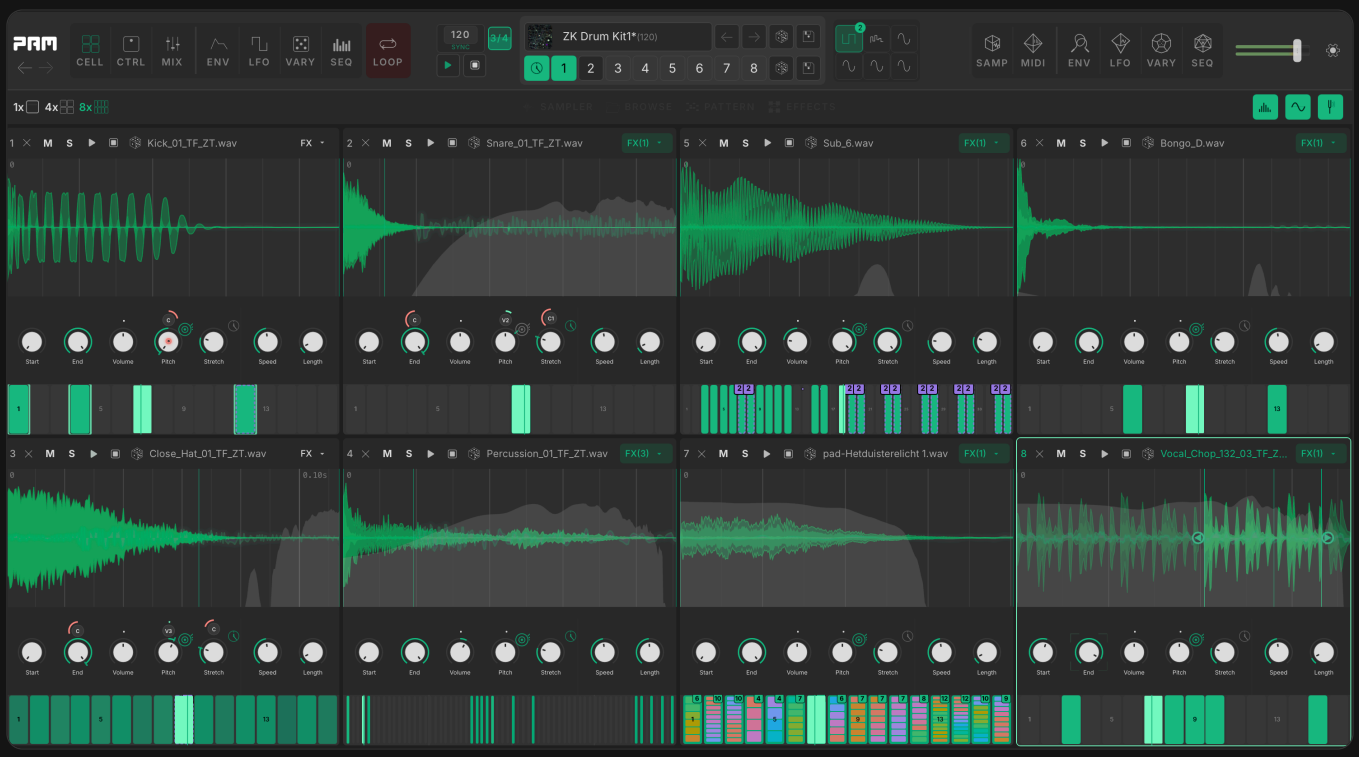
PAM

Pattern-based Audio Mapping System

8-Channel Modular Sampler · VST3 / AU / CLAP / Standalone
VERSION 1.4.35
macOS (Apple Silicon) · Windows



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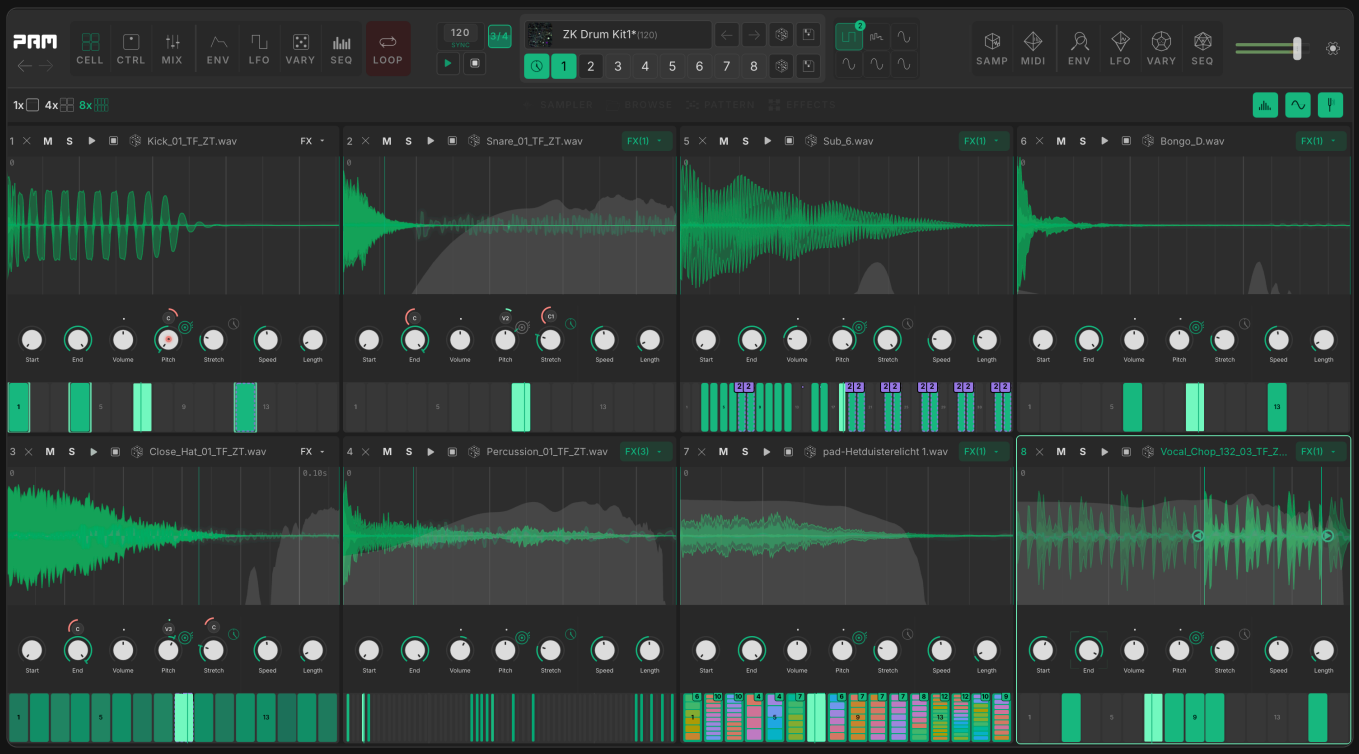
CHAPTER 1

INTRODUCTION & OVERVIEW

PAM (Pattern-based Audio Mapping System) is an 8-channel modular sampler. Each channel runs an independent sampler engine, effects chain, step sequencer, and modulation system. Audio flows through a fixed signal path: Samplers → Cell FX → Mix/Looper → Punch → Limiter. The Looper sits in parallel with the live cell mix — a crossfader blends between them. Cross-cell routing is supported for Vary modulation, sidechain envelope following, and Resample.



Cell Grid — all eight cells with waveforms, step sequencers, and per-cell controls

Eight Independent Cells

Each cell holds a sampler, effects chain, step sequencer, and modulation routing.

Flexible Audio Routing

Audio flows: Samplers → Cell FX → Mix/Looper (Crossfade) → Punch → Limiter.

Step Sequencer

Per-pattern sequencing with Note, Pitch, Slice, and Stretch lanes. Use the fullscreen Step Grid or classic Tracker view.

LFO & Envelope Modulation

Six global LFO generators plus per-cell envelope followers map to any parameter. Includes a drawable Custom shape with breakpoint curves and tension handles.

Looper

8-track looper with overdub, external input, and bar-synced variation switching. Record up to 8 tracks simultaneously, one per cell.

Vary System

Per-parameter randomisation with adjustable polarity and strength, including cross-cell routing.

CtrlAll Macros

Global macro controls with A/B crossfader, XY pad, and per-cell exclusions.

ParamSeq

Step-sequenced modulation lanes for any parameter, independent of the main note pattern.

RESOURCES & LINKS

map.audio — Official website, downloads, and product info
map.audio/faq — Frequently asked questions and troubleshooting

- **map.audio/changelog** — Version history and release notes
- **YouTube** — Video tutorials, demos, and walkthroughs
- **Discord** — Community chat, support, and preset sharing
- **Instagram** — Updates and sound design inspiration

CHAPTER 2

INSTALLATION & SETUP

Download the latest installer from map.audio and follow the steps below.

1. **Download** Visit map.audio and download the installer for your platform (macOS or Windows).
2. **Run Installer** Double-click the installer and follow the on-screen instructions. Admin rights may be required.
3. **Plugin Formats** PAM installs as VST3, AU (macOS), CLAP, and as a Standalone application.
4. **DAW Scan** Open your DAW and re-scan the plugin folder. PAM will appear under MAP Audio.
5. **Activation** On first launch you will be prompted to enter your license key or log in to your MAP Audio account.
6. **Sample Library** PAM ships with a built-in sample library. Additional samples can be loaded via the Browser.

> **NOTE** PAM stores its configuration in /Library/Application Support/MAP Audio/ on macOS and %APPDATA%\MAP Audio\ on Windows.

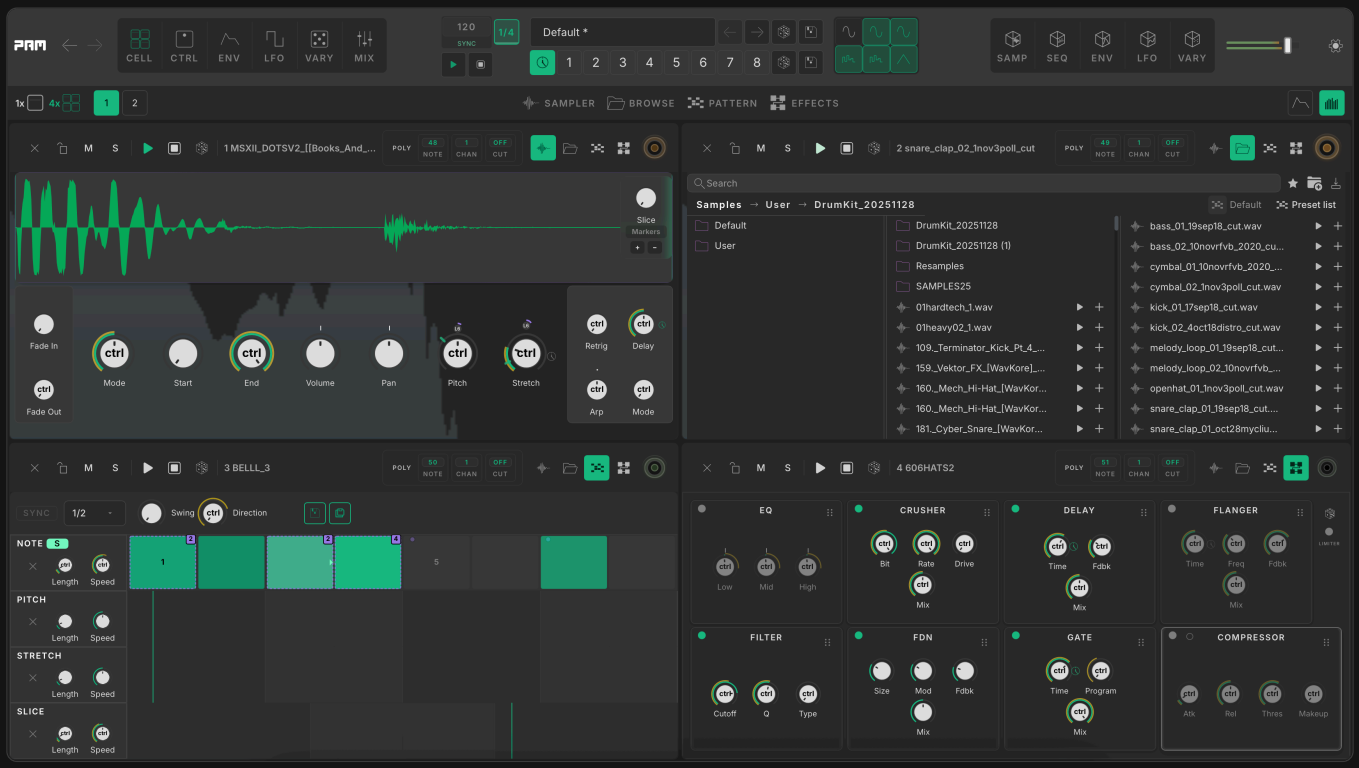
SYSTEM REQUIREMENTS

- macOS 12+ (Apple Silicon) | Windows 10/11 (64-bit)
- VST3, AU (macOS), CLAP, Standalone
- 4 GB RAM minimum · 8 GB recommended
- 500 MB disk space for installation + sample library
- DAW with VST3, AU or CLAP support

CHAPTER 3

INTERFACE OVERVIEW

PAM's interface is divided into a persistent top header, a main view area, and contextual panels. The header contains Transport, Presets, LFO, Randomize, Volume, and Settings. Switch views using the navigation bar: CELL, CTRL, MIX, ENV, LFO, VARY, SEQ, and LOOP.



Single-cell view showing Sampler, Browser, Pattern Editor, and Effects panels

NAVIGATION BAR

CELL Cell Grid view — all 8 cells at once.

CTRL CtrlAll view: global macro controls, XY pad, and A/B crossfader.

MIX Full mixer: volume, pan, mute, solo, and per-cell FX.

ENV Envelope follower assignments and settings.

LFO Global LFO generators and modulation matrix.

VARY Per-parameter randomisation with cross-cell routing.

SEQ ParamSeq view: step-sequenced modulation lanes.

LOOP Looper view: 8-track live audio capture and playback.

DETACHED WINDOWS

Right-click any view button in the navigation bar (CTRL, MIX, ENV, LFO, VARY, SEQ, LOOP) to pop it out into a separate floating window. Use Tile Presets to arrange multiple windows.

TRANSPORT CONTROLS

Play, Pause, and Stop. Bar Sync lives here. Right-click the transport area for MIDI Recording, Quantize, Overdub/Replace mode, and Metronome.

Record MIDI Arm recording. Right-click Transport ⟶ Record MIDI. Notes are captured into the active cell's pattern when transport plays.

Quantize Snap recorded notes to a grid: Off, 1/8, 1/16, or 1/32.

Overdub / Replace Layer new notes on top of existing ones, or overwrite them.

Metronome Audible click track synced to the beat. Accented on beat 1.

TIME SIGNATURE (METER)

Right-click the BPM display. The **Meter N/D** grid offers 12 presets: 2/4, 3/4, 4/4, 5/4, 6/4, 7/4, 3/8, 5/8, 6/8, 7/8, 9/8, 12/8. Default 4/4. Bar-length math in patterns, looper, song mode, and resampling follows the selected meter.

> **NOTE** When DAW-synced, the Meter picker is disabled and shows "(DAW)" — the host drives the time signature.

OTHER HEADER CONTROLS

Undo / Redo Undo/Redo lives in the header for fast iteration.

Master Volume Adjust global output level from the header.

Settings Open app preferences and utilities.

Header LFO Buttons Click to edit LFOs; drag a generator onto knobs to assign.

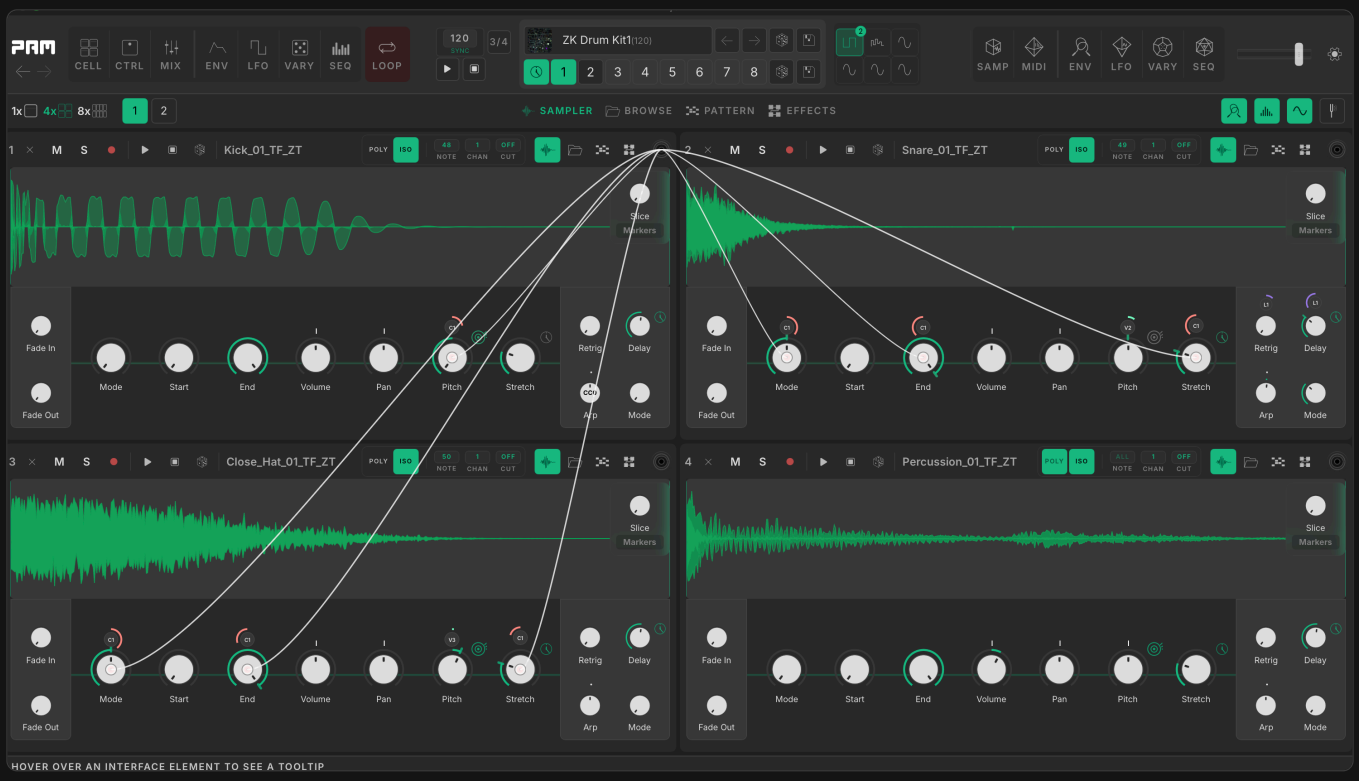
Cables & Spectrum Show/hide modulation cables, spectrum analyzer, and oscilloscope.

Context Menus Right-click (or two-finger click) throughout the app to access additional options for the targeted control.

CHAPTER 4

CELL GRID

The Cell Grid is PAM's default view. All eight cells are displayed simultaneously, each showing its waveform, sampler controls, and quick-access buttons.



4-cell layout with detailed sampler controls and envelope overlays

CELL HEADER CONTROLS

Reset Clear the cell back to its default state.

Mute / Solo Silence this cell or isolate it; all others are muted when Solo is active.

Play / Stop Preview the sample. Each cell has its own Stop button.

Arm Targets the cell for external MIDI input and resampling capture.

Randomize Randomize parameters for this cell.

Patch Point Access patch point routing controls per cell.

MIDI & POLY

Toggle Poly; set Note, Channel, and Cut (Choke) per cell for MIDI triggering. Cells sharing a cut group mute each other — useful for open/closed hi-hats. When Poly is enabled, the cell header shows "All" instead of a specific note number, and the pattern editor switches to Piano Roll mode for melodic sequencing.

GRID NAVIGATION

Grid Size Switch between 1-cell, 4-cell, and 8-cell layouts to fit your workflow.

Pages Navigate between sets of cells when not in 8-cell view.

POLY TOGGLE MENU

Right-click the waveforms to enable/disable Poly per cell or in bulk.

RESAMPLE TO CELL

Right-click a cell → Resample. Pick a source (Full Mix, Specific Cell, Looper Output, or External Input), mode (Live/Offline), and length. Live mode supports "Until Stopped" or "Fixed Length". Options include Normalize, Skip Silence, and Overdub.

Overdub When enabled, the new capture is mixed on top of the cell's existing sample instead of replacing it — layer takes, build up loops, or print effects over a previous pass without losing it. The combined audio is peak-limited so layering doesn't push the result into clipping. Skipped automatically if the cell is empty or the existing sample uses a different sample rate.

> **CAUTION** Live resampling captures audio in real time — make sure transport is playing and the source cell is producing sound before starting.

> **TIP** Trigger live resampling hands-free from a MIDI controller — see **MIDI → Resample** in the MIDI Mappings settings. Send a CC value to start, stop, or switch the captured cell while keeping the source/length/bar-sync settings from this panel.

CHAPTER 5

SAMPLER CONTROLS

Each cell contains a sampler engine with Start/End, Granular Stretch, Pitch, Volume, and Fade In/Out controls. Click the vinyl icon to toggle between Varispeed mode (pitch affects speed) and Pitch Shift mode (pitch is independent of speed).

Sampler view with waveform editor, slices, and full knob controls

WAVEFORM EDITOR

Drag to set Start/End points and fades. Add slices (up to 64) to chop samples — click the bottom edge of a slice to preview it. Use the Sample Browser below to load audio files.

> **NOTE** Double-click a slice marker to delete it. Hold Shift while dragging to snap slices to beat divisions.

AUTO SLICE — TRANSIENT DETECT

Open the Auto Slice menu (waveform context menu) and adjust **Transient Detect** sensitivity (0–100, default 50). Lower values produce fewer markers; higher values catch fast hits and ghost notes. The menu stays open after detection — retry at a different sensitivity without reopening. Double-click to reset to 50.

MAIN KNOBS

Start / End Playback start and end points within the sample (0–100%).

Stretch Granular time-stretch. Changes length without affecting pitch. Right-click for two engine controls: **XFade** (0.05–0.5 grain fraction, default 0.4) — overlap between grains; **Grain** (10–200 ms, default 50 ms) — grain window length. Modulatable via macros.

Pitch Pitch offset in semitones. Toggle the vinyl icon to switch between Varispeed and Pitch Shift modes.

Volume Per-cell output gain.

Fade In / Out Apply volume fade envelopes to the start and end of each triggered note.

SAMPLE BROWSER

Browse folders, search by name/tags/folder, and drag samples into cells.

VARY — PER-HIT VARIATION

Add per-hit variation. Right-click any knob → Vary column to set polarity/strength or assign a source cell.

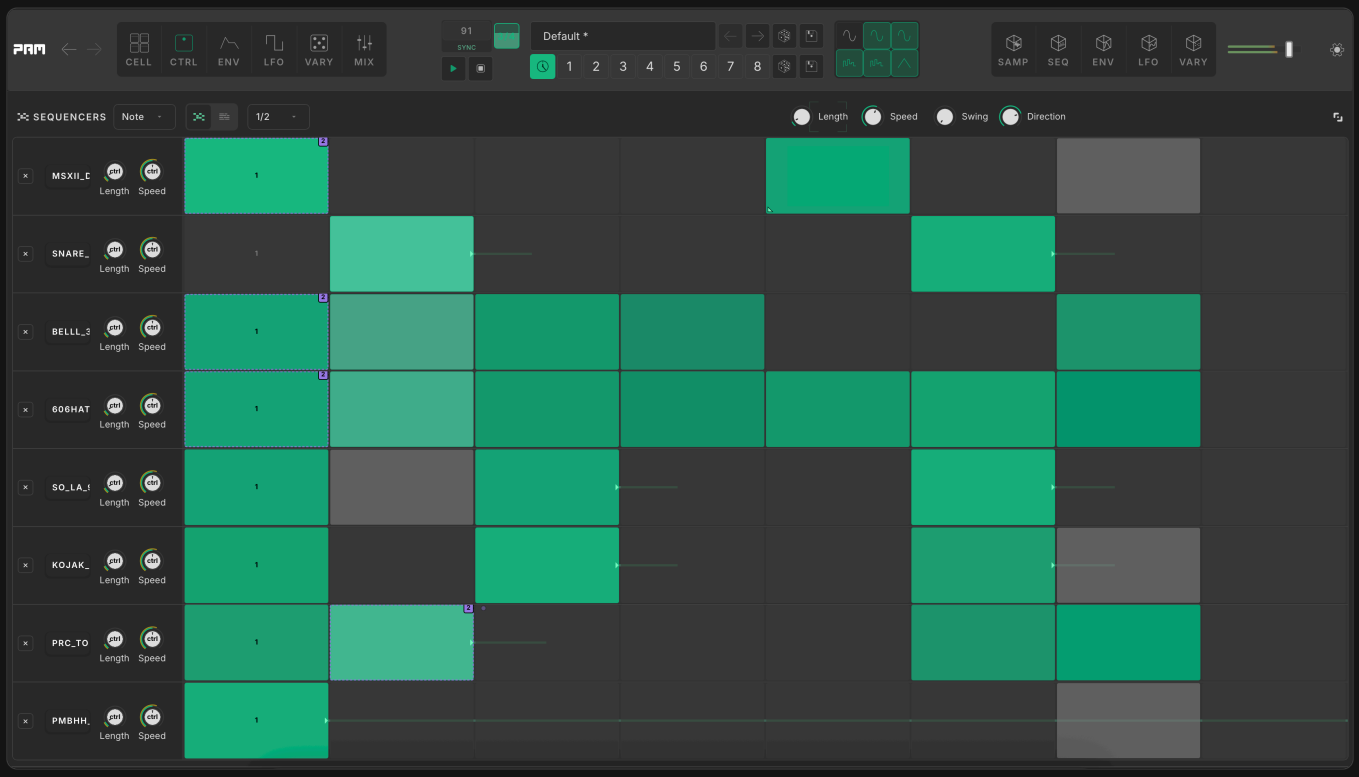
CREATE ENVELOPE BY DRAG

Drag a cell onto the small socket under a knob to add an envelope follower from that cell.

CHAPTER 6

PATTERN EDITOR

Program notes and value patterns. Each cell has its own pattern with independent length and playback speed. Keyboard shortcuts: Cmd+A Select All, Cmd+C/V Copy/Paste, Delete to remove, Arrow keys to adjust values, Escape to deselect.



Step sequencer with note patterns across all eight cells

PATTERN LANES

Note Toggle steps on/off. Active steps trigger the cell's sampler.

Pitch Per-step pitch offset — shift individual steps up or down in semitones.

Slice Per-step slice selection — which slice point plays on this step.

Stretch Per-step time-stretch value — alter the stretch amount for individual steps.

STEP PROPERTIES

Right-click any step to open the Step Properties panel. Each step supports:

Velocity MIDI velocity (0–127).

Vel Rnd Velocity randomisation amount (± %).

Probability Chance the step will fire (0–100%).

Cond Trig condition. Restricts when the step fires across loop iterations. **Always** (default) fires every loop. **1ST** fires only on the first loop. **N:M** (1:2 through 8:8) fires on the Nth pass of an M-loop cycle. Note, pitch, slice, and stretch lanes all support it. A glyph on the step shows the active condition. Gates together with Probability.

Retrigger Number of retriggers within a single step.

RT Delay Delay between retriggers in beats.

RT Vel Velocity of retriggered notes (% of main velocity).

RT Prob Probability for each retrigger event.

PATTERN MACROS

Set pattern length/speed for Note, Pitch, Slice, and Stretch lanes. Enable/disable or randomize.

PATTERN VARIATIONS MENU

Right-click pattern group labels or the empty bar area to copy/paste pattern groups.

PITCH / SLICE / STRETCH RIGHT-CLICK MENU

Right-click the Pitch, Slice, or Stretch knob (or open the value-lane editor's context menu) for pattern tools. The menu shows a waveform preview, Length and Speed knobs, and:

Rotate ◂ / ▸ Shifts every event one step earlier or later. Wraps around the pattern.

Random Generates a fresh sequence when the lane is empty; mutates the existing sequence when populated.

Shape Palette Saw, ramp, triangle, and other shapes populate the lane in one click.

GHOST MARKERS

When a pitch, slice, or stretch lane is open, the cell's note events tile across the timeline as faint markers — visual reference for where notes will trigger. No toggle.

GLOBAL PATTERN SETTINGS

Right-click the CtrlAll header for global pattern options: set length and speed across all cells at once, or clear all patterns.

SEQUENCER SETTINGS

Length Pattern length in bars (1–32). Independent per cell.

Speed Playback speed multiplier: 1/32 to 12× relative to global tempo (20 discrete values).

Swing Delays the off-beat step in each step pair. 0% = straight time. Right-click the Swing knob to pick Adaptive (grid follows note density, best for sparse or expressive patterns) or Grid (fixed 1/16 MPC-style grid, swing stays consistent as you edit). Per-cell, and also available on the Control All swing knob to set all cells at once.

Direction Playback direction: Forward, Backward, Ping Pong, Random Cycle, or Random Step.

Sync Locks the cell's clock to the global transport or lets it free-run.

PIANO ROLL

When a cell has Poly enabled, the pattern editor switches to a Piano Roll — a horizontal timeline where notes are drawn as rectangles at different pitches. This is ideal for melodic sequencing and chord programming.

DRAW MODE VS SELECT MODE

Toggle between two interaction modes using the toolbar button (pencil icon):

Draw Mode Click and drag to paint notes continuously. This is the default mode.

Select Mode Click to place a single note, then drag to set its duration.

GHOST NOTE PREVIEW

When hovering over empty space, a semi-transparent ghost note shows exactly where a note will be placed. The preview snaps to the current grid resolution and follows the cursor position.

ZOOMING

Cmd + Scroll Horizontal zoom anchored to the cursor position. The beat under the cursor stays fixed during zoom.

Shift + Scroll Horizontal scroll (also works with trackpad swipe).

Cmd + Shift + Scroll Vertical zoom (note range).

+ / – buttons Toolbar buttons for horizontal zoom.

The zoom range is 1x to 16x. A scrollbar overlay at the bottom of the note area supports drag-scrolling.

ADAPTIVE GRID

Timeline labels adapt to the current zoom level: at high zoom, every beat is labelled; at medium zoom, only bar numbers are shown; at low zoom, labels appear at wider intervals to prevent overlap.

QUANTIZE

Press the Q button in the toolbar to snap all events in the active sequencer to the current grid resolution. Both time positions and durations are quantized. The tooltip shows the active grid resolution (e.g., "Quantize to grid (1/16)").

CROSS-ROW SELECTION

In the Pattern Overview (showing Note, Pitch, Stretch, and Slice rows together), hold Shift and drag across rows to select events across multiple lanes simultaneously. A green highlight shows the selection area. Selected events can be moved, copied, or deleted together — moving events in one row keeps sibling rows in sync.

In the CtrlAll step grid, Shift+drag selects steps across multiple cell rows and columns. Press Delete to remove all selected steps, or Escape to clear the selection.

MULTI-LANE CLIPBOARD

Copy and paste works across lanes. Cmd+C captures events from all lanes that have a selection. Cmd+V pastes them back, preserving the multi-lane structure. Cmd+X cuts (copies then deletes). Events can also be pasted across different lane types with automatic value conversion.

PIANO ROLL SHORTCUTS

↑ / ↓ Move selected notes up/down by one semitone.

Shift + ↑ / ↓ Move selected notes up/down by one octave.

← / → Move selected notes left/right by the current snap resolution.

Shift + ← / → Move selected notes left/right by one beat.

Cmd + X Cut selected events.

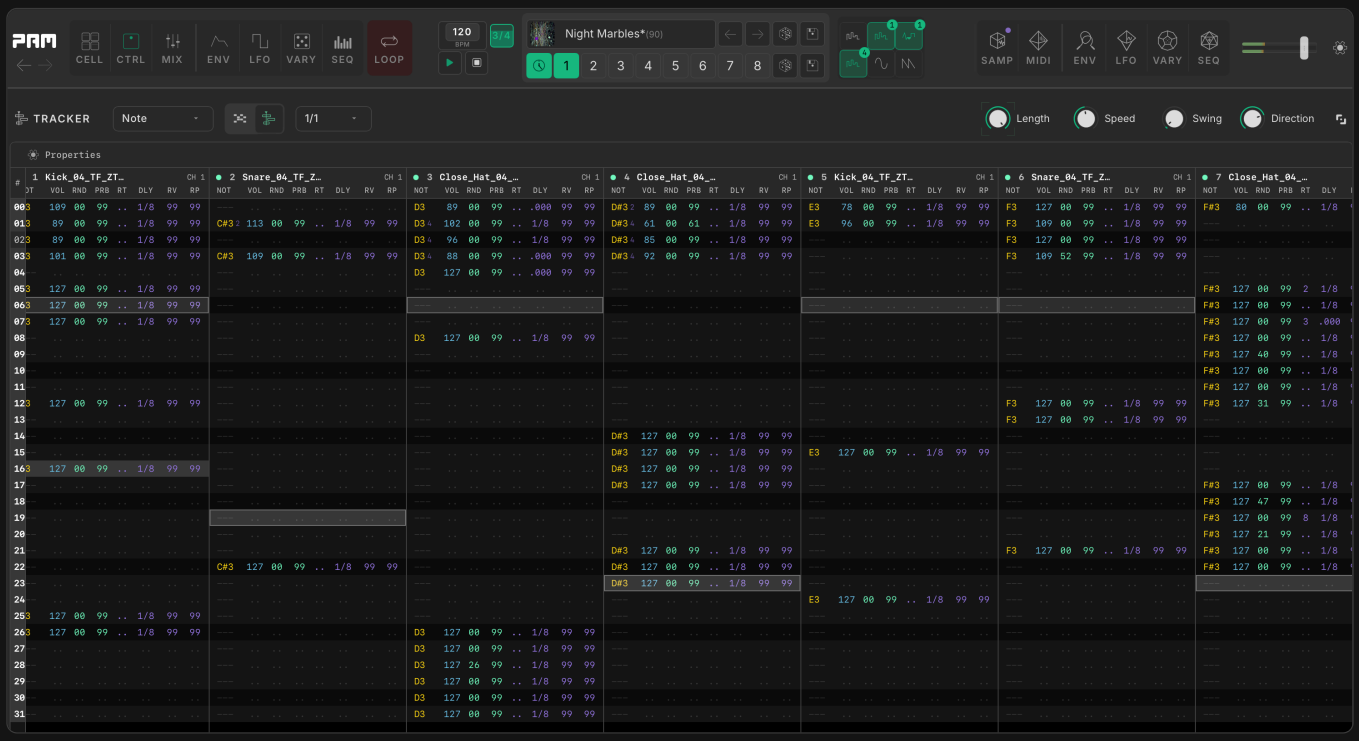
Cmd + D Duplicate selected events.

> **NOTE** The currently playing note highlights in green during playback, making it easy to follow the sequence in real time.

CHAPTER 7

TRACKER VIEW

The Tracker provides a vertical, detailed list of all steps. Click the Tracker icon in fullscreen to switch views. All eight cells appear as columns; each row represents one step.



Tracker view with all eight cells as columns — classic step-entry style

STEP GRID

Program steps quickly; use fullscreen to focus editing. In fullscreen, switch between Grid view and Tracker view.

VIEW PRESETS

Toolbar segmented buttons toggle which step columns are visible:

Notes NOT only.

Velocity NOT + VOL + RND.

Retrigger NOT + RT + DLY + RV + RP.

Full All columns (default).

ROW SIZE

S (14 px), **M** (18 px, default), or **L** (26 px).

RECORD MODE

Toggle the Record button to enable live note entry. With the cursor on a step, type letters A–G plus the number row for ASCII keyboard MIDI entry.

TRACKER PROPERTIES

Click any step to reveal detailed properties at the bottom, including velocity, probability, and retrigger.

COLUMN DATA FORMAT

NOT Note value (e.g. C3, D#3). Dots (..) indicate no note.

VOL Step velocity (0–127).

RND Velocity randomisation.

PRB Probability (00–99 = 0–99%, 99 = always).

RT Retrigger count.

DLY Retrigger delay.

RV Retrigger velocity.

RP Retrigger probability.

TRACKER NAVIGATION

Arrow Keys Move cursor between cells and steps.

Enter / Space Toggle the step at the current cursor position.

0–9, A–G Type note values directly (e.g. C3, A#2).

Delete / Backspace Clear the current step.

Cmd+C / Cmd+V Copy and paste step ranges.

CHAPTER 8

EFFECTS CHAIN

Each effect block is draggable to reorder. Power buttons enable/disable modules. Right-click Delay for Tape Smoothing mode. Eight effect slots are available per cell. Each effect has an on/off toggle, parameter knobs, and a Mix knob for wet/dry blending.

> NOTE Effects are processed in order from top to bottom. Drag to reorder for different tonal results — e.g., Filter before Delay vs. after.

FX TOOLBAR

Randomize FX for the current cell or toggle its Limiter here.

PER-CELL EFFECTS

EQ 3-band equalizer (Low, Mid, High). Boost or cut each band.

Crusher Bit crusher / sample rate reducer. Bit depth, Rate reduction, Drive, and Mix controls add lo-fi grit.

Delay Stereo delay with Time (synced or free), Feedback, and Mix. Right-click for Tape Smoothing mode.

Flanger Flanger effect with Time, Frequency, Feedback, and Mix.

Filter Cutoff, Q (resonance), and Type. Nine modes — set via the Type selector.

Lowpass / Highpass / Bandpass / Peak / Notch — TPT state-variable filter.
Comb 1 — Forward comb. Cutoff sets the comb period for flanger sweeps and pitched metallic textures.
Comb 2 — Feedback comb. Resonant pitched tones and reverb-like tails.
Formant — Sweeps vowel shapes (A → E → I → O → U) across Cutoff. Stereo.
Moog — 24 dB/oct ladder lowpass. Approaches self-oscillation at max Q.

FDN Feedback Delay Network reverb. Size, Mod depth, Feedback, and Mix.

Gate Noise gate / rhythmic gate with Time, Program, and Mix.

Compressor Dynamics compressor with Attack, Release, Threshold, and Makeup gain.

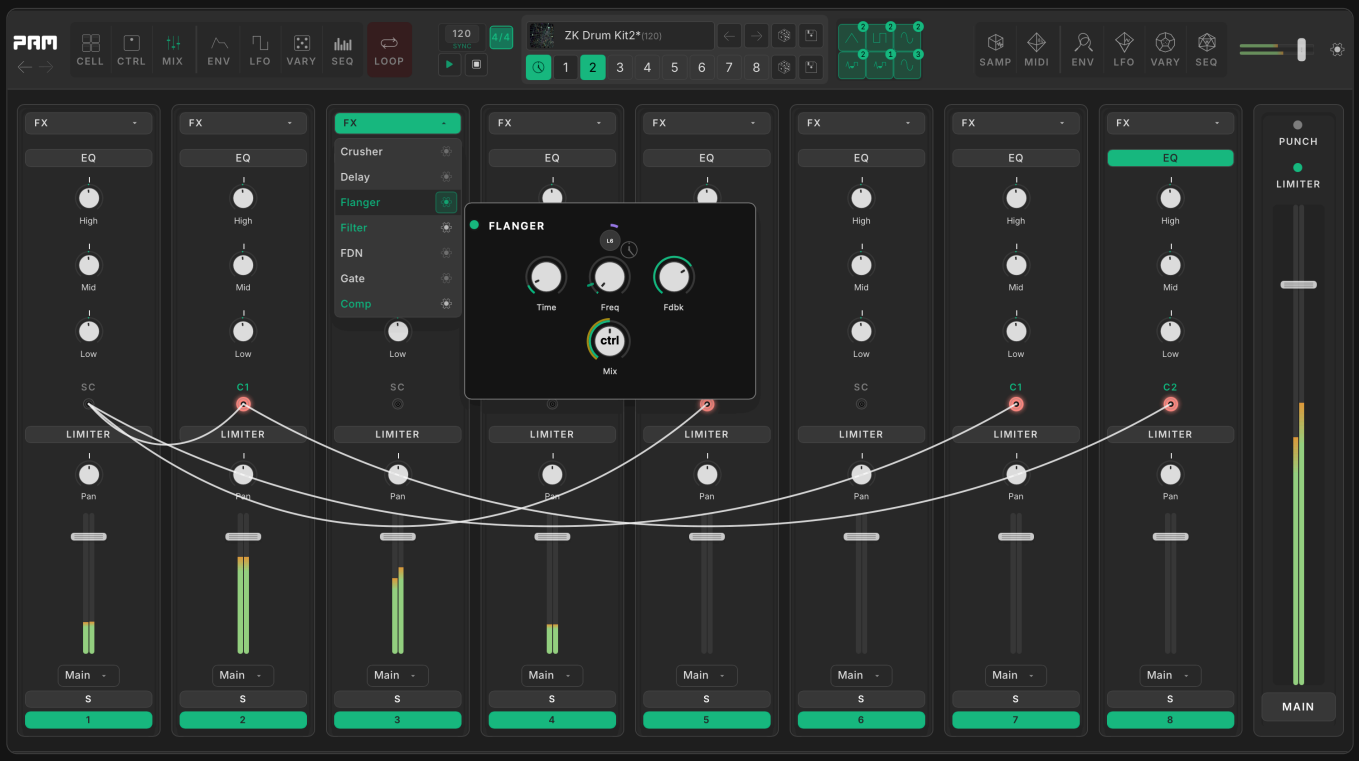
FX CONTEXT MENU

Right-click an FX name (e.g., Limiter) to open the per-cell enable menu for quick assignment.

CHAPTER 9

MIXER

Balance levels per cell and master. Use the Bus Selector to route cells to separate stereo outputs (Plugin mode). The master bus sits after the Mix/Looper crossfader; Punch (compressor) feeds into the Limiter as the final output stage.



Mixer view with 8 channel strips, EQ, limiters, and master bus

CHANNEL STRIP CONTROLS

FX Selector Drop-down to choose which effect is displayed on this channel strip.

EQ Quick EQ view showing Low, Mid, and High knobs for that cell.

Limiter Per-cell limiter button — routes the cell through the master limiter.

Pan Stereo pan knob.

Fader Channel volume fader with LED meter.

Solo (S) Isolates this cell.

Mute (M) Mute toggle on the channel label.

MASTER STRIP

Punch Master compressor for glue and impact.

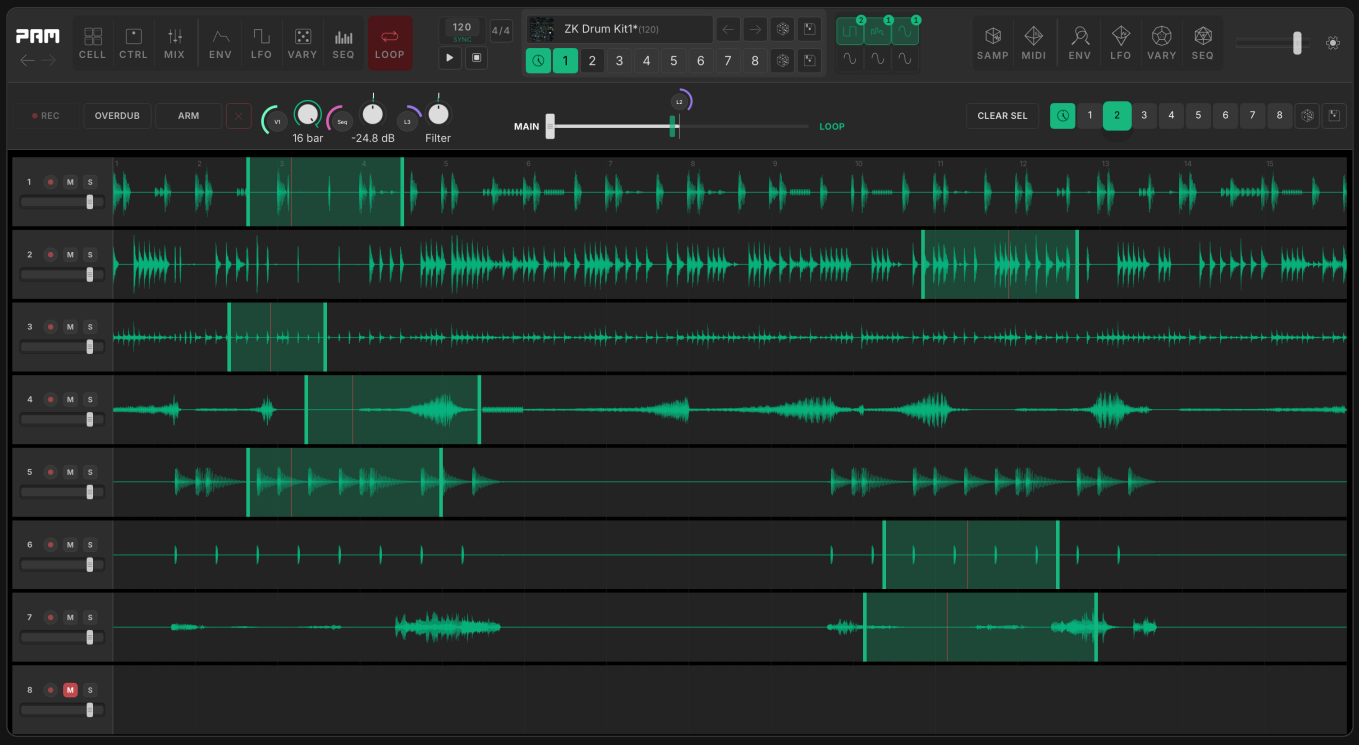
Limiter Prevents clipping, ensures safe output.

Main Fader Master output level.

CHAPTER 10

LOOPER

The Looper sits in parallel with the live cell mix at the Mix stage. The crossfader blends between them before the signal continues to Punch and Limiter. Record up to 8 tracks simultaneously — one per cell.



Looper with 8 tracks of recorded audio, waveform display, and crossfader

RECORDING CONTROLS

Arm tracks, choose loop length (up to 16 bars), then hit Record. Recording starts on the next bar. Toggle Overdub to layer on existing recordings, or Replace to overwrite.

> **CAUTION** Recording starts on the next bar boundary. If transport is stopped, press Play first — recording will not begin until the transport is running.

REC Start/Stop recording (keyboard: R).

Overdub Layer new audio on top of existing recordings.

Arm Arm/disarm all tracks at once.

Length Set loop duration: 1, 2, 4, 8, or 16 bars.

Sync Selection When ON, selection edits land at the next bar-sync boundary so multi-track changes stay in phase. Clearing a selection in this mode resyncs the playhead to the host transport position, not loop start. When OFF, edits apply immediately.

Clear Sel Resets all track selections to the full loop. Single-click a waveform to clear that track's selection; press Esc to clear all selections.

LOOP TRACKS

Each track corresponds to a cell. Arm tracks to record, view waveforms, and control playback. Drag and drop audio files directly onto tracks to load existing loops. Each track header shows Arm, Mute (M), Solo (S), and a stereo RMS meter behind the volume slider.

TRACK OPTIONS

Right-click any track (anywhere on the row, including the header) for advanced options:

Warp (Tempo Follow) Stretch the clip to follow the host BPM. Requires a Rec BPM anchor — new recordings stamp it automatically; older clips show 'Warp — set Rec BPM first' until you fill it in.

Quality Offline (high) pre-stretches the clip on a worker for the best quality, written to a cache the playback reads at unity rate. Realtime (low) stretches block-by-block while playing — switch on the fly without re-rendering.

Rec BPM BPM the clip was recorded at. Auto-stamped on new recordings; enter manually for legacy clips. Drives Warp's stretch ratio against the host BPM.

Source Choose where to record from. External Input captures the audio interface input; Cell 1–8 captures that cell's post-FX output.

Mode Replace overwrites; Overdub layers on top.

Auto Select (Sync) Auto-advances the selection region with playback. Manual selections are respected.

Reverse Plays the clip backwards. Coexists with Warp — the engine reads source samples in reverse.

Pitch Per-track ±24 semitones. With Warp off, acts as varispeed (changes pitch and tempo together). With Warp on, routes through the warp engine's transpose path so pitch shifts independently of tempo. Drag to set; × to reset.

Clear Selection Resets this track's selection to the full loop.

Open in Finder Reveals the clip file. No-op on iOS.

Clear Clip Deletes the recorded clip. Destructive — also clears warp cache, reverse, and pitch on that track.

ALL-TRACKS OPTIONS (EMPTY AREA RIGHT-CLICK)

Right-click the empty area below the tracks for batch actions across every clipped track:

Warp All Toggle Warp on every track that has a Rec BPM. Tracks without an anchor are skipped (the menu shows 'Warp All — set Rec BPMs first' until at least one is eligible).

Warp Quality Switch every clipped track to Offline (high) or Realtime (low) at once.

Reverse All Toggle Reverse on every clipped track.

Pitch All Drag-shift every clipped track's pitch in one move. Shows '— st' when tracks currently have different pitches; the × button resets all to 0.

AutoSelect All Toggle Auto Select (Sync) on every clipped track.

Sync Selection Same as the header toggle — applies to every track. Disabled if there are no selections to sync.

Set Selection Set every clipped track's selection to Full Loop, 1/2, 1/4, or 1/8. The submenu stays open so you can A/B sizes.

Randomize Selections Pick a random window of size 1/2, 1/4, or 1/8 per track, snapped to the musical grid so adjacent tracks align on beat boundaries.

Clear All Selections Resets every track's selection to the full loop.

CROSSFADE

Blend between your live cells and recorded loops. Main = cells only, Loop = Looper only. Right-click to add LFO or Vary modulation for automated transitions.

CLEAR SELECTION

Clear Sel resets all track selections to the full loop.

RESAMPLE BAR SYNC

Cell ⟶ Resample and looper live capture can align start and end to bar boundaries. Toggle Bar Sync in the Resample dialog.

LOOPER VARIATIONS

Save and recall up to 8 Looper states. Click a slot to load (synced to bar boundary); double-click for immediate load. Bar Sync controls timing (1/4, 1/2, 1, 2, 4, 8 bars, or Pattern). Slots show distinct states for filled, empty, active, and queued. A queued slot displays a progress fill toward the next boundary — click again to cancel.

Variation Slots Click to queue, double-click for immediate switch.

Bar Sync Right-click the clock icon to set sync interval (1/4, 1/2, 1, 2, 4, or 8 bars, or Pattern sync).

Save Store the current Looper state to the active slot.

Shuffle Randomly load from saved variations.

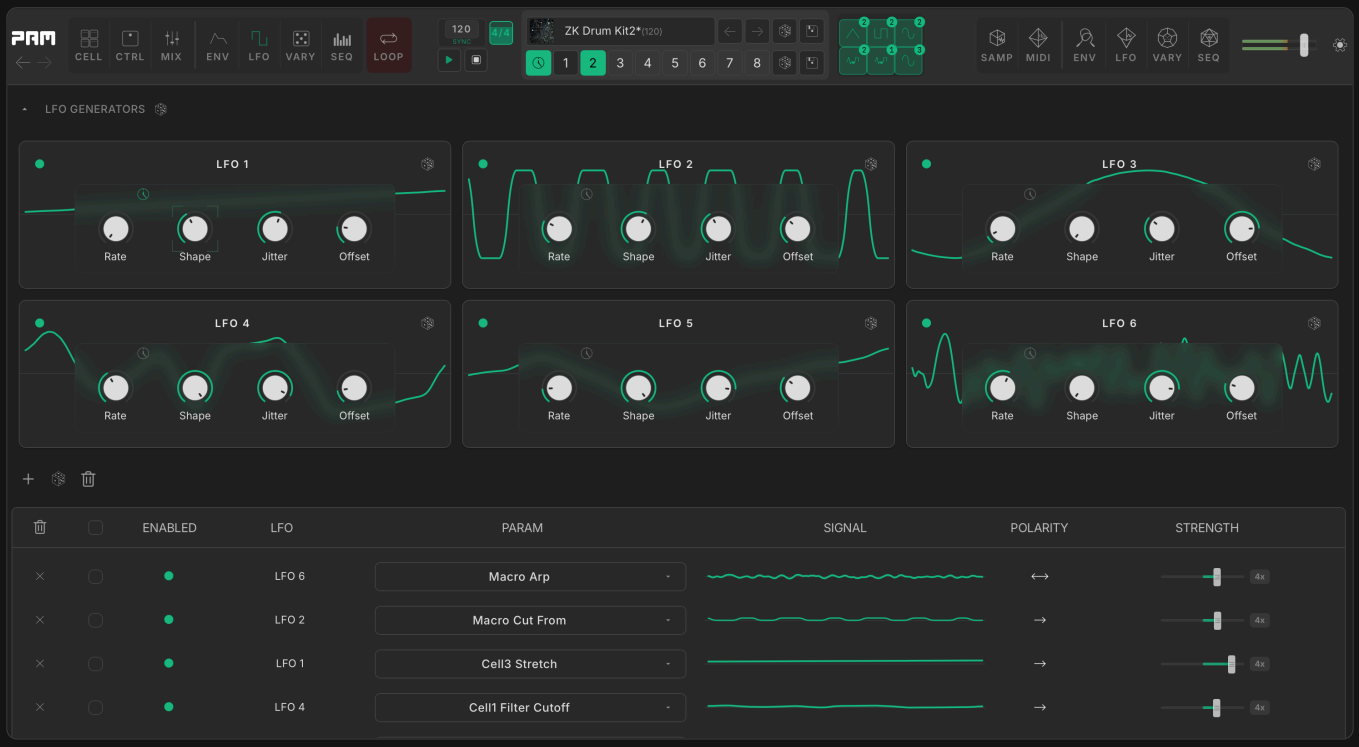
VARIATION CONTEXT MENU

Right-click any variation slot to save, load, copy, paste, or remove. Drag variations between slots to duplicate. The Looper is global — clips and variations persist across preset changes.

CHAPTER 11

LFO MODULATION

Design LFOs and route them to parameters. The left column configures Generators (Rate/Shape/Sync/Jitter/Offset). The right column lists Assignments with per-target Strength and Polarity. Use the LFO button in the header to toggle this view.



LFO view with 6 generators, waveform previews, and modulation assignments

HEADER LFO BUTTONS

Click to edit LFOs; drag a generator onto knobs to assign.

LFO GENERATORS

Set Rate, Shape, Sync (Hz/Sync), Jitter (random variation), and Offset (phase). Enable/disable a generator to globally mute its effect. These feed all LFO Assignments.

Rate Speed in Hz or synced divisions.

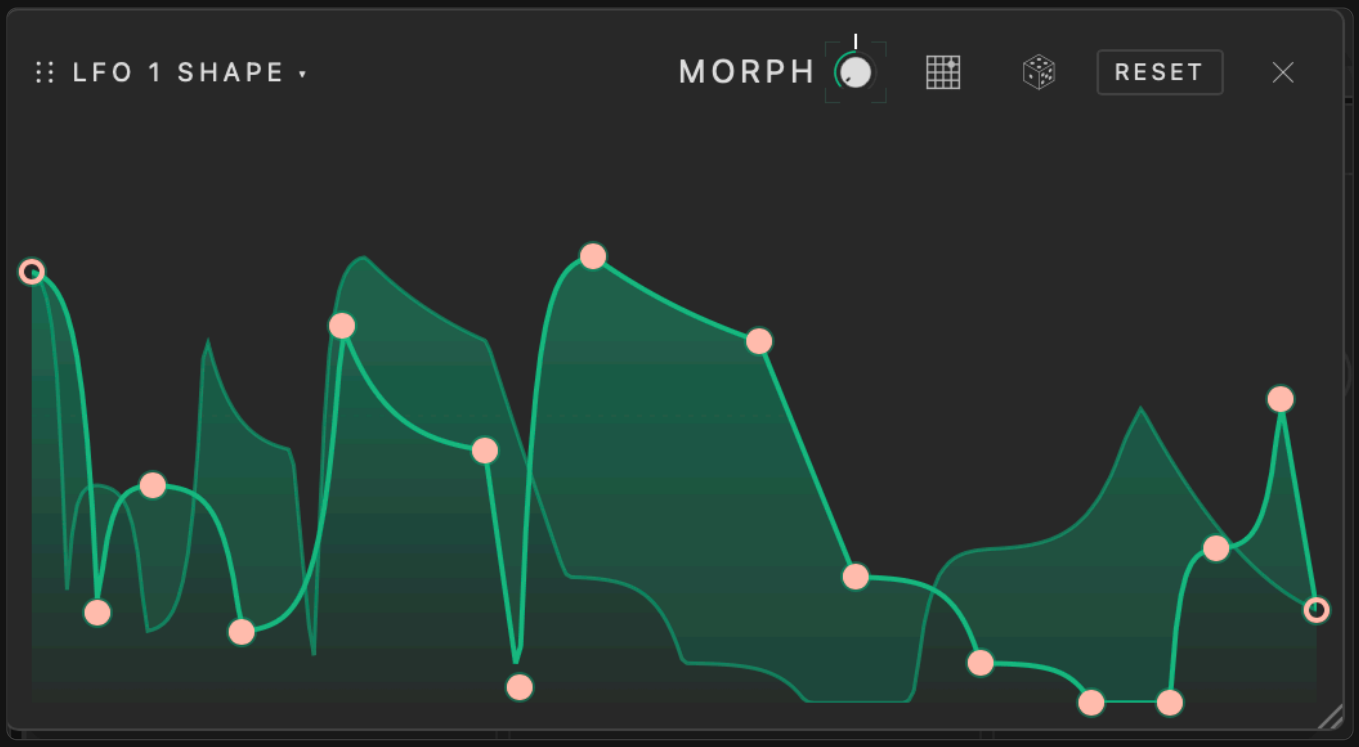
Shape Sine, Saw, Triangle, Square, Random, Wander, and Custom (drawn-curve) waveforms.

Jitter Random timing variation for organic motion.

Offset Phase offset to shift the cycle.

CUSTOM SHAPE (CURVE EDITOR)

Set Shape to **Custom** to draw your own LFO waveform. Click **Edit** in the LFO panel header to open the curve editor — a draggable, resizable popover with a live audio-driven playhead.



Curve editor — drawable breakpoints with tension shaping, Morph phase warp, grid snap, and randomize

Drag a handle Move a breakpoint. X is clamped between neighbours; Y is the value at that phase.

Click empty area Insert a new breakpoint at the click position.

Drag empty area Paint a freeform stroke. The stroke replaces points only inside its swept x-range; the rest of the curve is preserved.

Shift-drag a handle Bend the outgoing segment's tension. Up = convex, down = concave.

Right-click a handle Delete that breakpoint (endpoints can't be deleted).

Morph Bipolar phase warp on top of the drawn shape, modulatable from any source. The warped curve renders as a translucent band so you can see the audible playback against your design.

Reset Return to the default diagonal ramp.

> **TIP** Up to 16 breakpoints per curve. Tension shaping uses the same math as the audio thread, so the editor preview is sample-accurate to what you hear.

LFO ASSIGNMENTS

Choose a Generator per row, set Polarity (Uni/Bi) and Strength to scale modulation depth. Signal shows the live LFO after polarity/strength for that row.

Generator Select which LFO drives this parameter.

Polarity Unipolar 0⟶1 or Bipolar -1⟶1.

Strength Scales the assignment depth.

Signal Live post-scale LFO so you can preview modulation.

LFO MACROS

Global macro controls for LFO Rate, Shape, Jitter, and Offset. These act like master knobs for all LFO generators; use Excludes to keep specific generators untouched.

Macro Rate Moves all generator rates together.

Macro Shape Blend shapes across generators.

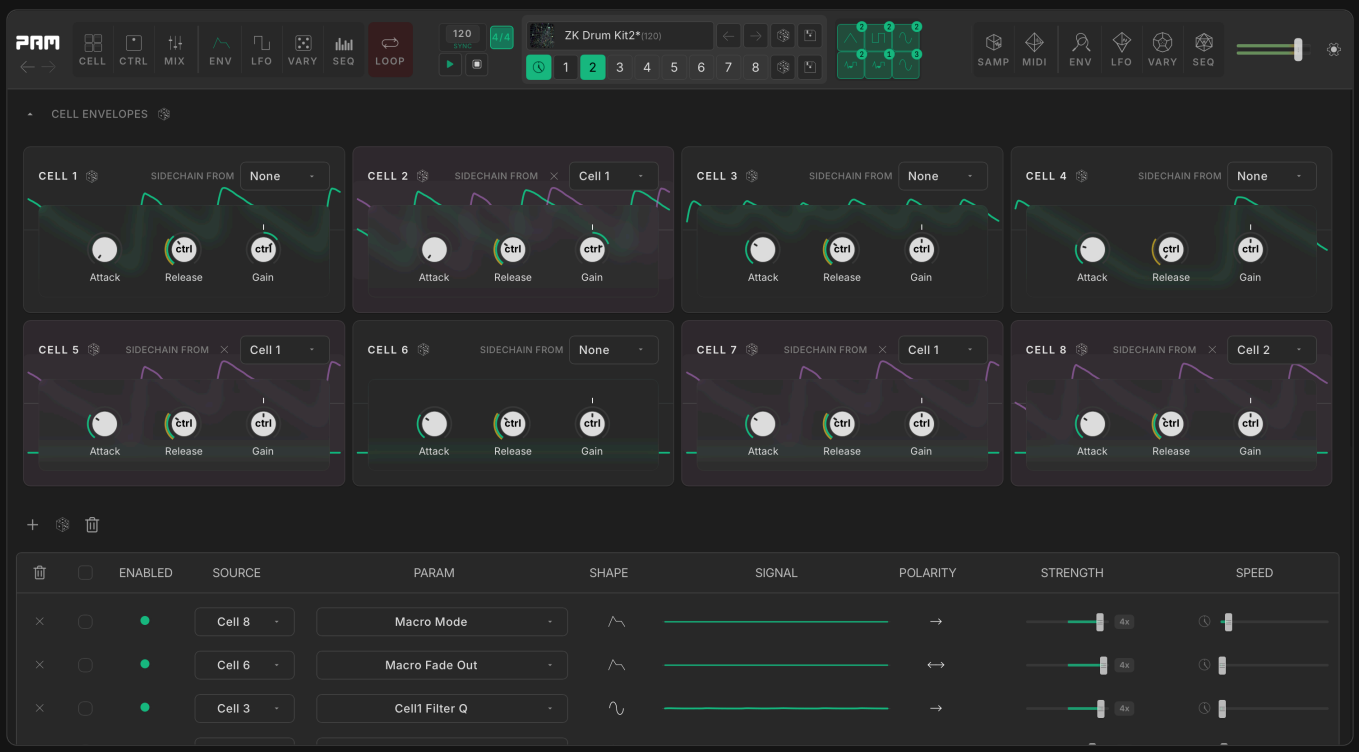
Jitter/Offset Add randomness and phase shifts globally.

Edit (Custom Curve) Switches every LFO to Custom shape and opens one shared curve editor. Edits broadcast to all LFOs at once — useful for shaping a global motion across the whole patch.

ENVELOPE FOLLOWER & VARY

ENVELOPE VIEW

Envelope followers convert signal level into a 0–1 control signal to modulate parameters. Multi-edit is supported. Use the ENV button in the header to toggle this view.



Envelope follower panels for all 8 cells with assignment table

SIDECHAIN PANELS

Sidechain lets one cell's signal control another. Pick a source with "Source"; overlays show Target vs Source.

Target The processed cell's output (ducked signal).

Source Sidechain trigger feeding the envelope follower. Every source picker — cell compressor, FX, mixer patch bay, and the modulation source dropdown — shows a live level meter per option, and the active source's level is mirrored on the compressor header.

ENVELOPE TOOLS

Add, randomize, or remove envelopes; multi-select supported.

ENVELOPE TABLE

Choose a target per row. Set Polarity and Strength. Signal shows the live envelope (Sidechain or Self). Tip: Click the X to remove; right-click the target knob for more tools.

Param Destination to modulate (e.g., Stretch, Pitch, Cutoff).

Polarity Unipolar for 0⟶1; Bipolar for -1⟶1 swings.

Strength Scales modulation depth per row.

Signal Live envelope from the source for sidechain-driven movement.

REMOVE ENVELOPE

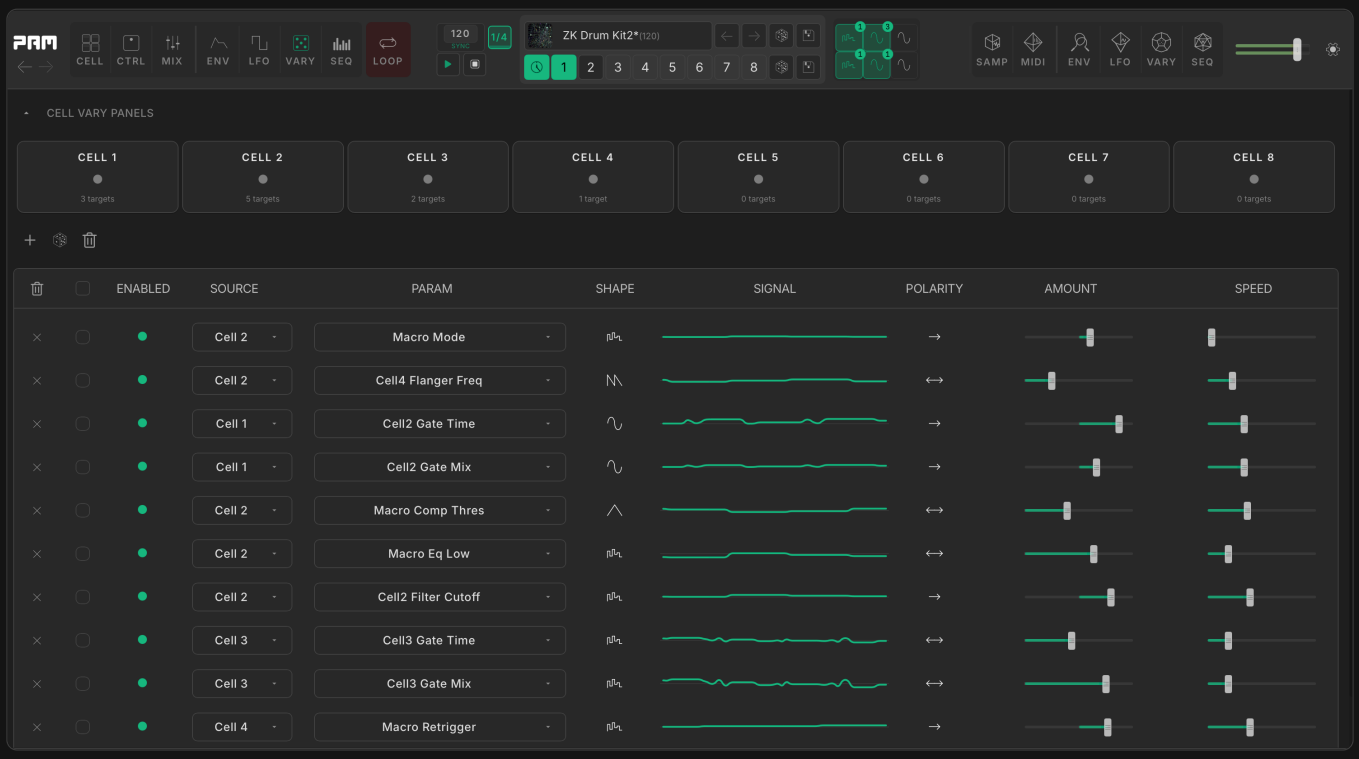
Click the X in the row to remove. Or right-click the target knob and remove from its menu.

ENVELOPE MACROS

Global macro controls for Envelope Attack, Release, and Gain. Toggle, reset, or randomize all Envelope Macros from the toolbar.

VARY VIEW

Create cross-modulation between cells. Map any cell parameter to another for evolving patches. Each trigger of the source cell generates a new random offset applied to the target parameter. Use the VARY button in the header to toggle this view.



Vary matrix with cross-cell modulation routing and per-target controls

VARY MATRIX

Each row defines a modulation link from a source cell to a target parameter on any cell.

- **Source** The cell whose trigger drives the randomization. Each time this cell fires, a new random value is generated.
- **Target** The destination parameter to modulate (e.g., Pitch, Cutoff, Stretch, Volume).
- **Polarity** Unipolar (0⟶1) applies positive offsets only. Bipolar (-1⟶1) swings both directions.
- **Amount** Scales the strength of the random offset. Higher values = more extreme variation per hit.

VARY PER-KNOB

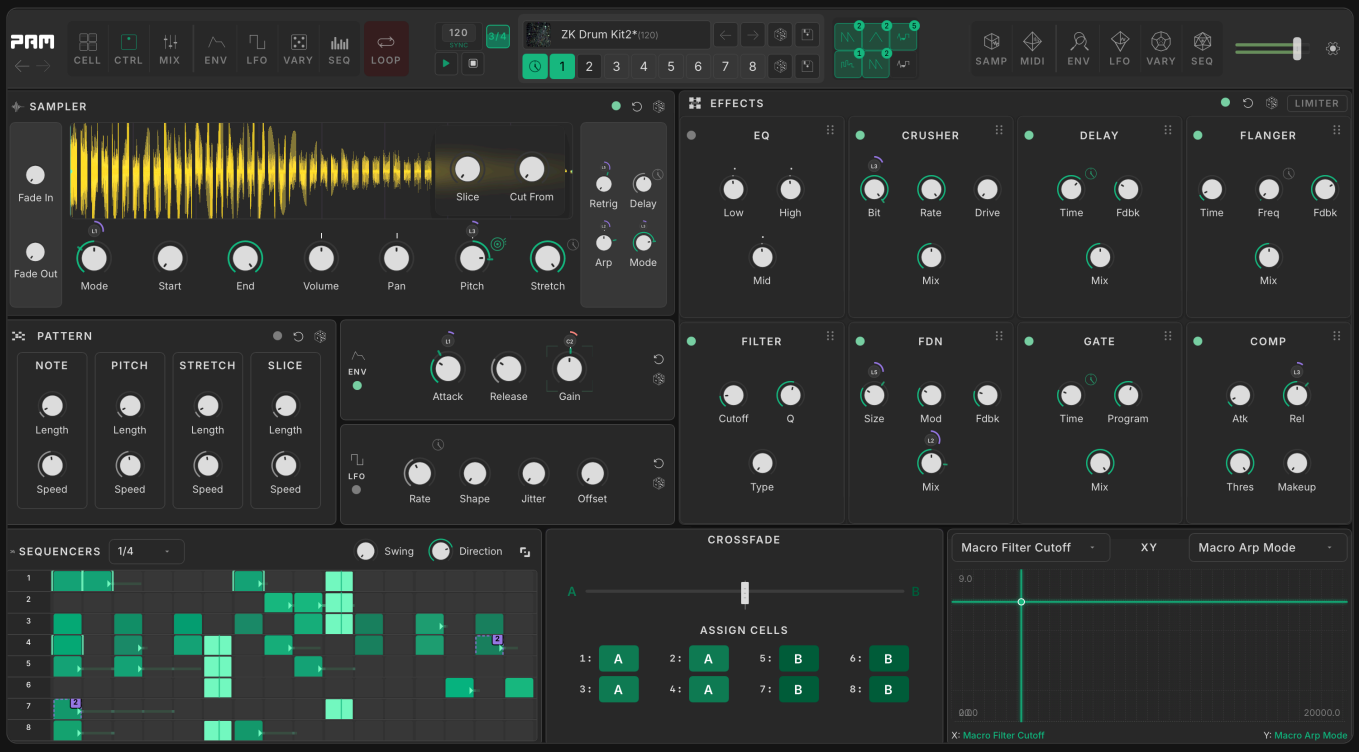
Right-click any knob ⟶ Vary column to quickly assign or adjust Vary for that specific parameter. Set source cell, polarity, and strength directly from the knob context menu.

> **NOTE** Vary is per-hit randomization — it generates a new value each time the source cell triggers. For continuous modulation, use LFO or Envelope instead.

CHAPTER 13

CTRLALL & MACRO CONTROLS

Global control hub. Adjust FX, Sampler Macros, Patterns, XY/Crossfader, and the Step Grid for all cells. Use the CTRL button in the header to toggle this view.



CtrlAll view with sampler, effects, pattern macros, crossfader, and XY pad

GLOBAL FX

Manage FX macros across all cells. Use the toolbar to toggle, reset, or randomize.

FX MACRO TOOLBAR

Toggle all FX, reset to defaults, or randomize FX macros globally.

Toggle FX Enable or disable all FX macros across cells.

Reset Restore FX macro values to sensible defaults.

Randomize Randomize all FX macro values across cells.

GLOBAL SAMPLER MACROS

Adjust sampler-related macros (Start, End, Stretch, Pitch) across all cells. Toggle the vinyl icon to switch all cells between Varispeed (Pitch = Speed) and Pitch Shift (Independent) modes.

SAMPLER WAVEFORMS

Visualize and compare per-cell waveforms in the Sampler panel.

XY PAD

Control two parameters simultaneously by dragging within the XY field.

CROSSFADER

Blend between assigned cell groups for transitions. Right-click the Crossfader value or LFO dot to create/replace an LFO and adjust Strength/Polarity.

PARAMSEQ VIEW

ParamSeq creates step-sequenced modulation lanes for any modulatable parameter, independent of the main note pattern. Click `SEQ` in the header (or press `Shift + 7`) to open the view. Each row binds a target parameter to either a cell's pattern timeline or to its own free-running clock, then plays step values back into the modulation matrix.

ACTION BAR

Above the table, three icons act on the whole list:

- **+** Add a new ParamSeq lane on the next unused parameter.
- **Random** When lanes already exist, mutate their sequences, lengths, speeds, polarities, and amounts. When the table is empty, seed a fresh set of lanes.
- **Trash** Clear every ParamSeq lane in the preset.

When the table is empty the + and `Random` icons appear large at the centre of the view as the empty-state prompt — the Trash button only appears once at least one lane exists.

TABLE COLUMNS

- **X** Delete the lane.
- **Select** Multi-select checkbox. The header checkbox toggles select-all. With multiple lanes selected, dragging Amount, Length, or Speed scales every selected lane proportionally to the value at the start of the drag.
- **Enabled** Power button — bypasses the lane without removing it.
- **Source** `Free` or `Cell 1`–`Cell N`. Cell mode follows that cell's pattern clock — the lane resets and steps in time with the cell. Free mode runs against the global transport and unlocks the longer Length range.
- **Param** Target parameter dropdown. Lists every modulatable knob in the preset; macros, sync params, and on/off toggles are excluded.
- **Steps** Drag-number from 2 to 64 steps. Reducing the step count keeps the truncated values in a buffer — they are restored if you grow the count again.
- **Signal** Inline step editor. Click-drag to draw step values; sweeping across multiple steps interpolates between them. A live playhead overlays the active step while transport is running.
- **Smth** Smooth interpolation between steps. Off = stepped, on = linearly ramped between values.
- **Pol** Polarity. Unipolar (`0 ⟶ 1`) or Bipolar (`-1 ⟶ +1`).
- **Amount** Modulation depth. The `4×` button next to the slider toggles Boost — DSP multiplies the strength by four for parameters that need a wider swing than the slider provides.
- **Length** Lane duration in bars. `0.25`–`8` bars in cell mode, `0.25`–`64` bars in Free mode.
- **Speed** Playback rate multiplier from `0.25×` to `4×`.

> **TIP** Click any sortable header (Source, Param, Amount, Length, Speed) to sort the table. Sorting is paused while you drag a value so rows do not reorder mid-edit.

INLINE PARAMSEQ EDITOR

A ParamSeq lane can also be created and edited from any knob's right-click menu, in the `SEQUENCER` section. Choose a clock source — `Free Clock` or `Cell N Clock` — and the lane editor appears inline. The header shows `SEQ FREE` or `SEQ C{N}` and gives you per-lane enable/disable and delete buttons.

The inline editor mirrors the table row's controls and adds a shape palette for seeding patterns:

- **Steps** Step count (2–64).
- **Shape** Ascending, Descending, Alternating, or Staircase. Selecting a shape rewrites the current step values.
- **Random** Re-roll the steps in this lane only.
- **Smooth** Linear interpolation between steps.
- **Polarity** Unipolar / Bipolar.
- **Strength** Modulation depth. The adjacent `4×` button toggles a DSP-side 4× boost.
- **Length** Lane bars (0.25–8 in cell mode, 0.25–64 in free mode).
- **Speed** Rate multiplier (`0.25×` – `4×`).

> **TIP** Use Free mode with a long Length (8–64 bars) to get slowly evolving parameter automation that does not reset with the cell pattern. Combine with Smooth for glide between values.

RANDOMIZE MENU

Right-click Randomize to include/exclude cells from randomization. Use Preset Pools to constrain sample randomization to samples used by selected presets.

CHAPTER 14

PRESET BROWSER

Browse, search, and manage presets. Toggle between List and Grid views. Drag in .preset/.zip files to import.

CREATE PRESET

Click Create to open a new empty preset.

SEARCH PRESETS

Full-text search across preset names, tags, authors, categories, and genres.

FILTERS

Filter by folder, category, subcategory, author, and tags to narrow results.

PRESET LIST

Select a preset to load it. Double-click to close the browser and return to the main view.

PRESET ITEM

Each preset shows its category, tags, date, and BPM (if present). Use the star to favorite.

PRESET ITEM MENU

Right-click a preset for options like Open Location, Export with Samples, Delete, or Create New.

PRESET OPTIONS

Right-click the preset name to open options like Open Location, Export with Samples, and Edit Metadata.

VARIATION MENU

Right-click a variation number to save, copy/paste, or remove. When MIDI Variation Hold is enabled in General settings, the menu also offers Learn MIDI Note, Clear MIDI Binding, and Set Channel for that slot.

VARIATION CROSSFADE

Variation switches crossfade at 0 ms by default (instant). Adjust the **Crossfade** drag-input in the Bar Sync menu (header bar-sync button) to set a longer fade. Range 0–2000 ms, 10 ms steps.

MIDI VARIATION HOLD

Enable from General settings. Right-click a variation slot → Learn MIDI Note, then press a note on your controller to bind it to that slot. Holding the note plays the variation and starts transport; releasing stops it. Re-pressing the same note restarts the pattern from the first beat. The whole variation section is highlighted while hold is active so the mode is always visible.

- **Learn MIDI Note** Arm the slot to capture the next incoming note.
- **Clear MIDI Binding** Remove the note assignment from the slot.
- **Set Channel** Limit the binding to a specific MIDI channel (or Any).

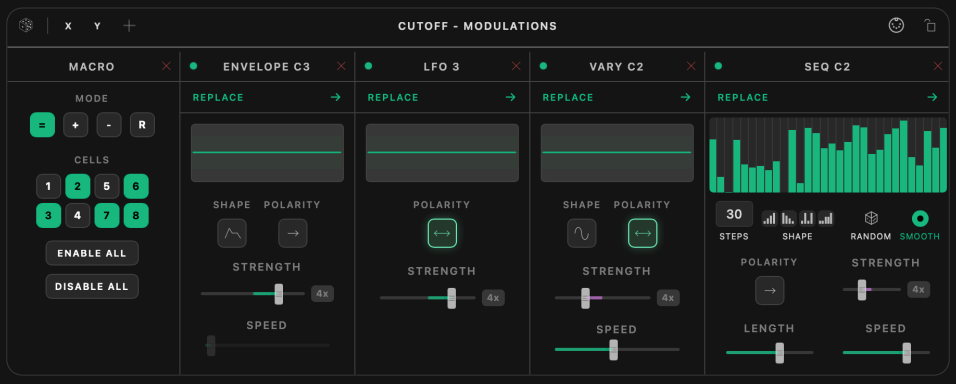
SAVE PRESET

Open the Save menu. Save updates or “Save As” to create a copy with a new name.

CHAPTER 15

MODULATION ROUTING

Every knob in PAM can be modulated by multiple sources simultaneously. The Knob Menu (right-click any knob) is the central hub for per-parameter modulation.



Knob modulation menu — Macro, Envelope, LFO, Vary, and Sequencer columns, each with strength, polarity, and live signal preview

KNOB CONTEXT MENU

Right-click any knob to add Envelope/LFO/Sequencer modulation, toggle macro settings, exclude from randomization, or assign MIDI Learn. You can type fractions (e.g. 1/4) when editing values.

KNOB CONTEXT: SEQUENCER

Right-click a knob to open modulation tools. Use the Sequencer column to add/remove ParamSeq links, choose source, and tune depth/rate from the menu.

KNOB MENU SOURCES

Macro Links this parameter to a global Macro. Mode (`=`, `+`, `−`, `R`) controls how the macro overrides, adds to, subtracts from, or resets the underlying value, and per-cell toggles select which cells receive the macro.

Envelope Uses an envelope follower signal from any cell as the modulation source.

LFO Selects one of the six global LFOs as the source.

Vary Connects the Vary (per-trigger randomisation) engine to this parameter.

Step Sequencer Per-parameter step sequencer (ParamSeq): 2 to 64 programmable steps with shape palette, smooth interpolation, and free-clock mode.

Automation Records and plays back DAW automation for this parameter.

MIDI LEARN

Right-click any knob and select MIDI Learn to assign a hardware controller. Move a knob or fader on your MIDI device and it maps automatically. Mapped CCs are filtered from MIDI output so they don't trigger downstream plugins.

> **NOTE** MIDI Learn mappings are saved with the plugin state, not with presets. Loading a new preset preserves your MIDI mappings.

MODULATION POLARITY

Each modulation source supports Unipolar (0⟶1) or Bipolar (-1⟶1) output. Multiple simultaneous modulations combine additively. Use Strength to scale modulation depth per row.

CHAPTER 16

TIPS & WORKFLOW

> **TIP** Use Cmd+A to select all steps, then Cmd+C/V to copy patterns between cells quickly.

> **TIP** Right-click almost anything for context-sensitive options — knobs, steps, cells, FX names, and navigation buttons all have menus.

TIP Drag an LFO button from the header directly onto any knob to instantly assign modulation.

TIP Use the Crossfader with LFO modulation for automated A/B transitions during performance.

TIP Set different pattern lengths per cell (e.g. 7 and 8 steps) to create polyrhythmic grooves.

TIP Record MIDI from an external controller with Quantize set to 1/16 for tight patterns, or Off for natural feel.

TIP Export presets with samples included (right-click preset → Export with Samples) to share complete kits.

TIP Use Looper Variations with Bar Sync to build arrangement-style performances in real time.

TIP Resample to Cell lets you bounce the full mix or individual cells back into PAM for further manipulation.

TIP Enable Poly on a cell to switch the pattern editor to Piano Roll mode — enter notes with per-note pitch and duration control.

TIP ParamSeq lanes at different speeds create complex, evolving textures without touching the note pattern.

NOTE For troubleshooting and DAW-specific setup guides, visit map.audio/faq. Join the Discord community for live support and preset sharing.

CHAPTER 17

SETTINGS & PREFERENCES

Open Settings from the gear icon in the header. The Settings panel has seven tabs: General, Performance, Export, Routing, MIDI Mappings, Account, and Keybindings.

GENERAL

Show Tooltips Display helpful tooltips throughout the interface.

HQ Mode Higher quality audio interpolation. Increases CPU usage.

Auto Enable Macro FX Automatically enable FX on all cells when adjusting macro knobs.

MIDI Variation Hold When enabled, assigned MIDI notes play variations only while held. Transport only advances while a bound note is held, and re-pressing the same note restarts the pattern from the first beat. Disabled by default.

Start Tutorial Restart the interactive onboarding walkthrough.

APPEARANCE

Dark / Light Mode Toggle between dark and light themes.

Custom Theme Color Adjust the hue slider (0–359°) to create a custom color theme.

Random Theme Generate a random color theme.

Reset Theme Restore the default dark theme.

Load Preset Themes Apply theme settings saved in presets when loading.

EXPORT

Export your mix, stems, or per-bus outputs as audio files.

Main Mix Export the full mix as a single stereo file.

Stems Export selected cells as separate stem files.

Per Bus Export each output bus as a separate file.

Format WAV (16/24/32-bit) or FLAC (16/24-bit).

Duration Set export length in seconds or bars.

OUTPUT ROUTING

Route cells and the Looper master to separate stereo output buses for multi-track DAW workflows.

Routing Matrix Per-bus grid to assign each cell — and the Looper master — to an output bus.

Looper Column Sends the Looper L/R to any of the 8 buses. Default is Out 1 (Main). Routing to Out 2–8 sends the Looper solo to that bus and removes it from the main mix; the aux-routed signal bypasses the master compressor and limiter.

Bus Width Toggle Mono/Stereo per bus (Standalone only).

> **NOTE** Output routing is essential for multi-output workflows in your DAW. Each bus appears as a separate stereo output in your DAW's mixer.

AUDIO DEVICE (STANDALONE ONLY)

Device Type Audio API: CoreAudio (macOS), WASAPI or ASIO (Windows).

Output Device Select the audio output device.

Input Device Select the audio input device (required for Resample from External Input and Looper external recording).

Sample Rate 44100 or 48000 Hz.

Buffer Size 128, 256, 512, or 1024 samples. Lower values reduce latency; higher values reduce CPU peaks.

MIDI MAPPINGS

Configure MIDI controllers, preset switching, and looper control via MIDI.

MIDI Learn Click Learn, then move a knob/fader on your controller to create a mapping.

Auto Map Auto-map macros 1–8 to CC 1–8.

Import / Export Save and load MIDI mapping configurations.

Source Type CC, Note, or Pitch Bend per mapping.

Mode Absolute, Relative-1, or Relative-2 encoding.

External Clock Sync Sync PAM's transport to an incoming MIDI clock signal (Standalone only).

MIDI Output Enable MIDI output and select a device. Patterns trigger notes on external hardware.

Mute Audio Output Silence PAM's audio when MIDI output is active — use when driving external hardware synths.

MIDI PRESET SWITCHING

Enable Toggle MIDI preset switching on/off.

Source Program Change or CC message.

Channel All Channels (Omni) or a specific channel 1–16.

MIDI LOOPER CONTROL

Control the Looper via MIDI CC messages. Actions include Toggle Record, Arm/Disarm All, Clear All, and per-track Arm/Mute/Solo/Clear (tracks 1–8).

MIDI → RESAMPLE

Trigger live resample-into-a-cell from a MIDI controller. The CC value selects the target cell, and capture follows whatever source/length/bar-sync the right-click Resample panel was last configured with — so you can prepare the panel once and then drive resampling hands-free.

Enable MIDI Resample Trigger Toggle the feature on/off. Defaults to on.

CC Number MIDI CC number to listen on. Default CC 19. Use the learn input to capture the next incoming CC.

MIDI Channel All Channels (Omni) or a specific channel 1–16.

CC value mapping:

- **1–8** (PAM) or **1** (Cell1) — Toggle resample into Cell N. If that cell is already capturing, stop and finalize. If a different cell is capturing, stop it first then start the new one.
- Any other value (including button-release value 0) is silently ignored, so a momentary pad sending 127-on / 0-off is safe to assign — release won't cancel a capture.

> **TIP** A small "MIDI: CC X value N" hint at the bottom of the right-click Resample panel shows the active mapping for that cell — click it to jump to MIDI settings.

PERFORMANCE MONITOR

Real-time DSP performance monitoring with per-module CPU usage bars.

CPU Bars Visual display of CPU usage per DSP module and effects.

System Info CPU model, core count, architecture.

Audio Info Sample rate, buffer size, latency, and XRun count.

KEYBINDINGS

Customize any keyboard shortcut. Shortcuts are grouped by section: Transport, Views, Variations, Presets, Randomize, Editing, Appearance, and Looper.

Re-assign Click a shortcut to enter capture mode, then press a new key combination.

Clear Disable a shortcut entirely.

Reset Restore a single shortcut or all shortcuts to defaults.

> **NOTE** Customized shortcuts are saved with your settings and persist across sessions.

ACCOUNT

Manage your license, view trial status, and enable experimental features.

License Status Shows Trial, Activated, Subscription, or App Store status.

Manage License Opens the web portal for license management.

Beta Features Enable experimental features: Video Mode and MCP Bridge.

> **CAUTION** Beta features are experimental and may cause instability. Enable at your own risk.

CHAPTER 18

SONG MODE

Song Mode is a node-based arrangement sequencer. Each node represents a Variation slot (or a different preset); connections define playback order. Access it via the SONG button in the navigation bar.

SONG GRID

The main canvas holds nodes and connections. Drag from the Preset Palette or Variation Palette to add a node. Connect nodes by dragging from one output to another input. Playback starts from the node with no incoming connections.

Node One arrangement step: a Variation index, optional preset reference, duration in bars, and repeat count.

Connection Defines playback order between nodes. Branching connections introduce probabilistic choices.

Duration Per-node bar length. Defaults to the longest pattern across all cells.

Repeat Count How many times the node plays before advancing to the next.

Probability 0–1 chance the node triggers. 0 = muted (pass-through to next node).

SONG MANAGEMENT

Up to 16 songs can be saved per session. Use the Songs dropdown in the Song Mode header to create, load, save, rename, or delete songs.

TRANSPORT & LOOP

The Song Mode header has its own Play, Pause, and Stop controls. Loop Start/End define the bar range over which the sequence repeats. Crossfade (ms) controls the blend time when switching between nodes.

RANDOMIZER

The Song Randomizer generates arrangement graphs from existing Variation slots. Right-click the Randomize button for options: node count, connection density, and probability ranges.

UNDO / REDO

Song Mode has its own 50-step undo/redo stack, separate from the main preset undo. Cmd+Z / Cmd+Shift+Z apply within the Song Grid.

CHAPTER 19

VIDEO MODE

Video Mode overlays real-time, audio-reactive visuals on top of PAM. Enable in Settings → Account → Beta Features → Video Mode.

> **CAUTION** Video Mode is experimental and under active development. The interface, layer system, and FX set are still evolving — full documentation will arrive with the public release.

CHAPTER 20

MCP BRIDGE

The MCP Bridge exposes PAM's engine to AI agents via the Model Context Protocol (MCP). When enabled, a running PAM instance accepts TCP commands from an MCP server process, which translates agent tool calls into live plugin operations. Supported by Claude Code, Cursor, and other MCP-compatible clients.

ENABLING THE BRIDGE

Experimental Mode Must be enabled first. Settings → Account → Beta Features → Experimental Mode.

MCP Bridge Enables the TCP bridge. Settings → Account → Beta Features → MCP Bridge. Default port: 9847.

> **NOTE** When the bridge starts, PAM writes a discovery file to `~/.pam-mcp-bridge.json` containing the port, instance ID, and PID. The MCP server reads this file to locate a running instance automatically.

CAPABILITIES

With the bridge active, an AI agent can perform the following against the live plugin:

Sample management — Browse library paths, load audio files into cells, reverse or trim samples, normalize peak amplitude, and run the native randomization engine with genre and BPM hints.

Pattern and sequencing — Write note, pitch, slice, and stretch sequences to any cell. Generate genre-appropriate rhythmic patterns. Clear or reset individual lanes.

Parameters and modulation — Set any parameter by ID, add or remove LFO/envelope/vary modulation links, add step-sequenced parameter automation (ParamSeq), enable or disable per-cell effects, and configure cell properties.

Transport and playback — Start, stop, or full-stop (reset to zero) the transport, set BPM, trigger one-shot MIDI notes without transport, and stop individual cells.

Presets and export — List, read, load, save, and import/export presets. Save and recall variation slots (0–7). Render audio to a WAV file.

NOTE Transport must be running for sequencer output. Use `start_transport` or press Play in the DAW before expecting pattern-driven audio.

MCP CLIENT SETUP

The MCP server is published on npm as `@map-audio/pam-mcp-server`. AI clients launch it on demand via `npx` — no repository checkout or manual install required.

Requirements Node.js 21 or newer on macOS or Windows. Verify with `node --version`. PAM must be running with the bridge enabled.

Add the following block to your MCP client's configuration file:

```
{
  "mcpServers": {
    "pam": {
      "command": "npx",
      "args": ["-y", "@map-audio/pam-mcp-server"]
    }
  }
}
```

Claude Desktop Edit `~/Library/Application Support/Claude/claude_desktop_config.json` (macOS) or `%APPDATA%\Claude\claude_desktop_config.json` (Windows). Fully quit Claude Desktop (`Cmd+Q` or right-click tray icon → Quit) and reopen.

Claude Code Run `claude mcp add pam -- npx -y @map-audio/pam-mcp-server`, or paste the block above into `.mcp.json` at your project root.

Cursor / other clients Use the same `mcpServers` block in the client's MCP config. Any stdio-compatible MCP client works.

CAUTION macOS GUI apps do not inherit your shell `PATH`. If you see `npx: command not found`, install Node from nodejs.org (avoid `nvm` / `asdf` for GUI clients), or specify an absolute path in the config: `"command": "/usr/local/bin/npx"` (Intel) or `"/opt/homebrew/bin/npx"` (Apple Silicon).

OFFLINE VS. LIVE TOOLS

Some tools operate without a running plugin instance (parameter lookup, preset listing, manifest summary). All other tools require PAM to be running with MCP Bridge enabled. Use `connection_status` to verify connectivity before issuing commands.

TIP Use `randomize_samples` with genre hints for fast kit-building, and `randomize_patterns` to generate rhythms that match loaded sample roles.

CHAPTER 21

KEYBOARD SHORTCUTS

PAM includes comprehensive keyboard shortcuts for fast workflow. On macOS, Cmd is used; on Windows, use Ctrl instead.

TRANSPORT & NAVIGATION

Space Play / Pause (Standalone only).

Esc Clear selection or close overlays.

← / → Navigate between pages.

VIEW SWITCHING

Shift + 1 Cell Grid view.

Shift + 2 CtrlAll view.

Shift + 3 Mixer view.

Shift + 4 Envelope view.

Shift + 5 LFO view.

Shift + 6 Vary view.

Shift + 7 ParamSeq view.

Shift + 8 Looper view.

Shift + ← / → Toggle grid layout (1 / 4 / 8 cells).

PRESETS & VARIATIONS

1 – 8 Select variation (synced to bar).

1 – 8 (double) Select variation (immediate).

Shift + D / A Next / previous preset.

Alt + D / A Next / previous variation.

Cmd + S Save preset.

Alt + S Save variation.

RANDOMIZATION

Shift + R Randomize preset.

Shift + V Shuffle variation.

Alt + 1 Randomize Samples.

Alt + 2 Randomize MIDI / Patterns.

Alt + 3 Randomize Param Sequences.

Alt + 4 Randomize Envelopes.

Alt + 5 Randomize LFOs.

Alt + 6 Randomize Vary.

EDITING

Cmd + Z Undo.

Cmd + Shift + Z Redo.

Cmd + C / V Copy / Paste cell or selection.

Cmd + X Cut selection (copy then delete).

Cmd + D Duplicate selected events.

Cmd + A Select all events in pattern.

Delete Delete selection (cable or step).

APPEARANCE

Shift + T Toggle dark / light theme.

Alt + T Randomize theme.

Shift + W Show / hide modulation cables.

LOOPER

R Toggle recording (Looper page active).

A Arm all tracks (Looper page active).

Cmd + 1–8 Select looper variation (bar sync).

PATTERN EDITING

Shift + Click Toggle selection on event.

Cmd + Shift + Click Range selection.

Cmd + Click Open step properties menu.

Shift + Drag Rectangle selection across rows (Pattern Overview / CtrlAll).

↑ / ↓ Adjust parameter value (semitone in Piano Roll).

Shift + ↑ / ↓ Adjust value by large step (octave in Piano Roll).

← / → Move notes by snap resolution (Piano Roll).

Shift + ← / → Move notes by one beat (Piano Roll).

Cmd + Scroll Horizontal zoom (Piano Roll).

> **TIP** Press Esc to unfocus text input fields and restore global keyboard shortcuts.

> **TIP** All keyboard shortcuts can be customized in Settings → Keybindings. Click any shortcut to re-assign it, or reset to defaults.

PAM

Pattern-based Audio Mapping System

User Manual · Version 1.4.35

map.audio

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