

LooLoo

Dual Audio Looper

Operation Manual

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Rack Extension for Reason • Version 1.0

1 What LooLoo is

LooLoo is a two-track audio looper for the Reason rack. Each track records what you feed it, plays the loop back, and lets you overdub, reshape, and process the result while it runs. The two tracks are independent — different loop lengths, different settings, separate audio paths — and can also be locked together so the second follows the first at a musical ratio.

It is built for looping that moves rather than repeats. Every track carries a set of variation controls — a playback window you can shrink and slide, independent pitch and speed, a granular grain size, decay, a stutter engine, and reverse — and all of them respond to CV. A LooLoo loop is a starting point you play with, not a fixed phrase on repeat.

At a glance: two independent looper tracks · per-track overdub with adjustable decay · playback window (size and offset) · independent pitch shift and varispeed · granular grain control · stutter engine · reverse · per-track FX send/return loop · full CV control over transport and every continuous parameter · track B can sync-lock to track A.

2 How a track is wired

Understanding one track is understanding both — track B is identical to track A in every respect except one (Sync Lock, which only B has). Signal moves through a track in this order:

- Input → record buffer. What arrives at the track's audio input is written to the loop buffer while recording or overdubbing.
- Buffer → playback window. The window selects which part of the loop you hear. At full size you hear the whole loop; shrink it and slide its offset to play back just a slice.
- Window → pitch / speed / grain. The selected audio is pitch-shifted and time-stretched by the granular engine. Pitch and playback speed are independent; grain size sets the texture of the stretch.
- → FX send / return. Each track has its own send and return pair, so you can insert any Reason effect into a single track's loop and fold the wet signal back in by the FX amount.
- → decay. When overdubbing, decay sets how much the existing loop fades on each pass, from an endless build-up to a short echo that erases itself.
- → track output, and → mix output. Each track has its own stereo output; both tracks are also summed to a mix output pair for convenience.

The FX guard, dry mix, and global volume act across this path and are described in §5.

3 Front panel



LooLoo front panel — track 1 (left), shared display and sync (centre), track 2 (right).

The panel is symmetric. Track 1 occupies the left half, track 2 the right, and each half carries the same controls in mirror image. The centre column between the two transport wheels holds the shared display and the sync control. Controls are described once, for a track; they apply identically to both.

3.1 Transport

Control	What it does
Rec	Arms and starts recording. With the loop empty, Rec begins recording the loop; once a loop exists, Rec toggles overdub in Overdub mode. Available on CV as well as the panel button.
Play	Starts and stops loop playback.
Clear	Erases the loop buffer for that track.

Control	What it does
Undo	Reverts the last overdub pass, so you can layer freely and step back a layer at a time.
Reset	Jumps the playhead back to the loop start immediately. Repeated presses give a stutter-style retrigger; a second press before the loop point cancels a pending reset.
Bars	Sets the loop length in bars, 1 to 16, for the next recording. Read at record time; changing it mid-loop has no effect until the next record.
Loop counter	The two-digit green readout shows the loop length in bars.

3.2 Recording behaviour

Control	What it does
Mode (Play / Overdub)	Selects what Rec does once a loop exists. In Play mode the loop simply plays; in Overdub mode, engaging Rec layers new input over the existing loop.
Free Rec	When on, recording is not quantised to the bar grid — the loop is exactly as long as you record it, and the Bars setting is used as an upper bound. When off, the loop snaps to the Bars length.
Quant Overdub	Quantises overdub punch-in to the bar so layered parts stay in time.
Early Stop	Ends recording at the next bar boundary rather than running to the full set length.

3.3 Playback shape — window, pitch, speed, grain

These are the controls that make LooLoo more than a tape loop. All four respond to CV.

Control	Range	What it does
Window size	0 – 100 %	How much of the loop is played back. Full size plays the whole loop; smaller values play a slice, looping just that region.
Window offset	0 – 100 %	Where the window sits in the loop. At full window size, offset has no audible effect (you already hear everything); as you shrink the window, offset slides the audible region through the loop. The window wraps around the loop end.
Pitch	–24 – +24 st	Transposes the loop in semitones, independent of playback speed. ±24 is two octaves each way.
Speed	0 – 2×	Playback speed. 1× is recorded speed; below reads slower, above faster. Independent of pitch.
Varispeed	Off / On	When on, Speed also changes pitch, the way a tape machine does — the two stop being independent and track together.
Grain (Grn)	10 – 300 ms	Grain size for the granular pitch/stretch engine. Short grains give a fine, busy texture; long grains are smoother but blur transients. This is the character control for pitch and speed changes.

3.4 Overdub decay and FX

Control	Range	What it does
Decay	0 – 100 %	How much the existing loop is attenuated on each overdub pass. At 0 the loop never fades — overdubs build up forever. Turn it up and older layers fade as new ones arrive, from a long wash down to a short self-erasing echo. Decay applies at full depth across the whole playback window.
Fx	0 – 100 %	How much of the track's FX return is folded back into the loop. Route the send/return pair (see §4) through any Reason effect; Fx sets how present that processed signal is.
Fade	0 – 2 s	Fade-in/out time for the loop, softening starts and stops.

3.5 Stutter

The stutter engine captures a short slice at the playhead and repeats it, for glitch and fill effects. It is momentary — held on the button or gated by CV.

Control	Range	What it does
Stutter	momentary	Engages the stutter while held. The captured slice is anchored to the playhead position at

Control	Range	What it does
		the moment of engagement, within the current playback window.
Spd (speed)	0 – 100 %	Playback rate of the stutter slice.
Size	0 – 100 %	Length of the captured slice.

3.6 Centre column — display and sync

Between the two wheels are the shared display and the sync control.

Control	What it does
Display	Shows loop and transport state. The green wheels either side animate the playhead position for each track; the small central readout shows the sync ratio when Sync Lock is engaged.
Sync Lock (track B)	Locks track B's loop length to track A's at a chosen musical ratio. When engaged, arming B's recording waits for A's loop point and captures exactly the ratio you set. This is a track-B-only feature: track A is always the master, track B the follower.
Sync ratio	The multiple of track A's loop that B captures: 0.25, 0.5, 1, 1.5, 2, 2.5, or 3. A ratio of 1 makes B the same length as A; 0.5 makes it half; 2 makes it twice.

3.7 Master section

Control	What it does
Bypass (On / Off)	The rack bypass switch. In bypass, the dry input passes through to the outputs.
Global volume	Overall output level, applied to both tracks together, after the per-track volumes.

4 Back panel — audio and CV

The back panel carries the audio connections in the centre and a full set of CV jacks for each track, arranged symmetrically — track 1 on the left, track 2 on the right, shared audio and mix down the middle. Every continuous front-panel parameter and every transport action has a matching CV input, so the whole device can be played from sequencers, LFOs, and gate sources.

4.1 Audio connections

Each track has its own stereo input, stereo output, and an FX send/return loop. Both tracks are additionally summed to a stereo mix output. All audio jacks are stereo (L/R) pairs.

Jack	Direction	Purpose
In (track 1 / 2)	Input	Audio into the track's record buffer.
Out (track 1 / 2)	Output	The track's own stereo output.
Send (track 1 / 2)	Output	Feeds the track's loop signal out to an external effect.
Rtrn (track 1 / 2)	Input	Returns the processed signal from that effect, folded in by the Fx amount.
Mix Out	Output	Both tracks summed to a single stereo pair.
Through / Dry-Wet	Output / control	Direct through path and its dry/wet balance for the mix output.

4.2 CV — transport gates (per track)

Gate inputs trigger the transport actions. A rising edge fires the action, exactly as pressing the panel button would. The B-track equivalents carry the `_b` suffix.

CV input	Fires
<code>cv_gate_rec</code>	Record / overdub
<code>cv_gate_play</code>	Play / stop
<code>cv_gate_clear</code>	Clear the loop
<code>cv_gate_undo</code>	Undo the last overdub
<code>cv_gate_stutter</code>	Stutter (gated — active while the CV is high)
<code>cv_reset</code>	Reset the playhead to loop start

4.3 CV — continuous parameters (per track)

These modulate the continuous controls. CV sums with the panel setting. As above, track B carries the `_b` suffix on each.

CV input	Modulates
<code>cv_vol</code>	Track volume
<code>cv_speed</code>	Playback speed
<code>cv_reverse</code>	Reverse (crosses the threshold to flip direction)
<code>cv_varispeed</code>	Varispeed on/off
<code>cv_decay</code>	Overdub decay
<code>cv_fx_mix</code>	FX return amount
<code>cv_window_size</code>	Window size
<code>cv_window_offset</code>	Window offset
<code>cv_pitch</code>	Pitch
<code>cv_grain_size</code>	Grain size
<code>cv_stutter_speed</code>	Stutter speed
<code>cv_stutter_size</code>	Stutter slice length
<code>cv_dry_mix</code>	Dry mix balance

4.4 CV — global and outputs

CV jack	Direction	Purpose
cv_global_vol	Input	Master output level, both tracks.
cv_out_pos / cv_out_pos_b	Output	Playhead position through the loop, as a rising ramp — useful for driving visuals or chaining timing.
cv_out_eol / cv_out_eol_b	Output	End-of-loop pulse, one per loop cycle. Clock other devices from a loop's own length.
cv_out_rec / cv_out_rec_b	Output	High while the track is recording.
cv_out_play / cv_out_play_b	Output	High while the track is playing.

The position and end-of-loop outputs make LooLoo a timing source as well as a looper: a track recording a phrase of any length becomes a clock at that length, and the position ramp can sweep a filter or drive a display in lockstep with the loop.

5 Global controls

Control	What it does
Global volume	Output level for both tracks together, on the panel and on cv_global_vol.
Dry mix	Balances the dry (unprocessed) signal against the looped/processed signal at the track output. Per track, and on CV.
FX guard	Limits the level of the FX return fed back into the loop, a safeguard against runaway build-up when an effect adds gain into a long decay. Raise it to tame feedback-prone effect chains.
Through / Dry-Wet	Sets the dry/wet balance of the mix output's through path.

6 Getting started

Record a first loop

- Feed audio into track 1's input (In).
- Set Bars to the length you want, or turn Free Rec on to record freely.
- Press Rec to start recording, and again — or wait for the bar length — to close the loop. It begins playing.

Layer with overdub

- Set the track's mode to Overdub.
- Press Rec to punch in; play or feed new material; press Rec to punch out.
- Turn Decay up if you want older layers to fade as you go; leave it at zero to build up indefinitely. Undo steps back a layer.

Reshape it

- Shrink Window size and sweep Window offset to loop just a slice of what you recorded.
- Move Pitch and Speed independently; turn Varispeed on to tie them together tape-style.
- Hold Stutter for fills; adjust Spd and Size for the character of the repeat.

Use both tracks together

- Record a phrase on track 1.
- On track 2, engage Sync Lock and choose a ratio, then arm recording — track 2 will capture exactly that multiple of track 1's length and stay locked to it.

Play it with CV

- Gate cv_gate_rec or cv_gate_stutter from a sequencer for rhythmic capture and glitching.
- Modulate cv_window_offset, cv_pitch, or cv_grain_size from an LFO for evolving textures.
- Take cv_out_eol as a clock, or cv_out_pos as a position ramp, to drive the rest of your rack from a loop.

7 Specifications

Format	Rack Extension for Reason (creative effect)
Rack size	3U
Tracks	2, independent, with optional B-follows-A sync lock
Loop length	1–16 bars quantised, or free length
Pitch range	–24 to +24 semitones, independent of speed
Speed range	0 to 2×, with optional varispeed (pitch-linked)
Grain size	10 to 300 ms
Sync ratios	0.25, 0.5, 1, 1.5, 2, 2.5, 3 × track A
Audio I/O	Per track: stereo in, stereo out, stereo FX send/return. Plus stereo mix out.
CV in	Per track: 6 transport gates + 13 parameter inputs; plus global volume
CV out	Per track: position ramp, end-of-loop pulse, record gate, play gate
Patches	Device state saves with the song; no patch browser