Trem CTRL

Manual for version **3.15**

Introduction

Interface Preview

Controls

Primary Controls

Rate

- *Rate Mode*
- *Note*
- *Tempo*
- *Tempo Sync*
- *Rate*
- *Rate Multiplier*

Shape

- *Depth*
- *Wave*
- *Bias*
- *Symmetry*

Vibe

- *Tube Color*
- *Trem Type*

- *Master On/Off*

Advanced Controls

Advanced Shape

- *Phase Offset*
- *Stereo Phase*

Advanced Rate

· *Swing*

Misc

· *Volume Comp*

· *Tube Noise Gain*

Trim

· *Input Trim*

· *Output Trim*

· *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

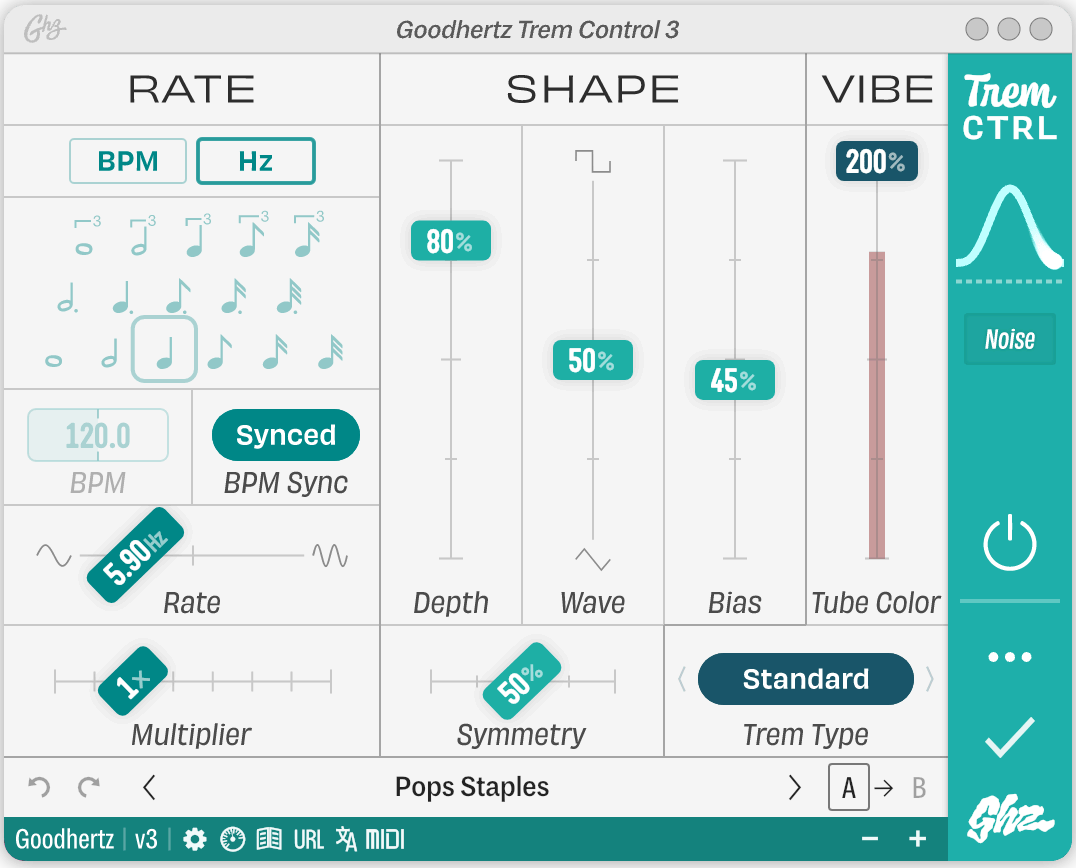
Trem Control

Classic tremolo for the 21st century

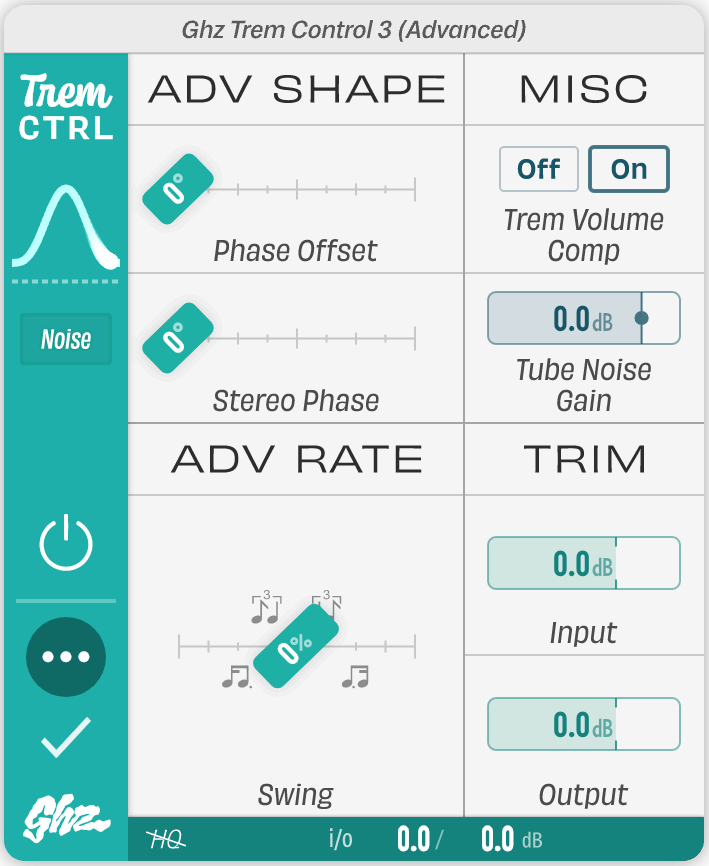
With intuitive rate controls, flexible shape parameters, and a rich palette of tremolo types, **Trem Control** may learned from the classic analog tremolo units of the last century, but it also makes possible — for the first time ever — radically new tremolo effects fit for this century. Paired with a crunchy tube summing stage, Trem Control can bring the warmth and vibe along with its wobble, chop, and shake.

Interface Preview

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



Advanced Controls



Controls

Primary Controls

Rate

Rate Mode

Default Hz

Determines how the tremolo rate is set.

Option	*Discussion*
BPM	The tremolo rate is based on the Tempo and Note selection
Hz	The tremolo rate is set in hertz with the Rate control

Note

Min 1

Max 1/32

Default 1/4

Note sets the tremolo rate using musical durations, ranging from a whole note: 1, to a thirty-second note: 1/32.

Option	*Symbol*
1	𝅝
1/2 D	𝅗𝅥.
1 T	
1/2	𝅗𝅥
1/4 D	♩.
1/2 T	

Option	*Symbol*
1/4	
1/8 D	
1/4 T	
1/8	
1/16 D	
1/8 T	
1/16	
1/32 D	
1/16 T	
1/32	

The **Note** control supports clicking, dragging, and the arrow keys.

Use `SHIFT` + `←` **or** `→` to “lock” the current row when changing notes.

Looking for something slower than a whole note, or faster than a thirty-second note? Use the Rate Multiplier to get at those outliers.

Note, Tempo, & Tempo Sync are active when Rate Mode is set to BPM.

Tempo

Default `120.0`

Trem Control’s tempo in beats per minute (BPM).

The tempo can be set via tap tempo. Use the `T` key when the control is highlighted or mouse clicks to tap in your

desired tempo.

Tempo Sync

Default Synced

Determines how the Tempo is set: either manually or synced from the host/DAW.

Options: Manual, Synced

Rate

Default 4.00Hz

Controls the absolute tremolo rate in hertz (Hz).

> ℹ **Rate** 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.

> ⚠ **Rate** is active when Rate Mode is set to Hz. **Rate** can be set via tap tempo: use the T key when the control is highlighted to tap in your desired speed.

Rate Multiplier

Default 1x

Increases or decreases the tremolo rate by a multiple.

> ℹ Example: 4Hz · 2x = 8Hz

> ⚠ The **Rate Multiplier** is active for both BPM & Hz Rate Mode's.

Shape

Depth

Default 100%

Controls how deep the tremolo modulates (i.e. the amount of tremolo).

- At 100%, the tremolo modulates from fully “On” (zero attenuation) to fully “Off” (full attenuation).

Wave

Default 50%

Continuously varies the tremolo wave shape from triangle to sine to square.

- Both triangle and sine types produce fairly smooth-sounding tremolo. Sine sounds a bit deeper; triangle sounds a bit sharper.

- Square wave tremolo produces hard chopping and has the sharpest sound of the three wave types.

Bias

Default 50%

Sort of like a pulse-width control, the **Bias** causes the tremolo shape to “bend” toward either amplitude extreme.

- At 0%, the tremolo shape is biased toward fully “Off” (full attenuation).

- At 100%, the tremolo shape is biased toward fully “On” (zero attenuation).

Symmetry

Default 50%

Controls the symmetry of the tremolo modulation’s rise and fall.

At 50%, the tremolo rise and fall are symmetrical and take the same amount of time.

At 0%, the tremolo rise is much faster than its fall — producing a sharper attack.

At 100%, the tremolo rise is much slower than its fall — producing a softer attack.

Vibe

Tube Color

Default 100%

Controls the amount of tube coloration.

0% is totally clean: no harmonic distortion, tonal coloration, or noise.

200% is the exact opposite.

Tube Color includes a meter embedded in the slider. This meter shows the THD (total harmonic distortion) added to the signal, up to 13% THD.

Trem Type

Default Standard

Trem Control offers a couple different tremolo types — each with their own unique sounds and applications.

Option	*Discussion*
Standard	Amplitude modulation: the tremolo you think of when you think of tremolo
Harmonic	Featured on many classic Fender amps from the mid-century, harmonic tremolo divides the highs and lows, modulating

Option	*Discussion*
	them out of phase to create a gorgeous, intoxicating wobble
Deep Harmonic	A more extreme version of the classic harmonic tremolo — can sound almost like a phasor, or someone shaking a metal sheet
Bass	Modulates the lows only
Treble	Modulates the highs only — great for more subtle tremolo effects
Air	Modulates the highest “air band” frequencies only
Mid/Side	Modulates the mid and side out-of-phase (only available in stereo)
Mid Only	Modulates the mid only (only available in stereo)
Side Only	Modulates the side only (only available in stereo)

Master On/Off

Default On

Bypasses **Trem Control**’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 **Trem Control**’s advanced controls, click the ••• icon in the sidebar.

Advanced Shape

Phase Offset

Default 0°

The **Phase Offset** makes it possible to offset where the modulation peak occurs in time (generally most useful when **Trem Control** is synced to the beat).

> At 0º, the the tremolo's loudest part is aligned to the downbeat. Offsetting this in time makes it possible create offbeat pulses and other interesting rhythmic effects.

Stereo Phase

Default 0°

The **Stereo Phase** is just like **Phase Offset**, except that it only affects one of the stereo channels.

> At 0º, the left/right tremolo modulations are exactly the same.

> At 180º, they are completely out of phase. This produces a much wider-sounding tremolo effect.

Advanced Rate

Swing

Default 0%

The swing control makes it possible push and pull the tremolo's rhythm, creating unequal pulses in succession.

> A **Swing** of 0% produces no swing at all — each tremolo pulse is the same length.

> ℹ **Swing** values above 0% cause every second pulse to be shorter in time. At 100%, the second pulse is infinitely short, causing the first pulse to be twice as long.

> ℹ **Swing** values below 0% cause every second pulse to be longer in time. At 100%, the first pulse is infinitely short, causing the second pulse to be twice as long.

> ℹ 25% gets you classic jazz swing, as notated by 𝅘𝅥𝅮³; -25% will get you the inverse, something we call *reverse* or *negative* swing, aka 𝅘𝅥𝅯³.

Misc

Volume Comp

Default On

When On, **Trem Control**'s volume compensation ensures approximately constant RMS level, regardless of the tremolo Depth.

Options: Off, On

Tube Noise Gain

Default 0.0dB

Controls the gain of the tube stage's noise.

> ℹ You can quickly turn toggle the noise On or Off by clicking the small sidebar "noise" icon.

> ⚠ The tube stage only produces noise when Tube Color is greater than 0%.

Trim

Input Trim

Default 0.0dB

Enables input gain trimming *before* the tube summing stage.

This can be used to overdrive the tube stage, producing some gnarly tube distortion and crunch.

Output Trim

Default 0.0dB

Enables output gain trimming *after* the tube summing stage.

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`, **Trem Control** 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!**

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**.

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 **Trem Control**'s processing.

Postprocess Output Gain

Default 0.0

Controls the output gain *after* **Trem Control**'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.

- **Basic**
  - *Default*
  - *Triangle*
  - *Sawtooth*
  - *Inverse Sawtooth*

- Square

Stereo

- Slow Auto-Pan
- Fast Stereo Wobble
- Reversed Pulses
- Stereo Chops

Historical

- Duncan Wurli *Tyler Duncan's Wurlitzer setting*
- For What It's Worth *Buffalo Springfield (1967)*
- Bang Bang *Nancy Sinatra (1966)*
- Pops Staples *As heard on "Uncloudy Day" (1961)*
- Money *Pink Floyd (1973)*
- Bones *Radiohead (1995)*
- Bones *Radiohead (1995)*
- No Quarter *Led Zeppelin (1973)*
- No Quarter *Led Zeppelin (1973)*
- Mandalorian Helmets Intro *(2019)*

Vibraphonists

- Lionel *"Stardust," Lionel Hampton and the Just Jazz All Stars (1956)*
- Milt *"Natural Affection," Modern Jazz Quartet (1963)*

Harmonic

- Leo
- Wub Wub
- Reverse Swoosh
- Harmonic Chop
- Harmonic Chop
- Leslie-esque
- Leslie-esque
- Where's the Bass?

- *Slow Treble Pan*
- *Stereo Air Shake*

Mid/Side

- *Moderate M/S Trem*
- *Full M/S Trem*
- *Weird Auto-Pan*
- *Rotate Right*
- *Rotate Left*
- *Mid -> L/R*
- *Shaky Sides*

Bizarre

- *Rewind*
- *Rewind*
- *Broken Digital*
- *Broken Digital*
- *Centrifuge*
- *Centrifuge*
- *Helicopter*
- *Helicopter*

Beat Synced

- *Pump (Light)*
- *Pump (Heavy)*
- *Chop*
- *Offbeat*
- *Offbeat Blips*
- *Legato Offbeats*
- *Oompah*
- *Make Room 4 Kick*
- *Side-Chained Feel*
- *Heavily Side Chained*

- *16th Harmonics*
- *Treble 16ths*
- *8th Reverse*
- *Treble Offbeats*
- *Ping Pong Offbeats*
- *Offbeat Gallop*
- *Move Left/Right*
- *Beat Slice*
- *Offbeat Beat Slice*
- *Echo-Like*
- *M/S Beat Slice*

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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.