scrawLFO

by kalikoDSP

Hand-drawn modulation for Ableton Live. Draw a shape and scrawLFO plays it in a loop, moving any parameter in your Set the way Live's LFO device does. Four engines hold your drawings; four lanes play them, each moving up to 8 parameters.

Device	Max MIDI Effect or Max Audio Effect, hosting the scrawLFO VST® 3
Needs	Live 12 Suite, or Standard with Max for Live
System	macOS 11 or later, Apple Silicon or Intel
Moves	up to 32 parameters: 4 lanes × 8
Support	support@kalikodsp.com

1 mint · 2 lilac · 3 coral · 4 sky

Quick start

1 Install
Run Install scrawLFO for Ableton Live from the Ableton Live disk image.

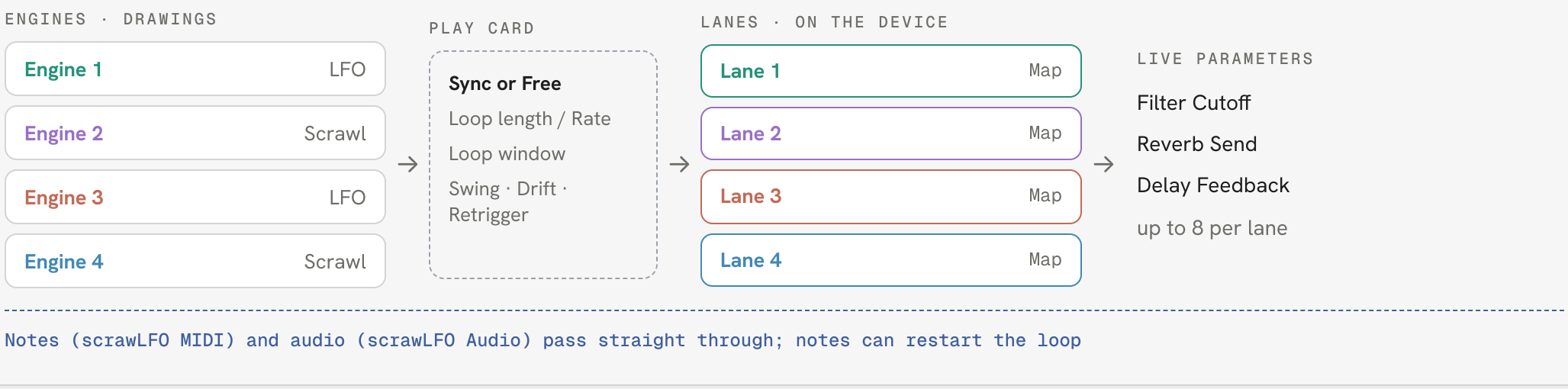
2 Drop it on a track
From your User Library: scrawLFO MIDI on a MIDI track, scrawLFO Audio on an audio track.

3 Map lane 1
Click its Map button on the device, then any parameter in your Set.

4 Press play
The lane moves the parameter around its knob, in time with Live.

5 Draw
Drag in the device's Loop view. Or click Edit: redraw, roll the Dice `N`, pick a preset.

Engines draw, lanes move parameters



Each lane reads **any** engine, so two lanes can play one drawing at different speeds or depths. An engine is a **Scrawl** (a gesture drawn on an XY pad, played back with your timing) or an **LFO** (one cycle of a waveform).

In this guide · 2 Install · 3 The device · 4 Mapping · 5 The window · 6 Header and tools · 7 Scrawl or LFO · 8 Drawing · 9 Timing · 10 Lanes · 11 Pages, presets, help

Not in Live? The MIDI CC guide.

Install and activate

Live doesn't load VST® 3 MIDI effects itself, so scrawLFO comes as a Max for Live device that hosts the plug-in, in two versions named for the track they go on: **scrawLFO MIDI** and **scrawLFO Audio**. They work the same way. You draw in scrawLFO's window or in the device's Loop view; you map lanes to parameters on the device.

Install

Open the **Ableton Live** disk image and run **Install scrawLFO for Ableton Live**. It adds both devices to your Live User Library, wherever you keep it: **scrawLFO MIDI** under Presets › MIDI Effects › Max MIDI Effect, **scrawLFO Audio** under Presets › Audio Effects › Max Audio Effect. They load their own copy of the plug-in, kept where Live doesn't look, so Live's browser lists no scrawLFO VST3. **Uninstall scrawLFO** removes everything.

Put it on a track

1. In the browser's User Library, drag **scrawLFO MIDI** onto a MIDI track, or **scrawLFO Audio** onto an audio track, a return or the Main.
2. scrawLFO's window opens, and the top of the device shows a green dot and what scrawLFO is doing (page 3). **Edit** opens the window again later.
3. Notes pass straight through scrawLFO MIDI, so an instrument after it is optional. scrawLFO Audio passes the track's audio through untouched.

Activate, or try the demo DEMO

The first time scrawLFO's window opens (click **Edit** on the device), it asks for your licence key: the one you were sent on Patreon, starting `SCRAWL-`. Paste it and click **Activate**, with the computer online. One key works on two computers; to move it, click **Deactivate this computer** under **Licence…** in the logo menu first.

No key yet? Click **Try demo**. The demo is the whole of scrawLFO, saving as usual, except that **every 45 seconds its lanes hold still for 3 seconds**: they keep their last value, so a mapped parameter stays where it is, then carry on from where the loop has got to. scrawLFO MIDI goes quiet for those 3 seconds too: notes still sounding through it are ended and new ones held back, then notes pass through again. The **DEMO** badge beside the logo opens the licence screen again; activating a key unlocks every open scrawLFO straight away, and Live Sets made in the demo open unchanged.

scrawLFO checks the key online now and then. If it can't reach the licence server for 90 days it goes back to the demo: connect to the internet and click **Activate**, the key already filled in.

Device and window agree

The lane rows on the device and the Lanes card in the window are the same settings: change either and the other follows. **Min** and **Max** read 0–100%, here and in the window. They are Live parameters, so you can automate them; Live's automation lanes read them 0 to 127, where 127 is 100%. In Details, beside each **Delay** box a small menu picks ms or a note value such as 1/16; the box then counts steps of it, so the delay follows the tempo. The device wears the window's skin: pick Graphite or Studio from the logo in the window.

Play and Details

The **Play | Details** switch at the top right picks what the device shows. It opens in **Play**, and your Set remembers the one you leave it on. **Edit**, beside the logo, opens scrawLFO's window.



1. **Tabs 1–4** pick the engine; **Clear** beside them empties it
2. **Edit** opens scrawLFO's window
3. **Type switch**: Scrawl or LFO
4. **Top line**: what scrawLFO is doing; until it's loaded, a message and **Reload** (below)
5. **1–8** switch the page; the lit one is showing
6. **Play | Details** picks the view
7. **Loop view**: the engine's drawing, its loop and the lanes' dots
8. **Lane rows**: the window's Lanes card, page 10
9. **Map** a parameter; shows the first one's name
10. **+** opens the slots, 8 per lane with their own Min and Max · **x** clears them
11. **Value**: what the lane is sending now

Play · the Loop view

On the left, the drawing of one engine, its loop as a bar underneath, and a dot for each lane that's playing it, with a marker on the bar for where that lane is. If an engine has nothing drawn yet, it says so.

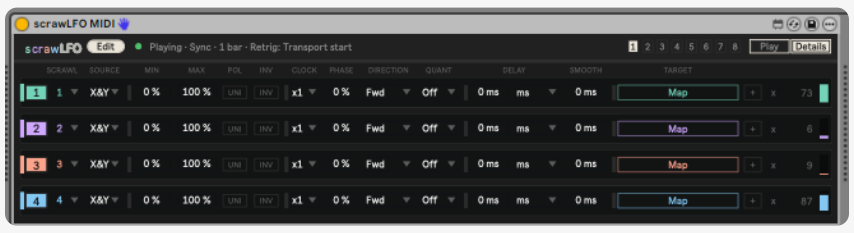
Tabs 1–4	Pick the engine, in scrawLFO's window too. The Loop view follows the engine you pick there.
Drag	Draws on the engine it shows. On a **Scrawl**, your stroke replaces the gesture, played back with the timing you drew it at. On an **LFO**, it pencils over the wave where you drag, leaving the rest as it was.
⇧ **+ drag**	On a Scrawl: hold Shift as you start the drag to add the stroke to the gesture, keeping what was there.
Clear	Next to the tabs: empties the engine's drawing.
Type switch	At the top right of the view, it shows whether the engine is a **Scrawl** or an **LFO**. Click it to switch the engine to the other Type, as its tab's menu does in the window.
Undo	Each stroke, Clear or Type switch is one undo step in scrawLFO's window: press **Edit** and use its Undo.

Play · the lanes

On the right, each lane has its number (click it to switch the lane on or off), the engine it reads, a trace of what it's sending, its **Min** and **Max**, its **Map** buttons and its current value.

Details

Every lane setting in one grid: Source, Pol, Inv, Clock, Phase, Direction, Quant, Delay and Smooth as well as the lane's engine, range and Map buttons. Page 10 explains each one.



The top line

- `Stopped · Sync · 1 bar · Retrig: Transport start`

Once scrawLFO is loaded, a green dot, then whether Live is playing, the timing (Sync and its loop length, or Free and its rate) and what retriggers the loop. Change those in scrawLFO's window. The buttons **1** to **8** beside it switch scrawLFO's page; the lit one is the page showing.

Until scrawLFO is loaded, it shows a message and a **Reload** button instead:

- **plug-in not installed** · run the Live installer again, then click Reload. Still there? Restart Live.
- **Loaded - lanes not linked** · plug-in and device are from different versions: run the Live installer again.

Point a lane at anything in your Set

A device, a send, a mixer volume, a rack macro: if you can click it, a lane can move it.

Map a lane

1. Click the lane's **Map**. It fills with the lane's colour and reads *Click a param*.
2. Click the parameter in your Set, once. Map now shows its name.
3. Press play. The lane moves it around its knob, as Live's LFO does.

Changed your mind? Click the flashing Map again to cancel. A parameter something else already modulates can't be taken: the slot's Map reads *In use* and stays free. Lanes 2 to 4 start off: switch one on with its number.

More than one parameter

Map again	Maps the next free slot. A lane has 8.
+	Opens the lane's slots beside the rows: each slot's target, its Min and Max, and an x to clear it. Once two are mapped, + shows the count.
x	Clears all of the lane's slots.
Window	The window's Lanes card has the same Map, x and + at the end of each row.
Delete	Deleting the device hands every parameter back to its own value. Undo the delete and the mappings return.

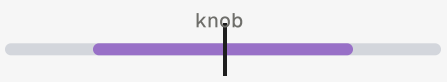
How far and which way

Uni



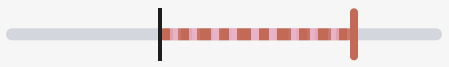
Pushes the parameter up from where its knob sits.

Bi



Swings it both ways around the knob. The middle of the drawing is no change.

Inv



Flips the lane. Uni rests at the top of its reach and falls back to the knob as the drawing rises.

Slot Min · Max

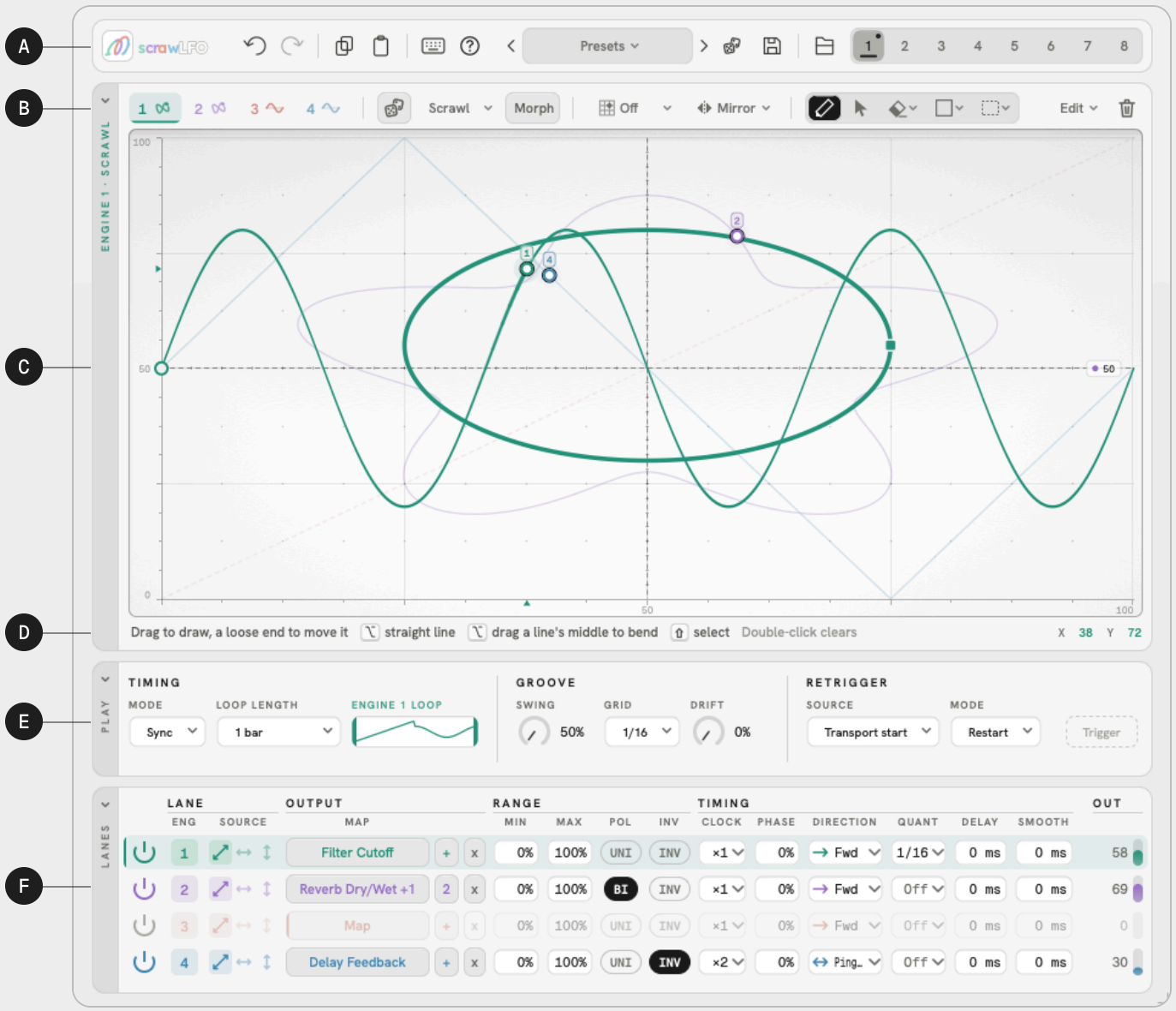
`Min 0%` `Max 100%`

How far one slot moves its parameter. Bi swings by Max − Min each way; Uni pushes up by Max. Min above Max turns the slot over.

Two layers of range: the lane's own **Min** and **Max** (0–100%) shape what the lane plays, for all its slots at once; each slot's Min and Max then set how far that one parameter moves.

Six areas, top to bottom

Click **Edit** on the device to open it. This is where you draw and edit; the device's Loop view draws too (page 3).



A Header

Undo, copy and paste, help, presets, files and the 8 pages. Page 6.

B Tool row

Engine tabs, Dice and Morph, grid, mirror, drawing tools and edits. Page 6.

C Canvas

The active engine's drawing. Other engines show faintly behind it; each lane's playhead rides its drawing in the lane's colour. Pages 7 and 8.

D Hint line

What the current tool does and which keys change it; the pointer's position on the right.

E Play card

Timing, loop window, swing, drift and retrigger. Page 9.

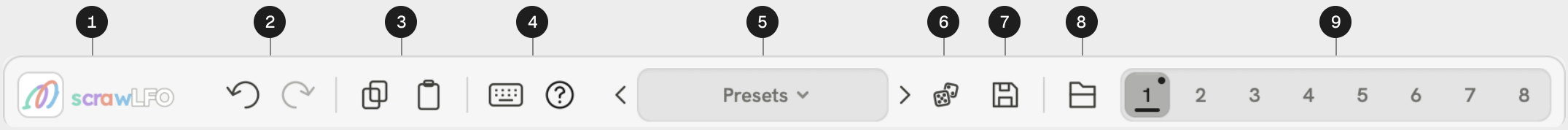
F Lanes card

The device's lane rows, in full: engine, mapping, range, speed and shaping. Page 10.

Each card folds to a bar with its chevron. Drag the window's corner to resize it. Click the logo for the skin, **Graphite** (dark) or **Studio** (light), this **Manual** and the **Tutorial**: 23 stops round the window, with a section on each Type's drawing tools to try; it also opens by itself the first time.

6 · A · HEADER

Header

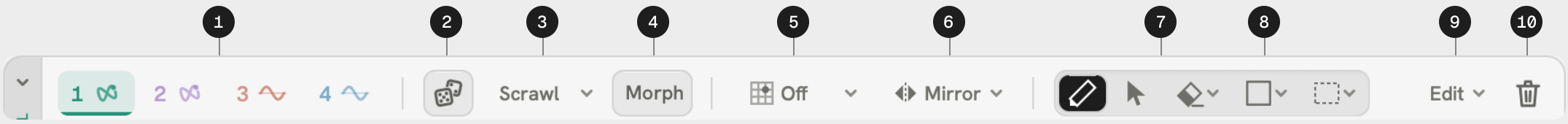


1. **Logo** · the skin (Graphite or Studio), **Manual** (this guide), the **Tutorial**, Credits and **Licence…**; without a key, a **DEMO** badge beside it opens the licence screen (page 2).
2. **Undo / Redo** · every drawing edit, across all four engines. ⌘Z ⇧⌘Z
3. **Copy / Paste** · the active engine's drawing, between engines, pages or instances. ⌘C ⌘V
4. **Shortcuts card** ? and the **tooltips** switch.
5. **Presets** · 96 factory drawings plus your own; **Init** starts afresh. [ ] step through them.
6. **Random preset** of the active engine's type. \
7. **Save** the drawing as a user preset, with a name and a hint.
8. **Files** · export or import pages, revert the page, choose the presets folder.
9. **Pages 1–8** · a dot marks a page you have edited.

6 · B · TOOL ROW · SCRAWL ENGINE

Tool row: Scrawl

This applies to the **Scrawl engine** (an XY gesture on the pad). Its controls act on the active engine: click a tab or press 1–4 to change it; a tab pulses while its engine plays. An LFO engine has its own row, below.

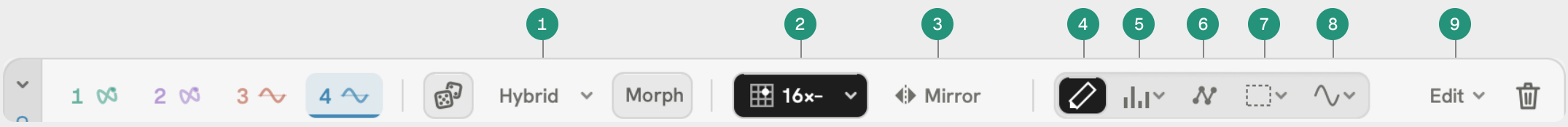


1. **Engine tabs** · right-click for Scrawl / LFO, Copy to, Off, Solo and Hide.
2. **Dice** · click for a new drawing N, drag up for more detail. Right-click undoes.
3. **Dice style** · Scrawl (a mix), Polygon, Line or Stepped.
4. **Morph** · nudges the drawing you have. Click for a little B, drag for more.
5. **Grid** · Snap to grid and Grid X / Y. Off to start.
6. **Mirror** · copies each stroke as you draw: Left/Right, Top/Bottom or Both.
7. **Tools** · Draw, Cursor, Erase, Shape, Select. Page 8.
8. **Shape** S · click it for the library of 46 stamps, then drag on the pad to place one.
9. **Edit** · Flip, Reverse, Smooth and more. **Show all** edits all four engines at once.
10. **Clear** the drawing.

6 · B · TOOL ROW · LFO ENGINE

Tool row: LFO

This applies to the **LFO engine** (a drawn waveform): make an LFO engine active and the row changes to suit it. The tabs, Dice, Morph and Clear work as on a Scrawl; **these differ**:



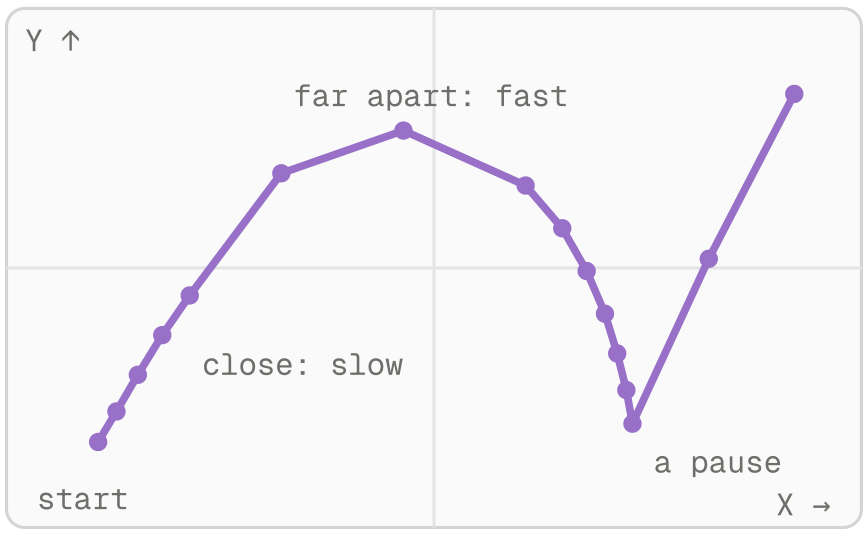
1. **Dice style** · Hybrid (a mix), Line, Curves or Stepped.
2. **Grid** · reads columns × rows: **16×–** is 16 columns, no rows. Lit because Snap is **on** to start. Grid X also sets the Step tool's columns, unless its menu picks a count.
3. **Mirror** · on or off, no menu: keeps the cycle symmetric, each edit copied across its middle.
4. **Pencil** D · draw over the curve; ⌘-drag for a straight ramp, ⌥-drag bends a segment, double-click adds a point.
5. **Step** T · paint a level per column. Its menu stamps a Ramp, Triangle, Sine, Alternate or Random run across a drag, and sets **Steps**: Grid, 4, 8, 16 or 32 columns.
6. **Points** P · click adds a point, joined straight to its neighbours; drag a point to move it; double-click or right-click deletes one; ⌥-drag bends a segment.
7. **Select** M · click a point (Shift-click for more), or draw a rectangle or lasso round several; move, scale or tilt them.
8. **Templates** (the sine glyph, in place of Shape) · 19 waveforms to start from: Sine, Saw, Square, Sidechain pump, S&H and more.
9. **Edit** · Flip horizontal H, Flip vertical F, Straighten curves L, Simplify S (far fewer points, the same line), Segment Type (Curve, S-Curve, Hold or Smooth), Delete points, Select all, Show all.

Scrawl or LFO: how each one plays

Every engine holds both a Scrawl and an LFO drawing; its type decides which one plays. Right-click an engine tab to switch: the other drawing is kept, so you can switch back. The difference is **where time lives**.

Scrawl

TIME IS IN YOUR HANDS

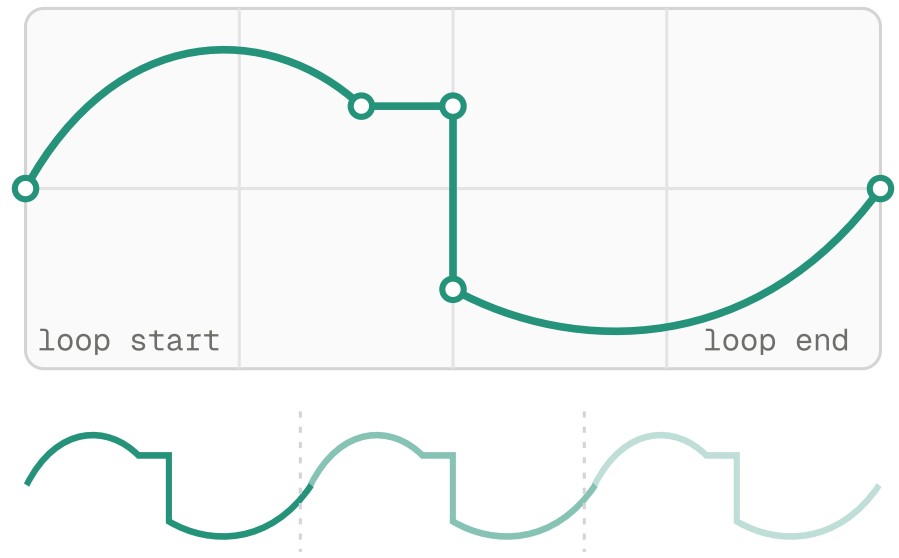


You perform it. Drag on the pad and scrawLFO records where the pointer is every millisecond, for up to 60 s. Playback retraces the path **at the speed you drew it**: a quick flick becomes a fast sweep, a pause becomes a hold.

Across the pad is not time: a stroke can double back, circle or cross itself. The pointer's position gives **two signals**, X (left to right) and Y (bottom to top). Each lane takes X, Y, or their average.

LFO

TIME RUNS LEFT TO RIGHT



You design it. The editor shows **one cycle**: the left edge is the start of the loop, the right edge its end, and the height is the value. The cycle repeats, the same every time.

Take your time: draw with the Pencil, paint Steps, or place Points and bend the lines between them, with Snap on the grid. It is **one signal**, so every lane reading an LFO plays the same curve, whatever its Source says.

	SCRAWL	LFO
You draw	a path on an XY pad, in real time	a curve: value over one cycle
Timing	from how fast you moved	from the horizontal axis
Signals	two, X and Y; lanes pick X, Y or both	one, the same for every lane
Feel	human, uneven, alive	exact, repeatable, on the grid
Edit with	Draw, Erase, Shape, Select, Dice, Morph	Pencil, Step, Points, Templates, Dice, Morph

What they share

Both loop on the Play card. In **Sync** the whole drawing stretches to fill the Loop length, so a three-second gesture and a single cycle both fill one bar; in **Free** both loop Rate times a second. The loop window, swing, drift, retrigger and every lane setting (Clock, Phase, Direction, Quant, Delay, Smooth) work the same on either.

Which one?

SCRAWL
A filter that breathes
The push and drag of a hand on a knob, looped.

SCRAWL
Two controls, one move
Lane 1 on X to cutoff, lane 2 on Y to resonance.

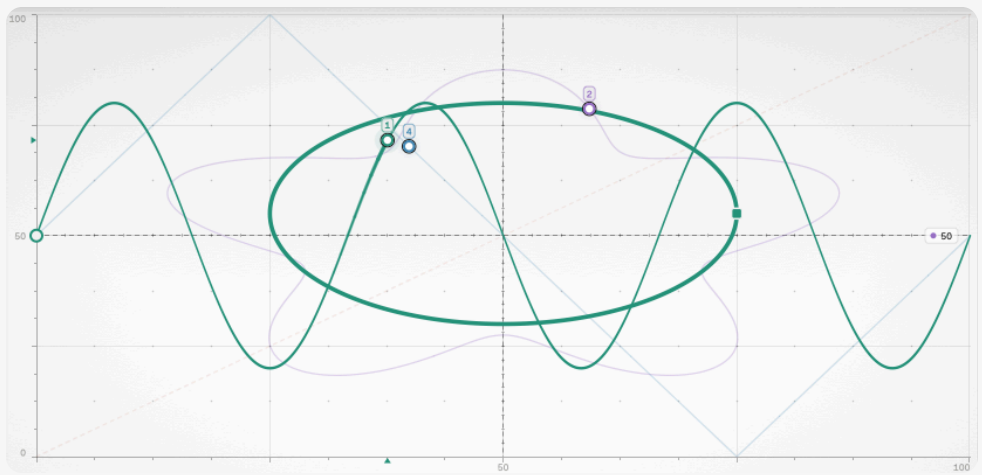
LFO
A pump on the beat
A ramp or a dip that lands on every quarter note.

LFO
A stepped pattern
Paint 16 steps with the Step tool, Snap on.

Two ways to draw

Right-click an engine tab, or click the Type switch in the device's Loop view, to make it a Scrawl or an LFO. The canvas follows the active engine. A new device opens engines 1 and 3 as LFOs, 2 and 4 as Scrawls. How they play differs: page 7.

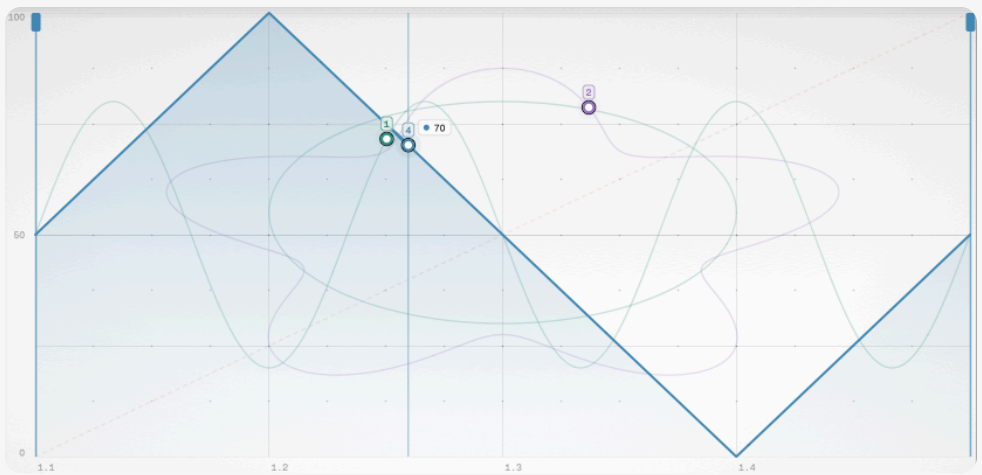
Scrawl XY pad



Drag to record a gesture in real time, up to 60 s. It loops with your timing. X and Y are two signals; each lane picks X, Y or both.

`D`	Draw: drag to record a stroke
`C`	Cursor: audition a position, record nothing
`E`	Erase: rub out, in three brush sizes
`S`	Shape: click to stamp, drag to size
`M`	Select: click a stroke to pick it, ⌘ adds, ⌥ removes; move, scale, rotate
`⌥` drag	Straight line, or from a stroke's last point carry the path on; bend a line from its middle, or curve a lone stroke
`⌥` dbl-click	Straighten a lone stroke between its ends
`⇧` or `⌥` over a point	It lights: drag to move a line's end or a shape's corner, its lines following
Drag a line's loose end	Stretch a straight line
Double-click	Clear the active engine

LFO waveform editor

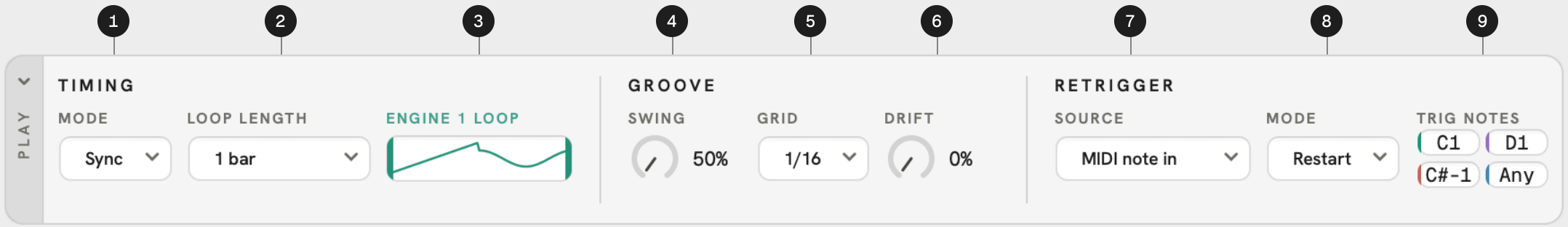


One cycle of a waveform, repeated. Draw it freehand, place breakpoints, or paint steps. Snap is on by default.

`D`	Pencil: draw over the curve; drag a lit point to move it; double-click adds one
`T`	Step: paint held steps, or stamp a ramp, sine or random run
`P`	Points: click adds a point, drag moves one; double-click or right-click deletes it
`M`	Select: click a point or box several; move, scale, tilt
`⌘` drag	Pencil: a straight line; ends land on points, ⇧ keeps it level
`^` drag	Pencil: draw free with Snap on
`⌥` drag	Bend a segment (by its type)
Right-click a segment	Its type: Curve, S-Curve, Hold or Smooth
`⌥` dbl-click	Straighten a bent segment

In either editor, **hold Shift** for a quick Select in any tool: over a point, a drag moves just that point; a box picks several. Let go and the selection stays: drag it, press `Delete`, or roll the Dice on just that part. `H` `F` flip, `R` reverses, arrow keys nudge. On a waveform, `L` straightens its curves and `S` simplifies it to a few bent segments. Edit ▸ Segment Type sets the type for a selection.

Timing and retrigger



1. **Mode** · **Sync** (default) follows Live's tempo and moves only while Live plays; **Free** runs at its own rate, playing or not.
2. **Loop length** (Sync) 1/16 to 16 bars, dotted and triplet too, or **Rate** (Free) 0.01–50 Hz.
3. **Engine loop** · drag the ends to play part of the cycle; cross them to play it backwards. ⌘-drag sets all four; ⌥-drag lands on 5% steps.
4. **Swing** · 50% is straight, 66.7% a triplet feel. Sync only.
5. **Grid** · swing on 1/8 or 1/16.
6. **Drift** · fresh random variation on every pass.
7. **Source** · what restarts the loop: Off, Button, Transport start (default: each time you press play) or, on scrawLFO MIDI only, MIDI note in.
8. **Mode** · **Restart** jumps to the start; **Hold** freezes while the note is down; **Trigger** moves only while the note or Trigger is held, stops where you let go and carries on from there next time. **One-shot** plays each lane's loop once, then holds where it ended; **One-shot Hold** plays it while the note or Trigger is held and stops where you let go; **One-shot Reset** sends the lanes back to their start when you let go. With Source Off they loop like Restart; from Transport start Trigger plays as Restart, the held One-shots as One-shot.
9. **Trig Notes** · the note that restarts each engine (or Any). With Button, the **Trigger** button.

Restart the loop from notes in Live

Set Source to **MIDI note in**. Every note that reaches the device restarts the loop; to have only one note do it, set the engine's **Trig Notes** box. Notes are named as Live names them: middle C is C3, a Drum Rack's first pad C1. Only **scrawLFO MIDI** hears notes: an audio effect gets no MIDI, so scrawLFO Audio restarts on Transport start or the Trigger button: its Source menu leaves MIDI note in out, and Trig Notes are hidden.

From a clip

On the same track: draw notes where the loop should restart.

From a keyboard

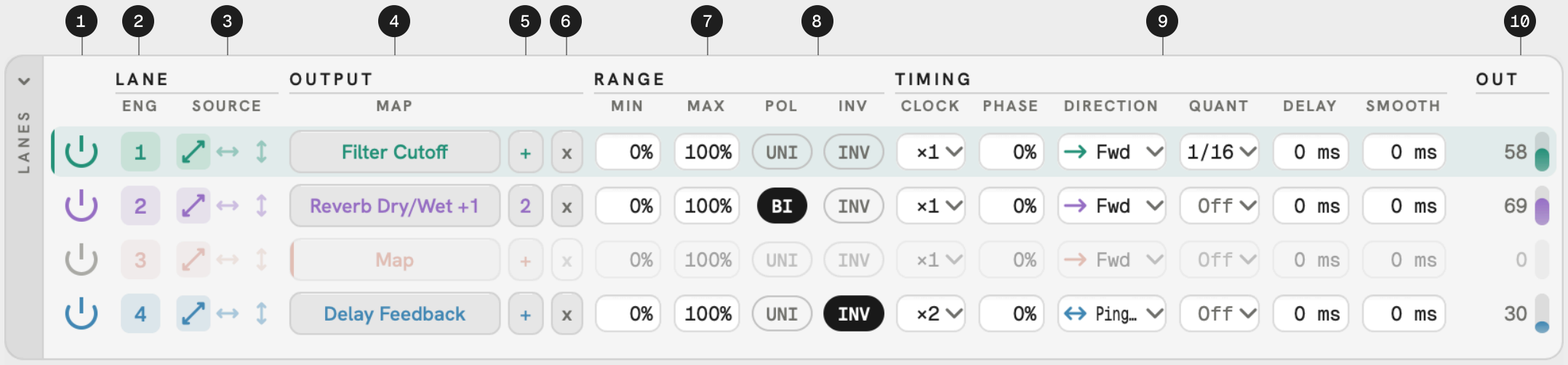
Arm the track, or set its Monitor to In. Use Free to play with Live stopped.

From another track

Restart on every kick: put scrawLFO MIDI on its own MIDI track, MIDI From the drum track, Monitor In.

Lanes

One row per lane, the same rows as the device's Details view. Each reads one engine and moves the parameters mapped to it.



COLUMN	WHAT IT DOES	RANGE
1-3 · LANE		
On	Switches the lane. Lane 1 starts on. Right-click to copy its settings to another lane.	on · off
Eng	The engine the lane reads. Click to step, right-click to pick.	1-4
Source	For a Scrawl: the average of X and Y, X alone, or Y alone. Every lane starts on X&Y. An LFO plays its waveform whatever this says.	X&Y · X · Y
4-6 · MAP		
Map	Click, then click a parameter in Live. Shows its name, and +1, +2… when there are more.	8 per lane
+	Opens the lane's 8 slots: each target, its own Min and Max, its own x, and a Map per slot. Reads the slot count from 2.	0-100%
x	Clears all of the lane's mappings.	
7, 8 · RANGE		
Min · Max	The part of the drawing's range the lane plays. Live's automation lanes for them read 0 to 127, where 127 is 100%.	0-100%
Pol	**UNI** pushes the parameter up from its knob, the drawing's lowest point to its highest; a flat line pushes by the level it's drawn at. **BI** swings it both ways around the knob, as drawn.	UNI · BI
Inv	Flips the lane.	on · off
9 · TIMING		
Clock	Speed against the loop: half time, double time and so on.	/8 … ×8
Phase	Starts the lane further through the drawing.	0-100%
Direction	Fwd, Back, Ping-Pong, Meander, Random, or **Seq**: click the Seq glyph for a sequencer of up to 16 steps that jumps around the drawing; Esc or a double-click outside it closes the window.	6 modes
Quant	Samples and holds on the beat grid, for stepped movement.	Off · 1/1 … 1/32
Delay	Plays the lane that far behind the playhead, from the first beat. In ms, or in steps of a note value so it follows the tempo: right-click the box for **Delay in**, Milliseconds or a note value from 1/64 to 1/1 (triplet and dotted too), and the box counts steps, reading 1/16 or 3 × 1/16. On the device, the unit menu beside the box picks the same. Up to 5 s either way.	0-5000 ms 0-32 steps
Smooth	Glides between values to soften steps and jumps.	0-500 ms
10 · OUT		
Meter	Where the lane is now.	0-100

Every box: **drag** or scroll to change, **double-click** to type, **⌥- or ⌘-click** to reset. The Rate, Swing and Drift wells reset the same way.

Pages, presets, shortcuts, help

Pages

8 pages, each a complete set of four drawings and every setting. Switch pages to change the whole patch at once.

Click	Go to the page
Shift-click	Copy this page there
Shift-⌥-click	Empty the page
Right-click	Duplicate, revert or empty
Automate Page	Switch pages from Live's automation or a macro (the page follows a moment later, not on the beat)

Presets and saving

Ships with 48 Scrawls and 48 LFO; a preset replaces the active engine's drawing. Save your own with the disk icon.

Your **Live Set** keeps the drawings, every setting, all 8 pages and every mapping; Live device presets save the same. Live has limited room for one device, though: very long or dense Scrawls are saved with less detail, and in extreme cases only the current page. A warning badge on the Files button says when; to keep an exact copy, choose **Export all pages** from its menu. To move a sound to another Set, **Export** and **Import** from the Files menu, or drop a .json file on the window.

Shortcuts

Press `?` in the window for the full card.

ANYWHERE

`Space`	Start and stop Live
`⌘Z` `⇧⌘Z`	Undo, redo
`⌘C` `⌘V`	Copy, paste drawing
`1` – `4`	Active engine
`N` `B`	Dice, Morph
`[` `]` `\`	Presets

DRAWING

`D` `C` `E` `S` `M`	Scrawl tools
`D` `T` `P` `M`	LFO tools
hold `⇧`	Quick Select
`H` `F` `R`	Flip, flip, reverse
`L` `S`	LFO: straighten, simplify
`⌘A` `Esc`	Select all, deselect
`←` `↑` `→` `↓`	Nudge the selection

PAGES

`⇧1` – `8`	Go to a page
`C` `V`	Over a page button: copy it, paste onto it

LANES

Right-click Delay	Delay in: ms, or steps of a note value

If something's wrong

The device shows a message and Reload

Plug-in not installed: run the Live installer again, click Reload, restart Live if needed. Lanes not linked: run the Live installer again.

A note doesn't retrigger

Source reads MIDI note in; the engine's Trig Note is the note you play, or Any; the track's MIDI meter shows the notes arriving.

scrawLFO crashed

It leaves a report, and the next time its window opens it offers it: **Send report** puts it in an email to support for you to send, **Show file** finds it, **Don't send** lets it go.

A parameter doesn't move

The lane is on and its trace or meter moves; Live is playing (in Sync); the slot's Max isn't 0%; the lane's Min and Max differ.

Everything goes quiet for 3 s every 45 s

That's the demo, and a **DEMO** badge shows beside the logo. Click it and activate your key (page 2): every open scrawLFO unlocks at once.

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