LOHI

Manual for version **3.15**

Introduction

Interface Preview

Controls

Primary Controls

Filter

- *Filter Type*
- *Filter Freq*
- *Filter Slope*
- *Filter Resonance*
- *Filter Mix*

Lim/Sat

- *Lim/Sat On/Off*
- *Lim/Sat Threshold*
- *Lim/Sat Color*

Output

- *Output Gain*

- *Master Mix*
- *Master On/Off*

Advanced Controls

- *Lim/Sat Auto Gain*
- *Lim/Sat Stereo Link*
- *Filter Glide Time*
- *Reset Meters*
- *HQ Mode*

- *Preprocess Input Gain*
- *Postprocess Output Gain*

Specs

Supported Channel Configurations

Presets

Acknowledgements

Authors

Translators

About Goodhertz Plugins

User Interface

Preset Bar

Toolbar

Keyboard Shortcuts

Right-Click Actions

Right-Click Preferences

Mouse Modifiers

Automation

Plugin Settings

System Requirements

Contact Support

Lohi

Filter sweeps: lo, hi, & anywhere in between

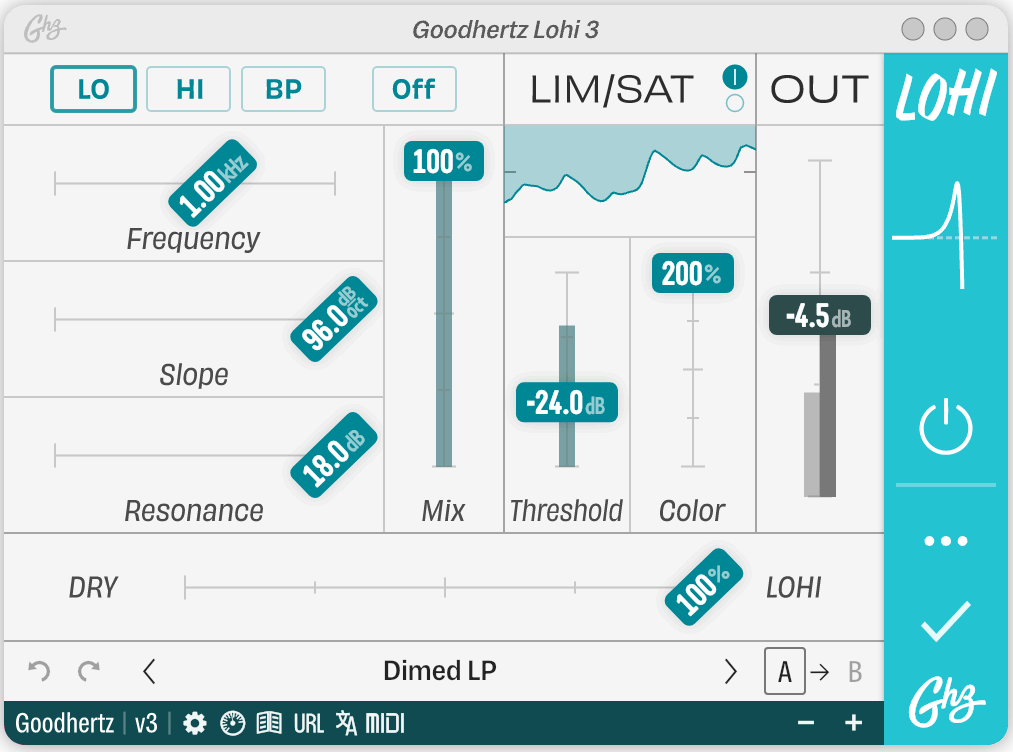
Aloha, Lohi.

Whether you're a music producer, DJ, sound designer, or mix engineer, you probably have a need for a simple filter that doesn't get upset when you automate it or change it in realtime.

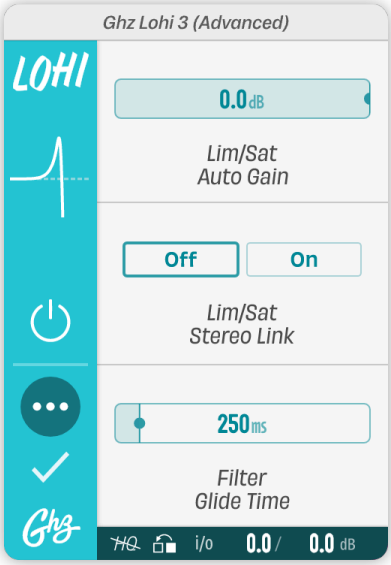
Although many filtering plugins exist, we've always struggled to find one that was easy to use and did what we wanted: sweepable frequency, variable slope, & independently controlled resonance. So we built those things into Lohi, and we included a killer analog-modeled limiter/saturator for some character and a mix knob for the filter section. Automate any parameter you like: filter type, saturation, mix — they're all meant to be happily controlled without artifacts, clicks, or pops.

Interface Preview

Here's a screenshot of Lohi in action. Click anywhere on the interface to jump to a control's definition below.



Advanced Controls



Controls

Primary Controls

Filter

Filter Type

Default LO

Changes the analog filter type.

Option	*Discussion*
LO	Passes low frequencies while attenuating high frequencies
HI	Passes high frequencies while attenuating low frequencies
BP	Passes frequencies within a certain range or band
Off	Filter is disabled

Filter Freq

Default 2.00kHz

Precisely controls the center frequency of the filter.

Filter Slope

Default 18.0dB/Oct

Continuously varies the steepness of the filter in dB per octave.

Filter Resonance

Default 6.0dB

Controls the amount of resonance at the Filter Freq.

Lohi is an analog filter design that uses feedback. When that feedback loop gets large enough, some resonance or ringing will occur. We recommend using the Lim/Sat controls to prevent any digital overs that might occur when the resonance is turned up.

Filter Mix

Default 100%

Controls the overall impact of the filter. At 0%, the filter has no effect.

This mix control won't introduce comb filtering or other unexpected blending artifacts like a standard parallel mix. Instead, it's designed to gracefully go from unfiltered to completely filtered.

Lim/Sat

Lohi's Lim/Sat section is a multi-stage analog-modeled saturator/limiter. It's not very much like a typical digital maximizer or soft clipper: it can pump a lot further and has a smooth, big-iron transformer sound.

Lim/Sat On/Off

Default On

Enables the limiter/saturator section.

Lim/Sat Threshold

Default 0.0dB

Controls the point at which limiting and more pronounced satuation will occur. Lower thresholds yield more limiting & saturation.

Lim/Sat Color

Default 100%

Controls the overall amount of analog coloration, saturation, and

harmonic distortion.

> At 0%, the Lim/Sat is rather clean sounding. 100% is a nice analog middle-ground, and 200% gets pretty rich and saturated.

> The amount of analog color is greatly influenced by the Lim/Sat Threshold.

Output

Output Gain

Default 0.0dB

Varies the output gain, after the Lim/Sat processing.

> **Output Gain** includes a level meter embedded in the slider. This meter shows the peak level of the signal both pre (lighter color) and post (darker color) **Lohi**'s processing.

Master Mix

Default 100%

Controls the overall **Lohi** mix. Smoothly transitions from no effect to fully filtered.

Master On/Off

Default On

Bypasses **Lohi**'s processing.

> We recommend using the **Master On/Off** instead of your DAW's plugin bypass to avoid digital artifacts.

Advanced Controls

The Advanced section offers more precise control and fine adjustment options.

To access **Lohi**'s advanced controls, click the `•••` icon in the sidebar.

Lim/Sat Auto Gain

Default `0.0dB`

Sets the reference peak level used by the limiter's auto gain algorithm.

> **Lohi**'s automatic gain compensation attempts to automatically make up for the gain lost during limiting so that the output volume remains approximately constant for different Lim/Sat Threshold settings.
>
> It works best when the **Lim/Sat Auto Gain** setting matches the peak level hitting the limiter. For example, if your input signal consistently peaks at `-6.0dB`, set **Lim/Sat Auto Gain** to `-6.0dB`.
>
> The maximum gain compensation is applied when **Lim/Sat Auto Gain** is set to `0.0 dB`. At `-20.0dB`, **Lim/Sat Auto Gain** is turned off completely.

> The automatic gain compensation in **Lohi** is not based on the input signal. Instead, a combination of the settings of the Lim/Sat Threshold and **Lim/Sat Auto Gain** determine the amount of gain compensation.

Lim/Sat Stereo Link

Default `Off`

Controls the stereo linking of the limiter/saturator.

State	*About*
OFF	Each channel operates independently.

State	*About*
ON	The same gain reduction is applied to all channels.

Options: Off, On

Filter Glide Time

Default 250ms

Controls approximately how long it takes the Filter controls to travel from one extreme to the other.

Filter Glide Time can be set via tap tempo. Use the `T` key when the control is highlighted to tap in your desired tempo.

Filter Glide Time can also be typed in as a note value relative to the current tempo, e.g. 1/4 for a quarter note, 1/8T for an eighth-note triplet, or 1/4D for a dotted quarter note. The value is set once at the current tempo, so it won't follow later tempo changes.

Clicks and pops may result at extremely fast filter glide times (like 10ms).

Reset Meters

Default Off

Resets the meter processing. This resets all the metering values across the plugin.

Options: Off, On

HQ Mode

Default Off

HQ Mode is our no-holds-barred processing mode where super high quality audio is given priority over CPU usage.

When **HQ Mode** is turned On, **Lohi** uses a higher precision algorithm, providing better spectral resolution at the expense of some added latency (~50 ms) and higher CPU usage.

Option	*Symbol*
Off	~~HQ~~
On	HQ!

ℹ We recommend using **HQ Mode** when you need the highest possible quality and don't mind 2-4x higher CPU usage. An important lead instrument, vocal, or a mastering session is a great place for **HQ Mode**.

ℹ **HQ Mode** cannot be MIDI mapped since automating it is not recommended.

⚠ **HQ Mode** will require more CPU resources and result in a slightly higher processing delay (latency). To ensure proper delay compensation in your host/DAW, automating **HQ Mode** is not recommended.

Preprocess Input Gain

Default 0.0

Controls the input gain *before* it hits **Lohi**'s processing.

Postprocess Output Gain

Default 0.0

Controls the output gain *after* **Lohi**'s processing.

Specs

Supported Channel Configurations

Input Channel #	*Output Channel #*
Mono	Mono
Mono	Stereo
Stereo	Stereo

Presets

The presets are a great way to get to know each plugin. The preset drawer can be accessed at the bottom of each plugin by clicking the current preset name.

- **LO**
  - *Analog 4-Pole LP*
  - *Analog 2-Pole LP*
  - *Hot Analog LP*
  - *Gramophone*
  - *Dimed LP*
  - *Steep Digital LP*
  - *One-Pole Digital LP*
- **HI**
  - *Analog 4-Pole HP*
  - *Analog 2-Pole HP*
  - *Hot Analog HP*
  - *Screaming HP*
  - *Dimed HP*
  - *Steep Digital HP*
  - *One-Pole Digital HP*
- **BP**

    - *Wah-like*
    - *Screaming BP*
    - *Tiney Radio*
    - *Siney*

- **Bass**
    - *Flip-Top Amp*
    - *What's Goin' On*
    - *Kingston*
    - *Tubby Sub*

Acknowledgements

Annlie Huang / *Chris Conover* / *Diana Zheng* / *Jack Stratton* / *Peter Raymond* / *Rob Bisel* / *TaeHo Park* / *Tyler Duncan*

Authors

Devin Kerr / *Rob Stenson* / *Jasper Duba* / *Noah Dayan*

Translators

TaeHo Park / *Tiago Frúgoli* / *Gustavo Guzmán* / *Reda Kermach* / *Noah Dayan* / *Gal Cohen* / *Sydney Bolton* / *Enrico Cirene*

About Goodhertz Plugins

User Interface

Goodhertz plugins are made to be workhorse tools that sound amazing. We've put a lot of thought and care into the audio quality and plugin usability, and for that reason, we've opted for simple and direct controls & interfaces that don't rely on photorealistic knobs or ornamental screw heads to communicate their meaning.

We've also decided to only include meters and graphs when we feel they will directly lead to a better sonic result. Meters/graphs can consume significant CPU resources, and we firmly believe that **if it sounds good, it is good**.

Our meters can be reset at any time using the "Reset Meters" button (in certain plugins) and manually enabled or disabled via the "Enable Metering" User Preference.

Preset Bar

Button	*Action*
↺	Undo the last parameter change.
↻	Redo the last parameter change.
〈	Switch to the previous preset.
"Preset Name"	Opens the preset drawer (Option/Alt + Click to reset all plugin settings to preset).
〉	Switch to the next preset.
A	Selects the A settings state.
→ ←	This copies the current settings to the opposite A/B state; i.e. if you're on the A state, clicking the arrow will copy those settings to the B state.
B	Selects the B settings state.

Toolbar

Introduced in version 3.10, the toolbar at the bottom of the plugin holds a handful of shortcut buttons.

Icon	*Action*
⚙	Opens preferences menu
⏲	Shows diagnostic information
📖	Opens plugin manual in your default web browser
URL	Opens a URL representation of the current plugin control state (Command/Ctrl + Click to copy the URL to the clipboard)
文A	Opens language-selection menu
MIDI	Opens MIDI Learn menu
~~HQ~~ HQ!	Toggles HQ mode (only in certain plugins)
↻●	Resets all meters (only in certain plugins)
−	Shrink interface
+	Enlarge interface

Keyboard Shortcuts

Action	*Keyboard Shortcut*
Enter New Parameter Value	Once you've clicked or double-clicked a control, type in a value, then hit `ENTER`, `RETURN`, *or* `TAB`. Depending on the control type, we support a variety of input values, such as fractions (e.g. 1/4 for 0.25), the kilo suffix (e.g. 4k for 4000), note values for time- and rate-based controls (e.g. 1/8T for an eighth note triplet or 1/4D for a dotted quarter note, relative to the current DAW or plugin BPM),

Action	*Keyboard Shortcut*
	and musical notes for frequency controls (e.g. A#5 for 923.33 Hz or Eb2 for 77.78 Hz).
Increment Parameter Value	↑ *or* → arrow keys
Decrement Parameter Value	↓ *or* ← arrow keys
Jump to Next Parameter	TAB
Jump to Previous Parameter	SHIFT + TAB *or* ` (backtick)
Escape Parameter Focus / Close any Open Drawers	ESC
Tap Tempo	T *or* **Click** (N.B. For this to work, you must have a BPM, milliseconds, or rate (Hz) control selected.)
Save Preset	N (N.B. For this to work, the preset panel must be open.)
Set Preset as Favorite	F (N.B. For this to work, the preset panel must be open.)
Edit Preset	E (N.B. For this to work, the preset panel must be open.)
Update Preset	U (N.B. For this to work, the preset panel must be open.)
Delete Preset	DELETE (N.B. For this to work, the preset panel must be open.)

Right-Click Actions

Action	*Instruction*
Read about Control in manual	**Right-Click** & select “Show in Plugin Manual”
Reset Control to Default	**Right-Click** & select “Reset to Factory Default Value”

Action	*Instruction*
Lock Control when switching presets	**Right-Click** & select “Lock When Switching Presets”
Copy current plugin settings to clipboard	**Right-Click** & select “Copy as URL to Clipboard”
Paste all plugin settings from clipboard	**Right-Click** & select “Paste From Clipboard”
Reset all plugin settings to Defaults	**Right-Click** & select “Reset All to Defaults”
Reset all plugin metering	**Right-Click** & select “Reset Meters” (only available in certain plugins)
Reset all plugin settings to Preset	**Right-Click** & select “Reset to [preset] Preset”
Update Preset with current plugin settings	**Right-Click** & select “Update [preset] Preset”
Create new Preset with current plugin settings	**Right-Click** & select “Create New Preset”
Go to the plugin’s manual page	**Right-Click** & select “Read [plugin name] Manual”

Right-Click Preferences

Action	*Explanation*
Language	Switch the display language of text elements in Goodhertz plugins. We currently support the following languages: English, Spanish, Portuguese, French, Italian, Japanese, Korean, Chinese (Simplified), Chinese (Traditional), and Arabic.
Advanced Pane	By default, this is *Closed in New Instances* — i.e. when you add a new instance of a plugin, it does not show you the advanced controls available by hitting the `•••` button in the sidebar. If you’d like new instances to start with the advanced controls showing, choose *Open in*

Action	*Explanation*
	New Instances. Either way, each instance remembers whether its advanced pane was open, including when you reopen a saved session.
Control Granularity	By default, all Goodhertz controls move in small increments when dragged. If you prefer controls to operate with larger increments by default, change this option to *Coarse*. N.B. This will swap the behavior of the Shift mouse modifier - i.e. Shift-dragging will move a control with standard granularity when set to *Coarse*.
Dark Mode	Allows you to choose the color palette used for displaying the interface. If you prefer the look of dark colors (or work in a darker environment) enable this option. The *Auto* option will automatically adjust the color scheme depending on the system preferences of your machine (Mac only).
Enable Hover Markers	By default, this is *On* — i.e. all controls will show markers on hover. If you find this behavior unnecessary, deselect this option and no markers will be shown.
Enable Metering	By default, this is *On* — i.e. in normal operation, all audio meters and visualizations available in Goodhertz plugins are enabled and running. If you'd like to turn them off and disable all metering and visualization, deselect this option. And to turn them back on, simply reselect it. N.B. If you're struggling to use a large number of Goodhertz plugins on an older processor with an integrated GPU, sometimes disabling metering can help.
Enable Scroll Input	By default, all Goodhertz sliders can be *scrolled* in addition to dragged. If you find this behavior unnecessary, deselect this option and no scrolling events will be used to control Goodhertz sliders.
Enable Tooltips	By default, this is *On* — i.e. all controls will show a tooltip on hover. If you find this behavior unnecessary, deselect this option and no tooltips will be shown.
GPU Acceleration	By default, this is *Enabled* — i.e. the GPU will be prioritized whenever possible to improve graphics performance. If your graphics card does not support GPU acceleration, this preference will be automatically set to *Reduced*. N.B. If you experience graphics issues, disabling this preference may help.

Action	*Explanation*
Keyboard Focus	By default, you can get keyboard focus on any Goodhertz control with a single click. Change this option to ensure keyboard focus only occurs on double clicks.
Window Size	Enlarge or shrink the Goodhertz plugin window by selecting an option here. This will save your preference for all instances of this plugin.
Diagnostics	Displays general information about the plugin and the configuration of your system for diagnostic purposes. If you experience any issues with the plugin, it can be helpful to include this information when contacting us. N.B. Clicking this window will copy the contents to the clipboard.
MIDI Learn	Configure the mapping used to control parameters via MIDI messages. To assign a MIDI number to a control, enable *MIDI Learn* and send a MIDI message while a control is focused. To remove an assigned mapping, click on a mapping entry in the list or select *Clear All* to reset the entire mapping. N.B. You can assign different types of MIDI messages including Pitch Bend, Note, and CC messages.

Mouse Modifiers

Action	*Combination (Mac)*	*Combination (Windows)*
Reset Parameter to Default Value	`OPTION` + Click	`ALT` + Click
Move Control with Coarse Precision	`SHIFT` + Drag	`SHIFT` + Drag
Move Control with Fine Precision	`COMMAND` + Drag	`CTRL` + Drag
Move Control with Normal Precision	Drag	Drag

Automation

Unintentional digital clicks and pops are the worst. They happen for lots of reasons and often end up wasting your time with needless revisions or mastering surgery. When they go unnoticed, they can make their way onto commercial albums and releases.

Plugin automation is a common cause of clicks and pops. Sweeping an EQ band, changing a delay setting, and even automating a plugin bypass can cause digital artifacts if poorly handled.

This is not true for Goodhertz plugins. Any parameter in a Goodhertz plugin, even on/off switches, can be automated freely and smoothly without clicks, pops, or zipper noises (unless otherwise noted). You can push them, pull them, LFO them — whatever you do, they'll handle it gracefully.

Since our Master On/Off controls won't create artifacts, we recommend that you use them rather than your DAW-supplied plugin bypass if you want to disable plugin processing.

Plugin Settings

Goodhertz plugin settings can be copied and pasted as text urls, which look like this: https://goodhertz.com/vulf-comp/3.0.9?cm=0&wf=0&lf=100&lfc=50

To copy and paste, right click anywhere on the plugin interface and select either the copy or the paste option.

E.g. If you paste "https://goodhertz.com/vulf-comp/3.0.9?cm=0&wf=0&lf=100&lfc=50" into Vulf Compressor it will recall the settings associated with that url. This way you can easily send an *exact* plugin setting to someone — in an email or a text — without any guesswork or screenshots.

System Requirements

Mac OS X ≥ 10.13

Audio Unit 64-Bit, VST 64-Bit, VST3 64-Bit, **or** AAX 64-Bit host

Windows ≥ 10
VST 64-Bit, VST3 64-Bit, **or** AAX 64-Bit host

Contact Support

To send plugin feedback, please e-mail us at feedback@goodhertz.com.

If you're having trouble, experiencing a technical issue, or you think you've found a bug, please email support@goodhertz.com.

Find all our contact info & bug-reporting protocol on the contact page.