
PREMIUM TUBE SERIES
PASSIVE EQ
Low Mid
Mid High
High
Mid
Side
Solo
Boost
Cut
link

Manual

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Special thanks to the Beta Test Team, who were invaluable not just in tracking down bugs, but in making this a better product.

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1 Welcome to PASSIVE EQ

Thank you for purchasing PASSIVE EQ, a professional, stereo EQ created by Native Instruments and Softube.

The following manual will give you an overview of the features of the PASSIVE EQ, as well as explain how to use the software.

1.1 What is an EQ?

EQ is short for **EQ**ualizer. Technically, an equalizer (or EQ) is an audio processing unit that is used to alter the frequency content of an audio signal. It can be used as a subtle effect, in order to help mix tracks, or it can be used as a creative tool to radically manipulate the spectral content of a sound.

EQ Types

Variations of EQ effects are very common and can be found built into many mixing desks, guitar amplifiers, and even mp3 players. Sometimes, like in a guitar amplifier, the EQs are fixed and you can only alter the gain of the bands. Sometimes EQs can be parametric, meaning you are able to alter all of the parameters: frequency, bandwidth and gain.

There are also several variations of the shapes of EQ bands:

- **Bell**: this is the standard EQ shape: a symmetrical selection of frequencies around the central frequency.
- **Shelf**: in shelf EQs, the amplitude control affects all of the frequencies above or below the central frequency, dependent on whether the shelf is a high shelf or a low shelf.
- **Filter**: filters out and removes a set of frequencies. These are commonly found on subtractive synthesizers.

Like all effects, at the professional level certain specific characteristics are desired and a handful of equipment gains popularity for being better than the rest.

1.2 The PASSIVE EQ

The PASSIVE EQ is a stereo, 4 band parametric EQ with lowpass and highpass filters. It is modeled after an analog EQ famous for its smooth and natural sound, which is greatly desired by professional engineers and producers. It uses tube amplifiers and has a true stereo topology which make it both sweet sounding and flexible.

The PASSIVE EQ takes the hardware one step further, by adding mid/side processing, and stereo linking options. These increase the possibilities, without losing the character of this famous EQ.

2 Using the PASSIVE EQ

2.1 The Menu Bar

At the very top of the PASSIVE EQ interface, you will see the menu bar. This is primarily used for saving and loading presets, but also has a few other functions.

The Menu Bar is located at the top of the interface.

Loading Presets

In the center part of the menu bar, you will see the preset menu. To navigate through presets, either:

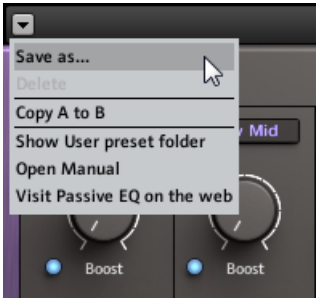
- Click on the left and right arrows to cycle through and load the presets one at a time, or
- Click on the dropdown menu to view a list of all available presets.

When using the second option, a preset is loaded when you click on its name.

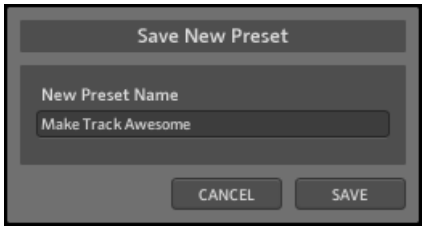
Saving and Deleting Presets

To save a preset:

1. Click on the drop-down arrow to the very left of the menu bar to open the File menu.
2. Select *Save as...* from the menu:



3. Enter the name of your preset in the area under the label New Preset Name:



4. Click the SAVE button to finish the process and close the dialog box.

If you wish to remove a preset you no longer want, you can delete it by selecting *Delete* from the File menu. Please note: you are not able to delete factory content.

A/B Comparisons

PASSIVE EQ offers an A/B comparison system to help you fine tune your settings.

Basically, this feature gives you two slots into which you can enter different parameter settings. You can then quickly switch between the two slots to quickly compare the settings and use whichever sounds better.

By default, you edit the parameters of slot A. To **switch to slot B**:

► Click on the **A/B** switch located beside the preset menu.

→ You will now be editing and listening to the parameters of slot B, until you click on the switch again.

To **copy the settings of slot A to slot B**:

► Go to the File menu on the left side of the menu bar and select *Copy A to B* from the list. You can also copy from B to A when editing the parameters of slot B.

Other functions

The File menu also offers the following options:

- *Show User preset folder*: opens a system window in the location of where your presets are saved.
- *Open Manual*: opens this PDF document for reference.

- *Visit Passive EQ on the web*: opens your default web browser and takes you to the PASSIVE EQ page on the Native Instruments website.

2.2 The Main Interface

The PASSIVE EQ Interface

The PASSIVE EQ has a dual set of controls, one for each channel. Both channels feature four parametric EQ bands, as well as input gain, and lowpass and highpass filters.

2.2.1 Channel Modes

You can use PASSIVE EQ either in **Stereo Mode**, or in **Mid/Side Mode**. Use the switch at the top of the interface to select a mode.

A comparison between Stereo Mode (left) and Mid/Side Mode (right)

- When in **Stereo Mode**, the EQ processes the left and right channels separately using the settings to the left and right of the interface.
- When in **Mid/Side Mode**, the left side of the EQ processes the sum of the stereo channels (the mono information), and the right side processes the difference between the stereo channels (the side information).
  Mid/Side mode also gives you a balance fader, allowing you to control the ratio between the mid and side channels, as well as Solo buttons for the channels so you can check your settings individually.

Mid/Side processing is frequently used for widening the stereo image, but can also be useful for mastering, allowing you to centralize bass frequencies, or remove nasty frequencies that only occur in the center of the stereo mix.

2.2.2 The Middle Section

The Middle Section Controls

Each channel has a central column of 4 controls:

- GAIN: This control is designed to be used to match the level of the bypassed signal with the processed signal, making it easier to check if your EQ settings are improving the sound or not. The range of the control is around -6dB to +4dB
- LP: controls both the cutoff frequency and the steepness of the lowpass filter. This can be used to remove high frequencies in a stronger manner than just using an EQ band.
  At the highest setting (18k), the filter has the steepest curve (around 40dB/octave). As the frequency is reduced, so too is the steepness of the curve. At the lower settings, the frequency response of the filter curve is around 18dB/octave. This gives a very smooth sounding response between the frequency settings.
  The filter can either be used as a utility filter, removing hiss or unwanted high frequencies, or as a creative filter for telephone/speaker style effects.

- HP: controls the cutoff frequency of the highpass filter. Like the lowpass filter, this can either be used as a utility or creative effect, but rather than cutting the high frequencies, it cuts the low frequencies.
  The steepness of the filter remains static at around 18dB/octave, regardless of the frequency setting.
- link: toggles the linking of the above controls between the two channels. When active, a change in one channel is mirrored in the other channel. When disabled, you can control the two channels independently.

2.2.3 The Bands

An example of the High Mid band

Each channel has 4 EQ bands with similar, but not identical, controls (listed from top to bottom):

- **On/Off switch**: By clicking on the name of the band, you can toggle the band on or off. The audio is processed by the band if the name is lit.

- **Boost/Cut**: The top knob allows you to alter the level of the EQ band. The mode button below it toggles between Cut or Boost mode for the knob, with the knob's label reflecting the current mode. As you toggle modes, the mode button also changes its color from orange (Cut) to blue (Boost). When in Cut mode, the knob is used to reduce the level of the EQ band; when in Boost mode, the knob is used to increase the level of the band.
  The range of the knob is about 20dB in both modes. Below you can see a comparison between a knob in Cut Mode (orange LED, left) and Boost Mode (blue LED, right)

- **Bandwidth**: controls the width of the frequency band, or the steepness of the EQ curve, depending on the Band Mode.
- **Band Mode**: The band mode button below the bandwidth knob is used to toggle between a **Shelf** and a **Bell** EQ shape for the band. Bell mode gives you control over the level of a central group of frequencies, whereas Shelf mode gives you control over the level of all

the frequencies above or below the selected frequency, depending on the setting.
The two lower bands will be set to low shelves, and the two higher bands will be set to high shelves. Below you can see a comparison between a band in Shelf Mode (left) and Bell Mode (right).

- **Frequency**: sets the central frequency of the EQ band. The range of this knob depends on the exact band you are controlling.
- **Link**: when activated, this mirrors the settings of the linked channel to the opposite channel. When this button is inactive, the band in each channel becomes independent.

3 Credits

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