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Manual

Nero WaveEditor

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Table of contents

1 Start Successfully

1.1 About the Manual

This manual is intended for all users who want to learn how to use Nero WaveEditor. It is process-based and explains how to achieve a specific objective on a step-by-step basis.

To make best use of this documentation, please note the following conventions:

	Indicates warnings, preconditions or instructions that have to be precisely followed.
	Indicates additional information or advice.
1. Start …	The number at the beginning of a line indicates a prompt for action. Carry out these actions in the order specified.
	Indicates an intermediate result.
	Indicates a result.
OK	Indicates text passages or buttons that appear in the program interface. They are shown in boldface.
(see…)	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 This Application

Nero WaveEditor allows you to record music, and edit the respective audio files using various filters and sound enhancement methods. You can then burn these optimized audio files using Nero Burning ROM or Nero Express.

Nero WaveEditor allows you to edit the audio files in real time without damaging the original file. Thanks to an internal reference-based audio format, the editing history is also saved so that changes can be undone. Various effects (e.g. chorus, delay, flanger, reverb), numerous tools (e.g. stereo processor, equalizer, noise gate), sophisticated improvement algorithms (band extrapolation, noise suppression, declicker) as well as various filters and tools in Nero WaveEditor assist you in editing your files.

2 Starting the Program

To start Nero WaveEditor, proceed as follows:

1. Select **Start** (the start icon) > (**All**) **Programs** > **Nero** > **Nero 11** > Nero WaveEditor.

➡ The Nero WaveEditor window is opened.

Additionally, Nero WaveEditor can be started from the **Welcome Application**.

➡ You have started Nero WaveEditor.

2.1 Configuration

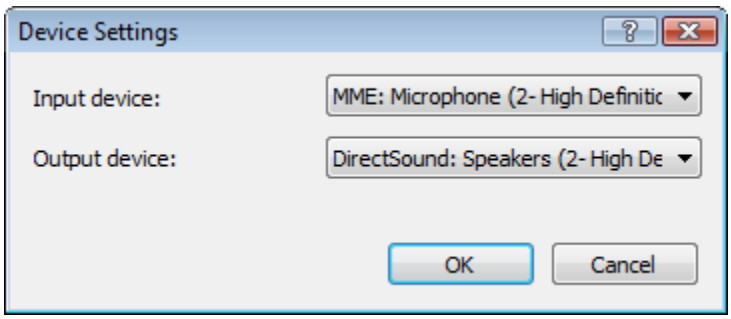
You can configure Nero WaveEditor to suit your needs. For this purpose the **Device Settings**, **Editor Options** and **Audio Format Settings** are available to you.

You reach the different setting windows via the **Options** entry in the menu bar.

2.1.1 Device Settings

In the **Device Settings** window of Nero WaveEditor it is possible to make determinations for the audio input and output.

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



Device Settings window

The following drop-down menus are available in the **Device Settings** window:

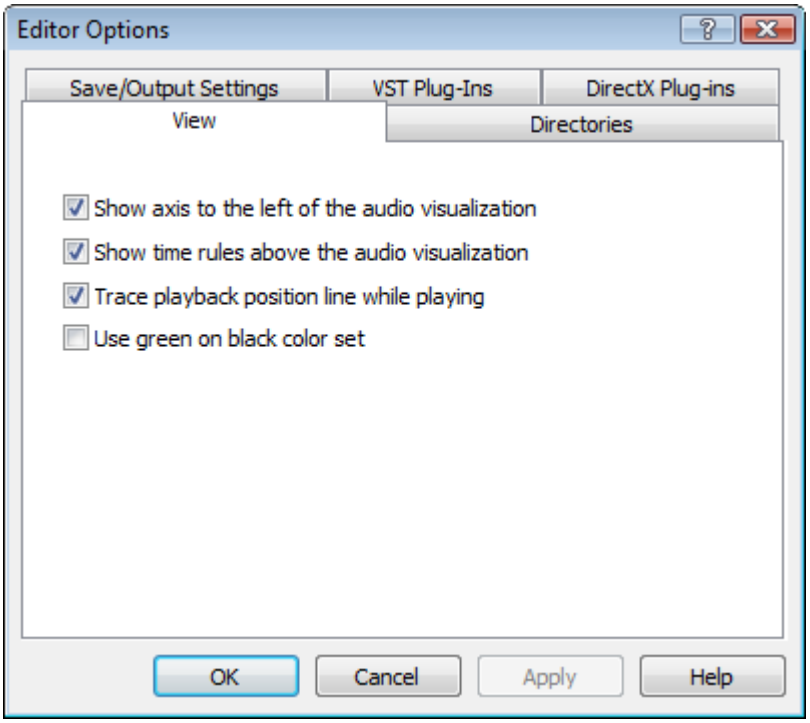
Input device	Specifies the audio device for the audio input (e.g. a microphone).
Output device	Specifies the audio device for the audio output (e.g. speakers).

2.1.2 Editor Options

In the Nero WaveEditor **Editor Options** window, it is possible to make output and saving settings as well as determine aspects of display and plug-ins on various tabs.

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

2.1.2.1 View Tab

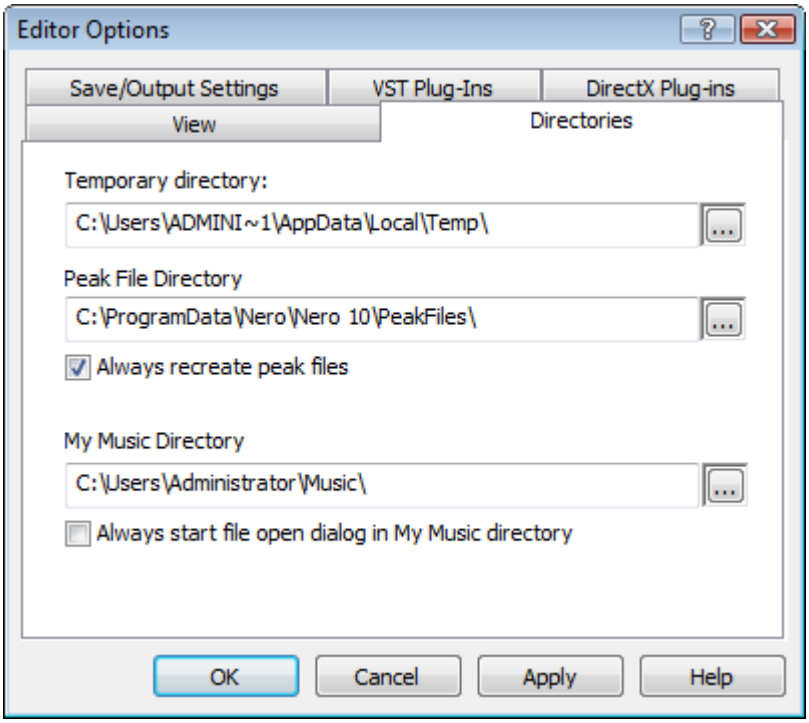


View tab

The following check boxes are available on the **View** tab:

Show axis to the left of the audio visualization	Displays a percentage axis to the left of the peak file of the audio file. The percentage axis shows the alignment of the frequency in the positive as well as the negative percentage area.
Show time rules above the audio visualization	Displays a time axis above the peak file of the audio file. The time axis shows the duration of the audio file in hours, minutes, seconds and milliseconds.
Trace playback position line while playing	Uses a black line to show the position of the playback in the audio file.
Use green on black color set	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.

2.1.2.2 Directories Tab

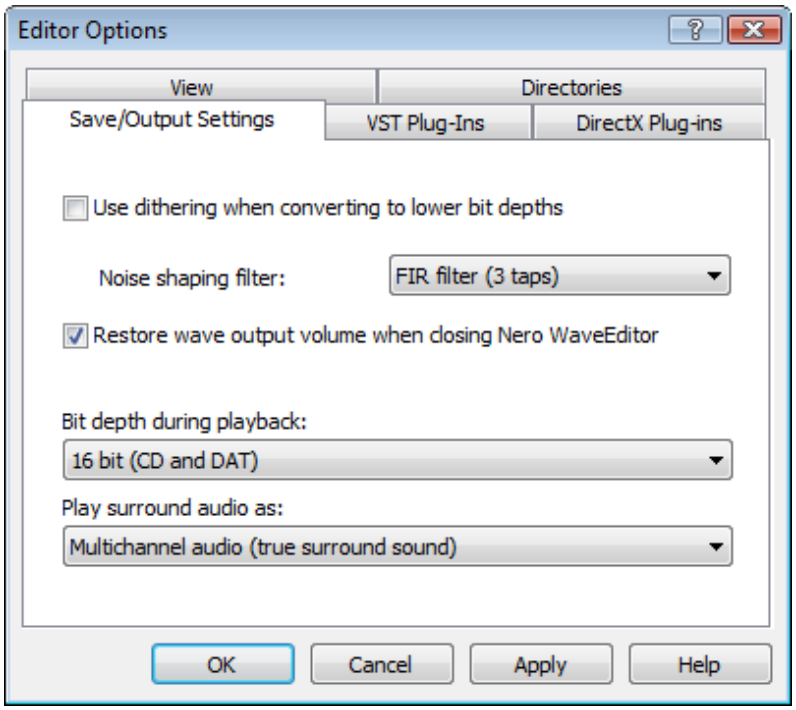


Directories tab

The following setting options are available on the **Directories** tab:

Input field **Temporary directory**	Defines the folder in which temporary files are stored. The folder should be located on a drive with plenty of storage space.
Input field **Peak File Directory**	Specifies the folder where peak files are stored. Peak files are cache files that Nero WaveEditor uses to open audio files more quickly. The folder should be located on a drive with ample storage space.
Check box **Always recreate peak files**	Always creates a new peak file when an audio file is opened. Otherwise, the peak files are stored temporarily in a directory and are called up again there.
Input field **My Music Directory**	Specifies the default folder where files are stored.
Check box **Always start file open dialog in My Music directory**	When calling the **Open** window, the system will always first show the folder that is specified in the **My Music direcory** text box.
Button ...	Opens a window where the folder can be selected for the respective files.

2.1.2.3 Save/Output Settings Tab



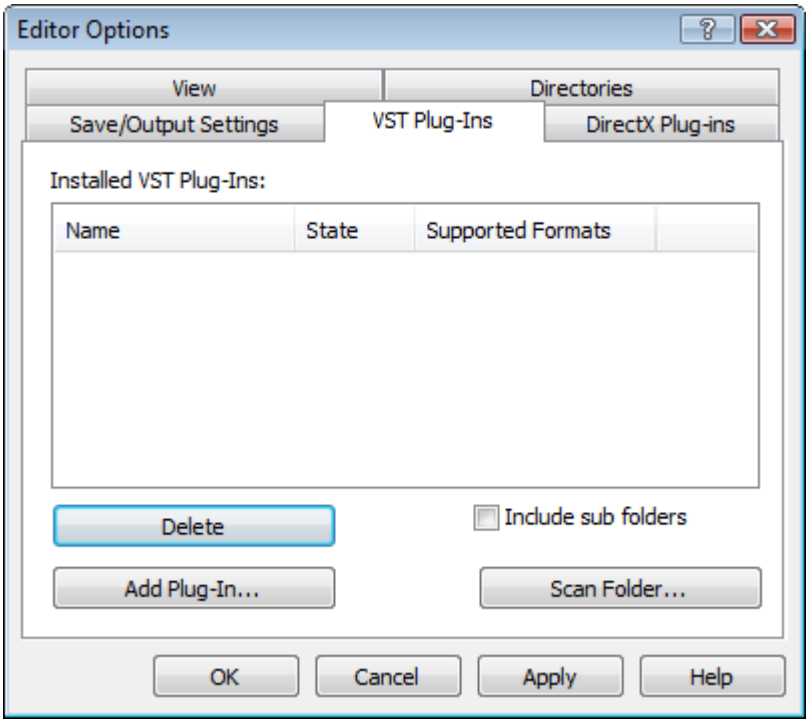
Save/Output Settings tab

The following setting options are available on the **Save/Output Settings** tab:

Check box **Use dithering when converting to lower bit depths**	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.
Drop-down menu **Noise shaping filter**	Specifies the type of noise shaping. **IIR filter (2nd order)**: Infinite Duration Impulse Response. Uses IIR filter. IIR filters can provide an infinitely long and continuous impulse response. In general they achieve a better subjective audio quality than FIR filters do, however they have higher levels of interference energy outside of the audible range. 2nd order means that sound is attenuated by 12 dB. **FIR filter (3 taps):** Finite Impulse Response filter. Uses FIR filters. FIR filters possess a pulse response with guaranteed finite length. This entry is selected by default.
Check box **Restore wave output volume when closing Nero WaveEditor**	Restores the volume of the audio file when Nero WaveEditor is closed.

Drop-down menu **Bit depth during playback**	Specifies the bit depth during the playback of the loaded audio file.
Drop-down menu **Play surround audio as**	Specifies how surround audio is played. **Multichannel audio**: Plays back surround audio with all channels. **Stereo using Nero HeadPhone (Virtual Surround)**: Plays back surround audio filtered down as stereo, with a virtual surround effect generated for headphones. **Stereo with Nero VirtualSpeakers (virtual surround)**: Plays surround audio filtered down as stereo, whereby a virtual sound effect is generated for speakers.

2.1.2.4 VST Plug-ins Tab



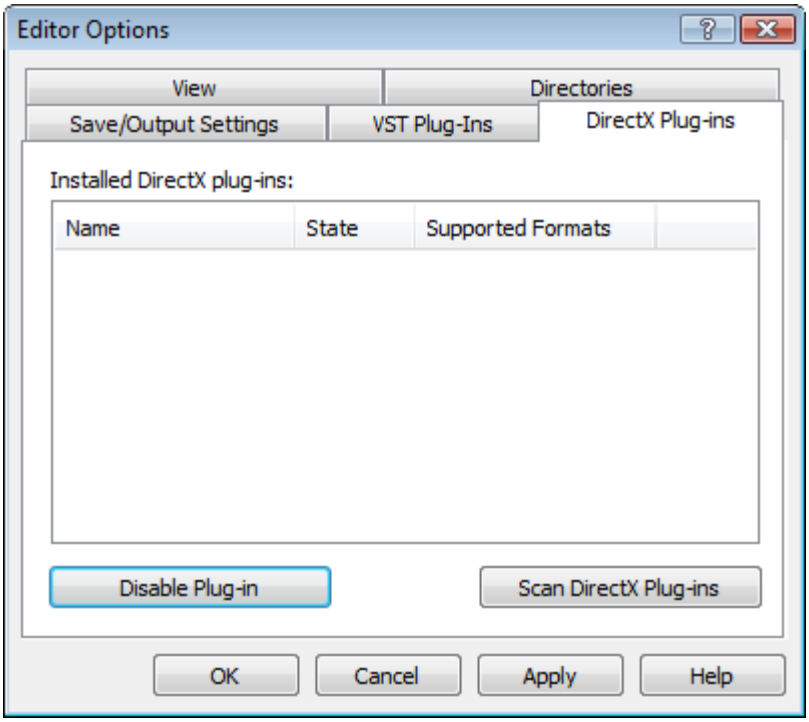
VST Plug-ins tab

The following setting options are available on the **VST Plug-ins** tab:

Display area **Installed VST Plug-ins**	Shows the currently installed VST plug-ins.

Button **Delete**	Deletes the selected VST plug-in.
Button **Add Plug-in**	Opens the **Open** dialog box. Installs a new VST plug-in.
Check box **Include sub folders**	Searches for new VST plug-ins in the specified folder and sub folders.
Button **Scan Folder**	Opens the **Open** dialog box. Searches for new VST plug-ins in the specified folder.

2.1.2.5 DirectX Plug-ins Tab



DirectX Plug-ins tab

The following setting options are available on the **DirectX Plug-ins** tab:

Display area **Installed DirectX Plug-ins**	Shows the currently installed DirectX Plug-ins.
Button **Disable Plug-in**	Disables the marked DirectX Plug-in.

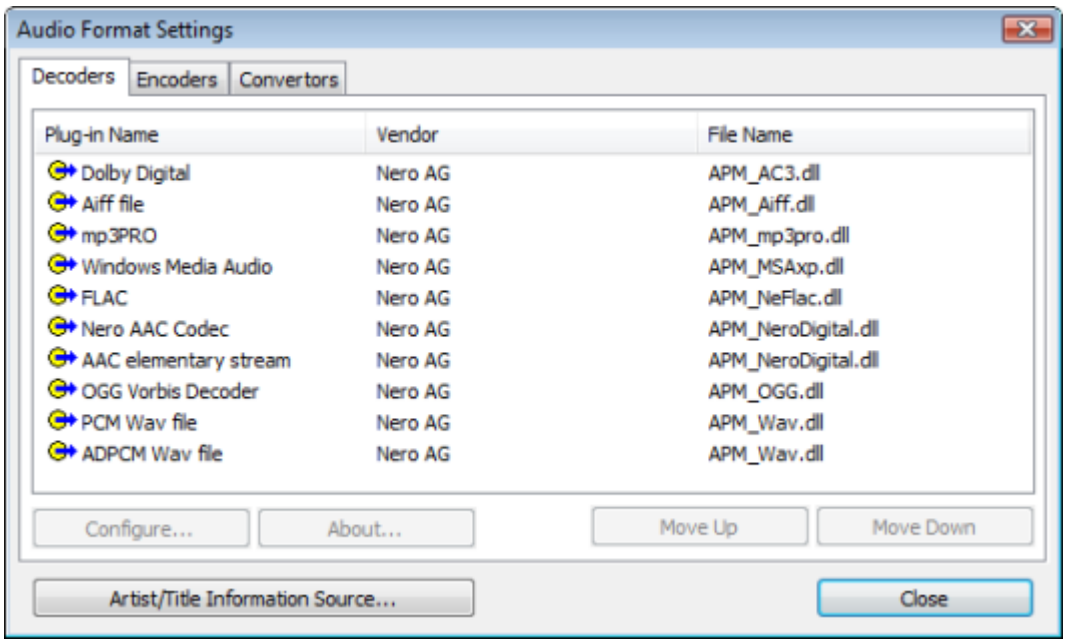
Button **Scan DirectX Plug-ins**	Carries out an intensive search for DirectX Plug-ins.

2.1.3 Audio Format Settings

In the **Audio Format Settings** window from Nero WaveEditor you can set various definitions for decoders, encoders and converters on different tabs.

You can open this window via the **Options** > **Audio Format Settings** entry in the menu bar.

2.1.3.1 Decoders Tab



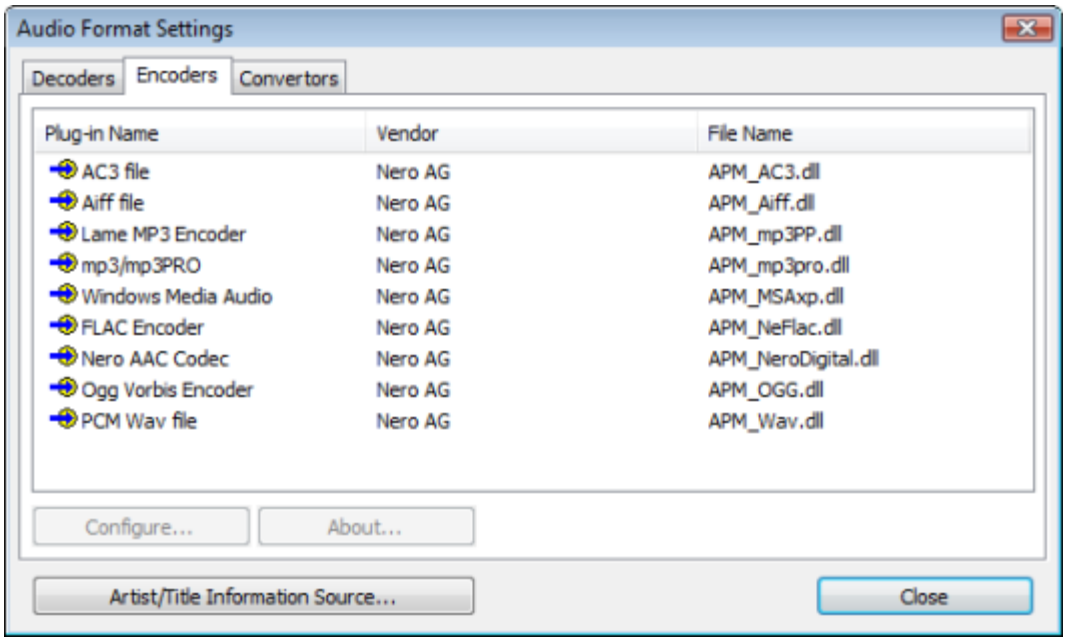
Decoders tab

The following setting options are available on the **Decoders** tab:

Display area **Decoder Plug-ins**	Shows the available decoders.
Button **Configure**	Opens a window where additional settings can be made for the selected decoder. This button is not available for all decoders.
Button **About**	Opens the **About** window where information about the selected decoder is displayed. This button is not available for all decoders.

Button **Move Up**	Moves the decoder up one entry.
Button **Move Down**	Moves the decoder down one entry.
Button **Artist/Title Information Source**	Opens the **Get Artist / Title Information** window where you can specify the source from which information relative to artist and title will be read.

2.1.3.2 Encoders Tab



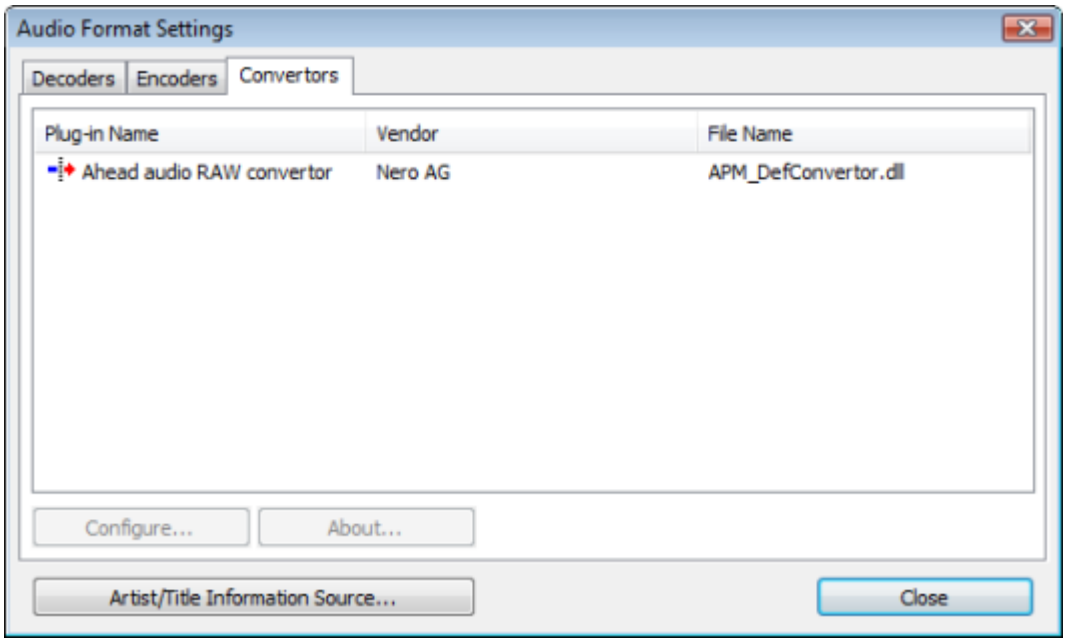
Encoders tab

The following setting options are available on the **Encoders** tab:

Display area **Encoder Plug-ins**	Shows the available encoders.
Button **Configure**	Opens a window where additional settings can be made for the selected encoder. This button is not available for all encoders.
Button **About**	Opens the **About** window where you can view information about the selected encoder. This button is not available for all encoders.

Button **Artist/Title Information Source**	Opens the **Get Artist / Title Information** window where you can specify the source from which information about artist and title will be read.

2.1.3.3 Converters Tab



Converters tab

The following setting options are available on the **Converters** tab:

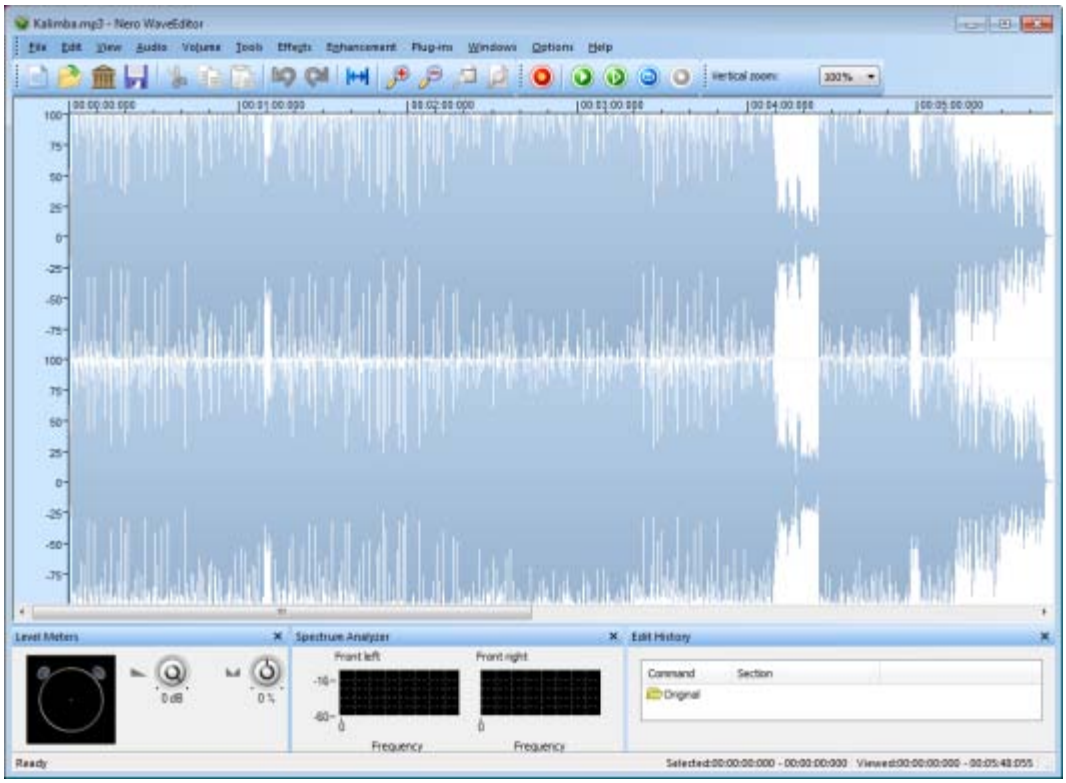
Display area **Converter Plug-ins**	Shows the available converters.
Button **Configure**	Opens a window where you can make additional settings for the selected converter. This button is not available for all converters.
Button **About**	Opens the **About** window where you can view information about the selected converter. This button is not available for all converters.
Button **Artist/Title Information Source**	Opens the **Get Artist / Title Information** window where you can specify the source from which information about artist and title will be read.

3 User Interface

3.1 Main Window

The main window is displayed when Nero WaveEditor is started. It is divided into a menu bar and toolbar and various displays at the bottom of the window.

An 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.



Main window

3.1.1 Menu Bar

The following menus are available in the menu bar:

File	Opens the **File** menu, containing file functions such as opening, saving and closing that you are already familiar with from Windows.
Edit	Opens the **Edit** 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 pause detection.

View	Opens the **View** menu offering the possibilty of individually adjusting the menu bar and toolbar, and enlarging or reducing the view of the project. In addition, you can change the view of the audio file, show and hide windows and display information about the loaded audio file.
Audio	Opens the **Audio** menu that offers the possibility of recording, playing and stopping audio files.
Volume	Opens the **Volume** menu with the option of changing the volume of the opened audio file. You can also choose from different **Fade In** and **Fade Out** methods.
Tools	Opens the **Tools** menu that offers the possibility of editing the opened audio file using a variety of tools.
Effects	Opens the **Effects** menu with the option to edit the opened audio file using a variety of effects.
Enhancement	Opens the **Enhancement** menu with the option to edit the sound of the opened audio file.
Plug-ins	Opens the **Plug-ins** menu with the option to carry out settings for DirectX as well as for VST plug-ins.
Windows	Opens the **Windows** menu, which allows all windows to be closed at once.
Options	Opens the **Options** menu with the option to configure the program.
Help	Opens the **Help** menu that offers the possibility of calling up online help and viewing the version number and other registration data.

3.1.1.1 Fade Out And Fade In Methods

The following setting options are available in the **Volume > Fade Out** entry in the menu bar:

	Fade out **Sinusoidal** .
	Fade out **Exponential** .

	Fade out **Linear** .
	Fade out **Logarithmic** .

The following setting options are available in the **Volume > Fade In** entry in the menu bar:

	Fade in **Sinusoidal** .
	Fade in **Exponential** .
	Fade in **Linear** .
	Fade in **Logarithmic** .

3.1.2 Toolbar Area

The toolbar area can consist of up to three toolbars: the **Standard Toolbar**, the **Transport Toolbar**, and the **Vertical Zoom Bar**. You can customize the toolbar area by selecting the desired toolbars via the **View** menu.

The following buttons are available in the **Standard Toolbar**:

	Creates an audio file.
	Opens an existing audio file.
	Opens Nero MediaBrowser which allows you to easily find, view and access media files and add them to your project.
	Saves the audio file.
	Cuts out the selected section and saves it to the clipboard.

	Copies the selected section and saves it to the clipboard.
	Pastes the contents of the clipboard at the selected point.
	Undoes the last action.
	Restores the last action that you have undone.
	Selects the entire audio file.
	Zooms into the audio file.
	Zooms out of the audio file.
	Zooms into the audio file so that the selected section is displayed in a manner that fills the screen.
	Zooms out of the audio file in such a manner that the entire project is displayed.

The following buttons are available in the **Transport Toolbar**:

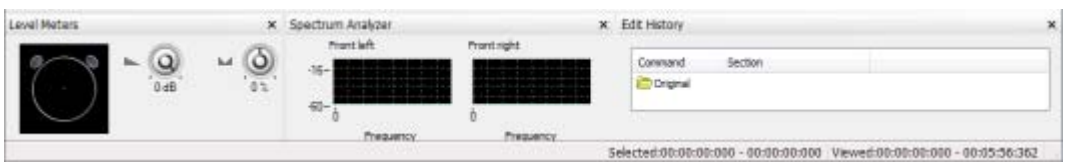
	Opens the **Recording Console** window.
	Plays the highlighted section of the audio file.
	Plays the complete audio file.
	Plays the audio file in a loop when clicking the **Play** button.
	Stops playback of the audio file.
	Pauses playback of the audio file. Only available while playing an audio file.

The following drop-down menu is available in the **Vertical Zoom Bar**:

Vertical zoom	Allows you to select the vertical zoom factor of the audio file.

3.1.3 Display Area

At the bottom of the window, various displays can be opened via the **View** menu.



Display area

The following entries are available in the **View** menu:

Level Meters	Opens the **Transport** 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 speakers.
Spectrum Analyzer	Opens the **Spectrum Analyzer** window in which the frequencies of the audio file are displayed graphically during playback.
Edit History	Opens the **Edit History** 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.
Status Bar	Displays the **Status Bar** which shows the duration of selected audio sections and the whole audio file at the bottom of the screen.

3.1.4 Nero MediaBrowser

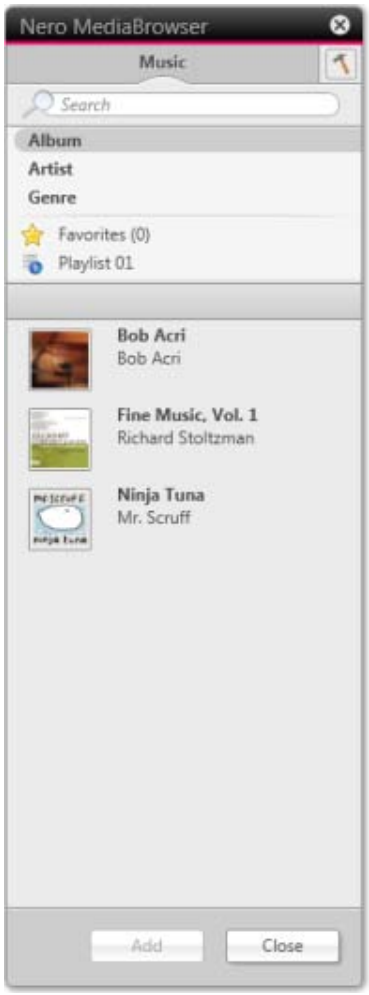
Nero MediaBrowser is a tool which you can use to easily find, view and access media files and add them to your project.

More precisely, with Nero MediaBrowser you can access a media library which contains all your media files that were indexed by Nero Kwik Media. Nero MediaBrowser is designed to be accessed in several Nero applications.

Nero MediaBrowser and the media library come with Nero Kwik Media and are installed together. You will find further information in the Nero Kwik Media manual.

Nero MediaBrowser can be opened via the  icon. Although Nero MediaBrowser can be moved freely around your desktop, it is part of Nero WaveEditor.

Nero MediaBrowser displays only media files which can actually be used in the relevant Nero WaveEditor project. To add media files to your project, select the media files in Nero MediaBrowser and click the **Add** button.



Nero MediaBrowser

The browsing task bar is the starting point for browsing Nero MediaBrowser. The categories (**Photos & Videos**, **Music** and **Projects**) are the same as featured in Nero Kwik Media. Each of the categories offers a **search bar**. It is only possible to search within one category at the same time. When one of the categories is clicked, the corresponding browsing area is displayed below.

There are different views available for each category: Clicking one of the entries in the upper part of the list (for example **Timeline**) displays the same view as when clicking the corresponding tabs in Nero Kwik Media. Clicking one of the collections in the lower part of the list displays the collection contents made within Nero Kwik Media. When one of the list items is clicked in Nero MediaBrowser, the corresponding content is displayed in the content area below.

A **dynamic scroll bar** is used in the content area. If the scroll thumb is dragged in a direction, the content will be constantly scrolled in this direction. The scrolling speed increases the further the scroll thumb is dragged from the center. If the scroll thumb is released it jumps back to the center position and stops the scrolling.

The following views are available for the **Photos & Videos** category:

Entry **Timeline**	Displays all photos and videos sorted in chronological order by creation date.
Entry **Faces**	Displays all photos in which faces of persons have been detected and named listed in alphabetical order. Unconfirmed or unnamed faces are not displayed. Faces are grouped into stacks; you can access one of the stacks by double clicking it. Nero Kwik Faces has to be installed.
Collection **Marked**	Displays the currently marked content. Refers to **Marked** in the sidebar of Nero Kwik Media.
Collection **Album**	Displays the content of smart albums and user generated albums. Refers to **Photo & Video Albums** in the sidebar of Nero Kwik Media.
Collection **Person group**	Displays the content of user generated person groups. You can switch between full photo and faces only view with the / icon. Refers to **Faces** in the sidebar of Nero Kwik Media. Nero Kwik Faces has to be installed.

The following views are available for the **Music** category:

Entry **Album**	Displays all audio tracks sorted in alphabetical order by album.
Entry **Artist**	Displays all audio tracks sorted in alphabetical order by artist.
Entry **Genre**	Displays all audio tracks sorted in alphabetical order by genre.
Collection **Marked**	Displays the currently marked content. Refers to **Marked** in the sidebar of Nero Kwik Media.
Collection **Playlist**	Displays the content of user generated playlists. Refers to **Playlist** in the sidebar of Nero Kwik Media.

The following view is available for the **Projects** category:

Entry **Timeline**	Displays all projects sorted in chronological creation date order.

Collection **Slide Show**	Displays the content of user generated slide shows. Refers to **Slide Show** in the sidebar of Nero Kwik Media.
Collection **Photobook**	Displays the content of user generated photobooks. Refers to **Photobook** in the sidebar of Nero Kwik Media.

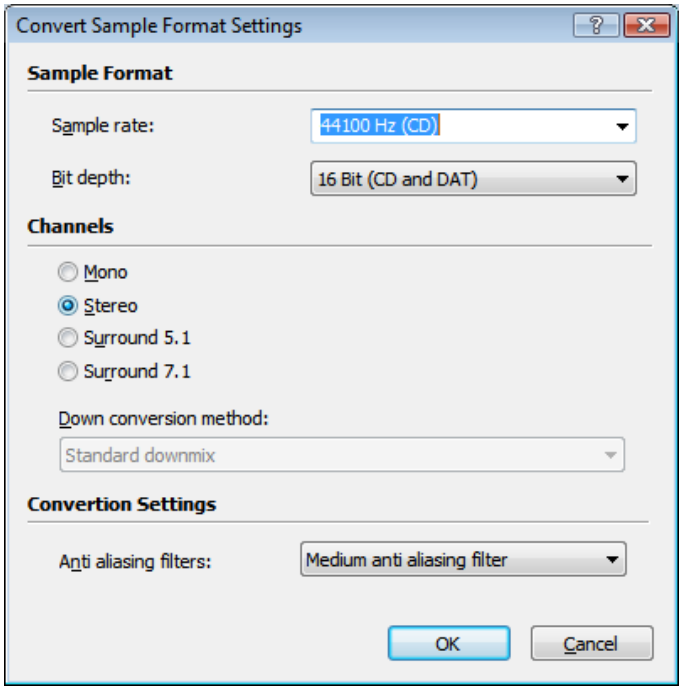
The **Options** window is opened when you click the button on the upper task bar. The options refer directly to Nero Kwik Media. The following setting option is displayed:

Library	Displays the **Library Manager** settings area. Three default folders (the Windows default folders) for **Photos**, **Music**, and **Videos** are available in the **Watched folders or drives** area from the start. If you want to add personal media folders, click the **Add** button and select the desired folder from the navigation tree. The library is refreshed when launching Nero Kwik Media. To delete a folder from the application's watchlist, click the button.

3.2 Sample Format Settings Window

Nero WaveEditor allows you to convert the sample format.

You reach the **Convert Sample Format Settings** window via the **Edit** > **Convert Sample Format** entry in the menu bar.



Convert Sample Format Settings window

The following drop-down menus are available in the **Sample Format** area:

Sample rate	Provides different sample rates for selection. The default rate is **44100 Hz (CD)**.
Bit depth	Provides different bit depths for selection. The default setting is **16-bit (CD and DAT)**.

The following setting options are available in the **Channels** area:

Option buttons **Channels**	Provides different output types for selection. With the selection of Surround 5.1 and 7.1 you have the option of creating a surround audio file with five or seven channels.
Drop-down menu **Down conversion method**	Converts a surround audio file into a normal stereo audio file, a stereo audio file with artificial surround sound for headphones or a stereo audio file with artificial surround sound for speakers. Only available with surround audio files.

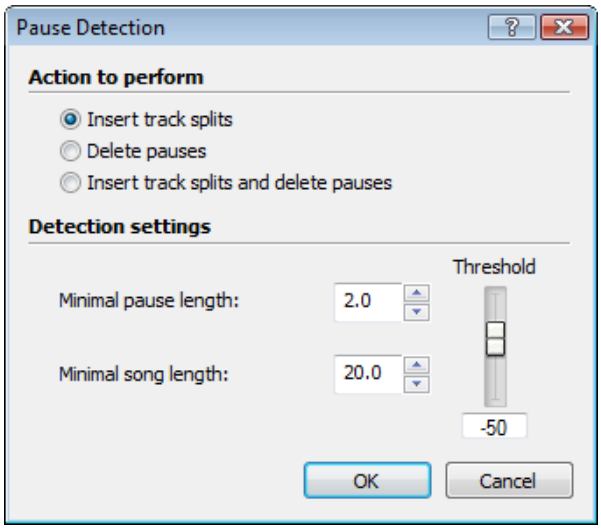
The following drop-down menu is available in the **Conversion settings** area:

Anti aliasing filters	This provides different kinds of anti-aliasing filters.

3.3 Pause Detection Window

Nero WaveEditor allows you to implement automatic pause detection for the audio file.

You reach the **Pause Detection** window via the **Edit** > **Pause Detection** entry in the menu bar.



Pause Detection window

The following option buttons are available in the **Action to Perform** area:

Insert track splits	Inserts tracksplits at the detected pauses.
Delete pauses	Deletes the detected pauses.
Insert track splits and delete pauses	Deletes the detected pauses and replaces them with tracksplits.

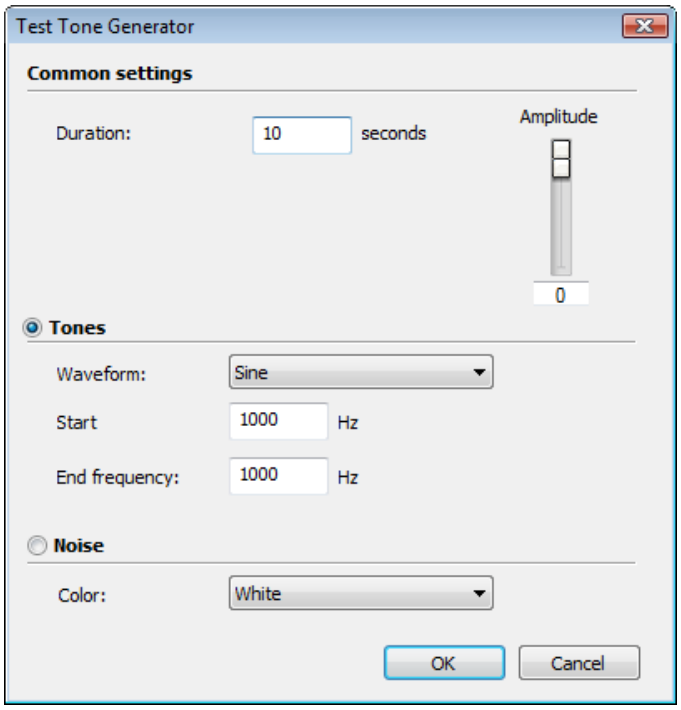
The following setting options are available in the **Detection Settings** area:

Input field **Minimal pause length**	Defines the minimum length of a pause in the audio file if it is to be detected automatically. The number is specified in seconds.
Input field **Minimal song length**	Defines the minimum length of a song if it is to be recognized as a whole song. The number is specified in seconds.
Slider **Threshold**	Defines the threshold for the volume below which the tracks of the audio file are detected as pauses.

3.4 Test Tone Generator Window

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

You reach this window via the **Edit** > **Insert Test Signal** entry in the menu bar.



Test Tone Generator window

The following setting options are available in the **Common settings** area:

Input field **Duration**	Specifies the duration of the test signal in seconds.
Slider **Amplitude**	Specifies the amplitude of the test signal both for sound and noise.

The following setting options are available in the **Tones** area:

Option button **Tones**	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.
Drop-down menu **Waveform**	Specifies the wave form that the test signal should have.
Input field **Start**	Specifies the start frequency of the test signal.
Input field **End frequency**	Specifies the end frequency of the test signal.

The following setting options are available in the **Noise** area:

Option button **Noise**	Defines that the test signal is reproduced as a noise. Also activates the area that defines the type of noise.
Drop-down menu **Color**	Specifies the type of noise. **White** is a loud noise, **Pink** a medium noise and **Brown** a quiet noise.

3.5 Filters

You can change the sound of an audio file in a variety of ways. For this purpose the **Tools**, **Effects** and **Enhancement** entries are available in the menu bar.

The following setting options are available in all sound change windows:

Button ▶	Plays the audio file changed by the filter.
Button ⏸	Stops playing.
Drop-down menu **Active Channels**	Provides the active channels for selection. You can switch the channels on and off separately.

Button **Bypass**	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.
Button **Process Offline**	Processes the change to the audio file offline. This enables the changed file to be played with a weaker processor without jerking.
Drop-down menu 	Provides both predefined and personally produced profiles for selection.
Button +	Creates a new profile with the current settings.
Button −	Removes the selected profile.

3.5.1 Tools

3.5.1.1 Deesser

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

The following sliders are available in the **Deesser** area:

Threshold	Specifies the level after which hiss is to be suppressed as a dB value. If this value is very low, even very quiet hiss is suppressed.
Attenuation	Specifies the extent to which hiss is to be damped if it is not filtered out completely.

The following sliders are available in the **Response Time** area:

Attack Time	Specifies how long the hiss has to be in order to be detected.
Release Time	Specifies for how long the hiss is to be filtered.

3.5.1.2 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.

The following setting options are available:

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

3.5.1.3 Equalizer

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

The following graph is available:

Frequency Response Graph	Shows the frequency response. The y-axis represents the amplitude and the x-axis the frequency.

The following setting options are available in the **Filter Settings** area:

Drop-down menu **Filter**	Selects the filters. The numbers in the **Filters** drop-down menu represent the squares in the **Frequency Response Graph** from left to right.
Slider **Center Frequency**	Indicates the distribution of the handles on the x-axis. You can enter the values (in Hz) of the center frequencies in the fields.
Slider **Bandwidth**	Indicates whether the bandwidth of the center frequency rises and falls steeply or gently. You can set a value between 0.1 and 3 octaves with the jog dial.
Slider **Gain**	Specifies the amplification of the signal on the y-axis of the curve in the diagram.

The following settings are available in the **Low Shelf** area:

Check box **Low Shelf**	Increases or decreases low frequencies.

Slider **Cut Off**	Allows the filter to start after a certain frequency.
Slider **Gain**	Specifies the degree of increase or decrease.

The following setting options are available in the **High Shelf** area:

Check box **High Shelf**	Increases or decreases high frequencies.
Slider **Cut Off**	Allows the filter to start after a certain frequency.
Slider **Gain**	Specifies the degree of increase or decrease.

3.5.1.4 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.

The following sliders are available:

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

The **Vocal Frequency Band** area specifies the frequency band of the voice. The following sliders are available:

Lower Frequency	Specifies the lower frequency limit for the voice. This is typically a value of 100 Hz.
Upper Frequency	Specifies the upper frequency limit for the voice. This is typically a value of 8000 Hz.

3.5.1.5 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.

The following sliders are available:

Threshold	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.
Attack Time	Specifies the time required to reopen the gate in milliseconds after the threshold has been exceeded, i.e. to restore the sound of the audio file.
Release Time	Specifies the time in milliseconds required to close the gate, i.e. to mute the audio file after the level has dropped below the threshold.

The following option buttons are available in the **Channel Mode** area:

Linked	If the **Linked** option button is enabled, the noise gate for both channels appears as soon as one or both of the two channels exceeds the threshold.
Independent	If the **Independent** option button is enabled, the noise gate closes or opens both channels independently when the threshold is reached. Only relevant for audio files in stereo format.

3.5.1.6 Pitch Tuning

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

The following setting options are available in the **Correction** area:

Check box **Correction**	Corrects incorrect sounds.
Bar **Corrected**	Shows the level of correction on the basis of the movement of the green arrow in percent.
Slider **Reference**	Specifies the reference sound used for correction.
Slider **Binding**	Specifies for how long the sound is to be corrected. The lower the value, the shorter the correction period for an incorrect sound.
Drop-down menu **Scale**	Provides a variety of scales for selection. The most commonly used scale in Europe is **Equally Tempered Chrome**.

The following setting options are available in the **Vibrato** area:

Check box **Vibrato**	Adds sound changes, both high and low. This causes the voice to "vibrate".

Slider **Frequency**	Indicates the frequency of the sound changes.
Slider **Depth**	Indicates the intensity of the sound change.

3.5.1.7 Stereo Processor

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

The **Left Out** area specifies the output intensity of the left speaker. The following sliders are available:

Left In	Specifies the intensity of the left input signal for the left speaker.
Right In	Specifies the intensity of the right input signal for the left speaker.

The **Right Out** area specifies the output intensity of the right speaker. The following sliders are available:

Left In	Specifies the intensity of the left input signal for the right speaker.
Right In	Specifies the intensity of the right input signal for the left speaker.

The following sliders are available in the **Stereo Settings** area:

Phase Offset	Compensates for differences in run-time between the left and right channel.
Stereo Broadening	Makes a mono recording sound like a stereo recording. This setting gives a stereo recording an even broader feeling.

3.5.1.8 Time Correction

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

The following setting options are available in the **Timescale Modification Factor** area:

Option button **Percentage**	Changes the playback speed in percent. The change can either be set on the slider or entered in the input field.
Option button **Beats per Minute**	Changes the playback speed in beats per minute (BPM). The change can be entered in the input field.
Drop-down menu **Optimization**	Specifies the type of music of the audio file to be altered, so as to optimize speed changes for this file.

3.5.1.9 Transpose

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

The following setting options are available:

Slider **Interval**	Changes the pitch in the audio file.
Slider **Fine-tune**	Permits fine tuning if retaining the original length causes distortion.
Check box **Maintain Original Length**	Retains the original length of the audio file.

3.5.2 Effects

3.5.2.1 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.

The following sliders are available in the **Modulation** area:

Depth	Specifies the degree of the change in pitch.
Frequency	Specifies the frequency of the change in pitch (oscillations).

The following slider is available in the **Delay** area:

Delay	Specifies the delay with which the copy is played in comparison with the original signal.

The following setting options are available in the **Filter** area:

Check box **Low Pass**	Activates a low pass filter.
Slider **Low Pass**	Reduces frequencies above the specified Hertz rate and allows low frequencies beneath the specified value to pass almost unfiltered.

The following sliders are available in the **Mix** area:

Effect	Mixes the original signal with the copied signal, indicating the intensity of the copied signal.
Dry Signal	Mixes the original signal with the copied signal, indicating the intensity of the original signal.

The following option buttons are available in the **Chorus** area:

Mono/Stereo	Gives the processed part of the audio file a more "mono-like" or "stereo-like" sound respectively.

3.5.2.2 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.

The following setting options are available:

Button **Select Impulse Response**	Allows you to open the source file for the impulse response from which the reverb effect for the audio file to be edited is generated.
Graph **Impulse Response Gain**	Displays the signal of the impulse response.
Graph **Gain**	Displays the frequency limit for the reverb. The y-axis of the curve specifies the gain of the reverb effect in the graph, while the x-axis shows the frequency.
Button 	Switches between a linear and logarithmic scale for the limiting frequency graphic.
Slider **Pre-Delay**	Specifies the length of time required by the sound to be deflected from an obstacle, thereby indicating the intensity of the echo.

The following sliders are available in the **Mix** area:

Dry Signal	Mixes the original signal with the copied signal, indicating the intensity of the original signal.
Effect	Mixes the original signal with the copied signal, indicating the intensity of the copied signal.

3.5.2.3 Delay

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

The following sliders are available in the **Delay** area:

Delay Time	Specifies the delay in playing back the copied signal.
Feedback	Specifies how many copies of the original signal are to be made.

The following sliders are available in the **Mix** area:

Dry Signal	Mixes the original signal with the copied signal, indicating the intensity of the original signal.
Effect	Mixes the original signal with the copied signal, indicating the intensity of the copied signal.

3.5.2.4 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.

The following setting options are available in the **Distortion** area:

Drop-down menu **Method**	Offers a variety of distortion options, e.g. an old megaphone.
Slider **Drive**	Indicates the intensity of the interference.
Slider **Hardness**	Specifies the hardness of the distortion. This can only be adjusted if the **Tube**, **Fuzz3** and **Variable clipping** entries have been selected in the **Method** drop-down menu.

The following setting options are available in the **Pre-Filtering** area:

Check box **Pre-Filtering**	Filters the original signal before it is distorted.
Slider **Lower Cutoff**	Specifies the lower limit of the frequency band for the original signal.
Slider **Upper Cutoff**	Specifies the upper limit of the frequency band for the original signal.

The following setting options are available in the **Post-Filtering** area:

Check box **Post-Filtering**	Filters the distorted signal.
Slider **Lower Cutoff**	Specifies the lower limit of the frequency band for the edited signal.
Slider **Upper Cutoff**	Specifies the upper limit of the frequency band for the edited signal.

The following sliders are available in the **Mix** area:

Dry Signal	Mixes the original signal with the copied signal, indicating the intensity of the original signal.
Effect	Mixes the original signal with the copied signal, indicating the intensity of the copied signal.

3.5.2.5 Doppler

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

The following setting options are available:

Graph	Shows the target and end point of the movement of the noise source. The listener is at the center of the graph. The pattern of the movement can be changed using the straight lines in the graph.
Slider **Diameter**	Specifies the diameters of the movement radius.
Slider **Duration**	Specifies the duration of the movement.

3.5.2.6 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.

The following setting options are available in the **Modulation** area:

Slider **Depth**	Modifies the copied signal and specifies the degree of the change in pitch.
Slider **Frequency**	Modifies the copied signal and specifies the frequency of the change in pitch.

The following setting options are available in the **Mix** area:

Slider **Dry Signal**	Mixes the original signal with the copied signal, indicating the intensity of the original signal.
Slider **Effect**	Mixes the original signal with the copied signal, indicating the intensity of the copied signal.

Check box **Stereo Flanger**	Gives the processed part of the audio file a more "stereo-like" sound.

3.5.2.7 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.

The following slider is available:

Aimed Gain	Specifies the degree of amplification.

3.5.2.8 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.

The following setting options are available:

Graph **Bit depth/sample rate**	Shows the change in the two sliders below the graph.
Slider **Bit Depth**	Specifies the bit depth. Audio CDs have a bit depth of 16, for example.
Slider **Sample Rate**	Specifies the sample rate. Audio CDs have a sample rate of 44100 Hz.

3.5.2.9 Modulation

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

The following setting options are available in the **Amplitude Modulation** area:

Check box **Amplitude Modulation**	Activates the settings options for amplitude modulation.
Graph **Modulation signal**	Shows the amplitude of the audio signal.
Slider **Frequency**	Specifies the frequency of the signal.

Slider **Amplitude Range**	Specifies the signal volume.
Drop-down menu **Modulation signal**	Selects the signal form that is displayed in the amplitudes modulation graph.
Check box **Blend Edges**	Balances different end and start values. Only activated for self-produced signals.

The following setting options are available in the **Frequency Modulation** area:

Check box **Frequency Modulation**	Activates the settings options for frequency modulation.
Graph **Modulation signal**	Shows the frequency of the audio signal.
Slider **Frequency**	Specifies the frequency of the signal.
Slider **Depth**	Specifies the depth of the signal.
Drop-down menu **Modulation signal**	Selects the signal form, for instance, sine, that is displayed in the frequency modulation graph.
Check box **Blend Edges**	Balances different end and start values. Only activated for self-produced signals.

Mix mixes the original signal with the modulated amplitude signal and the modulated frequency signal.

The following sliders are available in the **Mix** area:

Dry Signal	Indicates the intensity of the original signal.
Amplitude Modulated	Specifies the intensity of the signal with the modulated amplitude.
Frequency Modulated	Specifies the intensity of the signal with the modulated frequency.

3.5.2.10 Multi-Tap Delay

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

The following setting options are available:

Buttons **Active tap**	Provides several copies for selection. Each button represents one copy.
Graph **Gain**	Graphically represents the copies.
Slider **Delay**	Specifies the intervals at which copies are to be played.
Slider **Gain**	Specifies the volume/intensity of the copies.
Slider **Pan**	In the case of stereo files, this indicates the speaker on which the copies are to be heard.

The following setting options are available in the **Feedback** area:

Drop-down menu **Type**	Provides different filters for the copied signals for selection.
Slider **Feedback Gain**	Specifies the volume of the copies that are played after the time specified with the **Delay** slider.

The following sliders are available in the **Mix** area:

Dry Signal	Mixes the original signal with the edited copies, indicating the intensity of the original signal.
Effect	Mixes the original signal with the edited copies, indicating the intensity of the edited signal.

3.5.2.11 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.

The following setting options are available in the **Modulation** area:

Drop-down menu **Modulation Function**	Provides different signal forms.

Slider **Frequency**	Specifies the frequency of the copied signal.

The following setting options are available in the **Settings** area:

Slider **Lower Limit**	Specifies the lower limit of the frequency band.
Slider **Upper Limit**	Specifies the upper limit of the frequency band.
Slider **Bandwidth**	Indicates the bandwidth of the signal.
Check box **Stereo Flanger**	Gives the processed part of the audio file a more "stereo-like" sound

The following sliders are available in the **Mix** area:

Dry Signal	Mixes the original signal with the edited copy, indicating the intensity of the original signal.
Effect	Mixes the original signal with the edited copy, indicating the intensity of the edited signal.

3.5.2.12 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.

The following setting options are available:

Graph **Pitch**	Shows the pitch over the length of the audio file.
Slider **Pitch Range**	Sets the y-axis in the **Pitch** graph. The greater the value, the more noticeably the pitch can be changed.
Check box **Keep Length**	Retains the length of the audio file. The x-axis in the pitch (output length) graph is fixed.

3.5.2.13 Pseudo Reverse

The **Pseudo Reverse** effect does not reverse the whole audio file but divides it into small sequences. These are played in reverse direction in sequence in the forward direction. In this way the content of the audio file is still recognizable but gives the effect of reverse play-back.

The following option buttons are available in the **Reverse Duration** area:

Reverse Duration	Indicate how long the sequences should be to be played in reverse.

3.5.2.14 Re-analogue

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

The following setting options are available:

Check box **Hiss**	Adds noise to the audio file.
Slider **Level**	Specifies the intensity of the noise.
Check box **Retro Radio**	Makes the audio file sound slightly distorted, similar to the effect of an old radio.
Slider **Level**	Specifies the intensity of the distortion effect.
Check box **Clicks**	Adds the effect of scratches and dust on an old record.
Slider **Clicks**	Specifies the frequency and intensity of scratches as on an old record.
Slider **Crackle**	Specifies the frequency and intensity of crackling as on a vinyl record.
Option buttons **Source**	Offer a choice of different record types.
Check box **Buzz**	Adds a low frequency hum to the audio file.
Slider **Level**	Indicates the intensity of the hum.
Slider **Overtones**	Specifies the number of overtones the frequency has.

Slider **Slope**	Specifies the steepness of the transitions between high and low level. This setting make the hiss sound "scratchy".
Option buttons **Frequency**	Specify the hum frequency.

3.5.2.15 Reverb

The **Reverb** effect simulates the sound reflection in a space.

The following sliders are available:

Reverb Time	Specifies the duration of the reverb.
Room Size	Specifies the size of the imaginary room in which the reverb is to be generated.
Brightness	Specifies the brightness of the reverb.

The following sliders are available in the **Mix** area:

Dry Signal	Mixes the original signal with the edited copy, indicating the intensity of the original signal.
Effect	Mixes the original signal with the edited copy, indicating the intensity of the edited signal.

3.5.2.16 Stutter

The **Stutter** effect provides the option for modifying the rhythm of the audio file.

The following setting options are available:

Graph **Silence Duration**	Shows the length of the silence on the y-axis and the signal length on the x-axis.
Slider **Silence Duration**	Specifies the length of silences or repetitions.
Slider **Signal Duration**	Specifies the length of the signals to be repeated.

The following option buttons are available in the **Mode** area:

Mute	Plays the audio file in stutter mode **Mute**. The file is played for the period set using the **Signal Duration** slider and muted for the period set with the **Silence Duration** slider. The file retains its file length.

Stretch	Plays the audio file in stutter mode **Stretch**. The file is played for the period set using the **Signal Duration** slider and muted for the period set with the **Silence Duration** slider. The length of the file changes because after muting at the appropriate place in the file, playback resumes where the last playback ended.
Repeat	Plays the audio file in stutter mode **Repeat**. The file is played for the length of time set using the **Signal Length** slider. The same section of the audio file is then played again for the length of time set with the **Pause Length** slider. This is repeated until the selected area of the audio file is finished.

3.5.2.17 Surround Expansion

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

The following setting options are available:

Slider **Expansion**	Indicates the degree of expansion.
Check box **Front Channels**	Extends the expansion to include the front channels.
Check box **Side Channels**	Extends the expansion to include the side channels.
Check box **Surround Channels**	Extends the expansion to include the surround channels.

3.5.2.18 Surround Reverb

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

The following setting options are available in the **Room Dimension** area:

Graph **Room Dimension**	Visualizes the changes to the room dimensions.
Slider **Width**	Changes the width of the room.
Slider **Depth**	Changes the depth of the room.
Slider **Height**	Changes the height of the room.

The following setting options are available in the **Room Parameters** area:

Slider **Air Damping**	Specifies the level of air damping within the room.
Drop-down menu **Surface Material**	Specifies the characteristic surface material of the room (e.g. a carpet).

The following sliders are available in the **Output** area:

Early Reflections	Indicates the distance between the audio source and the listener.
Late Reflections	Indicates the reverb of the audio source in the room.
Dry Gain	Indicates the intensity of the original signal.

3.5.2.19 Voice Modification

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

The following setting options are available in the **Envelope** area:

Graph **Envelope Mapping**	Changes the input and output frequency of the audio file. You can change the straight lines using the handles. In the graph, the y-axis represents the output frequency and the x-axis the input frequency.
Slider **Scaling**	Moves the elements that form the voice.

The following sliders are available in the **Pitch** area:

Interval	Changes the pitch in the audio file.
Fine-tune	Permits fine tuning if retaining the original audio file length causes distortion due to the interval and patch changes.

The following slider is available in the **Time** area:

Stretch	Specifies whether the length of the audio file is to vary or whether the original length is to be retained.

The following option buttons are available in the **Mode** area:

Normal	Leaves the voice in the audio files unchanged. Only the previously set effects are used.
Robot Voice	Adds a robot-like quality to the already activated effects.
Whisper	Adds a whisper-like quality to the already activated effects.

3.5.2.20 Wah-Wah

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

The following setting options are available in the **Modulation** area:

Slider **Modulation Frequency**	Specifies the frequency of the modulation.
Drop-down menu **Modulation Function**	Selects the signal form of the modulation signal.

The following sliders are available in the **Mix** area:

Dry Signal	Mixes the original signal with the edited copy, indicating the intensity of the original signal.
Effect	Mixes the original signal with the edited copy, indicating the intensity of the edited signal.

The following sliders are available in the **Filter** area:

Lower Limit	Defines the lower limit for the frequency.
Upper Limit	Defines the upper limit for the frequency.
Bandwidth	Defines the bandwidth of the frequency.
Feedback	Specifies the number of copied signals.

3.5.3 Enhancement

3.5.3.1 Band Extrapolation

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

The following sliders are available in the **Spectral Remixer** area:

High Frequency	Indicates the intensity of the high frequency.
Dry Signal	Indicates the intensity of the original signal.
Low Frequency	Indicates the intensity of the low frequency.

The following sliders are available in the **Filter** area:

High Frequency	Indicates the frequency above which high frequencies are to be amplified.

Low Frequency	Indicates the frequency below which low frequencies are to be amplified.

3.5.3.2 Camera Denoiser

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

The following setting option is available:

Graph **Noise Reduction Level**	Displays the signal in graphical form.
Slider **Reduction Level**	Specifies the extent to which interfering noises are to be filtered out.

3.5.3.3 DC Offset Correction

DC Offset Correction improves recordings from poorly calibrated equipment (not centered around the zero point).

3.5.3.4 Declicker

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

The following setting options are available in the **Declicker** area:

Check box **Declicker**	Removes interfering noises such as clicks, which can be caused by scratches on records.
Slider **Detection Threshold**	Indicates how strong interfering noises must be to be recognized and filtered out.
Slider **Maximum Length**	Indicates the maximum length of time for which an interfering noise is to be filtered.
Check box **High Quality**	Offers higher filtering quality. However, this setting is very processor-intensive.

The following setting options are available in the **Decrackle** area:

Check box **Decrackle**	Removes interfering noises such as crackle, which can be caused by dust or needle sounds from the audio file.

Slider **Detection Threshold**	Indicates how strong interfering noises must be to be recognized and filtered out.
Slider **Reduction Level**	Specifies the extent to which interfering noises are to be filtered out.
Check box **Automatic Restoration**	Automatically sets the optimum values for both the **Declicker** and the **Decrackle** areas. Select the check boxes for the areas to be adjusted as well as the **Automatic Restoration** check box.

3.5.3.5 Declipper

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

The following sliders are available:

Detection Threshold	Specifies the volume at which removed amplitude peaks should be reattached.
Gain Modification	Reattaches the removed amplitude peaks. This percentage value should not be set too high because the peaks would otherwise be removed again after the file has been saved.

3.5.3.6 Dehum

The **Dehum** enhancement suppresses humming noises in the audio file.

The following setting options are available:

Graph **Hum Reduction**	Displays the four notch filters.
Button **Automatic Hum Detection**	Automatically sets the optimum values for all filters.

The following setting options are available in the **Dehum Filter Settings** area:

Option buttons **Filter**	Offers four different notch filters. These can be defined with the sliders. The four notch filters can also be linked with the **Link Filters** option button. In this case, all slider changes apply to all filters.
Slider **Frequency**	Specifies the frequency of the hum that is to be filtered.

Slider **Gain**	Specifies the extent to which hum is to be suppressed.
Slider **Width**	Specifies whether the range of the notch filter rises and falls steeply or gently.

3.5.3.7 Filter Toolbox

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

The following setting options are available:

Check box **User Drawn Filter Response**	Activates the option for changing the graph using handles.
Graph **User Drawn Filter Response**	Allows you to define a filter yourself by means of adjustable curves.
Button 	Switches between a linear and logarithmic scale for the limiting frequency graphic.

The following setting options are available in the **Bandpass Filter** area:

Check box **Bandpass Filter**	Adds a bandpass filter that allows a certain frequency range to be exceeded.
Slider **Upper Limit**	Specifies the upper frequency limit for the bandpass filter.
Slider **Lower Limit**	Specifies the lower frequency limit for the bandpass filter.

The following check boxes are available in the **Notch Filters** area:

Center	Insert up to three notch filters and bandpass stops that prevent a particular frequency range from being exceeded. You can specify the frequency of each notch filter by sliders.

3.5.3.8 Noise Reduction

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

The following setting options are available:

Graph **Spectral Subtraction Profile**	Maps the interfering signal.
Button 	Switches between a linear and logarithmic scale for the limiting frequency graphic.
Slider **Gain Floor**	Specifies the level of noise reduction when some noise is to be retained.
Slider **Reduction Level**	Specifies the level of noise reduction.

The following setting options are available in the **Mode** area:

Option button **Automatic Noise Analysis**	Automatically analyzes the audio file in relation to noise.
Button **Freeze**	Fixes the noise curve in the spectral subtraction profile and uses this as a reference signal.
Option button **Editable Noise Curve**	Inserts handles into the noise curve in the spectral subtraction profile; these can be used to edit the curve.
Option button **Noise Print**	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.
Button **Residual Output**	Only plays back the noise signal.

3.5.3.9 Noise Analysis

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

4 Playing Audio File

To play an audio file, proceed as follows:

1. Click the button in the toolbar.
   ➡ A window is opened.
2. Select the audio file you want to open in the file system and click the **Open** button.
   ➡ The channels of the audio file are presented as peak file.

> Alternatively, you can open and insert an audio file using Nero MediaBrowser. Nero MediaBrowser can be accessed via the icon in the toolbar.

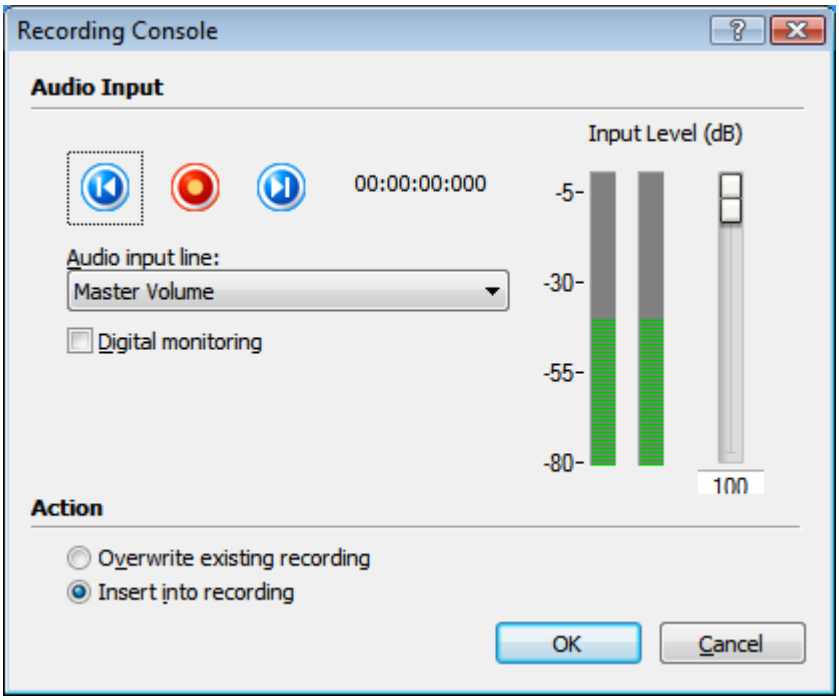
3. If you want to play the complete audio file, click the button in the toolbar.
4. If you have highlighted a section of the audio file and want to play this specific section, click the button in the toolbar.
5. If you want to play the file without interruption, click the button in the toolbar.
6. If you want to stop playback, click the button in the toolbar.
   ➡ You have played an audio file.

5 Recording Audio File

Nero WaveEditor can be used to record audio from any recognized device. The recording is monitored in the **Recording Console** window.

5.1 Recording Console Window

You reach the **Recording Console** window via the button in the toolbar.



Recording Console window

The following setting options are available in the **Audio Input** area of the **Recording Console** window:

Button	Returns to the start of the recording so that it can be overwritten.
Button	Record an audio file.
Button	Pauses recording. Only available while recording.
Button	Goes to the end of the recording so that recording can be resumed there.

Drop-down menu **Audio input line**	Specifies the audio input.
Check box **Digital monitoring**	Turns on the sound of the audio source so you can hear what you are recording.
Slider **Input Level**	Specifies the volume of the recording. The volume of the recording should be in the yellow area.

The following option buttons are available in the **Action** area:

Overwrite existing recording	Overwrites the existing recording or audio file which is open in Nero WaveEditor.
Insert into recording	Inserts the recording into the audio file at the point where the marker is located.

Differences in the recording options between Windows XP and Windows Vista/Windows 7

In Windows XP the sound card is seen as one device. Therefore, selecting a device will allow you to access all input options in the **Recording Console** window.

In Windows Vista and Windows 7 every input option is seen as a separate device. Therefore, the sound card input option must first be selected in the **Device Settings** window.

After that, the **Master Volume** entry in the **Recording Console** window represents the input device selected in the **Device Settings** window.

See also

Device Settings →5

5.2 Recording Audio File

To record an audio file, proceed as follows:

1. Click the button in the toolbar.
   ➡ The **Recording Console** window is opened.
2. Make the desired recording settings.
3. Click the button to make a recording.
   ➡ The recording process is started.
4. Click the button to interrupt the recording.
   ➡ The recording process is interrupted. You can resume it by clicking the button.
5. If you want to insert the recording into the file display, click the **OK** button.

➡ The channels of the recording are presented as peak file in the file display.

➡ You have recorded an audio file.

If you click the **Cancel** button in the **Recording Console** window during a recording, the recording will be stopped and the **Recording Console** window will be closed. Your recording will not be saved. If you want to interrupt the recording, click the ⏸ button instead of the **Cancel** button.

6 Editing Audio File

Nero WaveEditor offers various options for editing audio files. You can make changes to the file structure (such as inserting track splits), change the volume of an audio file (such as normalizing it), and apply other enhancement options (such as converting the sample format).

The following requirement must be fulfilled:

- An opened audio file is displayed in the file display.

You can either edit the complete audio file, or a specific section.
If you want to edit a specific section of the audio file, highlight the respective section in the file display.

6.1 Editing Audio File Structure

To edit the structure of an audio file, proceed as follows:

1. If you want silences in a song to be detected automatically so as to be able to skip these when playing the audio file:
   1. Click the **Edit** > **Pause Detection** entry in the menu bar.
      ➥ The **Pause Detection** window is opened.
   2. Define the required settings and click the **OK** button.
2. If you want to insert a track split in the audio file to be able to skip directly to this point, click the **Edit** > **Insert Track Split** entry in the menu bar.
3. If you want to save a single track produced by inserting track splits as a file:
   1. Click the **Edit** > **Save Tracks as Files** entry in the menu bar.
      ➥ The **Save Tracks as Separate Files** window is opened.
   2. Select the track you want to save, name it and select the desired file format.
   3. Click the **OK** button.
4. If you want to insert an additional audio file into the file display to create a crossfade between two files:
   1. Click the **Edit** > **Insert File** entry in the menu bar.
      ➥ A window is opened.
   2. Select the desired audio file and click the **Open** button.
      ➥ The audio file is inserted into the file display.

To define the location where you want the audio file to be inserted, you need to click this location before selecting the **Edit** > **Insert File** entry.

Alternatively, you can open and insert an audio file using Nero MediaBrowser.
Nero MediaBrowser can be accessed via the  icon in the toolbar.

Crossfade
The crossfading method allows you to combine audio files without interrupting the sound of these files. When applying a crossfade, the volume of the first audio file is faded out at the end and the volume of the next audio file is faded in at the beginning so as to create a smooth transition between the sound of these files.

➡ You have edited the structure of the audio file.

6.2 Editing Audio File Volume

To edit the volume of an audio file, proceed as follows:

1. If you want to raise or lower the volume of the highlighted section of the audio file:
   1. Click the **Volume** > **Volume Change** entry in the menu bar.
      ➡ The **Volume Change** window is opened.
   2. Move the **Volume Change** slider to the desired position.
      ➡ The set dB value is displayed in the display panel.
   3. Click the **OK** button.

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.

2. If you want to mute the highlighted section of the audio file, click the **Volume** > **Mute** entry in the menu bar.
   ➡ The change in volume in the highlighted section is displayed graphically in the file display.
3. If you want to normalize the frequencies of the highlighted section of the audio file to a particular dB value:
   1. Click the **Volume** > **Normalize** entry in the menu bar.
      ➡ The **Normalize** window is opened.
   2. Move the **Normalize to** slider to the desired position.
      ➡ The set dB value is displayed in the display panel.
   3. Click the **OK** button.
4. If you want to fade in or fade out the volume of the highlighted section of the audio file, click the **Volume** > **Fade In** or **Fade Out** entry in the menu bar and choose the desired method.
   ➡ The change in volume in the highlighted section is displayed graphically in the file display.
      ➡ You have edited the volume of the audio file.

6.3 Applying Other Enhancement Options

To apply other enhancement options to an audio file, proceed as follows:

1. If you want to convert the sample format:
   1. Click the **Edit** > **Convert Sample Format** entry in the menu bar.
      ➥ The **Convert Sample Format Settings** window is opened.
   2. Define the required settings and click the **OK** button.
2. If you want to play the highlighted section of the audio file in reverse, click the **Edit** > **Reverse** entry in the menu bar.
3. If you want to insert a test signal into the highlighted section of the audio file:
   1. Click the **Edit** > **Insert Test Signal** entry in the menu bar.
      ➥ The **Test Tone Generator** window is opened.
   2. Define the required settings and click the **OK** button.
      ➥ The test signal is added to the file display.
   3. Now define the range of the test signal by moving the green arrows at the bottom of the file display.
   4. If you want to fade out or fade in an audio file before and after the test signal, move the blue-green arrows at the top of the file display from left to right.
4. If you want to highlight a specific section with millisecond accuracy:
   1. Click the **Edit** > **Define Markers Manually** entry in the menu bar.
      ➥ The **Manually Define Markers** window is opened.
   2. Define the markers as desired in the **Selection begin** and **Selection end** area and click the **OK** button.
5. If you want to change the highlighted section of the audio file with optimizing tools, effects or an enhancement:
   1. Click the respective **Tools**, **Effects** or **Enhancement** entry in the menu bar.
      ➥ The relevant window is opened.
   2. Make the desired settings and click the **OK** button.
      ➥ You have edited the audio file.

See also

Filters →24

7 Technical Information

7.1 System Requirements

Nero WaveEditor is part of the Nero product you have installed. Its system requirements are the same. Detailed system requirements of this and all other Nero products can be found in the Support section on our Web site www.nero.com.

7.2 Supported Formats and Codecs

7.2.1 Audio Formats and Codecs

- Advanced Audio Coding (AAC) - import only
- Audio Interchange File Format (AIFF, AIF)
- Dolby Digital (AC3) - import only
- MP3 / mp3PRO (MP3)
- Moving Picture Experts Group-1 Audio Layer 3 (MP3)
- Moving Picture Experts Group-4 (MP4)
- Nero AAC Codec (MP4)
- Ogg Vorbis (OGG, OGM)
- Resource Interchange File Format WAVE (WAV, WAVE)
- Windows Media Audio (WMA)
- Nero WaveEditor File (NWF)
- Free Lossless Audio Codec (FLAC)

8 Glossary

Bit Depth

Bit depth indicates the precision with which an oscillation vibration will be captured. The greater the value, the more accurate is the acquisition and the better is the audio quality.

FIR Filter

A filter is a system that links an input signal with a transmission function and makes this changed signal available at its output. With a filter with finite pulse response (FIR filter) the output signal is made up of several partially buffered values of the input signal.

Frequency

The frequency denotes the oscillations per second of an electrical or magnetic field. With audio files this means that the frequency increases with rising pitch. The unit is Hertz (Hz). The highest magnitude of oscillation is called the amplitude.

IIR Filter

A filter is a system that links an input signal with a transmission function and makes this changed signal available at its output. A filter with infinite pulse response (IIR filter) uses the input values as well as buffered values of the output signal.

Normalization

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

Sample Rate

The sample rate indicates the frequency with which a signal is sampled per interval of time. It is measured in sampling values per second. The higher the sample rate the more precise the measurement, and the better the audio quality.

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10 Contact

Nero WaveEditor is a Nero AG product.

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