HY-Delay4 ver 1.0.0

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Registration

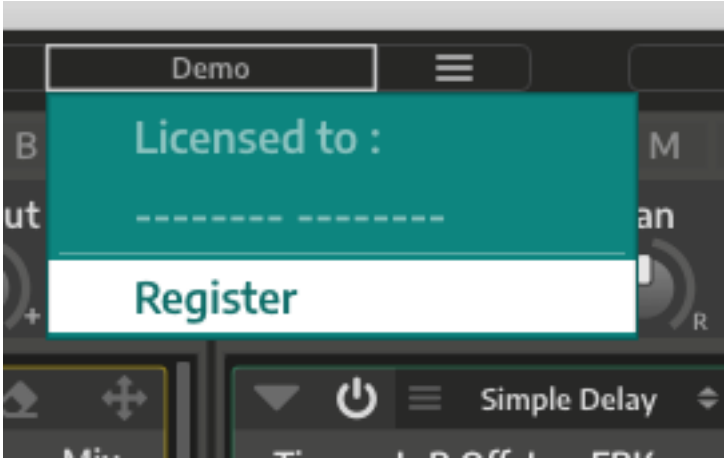
There are 2 ways to register your plugin.

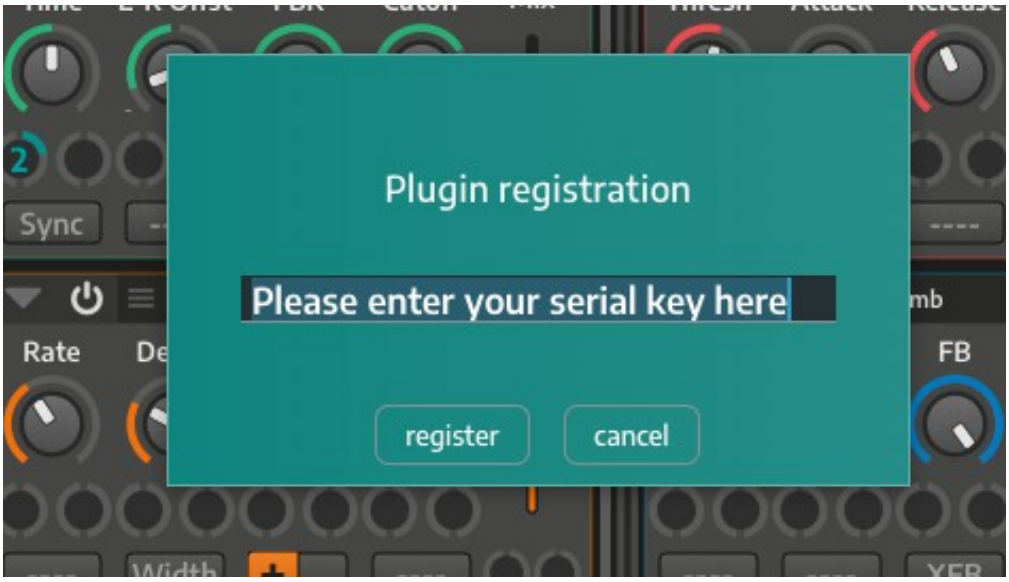
1. Drag and drop

Drag and drop your **keyfile** onto the plugin window directly.

2. Copy&Paste

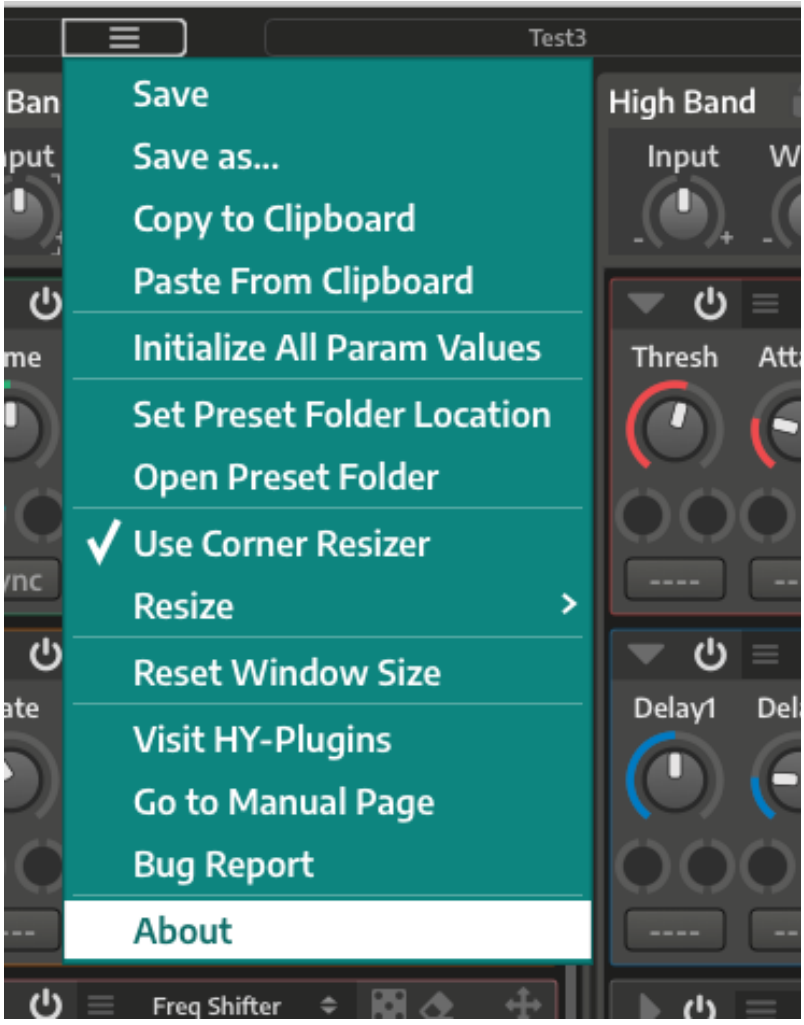
1. Open your **keyfile** with text editor and copy all strings
2. Click "**Demo**" button > select "**Register**" > paste it > press "**register**"





Once the plugin is registered, the word "**Demo**" will be replaced with the word "**Registered**".

Plugin Menu



Initialize All Param Values: Initializes all parameter values

Set Preset Folder: Allows you to change the preset folder location.

Open Preset Folder: Opens the preset folder

Use Corner Resizer: Turns Corner Resizer on/off in order to resize the plugin window

Resize: Resizes the plugin window to desired size

Reset Window Size: Resets the window size

Visit HY-Plugins: Jumps to our homepage

Go to Manual Page: Jumps to the manual page

Preset

You can load a stored preset file by clicking the preset button. You can also select a preset with the arrow buttons.

Save: Overwrites the currently loaded preset

Save as: Creates a new preset

Default Preset Folder Location:

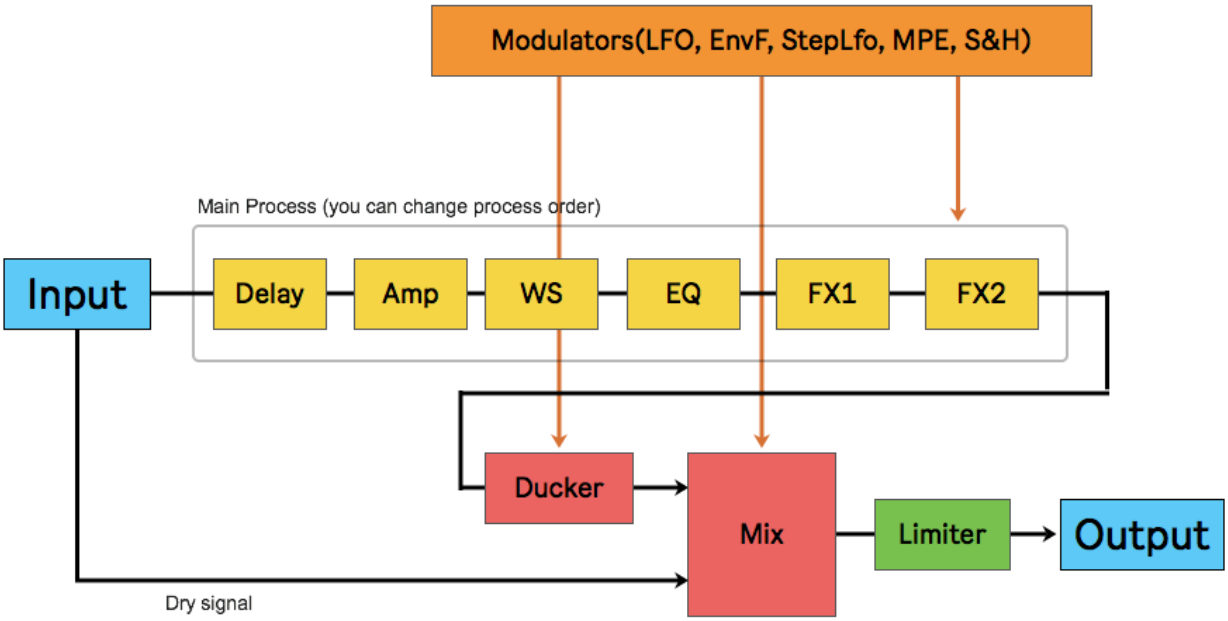
Mac : *Library/Audio/Presets/HY-Plugins/HY-Delay4*

Win : *C:\Users\user name\Documents\HY-Plugins\HY-Delay4*

Resizing Plugin Window

You can change the plugin size using the Corner Resizer.

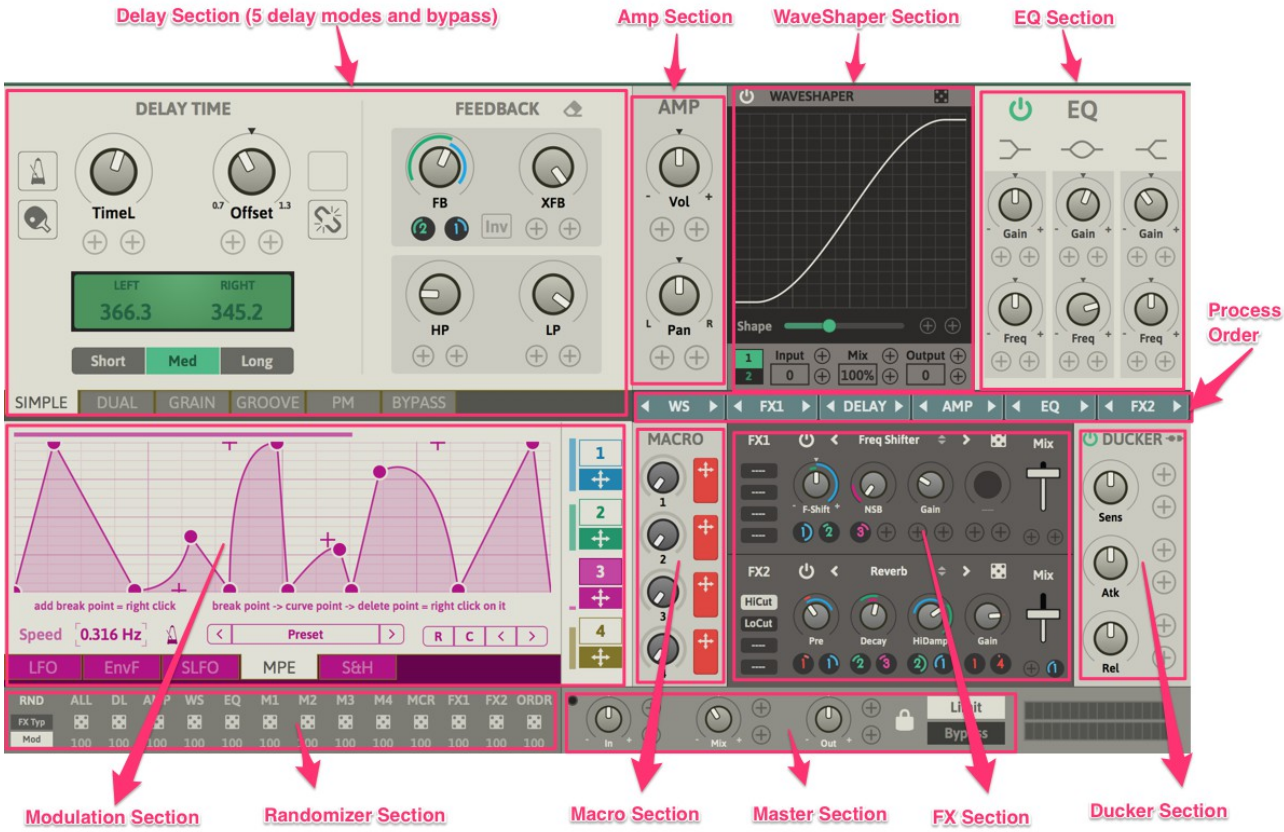
Signal Flow



There are 6 main signal processes (Delay, Amp, WS, EQ, Fx1, Fx2). You can also drag and drop the processes in the signal chain to change their order.

Effect parameters which have small knobs below the main knob can be modulated.

Plugin Window Overview



Delay Section:

There are 5 delay modes (Simple, Dual, Grain, Groove, PM). If you want to use this plugin without a delay, you can use bypass mode.

Amp Sections:

You can control the volume level and pan position of the wet signal here.

WaveShaper Section:

You can add a waveshape effect here.

EQ Section:

3-Band EQ

Modulation Section:

There are 4 modulator units available.

Each unit has 5 modes (LFO, Envelope Follower, StepLFO, MPE, Sample&Hold). You can assign modulation to a control using drag and drop.

Macro Section:

You can control multiple parameters at once with single macro knob.

For example: If you assign the Macro1 control to both the delay time and feedback controls, you then can control these two values with the Macro1 control knob.

FX Section:

2 multi-fx units are available.

22 effect types are available.

Process Order Section:

You can change the processing order of main processors here.

Ducker Section:

You can control the wet signal level with the dry/sidechain input via the Ducker effect.

Master Section:

You can control the Master in/out level, Dry/wet mix balance, Limiter on/off and Bypass on/off.

Randomizer Section:

You can randomize parameter values here.

Delay Section

Simple Delay Mode

It's a simple stereo delay.

Parameters:

- Time: Controls the delay time. By unlinking the left/right time, you can set them independently
- Offset: Sets the delay time offset between left and right. Left/right unlinked is not available
- Sync: Delay time will be synced to the host bpm speed
- PingPong: Delay is set to pingpong mode
- Time Range: Sets the delay time range, short (30~300), med (100~1000), long (800~3200)
- FB: Sets the feedback level
- XFB: Sets the cross fb level
- Inv: Inverts feedback signal polarity
- HP: Sets the cutoff frequency for highpass filter
- LP: Sets the cutoff frequency for lowpass filter

Dual Delay Mode

This is a dual ping pong delay mode.

Two ping pong delay lines are connected in a series.

Parameters:

- Balance: Sets the balance between Delay1 and Delay2

Grain Delay Mode

This is a granular pitch shift delay.

Parameters:

- Tune: Sets the pitch shift value in semitones (-12st ~ +12st)
- Fine: Sets the fine tuning for the pitch shift control (-0.5st ~ +0.5st)
- Grain Len: Sets the grain length, this value affects the pitch shift's character
- Pitch Rnd: Adds randomness to the pitch shift
- Diffuse: Sets the diffuse level

Groove Delay Mode

Two delay lines are used for creating rhythmic patterns.
The Delay time of the second delay line is defined by the base delay time and shuffle values.

Parameters:

- Shuffle: The time knob controls the delay time of the first delay line. The delay time of second delay line is the base Delay time * the Shuffle value
- Accent: The first delay line output will be emphasized by this value

PM Delay Mode

This delay mode is inspired by the Lexicon Prime Time delay.
There are two delay lines availabin parallel mode. This delay mode has two modes: Vintage and Modern.
In Vintage mode, when delay time is multiplied, the bandwidth of delayed signal is narrowed and the high frequency content will be lost.
In this mode, the input signal for the delay process will be down sampled to get longer delay times. As the delay time becomes longer, the high frequency of the delayed signal will be reduced.

In Modern mode these process are skipped.
Therefore, no high frequencies are lost with longer delay times.

Parameters:

- ADJ: Delay time adjustment. Controls the delay time within x0.5~x1.0. Setting both fully to the left will halve the signals.
- Vintage/Modern : Toggles between these two modes
- x1~x12: Multiply the delay time. In vintage mode, as delay time becomes longer, the high frequency content of delay signal will be lost
- Vo A/B: Volume control for Delay A/B
- Pan: Pan control for delay A/B
- Hold: Current delayed signal will be looped
- Rev: The hold signal loop will be reversed

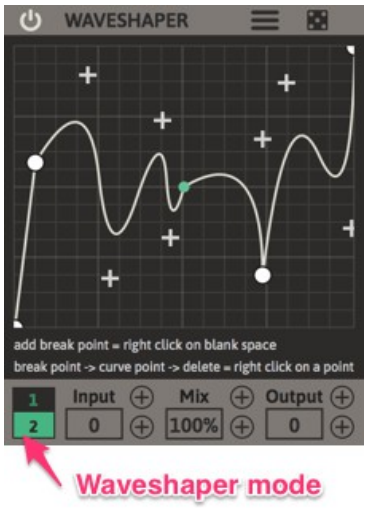
Bypass

If you want to use the plugin without these delay modes,
you can use the Bypass mode.

AMP Section

You can control the Volume level and Pan position here.

WaveShaper Section

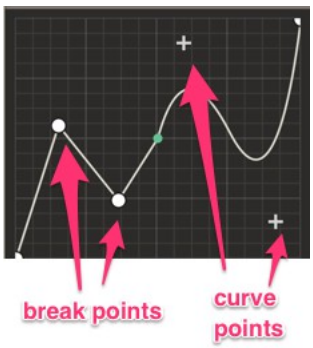


You can apply the Waveshaper effect here.

There are two waveshape modes.

WS Mode:

- Mode1: Simple waveshaper , you can control waveshaper with the shape slider
- Mode2: You draw your own shape with the shape editor



In WS Mode2, you can make your own shape with shape editor.

Right-click on blank field to add a new break point

Right-click on break point and drag it to change to curve point

Right-click on curve point to delete it

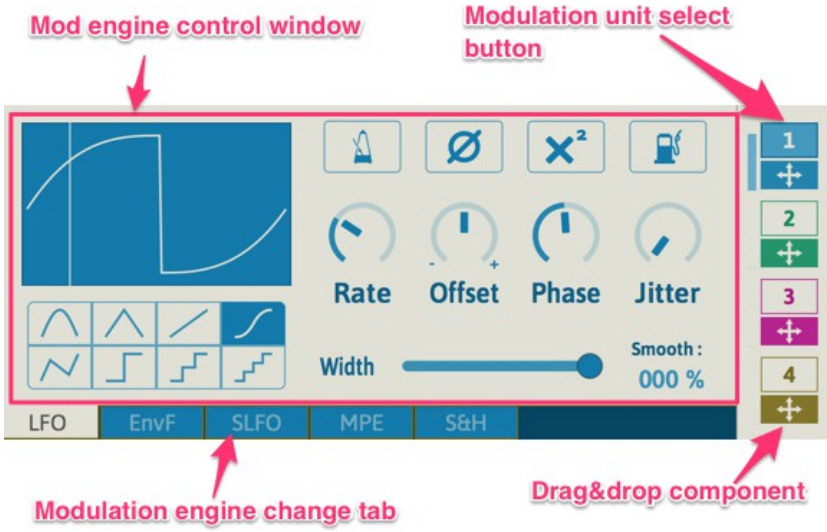
EQ Section

This is a simple 3-band equalizer.

You can control the gain/freq value per band.

You can bypass the EQ by turning off the power button

Modulation Section



There are 4 modulation units available.

Each unit has 5 mod engines (LFO, EnvFollower, StepLFO, MPE, Sample&Hold). You can change the Mod engine with the bottom tab button.

You can assign these modulation sources to target parameters via drag and drop. The different colors represent each Mod unit.

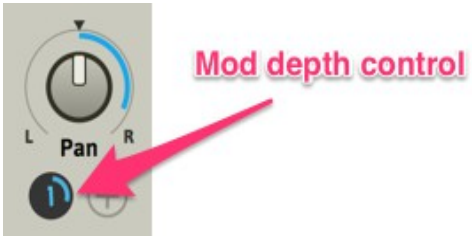
Modulation Assignment

Parameter knob/slider which have small circles below the main knob/slider can be controlled by modulation sources and macro knobs.

There are 2 ways to make a modulation assignment.

1, Drag&Drop

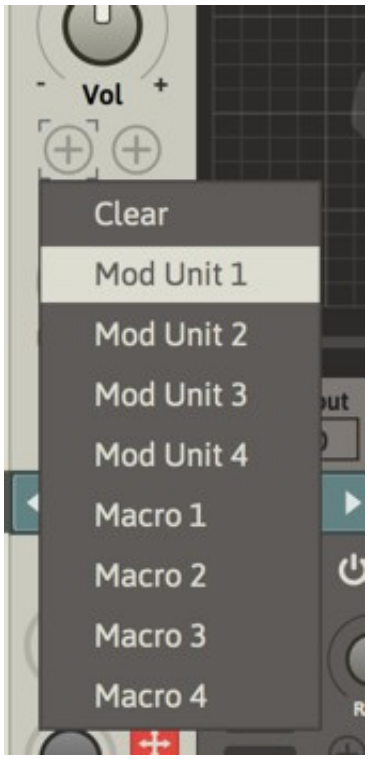
You can drag and drop the cross arrow icon to the target parameter's small circle to make a assignment.



When the modulation control is added to a small circle, it becomes small knob.

You can set the modulation depth with it by left clicking and moving your mouse up or down.

2, Right-Click

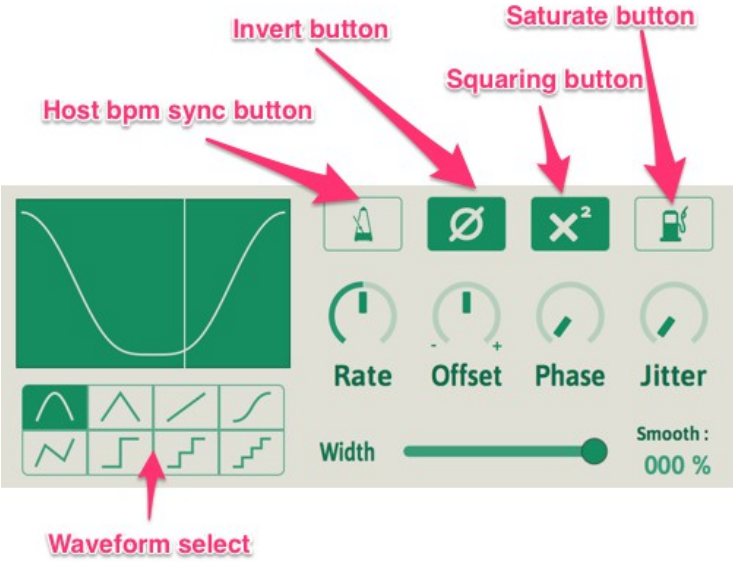


Right-click on a small circle and popup menu will show up.

You can select the modulation source with it.

You can also clear a modulation assignment with “Clear” option.

LFO

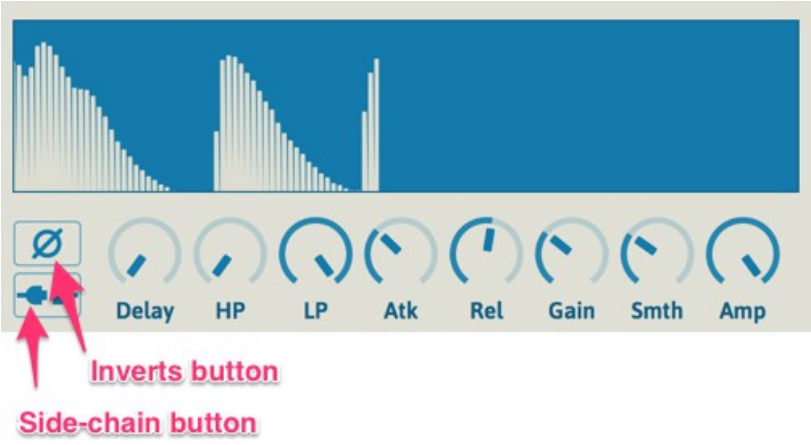


Low frequency oscillator.

Parameters:

- Waveform: Changes the lfo waveform
- Rate: Sets the lfo speed
- Offset: Adds the offset to the lfo signal
- Phase: Controls the waveform start phase position
- Jitter: Adds some randomness to the lfo signal
- Sync: Lfo speed will sync to the host bpm speed
- Invert: Inverts the lfo signal
- Square: Squares the lfo signal
- Saturate: Saturates the lfo signal
- Width: Controls the amp width of lfo signal
- Smooth: Smooths the lfo signal

Envelope Follower

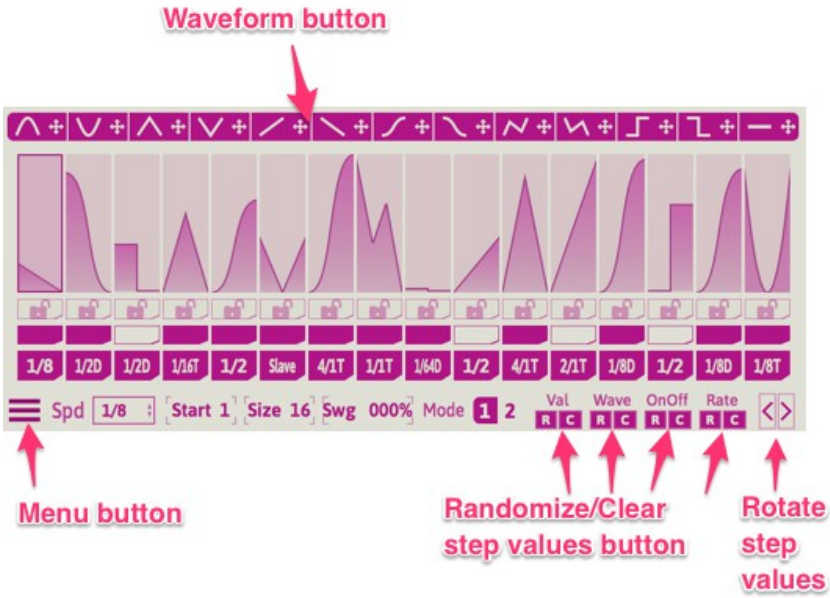


Input/side-chain signal will be converted to the modulation signal via the envelope follower. By turning on the side-chain button, the envelope follower engine reacts to side-chain signal.

Parameters:

- Invert: Inverts the envelope signal
- Side-chain: The envelope follower reacts to the side-chain signal
- Delay: Delays the envelope signal
- HP: Applies a highpass filter to envelope follower input signal
- LP: Applies a lowpass filter to envelope follower input signal
- Atk: Sets the attack time of envelope follower
- Rel: Sets the release time of envelope folower
- Gain: Sets the gain level of envelope signal
- Smth: smooths the envelope signal
- Amp: Sets the amp level of envelope signal

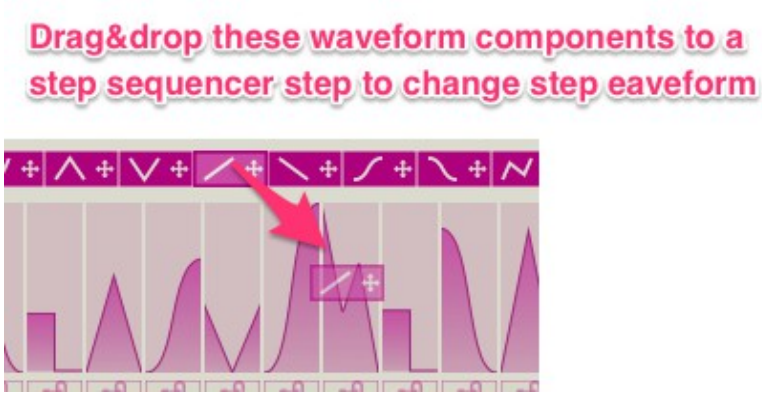
Step LFO



Step sequencer + LFO

You can trigger a different waveform with different speeds and level per step.

Step waveform change

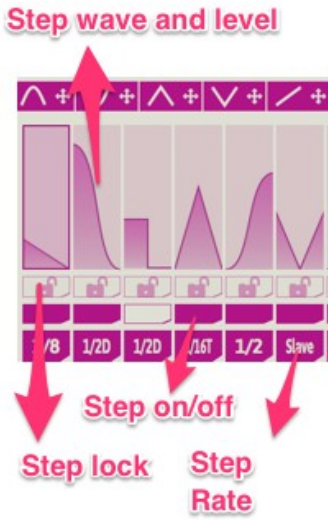


You can change the steps waveform with drag and drop waveform components above step seq steps.

If you want to change the waveform of multiple steps, press hold the Shift key while dragging a wave component to the target step.

If the step is locked, you cannot use drag and drop to change the waveform.

Step LFO Control



- Step wave/level: Sets the waveform that is triggered on that step and amplitude level of that waveform
- Step lock: With this turned on, that step will ignore any waveform change or randomize action
- Step On/Off: if this is inactive, that step will not generate any of Mod signal
- Step Rate: Sets the lfo speed of each step

Step Rate

There are 2 step rate modes.

Mode1:

In this mode, the step rate is independent from the sequencer speed of the step lfo. (except in a Slave mode)

In the picture to the left, the step rate of first step is “**Slave**”.

In this case , the sequencer speed is “**1/8**”, so step rate of the first step is “**1/8**”.

The step rate value of the second step is “**1/16**”, so 2 intervals of the waveform will be triggered on this step.

This is because the Step Rate is 2x faster than the Step Seq speed.

Mode2:

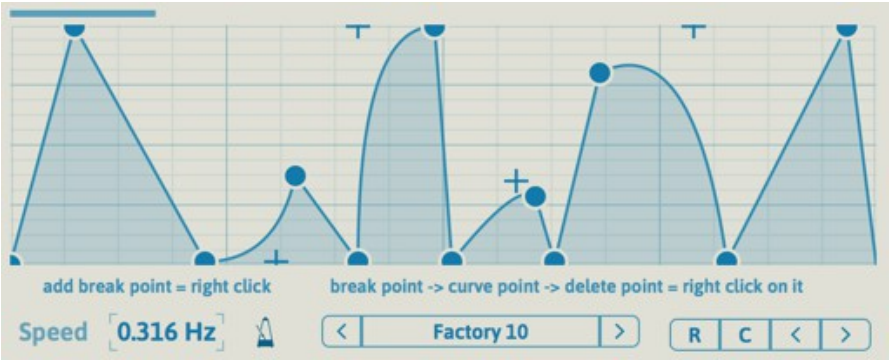
In this mode, the step rate is relative to the sequencer speed of a step lfo.

In the picture to the left, the Step Rate value of the first step is “x1”. This means lfo rate of the first step is 1/8 * 1.0

= 1/8.

The step rate of the second step is x0.5, so the actual speed of this step is 2x slower that Master Seq speed = ¼.

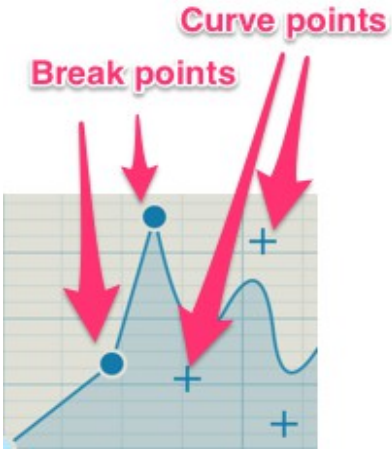
Multipoint Envelope



You can make your own envelope shape with this engine.

Parameters:

- Speed: Sets the envelope shape scan speed
- Sync: The scan speed will be synced to the host bpm
- R/C/</>: R=Randomize, C=Clear, <> = Shift break/curve points left/right



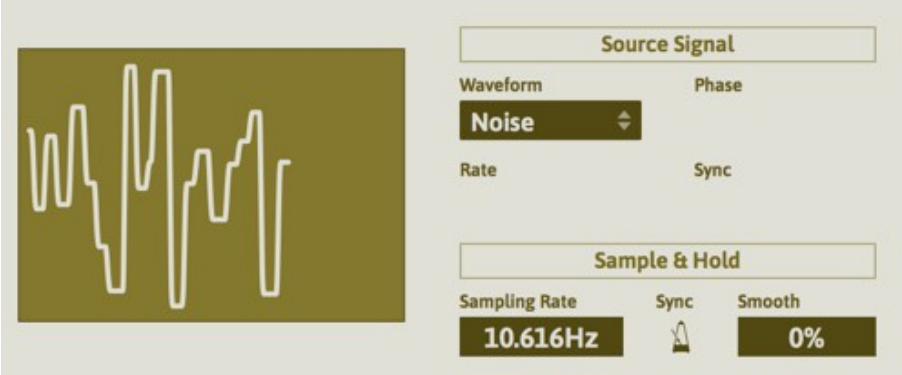
Shape Control Point:

- **Circle**: Break point
- **Cross**: Curve point

Add/Delete Control Point:

- **Right-click on blank space**: adds a new break point
- **Right-click on a break point**: break point > curve point
- **Right-click on a curve point**: curve point > delete

Sample&Hold



Sample & hold processor + source signal generator.
This engine has its own signal generator with sample and hold it for generating a Mod signal. The source signal generator is a simple LFO.

Source Signal Generator:

Waveform: Sets the source waveform

Rate: Sets the rate of the source signal

Sync: Bpm synced state

Phase: Sets the phase start position

Sample & Hold:

Rate: Sets the sampling interval

Sync: Bpm synced state

Macro

You can control multiple parameters at once with a single macro knob. You can drag and drop arrow icons to target parameters.

Example:

In the picture to the left, the Macro Knob1 is assigned to Volume and Pan parameters.

So when you increase the Macro Knob1 values, the volume level will be increased and pan position will be moved to left side.

Ducker

If the Ducker is active, the wet signal will be attenuated by a dry signal.

If the side-chain button is active, the ducker will react to the side-chain input.

Parameters:

- Sens: The higher this value, the ducking will occur at a lower threshold level
- Atk: Sets the time it takes the ducking signal level to reach target level
- Rel: Sets the time it takes the ducking signal to return to initial level

Master Control

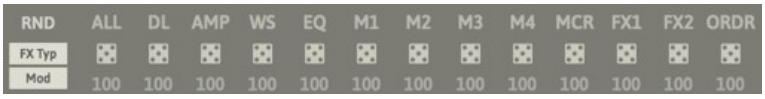
You can control the master in/out level, dry/wet mix balance, limiter on/off and bypass on/off here.

If Master Params lock is active, the master parameter will not be changed when you load a new preset.

Parameters:

- In: Sets the main input level
- Mix: Sets the dry/wet mix balance
- Out: Sets the main output level
- Limit: Turns limiter on/off
- Bypass: Bypass on/off

Randomzier



You can randomize parameters of a target section here.

By clicking the dice icon, the parameters of target section of the plugin will be randomized.

The number below the dice icon is randomized range from 0-100%.

If you set this to 0, that section will not be randomized.

Therefore if you want to randomize all sections except AMP section,

you can set range value of AMP to 0.

Parameters:

- Dice: Left click = Randomize, Right click = Clear
- Number below dice: Randomize range 0-100%
- FX Type: When active, the fx type will be randomized
- Mod: When this is active, the Mod Source and Mod Depth values of a target parameter will also be randomized.

FX Unit

This is a multi-effect unit.

There are two fx units available.

Each unit has 22 effect types.

FX Types

Simple Delay

Simple delay effect

Parameters:

Time = delay time
Sync = delay time bpm sync on/off
L-R Offset = offsets right delay time
FBK = feedback level
Tone = adjusts feedback filter

Ping Pong Delay

PingPong type delay

Parameters:

Time = delay time
Sync = delay time bpm sync on/off
Interval = pingpong interval between left and righ
FBK = feedback level
Tone = adjusts feedback filter

Reverse Delay

Delayed signal will be reversed

Parameters:

Time = delay time
Sync = delay time bpm sync on/off
L-R Offset = offsets right delay time
FBK = feedback level
Tone = adjusts feedback filter

M-Tap Delay

Multi-Tap Delay

Parameters:

Time = delay time
Sync = delay time bpm sync on/off
Spread = spreads delay time ration between taps
FBK = feedback level
Tone = adjusts feedback filter

Haas

Adding short delay to left and right signal

Parameters:

L-Delay = left delay time
R-Delay = right delay time
Gain = gain level

SVF

State variable filter

Parameters:

LP/BP/HP = morphable filter type
Cutoff = cutoff frequency
Reso = resonance level
Smooth = smoothness of cutoff freq change

HP/LP

One pole highpass and lowpass filter

Parameters:

HP = highpass cutoff frequency
LP = lowpass cutoff frequency
Gain = gain level

Formant

Formant filter

Parameters:

Vowel = vowel
Smooth = smoothness of vowel change
Char = vowel character
Gain = gain level

Comb

Comb filter

Parameters:

Delay1 = delay time1
Delay2 = delay time2
FB = feedback level
Tone = turn right = bright
Long1 = by turning this on, the delay time range of delay1 will be longer
Long2 = tby turning this on, thedelay time range of delay1 will be longer
XFB = cross feedback on/off

Chorus

Chorus effect

Parameters:

Rate = LFO speed
Depth = modulation depth
HP = highpass cutoff frequency
LP = lowpass cutoff frequency

Flanger

Flanger effect

Parameters:

Rate = LFO speed
Depth = modulation depth
Width = shift LFO phase
FBK = feedback level
+/- = feedback polarity
Delay = offset delay time

Phaser

Phaser effect

Parameters:

Rate = LFO speed
Depth = modulation depth
Width = shifting LFO phase
FBK = feedback level
Tone = adjusts feedback filter

Tremolo/Pan

Tremolo/Auto Panner

Parameters:

Rate = LFO speed
Sync = lfo speed sync to host tempo
Sin/Tri = lfo waveform
Width = full left = tremolo, fully right = auto panner
Cutoff = cutoff frequency of hp/lp
LP/HP = selects filter type (you cannot use both types at the same time)

Freq Shifter

Frequency shift effect

Parameters:

F-Shift = frequency shift amount
NSB = negative sideband level
Gain = gain level

Pitch Shifter

Pitch shift effect

Parameters:

L-Shift = left pitch shift
R-Shift = right pitch shift
Detune = detune mode on/off button
Gain = gain level

Lofi

Lofi effect combination of bit crusher and re-sampler

Parameters:

BitDep = bit depth
SampleRate = sampling rate
HP = highpass cutoff frequency
LP = lowpass cutoff frequency

Overdrive

Overdrive effect

Parameters:

Drive = drive level
HP = highpass cutoff frequency
LP = lowpass cutoff frequency
Level = output level

Clipper

Clipping effect

Parameters:

Gain = input gain
HP = highpass cutoff frequency
LP = lowpass cutoff frequency
Level = output level

Compressor

Compression effect

Parameters:

Thresh = signal above this level will be compressed
4/1,16/1 = compression ratio
Attack = attack time
Release = release time
Gain = gain level

EnvShaper

Envelope shaping effect

Parameters:

Attack = emphasize/de-emphasize attack portion
Sustain = emphasize/de-emphasize sustain level
Gain = gain level

Gate

Gate effect

Parameters:

Thresh = signal below this level will be suppressed
Attack = attack time
Release = release time
Gain = gain level

Reverb

Reverbration effect

Parameters:

Pre = pre delay time
Decay = decay time
HiDamp = amount of high damping
Gain = gain level
HiCut/LoCut = apply hi/lo shelf filter to the input signal

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HY-Delay4

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