

Rave Generation



ALIEN DRIVE



Wavetable Waveshaper & Distortion

User Manual

Overview

Alien Drive is a wavetable waveshaper. Instead of one fixed distortion curve, the signal reads its way through a bank of 256 curves, and how far it travels through the curve is itself a control. Push it far enough and the signal folds back on itself rather than flattening, which is where it stops sounding like an overdrive. A germanium diode overdrive with a tunable tone band sits in front of the shaper, and a shelving EQ with a resonant peak sits behind it. Around all of it runs a modulation system: an envelope follower that walks the wavetable in time with your transients, and a tempo-locked LFO with seven destinations.

Key Features

- A 16 x 16 wavetable bank - Curve X picks the family, Curve Y the hardness within it. Both axes interpolate, so you can sit between two curves.
- Wavefolding rather than clipping - Fold Gain sets how much of the curve a full-scale signal sweeps. The signal folds and generates harmonics a clipper cannot produce.
- Envelope-driven wavetable movement - Mod X and Mod Y push the curve position up to seven waves in either direction, following your transients.
- A tempo-locked LFO with five modes and seven destinations - Fold Gain, Fold Mix, Clip, Tone, EQ Freq, Peak and Dry/Wet, each with its own bipolar depth.
- Restart mode - the LFO begins at phase 0 every time you press play, so what you audition is what you record.
- Rotate - shifts where the curve is read, fold lands on a different part of the waveform.
- A germanium diode overdrive whose tone control decides which band gets driven, 10 Hz to 10 kHz, leaving the rest untouched.
- Shelving EQ with a resonant peak whose gain and bandwidth move together, running from broad emphasis to focused ringing.
- Off / 2x / 4x / 8x oversampling on the waveshaper and the output clipper.

Signal Flow

Input -> Comp -> Overdrive (Tone + Drive) -> Waveshaper -> Fold Mix -> EQ -> Gate -> Wet Level -> Dry/Wet -> Clip -> Output

Two things are worth knowing. Tone sits before the shaper, so it decides what gets folded rather than colouring the result afterwards - which is why modulating Tone changes the distortion character and not just the tone. And Clip sits after the dry/wet mix, so its ceiling holds regardless of what the wet path, the dry path or a blend of the two is doing.



The Panel

The top row runs INPUT, OVERDRIVE, EQ and GATE. The bottom row is the WAVESHAPER on the left - with the transfer curve display and the LFO controls beneath it - and OUTPUT on the right. The knobs are colour-coded by job: green for the waveshaper and its modulation, red for the two distortion stages, blue for the EQ, black for levels and times.

The graph draws the shaper's actual transfer curve at the current settings: input across, output up. The brighter band is the span a full-scale input sweeps at the current Fold Gain - anything outside it is curve you are not reaching. It follows Curve X, Curve Y, Rotate and the envelope, so it moves as you play.

Hovering over any control puts a short description in the bar at the bottom of the panel.

WAVESHAPER

The heart of the plugin. Your signal is used to read a position in a wavetable, and what comes out is whatever the wave says at that position. Because a wave turns around, a signal driven far enough folds back instead of flattening - and each fold adds harmonics that a clipper never generates.

Curve X and Curve Y address a 16 x 16 bank. X selects the family, which is a distinct character rather than a degree of the same thing; Y sets how sharply that family turns. Both axes interpolate, so the CURVE pill can free the knobs from their detents and let you sit between two curves. Those in-between positions are genuinely different nonlinearities, not crossfades of their neighbours, and most of the change between two adjacent waves happens in the first quarter of the gap.

Rotate shifts where in the wave the signal starts reading. The curve keeps its shape, but the fold lands on a different part of the waveform and a different set of harmonics comes out.

Waveshaper Controls

Curve X	Selects the curve family (1 to 16). Position 1 is close to clean, 16 is aggressive.
Curve Y	Hardness within the selected family (1 to 16). Where Curve X changes what the curve is, Curve Y changes how sharply it turns.
Curve	Step gives 16 detents, one per wave. Free gives 0.1 steps, so you can stop between two curves.
Rotate	Shifts where in the wave the signal starts reading (-180 to +180 degrees), moving the fold to a different part of the waveform.
Fold Gain	How much of the wave a full-scale input sweeps (0 to 100%). Below noon you are shaping; past noon the signal folds. The main intensity control.
Fold Mix	Blends the shaper's output against its own input (0 to 100%, default 50). The dry side here is the signal arriving from the overdrive, not the plugin's input. Around 40% keeps the transient and lets the fold fill in behind it.
Mod X	How far the envelope follower pushes Curve X, in wave positions (-7 to +7). Loud passages travel through the bank, quiet ones sit still.
Mod Y	The same for Curve Y (-7 to +7). If Curve Y is already at 16 there is nowhere further to go, so use a negative value.
Env Release	How long the envelope follower holds a transient (1 to 1000 ms, default 100), which decides how far Mod X and Mod Y actually travel. Keep it under about half the gap between hits - above that the follower never recovers and the wavetable stops moving. On a 120 BPM quarter-note loop that means roughly 250 ms or less.

MODULATION

The LFO is a second modulation source, independent of the envelope follower. It is off by default, and while it is off its rate and shape controls and all seven depth pills stay hidden. Depth pills sit under Fold Gain, Fold Mix, Clip, Tone, EQ Freq, Peak and Dry/Wet. Drag one to set how far the LFO moves that control, and the ring around the knob shows the span it covers. Depth is bipolar: the destination swings above and below where the knob is set, so at a given depth +50% and -50% cover the same range, 180 degrees apart in time. The sign starts to matter when you modulate two destinations at once and want one to rise as the other falls.

The five modes differ only in where phase comes from. Sync derives it from the host's bar, so the modulation is tied to the arrangement and bar 3 can differ from bar 4 - but pressing play off-grid lands it differently. Restart is tempo-locked in the same way but always begins at phase 0 when the transport starts, so what you hear while dialling in is what you get when you record. Trig follows the audio rather than the clock, restarting on each transient. Free ignores tempo and runs at a rate in hertz.

Modulation Controls

LFO	Off, Sync, Trig, Free or Restart.
Rate	Note division from 2 bars down to 1/32, including triplets. In Free mode this pill shows hertz instead (0.05 to 20 Hz) and is dragged rather than picked from a list.
Shape	Sine, Triangle, Saw, Square or Sample and Hold.
Depth pills	How far the LFO moves each destination (-100 to +100%). Seven of them: Fold Gain, Fold Mix, Clip, Tone, EQ Freq, Peak and Dry/Wet.

OVERDRIVE

A germanium diode stage with a tunable tone band in front of it. Germanium clips softly and asymmetrically, so it adds weight and even harmonics rather than a hard edge. The tone control is not an EQ on the output - it decides which band is sent into the diodes. The band is about two and a half octaves wide and everything outside it passes through untouched. Low settings drive the body of a kick and leave the click alone; high settings do the opposite.

Overdrive Controls

Drive	How hard the diodes are pushed (0 to 60 dB).
Tone	Which band gets driven (10 Hz to 10 kHz, 250 Hz at noon).

EQ

A low shelf and a high shelf that pivot around a shared corner, with a resonant peak at the same point. Because all three share one frequency, the EQ Freq control moves the whole section at once. EQ Freq has no gain of its own. With Bass at noon, Treble at 0 and Peak at 0 the section is flat and moving the corner does nothing at all. Raise Bass or Peak first - those are the two that make the sweep audible. Treble is the weakest partner, and pushing it further actually reduces the effect, because it lifts the whole output and the relative change shrinks.

EQ Controls

Bass	Low shelf at the EQ Freq point (full cut to +24 dB, 0 dB at 12 o'clock). Below noon it cuts steeply, above noon it boosts.
Treble	High shelf at the EQ Freq point (-24 to +24 dB).
EQ Freq	Where the shelves pivot and the peak sits (200 Hz to 3.2 kHz, 800 Hz at centre).
Peak	A peaking band at the EQ Freq point (0 to 100%). Gain rises and bandwidth narrows together, so it moves from broad emphasis into focused ringing. Past 75% it is a resonance rather than an EQ move.

Master Controls

Level in, dynamics, the gate, and everything after the shaper.

Input and Dynamics

Input	Gain into the plugin (0 to +24 dB). The waveshaper is level-dependent, so this sets how deep into the curve your signal reaches - the first thing to reach for if the effect feels too subtle.
Comp	Compression amount (0 to 100%). Threshold falls and ratio rises together. It sits before the distortion, so it evens out how hard different hits push into the shaper.

Gate

Threshold	The level the gate opens at (-80 to 0 dB, default -80). Fully left disables the gate completely - it does not process at all. One click up is a fully working gate, so leave it at the bottom unless you want it.
Release	How gradually the gate closes (10 to 2000 ms). The knob is tapered so the short end, where drums live, takes more of the travel.

Output

Wet Level	Level of the processed signal before the dry/wet mix (-60 to 0 dB).
Dry/Wet	Parallel mix against the plugin's input (0 to 100%, default 100). Distortion is usually run fully wet; lower it for parallel processing.
Clip	Drives the signal into a hard 0 dBFS ceiling (0 to 24 dB). At 0 it only catches peaks that would have overshoot; wound up it is a distortion stage in its own right. It sits after the mix, so the ceiling always holds.
Output	Final output level (-60 to 0 dB).
Bypass	Takes the effect out of circuit. Output stays live, Input does not, so at stock settings bypass is exactly unity and safe for A/B.
Quality	Oversampling: Off, 2x, 4x or 8x (default 4x). The waveshaper and the clipper both generate harmonics well past Nyquist, which fold back into the audible band at base rate. 4x is the least that keeps hard folding clean. Quality Off keeps aliased folding available, which is a legitimate sound.

Quick Start

Insert Alien Drive on a drum, bass, synth or full loop. It is a distortion, so it is usually run fully wet - Dry/Wet defaults to 100%.

Set the input first. The waveshaper responds to level, so Input decides how far into the curve your signal reaches. Then start with Curve X and Curve Y at 1 and bring Fold Gain up slowly: below noon you are shaping, past noon the signal starts folding. Walk Curve X up through the families with Fold Gain somewhere past 40% to hear how different they are. Finally use Fold Mix to decide how much of the transient survives, and Clip to hold the peak.

Presets & Starting Points

Weight on a kick: Input +6 to +12 dB, Curve X 3 to 5, Fold Gain 40 to 60%, Fold Mix around 40%. Tone low, 60 to 150 Hz, so the body is driven and the click passes clean. Clip at 3 to 6 dB to hold the peak.

Wavetable movement on drums: Mod X +4 or +5 with Env Release 20 to 50 ms. Each hit walks the curve and settles back before the next one arrives.

Rhythmic fold: LFO to Restart, Rate 1/8, Shape Sine, 40 to 70% depth on Fold Gain. Add a little depth on Fold Mix in the opposite direction so the dry side opens as the fold closes.

Metallic and ringing: Curve X 10 to 14, Fold Gain past 70%, Peak 60 to 80% with EQ Freq between 400 Hz and 1.5 kHz. Modulating EQ Freq turns the ringing into a sweep.

Between two curves: switch CURVE to Free and move Curve X in tenths. The territory between two families is a curve neither one produces, and the biggest changes are in the first quarter step after each whole number.

Parallel grit: push Fold Gain and Drive much harder than usual, then pull Dry/Wet back to 30 to 50%. The dry signal keeps the transient and the low end while the wet side adds density.

Aliased on purpose: set Quality to Off and wind Clip up. The fold-back lands in the audible band as inharmonic content - unmusical by design, and useful when that is what you want.

Troubleshooting & FAQ

I don't hear much happening

The waveshaper responds to level, so raise Input - at low levels the signal only reaches the gentle part of the curve. Then check Fold Gain, which is at 0 by default, and Fold Mix, which decides how much of the shaped signal you hear.

Mod X and Mod Y aren't moving the wavetable

Almost always Env Release being too long. The follower has to fall back between hits for the position to move at all. On a 500 ms kick loop, anything above roughly 400 ms leaves it pinned and the wavetable frozen. Drop it to 20 to 50 ms.

EQ Freq doesn't seem to do anything

It moves the corner that the shelves and the peak share, and has no gain of its own. With Bass at noon, Treble at 0 and Peak at 0 there is nothing for the corner to move. Raise Bass or Peak first.

The gate changes the sound with the threshold all the way down

Check it reads exactly -80.0. The threshold steps in 0.8 dB, so one click up is -79.2 and the gate is fully live - and down there it closes on the noise floor between hits and re-opens on every one. At -80.0 it does not process at all.

The first hit after pressing play sounds different from the rest

If Mod X or Mod Y is in use, the envelope follower starts from silence on the first hit where later hits start from the previous one's tail. It is confined to that first hit and is inaudible at short Env Release settings.

The sound changes depending on where I press play

That is Sync working as intended - phase comes from the song position, so starting off-grid lands the modulation differently. Use Restart if you want the same result wherever you start.

Why is there latency?

Oversampling adds a small fixed delay, reported to the host so it compensates automatically. Set Quality to Off for zero latency.

Bypass doesn't sound like the input

Bypass keeps Output live and takes Input out of circuit, so at stock settings it is exactly unity. If you have moved Output, bypass reflects it - deliberately, so you can level-match before comparing.

Specifications

SECTIONS: Input - Overdrive - Waveshaper - EQ - Gate - Output.

WAVESHAPER: 16 x 16 wavetable bank, 2048 samples per curve, bilinear interpolation on both axes; Fold Gain, Fold Mix and Rotate; stepped or free curve selection.

OVERDRIVE: Germanium diode model, 0 to 60 dB, with a 2.5-octave tone band tunable from 10 Hz to 10 kHz.

EQ: Low and high shelves plus a resonant peak sharing one corner, 200 Hz to 3.2 kHz; Bass full-cut to +24 dB, Treble +/-24 dB, Peak gain and bandwidth coupled.

MODULATION: Envelope follower to Curve X and Curve Y (+/-7 wave positions, 1 to 1000 ms release); LFO with Off / Sync / Trig / Free / Restart, ten note divisions or 0.05 to 20 Hz, five shapes, seven bipolar destinations.

DYNAMICS: Single-knob compressor before the distortion; noise gate after the EQ with adjustable threshold and release.

OUTPUT: Wet level, dry/wet mix, hard 0 dBFS ceiling with up to 24 dB of drive into it, output trim, unity bypass.

OVERSAMPLING: Off / 2x / 4x / 8x on the waveshaper and the output clipper; latency reported to the host.

CHANNELS: Stereo. Mono-compatible.

Support

For technical support, updates, and additional information:

Website: ravegeneration.io

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