



USER MANUAL

A sample-based groovestation for iPhone, iPad and Mac

Sample it. Generate it. Randomate it. Play it.

Sampler · 16-track rhythm sequencer · 16-strip mixer

16-genre Generator · 19-parameter Randomator · 32-row Song

64 pads across 4 banks · 16 filter machines · 8 patterns

Every sound starts as a sample: record it, chop it, make it yours.

Standalone, or as an AUV3 right inside your host – on iPhone, iPad and Mac.

Overview

Pulsark is a sample-based groovestation for iPhone, iPad and Mac. It runs standalone and as an AUv3 instrument inside a host, and the two are the same product: the plug-in shows the screens in this manual in full, scaled to the plug-in window. The phone runs that same app on a portrait canvas; the part titled Pulsark on iPhone says what that changes. Nothing here applies to only one of them unless it says so.

Key figures

Item	Value
Editor	5 play engines, 5 play modes
Filter	16 filter machines per pad, plus off
Generator	16 genres, 8 trig conditions
Keyboard	27 shortcuts in the standalone app
Mixer	16 channel strips plus master, 6 send effects, 5 reverb algorithms
Outputs	main stereo plus 16 individual outputs in a host
Platform	iOS and iPadOS 18.0 and later · macOS 15.0 and later
Randomator	19 parameters, each with per-track depth, lock and scope
Record	microphone, line input or resampling, mono or stereo
Sequencer	16 tracks, 8 patterns, 1/2/3/4 bars (16/32/48/64 base steps)
Song	up to 32 rows, each with a pattern, a length and a mute mask
Sound banks	4 banks of 16 pads – 64 pads per project
Track resolution	1 to 64 cells per bar, set per track

How the tab bar is grouped

The tab bar is one evenly spaced row, and these groups are the shape of the work behind it. They are a map, not an order – every screen edits the same live project, and you can work in any direction.

	Group	Screens
A	Sound	Sample kit, Editor, Record
B	Pattern and variation	Generator, Sequencer, Randomator
C	Arrangement	Song
D	Mix	Mixer

The badge on each part title says which group that screen sits in.

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Part 2	Sample kit	Pads, sound controls, choke groups and live capture
Part 3	Editor	Trim, loop, slice, tune and lo-fi for one pad
Part 4	Record	Record from mic, line or Pulsark's own output
Part 5	Sequencer	Grid, Orbit and Euclid step sequencing with per-step locks
Part 6	Generator	Genre-weighted whole-kit pattern generation
Part 7	Randomator	Guided randomization of sound and mixer settings
Part 8	Song	Arranging patterns into a finished track
Part 9	Mixer	Channel strips, aux sends, master chain and outputs
Part 10	Transport, tempo and sync	Playback, groove, metronome and external clock
Part 11	Projects, sound banks and export	Saving, sharing and getting audio out
Part 12	Settings	Preferences for playing, appearance, audio and MIDI
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Part 1 – Quick start

Global

The shortest path to a playing loop. Everything here is covered properly later; this is the route through it. If you have never opened Pulsark before, start on this page.

Your first loop

1. Open one of the factory projects. It arrives with a full kit.
2. On the Sample kit, tap pads to hear them. Tap the one you want to work with to select it.
3. Go to the Generator, pick a genre close to what you want, and generate. You now have a pattern on every track.
4. Press play. Use the pattern selector to move between patterns while it runs – the change lands on the next bar.
5. Back on the Sequencer, tap cells to add or remove hits. Press and hold a cell to set velocity, timing or pitch for that hit alone.
6. On the Mixer, balance the faders and add an insert effect where a channel needs it.
7. Go to the Randomator, enable a few parameters and roll until the kit sounds like yours. Each roll can be undone.
8. On the Song screen, chain your patterns into an arrangement.
9. Record your own material on the Record screen, then trim and tune it in the Editor.
10. Bounce to audio, or export the arrangement to carry on in a DAW.

Finding your way around

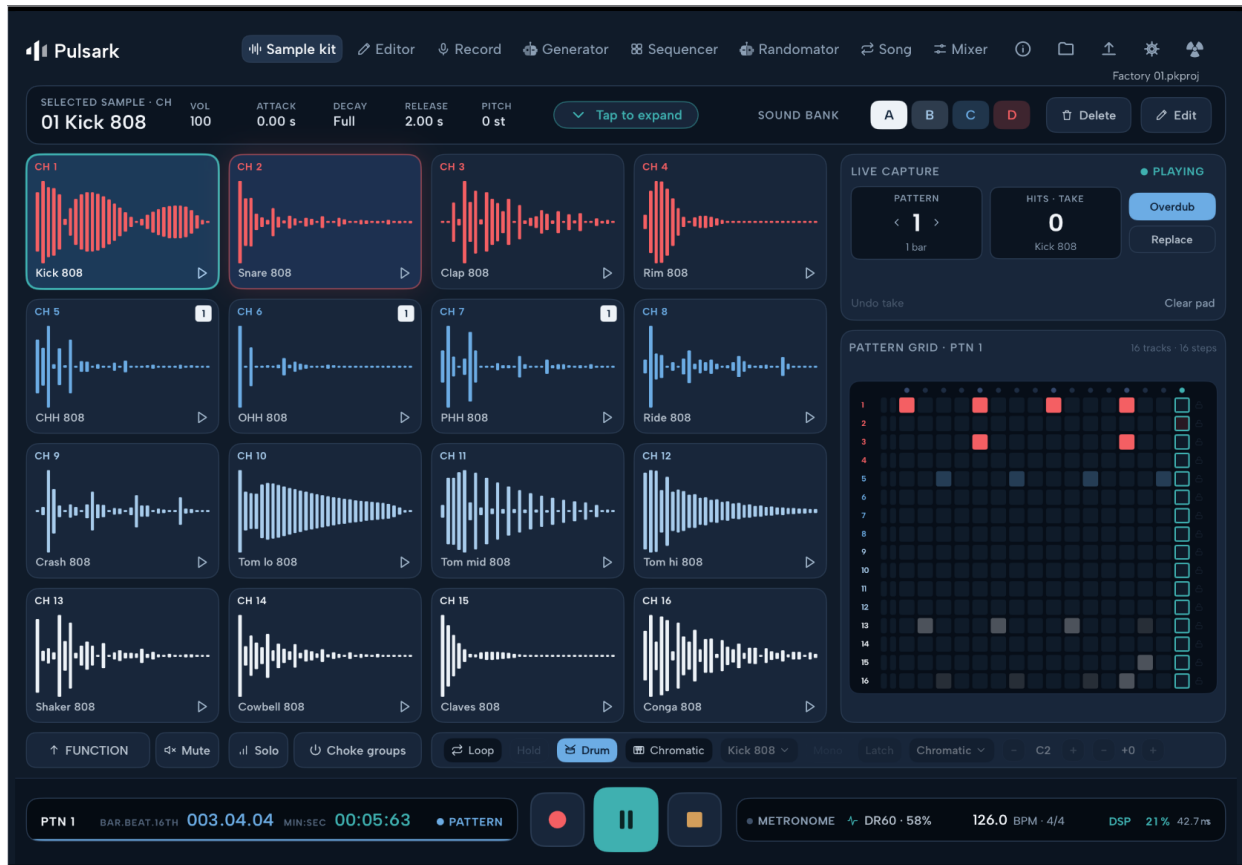
The tab bar runs left to right in the order the work usually happens: make the sound, write the pattern, vary it, arrange it, mix it. Nothing forces that order – every screen edits the same live project, and changes are heard immediately.

Control	What it does
Double-tap	Returns a knob to its default value.
Press and hold	Almost everywhere, a long press opens the detail behind a control – a step's locks, a knob's fine adjustment.
The transport bar	Always visible, on every screen. Play, stop, record, tempo and the position readout.
Undo	The Generator and the Randomator each keep one level of undo.

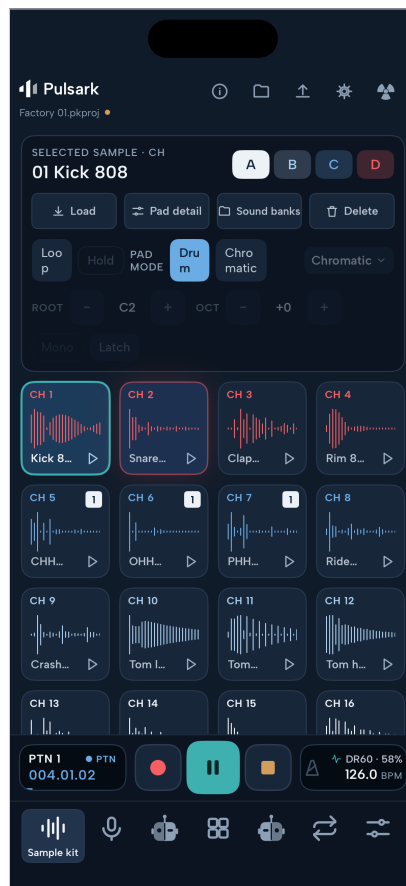
Part 2 – Sample kit

Group A – Sound · Shortcut Cmd 1

The Sample kit is where a project gets its sound. 4 banks of 16 pads sit on a 4x4 grid; the panel above them holds the sound controls for whichever pad is selected. Everything on this screen edits the pad, not the pattern.



Sample kit with the sound panel collapsed. The bank selector sits above the grid, the transport below it.



Sample kit, on iPhone.

Loading and playing a kit

1. Pick a bank. The pad grid follows immediately; playback is not interrupted.
2. Tap a pad to audition and select it. Multiple fingers play multiple pads.
3. Open the sound panel with the expand control to reach volume, attack, decay, release, pitch, pan, cutoff and resonance for the selected pad.
4. Choose a filter machine for the pad. The third knob relabels itself to whatever macro that machine offers. Set the machine to None to bypass the filter entirely.
5. Assign choke groups if two pads must cut each other off – an open and a closed hi-hat, for example.
6. Arm live capture and play the pads while the transport runs to write hits straight into the playing pattern.

Hearing a sample before you load it

Nothing is loaded onto a pad before you have heard it. Picking a file from the device opens a panel that plays it, draws its shape and states its length and format while the file is still where it was – loading copies it in, cancelling leaves both the pad and the file untouched. Inside a sound bank, tapping any sample plays it, and a separate button puts the one you settled on onto the pad.

- The panel names the pad it would load onto, and says so plainly when that pad already holds a sound.
- A file too long or too large to load says so before you spend a listen on it.
- A file dragged onto a pad loads without the audition panel.
- In a plugin host the audition is unavailable – loading works there as it always has.

The sound panel

Expanding the panel above the grid reveals every sound control for the selected pad: filter machine, envelope, pitch, pan, and the contextual third filter macro. Collapse it again when you want the full grid.



The sound panel expanded over the pad grid.

The MOD strip

Under the sound controls sits the MOD strip: the selected pad's modulation, one source at a time. LFO 1, LFO 2 and LFO 3 each swing one destination – level, pan, pitch, sample start, slice, the filter, the lo-fi stage, the hard gate, or the track's Randomator strength, which walks the whole track between the sound it had before randomization and the variation it is carrying – with a chosen wave, a rate that follows the tempo or runs free, and a depth that decides how far the swing reaches. Fade eases the modulation in or out after each hit, and the run mode decides whether the wave keeps turning on its own, restarts with every hit, freezes one value per hit, or plays a single sweep and stops. Every source wears its own colour, and a control under modulation carries a ring and a second pointer in that colour – so the strip says WHAT is moving a knob, not merely that something is.

- Filter env is an envelope of its own – attack, decay, sustain and release – driving the filter cutoff, with a depth that can open a closed filter or pluck an open one.
- Velocity turns how hard you play into movement of a chosen parameter. Full follows the incoming velocity, Strike reads where on the pad the finger lands, and Fixed plays every hit at the same level.
- Two sources can point at the same destination; the colours on the control say which is which, and their movements add up.

Hard gate and per-slice control

The hard gate cuts the sound after a set time, whatever the decay and release say – the tool that tightens a loose loop. The Hold knob reads out in milliseconds and spends most of its travel on the short times a tight gate wants, and on a sliced pad the gate closes every slice, not only the first hit. While the gate is engaged the decay and release controls stand down, and the gate can itself be swung by an LFO.

- Per-slice parameters: on a chopped pad the knob row can edit ONE slice – its level, envelope, pitch, pan and filter – while every untouched slice keeps following the pad. The pad's knob moves every slice that has not been edited.
- Whole-loop triggering: a sliced pad can play the loop from start to end on one hit, each slice passing through its own settings on the way.
- The TRIG and KNOBS switches pick the scope: whether a hit plays one slice or the whole loop, and whether the knobs edit all slices or the one under the cursor.

Chromatic pad mode

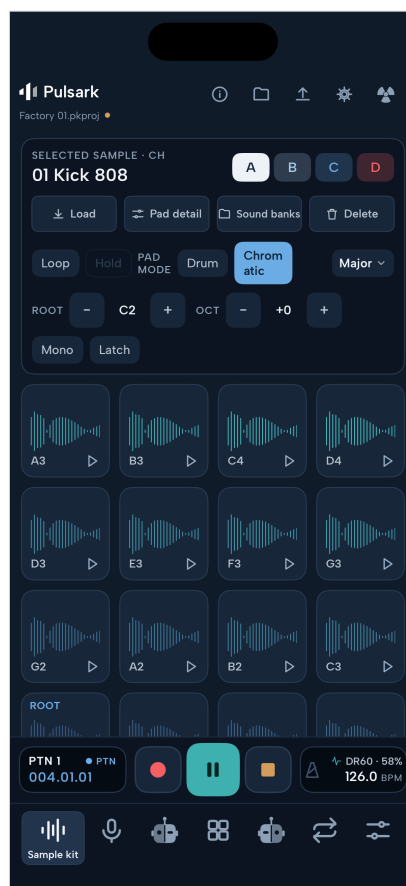
Switch the grid from Drum to Chromatic and all sixteen pads play ONE sample instead of sixteen. The cell you pick decides the pitch: the lowest note sits bottom left and rises to the right and upward, and the cells shade from blue to teal as the pitch rises. The pad you had selected becomes the source.

Control	What it does
Latch	A tap leaves the note sounding with no finger on the glass, and a second tap on the same cell ends it. With chords allowed, this builds a held chord one cell at a time. Stopping the transport ends everything latched.
Octave	Shifts the whole grid up or down by octaves. The key is unchanged.
Poly	Lets held notes stack into a chord instead of taking each other over. Off, the grid plays one note at a time, which is what a drum wants. A sliced source stays single-note, since stacking slices means nothing.
Root	The key the grid is laid out in. Moving it transposes all sixteen cells; a keyboard playing in over MIDI is unaffected, because a note name means one pitch wherever it comes from.
Scale	Which notes the sixteen cells are allowed to land on. The grid follows the scale from the root instead of every semitone.
Slices	When the source pad is sliced, the cells address its slices instead of pitches – the Editor's Play on pads button lands here in one tap. Cells beyond the last slice address nothing and read as empty.
Source pad	The sample every cell plays. Select a pad before switching to Chromatic, or change it from the pad mode row under the grid – the grid follows.

- A held note only sustains if the source pad loops: an unlooped sample ends. The grid says so when that is the case, with the fix on the same line.
- Recording works the same as in Drum mode: arm rec and play, and each cell writes a step at the pitch you played and the level you hit it with, and now for as long as you held it. The take lands on the source pad's own track unless you point it at another one.
- Note repeat, choke assignment and the hold-to-erase gesture still work. The playing gestures follow the note that was played; the editing ones act on the source pad, because editing a note makes no sense.



Chromatic pad mode: one sample across the grid, with the note on each cell and the pitch ramp rising to the right.



Sample kit, on iPhone.

Live capture

Live capture writes what you play into the pattern that is running. It has one level of undo per take.

Control	What it does
Apply	Puts what is already recorded back on the current grid, on whichever channel the quantize target names. It stays inactive while quantize is off, because off means keep the feel.
Note repeat	Hold a pad to roll at the selected rate instead of playing a single hit. The roll follows the tempo.
Overdub	Adds hits to what is already in the pattern. The safe default: nothing you have already recorded is lost.
Quantize	Snaps incoming hits to the chosen resolution as they are recorded. Set it off to keep exactly what you played, down to the millisecond.
Quantize channel	Which channel the grid applies to. Left on all channels it tightens the whole take; pointed at one channel it leaves the other channels unquantized.
Replace	Clears each track as you play into it. Only the new pass remains on that track.

Function

Function turns the pad grid into an editing surface: while it is engaged the pads make no sound. Hold Function and tap a pad to select it. Tap the selected pad again to mute it, again to solo it, again to switch on the choke assignment, and once more to leave the pad playing as before. A double tap opens the selected pad for editing instead.

- Hold Function with one hand and tap pads with the other, or tap Function on its own to latch it on until you tap it again – the way to use it with a mouse or trackpad.
- The mute and the solo it sets are the same switches the Mixer and the Sequencer use. A pad silenced here is silenced on those screens too.
- It never picks a choke group for you: it only switches the assignment on, and which group a sound belongs to stays your choice, made by tapping pads as usual.
- Leaving the Sample kit releases Function.

Choke groups

Pads in the same choke group cut each other off with a short fade instead of overlapping – the behaviour of a real hi-hat, where closing it stops the open sound. Open the choke assignment, then tap pads to put them in a group.

- A pad belongs to one group at most.
- Choking is a property of the sound, not of the mixer: it applies wherever the pad is triggered from, including the sequencer and incoming MIDI.



Choke assignment: tap pads to place them in a group.



Choke assignment on iPhone.

Filter machines (16)

Name	What it does
Acid	Diode ladder – coupled poles, feedback HP, squelch and drive
Base-W	HP+LP pair – base sets the floor, width opens the band. P-lock it.
BP	Bandpass 12 dB SVF – flat-passband makeup, isolate a band
Comb +	Tuned positive feedback, keytrackable – turns samples into synth material
Comb –	Negative feedback – hollow, phasey character
Dual SK	Dual Sallen-Key: resonant HP into the diode-loop LP – carve fat bands
EQ	Parametric peak – boost or cut ± 18 dB around the FILTER frequency
Formant	Three vowel bandpasses – morph A→E→I→O→U, talkbox material
HP	Highpass 12 dB SVF – clears mud without ringing
LP 12	SVF 2-pole ZDF – clean and open, keeps bass at high resonance
LP 24	Transistor ladder – tanh in every stage, warm; bass dips as resonance rises (as it should)
Morph	Multimode morph – one knob sweeps LP → BP → HP continuously
Notch	Band-reject SVF – carve one frequency, hollow phaser-ish character
OTA	OTA 4-pole – silky, the classic 12-bit sampler's channel filter
Poly	OTA cascade – Q-compensated, NO bass loss at resonance; slope 24→12 dB
Scream	Sallen-Key with the diode clip IN the resonance loop – aggressive, screaming

Note repeat rates (6)

Name	What it does
1/4	Rolls on the beat – one hit per quarter note.
1/8	Two hits per beat.
1/8T	Three hits per beat, an eighth-note triplet.
1/16	Four hits per beat. The usual hi-hat roll.
1/16T	Six hits per beat, a sixteenth-note triplet.
1/32	Eight hits per beat – a buzz rather than a roll.

Quantize resolutions (6)

Name	What it does
1/4	Snaps hits to the beat. Only for very loose playing.
1/8	Snaps to the nearest eighth note.
1/8T	Snaps to the nearest eighth-note triplet, for swung and shuffled parts.
1/16	Snaps to the nearest sixteenth. The usual choice for drums.
1/16T	Snaps to the nearest sixteenth-note triplet.
1/32	Snaps to the nearest thirty-second: close to unquantized, but it tidies the worst strays.

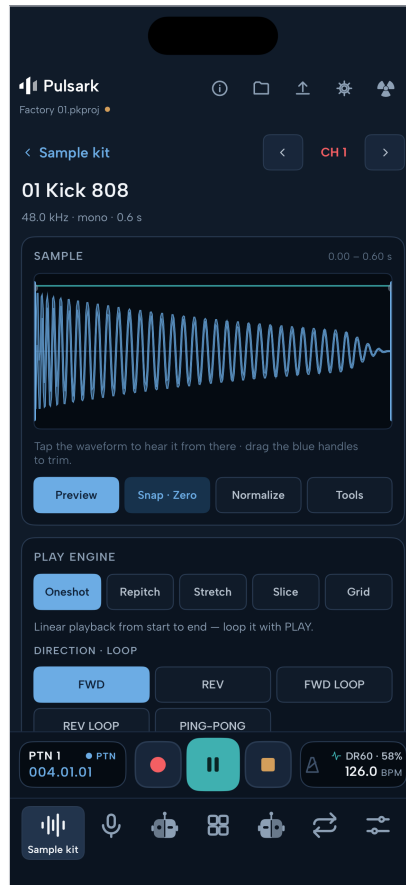
Part 3 – Editor

Group A – Sound · Shortcut Cmd 2

The Editor is the screen next to the Sample kit, and it edits one pad's sample. A rail of pads runs along the top, and the whole bank is reachable from it. Under it sits a panel that expands to the sound controls and folds away to the waveform. Every edit is non-destructive: the recording itself is never rewritten, and trim points, slices and tuning can be changed again at any time.



Editor: waveform with trim and loop handles, the play engine chips, and the lo-fi strip along the bottom.



Editor, on iPhone.

Editing a sample

1. Pick the pad on the rail along the top. It is the same selection the Sample kit makes.
2. Drag the trim handles to set start and end. Enable zero-crossing snap to avoid clicks at the edges.
3. Press Preview to hear the trimmed sound, and set the play mode beside it – looping modes expose a loop region with an equal-power crossfade. The loop point holds its level.
4. Expand the panel to reach the play engine. The engine decides how the sample follows tempo and pitch.
5. For chopped material, slice the sample and pick how the slices are found. Tap a segment to hear it; in manual mode the marker strip above the waveform adds, moves and removes slice points. Play on pads turns the pad grid into the slices, ready to play and record.
6. Shape the sound with attack, decay, release and tune, then add lo-fi if the material needs it. Fold the panel away again when you go back to the waveform.

The panel and what stays out of it

The sound controls live in one panel that expands and folds away, the same way the Sample kit's sound controls and the Sequencer's setup do. Folded, it reads back what it holds – the play engine, the trimmed length, and whether the sample is normalized or run through lo-fi – and hands its height to the waveform. Three controls stay out of it on purpose, because they are used with a hand already on the waveform: Preview, the play modes, and the snap setting that decides where a dragged handle lands.

Lo-fi strip

The lo-fi controls sit after the filter in the voice and before the mixer strip.

Control	What it does
Bit depth	Reduces the number of bits used to describe the waveform. Lower values add quantisation grit, from a light dust to full digital breakup.
Overdrive	Drives the voice into saturation. Rounds transients and adds harmonics.
Sample-rate reduction	Throws away samples to lower the effective sample rate, adding aliasing and a hard, early-digital character. Route it before or after the filter.

Normalize

Normalize raises the sample to a fixed ceiling without altering the recording. It applies to the trimmed region. Trim first, normalize after.

Play engines (5)

Name	What it does
Grid	Even N-way split – the quick way to chop a loop.
Oneshot	Linear playback from start to end – loop it with PLAY.
Repitch	Tempo-sync by speed – pitch follows, like vinyl or tape.
Slice	Cut at transients or by hand – every slice is a pad.
Stretch	Granular timestretch – tempo moves, pitch stays put.

Play modes (5)

Name	What it does
FWD	Plays the trimmed region once, from start to end.
FWD LOOP	Plays forwards and repeats the loop region for as long as the note is held.
PING-PONG	Alternates forwards and backwards through the loop region. There is no seam at the loop point.
REV	Plays the trimmed region backwards, once.
REV LOOP	Loops the region backwards.

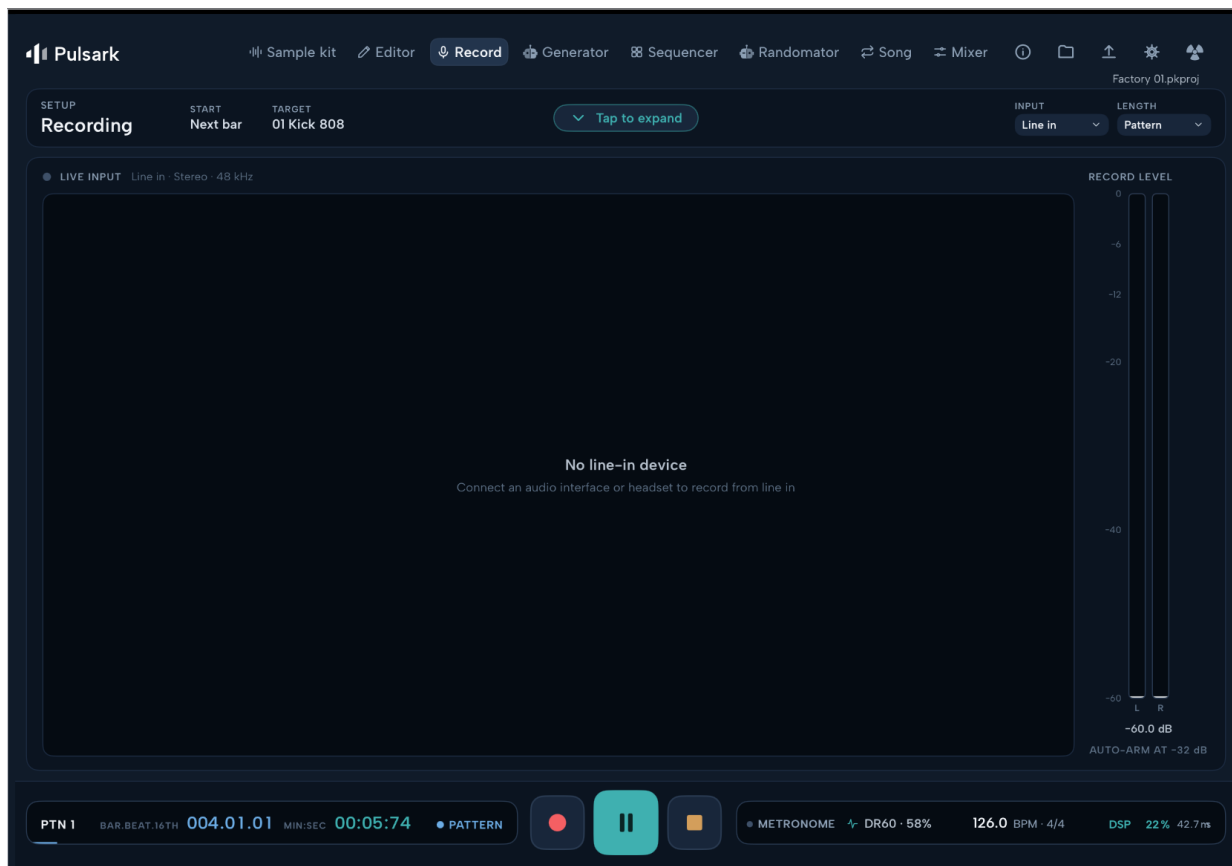
Slice modes (3)

Name	What it does
Even	Cuts the region into equal parts regardless of what is in it. Use it on material with a steady pulse.
Manual	You place every slice point by hand in the marker strip above the waveform, for material the automatic modes read wrongly.
Transient	Pulsark finds the attacks in the recording and cuts there. The fastest route for a drum loop.

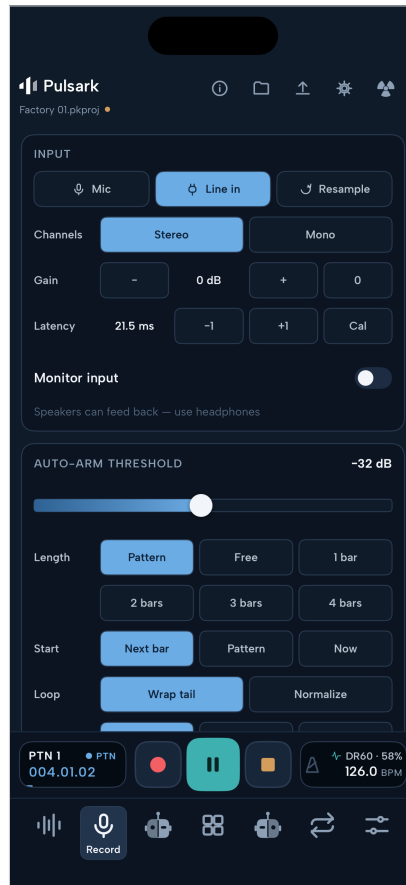
Part 4 – Record

Group A – Sound · Shortcut Cmd 3

The Record screen brings new material into the project: from a microphone, from a line input, or by resampling Pulsark's own master output. Recordings are stored alongside the project and referenced by the pad. One recording can serve several pads.



Record: input scope, stereo meters with peak hold, and the capture-length and count-in controls.



Record, on iPhone.

Making a recording

1. Choose the source: microphone, line input, or resample the master output.
2. Choose mono or stereo, then set the level until the meters peak below clipping.
3. Set a capture length – free, or a fixed number of bars – and a count-in if you are playing along.
4. Start the recording manually, or set a threshold and let it arm itself on the first transient.
5. Scrub and audition the take, then save it to a pad or send it straight to the Editor.

Resampling

Resampling records Pulsark's own output, including every mixer insert, send and master processor. It is the fastest way to freeze a whole chain into a single pad, which frees up voices and makes the result portable.

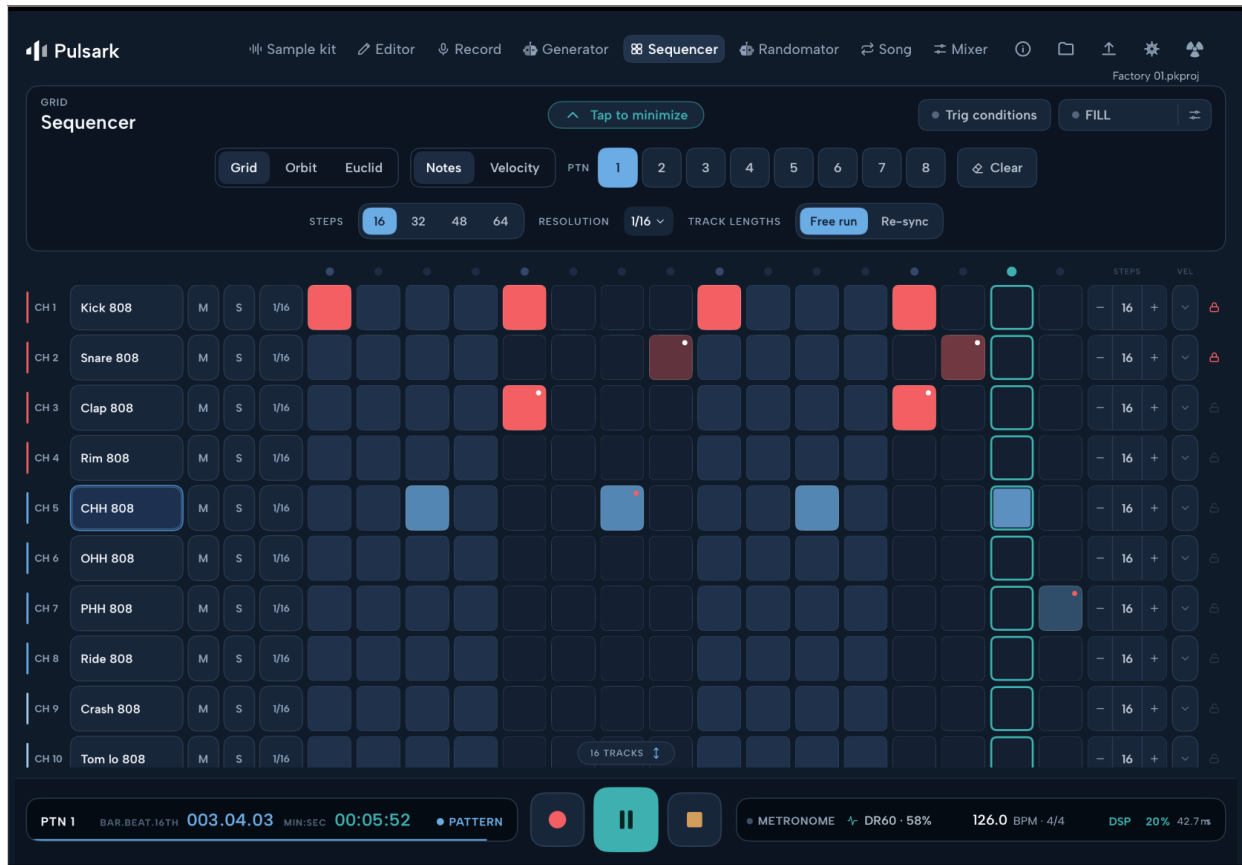
Reading the meters

The meters hold peaks and latch clipping. An overload stays visible after it has passed. Starting a new take clears the latch.

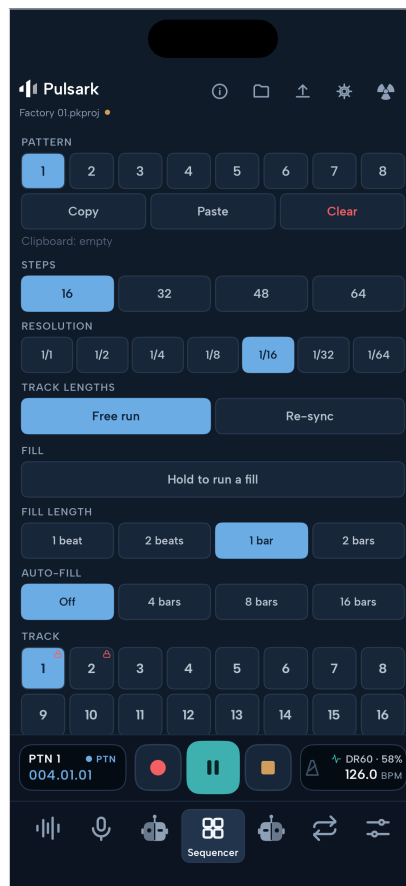
Part 5 – Sequencer

Group B – Pattern and variation · Shortcut Cmd 5

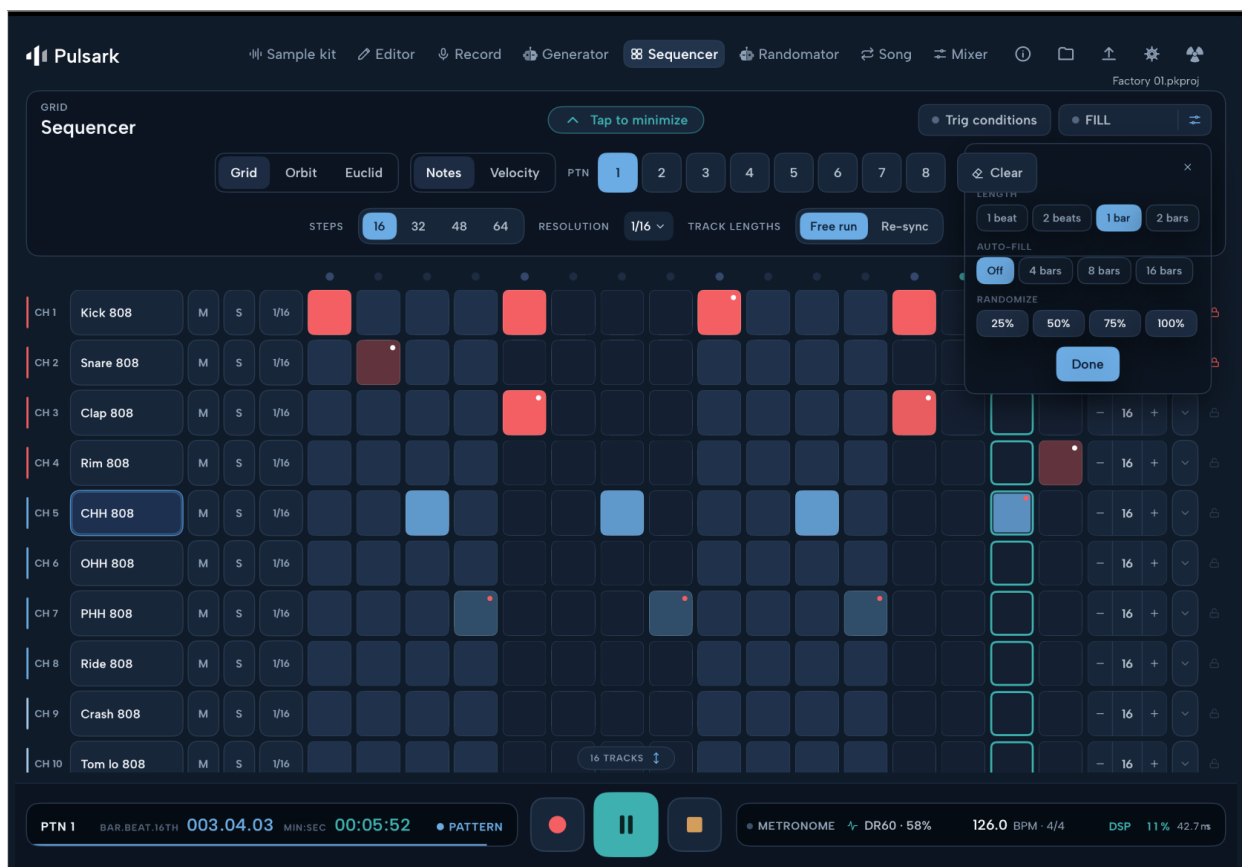
16 tracks and 8 patterns per project. A pattern is 1/2/3/4 bars long – 16/32/48/64 base steps – and each track can run its own resolution from 1 to 64 cells per bar. The three sub-modes (Grid, Orbit, Euclid) are three views of the same pattern, not three sequencers.



Grid mode: one row per track, with the loop-length stepper at the right end of each row.



Sequencer, on iPhone.



The fill settings, open under their chip in the Sequencer toolbar: how long a fill lasts, and how often one arrives on its own.

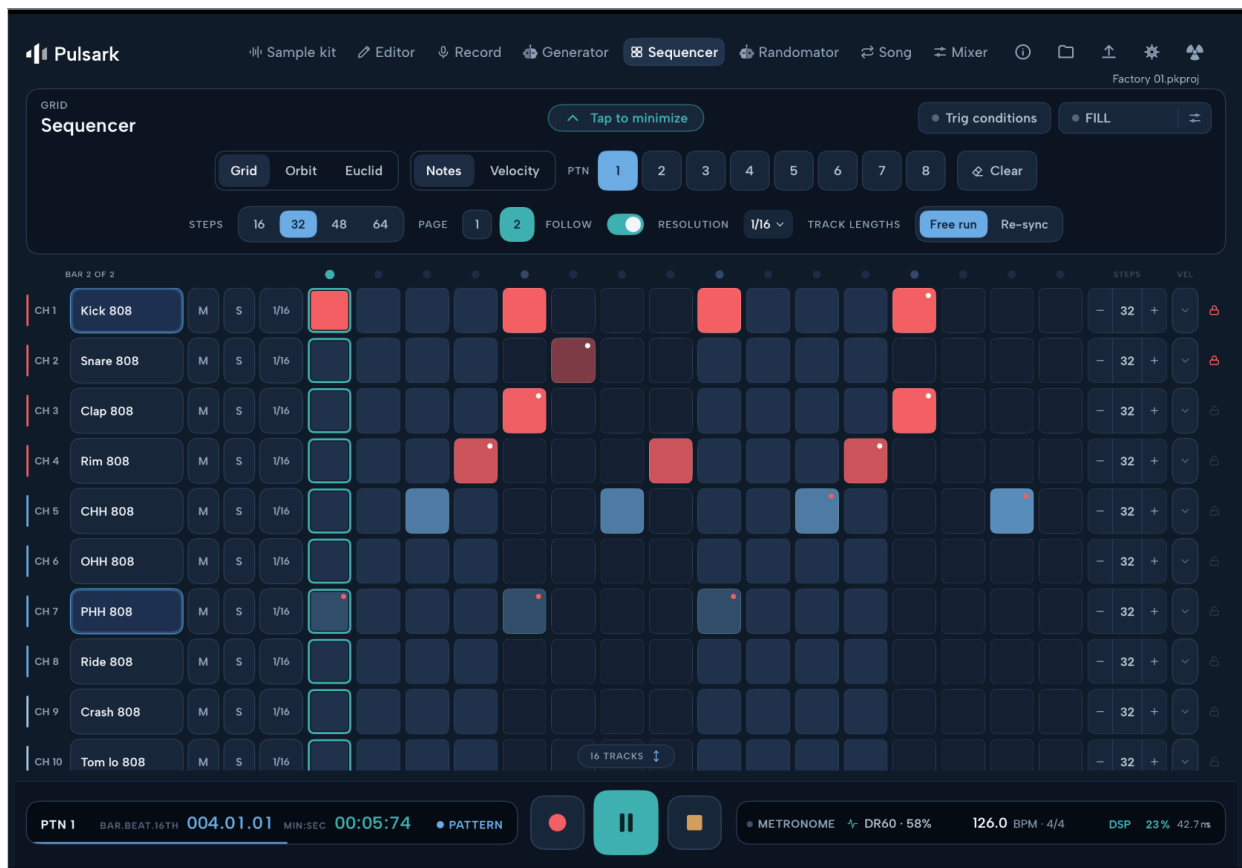
Building a pattern

1. Select a pattern. While the transport runs, the switch takes effect at the next bar line so the change lands in time.
2. Set how long the pattern is from the Steps row. Past one bar the grid pages: the page row beside Steps says how many bars there are and which one you are editing.
3. Tap cells to toggle steps. Swipe across a row to paint a run of cells in one gesture.
4. Set the track's resolution if it should run finer or coarser than the rest of the kit.
5. Shorten a track's loop length to run it against the others in a different metre. Hidden steps are kept and return when the length grows again.
6. Press and hold a step to open the step editor and lock parameters to that one step.
7. Give steps a trig condition when a part should play only sometimes.
8. Hold the FILL chip to run a fill, or open its settings and let one fire automatically at a set interval. Steps set to the FILL condition play only while a fill is running.
9. Switch to velocity editing to shape how hard the steps hit, either by drawing in a track's lane or with the track tools. See Velocity below.
10. Lock a track to keep Randomize, Generate and Clear off it.
11. Collapse the setup band above the grid once the pattern is set up. The tools fold away behind their heading and the grid takes the room.

The pattern toolbar

The row above the grid sets the shape of the pattern: how long it is, how fine its cells are, which bar you are looking at, and how a track that runs shorter than the rest behaves. The grid itself always draws one bar. A pattern longer than that is more pages, not more columns – the same way a step sequencer with a page button has always worked – and the header above the cells names the bar you are editing, and the bar being played when it is a different one. On a phone there are no pages to turn: that screen works one track at a time and draws every cell of every bar, so the page controls below belong to the tablet and the desktop.

Control	What it does
Follow	Turns the page with the transport instead of leaving it where you put it. It switches itself on the first time a pattern grows past one bar while the transport runs, so the playing bar is on the screen rather than behind it; set it yourself once and it stays where you set it.
Page	Which bar the grid is showing. The bar the transport is in is teal whether you are looking at it or not, so a pattern longer than one bar still says where the sound is.
Resolution	Cells per bar for the whole pattern. A coarser setting spreads the same bar over fewer, longer cells; a finer one buys room for rolls and off-grid placement. A track can override it for itself.
Steps	How long the pattern is, in bars. Growing a pattern repeats what is already written across the new bars, the way a drum machine does. Shortening it drops what sat past the new end, so it is not the way to play less than the whole pattern – shortening a track's own loop length is, and that keeps its hidden steps.
Steps, per track	The stepper at the end of each row is that track's own loop length, counted in cells. A track set shorter loops early and runs against the rest of the kit.
Track lengths	What happens to those shorter tracks when the pattern comes round. Free run lets them keep drifting, so the kit realigns only when their lengths agree; Re-sync pulls every track back to the top of the pattern each time it repeats.



A pattern of more than one bar: the page row beside Steps, the follow switch, and the bar read-out above the cells.

Parameter locks

A lock changes a parameter for one step only, leaving the rest of the track alone. The step editor's left column holds the timing and voice locks; the right column overrides the track's voice entirely for that step.

Control	What it does
Length	Sets how long the step holds before it releases.
Micro timing	Nudges the step off the grid, earlier or later, without moving it to another cell. This is where a pattern gets its push or drag.
Pan	Places this step in the stereo field.
Pitch	Transposes this step alone. A tuned tom fill out of one sample lives here.
Retrig	Repeats the step a set number of times within its own cell, with a velocity curve across the repeats.
Sample start	Starts the sample later into the recording for this step. One sample can yield several sounds.
Trig condition	Decides whether the step plays at all this time round. See Trig conditions below.
Velocity	Sets how hard this one step hits, independently of the rest of the track.
Voice override	Replaces the track's voice for this step: any pad as the sample, any filter machine with its own cutoff and resonance, and its own attack, decay and release.



Step editor: locks on the left, the voice override on the right.



The step editor on iPhone.



Track defaults: what every unlocked step inherits.



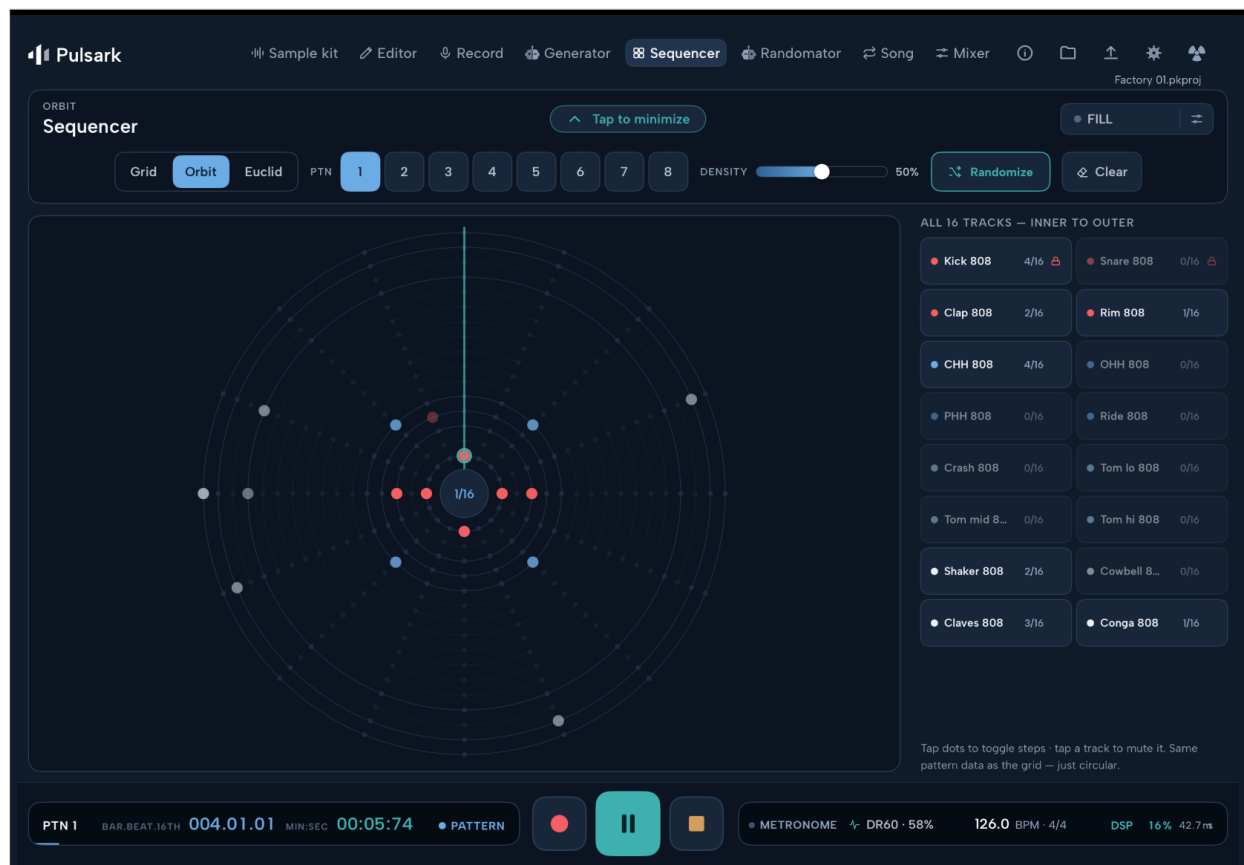
Track defaults on iPhone.

Reading the step editor

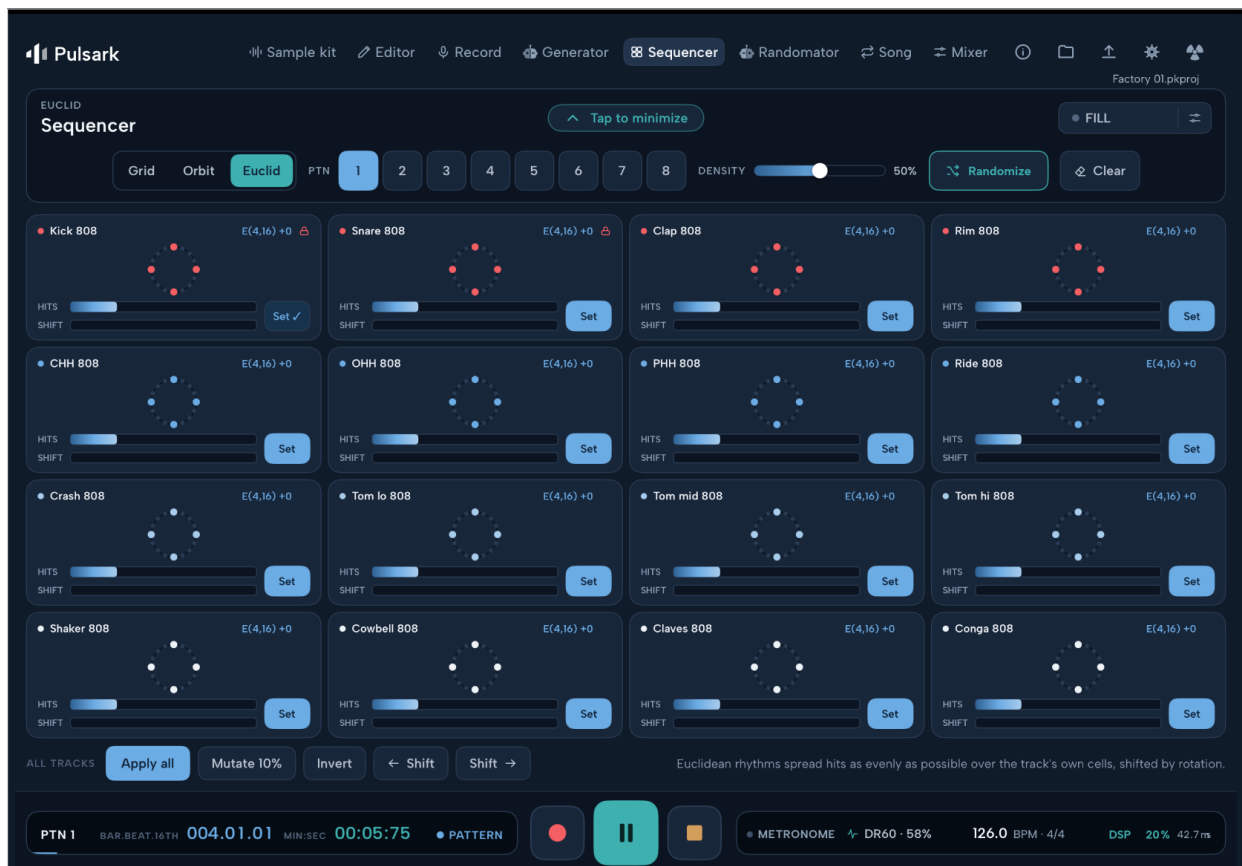
- A value that matches the track's own reads blue.
- An override reads teal, and the cell it belongs to shows a lock dot on the grid.
- Clearing a lock returns the step to the track's value; it does not set the value to zero.

The three sub-modes

Control	What it does
Euclid	Distributes a number of hits evenly across the bar for a track, with shift, invert, mutate and apply-to-all. The quick route to interlocking polyrhythms.
Grid	The full pattern, one row per track. This is where most editing happens; the dice here opens the Generator.
Orbit	All tracks drawn as concentric rings. Rotation and density are easier to read as a circle than as a row, which makes it the fastest way to spot a pattern that is off.



Orbit: all tracks as concentric rings.



Euclid: hits spread evenly across the bar.

Fills

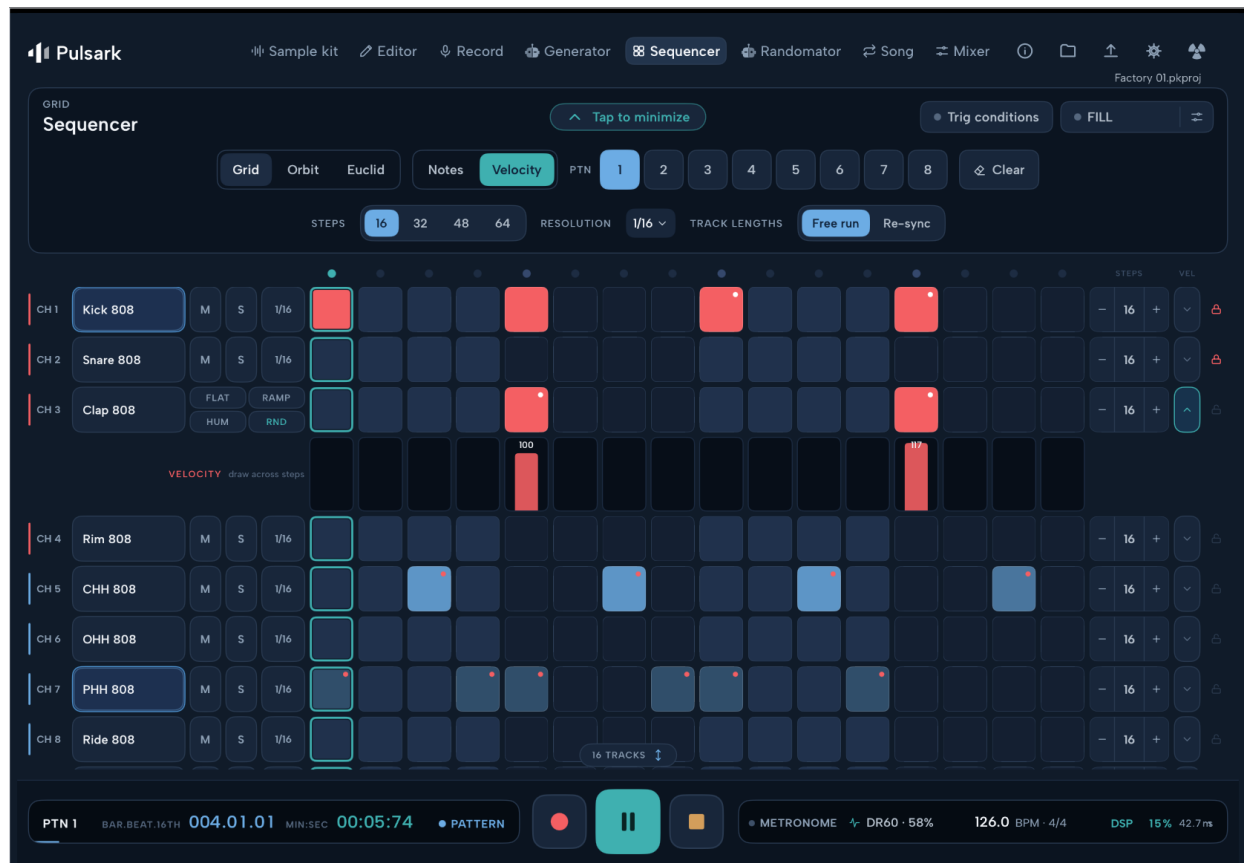
A fill is a burst that belongs to the pattern rather than to a performance: you write the extra hits once, set those steps to the FILL condition, and they stay out of the way until a fill runs. Holding the chip runs one for as long as you hold it. The settings decide how long an automatic fill lasts and how often it arrives – leave the interval off and the fill only ever happens when you ask for it.

Control	What it does
Auto-fill	How often a fill fires by itself, counted in bars. Off means fills only happen while you hold the chip.
Length	How long a fill lasts once it starts. A short setting gives a flick before the downbeat; a long one hands over a whole phrase.

Velocity

Steps say where a hit lands; velocity says how hard it lands. The velocity lane is where you set the second one, and it opens under any track without taking the first one away: the grid above keeps placing, painting and holding steps whether a lane is open or not. Open one with the chevron at the end of a row; the toolbar toggle opens a lane on the track you last auditioned, and closing the last open lane puts the grid back to plain step editing by itself unless you have turned that off in the settings. A row with a lane open lends its mute, solo and resolution place to its own track tools; every other row keeps them. Draw across the lane: each bar is a step, its height is how hard that step hits, and one stroke shapes a whole row. Empty cells are skipped: drawing across a gap does not fill it in. The stroke counts as a single edit: the message above the transport offers to put the row back as it was. The four track tools do the same job in one press, to every step on the track at once.

Control	What it does
Flat	Levels the track: every step back to the velocity a step plays at when nothing has been set on it. The way back from an uneven part.
Humanize	Nudges each step slightly, up or down. How far it may stray is a preference you set once.
Ramp	Spreads the track's steps from soft to hard in playing order.
Random	Rolls a fresh velocity for every step on the track, across the whole range.



A velocity lane opened under its track, with the track tools beside it where that row's mute, solo and resolution normally sit.

Copying patterns and tracks

A pattern can be copied whole and pasted into another slot, which is how a variation starts: copy, switch to the next slot, paste, then change the one thing that should differ. A single track copies the same way, without carrying the rest of the kit with it. The copy names where it came from when you paste it. Clearing empties the current pattern, and any track you have locked survives it.

Locking a track

The padlock at the end of each row protects that track's content. A locked track ignores every edit that would rewrite it – steps, velocity, loop length, the Euclid tools, Randomize, Generate and Clear all pass it by – and says so when you try. It is the same lock the Randomator shows in its own column. Mute and solo stay free: they are mixing moves, not edits to the part.

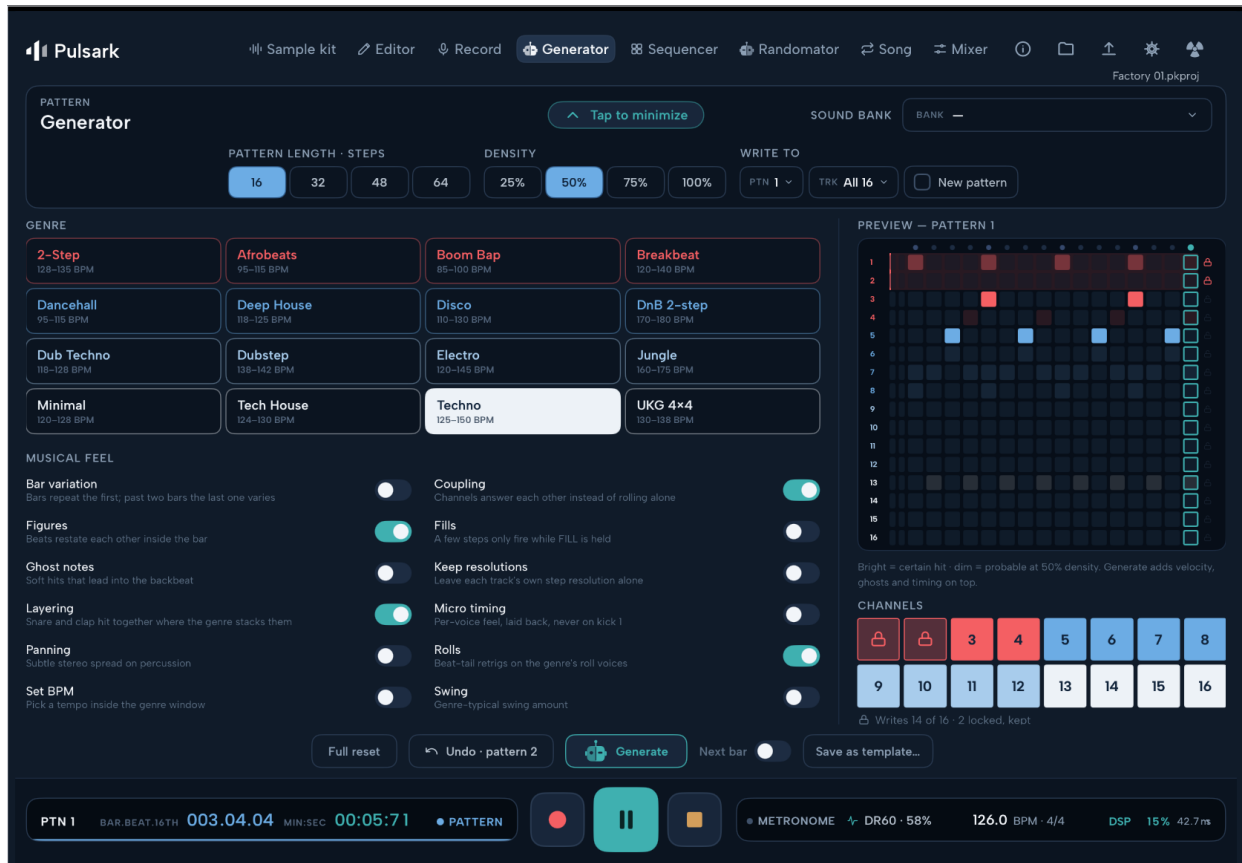
Trig conditions (8)

Name	What it does
1:2	Plays on every second pass of the pattern.
25%	The step plays roughly one time in four – occasional detail rather than a part.
2:4	Plays on the second pass of every four.
3:4	Plays on the third pass of every four.
50%	The step plays roughly half the time.
75%	The step plays roughly three times out of four, decided again on every pass.
Always	The step plays every time round. This is the default.
FILL	Plays only while a fill is running, and is silent the rest of the time.

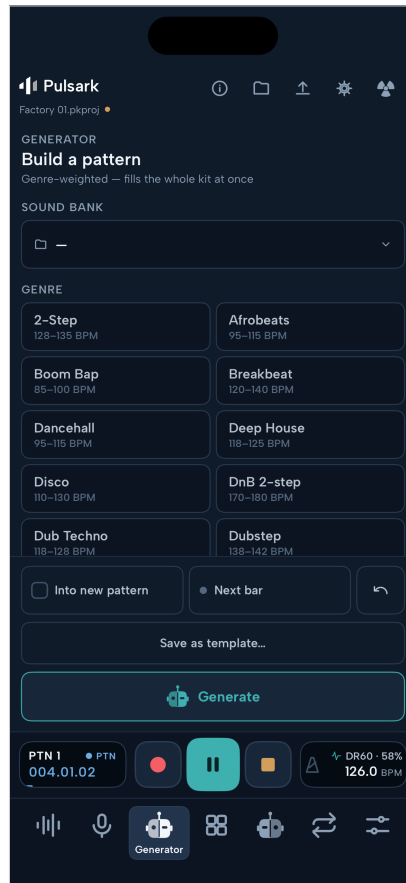
Part 6 – Generator

Group B – Pattern and variation · Shortcut Cmd 4

The Generator writes a complete kit pattern in one move, weighted by genre. It is the fast way from an empty project to something playable, and the natural start of the flow into the Sequencer and the Randomator.



Generator: genre and density on the left, musical-feel toggles in the middle, and the live preview grid on the right.



Generator, on iPhone.

Generating a pattern

1. Pick a genre. Each one carries its own tempo window and its own weighting of which channels play what.
2. Set the density and the pattern length.
3. Turn on the musical-feel options you want written in: fills, ghost notes, micro timing, panning, tempo, swing, trig conditions, velocity, rolls, layering, bar variation and whether each track keeps its own step resolution.
4. Choose where it writes: a target pattern, the channels it may write into, or a new-pattern mode that only ever writes to an empty slot.
5. Read the preview grid – certain hits and probable hits are drawn differently – then generate. Each tap is a fresh variation.
6. Undo if the previous pattern was better. It takes back one thing at a time and names what that is – the pattern it wrote, with any tempo it set, or a kit the bank picker swapped.

Structure and repetition

Bar variation decides the shape of a pattern longer than one bar: with it on, the bars repeat the first one, and past two bars the last is rolled fresh instead. With it off each bar is rolled on its own. Rolls and layering control two habits the generator has always had – beat-tail retrigs on the voices a genre rolls, and the snare-and-clap stack the genres that use it are built on – and both start out on.

- Keep resolutions leaves each track at the step resolution you set it to. Without it a whole-kit generate returns the grid to sixteenths, and a track you had running finer loses that setting.
- The hits still land where the genre puts them on a track that keeps a finer resolution: the cells in between stay free.
- Only some genres roll or layer at all. The two switches are silent on the rest.

Keeping a pattern you like

A generated pattern can be saved as a named template and recalled into any project. Templates are listed by name and load into the pattern you are pointing at. The Randomator keeps its own templates the same way, and the two are separate lists: one remembers a part, the other remembers a treatment.

What the Generator will not overwrite

- Channels locked in the Randomator are left alone.
- A channel locked in the Sequencer is the same lock. It is left alone here too.
- The padlock beside each preview row shows that lock and switches it.
- The new-pattern mode refuses to write over a pattern that already has content.
- Channels you have not picked are left alone, down to a single channel being the only one written.

Choosing which channels it writes

Under the preview sits a pad for every channel of the kit. A lit pad is written; a dark one is left exactly as it is. Tap to include or drop a channel, hold one to make it the only target, and use the Tracks menu for the whole kit, one of the four kit groups, or to invert what you have picked. Writing to part of the kit changes nothing else: the pattern keeps its length, its resolution and the project's tempo, and every channel you did not pick keeps every step it had. The Sequencer offers the same one-channel write from a channel's own head, without disturbing what you have set up here.

Generator genres (16)

Name	What it does
2-Step	Broken garage beat: the kick skips the second and fourth beat, and the snare carries the groove.
Afrobeats	Rolling, polyrhythmic percussion with a soft kick and layered hand drums.
Boom Bap	Dusty sampled kit, kick and snare well apart, swung and slightly behind the beat.
Breakbeat	Chopped funk break: syncopated kick, snare on two and four, and busy ghost notes between.
Dancehall	The steady one-drop pulse with heavy syncopation and live-feeling percussion.
Deep House	Warm and rolling, with a soft kick, brushed hats and swing in the sixteenths.
Disco	Live-feeling kit with an open hat on the off-beat and a snare that lands hard on two and four.
DnB 2-step	Fast, with the classic two-step kick and snare over rolling hats.
Dub Techno	Slow, deep and heavy on space. Sparse hits, long tails and chords that arrive off the beat.
Dubstep	Halftime, sparse and heavy: the snare on the third beat, the kick sub-low and everything else out of the way.

Name	What it does
Electro	Syncopated drum-machine funk with a hard snare and a bouncing, staccato kick.
Jungle	Chopped and re-ordered breaks at speed, with sub-heavy hits and constant variation.
Minimal	Techno stripped back: few elements, plenty of space, and all the interest in the detail.
Tech House	House swing on a techno frame: tight percussion, a busy off-beat and a firm kick.
Techno	Four-to-the-floor kick, tight closed hats and a driving off-beat. Machine-like and relentless.
UKG 4×4	Four-to-the-floor with garage swing and skipping percussion over the top.

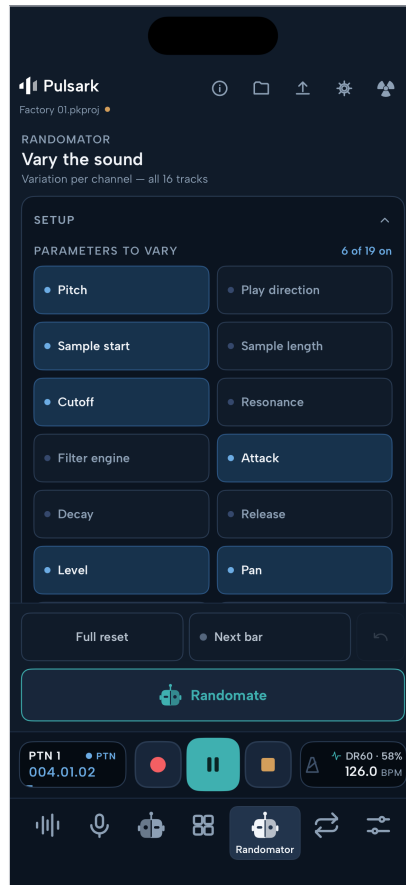
Part 7 – Randomator

Group B – Pattern and variation · Shortcut Cmd 6

Where the Generator writes notes, the Randomator varies sound. It moves the parameters you enable, on the tracks you leave unlocked, by the amount you allow – so the result is a variation of your kit rather than a different one.



Randomator: the parameter enables, the per-track depth, lock and scope columns, and the template row.



Randomator, on iPhone.

Rolling a variation

1. Enable the parameters that are allowed to move.
2. Set a variation depth per track. The column changes the sound as you drag it – the track moves away from the sound it had before any randomization, further the higher you pull, and back to exactly that sound at the bottom. It is the same amount the roll uses, and pulling a column down undoes the variation on that track.
3. Lock the tracks that must not change. A lock also protects the track from the Generator.
4. Roll. Every roll is measured from the sound you started with, not from the last roll. Compare, then roll again or undo – there is one level of undo per roll.
5. Save the setup as a named template when a combination is worth keeping. Templates stay available in every project.

Trig randomization

The Randomator can also write trig conditions and ratchets onto steps that are already active, drawn from a pool of conditions you choose. It never adds or removes steps.

Randomator parameters (19)

Name	What it does
Attack	Varies how quickly the sound reaches full level.

Name	What it does
Aux 1	Varies how much of the track goes to the first aux bus.
Aux 2	Varies how much of the track goes to the second aux bus.
Bit depth	Varies the lo-fi bit reduction.
Cutoff	Moves the filter's cutoff frequency.
Decay	Varies how quickly it falls away again.
Direction	Flips playback between forwards and backwards.
Filter engine	Re-picks which filter machine the track runs.
Level	Varies the track's level in the mix.
Overdrive	Varies how hard the voice is driven into saturation.
Pan	Moves the track across the stereo field.
Pitch	Transposes the track's sample.
Ratchet	Adds or removes step repeats.
Release	Varies how long the tail rings on after the hit lets go.
Resonance	Varies the emphasis at the cutoff.
Sample length	Shortens or extends how much of the sample plays.
Sample start	Moves the point in the recording where the sample begins, which can change a sound completely.
SR reduce	Varies the lo-fi sample-rate reduction.
Velocity	Varies how hard the track's existing steps hit, without moving any of them.

Part 8 – Song

Group C – Arrangement · Shortcut Cmd 7

The Song screen chains patterns into an arrangement of up to 32 rows. Each row names a pattern, a length in bars, a label of your own, and a mute mask that silences chosen channels for that section only.

Arranging

1. Add a row and choose its pattern and length in bars.
2. Label the row so the arrangement reads as sections rather than as numbers.
3. Set the row's mute mask to drop channels for that section without editing the pattern itself.
4. Reorder, duplicate or delete rows. This works while playing, and the playback cursor follows the edit.
5. Engage song mode. It takes effect at the next bar line; with loop off, the final row holds.

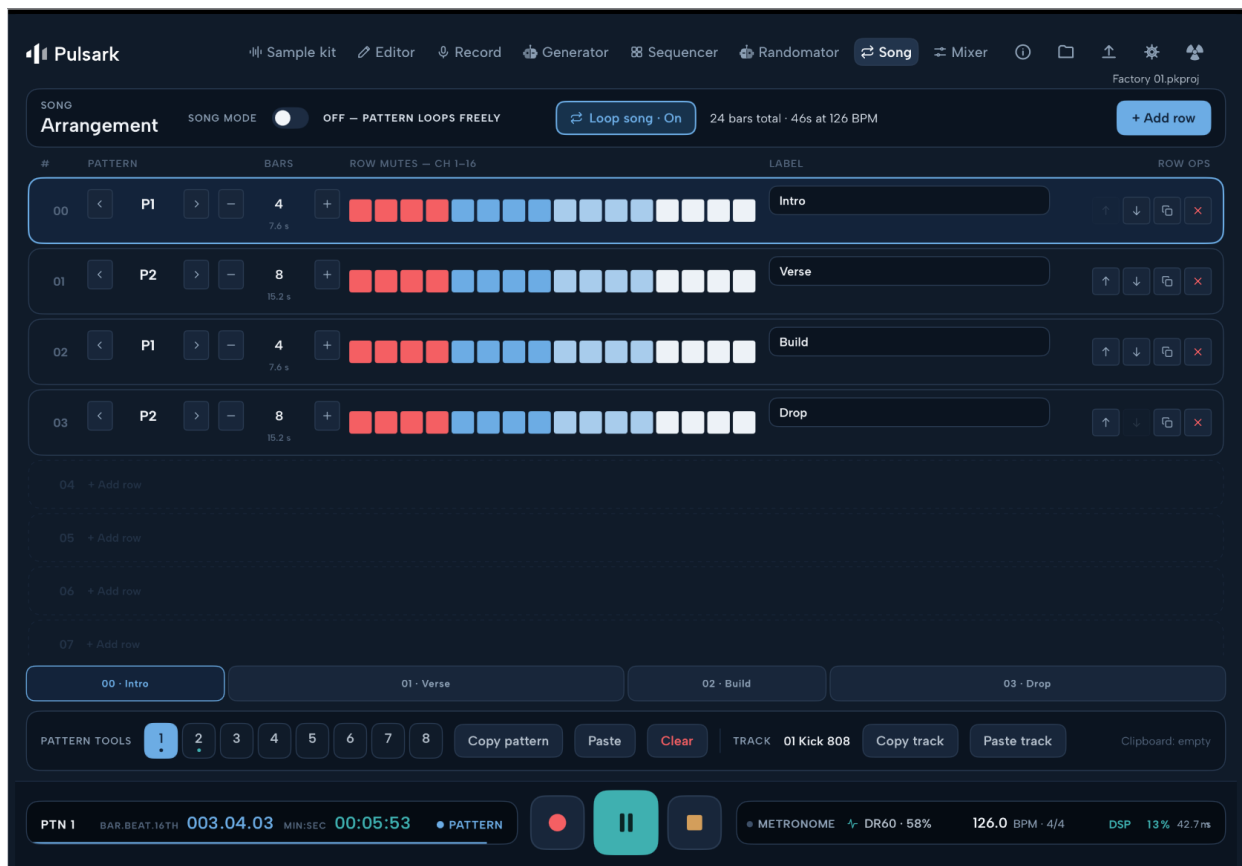
The two mute layers

Two independent layers can silence a channel, and either one is enough. Knowing which one is active saves a lot of hunting.

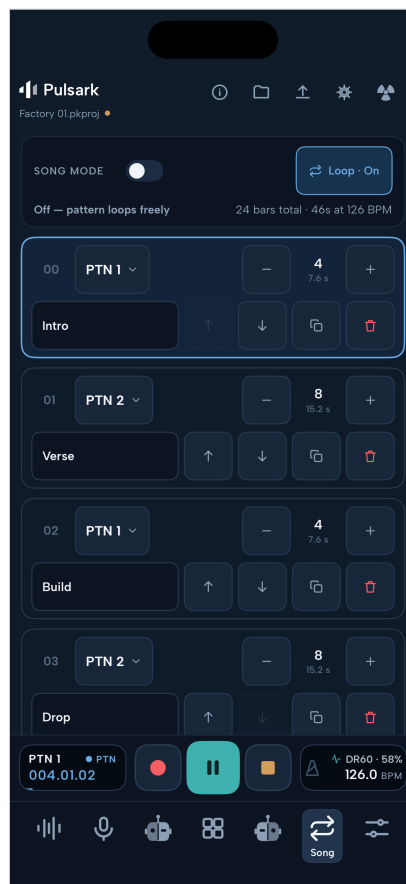
Control	What it does
Row mute mask	Set per song row. It applies only while that row is playing, which is how a section drops its percussion.
Session mute and solo	One switch per channel, and the Sample kit, the Sequencer and the Mixer all flip the same one: mute a channel in any of them and all three show it muted. It applies everywhere and is not stored in the arrangement.

Clipboard

The footer carries a pattern clipboard and a track clipboard.



Song: the row list with pattern, bar count, label and the per-row channel mute mask.



Song, on iPhone.

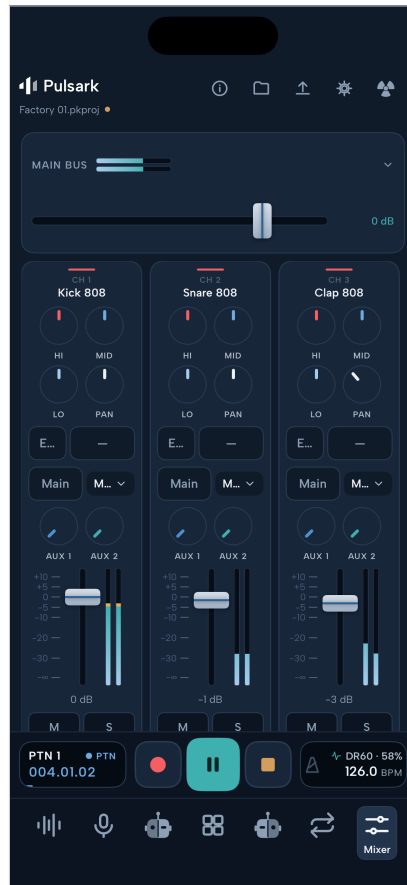
Part 9 – Mixer

Group D – Mix · Shortcut Cmd 8

16 channel strips and a master strip, eight strips visible at a time in a horizontal lane. Each strip carries EQ, pan, an insert slot, two aux sends, a fader with level metering, mute and solo, and an output assignment.



Mixer: channel strips in the lane, the two send busses and the master strip.



Mixer, on iPhone.

Mixing

1. Scroll the lane to reach the strips you need; the master strip stays in view.
2. Set EQ and pan, then balance with the faders. Double-tap a knob for its default, press and hold for fine adjustment.
3. Load an insert effect where a channel needs treatment of its own.
4. Send to the two aux busses and choose what each bus runs. A send is shared between channels.
5. Shape the sum on the master: character engine, then compressor, then soft clip, then the fader.
6. Assign strips to individual outputs if the host should receive them as separate stems.

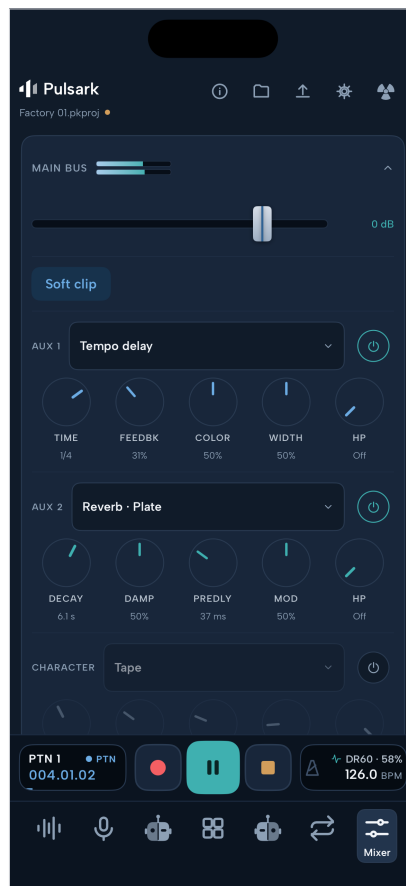
The master chain

The master strip runs in a fixed order, listed here in that order rather than alphabetically: colour first, control second, safety third.

Control	What it does
Character	A choice of tape, 12-bit, 45 RPM, drum box, vinyl or cassette, each with five macro knobs and a live waveform display. This is where the mix gets its era.
Compressor	Six knobs, operated by a live gain-reduction meter. Use the meter, not the numbers: a few decibels of movement on the beat is usually enough. Presets set the whole thing up for a job – glue, pumping, taming a peak – and are the quickest way in if the knobs are unfamiliar.
Soft clip	Rounds off the peaks the compressor lets through.
Fader and VU	The final level, with a peak LED that latches when the output has run too hot.



The master device panels open: character engine and compressor, each with its own visualisation.



The master device panels on iPhone.

The two aux busses

Every strip has two aux sends, and the two busses they feed are set up once and shared by the whole kit. Each bus carries one effect from the send set, a few quick parameters for it, a high-pass ahead of it, a bypass, and a return level coming back into the mix.

Control	What it does
Bypass	Silences the bus without disturbing a single send amount. The honest way to hear how much of the sound is effect: switch it off and listen to what leaves.
Effect	What the bus is. Delay and reverb are the usual pair – one bus long, one bus short – but any of the send effects can sit on either.
High-pass	Rolls the low end off before the effect. A reverb fed the whole kick turns to mud, and this is the cure: raise it until the bus adds air instead of weight.
Quick parameters	The controls that matter most for the chosen effect, on the bus itself.
Return level	How much of the bus comes back into the mix. It is host-automatable.

Individual outputs

Each strip can go to the main stereo mix or to one of the individual outputs Pulsark offers a host. A single pad can be recorded as an isolated stem. Two quick actions route every strip at once.

- A host that has not enabled an output folds that strip back into the main mix without losing the setting.
- The standalone app always sums to the main mix, and keeps the assignment for when the project is opened in a host.
- Some hosts cannot record a bus straight into an audio track. There, capture stereo by bouncing or freezing instead.



The insert picker.



The same picker choosing what an aux bus runs.

Insert effects (8)

Name	What it does
Chorus	A short, modulated delay mixed back with the dry sound. Thickens a part and spreads it across the stereo image.
Comb	A short feedback delay tuned to a pitch, adding a hollow metallic resonance that can be tuned musically.
Crush	Bit and sample-rate reduction on the channel: from a light dusting of grain to full digital breakup.
Drive	Saturation. Rounds off transients and adds harmonics.
FET comp	Transistor-style compression with the fastest attack of the four. Grabs transients hard and adds bite – the aggressive one.
Opto comp	Optical compression: slow to react, and it smooths gain changes instead of catching every peak. Naturally musical, forgiving on sustained material, and it pumps in a pleasant way when pushed.
Vari-Mu comp	Valve-style compression where the ratio itself rises with level: gentle on quiet passages, firm on loud ones, and warm throughout. Good on a whole mix.
VCA comp	Clean, fast, precise compression with no character of its own. The neutral choice when you want level control and nothing else.

Send effects (6)

Name	What it does
Chorus	A short, modulated delay mixed back with the dry sound. Thickens a part and spreads it across the stereo image.
Flanger	A very short modulated delay fed back on itself, producing the sweeping metallic whoosh.
Phaser	A series of notches swept through the frequency range. Similar motion to a flanger, but hollower and less metallic.
Ping-pong delay	A tempo-locked delay that alternates its repeats between left and right, widening the sound as it decays.
Reverb	Simulated space, with a choice of algorithm to set its character. See Reverb algorithms below.
Tempo delay	A delay whose time is locked to musical divisions of the tempo. It stays in time when the tempo changes.

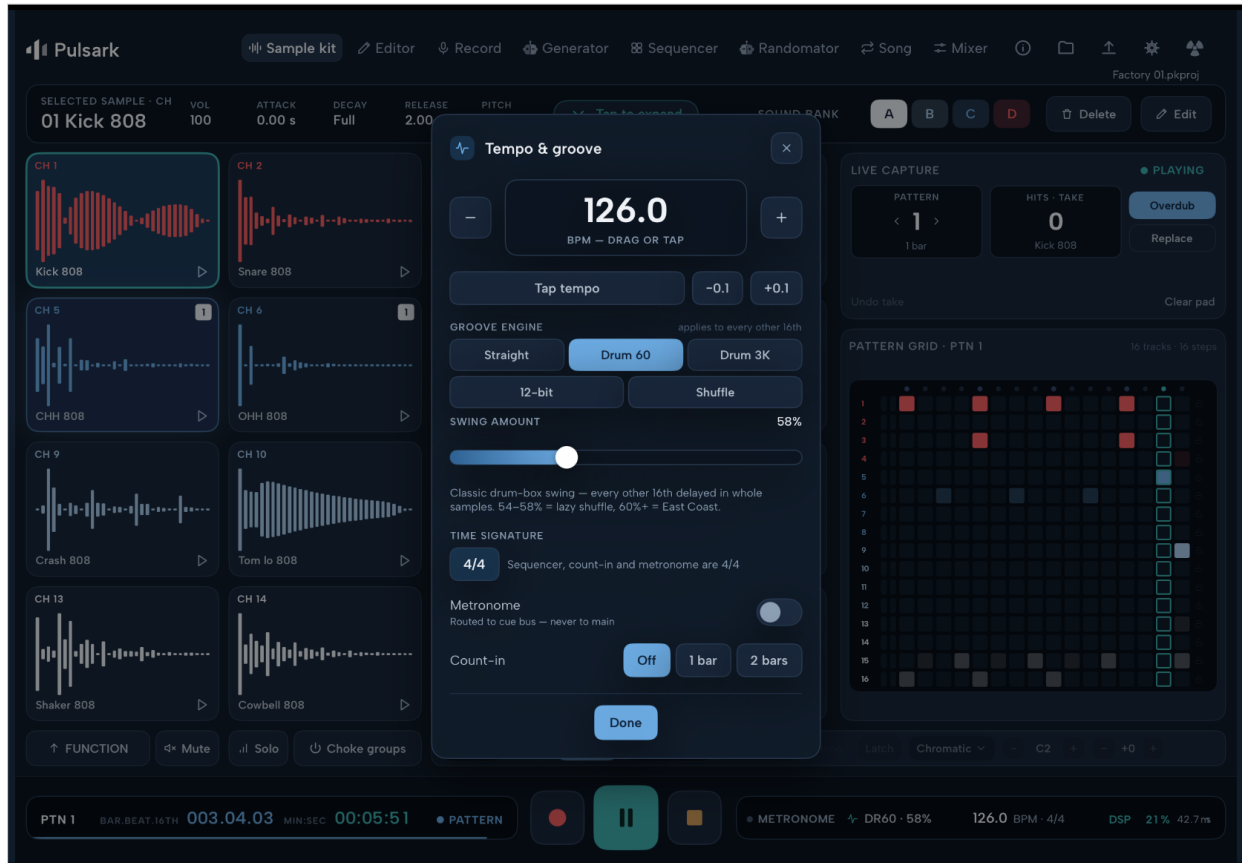
Reverb algorithms (5)

Name	What it does
Digital	A clean modern algorithm with an even decay and no analogue coloration. The neutral choice.
Hall	A large space with a slow build and a long tail. Use it sparingly on a rhythm kit, or it swallows the groove.
Plate	The classic studio plate: dense, bright and smooth, with no obvious room shape. Flattering on drums and vocals.
Room	A small space, heavy on early reflections. Adds depth and placement without a noticeable tail.
Spring	The tank reverb of a guitar amp. Boingy, resonant and unmistakably vintage – especially on dub material.

Part 10 – Transport, tempo and sync

Global

The transport bar is on every screen. It shows bar, beat and sixteenth, elapsed time, the current pattern, whether pattern or song mode is running, and a live readout of processing load and round-trip latency.



Tempo and groove: tempo, time signature, groove engine and swing amount.

Setting the tempo

1. Open tempo and groove from the transport bar.
2. Set the tempo by dragging, by fine steps, or by tapping it in.
3. Choose the time signature.
4. Pick a groove engine and set the swing amount. Groove is applied as the pattern plays, and is carried into anything you export.
5. Enable the metronome and a count-in when you are recording.

Playing in time with other gear

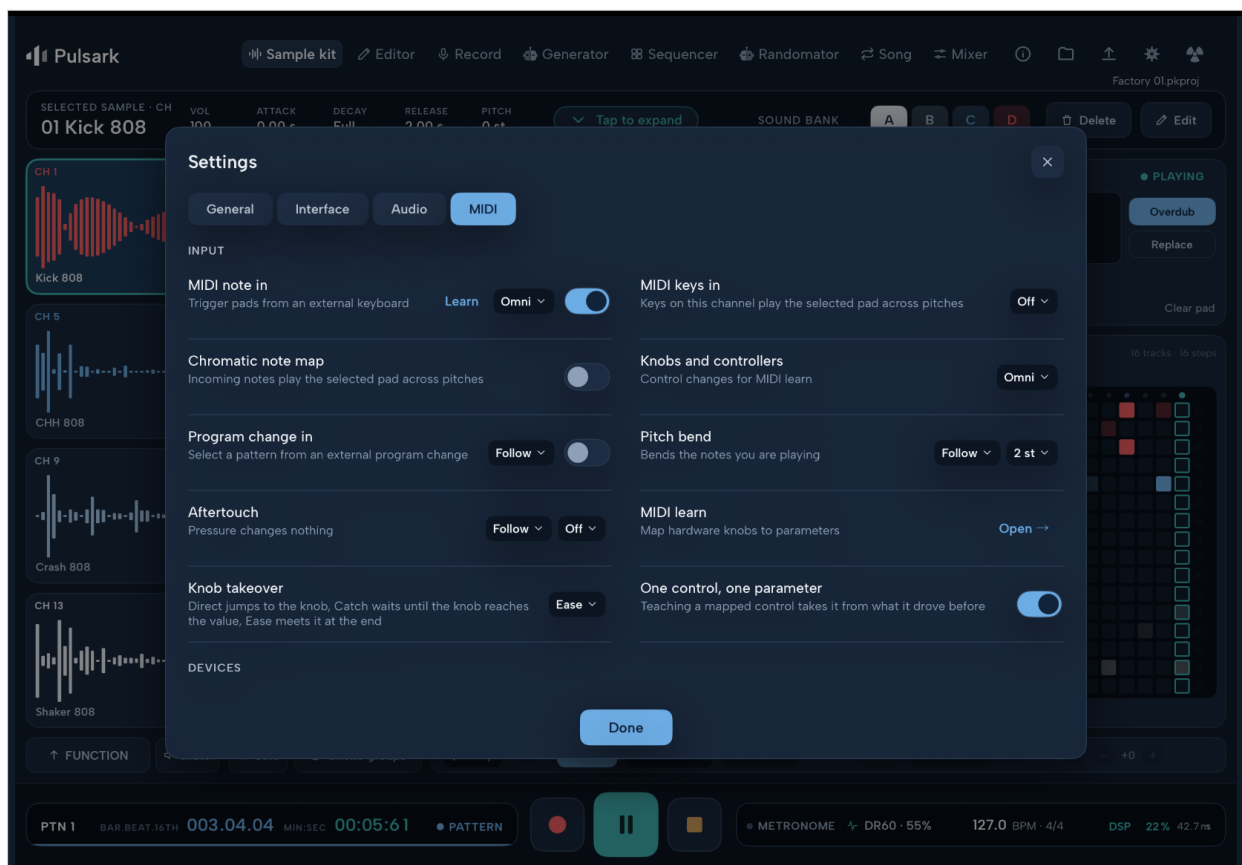
These are standalone features. In a host, Pulsark follows the host's clock and transport, including starting in the right place when the host starts mid-bar.

Control	What it does
Ableton Link	Shares tempo, beat position and start/stop with other Link-enabled apps and devices on the same network, in both directions.
MIDI clock in	Follows an incoming MIDI clock. The tempo readout smooths out jitter from the sending device, and an indicator shows when Pulsark is locked to it.
MIDI clock out	Sends a standard MIDI clock so external gear follows Pulsark's tempo.
Network MIDI	A MIDI session over Wi-Fi, for connecting to a computer or another tablet without a cable.

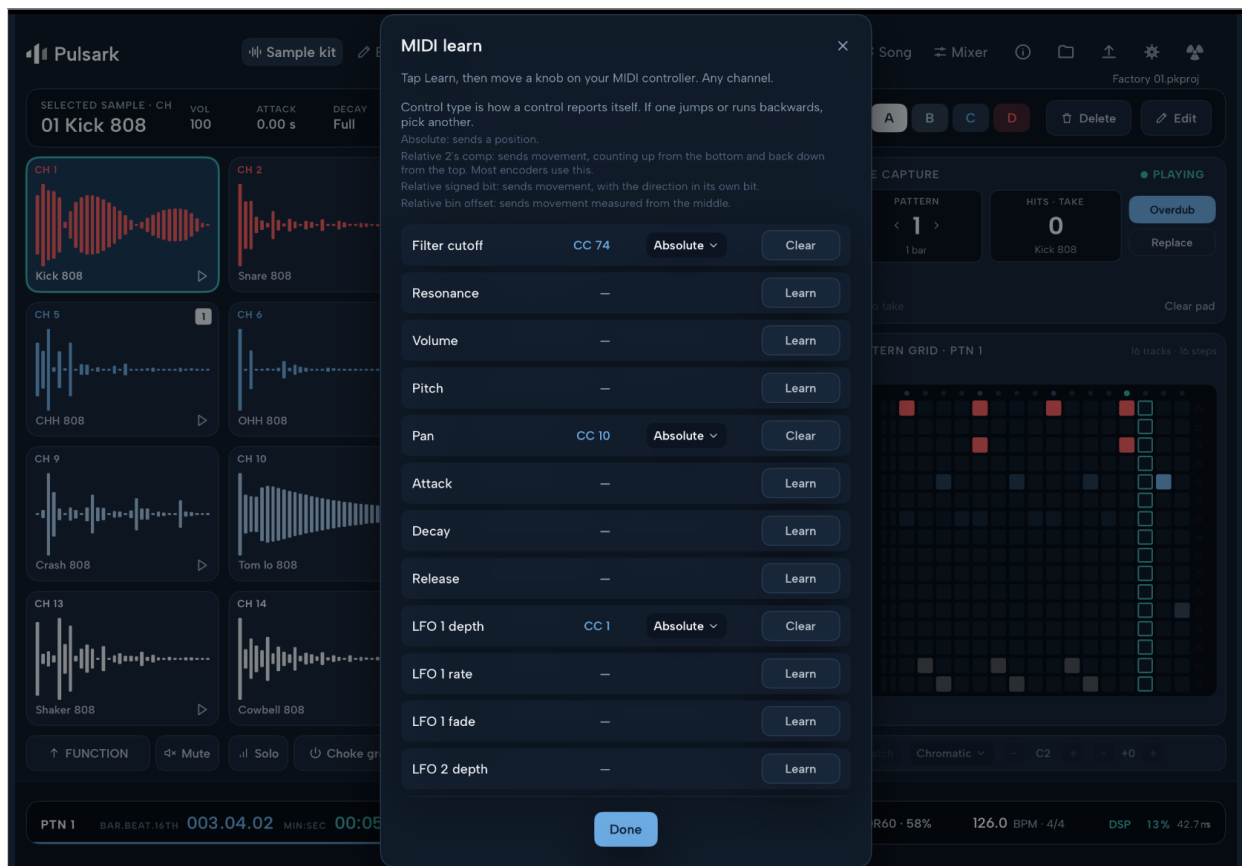
MIDI in

Incoming notes on the chosen channel play pads and select patterns, and how hard you play decides how loud the pad sounds. Set the channel to Omni and Pulsark answers all of them. On iPad and Mac, MIDI learn assigns a controller to one of 34 destinations, and the assignment is stored with the project – so a map made there opens on a phone even though the phone cannot edit it.

- MIDI 2.0 is supported. Controllers that send high-resolution velocity keep it all the way to the sound.
- The MIDI appendix at the back is the full chart: every message Pulsark answers, every one it sends, and the ones it deliberately ignores.



MIDI settings: input channel, clock and network session.

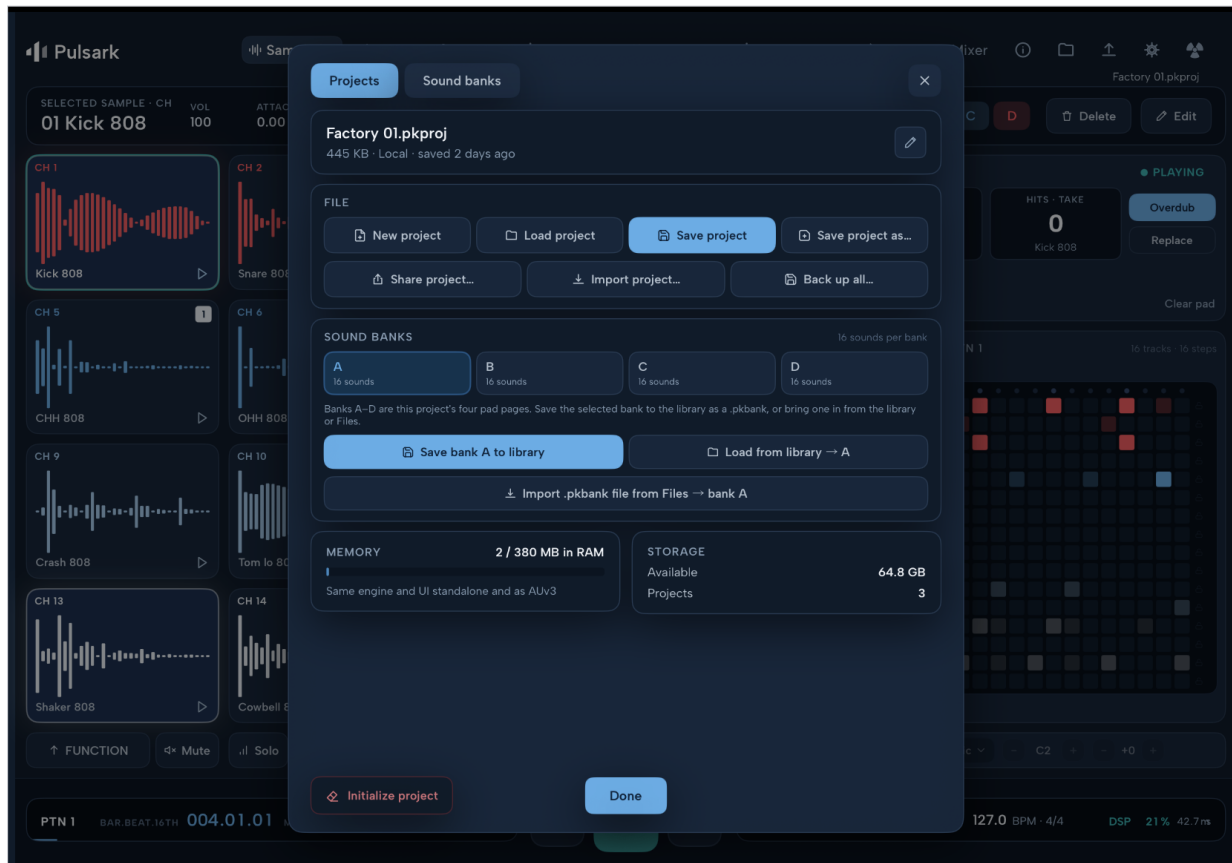


MIDI learn: pick a destination, then move a controller.

Part 11 – Projects, sound banks and export

Global

A project holds the whole instrument: pads, patterns, song and mixer. It references its recordings rather than containing them. The app and the plug-in see the same library.



Projects: open, save, duplicate, share and back up.



Sound banks: save, import and load into a kit slot.



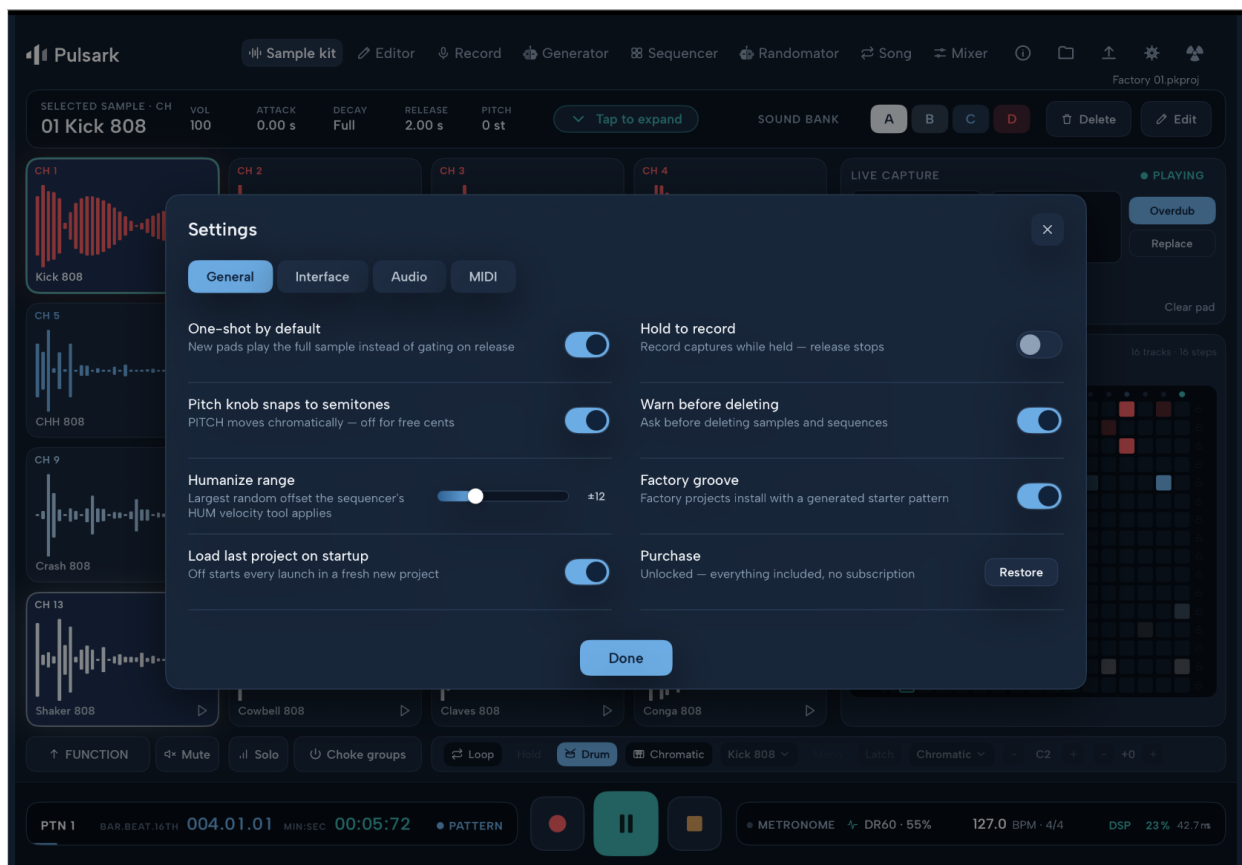
Export: audio renders and the DAW handoff, in one dialog.

Getting audio out

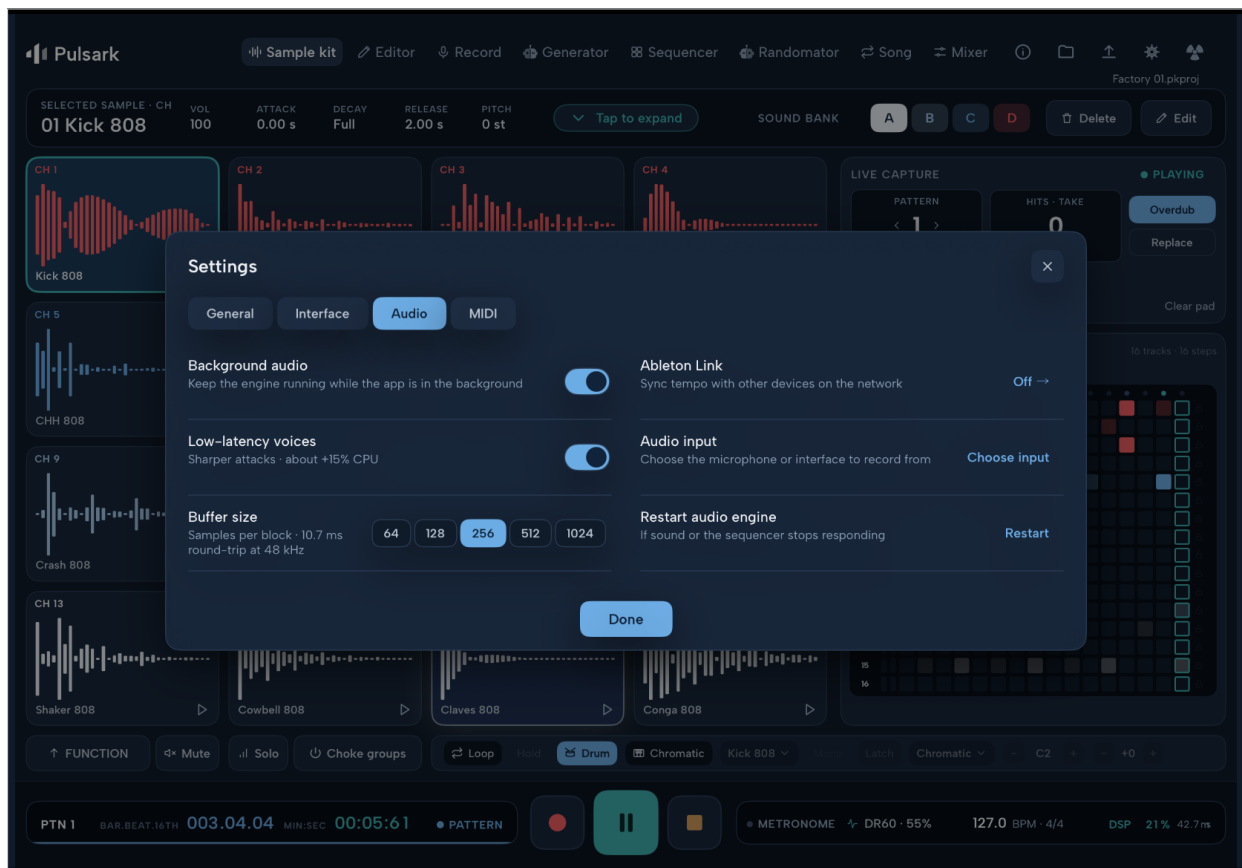
1. Open Export from the export icon in the header. Bounce to WAV when you need audio: the current loop, the whole song, or one file per track.
2. Choose the bit depth and sample rate. Dither is added at the lowest bit depth and the level is true-peak limited.
3. Export a DAW project when the arrangement should continue in a DAW – either as one audio clip per hit, or as note clips on a drum channel.
4. Export the MIDI and samples bundle for software that prefers a standard MIDI file plus the raw audio and a mapping.
5. Choose raw or as-heard when exporting the samples themselves. As-heard renders each one exactly as Pulsark plays it, with trim, pitch, filter, envelope, lo-fi, EQ, insert, fader and pan applied.

What the export preserves

Swing, groove, micro timing, gate length, retrig and trig conditions are all resolved into the exported timeline.



General settings, including the export defaults.



Audio settings: sample rate, buffer size and monitoring.

Backing up your work

Sharing a project packages it together with the recordings it uses and its kit slots. It opens complete on another device. Backing up does the same for your whole library at once: choose a folder and everything you have made is written there – every saved project, the sound banks you built or imported, and your saved Randomator and Generator setups. The folder can be iCloud Drive, a shared drive or a memory stick – anywhere the file picker can reach.

- Projects, banks and setups are kept in separate folders.
- Each one is a separate file. A single project or bank can be brought back on its own.
- The bundled sound banks are left out on purpose. They reinstall themselves, and leaving them out keeps the backup to the work that is only yours – including a bundled bank you have saved over, which counts as yours and is kept.
- Backing up to the same folder again replaces what is there rather than piling up copies beside it.
- Restoring is the ordinary import.

Sound banks

A sound bank is a portable set of pads, independent of any project. Save one from any bank, import one from a file, duplicate it, share it, and load it into any of the project's kit slots. Opening a bank shows its sixteen samples; tapping one plays it.

Building your own bank in Pulsark Studio

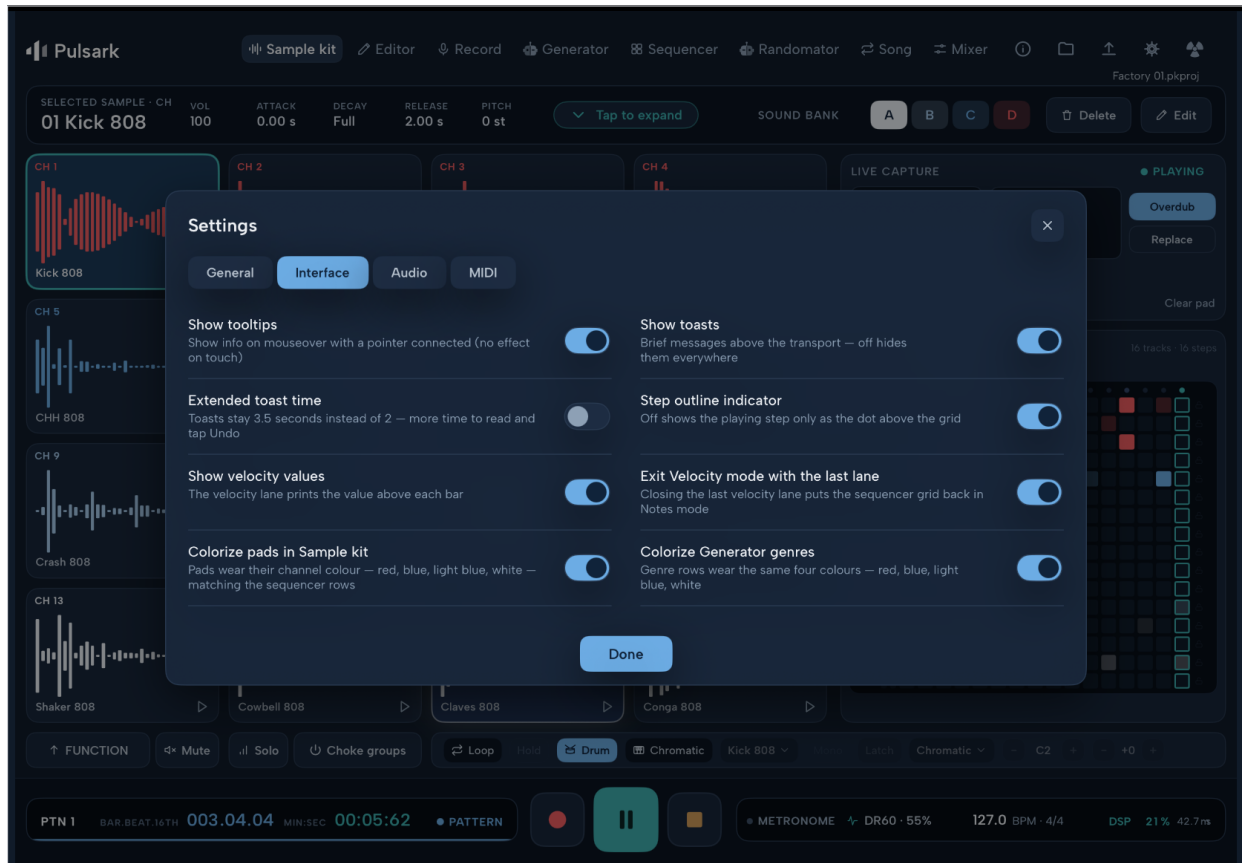
Pulsark Studio is a free browser tool at pulsark.app/studio for building sound banks away from the app. Start from one of the factory sample banks or drop in your own samples, audition everything against a groove, then export the bank and import it here.

- It builds the same shape as a kit in the app: up to 4 banks of 16 sounds.
- No account and no sign-in, and your samples are not uploaded anywhere – the work happens in the browser.
- Bring the result in from Files, under Banks, and load it into any bank slot.

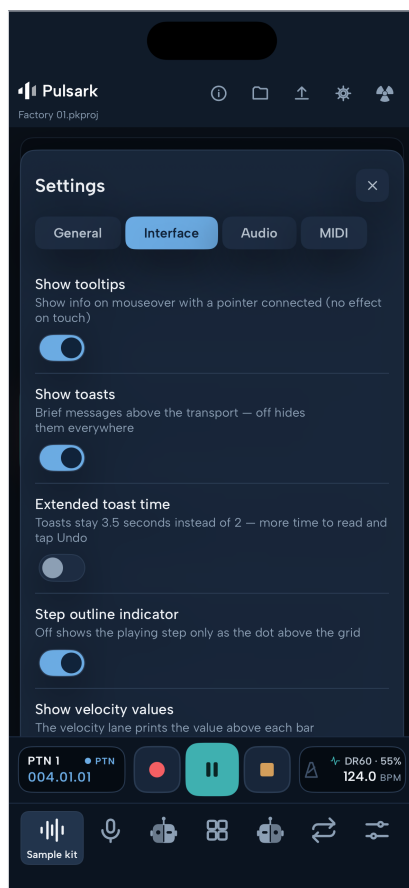
Part 12 – Settings

Global

Settings opens from the gear in the header and is grouped into four tabs. These are preferences, not project content: they belong to the app on this device and stay put when you open somebody else's project. Everything here has a working default.



Interface: what the app shows and how it reports back.



Settings, on iPhone.

General

How Pulsark behaves while you work.

Control	What it does
Factory groove	Decides whether a factory project arrives with a starter pattern already in it, or with an empty grid.
Hold to record	Makes the record button capture only while you hold it, and stop the moment you let go. Off, it latches.
Humanize range	How far the sequencer's humanize tool may stray from the weight a step already has. Small is a nudge; large is a different performance.
Load last project on startup	Reopens whatever you had open. Off, every launch starts in a fresh project.
One-shot by default	Decides whether a new pad plays its sample all the way through or stops when you lift your finger.
Pitch knob snaps to semitones	Keeps the pitch knob on chromatic steps. Off, it moves freely for tuning between them.
Warn before deleting	Asks first when something is about to be deleted for good.

Interface

What the app shows you, and how it tells you what it did. None of this changes a sound.

Control	What it does
Colorize Generator genres	Gives the genre grid the same four channel colours the Sample kit can wear.
Colorize pads in Sample kit	Pads wear their channel colour instead of the single blue, matching the sequencer rows.
Exit Velocity mode with the last lane	Closing the last open velocity lane puts the sequencer grid back in Notes mode. Off leaves the mode where you put it.
Extended toast time	Keeps the messages above the transport on screen longer, which also widens the window in which you can undo what one of them is reporting.
Show toasts	The brief messages above the transport. Off hides them everywhere, undo offers included.
Show tooltips	Shows an explanation when the pointer rests on a control. It needs a pointer and does nothing on touch alone.
Show velocity values	Prints the value above each bar in the sequencer's velocity lane.
Step outline indicator	Outlines the playing step on the grid. Off, the dot above the grid is the only playhead.

Audio

The engine's own settings. The buffer is the one worth understanding: a small buffer answers your fingers sooner and asks more of the device, a large one is steadier and slightly later, and the screen shows what the current choice costs in both directions.

Control	What it does
Ableton Link	Joins the local Link session. Tempo and the bar line are shared with every other Link app on the network. See Transport, tempo and sync.
Background audio	Keeps the engine running when you leave the app.
Buffer size	Trades latency against headroom. Lower is more immediate and costs more processing.
Low-latency voices	Sharpens the attack of every voice at the cost of some processing.
Restart audio engine	Rebuilds the audio engine where it stands. Reach for it if sound or the sequencer stops answering after a device or route change.

MIDI

Everything Pulsark receives and sends. The MIDI appendix at the back of this manual is the full chart.

Control	What it does
Chromatic note map	Plays one pad across pitches from incoming notes, instead of one pad per note.
MIDI clock in	Follows another device's tempo.

Control	What it does
MIDI clock out	Sends Pulsark's tempo to other devices.
MIDI learn	Opens the map from a hardware control to a destination in Pulsark. iPad and Mac only; a map made there opens on a phone.
MIDI learn control type	How a mapped control reports itself. Absolute sends a position: a knob with a marked travel, or a fader. The three Relative choices send movement: an endless encoder, which has no position to send. Learn settles the type from the control's first turns. If a control jumps between nothing and everything, or runs against the hand, pick another Relative.
MIDI network	Joins a wireless MIDI session with other machines on the network, with no cable involved.
MIDI note in	The channel incoming notes play on, and whether they play pads at all. Set it to answer every channel or just one.
Program change in	Lets an external program change select a pattern.

Part 13 – Pulsark on iPhone

Global

Pulsark on iPhone is the same app rather than a companion to it: the same projects, the same sounds, the same engine, and the same screens in the same order, on 7 tabs. The Editor is the one screen with no tab of its own here – on the phone it is the pad you open, and it holds the kit's sound controls as well. What changes is the shape. Each screen stands in one portrait column instead of spreading across a landscape canvas, and the transport and the tab bar sit along the bottom edge, where a thumb reaches them. Every screen in this manual is on the phone except the few named below.

Finding your way on a phone

1. Change screen from the tab bar along the bottom edge. It carries the same screens as the rail across the top of the iPad, in the same order.
2. Scroll. A screen flows down the page rather than fitting a fixed frame. A panel below the fold is one swipe away.
3. Tap a pad on the Sample kit to select it, then open its detail to reach everything the Editor holds.
4. Work the transport from the row above the tabs: record, play and stop, with the position readout to the left of them and tempo to the right.
5. Open a dialog from the header. It sits over the screen at the width of the phone, scrolls when it is taller than the window, and leaves the transport and the tabs reachable behind it.

The pad detail is a screen of its own

On iPad and Mac the Editor is a screen of its own, next to the Sample kit. The phone has no tab for it: there the pad detail is the Editor, and it also carries what the kit's sound panel holds – the selected pad's levels, envelope, filter and choke, then play engine, trim, loop, slices, tuning and lo-fi, stacked in a single column. It is reached by opening the selected pad, and it edits the same pad.

Not on the phone

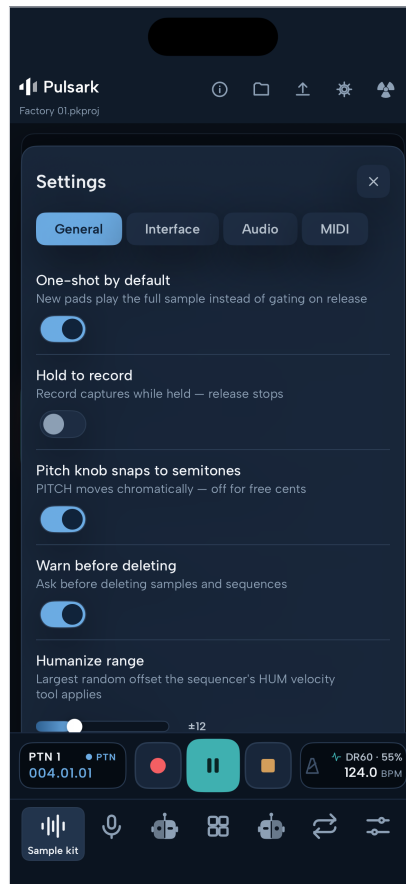
There is no phone surface yet for Euclid, MIDI learn, Orbit, the keyboard shortcuts, the pad's modulation controls and velocity editing. The modulation controls are the MOD strip and everything in it – the LFOs, the filter envelope, the velocity routings and the hard gate – which the phone plays but cannot edit. Nothing they hold is lost by opening a project on a phone: their settings are kept in the project, and anything set on an iPad or a Mac is there when the project is opened on one again. A pattern written in Orbit or Euclid plays on the phone like any other pattern, and modulation set on an iPad or a Mac goes on swinging the sound there – it is the editing surface that is absent, not the music.

In a different place

The phone has the bars of a longer pattern, the fill settings, the recording setup and the Sample kit's sound panel as well, in different places. The iPad tucks the fill settings behind a glyph because its toolbar is a single crowded row; on the phone they sit open on the screen. The Sample kit's sound panel is not a container that expands and collapses on the phone – it is the next thing down the column. And there is nothing to page through: the phone's sequencer works one track at a time and draws every cell of every bar, so a longer pattern is already whole on the screen where the tablet turns pages to reach it.

Dialogs

Every dialog in this manual is the same dialog on the phone, drawn to the width of the screen. It scrolls when it is taller than the window, and there is never anything to pan sideways to.



A dialog on the phone: the settings, at the width of the screen, with the transport and the tabs still in reach behind it.

Part 14 – Pulsark as a plug-in

Global

The AUv3 version is the whole instrument, not a companion app. It loads in a host's instrument slot, plays the same sounds, and shows the same interface as the standalone app, scaled to the plug-in window.



About: version and credits, identical in the app and in the plug-in.

Using the plug-in

1. Launch the standalone app once. That is what makes Pulsark available to the hosts on your device.
2. In the host, add Pulsark on an instrument track – not in an effect slot. Hosts list it under VAAG Audio, as Pulsark.
3. Work as in the app. Every screen in this manual is present.
4. Automate Pulsark's parameters from the host; they appear in the host's own automation list.
5. Assign strips to individual outputs, and enable those outputs in the host, to record separate stems.

What the host controls

Control	What it does
The keyboard	The host owns it. The shortcuts in Appendix A apply to the standalone app.
The plug-in window	Whichever canvas the device runs: the landscape one on iPad and Mac, the portrait one on iPhone. A host never gets a smaller feature set than the app on the same device.
Transport and tempo	The host drives both. Ableton Link, MIDI clock and tap tempo are standalone features.
Window size	Pulsark scales to the window the host gives it. It does not reflow, and it does not drop features on a small window.

Saving inside a host

The host saves the whole project as part of its own document, along with the parameter values. Audio is never copied into the host's document – the recordings stay in Pulsark's own library and are referenced.

Appendix A – Keyboard shortcuts

These keys work in the standalone app with a keyboard attached. In a host, the host owns the keyboard and its own transport keys take priority.

Transport

Key	Action
Cmd .	Stop
Cmd R	Arm / disarm record
Left arrow	Previous pattern
Return	Stop
Right arrow	Next pattern
Shift Cmd R	Mic / resample take
Space	Play / pause
Space Space	Stop (double tap)

Navigate

Key	Action
Cmd 1	Sample kit
Cmd 2	Editor
Cmd 3	Record
Cmd 4	Generator
Cmd 5	Sequencer
Cmd 6	Randomator
Cmd 7	Song
Cmd 8	Mixer
Shift Tab	Previous tab
Tab	Next tab

Sequencer mode

Key	Action
Cmd E	Euclid
Cmd G	Grid
Cmd O	Orbit

Panels

Key	Action
Cmd ,	Settings
Cmd /	Keyboard shortcuts
Cmd F	Files
Cmd T	Tempo & groove
Esc	Close panel
Shift Cmd E	Export

Appendix B – Control reference

Every control in Pulsark and what it does. With a mouse or trackpad connected, hovering a control shows the same description on screen. An ellipsis stands for a value Pulsark fills in from the current project, such as a track name or a pattern number.

Controls that appear throughout

Header / global

Control	What it does
About Pulsark	version and credits
Expand	show the sound controls
Export	render mixdown, stems and DAW handoff
Minimize	hide the sound controls
Projects	open, save and manage projects
Settings	audio, MIDI and app preferences

Instrument behaviour (spec 027)

Control	What it does
Hold	a sequenced trig on this pad rings on instead of ending with its step
Latch	a tap leaves the note sounding until you tap it again
Loop	the sample repeats while the pad is held, so a note can sustain
Poly	let held notes stack into a chord instead of taking each other over

Kit actions

Control	What it does
Choke groups	click, then tap pads to assign groups 1–4; pads in a group cut each other off
Function	hold it and pads stop sounding: tap a pad to select it, then mute, solo, Choke groups on and clear; double tap opens the sample editor · tap Function to latch it on
Mute	silence the selected track
Sample editor	trim, tune and shape the selected sample
Solo	hear only the selected track

Kit modes

Control	What it does
16 levels	one sample at 16 velocities across the pads
Chromatic mode	play the selected sample across pitches
Drum mode	one sample per pad, classic kit layout

Kit sound controls

Control	What it does
Attack	fade-in time · drag up or down · double-click resets
Decay	fall to sustain · drag up or down · double-click resets
Filter cutoff	drag up or down · double-click opens fully
Filter engine	click to change the filter model
Pan	stereo position · drag up or down · double-click centres
Pitch	±12 semitones · drag up or down · double-click resets
Release	fade-out time · drag up or down · double-click resets
Resonance	emphasis at the cutoff · drag up or down · double-click resets
Volume	drag up or down · double-click resets

Slice editing (spec 2026-08-10)

Control	What it does
Note repeat	hold a pad to roll at the chosen rate
Play on pads	turn the pad grid into this pad's slices and go play them
Quantize	snap live hits to the nearest step

Tab bar (one-line view descriptions)

Control	What it does
Editor	trim, slice, tune and shape the selected pad's sample
Generator	genre-weighted whole-kit pattern generation
Mixer	16 channel strips, sends and master
Randomator	guided randomization of sounds and patterns
Record	record from mic, line input or Pulsark's own output
Sample kit	pads, sound controls and live capture
Sequencer	Grid, Orbit and Euclid step sequencing
Song	arrange patterns into chains and a song

Transport

Control	What it does
Arm pattern recording	live capture · finger-drum into the pattern
Loop	loop the current pattern
Metronome	toggle the click track
Play	start or pause the transport · space
Record a sample	capture a take from the chosen input · Record tab
Stop	stop and return to the start · return
Tempo	tap to set the tempo · click to open tempo and groove

Controls by screen

Editor

Control	What it does
Edit pad	switch which pad's sample this screen edits
Horizontal zoom	steps in three levels · fourth tap shows the whole sample
Normalize	lift the sample to 0 dB · non-destructive, tap again to undo
Play ...	click to select
Preview	hear the trimmed sample · tap again to stop
Snap mode	handle drags land on zero crossings, transients, or exactly where you put them
SRR routing: ...	click to select
Tap chop	plays the sound – tap along to drop markers at the playhead
Vertical zoom	boost quiet material to full height
Zoom to fit	show the whole sample
Zoom to trim	fill the view with the audible region

Generator

Control	What it does
Density ...	how busy the generated pattern is
Full reset	restore the pre-randomization sound and zero the amounts
Into new pattern	off · click to write into a new pattern instead
Musical feel	the touches Generate writes into the pattern
Save as template	save the target pattern for reuse in any project
Undo generate	revert the last thing the Generator changed, one step at a time

Mixer

Control	What it does
Auto gain	makeup derived from threshold and ratio – the Makeup knob is out of circuit
Auto release	fast recovery after hits, long even recovery under sustained pressure – the Release knob is out of circuit
Bell	turns the shelf into a bell centred on FREQ (Type A only)
Channel EQ – ...	four bands, highpass filter and voicing – click to open
Close	close the channel EQ panel
Close	close without changing the effect
Compressor preset	click to choose a bus-compressor starting point
Done	close the channel EQ panel
... effect	... · click to choose the send effect
EQ preset	drum starting points – the knobs stay free afterwards
Highpass filter	18 dB per octave below the FREQ knob – clears rumble and mud
Insert – ...	... · click to change or remove
Main FX	show the send, character and compressor panels
Master character	... · click to choose the character engine
MIDI out · ...	off, or a channel and root note · plays external gear and its own sample
Output – ...	main stereo output · click to route

Projects, sound banks and export

Control	What it does
Add to library	add this bank to your library
Back	back to the list
Back	return to the list
Bank ...	click to select this sound bank
Done	close the export dialog
Import bank	bring a .pkbank file in from Files
Keep both	import as a copy, keeping the existing bank
Load into bank	load this sound bank into the selected slot
Load onto pad	put the selected sample on the pad you picked for
Open	click to open
Option	click to select
Overwrite	replace the existing bank
Preview	hear the selected sample

Control	What it does
Projects	your saved projects appear here
Sample	tap to hear it
Save and share	save the bank and open the share sheet
Save bank	save the current sounds as a bank
Save kit...	click to save kit...
Section	click to switch
Slot	click to select

Randomator

Control	What it does
Full reset	restore the pre-randomization sound and zero the amounts
Lock parameter	keep this parameter out of randomization
Randomator setup	expand the randomization settings
Randomize channel	roll new values for this channel only
Reset channel	restore this channel's pre-randomization sound
Save as template	save these settings as a reusable template
Trig condition ...	allowed in randomization · click to exclude
Undo randomate	revert the last randomation

Record

Control	What it does
CH ... · ...	click to select · recording overwrites this pad
Input gain	click to adjust the recording gain
Monitor input	hear the live input while recording – use headphones
Recording setup	expand the input, length and target-pad settings
Reset gain	back to 0 dB
Skip back	capture the bars that just played, quantized to the bar line
Take tool	click to apply

Sample kit

Control	What it does
Clear pad	remove this pad's hits from the pattern
Track already has steps	a take will layer onto the part already there
Undo take	revert the last captured take

Sequencer

Control	What it does
Bar page	click to view this bar of the pattern
CH ... · ...	... hits · click to mute this track
CH ... · ...	click to audition and select · hold for track defaults
Close	close this dialog
Close	hide the fill settings
Done	close the fill settings
Fill	hold to run a fill · steps set to the FILL condition play only then
Fill settings	fill length and the automatic interval
... mode	opens a velocity lane – the grid still places steps
Mute track	on · click to turn off
Pattern ...	click to select · switches at the next bar while playing
Randomize fill	new fill at ...% density · the groove is untouched
Remove step	turn this step off and close
Reset	double-click to centre
Sequencer setup	expand the sequencer tools – modes, patterns, steps and resolution
Set	this Euclid shape is already applied
Shift forward	rotate the pattern one step later
Step	click to toggle this step
Steps per track	tap the number to reset to 16
Track lock	locked · steps, velocity and randomize leave this track alone
Track resolution	1/... cells per bar · click to cycle
Upload new sample	pick an audio file to lock to this step
Velocity lane	opens and closes the lane where you draw velocity across this track's steps

Song

Control	What it does
Add row	add a row to the song arrangement
Clear slot	clear this pattern slot
Delete row	remove this section from the arrangement
Duplicate row	add a copy of this section after it
Fewer bars	shorten this row by one bar
More bars	lengthen this row by one bar
Move row down	play this section later in the arrangement
Move row up	play this section earlier in the arrangement
Next pattern	play the pattern after this one in this row
Pattern tools	copy, paste or clear patterns
Previous pattern	play the pattern before this one in this row
Song mode	play the arranged song instead of the single pattern
Song row	click to select this row
Track mute	click to mute this track in this song row

Transport, tempo and sync

Control	What it does
Close	close tempo and groove
Control type	absolute sends a position, relative sends movement · change it if the control jumps
Done	close Bluetooth MIDI
Done	close MIDI learn
Done	close settings
Faster	adjust tempo by 1 BPM
Groove and swing	click to open tempo, groove and swing
Metronome	on · click to turn the click off
MIDI learn	click, then move a control to assign · click again to clear
Panic	restart the audio engine · clears stuck voices
Pattern recording is armed	live capture is still writing trigs ·
Pause	start or pause the transport · space

Control	What it does
... samples	audio buffer size · smaller is tighter, larger is safer
Settings section	click to switch section
Stop	stop and return to the start · double-click cuts effect tails · return
Tempo	click to select
Tempo	click to open tempo and time signature
Time display	click to switch between bar/beat and elapsed time

Appendix C – Glossary

The vocabulary this manual uses, in one place.

Term	Meaning
AUv3	The plug-in format Pulsark uses on iPhone, iPad and Mac. It lets Pulsark run inside another music app as an instrument.
Aux send	A shared effect that several channels feed at once.
Bank	A set of pads that fills the grid. Switching banks changes the whole kit under your fingers.
Bit depth	How finely each sample is measured. Fewer bits means more noise and more grit.
Bounce	Rendering what you hear to an audio file.
Choke group	Pads that cut each other off instead of overlapping, the way a closing hi-hat stops the open one.
Cutoff	The frequency at which a filter starts to work. Lowering it on a lowpass filter makes a sound darker.
Envelope	How a sound rises and falls over time: attack in, decay and release out.
Groove	A timing and velocity template applied across the pattern, modelled on a particular drum machine or player.
Host	The app Pulsark runs inside as a plug-in, and which owns the transport and tempo.
Insert	An effect placed in a single channel's own signal path, heard only on that channel.
Latency	The delay between an action and the sound it makes. A smaller audio buffer lowers it and costs more processing.
Master bus	The point where every channel sums, and the last place to shape the mix as a whole.
Micro timing	A small shift of a step off the grid, earlier or later. It is what gives a pattern push or drag.
Normalize	Raising a sample's level so its loudest peak reaches a set ceiling.
One-shot	A sample that plays through to its end from a single trigger, rather than looping.
Pad	One playable sound. A pad holds a sample plus everything that shapes it.
Parameter lock	A value stored on a single step that overrides the track's own setting for that hit alone. The heart of pattern-based sound design.
Pattern	One loop of the sequencer: every track, every step, and the locks on them. A project holds several, and you switch between them while playing.
Pulsark Studio	A free browser tool at pulsark.app/studio for building sound banks without the app, and importing them afterwards.
Ratchet	A step that repeats several times inside its own cell, producing a roll.
Resample	Recording Pulsark's own output back into a pad, effects and all.
Resonance	Emphasis right at the cutoff frequency. A little adds focus; a lot makes the filter sing.
Sample rate	How many times per second audio is measured. It sets the highest frequency that can be reproduced.
Slice	A section of a longer recording, made playable on its own pad.
Sound bank	A saved, portable set of pads that can be loaded into any project.
Stem	One part of a mix exported on its own.

Term	Meaning
Step	One cell of a track. A step is on or off, and can carry parameter locks of its own.
Swing	Delaying every second subdivision so the rhythm shuffles rather than marching.
Track	One lane of the sequencer, playing one pad. There is one track per channel strip on the mixer.
Trig condition	A rule deciding whether a step plays this time round – a probability, or a position in a repeating cycle.
Trim	The start and end points that decide which part of a recording actually plays.
True peak	The real height of a waveform between measured samples – what matters for avoiding distortion after conversion.
Zero crossing	A point where the waveform passes through silence. Cutting there avoids the click an abrupt edit makes.

Appendix D – MIDI implementation

What Pulsark receives and what it sends. Standalone, Pulsark opens every MIDI port it finds. A keyboard, a pad controller or another app is connected as soon as it appears, and MIDI settings lists those ports for switching one off. As a plug-in, the host owns the routing and delivers MIDI to Pulsark instead, and takes what Pulsark sends; everything under Playing Pulsark below works the same either way, while clock, network and Bluetooth are standalone only, because in a host the host is the clock.

Playing Pulsark

Incoming notes arrive on the input channel set in MIDI settings, which starts at 10. A controller plays whatever channel it sends on. Set a channel instead and only that one is heard. Tap Learn and play a note, and the channel it arrived on becomes the channel. Underneath, the row reports the channel messages are arriving on. That is the reading to check when a keyboard is connected and silent. The switch beside it turns note input off altogether. Each of the other message types carries its own channel, set to follow the note channel until you say otherwise.

Message	What Pulsark does
All notes off	Releases every sounding pad and lets its tail finish. Use it when a controller is unplugged mid-note and a pad is left hanging.
All sound off	Cuts every sounding pad immediately.
Note off	Releases the pad. A pad set to play once ignores this and plays to its end; a looping or sustained pad stops when you let go.
Note on	Plays a pad. Notes C2 to D#3 address the sixteen pads of the current bank in order, and how hard you play decides how loud the pad sounds. When rec-arm is on, the note is written into the pattern at the level you played it.
Note on, pattern range	Notes E3 to B3 select a pattern instead of playing a pad. While a song is running the arrangement keeps control and the note is ignored.
Pitch bend	Bends the notes you are holding, up and down by the depth set beside the channel. It follows your hand and not the sequencer: pads the pattern is firing keep their own pitch. A controller that states its own bend depth is believed.
Pressure	Channel and per-note pressure swell the notes you are holding, once you choose what pressure should do. It changes nothing until you do, because a drum machine that quietly grows louder under a resting hand is a surprise rather than a feature.
Program change	Selects a pattern, once you switch it on in MIDI settings. It is off to begin with.

- Turn the chromatic note map on and incoming notes stop addressing pads: every note plays the chosen pad at a different pitch. The pattern range plays as notes too, because a keyboard player's notes are notes.
- Controllers that send a knob in two halves for finer resolution are read as one movement. Parameter messages of the registered and non-registered kind are read as well.
- Pulsark understands MIDI 2.0. A controller sending high-resolution velocity keeps every bit of it all the way to the sound.

Connecting devices

Standalone only. Everything connected is listened to until you say otherwise. A controller plugged in mid-session works without a relaunch.

Message	What Pulsark does
Bluetooth	Opens the system's own pairing list. Put the controller in pairing mode, pick it, and it becomes an ordinary MIDI device – nothing else in Pulsark treats it differently.
Inputs	Each connected device has its own switch in MIDI settings. Switch one off and Pulsark stops listening to it alone, which is what you want when two controllers are on the desk and only one should play.
Network	Carries MIDI over Wi-Fi. The line under the switch names what is connected.

Keeping time with other gear

These are standalone features. Loaded as a plug-in, Pulsark follows the host's clock and transport and none of them apply.

Message	What Pulsark does
Clock in	Follows an incoming MIDI clock at the standard 24 pulses per quarter note. The tempo readout smooths out jitter from the sending device and shows when Pulsark is locked to it.
Clock out	Sends a MIDI clock at 24 pulses per quarter note on the Pulsark port. Apps and devices subscribed to it run at Pulsark's tempo.
Link	Shares tempo, beat position and start and stop with other Link-enabled apps and devices on the same network, in both directions. Link is not MIDI, but it solves the same problem and is usually the easier one to reach for between apps.
Network session	Carries MIDI over Wi-Fi to a computer or another tablet, with no cable and no interface.
Song position	Says where in the song the transport stands. Pulsark sends it while stopped and again before it continues; an incoming position is honoured the same way, and the continue that follows starts there rather than at the top.
Start, stop and continue	An incoming start begins playback from the top, continue picks up where you paused, and stop halts the transport. Pulsark sends the same three when its own transport is used and clock out is on.
Transport buttons	The transport buttons on a controller or a control surface drive Pulsark without being mapped to anything: play, pause and stop answer as the on-screen buttons do, and record arms and disarms the sampler. Nothing has to be switched on, and a device that speaks a different transport language is simply ignored.

Sending to other instruments

Every track can play a synth, a drum machine or another app while it goes on playing its own sample – switching MIDI on never costs you the track. Open the Mixer and set a track's MIDI chip to a channel – the iPad and Mac strips choose the note as well, and on the phone the track sends the note its pad answers to. The note leaves at the instant the sample is struck. Swing, micro timing, retrigs and trig conditions reach the other instrument as you hear them here. Standalone, everything leaves on one port named after Pulsark, which also carries clock, transport and song position, and every MIDI destination on the device receives it – plug in an interface and the gear plays. Loaded as a plug-in, the notes go to the host.

Message	What Pulsark does
Note length	A step with a gate sends a note that long. A step without one sends a short note, the length a drum machine expects, rather than holding until the next step.
Pads	Playing a pad by hand sends its track's note too. A note that arrived as MIDI does not go back out.
Pitch	A step tuned up or down sends the track's note moved by the same interval.
Silence	A trig that does not sound sends nothing. Mutes, solos, song row mutes and a trig condition that fails all keep the note in.
Stopping	Stop, reset and switching a track off end every note Pulsark is holding on the other instrument.
Velocity	The level a step plays at is the level the note is sent at.
Where it goes	Every MIDI destination on the device receives what Pulsark sends until you say otherwise, and each one has its own switch in MIDI settings – so a desk with two synths can stop playing one of them.

Not received

Listed so you know rather than wonder. A controller sending these does no harm.

Message	What Pulsark does
Locating	Cueing to a position from a tape-style transport command is not answered – the transport buttons are, as above, but where they would move to is not. Use song position for that.
System exclusive	Beyond the transport buttons, which speak the cross-maker transport convention, Pulsark neither answers nor sends manufacturer messages. Loaded as a plug-in it answers none of them: the host owns the transport, and nothing of the kind is passed on.

Learn destinations

On iPad and Mac, MIDI learn maps a knob or fader on your controller to one of these. Pick a destination, move the control, and the two are linked; learning ignores the channel setting, and the channel the control arrived on becomes the one Pulsark listens to afterwards. The map is stored with the project. A phone opens it and cannot edit it. A few destinations answer their conventional controller number without being learned. Each mapped row carries a control type beside its number: Absolute for a control that sends a position, Relative for one that sends movement. Learn settles it by watching the control move, and it can be changed by hand when the guess is wrong.

Destination	Answers controller
Attack	After learning
Aux 1 send	After learning
Aux 2 send	After learning
Bit reduce	After learning
Channel level	After learning
Decay	After learning
Filter cutoff	74

Destination	Answers controller
Filter env attack	After learning
Filter env decay	After learning
Filter env depth	After learning
Filter env release	After learning
Filter env sustain	After learning
Filter macro	After learning
Hard gate	After learning
LFO 1 depth	1
LFO 1 fade	After learning
LFO 1 rate	After learning
LFO 2 depth	After learning
LFO 2 fade	After learning
LFO 2 rate	After learning
LFO 3 depth	After learning
LFO 3 fade	After learning
LFO 3 rate	After learning
Main level	7
Overdrive	After learning
Pan	10
Pattern select	After learning
Pitch	After learning
Rate reduce	After learning
Release	After learning
Resonance	After learning
Swing	After learning
Velocity depth	After learning
Volume	After learning