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## Nero WaveEditor Manual

Nero AG



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# 1 General information

## 1.1 About the manual

This manual is intended for all users who want to find out how to use Nero WaveEditor. It is therefore structured according to operations and provides step-by-step instructions for what you want to do..

In order to make best use of this manual, please note the following conventions:

Symbol	Meaning
	Indicates warnings, requirements, or notice messages that have to be precisely followed.
	Indicates additional information or notice messages.
<b>1.</b> Start ...	A number at the beginning of a line indicates a request for action. Carry out these actions in the order specified.
	Indicates an intermediate result.
	Indicates a result.
<b>OK</b>	Indicates text passages or buttons that appear in the program interface. They are shown in bold print.
<u>Chapter</u>	Indicates references to other chapters. They are executed as links and are shown in red and underlined.
[...]	Indicates keyboard shortcuts for entering commands.

## 1.2 About Nero WaveEditor

Nero WaveEditor allows you to record pieces of music, edit the corresponding audio files, for example using various filters and sound enhancement methods, and finally burn them using Nero Burning ROM or Nero Express.

With Nero WaveEditor, you edit the audio files non-destructively in real time. Thanks to an internal reference-based audio format, the editing history is simultaneously stored so that changes can also be undone. Various effects (e.g. chorus, delay, flanger, hall), numerous tools (e.g. stereo processor, equalizer, noise gate), sophisticated improvement algorithms (band extrapolation, noise suppression, declicker) as well as the filters and tools within Nero WaveEditor are provided to assist you in editing your files.

## 2 Technical information

### 2.1 System requirements

Nero WaveEditor is installed together with the full version of Nero. Its system requirements are the same. You can find more detailed information on the system requirements in the Nero QuickStart Guide.

In addition, the following requirements apply:

- Microsoft® DirectX® 9.0b (or greater).  
The latest version of DirectX® can be downloaded from the Internet under <http://www.microsoft.com/windows/directx> and installed.
- Minimum 5 MB free hard-disk space
- 16-bit Windows® compatible sound card and speakers or headphones



Installation of the latest WHQL-certified drivers is recommended. WHQL stands for Windows Hardware Quality Labs and means that the device driver from Microsoft® is certified compatible with Microsoft® Windows® and the relevant hardware.

#### 2.1.1 Supported Formats

Nero WaveEditor allows you to open the following formats or to save files in these formats:

- \*.AC3
- \*.aif, .aiff
- \*.mp3
- \*.wma
- \*.mp4
- \*.ogg
- \*.wav, .wave
- \*.nwf

### 3 Terminology

Sound is transmitted in air via waves. This characteristic gives rise to the following terms that can be important for working with Nero WaveEditor:


- **Frequency** is the number of vibrations per time unit. It is measured in Hertz.
- In the case of a sound wave, the **amplitude** is perceived as volume (loudness). This is the highest peak of a vibration.
- **Sampling rate** indicates how often the sound card determines the sampling value of an analog signal. It is measured in sampling values per second (Hertz or Hz). The higher the sampling rate, the more precise the measurement, and the better the audio quality. The sampling rate influences the frequency range. CDs use a sampling rate of 44,100 Hz, in other words 44,100 sampling values per second. This means that frequencies of up to 22,050 Hz can be recorded.
- **Bit depth** indicates the precision with which a vibration will be captured. The higher the bit depth, the more precise the capture, and the better the audio quality. CD's store audio data in 16 bits. this means that each sample value can accept 65,536 possible values.



## 4 Launching the program

### 4.1 Starting Nero WaveEditor via Nero StartSmart

To start Nero WaveEditor via Nero StartSmart, proceed as follows:

1. Click on the **Nero StartSmart** icon.  
→ The **Nero StartSmart** window is opened.
2. Click the  button.  
→ The list of Nero applications is displayed.

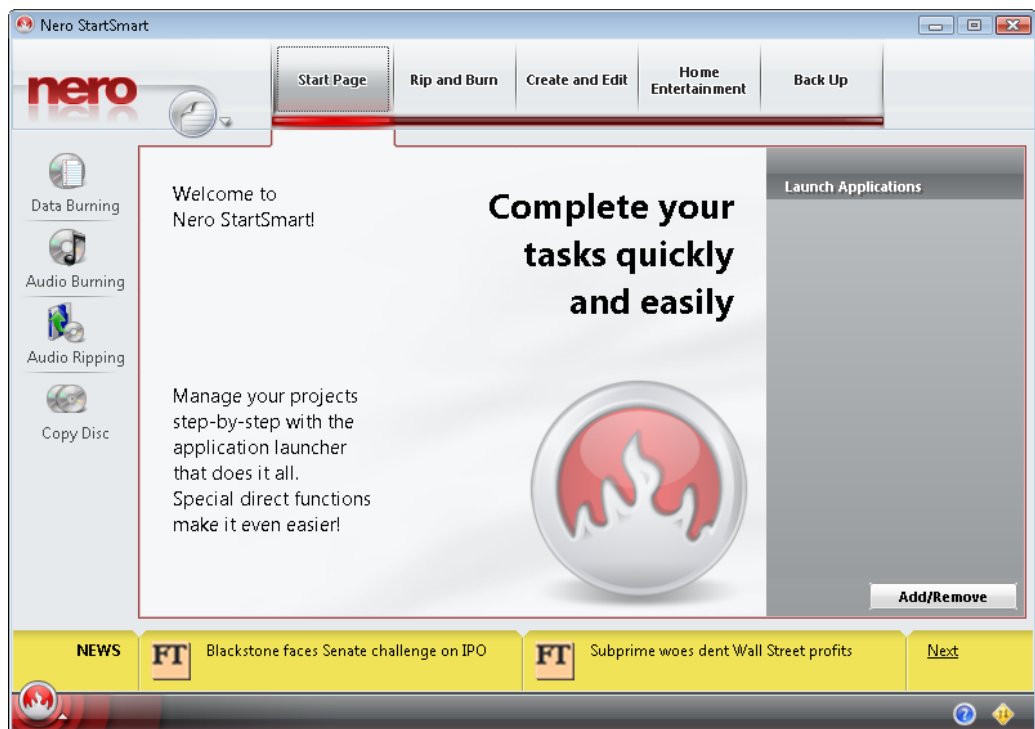


Fig. 1: Nero StartSmart

3. Select the **Nero WaveEditor** entry in the **Applications** list box.  
→ The **Nero WaveEditor** window opens.  
→ You have launched **Nero WaveEditor** via Nero StartSmart.

## 5 User interface

### 5.1 Main screen

When you start Nero WaveEditor the main screen is displayed. The main screen is divided into the following sections:

- Menu bar and toolbar
- File display
- Displays

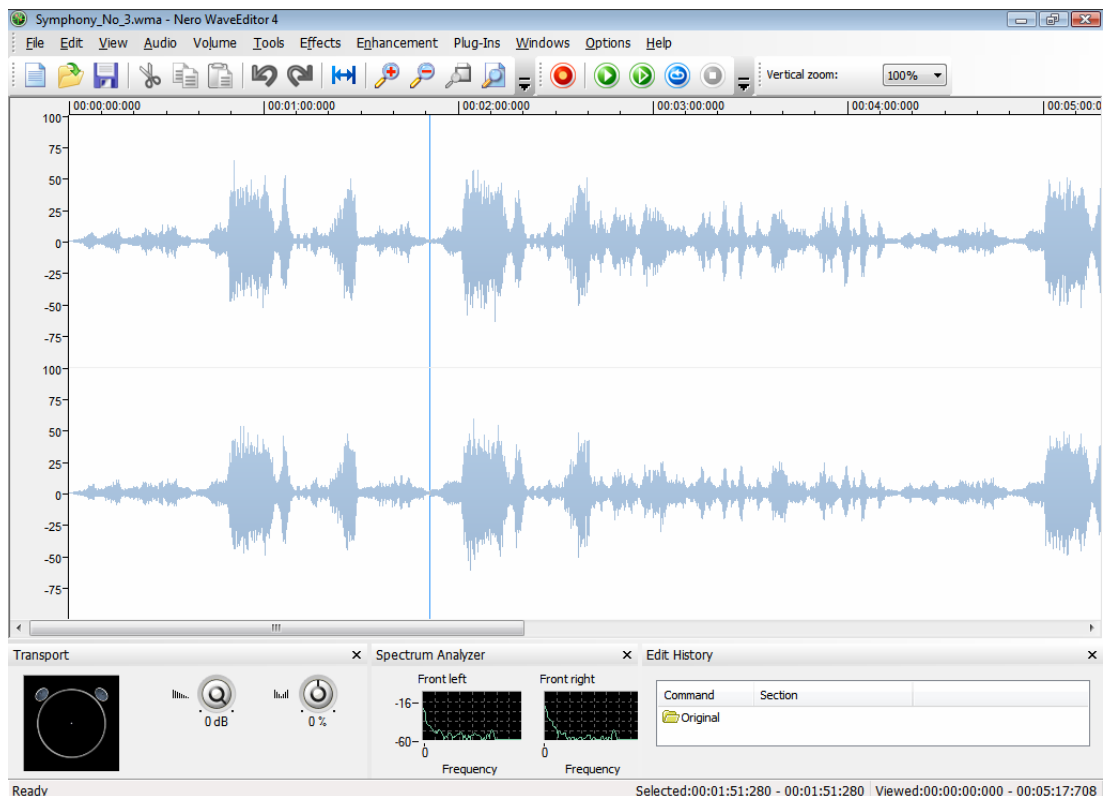


Fig. 2: Nero WaveEditor main screen

#### 5.1.1 Menu bar














The following setting options are available in the menu bar:

<b>File</b>	Opens the <b>File</b> menu that contains file functions such as open, save, and close with which you are already familiar from Windows®.
<b>Edit</b>	Opens the <b>Edit</b> menu containing editing functions for the files in the selection screen such as cutting, copying, and deleting that you are already familiar with from Windows®. You can

	also change the audio file, in different ways, insert files and track splits and activate automatic silence detection.
<b>View</b>	Opens the <b>View</b> menu that offers the possibility of individually adjusting the menu bar and toolbar, and enlarging or reducing the view of the project. You can also change the view of the audio file, show and hide windows and display information about the loaded audio file.
<b>Audio</b>	Opens the <b>Audio</b> menu that offers the possibility of recording, playing and stopping audio files.
<b>Volume</b>	Opens the <b>Volume</b> menu, which allows the volume of the opened audio file to be edited.
<b>Tools</b>	Opens the <b>Tools</b> menu, which allows the opened audio file to be edited using a variety of tools (see <a href="#">Tools</a> ).
<b>Effects</b>	Opens the <b>Effects</b> menu, which allows the opened audio file to be edited using a variety of effects (see <a href="#">Effects</a> ).
<b>Enhancement</b>	Opens the <b>Enhancement</b> menu, which allows the sound of the opened audio file to be edited (see <a href="#">Enhancement</a> ).
<b>Windows</b>	Opens the <b>Windows</b> menu, which allows all windows to be closed at once.
<b>Settings</b>	Opens the <b>Settings</b> menu, which allows the program to be configured (see <a href="#">Configuration</a> ).
<b>Help</b>	Opens the <b>Help</b> menu, which allows the help file to be called or information about Nero WaveEditor to be viewed.

## 5.1.2 Toolbar

The following setting options are available in the toolbar:

	Creates an audio file.
	Opens an existing audio file.
	Saves the audio file.
	Cuts out the selected section and saves it on the clipboard
	Copies the selected section and saves it on the clipboard
	Pastes the contents of the clipboard at the selected point.
	This undoes the last action.
	Restores the last action that you have undone.
	Selects the entire audio file.
	Zooms into the audio file.
	Zooms out from the audio file.
	Zooms into the audio file so that the selected section is displayed in a manner that fills the screen.
	Zooms out from the audio file so that the whole file can be seen.

### 5.1.3 File display

The opened file is displayed in the file display as a peak file with the wave display as standard. It is also possible to change the display to spectrogram display or wavelet display.

### 5.1.4 Display window

The following setting options are available in the **View** menu:

<b>Level Meters</b>	Opens the <b>Transport</b> window, the left half of which visualizes the room sound. You can also reproduce the audio file in the right half of the window, also changing the volume and the use of the loudspeakers.
<b>Spectrum Analyzer</b>	Opens the <b>Spectrum Analyzer</b> window in which the frequencies of the audio file are displayed graphically during playback.
<b>Edit History</b>	Opens the <b>Edit History</b> window which lists all the editing steps of the audio file. You can also return to any edit phase here and restore the original state of the audio file.

#### 5.1.4.1 Showing a display window or toolbar

To show a display window or toolbar, proceed as follows:

1. Click on the **View** > Required Display Window menu or toolbar.
  - ➔ The display windows are shown at the bottom of the main screen. You can move the display windows about as required and change their size. The toolbars are shown under the menu bar. These can also be moved using the mouse.

## 6 Configuration

You can configure Nero WaveEditor to suit your needs. The following adjustable sections are available to you.

- Device settings (see [Device Settings](#))
- Editor Options (see [Editor Options](#))
- Audio Format Settings (see [Audio Format Settings](#))

### 6.1 Device Settings

You can adjust device settings in the **Device Settings** window.

You reach this window via the menu bar under **Options > Device Settings**.

The following setting options are available in the Device Settings window:

<b>Input Device</b> pull-down menu	Displays the input device.
<b>Output Device</b> pull-down menu	Displays the output device.

### 6.2 Editor Options

The editor options are customized in the **Editor Options** window.

You reach this window via the menu bar under **Settings > Editor Options..**

#### 6.2.1 View tab

The **View** tab offers the following setting possibilities:

<b>Show axis to the left of the audio visualization</b> check box	Displays an axis to the left of the peak file of the audio file.
<b>Show time rules above the audio visualization</b> check box	Displays an axis above the peak file of the audio file.
<b>Trace playback position line while playing</b> check box	Uses a red line to show the position of the playback in the audio file.
<b>Use green on black color set</b> check box	Displays the peak file in green and the background in black. The default is for the peak file to be shown in blue and the background in white.

## 6.2.2 Folders tab

The **Folders** tab offers the following setting possibilities:

<b>Temporary folder</b> input field	Defines the folder in which temporary files are stored. The folder should be located on a drive with plenty of storage space.
<b>Peak File Directory</b> input field	Specifies the default folder where peak files are stored. Peak files are cache files that Nero WaveEditor uses to more quickly open audio files. The folder should be located on a drive with plenty of storage space.
<b>Always recreate peak files</b> check box	Always creates a new peak file when an audio file is opened. Otherwise the peak files are stores temporarily in a directory and are called up again there.
<b>My Music Directory</b> input field	Specifies the default folder where files are stored.
<b>Always start file open dialog in My Music folder</b> check box	When calling the <b>Open</b> dialog box the system will always first show the folder that is specified in the <b>My Music folder</b> input field.

## 6.2.3 Save/Output Settings tab

The **Save/Output Settings** tab offers the following setting possibilities:

<b>Use dithering when converting to lower bit depths</b> check box	Overlays sound errors that arise when converting to a lower bit depth with a white noise that is hardly noticed by human hearing. If there is no dithering, clearly audible interference can be heard when converting to lower bit depths.
Pull-down menu <b>Noise shaping filter</b>	Specifies the type of noise shaping <b>IIR filter (2nd order):</b> Infinite Duration Impulse Response. Uses IIR-filters. Second order means that sound is attenuated by 12 dB. IIR filters generally achieve a better audio quality than FIR filters. <b>FIR filter (3 taps):</b> Finite Impulse Response Filter. Uses FIR filters. This entry is selected by default.
<b>Restore wave output volume when closing Nero WaveEditor</b> check box	Restores the volume of the audio file when Nero WaveEditor is closed.
<b>Bit depth during playback:</b> pull-down menu	Specifies the bit depth during the playback of the loaded audio file.

<p>Pull-down menu: <b>Play surround audio as</b></p>	<p>Specifies how surround audio is played back.</p> <p><b>Multichannel Audio</b> Plays back surround audio with all channels.</p> <p><b>Stereo with Nero HeadPhone (virtual surround):</b> Plays back surround audio filtered down as stereo and a virtual surround effect is generated for headphones,</p> <p><b>Stereo with Nero VirtualSpeakers (virtual surround):</b> Plays surround audio filtered down as stereo and a virtual sound effect is generated for speakers.</p>
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### 6.2.4 VST Plug-Ins tab

The **VST Pug-Ins** tab offers the following setting possibilities:

<p>Display section <b>Installed VST Plug-Ins:</b></p>	<p>Shows the currently installed VST plug-ins</p>
<p><b>Delete</b> button</p>	<p>Deletes the selected VST plug-in</p>
<p>Button <b>Add plug-in</b></p>	<p>Opens the <b>Open</b> dialog box. Installs a new VST plug-in</p>
<p>Button <b>Scan folder</b></p>	<p>Opens the <b>Open</b> dialog box. Searches for new VST plug-ins in the specified folder.</p>

## 6.3 Audio Format Settings

Use the **Audio Format Settings** window to adjust the audio settings.  
You reach this window via the menu bar under **Options > Audioformat Settings**.

### 6.3.1 Decoder tab

The **Decoder** tab offers the following setting possibilities:

<p>Button <b>Configure</b></p>	<p>Opens a dialog box where additional settings can be made for the selected decoder. This button is not available for all decoders.</p>
<p>Button <b>Info</b></p>	<p>Opens the <b>About</b> dialog box where you can view information about the selected decoder. This button is not available for all decoders.</p>
<p>Button <b>Move Up</b></p>	<p>Moves the decoder up one entry.</p>
<p>Button <b>Move Down</b></p>	<p>Moves the decoder down one entry.</p>
<p>Button <b>Artist/Title Information Source</b></p>	<p>Opens the dialog box <b>Get Artist / Title Information</b> which shows the source from which information relative to artist and title will be input.</p>

### 6.3.2 Encoder tab

The **Encoder** tab offers the following setting possibilities:

Button <b>Configure</b>	Opens a dialog box where additional settings can be made for the selected encoder. This button is not available for all encoders.
Button <b>Info</b>	Opens the <b>About</b> dialog box where information about the selected encoder is displayed. This button is not available for all encoders.
Button <b>Artist/Title Information Source</b>	Opens the dialog box <b>Get Artist / Title Information</b> which shows the source from which information relative to artist and title will be input.

### 6.3.3 Converter tab

The **Converter** tab offers the following setting possibilities:

Button <b>Configure</b>	Opens a dialog box where additional settings can be made for the selected converter. This button is not available for all converters.
Button <b>Info</b>	Opens the <b>About</b> dialog box where you can view information about the selected converter. This button is not available for all converters.
Button <b>Artist/Title Information Source</b>	Opens the dialog box <b>Get Artist / Title Information</b> which shows the source from which information relative to artist and title will be input.



## 7 Audio

### 7.1 Playing Audio Files

To play an audio file, proceed as follows:

1. Click on the **File > Open** menu.  
→ The **Open** window appears.
2. Select the audio file you want to open in the file system and click on the **Open** button.  
→ The two channels of the audio file are presented as peak file.
3. To play back to complete audio file, click on the **Audio > Play All** menu.
4. If you have marked a section of the audio file and only want to play this section, click on the **Audio > Play Section** menu.
5. If you want to play back the file without interruption, click on the **Audio > Play Looped** menu.
6. To stop playback, click on the **Audio > Stop** menu.  
→ You have played back an audio file.

### 7.2 Recording Audio files

You can use Nero WaveEditor to connect many types of playback devices to the computer and to record the medium played there.

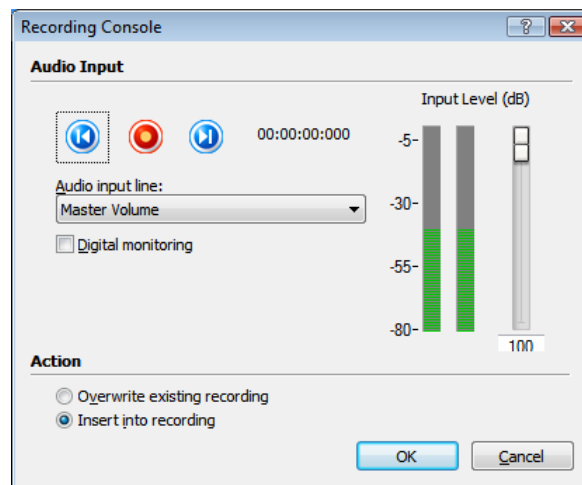






Fig. 3: **Recording Console** window while recording an audio file



The **Recording Console** window offers you the following setting options:

	Returns to the start of the recording so that this can be overwritten.
	Pauses recording.

	Records an audio file.
	Goes to the end of the recording so that recording can be resumed there.

<b>Overwrite existing recording</b> pull-down menu	Overwrites the existing recording or audio file which is open in Nero WaveEditor.
<b>Insert into recording</b> radio button	Inserts the recording into the audio file at the point where the marker is located.
<b>Audio input line</b> pull-down menu	Specifies the audio input.
<b>Digital Monitoring</b> check box	Activates the <b>Input level</b> control.
<b>Input level</b> control	Specifies the volume of the recording. The recording should be in the yellow area in the spectrum analyzer.

To record an audio file, proceed as follows:

1. Click on the **Audio > Capture** menu.  
→ The **Recording Console** window will open.
2. Make the desired capture settings.
3. Click on the  button to make a recording.
4. Click on the  button to interrupt the recording.
5. Click on the **OK** button if you want to insert the recording into the file display.  
→ You have created an audio file.

### 7.3 Editing Audio Files

To edit an audio file, proceed as follows:

1. If you want to play back the highlighted part of the audio file in reverse, click on the **Edit > Reverse** menu.
2. To insert a test signal into the audio file, click on the **Edit > Insert Test Signal** menu (see [Inserting a Test Signal in an Audio File](#)).
3. To convert the sample format, click on the **Edit > Convert Sample Format** menu (see [Converting Sample Format](#)).
4. If you want silences in a song to be detected automatically so as to be able to skip these when playing the audio file, click on the **Edit > Pause Detection** menu (see [Implementing Pause Detection](#)).
5. If you want to insert a track split in the audio file to be able to skip directly to this point, click on the **Edit > Insert Track Split** menu.
6. If you want to save a single track produced by inserting track splits as a file:
  1. Click on the **Edit > Save Tracks as Files** menu.

- The **Save Tracks as Separate Files** window is opened.
- 2. Select the track you want to save, name it and select the required file format.
- 3. Click on the **OK** button.
- 7. If you want to fade out the volume of the marked section of the audio file , click on the **Volume > Fade out >** required hide method menu (see [Fade out and fade in methods](#)).
  - The change in volume in the marked section is displayed graphically in the file display.
- 8. If you want to fade in the volume of the marked section of the audio file , click on the **Volume > Fade in >** required show method menu (see [Fade out and fade in methods](#)).
  - The change in volume in the marked section is displayed graphically in the file display.
- 9. If you want to normalize the frequencies of the marked part of the audio file to a particular dB value.


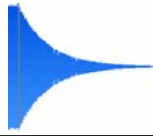




Normalizing in audio technology is the process whereby analog and/or digital audio data is raised to a uniform volume level.





- 1. Click on the **Volume > Normalization** menu.
  - The **Normalization** window will open.
- 2. Move the **Normalize to** control to the required position. The set dB value will appear in the display panel.
- 3. Click on the **OK** button.
- 10. If you want to raise or lower the volume of the marked section of the audio file:
  - Raising the volume raises all frequencies of the audio file by the specified dB value. Lowering the volume reduces all frequencies by the specified dB value.
- 1. Click on the **Volume > Volume Change** menu.
  - The **Volume Change** window will be opened.
- 2. Move the **Volume Change** control to the required position. The set dB value will appear in the display panel.
- 3. Click on the **OK** button.
- 11. If you want to mute the marked section of the audio file, click on the **Volume > Mute** menu.
  - The change in volume in the marked section is displayed graphically in the file display.
- 12. If you want to change the marked section of the audio file with a tool, click on the **Tool** menu (see [Tools](#)).
- 13. If you want to change the marked section of the audio file with an effect, click on the **Effect** menu (see [Effects](#)).
- 14. If you want to change the marked section of the audio file with an enhancement tool, click on the **Enhancement** menu (see [Enhancement](#)).
  - You have edited the audio file.

### 7.3.1 Fade out and fade in methods

The following options are available in the **Volume > Fade out** menu:

	Fade out <b>Sinusoidal</b>
	Fade out <b>Exponential</b>
	Fade out <b>Linear</b>
	Fade out <b>Logarithmic</b>

The following options are available in the **Volume > Fade in** menu:

	Fade in <b>Sinusoidal</b>
	Fade in <b>Exponential</b>
	Fade in <b>Linear</b>
	Fade in <b>Logarithmic</b>

### 7.3.2 Converting Sample Format

The **Edit** menu allows you to convert the sample format.

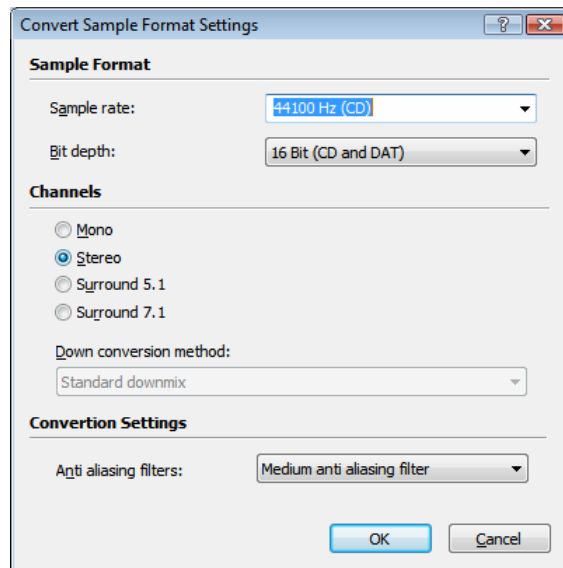


Fig. 4: **Converted Sample Format Settings** window

The **Converted Sample Format Settings** window offers you the following setting options:

<b>Sample Rate</b> drop-down menu	Provides different sample rates for selection.
<b>Bit Depth</b> pull-down menu	Provides different bit depths for selection.
<b>Channels</b> radio buttons	Provides different output types for selection. You can create a Surround audio file with five or seven channels by selecting Surround 5.1 and 7.1.
<b>Down conversion method</b> combo box	Converts a Surround audio file into a normal stereo-audio file, a stereo audio file with artificial Surroundsound for headsets or a stereo audio file with artificial Surroundsound for speakers. Only available with Surround audio files.
<b>Antialiasing Filter</b> combo box	This provides different kinds of antialiasing-filters.

To convert the sample format, proceed as follows:

1. Click on the **Edit > Convert Sample Format** menu.
  - ➔ The **Converted Sample Format Settings** window will be opened.
2. Define the required settings in the **Converted Sample Format Settings** window.
3. Click on the **OK** button.
  - ➔ You have converted the sample format.

### 7.3.3 Implementing Pause Detection

The **Edit** menu allows you to implement automatic pause detection for the audio file.

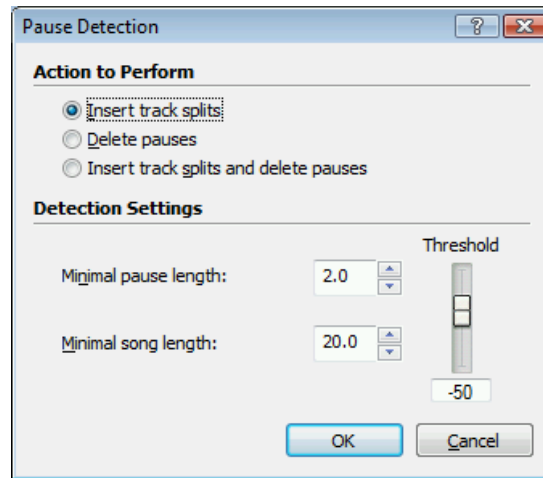


Fig. 5: **Pause Detection** window

The **Pause Detection** window offers you the following setting options:

<b>Action field</b>	Provides different actions for selection. You can insert track splits at the detected pauses, delete the detected pauses or delete the detected pauses and replace them with track splits.
<b>Pause Length input field</b>	Defines the minimum length of a pause in the audio file if it is to be detected automatically. The number is specified in seconds.
<b>Minimum Song length input field</b>	Defines the minimum length of a song if it is to be recognized as a whole song. The number is specified in seconds.
<b>Threshold control</b>	Defines the threshold for the volume below which the tracks of the audio file will be detected as pauses.

To implement automatic pause detection, proceed as follows:

1. Click on the **Edit > Pause Detection** menu.
  - The **Pause Detection** menu will be opened..
2. Define the required settings in the **Pause Detection** window.
3. Click on the **OK** button.
  - You have now implemented automatic silence detection.

### 7.3.4 Inserting a Test Signal in an Audio File

The Test Signal-Generator window allows you to insert a test signal in the audio file.

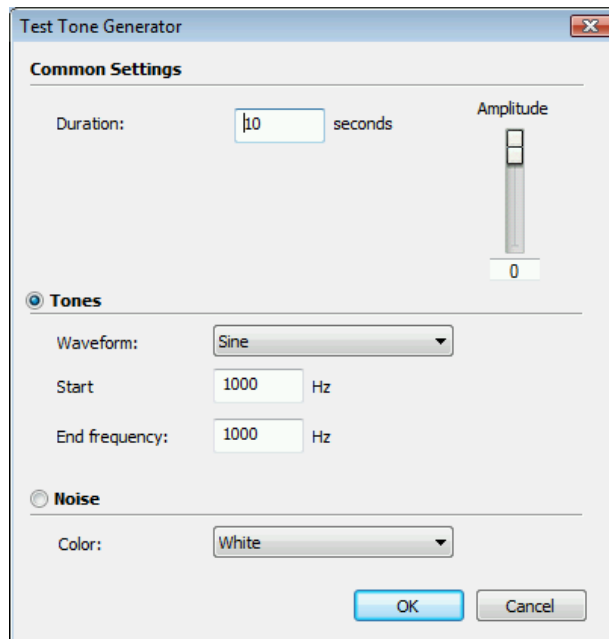


Fig. 6: Test Signal Generator window

The Test Signal Generator window offers you the following setting options:

<b>Duration</b> input field	Specifies the duration of the test signal.
<b>Tones</b> radio button	Defines that the test signal is reproduced as a tone. Also activates the area containing the setting options for the wave form, start frequency and end frequency of the test signal.
<b>Wave form</b> combo box	Specifies the wave form that the test signal should have.
<b>Start Frequency</b> input field	Specifies the start frequency of the test signal.
<b>End frequency</b> input field	Specifies the end frequency of the test signal.
<b>Noise</b> radio button	Defines that the test signal is reproduced as a noise. Also activates the area that defines the type of noise.
<b>Color</b> combo-box	Specifies the type of noise. <b>White</b> is a loud noise, <b>Pink</b> a medium noise and <b>Brown</b> a quiet noise.
<b>Amplitude</b> control	Specifies the amplitude of the test signal both for sound and noise.

1. Click on the **Edit > Insert Test Signal** menu.  
→ The **Test Signal Generator** window will be opened.

2. Make the required settings for the test signal to be inserted.
3. Click on the **OK** button.
4. Now define the range of the test signal by moving the arrows at the bottom of the file display.
5. To exclude an audio file before the test signal, move the blue-green arrows at the start of the test signal at the top of the file display from left to right.
6. To insert an audio file after the test signal, move the blue-green arrows at the end of the test signal at the top of the file display from left to right.
7. Click on the **OK** button.
  - ➔ You have inserted a test signal in the audio file.








## 8 Filters

You can change the sound of an audio file in a variety of ways. The following menus are available for this purpose:

- Tools
- Effects
- Enhancement

The following setting options are available in all windows:

	Plays the audio file changed by the filter.
	Stops playing.
<b>Active Channels</b>	Provides the active channels for selection. You can switch the channels on and off separately.
<b>Bypass</b>	Retains the change by the filter for the duration of the activation. This enables you to listen to the unedited file and the edited version alternately.
<b>Process offline</b>	Processes the change to the audio file offline. This enables the changed file to be played back with a weaker processor without jerking.
	Provides both predefined and personally produced profiles for selection.
	Creates a new profile with the current settings.
	Deletes the selected profile.

### 8.1 Tools

#### 8.1.1 DeEsser

The **DeEsser** tool is used to filter out unpleasant hissing sounds (sibilants) from recorded speech and song.

<b>Threshold</b>	Specifies the level after which hiss is to be suppressed as a dB value. If this value is very low, even very quiet hiss will be suppressed.
<b>Attenuation</b>	Specifies the extent to which hiss is to be damped if it is not filtered out completely.
<b>Attack Time</b>	Specifies how long the hiss has to be in order to be detected.
<b>Release Time</b>	Specifies for how long the hiss is to be filtered.

### 8.1.2 Dynamic Processor

You can use the **Dynamic Processor** tool to adjust the ratio between the input and output volume. This makes it possible, for example, to emphasize quiet noises, thereby lending more dynamism to the audio file.

<b>Characteristics</b>	Shows the ratio of input volume to output volume. In this case the y-axis is the output, and the x-axis the input.
<b>Attack Time</b>	Specifies the time it takes before the full effect is heard.
<b>Release Time</b>	Specifies the time it takes before the effect is no longer heard.
<b>Movie</b>	Processes all Surround channels for the same parts. This can only be activated when a Surround audio file is being processed.

### 8.1.3 Equalizer

The **Equalizer** tool allows you to emphasize certain frequencies, specifying the amplitude and bandwidth.

<b>Frequency Response Graph</b>	Shows the frequency response. The y-axis represents the amplitude and the x-axis the frequency.
<b>Center Frequencies</b>	Indicates the distribution of the handles on the x-axis. You can enter the values (in Hz) of the center frequencies in the fields.
<b>Emphasis</b>	Specifies the amplification of the signal on the y-axis of the curve in the diagram.
<b>Bandwidths</b>	Indicates whether the bandwidth of the medium frequency rises and falls steeply or gently. You can set a value between 0.1 and 3 octaves with the control.
<b>Low Shelf</b>	Increases or decreases low frequencies.
<b>Cut Off</b>	Allows the filter to start after a certain frequency.
<b>Gain</b>	Specifies the degree of increase or decrease.
<b>High Shelf</b>	Increases or decreases high frequencies.
<b>Cut Off</b>	Allows the filter to start after a certain frequency.
<b>Gain</b>	Specifies the degree of increase or decrease.

### 8.1.4 Karaoke Filter

The **Karaoke Filter** tool filters frequencies from the audio file that are the same on both channels of a stereo file. On older recordings this is usually the voice. However, if the voice is not distributed evenly on both channels, you can perform some fine tuning.

<b>Vocal Pan</b>	Specifies the channel and intensity with which the voice is to be filtered.
<b>Gain Compensation</b>	Increases the volume of the audio file, which had become quieter because the filter was applied.

<b>Vocal Frequency Band</b>	Specifies the frequency band of the voice.
<b>Lower Frequency</b>	Specifies the lower frequency limit for the voice. This is typically a value of 100 Hz.
<b>Upper Frequency</b>	Specifies the upper frequency limit for the voice. This is typically a value of 7000 Hz.

### 8.1.5 Noise Gate

The **Noise Gate** tool suppresses quiet sections in the signal transmission. For example, it helps prevent noise. The Noise Gate belongs to the category of dynamic processors.

<b>Threshold</b>	Specifies the minimum dB value below which the audio file is to be muted. In other words, the gate is closed if the dB value is too low.
<b>Attack Time</b>	Specifies the time required to reopen the gate in milliseconds after the threshold has been exceeded, in other words to restore the sound of the audio file.
<b>Release Time</b>	Specifies the time in milliseconds required to close the gate, in other words to mute the audio file, after the level has dropped below the threshold.
<b>Channel Mode</b>	<p>Only relevant for audio files in stereo format.</p> <p>If the <b>Linked</b> radio button is enabled, the noise gate for both channels is opened as soon as one or both of the two channels exceeds the threshold.</p> <p>If the <b>Independent</b> radio button is enabled, the noise gate closes or opens both channels independently when the threshold is reached.</p>

### 8.1.6 Pitch Tuning

The **Pitch Tuning** tool changes the pitch, for example of the voice, for a short time, so that incorrectly sung tones can be corrected.

<b>Correction</b>	Corrects incorrect sounds.
<b>Corrected</b>	Shows the level of correction on the basis of the movement of the green arrow.
<b>Reference</b>	Specifies the reference sound used for correction..
<b>Binding</b>	Specifies for how long the sound is to be corrected. The lower the value, the shorter the correction period for an incorrect sound.
<b>Scale:</b>	Provides a variety of scales for selection. The most commonly used scale in Europe is Equally Tempered Chrome.
<b>Vibrato</b>	Adds sound changes, both high and low. This causes the voice to "vibrate".
<b>Frequency</b>	Indicates the frequency of the sound changes.
<b>Depth</b>	Indicates the intensity of the sound change.

### 8.1.7 Stereo Processor

The **Stereo Processor** tool allows you to manipulate the stereo sounds.

<b>Left Out</b>	Specifies the output intensity of the left hand loudspeaker
<b>Left In</b>	Specifies the intensity of the left input signal for the left hand loudspeaker.
<b>Right In</b>	Specifies the intensity of the right input signal for the left hand loudspeaker.
<b>Right Out</b>	Specifies the output intensity of the right hand loudspeaker
<b>Left In</b>	Specifies the intensity of the left input signal for the right hand loudspeaker.
<b>Right In</b>	Specifies the intensity of the right input signal for the right hand loudspeaker.
<b>Stereo Settings</b>	Provides further stereo sound settings.
<b>Phase Offset</b>	Compensates for differences in run-time between the left and right channel.
<b>Stereo Broadening</b>	Makes a mono recording sound like a stereo recording. This setting will give a stereo recording an even broader feeling.

### 8.1.8 Time Correction

The **Time Correction** tool changes the playback speed, but not the pitch.

<b>Timescale Modification Factor</b>	Offers two different ways to change the playback speed of the audio file.
<b>Percentage</b>	Changes the playback speed in percent. The change can either be set on the control or entered in the input field.
<b>Beats per Minute</b>	Changes the playback speed to beats per minute (BpM).
<b>Optimization</b>	Specifies the type of music of the audio file to be altered, so as to optimize speed changes for this file.

### 8.1.9 Transpose

The **Transpose** tool changes the pitch. The length of the audio file can be changed or retained. However, it is possible to adjust the length of the audio file to the faster playback speed.

<b>Interval</b>	Changes the interval in the audio file.
<b>Fine-tune</b>	Permits fine tuning if retaining the original length causes distortion.
<b>Maintain Original Length</b>	Retains the original length of the audio file.

## 8.2 Effects


### 8.2.1 Chorus

The **Chorus** effect creates an echo effect, which when applied to a recorded voice, makes it sound like there is a choir singing in the background.

<b>Modulation</b>	Changes the copied signal
<b>Depth</b>	Specifies the degree of the change in pitch
<b>Frequency</b>	Specifies the frequency of the change in pitch (oscillations).
<b>Delay</b>	Specifies the delay with which the copy is played in comparison with the original signal.
<b>Filters</b>	Allows a low pass filter to be activated.
<b>Low Pass</b>	Reduces frequencies above the specified Hertz rate and allows low frequencies beneath the specified value to pass almost unfiltered.
<b>Mix</b>	Mixes the original signal with the copied signal.
<b>Effect</b>	Specifies the intensity of the copied signal.
<b>Dry Signal</b>	Indicates the intensity of the original signal.
<b>Stereo Chorus</b>	Gives the processed part of the audio file a more "stereo-like" sound

### 8.2.2 Convolution Reverb

The **Convolution Reverb** effect transfers the convolution reverb conditions of a reference file and adjusts the audio file to the relevant reverb conditions.

<b>Select Impulse Response</b>	Opens the source file for the impulse response from which the reverb effect for the audio file to be edited is generated.
<b>Impulse Response Gain</b>	Displays the signal of the impulse response.
<b>Gain</b>	Displays the frequency limit for the reverb. The y-axis of the curve specifies the gain of the reverb effect in the diagram, while the x-axis shows the frequency.
	Switches between a linear and logarithmic scale for the limiting frequency graphic.
<b>Pre-Delay</b>	Specifies the length of time required by the sound to be deflected from an obstacle, thereby indicating the intensity of the echo.
<b>Mix</b>	Mixes the original signal with the copied signal.
<b>Dry Signal</b>	Indicates the intensity of the original signal.
<b>Effect</b>	Specifies the intensity of the copied signal.

### 8.2.3 Delay

The **Delay** effect creates an echo using a copy of the original signal which is played back with a delay.

<b>Delay</b>	Provides setting options for the copy of the original signal.
<b>Delay Time</b>	Specifies the delay in playing back the copied signal.
<b>Feedback</b>	Specifies how many copies of the original signal are to be made.
<b>Mix</b>	Mixes the original signal with the copied signal.
<b>Dry Signal</b>	Indicates the intensity of the original signal.
<b>Effect</b>	Specifies the intensity of the copied signal.

### 8.2.4 Distortion

The **Distortion** effect is used for guitars. This means that a recording of acoustic guitar can be distorted to sound like an electric guitar.

<b>Distortion</b>	Distorts the original signal.
<b>Method</b>	Offers a variety of distortion options, e.g. an old megaphone.
<b>Drive</b>	Indicates the intensity of the interference.
<b>Hardness</b>	Specifies the hardness of the distortion. This can only be adjusted if the entries <b>Tube</b> , <b>Fuzz3</b> and <b>Variable clipping</b> have been selected in the <b>Method</b> combo box..
<b>Pre-Filtering</b>	Filters the original signal before it is distorted.
<b>Lower Cutoff</b>	Specifies the lower limit of the frequency band for the original signal.
<b>Upper Cutoff</b>	Specifies the upper limit of the frequency band for the original signal.
<b>Post-Filtering</b>	Filters the distorted signal.
<b>Lower Cutoff</b>	Specifies the lower limit of the frequency band for the edited signal.
<b>Upper Cutoff</b>	Specifies the upper limit of the frequency band for the edited signal.
<b>Mix</b>	Mixes the original signal with the edited signal.
<b>Dry Signal</b>	Indicates the intensity of the original signal.
<b>Effect</b>	Specifies the intensity of the copied signal.

### 8.2.5 Doppler

The **Doppler** effect simulates a noise source passing by and the resulting special auditory features.

<b>Graphic</b>	Shows the target and end point of the movement of the noise source. The listener is at the center of the graphic. The pattern of the movement can be changed using the straight lines in the graphic.
<b>Diameter</b>	Specifies the diameters of the movement radius.
<b>Duration</b>	Specifies the duration of the movement.

### 8.2.6 Flanger

The **Flanger** effect is a guitar effect that distorts the sound by playing back a copy of the original signal with a delay. The copy is changed by means of modulation, so that the sound is distorted in a characteristic way.

<b>Modulation</b>	Changes the copied signal
<b>Depth</b>	Specifies the degree of the change in pitch.
<b>Frequency</b>	Specifies the frequency of the change in pitch.
<b>Mix</b>	Mixes the original signal with the copied signal.
<b>Dry Signal</b>	Indicates the intensity of the original signal.
<b>Effect</b>	Specifies the intensity of the copied signal.
<b>Stereo Flanger</b>	Gives the processed part of the audio file a more "stereo-like" sound

### 8.2.7 Loudness

The **Loudness** effect increases the volume of the audio file without increasing the maximum value of the amplitude (value 1) by raising the amplitude of other areas in the audio file. The file is thus louder overall without exceeding value 1 of the amplitude.

<b>Aimed Gain</b>	Specifies the degree of amplification.
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### 8.2.8 Low Fidelity

The **Low Fidelity** effect creates interference effects, so called quantification errors, by reducing the bit rate. Noise can be heard when the bit rate is dramatically reduced. If the sample rate is reduced, the audio file sounds duller and less detailed.

<b>Bit Depth / Sample Rate</b>	Shows the change in the two controls under the graphic.
<b>Bit depth</b>	Specifies the bit depth. Music CDs have a bit depth of 16, for example.
<b>Sample Rate</b>	Specifies the sample rate. Music CDs have a sample rate of 44100 Hz.

## 8.2.9 Modulation

The **Modulation** effect allows the amplitude and frequency to be changed separately.

<b>Amplitude Modulation</b>	Shows the amplitude of the audio signal.
<b>Frequency</b>	Specifies the frequency of the signal.
<b>Amplitude Range</b>	Specifies the signal volume.
<b>Modulation Signal</b>	Provides different signal forms.
<b>Blend Edges</b>	Balances different end and start values. Only activated for self-produced signals.
<b>Frequency Modulation</b>	Shows the frequency of the audio signal.
<b>Frequency</b>	Specifies the frequency of the signal.
<b>Depth</b>	Specifies the depth of the signal.
<b>Modulation Signal</b>	Provides different signal forms.
<b>Blend Edges</b>	Balances different end and start values. Only activated for self-produced signals.
<b>Mix</b>	Mixes the original signal with the modulated amplitude signal and the modulated frequency signal..
<b>Dry Signal</b>	Indicates the intensity of the original signal.
<b>Amplitude Modulated</b>	Specifies the intensity of the signal with the modulated amplitude.
<b>Frequency Modulated</b>	Specifies the intensity of the signal with the modulated frequency.

## 8.2.10 Multi-Tap Delay

The **Multi-Tap-Delay** effect allows several copies of the original signal to be created and played back with a delay. This creates the reverb effect.

<b>Active tap</b>	Provides several copies for selection.
<b>Graphic</b>	Shows the copy and its copies.
<b>Delay</b>	Specifies the intervals at which copies are to be played back.
<b>Emphasis</b>	Specifies the volume/intensity of the copies.
<b>Pan</b>	In the case of stereo files, this indicates the speaker on which the copies are to be heard.
<b>Feedback</b>	Offers settings for the copies of the copy of the original signal.
<b>Type</b>	Provides different filters for the copied signals for selection.
<b>Feedback Gain</b>	Specifies the volume of the copies that are played back after the time specified with the <b>Delay</b> control.
<b>Mix</b>	Mixes the original signal with the edited copies.
<b>Dry Signal</b>	Indicates the intensity of the original signal.
<b>Effect</b>	Specifies the intensity of the edited signal.



### 8.2.11 Phaser

The **Phaser** effect is a guitar effect that distorts the sound by playing back a band-filtered copy of the original signal with a delay.

<b>Modulation</b>	Provides settings for modulating the copied signal.
<b>Modulation Function</b>	Provides different signal forms.
<b>Frequency</b>	Specifies the frequency of the copied signal.
<b>Settings</b>	Offers settings for band filtering.
<b>Lower Limit</b>	Specifies the lower limit of the frequency band.
<b>Upper Limit</b>	Specifies the upper limit of the frequency band.
<b>Bandwidth</b>	Indicates the bandwidth of the signal.
<b>Stereo Flanger</b>	Gives the processed part of the audio file a more "stereo-like" sound
<b>Mix</b>	Mixes the original signal with the edited copy.
<b>Dry Signal</b>	Indicates the intensity of the original signal.
<b>Effect</b>	Specifies the intensity of the edited signal.

### 8.2.12 Pitch Bend

The **Pitch Bend** effect changes the pitch over the length of the audio file with the help of a "speed curve". The length of the audio file can be changed or retained.

<b>Graphic</b>	Shows the pitch over the length of the audio file.
<b>Pitch Range</b>	Sets the y-axis of the graphic. The higher the value, the more noticeably the pitch can be changed.
<b>Keep Length</b>	Maintains the length of the audio file when the check box is enabled.

### 8.2.13 Pseudo Reverse

The **Pseudo-Reverse** does not reverse the entire audio file, but rather divides it into small sequences that are played back in reverse order in "normal" direction . This means that the content of the audio file can still be recognized and creates the effect of reversing the order of play.

<b>Reverse Duration</b>	Indicates how long the sequences should be to be played in reverse.
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### 8.2.14 Re-analogue

The **Re-Analogue** effect adds effect to the audio file that make it sound artificially older.

<b>Noise</b>	Adds noise to the audio file.
<b>Levels</b>	Specifies the intensity of the noise.

<b>Retro-Radio</b>	Makes the audio file sound slightly distorted, similar to the effect of an old radio.
<b>Levels</b>	Specifies the intensity of the distortion effect.
<b>Gramophone</b>	Adds the effect of scratches and dust on an old record.
<b>Clicks</b>	Specifies the frequency and intensity of scratches as on a vinyl record.
<b>Crackle</b>	Specifies the frequency and intensity of crackle as on a vinyl record.
<b>Source</b>	Offers a choice of different record types.
<b>Humming</b>	Adds a low frequency hum
<b>Levels</b>	Indicates the intensity of the hum.
<b>Overtone</b>	Specifies the number of overtones the frequency has.
<b>Curve</b>	Specifies the steepness of the transitions between high and low level. This setting make the hiss sound "scratchy".
<b>Frequency</b>	Specifies the hum frequency.

### 8.2.15 Reverb

**Reverb** creates a reverb effect.

<b>Reverb Time</b>	Specifies the duration of the reverb.
<b>Room Size</b>	Specifies the size of the imaginary room in which the reverb is to be generated.
<b>Brightness</b>	Specifies the brightness of the reverb.
<b>Mix</b>	Mixes the original signal with the edited copy.
<b>Dry Signal</b>	Indicates the intensity of the original signal.
<b>Effect</b>	Specifies the intensity of the edited copy of the signal.

### 8.2.16 Stutter

The **Stutter** effect allows there different stutter effects to be applied.

<b>Graphic</b>	Shows the length of the silence on the y axis and the signal length on the x axis.
<b>Silence Duration</b>	Specifies the length of silences or repetitions.
<b>Signal Duration</b>	Specifies the length of the signals to be repeated.
<b>Mode</b>	Provides three different stutter modes.
<b>Mute</b>	Plays back the audio file in mute mode. The file is played for the period set using the <b>Signal Duration</b> control and muted for the period set with the <b>Silence Duration</b> control. The file retains its file length.
<b>Stretch</b>	Plays back the audio file in <b>stretch</b> mode. The file is played for the period set using the <b>Signal Duration</b> control and muted for the period set with the <b>Silence Duration</b> control. The length of the file changes because after muting at the appropriate place in

	the file, playback resumes where the last playback ended.
<b>Repeat</b>	Plays back the audio file in Repeat mode. The file is played back for the length of time set using the <b>Signal Duration</b> control. The same section of the audio file is then played again for the length of time set with the <b>Silence Duration</b> control. After this section has been played again, playback resumes at the point at which the playback specified by the signal length ends, and so on.

### 8.2.17 Surround Expansion

The **Surround Expansion** effect is only available if you are editing a Surround audio file (5.1 or 7.1). This offers advanced Surround Sound settings.

<b>Expansion</b>	Indicates the degree of expansion.
<b>Front Channels</b>	Extends the expansion to include the front channels.
<b>Side Channels</b>	Extends the expansion to include the side channels.
<b>Surround Channels</b>	Extends the expansion to include the Surround channels.

### 8.2.18 Surround Reverb

The **Surround Reverb** allows reverb effects to be added to the audio file, making it sound as if it was recorded under different spatial conditions.

<b>Room Dimension</b>	Allows you to set the dimensions of the room in which the audio source is to be located.
<b>Graphic</b>	Visualizes the changes to the room dimensions.
<b>Width</b>	Changes the width of the room.
<b>Depth</b>	Changes the depth of the room.
<b>Height</b>	Changes the height of the room.
<b>Room Parameters</b>	Allows you to set the surface and air damping properties of the room in which the audio source is to be located.
<b>Air Damping</b>	Specifies the level of damping by the air.
<b>Surface Material</b>	Specifies the characteristic surface material of the room.
<b>Output</b>	This offers advanced Surround Reverb settings.
<b>Early Reflections</b>	Indicates the distance between the audio source and the listener.
<b>Late Reflections</b>	Indicates the reverb of the audio source in the room
<b>Dry Gain</b>	Indicates the intensity of the original signal.

### 8.2.19 Voice Modification

The **Voice Modification** effect mainly allows the voice in an audio file to be manipulated.

<b>Envelope</b>	Provides setting options for frequencies.
<b>Graphic</b>	Changes the input and output frequency of the audio file. You can change the straight lines using the handles. In the graphic, the y axis represents the output frequency and the x axis the input frequency.
<b>Scaling</b>	Moves the elements that form the voice
<b>Pitch</b>	Used to set the pitch.
<b>Interval</b>	Changes the interval in the audio file.
<b>Fine-tune</b>	Permits fine tuning if retaining the original audio file length causes distortion due to the interval and patch changes.
<b>Time</b>	Offers options for changing the playback time of the audio file.
<b>Dilate</b>	Specifies whether the length of the audio file is to vary or whether the original length is to be retained.
<b>Mode</b>	Offers a variety of change modes.
<b>Normal</b>	Applies the effects to the unchanged audio file.
<b>Robotize</b>	Adds a robot-like quality to the already activated effects.
<b>Whisper</b>	Adds a whisper-like quality to the already activated effects.

### 8.2.20 Wah-Wah

The **Wah-Wah** effect allows you to distort the recording of a guitar with the characteristic Wah-Wah effect device.

<b>Modulation</b>	Offers frequency modulation settings..
<b>Modulation Frequency</b>	Specifies the frequency of the modulation.
<b>Modulation Function</b>	Offers several forms of the modulation signal to choose from.
<b>Mix</b>	Mixes the original signal with the edited copy.
<b>Dry Signal</b>	Indicates the intensity of the original signal.
<b>Effect</b>	Specifies the intensity of the edited signal.
<b>Filters</b>	Offers a variety of filters.
<b>Lower Limit</b>	Defines the lower limit for the frequency.
<b>Upper Limit</b>	Defines the upper limit for the frequency.
<b>Bandwidth</b>	Defines the bandwidth of the frequency.
<b>Feedback</b>	Specifies the number of copied signals..

## 8.3 Enhancement

### 8.3.1 Band Extrapolation

**Band Extrapolation** enhancement allows certain frequencies to be emphasized or suppressed.

<b>Spectral Remixer</b>	Mixes high, low and original frequencies.
<b>High Frequency</b>	Indicates the intensity of the high frequency.
<b>Dry Signal</b>	Indicates the intensity of the original signal.
<b>Low Frequency</b>	Indicates the intensity of the low frequency.
<b>Filters</b>	Amplifies high and low frequencies.
<b>High Frequency</b>	Indicates the frequency above which high frequencies are to be amplified.
<b>Low Frequency</b>	Indicates the frequency below which low frequencies are to be amplified.

### 8.3.2 Camera Denoiser

**Camera Denoiser** enhancement reduces buzz and other background noise from camera recordings in particular.

<b>Noise Reduction Level:</b>	Displays the signal in graphical form.
<b>Reduction Level</b>	Specifies the extent to which interfering noises are to be filtered out.

### 8.3.3 DC Offset Correction

**DC offset correction** improves recordings from poorly calibrated equipment (not centered around the zero point).

### 8.3.4 Declicker

**DeClicker** enhancement allows audio files to have noises such as clicks or crackle removed.

<b>Declicker</b>	Removes interfering noises such as clicks, which can be caused by scratches on records for example, from audio files.
<b>Detection Value</b>	Indicates how strong interfering noises must be if it is to be recognized and filtered out.
<b>Maximum Length</b>	Indicates the maximum length of time for which an interfering noise is to be filtered.
<b>High Quality</b>	Offers higher filtering quality. However, this setting is very processor-intensive.
<b>Decrackle</b>	Removes interfering noises such as crackle, which can be caused by dust or needle sounds from the audio file.

<b>Detection Value</b>	Indicates how strong interfering noises must be to be recognized and filtered out.
<b>Reduction Level</b>	Specifies the extent to which interfering noises are to be filtered out.
<b>Automatic restoration</b>	Automatically sets the optimum values for both areas. Click the check boxes for the areas to be adjusted and activate the <b>Automatic Restore</b> option.

### 8.3.5 Declipper

The **DeClipper** enhancement adds amplitude peaks that were higher than the value 1 and were therefore cut off when being imported into Nero WaveEditor.

<b>Detection Value</b>	Specifies the volume at which removed amplitude peaks should be reattached.
<b>Gain Modification</b>	Reattaches the removed amplitude peaks. This should not be set too high because the peaks would otherwise be removed again after the file has been saved.


### 8.3.6 DeHum

The **DeHum** enhancement suppresses humming noises in the audio file

<b>Hum Reduction</b>	Displays the four notch filters.
<b>Automatic Hum Detection</b>	Automatically sets the optimum values for all filters.
<b>Dehum Filter Settings</b>	Offers various filters to suppress hum.
<b>Filters</b>	Offers four different notch filters. These can be defined with the controls. The four notch filters can also be linked with the <b>Link Filter</b> radio button. In this case all changes by the controls apply to all filters..
<b>Frequency</b>	Specifies the frequency of the hum that is to be filtered.
<b>Emphasis</b>	Specifies the extent to which hum is to be suppressed.
<b>Width</b>	Specifies whether the range of the notch filter rises and falls steeply or gently.

### 8.3.7 Filter Toolbox


The **Filter Toolbox** enhancement allows you to define your own audio filters.

<b>User drawn filter response</b>	Activates the option for changing the graphic itself using handles.
<b>Graphic</b>	Allows you to define a filter yourself by means of adjustable curves.
	Switches between a linear and logarithmic scale for the limiting frequency graphic.

<b>Bandpass Filter</b>	Adds a band-pass filter that allows a certain frequency range to be exceeded.
<b>Upper Limit</b>	Specifies the upper frequency limit for the bandpass filter.
<b>Lower Limit</b>	Specifies the lower frequency limit for the bandpass filter.
<b>Notch Filters</b>	Inserts up to three notch filters and bandpass stops that prevent a particular frequency range from being exceeded.
<b>Center</b>	Specifies the frequency of the relevant notch filter.

### 8.3.8 Noise Reduction

The **Noise Reduction** enhancement suppresses distracting noise in an audio file.

<b>Spectral Subtraction Profile</b>	Maps the interfering signal.
	Switches between a linear and logarithmic scale for the limiting frequency graphic.
<b>Gain Floor</b>	Specifies the level of noise reduction when some noise is to be retained.
<b>Reduction Level</b>	Specifies the level of noise reduction. Specifies the level of noise reduction.
<b>Mode</b>	Provides three different modes.
<b>Automatic Noise Analysis</b>	Automatically analyzes the audio file in relation to noise.
<b>Freeze</b>	Fixes the noise curve in the spectral subtraction profile and uses this as a reference signal.
<b>Editable Noise Curve</b>	Inserts handles into the noise curve in the spectral subtraction profile; these can be used to edit the curve.
<b>Noise Print</b>	This is automatically activated after the implementation of the noise analysis and after the first time the noise suppression is called. The noise curve generated by the noise analysis can be edited.
<b>Residual Output</b>	Only plays back the noise signal.

### 8.3.9 Noise Analysis

The **Noise analysis** enhancement uses a marked area in the audio file as a noise reference sound. This reference sound is then used in the **noise suppression** sound optimization to suppress the noise.

## 8.4 Changing the sound of an audio file

To change the sound of an audio file with tools , effects and sound optimizing tools, proceed as follows:

1. Mark the area of the audio file where you want to change the sound.
  - ➔ The marked area will be highlighted in a different color.
2. Click on whichever of the following menus you require:
  - **Tools** > required entry
  - **Effects** > required entry
  - **Enhancement** > required entry
  - ➔ The relevant window is opened.
3. You can decide the required settings in the open window.
4. Click on the **OK** button.
  - ➔ You have changes the sound of the highlighted part of the audio file.



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## 11 Contact Information

Nero WaveEditor is a product of Nero AG.

# nero WAVE((( )))EDITOR 4

Nero AG  
Im Stöckmädle 13-15  
76307 Karlsbad  
Germany

**Web:** [www.nero.com](http://www.nero.com)  
**Help:** <http://support.nero.com>  
**E-mail:** [techsupport@nero.com](mailto:techsupport@nero.com)  
**Fax:** +49 724 892 8499

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