THE PERCOLATOR

DO THE THING

TIME TO PERCOLATE!

THE PERCOLATOR is a semi-modular multi effects audio processor featuring extensive modulation, a Granular Looper and a modular Snapshot System. We designed The Percolator with both sound design and also live performance in mind and hope that the Percolator delivers you a unique and intuitive way to tackle a wide range of sound bending tasks, from adding gentle movement to pads and chords, creating interesting textures and movement, through to completely mangling and rearranging loops or even whole mixes into new unrecognizable results.

The Percolator was inspired by a desire to try to somehow meld hardware and software characteristics into one audio processing experience. We wanted a singular interface, with everyone in one place and always accessible with familiar modules and control. We needed a way to instantly and effortlessly record things when magic happens. We added a few twists of our own to the effect modules, but the real heart of The Percolator is the interplay between the effects, the modulations and snapshots and the Looper. That's where the good times are.

We have put a whole bunch of love and aspiration into the design and development for The Percolator and are super happy and proud of how the product has evolved through this process. We hope you have as much fun creating with it as we did designing and building it - and as we do have using it ourselves.

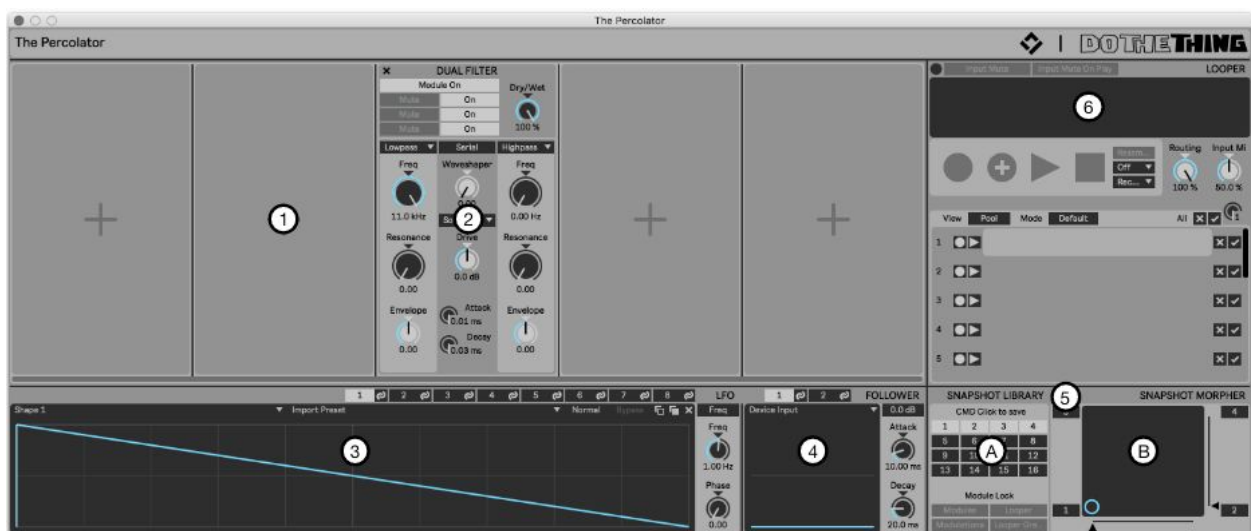 Go! Mangle! Modulate! Percolate!

S & S. Dec 2020.

Overview

1. Effect Rack Slots
2. Effect Module
3. LFO Module
4. Envelope Follower Module
   a. Snapshot Module
   b. Library
5. XY Pad Morpher
6. Looper Module with Granular Player

The heart of The Percolator is the interplay between the different modules.

The Effect Rack can hold up to 5 Effect Modules simultaneously in a serial, left to right, configuration and can be easily reordered. The Effect Rack includes an internal limiter which sits on the Effect Rack output and before the Looper.

Modulation is handled by 8 LFOs, consisting of up to 8 shape variations each (different Shapes can be saved to different Snapshots), and 2 Envelope Followers, with some modules having further limited Envelopes on board. Almost anything can be a modulation target and sources can be mapped to several targets.

The Modular Snapshot System consists of 2 components; a Library with 16 Snapshot Slots and an XY Pad which enables morphing between 4 assignable Snapshots. Each Snapshot can save the complete state of the Effects Modules, the Modulation Module and mappings and the Looper including the Granular Player. The different Modules are each assigned their own Snapshot layer and layers from different Snapshots can be recombined and even saved to new Snapshots.

The Looper enables recording of the output signal of the Effects Modules. The output of the Looper can be routed back through the effect modules for endless resampling and mixed with incoming audio. Up to 16 Loops can be temporarily saved to the Loop Pool* and recalled to the player. Playback of Loops stored in the Loop Pool can be modulated.

The Looper also features a Granular Player with up to 8 Grains simultaneously available for getting all weird, stuttery and grainy.

* Ableton Live will not save recordings stored in the Loop Pool when saving Live Sets!
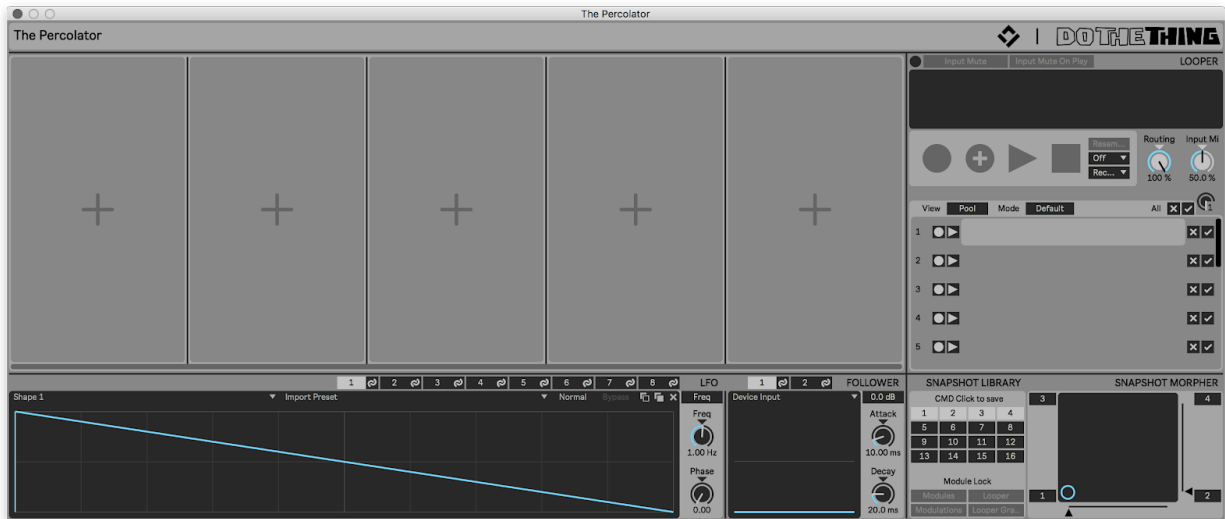
Installation

Windows/ Mac

Do we even need this?

Effect Rack & Modules

The Effect Rack section of The Percolator can hold up to 5 simultaneous Effects Modules at any time. We've included 6 modules with this release and have some interesting ideas for possibly adding further modules in the future. All effect modules share some common features and interactions. A visual reference, the serial signal path runs left to right through the Effect Modules and then to the Looper. The output of which can then be routed back to the Effect Rack input. So really, the Looper surrounds the modules, but we thought that might be difficult to explain.
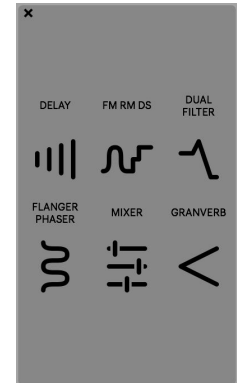
Module Load, Delete, Bypass & Swap Position

1. To load a Module click on the On/ + symbol in any of the empty slots.
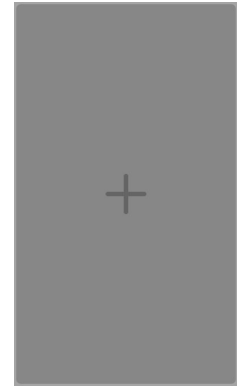
2. Click on a Module to select it from the pop-up Menu.

Module Mixer Section

1. To delete a Module click on the (X) in the top left corner of any Module.
2. Each module can be individually activated or bypassed by clicking on the Module On/ Off button.
3. Change any module's position in the rack by clicking and holding on the title bar and dragging the module to the desired slot.
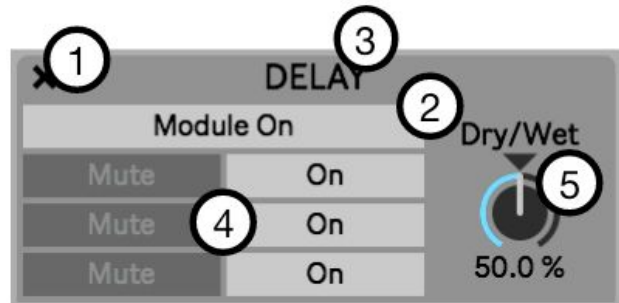
Split Band processing, Muting, Bypass
4. Each module features All Band, High, Mid & Low Frequency band Output Mute and Module Bypass Buttons. These allow you to apply module effects to, or Mute the output of, any single band, any combination of bands, or all bands.

Dry/ Wet Mix
5. To the Right of the Frequency Band Mute and Bypass buttons is the Wet/ Dry mix.

Tips

Try different combinations of Muting and Bypassing bands to hear the difference in tone and behaviour at the click of a button.
Try changing the position of any effect module in the Rack to quickly and easily experiment with how the effect modules interact with each other in different configurations.

Notes

The effect modules can generate frequencies that cross the band crossover settings, even when those bands are bypassed or muted.

Delay

1. Input Mute is used to mute the module input. Selective muting of the module input can let delay tails ring without being retriggered by incoming audio.
2. Time adjusts the delay time.
3. Time Mode selects Ms or Interval mode for the Time dial.
4. Feedback adjusts the amount of feedback. Setting of 1.00 or above will result in a persistent loop, even if Live's transport is stopped.
5. Feedback Frequency & Pitch Shifting Mode On/ Off
6. Feedback Frequency & Pitch Shifting Mode toggles the shift amount mode between   Freq (Frequency) and Robot (Pitch).
7. Position assigns the Frequency/ Pitch circuit to either the Feedback or to the Module Output.
   When assigned to the feedback loop, the pitch is applied to each loop as it is generated, resulting in a constantly rising or lowering pitch effect, similar to a Shepard's Tone.
8. Feedback Frequency & Pitch Shifting Amount adjusts the Frequency or Pitch Shifting amount in positive (clockwise from center) or negative (counter clockwise from center) values.
9. Pre/ Post Filter Toggle places the Feedback before or after the Low Pass and High Pass Filter section.
10. Feedback Low Pass Filter
11. Feedback High Pass Filter Low and High Pass filters in a serial configuration assigned to the Delay tail and Feedback only. The dry module input is not affected by the filters.

12. Stereo Width widens the delay's stereo image. Extreme settings will result in a stereo ping pong delay effect.
13. Ducking Section
    a. Output Ducking is used to duck the wet delay output of the Delay module against the audio signal coming into the module. The dry input signal is unaffected.
    b. Feedback Ducking reduces the Feedback amount based on the input signal. This achieves a similar effect to placing an envelope follower on the feedback parameter.
    c. Ducking Envelope Attack
    d. Ducking Envelope Release
   Attack and Release times for the Feedback Ducking amounts.

Tip!

Using high Feedback settings with Frequency or Pitch.
When using high feedback settings with Frequency or Pitch shifting, be cautious when stopping playback. With feedback settings of 1.00 and above the Delay will continue to loop and feedback when Live's transport is stopped. If the Frequency or Pitch shifting are also activated they will continue to also feedback and can potentially continuously rise to painful levels.

The robot (pitch) shifting might cause some delay time differences.

Dual Filter

1. Filter 1 and 2. Filter 2
2. Filter Type selects the filter mode. Available types are High Pass, Low Pass, Bandpass, Notch and Peak.
3. Cutoff Frequency adjusts the Frequency cutoff amount.
4. Resonance adjusts the filter resonance.
5. Cutoff Frequency Envelope adjusts the Envelope depth applied to the cutoff frequency.
6. Filter Envelope Attack
7. Filter Envelope Decay
8. Attack and Decay amounts for both filter's cutoff frequencies.
9. Serial or Parallel Configuration sets the configuration of the filter to be either Serial, with the Waveshaping and Drive sections after Filter 1 and before Filter 2, or Parallel with the Waveshaping and Drive sections assigned to Filter 1 only.
10. Waveshaper Amount adjusts the waveshaping amount which applies character to the distortion, not just gain.
11. Waveshaper Shape selects the Waveshape type used by the Waveshaper.
12. Drive controls a gain stage for overdriving the signal.
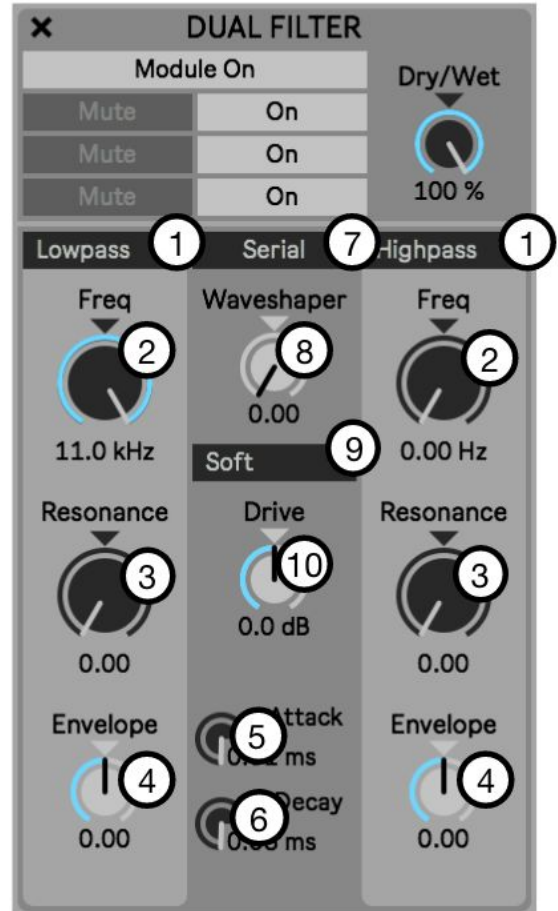
FM RM DS

Frequency Modulation (FM) Mode
1. Frequency/ Note Button toggles between frequency and musical interval modes for the Frequency/ Note dial.
2. Frequency/ Note Dial sets the position of the frequency modulator's pitch.
3. Depth sets the amount of the frequency modulator effect.
4. Depth Envelope sets the amount of the envelope in positive or negative values.

Ring Modulation (RM) Mode
5. Frequency/ Note Button toggles between frequency and musical interval modes for the Frequency/ Note dial.
6. Frequency/ Note Dial sets the position of the Ring Modulator's pitch.
7. Depth sets the amount of the Ring Modulator effect.
8. Depth Envelope sets the amount of the envelope in positive or negative values.
9. Filter Envelope Attack
10. Filter Envelope Decay
    Attack and Decay amounts for both filter's cutoff frequencies.

Downsampler (Sample Rate Reduction)
11. Amount sets the amount of rate reduction being applied.
12. Pre Filter On/ Off Button activates the Low Pass filter placed before the Downsampler. This combination can be used to create the typical "YAYA" effect that you can often hear in old Daft Punk records.
13. Amount controls the filter cutoff frequency.
14. Post Filter Fader On/ Off
15. Amount activates the low pass filter placed after the Downsampler. Here, the more you downsample, the lower the filter goes. You can use this to hide the very nasty aliasing created by the downsampling which can help to produce a less digital, more lofi style sound.
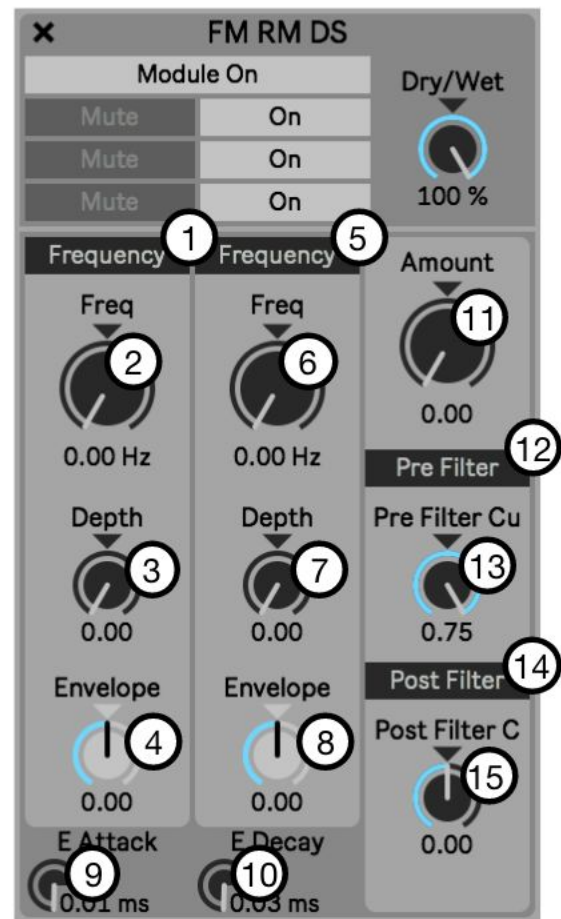
Granverb

1. Input Mute is used to mute the module input. Selective muting of the module input can let the reverb tail ring without being retriggered by incoming audio.
2. Decay Time sets the amount, or size, of the reverb.
3. Feedback sets the amount of feedback being applied to the reverb tail.
4. Feedback Frequency & Pitch Shifting Mode On/ Off
5. Feedback Frequency & Pitch Shifting Mode toggles the mode between Hz (Frequency) and Robot (Pitch).
6. Position assigns the Frequency or Pitch Shift to either the feedback loop or to the module output.
7. Feedback Frequency & Pitch Shifting Amount adjusts the Frequency or Pitch Shifting amount in positive (clockwise from center) or negative (counter clockwise from center) values.
8. Freeze can be used to catch short sections of reverb and loop them.
9. Feedback Low Pass Filter
10. Feedback High Pass Filter Low and High Pass filters are assigned to the Delay tail and Feedback only. The dry module input is unaffected.
11. Stereo Width widens the reverb's stereo image.
12. Diffuse changes the nature of the reverb effect. At low settings the Reverb will generate delay like taps and at high settings the reverb's decay will wash out in a more typical reverb manner.
13. Ducking Section
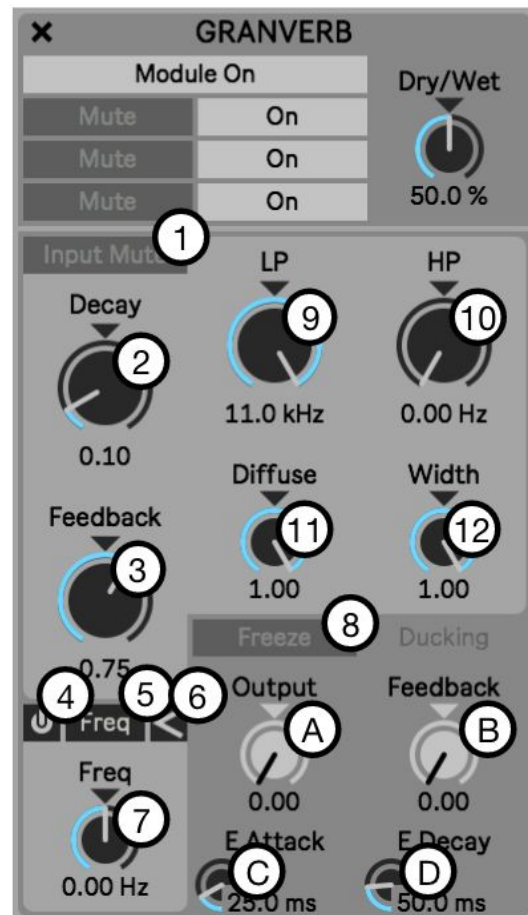
a. Output Ducking is used to duck the wet delay output of the Delay module against the audio signal coming into the module. The dry input signal is unaffected.
b. Feedback Ducking reduces the Feedback amount based on the input signal. This achieves a similar effect to placing an envelope follower on the feedback parameter.
c. Ducking Envelope Attack
d. Ducking Envelope Release
    i. Attack and Release times for the Feedback Ducking amounts.
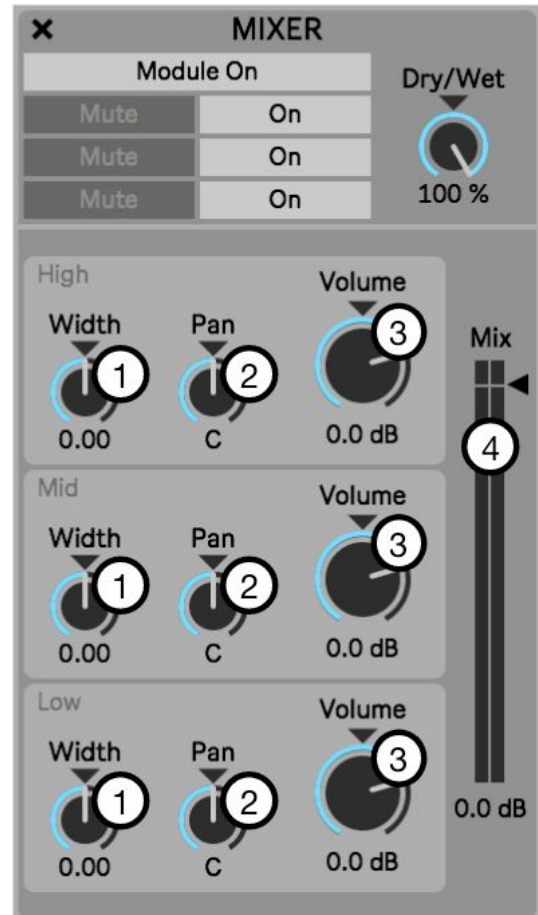
Mixer

High Band
Mid Band
Low Band

1. Stereo Width adjusts the stereo width of the band.
2. Pan Position sets the pan position of the band.
3. Volume sets the band volume.

Sum Volume

4. Sum sets the module output volume.

Flanger Phaser

Chorus/ Flanger
Chorus and Flanging effects can be achieved through by applying a sine wave modulating it's own delay time

1. **Frequency** sets the frequency of the sine wave.
2. **Time** Time changes the maximum delay time the sine wave can achieve, similar to an amount parameter.
3. **Iterations** Iterations can double the amount of delays for each the left and right side. Width offsets the phase of each sine wave (every delay for every iteration has its own sine wave).
4. **Feedback** causes the result output of the delays to loop back into the Feedback input.
5. **Stereo Width** adjusts the stereo width of the effect.

Phaser

6. Amount adjusts the Phaser depth.
7. Frequency sets the Phaser's rate.
8. Stereo Width adjusts the stereo width of the Phaser effect.
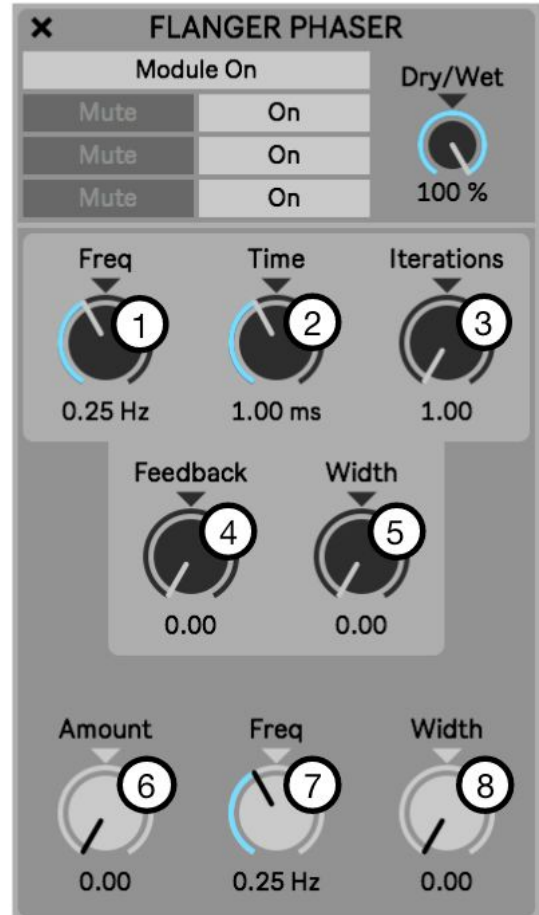
How to make a Chorus effect.
   Apply higher settings to the Iteration parameter and lower to the Time parameters to achieve a stronger Chorus character.
How to make a Flanger effect.
   Apply higher settings to the Feedback parameter and reduce the Width parameter to achieve a stronger Flanger character.

Modulation

Modulators. We has 'em.

LFO Module

1. LFO 1-8 Selection Tabs are used to assign the selected LFO to the front panel editor and controls.
2. LFO 1-8 Mapping Mode On/ Off Tabs are used to activate the mapping mode which enables linking the LFO to modulation target parameters.
3. Shape is a menu which is used to select the LFO shape for use. The Shape menu can hold 8 Shapes per LFO. Different LFO shapes can be saved to Snapshots.
4. Preset Library is a library of LFO shapes which can be loaded into the Shape menu.
5. Playback Direction sets the playback direction of the LFO.
6. Bypass is used to activate and deactivate the LFO's mapping assignments.
7. Copy LFO Shape copies the current LFO shape.
8. Paste LFO Shape pastes the copied LFO shape to the currently selected LFO.
9. X is used to delete breakpoints. If some breakpoints are currently selected, it only deletes those selected points. If no breakpoints are selected, it deletes the whole shape and replaces it with the default shape
10. LFO Rate Mode is used to select either Hz or Interval modes for the LFO Rate.
    a. When the LFO is setting to Frequency timing, the LFO playhead will continue to cycle when Live's playhead is stopped. In Interval mode, the playhead will only cycle when Live's playback is active.
11. LFO Rate sets the rate for the LFO.

12. Phase is used to offset the LFO start position. Moving the Start position will cause the LFO to begin playback from the selected position.
13. Waveform Editor is used to display the currently selected shape and can be edited.

Double click on the shape to create a breakpoint.

Click and drag to reposition the breakpoint.

Hold Shift to constrain the horizontal position of the breakpoint to the nearest breakpoint.

IE; IF there is breakpoint to the left of the breakpoint being edited, then the edited breakpoint cannot be dragged past the position of the left breakpoint.

Click in the editor and drag to select multiple breakpoints.

Hold Option and Drag to copy those breakpoints to a new position.

Envelope Follower Module

1. Envelope 1 & 2 Selection Tabs are used to assign the selected Envelope to the front panel controls.
2. Envelope 1 & 2 Mapping Mode On/ Off Tabs are used to activate the mapping mode which enables linking the Envelope Followers to modulation target parameters.
3. Source selects the output of the module that you wish to use to trigger the envelope. The source input is assigned to Modules, not to Effect Rack Slots
4. Input Gain can be used to scale the input signal in order to compensate for too quiet or loud sources.
5. Attack adjusts the speed of the Envelope attack.
6. Decay adjusts the speed of the Envelope decay.
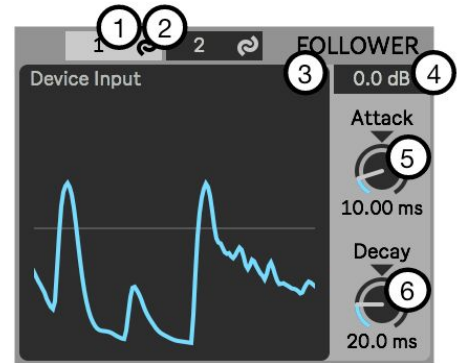
Mapping Modulation Sources to Targets
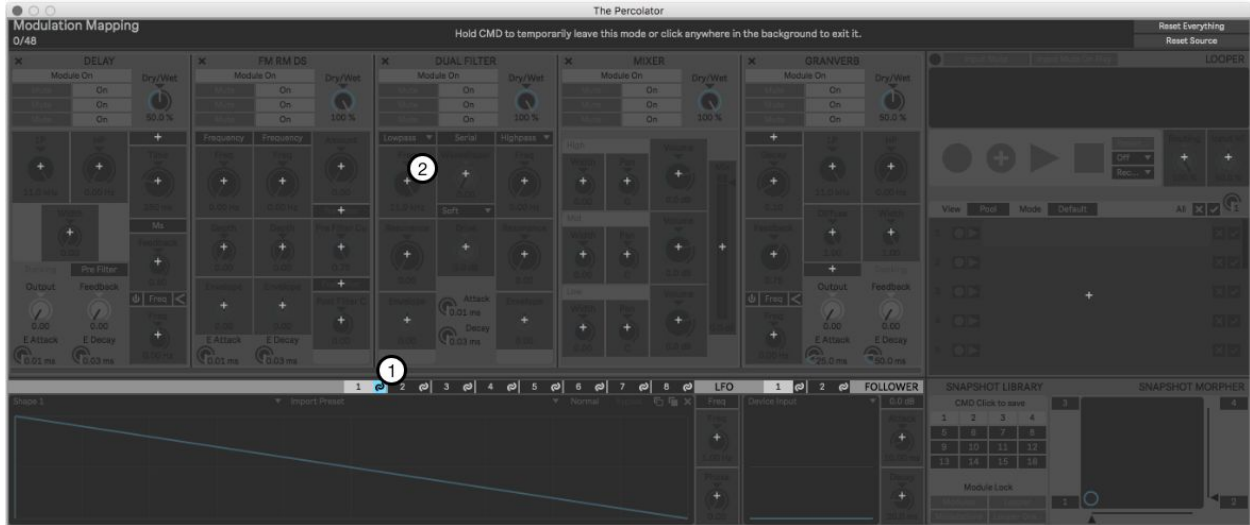
1. Click any of the Mapping On/ Off buttons to activate the mapping for that LFO or Envelope Follower. Modulation targets will now be highlighted.
2. Click the "+" icon on any target to assign the LFO or Envelope Follower to the target.
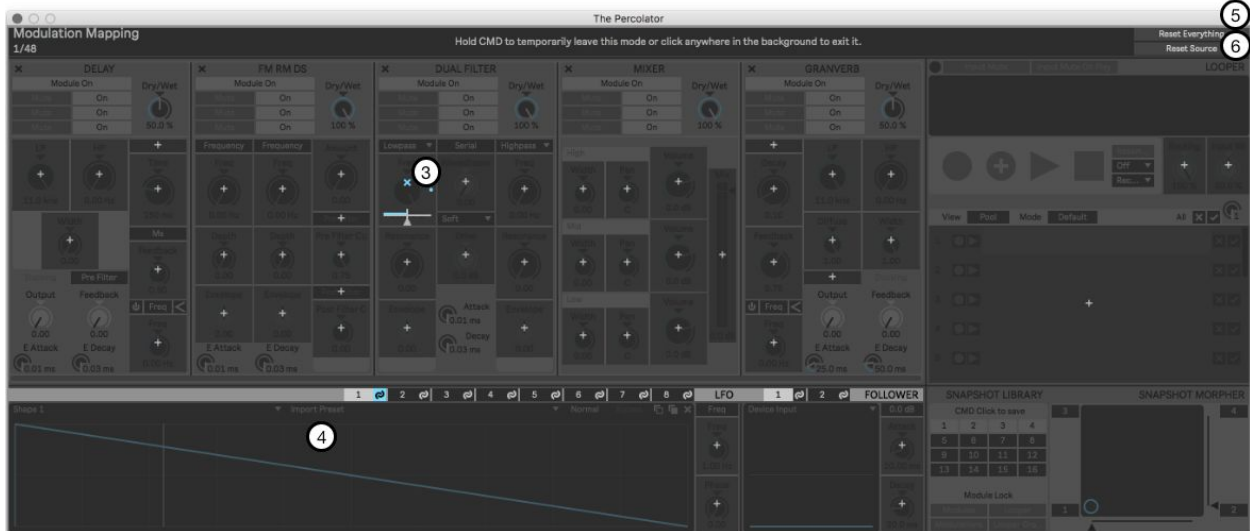
3. Adjust the Modulation amount from the target mapping depth slider.
4. Click anywhere outside the target "+" icon to exit the mode.
5. Reset Everything is used to clear all modulation mappings.
6. Reset source will only clear the currently selected modulation source.

Tips
When in the mapping mode, press and hold CMD to momentarily defeat the Mapping mode and be able to adjust the centre point of the target parameter.

Internal Modulation and Live's Automation

The Percolator's internal modulation is separate to Live's automation system and both can be applied to Modulation targets simultaneously.

Snapshot Module

Snapshot Library
Snapshots are used to store the complete state of the device at any given point in time.

1. Click on any Snapshot to recall it. Selecting new Snapshots will cause the device to jump to the new settings.

CMD + Click on any Snapshot to save the current state of the device to that Snapshot.

SHIFT + Click on any Snapshot to clear it.

2. Module Lock is used to Lock any of the Module Types to the currently recalled Snapshot, so the state of that module is retained when recalling, saving or clearing any Snapshots.

For example; I have Snapshots 1 & 2 saved with 2 different Effect Modules settings. I create some Modulation Settings in Snapshot 1 and wish to hear this modulation setting applied to the Effect Module settings saved in Snapshot 2.

Select Snapshot 2 and Lock the Effect Modules Layer.

Select Snapshot 1.

You will now hear the 'locked' Effect Modules setting from Snapshot 2 and the LFO settings from Snapshot 1.

These combined settings can be saved to a new Snapshot by CMD clicking on a new Snapshot Slot.

Deactivate the Effect Module Layer Lock (from Snapshot 2) to hear and edit the new Snapshot.

XY Pad 4 way morpher.

3. Snapshot Slots are used to assign Snapshots to the XY Pad.

Click on the desired Slot and enter the desired Snapshot number to assign Snapshots.

4. Drag the target dot in the XY Pad to morph between the selected Snapshots, or alternatively adjust the X or Y axis sliders positioned alongside the XY Pad.

Clicking in the either Snapshot Library or the XY Pad will switch functionality instantly to that component.
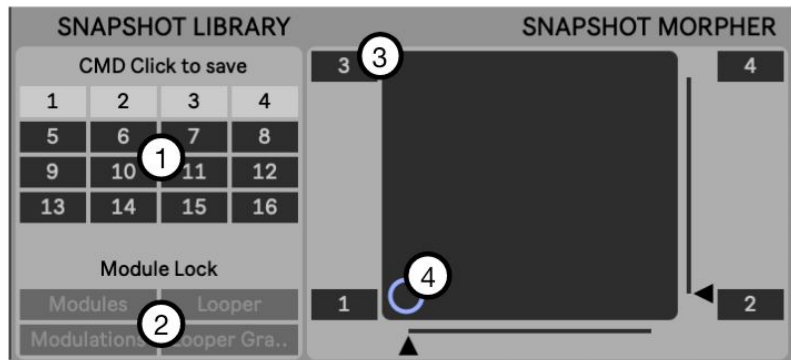
Looper Module

Input Mute is used to mute the audio input to The Percolator. This is useful when playing back Loops from either the Looper and you do not wish to hear the audio input at the same time.

Mute on Playback Is used to mute the incoming audio to The Percolator when Looper playback is active.

Routing sets the send level of the Looper back to the Effect Modules relative to the device output.

Mix controls the mix balance between the Looper output and audio input being fed into the Effect Modules. A 0% setting will result in only the audio input being audible. At 100% only the Looper is audible.

Record, Overdub, Play and Stop buttons are locked to Live's Global Quantise setting.

> To completely remove any quantisation from the button actions, set Live's Global quantize to 'Off'.

Resample is an Overdub mode that assigns the overdubbed recordings to new Slots in the Loop Pool, rather than merging new recordings into the playing Loop.

Fixed Length and Next are used to automate Record, Overdub, Play and Stop behaviours. Fixed Length specifies when the Next action will be triggered, and Next specifies what action will occur. For example; loops of a defined length can be automatically recorded to the Loop Pool in realtime every 2 bars by setting Fixed Length to 2 and Next to Record.
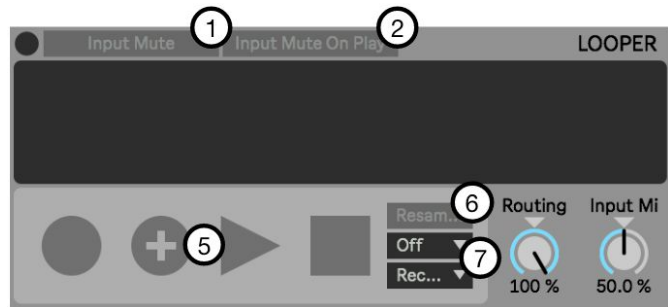
The Loop Pool

The Loop Pool displays recording Slots used for temporarily storing recordings to the Looper buffer.

View toggles the lower view between the Loop Pool and the Grain parameters.

Mode toggles between the Default Looper playback and the Granular modes.

      * Recordings saved in the Loop Pool are not saved with Live Project saves!

Clear All is used to clear all recordings from the Loop Pool.

Export is used to Export all recordings in the Loop pool.

Loop Pool Slot Dial can be used to select the target slot for recording or playback.

Loop Slots

16 Slots are available and share the following features.

Record is used to select the next Slot to be used for recording.

Playback is used to select the currently playing Loop.

Clear will clear the recording from the current Slot.

Export will export the Slot recording.

Waveform Display displays the waveform of the current stored recording or empty Slot..

Clicking a stored waveform will select it for playback and display the waveform in the main player.

When no recording is currently stored in the slot, the blank slot can be clicked to select as the recording destination.
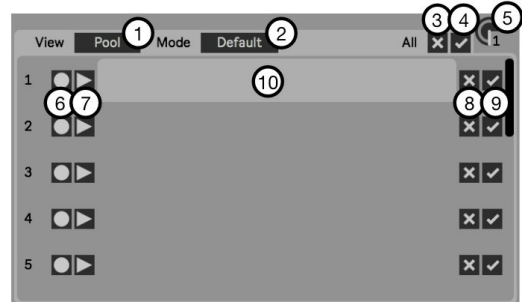
How to Record Loops

Recording Loops; Manual operation
      Press Record to begin Recording immediately or as defined by Live's Global Quantize.
      Then Press:
      Stop to stop recording
      Record to continue recording a new loop into a new Loop Pool Slot.
      Overdub to overdub the incoming signal into the playing recording.
If Fixed Length is set to an interval length, then the selected Next action will trigger at the specified interval.

How to Record several consecutive takes into the Loop Pool.
      Set the Next action to Record and the Looper will continue to record to new loops to the Loop Pool Slots until manually stopped. Up to 16 slots are available.

How to Overdub the currently playing Loop through the effect modules to a new slot.
The Looper can play from one take while recording to another, also through the effect modules.
      Click the Resample button.
      Set the Next action to Overdub and set the desired Loop length. The Looper will playback the selected Loop and then record new Loops to the Loop Pool Slots until manually stopped.

Loop Pool Playback Modulation
Modulating playback of loops in the Loop Pool by assigning an LFO or Envelope Follower to the Loop Slot Dial will result in activating legato playback of each loop within the range defined by the modulation depth of the Loop Dial. This can be used to remix different sections of each Loop stored in the Loop Pool together.

Loop Pool and Snapshots
The currently selected Loop Pool Slot can be saved to Snapshots, enabling different active Loops to be saved to different Snapshots.

Granular Player

Click Loop Pool/ Grains to select the Granular player interface.
Click the Looper/ Granular button to activate the Granular player.
Reset will reset all 8 Grains parameters to default.
1-8 Grain Editor Tabs are used to display the desired Grains parameters.
1-8 Grain On/ Off Buttons are used to activate or deactivate the 8 Granular Playheads.
Position sets the playback start position.
Loop Size defines the Loop length in relation to the Position.
Length sets the length of the playhead.
Fade adds a short fade to the end of the playhead to smooth looped playback.
Direction sets the playhead playback direction. This can be set to forward backward or Ping Pong.
Pitch sets the pitch of the selected grain.
Speed sets the playback speed for the Grain. This can be set to negative values also, causing the playhead to travel backwards through the defined Loop size.
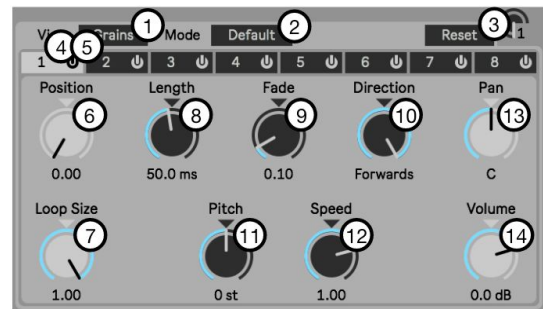Volume sets the volume of the currently selected grain.
Pan sets the pan position of the current selected grain.
Modulation and the Granular player
Grain On/ off and all grain parameters are available as modulation targets.

Snapshots and the Granular player
Grain On/ off and all grain parameters are available to be saved to Snapshots.

THE PERCOLATOR

The Percolator is an ongoing collaboration between Chaos Culture and Do the Thing.

Chaos Culture

Sebastian was introduced to music early on and grew up reverse engineering and producing songs. While being professionally trained to become a jazz pianist, he learned the ins and outs of many applications and electronic devices. The most important one was the lite version of Ableton Live 4, which enabled him to dive deeper into sound design and other aspects of music production. By studying audio engineering and working with many studios, Sebastian was introduced to the music industry as he started his work as a mixing engineer and sound designer. Chaos Culture is a project, an artist name he uses to publish some of his music and other creations such as Max for Live devices that extend the functionality of Live.

Do The Thing

Sammy grew up playing guitar in high school bands which fostered his love for guitar pedals and audio effect in general. Discovering MPCs in his late teens, a new passion for electronic music quickly fostered and then - acid techno. The late 1990s found Sammy practising DJ sets at his local 2nd hand synth store (who could afford turntables?) lead to establishing the foundation for a long career in the MI industry, eventually landing him in Berlin working for Ableton in their international sales team and later managing Business Development. With 20 odd years experience playing records and relentlessly buying and selling studio gear, alongside his passion for clean workflows and beautiful solutions, Do The Thing is the working alias for his current creative projects and freelance work.

www.dothething.biz