

Vocal Saturator

User Guide | Parish Audio

Vocal-focused saturation with three Character modes, Body and Air shaping, parallel Mix, and output metering.



Product page: <https://parishaudio.com/products/vocal-saturator>

Vocal Saturator is designed to add harmonic density, body, presence, and upper-frequency lift without forcing you to build a separate saturation and tone-shaping chain. Choose a Character mode, set Drive, shape Body and Air, then blend the result with Mix.

1. Quick Start

1. Insert Vocal Saturator on a vocal track or vocal bus.
2. Choose a Character mode: Warm for rounded density, Forward for more assertive presence, or Open for a cleaner, more extended top end.
3. Raise Drive until the vocal gains the amount of density and harmonic color you want.
4. Use Body to add or reduce low-mid weight, then use Air to restore or emphasize upper-frequency openness.
5. Use Mix below 100% for parallel saturation when you want to keep more of the original vocal intact.
6. Set Output so the processed vocal is level-matched to bypass before judging the tonal change.

2. What Vocal Saturator Does

Vocal Saturator combines tone shaping and nonlinear saturation in a single signal path. The wet signal is high-pass filtered, shaped in the body region, driven into a Character-dependent saturation curve, gently level-compensated, then shaped by a high-frequency contour before final wet/dry blending.

- A fixed 75 Hz high-pass filter removes very low-frequency energy from the wet saturation path.
- Body applies a broad low-mid bell before saturation. Its center frequency changes with the selected Character mode.
- Drive increases level into the nonlinear stage and changes how strongly the saturation curve is engaged.

- Warm, Forward, and Open use different nonlinear shapes and different tone-shaping frequencies.
- A Character- and Drive-dependent low-pass stage controls the extreme top end after saturation.
- Air applies a high-shelf boost after saturation to restore or enhance openness.
- A low-frequency DC-blocking filter follows the nonlinear stage.
- Mix blends the untouched dry signal with the complete wet path, and Output sets final active-plugin level.

3. Character Modes

Mode	General behavior	Useful direction
Warm	Rounded, harmonically dense saturation with a mix of symmetric and asymmetric behavior.	Fuller vocals, softer edges, intimate or vintage-leaning tone.
Forward	Highest internal drive of the three modes with a stronger edge component and a slightly higher Body focus.	Presence, urgency, pop/rock vocals, or tracks that need to move toward the front of the mix.
Open	Lowest internal drive, a smoother nonlinear blend, lower Body focus, and the most extended high-frequency contour.	Airier vocals, cleaner lift, modern brightness, or when you want color without closing in the top end.

Important: These modes are purpose-built voicings. The code does not define them as emulations of specific analog hardware units.

4. Main Controls

Drive 0 to 100%

Controls how strongly the vocal is driven into the saturation stage. Higher values add more harmonic density and nonlinear character. Drive also influences the post-saturation high-frequency contour, so higher settings can become warmer or darker depending on Character and Air.

Practical note: Vocal Saturator applies level compensation after the nonlinear stage, so Drive is intended primarily as a color/intensity control rather than a simple volume knob.

Body -100 to +100%

Shapes a broad low-mid region before saturation. Positive values add weight and density; negative values reduce body and can clear space around the lower midrange.

Practical note: Internally this maps to approximately -6 dB to +6 dB of broad bell gain. The bell is centered around 250 Hz in Warm, 310 Hz in Forward, and 210 Hz in Open.

Air 0 to 100%

Adds upper-frequency lift after the saturation stage. It helps restore openness when stronger Drive settings darken the wet signal and can also add extra breath and sheen to a vocal.

Practical note: The Air control provides up to roughly 8 dB of high-shelf boost. The shelf frequency changes with Character.

Mix 0 to 100%

Blends the untouched dry vocal with the processed saturation path. 100% is fully processed; lower values create parallel saturation.

Practical note: Parallel settings are often effective when Drive is intentionally pushed harder than you would use at 100% wet.

Output -12 to +12 dB

Sets the final level after the wet/dry blend. Use it to match perceived loudness when comparing settings or bypassing the plugin.

5. How Body and Air Interact with Character

Character	Body center	Air shelf	Tonal tendency
Warm	250 Hz	7.2 kHz	Slightly lower top-end contour; useful when the goal is density and smoothness.
Forward	310 Hz	6.4 kHz	Higher low-mid focus and stronger saturation drive; designed to emphasize presence and forwardness.
Open	210 Hz	8.2 kHz	Lower body center and the most open upper-frequency contour; designed to retain more extension.

Drive, Air, and Character also influence the post-saturation low-pass frequency. As Drive rises, the low-pass generally moves lower; Air counteracts some of that darkening, and Open keeps the cutoff higher than the other modes. This is one reason the three Character buttons feel different even at the same Drive value.

6. Meters and Heat Display

The right side of the interface contains stereo Input and Output meters plus a Heat display. The Input and Output meters show relative signal level for the left and right channels. Heat is a relative saturation-activity indicator based on how much the wet signal is being changed by the processing; it is not a dB meter and should be used as a visual guide rather than an absolute measurement.

7. Practical Workflows

Goal	Starting approach
Natural vocal polish	Start with Warm, Drive around the lower third, a small positive Body setting, modest Air, and Mix at 100%. Level-match with Output.
Pop vocal presence	Try Forward with moderate Drive, neutral or slightly positive Body, and enough Air to keep the vocal bright. Back Mix down if the saturation becomes too obvious.
Airy modern vocal	Use Open, moderate Drive, slightly reduced Body if needed, and a stronger Air setting for lift without as much top-end softening.
Parallel heat	Push Drive harder than normal, choose Warm or Forward, then reduce Mix until the original articulation returns while the saturated layer supplies density underneath.
Thin vocal	Add Body before increasing Drive. Saturation then works on a fuller low-mid balance rather than simply making the thin vocal brighter or more aggressive.
Harsh vocal	Use Warm, reduce Air, avoid excessive Drive, and consider a small positive Body setting. If the vocal remains harsh, use dedicated harshness control elsewhere in the chain rather than expecting saturation alone to solve it.
Vocal bus cohesion	Use a lower Drive setting and 100% Mix, or moderate Drive with a slightly reduced Mix. Warm is a useful starting point for grouped backing vocals.

8. Factory Presets

Preset	Character	Purpose
Velvet Verse	Warm	Gentle warm saturation with added Body and restrained Air.
Pop Lift	Forward	More assertive presence with extra Air for a polished pop-vocal lift.

Preset	Character	Purpose
Broadcast Smooth	Warm	Low Drive, fuller Body, and restrained Air for controlled smoothness.
Parallel Heat	Forward	Higher Drive with Mix reduced to 38% for parallel density.
Airy Hook	Open	Reduced Body and stronger Air for a lighter, more open hook-vocal sound.
Intimate Tube	Warm	Stronger warm Drive, more Body, low Air, and a slightly reduced Mix for intimate density.

Preset behavior: Factory presets preserve the current Output setting. Loading a user preset also preserves Output, so changing sounds does not unexpectedly change your session gain staging.

9. Presets, Undo/Redo, and Resizing

- Vocal Saturator includes factory presets and supports saving, loading, renaming, and deleting user presets through the Parish Audio preset system.
- Knob changes, Character changes, Power changes, and preset actions participate in the plugin's undo/redo system.
- The window is resizable and the saved dimensions are stored with the plugin state.
- Editable value readouts below the knobs allow direct numeric entry.

10. Troubleshooting

Symptom	What to try
The vocal gets darker when I add Drive.	That can be expected because Drive also lowers the post-saturation low-pass contour. Add Air, try Open mode, lower Drive, or use a parallel Mix setting.
The vocal feels too thick or muddy.	Reduce Body, lower Drive, or try Open. Body is applied before saturation, so large positive values can make the nonlinear stage react to more low-mid energy.
The effect is too obvious.	Lower Drive or reduce Mix. For strong Drive settings, parallel blending is often the easiest way to keep the vocal natural.
I need more presence.	Try Forward mode, moderate Drive, and some Air. Forward uses the strongest internal saturation drive and a higher Body center than Warm/Open.
The vocal sounds too bright.	Reduce Air, switch from Open to Warm, or increase Drive slightly if you want a softer top-end contour along with more saturation.
Heat is moving but the level meters look similar.	That is normal. Heat reflects processing activity, not output loudness. Output is level-compensated independently.
Mix at 0% still changes level when I move Output.	That is expected. Output is applied after the dry/wet Mix inside the active plugin. Power bypass returns the untouched dry signal.

11. Technical Reference

Item	Specification
Character	Warm / Forward / Open
Drive	0 to 100%
Body	-100 to +100% (approximately -6 to +6 dB internal bell gain)
Air	0 to 100% (up to approximately +8 dB internal high-shelf gain)
Mix	0 to 100%
Output	-12 to +12 dB
Wet-path HPF	75 Hz fixed
DC blocker	18 Hz fixed
Main layouts	Mono or stereo
Meters	Stereo Input, stereo Output, relative Heat/saturation indicator