

DeFilter

User Guide

Acon AS

DeFilter User Guide

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1 Introduction

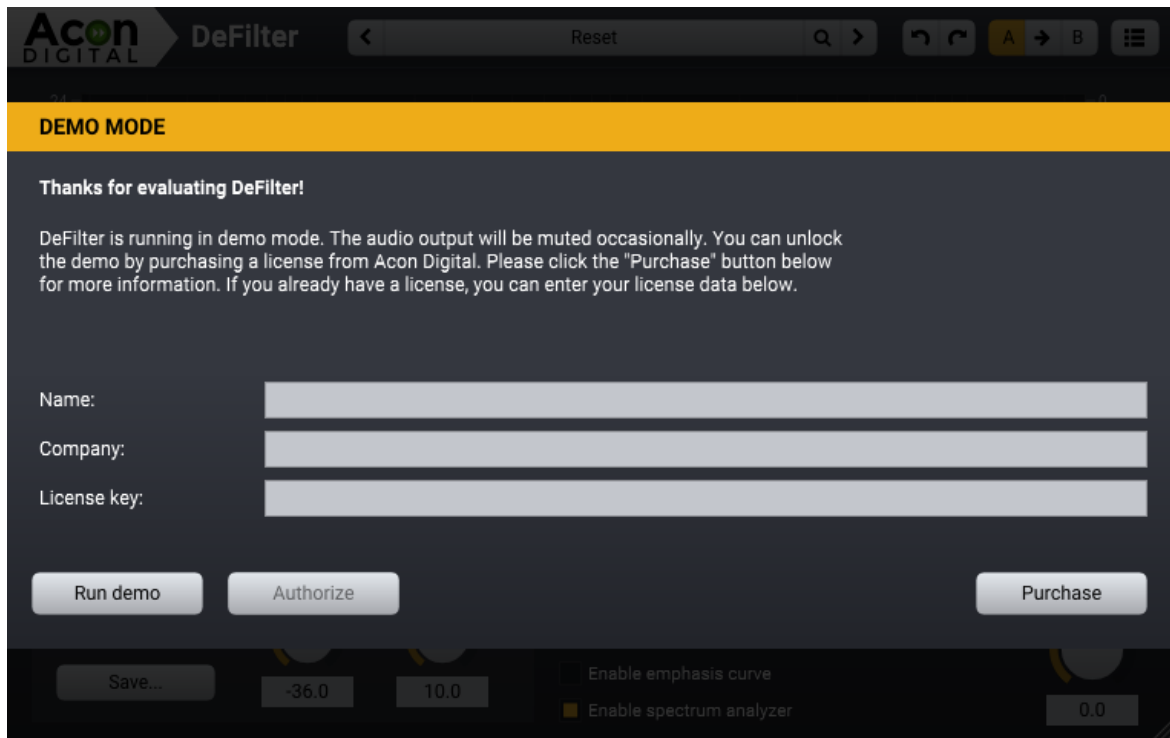
Thanks for using *Acon Digital DeFilter*. *DeFilter* is an efficient tool to even out tonal imbalances in a mix or reduce resonant peaks or dips in the frequency spectrum. Even severe issues such as comb filter effects or standing waves from untreated rooms can be addressed. *DeFilter* achieves this by analyzing the input signal over time and estimating a correction filter that best suits the signal during the analysis period.

DeFilter can match recordings to target profiles such as music or speech, or alternatively extract the overall timbre from the source – the large strokes – while evening out narrow peaks and dips. The latter removes resonances and comb filter effects effectively while preserving the tonal character of the input signal. Recordings can also be equalized to match a reference recording. Frequency dependent correction levels can be defined using custom curves, so that you can let *DeFilter* focus on problematic frequency ranges while leaving other frequency regions untouched.

1.1 Purchase and Authorization

Acon Digital DeFilter will run in demo mode the first time you open it from your audio editor or digital audio workstation (DAW). The demo mode is fully functional with exception of short passages with muted audio output at irregular intervals. The demo version can be unlocked by purchasing a license key from Acon Digital (see [Acon Digital online shop](#)). When a plug-in is opened in the demo mode, a dialog box appears where you can choose to continue with the demo version or enter a license key. There is also a purchase button which directs you to the [Acon Digital online shop](#).

If you have purchased a license key from Acon Digital, please enter you name, company name if applicable and the license key you obtained. The *Authorize* button will remain deactivated until the license key has been accepted. After having successfully authorized *Acon Digital DeFilter*, the demo dialog box will not appear again.



The demo dialog box appears when starting Acon Digital DeFilter prior to authorization.

2 Host Integration

You can access *Acon Digital DeFilter* from your host application (audio editor or DAW) of choice. The plug-in is available as a 32 or 64 bit VST or AAX plug-in on the Windows platform or as a VST, AU or AAX plug-in on Mac OS X (32 / 64 bit fat binaries). Some host applications will require a rescan and possibly adding the *Acon Digital DeFilter* installation directory to the list of VST directories. Please consult the manual for your host application for further details.

3 Using DeFilter

DeFilter is a powerful tool that can be used to automatically address problems in a mix or to remove unwanted resonances, comb filter effects or other tonal imbalances. In order to accomplish this, *DeFilter* needs to analyze the audio recording before the actual correction phase. You can do this by activating the learn mode using the corresponding button in the user interface and play a part of the recording for analysis. 15 to 30 seconds of audio is usually enough to obtain good results. We recommend choosing a 'busy' part of the recording with sharp attacks and quick signal level changes since these are helpful for the analysis. When the analysis is done, you should disable the learn mode and leave it disabled for the correction phase. *DeFilter* can match the frequency spectrum to predefined profiles such as music and speech or to a measured

profile (matched equalization). *DeFilter* can also be set up to remove local peaks and dips in the spectrum while maintaining the overall timbre, which can be very effective when removing sharp resonances or undesired comb filters.



The DeFilter plug-in window. The graph shows the correction filter curve as well as the frequency spectrum of the input and output signal.

The correction process can be monitored visually using the spectrum analyzer showing and the visualization of the correction filter gains.

Filter estimation

The *Filter estimation* group contains controls that affect the estimation of the input signal's long term frequency spectrum. The input signal is only estimated when the learn button is activated and the estimation will normally be more accurate when the learning time increases. We recommend to use the learn mode for at least 15 seconds on a busy part of the recording. The learn mode should always be disabled when applying the correction filter.

Learn button

Enables or disables the estimation of the input signal's frequency spectrum.

Save button

You can save the estimated long term frequency spectrum to a file. This is essential if you want to match the frequency spectrum of a recording to that of a reference

recording. To do so, analyze the reference recording, click the *Save* button and choose a name and folder for the file. Now you can use the *Load* button in the *Target EQ* profile group to load the reference file. Now you can open the file you want to apply match equalization to and use the learn button to analyze. When done, deactivate the learn mode and apply the correction filter.

Signal level threshold (dB)

The signal level threshold sets the minimum input signal level required for the analysis. Real recordings frequently contain noise sources such as noise from electronic components that have a very different frequency spectrum than the wanted signal. To avoid these from corrupting the estimation, the threshold level should be set considerably higher than the noise level of the recording.

Filter length (ms)

The filter length parameter sets the length of the correction filter. Longer filters will be able to capture finer details in the frequency spectrum, but require a longer learning time and increase the CPU consumption during analysis.

Target EQ profile

The target EQ profile group lets you control the properties of the desired target frequency spectrum. You can choose among predefined profiles or load measurements from reference recordings. The drop-down list contains predefined options:

- **Automatic**

Automatic mode extracts the smooth frequency spectrum curve from the source so that the overall timbre is preserved. However, narrow peaks and dips will be effectively removed.

- **Music**

The music profile matches the frequency spectrum to suit music. Some post processing with your favorite equalizer might be required, but the music profile should be a great starting point.

- **Music (dark)**

This is a slightly darker sounding profile for music.

- **Music (less harsh)**

Profile intended for music with a slight decrease in levels where the ears are most sensitive, hence reducing the perceived harshness.

- **Speech**

The speech profile matches the frequency spectrum to a frequency distribution suitable for voice recordings.

- **Custom**

The custom mode uses measurements of reference signal and is only available when you have loaded a measurement using the load button.

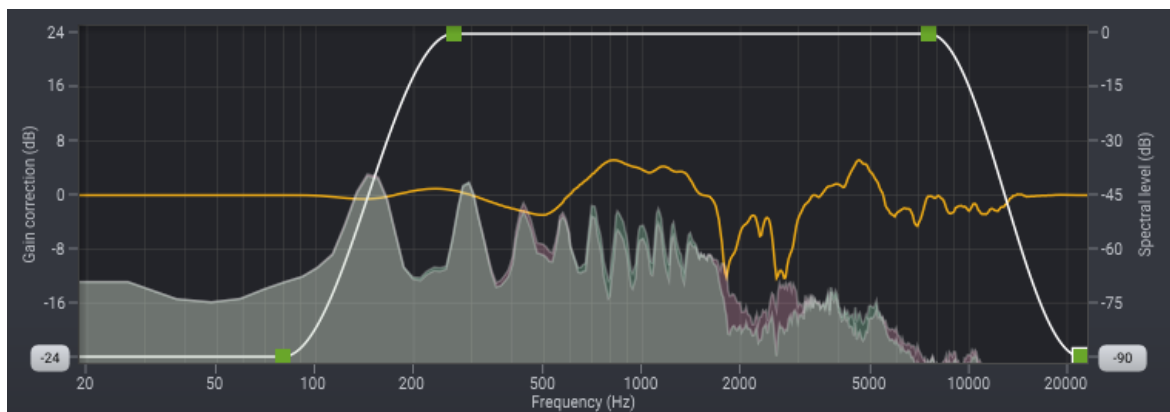
Load Button

You can use this button to load a measurement of a reference file. See Save button under *Filter estimation* for more information.

Global Parameters

Enable emphasis curve

The emphasis curve allows frequency dependent control over the level of correction ranging from 0% (no correction) to 100% (full correction). The emphasis curve allows you focus the correction on problematic regions in the frequency spectrum. Click the *Enable emphasis* curve toggle button to enable the emphasis curve. You can add or remove curve points by double clicking the left mouse button. Click and hold down the left mouse button to move curve points.



Acon Digital DeFilter running with the level emphasis enabled.

Enable spectrum analyzer

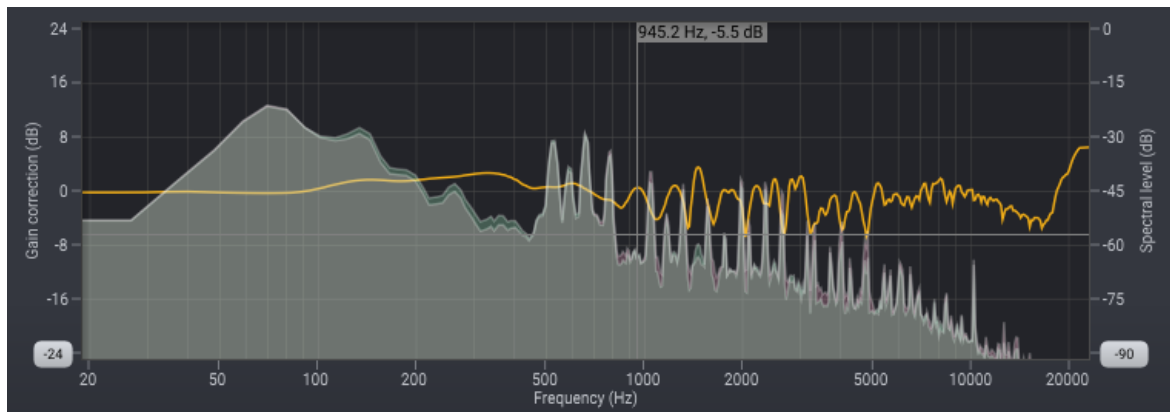
The spectrum analyzer enables the visualization of the short term input and output spectra and helps monitoring the effect of the correction filter.

Master Gain (dB)

If the correction filters alters the perceived loudness of the signal, you can adjust the output gain in Decibel using this knob.

Using DeFilter for Analysis

Even in situation where you want to use a conventional equalizer for the actual processing, DeFilter can be a very helpful companion for analysis purposes. The correction curve helps identify peaks or dips that can be cumbersome to find manually. The center frequency and gain values are easier to read out when using the crosshair cursor mode. By pressing and holding down the Alt key on your keyboard while hovering over the curve display, DeFilter displays the exact frequency and gain values as shown in the screenshot below:



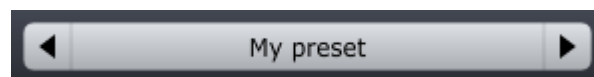
Pressing the alt key while hovering over the curve display enables the crosshair cursor mode.

The Plug-in Header

The upper region of the *DeFilter* plug-in window lets you manage presets, undo or redo changes or quickly compare different settings using the A / B compare tools:

Preset section

DeFilter is shipped with a set of factory presets that serve as a starting point for further adjustments. You can browse through preset categories and presets as well as create and manage your own presets using the preset management section in *DeFilter*:



The preset management section in DeFilter.

You can browse through the presets using the arrow buttons. Alternatively, you can click the current preset name and a drop-down menu appears. You can also save your own presets by choosing "Save user preset file..." from the menu. A file chooser dialog box appears where you can enter the name of the preset you wish to

save. You can create sub folders and place your preset files inside, and these will appear as categories in the user presets.

Undo and redo

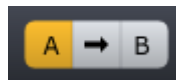
You can undo (or redo) any changes to the parameter settings by clicking the circular arrow back or forward buttons:



Undo and redo buttons

A / B comparisons

It is frequently useful to be able to quickly compare different parameter settings. You can do this using the A / B comparison buttons:



The A / B comparison buttons allows you to quickly compare different settings

You can keep two independent sets of parameter settings, the A and B settings, and switch between them using the corresponding buttons. The arrow button copies the settings from A to B or the other way around depending on which parameter set that is currently active.

The plug-in menu

The last button in the plug-in header displays the plug-in menu:



You can click the plug-in menu button for the plug-in specific menu

From the plug-in menu you can among other choose different visual themes, show this help or information about the plug-in.

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