

DELOS

DSP

TECHNICAL REFERENCE & USER MANUAL

VOCAL LABS

A modular vocal channel strip — eight processing modules across two independent racks, true convolution reverb, tempo-synced delay and a standalone application for DAW-free use.

VERSION

1.0.4

PUBLISHER

Delos DSP

WEB

delosdsp.com

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1. OVERVIEW

VOCAL LABS is a modular vocal channel strip built around two independent five-module racks and a shared output stage, rather than one fixed signal chain. **Gate, EQ, De-Ess, Comp, Warmth, Bitcrusher, Reverb** and **Delay** are available as separate modules — drag only the ones a given vocal needs into either rack, in whatever order the chain calls for, instead of managing eight separate plugin instances.

Twenty genre-built factory presets configure a complete chain, not just one module, and the whole rack — every module, every setting — saves and recalls as a single user preset. VOCAL LABS also runs as a **standalone application**, independent of a DAW, for processing a vocal chain live through an audio interface rather than only inside a session.

KEY FEATURES

- Two independent five-module racks plus a final Main Output stage
- Eight modules: Gate, EQ, De-Ess, Comp, Warmth, Bitcrusher, Reverb and Delay
- True stereo convolution reverb — 19 curated spaces across six categories
- Tempo-synced delay with tap tempo and ping-pong cross-feed
- 20 genre-built factory presets, plus whole-chain user preset save/recall
- Standalone application for DAW-free, live vocal processing
- Vintage VU metering and final trim gain at the output stage

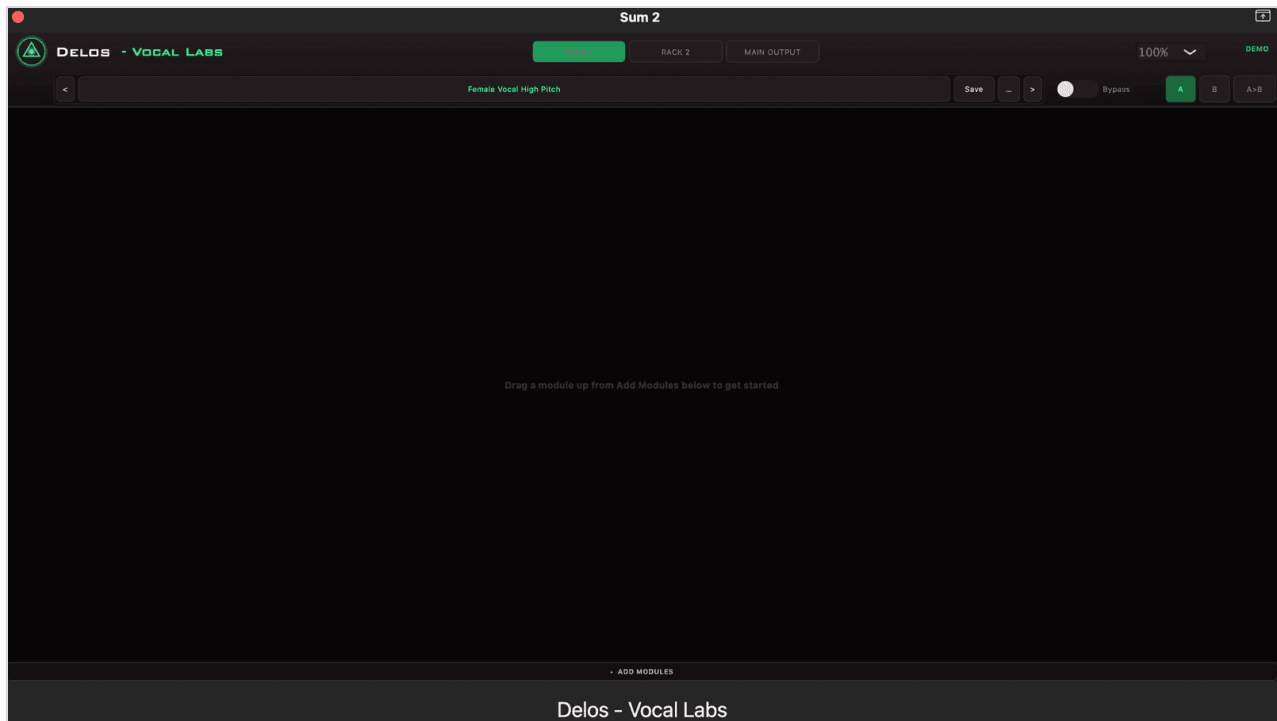
2. GETTING STARTED

SUPPORTED FORMATS

VOCAL LABS is built as an Audio Unit, VST3, a Unity plugin and a standalone application, for macOS (Apple Silicon and Intel) and Windows.

INSTALLATION

Run the platform installer and restart your DAW, or rescan its plugin folders. VOCAL LABS opens to an empty rack on first launch, with every module available — see Activation below.



The default empty rack on first launch — drag a module up from the Add Modules row to begin a chain.

ACTIVATION

VOCAL LABS is free — register with a name and email address to activate it, and it stays activated permanently. No trial period and no serial key are required.

3. INTERFACE OVERVIEW

The main window is organized around three tabs at the top — **RACK 1**, **RACK 2** and **MAIN OUTPUT** — plus a preset bar for browsing, saving and A/B-comparing the entire chain across both racks at once.



Rack 1 populated with Gate, EQ, De-Ess, Comp and Warmth — the preset bar and RACK 1 / RACK 2 / MAIN OUTPUT tabs sit above.

RACKS

Each rack holds up to five modules, chosen freely from Gate, EQ, De-Ess, Comp, Warmth, Bitcrusher, Reverb and Delay — the same eight modules are available to either rack. Click a module button in the **Add Modules** row along the bottom to add it to the active rack; an added module's button dims to show it is already in use elsewhere. Modules can be dragged to reorder them within a rack, and each module panel has its own **X** button to remove it.

MAIN OUTPUT

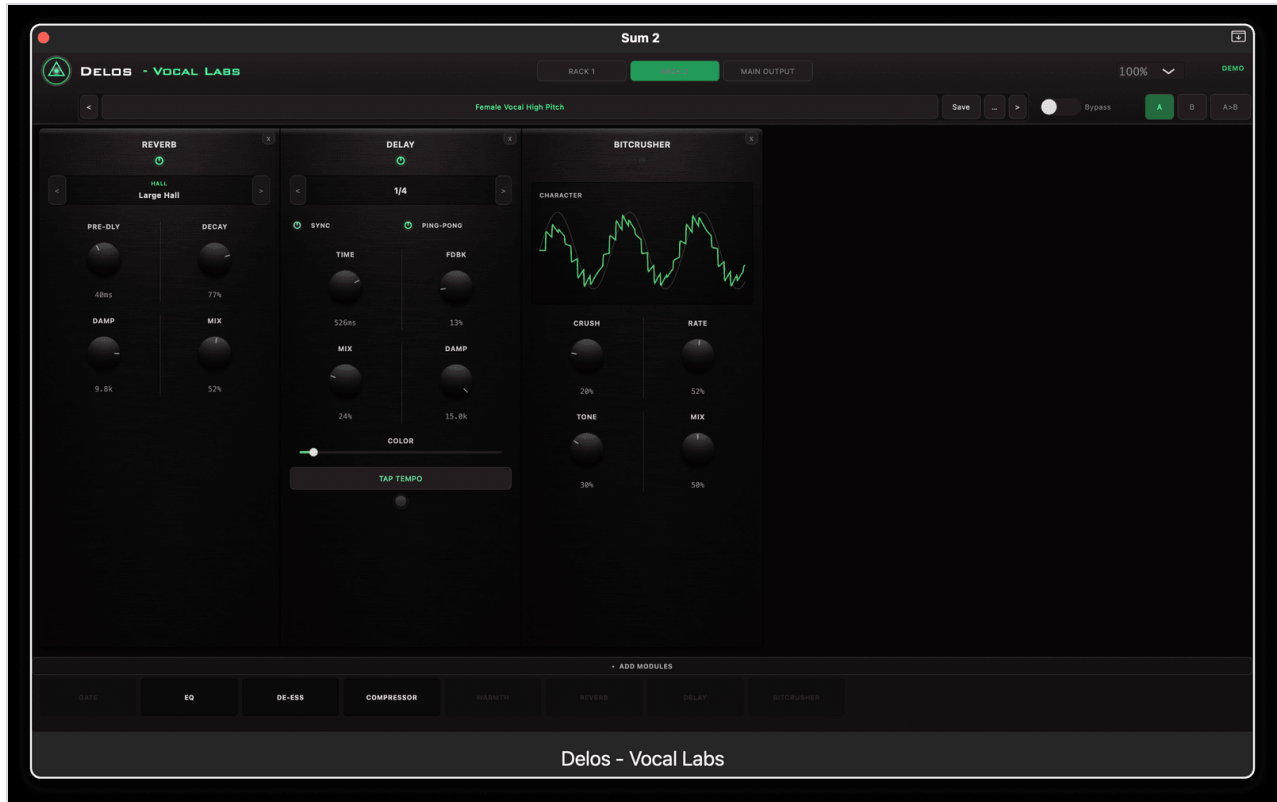
The third tab holds a single shared stage that both racks feed into before the signal reaches the host — see Section 5.

PRESET BAR

Previous/next navigation, a click-to-browse preset name field, Save, and A / B / A>B state comparison sit above the tabs and apply to the complete chain — both racks and the output stage — not to one module at a time.

4. THE EIGHT MODULES

Every module has its own on/off power toggle beneath its name, so a module can stay in the rack, fully configured, without processing the signal.



Rack 2 holding Reverb, Delay and Bitcrusher — space, repeats and character, kept separate from the corrective chain in Rack 1.

4.1 GATE

A stereo-linked downward expander — a single envelope drives gain reduction on both channels together, so a hard-panned vocal never half-gates. The detector has its own **Low Cut / High Cut sidechain key filters**, applied to a copy of the input before it reaches the detector — never to the audio itself — so low-frequency rumble or hi-hat bleed can be filtered out of the trigger without touching the tone of what actually passes through.

PARAMETER	RANGE	DEFAULT
Threshold	-80 to 0 dB	-27.6 dB
Ratio	1:1 to 20:1	3.0:1
Range	0 to 80 dB	15.0 dB
Attack	0.1 to 50 ms	8.00 ms
Release	5 to 2000 ms	350 ms
Hold	0 to 500 ms	70 ms
Sidechain Filters	20 Hz to 20 kHz	20Hz-20kHz

4.2 EQ

Five bands sized for channel-strip work rather than corrective surgery: **AIR** (high shelf), **HM** and **LM** (two sweepable bell bands), **BODY** (low shelf) and **HPF**. Each band has its own on/off indicator, so an unused band costs nothing.

PARAMETER	RANGE	DEFAULT
Air (High Shelf)	-24 to +24 dB	0.0 dB
HM Freq / Gain	200 Hz-8 kHz / +-24dB	3.0k / 0dB
LM Freq / Gain	80-1200 Hz / +-24dB	400Hz / 0dB
Body (Low Shelf)	-24 to +24 dB	0.0 dB
HPF	20 to 500 Hz	80 Hz

4.3 DE-ESS

Frequency-selective de-essing. A band-passed copy of the input drives the detector, so only energy inside the sibilant range is measured — reduction is then subtracted back from just that band, leaving everything outside it untouched, instead of a broadband multiply dipping the whole signal on every 's'.

PARAMETER	RANGE	DEFAULT
Freq	2 to 12 kHz	5.42k
Width (Q)	0.1 to 4.0	0.43
Thresh	-60 to 0 dB	-30.1 dB
Range	0 to 24 dB	12.0 dB

4.4 COMP

A single feed-forward VCA circuit — deliberately not a multi-algorithm menu, but one predictable compressor with a split waveform display (input above, gain-reduced output below) and a color-coded GR meter (Light / Med / Heavy).

PARAMETER	RANGE	DEFAULT
Thresh	-60 to 0 dB	-26.8 dB
Ratio	1:1 to 20:1	4.0:1
Attack	0.1 to 300 ms	8.0 ms
Release	5 to 2000 ms	120 ms
Makeup	-12 to +24 dB	0.0 dB
Mix	0-100%	100%

4.5 WARMTH

Symmetric tanh soft-clip saturation, driven by an input gain stage (Drive) and blended against the dry signal by Amount. Symmetric clipping is used deliberately, to avoid adding a DC offset that would otherwise need its own blocking filter.

PARAMETER	RANGE	DEFAULT
Drive	0 to 24 dB	11.6 dB
Amount	0-100%	42%
Output	-12 to +12 dB	0.0 dB

4.6 BITCRUSHER

Bit-depth crush plus sample-and-hold downsampling — the two classic digital-grit degradations — in series with a narrowing band-pass (the telephone/old-radio move) and a Mix blend. The one module in the rack that is allowed to make a vocal sound worse on purpose, for lo-fi character presets.

PARAMETER	RANGE	DEFAULT
Crush	16-bit to 2-bit	42%
Rate	1x to 24x downsample	43%
Tone	0–100%	29%
Mix	0–100%	59%

4.7 REVERB

True stereo convolution from real captured impulse responses, not an algorithmic model — see Section 8 for the full list of 19 spaces. Pre-Delay and Damp are real-time, per-sample controls; Decay reshapes the loaded IR itself and triggers a brief reload when changed, so it is quantized to coarse steps rather than continuously smooth.

PARAMETER	RANGE	DEFAULT
Pre-Delay	0 to 200 ms	20 ms
Decay	0–100% (quantized)	55%
Damp	1 kHz to 20 kHz	6.0 kHz
Mix	0–100%	35%

4.8 DELAY

Stereo delay with a damped feedback path, so repeats darken over time instead of ringing forever at full brightness, plus optional ping-pong cross-feed. Tempo sync recomputes the delay time from the host's live BPM and the selected note division; Color is a bipolar tone control on the repeats themselves.

PARAMETER	RANGE	DEFAULT
Time (free)	1 to 2500 ms	100 ms
Division (synced)	1/32 to 1/1	1/8
Feedback	0–100%	35%
Mix	0–100%	25%
Damp	1 kHz to 20 kHz	6.0 kHz
Color	–100 to +100 (bipolar)	0 (center)

5. MAIN OUTPUT

A shared stage that sits after both racks and ahead of the host's own fader — a vintage-styled VU meter for a level reference that reads the way an analog meter always has, and a final **Trim** knob for output gain.

PARAMETER	RANGE	DEFAULT
Trim	-24 to +24 dB	0.0 dB

6. FULL PARAMETER REFERENCE

GATE

PARAMETER	RANGE	DEFAULT
Threshold	-80 to 0 dB	-27.6 dB
Ratio	1:1 to 20:1	3.0:1
Range	0 to 80 dB	15.0 dB
Attack	0.1 to 50 ms	8.00 ms
Release	5 to 2000 ms	350 ms
Hold	0 to 500 ms	70 ms
Sidechain Filters	20 Hz to 20 kHz	20Hz-20kHz

EQ

PARAMETER	RANGE	DEFAULT
Air (High Shelf)	-24 to +24 dB	0.0 dB
HM Freq / Gain	200 Hz-8 kHz / +-24dB	3.0k / 0dB
LM Freq / Gain	80-1200 Hz / +-24dB	400Hz / 0dB
Body (Low Shelf)	-24 to +24 dB	0.0 dB
HPF	20 to 500 Hz	80 Hz

DE-ESS

PARAMETER	RANGE	DEFAULT
Freq	2 to 12 kHz	5.42k
Width (Q)	0.1 to 4.0	0.43
Thresh	-60 to 0 dB	-30.1 dB
Range	0 to 24 dB	12.0 dB

COMP

PARAMETER	RANGE	DEFAULT
Thresh	-60 to 0 dB	-26.8 dB
Ratio	1:1 to 20:1	4.0:1
Attack	0.1 to 300 ms	8.0 ms
Release	5 to 2000 ms	120 ms
Makeup	-12 to +24 dB	0.0 dB
Mix	0-100%	100%

WARMTH

PARAMETER	RANGE	DEFAULT
Drive	0 to 24 dB	11.6 dB
Amount	0-100%	42%
Output	-12 to +12 dB	0.0 dB

BITCRUSHER

PARAMETER	RANGE	DEFAULT
Crush	16-bit to 2-bit	42%
Rate	1x to 24x downsample	43%
Tone	0-100%	29%
Mix	0-100%	59%

REVERB

PARAMETER	RANGE	DEFAULT
Pre-Delay	0 to 200 ms	20 ms
Decay	0-100% (quantized)	55%
Damp	1 kHz to 20 kHz	6.0 kHz
Mix	0-100%	35%

DELAY

PARAMETER	RANGE	DEFAULT
Time (free)	1 to 2500 ms	100 ms
Division (synced)	1/32 to 1/1	1/8
Feedback	0–100%	35%
Mix	0–100%	25%
Damp	1 kHz to 20 kHz	6.0 kHz
Color	–100 to +100 (bipolar)	0 (center)

MAIN OUTPUT

PARAMETER	RANGE	DEFAULT
Trim	–24 to +24 dB	0.0 dB

7. FACTORY PRESETS

VOCAL LABS ships with 20 genre-built factory presets. Each configures the complete chain — module selection, order and every setting across both racks — not just one module.



The preset browser, opened from the preset name field in the bar above the tabs.

Alternative Metal Vocal

Blues Vocal

Bright Female Vocal

Country Vocal

EDM Vocal

Female Pop Lead

Folk Vocal

Indie Vocal

Jazz Vocal

Live Stage Vocal

Male Pop Lead

Metalcore Vocal

Modern Metal Vocal

Podcast & Voiceover

Pop Vocal

Rap Vocal

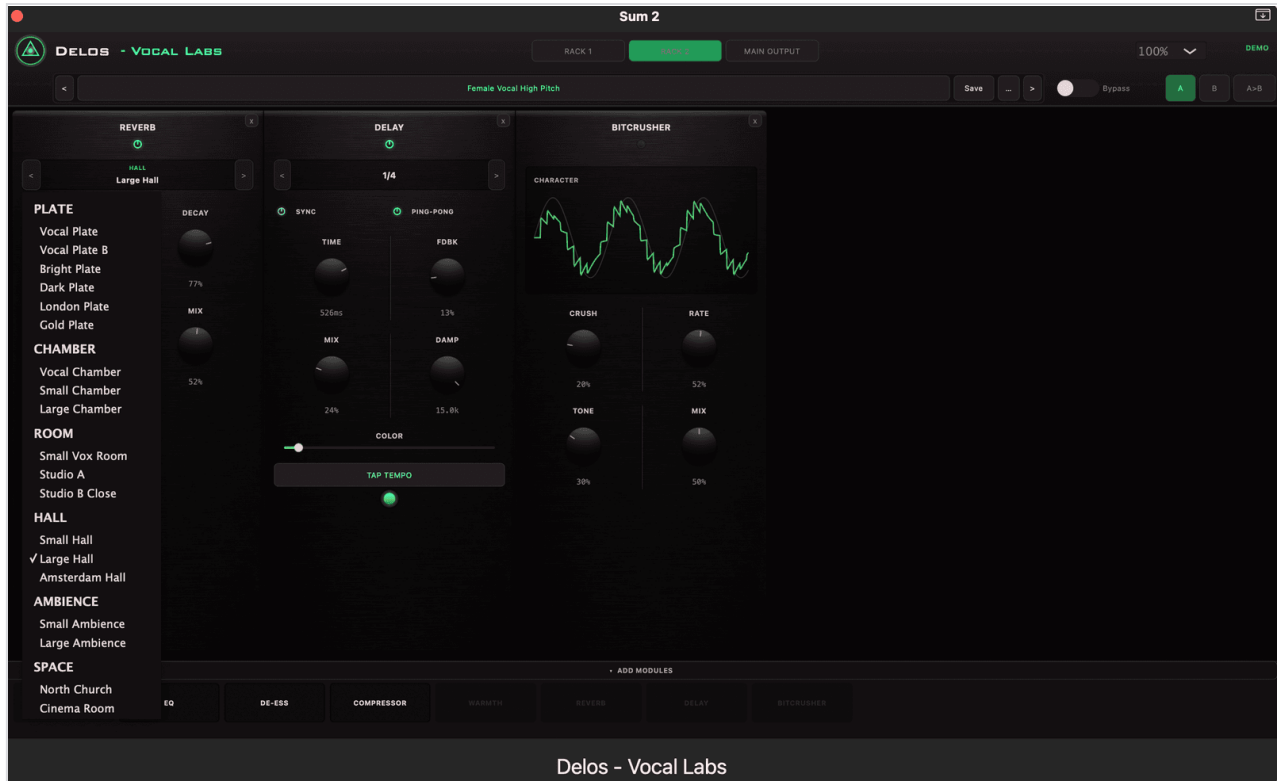
Rock Vocal

Soul Vocal

Warm Male Vocal

8. REVERB SPACES

The Reverb module's 19 impulse responses are organized into six categories, cycled with the < / > arrows above the module or browsed directly from its space name.



The Reverb module's space browser, opened directly from its space-name field, grouped by category.

PLATE

Vocal Plate
 Vocal Plate B
 Bright Plate
 Dark Plate
 London Plate
 Gold Plate

CHAMBER

Vocal Chamber
Small Chamber
Large Chamber

ROOM

Small Vox Room
Studio A
Studio B Close

HALL

Small Hall
Large Hall
Amsterdam Hall

AMBIENCE

Small Ambience
Large Ambience

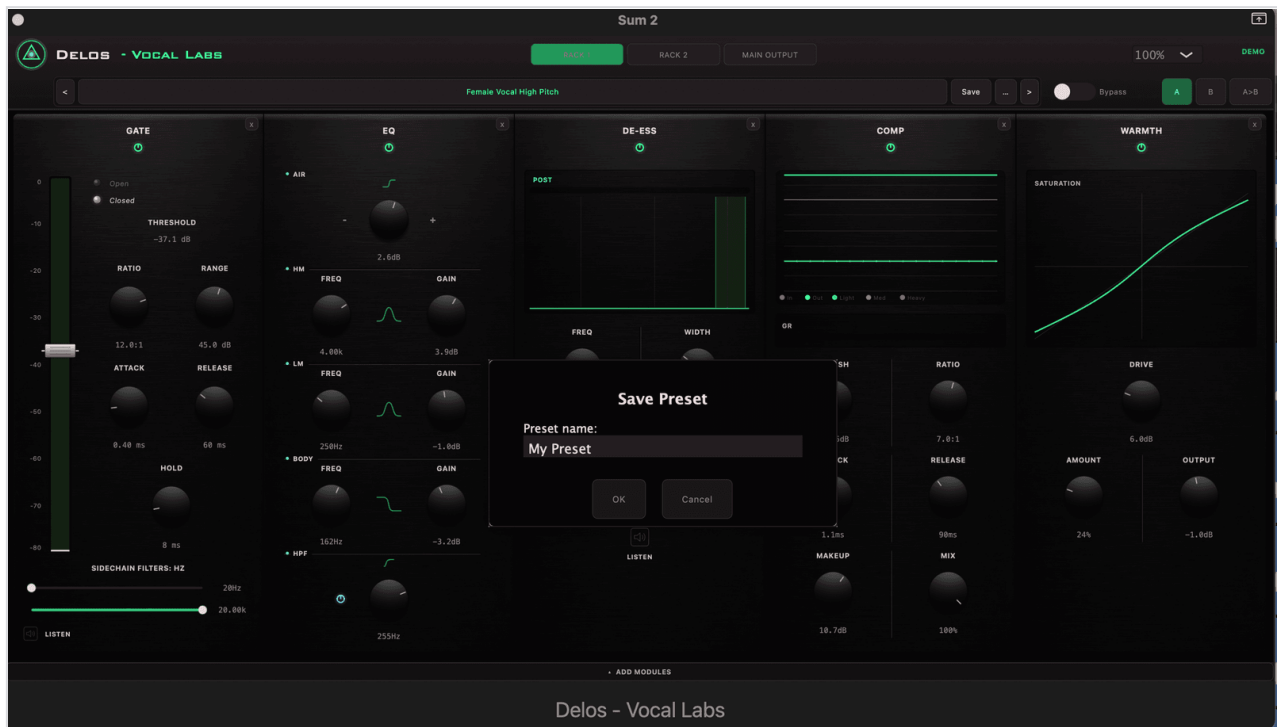
SPACE

North Church
Cinema Room

9. SAVE, RECALL & A/B COMPARE

CHAIN PRESETS

Save stores the complete state of both racks and the Main Output stage — every module present, its position, and every knob — as a single named preset, recalled later exactly as saved.



The Save Preset dialog, opened from the Save button in the preset bar.

A / B COMPARISON

VOCAL LABS keeps two complete, independent snapshots of the entire chain (A and B). Switching slots saves the outgoing slot's current state and loads the incoming slot's state. The A>B / B>A button copies the active slot straight into the other slot with no separate paste step.

10. STANDALONE APPLICATION

VOCAL LABS installs a standalone application alongside the plugin formats, running the same eight modules and both racks independently of a DAW. Select an audio input and output device from the application's audio settings, then build a chain exactly as in the plugin — useful for processing a vocal live through an audio interface: on stage, streaming, or recording narration and podcasts without opening a DAW project.

LIVE USE

As with any software running live, confirm your audio interface's buffer size and driver are stable at the sample rate you intend to perform at before relying on VOCAL LABS Standalone on stage, and keep a way to bypass or mute processing on hand.

11. TECHNICAL NOTES & KNOWN BEHAVIORS

GATE DETECTION IS STEREO-LINKED

Gate reads one combined envelope from both channels rather than gating each side independently, so a signal panned hard to one side does not open and close unevenly against the other.

DE-ESS REDUCTION IS FREQUENCY-CONFINED

Because the detector and the gain reduction both come from the same band-passed copy of the signal, De-Ess reduction never dips content outside the sibilant band — unlike a broadband compressor keyed from a filtered sidechain.

REVERB DECAY RELOADS THE IMPULSE RESPONSE

Decay reshapes the loaded IR itself rather than filtering the wet signal, so changing it triggers a brief reload. It is quantized to coarse steps for this reason — expect a small amount of latency on a Decay change, not a smooth real-time sweep.

DELAY TIME IS NOT SMOOTHED

Changing Time (or the synced Division) jumps directly to the new value rather than crossfading — an intentional simplification, matching the scope of the module.

BITCRUSHER IS THE ONE MODULE MEANT TO DEGRADE THE SIGNAL

Crush, Rate and Tone are designed to sound broken on purpose for character presets ("Telephone Vocal", "Old Radio Vocal" style) — this is expected behavior, not a bug.

12. TROUBLESHOOTING

Plugin doesn't appear in my DAW

Rescan your plugin folders from your DAW's preferences, and confirm the installer placed the Audio Unit / VST3 component in the standard system plugin directory for your platform.

No audio is passing through the plugin

Check that the trial or license is still active — VOCAL LABS continues to load after a trial expires but stops processing audio until reactivated. Also confirm the modules you expect are actually present in the active rack and switched on.

A module's controls seem to do nothing

Check that module's own power toggle, directly beneath its name — a module stays in the rack when switched off, but stops processing.

Reverb briefly stutters when I move Decay

Expected — see Section 11. Decay reloads the impulse response rather than filtering in real time.

My host only shows one rack's worth of modules

RACK 1, RACK 2 and MAIN OUTPUT are separate tabs at the top of the window, not a single scrolling view — confirm which tab is active.

13. VERSION & CREDITS

Product	DELOS VOCAL LABS
Version	1.0.4
Publisher	Delos DSP
Formats	AU, VST3, Unity, Standalone
Platforms	macOS (Apple Silicon & Intel) and Windows
Web	delosdsp.com
Support	delosdsp.com/contact

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