ORRA EQ

16-Band Parametric EQ & Saturation Suite

User Manual

Orra Audio LLC

Version 1.3.0

June 2026

www.orraaudio.com

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1. Introduction

What is Orra EQ?

Orra EQ is a professional 16-band parametric equalizer for music production, mixing, and mastering. It combines transparent equalization with sophisticated saturation processing, dynamic saturation, dynamic EQ with full sidechain support, and vintage analog emulation in an intuitive interface.

Key Features

- 16 fully parametric EQ bands with extended frequency range (10 Hz to 22 kHz)
- Five processing modes per band: EQ, Orra Tube, Tape, Models (10 saturation types), and Dynamic EQ
- **Per-band sidechain for Dynamic EQ** — Off / External / Link 1–36 (new in v1.2.1)
- **Cross-DAW sidechain via Orra Link** — route any track in your session to any band, regardless of DAW routing limitations (new in v1.2.1)
- **Oversampling for saturation modes** — Off / 2× / 4× to reduce aliasing on hot drive (new in v1.2.1)
- Per-band Mid/Side processing
- Real-time FFT spectrum analyzer with pre/post visualization
- **Settings panels with tabs** — every band has its own settings area that opens automatically when selected (new in v1.2.1)
- **Piano view** — vertical piano keyboard showing which note the band sits on (new in v1.2.1)
- **Zones view** — frequency-region overview from SUB to AIR (new in v1.2.1)
- **Tips carousel** — rotating workflow tips when no band is selected (new in v1.2.1)
- Dynamic saturation system: upward compression for adding character to quiet signals
- 100-snapshot history system: non-destructive experimentation with instant recall
- Professional preset management: factory presets plus unlimited user presets
- Solo, Bypass, Delta, and Hide Curve modes for surgical EQ work
- Comprehensive keyboard shortcut support
- Input/Output metering with separate gain controls

2. Getting Started

System Requirements

- **macOS:** 10.13 or later (VST3, AU, AAX)
- **Windows:** Windows 10 or later (VST3, AAX)
- **Plugin Formats:** VST3, AudioUnit (AU), AAX
- **DAW Compatibility:** Ableton Live, Logic Pro, FL Studio, Cubase, Studio One, Reaper, Pro Tools 2020+ (AAX)

Installation

- Download the Orra EQ installer from orraaudio.com
- Run the installer and follow on-screen instructions
- The plugin will be installed to your system's standard plugin directories
- Restart your DAW if it was running during installation
- Scan for new plugins in your DAW's preferences

Activation

Orra EQ requires activation to use beyond the 14-day demo period.

Option 1: Enter License Key

- If you've purchased Orra EQ, click **Enter License Key** on the overlay
- Enter your license key (format: XXXXXXXX-XXXX-XXXX-XXXX-XXXXXXXXXXXX)
- Your license activates on this machine (3 activations total per license)

Option 2: Start 14-Day Demo

- Click **Start 14-Day Demo** to try Orra EQ with full functionality
- Demo can only be started once per machine
- All features unlocked during demo period
- Days remaining displayed in header

Option 3: Purchase

- Click **Purchase Orra EQ** to visit our website
- After purchase, use Option 1 to activate

3. Interface Overview

Main Layout

Orra EQ's interface consists of:

- **Header bar** (top) with preset, oversampling, analyzer, and license controls
- **EQ curve display** (center) with 16 interactive control points
- **Settings panel** (center-right) with per-band tabs and content — always visible, never collapses
- **Right panel** (120 px) with band controls
- **Meter panel** (far right, 120 px) with input/output meters

Header Bar

Left Side

- **License:** click the Orra logo to view license status

Center

- **Analyzer Controls:**
  - Pre (green) / Post (blue) toggle buttons
  - Individual Bands toggle (orange)
  - Peak Hold toggle

NEW IN v1.2.1

- **Oversampling:**
  - **Off** — native sample rate, lowest CPU
  - **2×** — doubles the internal rate during saturation processing
  - **4×** — highest fidelity for hot drive or high-frequency-rich material
  - Setting is saved with the project. Only affects saturation-flavoured bands.

Right Side

- **Undo** button
- **Snapshot History:** access 100-step undo history (folder icon)
- **Preset Browser:** open preset manager (folder icon)
- **Tips (?):** click to enable on-hover tooltips. Right-click for keyboard shortcut legend.

EQ Curve Display

The central display shows:

- Frequency response curve (white for EQ, gold for saturation modes)
- 16 numbered control points (colored by band)
- Real-time spectrum analyzer (green = input, blue = output)
- Grid lines for frequency (10 Hz to 22 kHz) and gain (-60 dB to +30 dB)
- Frequency readout when hovering over the curve
- Mid and Side response curves (amber and teal) when using M/S processing

Right Panel — Band Controls (120 px)

Top Row: State Buttons

- **S (Solo)** — hear only this band's effect
- **B (Bypass)** — disable this band
- **D (Delta)** — hear only what the band removes or adds
- **H (Hide)** — hide this band's curve visualization

Band Selection

- **Band Selector:** dropdown showing all active bands

Core Parameters (when a band is selected)

- **Frequency:** 10 Hz to 22 kHz
- **Gain:** -60 dB to +30 dB (EQ mode), 0–100% (saturation modes), or 0–48 dB (Dynamic EQ amount)
- **Q (Quality):** 0.1 to 40.0

Filter and Mode Controls

- **Filter Type:** Bell, High Shelf, Low Shelf (EQ and Dynamic EQ modes); Low Cut, High Cut (EQ mode only)
- **Slope:** 12 / 24 / 36 / 48 dB/oct (shelf filters); up to 96 dB/oct for Low/High Cut
- **Mode:** EQ / Orra Tube / Tape Saturation / Models / Dynamic EQ
- **Channel:** Stereo, Mid, or Side (per band)

NEW IN v1.2.1

- **Sidechain** (Dynamic EQ bands only): Off / External / Link 1–36

Settings Panel — Tabbed Content

NEW IN v1.2.1

The settings panel is now permanent furniture — it never collapses, so the EQ display stays at constant width and your band positions don't shift around as you work.

When you select a band, the panel automatically opens to the appropriate view for that band's mode:

- **EQ band** → Zones view (musical region context)
- **Tape band** → Tape settings (Model / Speed / Noise)
- **Models band** → Saturation settings (Type / Tone / Bias / etc.)
- **Dynamic EQ band** → Dynamic settings (Attack / Release / Threshold / Ratio)
- **Orra Tube band** → DynSat settings

Tabs at the top of the panel let you switch views without leaving the band:

- **Row 1 (mode-specific):**
  - Orra Tube: [Dynamic]
  - Tape: [TAPE | Dynamic]
  - Models: [Models | Dynamic]
  - Dynamic EQ: [Dynamic]
  - EQ mode: no mode-specific row
- **Row 2 (always available):** [Zones | Piano]

> *Each band remembers its last visited tab, so jumping between bands restores what you were looking at. If a tab is no longer applicable to the band's current mode, it gracefully falls back to that mode's default.*

Tips Carousel

NEW IN v1.2.1

When no band is selected, the settings slot displays a rotating tip carousel — a quick refresher on shortcuts, mouse modifiers, and workflow features. Tips fade in and out every ~8 seconds.

Meter Panel (far right, 120 px)

Input Section

- Input Meter: stereo L/R peak and RMS display (gold)
- Input Gain knob: -12 dB to +12 dB trim control

Output Section

- Output Meter: stereo L/R peak and RMS display (gold)
- Output Gain knob: -12 dB to +12 dB output level

4. Working with EQ Bands

Creating Bands

Double-Click on Curve

- Double-click anywhere on the EQ curve display
- A new band is created at that frequency
- Band automatically selected for editing — settings panel auto-opens to the appropriate view

Click Existing Control Point

- Click any numbered control point (1–16)
- Band becomes active for editing
- Parameters appear in the right panel
- Settings panel switches to that band's last-used tab

Band Selector Dropdown

- Click the band selector dropdown in the right panel
- Choose from list of active bands
- Band selected and ready to edit

Quick Band Creation Shortcuts

- **Double-click:** EQ band
- **Dbl-right-click:** Orra Tube
- **Shift + Dbl-right-click:** Models
- **Alt/Opt + Dbl-right-click:** Tape
- **Shift + Alt/Opt + Dbl-right-click:** Dynamic EQ

Editing Bands

Moving Control Points

- Click and drag vertically to adjust gain (-60 dB to +30 dB)
- Click and drag horizontally to adjust frequency (10 Hz to 22 kHz)

Adjusting Q (Bandwidth)

- Cmd + drag for Q adjustment, or scroll over a band

- Wider Q = broader effect, narrower Q = surgical precision

Multi-Band Selection

- Click and drag on empty curve area to draw selection box
- All bands within the box are selected
- Move multiple bands together by dragging any selected point
- Right-click selection for batch operations

Band Right-Click Menu

Right-click any control point to access:

Filter Types

- Bell (parametric peak/dip) — EQ and Dynamic EQ modes
- High Shelf — EQ and Dynamic EQ modes
- Low Shelf — EQ and Dynamic EQ modes
- Low Cut (high-pass) — EQ mode only
- High Cut (low-pass) — EQ mode only

Processing Modes

- EQ (traditional equalization)
- Orra Tube (tube saturation)
- Tape (vintage tape emulation)
- Models (10 saturation algorithms)
- Dynamic EQ (frequency-selective compression)

Band Management

- **Reset Band** (return to defaults)
- **Delete Band** (remove from processing)

Channel

- Stereo, Mid, Side

Snap To Note

- Snap to C, C#, D, D#, E, F, F#, G, G#, A, A#, B
- Aligns frequency to nearest octave of that note

Snap To Key (multi-band)

- Select scale, then root note
- Aligns selected bands to nearest notes in that key

Deleting Bands

- **Context Menu:** right-click control point → Delete Band
- **Reset:** right-click control point → Reset Band (sets gain to 0 dB but keeps frequency)
- **Keyboard:** Delete or Backspace

5. Band Processing Modes

Each of Orra EQ's 16 bands can operate in one of five processing modes. The curve visualization changes color: white for EQ, gold for saturation modes.

Channel Processing: Mid/Side

Every band has a Channel selector that determines which part of the stereo signal it processes:

- **Stereo** (default) — band processes the full stereo signal
- **Mid** — band processes only the center (mono) content
- **Side** — band processes only the side (stereo difference) content

This works with all five processing modes. You can EQ the mid channel, saturate the sides, or apply dynamic EQ to just the center — all within a single plugin instance.

Any of these methods can be used to set a band's channel:

- Right-click any band and select the channel from the context menu
- Use the Channel dropdown in the side panel
- Press **C** to cycle through Stereo, Mid, Side

Separate Mid and Side response curves are drawn on the display in amber and teal.

Mode 1: EQ (Traditional Equalization)

Transparent, surgical equalization with extended range and precision.

Parameters

- Frequency: 10 Hz to 22 kHz
- Gain: -60 dB to +30 dB
- Q: 0.1 to 40.0

- Type: Bell / High Shelf / Low Shelf / Low Cut / High Cut
- Slope: 12 / 24 / 36 / 48 dB/oct (shelves); 12–96 dB/oct (Low/High Cut)

Default Settings Tab

Zones (new default in v1.2.1 — provides musical region context for EQ moves).

Use Cases

- Corrective EQ (removing resonances, rumble, harshness)
- Tonal shaping (brightening, warming, adding body)
- Mastering EQ (subtle adjustments)
- Surgical frequency removal

Professional Tips

- Use narrow Q (>5.0) to notch out specific problem frequencies
- Use wide Q (<1.0) for musical tonal shaping
- Stack multiple gentle boosts/cuts instead of extreme single adjustments
- Cut first, boost with saturation second (cleaner results)

Low Cut & High Cut (new in v1.3.0)

Two dedicated cut filters, available on any band in EQ mode. **Low Cut** is a high-pass — it removes everything below the corner frequency (sub-rumble, handling noise, stage bleed). **High Cut** is a low-pass — it removes everything above the corner (fizz, hiss, harsh top).

- **Slope:** 12 / 24 / 36 / 48 / 72 / 96 dB/oct. 72 and 96 are brickwall-steep; gentler slopes give musical, transparent roll-offs.
- **Response:** maximally flat (Butterworth) — no resonant bump at the corner.
- **Using them:** pick Low Cut or High Cut from FILTER TYPE (or the right-click menu); set the corner by dragging the band node or with the FREQ knob.
- **Gain and Q** are greyed out — cut filters are pure Butterworth, so neither applies. Zero added latency.

Cut filters are EQ-mode only. Switching a cut band into a saturation or Dynamic EQ mode holds the cut inactive and restores it when you return to EQ.

Mode 2: Orra Tube (Tube Saturation)

Musical tube saturation with dynamic response. Based on vintage tube preamp characteristics with asymmetric distortion.

Parameters

- Frequency: center frequency for bandpass filtering
- Drive: 0–100% (saturation drive amount)
- Q: bandwidth of effect

Dynamic Saturation Tab

Click **Dynamic** to access:

- **Enable/Disable:** turn dynamic saturation on/off
- **Threshold:** -60 dB to 0 dB (level below which saturation is added)
- **Attack:** 1–100 ms (response speed to quiet signals)
- **Release:** 10–1000 ms (how quickly saturation fades when signal gets louder)

Oversampling is controlled globally from the header (Off / 2× / 4×). Use 2× or 4× when driving hard to keep alias artifacts inaudible.

How It Works

- Band isolates selected frequency range using a bandpass filter
- Signal processed through the tube saturation algorithm
- Saturated band mixed back with the dry signal
- Higher gain = more drive = more harmonics
- Dynamic saturation adds extra drive to quiet signals below threshold

Use Cases

- Adding warmth to vocals (2–5 kHz, moderate drive)
- Thickening bass (80–200 Hz, subtle drive)
- Enhancing presence (3–8 kHz, gentle drive)
- Creating analog character on drums
- Bringing up quiet details dynamically

Professional Tips

- Start with 20–30% gain and adjust to taste
- Wider Q (0.5–1.5) for musical saturation
- Narrower Q (2.0–5.0) for focused enhancement
- Use dynamic saturation to add detail without muddying louder passages
- Set threshold 10–15 dB below average signal level for subtle enhancement
- Set threshold above average signal level for constant saturation that has movement
- Engage 2× oversampling when driving hard or working with bright source material

Mode 3: Tape Saturation (Vintage Tape Emulation)

Authentic analog tape machine emulation with multiple tape formulations, speeds, and noise reduction options.

Parameters

- Frequency: center frequency for bandpass filtering
- Drive: 0–100% (tape saturation amount)
- Q: bandwidth of effect

TAPE Tab

Click **TAPE** to access tape model, speed, and noise controls.

Tape Model:

- **Studio Reference** — clean, professional studio tape
- **Console Master** — mix bus tape with subtle coloration
- **Multitrack Wide** — wide stereo imaging characteristics
- **Vintage Mono** — classic mono tape sound
- **Valve Preamp** — tube-driven tape warmth
- **Half-Inch Hi-Fi** — high-fidelity tape response

Tape Speed:

- **High (Fast)** — cleanest, most transparent
- **Medium (Balanced)** — balanced vintage character
- **Low (Vintage)** — maximum saturation and coloration

Noise Characteristics:

- **None** — raw tape, most hiss
- **Light** — moderate reduction
- **Medium** — strong reduction
- **Clean** — no hiss

Click **Dynamic** for the dynamic saturation controls (same behavior as Orra Tube mode).

> *Oversampling: controlled globally from the header. Tape modes benefit from 2× or 4× at high drive amounts.*

Use Cases

- Vintage drum character (Vintage Mono, Low speed)
- Warm vocal treatment (Studio Reference, Medium speed, Light noise)

- Lo-fi / vintage effects (Vintage Mono, Low speed, Medium noise)
- Mix bus glue (Console Master, High speed, Clean noise)
- Tube-colored processing (Valve Preamp, Medium speed)

Professional Tips

- Low speed = more coloration (good for creative effects)
- High speed = more transparent (good for subtle enhancement)
- Half-Inch Hi-Fi + High speed = cleanest saturation
- Vintage Mono + Low speed = maximum vintage vibe
- Light or Clean noise for realistic tape feel without excessive hiss
- Apply to full frequency range (wide Q) for mix bus glue
- Apply to specific ranges (narrow Q) for targeted vintage color

Mode 4: Models (10 Saturation Algorithms)

Professional saturation toolkit with 10 distinct algorithms ranging from vintage hardware emulation to creative digital processing.

Parameters

- Frequency: center frequency for bandpass filtering
- Drive: 0–100% (saturation drive amount)
- Q: bandwidth of effect

Models Tab — Saturation Types

- **Vintage Preamp** — warm, smooth preamp saturation. Best for vocals, acoustic instruments, smooth character.
- **Power Tube** — aggressive power amp distortion. Best for electric guitars, bass, aggressive character.
- **Transistor** — solid-state transistor clipping. Best for modern production, punch, aggression.
- **Diode (Germanium)** — germanium diode clipping (asymmetric). Best for bass, creative distortion, vintage vibe.
- **Diode (Symmetric)** — silicon diode clipping (symmetric). Best for modern rock/metal, defined distortion.
- **Wavefolder** — complex waveshaping and folding. Best for creative effects, experimental sound design.
- **Bit Crusher** — digital bit reduction and sample rate reduction. Best for lo-fi aesthetics, creative degradation.

- **British Console** — classic SSL-style console distortion. Best for mix bus glue, professional polish.
- **VCA Console** — API-style VCA console saturation. Best for drums, mix bus, controlled aggression.
- **Exciter** — psychoacoustic harmonic generation. Best for mastering, air, perceived brightness.

Common Parameters (all types)

- **Tone:** -100% to +100% (frequency tilt)
- **Bias:** -100% to +100% (asymmetry)

Type-Specific Parameters

- **Bit Depth** (Bit Crusher only): 1–16 bits
- **Sample Rate** (Bit Crusher only): 1× to 24×
- **Fold Amount** (Wavefolder only): 1.0 to 10.0

Click **Dynamic** for the dynamic saturation controls (same as Orra Tube mode).

> *Oversampling: controlled globally from the header. The Bit Crusher and Wavefolder benefit most from 4× when used aggressively.*

Professional Tips

- Tone control is frequency-dependent saturation tilt (use to balance brightness)
- Bias creates asymmetry (try small amounts for subtle character)
- Bit Crusher at 8-bit with 4× sample rate = vintage-sampler character
- Wavefolder with 2–3 fold amount = harmonic bass enhancement
- Exciter on master = surgical high-frequency enhancement (use sparingly)
- VCA Console on drum bus = punchy, controlled aggression
- Stack multiple gentle saturation types for complex character

Mode 5: Dynamic EQ (Frequency-Selective Compression)

Intelligent, frequency-selective dynamic processing. Automatically reduces specific frequency ranges based on detector level.

Parameters

- Frequency: center frequency to process
- Amount: 0–48 dB (maximum gain reduction available)
- Q: bandwidth of dynamic processing
- Type: filter shape (Bell, High Shelf, Low Shelf)

Dynamic Tab

Click **Dynamic** to access:

- **Attack:** 0.1–1000 ms (response speed to level increase)
- **Release:** 1–5000 ms (return speed to rest)
- **Threshold:** -60 dB to 0 dB (level where processing begins)
- **Ratio:** 1.0:1 to 20:1 (amount of processing)

Visualization

- **Input Level Meter (green):** shows current band input level; red line for threshold
- **Gain Reduction Meter (red):** shows amount of processing applied
- **White EQ curve line** moves to show real-time level reduction

Sidechain

NEW IN v1.2.1

The right panel includes a **Sidechain** dropdown directly under the Channel selector. See **Section 9 — Sidechain for Dynamic EQ** for full details. Quick summary:

- **Off** — band detects on its own input (classic behavior, frequency-conscious)
- **External** — band detects on the host's external sidechain input — route any track into Orra EQ's sidechain to key the band
- **Link 1–36** — band detects on an Orra Link channel — works across busses, tracks, and any DAW routing without host-specific limitations

> *Each band can independently pick its own sidechain source. Duck the low band off the kick, the mud band off the snare, and the harsh band off the lead vocal — all in one plugin instance.*

6. Settings Panels and Tabs

NEW IN v1.2.1

The settings panel sits to the right of the EQ display and is always visible — it's permanent furniture, not a pop-out.

Behavior

- **Auto-open:** when you select a band, the panel automatically opens to the right view for that band's mode (Zones for EQ, Tape settings for Tape, etc.).
- **Tab memory:** each band remembers its last visited tab. Jumping between bands restores what you were looking at.

- **Graceful fallback:** if a tab no longer applies after a mode change (e.g. you switch a band from Tape to EQ), the panel falls back to the mode's default tab.
- **No band selected:** the panel displays the rotating tips carousel.

Tab Layout

The panel header has up to two rows of tabs:

Row 1 — mode-specific:

- Orra Tube: [Dynamic]
- Tape: [TAPE | Dynamic]
- Models: [Models | Dynamic]
- Dynamic EQ: [Dynamic]
- EQ: row omitted entirely

Row 2 — always available: [Zones | Piano]

Click any tab to switch the view. Tabs highlight to show which view is active.

Tab Reference

- **TAPE** — Tape model, speed, noise reduction
- **Models** — Saturation type, Tone, Bias, type-specific parameters
- **Dynamic** — in saturation modes: dynamic saturation enable, threshold, range, attack, release. In Dynamic EQ mode: attack, release, threshold, ratio.
- **Zones** — vertical strip of frequency regions (SUB to AIR) with a gold indicator showing where the band sits
- **Piano** — vertical scrollable piano with the band's nearest key highlighted

7. Piano View

NEW IN v1.2.1

A vertical scrollable piano keyboard, available on every band:

- Lays out all 88 standard piano keys plus extended octaves so the full 20 Hz – 20 kHz range is reachable
- The key that matches the selected band's frequency glows: green when perfectly in tune with a note, fading to yellow as the band moves off-pitch
- Smooth crossfade animation when the active key changes

- Mouse-wheel scrolls; the view auto-recenters on the active key whenever you change a band's frequency to a different note
- Compact readout at the top shows Hz, note name, and cents off

Great for tuning drums, finding harmonic resonances, snapping bands to musical pitches, or just keeping a musical sense of where you're EQ'ing.

8. Zones View

NEW IN v1.2.1

A vertical problem-zone strip showing the frequency regions every mix engineer ends up thinking about:

SUB / BASS / MUD / BOXY / BODY / HARSH / SIBILANCE / AIR

A gold indicator line shows where the selected band's frequency sits. Useful for a quick gut-check of what you're working on — especially helpful for less experienced ears or for sanity-checking the frequency you just dialed in.

Zones is the default settings tab for EQ-mode bands.

9. Sidechain for Dynamic EQ

NEW IN v1.2.1

Each Dynamic EQ band has its own Sidechain source picker in the right panel, directly under the CHANNEL dropdown. Select what audio drives the band's level detector — independently per band.

Sidechain Modes

Off (default)

The band detects on its own input. This is the classic dynamic EQ behavior: a bandpass filter at the band's center frequency feeds the detector, so the band only reacts to energy in its own frequency neighborhood. Use **Off** when you want the band to self-trigger (de-essing, resonance taming, etc.).

External

The band detects on Orra EQ's external sidechain bus. Route any track in your DAW into the sidechain input, and the band reacts to that signal's full-band level. Use **External** when you want a kick to trigger a low-shelf cut on the mix bus, a snare to duck a harsh band on guitars, etc.

Link 1–36

The band detects on an Orra Link channel. Insert the Orra Link plugin on a source track, set it to a channel number, then pick that same channel number here. Works across busses, tracks, and groups regardless of whether your DAW supports flexible sidechain routing.

Frequency-Independent Detection

When the band uses an External or Link sidechain, the detector bypasses the band's own bandpass — it reads the full SC signal directly. Moving the band's frequency knob doesn't change how the kick triggers it; the frequency knob only controls **which frequencies get ducked**. This matches the convention in Pro-Q 3, Pro-MB, and other modern dynamic EQs.

In contrast, self-detect mode (Off) keeps the frequency-conscious bandpass behavior — the band only sees energy near its own center frequency.

Routing External Sidechain in Major DAWs

Logic Pro (AU)

- Insert Orra EQ on the destination track as usual
- Above the plugin window, click the small **Side Chain** dropdown
- Pick the source track or bus

Pro Tools (AAX)

- Insert Orra EQ on the destination track
- In the plugin window header, click the **Key Input** (Side Chain) selector
- Pick the source bus

Ableton Live (VST3)

- Insert Orra EQ on the destination track
- Click the wrench icon (top-left of plugin window) to expose the device's sidechain panel
- Set the SC source

Reaper (VST3)

- Insert Orra EQ on the destination track
- Open the plugin and click **2 in 2 out** in the title bar to show the routing matrix
- Route extra input channels (3 / 4) from your source track

Cubase / Studio One (VST3)

- Insert Orra EQ

- Click the side-chain **activate** icon in the plugin header
- Send the source track to the resulting send

Orra Link — Cross-DAW Sidechain Routing

Orra Link is a free companion plugin (included with Orra Press) that bypasses DAW routing entirely. It writes audio into a shared memory region with 36 numbered channels. Any Orra EQ band can read from any of those channels.

To use Orra Link

- **1.** Insert **Orra Link** on the source track (the track whose audio should trigger the band)
- **2.** Set Orra Link's channel number (1–36)
- **3.** In Orra EQ, pick the matching **Link N** entry in the band's Sidechain dropdown

Why use Link instead of External

- DAWs differ in sidechain routing flexibility — some don't let you sidechain across bus types. Link bypasses all of that.
- One source can feed multiple receivers across multiple plugin instances.
- Different bands of the same Orra EQ can pick different Link channels — duck different bands off completely different sources

> ***Liveness and fallback:*** *if an Orra Link sender stops (track removed, plugin disabled, host crash), the band falls back to self-detection within ~340 ms. Audio keeps flowing — no stuck gain reduction, no buzz.*
>
> ***Latency:*** *zero added latency on the receiver side. The detector envelope follower's existing ms-scale time constants smooth over the standard one-block intrinsic Link latency below perceptual threshold.*

Tips

- **Many bands, many sources:** insert Orra Link on the kick, snare, and lead vocal, set them to channels 1/2/3, then on your mix bus Orra EQ pick Link 1 for the low band, Link 2 for the mud band, Link 3 for the harsh band. Three independent ducks, one EQ.
- **Stereo vs mono SC:** mono SC drives both detectors; stereo SC drives left/right detectors independently.
- **Input gain doesn't affect SC level:** the input-gain knob in the meter panel scales only the main signal, never the sidechain input.
- **Snapshot/preset capture:** SC source choice is saved with presets, snapshots, and project state.

10. Oversampling for Saturation Modes

NEW IN v1.2.1

A global oversampling control in the header lets you reduce aliasing artifacts on any saturation-flavoured band (Orra Tube, Tape, Models, Dynamic Saturation):

- **Off** — native sample rate. Lowest CPU. Suitable for tracking and lighter drive amounts.
- **2×** — doubles the internal sample rate during saturation. Cleaner highs and less aliasing audibility on hot drive settings.
- **4×** — highest fidelity. Use on hot saturation in mastering or when the source has lots of high-frequency content.

Setting persists with the project. Has no effect on pure EQ bands or Dynamic EQ bands — those run at native rate and incur no aliasing.

11. Solo, Bypass, Delta, and Hide Curve

Each band has four state buttons (circular toggles in the right panel):

S — Solo Mode

- Hear ONLY the selected band's effect
- All other bands temporarily disabled
- Multiple bands can be soloed simultaneously
- Perfect for identifying problem frequencies by sweeping with gain boost

B — Bypass Mode

- Disable this band while keeping it in the chain
- Useful for A/B comparison

D — Delta Mode (Difference / Isolation)

- Hear ONLY what the band removes or adds
- Everything else is inverted out
- Extremely powerful for surgical resonance removal and verifying de-essing

H — Hide Curve

- Hides this band's curve visualization
- Band still processes audio
- Useful for decluttering the display when working with many bands

Multi-Band Selection and Editing

Selection Box

- Click and drag on empty curve area
- All bands within rectangle are selected
- Selected bands have enhanced visual highlight

Group Operations

- **Move together:** drag any selected band to move all
- **Batch context menu** (right-click selection):
  - Set Filter Type for all
  - Set Processing Mode for all
  - Snap to Key for all
  - Reset all selected bands
  - Delete all selected bands
- **Clear selection:** click on empty area to deselect

Pro Tips

- **Solo + gain boost + frequency sweep:** classic method for finding resonances
- **Delta mode:** most powerful for precision work
- **Bypass:** always check bypass to verify improvements
- **Hide:** hide unused bands for cleaner workspace

12. Snap to Note and Snap to Key

Align band frequencies to musical notes and keys for tonal, musical EQ adjustments. Orra EQ provides two different snapping systems depending on whether you have a single band or multiple bands selected.

Single Band: Snap to Note

When you have ONE band selected, you can snap it to the nearest frequency of any musical note.

How to Use

- Select a single band (click control point)
- Right-click the control point
- Choose **Snap to Note**
- Select any note (C, C#, D, D#, E, F, F#, G, G#, A, A#, B)
- Band snaps to nearest octave of that note

Examples

- Band at 250 Hz → Snap to A → moves to 220 Hz (A3)
- Band at 800 Hz → Snap to G → moves to 784 Hz (G5)

Multiple Bands: Snap to Key

When you have MULTIPLE bands selected, you can snap them all to notes within a specific musical key/scale. This ensures all selected bands align to harmonically related frequencies.

How to Use

- Select multiple bands (drag selection box over control points)
- Right-click the selection
- Choose **Snap to Key**
- Select scale type, then root note
- All selected bands snap to nearest note within that key/scale

Available Keys/Scales

- **Major:** C Major through B Major (all 12)
- **Minor:** C Minor through B Minor (all 12)
- **Major Pentatonic:** all 12 root notes
- **Minor Pentatonic:** all 12 root notes

Example — Song in G Major

- Select 5 bands across the frequency spectrum
- Right-click selection → Snap to Key → Major → G Major
- Result: all bands snap to notes in G Major scale (G, A, B, C, D, E, F#)
- Creates harmonically coherent EQ adjustments that reinforce the song's key

Professional Tips

- **Single band precision:** use Snap to Note when you know the exact problematic note or want to enhance a specific harmonic
- **Multi-band harmony:** use Snap to Key when sculpting multiple bands to create harmonically coherent adjustments
- **Major vs Minor:** choose based on song key
- **Pentatonic safety:** pentatonic scales contain fewer notes, making them safer choices that avoid dissonance
- **Boost fundamentals:** in a song's key, boost low/mid frequencies at root, third, and fifth of the key
- **Air and presence:** use Snap to Key in upper frequencies (4–10 kHz) to add harmonically-aligned air
- **Experimental approach:** try snapping to the key, then listen — if it sounds musical, keep it

13. Presets and Snapshots

Preset System

Click the Preset button in the header to open the browser.

Categories

- **User** — your saved presets
- **Vocal** — presets for voice processing
- **Mastering** — final mix EQ presets
- **Creative** — experimental and effect presets
- **Corrective** — problem-solving presets
- **Instruments** — instrument-specific presets

Searching

- Use category selector dropdown to filter by category
- Type in search box to filter by name or category

Saving Presets

- Click **Save** button in preset browser
- Enter preset name

- Choose category (or create new)
- Click **Save**

Loading Presets

- Double-click preset in list

Managing Presets

- **Delete:** select preset, click **Delete** (user presets only)
- **Open Folder:** click **Folder** to access preset files
- **Import:** drag .orrapreset preset files into the preset folder

Snapshot History System (100-Step Undo)

Orra EQ features a professional, non-destructive 100-snapshot history system.

How It Works

- Almost all single-band parameter change gestures create a snapshot automatically
- History stores last 100 snapshots (oldest removed when full)
- Each snapshot shows timestamp and description of changes
- Non-destructive: restore any snapshot, create new branch

Accessing Snapshot History

- Click the **Snapshot History** button in the header (folder icon)
- Window overlays EQ curve (40% transparent)
- See up to 100 previous states

Using Snapshots

- **Single-click:** immediately preview that state
- **Close window:** keep the previewed state
- **Navigation:** click different snapshots to preview
- **No undo needed:** just click and explore

Snapshot Descriptions (Auto-Generated)

- Single parameter: *Band 1 Gain*
- Multiple parameters: *Band 3 Freq, Band 5 Type*
- Many parameters: *5 parameters changed*

When Snapshots Are Captured

- After mouse release on any control
- After completing a drag on EQ curve
- After text entry in parameter fields
- When loading a preset
- NOT during automation playback

Pro Workflow

- Make aggressive EQ changes
- Doesn't sound right? Click snapshot history
- Preview previous states with single clicks
- Find the sweet spot from earlier
- Close history window — state is kept

14. Metering and Analysis

Spectrum Analyzer

Professional real-time FFT spectrum analyzer with multiple visualization modes.

Analyzer Types

- **Linear FFT** — traditional FFT bin representation
- **Octave Bands** — 1/3 octave smoothing
- **Hybrid** — combines linear detail with octave smoothing

Refresh Rates

- **Slow** (~15 fps) — more stable, less CPU
- **Medium** (~30 fps) — balanced (default)
- **Fast** (~45 fps) — responsive
- **Real-time** (~60 fps) — maximum responsiveness, higher CPU

Analyzer Views (toggle buttons in header)

- **Pre** (green) — shows signal before EQ processing
- **Post** (blue) — shows signal after EQ processing
- **Peak Hold** (teal) — display both pre and post peak values simultaneously
- **Hide All Band Curves** (orange) — hides every band's frequency response curve

Tips

- Use Pre view when identifying problems
- Use Post view when verifying fixes
- Use both enabled for real-time feedback
- Enable Peak Hold to catch transients

Input / Output Metering (right panel)

Input Meters

- Shows signal level BEFORE EQ processing (post input-gain knob)
- Peak and RMS metering (gold color)
- Range: -60 dB to 0 dB
- Input gain control: -12 dB to +12 dB

Output Meters

- Shows signal level AFTER all EQ processing
- Peak and RMS metering (gold color)
- Range: -60 dB to 0 dB
- Output gain control: -12 dB to +12 dB

Gain Control Knobs

- Double-click to reset to 0 dB (unity gain)
- Command + drag (macOS) / Ctrl + drag (Windows) for fine adjustment
- Applied in signal chain: Input Gain → EQ Processing → Output Gain
- Input gain affects only the main signal — never the sidechain bus

Professional Gain Staging

- Set input gain so peaks are around -12 dB
- Apply EQ processing
- Adjust output gain to match input level
- Compare input and output meters to verify headroom

15. Licensing and Demo

License Types

Full License

- Perpetual license (pay once, use forever)
- 3 activations per license
- Includes all future 1.x updates
- Manage activations via License panel

Demo Version

- Full functionality for 14 days
- Can only be started once per machine
- Days remaining displayed in header
- After demo expires, must purchase to continue

Activation

Activating Your License

- Open Orra EQ
- Click **Enter License Key** on overlay
- Enter your license key (from purchase email)
- Click **Activate**
- License activates on this machine (counts as 1 of 3 activations)

License Validation

- Orra EQ validates license online periodically

Managing Your License

Click the logo in the header to open the License Status Panel.

Displays

- License status (Active / Demo)
- Licensed user name and email
- Activation usage (e.g., 2/3 = 2 of 3 activations used)

Actions

- **Deactivate This Machine:** free up an activation slot

- **Purchase** (if demo): link to Orra Audio website

Deactivating

- Open License Status Panel
- Click **Deactivate This Machine**
- Confirm deactivation
- Activation slot freed immediately

Common Scenarios

Moving to New Computer

- Deactivate on old computer
- Install on new computer
- Activate with same license key

Reached 3/3 Activations

- Deactivate on machine you no longer use
- Activate on new machine

Demo Mode

Starting Demo

- Open Orra EQ (unlicensed)
- Click **Start 14-Day Demo**
- Demo begins immediately
- Full functionality for 14 days

During Demo

- All features unlocked
- *Demo: X days remaining* displayed in header
- Reminder to purchase as expiration approaches

Demo Expiration

- After 14 days, plugin displays overlay
- Must purchase license to continue
- Can activate license during demo period (demo ends, license begins)

Demo Limitations

- Can only be started once per machine
- Cannot restart demo after expiration
- No time-based crippling or audio degradation during demo

16. Keyboard Shortcuts

Global

- **Cmd/Ctrl+Z** — Undo
- **Space** — Play / Stop (passes through to your DAW)

Band Navigation

- **,** (comma) — Previous band
- **.** (period) — Next band

Band Controls

- **S** — Solo
- **B** — Bypass
- **D** — Delta
- **H** — Hide curve
- **C** — Cycle channel (Stereo / Mid / Side)
- **Delete** — Remove band

Filter Type

- **1** — Bell
- **2** — High Shelf
- **3** — Low Shelf

Quick Band Creation

- **Double-click** — EQ band
- **Dbl-right-click** — Orra Tube

- **Shift + Dbl-right** — Models
- **Alt/Opt + Dbl-right** — Tape
- **Shift + Alt/Opt + Dbl-right** — Dynamic EQ

Scroll Wheel

- **Scroll over band** — Adjust Q

EQ Control Point Interactions

- **Click + drag** — Move band (frequency + gain)
- **Cmd + drag (macOS) / Ctrl + drag (Windows)** — Fine Q adjustment
- **Click + drag (empty area)** — Multi-select bands
- **Right-click** — Context menu

Right-click the Tips button (?) in the header to view the full keyboard shortcut legend at any time.

17. Technical Specifications

Audio

- **Processing:** 32-bit floating point
- **Sample Rates:** 44.1 kHz to 192 kHz (and beyond)
- **Latency:** Zero samples (including with sidechain enabled)
- **Frequency Range:** 10 Hz to 22 kHz
- **Gain Range:** -60 dB to +30 dB (EQ mode)
- **Q Range:** 0.1 to 40.0
- **Dynamic Range:** >120 dB

EQ Specifications

- **Bands:** 16 fully parametric
- **Filter Types:** 5 (Bell, High Shelf, Low Shelf, Low Cut, High Cut)
- **Low/High Cut slopes:** 12 / 24 / 36 / 48 / 72 / 96 dB/oct (Butterworth)
- **Processing Modes:** 5 per band (EQ, Orra Tube, Tape Saturation, Models, Dynamic EQ)
- **Per-band Mid/Side** channel processing
- **Per-band sidechain source** (Dynamic EQ): Off / External / Link 1–36

- **Saturation Algorithms (17 total):** Orra Tube, Tape (6 models), Models (Vintage Preamp, Power Tube, Transistor, 2× Diode, Wavefolder, Bit Crusher, 2× Console, Exciter)

Sidechain

NEW IN v1.2.1

- External SC input bus: 1 (mono or stereo)
- Orra Link channels: 36 (cross-DAW shared memory)
- Detector mode (external/Link SC): wide-band, frequency-independent
- Detector mode (self-detect): bandpass-filtered at band's center frequency

Oversampling

NEW IN v1.2.1

- Modes: Off / 2× / 4×
- Scope: saturation-flavoured bands only (Orra Tube, Tape, Models, Dynamic Saturation)
- Applied via the header control; persists with project state

Analyzer

- FFT Size: 4096 samples
- Window: Blackman-Harris
- Resolution: 1024 display bins
- Refresh Rates: 15, 30, 45, 60+ fps
- Analysis Types: Linear FFT, 1/3 Octave, Hybrid
- Pre/Post Analysis: independent input/output analyzers

System

- Preset Storage: unlimited user presets
- Snapshot History: 100 states
- Plugin Formats: VST3, AudioUnit (AU), AAX
- Platforms: macOS (10.13+), Windows (10+) — VST3, AU, AAX

18. Troubleshooting

Common Issues

"Orra EQ not showing up in DAW"

- Rescan plugins in DAW preferences
- macOS: check AU validation in Audio MIDI Setup; AAX path: /Library/Application Support/Avid/Audio/Plug-Ins/
- Windows: verify VST3 or AAX path is scanned
- Try: restart DAW, restart computer

"License validation failed"

- Check internet connection
- Verify license key was entered correctly
- Contact support if persistent

"Sound is distorting/clipping"

- Check input/output meters
- Reduce input gain if input is clipping
- Reduce overall EQ gain (multiple boosts add up)
- Check output gain
- Verify gain structure in DAW
- For saturation modes, try engaging 2× or 4× oversampling

"EQ curve not visible"

- Check band is not hidden (H button)
- Verify band gain is not at 0 dB
- Verify band is enabled (not bypassed)

"Sidechain isn't working"

NEW IN v1.2.1

- For **External**: confirm your DAW is actually routing audio to Orra EQ's sidechain input. Most DAWs require explicit sidechain routing via the plugin header.
- For **Link**: confirm Orra Link is inserted on the source track, enabled, and set to the same channel number as the band's Sidechain dropdown selection.
- Confirm the band is in **Dynamic EQ** mode — the Sidechain dropdown only affects Dynamic EQ bands.
- Confirm the band's Amount > 0 and Threshold isn't set so high that no signal triggers it.

"Demo period already used"

- Demo can only be started once per machine
- Purchase license to continue using
- Demo tied to hardware fingerprint

Getting Help

Support Resources

- **Email:** support@orraaudio.com
- **Website:** https://orraaudio.com/support
- **Documentation:** https://orraaudio.com/docs

Before Contacting Support

- Check this manual for solution
- Visit FAQ at https://orraaudio.com/support
- Try restarting DAW
- Verify system meets requirements
- Check DAW's plugin scanner/validator
- Test in different DAW (if possible)

19. What's New

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v1.3.0

Low Cut & High Cut filters. Two new EQ-mode filter types — a high-pass (Low Cut) and a low-pass (High Cut) — with selectable slopes of 12 / 24 / 36 / 48 / 72 / 96 dB/oct. The 72 and 96 dB/oct settings are brickwall-steep for surgical removal; the response is maximally flat (Butterworth) with no resonant bump at the corner. Gain and Q don't apply to cut filters, so they're greyed out. Zero added latency.

Fixes. The highest-numbered band in a saved session no longer loads silent and hidden in Pro Tools; the header analyzer toggles (input analyzer, peak hold, band curves) now persist across closing/reopening the window and project reloads; and deleting a band no longer leaves the Solo / Bypass / Delta / Hide buttons missing until another band is selected.

v1.2.1

This update brought the largest workflow refresh since launch, plus a complete sidechain system. Everything is additive — existing sessions load unchanged and unaffected.

Per-Band Sidechain for Dynamic EQ

Every Dynamic EQ band gets its own Sidechain dropdown: Off / External / Link 1–36. Each band can independently key off a different source — duck the mud band off the bass DI, dip the boxy band off the snare, and ease the harsh band off the lead vocal, all at once. Zero added latency, frequency-independent detection (Pro-Q 3 / Pro-MB convention) for external/Link, classic frequency-conscious behavior for self-detect.

Cross-DAW Sidechain via Orra Link

Orra Link is a free companion plugin (included with Orra Press) that exposes 36 named sidechain channels via shared memory. Insert Link on the source track, set the channel number, then pick that Link N in any Orra EQ band's Sidechain dropdown. Works across busses, tracks, and any DAW routing without host-specific limitations. Senders that stop heartbeating drop off receivers within ~340 ms — the band falls back to self-detection so audio keeps flowing.

Oversampling for Saturation Modes

A new Oversampling control in the header lets you reduce aliasing on any saturation-flavoured band: Off / 2× / 4×. Setting persists with the project.

Auto-Opening Settings Panels

Adding or selecting a band now automatically opens the right settings panel for that band's processing mode — no more hunting for the controls that go with what you just added. The 120 px settings slot is now permanent furniture so the main EQ display stays at constant width and your band positions don't shift around as you work.

Tabs Live Inside the Settings Panel

Panel-selector tabs (TAPE / Dynamic / Models / Dyn Sat) moved from the band-controls panel into the settings panel itself, laid out in two rows at the top. Each band remembers its last visited tab, so jumping between bands restores what you were looking at.

Tips Carousel

When no band is selected, the settings slot displays a rotating tip carousel — a quick refresher on shortcuts, mouse modifiers, and workflow features. Tips fade in and out every ~8 seconds.

Piano View

A vertical scrollable piano keyboard, available on every band. The key that matches the selected band's frequency glows: green when perfectly in tune, fading to yellow as the band moves off-pitch. Great for tuning drums, finding harmonic resonances, or snapping bands to musical pitches.

Zones View

A vertical problem-zone strip — SUB / BASS / MUD / BOXY / BODY / HARSH / SIBILANCE / AIR — with a gold indicator showing where the selected band's frequency sits. Default settings tab for EQ-mode bands.

Workflow and UI Polish

- Mode changes now snap the active tab back to the mode's default panel, so you don't accidentally land on Piano or Zones when you switch a band to Tape and miss the tape controls.
- The DynSat tab is now reachable in Orra Tube mode — previously it was the only option and got hidden when you tabbed to Piano/Zones.
- The Dynamic settings tab is reachable in Dynamic EQ mode after visiting Piano or Zones.
- Fixed ghosting where leftover controls from a previously open panel would linger briefly after switching bands via the EQ display.
- Settings panel close buttons removed (panels are permanent furniture now).
- Cleaned up Unicode rendering in numeric readouts so cents and other suffixes display correctly across every macOS font stack.
- Mode-change transitions no longer flash visible-but-empty panels.

Quick Reference Card

Most Important Controls

Creating Bands

- **Double-click** — EQ band
- **Dbl-right-click** — Orra Tube
- **Shift + Dbl-right-click** — Models
- **Alt/Opt + Dbl-right-click** — Tape
- **Shift + Alt/Opt + Dbl-right-click** — Dynamic EQ

Essential Actions

- **Right-click control point** — Context menu (filter types, modes, key snapping)
- **S / B / D / H buttons** — Solo / Bypass / Delta / Hide
- **Scroll over point** — Adjust Q
- **Cmd + drag (macOS) / Ctrl + drag (Windows)** any knob — Fine adjustment
- **C** — Cycle channel (Stereo / Mid / Side)
- **,** / **.** — Select previous/next band

New in v1.3.0

- **Low Cut** and **High Cut** filters (EQ mode) — high-pass / low-pass, slopes up to 96 dB/oct
- Header analyzer toggles (input analyzer, peak hold, band curves) now persist across window close/reopen

New in v1.2.1

- Header **Oversampling** control — saturation aliasing reduction
- Right-panel **Sidechain** dropdown (Dynamic EQ only) — Off / External / Link 1–36
- **Settings panel** is always visible with auto-opening per-mode views
- **Piano** and **Zones** tabs available on every band

Document Version 1.3.0 — June 2026