



Cluster by Sinevibes
animated filter

INTRODUCTION

Cluster is a plugin for creating complex, animated filter effects. At its core is a looping step sequencer that runs in precise sync with incoming audio and lets you set filter type, frequency and modulation envelope individually per each of its 32 steps. Thanks to such flexibility, as well as multiple filter models and finely-tunable parameters, Cluster can easily do anything from smooth, precise filter sweeps to rhythmic spectral reconstruction – regardless of what kind of sound is on the input.

Cluster displays a live audio waveform and aligns its sequencer graphics with it – exactly in the same way it's done by the sound engine, for true “what you see is what you get” operation. Every element in its user interface is color-coded and features subtle animations, bringing unusual ease of use and interactivity. Plus, all this goodness is rendered right on your Mac's graphics adapter meaning fast response and no extra load on the main processor, regardless of how new or old your system is.

SOUND ENGINE

- Sequencer with up to 32 steps, variable duration, division and swing ratio.
- Filter matrix with low-pass, high-pass, band-pass and band-reject types.
- Three filter modes: -12 dB/octave state-variable filter, -12 and -24 dB/octave biquad filters.
- Envelope matrix offering 10 envelope shapes, adjustable time and lag.
- Eight parameter snapshots in each preset, available for realtime switching and automation.
- Host transport synchronization with support for tempo and time signature changes.

GRAPHIC INTERFACE

- Live input audio waveform and fluid sequencer graphics visually matched to it.
- Support for multi-touch gestures and force touch on compatible trackpad devices.
- Fully hardware-accelerated rendering with support for Retina screen resolution.

COMPATIBILITY

- Works with any application that supports Audio Unit effect plugins.
- Supports OS X 10.6 or later running on 32 or 64 bit Intel Macs.

QUICK START

Step 1

Start the host transport to see the live audio waveform

Step 2

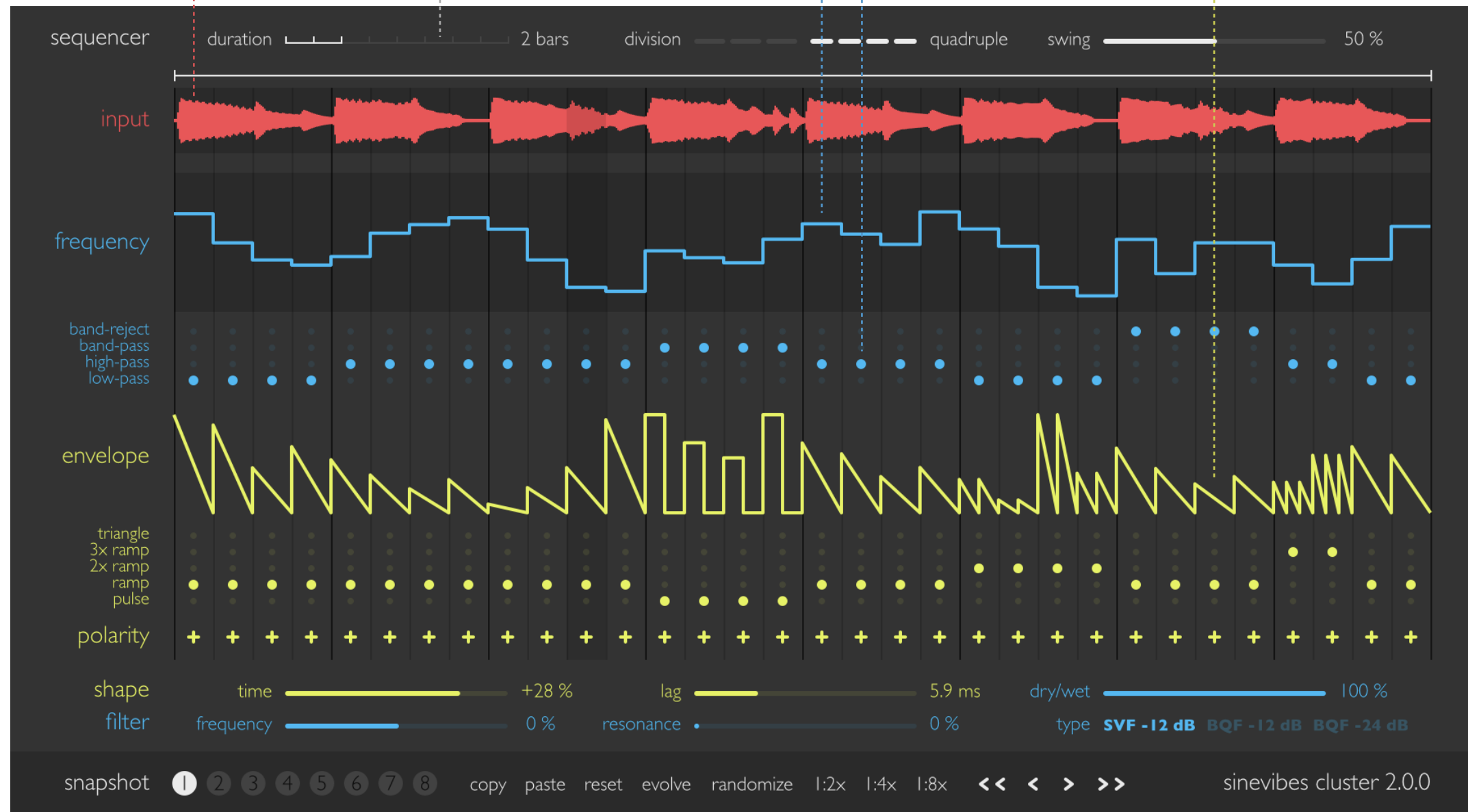
Adjust sequencer settings to match the rhythmical timing of incoming audio

Step 3

Click and drag to set filter frequency and filter mode for each sequencer step

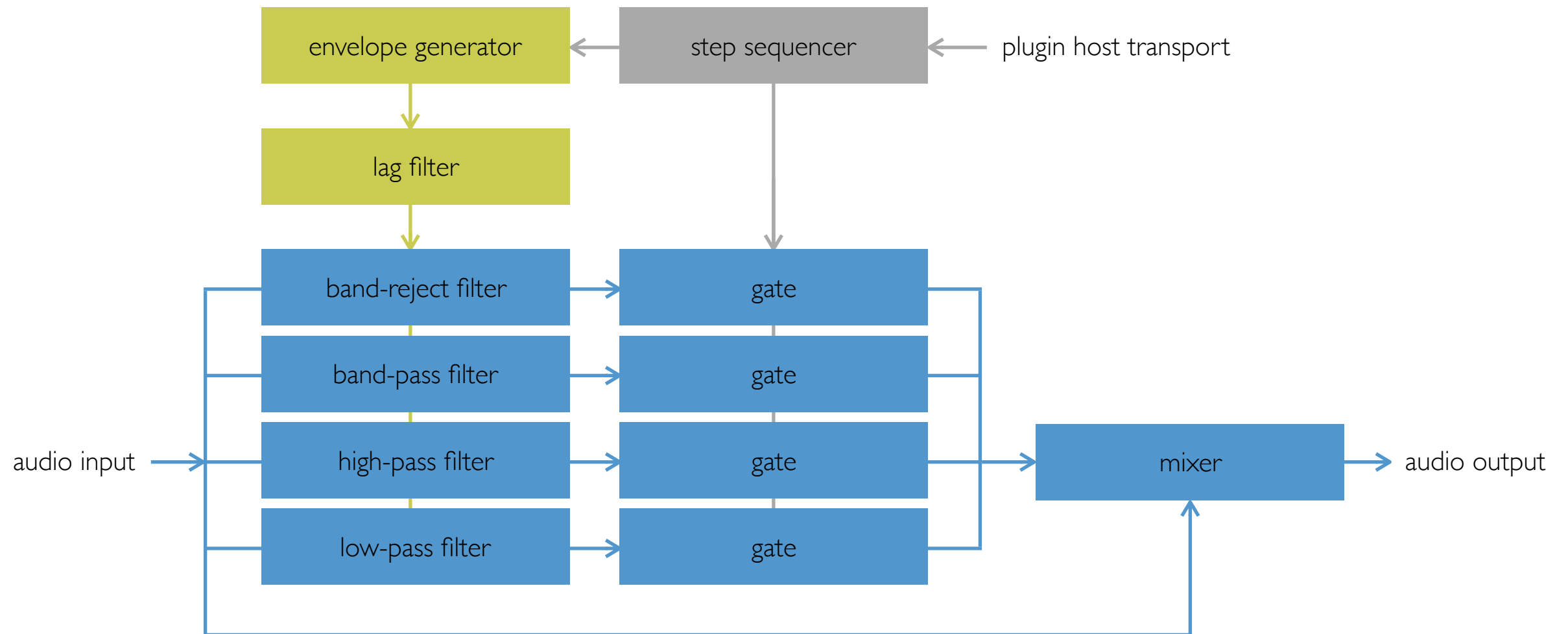
Step 4

Click and drag to change the envelope modulation depth for each sequencer step



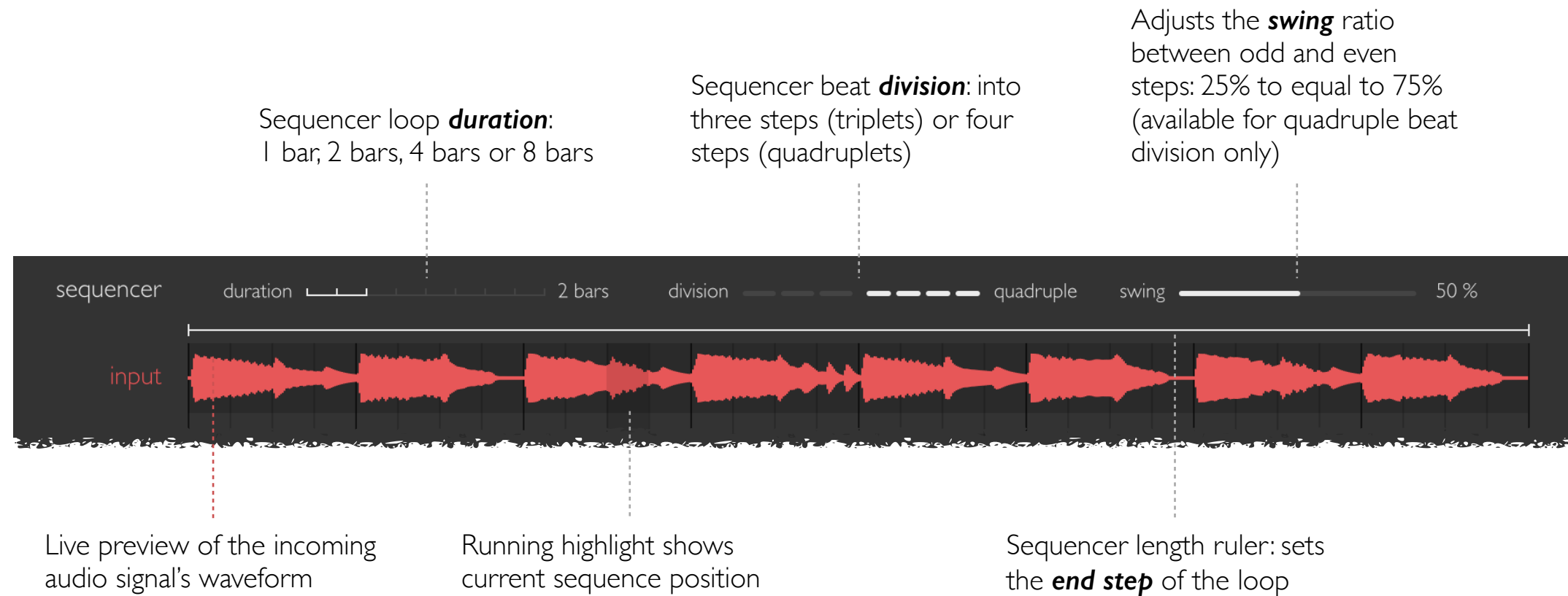
BASICS & BLOCK DIAGRAM

Here is how Cluster works. Dry input audio is sent into four filters working in parallel: low-pass, high-pass, band-pass and band-reject. Each filter goes into its own output gate, and the gates are controlled by a step sequencer: this defines which filter sounds at which point in time. The step sequencer also controls a multi-envelope generator that produces a modulation signal. This signal is sent through a lag filter (for variable shape smoothing) and then to modulate the cutoff frequencies of the four main filters. Finally, the gated filter outputs are mixed with the dry signal and sent into the output.



INTERFACE OVERVIEW

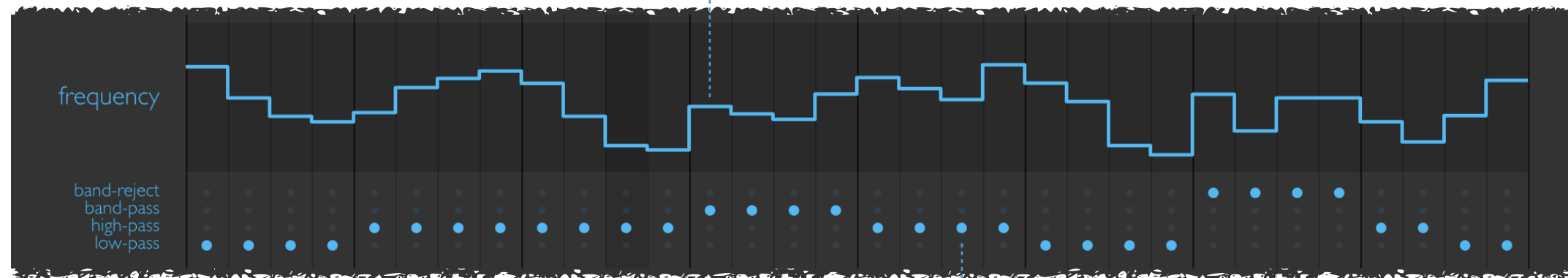
Sequencer & live audio waveform



INTERFACE OVERVIEW

Per-step filter parameters

Filter cutoff **frequency**: click and drag to adjust frequency for each sequencer step (20 Hz to 20 kHz), more actions available via [shortcuts](#)

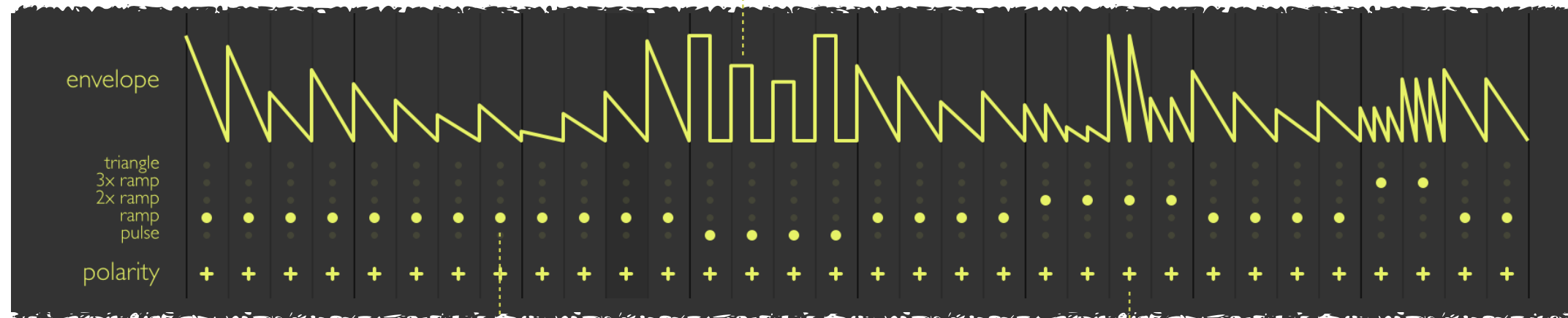


Filter **mode**: click and drag to adjust filter mode for each sequencer step (low-pass, high-pass, band-pass, band-reject), other actions available via [shortcuts](#)

INTERFACE OVERVIEW

Per-step modulation envelope parameters

Modulation envelope **level**: click and drag to adjust filter frequency modulation level for each sequencer step, more actions available via [shortcuts](#)



Envelope **shape**: click and drag to adjust envelope shape for each sequencer step (pulse, 1/2/3x ramp, triangle), other actions also available via [shortcuts](#)

Envelope **polarity**: click and drag to adjust polarity for each sequencer step, more actions via [shortcuts](#)

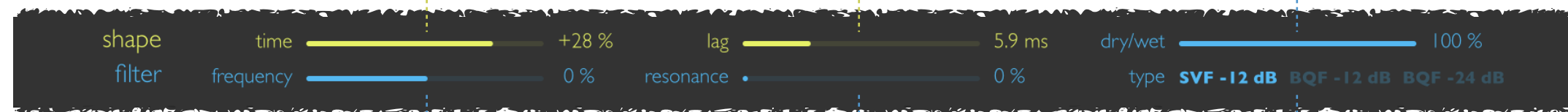
INTERFACE OVERVIEW

Filter & envelope settings

Envelope duration **time**:
short to standard to long

Envelope **lag**: attack/decay
smoothing time from 2 ms
(snappy) to 200 ms (lazy)

Overall **dry/wet** balance
between the input signal and
the filter output



Filter cutoff **frequency** offset:
+/- 50% (+/- 10 kHz)

Filter **resonance** amount
(peak level around the cutoff
frequency): 0% to 100%

Filter **type**: -12 dB/octave
state variable filter (capable
of self-oscillation with high
resonance settings), -12 and
-24 dB/octave biquad filters

INTERFACE OVERVIEW

Snapshot & sequencer functions



Current parameter **snapshot** number; can also be changed with two-finger swipe shortcuts

Snapshot functions to **copy**, **paste**, or **reset** the whole snapshot, as well as **evolve** (set some sequencer steps to random values) or **randomize** (set all sequencer steps to random values)

Functions to **clone** the first half, first quarter or first one eighth of the sequence (aware of current sequencer beat division)

Functions to **shift** the sequence left or right by one beat or by one step (aware of current sequencer beat division)

SHORTCUTS

Cluster's graphic interface features multiple shortcuts that modify or automate the editing workflow. The shortcuts are activated by double-clicking, by clicking and dragging while pressing a key (such as *command* or *option*), and also using *multi-touch* gestures or *force-touch* clicks on a trackpad that supports them.

sequencer	<i>command-click</i> or <i>double-click</i> on any control – reset to default value
filter frequency	<i>command-click (drag)</i> or <i>force-click (drag)</i> – set all steps to the same filter frequency <i>control-click (drag)</i> – adjust last clicked step within 10 fixed values <i>shift-drag</i> – relatively adjust all steps at the same time <i>option-click</i> – set all steps to random frequency values
filter matrix	<i>command-click (drag)</i> or <i>force-click (drag)</i> – set all steps to the same filter type <i>control-click (drag)</i> – snap to last clicked filter type <i>option-click</i> – set all steps to random filter types
envelope	<i>command-click (drag)</i> or <i>force-click (drag)</i> – set all steps to the same envelope level <i>control-click (drag)</i> – adjust last clicked step within 10 fixed values <i>shift-drag</i> – relatively adjust all steps at the same time <i>option-click</i> – set all steps to random envelope levels
envelope matrix	<i>command-click (drag)</i> or <i>force-click (drag)</i> – set all steps to the same envelope type <i>control-click (drag)</i> – snap to last clicked envelope type <i>option-click</i> – set all steps to random envelope types
envelope polarity	<i>command-click</i> or <i>force-click</i> – flip envelope polarity on all steps <i>option-click</i> – set all steps to random envelope polarity values
envelope shape	<i>command-click</i> or <i>double-click</i> on any control – reset to default value
snapshot	<i>two-finger swipe</i> left or right (from anywhere in the interface) – switch to previous or next snapshot



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