

ORRA AUDIO · PRODUCT MANUAL

Version 1.0.0

ORRA DEVERB

DE-REVERBERATION

Reduce room sound on recorded tracks.

Measure the room with Scout, then set the balance by ear.

Welcome

Orra Deverb reduces the room sound in a recording: the reverb tail that follows notes and words, and the ambience that sits under them. It works on a single track, mono or stereo, without a separate reference signal. The direct sound keeps its original phase and stereo image; only the level of each frequency is changed over time.

The plugin has two parts. A **room model** describes how quickly the reverb decays (**Room Decay**) and how loud it is relative to the direct sound (**Reverb Level**). A **separation stage** then decides, many times a second and for every frequency, how much of what it hears is room and how much is source, and turns the room down. **Scout** measures the room model from the track itself; the remaining controls set how far the separation goes and what it protects.

The display shows the input and the restored signal as a spectrum, the reduction across frequency, or the level of both over the last few seconds, so a tail can be seen shortening. The **Removed** button plays only what is being taken out, which is the quickest way to hear whether the settings are too strong.

This manual follows the interface top-down. *How It Works* explains the room model and what the separation can and cannot separate, *The Controls* lists every control with its range, and later chapters cover Scout, the display, presets and comparison, licensing, and a short workflow chapter.

System Requirements

Formats	macOS: VST3, Audio Unit (AU), AAX (Pro Tools). Windows: VST3, AAX.
macOS	10.13 or later (Universal: Apple Silicon and Intel).
Windows	Windows 10 or later, 64-bit.
Channels	Mono or stereo. On stereo tracks the left and right channels share one set of decisions, so the stereo image of the source is preserved.
Sample rates	44.1 to 192 kHz. The analysis length adapts so the plugin behaves the same at every rate.
Latency	2048 samples, reported to the host for compensation: 46.4 ms at 44.1 and 88.2 kHz, 42.7 ms at 48, 96 and 192 kHz. Bypass keeps the same latency so comparisons stay aligned.
Licence	14-day demo, then activation with your licence key (click the ORRA DEVERB wordmark). Activation in one instance reaches every open instance within about two seconds.

Interface Tour

The window is organised top-down on a brushed aluminium plate: a header, a riser with the display tabs, the display, and a band carrying four control cards. Controls are raised out of the plate; the display is recessed into it.

1. Header

On the left, the **ORRA DEVERB** wordmark; click it any time for the licence & info panel. In the centre, the preset strip: < and > step through the six starting points, and the menu shows the current one, or *Custom settings* once you have moved a knob. Then the **A/B** comparison key and **COPY A > B**, the **SCOUT** key, **BYPASS**, the **UI scale** menu (75 to 150 %) and the circular **?** tooltip toggle; right-click it to choose the tooltip language.

2. Tab Riser

Three tabs choose what the display shows: **SPECTRUM**, **REDUCTION** and **TAIL**. The engraved ORRA AUDIO mark sits at the right of the riser.

3. Display

The left part is the plot for the selected tab; the right part holds the large **REDUCTION** readout in dB and the **IN** and **OUT** peak meters. The line at the top right reports the processing mode (stereo-linked, mono, bypassed, or listening to removed audio) and the current latency in milliseconds. Scout writes its progress and result along the bottom of the plot.

4. Control Cards

01 REDUCTION holds the large Reduction knob. **02 ROOM** holds the room model: **ROOM DECAY** and **REVERB LEVEL**. **03 CHARACTER** holds **PRESERVE**, **FOCUS** and **SMOOTHING**. **04 FINISH** holds **MAX REDUCTION**, **OUTPUT** and the **REMOVED** key. Captions under the knobs give the direction of each range.

Every knob: double-click to return to its default, double-click its value to type a number. The mouse wheel does not move knobs, so scrolling a host window cannot change a setting by accident.

How It Works

The room model

A reverb tail decays at a rate set by the room: **Room Decay** is the time it takes to fall by 60 dB, the same quantity a reverb plugin calls decay or RT60. **Reverb Level** is how loud the reverb is compared with the direct sound while the source is playing. With those two numbers the plugin can predict, from what it heard a moment ago, how much reverb should be present now at each frequency. The difference between that prediction and what it actually hears is the direct sound.

The separation

The audio is analysed in overlapping 43 ms frames. For every frequency in every frame the plugin weighs three kinds of evidence: whether the level has been falling at the rate the room model predicts, whether a short-term predictor can explain the current sound from the recent past (a property of reverb, not of new notes), and on stereo tracks, whether the left and right channels agree. A centred voice or instrument is the same in both channels; a stereo reverb is not, and the plugin learns the reverb's own left-right signature during the first tails it hears. From this it computes a gain for each frequency, and applies the same gain to both channels so the stereo image is not disturbed.

Two protections limit the gain. **Preserve** keeps attacks and the harmonics of sustained notes from being treated as room. **Max Reduction** sets the deepest cut allowed. Once a tail has been confirmed the gain holds through the normal fluctuations of a reverb, so the room does not flicker back in between frames. The gain is smoothed across neighbouring frequencies wherever nothing is being protected, which keeps the residual from sounding glassy.

What it does not do

The first 40 ms after a sound, where early reflections live, are left alone: this is what keeps the direct sound intact, and it also means a very small room's colouration is not removed. Phase is never altered. Heavy reverb underneath dense, sustained material cannot be fully separated by any single-track method, and at strong settings the natural release of an instrument can be shortened along with the room. The plugin is not a noise reducer; steady background noise is neither removed nor added to.

Signal flow

input → analysis (43 ms frames, 75 % overlap) → room model + protections → per-frequency gain, shared by both channels → resynthesis → blend with the delayed input under **REDUCTION** → **OUTPUT** trim → **REMOVED** or **BYPASS** selection.

Removed is exactly the input minus the restored signal, so restored plus removed reconstructs the original.

The Controls

Control	Range · Default	What it does
REDUCTION	0–100 % · 55 %	How much room to remove. It raises the strength of the separation and blends from the original toward the restored signal. At 0 % the output is the original, delayed by the plugin's latency. Scout sets it to 95 %.
ROOM DECAY	0.15–3.00 s · 0.80 s	The room model's decay time (RT60). Set it to the reverb you hear, or let Scout measure it. Too short and long tails are missed; too long and sustained notes lose some body.
REVERB LEVEL	–24–0 dB · –6 dB	The reverb's level relative to the direct sound. Lower values protect sustained notes from being treated as room; raise it for very wet material. Scout measures it on stereo tracks.
PRESERVE	0–100 % · 75 %	Protection for attacks and tonal detail. Higher for instruments, sustained vocals and full mixes; lower for a stronger clean-up of speech or percussion.
FOCUS	–100–+100 % · 0 %	Tilts the reduction toward low frequencies (left) or high frequencies (right). Centre treats the spectrum evenly. Useful when the reverb is darker or brighter than the source.
SMOOTHING	0–100 % · 60 %	How quickly the reduction may deepen from frame to frame. Higher values sound calmer on sustained material; lower values follow fast changes more closely.
MAX REDUCTION	3–30 dB · 18 dB	The deepest cut allowed at any frequency. Smaller values keep more of the natural ambience; larger values dry the tails further. Scout sets it from the measured reverb level, up to 28.5 dB.
OUTPUT	–18–+18 dB · 0 dB	Output trim, applied to the restored and the removed signal alike. Bypass returns the original level.
REMOVED	key	Monitors only what is being taken out, before the output trim. The key lights while active.
BYPASS	key	Passes the original at the same latency, so switching stays in time. The room model keeps adapting during bypass. The host's own bypass does the same.

All eight knobs, Removed and Bypass are host-automatable. Room Decay, Reverb Level, Max Reduction, Preserve, Focus and Reduction are also written by Scout, as ordinary parameter changes the host can undo.

Scout

Scout listens to the track while it plays and sets the controls for the room it hears. It replaces the guesswork in Room Decay and Reverb Level, which are the two settings that matter most to the result, and it gives the other controls a starting point measured from the material.

Using it

Press **SCOUT** in the header and start playback over a passage that contains pauses or clear note endings; Scout learns from the tails that follow them. The key reads *LISTENING* with the elapsed time, and the display's bottom line counts the tails found so far. Scout stops on its own once it has heard enough, between 8 and 30 seconds of audio, and writes its result on the display. Press the key again to cancel. Only audible material counts toward the time; silence and a DAW's idle noise floor do not.

What it sets

Room Decay	The measured decay of the reverb, fitted on the diffuse part of the signal so the source's own fades do not count.
Reverb Level	The reverb's level under the source, measured from the left-right coherence. Stereo tracks only; on a mono track the knob is left as it was and the status line says so.
Max Reduction	Deep enough to place the tail about 40 dB under the source, up to 28.5 dB.
Preserve	Higher for sustained, tonal material; lower for percussive material.
Focus	Tilted toward the frequency range where the reverb is stronger relative to the source.
Reduction	95 %. Back it off to taste afterward; it is the one control Scout leaves to you.

Smoothing and Output are never changed. Every value Scout writes is an ordinary parameter change: the host sees it, automation can override it, and undo takes it back.

When it cannot measure

If fewer than four usable tails were heard by the end, Scout reports how many it found and changes nothing. Continuous material with no gaps, such as a sustained pad or a dense mix, gives it little to measure; choose a passage with phrase endings, or set Room Decay by ear from the TAIL display. If a decay is longer than three seconds, Scout reports the maximum. Rooms measured on one track can be reused on others recorded in the same space by copying the settings or saving a preset in the host.

The Display

The three tabs show the same processing from three angles. All of them run before the Output trim; the meters and the Removed/Bypass selection follow the actual output.

SPECTRUM

The input in blue and the restored signal in gold, from 30 Hz to the top of the audible band on a logarithmic frequency axis, 0 to -72 dB. Where the gold trace sits below the blue, room is being removed. During a pause the blue trace is the reverb tail alone and the gold trace shows how much of it survives.

REDUCTION

The attenuation currently applied across frequency, 0 to 30 dB. This is the plugin's decision, not a level: a flat line at 0 dB during a sustained note means nothing is being removed there, which is what Preserve is for. The large **REDUCTION** number on the right is the same quantity averaged over the whole spectrum, weighted by where the energy is.

TAIL

The level of the input (blue) and the restored signal (gold) over roughly the last 2.7 seconds, newest at the right. A dotted line starts at the loudest moment in the window and falls at the rate the current Room Decay setting implies. Three things can be read from it: how much shorter the restored tail is than the original after each phrase; whether Room Decay matches the room (an input tail falling faster than the dotted line means the setting is longer than the real room, and the reverse); and what Scout changed, since the line jumps when Room Decay is set.

Meters and status

IN and **OUT** show peak level in dBFS with a 300 ms fall; a level above 0 dBFS is shown in a warning colour. The status line at the top right reports the processing mode and the latency. When the track is silent the plot shows *Waiting for input audio*.

Presets, Comparison & Tooltips

Starting points

Six presets in the header menu set the eight knobs for common material: **Natural / Starting point**, **Vocal / Close & clear**, **Dialogue / Room control**, **Instrument / Keep the body**, **Drums / Tighten the room** and **Mix / Gentle restoration**. They are starting positions, not measurements of your room; Scout is. Once a knob leaves the preset's values the menu reads *Custom settings*. All settings, including the current tooltip language and UI scale, are saved with the host session; presets are saved through the host's own preset system.

A / B

The **A** key swaps the eight knobs with a second, temporary set and reads **B** while that set is active. **COPY A > B** copies the current knobs into the other slot, so a typical comparison is: set something up, copy it, adjust, then flip between the two. The slots exist while the editor is open; the current knobs are what the host saves.

Tooltips and languages

Hover any control for an explanation. The circular **?** at the right of the header hides and shows the tooltips; right-click it to choose the language: English, Nederlands, 日本語, Español, Português (Brasil), Deutsch or Français. Choosing a language also switches tooltips on. Both choices are remembered with the session.

UI scale

The menu next to the **?** offers 75, 100, 125 and 150 %. The choice is stored in the session and clamped to the display it is restored on.

Licensing

Demo and activation

On a machine with no licence the plugin opens with an overlay offering **Activate**, a **14-day demo** and **Purchase**. The plugin is silent until the demo is started or a key is activated. The demo is the full plugin for 14 days and can be started once per machine.

To activate, click **Activate**, paste the licence key from your purchase e-mail and press the button. Activation contacts the licence server once; after that the licence is checked from a local file and the plugin does not need a connection. An activation made in one plugin instance reaches every other open instance within about two seconds, so there is no need to reopen a session.

The licence & info panel

Click the **ORRA DEVERB** wordmark. The panel shows the version number, the licence status and the machine it is bound to, and offers **Activate** or **Deactivate**. Deactivating frees this machine's activation so the key can be used elsewhere; the plugin then falls back to the demo if one is still running, or goes silent until reactivated. The panel also links to the Orra Audio site, support, this manual and the social channels. Rocky, at the end of the row, is not a feature.

Offline rendering

The licence gate is not applied during an offline bounce or freeze. A session that loaded normally renders normally, even if the licence was deactivated while it was open.

Where the licence lives

macOS: `~/Library/Application Support/Orra Audio/Orra Deverb/`. Windows: `%APPDATA%\Orra Audio\Orra Deverb\`. The file is specific to this product and this machine; copying it to another computer does not transfer the licence. Deactivate before retiring or reinstalling a machine.

Tips & Workflow

Scout first, then Reduction

Insert the plugin, press Scout, play a passage with phrase endings. When it finishes, the plugin is at its driest sensible setting for that room. Turn Reduction down until the room sits where you want it; on most material something between 60 and 95 % keeps the recording sounding like a recording.

Listen to Removed

Switch **REMOVED** on while adjusting. You should hear room, and little else. If the voice or the instrument is clearly audible in what is being removed, the settings are too strong: raise Preserve first, then lower Reduction or Max Reduction. Switch it off again before judging the result.

Sustained sources

Vocals, strings and pads are the hard case, because a held note and a tail look alike. Preserve above 75 % and a Reverb Level a few dB lower than measured keep the body of the note. If a note still thins out at its end, raise Smoothing a little.

Percussive sources

Drums and plucked instruments tolerate lower Preserve and a shorter Room Decay. Focus toward the low end (left) tightens a boomy room without touching the snap of the attack.

Short rooms and long halls

A small room's tail is gone within half a second; if Room Decay is set much longer than that, sustained notes are treated as room. A long hall needs the full decay time and a deeper Max Reduction. The TAIL display shows which case you have: compare the slope of the blue tail with the dotted line.

Mono tracks and mono reverbs

The left-right comparison is only available on stereo tracks with a stereo reverb. On mono tracks, or when the reverb is the same in both channels, the plugin relies on the room model and the protections alone and Scout leaves Reverb Level unchanged. Set Reverb Level by ear: lower it until sustained notes stop losing weight, then stop.

Keep a copy of the room

Tracks recorded in the same space share a room. Once Scout has measured one of them, copy the settings to the others with the host's copy-settings function, or store them as a host preset named after the room.

Notes

Behaviour worth knowing

- The room model starts fresh each time playback starts; the first second or two after a start are slightly less certain than the rest. The model is not saved with the session, only the settings are.
- The learned left-right signature of the reverb also starts fresh, and the left-right comparison stays out of the way until it has been learned from the first tails.
- Analysis continues during Bypass and at 0 % Reduction, so re-engaging the plugin does not start over.
- The plugin's tail is its latency: it produces no sound after the input has stopped and the buffered audio has drained.
- Identical audio produces identical output regardless of the host's buffer size, at constant settings.
- Values outside the audio range and non-finite samples from the host are rejected before analysis.

Limits

- Early reflections, within the first 40 ms, are not removed. A very small, boxy room keeps some of its colour even when its tail is gone.
- Reverb underneath dense, sustained material cannot be fully separated from it on a single track. Some residual room under such passages is expected, and a Max Reduction below the maximum keeps it natural.
- At strong settings the natural release of an instrument can be shortened along with the room.
- A reverb whose decay exceeds three seconds is treated as a three-second room.
- Delays and echoes are not reverb; a repeat that decays through feedback is measured as a decay by Scout but is not removed cleanly by the separation.

Keyboard and mouse

- Double-click a knob: return to default. Double-click its value: type a number.
- Right-click the **?**: tooltip language. Click the wordmark: licence & info.
- The mouse wheel does not change knobs.

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