

# SOLID MIX SERIES

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# SOLID EQ



Manual



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Document authored by: Nicolas Sidi, Adam Hanley, Gustav Sto. Tomas

Software version: 1.0 (11/2012)

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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## Germany

Native Instruments GmbH  
Schlesische Str. 29-30  
D-10997 Berlin  
Germany  
[www.native-instruments.de](http://www.native-instruments.de)

## USA

Native Instruments North America, Inc.  
6725 Sunset Boulevard  
5th Floor  
Los Angeles, CA 90028  
USA  
[www.native-instruments.com](http://www.native-instruments.com)



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# 1 Welcome to SOLID EQ

SOLID EQ brings the equalizer section of one of the most renowned studio mixing consoles of all times into your studio by way of FX Framework.

## 1.1 What Is an Equalizer?

An equalizer (EQ for short) is an essential audio processing tool that allows you to amplify or attenuate specific parts of the frequency content in your audio signal.

Its name reminds its original purpose in telecommunications, namely correcting the frequency content of a signal that might have been altered somewhere on the line — in short, equalizing it again.

In the audio domain, though, the equalizer can be used in many more applications, including creative ones, just to name a few:

- Defining the bass content.
- Adding sparkle to vocals.
- Correcting unwanted resonances in your recordings.
- Separating tracks with similar frequency ranges.
- Modifying more frankly, or even creatively destroying your original sound.

### Gains, Frequency Bands, and Response Curves

Equalizers allow you to apply various amounts of amplification or attenuation (called **gains**) to different ranges of frequencies (called **frequency bands**). Basically, an equalizer can be seen as a set of filters, each of them applying a certain amplification/attenuation to a particular frequency band.

On each band, the boost/cut is not constant for all frequencies but rather continuously evolving between both ends of the band. This is called the **frequency response** — also referred as the “shape” of the band. Here are a few common shape types:

- **Shelving:** Raise or lower a frequency and everything above or below it. A low shelf has a plateau at the bottom end, a high shelf at the top. This is the kind of EQ behind the “Bass” and “Treble” knobs on your hi-fi amplifier.
- **Low-cut, high-cut:** Cuts the frequencies above or below a certain frequency. Also called high-pass and low-pass filters, the important aspects are where the cut (or pass) starts, and the slope of the downward curve. A steep slope sounds less natural, but can be more precise.
- **Bell:** Boosts/cuts frequencies around a center frequency. At this center frequency, the boost/cut is maximal. Below and above this frequency, the boost/cut falls back to zero on both ends of the frequency band, following a bell shape.

The number, size, and shape of the frequency bands differ upon each equalizer implementation. Moreover, the characteristics (including inaccuracies!) of the analog components, together with the way they are used, draw up the sonic character of each device.

## Graphic vs. Parametric Equalizers

Most equalizers can be grouped into two main categories:

- **Graphic equalizers** allow you to change gains for a certain number of fixed frequency bands. Most of the time, this type of equalizer provides you with a series of vertical gain faders, each of them controlling the amplification of a particular frequency band, and from which you can visually shape the overall frequency response of the equalizer (hence the word “graphic”).
- **Parametric and semi-parametric equalizers**, on the other hand, allow you to adjust further parameters for each frequency band (e.g. their position, size and shape). This gives you much more flexibility in altering your input signal. While the exact parameters available depend on the way each equalizer is implemented, in general you will find the following parameters or their equivalents for each frequency band:
  - A **frequency** parameter (sometimes called **cutoff frequency**) allows you to define the center frequency of the band.
  - A **width** parameter (sometimes called **quality factor**, or **Q** in short) allows you to adjust the bandwidth to which the amplification/attenuation is applied.
  - A **gain** parameter controls the amplification/attenuation applied to the band. Most of the time, it defines the amplification/attenuation at the frequency set above.

The SOLID EQ belongs to the latter category.

## 1.2 The SOLID EQ

Originally released in the mid-1970s, the analog mixing console that inspired the SOLID MIX SERIES soon became the central element in many of the greatest studios around the world. Claiming to be the mixer behind more platinum selling albums than all other consoles combined, this mixing console literally contributed to the sound of the 1980s. The precise and transparent sound of its full-featured channel strips set new references for mixing engineers.

The SOLID EQ brings you the equalization section of this highly acclaimed channel strip. This equalizer offers two fully-parametric mid-range bands and two semi-parametric high and low bands, and notably recreates the switchable E and G characteristics of the original gear for working on all kinds of audio materials.

### Additional Features

Bringing analog hardware into the software world allowed us to add a few great features, which are available in the expert panel of the SOLID EQ. For example, the SOLID EQ not only recreates the EQ section of the well known mixing desk, but also adds the infamous high-pass and low-pass filters from that same desk. And, of course, as with any unit available through FX Framework, you can save and recall presets for your favorite settings.

## 2 Using the SOLID EQ

This chapter describes how to use the SOLID EQ.

### 2.1 The Menu Bar

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

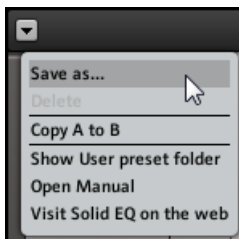


The Menu bar is located at the top of the interface.

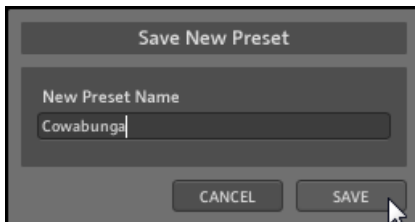
#### Saving and Deleting Presets

To save a preset:

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

## Loading Presets

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

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

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

## The Preset Menu

When you save a preset, the Preset menu is automatically split in two submenus, one containing factory presets and one containing user presets. By selecting a preset from the *User* submenu, the list of presets you have saved is brought to the front of the Preset menu and displayed below the *Factory* and *User* options.



- By loading one of the presets from the *Factory* submenu, the factory presets are brought back to the front.

## A/B Comparisons

SOLID 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 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 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.

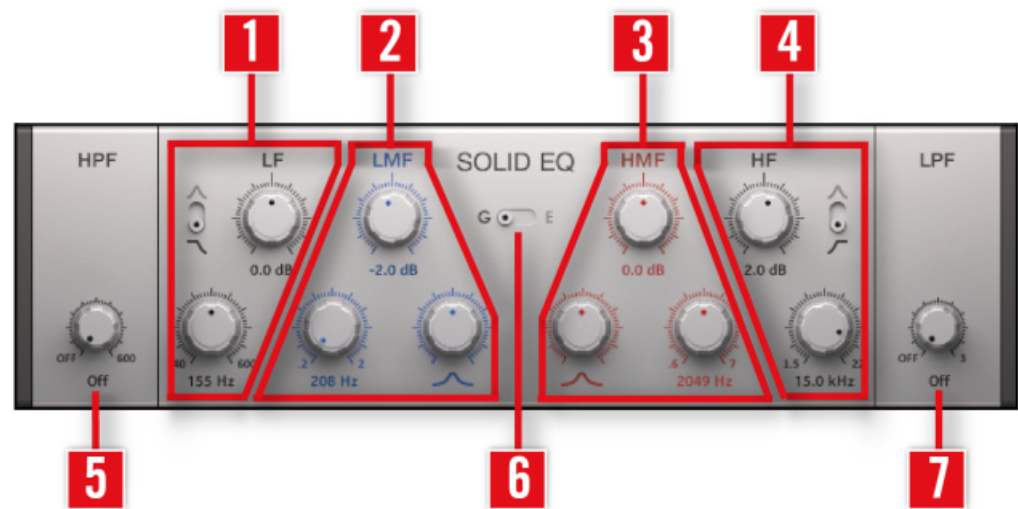
### Other functions

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. Here you can rename your presets by changing the file names.
- *Open Manual*: opens this PDF document for reference.
- *Visit Solid EQ on the web*: opens your default web browser and takes you to the SOLID EQ page on the Native Instruments website.

## 2.2 The Main Interface

This section describes the SOLID EQ interface and controls in detail.



The SOLID EQ user interface.


The four sets of colored knobs represent the four main frequency band of your equalizer.

- (1) **LF section**: controls for the low frequency band.
- (2) **LMF section**: controls for the low-middle frequency band.
- (3) **HMF section**: controls for the high-middle frequency band.
- (4) **HF section**: controls for the high frequency band.


These four sections hold the following controls:

Control	Description
Hz or kHz knob	Adjusts the band’s center frequency. Thus, this parameter sets the overall position of that frequency band in the spectrum. For the LF, LMF, and HMF band, the frequency is measured in hertz; for the HF band, it is measured in kilohertz.
dB knob	Adjusts the amplification gain (i.e. the amount of cut/boost) at the band’s center frequency, in decibels. With the knob at the center position, the frequency band is left untouched.

Control	Description
<b>Bell switch</b> (LF and HF sections only)	Switches between shelving and bell response curve: With the switch disabled, the low/high frequency band has a shelving response curve. With the switch enabled, the band has a bell response curve (similar to those of the LMF and HMF bands).
<b>Q knob</b> (quality factor) (LMF and HMF sections only)	Adjusts the width of the frequency band by modifying the steepness of the bell response curve around the center frequency. With the knob at full right, the frequency band is wide and the slope of the bell is very soft. By turning the knob counter-clockwise, the slope becomes steeper and the band narrower — in other terms, fewer frequencies are affected by the cut/boost and the equalization on this band is more selective.

 As a rule of thumb: Use a low Q (wide bandwidth) when boosting, and a high Q (a narrow spike) when cutting.

- (5) **HPF knob**: Additional high-pass filter allowing you tu cut the low end of the frequency spectrum.
- (6) **Curve switch**: Switches between two characteristics for the overall response curve of the EQ. Both settings notably differ by their slope behavior:
- **G** (switch on the left): With this setting, the LF and HF bands have a steeper slope. Furthermore, the bandwidth for the LMF and HMF sections vary with the gain set by the DB knob: The lower the cut/boost, the wider the frequency band. This can be useful when you want to apply subtle corrections to complex audio material (e.g. whole mixes).
  - **E** (switch on the right): With this setting, the LF and HF bands have a slightly softer slope, while the LMF and HMF bands keep a constant bandwidth at all gains. This settings allows achieving high Q values even for low gain values, which can be very useful when you want to select narrow frequency bands (e.g. when making surgical adjustments on specific sounds).

 For the LMF and HMF band, with the dB knob at full left or full right (i.e. at full amplification or attenuation), the E and G response curves are identical.

- (7) **LPF knob**: Additional low-pass filter allowing you tu cut the high end of the frequency spectrum.