



User Manual

Tube-style saturation with H2→H3 harmonic crossover.

The Offline Promise: DeepFryer is offline-first. The plugin does not collect telemetry or send usage data. Website and manual links in the Settings panel only open if you click them.

01. INTRODUCTION

DeepFryer is a measurement-fitted tube saturation engine with a distinctive H2→H3 harmonic crossover. At low Drive, even harmonics (H2) dominate for roundness, body, and even-harmonic density. As Drive increases, odd harmonics (H3) take over for edgier, more aggressive character.

KEY FEATURES

- Built from large-scale harmonic-response measurement.
- H2-dominant at low Drive, H3-dominant at high Drive.
- Quality modes with up to 8× oversampling.
- Pre-saturation high-pass filter for clean low end.
- Auto-gain for loudness-matched bypass comparison.
- Offline cryptographic validation.

THE H2→H3 CHARACTER

DeepFryer uses a tube-style saturation model with a distinctive harmonic progression: H2-dominant body at low settings that transitions to H3-dominant edge as Drive increases. The most obvious character flip sits around Drive 65–70%.

02. INSTALLATION

DeepFryer is currently available for **Windows** and **Linux**.

SYSTEM REQUIREMENTS & PLUGIN LOCATIONS		
REQUIREMENT	MINIMUM SPECIFICATION	
Operating System	Windows 10+ or Linux	
Plugin Formats	VST3, CLAP — VST2 is not supported.	
Sample Rates	44.1 kHz to 192 kHz	
PLATFORM	FORMAT	DEFAULT LOCATION
Windows	VST3	C:\Program Files\Common Files\VST3\
Windows	CLAP	C:\Program Files\Common Files\CLAP\
Linux	VST3	~/.vst3/ (per-user) or /usr/local/lib/vst3/ (system-wide)
Linux	CLAP	~/.clap/ (per-user) or /usr/local/lib/clap/ (system-wide)

WHY NO MACOS?

macOS is not included in this release. DeepFryer currently focuses on Windows and Linux, where we can ship offline-first plugins without additional platform distribution requirements.

03. INTERFACE OVERVIEW

DeepFryer's interface is organized top-to-bottom. The default window is 1100 × 740 pixels. The UI is resizable — use the zoom control in the Status Footer, and the chosen scale is remembered per DAW project.

SECTION	DEFAULT HEIGHT	PURPOSE
Header Strip	54 px	Logo, license badge, power, and panels.
Telemetry Strip	40 px	Quality pill, meters, correlation, analyzer toggle.
Analyzer Graph	Flexible	Spectrum / Curve / THD views.
Dashboard	~235 px	3-column control surface (Input & Voicing, Fry Core, Master Stage).
Status Footer	32 px	CPU, latency, oversampling, sample rate, zoom.

Heights scale proportionally with the zoom setting. Values shown are at 100%. Dashboard height tracks the golden-ratio split (~38.2%) between the analyzer and the control strip.

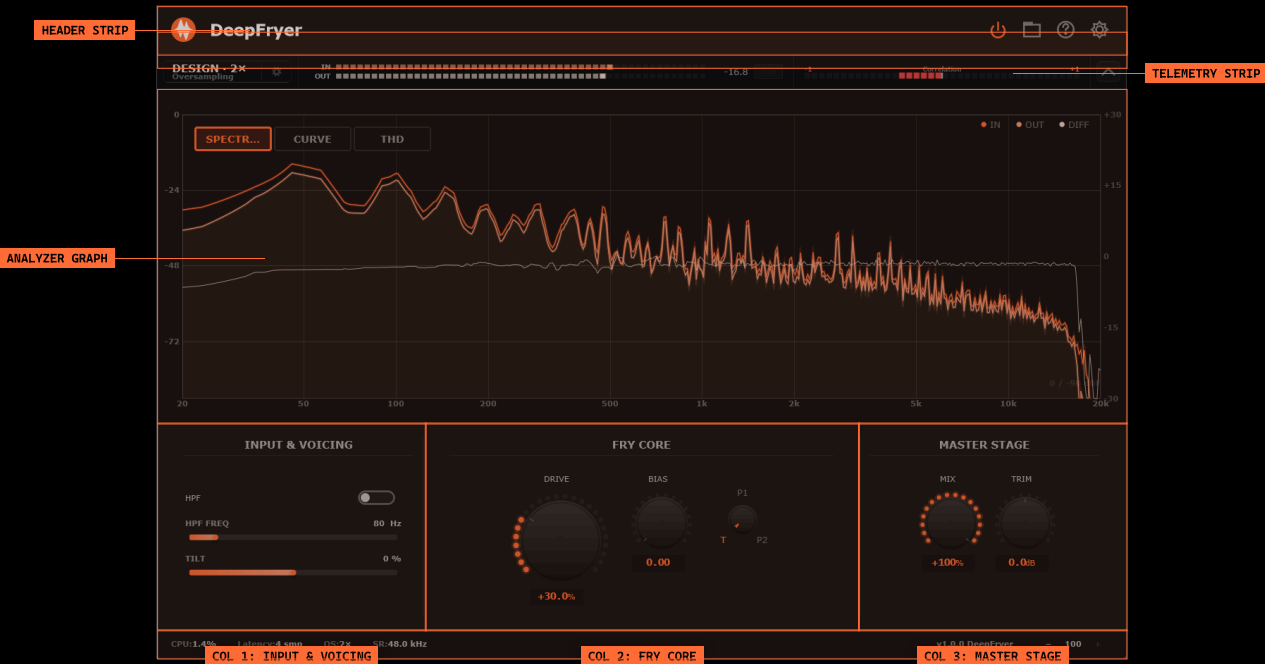


FIG. 1 – INTERFACE OVERVIEW: STRIPS, ANALYZER, AND DASHBOARD

STATUS FOOTER

ITEM	DESCRIPTION
CPU	Plugin CPU load as percentage of audio buffer budget.
Latency	Reported latency in samples (varies with Quality mode).
OS	Current oversampling factor (1×, 2×, 4×, 8×).
SR	Host sample rate in kHz.
Version	Plugin version string (bottom-right).
Zoom	UI scale control (– / percentage / +). Chosen scale is remembered per DAW project.

ANALYZER GRAPH

Three tabs share the graph area: **Spectrum** (real-time harmonic content — watch H2 and H3 move as you adjust Drive), **Curve** (input/output transfer curve for the current Drive setting), and **THD** (total harmonic distortion vs. input level). IN / OUT / DIFF toggles show the input, output, and difference traces.

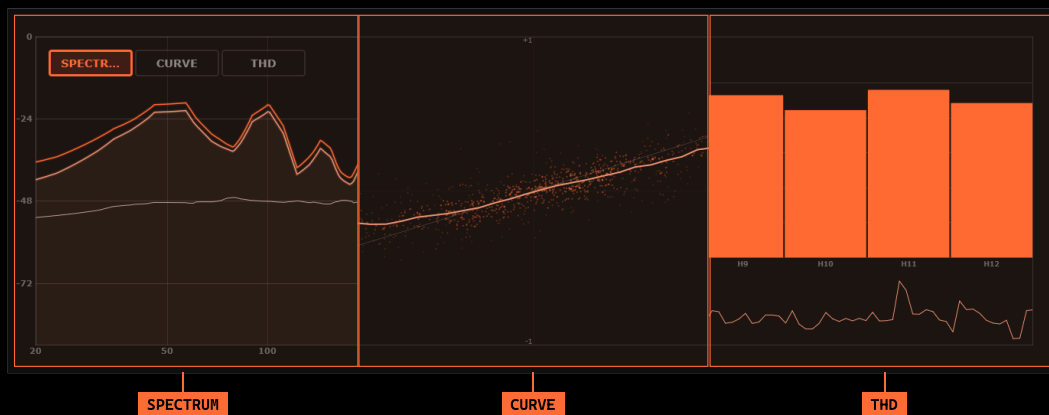


FIG. 2 – ANALYZER GRAPH: SPECTRUM, CURVE, AND THD VIEWS

04. FRY CORE (DRIVE, BIAS, TYPE)

The centre column — Drive, Bias, and tube Type — is the heart of DeepFryer. Drive doesn't just add input gain, it selects which saturation curve to use. Bias and Type further shape the harmonic fingerprint.

DRIVE — THE H2→H3 CROSSOVER

DRIVE	CHARACTER	H2 (DBr)	H3 (DBr)	THD (DBr)
30%	H2 body, H3 well below	−31	−47	−31
50%	H2 still leads, H3 climbing	−23	−33	−22
80%	H3 dominant, H2 receding	−31	−12	−12
100%	H3-dominant, heavy saturation	−37	−11	−10

Values measured at input = −18 dBFS with Type = T and Bias = 0.0 (all other controls at default). Campaign: 20260417_122103_t_cheb_h2_corr. H2 / H3 are relative to the fundamental (dBr); THD is the total harmonic distortion floor.

Key Insight: The Drive control does not just add gain — it shifts the harmonic balance. Low Drive (<50%) emphasizes even-harmonic (H2) body. High Drive (>70%) emphasizes odd-harmonic (H3) edge and grit. The most obvious character flip sits around **Drive 65–70%**.

BIAS

DC-bias offset applied inside the saturator. Skews the H2 / H3 balance without changing Drive. Range **0.00 (no offset, neutral)** to **1.00 (maximum asymmetry)** — higher values push the waveform asymmetrically, pulling the harmonic character toward H2. Useful for adding roundness and even-harmonic body without re-dialling Drive.

TYPE (T / P1 / P2)

Three tube-style voicings built from measured reference data. Same core engine, different harmonic fingerprint.

TYPE	CHARACTER
T	Default triode voicing — balanced H2 / H3 behaviour.
P1	Pentode #1 — tighter mids, earlier H3 onset, earlier breakup.
P2	Pentode #2 — most aggressive, heaviest H3 plateau at high Drive.



FIG. 3 – FRY CORE PANEL: DRIVE, BIAS, TYPE

05. INPUT & VOICING (HPF, TILT)

The left column shapes the signal *before* it hits the saturator (HPF) and *after* (Tilt).

HPF — PRE-SATURATION HIGH-PASS

A high-pass filter (20–500 Hz) applied *before* the saturator. Toggle it on/off with the HPF switch; dial the cutoff with the HPF Freq slider. Removes subsonic content so heavy low end doesn't smear into muddy distortion.

When to use HPF: Enable at 60–80 Hz on any source with significant low-frequency content (bass, kick, synths). Keeps the low end clean while saturating the mids and highs.

TILT

Post-saturation tone control. Tilts the spectrum around 1 kHz.

POSITION	EFFECT
–100% (Dark)	–6 dB tilt toward bass, rolls off highs
0% (Neutral)	No tilt, flat response
+100% (Bright)	+6 dB tilt toward treble, rolls off bass

06. MASTER STAGE (MIX, TRIM)

MIX

Dry / wet parallel blend (0–100%). At 0%, the dry signal passes through unchanged. At 100%, output is fully processed.

TRIM

Output level adjustment (–12 to +12 dB, centre = 0 dB). Use to compensate for the level changes introduced by saturation.

Parallel Processing Tip: For parallel saturation, push Drive high (60%+) and blend back with Mix at 20–40%. This gives harmonic texture without destroying the clean signal's dynamics.



FIG. 4 – INPUT & VOICING (LEFT) AND MASTER STAGE (RIGHT) PANELS

07. QUALITY & ENGINE (STATUS PILL)

Quality is selected from the **oversampling pill** in the top-left of the Telemetry Strip — click it to drop a themed selector.

MODE	OVERSAMPLING	BEST FOR	LATENCY
Live	1×	Tracking / playing	0 samples
Design	2×	Sound design, track-building	~15 samples
Mix	4×	Balancing in context	~30 samples
Master	8×	Final render pass	~60 samples

When to step up: For high-drive settings, use Design (2×), Mix (4×), or Master (8×) for cleaner oversampled rendering. Latency is only reported to the host when oversampling is active; most DAWs compensate automatically.

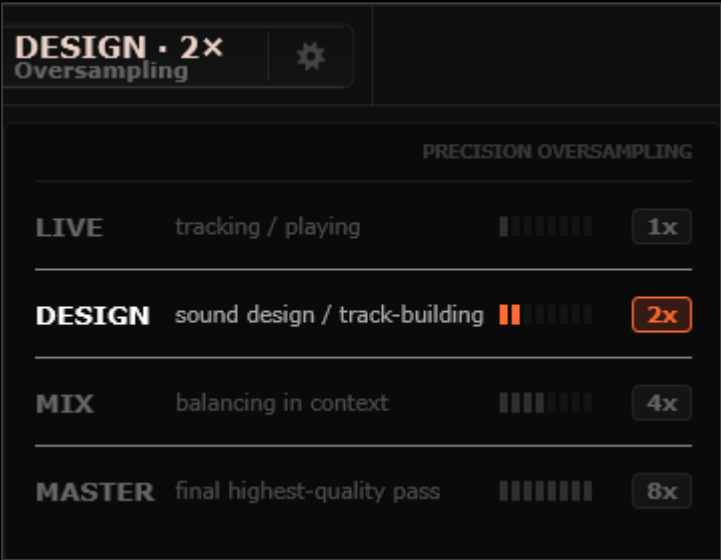


FIG. 5 — QUALITY DROPDOWN (CLICK THE OVERSAMPLING PILL)

08. SETTINGS PANEL

Opened from the gear icon in the Header Strip. Holds plugin-global preferences that live outside the main dashboard.

AUDIO ENGINE

SETTING	BEHAVIOUR
DC Blocker	Removes sub-harmonic DC build-up on the output path.
Clip Latch	How long the CLIP indicator stays lit after a peak.
Corr. Speed	Correlation-meter response time (faster = more reactive, smoother = more readable).
Auto-Gain	Automatically compensates for the level changes introduced by Drive. When enabled, bypass compare is loudness-matched.
Stereo Processing	Stereo — L / R processed independently, shared parameters. Dual Mono — L / R with per-channel drive offset. Mid / Side — encode → process M / S independently → decode.

PREFERENCES

SETTING	BEHAVIOUR
Accent Color	Eight-swatch accent colour picker for the UI.
Theme Mode	Dark or Light theme.
Show Power Button	Show or hide the header power button.
Tooltips	Show explanatory tooltips on hover for controls and abbreviations.
License	Displays activation status and the licensed-to email hash.

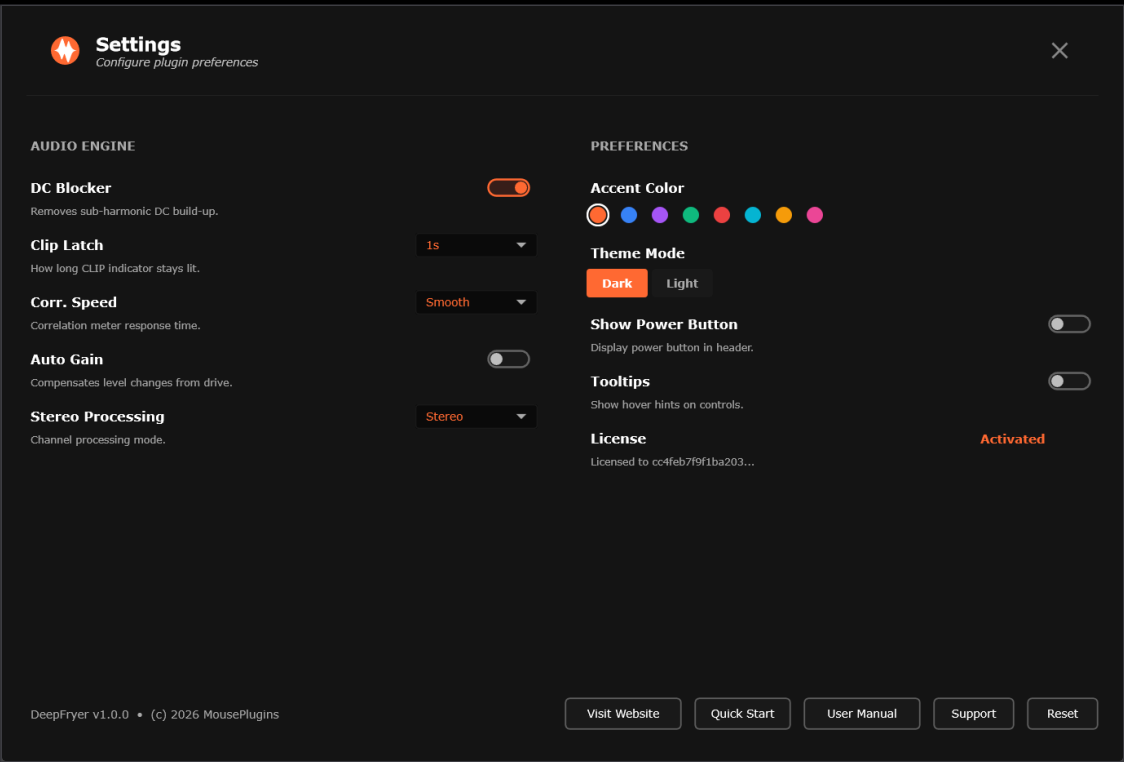


FIG. 6 – SETTINGS PANEL: PLUGIN-GLOBAL PREFERENCES

09. PRESETS PANEL

Accessed via the **presets icon** in the header.

FACTORY PRESETS

PRESET	CHARACTER
Clean Body	Gentle tube colour with a light parallel blend.
Medium Drive	Medium saturation with rounded transient behaviour.
Crunchy Valve	High drive, earlier P1 breakup.
Bias Drift	Off-centre voicing, asymmetric tube character.
Dark Crunch	Heavy drive with HPF and tilt rolloff.
Fuzz Box	P2 at full tilt, hot with both H2 and H3.

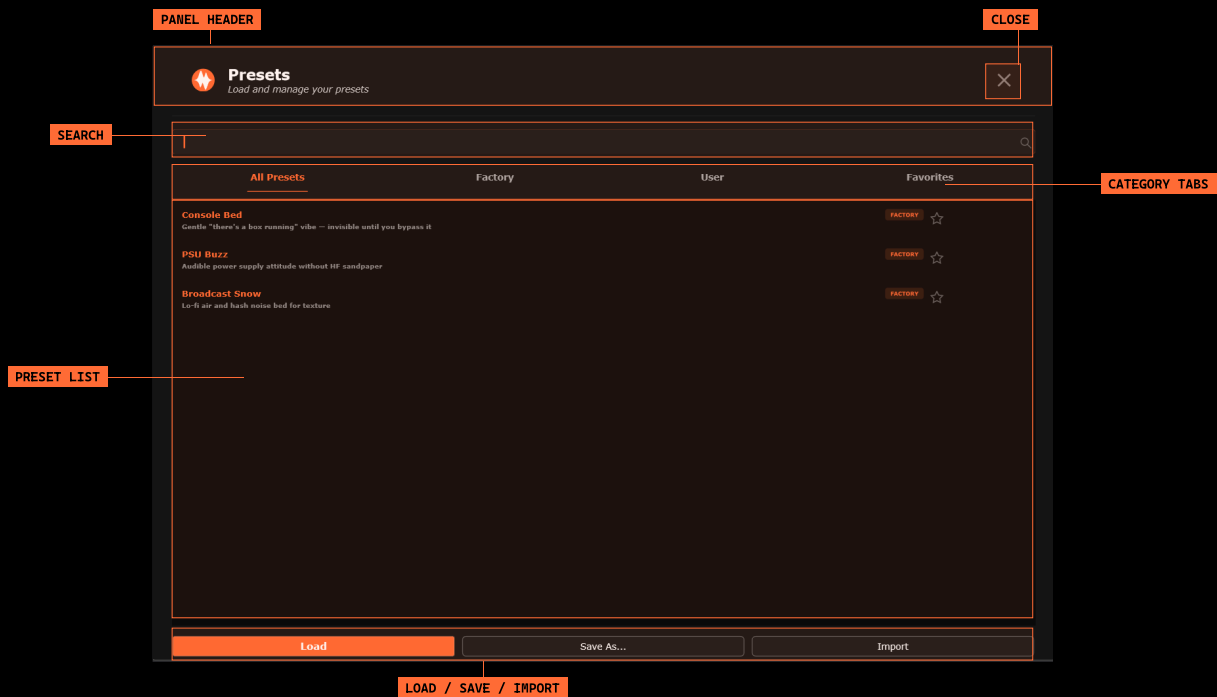


FIG. 7 – PRESETS PANEL: BROWSE AND MANAGE PRESETS

10. LICENSING & SUPPORT

OFFLINE LICENSING

DeepFryer uses **offline cryptographic validation (Ed25519)**. Your license key works without requiring an internet connection for normal plugin use.

DEMO MODE

Fully functional with periodic **0.5s noise bursts** every 60 seconds. **Noise bursts will be printed in renders/exports.**

Important: Enter or paste your license key in the Product Key field, then click Activate.

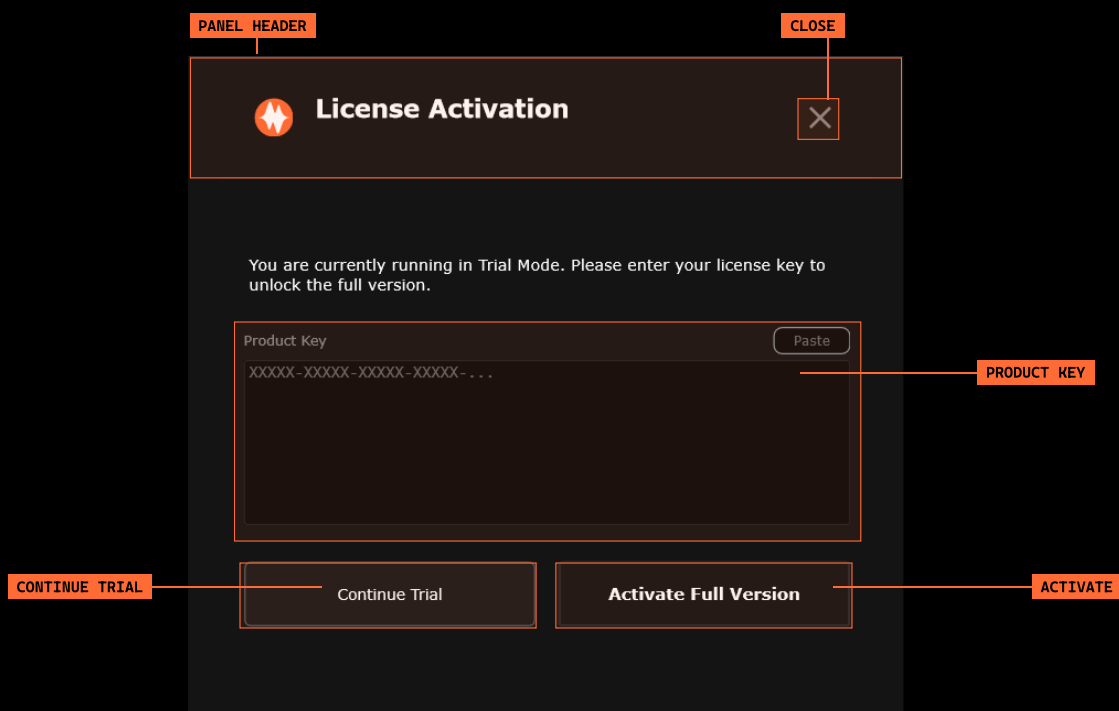


FIG. 8 – LICENSING PANEL (CLICK THE LICENSE BADGE IN THE HEADER)

11. SIGNAL CHAIN RECOMMENDATIONS

Option A: Subtle Bus Density (Recommended)

Mix bus: your EQ / compression → **DeepFryer** → final limiter
Use low Drive (20–35%) for H2-dominant body and roundness.

Option B: Track Saturation

Track: **DeepFryer** → EQ → compressor
Push Drive to 40–60% for audible harmonic content before dynamics.

Option C: Parallel Crunch

Track: **DeepFryer** with high Drive (70%+) and Mix at 30–50%
Heavy saturation blended parallel for texture without destruction.

STARTER VALUES

PARAMETER	SAFE START	PUSH IT	HIGH-DRIVE NOTES
Drive	25%	50%	80%+
Tilt	0%	±30%	±80%
Mix (parallel)	100%	50%	30% at high Drive
Quality	Design (2×)	Mix (4×)	Use higher oversampling for high Drive

Best Practices:

- For subtle saturation, start around 20–30% Drive.
- For high-drive settings, use Design (2×), Mix (4×), or Master (8×) for cleaner oversampled rendering.
- Use Auto-Gain when bypass-comparing, because Drive changes level as well as tone.

DeepFryer is a product of MousePlugins.
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