

EQ Pro



The complete guide to the 24-band dynamic EQ.

macOS (VST3, AU) · Windows (VST3) · v1.2.4

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Overview

EQ Pro is a transparent, surgical equalizer with up to 24 freely typed bands over an interactive curve, a real-time spectrum analyzer, per-band dynamics, Mid/Side and Left/Right processing, and selectable phase behaviour. No analog colouring: it does exactly what the curve shows.



The drawn curve and the processed audio share the exact same filter maths, so what you see is what you hear. Every band is an individually host-automatable parameter, so a full automation lane is available for each.

Installation

macOS

Run the macOS installer (a notarized `.pkg`). It adds two formats:

- **VST3** to `/Library/Audio/Plug-Ins/VST3`
- **Audio Unit (AU)** to `/Library/Audio/Plug-Ins/Components`

Windows

On Windows, EQ Pro ships as a **VST3** inside a zip (Audio Unit is macOS-only). After downloading, unzip it and copy the folder `Jeesonic EQ Pro.vst3` into your system VST3 folder:

- `C:\Program Files\Common Files\VST3\`

Create that `VST3` folder if it does not exist. Writing there needs administrator rights, so Windows may ask you to confirm. The plug-in is not code-signed, but Windows does not block VST3 plug-ins, so no security prompt appears; your host simply loads it. The zip also contains an `INSTALL.txt` with these steps.

After installing on either platform, rescan plug-ins or restart your host so it picks up the new version. If an instance is already loaded, remove and re-insert it (or reopen the project).

EQ Pro is free to use, privately and commercially, with no registration and no time limit. Please download it from jeesonic.de rather than from a copy elsewhere, so you always get the current build. See the [terms of use](#).

The interface



Every control at a glance. The numbers match the list below.

The window has four areas: the **header** along the top, the **meter margins** left and right, the **curve and analyzer** in the centre, and the **control strip** along the bottom, laid out like a piece of hardware on one axis from Input to Output.

1. **Preset browser.** Factory starting points and your own presets; the arrows step through them.
2. **A/B compare.** Holds two versions of your settings so you can flip between them; the arrow copies one side to the other.
3. **Spectrum landmarks.** Marks the frequencies that keep standing out over time.
4. **Help.** Manual, website and version info.
5. **Settings.** Tooltips, analyzer tilt and decay, window scale, Make Default.
6. **Input meters.** Stereo peak meters with a peak-hold value in dBFS.
7. **Output meters.** The same, after the EQ.

- 8. Curve and analyzer.** The grid, the live spectrum, the summed response and one thin coloured line per band.
- 9. Band handle.** Drag to set frequency and gain, scroll to set Q or slope, right-click for type, channel and delete.
- 10. Inline band panel.** The selected band's values and switches, with the dynamics controls when DYN is on.
- 11. Piano keyboard.** Reads any spot on the curve as a musical note.
- 12. Input.** Level going into the EQ.
- 13. Bypass.** Level-matched: it removes the EQ but keeps the input and output trim, for an honest A/B.
- 14. Gain Scale.** Scales every band's gain at once.
- 15. Selected band.** Freq / Gain / Q, the ON and SOLO switches, and the arrows that step from band to band.
- 16. Mode, Sampling and Auto Gain.** The switch row: phase mode (Digital, Standard, Natural or Linear), oversampling (Off / 2x / 4x) and Auto Gain, which compensates the EQ's own gain change.
- 17. Output.** Level leaving the EQ.

The window is **freely resizable**: drag the corner and the whole UI scales smoothly at any size between 75 % and 200 %. The size is remembered with the project. The settings gear still offers the fixed scale steps as quick presets. (In the Audio Unit the window uses the fixed steps only, because the main AU host has trouble with continuous resizing.)

Hover help Since 1.2

Rest the pointer on any knob, button or value and a short explanation appears, including the controls in the inline band panel. Turn it on or off with **Tooltips** in the settings gear; the choice is remembered with the project.

Presets Since 1.2

The preset browser sits in the centre of the header.

- **Factory templates** give you a starting point rather than a finished mixing decision: High Pass, Low Pass, Tilt, Dynamic EQ, plus a flat Default.

- **Your own presets:** *Save as* stores the current setup, *Delete* removes one, *Reveal preset folder* opens it on disk.
- The **arrows** step through the whole list. The display shows the current preset name, with a * once you edit away from it.

Make Default Since 1.2

Make Default in the settings gear saves the current setup (all bands plus the analyzer and UI options) as the state every new instance opens with. Once you have set one, the entry reads **Update Default**, and a **Factory Default** entry appears to return new instances to the built-in default. A project you reopen always restores its own saved state; only fresh instances start from your default.

A/B Since 1.2

The **A** and **B** buttons in the header hold two versions of your settings so you can flip between them and hear the difference instantly. Click A or B to switch. The arrow between the letters copies the current version to the other (it points at the destination and flashes it), so you can branch an alternative from where you are. Both versions are remembered with the project.

Working with bands and the curve

The canvas maps frequency across its width (log scale, 10 Hz to 20 kHz) and gain over its height (up to +/-24 dB shown). Each band is a coloured dot sitting on its own response curve.

Every band also draws its **individual response** Since 1.2 as a thin coloured line behind the summed curve, so you can always see which feature in the result belongs to which band without selecting it first. The active band draws brighter. A band's handle always sits on its own per-band curve, so marker and curve line up. (For a dynamic band the handle and its per-band curve stay at the set position; the summed curve shows the live movement.)

Creating, selecting and removing bands

- **Add a band:** double-click an empty spot on the curve. A band dropped near the far left or right edge defaults to a low cut or high cut. New gain bands start at 0 dB, so the handle lands on the existing curve; the cursor then follows the new marker so you can drag it straight away.
- **Select a band:** click its handle. The bottom Freq / Gain / Q knobs and the inline panel follow the selection. The arrow steppers next to the knobs walk through the bands in frequency order.

- **Delete a band:** double-click its handle, or use the  button in the inline panel, or right-click the handle and choose Delete.

Shaping with the mouse

- **Drag a handle** to set frequency (horizontal) and gain (vertical) at once. Dragging is relative to where you grab: a band that overlaps others moves smoothly from the grab point, with no jump.
- **Scroll** over a handle to set **Q** (bells, shelves, notch) or the **slope** (cut bands, 6 to 96 dB/oct).
- **Right-click** a handle for a menu of type, slope, channel and delete. Right-click empty space for an add menu.

Filter types

Right-click a handle (or use the shape button in the inline panel) to pick the band type:

TYPE	USE	CONTROLS
Bell	Boost or cut around a centre frequency.	Freq, Gain, Q
Low Shelf	Lift or drop everything below a corner.	Freq, Gain, Q
High Shelf	Lift or drop everything above a corner.	Freq, Gain, Q
Low Cut	High-pass: remove lows below the corner.	Freq, Slope
High Cut	Low-pass: remove highs above the corner.	Freq, Slope
Notch	Deep, narrow removal at one frequency.	Freq, Q
Tilt	Tilt the whole spectrum darker or brighter around a pivot.	Freq (pivot), Tilt amount

Bells and both shelves are **symmetric (constant-Q)**: a cut is the exact mirror of the boost of the same Q. Cut types are only offered when no other band sits further out on that side, so a cut never swallows bands beyond it.



The band frequency runs from 10 Hz (for subsonic high-pass work) up to 20 kHz, the right edge of the display, so the Freq knob and the marker stop at the same place. A band loaded from an older session above 20 kHz is clamped to 20 kHz.

Spectrum landmarks Since 1.2

Spectrum landmarks (the icon at the top right) mark where something keeps going on in your spectrum. The plug-in listens to the energy of the incoming signal over a few seconds and marks the narrow peaks that stand out of their surroundings, rather than just the loud regions. A peak that stays in one place is emphasised the longer it holds, while ones that drift around stay faint or drop away, so what is structural separates from passing spectral movement.

The colour tells the two cases apart: a **red** marker is a frequency that holds its place over time, a **green** one wanders. A steady red marker is the typical room mode, ringing note or resonance; green is more often musical movement that only passes through.

A landmark is **a place to look, not a verdict**. Whether the note, room mode or resonance it points at is a problem or the character of the instrument is your call: the marker only tells you

something is consistently there. Listen first, then decide what the EQ should do about it, if anything.

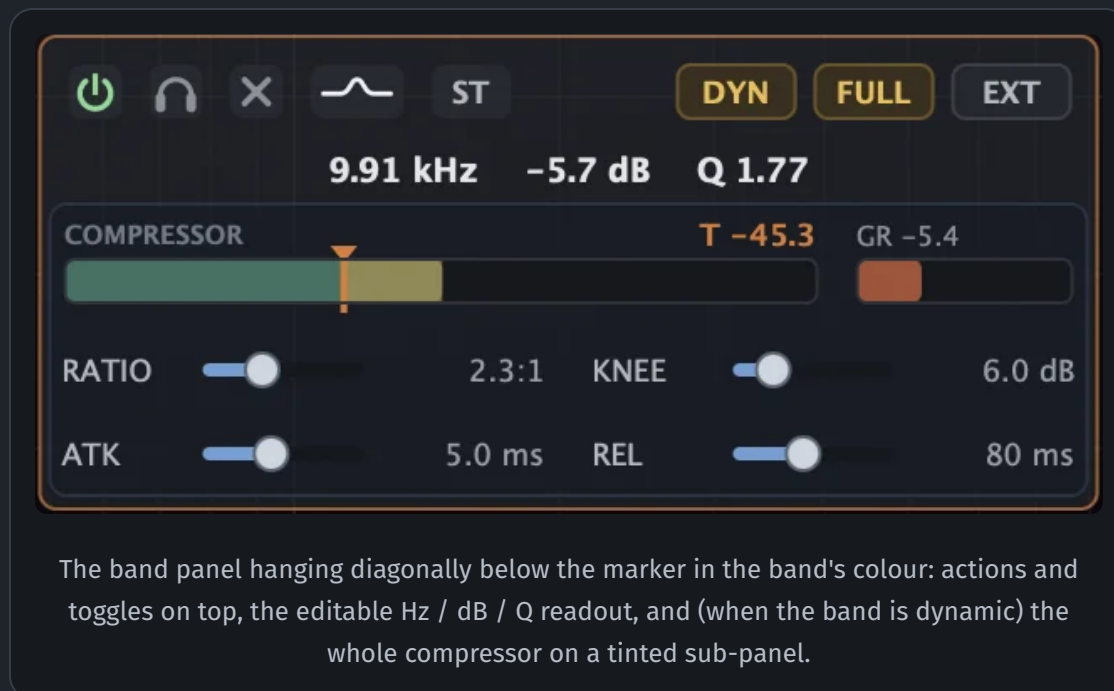
- Small **markers** hang from the top of the curve, each with a faint guide line down to line a band up on.
- **Hover** a marker to see its exact frequency, its nearest note, and how far it stands out.
- **Press and hold** a marker to hear it on its own for as long as you hold it (a momentary, narrow audition). **Drag down** onto the curve to sweep the audition continuously across any frequency, snapping back to the markers in the top strip. Releasing goes straight back to normal.

Nothing is judged, created or changed, it is purely a listen. Click the icon to switch it on or off; the state is remembered with the project. It is otherwise display only.

The inline band panel

Selecting a band shows a panel floating at its handle. Everything for that band lives here, so the bottom strip never reflows.

The panel keeps itself clear of the curve as you work, sliding to the other side of the marker when the band would otherwise be hidden. Its frame and the short leader line to the handle carry the band's own colour, so it is always clear which band the panel is editing.



Top row

- **Power:** switch the band on or off without deleting it.
- **Solo** (headphone): audition just this band as a band-pass, to find the exact spot. It is a listen tool, not a mute, so it does not change the mix. On a dynamic band the dynamics stay active in solo, so you hear exactly what the band is doing.
- **Delete:** remove the band.
- **Shape** button: open the filter-type popup.
- **Channel** button (): set the stereo placement (see Mid/Side and Left/Right).
- **DYN / FULL / EXT:** the dynamics toggles (see Dynamic EQ).

Editable readout

The Hz / dB / Q (or slope / tilt) values are editable both ways: **drag** a value up or down to nudge it (hold Shift for fine steps), or **double-click** it to type a number. Enter for kHz. The four compressor values (Ratio / Knee / Attack / Release) are typed by double-click, on top of dragging their sliders; for Ratio you can type for brickwall limiting.

When a band is dynamic, its whole compressor (the dynamics meter and the FULL controls) sits on a tinted sub-panel, set apart from the Hz / dB / Q main values that stay the focus above it.

Dynamic EQ

Any bell or shelf can be made dynamic: its gain engages only when the signal inside that exact band crosses a threshold. The detector listens to precisely the band you drew, at its own **frequency** and **Q**, so it reacts only to what that band covers, nothing else.

A dynamic bell at 9 kHz taming the top end, with FULL revealed: the dynamics meter (level, draggable threshold marker, and the gain reduction it is applying right now) above the full compressor controls, Ratio / Knee then Attack / Release.

Gain is the range, threshold is the trigger

The band's **Gain** sets the *range*: it is the limit the dynamic move reaches when the band is fully engaged. A small gain is a gentle move, a large one is firmer. The **Threshold** is separate and **absolute** (in dBFS): the band starts to act as the in-band level rises above it and reaches the full Gain as the level climbs further. Because the two are decoupled, you set how hard the band can pull with Gain and where it starts pulling with Threshold, independently.

How the band reacts to the threshold

By default a dynamic band reacts to content **above** the threshold: with positive gain it lifts loud content further (an upward move on peaks), with negative gain it holds loud content down (the classic de-esser).

The dynamics meter

Whenever a band is dynamic, the panel shows a per-band dynamics meter, the standard view:

- The **level bar** is the in-band detector level. The part that sits above the threshold (what actually drives the move) is drawn in amber.
- The **threshold marker** (a small triangle in the band's colour) sits on the level track. Drag it to set the threshold; the **T** readout shows its dBFS value.
- **GR** shows the live move the band is applying right now: **GR** (coral) for a cut band and **GA** (green) for a boost band, so the meter fills whichever way the band works.

Toggles

- **DYN** turns the dynamics on for the band.
- **FULL** reveals the full compressor controls below the meter, as four sliders in two rows: **Ratio** and **Knee**, then **Attack** and **Release**. FULL only exposes more control, it does not change the detector or the threshold.
- **EXT** drives the detector from the external sidechain bus instead of the band's own signal. An amber dot warns if EXT is on but no sidechain signal is arriving (the band then falls back to internal detection).

Automatic vs Full controls

With **FULL** off, the band uses automatic, program-adaptive ballistics and shaping, a good starting point.

An automatic band now **levels gently** Since 1.2 rather than limiting: the strength of the grab follows the gain range you set, so a small range (say -3 dB) eases its region down softly (about 1.5:1) and a large range grabs firmly (5:1 at -24 dB). This is the **Musical** default. **Full controls** still gives you the exact ratio you set, including brickwall.

You can pick the behaviour per project under **Auto Dynamics** in the settings menu (**Musical** / **Classic**); the choice is stored with the project. A project saved with an earlier version loads in **Classic** and sounds exactly as mixed.

Revealing Full controls no longer jumps the Ratio to brickwall: on a musical automatic band it starts at the value the automatic reduction was already using, so the sound stays continuous while you take over. The moment you set the Ratio by hand it is kept from then on; a band you never touch follows the automatic value.

The full compressor (FULL)

With **FULL** on, the band is a complete compressor on its own frequency region. Together with the Threshold (on the meter) and the Gain (the range), the controls are:

- **Ratio** sets how much of the level over the threshold is removed, from **1:1** (nothing) up to **Inf** (brickwall). The Gain still caps the maximum move.
- **Knee** is the soft-knee width (0 to 24 dB) around the threshold, so the onset can be a gradual ease-in (wider) or a hard switch (0 dB). The default is 6 dB.
- **Attack** and **Release** set how fast the band reacts and recovers.

Solo keeps the dynamics running. When you audition a dynamic band on its headphone solo, you hear exactly what its compressor is doing, on exactly the frequencies it reacts to, so the meter and your ears agree.

Dynamic bands work in every phase mode, including **Linear Phase** Since 1.2: their detectors keep running and the moving gain is applied through the linear-phase engine itself, so threshold, ratio and timing behave as in the other modes while the phase stays linear. Because the linear-phase path looks ahead of its own output, the dynamics react with a natural lookahead there; very fast attacks are a little softer than in the zero-latency modes, which is inherent to any linear-phase dynamic EQ.

Mid/Side and Left/Right

Each band can act on a chosen part of the stereo field. Click the channel button in the panel, or use the **Channel** submenu at the top of a band's right-click menu, and pick:

MODE	ACTS ON	HANDLE BADGE
Stereo	Both channels equally (the default).	none
Mid	The mono (centre) sum only.	amber
Side	The stereo difference only.	violet
Left	The left channel only.	coral
Right	The right channel only.	teal

The right-click Channel submenu and the panel's channel button stay in sync. When non-stereo bands are present, the curve splits into colour-coded component lanes (Mid and Side, or Left and Right) so you can see each placement's own response. A band's handle rides its own lane.

Spectrum analyzer

A time-smoothed FFT analyzer sits behind the curve, on a log-frequency display with an interpolated low end (no staircase). It has three modes, set from the settings gear:

- **Off:** no analyzer.
- **Post:** the processed (output) spectrum, filled.
- **Pre + Post:** the input spectrum as a faint line behind the filled output, so you can see what the EQ did.

Decay and display slope Since 1.2

Two more analyzer settings sit in the gear menu, both display only and both remembered with the project:

- **Decay** sets how quickly the spectrum falls back after a peak, from **Fast** (a snappy trace that follows the signal down) to **Very slow** (a steady, heavily damped display where peaks linger), with **Medium** the default.
- **Display slope** tilts the spectrum by **3**, **4.5** or **6 dB/oct** (pivoting at 1 kHz) so the top octaves are easier to read and a typical mix sits flatter, or leave it **Off** for the raw spectrum. It affects only the display, not the audio.

Piano keyboard Since 1.2

A **piano keyboard** along the frequency axis lets any spot on the curve read as a musical note. It can be turned off in the settings gear.

Use the analyzer to find problem frequencies, but trust your ears for the final move.

Phase modes and oversampling

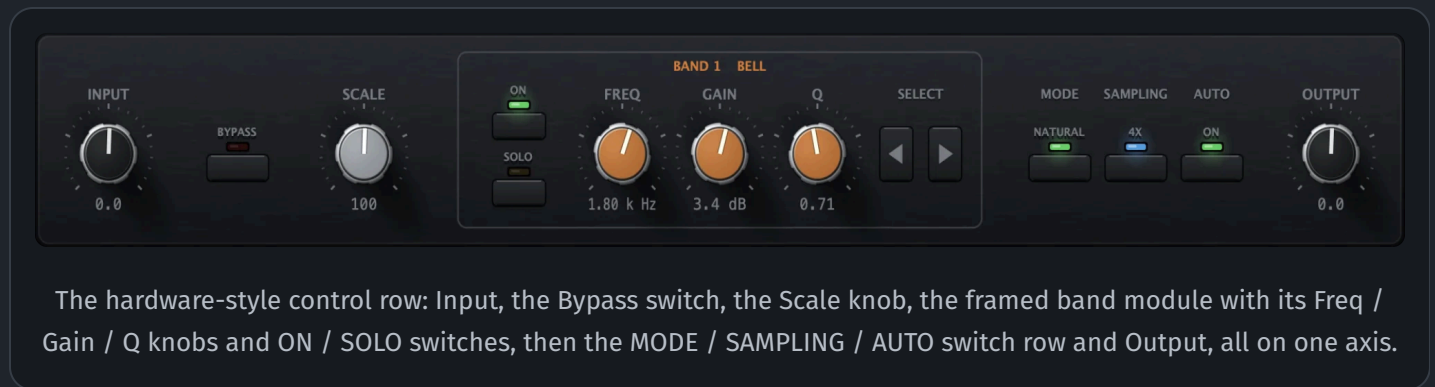
The mode sits as a switch in the bottom strip under the MODE legend. Digital, Standard and Natural Phase are all zero or near-zero latency; only Linear Phase adds real delay.

MODE	CHARACTER	LATENCY
Digital	The plain bilinear filter design. Like a classic digital EQ, high bells and shelves narrow (cramp) near the top of the spectrum.	None
Standard	Analog-matched magnitude, so the top octave stays true. Minimum-phase and the default.	None
Natural Phase	Standard's magnitude, with the top-octave phase aligned to the analog reference by a short correction filter. It does not flatten phase: it is still minimum-phase-family with a full phase response, only the very top is matched to the analog curve. Reach for it when that last bit of top-end phase behaviour matters and you cannot spend Linear Phase's delay.	About 1 ms
Linear Phase	Analog-matched magnitude with no phase shift at all, via an FFT. This is the only mode that removes phase shift. Best for mastering and parallel paths.	Adds latency (tens of ms)

Dynamic bands work in all four modes (see Dynamic EQ). **Oversampling** sits next to MODE as the **SAMPLING** switch (Off / 2x / 4x): left-click cycles it, right-click picks directly, and its LED is dark at Off and lights when engaged (green at 2x, blue at 4x). It runs the filters at a higher internal rate for cleaner behaviour near Nyquist on steep or high-frequency moves, applies to the IIR paths (Digital, Standard and Natural Phase), and uses a low-latency design.

On CPU. Digital and Standard are the lightest and cost the same, so choose between them by ear, not by load. Natural Phase and Linear Phase cost a bit more (a correction filter and an FFT, respectively); the practical difference between them is latency, not CPU. Oversampling roughly doubles the load per step (2x, 4x). The heaviest combination is many dynamic bands in Natural Phase, since each moving band re-fits its correction filter; even then a single instance stays well within real time on a modern machine.

Gain Scale and Auto Gain



The hardware-style control row: Input, the Bypass switch, the Scale knob, the framed band module with its Freq / Gain / Q knobs and ON / SOLO switches, then the MODE / SAMPLING / AUTO switch row and Output, all on one axis.

Gain Scale

The **Scale** dial (0 to 200 %) scales every band's gain at once: 100 % is as drawn, 50 % is half the moves, 0 % is flat, 200 % is double. The whole curve, the handles and the on-curve readouts follow the Scale, while the stored per-band values stay untouched. Use it to dial the whole EQ in or out, or to A/B a gentler version of your curve. Cut and notch bands have no gain, so they are unaffected.

Auto Gain

The **Auto** switch level-matches the output so bypassing the EQ compares at an even loudness. It is **deterministic**: the trim is computed purely from the filter response (the average level the curve adds or removes), never from a level measurement. That means it has no detector of its own and never acts like a compressor, which is exactly what you want from an EQ. A broadband boost gives a downward trim, a broadband cut gives an upward trim, and a balanced curve leaves the level essentially unchanged.

Its LED turns **amber** while Auto Gain is on and a band it cannot fully level-match is present, so an incomplete level match is never invisible.

Auto Gain follows the dynamics

Auto Gain also folds in what the dynamic bands are doing right now. It reads each dynamic band's live gain (which the band's own dynamics already determine) and keeps the broadband loudness steady as the band moves. The result is a dynamic EQ that **changes the spectrum without changing the level**: the notch or peak still acts, but the track does not get quieter or louder as it does.

This is still not a second compressor: the only thing that moves over time is the band's own dynamic gain, and the compensation is feed-forward (the detector listens before it), so it cannot pump or run away. It holds the perceived (equal-energy-per-octave) loudness, so it tracks real program material closely.

Because Auto Gain neutralises a dynamic band's level change, a band you *want* to reduce level (a classic de-esser) is also level-matched while Auto Gain is on. Turn Auto Gain off if you want that level reduction to come through.

Auto Gain reflects whatever Gain Scale is doing, so the two work together: pull Scale up and Auto Gain keeps the level steady. The manual Output knob still works on top of Auto Gain.

Input, output and metering



Stereo input metering: the left and right bars inside one shared frame with the dB scale, the peak-hold value in dBFS underneath, and the OVER lamp lit at the top after a peak reached 0 dBFS.

- **Input** knob (left margin): gain applied before the EQ. The input meters follow it.
- **Output** knob (right margin): trim applied after the EQ.

- **Stereo meters** flank the curve: a pair on the left for input, a pair on the right for output. The outer bar of each pair carries the dB scale.
- **Bypass** (bottom left): removes the EQ for a true A/B. It keeps the input gain and output trim, so toggling it compares the EQ on and off at the same level instead of jumping the gain, and it keeps any added latency (Linear Phase, for example), so playback does not pop or shift.

For an honest bypass comparison, turn on Auto Gain so the levels match.

Settings

The gear icon at the top right opens the settings menu:

- **Analyzer:** Off / Post / Pre + Post, plus **Decay** and **Display slope** (see Spectrum analyzer).
- **Auto Dynamics:** Musical / Classic (see Dynamic EQ).
- **Oversampling:** Off / 2x / 4x.
- **Tooltips:** the hover help on or off.
- **Piano keyboard:** the note keyboard along the frequency axis on or off.
- **UI Scale:** fixed steps (75 / 85 / 100 / 125 / 150 / 175 / 200 %) as quick presets; the window is also freely resizable by dragging its corner.
- **Make Default / Update Default / Factory Default:** the state new instances open with (see Presets).
- **Check for updates:** when on (the default), the plug-in looks for a newer version at most once per day, the first time you open its window that day. If one is available, the **settings gear tints green**; opening the menu shows a link that opens jeesonic.de. Nothing is ever downloaded or installed automatically. It is a plain request for a small public version file, sends no personal data, and can be turned off here. See the [privacy note](#).

The current version, format and build stamp are shown in the **Help** menu.

All plug-in state (every band and setting) is saved with your host session.

Mouse and keyboard reference

ACTION	RESULT
Double-click empty curve	Add a band (a cut at the far edges, at 0 dB elsewhere)
Double-click a handle	Delete that band
Click a handle	Select the band
Drag a handle	Set frequency and gain
Scroll over a handle	Set Q (bell / shelf / notch) or slope (cuts)
Right-click a handle	Type / slope / channel / delete menu
Right-click empty curve	Add-band menu
Double-click a value	Type a number (k for kHz)
Press and hold a landmark marker	Audition that spot; drag down to sweep
Arrow steppers	Select the previous / next band by frequency

Tips

- **Find then fix:** solo a bell and sweep to locate a resonance, then back the gain off to cut it. Or turn on spectrum landmarks and let them point you at the steady peaks first.
- **Tame dynamically:** for a frequency that is only a problem on loud notes (a harsh vocal S, a boomy kick), use a dynamic cut instead of a static one so it only acts when needed.
- **De-ess in stereo or Side:** a dynamic high-shelf or bell on the Side channel can tame sibilance or harsh cymbals without dulling the centre.
- **Shape, don't squash:** with FULL revealed, dial a softer Ratio and a wider Knee for a gentle, musical move instead of hard limiting; the Gain still caps how far it can go.
- **Tone without loudness:** keep Auto Gain on with your dynamic bands and the EQ changes the spectrum while holding the loudness steady, so you hear the tone change, not a level change.
- **Match loudness:** turn on Auto Gain before A/B-ing against bypass, so you judge tone and not level.

- **Linear phase for masters:** switch to Linear Phase on a mix bus or master where phase smear matters; use Digital or Standard while tracking to avoid delay.
- **Scale to taste:** build an aggressive curve, then pull Scale back to 60 to 80 % for a more natural version without redrawing every band.