

Manual for version **3.15**

- **Introduction**
- **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

Lossy

Lossy artifacts, on demand

When our friend Tyler Duncan (an incredible producer & mixer) wanted a certain drum fill to reek of the 90's — to sound like a low bit-rate digital MP3 ripped from KaZaA — he turned to Goodhertz for answers.

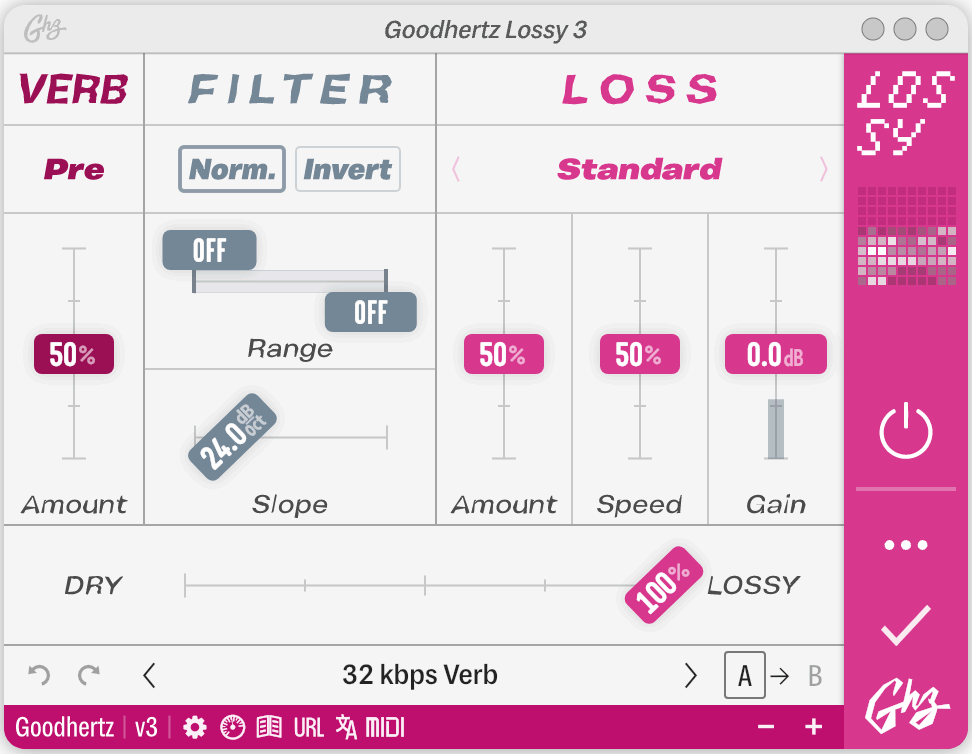
This got us thinking. Bitcrushers exist, but Tyler didn't have 8-bit in mind, he wanted lossy digital audio: streaming music on a 56k modem. What if a plugin could degrade digital audio & capture that quintessential compressed sound in realtime?

Lossy gives you the nasty (beautiful?) artifacts of heavily deconstructed audio in a highly-tweakable realtime plugin.

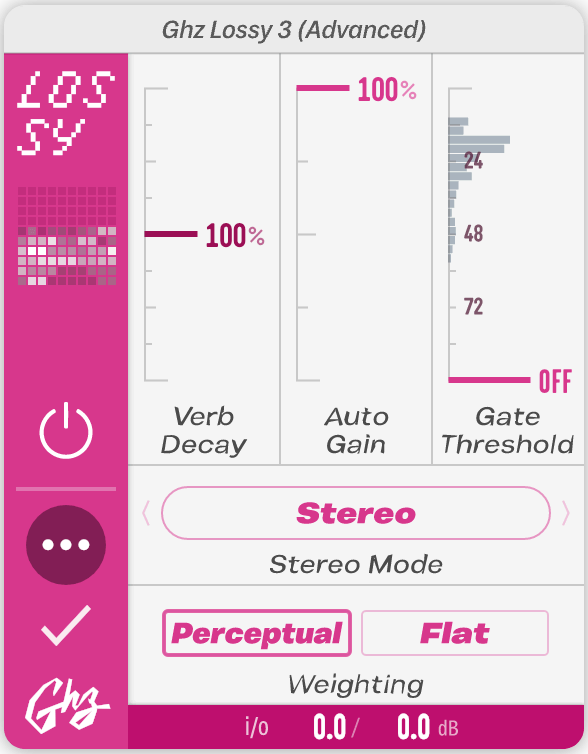
> *Whatever you now find weird, ugly, uncomfortable and nasty about a new medium will surely become its signature. CD distortion, the jitteriness of digital video, the crap sound of 8-bit - all of these will be cherished and emulated as soon as they can be avoided.*
>
> *— Brian Eno, A Year With Swollen Appendices*

Interface Preview

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



Advanced Controls



Controls

Primary Controls

Verb

Lossy's reverb was inspired by the 1980's reverb algorithms developed by Keith Barr and other pioneers of the first digital reverbs. Though it's not a realistic-sounding reverb and doesn't sound like Carnegie Hall or Concertgebouw, it does sound extremely reminiscent of the reverbs used by electronic musicians in the early 1990's (Aphex Twin, Squarepusher, Boards of Canada, etc).

Despite being pretty much the most "digital" reverb we could make, it has a warmer, almost organic quality.

Verb Position

Default Pre

Sets whether the Verb is applied Pre- or Post- Lossy and Filter processing.

Option	*Discussion*
Pre	Reverb applied before Loss section
Post	Reverb applied after Loss section

Applying reverb *before* Loss adds more sound to be Lossified, for a more full and expansive effect

Applying reverb *after* Loss sounds more like a traditional reverb, adding space to the original Lossy sound

Verb Amount

Default 0%

Controls the amount of reverb applied.

Filter

Filter Mode

Default Norm.

Switches between Normal, a bandpass filter, and Inverted, a bandreject filter.

Option	*Discussion*
Norm.	Frequencies inside the filter range are audible and those outside are cut
Invert	Frequencies outside the filter range are audible and those inside are cut

Low Cut Freq

Default 20Hz

Controls the center frequency of the low cut.

High Cut Freq

Default 20.0kHz

Controls the center frequency of the high cut.

Filter Slope

Default 24.0dB/Oct

Varies the filter slope for both high cut & low cut.

Loss

Loss Mode

Default Standard

Option	*Discussion*
Standard	Lossy data compression reminiscent of a low bit-rate digital MP3
Inverse	Everything stripped away in Standard mode
Phase Jitter	Simulates inaccuracies in phase and timing due to imperfect clocking
Packet Repeat	Fills the spaces of Packet Loss with repeats of the previous audio
Packet Loss	The skips and spaces of a bad connection
Standard + Packet Loss	A combination of Standard and Packet Loss modes
Standard + Packet Repeat	A combination of Standard and Packet Repeat modes

Loss Amount

Default 0%

Varies the amount of lossy data compression.

Lossy is a creative tool and is not based any any particular lossy codec or standard (i.e. it's not a MP3 codec checker).

Loss Speed

Default 100%

Controls how quickly the data compression algorithm acts.

Slower speeds have more spectral smear, faster speeds tend to sound more garbled.

Loss Gain

Default 0.0dB

Overall gain of the **Lossy** signal.

Loss Gain includes a level meter embedded in the slider. This meter shows the peak level of the output signal after **Lossy**'s processing.

If the signal peak exceeds or equals `0.0dB` the meter color turns red, indicating that clipping *could* occur. **Lossy** will never clip internally, due to its double-precision floating-point processing, but the signal might be clipped at a later stage (by the host/DAW or DAC).

Master Mix

Default 100%

Controls the overall **Lossy** mix.

Master On/Off

Default On

Bypasses **Lossy**'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 **Lossy**'s advanced controls, click the ··· icon in the sidebar.

Verb Decay

Default 100%

Controls the length of the reverb decay. 0% is very fast, and 200% is very slow.

Auto Gain

Default 0%

Enables automatic gain compensation.

> **Auto Gain** helps keep the perceived volume the same, even when much of the audio information has been removed due to data compression.

Gate Threshold

Default -96.0dB

Threshold below which the audio is silenced.

Stereo Mode

Default Stereo

Option	*Discussion*
Stereo	Left and right channels are processed independently.
Joint Stereo	Left and right channels are processed together. Generally produces a stereo image that is truer to the source.
Mono	Left and right channels are summed to mono.

Weighting

Default Perceptual

Option	*Discussion*
Perceptual	Frequencies weighted using a psychoacoustic model
Flat	All frequencies weighted equally

Preprocess Input Gain

Default 0.0

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

Postprocess Output Gain

Default 0.0

Controls the output gain *after* **Lossy**'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*
  - *128 kbps*
  - *96 kbps*
  - *64 kbps*
  - *32 kbps*
  - *Digital Garbage*

- *Singing Glasses*
- *Cellphone Muzak*
- *Cellphone Muzak II* *Opus No. 1 (1989)*
- *Detroit Factory*
- *Bad Cell Connection*
- *Bad Video Streaming*
- *Bad Live Stream*
- *Almost Intelligent Slop*
- *Digital Blizzard*
- *Static*
- *Ghost in the MP3*
- *Can't Acquire Signal*
- *Enter the Matrix*
- *Infinite Hold*
- *Deep Space Network*
- *Digital Raindrops*
- *Weak Satellite*
- *Jitterverb, Large Room*
- *Jitterverb, Small Room*

Verb

- *32 kbps Verb*
- *Bad Live Streaming*
- *Spectral Blur*
- *Atlantic Cathedral*
- *Siney Verb*
- *Deeper Space Network*
- *Whale Song*
- *Supermarket @ 3:00 AM*
- *Packetlossgate*
- *Broken Left/Right Pair*
- *Digital Raindrops (in a Cave)*

Acknowledgements

Annlie Huang / *Chris Conover* / *Diana Zheng* / *Jack Stratton* / *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

Icon	*Action*
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), 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)

Action	*Keyboard Shortcut*
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”
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)

Action	*Instruction*
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

Action	*Explanation*
	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.
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

Action	*Explanation*
	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.