Amplitude

You can choose the LFO amplitude range from the following two types:

-1 to 1

The LFO amplitude will be positive or negative.

0 to 1

The LFO amplitude is positive only.



Reset

When on, the LFO signal phase angle is reset at note-on.

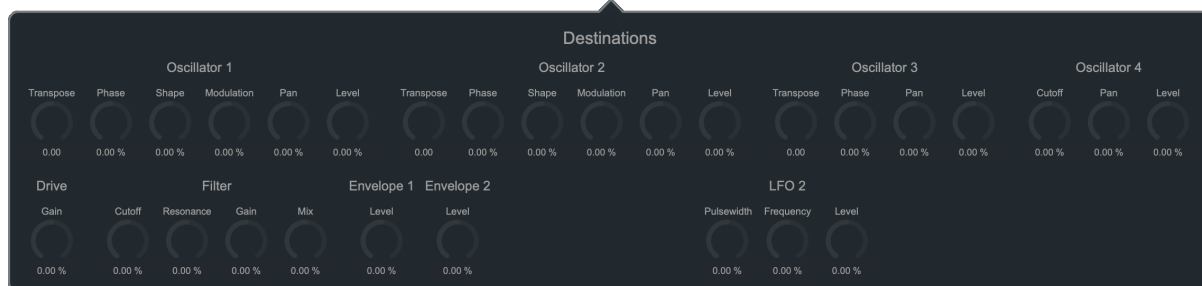


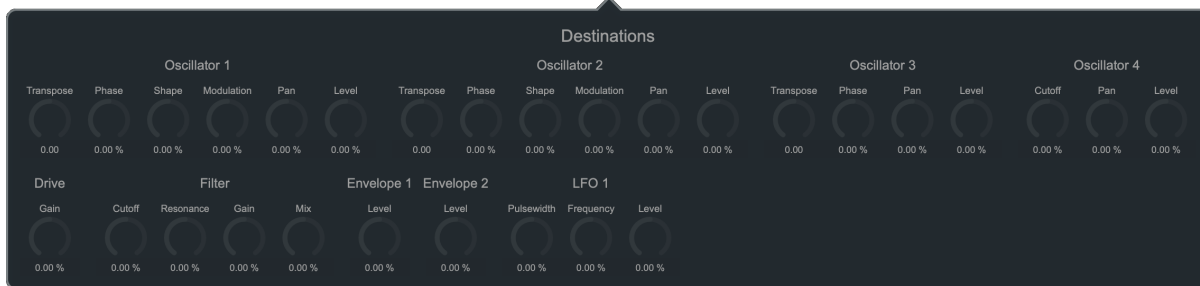
Synchronize

When on, you can specify the frequency as a percentage of the DAW's BPM from Frequency.



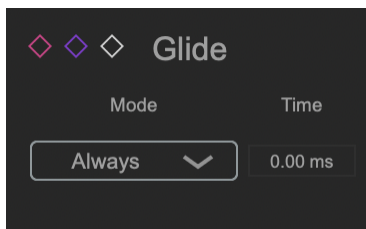
Destinations





You can select which parameter the LFO output will affect.

4.7 Glide



This section handles the glide function, which is one of the MIDI control changes.

4.3.1 Parameters



Target

Determines whether glide is enabled for each oscillator.

Mode

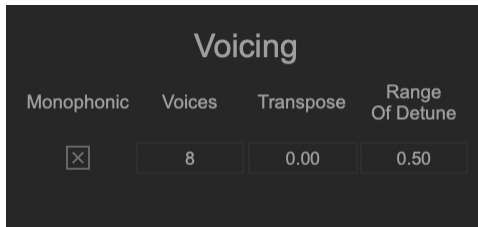
You can choose from two types of glide modes.

If you select Always, the glide effect will always be active, and if you select Legato, the glide effect will only occur when consecutive note-ons occur.

Time

You can specify the time it takes to reach the desired note.

4.8 Voicing



This section allows you to change to monophonic mode, set the number of voices, and set the overall pitch.

4.8.1 Parameters

Monophonic

When on, it operates as a monophonic synthesizer.

Bound

Use this when Monophonic is on. If this setting is enabled and another note-on occurs during a note-on, the envelope and LFO will not be retriggered (for example, reset).

Voices

Controls the maximum number of simultaneous voices.

Transpose

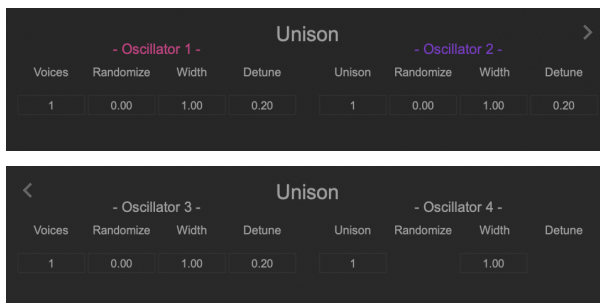
Controls the pitch of the oscillator. ± 1 is a semitone, ± 12 is an octave.

Range Of Detune

In the unison function described below, Controls the range of pitch deviation when Detune is at its maximum value.

For more information, see the next section, 4.9.2 How does Range Of Detune work in Unison?

4.9 Unison



This function allows multiple input notes to be played simultaneously, adding thickness, breadth, and power to the sound.

4.9.1 Parameters

Voices

Controls the number of sounds that are played with a note-on.

When used in conjunction with Width and Detune (described below), it can add width and thickness to the sound.

Randomize

When simultaneous notes are played, the output start angles of each audio signal are randomly shifted.

Without this function, the start angles of multiple audio signals produced by Voices will be aligned, resulting in an increase in volume without any effect such as thickness or spaciousness.

Furthermore, if you use only Detune and do not use this parameter, unison will produce a thick sound due to the different pitches of the multiple audio signals, but a large undulation will occur immediately after the sound is released. This is also caused by the waveform start angles being aligned. This function is an effective way to avoid this.

Width

Controls the stereo width of the audio signal.

This parameter also has no effect if the start positions of multiple sounded waveforms are aligned. This function is intended to be used in conjunction with Randomize.

Detune

This controls the pitch offset for each of the multiple audio signals. When this parameter is at its maximum value, the offset will follow the Range Of Detune setting described above.

4.9.2 How does Range Of Detune work in Unison?

The Range Of Detune in the Voicing section determines the maximum value of the detune range for notes played in unison.

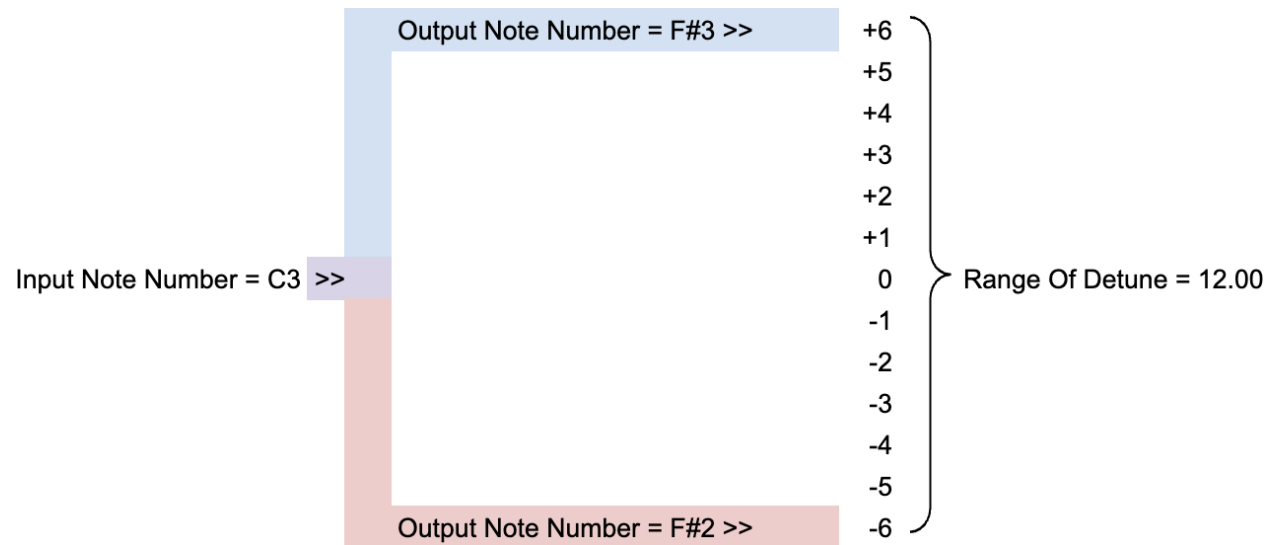
Let's take the following configuration as an example to see how it works:

Voicing > **Range Of Detune** : 12.00

Unison - Oscillator 1 > **Voices** : 2

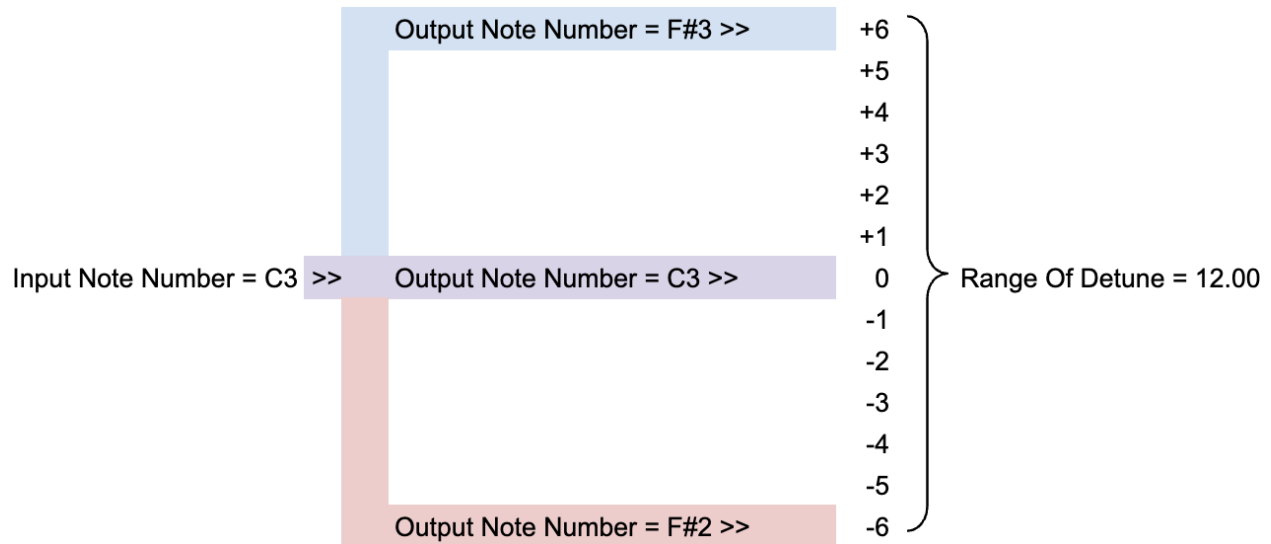
Unison - Oscillator 1 > **Detune** : 1.00

A Range Of Detune of 12.00 and a Detune of 1.00 (100%) means that the detune will be within a maximum range of one octave above or below the center. Unison > Voices is 2, so if you enter a note number of C3, the two C3 notes will be separated by a sixth above or below the center.



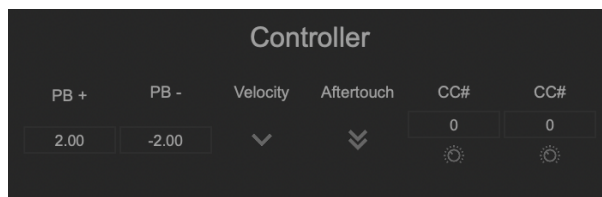
So what happens if Unison > Voices is 3?

In this case, C3, F#3, and F#2 are sounded by separating them equally across the range of one octave above and below.



Depending on how you use Range Of Detune, you can use it not only as a detuning effect to add thickness, but also to simulate an organ using octave unison, for example.

4.10 Controller



This section determines the behavior when MIDI information such as pitch bend, velocity, and control change is received.

4.10.1 Parameters

PB +

Controls the maximum pitch change when the pitch bend wheel is moved upwards.

PB -

Controls the maximum pitch change when the pitch bend wheel is moved downwards.



Velocity

You can select which parameter the velocity change value will be applied to.



Aftertouch

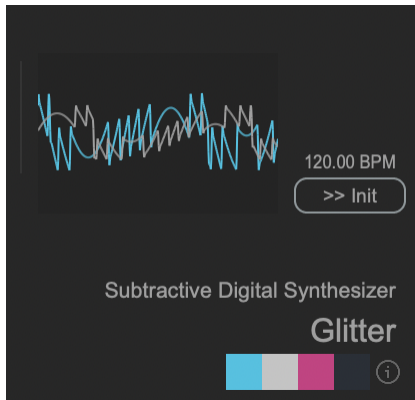
You can select which parameter the aftertouch change value will be applied to.



CC#

You can select which parameter the change value caused by the control change from the specified control number will be applied to.

4.11 Information



This section is responsible for displaying the DAW's BPM and version information, as well as initialization.

4.11.1 Parameters

Heat

Initializes the settings of this software.



Information

Displays the version of this software.