Tone CTRL

Manual for version **3.15**

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Tone Control

Timeless EQ, taken back to the future

In 1950, an unassuming audio engineer named Peter J. Baxandall won a $25 dollar watch for an innovative treble & bass circuit design. 64 years later, Goodhertz brings you Tone Control — a powerful EQ based around a simple idea.

Designed with his original circuit in mind, Tone Control refines and expands the classic tone stack, creating a gorgeous, buttery-smooth equalizer with enough versatility for every track in your mix or mastering session.

Interface Preview

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



Advanced Controls



Controls

Primary Controls

Bass

N.B. The Linear Phase control affects the Bass shelf filter design.

Bass On/Off

Default On

Turns **Bass Gain**, **Bass Freq**, and **Bass Slope** On and Off.

Bass Gain

Default 0.0dB

Amount of Bass boost/cut

Bass Freq

Default 200Hz

Center frequency of the Bass shelf.

Bass Slope

Default 50%

Varies the steepness of the Bass shelves slope.

> At 0%, the transition band is very smooth, gradually transitioning across several octaves. At 100%, the shelf quickly transitions from 0 dB to its maximum boost/cut.

Treble

N.B. The Linear Phase control affects the Treble shelf filter design.

Treble On/Off

Default On

Turns **Treble Gain**, **Treble Freq**, and **Treble Slope** On and Off.

Treble Gain

Default 0.0dB

Amount of Treble boost/cut

Treble Freq

Default 5.00kHz

Center frequency of the Treble shelf.

Treble Slope

Default 50%

Varies the steepness of the Treble shelf's slope. Comparable to the Bass Slope control.

Low Cut

Tone Control's Low Cut filter allows careful adjustment of the lowest bass content in a signal.

Use the controls in this module to cut out or reduce unwanted low frequency information, infrasonic sounds, popping p's, plosives, rumble, or DC offset. By removing unwanted low end, clarity, definition, and headroom can often be increased in a mix.

Low Cut On/Off

Default Off

Turns **Low Cut Freq**, and **Low Cut Slope** On and Off.

Low Cut Freq

Default 20Hz

Center frequency of the Low Cut.

Low Cut Slope

Default 24.0dB/Oct

Varies the steepness of the Low Cut continuously from 6.0dB/Oct to 48.0dB/Oct.

> ℹ Use a steep slope when you want to completely eliminate all information below the **Low Cut Freq**. Use a gentle slope to gradually roll off low end over several octaves.

High Cut

Tone Control's High Cut allows careful adjustment of the high end content in a signal.

Use the controls in this module to cut out or reduce unwanted high frequency information, CRT whine, or ultrasonic sounds.

High Cut On/Off

Default Off

Turns **High Cut Freq**, and **High Cut Slope** On and Off.

High Cut Freq

Default 20.0kHz

Center frequency of the High Cut.

High Cut Slope

Default 24.0dB/Oct

Varies the steepness of the High Cut continuously from 6.0dB/Oct to 48.0dB/Oct.

> ℹ Use a steep slope when you want to completely eliminate all information above the **High Cut Freq**. Use a gentle slope to gradually roll off high end over several octaves.

Master

Master Air

Default 0%

Tone Control's Air filter enables careful refinement of the highest treble content, often referred to as the "air band." Completely unique to **Tone Control**, **Master Air** tone shaping is most obvious above 10kHz, but it does have a perceivable impact across the entire frequency spectrum, which is why we chose the include it in the Master section.

- The Linear Phase control affects the **Master Air** filter design.
- Use the **Master Air** to control how upfront or forward certain elements sit in a mix. At -100%, sounds are pushed back in the mix, at +100% sounds appear closer and more detailed (often great on a lead vocal).
- The amount of Air also has a big impact on how modern or vintage things feel. Thus **Master Air** can also be used as a type of old/new control, where -100% is older and duller, +100% is new and shiny.

Master Mix

Default 100%

Global **Tone Control** mix.

- At 200%, the Bass Gain, Treble Gain, Master Air settings are effectively doubled.
- The **Master Mix** does not affect the Low Cut or High Cut.

Master Gain

Default 0.0dB

Master **Tone Control** gain.

- **Master Gain** includes a level meter embedded in the slider. This meter shows the peak level of the output signal

> after **Tone Control**'s processing.
>
> If the signal peak exceeds or equals `0.0dB` the meter color turns red, indicating that clipping could occur. **Tone Control** 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 On/Off

Default On

Bypasses **Tone Control**'s processing.

> ℹ 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 **Tone Control**'s advanced controls, click the ··· icon in the sidebar.

Mode

Processing Mode Listen

Default Off

Solos the the signal being processed (as specified by Processing Mode).

Processing Mode

Default Stereo

Processing Mode allows **Tone Control**'s processing to be applied *only* to a specific channel. All other channels are passed through the plugin unaffected.

Options: Stereo, Left Only, Right Only, Mid Only, Side Only

Linear Phase

Default 0%

The **Linear Phase** control allows continuous variation between minimum phase and linear phase equalization.

At 0%, **Tone Control**'s Bass, Treble, & Master Air filters are all minimum phase. At 100%, they are fully linear phase.

The choice of **linear phase** or **minimum phase** equalization — or anything in between — is highly subjective, but here are some key differences:

Linear Phase

- Perfect, linear phase response
- High latency
- Both pre- & post-ring
- "Digital"
- Often sounds gorgeous & three dimensional

Minimum Phase

- Some phase deviation
- Zero latency
- Post-ring only
- More "analog-like"
- Funkier

Tone Control has a handy impulse response visualization to help show what's going on with the impulse response of the equalizer for various settings, and, most importantly,

how the **Linear Phase** control affects the impulse response & the decay of the filter.

⚠ HQ Mode must be turned `On` to use **Linear Phase**.

⚠ **Linear Phase** only affects the Bass, Treble, & Master Air filters. It does not affect **Tone Control**'s Low Cut or High Cut filters.

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`, **Tone 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!**

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 **Tone Control**'s processing.

Postprocess Output Gain

Default 0.0

Controls the output gain *after* **Tone 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.

- **General**
  - *Default*
  - *Hi-Fi*
  - *Extra Hi-Fi*
  - *Old School*
  - *Everything Closer*
  - *A Few Steps Back*

- **Air**
  - *Modern Air*
  - *Less Air*
  - *No Air*
  - *Max Air*
- **Bass**
  - *Warm*
  - *Bump*
  - *Bump w/ Rumble Filter*
  - *Sub Love*
  - *Sub Love w/ Rumble Filter*
- **Treble**
  - *Smooth Top End Boost*
  - *Bright*
  - *Dark*
  - *Pillow Top*
- **Mastering**
  - *Gentle Slope Up*
  - *Less Low End Mud*
  - *Presence Boost*
  - *Clear Mids (M/S)*
  - *Clear Sides (M/S)*
  - *Grounded Mids (M/S)*
  - *Warm & Wide Sides (M/S)*
- **Individual Instruments**
  - *P-Bass Starter*
  - *Acoustic Gtr, Bright*
  - *Gorgeous Strings*
  - *Larger-than-life Piano*

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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

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.