

About This File

This Help file contains context-sensitive help topics that are used by Sonic Foundry XFX 2.

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Threshold level (-Inf. to 0 dB)

Drag the fader to set the level below which signals will be removed from the sound file. Zero dB is a very high level, while -70 dB is very low. Noise levels are typically around -40 dB.

Attack time (1 to 500 ms)

Drag the slider to set the time it takes the gain of the gate to change from zero to one once the level rises above the threshold.

A low **Attack time** preserves percussive attacks. Higher values cause sounds to slowly swell up in volume.

Release time (1 to 5,000 ms)

Drag the slider to set the time it takes the gain of the gate to change from one to zero once the level falls below the threshold.

A long **Release time** preserves natural-sounding decays; otherwise long decays will be cut off.

Dynamics input/output graph

The Input vs. Output level graph shows the gain that will be applied to the input signal, depending on its level over time. The diagonal line, referred to as the No Gain line, indicates where the input and output levels are equal (a ratio of 1 to 1). When an envelope point is below the line, gain reduction occurs. This allows you to create a compression curve of your choice by adding points to the graph.

By adjusting the graph, you can generate compression, limiting, noise gating, and expansion effects by moving the envelope points manually or by using the Threshold and Ratio controls. To view examples of common graph shapes, look at some of the included presets.

Output gain (-25 to 25 dB)

Drag the fader if you want to apply a gain after processing..

Note: If the **Auto gain compensate** check box is selected, the output gain is still applied afterwards. This can result in clipped signals.

Reset Graph

Click to reset all envelope points to their default positions.

Sync stereo gain (On/Off)

Select this check box if you want the left- and right-channel gain to be the same. This prevents a loss of stereo imaging that can occur if both channels were to be processed independently.

Auto gain compensate (On/Off)

Select this check box to apply gain during processing to keep the maximum input and output levels constant. In general, this gain will be equal to the decibel level of the highest envelope point in the graph.

You can still use the **Output gain** fader to fine-tune the overall gain.

Attack time (0 to 500 ms)

Drag the slider to set the time it takes the gain of the dynamics processor to change from zero to one once the level rises above the threshold.

A low **Attack time** preserves percussive attacks. Higher values cause sounds to slowly swell up in volume.

Release time (0 to 5,000 ms)

Drag the slider to set the time it takes the gain of the dynamics processor to change from one to zero once the level falls below the threshold.

A long **Release time** preserves natural-sounding decays; otherwise long decays will be cut off.

Threshold (-80 to -0.1 dB)

Drag the fader to set the level at which the dynamics processor begins acting on the signal.

Note: When you change the threshold, all points slide diagonally along the No Gain line.

Ratio (1.0:1 to Inf.:1)

Drag the slider to set the compression ratio of input to output levels.

This ratio determines how much a signal has to rise above the threshold for every 1 dB of increase in the output.

Output gain (-25 to 25 dB)

Drag the fader if you want to apply a gain after processing.

Note: If the **Auto gain compensate** check box is selected, the output gain is still applied afterwards. This can result in clipped signals.

Sync stereo channels (On/Off)

Select this check box if you want the left- and right-channel gain to be the same. This prevents a loss of stereo imaging that can occur if both channels were to be processed independently.

Threshold (-Inf. to 0 dB)

Drag the fader to set the level at which the dynamics processor begins acting on the signal. The selected frequency band will be compressed when it exceeds this level.

You can select the **Capture threshold** check box to detect and update the threshold automatically.

Note: You will not be able to control the threshold when **Capture threshold** is selected.

Play Meters

Display the peak output levels of the specified band. Right-click to display a shortcut menu to select meter resolution and options.

Input/Output Button

Click to toggle between monitoring the input or output signal of each band. In **Output** mode, the meters show the post-compressed, post-output gain level of the band.

Gain reduction meter

The inverted red Gain Reduction meter shows the difference in gain between the input and output for each band. The Gain Reduction meter is helpful as a visual reference for how much you are compressing a band.

Amount (1:1 to 50:1)

Drag the slider to set the compression ratio applied to a band when it is above the threshold level. A high compression ratio means more gain reduction will be applied.

Attack time (0 to 500 ms)

Drag the slider to set the time, in milliseconds, required for the dynamics processor to start acting on the signal when the input level rises above the threshold.

Release time (0 to 5,000 ms)

Drag the slider to set the time, in milliseconds, required for the dynamics processor to stop acting on the signal when the input level drops below the threshold.

Type

Choose a frequency band type from the drop-down list:

Low-shelf

Frequencies below the cut-off frequency will be compressed when using a low-shelf filter. When you select **Low-shelf**, drag the **Below** slider to set the cut-off frequency.

Band-notch

Frequencies surrounding the center frequency will be compressed when using a band-notch filter. When you select **Band-notch**, drag the **Center** slider to set the center frequency, and drag the **Width** slider to set the frequency range of the band.

High-shelf

Frequencies above the cut-off frequency will be compressed when using a high-shelf filter. When you select **High-shelf**, drag the **Above** slider to set the cut-off frequency.

Gain (-25 to 25 dB)

Drag the fader to set the overall gain applied to a band after it has been compressed. Set the fader above 0 dB to compensate for the level lost due to compression.

Width (0.3 to 3.0 oct.)

Drag the slider to specify the frequency range that will be compressed when using Band-notch mode.

Frequency (Below, Center, Above) (50 to 15,000 Hz)

If the band mode is a low- or high-shelf, *Frequency* determines the cut-off frequency for which the filter starts processing. When using a band-notch filter, it is the center frequency of the band.

Band bypass (On/Off)

When this check box is selected, the current band will be grayed and will not affect the source material.

Enable meters (On/Off)

Select this check box to display level meters for each band in the Multi-Band Dynamics dialog.

Monitoring levels can cause slow processing on some computers. Disabling meters will improve performance.

Capture threshold (On/Off)

When this check box is selected, the threshold for the current band is automatically detected and updated during preview. You will not be able to control the threshold when **Capture threshold** is enabled.

Solo (On/Off)

When this check box is selected, the signal will be processed by the current band only, bypassing the processing parameters for other bands.

Dry out (-Inf. to 25 dB)

Drag the fader to set the level of the unprocessed signal mixed into the output.

Wet out (-25 to 25 dB)

Drag the fader to set the level of the processed signal mixed into the output.

EQ graph

The EQ graph displays the amplitude vs. frequency curve generated from the current settings.

Gain (-25 to 25 dB)

Drag the frequency-band faders to boost or attenuate the selected frequency band.

To quickly disable a band, set the gain to 0.0 dB by double-clicking the fader handle.

Width (0.3 to 2.5 oct.)

Drag the slider to specify the number of octaves (centered on the selected frequency) that will be affected by the filtering. Use a high value to affect a greater range of frequencies and a low value for a more selective filter.

Center frequency (20 to 15,000 Hz)

Drag the slider to specify the center of the selected frequency band.

Enable low-shelf (On/Off)

Select this check box to attenuate or boost frequencies below the low-shelf cutoff frequency.

The low-shelf cutoff frequency and gain are determined by the sliders to the right of the **Enable low-shelf** checkbox.

Enable high-shelf (On/Off)

Select this check box to attenuate or boost frequencies above the high-shelf cutoff frequency.

The high-shelf cutoff frequency and gain are determined by the sliders to the right of the **Enable high-shelf** checkbox.

Band attenuation/gain faders (-Inf. to 24 dB)

Drag the frequency-band faders to boost or attenuate the selected frequency band. To quickly disable a band, set the gain to 0.0 dB by double-clicking the fader handle.

The frequency displayed at the bottom of the fader is the center frequency of the frequency band affected by the fader.

Output gain (-60 to 20 dB)

Drag this fader if you want to apply a gain after processing.

This is used to compensate for the gain lost from the prominent frequency gain reduction or to lower the overall level when boosting frequency bands.

Center frequency

The frequency displayed at the bottom of the fader is the center frequency of the frequency band affected by the fader.

Graphic EQ frequency graph

This Graphic EQ Frequency Graph maps each possible frequency to an output level. The horizontal line through the center of the graph shows where the frequencies will be neither boosted nor attenuated. When the envelope is below the centerline, signals of the corresponding frequency level are attenuated. When the envelope is above the centerline, the signal is boosted.

With this in mind, it is possible to draw graphs to generate innumerable effects by moving the envelope points manually or by using the 10 and 20 band pages to rough in the filter and fine tune using the envelope. To view examples of common graph shapes, take a look at some of the included presets.

Accuracy (Low, Medium, High)

Choose a setting from the drop-down list to determine a compromise between filter precision and processing speed.

Low precision is not recommended for performing very sharp filtering, when filtering very low frequencies, or when using a high sample rate.

Reset

Click to reset all envelope points and band faders to their default positions.

Output gain (-60 to 20 dB)

Drag this fader if you want to apply a gain after processing.

Amount (-60 to 20 dB)

Drag the fader to set the gain applied to the specified frequency band. This gain may be positive or negative.

Center/Cutoff frequency (20 to 22,050 Hz)

Center frequency controls the center frequency for band-notch and band-peak filters.

Cutoff frequency controls the frequency above or below which the high-shelf and low-shelf filters act.

Band/Transition Width (0.1 to 5 oct.)

Band width controls the width of the frequency spectrum affected when using band-notch and band-peak filters.

Transition width controls the slope of the filter for the low-shelf and high-shelf options.

Filter style

Choose a filter style from the drop-down list.

High-frequency shelf

Frequencies above the **Cutoff frequency** are boosted or attenuated by the **Amount**. This filter is good for removing the high frequencies of a channel and can be used to remove high-frequency rumbles such as wind, tape hiss, or computer noise.

Low-frequency shelf

Frequencies below the **Cutoff frequency** are attenuated by the **Amount**. This filter is good for removing the low frequencies of a channel and can be used to remove low-frequency rumbles such as wind, electrical hum, or traffic noise.

Band-pass peak

Frequencies outside of the **Center frequency** and **Band width** are attenuated or boosted by the **Amount**. A band-pass filter is useful when trying to isolate or boost a particular frequency range of voice, for example.

Band-notch/boost

Frequencies centered on the **Center frequency** are boosted or attenuated by the **Amount**. A band-notch filter can attenuate a selected frequency band and is often used to remove narrow-bandwidth noise such as amplifier/microphone feedback or 60 Hz electrical hum.

Graph

The graph illustrates a visual representation of the frequency response curve of the filter. The horizontal and vertical axes correspond to frequency and gain. This graph is only for reference; it does not indicate what is specifically happening in a filter that you design.

Accuracy (Low, Medium, High)

Choose a setting from the drop-down list to determine a compromise between filter precision and processing speed.

Low precision is not recommended for performing very sharp filtering, when filtering very low frequencies, or when using a high sample rate.

