

Parametric Compressor

User Guide | Parish Audio

Frequency-selective compression with independent detector routing for each band.



Product page: <https://parishaudio.com/products/parametric-compressor>

Parametric Compressor lets you place independent compression exactly where you need it in the spectrum. Each band has its own frequency range, detector routing, threshold, ratio, timing, and makeup gain, while bands can overlap or expand to full-band compression.

1. Quick Start

1. Insert Parametric Compressor on the track or bus you want to control.
2. Double-click the spectrum display or click + Add Band to create a compression band. Up to 10 bands can be active at once.
3. Move the band to the problem area with Frequency, or drag its numbered node/body in the graph. Resize it with Width, the band edges, or the mouse wheel.
4. Set Threshold and Ratio so the band compresses only when that region becomes too prominent.
5. Use Attack and Release to shape how quickly the band reacts and recovers, then use Makeup if the compressed region needs level compensation.
6. Choose Source: Main, SC, or Both, and Detect: Band or Full to decide what drives the band compressor.
7. Use global Mix for parallel compression and Output to level-match the finished result.

2. What Makes It Different

A conventional compressor responds to the overall signal and changes the level of the entire signal. A multiband compressor divides the spectrum into fixed crossover regions. Parametric Compressor takes a different approach: each band is placed like a parametric EQ band, but the amount of cut is controlled dynamically by a compressor detector.

A partial-width band applies dynamic gain only around its selected frequency range. A full-width band behaves as a broadband compressor. Because bands are independent, they can overlap, cover different areas, or combine focused and full-band compression in the same instance.

Each band also has independent detector routing. The audible processing can stay focused on one frequency region while the detector listens to that same band, the full spectrum, an external sidechain, or a combination of main and sidechain signals.

3. Spectrum Display and Band Editing

- The subdued trace shows the input spectrum; the brighter blue trace shows the processed output spectrum.
- Double-click an empty area of the graph to add a band at that frequency.
- Drag a numbered node or the shaded body of a partial-width band to move its center frequency.
- Drag the left or right edge to resize the band while keeping the opposite edge anchored.
- Use the mouse wheel over a band to change Width. Hold Shift for finer width adjustments.
- Right-click a band for commands including Delete, Duplicate, and Set Band to Full Width. Right-click empty space to add a normal or full-width band at that location.
- A selected band displays its width and current gain reduction in a small readout above the node.

4. Per-Band Controls

Source (Main / SC / Both)

Chooses the signal that drives the detector for the selected band. Main listens to the track being processed. SC listens to the external sidechain bus. Both combines detector energy from the main and sidechain signals.

***Practical note:** The external sidechain is detector-only; it is never mixed into the audible output.*

Detect (Band / Full)

Chooses whether the detector listens only to the selected frequency band or to the full-spectrum detector signal. Band is useful when you want compression to react specifically to energy in the same region being controlled. Full lets the selected frequency region react to overall signal level.

***Practical note:** For a full-width processing band, the detector is effectively full-spectrum even if Band is selected, because the processing band already spans the entire spectrum.*

Frequency (20 Hz - 20 kHz)

Sets the center frequency of the selected compression band. On partial-width bands, this defines where the dynamic gain filter is centered.

***Practical note:** Move Frequency to the area that becomes too strong, not necessarily the loudest part of the entire source.*

Width (0.25 - 10.00 octaves / FULL)

Sets how much of the spectrum the band covers. Narrow values target a small region; larger values affect a broader range. At approximately 9.95 octaves and above, the interface treats the band as FULL and the compressor applies broadband gain.

***Practical note:** Overlapping bands are allowed. This makes it possible to use a broad control band and then add narrower problem-specific bands inside it.*

Threshold (-60.0 to 0.0 dB)

Sets the detector level above which compression begins. Lower thresholds cause the band to react more often; higher thresholds limit compression to stronger events.

Ratio (1.00:1 - 20:1)

Controls how strongly the band reduces level once the detector crosses Threshold. Low ratios are gentle; high ratios create firmer control. The compressor uses a fixed 6 dB soft knee around the threshold.

Attack (0.10 - 250 ms)

Sets how quickly the detector envelope responds to rising level. Faster attacks catch short peaks and aggressive resonances; slower attacks let more initial impact pass.

Release (5 - 2000 ms)

Sets how quickly compression recovers after the detector falls. Short releases track rapid changes closely; longer releases create smoother, more sustained control.

Makeup (-12.0 to +12.0 dB)

Adds or subtracts gain within the selected band after gain reduction. On partial-width bands, Makeup is applied through the same parametric gain shape. On a full-width band, it becomes broadband makeup gain.

***Practical note:** Use Makeup for intentional compensation, not automatically. Level-match before deciding whether a compressed region actually needs to be raised.*

5. Global Controls

Mix (0 - 100%)

Blends the fully processed wet path with the original dry signal. At 100% you hear the complete band processing; lower settings create parallel compression across the entire plugin.

Output (-18.0 to +18.0 dB)

Adjusts the final output after the dry/wet blend. Use it to level-match the plugin against bypass.

Power (On / Off)

Engages or bypasses processing with a short smoothed transition.

6. Detector Routing Explained

Routing	Detector behavior	Typical use
Main + Band	The selected frequency region of the main input drives compression.	Frequency-dependent control such as de-harshing, low-end control, resonance management.
Main + Full	The full main signal drives compression, but the gain change is applied only to the selected processing band.	Making a presence band or low band respond to overall performance level.
SC + Band	The selected frequency region of the external sidechain drives compression.	Frequency-selective ducking keyed by another track.
SC + Full	The full external sidechain drives compression of the selected band.	Classic sidechain ducking restricted to one spectral region.
Both + Band	Band-limited energy from both main and sidechain contributes to the detector.	Shared triggering when both signals should influence control.
Both + Full	Full-spectrum energy from both main and sidechain contributes to the detector.	Broad combined triggering while processing remains frequency-selective.

Stereo note: detector power is combined across left and right channels, so a band applies the same gain-reduction amount to both channels. This keeps stereo image changes from being caused by independent left/right compression.

7. Practical Workflows

Smooth a harsh vocal

- Add a band around the harsh upper-mid region and keep Width relatively focused.
- Use Main + Band so only energy in that region drives the detector.
- Start with a moderate Ratio and a fast-to-medium Attack, then adjust Release until the control sounds natural.
- Add a second higher band if sibilance needs separate timing or strength.

Control low-end buildup

- Create one band in the sub/low-bass region and another in the upper-bass or low-mid region if needed.
- Use separate thresholds and releases so sub energy and bass-note body can be controlled independently.
- Keep the bands overlapping if that produces a smoother transition; there are no crossover boundaries to manage.

Frequency-selective sidechain ducking

- Route a key signal to the plugin sidechain bus.
- Set Source to SC and choose Full if the whole key signal should trigger compression.
- Place the processing band only where space is needed - for example, ducking a bass region when the kick hits without lowering the entire track.

Broadband compression plus problem bands

- Create a FULL-width band for general compression.
- Add narrower overlapping bands for specific areas that occasionally jump forward.
- Because every band has its own detector and timing, the broadband and focused control can react differently.

Parallel dynamic control

- Dial in the bands at 100% Mix first so the behavior is easy to hear.
- Reduce global Mix to blend the processed result with the original signal.
- Use Output for final level matching rather than judging the louder version as automatically better.

8. Factory Presets

Preset	Purpose
Broadband Control	Single full-width band for general compression.
Vocal Smooth	Upper-mid, sibilance, and broadband vocal control.
De-Harsh	Focused upper-band harshness and sharpness control.
Low-End Tamer	Separate low and upper-bass control bands.
Bass Control	Low/mid bass control plus broadband compression.
Drum Punch	Low/presence control plus broadband compression for punch.
Mix Glue + Low Control	Gentle full-band glue with an additional low-frequency control band.
Guitar Edge Control	Two focused upper-mid bands for controlling edge and bite.
Mastering Gentle	Gentle broadband, low, and upper-mid control.
Three-Zone Control	Independent low, mid, and high zones without crossovers.

Factory presets set Power on, Mix to 100%, Output to 0 dB, and rebuild the active band configuration. The preset bands use the Main source and Band detector defaults; a FULL-width band behaves as broadband compression.

9. Tips and Best Practices

- Start with fewer bands. Add another band only when a separate frequency region needs different threshold, timing, or detector behavior.
- Use narrow bands for specific resonances or harshness, and broader bands for tonal regions that move together.
- Overlapping bands are intentional and useful. Two bands can independently compress the same area with different timing or detector routing.
- If a band sounds like static EQ rather than dynamic control, raise Threshold or lower Ratio so gain reduction happens only when needed.
- Use the selected-band meter and gain-reduction readout to confirm when and how strongly a band is reacting.
- For external sidechain use, confirm that your DAW is actually feeding the plugin sidechain bus. The plugin accepts mono or stereo sidechain input.
- Level-match Output before comparing bypass. Compression can change perceived loudness even when the tonal result is better.
- Use global Mix after the individual bands are working correctly; it is easier to diagnose band behavior at 100% Mix.

10. Troubleshooting

Symptom	What to try
A band is not compressing.	Lower Threshold, confirm Ratio is above 1:1, and check that the selected detector Source is receiving signal. If using SC, verify sidechain routing in the DAW.
The sidechain signal is audible.	It should not be. The external sidechain is detector-only. If you hear the key signal, check the DAW routing rather than the plugin Mix control.
The band reacts to too much of the signal.	Use Detect = Band and reduce Width so the detector listens to a more focused region.
I want the whole signal compressed.	Set Width to FULL. Full-width processing applies broadband gain reduction and makeup.
The result pumps or chatters.	Increase Release, reduce Ratio, raise Threshold, or broaden the detector region if it is reacting to very narrow transient energy.
The tone changes too much even when compression is light.	Check Makeup. On partial-width bands, positive or negative Makeup behaves like a static offset inside that band in addition to dynamic gain reduction.
The plugin has reached the band limit.	A maximum of 10 bands can be active. Delete or repurpose an existing band before adding another.
The display shows activity but little audible change.	Check global Mix and Output, then confirm the selected band Width and current gain reduction. Very low Ratio or high Threshold settings can produce subtle processing.

11. Technical Reference

Item	Specification
Processing type	Frequency-selective / parametric compression with up to 10 independent bands
Band frequency	20 Hz - 20 kHz
Band width	0.25 - 10.00 octaves; 9.95+ treated as FULL width

Item	Specification
Threshold	-60.0 to 0.0 dB
Ratio	1.00:1 to 20:1
Attack	0.10 to 250 ms
Release	5 to 2000 ms
Makeup	-12.0 to +12.0 dB per band
Detector source	Main / Sidechain / Both, independently per band
Detector spectrum	Band / Full, independently per band
Compression knee	Fixed 6 dB soft knee
Global Mix	0 - 100% dry/wet blend
Global Output	-18.0 to +18.0 dB
Stereo behavior	Stereo-linked detector/gain reduction
External sidechain	Optional mono or stereo detector input; not mixed into output
Spectrum display	Input and processed output spectrum
State/workflow	Factory/user presets, undo/redo, automation-aware parameter gestures, resizable editor

12. More Information

Product page: <https://parishaudio.com/products/parametric-compressor>

Parish Audio: <https://parishaudio.com>

Support: <https://parishaudio.com/support>