KASET

HIGH SPEED DUBBING SYSTEM



MODEL KS-83

OWNER'S MANUAL

SUBVERSELAB

1. INTRODUCTION

KS-83

KASET is a double cassette deck, modelled as generations rather than a single "tape" effect. Each generation is one more trip onto tape and back — record pre-emphasis, saturation, playback de-emphasis, head bump, gap loss, wow and flutter, hiss, and worn-oxide dropouts — run again on top of the last: the way a mixtape dubbed from a dub of a dub actually sounded.

The unit ships as VST3 and AU on macOS (Apple Silicon and Intel), and as VST3 on Windows (64-bit).

GENERATIONS

- **Master** — one trip onto tape.
- **1st Dub** through **4th Dub** — two to five trips, each one a copy of the one before. Top end falls and hiss builds with every generation; speed error (wow/flutter) does not build up: each pass drifts independently, so the measured pitch deviation is highest on Master and falls with each dub (see §4).

Every "random" element in the engine — drift, hiss, dropout timing — comes from a seeded generator: identical input and settings give identical output, bit for bit.

2. INSTALLATION

MACOS & WINDOWS

KASET installs as an Audio Unit (AU) and a VST3 plug-in on macOS (Apple Silicon and Intel); on Windows (64-bit) it installs as a VST3 plug-in.

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 and the Audio Unit.
- 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: sign in at subverselab.com/launch and download; no activation needed.

3. PANEL TOUR

Laid out as a double deck: transport and dub-generation controls along the top strip, the knob row across the middle, and the two cassette wells — record side (A) and dub side (B) — across the bottom, with the tape counter and record-level ladder between them.



1. **TAPE / BYPASS** — piano keys under the "SIGNAL PATH" bracket. TAPE runs the signal through the engine; BYPASS is a complete, bit-exact dry bypass.
2. **AUTO GAIN** — piano key, toggles automatic level compensation.
3. **DUB / COPIES dial** — the generation selector: Master, 1st, 2nd, 3rd, 4th Dub, shown as a tuner-style scale with a pointer.
4. **TAPE SELECTOR** — three buttons: Normal, Chrome, Metal. Under it, **TRACK** (low-latency switch) and a **LATENCY** window that reads the latency reported to the host.
5. **RECORD group** — Input, Saturation.
6. **TRANSPORT group** — Wow, Flutter.
7. **TAPE group** — Hiss, Wear.
8. **OUTPUT group** — Mix, Output.
9. **Deck A** (record/play back, gold badge) and **Deck B** (play back, teal badge) — cassette wells showing the tape type and hub position.
10. **TAPE COUNTER** — a three-drum mechanical counter; click to zero it.
11. **REC LEVEL** — a segmented L/R level ladder, 0 at −18 dBFS RMS.

4. CONTROLS

FULL REFERENCE

CONTROL	RANGE / DEFAULT	WHAT IT DOES

Generation	Master–4th Dub · 2nd Dub	How many trips onto tape and back the signal takes. Each generation runs the full chain again on top of the last, so top end and hiss accumulate. Speed error does not: each pass's drift is independent, and the measured pitch deviation is highest on Master (2.53 cents RMS at default Wow/Flutter), then 2nd Dub 2.08, 4th Dub 1.81.
Tape	Normal/Chrome/Metal · Normal	Normal is Type I. Chrome and Metal hold more top end and headroom before the tape compresses, and run quieter hiss (see §6).
Input	–12 to +12 dB · 0 dB	Gain into the tape path only; the dry path underneath is unaffected. With Auto Gain on, Input changes the drive (grit), not the output level.
Saturation	0–100 % · 55 %	How hard the tape is driven — a soft, slightly asymmetric curve, like real oxide. Reduced automatically past the 2nd dub so it doesn't keep piling up.
Wow	0–100 % · 50 %	Slow speed drift, up to 0.35 % of head travel per pass at 0.55–0.8 Hz. Pitch deviation is highest on Master and falls with each dub (see Generation).
Flutter	0–100 % · 50 %	Fast speed wobble, up to 0.12 % of head travel per pass at 6.5–9.5 Hz.
Hiss	0–100 % · 50 %	Band-shaped tape noise, roughly 900 Hz–7.5 kHz, added once per generation.
Wear	0–100 % · 25 %	Worn-oxide dropouts: brief level sags of 20–90 ms, at random (seeded) intervals that scale with this control.
Mix	0–100 % · 100 %	Dry/wet balance. Also scaled by the TAPE/BYPASS transport state.
Output	–12 to +12 dB · 0 dB	Final output trim, after the mix and after Auto Gain. Bypassed entirely in BYPASS.
Auto Gain	On/off · on	Matches the tape path's loudness to the input over about 1.5 s, within a ±12 dB range; holds level within ±0.1 dB in tests. Tracks average loudness, not peaks.
TRACK	On/off · off (MIX)	Low-latency switch under the tape selector, for recording through KASET. On, the five trips share one moving head instead of five: latency drops from 720 to 72 samples at 48 kHz (1.5 ms; 66 at 44.1 kHz), the tape colour is the same, and Wow is shallower at its deepest settings. Off (MIX) is the full five-head transport. Saved with the project, not automatable; some hosts re-read the latency only after a transport restart. The LATENCY window shows the number reported to the host.
TAPE / BYPASS	Default: TAPE	TAPE runs the engine. BYPASS is a complete bypass — every knob including Output is out of the path, signal leaves bit-exact and latency-aligned. Fades over about 20 ms; latency is the same in TAPE and BYPASS.

In BYPASS the knobs dim and the DUB / COPIES dial reads "BYPASS — tape is out of the signal path." Knobs still move and update while dimmed — they simply have no audible effect until TAPE is pressed again.

TROUBLESHOOTING

- **I turn knobs and hear nothing** — check that TAPE is lit. In BYPASS the tape path (and every knob on it, Output included) is out of circuit by design.

5. RECIPES

STARTING POINTS

MIX-BUS WARMTH (STARTING POINT)

Generation: 2nd Dub · Tape: Normal · Auto Gain: on · Mix: 15–25 % · Saturation: 40–55 %

The suggested default for gluing a mix bus: enough generation loss to feel like tape, Auto Gain keeping the level honest so you can judge the effect by ear, not by a level jump.

LO-FI VOCAL DUB

Generation: 4th Dub · Tape: Normal · Wow: 70 % · Flutter: 60 % · Hiss: 60 % · Mix: 100 %

Heavy top-end loss (down toward 4.4 kHz) and audible hiss for a deliberately worn, dubbed-cassette vocal texture.

CLEAN CHROME PASS

Generation: 1st Dub · Tape: Chrome · Saturation: 35 % · Wear: 0 % · Auto Gain: on

Chrome's extra headroom and quieter hiss keep this pass close to the source — useful when you want tape colour without much degradation.

A/B AGAINST DRY

Set TAPE / BYPASS to BYPASS to check the untouched dry signal at matched level — BYPASS is bit-exact and plug-in latency does not change, so the comparison stays time-aligned.

6. SPECIFICATIONS

MEASURED

ITEM	VALUE
Formats / Platform	macOS (Apple Silicon and Intel): VST3, AU · Windows (64-bit): VST3
Channel layouts	Mono → Stereo, Stereo → Stereo
Latency	MIX (default): 720 samples at 48 kHz (15 ms), 660 at 44.1 kHz, the same for every generation · TRACK: 72 samples at 48 kHz (1.5 ms), 66 at 44.1 kHz
Code signing	macOS installer signed with a Developer ID and notarised by Apple
Getting the plugin	Sign in at subverselab.com/launch and download — no activation needed

GENERATION TOP END (TAPE: NORMAL, MEASURED BY WHITE-NOISE RESPONSE, –3 DB POINT)

GENERATION	TOP END (APPROX.)
Master	≈ 10 kHz
1st Dub	≈ 8.4 kHz
2nd Dub	≈ 6.4 kHz
4th Dub	≈ 4.4 kHz

TAPE TYPES

TYPE	TOP END	HISS	HEADROOM
Normal (Type I)	baseline	baseline	baseline
Chrome (Type II)	× 1.18	–4 dB	more
Metal (Type IV)	× 1.3	–6 dB	most

TRANSPORT AND NOISE

- Wow: up to 0.35 % of head travel per pass, at 0.55–0.8 Hz.
- Flutter: up to 0.12 % of head travel per pass, at 6.5–9.5 Hz.
- Wear: dropouts of 20–90 ms, at random (seeded) intervals.
- Hiss: band-shaped noise, roughly 900 Hz – 7.5 kHz.
- Auto Gain: ±12 dB range; holds level within ±0.1 dB in tests.
- Bypass: bit-exact dry.