

Manual for version **3.15**

Introduction

Visualization

Interface Preview

Controls

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

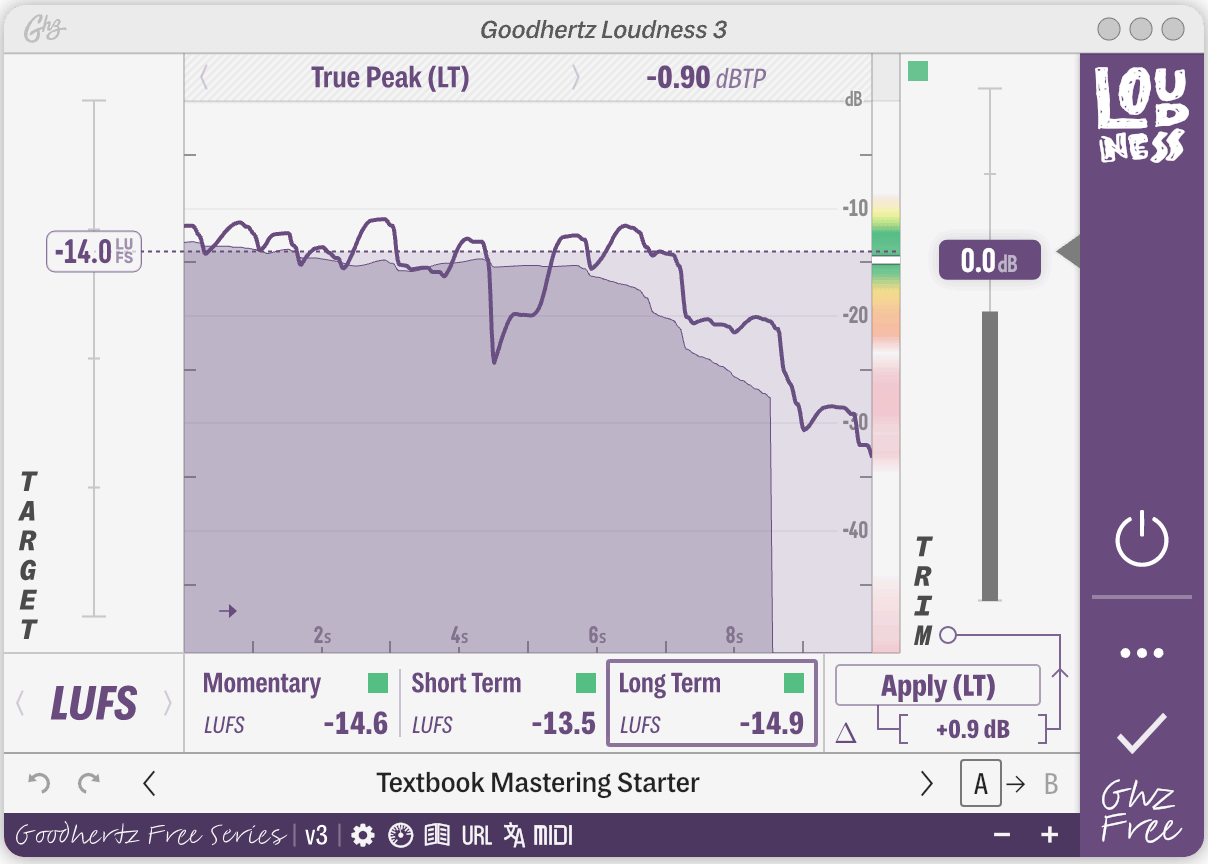
Contact Support

Loudness

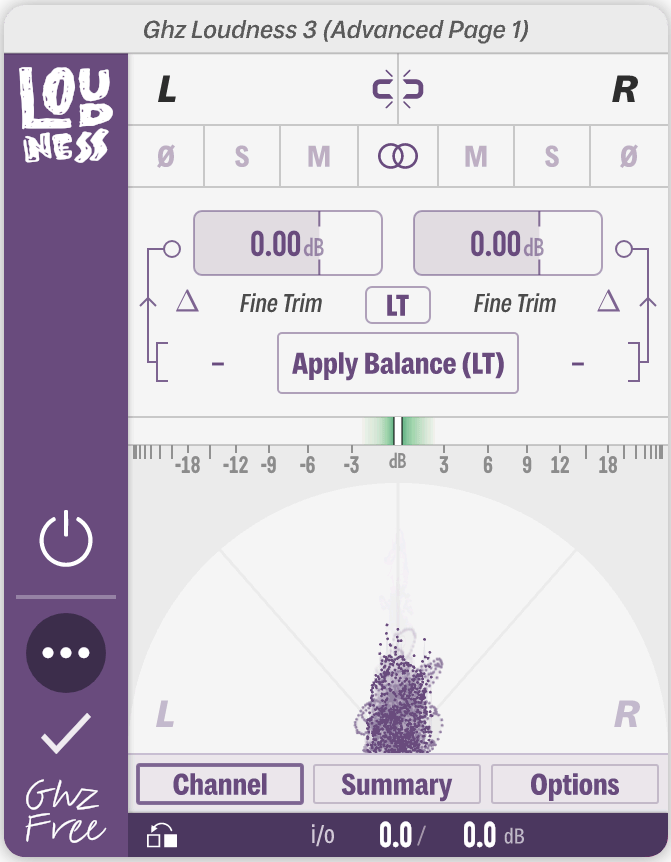
Hit the target

Interface Preview

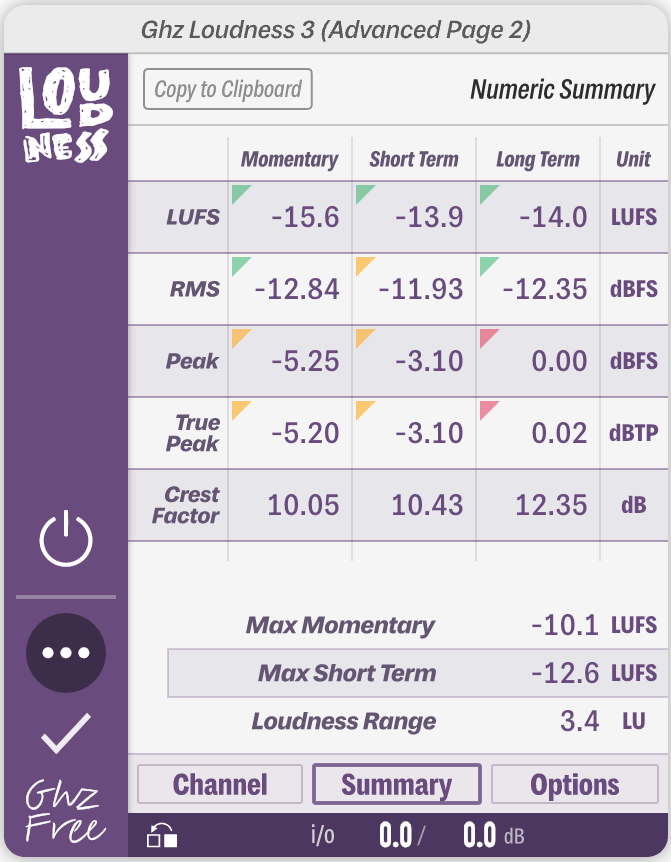
Here's a screenshot of Loudness in action. Click anywhere on the interface to jump to a control's definition below.



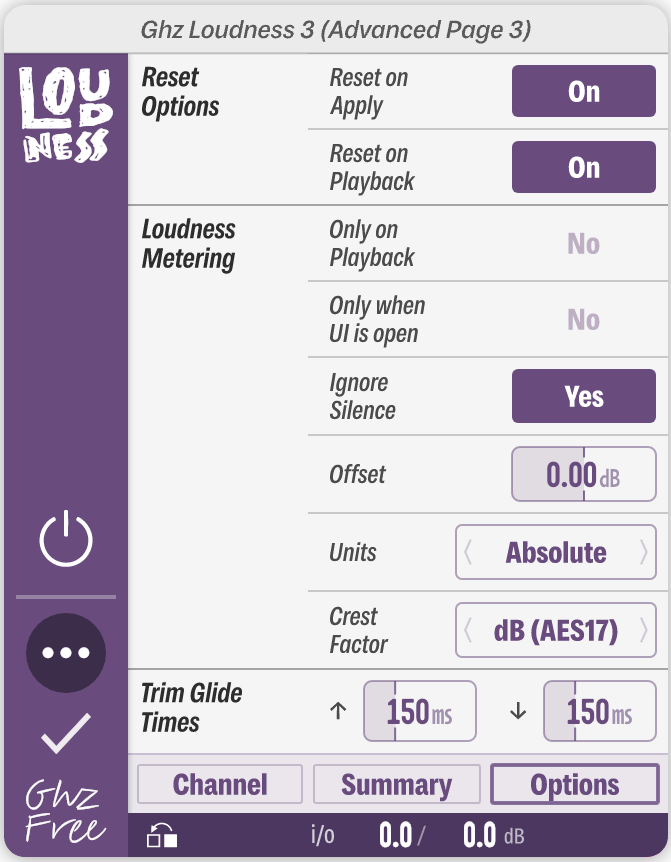
Advanced Controls, Page 1



Advanced Controls, Page 2



Advanced Controls, Page 3

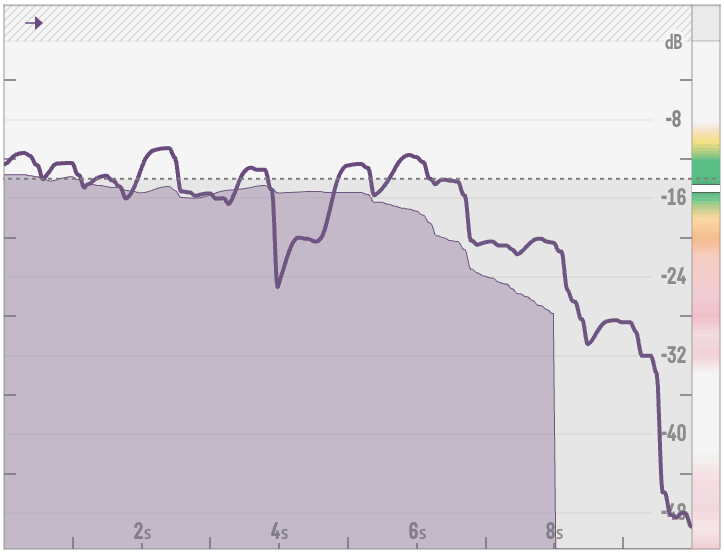


Visualization

Loudness Graph & Histogram

Loudness features a large real-time metering graph with a histogram on its right-hand side. Depending on the meter type selected (LUFS/RMS/Peak/True Peak), the graph will simultaneously display its corresponding Momentary value as a stroke line and its corresponding Short Term value as a filled line. The target loudness is represented by a dashed line overlay.

The histogram on the other hand will display the Long Term value as a white block and the Momentary value as a highlight of colors. The colors will indicate the proximity of Momentary values to the predetermined target (as described later in the Measurements section).

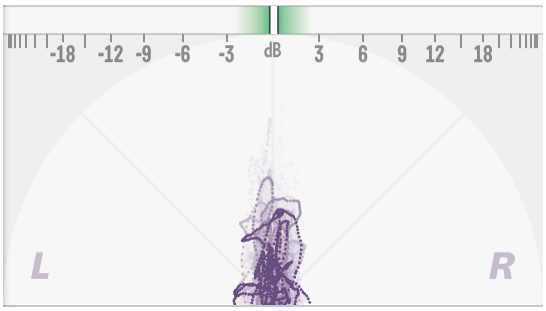


Loudness Graph & Histogram

Balance Histogram & Goniometer

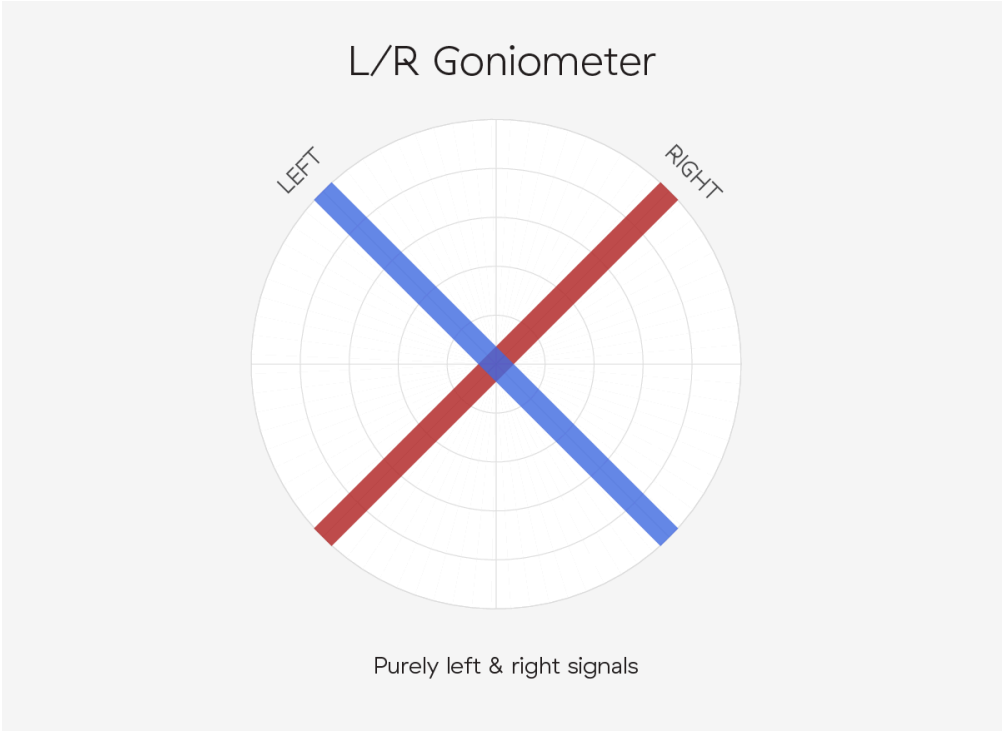
Loudness also includes a half-size real-time stereo display called a goniometer (or vectorscope) in the Channel page of the advanced pane with a balance histogram on top. By interpreting the goniometer, it's possible to quickly deduce many characteristics about the stereo field and the precise relationship between left & right channels.

Depending on the balance measurement window selected, the histogram will display the Short Term or Long Term balance value as a white block and the Momentary balance value as a highlight of colors.

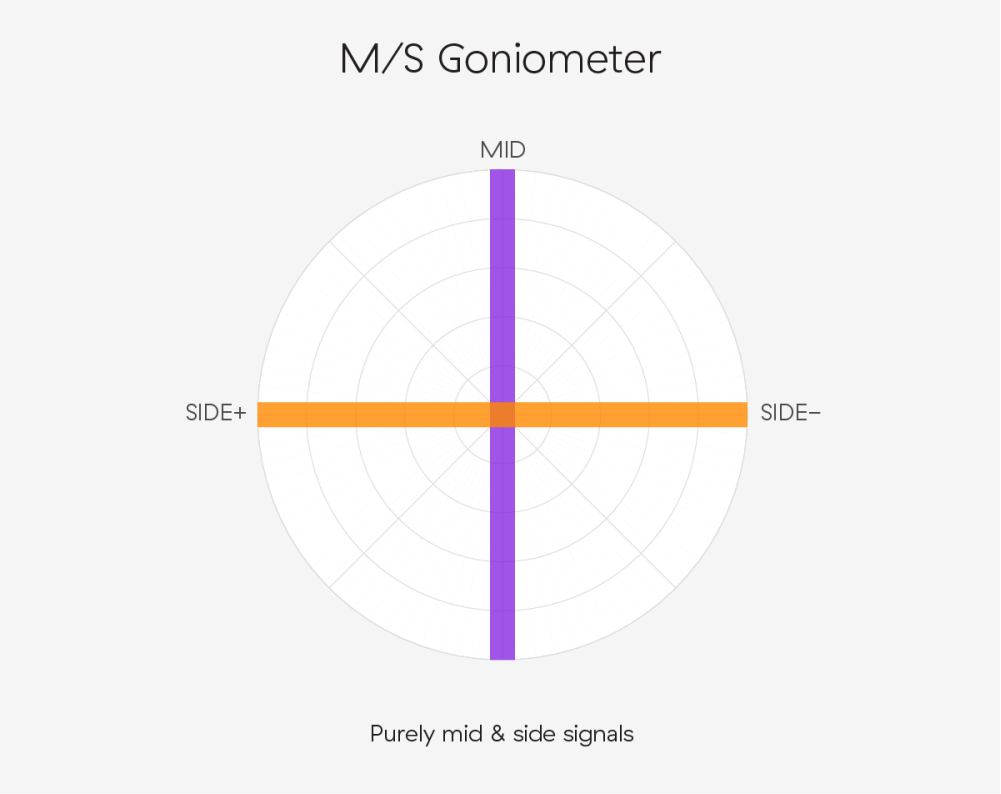


Goniometer & Balance Histogram

Here are some examples of how simple stereo signals appear in the goniometer:



Left and Right in Goniometer



Mid and Side in Goniometer

Measurements

A numeric summary table is available in the Summary page of the advanced pane and provides a handy way to monitor all the available measurement values simultaneously in **Loudness**. The summary also provides extra measurement values such as Crest Factor, Max Momentary LUFS, Max Short Term LUFS, and Loudness Range for further inspection. Some of the more useful measurement types are also available as a permanent display in the sidebar.

	Momentary	Short Term	Long Term	Unit
LUFS	-18.5	-13.4	-14.4	LUFS
RMS	-20.29	-11.39	-13.16	dBFS
Peak	-8.02	-2.20	-0.73	dBFS
True Peak	-7.94	-2.19	-0.71	dBTP
Crest Factor	6.18	4.83	5.92	

Max Momentary	-10.1	LUFS
Max Short Term	-12.8	LUFS
Loudness Range	9.9	LU

Loudness Summary

In LUFS and RMS modes, the green/yellow/red colors represent a difference of ±2dB/±4dB/±12dB respectively from the predetermined target value. In Peak and True Peak modes, the indicators will turn red above 0dB, yellow below 0dB and green below -6dB, relative to the target level.

The same color coding scheme can be seen in the main meter display:



Loudness Meters

Loudness also features a clipping light in the Trim Gain slider to indicate when the Long Term True Peak value has exceeded 0dB.

Controls

Primary Controls

Target Loudness

Target LUFS

Default -23.0LUFS

Adjusts the desired loudness target.

Target LUFS is only used when Meter Type is set to LUFS.

Target RMS

Default -24.0dBFS

Adjusts the desired RMS target.

Target RMS is only used when Meter Type is set to RMS.

Target Peak

Default 0.0dBFS

Adjusts the desired peak target.

Target Peak is only used when Meter Type is set to Peak.

Target True Peak

Default 0.0dBTP

Adjusts the desired true peak target.

Target True Peak is only used when Meter Type is set to True Peak.

Meter Type

Default LUFS

Switches between different metering types.

Options: LUFS, RMS, Peak, True Peak

Loudness Meters

Top Bar Readout

Default
True Peak (LT)

Top Bar Readout switches **Loudness**'s numeric readout mode in the top bar.

Option	*About*
Peak (LT)	Long Term Peak
True Peak (LT)	Long Term True Peak
Max LUFS (M)	Max Momentary LUFS
Max LUFS (ST)	Max Short Term LUFS
Loudness Range	Loudness Range

Gain Range

Default -48 dB

Changes the gain scale of the loudness meter.

Time Range

Default 5s

Changes the time scale of the loudness meter.

Time Direction

Default LTR

Changes the sliding direction of the loudness meter.

Measurement Window

Default Short Term

Selects the measurement window of the gain to apply.

Option	*Discussion*
Momentary	Represents a 150ms window in Peak/True Peak meters, a 300ms window in RMS, and a 400ms window in LUFS.
Short Term	Represents a 1s window in Peak/True Peak meters and a 3s window in LUFS/RMS meters.
Long Term	Represents the integrated value for LUFS/RMS meters and the maximum value for Peak/True Peak meters.

Trim Controls

Trim Gain

Default 0.0dB

Adjusts the gain of the signal.

The light indicator turns red when clipping has occured according to the long term true peak value.

Trim Gain has a triangular indicator ◀ floating to the right side of the slider. This triangle indicates approximately where **Trim Gain** would need to be set in order to reach the target loudness.

Apply Momentary

Default Off

Applies the suggested momentary trim gain to reach the target loudness.

Options: Off, On

Apply Momentary is only used when Measurement Window is set to Momentary.

Apply Short Term

Default Off

Applies the suggested short term trim gain to reach the target loudness.

Options: Off, On

Apply Short Term is only used when Measurement Window is set to Short Term.

Apply Long Term

Default Off

Applies the suggested long term trim gain to reach the target loudness.

Options: Off, On

Apply Long Term is only used when Measurement Window is set to Long Term.

Master On/Off

Default On

Bypasses **Loudness**'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 **Loudness**'s advanced controls, click the ••• icon in the sidebar.

Stereo Controls

Left/Right Link

Default Off

Links all Advanced Left & Right controls together.

Left Polarity

Default Off

Flips the polarity of the left channel.

Options: Off, On

Left Solo

Default Off

Solos the *left* signal.

Options: Off, On

Left Mute

Default Off

Mutes the *left* signal.

Options: Off, On

Mono Sum

Default Off

Sums the stereo signal into mono.

Right Polarity

Default Off

Flips the polarity of the right channel.

Options: Off, On

Right Solo

Default Off

Solos the *right* signal.

Options: Off, On

Right Mute

Default Off

Mutes the *right* signal.

Options: Off, On

Left Trim

Default 0.00dB

Enables left channel gain trimming.

Right Trim

Default 0.00dB

Enables right channel gain trimming.

Balance Controls

Balance Measurement Window

Default ST

Selects the measurement window of the balance to apply.

Option	*About*	*Discussion*
ST	Short Term	Represents a 3s RMS window.
LT	Long Term	Represents the integrated RMS value.

Apply Balance Short Term

Default Off

Applies the suggested short term fine trim gain to balance the stereo signal.

Options: Off, On

Apply Balance Short Term is only used when Balance Measurement Window is set to Short Term.

Apply Balance Long Term

Default Off

Applies the suggested long term fine trim gain to balance the stereo signal.

Options: Off, On

Apply Balance Long Term is only used when Balance Measurement Window is set to Long Term.

Balance Range

Default +-Inf dB

Changes the display scale of the balance meter.

Reset Options

Reset On Apply

Default On

Choose to reset the meters manually or automatically on apply.

Options: Off, On

Reset On Playback

Default On

Choose to reset the meters manually or automatically on playback.

Options: Off, On

Metering Options

Metering Playback Only

Default Off

Choose to always meter the loudness or only on playback.

Options: Off, On

Metering UI Only

Default Off

Choose to always meter the loudness or only when the UI is open.

Options: Off, On

Metering Ignore Silence

Default On

Determines whether loudness metering is paused when the output signal is silent. With this set to YES, **Loudness** will consider anything below approximately -192 dBFS to be silence.

Options: Off, On

⚠ This control applies to long term meters only (i.e. Momentary & Short Term meters will continue processing

> regardless of this setting.)

Metering Offset

Default 0.00dB

Offsets the loudness meter calculation by a given amount.

Metering Units

Default Absolute

Chooses whether to display the absolute (LUFS) or relative (LU) metering value. The relative value will be calculated according to where Target LUFS is set.

Options: Absolute, Relative

Crest Factor Units

Default dB (AES17)

Chooses whether to display the crest factor as a ratio (common in electrical engineering) or in decibels (more common for audio).

For Ratio, crest factor is calculated from amplitudes: Peak / RMS, where RMS is the raw RMS value. A sine tone will have a crest factor of 1.414 (≈ √2).

For dB (AES17), crest factor is calculated from dBFS values: Peak (dBFS) − RMS (dBFS), where RMS uses AES17 referencing. Under AES17, a sine tone will have a crest factor of 0 dB.

Options: Ratio, dB (AES17)

Trim Options

Trim Up Glide Time

Default 150ms

Controls how long it takes the Trim Gain to travel up from one extreme

to the other.

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

Trim Up 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 trim glide times. At 10ms, **Trim Up Glide Time** is turned off completely and no gliding occurs.

Trim Down Glide Time

Default 150ms

Controls how long it takes the Trim Gain to travel down from one extreme to the other.

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

Trim Down 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 trim glide times. At 10ms, **Trim Down Glide Time** is turned off completely and no gliding occurs.

Reset Meters

Default Off

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

Options: Off, On

Adv Page

Default Channel

Selects which Advanced Page is displayed.

Options: Channel, Summary, Options

⚠ This control affects the display only (not the sound).

Preprocess Input Gain

Default 0.0

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

Postprocess Output Gain

Default 0.0

Controls the output gain *after* **Loudness**'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.

- **General**
  - *Default*
- **Music Loudness Targets**
  - *Mastering Starter*
  - *Textbook Mastering Starter*
  - *Premaster 2-Bus*
- **Film & TV Loudness Targets**
  - *EBU R128 (TV, EU)*
  - *ATSC A/85 (TV, USA)*
  - *Nearfield / Streaming*
- **Utility**
  - *Mid Only (Mono)*
  - *Side Only (Mono)*
  - *Left Only (Mono)*
  - *Right Only (Mono)*
  - *Invert Polarity*

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Translators

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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.

Button	*Action*
‹	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)
	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)

Icon	*Action*
−	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), 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.)

Action	*Keyboard Shortcut*
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”
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 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.

Action	*Explanation*
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.
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.