

MOD-05 / SPECTRAL

HORIZON

SPECTRAL

FREE • AGPLV3

VST3 • AU

HORIZON captures a single spectral frame and **holds it** — but the freeze isn't static. With RATE off it's a sustained pad; raise RATE — and especially with SYNC — and the same instant **gates to the beat** as a rhythmic stutter. One gesture suspends a moment; one knob makes it groove.

// ANATOMY



// CONTROLS — COMPLETE REFERENCE

SOUND

FREEZE — The central gesture. Hit it and the instant under your cursor is captured and held — a latch you can automate.

RATE / SYNC — The re-trigger of the freeze. Off = a sustained pad; fast — and locked to tempo (1/16–2 bars) — = a rhythmic stutter that beats with the track.

WHISPER — Phase coherence vs randomization: from glassy and tonal (clean by default) to diffuse and airy whisperization.

SPREAD — De-correlates the freeze across the field — centred to fully spread, constant-power, so it stays mono-safe.

DUCK — The frozen wet steps back when the dry hits and returns in the gaps — the freeze breathes with the performance.

MIX • IN PHASE — Dry/wet blend so you can freeze under the live audio. IN PHASE folds the wide freeze to mono-safe in one click.

GLOBAL & I/O

IN / OUT — Input and output gain trim, smoothly ramped, with an output peak meter and clip LED.

SIZE • S/M/L — Three interface scales; your choice is remembered across every OVNI plugin.

PRESETS — Save your own and browse the bank with ◀ name ▶.

A/B — Hold two settings and flip between them to compare.

BYPASS — The power icon bypasses the effect for a clean A/B against the dry signal.

// PARAMETERS • EXACT RANGES

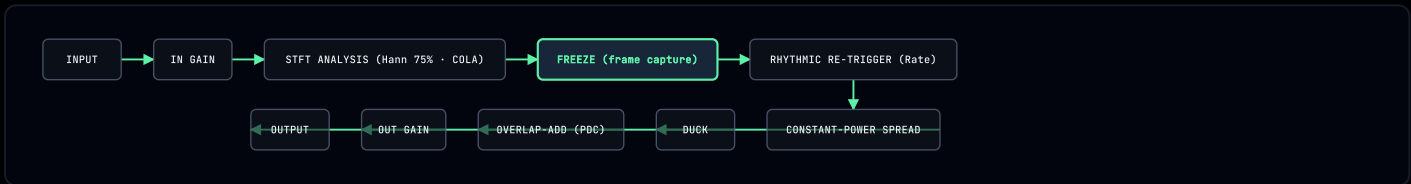
	RANGE	DEFAULT
FREEZE	Off • On	Off
WHISPER	0-100%	12%
SPREAD	0-100%	50%
DUCK	0-100%	0%
MIX	0-100%	100%
RATE (FREE)	0-8 Hz • 0 = sustained	0 Hz • Off
RATE SYNC	Off • On	Off

	RANGE	DEFAULT
RATE DIV	1/16 • 1/8 • 1/4 • 1/2 • 1 • 2 bar	1/4
LOW CUT	0-100% → 20-500 Hz • log	0% • off
HI CUT	0-100% → 20 kHz-1.5 kHz • log • inverted	0% • off
INPUT GAIN	-24...+24 dB	0 dB
OUTPUT GAIN	-24...+24 dB	0 dB
IN PHASE • MONO-SAFE	Off • On	Off
BYPASS	Off • On	Off

// HOW IT WORKS

STFT freeze, re-gated to tempo.

The same spectral engine as AURORA — but instead of stretching time, it stops it and re-fires it on the beat.



// UNDER THE HOOD

STFT / OVERLAP-ADD

A Hann window at 75% overlap with COLA captures the frame magnitude and re-synthesizes it indefinitely — the same spectral engine that drives AURORA, here used to stop time instead of stretch it.

PHASE CHARACTER

Coherent phase keeps the freeze glassy and tonal; randomizing it with WHISPER blurs it toward airy texture. The default is coherent — clean, not noisy. The WHISPER toll is phase, not alias (−36.2 dBFS, declared).

PEAK-LOCKED FREEZE (NO INTER-BIN BEATING)

A naïve freeze advances each bin at its own bin frequency, so bins within one Hann lobe drift at different rates and beat against each other — the held tone pulses (amplitude modulation at the frame rate, measured 10–17 dB) and loses level. HORIZON uses Laroche–Dolson identity phase-locking: every bin in a lobe advances at its dominant PEAK’s frequency, so each lobe moves rigidly, inter-bin beating cancels (<2 dB residual) and the freeze holds dead-steady at full level — magnitude, timbre and alias floor untouched.

RHYTHMIC RE-TRIGGER

The held frame is gated at the Rate. In SYNC the period is derived from the host tempo (bpm/60 / beats) and locked to ppqPosition, so the pulse never drifts against the song.

CONSTANT-POWER SPREAD

Per-bin L/R phase de-correlation with equal power in both channels. Because the width comes from de-correlation and not from a delay, it never folds into a structured comb filter in mono (unlike a Haas widener); IN PHASE collapses the offsets for the exact mono-safe fold (+1.000 correlation).

RATE CAP — GROOVE, NOT MODULATION

The rhythmic re-trigger is hard-capped at 8 Hz. Above roughly that rate a gate stops reading as rhythm and starts reading as amplitude modulation — audible roughness / a buzzing sideband rather than a stutter. Capping the raised-cosine gate under that bound keeps every division (down to 1/16) a musical groove instead of ring-mod-style AM. This is the same ~20 Hz AM threshold that governs AURORA’s Motion clamp, applied here to the gate rate.

SOFT GATE

Every re-trigger uses a smooth envelope (short attack/decay) plus a block crossfade, so the stutter never clicks or rings — even at the fastest divisions.

HONEST LATENCY

Block latency (N = 2048 smp ≤ 48 kHz; 4096 @ 96 kHz) is reported to the host and PDC-compensated. The internal duck sidechain and flush-to-zero keep it click- and clip-free. Alias floor is STFT-identity −119.82 dBFS.

MONO-AUDIBLE SHIMMER

Because the SPREAD width lives in the side (opposite L/R phase), it cancels in a mono sum. HORIZON adds a separate diffusion that survives mono: each bin’s magnitude breathes at its own fixed-random phase under a slow 0.18 Hz sub-audio LFO, applied identically to L and R. The energy drifts across the spectrum as a glassy wash you can hear summed to mono, while the correlation/width are untouched. Its depth follows √WHISPER (present already at the default 12) and it is high-pass weighted above 160 Hz so the low end stays solid; the LFO sits far below the ~20 Hz AM threshold, so it reads as diffusion, not tremolo.

// MEASURED PERFORMANCE

Alias floor · STFT identity	-119.82 dBFS	WHISPER toll · phase, not alias	-36.2 dBFS · declared
Image correlation · Spread 100%	+0.326 (IACC, opens)	IN PHASE correlation · mono-safe	+1.000 · bass-mono
Anti-clip true-peak	0.848	CPU · 48 kHz / 512	0.50%
Latency	2048 smp · 42.7 ms@48k · PDC		

Conditions — alias floor is the STFT identity path (Mix 100%, Freeze off); the WHISPER toll is phase, not alias, and is declared separately. Image correlation (IACC) on pink noise at Spread 100%; true-peak swept across 44.1 / 48 / 96 kHz. CPU = 48 kHz / 512-sample blocks.

// LATENCY · PER SAMPLE RATE

	44.1 KHZ	48 KHZ	96 KHZ
REPORTED LATENCY	2048 samples / 46.4 ms	2048 samples / 42.7 ms	4096 samples / 42.7 ms

PDC-reported to host (one STFT frame: 2048 samples up to 48 kHz, 4096 from 88.2 kHz).

// SPECIFICATIONS

SYSTEM · FORMATS		AUDIO · PROJECT	
FORMATS	AU · VST3 (macOS) · VST3 (Windows)	SAMPLE RATES	44.1 – 192 kHz (host)
SYSTEMS	macOS 11+ · Windows 10+	PRECISION	64-bit float
ARCHITECTURE	Universal · Apple Silicon + Intel	LATENCY	2048 smp · 42.7 ms @48k · PDC
I/O	mono / stereo in → stereo out	PRESETS	6 · 3 Production + 3 Sound Design
MIDI	Program Change · preset recall	LICENSE	AGPLv3 · open-source at launch

// TRANSPARENCY & HONESTY

Dry path is transparent — Bypass is a chassis pass-through. The alias floor is the STFT identity path (–119.82 dBFS); the WHISPER toll (–36.2 dBFS) is phase de-coherence, not aliasing, and is declared as such. Latency is reported and PDC-compensated. No analog modeling. THD+N, frequency response and SNR are not characterised.

// INSTALL (FREE & OPEN-SOURCE)

Free & open-source (AGPLv3), not yet code-signed. On **macOS**, grab the **.pkg** installer from [ovniaudio.com](#) and double-click — it installs itself; if Gatekeeper objects, **right-click → Open** (macOS ≤ 14) or System Settings → Privacy & Security → **Open Anyway** (macOS 15). On **Windows**, unblock the ZIP (right-click → Properties → Unblock), copy the **.vst3** folder to **C:\Program Files\Common Files\VST3**, and if SmartScreen warns choose **More info → Run anyway. AGPLv3 · open-source at launch.**