

Peakline

User Guide | Parish Audio

Peak shaper and loudness clipper with three clipping modes, low-frequency protection, edge control, and up to 8x oversampling.



Product page: <https://parishaudio.com/products/peakline>

Peakline is designed to shape peaks and increase controlled loudness without reducing the process to a single hard clipper. Input, Mode, Shape, Edge, Low Protect, Drive, Ceiling, Mix, and Oversampling let you choose how the signal reaches and behaves around the final ceiling.

1. Quick Start

1. Insert Peakline on a track, drum bus, mix bus, or master where you want tighter peaks or more controlled loudness.
2. Choose a Mode: Soft for rounded saturation, Hard for firmer clipping, or Punch for a more assertive shaping curve.
3. Raise Input to push the signal harder into the selected Mode, then use Shape to decide how strongly that mode bends or clips the waveform.
4. Set Ceiling to the maximum wet-path peak level you want Peakline to allow.
5. Use Drive to raise or lower the shaped signal before the final Ceiling. More positive Drive pushes harder into the final ceiling clipper.
6. Use Low Protect to keep deep low-frequency content from dominating the nonlinear shaping, and use Edge to emphasize or soften upper-frequency attack.
7. Set Mix for parallel processing if desired, then use Output for final level matching.

2. Signal Flow at a Glance

- Input gain is applied first, followed by a very-low-frequency DC blocking filter.

- Peakline separates a low-frequency component below roughly 150 Hz for Low Protect and a high-frequency component above roughly 2.2 kHz for Edge shaping.
- Edge adds or subtracts a high-frequency component before the nonlinear Mode stage.
- Low Protect reduces part of the low-frequency content before the Mode stage, then restores some of that low end afterward so bass is less dominated by the main shaping curve.
- The selected Soft, Hard, or Punch Mode applies the main nonlinear waveform shaping. Shape controls how strongly the selected curve is driven or tightened.
- Drive is applied after the Mode stage and before the final Ceiling, so it determines how hard the shaped signal is pushed into the ceiling clamp.
- Ceiling applies a final symmetric peak limit on the wet path.
- Mix blends the original dry signal with the processed wet path, and Output sets the final active-plugin level.
- When oversampling is enabled, the nonlinear Mode stage, low-frequency reinjection, Drive, and final Ceiling are processed at 2x, 4x, or 8x sample rate before returning to the host rate.

3. Clipping Modes

Mode	General behavior	Useful direction
Soft	Smooth tanh-style saturation with a rounded transition into limiting.	Mix bus, mastering, vocals, bass, or sources where you want peak control with softer edges.
Hard	A firmer threshold-style clip whose effective threshold moves lower as Shape increases.	Tighter peak containment, more obvious clipping, electronic drums, bass, or aggressive loudness work.
Punch	An atan-style saturation curve with an additional punch/edge term as Shape rises.	Drums, snares, guitars, or material where you want stronger perceived attack and character.

Important: Punch is a nonlinear shaping curve; it is not a transient detector with attack/release controls.

4. Main Controls

Input -24 to +24 dB

Sets the level entering Peakline. Raising Input drives the selected Mode harder before the later Drive and Ceiling stages.

Practical note: Input and Drive are not duplicates: Input affects how hard the nonlinear Mode stage is hit, while Drive acts after that shaping stage.

Shape 0 to 100%

Controls the intensity/curvature of the selected Mode. In Soft mode it increases saturation strength, in Hard mode it lowers the clipping threshold, and in Punch mode it increases the atan shaping and punch component.

Ceiling -12 to 0 dB

Sets the final peak limit for the processed wet path. After Mode shaping and Drive, Peakline hard-limits the wet signal to this level.

Practical note: The Clip Amount meter specifically reflects activity at this final ceiling stage, not all harmonic shaping that happens earlier.

Drive -24 to +24 dB

Applies gain after the Mode stage and low-frequency reinjection, immediately before the final Ceiling. Positive Drive pushes the shaped signal harder into the ceiling and increases clip amount; negative Drive reduces that pressure.

Practical note: The underlying parameter is named Output in the processor code, but the current user interface labels it Drive.

Mix 0 to 100%

Blends the untouched dry source with the fully processed wet path. 100% is fully processed; lower settings are useful for parallel clipping and peak shaping.

Output -24 to +24 dB

Sets the final master level after the dry/wet Mix stage.

Practical note: The underlying processor parameter is named Master; the visible control is labeled Output. Factory and user preset loads preserve the current Output setting.

5. Edge and Low Protect

Edge -100 to +100%

Shapes the upper-frequency component above roughly 2.2 kHz before clipping. Positive values add more high-frequency energy into the nonlinear stage for extra bite and definition; negative values reduce that component for a smoother, less aggressive edge.

Practical note: Because Edge changes the signal before clipping, it can change both tone and how the nonlinear stage reacts.

Low Protect 0 to 100%

Reduces part of the content below roughly 150 Hz before the Mode stage, then reintroduces some low-frequency content after that shaping stage. This helps keep kick fundamentals, bass, and sub energy from dominating the main nonlinear curve.

Practical note: Low Protect does not completely bypass the final Drive/Ceiling stages for the lows. It mainly protects low frequencies from the Mode shaping stage and then restores some of their weight before final clipping.

6. Oversampling

Setting	Behavior
Off	No oversampling; zero oversampling latency and lowest CPU use.
2x	Moderate reduction of aliasing with lower CPU/latency than higher modes.
4x	Factory default; stronger aliasing reduction with moderate additional CPU and latency.
8x	Highest available oversampling quality and highest CPU/latency cost.

With oversampling enabled, Peakline keeps the main alias-producing nonlinear stages inside the oversampled domain: Mode shaping, Low Protect reinjection, Drive, and the final Ceiling. The dry path is latency-aligned before Mix so parallel blends remain time-aligned.

7. Meters and Transfer Graph

Display	Meaning
Input meters	Stereo level meters measured after Input gain.
Output meters	Stereo level meters measured at the final plugin output.
Clip Amount	Relative activity meter derived from how much the post-Drive signal is being reduced by the final Ceiling.
Transfer graph	Visualizes the approximate input/output curve for Mode, Shape, Input, Drive, and Ceiling. It is a useful shaping reference, not a complete visualization of Edge, Low Protect, Mix, or final Output.

8. Practical Workflows

Goal	Starting approach
Master / mix loudness	Start with Soft mode, modest Input, lower Shape, Ceiling around -1 dB, conservative Drive, high Low Protect, and 4x or 8x oversampling. Compare at matched Output level.
Punchy drums	Try Punch mode, moderate-to-high Shape, positive Edge, and enough Input/Drive to create visible Clip Amount while keeping Low Protect around the middle if the kick needs weight.
Hard electronic clipping	Use Hard mode, increase Shape, set a deliberate Ceiling, then use Drive to control how much signal reaches that ceiling.

Goal	Starting approach
Parallel smash	Use a stronger Punch or Hard setting, then reduce Mix so the clipped path reinforces the original transients/body instead of replacing them.
Vocal peak control	Try Soft mode, modest Shape, moderate Low Protect, low positive Edge, and a ceiling around -1 to -2 dB. Use Mix below 100% if the result feels too dense.
808 / bass control	Use Hard or Soft mode with high Low Protect. Let the harmonically richer portion clip while preserving more of the deep fundamental character.
Aggressive guitars	Use Punch mode, positive Edge, moderate-to-high Shape, and enough Drive to flatten sharp peaks while adding density.

9. Factory Presets

Preset	Mode	Starting character/settings
Punchy Drums	Punch	+6 dB Input, 56% Shape, -1 dB Ceiling, +2 dB Drive, 18% Edge, 52% Low Protect, 4x.
Loud Mix Bus	Soft	+3 dB Input, 34% Shape, -1 dB Ceiling, +1 dB Drive, 80% Mix, 68% Low Protect, 4x.
Snare Forward	Punch	+8 dB Input, 62% Shape, -1.8 dB Ceiling, +0.5 dB Drive, 36% Edge, 34% Low Protect, 2x.
Clipper Glue	Hard	+4 dB Input, 46% Shape, -0.8 dB Ceiling, +1.5 dB Drive, 72% Mix, 72% Low Protect, 4x.
Warm Masters	Soft	+2 dB Input, 24% Shape, -1.2 dB Ceiling, -10% Edge, 84% Low Protect, 8x.
Parallel Smash	Punch	+10 dB Input, 72% Shape, -2.2 dB Ceiling, 42% Mix, 20% Edge, 40% Low Protect, 4x.
Vocal Peak Tame	Soft	+3 dB Input, 28% Shape, -1.4 dB Ceiling, -0.5 dB Drive, 80% Mix, 78% Low Protect, 2x.
808 Grip	Hard	+5 dB Input, 52% Shape, -1.5 dB Ceiling, +1 dB Drive, -8% Edge, 92% Low Protect, 4x.
Aggro Guitars	Punch	+7 dB Input, 58% Shape, -1.2 dB Ceiling, +1.2 dB Drive, 28% Edge, 38% Low Protect, 4x.
Clean Loudness	Soft	+1.5 dB Input, 18% Shape, -0.8 dB Ceiling, 0 dB Drive, 88% Low Protect, 8x.

Preset behavior: Factory presets preserve the current Output setting. User preset loading also preserves the current Output setting, so recalling a sound does not unexpectedly change your final gain staging.

10. Presets, Undo/Redo, and Resizing

- Peakline includes factory presets and supports saving, loading, renaming, and deleting user presets.
- Control changes, Mode changes, Oversampling changes, and preset actions participate in Peakline's undo/redo system.
- Numeric value readouts are editable directly in the current interface.
- The interface is resizable and the saved window dimensions are stored with the plugin state.

11. Troubleshooting

Symptom	What to try / explanation
I hear distortion before the Clip Amount meter moves much.	The Mode stage itself is nonlinear. Clip Amount reflects the later final Ceiling clamp, so Soft/Hard/Punch coloration can be audible even when the final ceiling is not clipping heavily.
The low end gets too flattened.	Raise Low Protect, reduce Input/Shape, or lower Drive. Low Protect reduces how much sub/low-bass energy feeds the main Mode shaping stage.
The sound is too bright or aggressive.	Reduce Edge or move it negative, use Soft instead of Punch/Hard, or lower Shape/Input.
The result is too dense.	Reduce Mix for parallel blending, reduce Input/Drive, or use a gentler Mode/Shape setting.

Symptom	What to try / explanation
CPU usage increased after changing oversampling.	Higher oversampling modes process the nonlinear stages at higher internal sample rates and require more CPU. Use 2x or 4x while mixing if 8x is unnecessary.
My DAW reports latency with oversampling enabled.	That is expected. Peakline reports oversampling latency and aligns the dry path so the internal Mix stays time-aligned.
Output level changes when Mix is at 0%.	That is expected. Output is after the Mix stage. Power bypass returns the untouched dry signal and is different from Mix at 0%.
A preset changed the sound but not the final Output level.	That is intentional. Factory and user preset recall preserve the current Output setting.

12. Technical Reference

Item	Specification
Mode	Soft / Hard / Punch
Input	-24 to +24 dB
Shape	0 to 100%
Ceiling	-12 to 0 dB
Drive	-24 to +24 dB (processor parameter ID: output)
Output	-24 to +24 dB (processor parameter ID: master)
Mix	0 to 100%
Edge	-100 to +100%
Low Protect	0 to 100%
Oversampling	Off / 2x / 4x / 8x
Low Protect split	Approx. 150 Hz low-pass component
Edge split	Approx. 2.2 kHz high-pass component
DC blocker	Approx. 18 Hz
Main channel layouts	Mono or stereo
Plugin formats	Windows VST3; macOS VST3 and AU

13. Product Information and Support

For current downloads, product information, and updates:

<https://parishaudio.com/products/peakline>

Parish Audio support: <https://parishaudio.com/contact>