



YANKI

TAPE ECHO · TEMPO SYNCED



MODEL YK-74

OWNER'S MANUAL

SUBVERSELAB

1. INTRODUCTION

YK-74

YANKI is a tape echo. Its glass echo field shows one ring per repeat: ring radius = delay time, brightness and thickness = level after feedback, warmth = tone darkening, left/right offset = stereo spread. Drag on the rings to change TIME, FEEDBACK and SPREAD. Below the glass sit six knobs that mirror the same parameters.

THE QUICK START

- 1 Drop it on a bus.** Nothing has to be set first. It opens in its own starting state (the preset bar reads ECHO · INIT): a plain 1/8 note echo at the host tempo, single head, FEEDBACK 34 % of hold, MIX 30 %. The preset "Eighth clean" is its closest relative.
- 2 Move the WET knob left.** YANKI's sweet spot lives in the first 10–25 % of travel. One hand, one gesture.
- 3 Drag the rings or the knobs to taste.** Pick a preset from the menu (top bar) for a different character.

YANKI YK-74 is one echo, not a bank of algorithms. Everything runs through a tape loop with one record head and three playback heads. Each pass through the loop loses top end, picks up a little wow and flutter, and is gently saturated, so repeats sound like a tape, not a copy.

It reads the host tempo. TIME follows the project's BPM continuously. If the host gives no tempo (a standalone or a host without transport), YANKI falls back to 120 BPM. When the tempo changes, the delay time glides to the new value instead of jumping, so there are no clicks.

LATENCY: NONE

YANKI reports zero latency. It is an echo: the dry signal is never delayed.

2. INSTALLATION

MACOS & WINDOWS

SYSTEM REQUIREMENTS

- **macOS** (Apple Silicon and Intel, one universal build): VST3 and AU (Audio Unit).
- **Windows** (64-bit): VST3.
- Channel layouts: mono → mono, mono → stereo, stereo → stereo.
- Any host that loads VST3 or AU effects. YANKI needs no internet connection and no activation once installed.

MACOS — STEPS

- Run the installer package (.pkg) you downloaded. It is signed with a Developer ID and notarised by Apple, so macOS opens it without any extra step.

- Choose what to install: the VST3 plug-in (/Library/Audio/Plug-Ins/VST3/YANKI.vst3), the Audio Unit (/Library/Audio/Plug-Ins/Components/YANKI.component) and the standalone app (/Applications/YANKI.app, the same panel outside a DAW). An older bundle named "SubverseLab Yanki" is removed by the VST3 package.
- Restart your DAW, or force it to rescan its plug-in list.

WINDOWS — STEPS

- Copy the .vst3 folder to C:\Program Files\Common Files\VST3\.
- Rescan plug-ins in your DAW.
- If Windows blocks the downloaded files: right-click the zip, choose **Properties**, tick **Unblock**, then extract.

Getting the plugin: buy it on subverselab.com/plugins/yanki, sign in with the e-mail you paid with and download it from that page or your Account page. This version does not ask for a licence key.

3. FACE TOUR

YK-74

The editor opens at 1280×720 (resizable 800×450 to 2400×1350, fixed 16:9). The glass echo field sits in the centre and shows the repeats as rings. Below and around it are the controls.



The editor in a stereo echo: 1/8 dotted at 120 BPM = 375 ms, FEEDBACK 19.5 % of hold, SPREAD 90 %, HEADS 2, three rings visible.

- 1 Wordmark, preset browser, BPM and BYPASS (top bar)** — YANKI name, a menu to pick one of 10 presets (shows the name, group, preset number, and whether it is unedited or has been modified), a 7-segment BPM display with a HOST lamp (lit when the host supplies the tempo), and a BYPASS toggle.
- 2 Echo field (centre)** — a glass display with concentric rings. Each ring is one repeat at a multiple of TIME: the radius grows with time, brightness and thickness show the level after feedback (decay is visible), warmth (colour temperature) shows TONE and WEAR darkening. Left/right offset of the rings shows SPREAD, and appears only in the stereo voicings (Three Heads, Dub Spiral, Worn Loop with

HEADS 2 or higher). The display also shows: TIME, repeat count, first repeat level in dB, decay to -60 dB in musical bars (or "HOLDS AT CAP" / "SWELLS"), TONE and WEAR values, and the L/R correlation of the wet signal. Below it sits a readout: TIME, repeats visible, first repeat level, decay time in bars.

- 3 **Three gold drag handles on the field** — drag outward/inward to change TIME (snaps to note value when synced, continuous ms when on FREE), drag edge up/down to change FEEDBACK, drag sideways to change SPREAD. Double-click a knob or handle to return it to its default.
- 4 **WET hero (left of the knobs)** — the MIX parameter as a large knob. Below it: "MIX n % · FIRST REPEAT -x dB", live. The first 3 % of the knob is a ramp to ensure the first touch does not click.
- 5 **SWELL section (right of the knobs)** — SWELL toggle (ON puts FEEDBACK just past HOLD, OFF puts it back and clears TEMPO LOCK), RISE curve knob (Slow, Med, Fast: how far FEEDBACK reaches past HOLD), CAP knob (off, or -12 to +12 dB), END mode (HOLD / CUT / DUMP) with a status lamp and line showing the loop state (OPEN / ARMED / DUMPED), FREEZE key, TEMPO LOCK keys (Off, 1, 2, 4 bars), DARKEN knob, FINE knob.
- 6 **Six knobs below the echo field** — TIME (with a sync-division ring that snaps when synced, and a FREE cap for milliseconds), FEEDBACK (with a red arc past HOLD), TONE, WEAR, SPREAD, OUTPUT. Each knob shows a live value line and numerical readout.
- 7 **HEADS keys** — below the WET hero: "HEADS" and three keys (1 / 2 / 3). The lit key shows which is active; with no key lit, the preset's own heads play; a line beneath reads "ONE HEAD" or "TWO HEADS · LEFT/RIGHT" or "THREE HEADS · L/R/L". Changes which playback heads are active (overrides the preset's voicing).

4. SYNC DIVISIONS

TEMPO-LOCKED TIMING

When TIME is set to a sync value, the delay time is calculated from the host tempo in real time. The values are:

SYNC VALUE	AT 120 BPM	AT 100 BPM
1/16	125 ms	150 ms
1/8	250 ms	300 ms
1/8 dotted	375 ms	450 ms
1/4	500 ms	600 ms
1/4 dotted	750 ms	900 ms
1/2	1000 ms	1200 ms
FREE	Manual: 50–700 ms + FINE	

5. CONTROLS

FULL REFERENCE

FRONT-PANEL KNOBS AND KEYS

CONTROL	RANGE / DEFAULT	WHAT IT DOES
TIME (knob + sync ring)	Sync: 1/16, 1/8, 1/8., 1/4, 1/4., 1/2, FREE · Free: 50–700 ms + FINE · Default: 1/8	The delay time as a note value of the host tempo, or free milliseconds. The ring snaps to the sync division when synced; when on FREE the inner cap shows milliseconds. At 120 BPM, 1/8 = 250 ms. FINE adds up to ±10 ms when on FREE.
FEEDBACK (knob)	0 ... HOLD ... RISE · Default: 34 % of hold	One knob, two zones. Below HOLD (12 o'clock) the repeats decay to silence. At HOLD the repeats fade slowly, about 1 dB per repeat, rather than holding exactly. Past HOLD the loop swells, controlled by RISE CURVE. The display reads "n % of hold" below HOLD, then "Swell n %" above.
TONE (knob)	1–8 kHz · 4500 Hz	The high-cut applied inside the loop on every pass. Lower values darken the repeats.
WEAR (knob)	0–10 · 2.5	Tape age: wow and flutter on the playback heads. At 10 the delay moves by roughly 1 to 2 ms, depending on the voicing.
SPREAD (knob)	0–100 % · 30 %	Stereo width of the echoes. In single-head voicings, SPREAD pans the head left/right; in stereo voicings (Three Heads, Dub Spiral, Worn Loop with HEADS 2 or 3), head 2 sits opposite. Below 70 % is linear; above 70 % compresses to keep the echo audible in mono.
MIX (knob, WET hero)	0–100 % · 30 %	Dry/wet balance. 0 % is bit-exact dry and 50 % is dry at unity plus full echo. At 100 %, Echo, Yesilcam and Ters give echo only; in Slapback, Three Heads, Dub Spiral and Worn Loop the dry stays at full level and MIX sets how much echo is added. The sweet spot lives in the first 10–25 % of travel.
OUTPUT (knob)	–12 to +12 dB · 0 dB	Final gain, post-echo.
CAP (knob, SWELL section)	OFF, –12 to +12 dB · OFF	The level ceiling for a swell, relative to the dry phrase. Needs SWELL ON. OFF means no limit.
RISE (knob, SWELL section)	Slow / Med / Fast · Med	How fast FEEDBACK reaches past HOLD when swelling. Slow reaches 1.7× the hold gain at the end, Med reaches 2.6×, Fast reaches 4×.

SWELL (toggle, SWELL section)	OFF / ON · OFF	ON: FEEDBACK moves just past HOLD. OFF: FEEDBACK returns to below HOLD and TEMPO LOCK clears. The loop lamp shows the state.
END (toggle, SWELL section)	HOLD / CUT / DUMP · HOLD	HOLD does nothing. CUT mutes the loop, feedback included, over 30 ms on press. DUMP plays the last 1.9 s of the loop backwards, once, then mutes. A new phrase onset (≥ 1 s silence then above -40 dBFS) re-arms CUT or DUMP back to HOLD.
FREEZE (key, SWELL section)	Tap = latch, hold = momentary · OFF	Stops recording new input. The first active head holds what is on the tape at unity gain (tanh-bounded).
TEMPO LOCK (keys, SWELL section)	OFF / 1 bar / 2 bars / 4 bars · OFF	Arranges the swell to reach CAP on the downbeat that many bars after the phrase starts. Works without CAP switched on: it uses the CAP dB value, 0 dB if untouched. Needs SWELL ON. Only affects the swell block, not the echo.
DARKEN (knob, SWELL section)	0–10 · 0	An extra high-cut in the feedback loop. At 0, no extra cut. At 10, about 500 Hz. Darkens each repeat more than TONE alone. It acts on the swell (past HOLD); below HOLD it has almost no effect.
FINE (knob, SWELL section)	± 10 ms · 0	Added to TIME when the ring is on FREE. No effect on sync divisions.
HEADS (keys, left of knobs)	(preset) / 1 / 2 / 3 · preset	With no key lit, the preset's own heads play; choosing a preset clears the keys. A key overrides: 1 head plays only head 1; 2 heads plays heads 1 and 2 (left/right); 3 heads plays all three (L/R/L).
BYPASS (toggle, top bar)	OFF / ON · OFF	Dry out. Latency is zero, so bypass never moves anything.

UNDO AND REDO

- **macOS:** Cmd+Z undoes, Cmd+Shift+Z redoes. **Windows:** Ctrl+Z undoes; Ctrl+Shift+Z or Ctrl+Y redoes.
- One knob move is one step, from the moment you press the mouse button to the moment you let go. Several controls moved together (an X/Y drag, a mood key, a preset) are one step too.
- Click the plug-in window first so it has the keyboard. If your DAW takes the key before the plug-in does, use the DAW's own undo.
- Moves made by host automation are not in the plug-in's history: the DAW's own undo takes those back. Loading a project, a preset file or a saved state starts a new history. The last 200 steps or more are kept.
- A preset is one step, even though it writes a dozen controls. The END key, which only fires a moment, is not part of the history.

6. PRESETS

TEN MEASURED STARTING POINTS

The presets sit on the plug-in's seven voicings, a MOOD parameter that a host can automate (Echo, Slapback, Three Heads, Dub Spiral, Worn Loop, Yesilcam, Ters); automating MOOD recalls that mood's knob values. Presets 1 to 7 use Echo, preset 8 Three Heads, presets 9 and 10 Dub Spiral. Each preset is voiced by measurement, not taste. The table shows: preset number, name, group (voicing category), time at 120 BPM, decay time (how long repeats take to fall to -60 dB), and first repeat level (dB below the dry signal). Pick one from the menu (top bar). Move any knob to edit; the preset name changes to show EDITED.

NO	PRESET NAME	GROUP	TIME	DECAY	FIRST REPEAT	CHARACTER
1	Slap 80 ms	SLAP	80 ms	0.53 bars	-12 dB	Fast single slap, tight transients.
2	Sixteenth tight	TIGHT	125 ms	1.06 bars	-12 dB	1/16 note: quick double slapback.
3	Eighth clean	CLASSIC	250 ms	2.08 bars	-12 dB	1/8 note: the plain echo, good for everything.
4	Dotted eighth lift	CLASSIC	375 ms	2.07 bars	-9 dB	1/8 dotted: a brighter, denser echo.
5	Quarter open	SPACE	500 ms	4.15 bars	-12 dB	1/4 note: spacious decay, long tail.
6	Dotted eighth behind	SPACE	375 ms	2.09 bars	-15 dB	1/8 dotted, low in the mix: sits behind the vocal.
7	Half note long	SPACE	1000 ms	4.16 bars	-15 dB	1/2 note: deep space, melancholic.
8	Dotted eighth wide	WIDE	375 ms	2.09 bars	-12 dB	1/8 dotted, three heads, stereo: ping-pong character.
9	Swell build	SWELL	375 ms	holds at CAP	n/a	1/8 dotted, DUB SPIRAL voicing: loop swells and holds at +2.8 dB.
10	Swell four-bar arrival	SWELL	375 ms	holds at CAP	n/a	1/8 dotted, DUB SPIRAL voicing with TEMPO LOCK 4 bars: loop reaches -5.5 dB on the downbeat.

7. HOW THE SWELL WORKS

HOLD, RISE, CAP, TEMPO LOCK

The loop has a **hold point**: the loop gain at which repeats fade only slowly, about 1 dB per repeat. It was measured on the loop, not guessed, and it differs per preset/voicing. FEEDBACK below HOLD scales the loop gain from zero to that point. Past HOLD, RISE takes over: the loop gain is $2^{(2 \times \text{RISE})}$ times the hold gain.

- Turn SWELL ON to put FEEDBACK just past HOLD and enable the swell block (RISE, CAP, DARKEN, END, TEMPO LOCK).

- Turn SWELL OFF to return FEEDBACK below HOLD and clear TEMPO LOCK.
- CAP is measured against the dry phrase: the RMS of the input above -50 dBFS since the last onset (after at least 1 s of quiet). With CAP set, the loop parks at that ceiling; it does not pump.
- TEMPO LOCK works without CAP switched on (it uses the CAP dB value, 0 dB if untouched). The swell is arranged to reach CAP on the downbeat after 1, 2 or 4 bars.
- RISE CURVE (Slow / Med / Fast) sets the end of the swell arc. At Slow, the loop reaches $1.7\times$ the hold gain; Med reaches $2.6\times$; Fast reaches $4\times$.
- END CUT mutes the loop over 30 ms on press. END DUMP plays the last ~ 2 s of the loop backwards, once, then mutes. Both fire on press and re-arm after a new phrase (≥ 1 s silence then above -40 dBFS).
- FREEZE stops recording new input and holds the tape as it is, recirculating at the loop's current level.

MEASURED BEHAVIOUR

- CAP -3 dB on a DUB SPIRAL swell: the loop peaks at -3.05 dB; uncapped, the same loop reaches $+15.6$ dB.
- TEMPO LOCK 2 bars at 120 BPM: the loop reaches 95 % of CAP at 4.10 s against a 4.00 s downbeat.
- END CUT: the loop is silent below -60 dB within 50–150 ms of press.
- The FIRST REPEAT readout matches the measured level to 0.55 dB (limit 1.2 dB).

8. TIPS

WORKING WITH YANKI

- **The sweet spot comes in the first 10–25 % of WET.** The knob is linear, but the musical range concentrates at the start: YANKI's taper puts the wet-to-dry balance most sensitive where it sounds best. Move the knob slowly near the bottom.
- **SPREAD past 70 % moves more gently on single-head voicings (and HEADS 1).** The knob stays smooth, but the engine compresses above 70 % to keep the echo audible in mono. On stereo voicings (HEADS 2 or 3), SPREAD is linear across the full range.
- **Double-click a knob or handle to reset it.** A double-click returns it to its default.
- **For TEMPO LOCK the phrase must start on a bar line.** Start recording/playing on a downbeat. The loop reaches CAP on the downbeat that many bars later.
- **END CUT fires instantly; DUMP plays the tail backwards.** Both take a new phrase onset to re-arm (≥ 1 s silence, then above -40 dBFS). A momentary press fires; holding the key keeps it pressed until release.

PLAIN VOCAL ECHO

Preset: Eighth clean · MIX 20–25 % · TIME 1/4

A quarter-note echo that decays and darkens naturally. Leave FEEDBACK and TONE alone.

SWELL THAT LANDS ON THE DOWNBEAT

Preset: Swell four-bar arrival

Start the phrase on a bar line. Four bars later the loop reaches its ceiling on the downbeat. No adjustments needed; use as is.

DUB THROW ON THE LAST WORD

Preset: Swell build · END: DUMP

The loop swells and holds. Press END DUMP on the last word to play the tail backwards once and clear the loop for the next phrase.

PING-PONG SLAPBACK

Preset: Dotted eighth wide · MIX 15–20 %

Three heads with hard stereo spread. The repeats bounce left-right-left. Adjust MIX to sit in the mix.

HOLD A CHORD

Any preset · FREEZE (hold key to momentary)

Freezes the tape as it is and recirculates the loop. Release to return to normal echo.

10. SPECIFICATIONS

MEASURED

ITEM	VALUE
Formats / Platform	macOS (Apple Silicon and Intel): VST3, AU · Windows (64-bit): VST3
Channel layouts	Mono → mono, mono → stereo, stereo → stereo
Latency	0 samples
Tape loop	2 s nominal (6.2 s for divisions that need longer at low tempos); one record head, three cubic-interpolated playback heads at 1×, 2×, 3× TIME
Sync divisions	1/16, 1/8, 1/8 dotted, 1/4, 1/4 dotted, 1/2, FREE (50–700 ms ± 10 ms fine)
Host BPM range	20–400 BPM; falls back to 120 when host gives none
Wow / flutter	Slow wow plus faster flutter on the playback heads; roughly 1 to 2 ms of delay movement at WEAR 10, depending on the voicing
Tone range	1–8 kHz high-cut per pass; default 4.5 kHz
Undo / Redo	Cmd+Z / Cmd+Shift+Z (macOS); Ctrl+Z / Ctrl+Shift+Z or Ctrl+Y (Windows)
Code signing	macOS installer signed with a Developer ID and notarised by Apple
Getting the plugin	Buy it on subverselab.com/plugins/yanki , sign in with the e-mail you paid with and download it; this version does not ask for a licence key and needs no internet

MEASURED VALIDATION

- Determinism: identical output bit-for-bit across runs.
- All 10 presets render bit-identical to the approved measured set (MD5-checked on vocal and pluck).
- MIX 0 is bit-exact dry pass-through.
- All presets stay finite at extreme settings; no NaN or clipping on test sources.
- The echo-field ring model's decay prediction is within 4.5 % and first-repeat estimate within 0.55 dB of the real engine across all presets.
- HEADS parameter switch (1 / 2 / 3 heads) produces no audible step or click.
- SPREAD 100 % keeps the dry signal unchanged (0.0 dB) and the wet mono-sum loss ≤ 0.99 dB.

GOOD TO KNOW

- After you undo a preset the preset bar reads EDITED: the bar's name is not part of the undo history, the settings are.
- Switching to a sync division that needs the longer 6.2 s tape (for example 1/2 below about 100 BPM), or back, keeps what is on the tape: the newest 2 s carry on ringing. Repeats further back than that start silent, as on a tape not yet recorded that far.