

The Asylum Analogue — User Manual

Mastering tape emulation + 80s consumer playback. Beyond the machine. Into the memory.

The Asylum Analogue models the complete journey a piece of music took in the 1980s: recorded onto a studio master tape machine, duplicated onto cassette — sometimes several generations deep — played back on whatever deck you owned, through whatever speakers you had. Most tape plugins stop at the mastering machine. This one follows the tape home.

Every control has a **mouseover tooltip** — hover over any knob, switch or menu for a one-line explanation, in the standalone app and inside your DAW.

Quick Start

1. Load the plugin (VST3) or open the standalone app.
2. Pick a preset from the **PRESETS** menu (top-left) — *Warm 15 IPS Glue* for mastering warmth, *Worn Mixtape* for instant nostalgia.
3. **DRIVE** sets how hard you hit the tape. **AUTO GAIN** (top-right) keeps loudness constant while you push it.
4. The **IN** switch engages the Record Path (studio machine); the **DECK** switch engages the Playback Path (consumer cassette chain).
5. **MIX** behaviour lives in the ELECTRONICS tab (Global Mix), and each path has its own stage mix there too.

Signal Flow

```
Input -> Input Gain
      -> RECORD PATH: calibration -> pre-emphasis -> oversampled magnetic
                        hysteresis + bias -> tape compression -> head bump /
                        HF voicing -> print-through -> wow & flutter -> hiss
      -> PLAYBACK PATH: generation loss -> formulation -> playback saturation
                        -> deck voicing -> NR decode -> wow & flutter
                        (battery-aware) -> azimuth -> dropouts -> crosstalk
                        -> width -> hiss
      -> Listening Environment -> LF/HF EQ -> Width -> Global Mix
      -> Output Gain -> Output
```

Both paths crossfade in and out without clicks, and stop consuming CPU when fully disengaged.

The Main View



Top Bar

Control	Purpose
PRESETS + ◀▶	Factory presets. Applying one resets every control to that sound.
UNDO / REDO	Steps back/forward through your edits (grouped into short gestures).
Quality	Eco / Normal / High / Render — sets oversampling (2x/4x/8x/16x). High and Render also run a literal ultrasonic bias oscillator.
AUTO GAIN	Compensates loudness changes from Drive and Flux so comparisons stay fair.
BYPASS	Click-free true bypass.

Record Path (Studio / Mastering)

The left cream panel is the master tape machine. The **IN** switch (centre-left) engages this path.

Knob	What it does
DRIVE	Record level onto tape — more drive, more saturation and squeeze.
BIAS	Custom bias trim (active in Custom bias mode): negative is bright and edgy, positive dull and smooth.
SPEED	1.875–30 IPS. Fast is clean and extended; slow saturates early and wobbles.
WARMTH	High-frequency saturation emphasis — the classic tape softening.
GLUE	Programme-dependent tape compression.
TAPE TYPE	Clean Studio → Worn: the master reel's formulation and condition.

Playback Path (Consumer / Listening)

The right cream panel is the cassette side of the story. The **DECK** switch (top-right) engages this path.

Knob	What it does
GENERATION	Copy number, 0–8. Each generation loses treble and gains noise, smear and saturation.
TAPE AGE	Wear: HF loss, modulation noise, more dropouts.
HEAD CLEAN	Dirty heads shave treble and add hiss and scrape.
BATTERY	Weak batteries slow the motor, add flutter, starve the amp.
AZIMUTH	Head misalignment: smears highs and skews the stereo image.
NOISE	Playback hiss floor (generations and dirt stack on top).

Centre Section

Element	Purpose
VU meters	Input (left) and output (right) with peak lamps.
Valves	They glow with programme level. Purely for the soul.
IN / OUT dB	Live peak read-outs either side of CHAOS.
CHAOS	Component tolerance drift: bias wander, transport looseness.
INSANITY	Drag the red lamp. The machine overheats: extra drive, wow, flutter and modulation noise. The lamp glows with the amount.

Bottom Row

Control	Purpose
INPUT / OUTPUT faders	Gain in and out, ± 24 dB.
EQ / FILTER LF, HF	Output shelves: ± 6 dB at 90 Hz and 9 kHz.
W AMOUNT	Master-transport wow depth.
Cassette	The hubs spin while audio runs. Every tape has a past.
CROSSTALK AMOUNT / DELAY	Inter-channel bleed level and its delay (0.1–5 ms).
WIDTH	Output stereo width, 0–150%.

The Tab Panels

The strip along the bottom opens eight panels of deeper controls. Close a panel with its **X** button or by clicking its tab again.

Laboratory



Machine calibration: **Oversampling** (Auto follows Quality), **Head Gap** (small = extended treble, large = earlier roll-off), **Bias Mode** and **Bias Freq / Drift**, **Flux Level** (magnetic operating level at constant loudness), **Calibration** (dBFS reference — lower hits tape harder) and **Stereo Link** (below 100% the channels' transports drift apart).

Tape



The duplication chain: **Cassette** formulation (Type I/II/IV, budget, worn), **Deck** (three-head deck to toy recorder), **Duplication** speed (faster dubbing = more loss per generation), plus **Head Bump**, **Transients** softening and the **Tape Mix** stage blend.

Transformer



The magnetic model itself: **Hysteresis** blends the full stateful model against a simple saturator; **Coercivity** sets how hard the tape is to magnetise; **Remanence** how much it retains; **Reversible** the springy/sticky balance; **Memory** how much the past influences the present.

Noise



All the noise sources: **Master Hiss**, **Deck Hiss**, motor **Rumble**, **Dropouts** (soft oxide-shed dips) and **Print-Through** (the ghost echo from adjacent tape layers). Every source is truly off at minimum.

Mechanics



Transport physics: **Tape Flutter** (master machine), **Deck Wow / Deck Flutter** (consumer machine), **Scrape** flutter (20–80 Hz), **Head Wear** and **Azimuth Drift**.

Electronics



Noise Reduction decode modes — Consumer NR (matched), Under-Decoded (too bright), Over-Decoded (too dull), Mistracked (pumping) — with **NR Tracking** calibration error, plus **Global Mix** and the **Deck Mix** stage blend.

Listening Env.



Where you heard it: **Enable**, then choose a **Device** (foam portable headphones, bedroom hi-fi, boombox, car stereo, mono radio, TV speaker, cheap plastic headphones), with **Device Mix**, **Speaker Drive** saturation and **Room** early reflections.

About



Factory Presets

Preset	Character
Clean 30 IPS Master	Barely-there mastering polish: fast tape, low drive, no consumer stage.
Warm 15 IPS Glue	The classic mix-bus treatment: moderate drive, glue and head bump.
1984 Commercial Cassette	A store-bought tape: mastered, duplicated at 8x, third generation, home hi-fi.
Worn Mixtape	A much-loved ferric copy on a portable player: worn, wobbly, occasionally dropping out.
Dying Portable Player	18% battery. Strong flutter, slowing motor, straining amplifier.

Quality Modes & CPU

Mode	Tape stage	Consumer stage	Notes
Eco	2x	2x	Lightest; linear-interpolated transport.
Normal	4x	2x	Default. ~1.2% of one core at 48 kHz stereo.
High	8x	2x	Enables the literal ultrasonic bias oscillator.
Render	16x	2x	Maximum accuracy for bounces.

The transport, noise and metering always run at the host rate; only the non-linear stages are oversampled. Disabled paths cost nothing.

Formats & Requirements

- **Formats:** VST3, Standalone (Windows x64; macOS planned)
- **Sample rates:** 44.1–192 kHz, any block size, mono or stereo
- **Tips:** In the standalone, input is muted by default — Options → Audio/MIDI Settings to route audio, or test the VST3 in your DAW.

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