PURGE+

Dynamic Resonance Suppressor

User Manual

Version 1.5.0



quietformat

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Product Introduction

PURGE Plus 1.5.0 is a **major update** that has been significantly redesigned from the previous **1.0.x versions**. Through **thousands of hours of testing and development**, the quietformat development team improved the stability of the **Windows version** and implemented a **real-time resonance detection structure** that goes beyond the previous frequency-band-based dynamic EQ approach.

PURGE Plus no longer simply reduces a frequency just because a certain band has more energy. Instead, it continuously analyzes the input spectrum and dynamically attenuates only the **resonance candidates** that protrude abnormally from the surrounding **spectral flow**.

For example, i**f 5 kHz is loud, PURGE Plus does not automatically suppress 5 kHz**. Suppression occurs only when a **narrow, unpleasant peak** around 5 kHz stands out from the surrounding frequency range.

With this change, **PURGE Plus 1.5.0** operates with much greater **precision and transparency** than previous versions. It is designed to preserve musical tone as much as possible, such as **vocal presence**, **snare attack**, **piano body**, and the intentional brightness of a synth, while more accurately controlling **unpleasant resonances**, **sharp peaks**, **sibilant harshness**, and **boxy buildup**.

PURGE Plus is not an automatic EQ designed to simply make things sound prettier. It is a **dynamic resonance suppressor** built to find and clean up **problematic resonances** that unnecessarily stand out in the music.

The best result is not “**a lot has been cut**,” but rather “**the annoying part is gone, while the original sound remains intact**.”



Quick Start

If this is your first time using PURGE Plus, we recommend starting with the following workflow.

1. Insert PURGE Plus on a track or mix bus.
2. Adjust Depth to set the amount of resonance suppression.
3. Enable Delta to hear what PURGE Plus is removing.
4. If too much of the original sound is audible in Delta, lower Sensitivity or increase Isolation.
5. If the problem area is clear, move a Guide Node to that frequency range.
6. If the high end sounds watery, fluttery, or unstable, increase Release and lower Detail.
7. Finally, adjust Mix and Output to match the processed level.

Rather than using strong settings from the beginning, start with moderate Depth and Sensitivity values, then use Delta to check what is being removed while making fine adjustments.

Core Concept

PURGE Plus does not make decisions based simply on **absolute volume**. Its detection is based on **relative spectral prominence**.
In other words, the plugin looks for the following:

- Whether a specific frequency is protruding abnormally from the surrounding **spectral envelope**
- Whether that peak behaves like a narrow or medium-width **resonance**
- Whether it can be distinguished from short transients, harmonic body, or the **fundamental tone**
- Whether the problematic component remains meaningful over time
- Whether the user has made that region more sensitive using a **Guide Node**

Because of this, PURGE Plus is **not just a multi-band dynamic EQ**.

It does not operate based on "**this frequency band has a lot of energy**."
Instead, it operates based on "**there is a resonance inside this band that sticks out sharply compared to the surrounding frequencies**."

Processing Overview

The PURGE Plus **detector** operates based on the **dry input signal before processing**.

This prevents the already-attenuated **wet signal** from feeding back into the detector and confusing its decision-making.

Internally, PURGE Plus analyzes the input signal in real time, finds **resonance candidates** that protrude abnormally from the surrounding frequency range, and attenuates them only as much as needed using **dynamic filters**.

This structure is designed to follow momentary resonances as they appear, while avoiding excessive reduction of the instrument's natural harmonic structure or overall tone.

Interface Overview



The PURGE Plus UI is divided into four main sections.

① **Analyzer**
The central graph that displays the reduction curve and guide nodes.

② **Main Controls**
Controls for Depth, Sensitivity, Detail, Isolation, Max Cut, Attack, and Release.

③ **Monitoring / Mode**
Controls for Delta, Sidechain, Bypass, and Precision Mode / Live Mode.

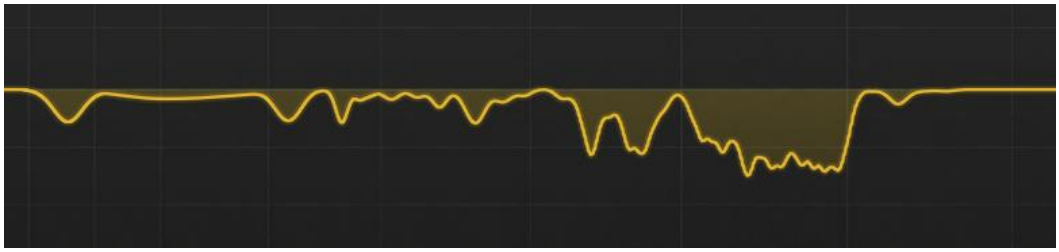
④ **Metering**
Displays the reduction meter and input/output level meters.

The Analyzer may look similar to an EQ graph, but it is not a fixed EQ curve. It is a visual representation of the current detector behavior and suppression activity.

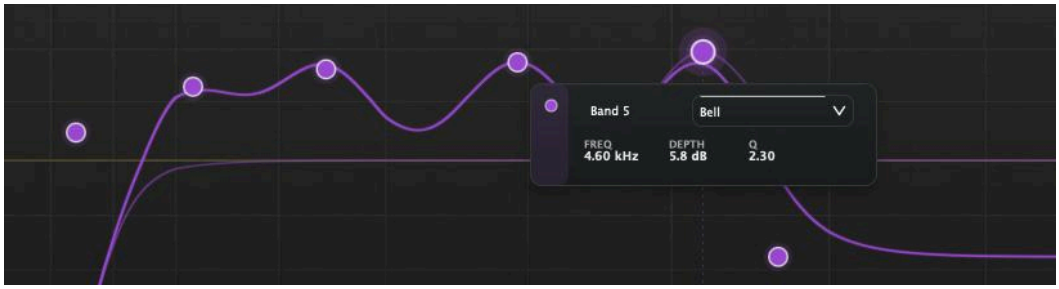
Analyzer

The Analyzer displays the following information.

Reduction Curve
Shows which frequencies are currently being attenuated and how much suppression is being applied.



Guide Nodes
Guide points that let the user adjust the detector's sensitivity bias.



Reduction Meter
Displays the overall amount of reduction.



Input / Output Meter
Displays the input and output levels.



The lower the Reduction Curve moves, the more suppression is being applied at that frequency.

The Analyzer is not a fixed EQ curve. It is a dynamic visualization that changes continuously according to the current input signal and detector response.

Guide Nodes

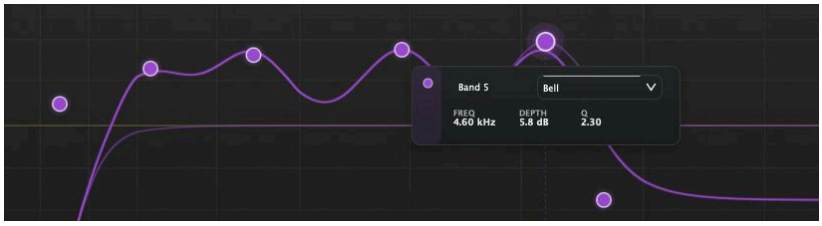
A Guide Node is not an EQ.

It does not directly **boost** or **cut** the sound. Instead, it works as a **sensitivity bias** that tells the detector which frequency areas it should pay more or less attention to.

For example, raising a 5 kHz Guide Node does not make 5 kHz louder.
It makes PURGE Plus respond more actively when a resonance candidate appears around 5 kHz.

Likewise, lowering a Guide Node does not directly cut that frequency.
It simply encourages the detector to be less sensitive in that area.

In simple terms, a Guide Node is not an EQ.
It is a map that tells the detector where to listen more carefully.



Guide Node Controls

Drag
Adjusts the frequency and guide amount.

Double-click
Turns the selected Guide Node on or off.

Command-click
Resets the selected Guide Node to its default value.
On Windows, use Ctrl-click.

Mouse wheel over a selected node
Adjusts the node's Q.

Click a node
Displays a popup with frequency, depth, and Q information.

Guide Type

Guide Nodes can use the following types:

-Bell
-Low Shelf
-High Shelf
-Low Cut
-High Cut
-Band Pass
-Band Reject
-Tilt

These types are not actual EQ filters. They are **detector guide shapes**.

In other words, they do not directly filter the sound.
They define how the detector should interpret and focus on a specific frequency area.

Main Controls



Depth
Controls the overall strength of resonance suppression.

Higher values apply stronger reduction to detected resonances.

If Depth is set too high, it may also suppress intentional tone or presence, so it is recommended to adjust it while checking the result with Delta.

Sensitivity
Controls how easily PURGE Plus detects resonance candidates.

Higher Sensitivity values allow smaller peaks to be detected more easily.

If Depth is about “how strongly the resonance is reduced,” Sensitivity is closer to “how easily something is judged as a problem.”

Detail
Controls the precision of detection and reduction.

Higher values make PURGE Plus more sensitive to narrow, detailed resonances.
Lower values create a smoother and wider suppression behavior.

Isolation
Controls how strongly PURGE Plus separates problematic resonances from musical tone.

Higher values make the detector evaluate the surrounding frequency range and harmonic context more strictly, focusing more on problematic peaks.

If too much of the original sound is audible in Delta, try increasing Isolation.

Max Cut
Sets the maximum amount of attenuation that a single resonance object can receive.

Even if Depth is set high, the reduction will not go deeper than the Max Cut limit.

If you want to control strong resonances more firmly, check Max Cut together with Depth.

Attack
Controls how quickly reduction is applied after a resonance is detected.

Shorter Attack values respond faster to sibilance, clicks, and harsh transients.

If Attack is too fast, transients may become dull, so adjust it while listening to the source.

Release
Controls how slowly the reduction returns to normal after the resonance disappears.

Shorter Release values return the sound more quickly, but if Release is too short, the high end may become watery, fluttery, or unstable.

Longer Release values feel more stable, but if set too long, the tone may feel overly suppressed.

Mix
Controls the dry/wet balance.

At 100%, the full processed PURGE Plus signal is applied.
Lower values blend the original dry signal with the processed signal.

Output
Controls the final output level.

Use it to match the perceived level after resonance suppression, or to adjust the output if it is too loud or too quiet.

Delta



Delta lets you listen only to the components that PURGE Plus is removing.

Delta is not the final output sound.
It is a monitoring function used to check what PURGE Plus is attenuating.

In a healthy Delta signal, you should hear mostly the following elements rather than the full musical signal:

-Creaky resonances
-Sibilance
-Sharpness
-Ringing
-Boxy buildup
-Fizz
-Brittle high-frequency content

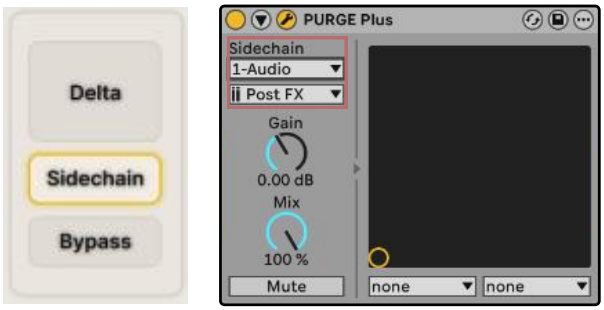
The more Delta focuses on unpleasant resonances, the better the setting is usually working.

On the other hand, if too much of the vocal body, piano fundamental, core guitar tone, or full drum attack is audible in Delta, the setting may be too aggressive.

In that case, try the following:

-Lower Depth
-Lower Sensitivity
-Increase Isolation
-Focus the Guide Nodes only on the problem area
-Slightly increase Release
-Lower Max Cut

Sidechain



When **Sidechain** is enabled, PURGE Plus can use the **sidechain input signal** as the detector source instead of only analyzing the track where the plugin is inserted.

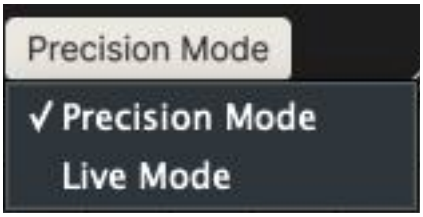
Example:

1. Insert PURGE Plus on the Bass track.
2. Route the Kick to the sidechain input.
3. Enable the Sidechain button.
4. When the kick hits, PURGE Plus dynamically controls the resonant frequency areas in the bass that conflict with the kick.

This is **not simple volume ducking**.

Instead of reducing the entire volume, PURGE Plus uses the sidechain signal to focus suppression on the frequency areas that are conflicting, resonating, or protruding.

Processing Mode



PURGE Plus provides two processing modes:

Precision Mode
Live Mode

Precision Mode

Precision Mode is the default mode for **mixing** and **mastering**.

Precision Mode uses l**ookahead processing** and reports **2048 samples of latency** to the host.

At **48 kHz**, this is approximately **42.7 ms**.

This mode allows the detector to track resonances more stably, making it suitable for situations that require more precise suppression.

Most DAWs automatically compensate for the latency reported by the plugin.
For this reason, **Precision Mode** is recommended as the default choice for mixing and mastering.

Recommended for:

-Cleaning up vocal harshness
-Controlling piano resonance
-Reducing guitar fizz
-Taming sharp synth peaks
-Mix bus or pre-master cleanup

Live Mode

Live Mode is designed for real-time performance and monitoring situations where low latency is important.

Live Mode operates **without lookahead** and reports **0 samples of latency**.

Because it has less lookahead margin than Precision Mode, it prioritizes **real-time response** and **low latency** over the most precise resonance tracking.

Recommended for:

-Recording monitoring
-Live performance
-Latency-sensitive sessions
-Real-time playing

Choosing Between Precision Mode and Live Mode

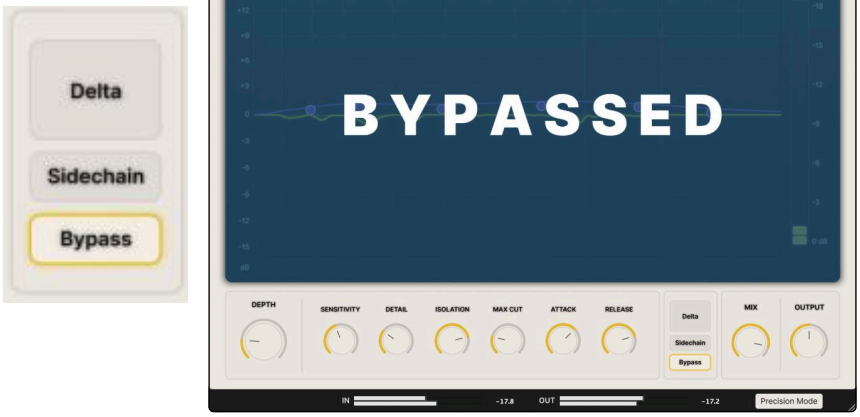
Use Precision Mode when:

-You are mixing or mastering
-Stable resonance suppression is more important than latency
-You need detailed resonance cleanup on vocals, piano, guitars, or synths
-You want natural cleanup on a mix bus or mastering chain

Use Live Mode when:

-You are monitoring while recording
-You are performing live
-You need to minimize session latency
-The performer can directly feel plugin latency

Bypass

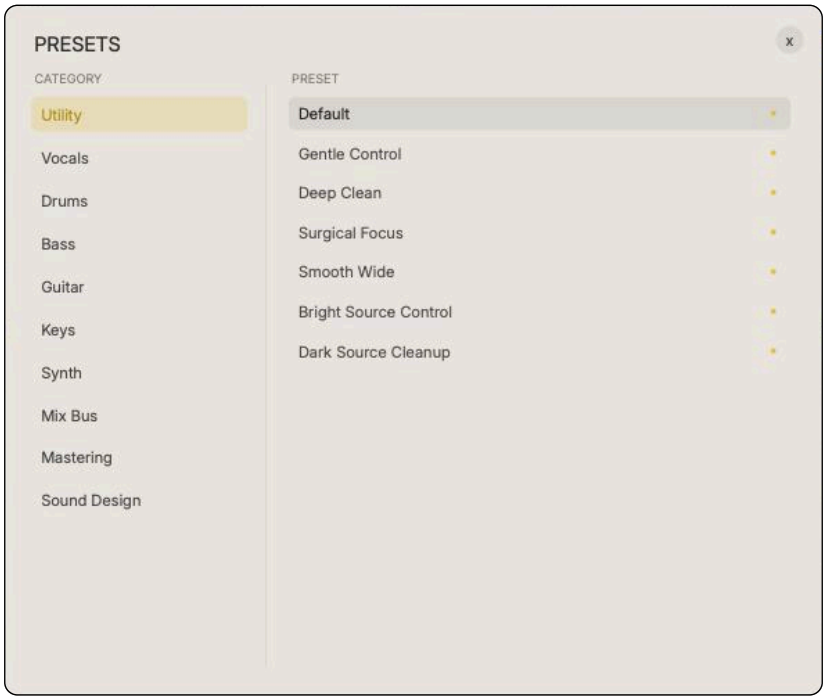


Bypass turns off PURGE Plus processing and lets the original signal pass through.

Use it to compare the sound **before and after processing**.

When Bypass is enabled, r**esonance suppression is not applied**.

Presets



PURGE Plus provides **Factory Presets** that can be used as starting points for different source types.

Factory Preset categories:

-Utility
-Vocals
-Drums
-Bass
-Guitar
-Keys
-Synth
-Mix Bus
-Mastering
-Sound Design

You can select categories and presets in the **Preset Browser**, and save your own user presets using the **Save** button.

Presets are not meant to be final answers.
They are starting points that should be adjusted to match the actual source.

For best results, fine-tune **Depth**, **Sensitivity**, **Guide Nodes**, **Attack**, and **Release** after loading a preset.

Preset Category Guide

Utility
General-purpose starting points that can be used on almost any source.

Vocals
Designed for vocal harshness, nasal tone, sibilance edge, and boxiness.

Drums
Designed for snare ring, cymbal harshness, overheads, room tone, and tom resonance.

Bass
Designed for low-end boom, low-mid mud, 808 resonance, and uneven notes in bass guitar.

Guitar
Designed for acoustic body boom, pick edge, electric guitar amp fizz, and palm mute resonance.

Keys
Designed for piano ringing, hammer attack, EP bell tone, Wurly bite, and pluck attack.

Synth
Designed for filter resonance, digital edge, supersaw harshness, and pad/lead/arp resonance.

Mix Bus
Used to gently clean up resonances that stand out across the full mix.

Mastering
Used for very conservative and transparent resonance control on the master bus.

Sound Design
Used for stronger, more creative resonance shaping or extreme suppression.

How Not to Overuse PURGE Plus

PURGE Plus is not a plugin that gets better simply by using more of it.

A good setting is one where **problematic resonances** are audible in Delta, but the original instrument's **body** or **musical tone** is not heard too much.

If the sound becomes too thin or pushed too far back, try the following:

-Lower Depth
-Lower Sensitivity
-Lower Max Cut
-Lower Mix
-Increase Isolation
-Adjust the Guide Nodes more narrowly

When Too Much of the Original Sound Is Audible in Delta

-Lower Sensitivity.
-Lower Depth.
-Increase Isolation.
-Focus the Guide Nodes more narrowly on the problem frequency.
-Avoid setting Max Cut too high.

Usage Philosophy

PURGE Plus is not an automatic EQ designed to make the sound brighter or prettier by default.

The purpose of this plugin is to find unpleasant resonances that stick out within the music and clean them up only as much as needed.

The best result is when:

-The annoying parts disappear
-The original instrument tone remains intact
-Delta mainly contains problematic resonances
-The final sound remains natural

Checking the components being removed in **Delta** and using only the amount you need is the most musical way to use PURGE Plus.

System Requirements

-macOS 10.13 or later / Windows 10 or later (64-bit only)
-VST3 / AU compatible DAW
-Minimum 8GB RAM (16GB recommended)
-Universal (Apple Silicon + Intel) support



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