

XenoChop

Version 1.0 User Manual

Audio Chopping / Ratcheting Gate - Sequencing, Probability, Filtering and Envelope Shaping



Host-Synchronised Chopping

Build 4, 8, 12 or 16-step patterns locked to the DAW timeline.

1x-4x Ratcheting

Turn individual steps into repeated live-first slices and rapid fills.

Velocity & Probability

Shape dynamics and introduce controlled variation independently for every step.

Envelope + Wet Filter

Shape each subdivision, filter only the chopped path, then blend it with the original signal.

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Chop Tip

Design the timing first with Velocity at 100%, then shape dynamics afterward. It is easier to hear whether the pattern works before adding level variation.

Introduction

XenoChop turns incoming audio into tempo-locked rhythmic cuts, repeated slices and probabilistic stutters. It is designed for drums, loops, synths, vocals, effects returns and any other source that benefits from precise rhythmic interruption.

The central sequencer combines four programmable ideas for every position: whether the step is active, how many ratchet subdivisions it creates, how loud the chopped signal is, and how likely the step is to fire. The lower panel then controls clocking, filtering, envelope shape, wet/dry balance and final output.

Main Features

4 / 8 / 12 / 16 STEPS

Host-synchronised pattern lengths with 1/4, 1/8, 1/16 and 1/32 step rates.

FOUR SEQUENCER ROWS

On/Off, Ratchet, Velocity and Probability are independently editable per step.

LIVE-FIRST RATCHETS

The first subdivision passes and captures live audio; later subdivisions repeat that captured slice.

WET-PATH FILTER

Low-pass, high-pass and band-pass filtering affect only the chopped signal.

PER-RATCHET ENVELOPE

Length, Attack, Release, Shape and Gap control every subdivision, including 1x steps.

PRESET SYSTEM

Factory and persistent user presets store the complete XenoChop state.

Chop Tip

Use Probability on only a few steps if you want the groove to stay recognizable. Too many low-probability anchors can make the pattern feel directionless.

Quick Start

1. Insert XenoChop on an audio track or effects bus.
2. Start the DAW transport so XenoChop can follow host tempo and musical position.
3. Choose a factory preset or press **INIT** for a clean starting state.
4. Set **Rate** and **Steps**.
5. Enable the sequencer steps you want to hear.
6. Choose **Ratchet** values from 1x to 4x and set per-step **Velocity** and **Probability**.
7. Use **Length / Attack / Release / Gap** to shape the repeated slices.
8. Use **Mix** to balance dry and chopped audio, then level-match with **Output**.

Signal Flow

INPUT -> CHOP / RATCHET -> ENVELOPE -> FILTER -> MIX -> OUTPUT

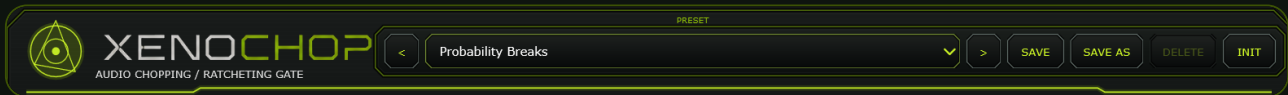
The filter affects only the chopped wet path. The dry side of Mix remains unfiltered, and Output gain is applied after the wet/dry blend.



Rhythm Note

At a 1/16 rate with 16 steps in 4/4, the sequencer spans one bar. Four steps give one quarter note, eight steps half a bar, and twelve steps three quarters of a bar.

Interface Overview



The header contains preset navigation and preset management.

Area	Purpose
Preset strip	Browse factory and user presets, save copies, delete user presets and return to Init.
Sequencer	Sixteen positions with On/Off, Ratchet, Velocity and Probability rows.
Steps / Filter tab	Rate, pattern length, Swing, Smooth, global pattern actions, filtering, Mix and Output.
Envelope tab	Per-subdivision envelope controls plus the Live Wet Chop display.

The sequencer remains visible while switching the lower panel, so timing and step programming never disappear while you work on the filter or envelope.

Chop Tip

A 1x ratchet is still shaped by the ratchet envelope. Length, Attack, Release and Gap therefore matter even when no audible retrigger is occurring.

Sequencer Rows

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
ON / OFF	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	<input type="button" value="OFF"/> <input type="button" value="ON"/>
RATCHET	1x	2x	1x	3x	1x	2x	4x	1x	2x	3x	1x	4x	1x	2x	3x	2x	<input type="button" value="1X"/> <input type="button" value="4X"/>
VELOCITY	82%	88%	94%	82%	88%	94%	82%	88%	94%	82%	88%	94%	82%	88%	94%	82%	<input type="button" value="0%"/> <input type="button" value="100%"/>
PROBABILITY	100%	72%	45%	82%	100%	58%	33%	78%	92%	48%	68%	37%	100%	55%	28%	76%	<input type="button" value="0%"/> <input type="button" value="100%"/>

Four rows define the behaviour of each of the sixteen stored positions.

Row	What it does	Range
On / Off	Determines whether the step can produce chopped audio. Disabled steps are silent on the wet path.	Off / On
Ratchet	Sets the number of subdivisions inside the step. The first subdivision captures current audio; later subdivisions repeat it.	1x-4x
Velocity	Sets wet level for the step, useful for accents and ghost-note style variation.	0-100%
Probability	Sets the chance that an enabled step will fire while remaining locked to the rhythmic grid.	0-100%

The highlighted vertical column is the current sequencer position. Steps beyond the selected 4/8/12-step length remain stored even while inactive.

Level note: dense ratchets combined with positive Output gain can create strong peaks. Leave sensible headroom in the DAW.

Chop Tip

Use high-pass or band-pass filtering on percussion when you want XenoChop to add rhythmic texture without repeatedly reintroducing the whole low-frequency body of the source.

Fast Pattern Editing

XenoChop is designed for painting patterns rather than adjusting every cell one at a time.

Gesture / control	Behaviour
Click a cell	Changes the selected step immediately.
Drag across On / Off	Paints the same enabled or disabled state across multiple steps.
Drag across value rows	Uses vertical mouse position to paint Ratchet, Velocity or Probability across steps.
Right-click / right-drag	Sets affected cells to their minimum value.
OFF / ON	Sets the whole On/Off row to its minimum or maximum.
1X / 4X	Sets all Ratchet cells to 1x or 4x.
0% / 100%	Sets an entire Velocity or Probability row to minimum or maximum.

Global Pattern Actions

- **RANDOMISE** creates a new pattern with varied states, ratchets, velocities and probabilities.
- **ALL FULL** enables every step and sets Ratchet to 4x, Velocity to 100% and Probability to 100%.
- **CLEAR** turns every step off without erasing the stored Ratchet, Velocity and Probability values.

Chop Tip

If a preset is nearly right, save a user copy before Randomise. Factory presets are read-only, so your original starting point is always safe.

How Ratcheting Works

XenoChop uses a **live-first slice capture** design. When a step fires, the first ratchet subdivision passes and captures the current incoming audio. If the step is set to 2x, 3x or 4x, the later subdivisions repeat that captured audio inside the remaining duration of the step.

1X

One gated live subdivision. It is still shaped by the ratchet envelope.

2X

One live capture followed by one repeated subdivision.

3X / 4X

Increasingly dense retriggers from the captured slice, useful for fills and stutters.

Probability comes first

An enabled step must pass its Probability test before an audible wet chop occurs. If it misses, the step does not produce the ratchet event.

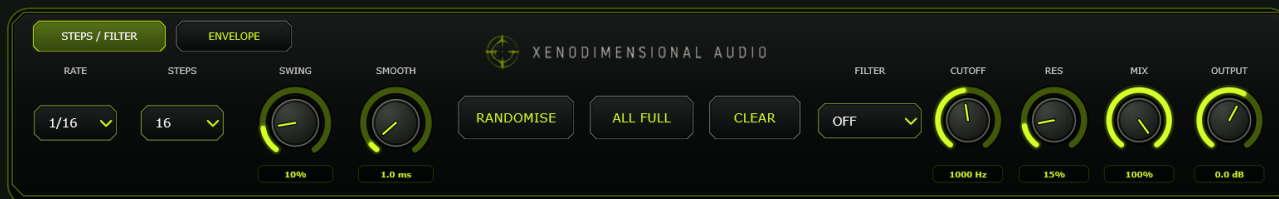
Velocity applies per step

Velocity controls wet level for that step after it has been allowed to fire, so ratchet density and dynamic emphasis remain separate creative decisions.

Transport Note

XenoChop clears its captured chop buffer when transport stops and starts again, preventing an old slice from unexpectedly reappearing.

Steps / Filter Page



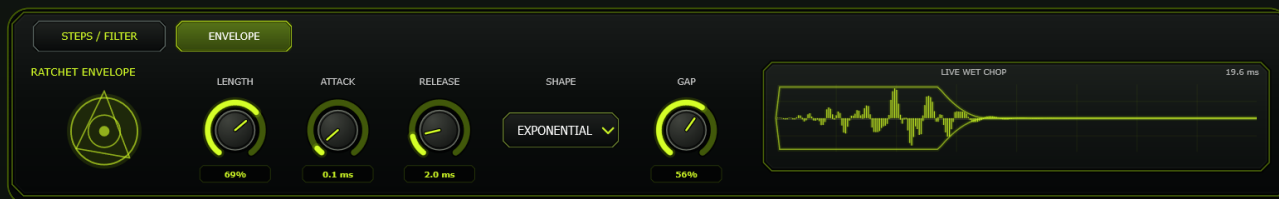
The Steps / Filter panel handles timing, smoothing, pattern actions, wet-path filtering, Mix and Output.

Control	Range	Function
Rate	1/4, 1/8, 1/16, 1/32	Sets each sequencer step duration relative to host tempo.
Steps	4, 8, 12, 16	Sets active pattern length; later steps remain stored.
Swing	0-65%	Lengthens and shortens alternating steps while pairs remain aligned to the host grid.
Smooth	0.1-20 ms	Applies short smoothing around chop transitions. Higher values reduce clicks but soften transients.
Filter	Off / Low-pass / High-pass / Band-pass	Selects filtering for the chopped wet signal only.
Cutoff	20 Hz-20 kHz	Sets filter frequency.
Res	0-100%	Sets resonance/Q around Cutoff.
Mix	0-100%	Equal-power blend from dry input to fully chopped wet signal.
Output	-18 to +12 dB	Final gain after the wet/dry blend.

Chop Tip

Automating Mix is one of the easiest ways to turn XenoChop into a fill generator: leave the source dry most of the time and bring the chop in only at phrase endings.

Envelope Page



The envelope restarts at the beginning of every ratchet subdivision, including 1x steps.

Control	Range	Function
Length	5-100%	Maximum audible portion of each subdivision.
Attack	0-50 ms	Fade-in time at the start of every subdivision.
Release	0-100 ms	Fade-out before the audible portion ends.
Shape	Linear / Exponential	Changes attack and release curvature.
Gap	0-90%	Reserves silence at the end of each subdivision.

The envelope is applied to the chopped wet path before the filter. The preview follows the current subdivision duration, so Rate, Swing and Ratchet count change how the millisecond fades fit into the available slice.

Chop Tip

Design the timing first with Velocity at 100%, then shape dynamics afterward. It is easier to hear whether the pattern works before adding level variation.

Live Wet Chop Display



The visualiser shows the latest audible chopped subdivision with the envelope outline around it.

- The waveform is captured **after the ratchet envelope and filter**.
- It is captured **before the global Mix and Output controls**.
- The previous waveform is retained through silent steps and probability misses until another audible wet chop is captured.
- **WAITING FOR LIVE CHOP** means no audible wet subdivision has been captured yet.

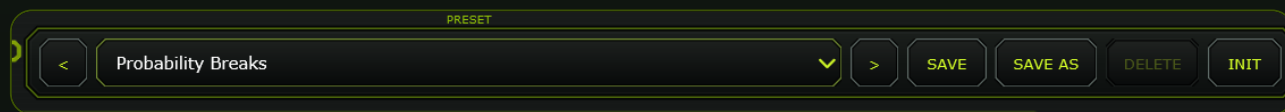
Click-free starting point

For drums, a useful starting point is Length 100%, Attack 0.5 ms, Release 2 ms and Gap 0%. Increase Release or Smooth only when you hear unwanted clicks.

Chop Tip

Use Probability on only a few steps if you want the groove to stay recognizable. Too many low-probability anchors can make the pattern feel directionless.

Preset System



The responsive preset strip stores complete XenoChop states.

Control	Behaviour
< / >	Move to previous or next preset.
Preset menu	Choose from separate Factory Presets and User Presets sections.
SAVE	Overwrites the selected user preset. On a factory preset or Init state, it opens Save As instead.
SAVE AS	Creates a new editable user preset.
DELETE	Deletes the selected user preset. Factory presets cannot be deleted.
INIT	Restores the original XenoChop state.

What a preset stores

Presets store all sixteen step states, Ratchet / Velocity / Probability values, Rate, Steps, Swing, Smooth, filter settings, envelope settings, Mix and Output.

On Windows, user presets use the .xcpreset extension and are stored under %APPDATA%\Xenodimensional\XenoChop\Presets.

Rhythm Note

At a 1/16 rate with 16 steps in 4/4, the sequencer spans one bar. Four steps give one quarter note, eight steps half a bar, and twelve steps three quarters of a bar.

Factory Preset Guide

Preset	Character
Straight Chop	Alternating sixteenth-note gates for a clear rhythmic pulse.
Sparse Glitch	Occasional probability-driven ratchet bursts.
Machine Gun	Continuous 4x retriggering for dense repetition.
Swing Ratchets	Varied retriggers with pronounced paired-step swing.
Probability Breaks	A full pattern with changing per-step probability.
Filtered Stutter	Short low-pass stutters with resonance.
Soft Tremolo	Smooth attack and release modulation with partial wet mix.
High-Pass Shuffle	A swung high-pass treatment suited to percussion.
Band-Pass Pulse	Alternating resonant band-pass pulses.
Broken Circuit	Rapid, sparse and irregular high-pass glitches.
Wife Swap	A full-level 16-step ratchet pattern with 51% Mix and +6.1 dB Output.

Factory presets are read-only starting points. Use **SAVE** or **SAVE AS** to create an editable user copy.

Chop Tip

A 1x ratchet is still shaped by the ratchet envelope. Length, Attack, Release and Gap therefore matter even when no audible retrigger is occurring.

Sound Recipes

PUNCHY DRUM CHOP

Rate 1/16; Steps 16. Use 2x or 4x on selected fills. Length 80-100%, Attack about 0.5 ms, Release about 2 ms. Mix 50-100%, Output matched to source.

SOFT RHYTHMIC TREMOLO

Enable all steps at 1x. Length 55-80%, Attack 5-15 ms, Release 15-40 ms, Mix 30-70%, Filter Off.

HIGH-PASS PERCUSSION SHUFFLE

Rate 1/16, Swing 15-35%, High-pass around 800 Hz-3 kHz, Resonance 10-30%, with Probability on a few off-beat steps.

GLITCH FILL

Rate 1/32; Steps 4 or 8. Randomise, then reduce active steps. Ratchets 3x-4x, Probability 40-80%, short Length and a small Gap.

FILTERED VOCAL REPEAT

Rate 1/8 or 1/16. Use Band-pass or Low-pass, Attack 2-8 ms and Release 10-30 ms. Automate Mix at phrase endings.

CONTROLLED CHAOS

Start from Probability Breaks. Keep important downbeats at 100% probability, Randomise the rest, then save each useful variation.

Chop Tip

Use high-pass or band-pass filtering on percussion when you want XenoChop to add rhythmic texture without repeatedly reintroducing the whole low-frequency body of the source.

Automation and Transport

Transport Behaviour

XenoChop follows host tempo and musical position while the transport is playing. Swing remains paired to the DAW grid rather than drifting over time.

When playback stops, the captured chop buffer and filter state are cleared silently. The next Play command starts with an empty capture buffer so stale audio cannot replay.

Automation

Sequencer step states and values can be automated from the host. Rate, Steps, Swing, Smooth, filter, envelope, Mix and Output are also plugin parameters.

GOOD CONTINUOUS TARGETS

Mix, Filter Cutoff, Resonance, Swing, Gate Length and Gap.

GOOD ABRUPT TARGETS

Step Probability, Ratchet values, step On/Off states and short preset changes.

Level Matching

Start with Output at 0 dB, compare dry and wet at similar loudness, then adjust Output until the processed and unprocessed states feel comparable.

Chop Tip

If a preset is nearly right, save a user copy before Randomise. Factory presets are read-only, so your original starting point is always safe.

Troubleshooting

Symptom	Check
No chopped sound	Start transport. Confirm at least one step is On, Velocity and Probability are above 0%, and Mix is not fully Dry.
Wet side is quiet	Check step Velocity, envelope Length/Gap and filter settings before raising Output.
Clicks at chop boundaries	Increase Attack, Release or Smooth slightly. Very short slices may need more smoothing.
Filter seems inactive	The filter affects only the wet path. Increase Mix or temporarily use 100% Wet while adjusting it.
DELETE is disabled	Only user presets can be deleted. Factory presets and Init are protected.
WAITING FOR LIVE CHOP	Play audio through an enabled step that successfully passes its Probability test.
Old audio after stop/start	v1.0 clears captured slice history at transport stop and again before new playback. Confirm the current v1.0 plugin is loaded.

Specifications & Version 1.0 Release

Core Specifications

Plugin type	Tempo-synchronised stereo audio effect
Pattern length	4, 8, 12 or 16 steps
Step rate	1/4, 1/8, 1/16 or 1/32
Ratchet count	1x-4x per step
Swing	0-65%
Smooth	0.1-20 ms
Filter	Off, Low-pass, High-pass, Band-pass
Cutoff	20 Hz-20 kHz
Envelope Attack	0-50 ms
Envelope Release	0-100 ms
Gate Length	5-100%
Gap	0-90%
Output	-18 to +12 dB

Version 1.0 Release

XenoChop v1.0 is the first public release. It brings together the completed host-synchronised sequencer, 1x-4x ratchet engine, per-step probability and velocity, wet-path filtering, ratchet envelope, live waveform display, DAW automation and the factory/user preset system.

PERFORMANCE CORE

Tempo-synchronised chopping, paired-step swing, live-first ratchet capture and probability-driven variation.

SOUND SHAPING

Per-subdivision envelope, wet-only filtering, equal-power Mix and post-blend Output gain.