



# FabFilter Pro-Q 4

## User Manual



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## About FabFilter Pro-Q 4

Since its original release in 2009, FabFilter Pro-Q has become the trusted workhorse EQ plug-in for many engineers and producers around the world, widely praised for its workflow, sound quality and feature set. With version 4, we're bringing exciting new features to Pro-Q, introducing spectral dynamics, the instance list, EQ Sketch, vintage saturation and much more.

FabFilter Pro-Q 4 gives you the highest possible sound quality, a complete feature set, and a gorgeous, intelligent interface that is designed to help you get 'that' sound quickly and easily.



### New in version 4

At first glance, FabFilter Pro-Q 4 looks quite similar to its predecessor. But looks are deceiving! Of course, the clean design and intelligence of Pro-Q 3 is still present, but a lot of exciting new functionality has been added to improve both sound and workflow:

- Usability improvements and [EQ Sketch](#). Wondered if you could ever just draw the curves you'd like? Now you can!
- The new [Instance list](#) lets you control all instances in your session via a single plug-in interface.
- Use [Spectral dynamics](#) to treat problem frequencies more precisely and efficiently.
- Setup your mixes with one of the [Character](#) modes to add that analog, vintage feel.
- The [Dynamic EQ](#) section has been improved, with Attack and Release settings, but also optional free side-chain filtering.
- You can now choose to use [fractional slope](#) settings if you need to, e.g. a 3.5 dB/oct LP or HP filter.
- Improved dynamic EQ processing for less distortion and cleaner sound.
- Improved precision in [linear phase](#) processing.
- New [All Pass](#) filter shape.
- You can now [copy and paste EQ bands](#) or presets, also between instances or via the new instance list.
- Improved analog matching in zero latency and natural phase mode.
- You can change parameters directly via the value display in the EQ controller by dragging or with the mouse wheel.
- Overall new and fresh design.
- Many minor improvements.

### Other key features

And of course, all the goodness of the Pro-Q 3 is still here: highest possible sound quality, dynamic EQ,

Natural and Linear Phase processing, universal slope support for all EQ shapes, EQ match, a gorgeous, resizeable interface with full screen mode for easy and precise editing, up to 24 EQ bands, intelligent band solo mode, stereo or mid/side processing, intelligent multi-band selection and editing for maximum ease of use and efficiency, spectrum grab, GPU-powered graphics acceleration, double-click text entry of parameter values, different display ranges: 3 dB and 6 dB ranges for mastering, 12 dB and 30 dB for mixing, Pro Tools hardware control surfaces support, MIDI Learn, undo/redo and A/B comparison, and an extensive help file with interactive help hints.

### Upgrading to Pro-Q 4

Upgrading from Pro-Q version 3 to the new Pro-Q 4 is safe and easy: installing Pro-Q 4 will **not** replace or delete the previous Pro-Q 3, 2 or version 1 plug-ins. All versions will co-exist and can be used at the same time. This ensures that you can open old sessions that use Pro-Q 3 without problems! Of course, FabFilter Pro-Q 4 can also read all presets from previous versions as well. See [Upgrading to Pro-Q 4](#) for more information.

FabFilter Pro-Q 4 is available in VST, VST3, CLAP, AU (Audio Units), AAX Native and AudioSuite formats.

Windows requirements	macOS requirements
Windows 11, 10, 8, 7 or Vista	macOS 10.13 or higher (64-bit only)
64-bit or 32-bit	VST 2/3, AU or CLAP host, or Pro Tools
VST 2/3 or CLAP host, or Pro Tools	Intel or Apple Silicon processor

In addition, you can find the [AUv3 version](#) of Pro-Q 4 for iPad in the iOS App Store.

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Next: [Quick start](#)

### See Also

[Using FabFilter Pro-Q 4](#)

[Acknowledgements](#)

## Quick start

The installer will copy the FabFilter Pro-Q 4 plug-in into the common VST, VST 3, CLAP, AU (macOS only) and Pro Tools plug-in folders on your computer. On macOS, the global plug-in folders in /Library/Audio/Plug-Ins are used.

In most cases, your host will then recognize the plugin automatically. However, if the instructions below do not work, see [Manual installation](#) instead.

- **Pro Tools**

Choose an empty insert slot on one of your audio tracks, instrument tracks or buses and select FabFilter Pro-Q 4 from the pop-up menu in the EQ section.

- **Studio One**

Click the '+' button next to the Inserts tab of an audio track, instrument track or bus and select 'Pro-Q 4' from the drop-down menu.

- **Logic Pro**

Choose an empty insert slot on one of your audio tracks, instrument tracks or buses and select FabFilter Pro-Q 4 from the pop-up menu. You will find FabFilter Pro-Q 4 in the *Audio Units* > *FabFilter* section (named Pro-Q 4).

- **Ableton Live**

In Session view, select the track you would like to place FabFilter Pro-Q 4 on, for example by clicking the track name. At the left top of Ableton Live's interface, click on the Plug-in Device Browser icon (third icon from the top). From the plug-ins list, double-click FabFilter > Pro-Q 4, or drag it onto the track.

- **Cubase**

Choose an empty insert slot, for example in the Mixer, and select EQ > Pro-Q 4 from the menu that appears. To use the MIDI features in Pro-Q 4, create a new MIDI track and set its output to the Pro-Q 4 instance you have just created.

To begin, just open the plug-in and drag the yellow line in the display or double-click anywhere to create new EQ bands. Enjoy!

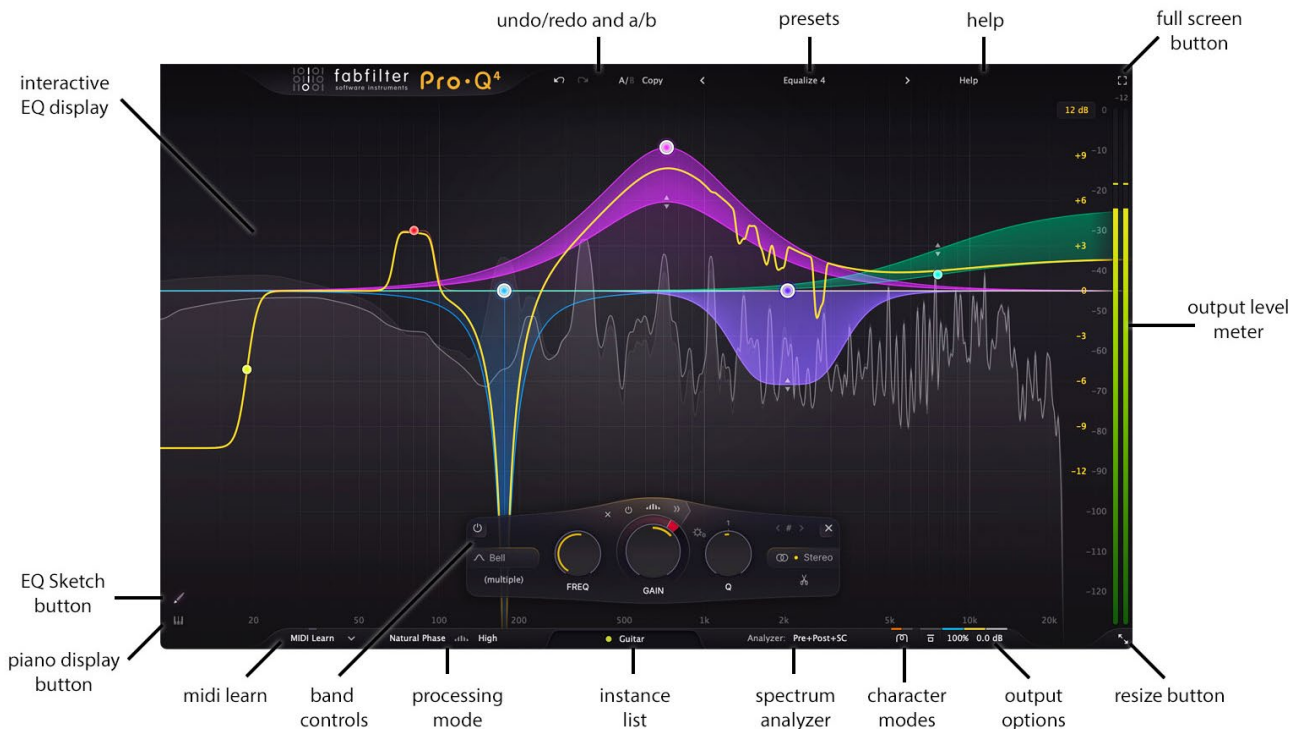
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Next: [FabFilter Pro-Q 4 overview](#)

**See Also**  
[Overview](#)

## Overview

The interface of FabFilter Pro-Q 4 is simple and straightforward. The interactive EQ display fills the plug-in window, and lets you create and adjust EQ bands using the mouse. When you create or select bands, the band controls will appear, floating above the display, positioned under the selected bands. Using the band controls, you can change the settings of the currently selected EQ bands. The bottom bar offers features like processing mode (zero latency, Natural Phase or linear phase), the instance list, spectrum analyzer settings, global bypass, character modes, and output settings.



- **Interactive EQ display**

The interactive EQ display shows you in a glance what's going on and lets you easily create and edit EQ bands. See [Display and workflow](#).

- **Band selection controls**

The controls below the EQ display adjust the parameters of the currently selected EQ bands in the display. See [Band controls](#).

- **Processing mode**

FabFilter Pro-Q 4 can work in zero-latency mode, Natural Phase mode or in linear-phase mode with variable processing resolution. See [Processing mode](#).

- **Instance list**

The Instance list button in the center of the bottom bar opens the instance list, providing easy access to all other Pro-Q 4 instances in your session. This is also the starting point for [EQ Match](#), which lets you match the spectrum of a reference signal, and collision detection. See [Instance list](#).

- **Spectrum analyzer**

Via the Analyzer button, you can enable or disable the real-time spectrum analyzers for the pre-EQ, post-EQ and external signals, and customize the analyzer settings. See [Spectrum analyzer](#).

- **Character modes**

The Character mode button chooses between Clean, or the new Subtle or Warm character modes, introducing vintage non-linearities and warmth to your mixes. See [Character mode](#).

- **Output options**

On the far right of the bottom bar, you can bypass the entire plug-in, invert the output phase, enable or disable auto-gain, show/hide the output metering, apply an overall gain scale and adjust the output level and panning. See [Output options](#).

- **Full Screen mode, resizing and scaling**

The Resize button at the far right of the bottom bar lets you change the interface size and scaling. In addition, click the Full Screen button in the top-right corner of the interface to let Pro-Q 4 fill the entire screen. See [Full Screen mode, resizing and scaling](#).

- **EQ Sketch**

The EQ Sketch button starts EQ Sketch mode, which lets you draw the entire EQ curve in one step. See [EQ Sketch](#).

- **Piano display**

Using the Piano Display button, you can toggle between the normal frequency scale and a piano keyboard display, via which you can easily quantize band frequencies. See [Piano display](#).

- **MIDI learn**

MIDI Learn lets you associate any MIDI controller with any plug-in parameter. See [MIDI Learn](#).

- **Presets, undo, A/B, help**

With the preset buttons, you can easily browse through the factory presets or save your own settings so you can re-use them in other songs. The Undo, Redo, A/B and Copy buttons at the top of the plug-in interface enable you to undo your changes and switch between different states of the plug-in. Finally, the Help menu provides access to help and version information. See [Loading presets](#) and [Undo, redo, A/B switch](#).

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Next: [Knobs](#)

**See Also**  
[Quick start](#)

## Knobs

It is easy to control FabFilter Pro-Q 4's parameters with the large round knobs. They will light up when you move the mouse cursor around to indicate that you can adjust them. The moment you move the mouse cursor over a knob, a parameter value display will pop up, which shows the name and the current value of the parameter.



All knobs support three ways of control:

1. **Vertical mode**

Click on a knob and drag up or down to rotate it. The knob reacts to the speed with which you are dragging, so if you move the mouse slowly, you make precise adjustments.

2. **Mouse wheel mode**

Perhaps the easiest way to make adjustments is by using the mouse wheel when you hover over a knob. This mode works for all the knobs and possible panning rings. (On Windows, you might need to click in the plug-in interface first to make sure it is the active window.)

3. **Text entry mode**

Double-click a knob to enter an exact value using the keyboard.

### Tips

- To **reset** a knob to its default position, hold down the *Ctrl* key (Windows) or *Command* key (macOS) and click the knob once. Note: In Pro Tools, Pro-Q 4 uses the default Pro Tools keyboard shortcut for reset: *Alt*+click.
- To **fine-tune** a value when using vertical drag mode or the mouse wheel, hold down the *Shift* key while dragging or moving the mouse wheel. Note: In Pro Tools, Pro-Q 4 uses the default Pro Tools keyboard shortcut for fine tune: *Ctrl*+drag on Windows or *Command*+drag on macOS.
- There are several **handy shortcuts in text entry mode**. With frequency values, you can type e.g. '1k' to set the value to 1000 Hz, and also 'A4' for 440 Hz, or even strings like 'C#3+13'. With dB values, you can type e.g. '2x' to get +6 dB (the value that corresponds to two times louder). With all values, you can also type a percentage (e.g. '50%' will put a knob exactly in the middle position).
- Sometimes, knobs in our plug-in interfaces are **linked**: these can be adjusted simultaneously by holding down the *Alt* key (*Shift* key in Pro Tools) while dragging on one of them. For example, an output level and input level setting of a plug-in could be adjusted simultaneously (in the opposite direction) this way.

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Next: [Display and workflow](#)

### See Also

[Overview](#)



## Display and workflow

The large display shows all EQ bands and lets you easily create new bands and edit them. The thick yellow curve shows the overall frequency response and dynamic behavior of the equalizer. The EQ display looks simple and straightforward, but it contains a lot of intelligence and smart features. We strongly recommend to take some time to read this topic and learn about all its options and shortcuts... it will highly improve your workflow!



### Creating bands

- To add a new EQ band, simply click on the yellow overall curve and drag it up or down. You will see a small preview of the type of curve that will be created when you start dragging.
- Alternatively, when you hover anywhere in the display, a subtle curve preview will appear, indicating the exact curve that you can create at that position. Just click (or double-click) on the display background to add it.
- When you already have bands selected, the above mentioned curve preview will show as a dashed line, indicating that a single click will deselect instead of create a band directly. You can still use double-click or *Ctrl*-click (*Command*-click on macOS) to create a band.
- Hold down the *Alt* key while creating a band using the method above, to create a [dynamic band](#) instead of a normal band, or hold down *Alt+Shift* to create a [spectral band](#).
- You can also create multiple bands with a single mouse gesture via [EQ Sketch](#).

The shape of newly created curves depends on where you click, and once you get used to this, it's a real time-saver! Do you need a Notch curve? Just double-click in the far low area of the display. Want a Low Cut or High Cut filter? Double-click in the far left or far right areas. Shelving filter? Drag the yellow curve at the left or right end of the display.

### Selecting bands

- Click the EQ band's dot or the colored area around it to select it.
- Click and drag on the display background to **select adjacent bands** by dragging a rectangle around them.
- Hold down *Ctrl* (*Command* on macOS) and click another dot to **select multiple bands**. Hold down *Shift* and click a dot to **select a consecutive range** of bands.
- **Deselect** all bands by clicking anywhere on the display background.

### Adjusting and editing bands

Once you have selected one or more EQ bands, the display highlights the shapes of the selected bands. You can now of course edit the EQ settings via the floating [band controls](#), but the easiest way to adjust them is simply by dragging them around:

- Click and drag a selected dot to adjust the **frequency** and **gain** of all selected bands. If you have multiple bands selected, the gain of all selected bands will be scaled relative to each other.
- For [dynamic bands](#), drag the dynamic range indicator up or down to adjust the **dynamic range**.

- Move the **mouse wheel** to adjust the **Q setting**, making the selected bands narrower or wider. This works while dragging or when the mouse pointer is above a curve. For low/high cut filters, the mouse wheel adjusts the **slope** instead, setting it to stepped values. Hold the Shift key to set it to any desired **fractional slope** value.
- Alternatively, adjust the **Q** of all selected bands by holding down *Ctrl* (*Command* on macOS) while dragging vertically.
- Move the mouse wheel while holding down *Alt* to adjust the **dynamic range** setting or *Ctrl* (*Command* on macOS) to adjust the **gain**. Hold both *Alt* and *Ctrl* (*Alt+Command* on macOS) to perform a linked change, trading gain for dynamic range.
- Hold down *Shift* while dragging (or while using the mouse wheel) to **fine-tune** the settings of the selected bands.
- Hold down *Alt* while dragging to **constrain** to horizontal adjustments (frequency) or vertical adjustments (gain or *Q*, depending on the *Ctrl/Command* key).
- Hold down *Alt* and click the dot on an EQ band once to toggle its **bypass** state (enabling or disabling the band).
- Hold down *Ctrl+Alt* (*Command+Alt* on macOS) and click the dot on an EQ band once to change its **shape**.
- Hold down *Alt+Shift* and click the dot on an EQ band once to change its **slope**.
- Double-click a dot to **enter values in the EQ parameter display** (using the *Tab* key to step through Frequency, Gain and *Q*) or double-click the values in the parameter value display directly. Note that you can enter frequencies in various ways, like "100", "2k", "A4" or "C#2+13".
- If you right-click on the dot for an EQ band, a **pop-up menu** appears with various band settings. This is a quick way to modify the EQ band while you're working in the display.

### Copying and pasting bands

You can copy any band or selection of bands by right-clicking on a curve dot, and choosing **Copy** from the curve menu. Now, you can paste these band in any Pro-Q 4 instance by right-clicking anywhere in the display, and choosing **Paste** from the menu that appears. To copy all bands, right-click on the background and click **Copy** from this menu.

To copy and paste all Pro-Q parameters including output settings and processing mode, use the Copy and Paste commands in the [preset browser](#).

### EQ parameter display

Next to each EQ band's dot in the display, the EQ parameter display shows the exact parameter values for the EQ band, along with quick controls to bypass or delete a band, enter [solo mode](#), and change its shape. You can double-click a value in the display directly to edit it. You can also click-and-drag or use the mouse wheel above any of the shown parameters to make changes on a band or selection. Click the triangular menu button to access the band menu with more options.

In case you find the EQ parameter display to be distracting, you can turn it off via the **Show EQ Parameter Display** option on the Help menu.

### Display range

Note that two display scales are drawn: the yellow scale corresponds to the EQ band curves and yellow overall curve. The gray scale at the far right is used by the [spectrum analyzer](#) and [output level meter](#). In the top-right corner of the display at the top of the yellow scale, there is a drop-down button to choose the **display range**: +/- 3 dB, 6 dB, 12 dB or 30 dB. When you are dragging a curve outside the current range of the display, the range will expand automatically as needed.

### Horizontal zooming

Sometimes it might be useful to zoom in to a specific frequency for extra precise editing. You can easily do this by clicking and dragging the frequency scale at the bottom of the EQ display, just above the bottom bar. You can do the following:

- Click and **drag up and down** to zoom in and out at the frequency you have clicked on.
- While zoomed in, you can also **drag left and right** to move the frequency scale.
- Just **double-click** the scale to return to its default full range.

### Tips

- Don't like the curve previews in the display? You can disable this feature via the **Auto-EQ Sketch** option in the Help menu.
- In **Full Screen mode**, available via the button at the right top of the interface, the EQ display will fill the whole screen so you can make very precise adjustments. See [Full Screen mode and](#)

[resizing](#).

- To **quantize a frequency** without using the [piano display](#), just double-click a curve dot in the display or the Frequency knob in the EQ controls, and enter a value like "A4" or "C#2".
  - It is possible to turn off the automatic adjustment of the display range via the **Auto-Adjust Display Range** option on the Help menu.
  - Even though frequencies above 20 kHz are generally inaudible, the display extends to 30 kHz so you can put filters above this limit. The left part of the filter, extending into the audible frequency spectrum, still affects the sound. This gives you even more possibilities to shape the frequency response of the equalizer just the way you need it.
- 

Next: [EQ Sketch](#)

#### **See Also**

[Dynamic EQ](#)

[Instance list](#)

[EQ Sketch](#)

[Spectrum Grab](#)

## EQ Sketch

Setting up initial EQ settings in your equalizer often involves adding a few bands to get started, like a low cut filter, a few bell filters and a high shelf, creating a general starting point. Wouldn't it be great if you could draw that curve in one gesture? Well... now you can!

When you open Pro-Q 4 with its default preset, having no curves yet, and you hover above the display, a curve hint will appear indicating the type of curve you can create at that position via a click or double-click. But when you click, hold the mouse down and start drawing from left to right, Pro-Q 4 will interpret your movements and adds curves along the way, until you release the mouse again. Already have curves in the display? Click the **EQ Sketch** button at the left bottom of the interface to enable EQ Sketch mode and start sketching anywhere you like.



Of course, EQ Sketch is not about adding many or very precise bands with specific settings; it's about sketching a global curve to start with, adding a few initial LP/HP filters, bells and shelves to start with in a fast and easy way. It might even **take a bit of practice** to get good at it, but once you do, it's a real time saver, especially in combination with the [Instance list](#).

Here's how it works:

- Start sketching anywhere, and move your mouse from left to right, essentially **drawing the desired result curve**.
- Once an EQ band has been added during EQ Sketch, you can **adjust its slope (low pass or highpass) or Q (other shapes)** via the steepness of your movements. But once you get near the zero dB line in the display, the curve is finalized.
- A new curve is added while sketching when you're **near the zero dB line** in the display, and move the mouse far enough away from it. The type of curve depends on the position in the display.
- If you're not happy with the added curves during the process, just **move the mouse back a bit** during the same sketch movement to remove earlier added curves and draw the section again.
- Not happy with the sketched results after you've finished? Just click the Undo button at the top of the interface and try again.

### Tips

- Note that you can disable curve previews and EQ Sketch via the Help menu of the plug-in if you want to. Of course, you can still use EQ Sketch by clicking the dedicated EQ Sketch button at the bottom left of the interface.

Next: [Band controls](#)

### See Also

[Instance list](#)  
[Overview](#)

## Band controls

When you select EQ bands in the [interactive EQ display](#), the floating band controls will automatically appear, right under the selected bands at the bottom of the display. The band controls show the current settings of the selected EQ bands and enable you to adjust them precisely.



From left to right, the following settings are available:

- The **bypass** button at the left top lets you easily bypass the selected EQ bands. Note that you can also bypass an EQ band by *Alt*-clicking its dot in the display. While an EQ band is bypassed, it is dimmed in the display and a red light glows in the bypass button.
- The **shape** button selects the filter shape of the selected bands:
  1. Bell, the traditional parametric EQ shape and probably the most versatile of them all
  2. Low Shelf, to boost or attenuate low frequencies
  3. Low Cut, to cut all sound below the filter frequency
  4. High Shelf, to boost or attenuate high frequencies
  5. High Cut, to cut all sound above the filter frequency
  6. Notch, to cut a small section of the spectrum
  7. Band Pass, to isolate a section of the spectrum
  8. Tilt Shelf, to tilt the spectrum around a certain frequency
  9. Flat Tilt, to tilt the spectrum using a flat curve, around a certain frequency
  10. All Pass, to introduce phase adjustments without changing the gain

Note: you also change the shape of an EQ band by *Ctrl+Alt*-clicking its dot (*Command+Alt* on macOS) in the display.

- The **slope** button below the shape parameter sets the steepness of the filter for any curve shape, from 0 dB/oct to 96 dB/oct (and even up to Brickwall for Low Cut and High Cut filters), and can be set to any **fractional slope** value in between. Clicking the button opens a menu that lets you either click the desired slope, or drag the indicator to choose any in-between value. You can also use the **mouse-wheel** above the button, which will change the slope between the traditional, fixed slope settings, or hold the *Shift* key (or in Pro Tools: *Ctrl*+drag on Windows or *Command*+drag on macOS) to set any fractional slope.
- The **frequency** knob sets the frequency of the selected band between 5 Hz and 30 kHz. If multiple bands are selected, they are adjusted in parallel.
- The **gain** knob sets the gain in dB of the selected bands between -30 and +30 dB. This setting is only used for Bell, Shelving and Flat Tilt filter types.
- The **dynamic range** ring sets the range of dynamic EQing in dB, ranging from -30 to 30 dB (possibly limited by the gain setting limits). Choosing a positive or negative dynamic range will make the band dynamic and expose additional dynamic controls. This setting is only available for Bell and Shelving filter types. See [Dynamic EQ](#).
- The **Q** knob sets the bandwidth of the selected bands, widening or narrowing them. The Q cannot be adjusted when a 6 dB/octave slope is used.

Note: Because there are different interpretations of Q values in various EQ plug-ins and scientific papers, we have chosen the value 1 to correspond to the default bandwidth. For the shelf filters, the internal Q values are chosen such that they result in a good range of shelf shapes. Keep this in mind when trying to reproduce the filter shapes of another EQ plug-in in Pro-Q: the interpretation of the Q values might not be the same.

Using the **Gain-Q interaction** button, between the gain and Q knobs, you can enable a subtle, analog-EQ-like gain-Q interaction. When enabled, Q and gain influence each other in a pleasant way often found in analog mixing consoles. Essentially, this means that the Q automatically gets a bit narrower when gain is increased, and the other way around, a little gain is added when the Q gets very narrow.

Note: Gain-Q interaction only affects the Bell filter shape. Pro-Q remembers the last Gain-Q interaction setting that you've chosen and will use this for new instances of the plug-in.

- The **previous- and next band** buttons let you step through the current available bands in the display, in the order in which they currently appear in the display. In between, the band number of the current band is shown to help you to identify this band in the host when automating EQ parameters.

Note: When creating new bands, they will be numbered 1, 2, 3 and so on. But when you delete a band, the others won't renumber, in order to ensure that currently written automation in your host still controls the correct band.

- The **delete** button at the right top removes the selected EQ bands. If you have accidentally deleted some bands, you can easily restore them using the [Undo](#) button at the top of the plug-in interface.
- The **stereo placement** button controls which channels are affected by the selected bands. The **split** button (scissors icon) splits the selected bands into L and R (or M and S) bands. See [Stereo options](#). When using Pro-Q on a surround/immersive audio channel, the stereo placement button will open a panel with more extensive stereo placement and speaker selection setting. See [Surround and Dolby Atmos](#).

### Tips

- Double-click any knob to enter the value directly using the keyboard. See [Knobs](#) for more information. For the Frequency knob, you can enter values in various ways, like "100" or "2k", but also "A4" or "C#2+13".
- To hide the band controls, simply deselect all bands by clicking on the display background.
- Hold down the *Alt* key while changing the gain or dynamic range knobs in a reverse-linked way (i.e. to trade gain for dynamic range).
- The minimum possible slope value is different for the various filter shapes. Bell and Notch filters have minimum slope of 12 dB/oct, Low Cut, High Cut and Band Pass filters go all the way down to 0 dB/oct, while all other slopes use 6 dB/oct as the minimum possible value.
- The *All Pass* shape is useful for adjusting the phase relationship between related tracks in a mix. You could see it as a versatile alternative to simply inverting the phase.

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Next: [Dynamic EQ](#)

### See Also

[Overview](#)

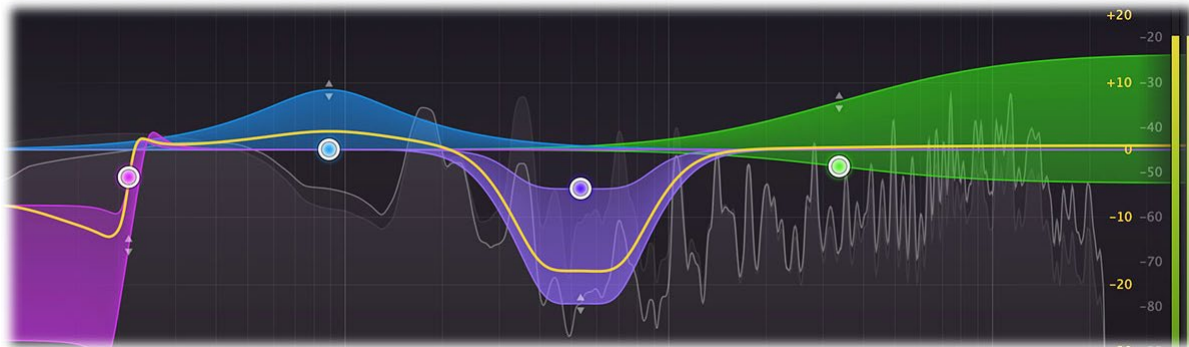
[Display and workflow](#)

## Dynamic EQ

One of Pro-Q 4's standout features is dynamic EQ. Any of Pro-Q's bands (with Bell or Shelf shapes) can be made dynamic, at any slope, with [perfect analog matching](#) and in [Linear Phase mode](#).

Simply put, dynamic EQ changes the gain of an EQ band dynamically, depending on the level of the input signal. This makes it possible to perform subtle and surgical edits similar to a multi-band compressor, but in a way that's often more intuitive and easier to work with.

Since Pro-Q is used by many engineers and producers worldwide as their standard workhorse EQ, we have designed dynamic EQ as an intuitive and elegant extension of the regular workflow: the dynamic options and controls are only exposed when you actually start using them, and won't get in the way of your normal EQ work.



The dynamic behavior of Pro-Q 4 has been carefully tuned and is highly program dependent: attack, release and knee all depend on the processed audio, the frequency range of the EQ band and the current dynamic range. This results in very natural and smooth sounding compression and expansion, useful for a wide range of dynamic EQing applications.

### Creating dynamic bands

Making a band dynamic can be done in different ways:

- Select EQ bands in the [EQ display](#), and then adjust the **dynamic range ring** around the Gain knob in the band controls, choosing a positive or negative value.
- Hover above an EQ band in the display, and use the **mouse wheel** while holding down the *Alt* key to adjust the dynamic range for this band or the selected EQ bands.
- Select EQ bands in the display, and then choose **Make Dynamic** on the band menu (which you can access by right-clicking the band dot, or via the menu button in the EQ parameter display).
- You can also **create dynamic bands** right away (initialized with a dynamic range instead of normal gain), by holding down the *Alt* key while creating bands in any of the normal ways: *Alt*+drag the result curve, *Alt*+double-click in the EQ display or *Alt*+*Ctrl*+click (*Alt*+*Command*+click on macOS) in the EQ display.

By default, the dynamic EQ process will trigger on a band-limited version of the plugin's input, according to the frequency range the band works on.

### Dynamic band controls

The following dynamic controls are displayed for dynamic EQ bands:



- The **dynamic range** ring sets the amount of dynamic EQing for a band, ranging from -30 to 30 dB (possibly limited by the maximum gain setting limits). Choose a positive (expansion) or negative (compression) value here enables dynamic EQing and exposes the additional dynamic controls. Note that this setting is only available for Bell, Shelving and Flat Tilt filter types. The current

dynamic gain change is shown as a yellow bar inside the ring, on top of the dynamic range that is indicated in red.

Note that you can also drag the dynamic range indicator for a band in the [EQ display](#) up or down to adjust the dynamic range.

- The **expand >>** button toggles the dynamic behavior between the default auto mode, or customized mode. When in auto mode, the attack and release are automatically set and threshold is constantly adjusting to the level of the current, band-limited trigger signal. Click the expand button to reveal the dynamics panel with additional options:
  - The **threshold slider** sets the threshold for triggering the dynamic EQ. When set to its top value, the threshold will be determined automatically (shown with 'A' in the threshold slider button). The level of the trigger signal is shown in the slider, making it easy to find the correct custom threshold. Note that a soft knee is used internally by the dynamic EQ algorithm, so it can start triggering a little bit below the selected threshold value.
  - The **external side chain** button lets you toggle between triggering on the plug-in input signal, or the external side chain input. The side chain signal is band-limited just like the regular input signal, depending on the *Band* or *Free* triggering options. See also [External side-chaining](#).
  - The **attack and release** knobs adjust the speed with which dynamic changes are applied. At the center position (50%), the behavior is equal to auto mode. Setting it to lower or higher values makes the attack or release faster or slower.
  - The **triggering** button specifies the signal to trigger on. It defaults to *Band*, which means that the dynamics processing is triggered according to the frequency range of the band. By setting this to *Free*, low and high-cut filtering controls will appear, which let you customize the frequency range to trigger on. By holding the **audition** button, you can listen to the current triggering signal.

Click the expand button again to hide the dynamics panel and revert all behavior back to auto mode. If you don't see the dynamics options, they are not in effect.

- The **Spectral** button at the top of the dynamic range ring toggles between normal and Spectral dynamics processing. For more about this special type of dynamics processing, see [Spectral dynamics](#).
- The **bypass dynamics** button at the left top of the dynamic range ring makes it easy to bypass the dynamic behavior of the currently selected bands. While the dynamic behavior is bypassed, this is reflected in the EQ display, the dynamic range ring is shown as inactive, and a red light glows in the button.
- The **clear dynamics** button will reset the dynamic range to 0 dB for all selected bands, turning them back into normal, non-dynamic bands.

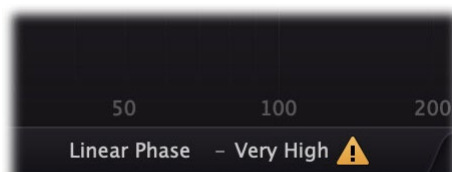
### How and when to use dynamic EQ

Generally when mixing or mastering, making static EQ adjustments works very well. But sometimes, using EQ dynamically can be the key to solving specific frequency issues or bringing out certain elements in a mix. For example, you can use dynamic EQ to brighten a kick drum or tame a hi-hat in your drum track, highlighting or suppressing only the transients. Or you could use a narrow dynamic bell filter to suppress sibilance in a vocal recording. Especially in combination with the per-band [mid/side/stereo options](#), the possibilities are endless.

Pro-Q's workflow is perfect for this: you can use it as your go-to EQ on every channel, doing the usual static EQing, but when you need to you can make any band dynamic right away.

### Linear Phase processing

Dynamic EQing also works in [Linear Phase mode](#), but only for Processing Resolution settings up to *High*. The attack and release response will be slightly different from the normal behavior in Zero Latency and Natural Phase modes.



When using dynamic EQ in Linear Phase mode in combination with the Very High or Maximum resolution settings, you will see a warning sign next to the Processing Mode button to indicate that this is not possible. In this case, simply lower the resolution to High or lower to be able to use dynamic EQing.



## Tips

- When using the mouse wheel above an EQ band while holding down both *Alt* and *Ctrl* (*Command* on macOS), you change both the dynamic range and gain of the band in a reverse linked way, i.e. you can trade gain for dynamic range.
- 

Next: [Spectral dynamics](#)

## See Also

[Overview](#)

[Band controls](#)

[Spectrum Grab](#)

## Spectral dynamics

Pro-Q 4 introduces a new variation on dynamic EQ: Spectral dynamics. With traditional dynamic EQ, the gain of an EQ band depends on the level of the input signal. In Spectral mode, Pro-Q 4 doesn't change the gain of the whole band, but triggers on specific frequencies within that band when it exceeds the threshold, leaving other frequencies untouched.



Spectral dynamic processing is a great way of treating varying problem frequencies in a much more subtle manner compared to using traditional dynamic EQing. Typically, you would need a separate, dedicated and often complex plug-in for this type of processing, but Pro-Q 4 makes the process simple to use and easy to understand, as a logical extension of normal dynamic processing.

- You can enable Spectral dynamics by adding a shelving- or bell curve, choosing a dynamic range, and then **clicking the Spectral icon** right at the top of the gain / dynamic range knobs.
- You can also create Spectral bands directly in the [EQ display](#) via **Alt+Shift+click**. Otherwise, you can also make a band Spectral by right-clicking the curve dot and choosing **Make Spectral** from the curve menu.
- By default, in [Auto mode](#), the threshold, attack and release are set automatically, depending on the incoming audio, but by clicking the **expand >>** button, you can **adjust these manually** as desired, just as with normal dynamic EQ.
- In Spectral mode, the expanded dynamics section will show a **Spectral Density** slider. This sets how selective the spectral processing is. At lower values, the ranges that are triggered for frequencies will be relatively wide, while the areas will be very narrow and specific for higher density values.
- The **Spectral Tilt** button at the right top of the expanded dynamics section sets whether a tilt of 3 dB/oct is applied to the input spectrum before it is used to trigger the spectral dynamics processing. This is on by default for new spectral bands. By applying this gentle tilt to the spectrum, higher frequencies will trigger slightly more than lower frequencies. This helps to get more natural sounding results, especially when working on complex, wide-range audio such as a complete mix where the frequency spectrum often matches a pink noise response.
- Spectral EQing requires linear phase processing. Enabling spectral mode on a specific EQ band will cause that band to use **linear phase processing**, while the others will still be processed using the current processing mode as set in the bottom bar.
- If you have set any of the bands to use Spectral dynamics, the **Processing Resolution** control will appear in the bottom bar, also showing a spectral icon if the plug-in is currently set to one of the non-linear phase modes. This controls the resolution of [linear phase processing](#) of the spectral bands. The best resolution to choose depends on the audio you are working with; if you are treating high frequencies only, the Low or Medium resolution settings will probably work just fine.

The latency introduced by linear phase processing depends on the chosen resolution.

### **Tips**

- Spectral dynamics is a great way to treat harshness and problem frequencies in guitar or vocal recordings.
- The Very High and Maximum linear phase processing resolutions aren't available for spectral or dynamic EQ.
- Most of the time, Low or Medium processing resolution settings are perfect for Spectral processing, especially when you're treating higher frequencies above 1000 Hz.
- Just like with normal Dynamic EQ, you can use the external side chain of the plug-in for triggering instead of the normal input of the plug-in.

Next: [Instance list](#)

### **See Also**

[Overview](#)

## Instance List

With Pro-Q 4, you can now control any other Pro-Q 4 instance in your session from a single plug-in interface. This is a huge time-saver, making it much easier to setup initial EQing when starting a mix session.



### The basics

- Just click the **instance button** (with the current instance name) at the center of the bottom bar to **open the instance list**: an overview of all Pro-Q 4 instances in your session. At the smallest zoom level, it looks a bit like the small spectrum/collision list from Pro-Q 3, but there's much more to it...
- **Zoom levels**: Choose the zoom level you like using the zoom slider at the top of the interface. At the smallest zoom levels, you will only see spectrums of the instances, plus possible collisions of course. At intermediate zoom levels, you will also see the result curves on top of the spectrums. At the higher zoom levels, you can interact with the instance list items like you would in a normal Pro-Q 4 interface, clicking or dragging to create and adjust curves. You can even use the new [EQ Sketch](#) feature here, which makes it a lightning-fast way to setup initial EQing in your mix session.
- Next to the zoom level slider, you can enable or disable **auto-zoom**. When enabled, an instance item will automatically zoom in when you hover above it, so you can edit it directly.
- You can also easily **filter** currently shown instances using the filter text field at the top, which filters the listed instances as you type.
- Using the **Options** button at the right of the filter text field, you can also choose **Quick Jump**. This will open a floating panel, which lets you search for a track by name, and scrolls to that track when you select it, without actually filtering the list. Here, you can also choose what happens when you start typing when you're in the Instance List. You can choose between **Type to Filter** to start filtering tracks, or **Type to Quick Jump** to easily scroll to the track you need to work on.
- The **Filter Pinned** button toggles between showing only pinned tracks, or all tracks.
- If there are many instances in your session, a **minimap** appears at the right top, which makes it easy to navigate the list by clicking and dragging or via the mouse wheel. The minimap will also show which instances are pinned at the moment. You can show or hide the minimap using the **Show Minimap button** next to the Full Screen button at the right top.
- The **Close button** at the right top of the interface closes the instance list and reverts back to the normal interface. Alternatively, you can also use the Esc key to exit the instance list.

### Working with instances



- In the smallest zoom levels (where you cannot edit the instance) just **clicking in an instance** will make it active and zoom it to a maximum level, making it easy to do precise EQ adjustments. In the larger zoom levels, a dedicated **maximize button** appear next to the pin / collision reference buttons, which enlarges the instance to maximum level. **Clicking in the empty space** left or right of the items will unzoom it again.
- When editing an instance, you can add and change curves just like you are used to in the normal EQ display, but without the band controls panel. You can change curve values by dragging curve dots or values in the parameter value display. In addition, **right-click a curve dot** to open the [curve menu](#), which offers the possibility to change the [speaker set](#) and [stereo placement](#), make a curve [dynamic](#) or [spectral](#), and more.
- When you hover above an instance, you will see a small **output level** button at the right bottom; hover above it to get access to [output settings](#) of the instance like bypass, auto-gain, phase invert and output level/panning. Above the output level knob, you will see the **emphasize button**. Click it to momentarily raise the instance level; it can help you identify which tracks you are working on in a complex mix with many instances.
- By default, the **instance name** (and color if possible in your DAW) is set automatically based on the track name, but you can always double-click an instance name to adjust it as you like. (Note: currently Pro Tools doesn't support either and Logic Pro doesn't support reporting track colors.)
- You can **pin** instances via the pin icon, and then filter on all pinned tracks using the **Filter Pinned** button at the top of the interface. You can save and restore sets of pinned tracks via the options button in the toolbar. Use Shift-click to **pin a range** of instance items, or Alt-click to **pin one instance uniquely**.
- The **Menu button** at the center right of the instance item, gives you access to various options like copy/paste and starting [EQ Match](#). If there are multiple instances with the same track color, it offers a **Pin Similar Colors** command to pin all tracks with this color.
- The instance list is now also the way to detect **collisions**. By default, the main instance you are now in, is the *collision reference*; this is indicated by the red **collision reference icon** at the left top of the Instance item. Other instance items will show collisions with this instance. You can change any instance into the collision reference by clicking the collision reference button of another instance. This also sets which [external spectrum](#) is shown in the main interface.

## Notes

When using the VST3 plug-in in DAWs like Studio One, Cubase or Ableton Live, Pro-Q 4 instances know the track order and color of the track they are placed on. This makes it possible to show instance items in track order, with colored dots representing the track color.

Unfortunately, the AAX and AU plug-in formats cannot communicate this information to the plug-in yet. This means that the instance items in the instance list will be ordered by name instead in DAWs like Pro Tools and Logic Pro. We are in direct contact with the development teams for both Logic Pro and Pro Tools and will hopefully be able to get this implemented for AAX and Audio Units as well.

## Tips

- The best way to use the instance list is in [Full Screen mode](#), where you can make precise adjustments and get the best overview of all instances.
- You can drag and drop preset files from Windows Explorer or the Finder on Mac onto an instance to load the preset. Drag and drop an audio file to start [EQ Match](#) on the instance, using the audio file as the reference spectrum.

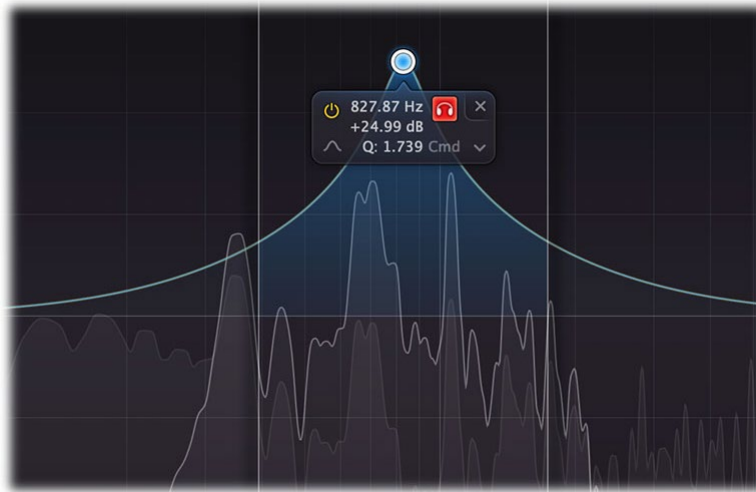
Next: [Solo](#)

## See Also

[Overview](#)  
[EQ Sketch](#)  
[Display and workflow](#)

## Solo

When you move the mouse cursor near an EQ band in the display, the EQ parameter display pops up showing the current parameter values for the band.



Click and hold the **solo button** (with the headphones icon) to enter **solo** mode for the current EQ band. The other EQ bands will dim, just like the yellow overall curve. Simply **drag** the solo button horizontally to change the frequency of the band, or vertically to adjust the **solo listening level**.

In solo mode, you don't hear the effect of the EQ band itself, but instead you will hear the part of the frequency spectrum that is being affected by that band. Of course, the frequency range depends on the frequency and Q settings, and is visualized in the display as well.

When using solo mode with **Low Cut** or **High Cut** bands, you will hear the frequencies that are being cut away instead of the frequencies that pass, which helps you to determine whether you are cutting the right frequencies.

Generally, solo mode aims to expose the parts of the incoming audio that matter to the current EQ band, but that you can't hear just by listening to the regular EQ sound.

### Tips

- When using solo with **Bell** or **Shelving** bands, hold down Ctrl (Cmd on macOS) while dragging to change the Q, which will of course affect the frequency range that you hear. For filter types that do not have a Gain setting (Low- and High Cut, Notch, Band Pass), dragging in solo mode has the same effect as dragging the normal, changing both Frequency and Q.
- You can adjust the **solo listening level** by moving the mouse up or down while holding the solo button.
- If the [piano display](#) is enabled, the parameter value display will also show the note number that corresponds to the band frequency.
- You can turn the parameter value display on and off by clicking **Show EQ Parameter Display** in the Help menu.

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Next: [Full Screen mode, resizing and scaling](#)

### See Also

[Overview](#)  
[Display and workflow](#)

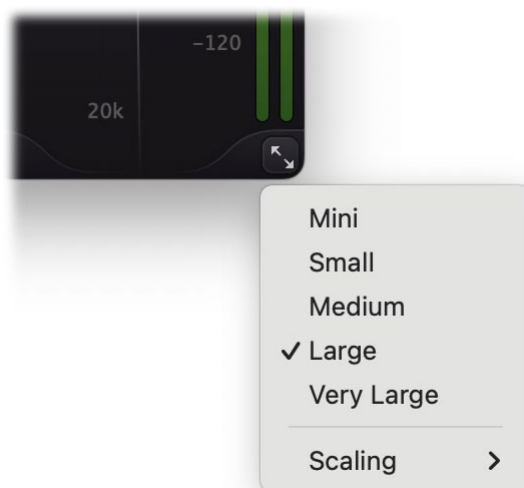
## Full Screen mode, resizing and scaling

With just the click of a button, the Pro-Q 4 interface will fill up the whole computer screen so you can make ultra-precise adjustments and get the best view on the spectrum analyzer and filter display. To exit Full Screen mode, just press Escape or click the Full Screen button again.



### Resizing

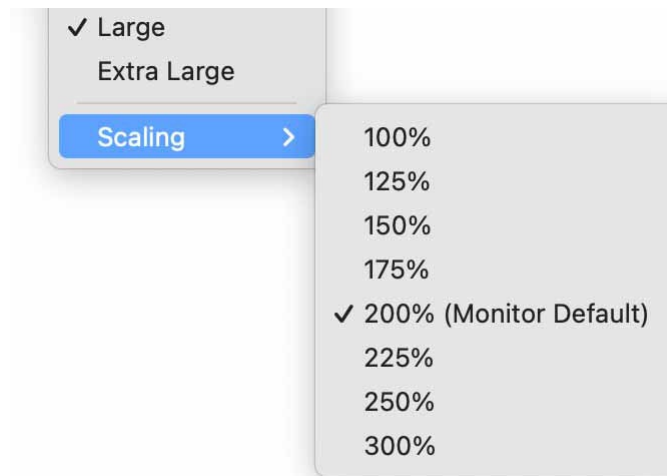
In addition to Full Screen mode, you can also customize the normal interface size using the Resize button at the right of the bottom bar. You can choose between Mini (smallest size, equal to the AUv3 default plug-in size on iOS), Small, Medium (the default size), Large or Extra Large. Once you have selected a size, it will automatically become the default size for new plug-in instances.



### Scaling

At the bottom of the resize menu, the Scaling submenu lets you increase or decrease the interface scaling relative to the system default, e.g. 150% (smaller) or 300% (larger) on Retina monitors (that have a 200% scaling by default).

When you enable Full Screen mode, the plug-in will automatically choose an appropriate scaling so that all controls become a bit larger. The plug-in automatically remembers the chosen scalings for normal and Full screen mode, and also per monitor type (Retina / High DPI or regular), so once you've customized the settings to your preference, you don't have to worry about it anymore.



### Tips

- When using the VST3 plug-in, you can resize the plug-in interface by just dragging the window edges to any size you like. Of course you can always go back to one of the predefined sizes with the resize button.
- The large interface options will be greyed out in the Resize button menu if the current display is too small to support them, and the same applies to the scaling options.

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Next: [Piano display](#)

### See Also

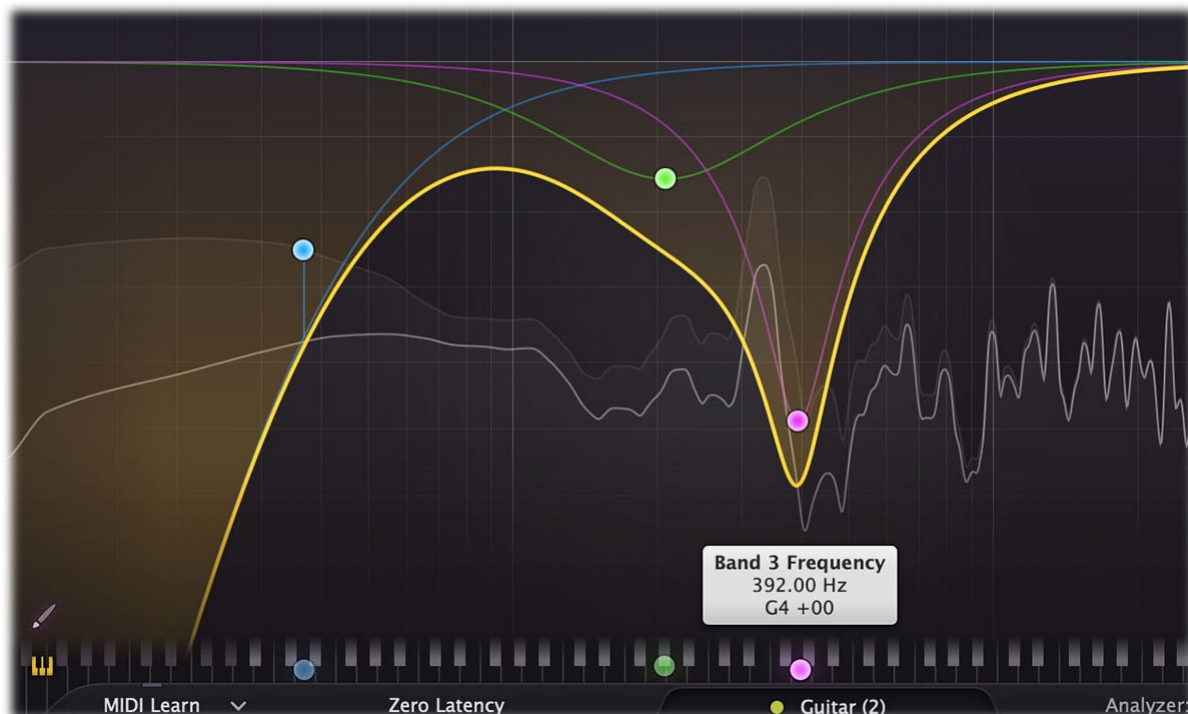
[Overview](#)

[Display and workflow](#)



## Piano display

Using the Piano Display button at the bottom left of Pro-Q's interface, just above the bottom bar, you can toggle between the normal frequency scale and a piano keyboard display, via which band frequencies can be adjusted as well. The highlighted keys correspond to an 88-keys grand piano layout, ranging from A0 (27.5 Hz) to C8 (4186.01 Hz).



For every band in the display, there is a corresponding dot on the keyboard. You can interact with the dots in two ways:

- Click the dot once to quantize the associated band's frequency to the exact musical note.
- Click and drag the dot to change the frequency while keeping it quantized to musical notes.

While the piano display is active, parameter value displays that show a band's frequency will also show that frequency as a musical note (including cents offset). Note that at any time, also if the piano display is not showing, you can enter frequencies as musical notes. For example, you can double-click on the Frequency knob in the band selection controls and type "D#5 +13", or "A4".

### Tips

- To **quantize a frequency** without using the piano display, just double-click a curve dot in the display or the Frequency knob in the EQ controls, and enter a value like "A4" or "C#2".
- Pro-Q 4 displays the C4 key as middle C, following the most used Roland standard. Note that some DAWs (e.g. Cubase) might use a different format, showing C3 as middle C (the Yamaha standard).
- By default, the piano display key that matches the frequency at the current mouse position is highlighted, and a small label shows its note number. You can turn this feature on or off by clicking **Show Frequency On Hover** in the Help menu.

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Next: [Stereo options](#)

### See Also

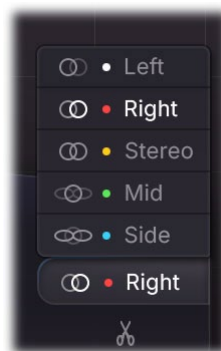
[Overview](#)  
[Display and workflow](#)

## Stereo options

With Pro-Q 4, it's very easy to equalize left, right, mid or side signals in a different way. This is a great way to surgically remove unwanted sound artefacts, or even to add stereo effects.



Pro-Q 4 offers a stereo placement setting per band. In the default Stereo mode, an EQ band works on both channels of a stereo pair. Using the **stereo placement** button on the right-hand side of the [band controls](#), you can choose to process only the left, right, mid or side information instead:



Click the **split** button underneath the buttons to duplicate the selected band, making two identical copies, one operating only on the left channel and one operating on the right channel. This makes it very easy to slightly adjust one of the channels. The EQ display will group curves that work on the same channels, to visualize the resulting adjustments.

Using the Mid or Side stereo placement setting, you can then easily filter the mid (mono) information independently from the side (stereo) information. This is often the best way to fix artefacts or modify stereo information, because mid/side represents the stereo signal in a more natural way.

The result curve for adjustments exclusive for the left channel will be shown in **white**, while **red** is used for the right channel. The mid and side adjustment curves are shown in **green** and **blue**. Of course, curves that affect all channels are shown in **yellow** as always.

## Techniques

Independent channel equalization is very useful when dealing with stereo audio containing unbalanced frequency content over the stereo field. Let's say you want to combine a stereo drum recording with a stereo acoustic guitar recording. The drum recording contains more low-mid frequencies in the left channel (for example a low tom), and more high frequencies in the right channel (like cymbals or a hi-hat). The guitar sound, recorded with a mic capturing the sound-board/hole panned left and one capturing the fretboard/neck panned right, might have similar frequencies as the drum recording, making it hard to combine them in a balanced way. By using independent left/right channel EQing, it is possible to balance these elements so that they do not fight each other. Instead of EQing the whole stereo track of the drums and guitars one can simply EQ where it is necessary to get the two elements to complement each other.

Mid/side EQ is perhaps most commonly used to bring some stereo elements further up within a recording, either by cutting certain frequencies in the mid channel or by boosting the wanted frequency range in the side channel. It is great for adding a bit of depth to typical hard panned rock/heavy guitar recordings where you boost the "bite" frequency range of the guitars (around 2-4kHz) with a quite

narrow EQ. Combine this with cutting some of the "mud" away from the side channels will give the effect of huge guitars that still sit well within a mix.

Independent mid/side equalization is also often used during mastering. For example, raising high frequencies in the side channel can freshen up the sound, while a low cut filter in the mid channel can work very well to clear up the low end.

Consider using [linear-phase processing](#) when filtering stereo channels (left, right, mid or side) differently to avoid introducing unwanted phase changes.

### **Surround and mono operation**

FabFilter Pro-Q 4 can also work as a mono or surround equalizer plug-in and will adapt itself automatically to the channel layout of the track it is inserted on. In a mono instance, the dedicated stereo options like output panning and stereo placement are not available, of course. When used on surround/immersive audio tracks, Pro-Q 4 offers extra channel placement options to configure the selection of speakers that EQ bands will apply to. See [Surround and Dolby Atmos](#).

If you load a preset with stereo- or surround specific bands (e.g. with Left stereo placement or Lss/Rss speakers setting), they will be shown as disabled in the EQ display, and won't affect audio processing. You can simply remove these bands, or enable them again using the **Reset Placement/Speakers** command in the band's curve menu, which will reset the stereo placement and speakers settings of the selected bands to make them compatible with the current track.

Best practice is to save custom surround or channel-specific [presets](#) in a dedicated subfolder to use only when needed.

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Next: [Surround and Dolby Atmos](#)

### **See Also**

[Overview](#)

[Band controls](#)

[Display and workflow](#)

## Surround and Dolby Atmos

FabFilter Pro-Q 4 supports all important surround/immersive audio formats, up to 9.1.6 Dolby Atmos (depending on the DAW and plug-in format). When you add Pro-Q 4 to a surround channel, the interface automatically adapts itself to the used multi-channel format. The output level meter will show all channels, with appropriate labels to identify them.

In addition, the Stereo Placement button will now give access to a surround panel with more sophisticated options to choose which speakers are affected by the selected EQ bands.

### Speakers and stereo placement

The surround panel shows you an overview of the available speakers in the current surround channel layout. By default, all speakers are selected except the LFE channels. Using the *All* button at the left top, you can toggle to include or exclude the LFE channels.

Click a row of speakers to only select this row, e.g. Lss/Rss or Center. In addition, you can select a specific [stereo placement](#) setting at the top to affect only the left, right, mid or side information of the selected speakers. Of course you can also click any of the individual speaker icons directly to let the selected bands work on that speaker only.

If you have selected the L/R speakers, you can click the Center speaker to add it to the set, so a curve applies to all three front **L/C/R** speakers. This also works the other way around: if Center is selected, clicking L/R will add it. When both Center and L/R are selected, just click one of the two rows again to select it exclusively.



The caption of the stereo placement button in the band controls will describe the selected speakers and an additional label under the button will show specific stereo placement information (e.g. "Left only") if needed.

### Notes

- [Output panning](#) is not available when using Pro-Q 4 in a surround layout. We recommend to change surround channel levels using a dedicated surround panning plug-in.
- If you load a preset that uses specific surround settings that are not available in the current channel layout, some bands may be disabled, and won't affect the audio. You can either remove these bands, or enable them again via the curve menu's **Reset Placement/Speakers** item, resetting the speakers/stereo placement information.

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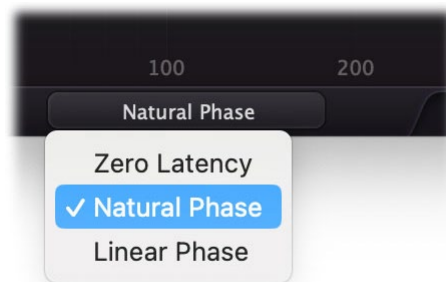
Next: [Processing mode](#)

### See Also

[Overview](#)  
[Stereo options](#)  
[Band controls](#)

## Processing mode

The Processing Mode button in the bottom bar selects the type of EQ processing. In almost all cases, either Zero Latency or Natural Phase modes will deliver perfect results, and when linear-phase processing is needed, you can of course use Linear Phase mode with a customizable resolution.



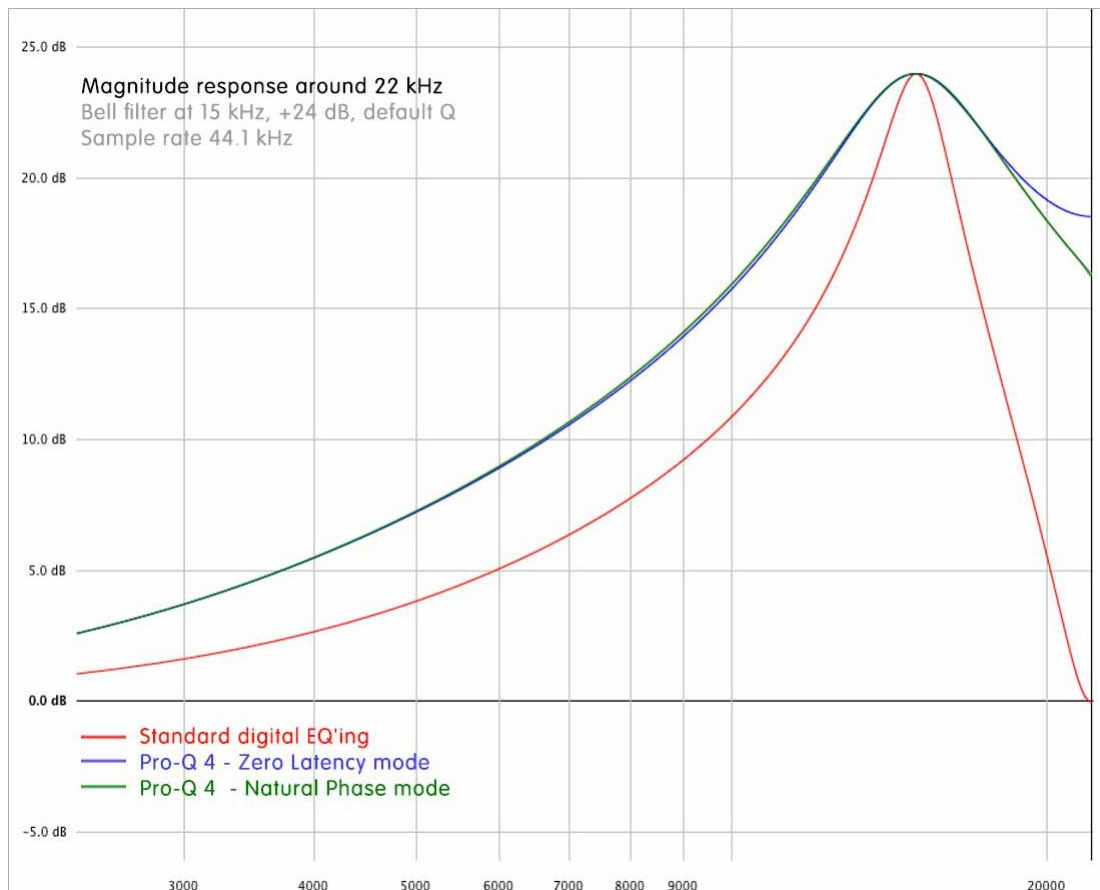
### Zero Latency

In Zero Latency mode, Pro-Q matches the magnitude response of analog EQing as closely as possible, obviously without introducing any latency. It is Pro-Q's most efficient processing mode, and absolutely sufficient for most applications.

### Natural Phase

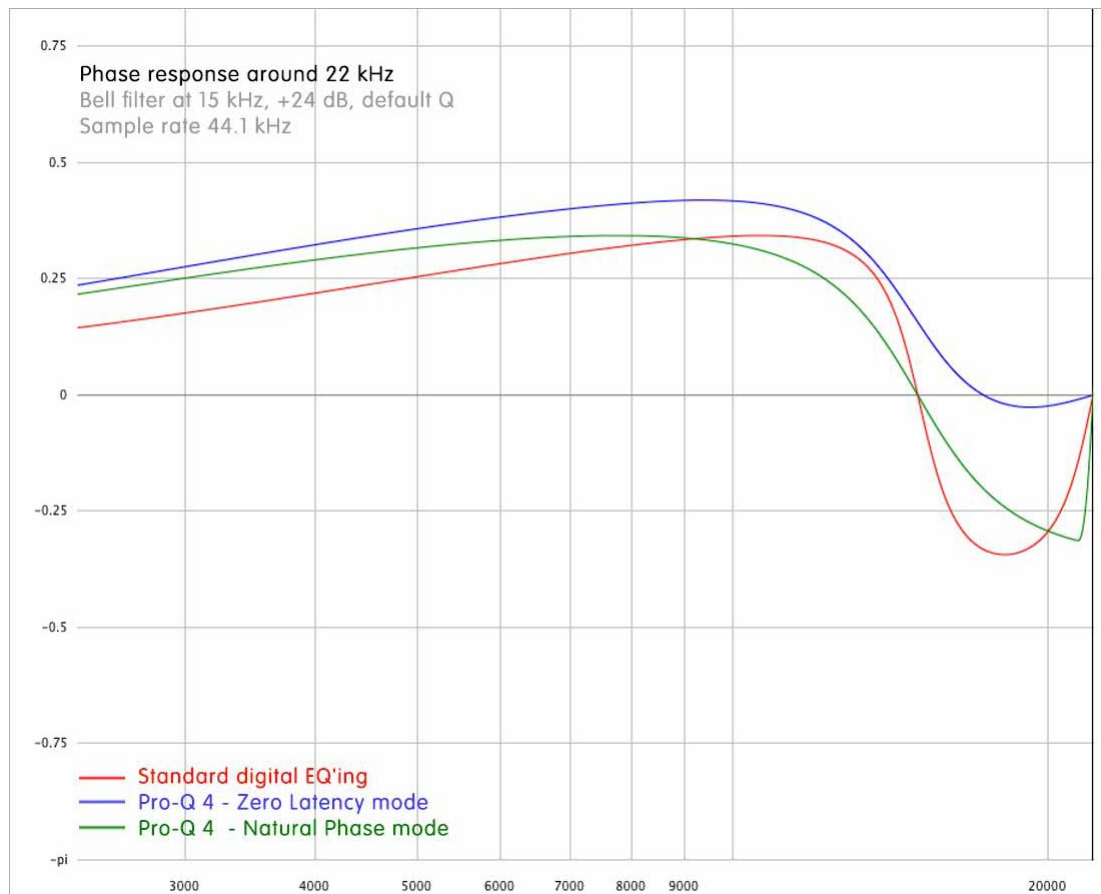
Pro-Q's unique Natural Phase mode performs even better. It not only perfectly matches magnitude response of analog EQing, but also closely matches the analog phase response. So it delivers the most accurate frequency response and best sound quality, even at the lowest frequencies and highest Q settings, without introducing noticeable pre-ringing or long latency.

To illustrate the difference between the two modes, we've plotted both magnitude and phase response of a Bell filter at 15 kHz, and we've also compared this with standard digital EQing, like most DAWs implement in their factory EQ plug-ins.



The red curve shows the magnitude response of standard digital EQing, which really is far from perfect. The blue curve is the response in Pro-Q's Zero Latency mode, which

is nearly perfect, except for a small deviation above 18 kHz. The green line shows Pro-Q's Natural Phase mode: it matches the theoretical analog magnitude response precisely!



And now the phase response. Again, the red curve represents standard digital EQ'ing, and blue curve Pro-Q's Zero Latency mode: both have a non-ideal phase response. The green line illustrates Pro-Q's Natural Phase mode response. Apart from a very small, inaudible deviation above 20 kHz, it perfectly matches the theoretical analog phase response.

## Linear Phase

When filtering audio, traditional analog and digital filters not only change the magnitude, but introduce phase changes as well. What happens is that the phase of different frequencies in the signal is changed in different ways. This can have an audible effect on the sound, but not necessarily in a bad way. Most of the time, for example for a simple bell or shelving filter, the phase effects are very subtle and hardly noticeable. However, for higher-order filters like steep low cut or high cut filters, the effect can become quite apparent as the phase distortion starts to affect transients and can make the sound less transparent.

Moreover, problems arise when you mix a filtered and phase-altered signal with another similar signal that has not been filtered, or that has been filtered in a different way. In this case, it is very likely that the different phase components of both signals won't match up properly and will cancel each other to some extent. This situation can for example occur when mastering. It is quite common to apply an equalizer only to a part of the song, using crossfades at the beginning and end of the affected region. Because the phase information in the original and filtered parts is different, the fades won't work as intended.

Linear-phase processing provides an answer to these problems. Linear-phase filters only change the magnitude of the audio, while leaving the phase untouched. However, linear-phase filters also have some disadvantages. First of all they introduce latency: the entire signal is delayed when passing through the plug-in. Higher processing resolution (for better response in the low frequencies), results in longer latency, but unfortunately this can also introduce 'pre-ring' that can make transients (e.g. a kick drum) lose their edge.


When Linear Phase processing is selected, a Processing Resolution button becomes available. Choosing the correct resolution is a compromise depending on the program material and your personal preference. The following resolutions are available:

- **Low** provides linear-phase processing with a minimal latency. Use only with low Q settings, or when only changing the mid-high part of the spectrum. With a sample rate of 44.1 kHz, it results in a total latency of 3072 samples (about 70 ms).
- **Medium** is a good compromise between low-frequency resolution and latency and we recommend to use this in general for linear-phase processing. The total latency is 5120 samples at a sample rate of 44.1 kHz (about 116 ms).
- **High** gives great low-frequency resolution. If you need to use high Q settings when changing the low end of the spectrum, use this mode. The total latency is 9216 samples at a sample rate of 44.1 kHz (about 209 ms).
- **Very High** gives even better low-frequency resolution. The total latency is 17408 samples at a sample rate of 44.1 kHz (about 395 ms).
- **Maximum** results in very high low-frequency resolution at the expense of a very large latency and possible pre-echo problems. The total latency here is 66560 samples at a sample rate of 44.1 kHz (about 1509 ms).

Note: when using both L/R-specific bands and [M/S-specific bands](#) at the same time, the linear phase processing will be done in two separate stages: first the L/R stage, then the M/S stage. Be aware that this will double the latency.

Changing EQ band frequencies in Linear Phase mode sounds just as smooth as when using the other modes, no zipper effects whatsoever. This might sound trivial, but it's actually quite unique in linear-phase processing!

### Choosing a suitable processing mode

As already explained, in almost all normal mixing and mastering situations, Zero Latency mode or Natural Phase mode (with its even better accuracy and phase response) will be the best choice. It is important to understand that linear-phase processing is not better or more transparent than normal processing, it is different! Linear-phase EQing is a problem-solving tool, in general only used to avoid phase cancellation problems. To learn more about linear-phase vs. normal EQing, watch Dan Worrall's excellent video tutorial on the subject: [EQ: Linear Phase vs. Minimum Phase](#) .

### Notes

- Dynamic and Spectral EQing also works in Linear Phase mode, but only for Processing Resolution settings up to 'High'. See [Dynamic EQ](#).
- Spectral bands will automatically use linear phase processing. See [Spectral dynamics](#).
- When working with different sample rates, the latency in samples of the various linear-phase modes can change to give you approximately the same low-frequency resolution (and the same latency in ms).
- Due to Pro-Q's advanced design, the CPU usage is very low, even when using up to 24 EQ bands, and it doesn't change much with the different linear-phase processing modes.

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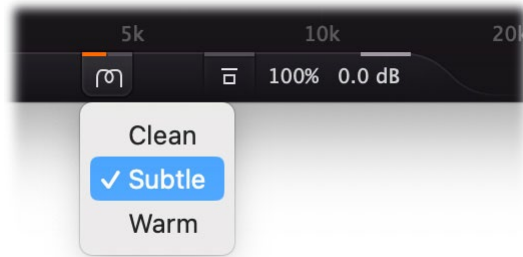
Next: [Character mode](#)

### See Also

[Overview](#)  
[Display and workflow](#)

## Character modes

At the right of the bottom bar, you will notice the new Character button. Using this, you can choose between Clean, Subtle or Warm character modes. The default Clean mode is the original, transparent sound that Pro-Q is known for.



- With **Subtle** character mode enabled, Pro-Q 4 will introduce a subtle, vintage type of saturation. The amount of coloring is highly program dependent and is different per frequency and affected by EQ bands as well.
- The **Warm** mode will introduce a slightly more apparent, tube-like form of saturation and colored sound.

You can use the Character modes in various ways. First of all, you could choose one of the coloring modes and save your Default Setting with it. Then, when you put Pro-Q 4 on all the tracks in your session, you can 'mix into it', like you would when working on a classic mixing console together with vintage outboard.

Otherwise, you could use the Clean character by default, but use the Subtle or Warm modes on specific tracks or buses for specific character and coloring when you need it.

Next: [Spectrum analyzer](#)

**See Also**  
[Overview](#)

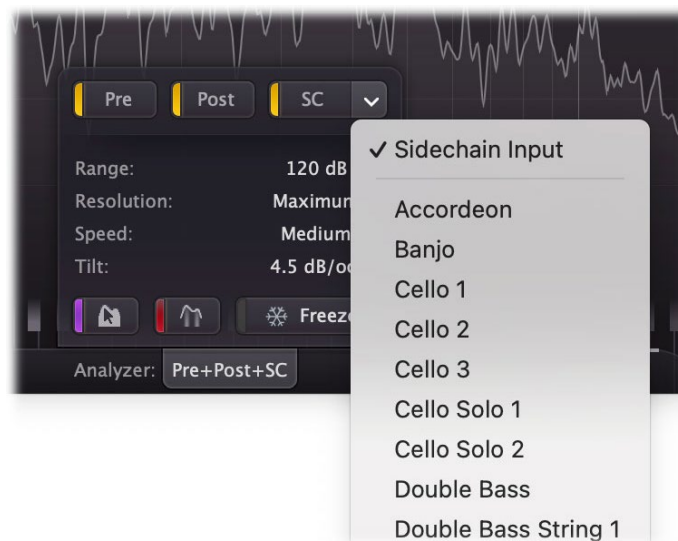


## Spectrum analyzer

To help you judge the effect of the combined EQ bands on the incoming audio signal, FabFilter Pro-Q 4 includes a powerful real-time frequency analyzer.



The spectrum analyzer can be customized via the analyzer panel, which pops up automatically when you hover above the analyzer button in the bottom bar. It offers the following options:

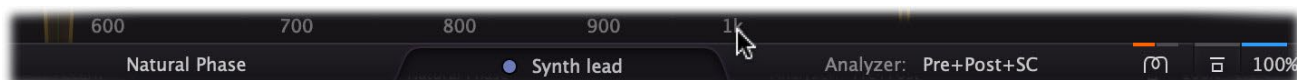


- The **Pre** and **Post** and **SC/Ext** buttons at the left top of the analyzer panel enable or disable the pre-, post- and external external spectrum visualization. Note that when [global bypass](#) is enabled, the plug-in won't receive or handle any audio, so the spectrum analyzer is disabled as well.
- Using the SC/Ext button's menu, you can choose an **external spectrum** in the main EQ display: this can be either the external side chain of the plug-in, or the post-EQ spectrum from any other Pro-Q 4 instance, as shown in the list of external spectrums. Simply click an external spectrum in the list to activate it. It will be shown in the EQ display with a light red outline to distinguish it from the regular pre- or post-EQ spectrum.
- The **Freeze** button at the right bottom of the panel causes the spectrum to stop falling and build up a maximum over time. While Freeze is enabled, a blue line at the top of the Analyzer button in the bottom bar indicates this state as well.
- The **Spectrum Grab** button next to the Freeze button enables or disables the Spectrum Grab feature. If enabled, you can leave the mouse above the spectrum for a few seconds, and Pro-Q will automatically enter Spectrum Grab mode. Existing EQ bands will be dimmed while the spectrum freezes. You can now simply grab one of the peaks in the white output spectrum line, and drag to adjust! See [Spectrum Grab](#).
- The **Show Collisions** button enables or disables frequency collision indication. When enabled, the main analyzer will highlight areas of the spectrum (using a red glow) where frequencies may collide with frequencies of the currently selected external spectrum, possibly causing auditory masking issues. In addition, similar highlighting is shown in the [Instance list](#). Note that collision detection is merely an *indication*, and not exact science. Always use your ears to decide whether you are actually dealing with problematic collisions or

frequency masking. To properly detect peaks and collision areas in the low frequencies, it's best to use the High or Maximum analyzer resolution setting.

- With the following settings you can customize the behavior of the real-time spectrum measurements:
  - The **Range** setting specifies the vertical range of the spectrum analyzer, which can be 60 dB, 90 dB (the default setting) or 120 dB.
  - The **Resolution** setting determines how precise the spectrum analyzer works. Higher resolution settings allow more precision in the low-frequency area, but because more incoming samples are needed to calculate a single spectrum, the update rate will be lower which generally results a slower attack time. The **Low** value corresponds to a resolution of 1024 points, **Medium** to 2048, **High** to 4096, and **Maximum** to 8192 points.
  - The **Speed** setting selects the release speed of the spectrum. A fast release shows dynamic changes more clearly, while a slow release gives you more time to examine the spectrum before it disappears.
  - The **Tilt** setting tilts the measured spectrum around 1 kHz with a specified slope, expressed in dB per octave. The default setting of 4.5 dB/oct results in a natural looking spectrum, resembling best how loudness is perceived by the human ear.

### Horizontal zooming



Sometimes it might be useful to zoom in to a specific frequency. You can easily do this by clicking and dragging the frequency scale at the bottom of the EQ display, just above the bottom bar. You can do the following:

- Click and **drag up and down** to zoom in and out at the frequency you have clicked on.
- While zoomed in, you can also **drag left and right** to move the frequency scale.
- Just **double-click** the scale to return to its default full range.

### Tips

- When you hover over the display, or move the mouse slowly, the frequency under the mouse cursor is shown in the frequency scale at the bottom of the display. If the [piano display](#) is enabled, the key under the mouse cursor is highlighted. You can turn this feature on or off by clicking **Show Frequency On Hover** in the Help menu.
- To properly detect peaks and collision areas in the low frequencies, it's best to use the High or Maximum analyzer resolution setting.
- If the dark red color used for frequency collisions is hard to see for you, click Use Accessible Colors on the Help menu to toggle to a brighter color.
- When skipping through presets, the current analyzer settings are not changed, but they are saved in songs.
- Hold down the Freeze button to freeze temporarily until you release the mouse button again.
- If desired, you can make the analyzer panel 'sticky' by clicking the Analyzer button once. Click it again to hide the panel.
- You can also select an external spectrum from the [instance list](#), using the collision reference button at the left-top corner of an instance.

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Next: [EQ Match](#)

### See Also

[Overview](#)  
[External side-chaining](#)  
[Display and workflow](#)

## EQ Match

Sometimes, it can be very useful to be able to match the tonal characteristics of a certain reference audio signal. For example, you're in the process of recording vocals, and for some reason you just don't get them to sound like the recordings you made a few days earlier. Or you really like the overall color and sound of a certain mastered song, and want your own track to sound alike.

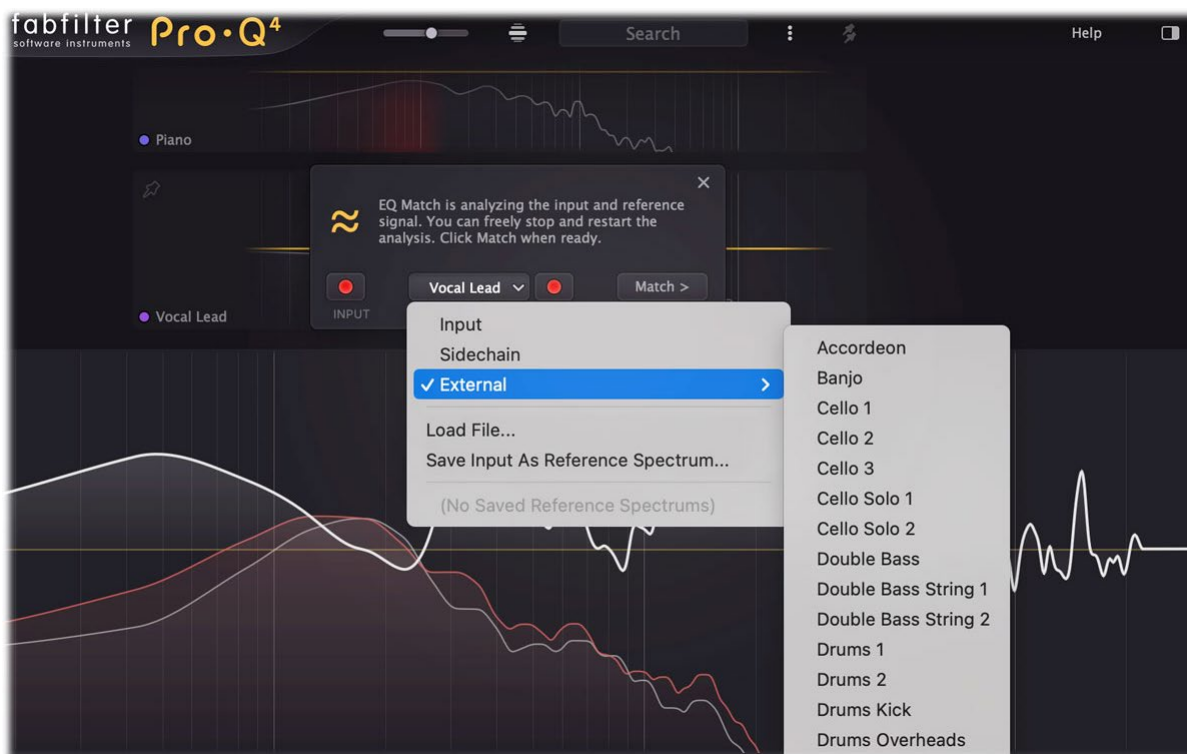
You can of course add EQ bands and try to find appropriate settings yourself, but Pro-Q offers an automated process to do this for you: EQ Match! It's a simple process that lets you choose or record a reference spectrum, compares it to the spectrum of the current input, and adds new EQ bands to make your audio sound like the reference signal. It gets you 'that' sound in less than a minute.



As the EQ Match process often involves comparing audio of different Pro-Q instances, it is available via the [Instance list](#). Just hover above an instance item, click the menu button that appears at the center right, and choose *EQ Match*. Then, follow these steps:

### Step 1: Choose your reference

Starting EQ Match will open the EQ Match panel above the instance item. By default, EQ Match is already listening to plug-in input and starts analysis right away, building an input spectrum.



Click the Reference button to choose a reference source. You have the following options:

- **Select a previously stored Reference Spectrum**

Just choose one of your earlier saved reference spectrums and you're ready to match!

To save a spectrum, just add a FabFilter Pro-Q 4 instance to a track that contains the reference audio, open the EQ Match panel, analyze the input for a while and then choose *Save Input As Reference Spectrum* via the Reference button. Once saved, you can select it as a reference immediately in any other Pro-Q 4 instance.

- **Record a reference spectrum via the main plug-in input**

Let's say you punched in some new vocals on a track you've recorded a few days ago, and they sound slightly different. In this case, after building the current input spectrum, you can select *Input* as reference, move the playhead to an earlier point in your song that plays the previously recorded vocal, and build a reference spectrum from it. If needed, you can easily switch back and forth to building the original and reference spectrums, toggling the Record/Pause buttons.

- **Use an external spectrum as the reference**

The *External* submenu lists all other Pro-Q 4 instances: just click one to use output as the reference to record. Or click *Side Chain* to use the plug-in's side chain input. The plug-in will then analyze both original and reference spectrums at the same time. Once it has gathered enough information, the Match button will become enabled and you're ready to proceed. If you have pinned another track in the instance list, it will be auto-selected as the external reference here.

- **Record a reference spectrum from an audio file**

Simply click *Load File...* to open any audio file that will be used to record the spectrum. You can also select a saved reference spectrum file here.

When you're analyzing input or reference audio, the spectrum averages over time, so after a while (normally this doesn't take more than 30 seconds), you'll notice that the detected average spectrum isn't changing much any more. Once a valid input and reference spectrum have been analyzed or selected, you'll see a thick white line that shows the difference and the *Match* button will automatically become available.

*Note: If there's no audio detected at the inputs you've chosen to analyze, either because your DAW isn't running or the side chain isn't connected properly, you will be notified about this.*

## Step 2: Match

After analyzing and clicking the *Match* button, Pro-Q automatically calculates how many and what kind of EQ bands are needed to match the sound of the side-chain audio. EQ Match now proposes a number of new bands, and gives you the opportunity to customize the matching detail, using the slider.



By choosing more bands, even the smallest differences in the analyzed spectrums will be matched, while choosing less bands will only cover the main shape of the difference spectrum. Usually, there's no need to alter this, as EQ Match intelligently chooses the number of bands that is sufficient to match the most important characteristics of the difference spectrum.

If you're happy with the results, simply click the *Finish* button (or click anywhere outside the EQ Match

panel), after which the new EQ bands are permanently added. Of course, you can also choose to return to the previous step, by clicking the *Analyze* button.

### Notes

- You might see a warning that no audio is being detected for the input and/or reference, so there's nothing to analyze. This usually happens because either your DAW isn't running or because the main plug-in input or the side chain input isn't properly connected and receiving audio.
  - The *Match* button will automatically become available when both a valid input and reference spectrum have been analyzed or selected. Until that time, there's not enough information to match and it will remain disabled.
  - EQ Match uses the same resolution as the regular spectrum analyzer. If you need more low-frequency resolution, try setting the **Resolution** parameter in the [analyzer settings](#) to *High* or *Maximum*.
  - You can also drag and drop audio files onto the EQ Match panel, or even on an instance in the list, to use the file as a reference signal.
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Next: [Spectrum Grab](#)

### See Also

[Overview](#)

[External side-chaining](#)

[Spectrum analyzer](#)

[Display and workflow](#)

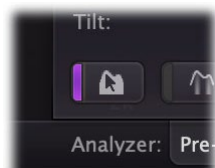
[Instance list](#)

## Spectrum Grab

Did you ever wonder how it would be if you could just grab that obvious peak in the frequency spectrum analyzer? That's possible in Pro-Q! If the [Post-EQ or Pre-EQ analyzer](#) is active, and you leave the mouse above the spectrum for a few seconds, Pro-Q will automatically enter Spectrum Grab mode. Existing EQ bands will be dimmed while the spectrum freezes. You can now simply grab one of the peaks in the white output spectrum line, and drag to adjust. The most important peaks in the signal will show a label with their frequency (or note value when the [piano display](#) is enabled).



After dragging a peak and releasing the mouse button, the interface will revert back to normal again and you'll see the new EQ band that has just been added, so you can customize it if needed.



By default, Spectrum Grab is enabled, but if you find it distracting, you can disable it in the [Analyzer Settings](#) panel, accessible via the bottom bar.

### Notes

- You can also activate **Permanent Spectrum Grab** mode by clicking and holding in the spectrum area until the highlight becomes blue. This freezes the spectrum permanently so you can grab and drag multiple spectrum peaks. To exit this mode, simply click on the display background instead of on the white spectrum curve.
- Spectrum Grab works best when the Post-EQ setting is enabled in the [Analyzer settings](#), because this relates best to what you are actually hearing. Spectrum Grab will also work with only the Pre-EQ spectrum enabled, but when you grab and adjust a peak by dragging it down, you won't see this reflected in the spectrum of course.
- In Spectrum Grab mode, only Bell filters are created, and an appropriate Q is determined automatically. Of course, after creating a new band, you can further customize it using the normal [band controls](#).

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Next: [Output options](#)

**See Also**[Overview](#)[Spectrum analyzer](#)[Display and workflow](#)

## Output options

At the righthand side of the bottom bar in the interface, FabFilter Pro-Q offers a set of global output options.

The **Global Bypass** button lets you bypass the entire plug-in. While most hosts already provide the ability to bypass plug-ins, our internal global bypass feature is guaranteed to work correctly in [Linear Phase or Natural Phase mode](#) (compensating for the latency of the plug-in) and also applies soft bypassing to avoid clicks. While the plug-in is bypassed, the EQ display dims and a red line at the top of the bypass button appears.

As soon as you hover the mouse above the output option button, right next to the bypass button, a panel with various options and a large output/pan knob will pop up, giving you access to the following settings:



- Using the **Phase Invert** toggle button, you can flip the phase of the output signal. While Phase Invert is active, the button becomes blue, and a blue line at the top of the output level button indicates this state as well.
- If **Auto Gain** is enabled, using the button with the 'A' symbol, Pro-Q automatically compensates for increase or loss of gain after EQing. Note that the applied make-up gain is an educated guess based on the current EQ settings, and is *not* a dynamic process based on actually measured levels. While Auto Gain is enabled, the button becomes yellow, and a yellow line at the top of the output level button indicates this state as well.
- Using the **Output Level Metering** button, you can choose to show or hide the level meter at the far right of the interface, which shows the current output level of the plug-in. Note that FabFilter Pro-Q 4 has unlimited internal headroom and will *never* clip itself: the metering indicates clipping only to warn against possible clipping during further processing of the output signal.
- Using the **Gain Scale** slider, just below the gain level/pan knobs, you can scale the effect of the gain settings of all curves by dragging horizontally. This can be very useful when you want to automate the overall effect of the EQ.

Note: This only affects the EQ shapes that actually offer a gain setting: Bell, Shelving and Flat Tilt filters. It will not affect the other filter types.

- The **Output Gain** knob lets you adjust the output level between minus infinity and +36 dB. You can use this to correct any overall level change that the EQ bands might introduce. Note that FabFilter Pro-Q 4 features unlimited internal headroom so it won't clip internally at any level. You only need to be concerned about any clipping that might occur after the signal has left Pro-Q 4.
- The **Output Pan** ring (only visible on stereo tracks) adjusts the relative levels of the left and right, or mid and side audio channels.
- The **Output Pan Mode** (only visible on stereo tracks) selects between normal left/right or mid/side output panning.

### Tips

- If you would like to enable/disable Auto Gain by default for new instances, simply update the default preset by clicking **Options > Save As Default** in the presets menu.
- If desired, you can make the output options panel 'sticky' by clicking the output button once. Click it again to hide the panel.
- You can directly adjust the output gain or the gain scale by clicking and dragging the output button vertically.
- When the output knobs are visible, you can double-click them to be able to enter a value directly using the keyboard.

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Next: [MIDI learn](#)



**See Also**  
[Overview](#)

## MIDI Learn

Controlling FabFilter Pro-Q 4's parameters directly with MIDI is very easy using the MIDI Learn feature. With MIDI Learn, you can associate any MIDI controller with any parameter.



Click the **MIDI Learn** button in the bottom bar to enter MIDI Learn mode. The interface dims and the parameters that can be controlled are highlighted. Each parameter has a small text balloon that displays the associated controller number. Now do the following to associate a controller number with a parameter:

1. Touch the control of the desired parameter in the interface that you wish to control. A red square will mark the chosen parameter.
2. Adjust the slider or knob on your MIDI keyboard or MIDI controller that you want to associate with that parameter.

That's it! The parameter will now be controlled with the MIDI controller. You can now go back to step 1 to associate a different parameter. Note that there is no warning when you associate a different knob with a controller number that is already used. It will just be replaced.

To exit MIDI Learn mode, click the MIDI Learn button again, or click Close at the top of the interface.

Click the small menu drop-down button next to the MIDI Learn button to access the **MIDI Learn menu**:

- **Enable MIDI**  
This globally turns MIDI control of parameters on or off: useful in hosts that automatically send all MIDI events on a track to all effect plug-ins associated with that track as well.
- **Clear**  
This submenu shows all parameter associations and lets you delete individual associations or clear all associations in one step.
- **Revert**  
Reverts to the last saved MIDI mapping (or the state when the plug-in was started).
- **Save**  
Saves the current MIDI mapping so Revert will go back to this state. The current mapping is automatically saved when closing the plug-in.

### Routing MIDI to effect plug-ins

For MIDI Learn to work properly, the plug-in need to actually receive MIDI of course. Depending on your host, it can be quite difficult to route MIDI data to effect plug-ins. Here's how to do it in the most important hosts:

- **Pro Tools**  
Create a new **MIDI track**. From the MIDI input drop down menu, choose your MIDI device (if not already selected) and from the MIDI output drop down menu, choose FabFilter Pro-Q 4 -> channel

1 for the instance you would like to control.

- **Logic Pro**

Instead of adding FabFilter Pro-Q 4 to one of the insert slots, create a new **Instrument Track**, and click on the Instrument slot. Then choose **AU MIDI-controlled Effects** > FabFilter > Pro-Q 4. Now, the plug-in receives MIDI. To get audio into the plug-in, click the '**Side Chain**' drop down menu in Logic's plug-in header and choose the actual input track. Next, you can mute that original track, so you only hear the audio through the plug-in. The only downside is that plug-ins with an external side-chain cannot use it anymore.

- **Ableton Live**

First of all, create a new **MIDI track**. From the 'MIDI from' drop down menu, choose your MIDI device (if not already selected). Then, in the 'MIDI to' drop down menu, choose the Audio track that has FabFilter Pro-Q 4 on it. Note: only the first plug-in on any track can receive MIDI.

- **Cubase**

Simply create a new **MIDI track** and set its output to the Pro-Q 4 instance you would like to control via MIDI.

### Controlling the active EQ band

You can use MIDI Learn in Pro-Q 4 in two ways: either by connecting each knob or slider on your MIDI controller to a specific band (for example connecting it to *Band 1 Frequency* or *Band 3 Gain*), or by setting up one set of controls on your MIDI controller to adjust the active band. The advantage of controlling the active band is that you only need a small amount of controls on your MIDI controller. However, this works only while the plug-in interface is open in your DAW.

- To associate a knob or slider on your MIDI controller with a **specific band**, click the band dot for the band you want to control after entering MIDI Learn mode. The band name drop-down input now shows the band number, for example *Band 1* (like in the screen shot above). Click on a control in the interface. The bar at the top will show the name of the parameter, for example *Band 1 Frequency*. Now turn a slider or knob on your MIDI controller to associate it with this parameter.
- To associate a knob or slider on your MIDI controller with the **active band**, simply don't select a band after entering MIDI Learn mode. The band name drop-down input will show *Active Band*. Click on a control in the interface right away. The bar at the top shows e.g. *Active Band Frequency* as the name. Turn a slider or knob on your MIDI controller to make the association.

In active band mode, you can also connect buttons on your MIDI controller to the **previous/next band** and the **delete band** buttons in the band controls. The button in the interface will be activated upon receiving a controller message of 127 after a previous lower value from the MIDI controller. This allows you to activate a band directly from your MIDI controller.

Note that you can use the band name drop-down input to switch between any specific band or active band mode.

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Next: [Undo, redo, A/B switch](#)

### See Also

[Overview](#)

## Undo, redo, A/B switch

The Undo and Redo buttons at the top of the FabFilter Pro-Q 4 interface enable you to easily undo changes you made to the plug-in. With the A/B feature, you can quickly switch between two different states of the plug-in.



- The **Undo** button at the left will undo the last change. Every change to the plug-in (such as dragging a knob or selecting a new preset) creates a new state in the undo history. The Undo button steps back through the history to restore the previous states of the plug-in.
- The **Redo** button cancels the last undo command. It steps forward through the history until you are back at the most recent plug-in state.
- The **A/B** button switches from A to B and back. Before switching, the current state of the plug-in is saved, so if you click this button twice, you are back at the first state. The button highlights the currently selected state (A or B). In the example above, the A state is active.
- The **Copy** button copies the active state to the inactive state. This marks the current state of the plug-in and allows you to go back to it easily with the A/B button. After clicking Copy, the button disables itself to show that both states are equal, so there is nothing to copy anymore.

### Notes

- If the plug-in parameters are changed without using the plug-in interface, for example with MIDI or automation, no new undo states are recorded.
- The Undo and Redo buttons will disable themselves if there is nothing to undo or redo.

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Next: [Using on iOS](#)

**See Also**  
[Overview](#)

## Loading presets

FabFilter Pro-Q 4 comes with a large collection of carefully designed factory presets, to use as starting points for your own edits.

The preset button shows the name of the current preset. If you have changed the preset by adjusting one or more parameters, the name is dimmed to indicate that this is not the original preset anymore.

Click the preset button to open the **preset browser**:



The preset browser shows all presets grouped in folders, with the current preset highlighted in blue.

### Preset details

A preset can contain extra information: **author**, **tags** and a **description**, which is shown in the panel on the right. These fields are present in all factory presets and can of course be edited as well: just double click the author or description. To add a tag, click the **+** button. Double-click a tag to rename it, or hover over the tag and click the **x** button to remove it.

### Browsing presets

You can browse and select presets in various ways:

- Of course, you can simply browse **using the mouse**. Hover over folders to open them, and click on a preset to load it. If you move the mouse outside the browser after selecting a preset, the browser will close. Otherwise, it will stay open so you can look around and try multiple presets, or edit their information.
- Within the preset browser, you can **use the arrow keys** to navigate, and the Enter key to load a preset and close the browser. Use the right arrow key to load a preset without closing the browser. Press the Esc key to close the browser without selecting anything.
- You can also click the previous/next arrow buttons around the preset button to explore presets one by one without opening the preset browser.
- ... and while the browser is open, **use the [ and ] keys** to load the next or previous preset directly.

### Searching, filtering and favorites

In the preset browser, you can **start typing to search** through the presets, filtering on folder name, preset name or tag. While typing, the preset browser automatically filter the current selection and update itself to show the resulting sub set. If you've first started browsing by mouse, just **click the Search field** and type to start filtering again.

You can also **mark presets as favorite**, by clicking the star icon next to the preset name in the preset details panel. Click the star icon next to the Search field to show only your favorites.

### Copy or paste presets

You can copy the current settings of the plug-in and paste it into any plug-in instance you like. You can either open the preset browser and use the **Copy** or **Paste** item at the bottom, just above the Save As item. Or you can **right-click on the preset button**, and use the menu that pops up.

### Preset browser options

Click the Options button  at the left of the search field at the top to open a menu with extra options:



- When **Type To Search** is enabled, you can start typing to search, right after you've clicked the preset button. Disabling this will always require a click in the Search field to start searching. This might be handy, for example if you're working without a MIDI keyboard and use letters on your computer keyboard to play notes.
- When **Enable MIDI Program Changes** is active, you can load presets via MIDI program change and bank select messages. The corresponding bank/program numbers are then shown in front of the preset name (for example: *(0/65) My Preset*). This means that you can load that preset by first sending a Bank Select message to select bank 0 and then sending a Program Change message to select program 65.

**Important:** All the presets in your preset folder are numbered automatically, starting with bank 0 and program 0. This way, you are able to access any of the presets via MIDI. However, this also means that when you add new presets to the menu, bank/program numbers of other presets might change. Be aware of this when recording program changes in a session! We recommend to create a dedicated folder in your presets folder for your program changes, and name it with two leading underscores (e.g. "\_\_Programs") to ensure it's the first folder in your preset collection and the presets in this folder start with bank 0 and program 0.

- The **Default Setting** preset is loaded automatically when FabFilter Pro-Q 4 is started. To change the default settings, simply overwrite this preset by clicking **Save As Default**.
- To open a preset outside the [presets folder](#), click **Open Other Preset**. This might be useful if someone sends you a preset by email, for example.
- To change the location where the presets for Pro-Q 4 are stored, choose **Change Preset Folder** and select the desired folder.
- If somehow the factory presets are lost or not installed properly, click **Restore Factory Presets** to restore them.
- If needed, for example after you've manually removed or added files in the folder while Pro-Q 4 is open, click **Refresh** to rescan the preset folder.

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## Working with Pro Tools control surfaces

FabFilter Pro-Q 4 supports the most important Pro Tools hardware control surfaces, such as Avid ICON D-Control and D-Command. Because you need a fixed number of bands in Pro-Q to use this effectively, we have added a *Flat 7 Bands* factory preset that can be used as your personal default preset. To set this preset as FabFilter Pro-Q's startup setting, load it once and then choose **Options > Save As Default** in the presets menu.

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Next: [Saving presets](#)

**See Also**  
[Overview](#)

## Saving presets

You can easily extend the included presets with new settings to build your own library of presets for FabFilter Pro-Q 4 that you can reuse in various projects. This is also a good way to copy settings across multiple instances of FabFilter Pro-Q 4 in a session.

To save the current setting as a preset, click the preset button, and then click *Save As*. A standard Save dialog will appear. Type a name for the new preset and click *Save* to finish.

In the Save dialog, you can also rename and delete existing presets and create a new folder to store presets in. New folders will show up as new categories in the preset menu. (On macOS, this should be done with the Finder.)

### Right-click shortcut menu

You can also right-click on the preset button to open a small menu with shortcuts:

- **Favorite:** Mark the current preset as favorite.
- **Save:** Overwrite the currently loaded preset. You will be asked for confirmation before saving.
- **Save As:** Just like choosing the 'Save As...' item from the main menu.

See [How presets are stored](#) to determine the preset folder location and learn more about factory presets.

---

Next: [How presets are stored](#)

### See Also

[Loading presets](#)  
[Overview](#)



## How presets are stored

Presets for FabFilter Pro-Q 4 are stored in separate files with the .ffp extension (for FabFilter Preset). All presets reside in subfolders in the main preset folder. The subfolders will show up as separate categories in the preset menu. You can also further divide the subfolders into categories.

You can manage the preset files just like other files on your computer. The easiest way to do this is in the Save dialog that appears if you are saving a preset. The preset menu will automatically reload itself with the changes when the dialog is closed.

Furthermore it is very easy to share your newly created presets with other users since FabFilter presets use the same file format on both Windows and macOS.

The default location of the main preset folder is *Documents/FabFilter/Presets/Pro-Q 4* on both Windows and macOS. To change this location, first copy all presets to the desired new location. Click Options ⚙️ and **Change Preset Folder** in the preset browser and select the new folder.

Note: previously on macOS, presets were stored in *~/Library/Audio/Presets/FabFilter/FabFilter Pro-Q 4*. To determine the current location of the presets folder, click Options ⚙️ and **Change Preset Folder** in the preset browser.

### Restoring factory presets

If you have accidentally lost the factory presets, you can easily restore them by clicking Options ⚙️ and **Restore Factory Presets** in the preset browser. This will install all factory presets again.

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Next: [Purchasing FabFilter Pro-Q 4](#)

### See Also

[Saving presets](#)  
[Overview](#)

## Purchasing FabFilter Pro-Q 4


Once you have downloaded and installed the evaluation copy of FabFilter Pro-Q 4, you may evaluate it during 30 days. Every time you start the plug-in, you will see the following dialog:




While there are still days left, you can click **Evaluate** to start working with the plugin. If you want to keep using FabFilter Pro-Q 4 after the evaluation period, you must buy a copy in the online FabFilter Shop by clicking the **Buy Now** button in the evaluation dialog.

- [Go to the FabFilter Shop and purchase FabFilter Pro-Q 4 now](#) 

We accept a wide range of payment methods, like credit cards, PayPal, wire transfer and iDeal. The FabFilter Shop uses secure connections and encryption: therefore your personal information is completely safe.

Within a few minutes after you have purchased your copy, you will receive an email containing your personal license key. You use this license key to turn the evaluation copy into a fully registered version without the evaluation dialog and the 30-day trial restriction. In addition, we will automatically create a [FabFilter account](#)  for you (if you don't have one already). Here, you can access all your license keys at any time.

**Note:** If the evaluation period has expired but you didn't have the chance to properly evaluate the plug-in, you can request a new evaluation period by contacting us at [info@fabfilter.com](mailto:info@fabfilter.com) .

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Next: [Entering your license key](#)

### See Also

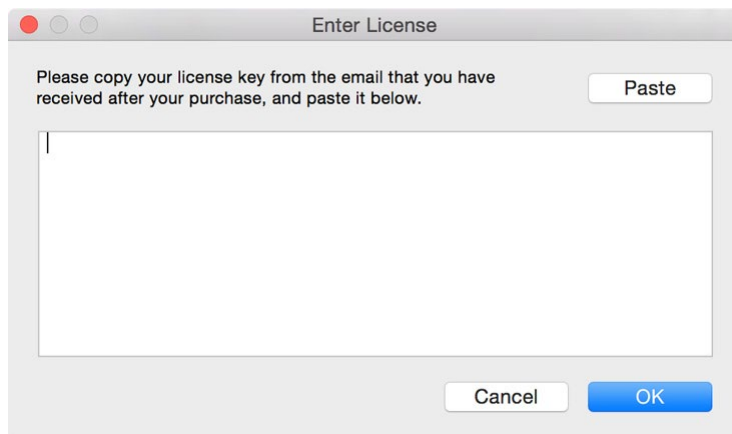
[Support](#)

[License agreement](#)

## Entering your license key

After you have purchased FabFilter Pro-Q 4 in the online [FabFilter Shop](#), you will immediately receive an email containing your personal license key. This license key will turn the evaluation version into a fully registered plug-in.

- Start FabFilter Pro-Q 4 and click **Enter License** in the evaluation dialog, or click Enter License on the Help menu if the plug-in is already running.
- Copy the license information from the email you have received and paste it into the text field. Make sure that you are copying the entire license key including the *Product* and *Licensee* lines! If you are not sure what text to copy, just copy and paste the whole email.



After you have entered your license information, you will need to restart the plug-in host, so make sure you save your settings if needed. From now on, you will be able to use FabFilter Pro-Q 4 for an unlimited period of time with full support via email.

### Tips

- After your purchase, you can always retrieve your license key again by logging into your [personal FabFilter account](#). Here you can also keep track of all your orders and take advantage of great discounts when buying other FabFilter plug-ins.
- To deauthorize your license key and remove it from the computer, click **Deauthorize** on the Help menu. If you temporarily needed to install your license on another computer, or if you have transferred your license to someone else, this is the way to deinstall your personal license key safely.

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Next: [Support](#)

### See Also

[Purchasing FabFilter Pro-Q 4](#)  
[Support](#)  
[License agreement](#)

## Support


If you need help with problems or questions, and the help file does not provide an answer, please visit the support pages on our web site.

- [Go to FabFilter Support](#) 

From here, you have direct access to the customer support forum, very useful tutorial videos for all FabFilter plug-ins, online and PDF versions of all our help files, and a section with extra downloads (such as presets, controller templates, older plug-in versions).

For sales-related questions and technical support, you can also contact FabFilter directly at [info@fabfilter.com](mailto:info@fabfilter.com).

### Reporting a bug

If you have encountered a bug in FabFilter Pro-Q 4, first of all make sure that you are using the latest version of the plug-in, which you can find at [www.fabfilter.com/download](http://www.fabfilter.com/download) . You can easily check the version of FabFilter Pro-Q 4 that you are using by clicking Help > About in the plug-in interface. If the bug is still present in the latest version, please send us an e-mail at [info@fabfilter.com](mailto:info@fabfilter.com) and include as much technical information as possible: operation system and version, host software and version, steps to reproduce the bug, etc. Thanks in advance!

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Next: [Upgrading to Pro-Q 4](#)

### See Also

[Overview](#)

[About FabFilter](#)

## Upgrading to Pro-Q 4

Upgrading from Pro-Q version 3, 2 or 1 to the new Pro-Q 4 is safe and easy: installing Pro-Q 4 will **not** replace or delete the previous Pro-Q plug-in versions. Different major versions will co-exist and can be used at the same time. This ensures that you can open old songs that use Pro-Q 3 without problems.

### Presets from version 3, 2 or 1

All presets created with Pro-Q 3, 2 or 1 can be loaded in Pro-Q 4. If you upgraded to the new version, your original presets v3, v2 and v1 presets will be accessible via the **V3 Preset Folder**, **V2 Preset Folder** and **V1 Preset Folder** items in the preset menu. See also [Loading presets](#).

Note: Because the processing engine in Pro-Q has been renewed and improved, it's possible that a preset from a previous version loaded into Pro-Q 4 sounds slightly different.

### Replacing a Pro-Q 3, 2 or 1 instance by Pro-Q 4

If you are working on a song and want to replace an earlier Pro-Q version instance with the new Pro-Q 4, we advise you to do the following:

- First, save the current setting of the instance as a FabFilter preset in the preset folder of that Pro-Q version.
- Then, remove the old Pro-Q instance and add Pro-Q 4 in its place.
- Finally, load the preset that you just created into Pro-Q 4 via the V3/2/1 Preset Folder submenu in the preset menu.

### Automation

Because the feature set of Pro-Q 4 has changed fundamentally, any automation data that has been written by a Pro-Q 3, Pro-Q 2 or Pro-Q 1 instance **cannot be read correctly** by Pro-Q 4.

Note: We are in contact with developers from all plug-in frameworks to implement a way of properly replacing old Pro-Q instance with new Pro-Q 4 instances, including the translation of automation data, but sadly this is not possible yet at the moment.

---

Next: [Manual installation](#)

### See Also

[Overview](#)

[Support](#)

## Manual installation

When installing FabFilter Pro-Q 4, the installation program will try to copy the plug-in into the appropriate plug-ins folders, and in most cases your host will recognize FabFilter Pro-Q 4 automatically. Otherwise, please follow these instructions:

### Windows

On Windows, most hosts have their own VST plug-ins folder. So if you are using Windows and your host does not recognize FabFilter Pro-Q 4, you need to locate the proper plug-ins folder for your host first (it is usually shown in the Preferences or similar dialog). Then, copy the file *FabFilter Pro-Q 4.dll* from *C:\Program Files\FabFilter\Pro-Q 4* (or *C:\Program Files (x86)\FabFilter\Pro-Q 4* if you are using a 32-bit host on 64-bit Windows) to the plug-ins folder that you have found and restart the host so it can reload all its plug-ins. The VST3, CLAP, and AAX plug-ins are installed in the standard plug-in folders on your computer.

You can simply uninstall plug-ins or bundles via the Control Panel.

### macOS

On macOS, plug-ins are installed in the standard plug-in folders in the system Library folder. These are the *only* possible correct locations:

- Audio Units: */Library/Audio/Plug-Ins/Components*
- VST/VST3: */Library/Audio/Plug-Ins/VST* and */Library/Audio/Plug-Ins/VST3*
- CLAP: */Library/Audio/Plug-Ins/CLAP*
- AAX: */Library/Application Support/Avid/Audio/Plug-Ins*


Note: AU and VST/VST3 plug-ins may also be placed in the user's Library folders under */Users/<username>/Library/Audio/Plug-Ins*.

To uninstall the plug-ins from your Mac, you can just delete the specific FabFilter plug-in files at the above locations. Finally, if you really want to delete all data written by our plug-ins, you can remove the following folders/files as well:

- */Users/<username>/Documents/FabFilter/Presets/Pro-Q 4*
- */Users/<username>/Library/Audio/Presets/FabFilter/FabFilter Pro-Q 4*
- */Users/<username>/Library/Application Support/FabFilter/Pro-Q 4*
- */Users/<username>/Library/Preferences/com.fabfilter.Pro-Q.4.plist*

**Note:** Since OS X 10.7 (Lion), the system and user Library folders are marked as hidden by default. To make them visible again in Finder, open Terminal (found in */Applications/Utilities*) and enter the following commands:

```
chflags nohidden /Library
chflags nohidden ~/Library
```

If you still have problems, contact [FabFilter Support](#) .

---

Next: [VST plug-in versions](#)

### See Also

[Quick start](#)  
[Support](#)

## VST plug-in versions

FabFilter Pro-Q 4 is available in both VST 2 and VST 3 formats. They can be installed and used both at the same time. The VST 3 format offers easy side-chaining, free interface resizing, and is more CPU-friendly in some cases, but it can only be used by hosts that support it, for example recent versions of Cubase, Studio One or FL Studio. The VST 2 format is compatible with a larger variety of hosts.

Both the VST 2 and VST 3 versions of the plug-in automatically adapt themselves to the channel layout of the track they are inserted on (mono/stereo and surround).

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*Next:* [External side chaining](#)

### **See Also**

[Quick start](#)

[Manual installation](#)

## External side chaining

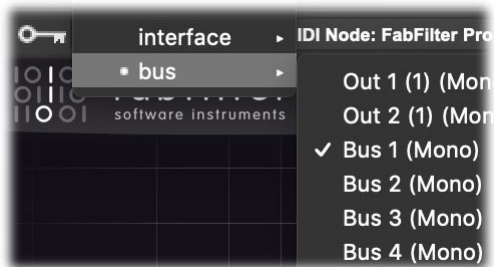
FabFilter Pro-Q 4 offers the possibility of feeding an external signal to its side chain, so that you can make it trigger on a different signal than the audio it is actually processing. Feeding a signal to a plug-in's side-chain inputs works slightly different in various hosts. This topic describes the procedure for some of the most popular hosts around: [Pro Tools](#), [Studio One](#), [Ableton Live](#), [Logic Pro](#) and [Cubase](#).

To explain how it works, we use a scenario with two tracks. The first one contains the audio that we want to process with Pro-Q 4, which we'll call the *main track* from now. The second track contains the audio that we want to route to Pro-Q 4's external side-chain input and use as trigger signal. We'll call this track the *side chain track*.

After setting up everything according to the instructions below for your host, you can check whether everything is routed correctly. Play the audio and make sure you've chosen the 'Side Chain' item from the external spectrum list in the [Analyzer panel](#). Confirm that FabFilter Pro-Q 4 shows the side-chain spectrum now.

### Pro Tools

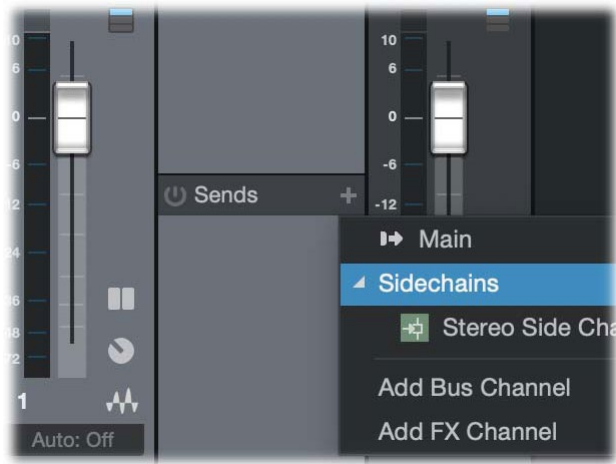
- Open Pro Tools and start a new empty session.
- Create two audio tracks that we'll use as main track and side chain track. Add audio files to both track.
- Open the Mix window to display the tracks with their Insert slots and Sends slots.
- In the first 'Sends' slot of the side chain track, choose 'Bus 1'. The track view for Bus 1 will open: set its level slider to 0.0 dB so the bus actually produces audio!
- In the first 'Inserts' slot of the main track, choose EQ > FabFilter Pro-Q 4.
- Open FabFilter Pro-Q 4's interface and choose the 'Side Chain' item from the external spectrum list.
- Now, in the 'Key Input' menu of the plug-in interface (just above the FabFilter logo), choose bus > Bus 1 instead of the default 'no key input'. Now, the audio from the side chain track is routed to Pro-Q 4's external side chain input via Bus 1.



### Studio One

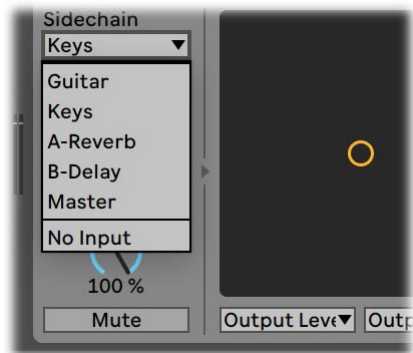
- Open Studio One and choose 'Create a new song'.
- Add two audio tracks (via Track > Add Tracks...) that we'll use as main track and side chain track.
- Add audio files on both the main track and the side chain track. You can simply drag audio files from a Finder/Explorer window onto a track.
- Access the mix window via "Mix" in Studio One's bottom right corner.
- Insert FabFilter Pro-Q 4 on your main track via the '+' button next to the Insert tab.
- Open FabFilter Pro-Q 4's interface and choose the 'Side Chain' item from the external spectrum list.
- On the side chain track, select Sends > Sidechains > FabFilter Pro-Q 4.





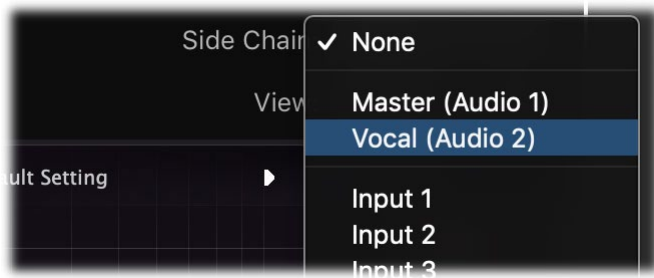
## Ableton Live

- Open Ableton Live and start with an empty arrangement. We'll use Track 1 as the side chain track and Track 2 as the main track.
- From the folder menu's on at the left top of Ableton Live's interface, drag different audio clips to the first empty slots of Track 1 and Track 2.
- From the VST (or Audio Units) plug-in menu, also at the left top of Ableton Live's interface, drag FabFilter Pro-Q 4 onto Track 2, the main track.
- In the small device interface for Pro-Q 4 in the bottom Effects section, choose 'Track 1' from the 'Sidechain' drop down menu.
- Open FabFilter Pro-Q 4's interface and choose the 'Side Chain' item from the external spectrum list.
- **Note:** In earlier versions of Ableton Live (< 10.1), setting up sidechaining worked differently, which is described [here](#).



## Logic Pro

- Open Logic Pro and create a new empty project via File > New...
- Add two audio tracks (via Track > New...) that we'll use as main track and side chain track.
- Add audio files on both the main track and the side chain track. You can simply drag audio files from a Finder/Explorer window onto a track.
- Select the main track and add Pro-Q 4 in the first Insert effect slot.
- Open FabFilter Pro-Q 4's interface and choose the 'Side Chain' item from the external spectrum list.
- In the right top corner of the plug-in interface header, in the 'Side Chain' menu, choose the side chain track. Now, the signal from the side chain track is sent to FabFilter Pro-Q 4's external side-chain input.



## Cubase

- Open Cubase and create a new empty project.
- Add two audio tracks that we'll use as main track and side chain track.
- Add audio files on both the main track and the side chain track. You can simply drag audio files from a Finder/Explorer window onto a track.
- Open the Mixer. In the main track, click on an empty insert slot and select the VST 3 version of FabFilter Pro-Q 4 in the EQ menu (note the VST 3 icon which looks like ///).
- Open FabFilter Pro-Q 4's interface and choose the 'Side Chain' item from the external spectrum list.
- In the plug-in header, click on the Activate Side-Chain button (right of the R/W buttons) to enable the external side chain in Cubase.
- At the top of the Mixer, set the output for the side chain track to the side-chain input of FabFilter Pro-Q 4.

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Next: [License agreement](#)

## See Also

[Quick start](#)

[Manual installation](#)

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Next: [Acknowledgements](#)

### **See Also**

[Purchasing FabFilter Pro-Q 4 Support](#)

## Acknowledgements

A huge thanks to all our beta testers for their relentless testing of the different beta versions! Special thanks go to bManic for his work on the new factory presets.

Furthermore we would like to thank all our users for their support and loyalty over the years. You have made this new version of Pro-Q possible.

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Next: [About FabFilter](#)

### See Also

[Purchasing FabFilter Pro-Q 4 Support](#)

## About FabFilter

Beautiful sound. Fantastic workflow. These are the foundations of FabFilter. We create powerful audio plug-ins with superb sound quality and innovative interfaces.

### A unique perspective

At FabFilter, we make the best possible tools for music production and audio processing. To achieve this, we continually rethink and challenge industry standards: we've never been afraid of reinventing the wheel. Considering every little detail, we tune our algorithms and interfaces until they sound perfect, look amazing and feel great to work with.

### It's the sound that counts

Above everything else, you need superb sound quality. That's why we put a lot of effort into developing unique audio processing algorithms, ranging from our famous resonating filters to transparent high-end EQ and dynamics processing.

### Innovative interfaces, great design

Every FabFilter plug-in has an easy-to-use, well-designed interface aimed at providing unsurpassed workflow. Our plug-ins focus on the task you're performing at that specific moment: they expose the features you need, when you need them. And because of our special attention to design, you'll be delighted every time you open a FabFilter plug-in.

### Don't take our word for it

We always set the highest standard for sound quality, usability and design to make truly great products that raise the bar on what audio software can do. That's why we're very happy with the praise we've received from users and press alike:

"In the decade since the release of its first plug-in, One, FabFilter has made an indelible mark on the music production landscape." — Computer Music magazine

"While many other software developers are busy trying to model hardware, FabFilter is leaving them in the dust by being visionaries and reaching into the future. FabFilter stuff is just on another level." — Jeff Sanders

"FabFilter has an enviable reputation for making easy-to-use, powerful tools." — Music Tech magazine

*FabFilter was founded in 2002 by Frederik Slijkerman and Floris Klinkert, and is based in Amsterdam, The Netherlands.*

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### See Also

[Support](#)

[FabFilter web site](#) 