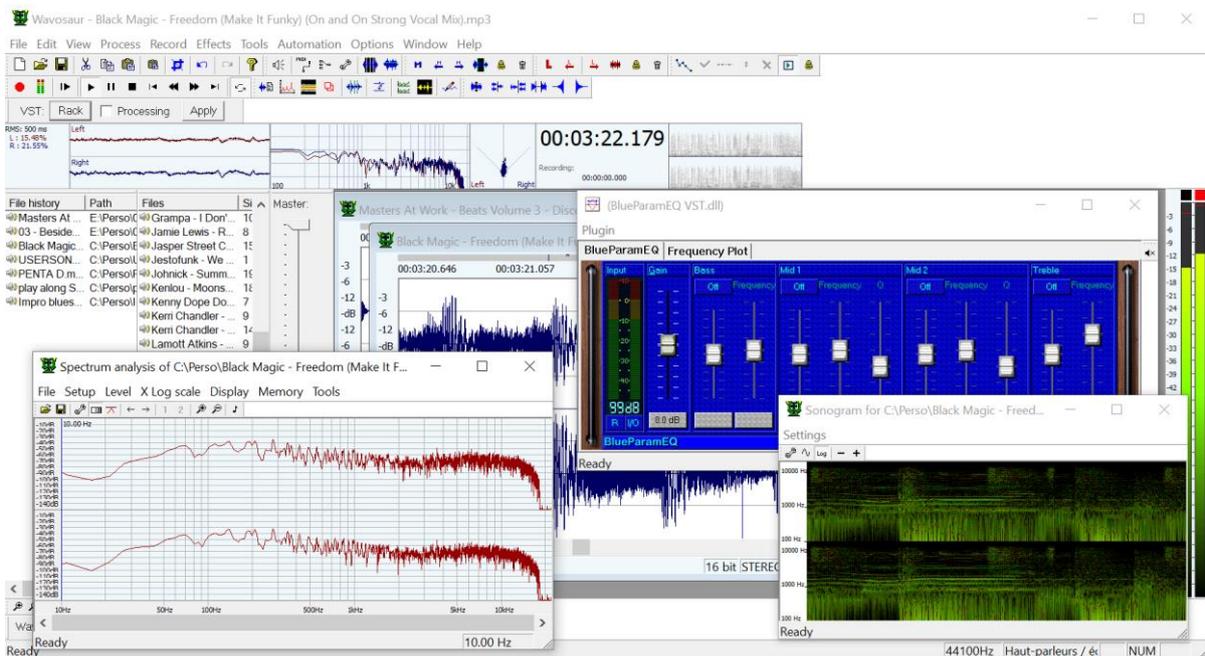




Wavosaur quick start guide



Wavosaur free audio editor with VST and ASIO support



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1. Installation:

If you have downloaded Wavosaur from <https://www.wavosaur.com> you have a zip archive file called *Wavosaur.x.x.x.x.zip*. And thanks!!!

So now, just unzip the archive, there are only 2 exe files in the archive:

- the Wavosaur executable (Wavosaur.exe)
- the VSTScan application (WavosaurVSTScan.exe)

Note that Wavosaur:

- **doesn't need installer**
- it doesn't write into the **registry or in Windows directories**
- and in general, it doesn't need any external dll. If dll files are necessary, there are inside the zip file.

Note about 32 and 64 bits versions: two versions of exe files are usable depending of what you want:

- for 64 bits operating systems, it's possible to use both versions
- for 32 bits operating systems, only 32bits version is usable

To use 32 bits VST, you must use Wavosaur 32 bits, and 64 bits for 64 bits.

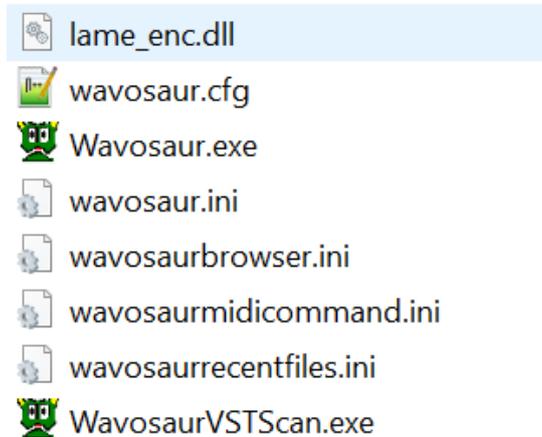


1.1. Configuration files:

It's recommended to create "Wavosaur" folder and place the application (Wavosaur.exe file) inside the directory.

Wavosaur creates configuration files to store settings and user preferences:

- *wavosaur.ini*
- *wavosaurbrowser.ini*
- *wavosaurmidicommand.ini*
- *wavosaurrecentfiles.ini*
- *wavosaur.cfg*
- *wavosaur.vst*



Wavosaur works without these files (but if you delete them, you'll lose your configuration settings). If you need to reset your configuration, just delete these files. There are also editable (text file format).

During a session Wavosaur also create temporary files that are deleted when the user exits the application.

1.2. Editor skin preferences:

You can also download optional *.skin* files used for storing the "skin preferences" of the editor. See the **Editor Configuration** chapter for more information.

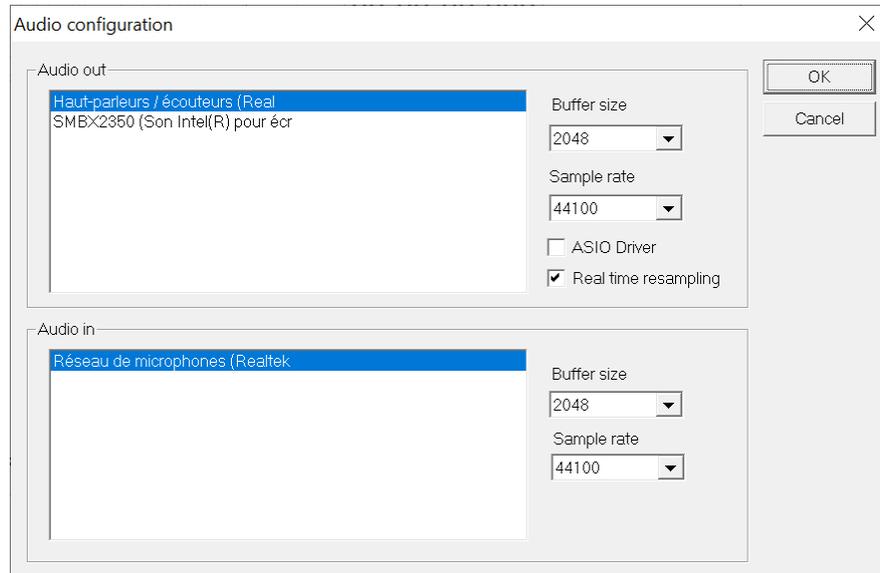
These files can be placed anywhere, it's a good idea to store them in the Wavosaur folder.



2. Configuration:

2.1. Audio configuration:

Go in menu Options → Audio configuration



Audio out:

This tab displays all the MME drivers available on your system. Select the driver you want for audio playing.

Buffer size:

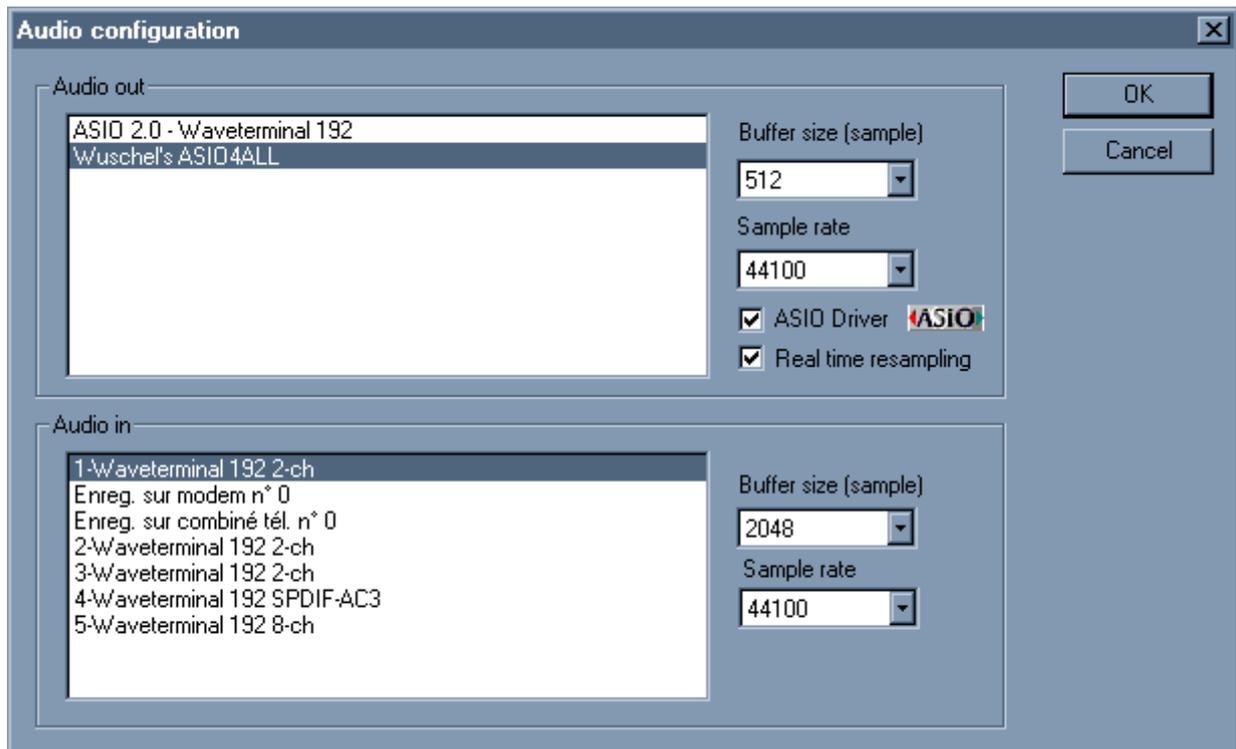
This dropdown menu lets you change the buffer size for audio playing. If you experience glitches or crackle when playing, try to increase the buffer size value. The more the buffer size, the more the latency, decrease the buffer size if you want a better latency.

Sample rate:

This dropdown menu lets you choose the sample rate for audio out. Don't forget to adjust the buffer size if you change this parameter and want the same latency.

ASIO Driver:

This checkbox switches between MME & ASIO drivers. (for the audio output only atm). If your soundcard doesn't support ASIO, you can install ASIO4ALL. Choose your ASIO driver in the audio out tab (see next figure).



Realtime resampling:

When checked, Wavosaur perform real-time resampling: audio output is resampled to the samplerate frequency chosen for output.

If you uncheck this box, file with samplerate that differs from the output samplerate will play faster/slower.

Audio in:

This tab lets you choose the audio driver for audio input. Choose here your line input or mic input for recording.

Buffer size:

Change the buffer size if you experience glitches/missing buffer when recording.

Sample rate:

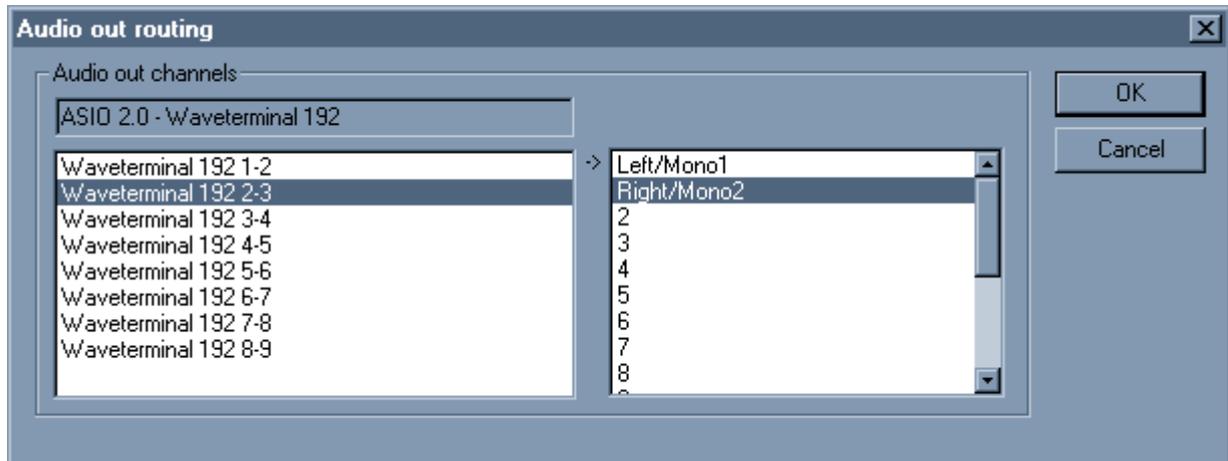
Choose the sample rate for your recording.

These settings are saved in the .cfg file. If you delete the .cfg file, Wavosaur resets to the default configuration.



2.2. Audio routing:

Go in menu Options → Audio routing



Depending on your soundcard/drivers you can have more than two outputs. This configuration window lets you choose the routing for audio output.

The left tab displays your soundcard outputs.

The right tab displays the Wavosaur channels (= the .wav channels)

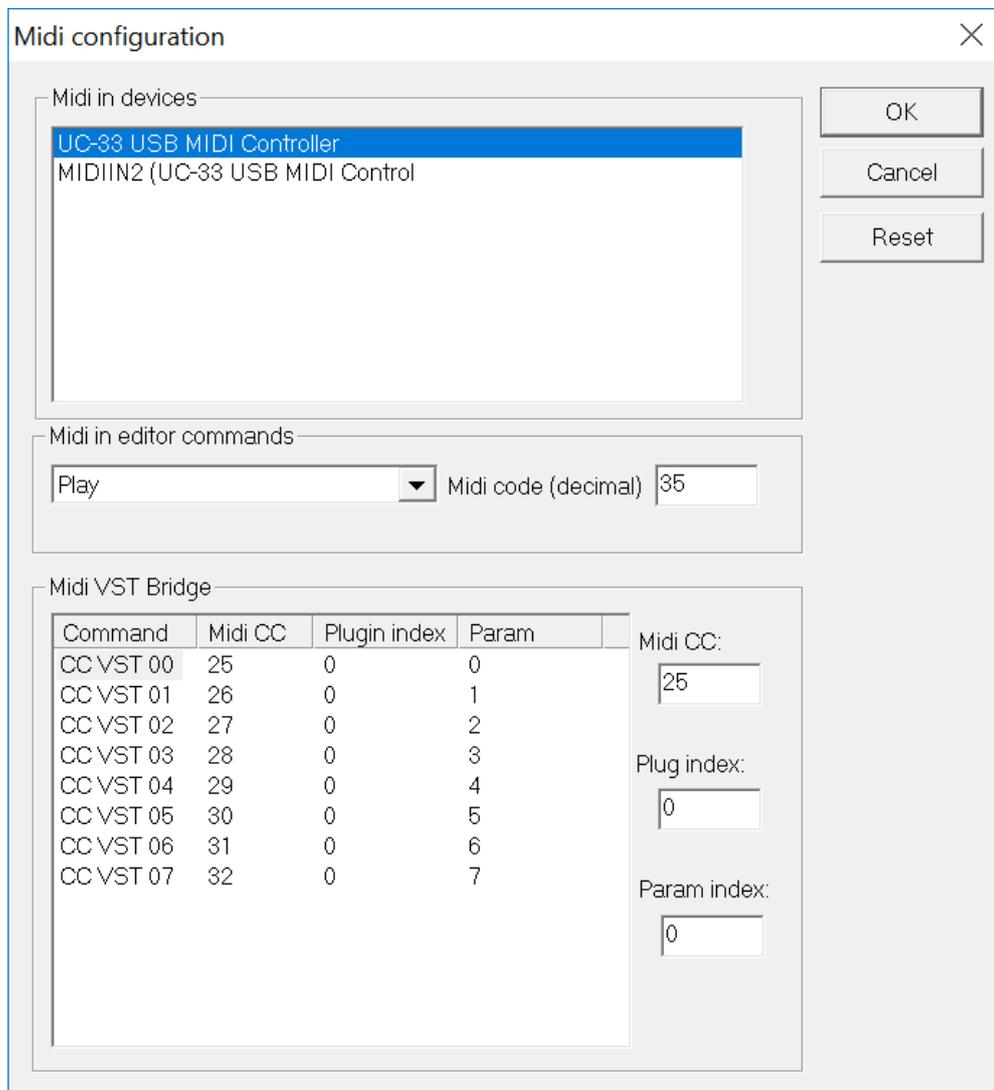
Select in the left tab the soundcard audio output, and make it match to the wav channel you want.

- You can send the main stereo channels (0 & 1) to all your outputs.
- You can send all the 16 wav channels to different outputs (if you have enough audio out!) for multichannel wav.
- You can invert left & right outputs.
- Etc.



2.3. MIDI configuration:

Go in menu Options → MIDI configuration



This tab let you choose one or more MIDI input port.



2.4. Midi in devices:

List of midi devices like sound card in/out etc

2.5. Midi in editor commands:

Wavosaur is receptive to MIDI Control Change messages, you can use a MIDI external controller to trigger the main functions in Wavosaur.

Here's the list of commands usable with MIDI message:

- Play
- Stop
- Pause
- Record
- Rewind
- Forward
- Volume
- Go to next marker
- Go to previous marker
- Back to start
- Toggle windows

You can also edit the wavosaurmidicommand.ini file to assign your own CC numbers.

```
[Midi command general]
Play=35
Stop=34
Pause=38
Etc.....
```



2.6. Midi VST bridge:

This mapper is used to send midi messages to VST effects. Choose your Midi command (Midi CC), choose the effect address in the rack (Plugin index) and the index of the parameter you want to change.

In the wavosaurmidicommand.ini file:

```
[CC VST 00]
Midi cmd=25
VST rack index=0
VST param index=0
```



2.7. Editor configuration:

Go in menu Options → Editor configuration

Editor configuration

Path configuration

Vst path C:\

Sor file c:\

Sound path C:\

Skin c:\

General

Reminder on close (popup windows at close)

Always open new file for record

Popup menu on right click

Auto scroll sample during playing

Use multimedia keys

Maximized main window at startup

Disable processing after applying VST

Save current VST rack (reload start)

Last opened files at startup

Paste replace

Zoom at mouse pointer (wheel)

VST host tempo 125.00 bpm

Auto check for update (online)

Keep *.rec files

Undo in RAM

Forward / rewind speed 4

Selection

Snap to zero crossing

Selection grid line number 4

Out of screen speed 30

OK

Cancel

Reset

Path configuration

You can set a path for different directories:

- VST plugins
- sor VST chain files
- sound file
- skin files

General

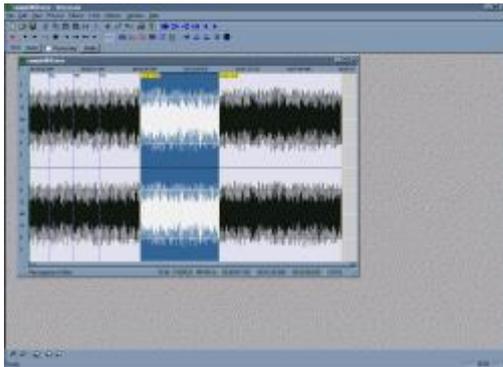
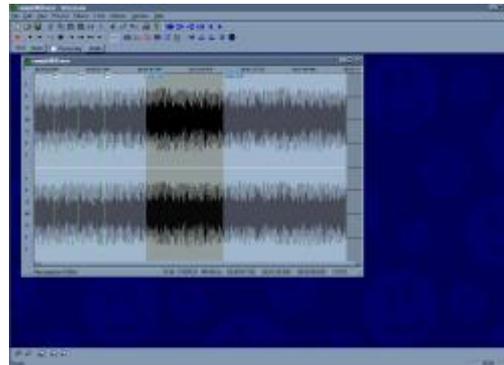
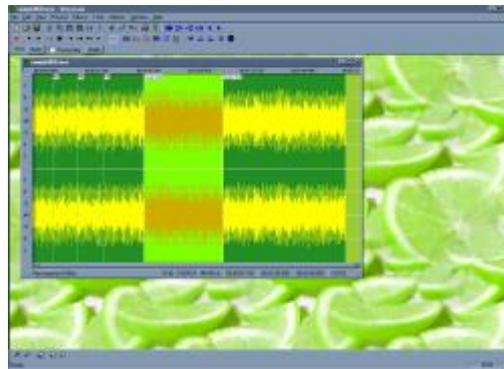
Here you can set options for the editor, the changes are effective immediately.



2.8. Color and skin configurations:

Go in menu Options → Color and skin configuration

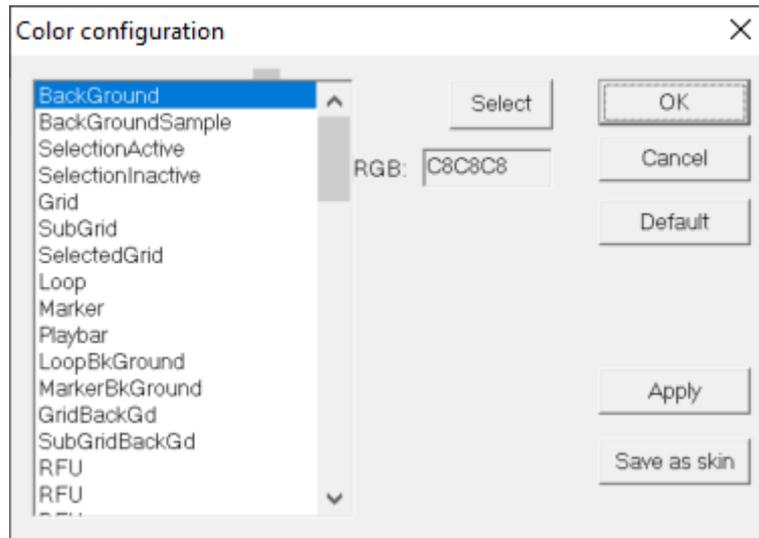
You can load a *.skin file to give a different look to the Wavosaur editor.
Skin files can be found at <https://www.wavosaur.com/skins.php>





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You can select your own color using the dedicated dialog box:





2.9. Editing wavosaur.cfg:

Some configuration options are not yet available from the Wavosaur interface, but you can edit the wavosaur.cfg file to enter your settings.

Open the file:

First be sure that Wavosaur is **NOT** running

Open the wavosaur.cfg file with the Windows notepad program:

The configuration informations are presented as:

[Section]

Name=Value

You can change the "Value" fields.

Examples:

VSTPathOpen = *enter your preferred VST path folder*

VSTBPM = *enter the default BPM for Wavosaur*

SamplePathOpen = *enter your preferred sample path folder*

ReminderOnClose =

0 = no reminder on close

1 = reminder on close

PasteReplace =

0 = paste insert the clipboard data at cursor

1 = paste replace the selection with the clipboard data

AlwaysNewForRecord =

0 = record appends data to the current file

1 = record creates a new file

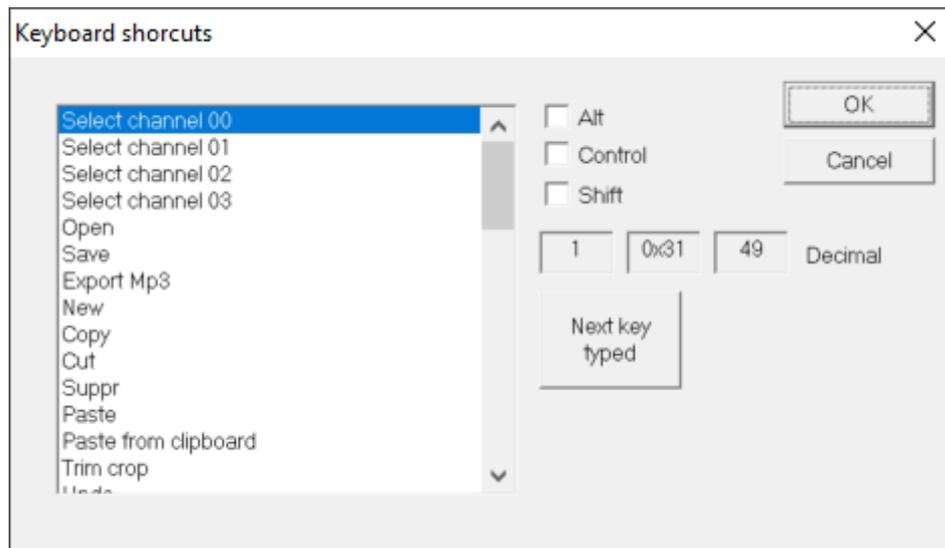
PopupMenuRightClick =

0 = drag waveform with right click (no context menu on right click)

1 = context menu on right click



2.10. Keyboard shortcuts:



Several Wavosaur commands could be used with shortcuts: use this dialogbox to change the key or key combination.

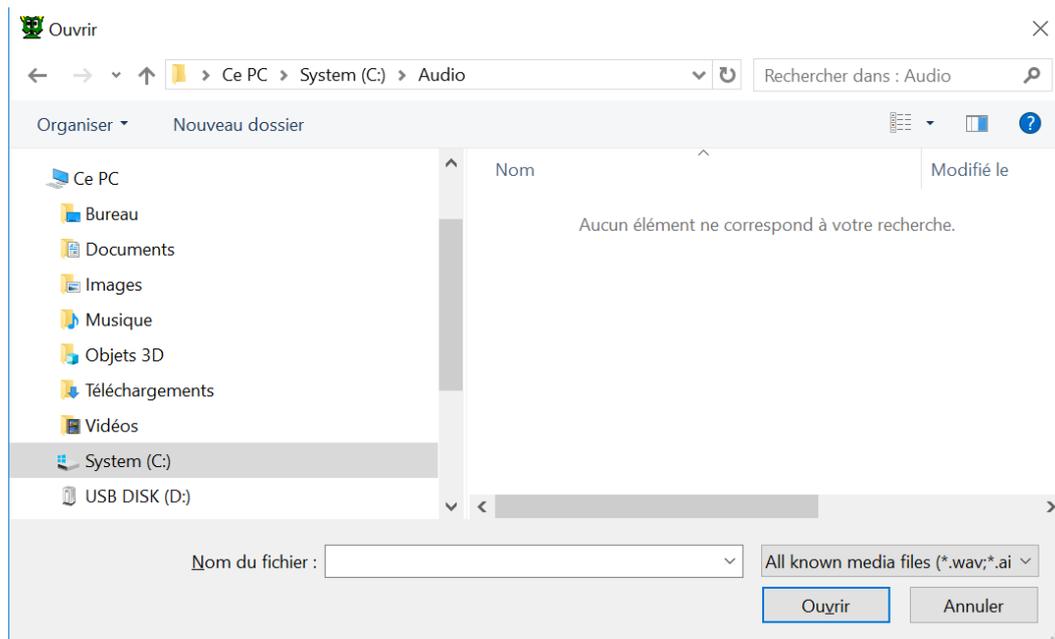


3. Files:

3.1. New/open/save:

3.1.1. Open a file:

Go in menu Files → Open



Select in the filetype dropdown menu the "file display filter" you want:

- .wav,
- .aiff
- .iff
- .au
- .snd
- .voc
- .mp3
- .vox
- all files, all known media files.

If file can't be opened, you can try to use the "**import**" feature.

Wavosaur can open a lot of audio formats we won't list here (new file format supports are added to each new Wavosaur releases).



3.1.2. Save a file:

Wavosaur save in .wav format only, you have different options for saving files:

menu Files → save or save as:
Save the current file on the disk.

menu Files → save selection as:
Save the current selection in a new file on the disk.

See also the **"export"** feature.

3.1.3. File browser and file history:

File history	Path	Files
🔊 Frankie Feli...	c:\Perso\F	↑ ..
🔊 DJ Sneak - ...	c:\Perso\I	🔊 01 - Superficial.mp3
🔊 Louis Bene...	c:\Perso\L	🔊 02 - Got the Bug.mp3
		🔊 03 - Besides You.mp3
		🔊 04 - Everyday (feat. Kavita)
		🔊 05 - Big _ Little Lies (feat
		🔊 06 - Bougez.mp3
		🔊 07 - Miles Away.mp3
		🔊 08 - Stay True (feat. Kavita)
		🔊 09 - Something.mp3
		🔊 10 - Man Trouble.mp3
		🔊 11 - Magical Moments (fe
		🔊 12 - Marbles (Demo Versi
		🔊 13 - Daome (Demo Versi

Double click inside file browser to open it.

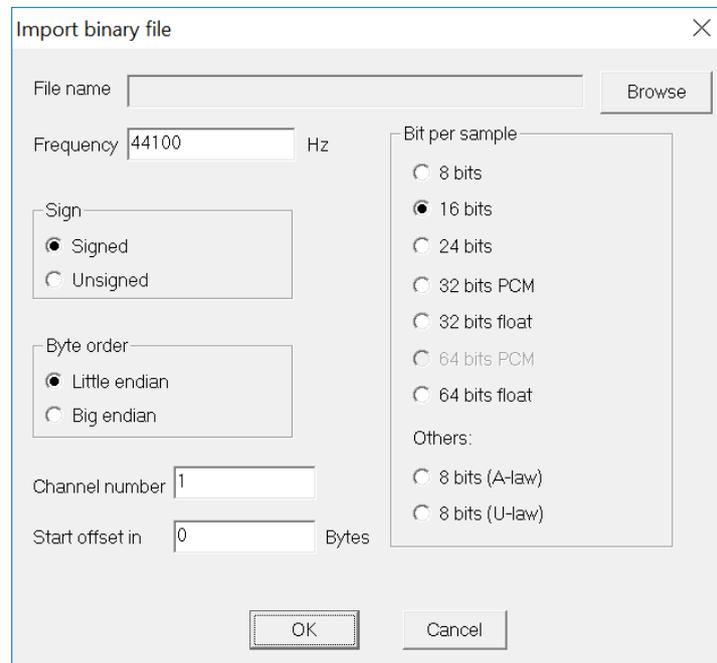
Each file opened is inserted inside file history list.



3.2. Import/export

3.2.1. To import file

Go in menu Files → Import → Import binary file



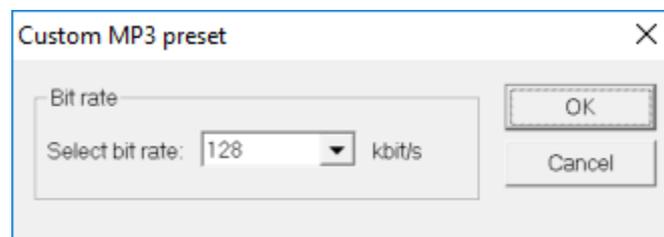
You can import any file, choose the settings for sample rate, bit depth, sign, channel number and byte order. You can also select an offset to skip the first n bytes of the file.

3.2.2. To export file:

Go in menu Files → Export → Export as MP3

You **need the lame_enc.dll** to be present in the Wavosaur folder.

You can choose you bitrate for MP3 encoding:



Note: mp3 is compressed file format with losses for each time you save it. That the reason why it's better to export the file only at the end of your work.



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Go in menu Files → Export → Export all regions

This feature exports all the data regions delimited by markers in separated files.

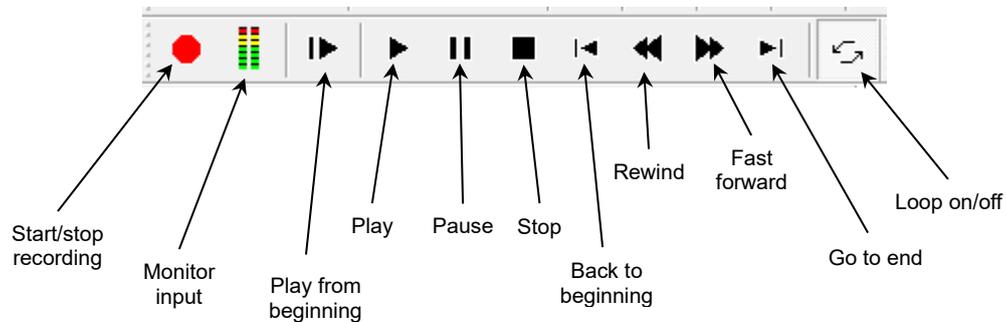
Go in menu Files → Export → Export as text

This feature exports the current files in text format, for using in application such as *Excel*, *Matlab*, *PSpice* etc. It's not recommended to export long files!



4. Playing/recording:

4.1. The transport bar:



You can also play/stop by pressing the spacebar.

When loop is on, the selection is played in loop, if there's no selection, the entire file is played in loop.

Play from start plays the entire file without loop (even if loop is on).

Wavosaur plays the **current file**: the one that has the focus.

You can quickly switch between opened files with CTRL+TAB.

4.2. Recording:

Click on the record button to start: Wavosaur records the audio in.

Click on the record button again to stop the recording.

If there's no opened file, Wavosaur create a new file for the recording

If a file is opened, the recorded datas are appended at the end of the current file. A marker is inserted to show the beginning of the record.

Check your audio configuration to select the audio input and samplerate.

Bit depth is 16 bits, you can change to 24 bits recording if your soundcard supports this bit-depth by editing the wavosaur.cfg (AudioInBitDepth).



4.3. Widget:

Wavosaur embeds different Widget: internal plugins for real time audio analysis.



RMS: shows in real time root mean square value of output signal

Scope: to see the different channel signals

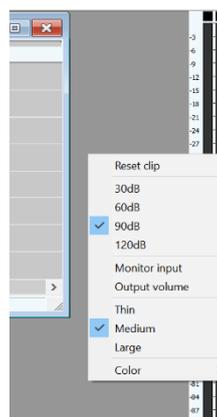
FFT: for real time spectrum analysis

Stereo: to see the distribution of stereo signal

Chrono: shows the value of the play bar position

Sonogram: to see the real time sonogram

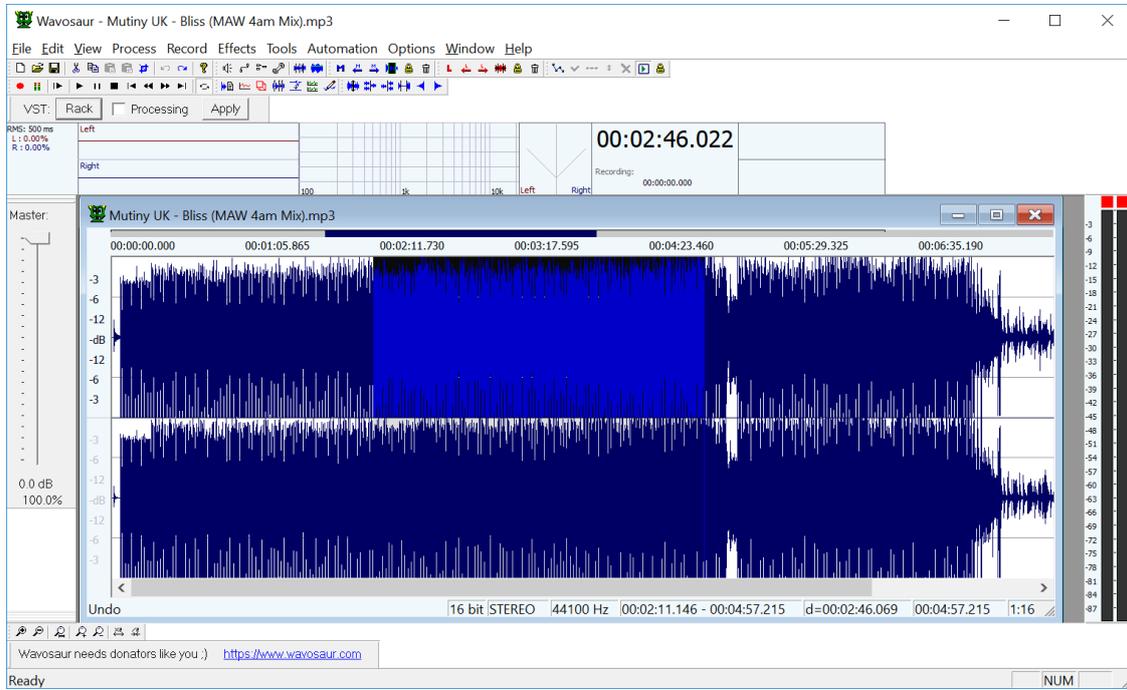
Vu meter: right click on vu meter to change properties:





5. Editing:

5.1. Select/zoom/scroll:



5.1.1. Selecting:

Use the mouse to select an audio range.

You can also use your keyboard: Shift + Arrow

CTRL+A select all the file.

Double mouse click select all the file (if there is no loop points or markers)

Double mouse click select data inside a loop if loop point are presents.

Double mouse click select data between two markers if markers are presents.

5.1.2. Scrolling:

Use mouse right click + drag to move the view.

You can also use the scrollbar.

5.1.3. Zoom:

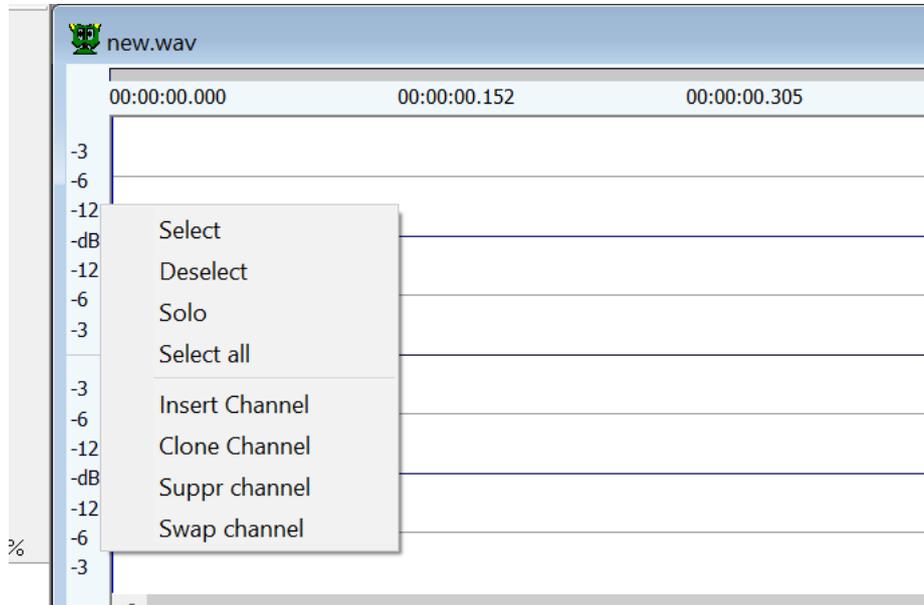
Use the mousewheel to zoom in/out in time, you can also use the up and down arrow keys on your keyboard.

Use CTRL+mousewheel to zoom in/out in amplitude



5.1.4. Channel selecting:

Use your keyboard (the 1...8 keys) to select/deselect the wav channels: the deselected channel have their output muted.



You can also use right click to display menu to select/unselect channel.



5.2. Basic editing:

Basic features can be accessed from menu/toolbar/shortcuts:



delete	DEL
cut	CTRL+X
copy	CTRL+C
paste	CTRL+V
paste and mix	
trim/crop	CTRL+T
undo	CTRL+Z

Note about paste:

Paste is inserting the clipboard data at cursor

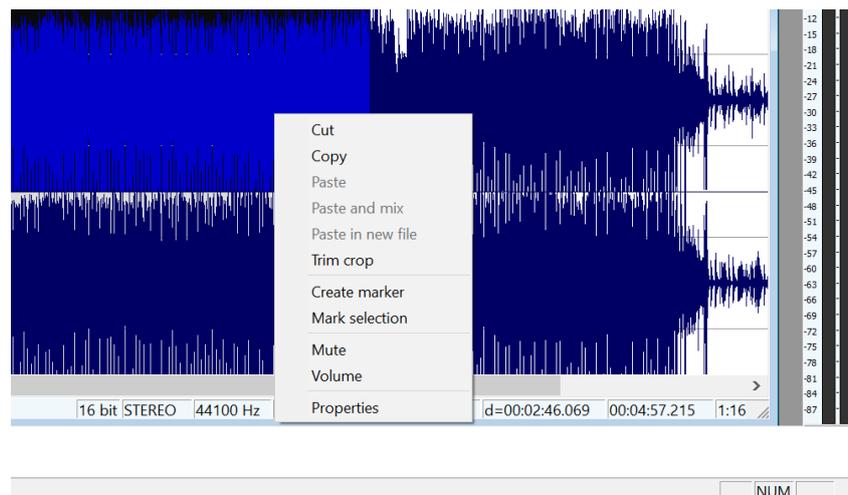
If there's a selection you have two options:

- paste replace (default behaviour): the selection is replaced by the clipboard.
- paste insert: the clipboard is inserted at cursor without replacing selection.

You can copy/paste from one file to another, note that if the sample rate between source and destination files are different, the clipboard is not resampled.

Note about channel: copy/paste between two files with different channels number is not allowed.

A context menu can be displayed on right click:





5.3. Processing audio:

Lots of the process features can be found in the process menu, or accessed with the toolbars (not all the features are in the toolbar)

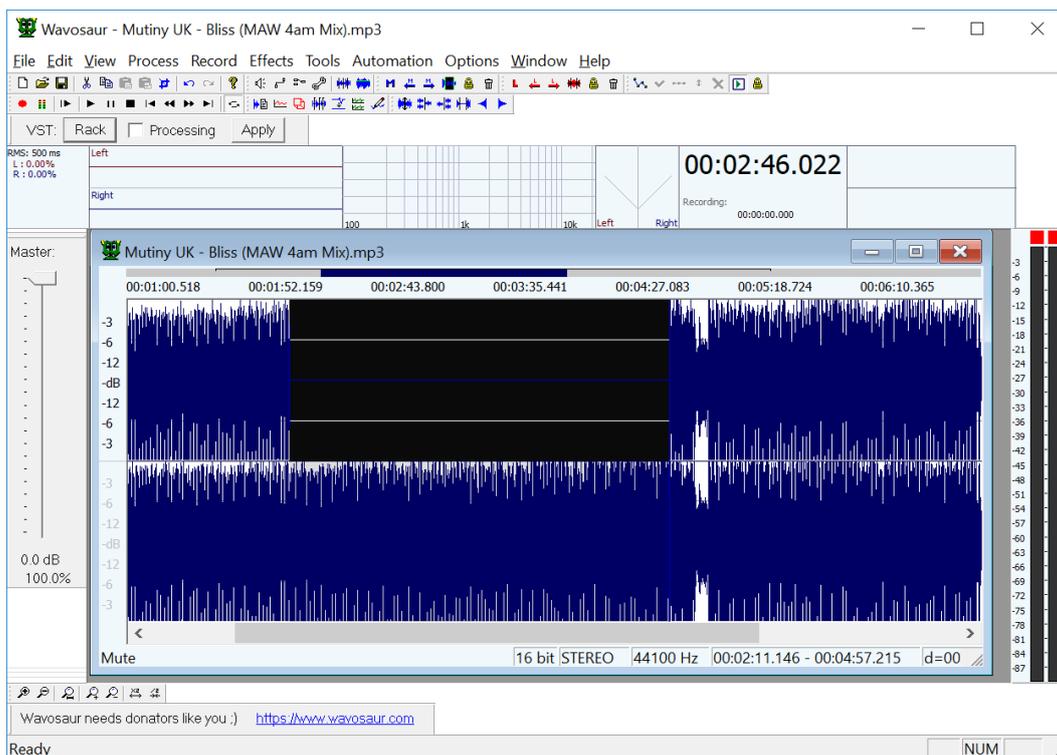


Some processes are effective on the selected channel only:
Volume, normalize, mute, fade, reverse, invert.

Some processes are effective on all channel (selected or not):
Insert silence, vocal remover, convert to mono, resample, bit depth converter.

You can find more detailed information about the process features in the complete help for Wavosaur.

Here's a screenshot of a "mute on the left channel":





6. VST rack:

6.1. Using VST effects:

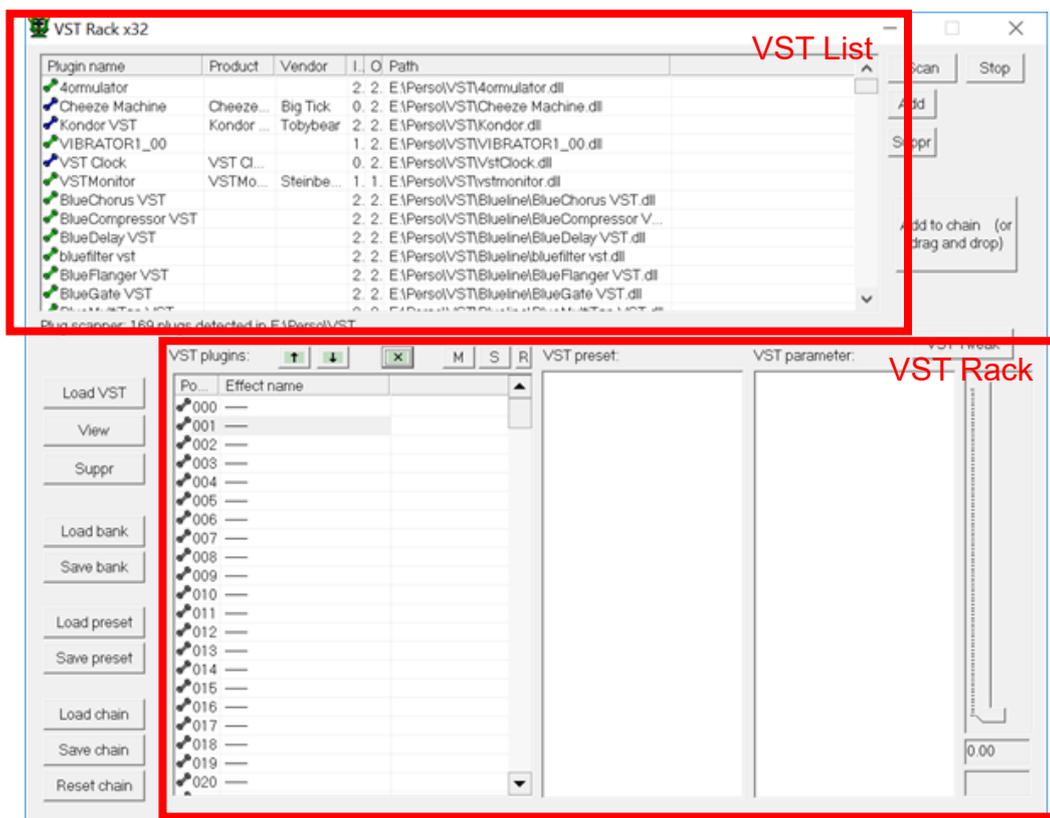
6.1.1. VST bar:



Click on the VST rack button under the transport bar brings up the VST rack window. Check the processing box to hear in real time the audio processed by the VST effects.

Click on the apply button to apply the effect to your file.

6.1.2. VST rack:

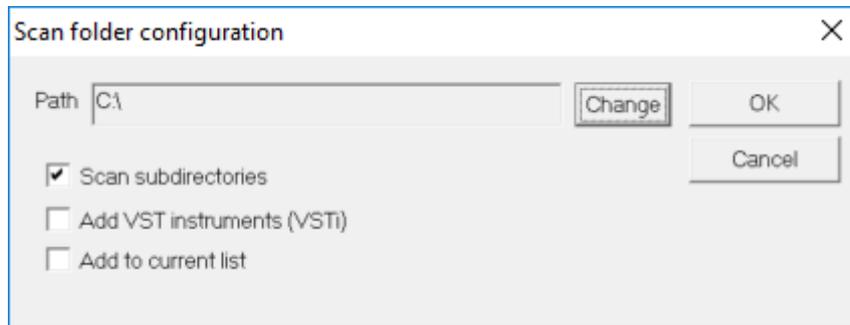




VST list: list of preferred plugins to use.

Scan
Stop

scan a directory with and without subdirectories
stop scanning



Add
Suppr

to add VST plugin from the list
to suppress VST plugin from the list

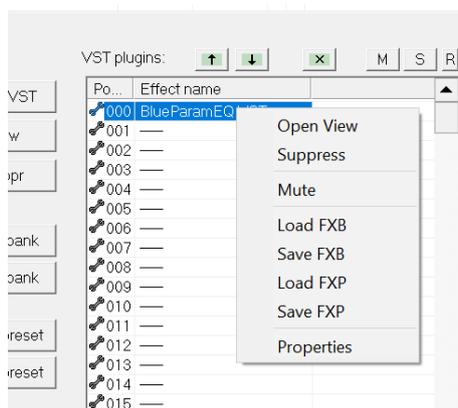


VST rack: chaining of plugins

Load VST	lets you choose the VST effect you want to use
View	shows up the GUI of the VST effect
Suppr	unloads the VST effect.
Load bank	loads specific bank for plugin
Save bank	saves bank
Load preset	loads specific preset for VST
Save preset	saves specific preset for VST
Load chain	loads chain of VST
Save chain	saves the current chain in rack
Reset chain	suppress all VST inside the rack

Note: after applying an effect, do not forget to uncheck the "processing" box unless you want to hear your file (re) processed again.

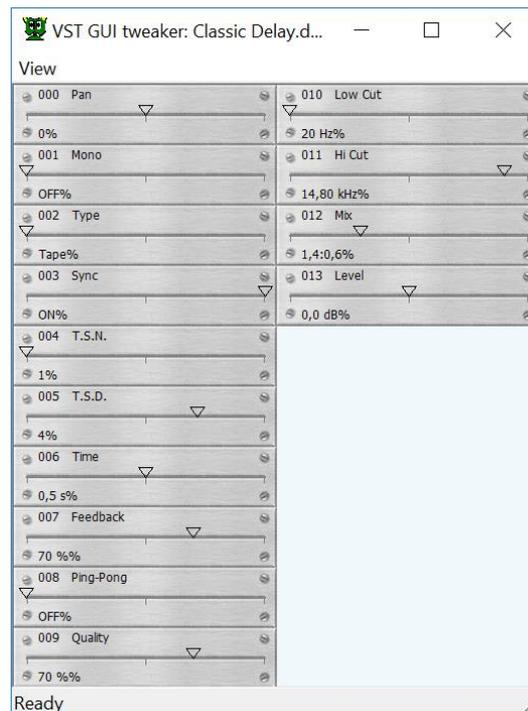
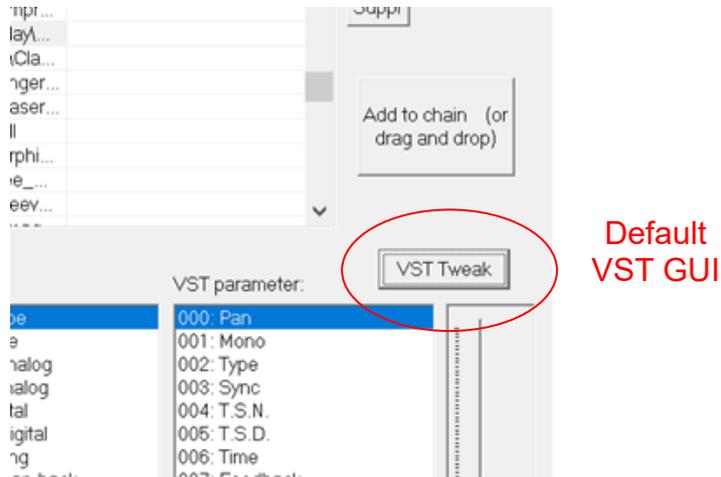
Right clicking on the VST plugin in the list show you the different associated commands:





6.1.3. Change VST parameters with default GUI:

Wavosaur has universal “VST tweaker” to change the value of VST parameters with or without graphical interface (GUI):

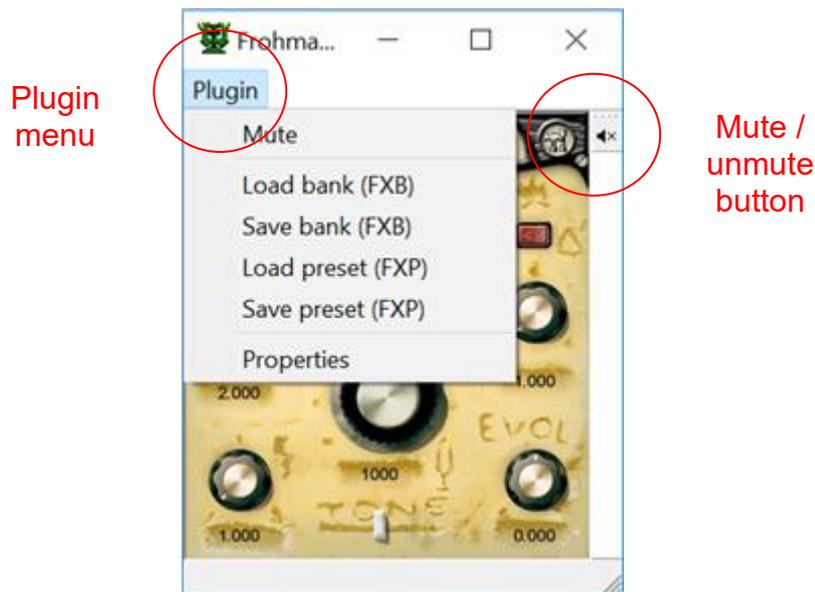


Each parameter has slider sensitive to mouse events: the index, the name and the value are visible.

View menu arrange the parameters list.



6.1.4. Open VST GUI:



VST GUI is visible double clicking the VST in rack or using the “View” button.

If plugin has no graphical interface, Wavosaur default GUI is opened. Else the GUI of the plugin is visible inside window.

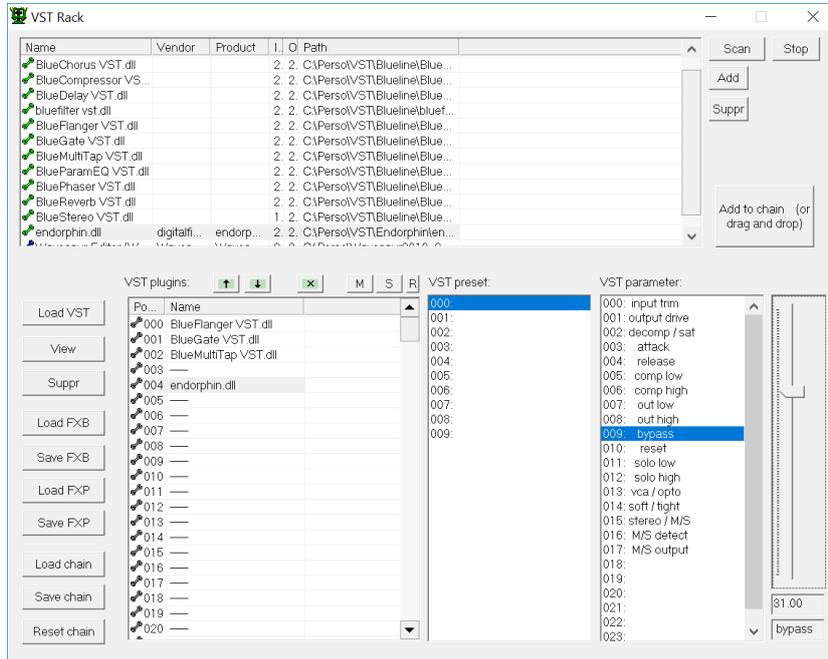
The “Plugin” menu shows features about plugin like bank save and load or preset save and load. VST properties is for advanced user to watch plugin internal attributes.

The right aligned toolbar has a mute button to enable or disable the VST plugin.



6.2. Setup a VST effects chain:

You can use the VST rack to set up a chain of effects.



To chain the VST effects, select a slot and load a VST effect into it, the signal flow is as you expect: from the slot 000 to the last occupied slot.

You can save the chain preset in a file and reload it later, use the load and save chain button. The chain file also stores the actuals VST parameters state.

Reset chain removes all the VST from the slots.

Note that the *.sor chain files format could change with newer version of Wavosaur.

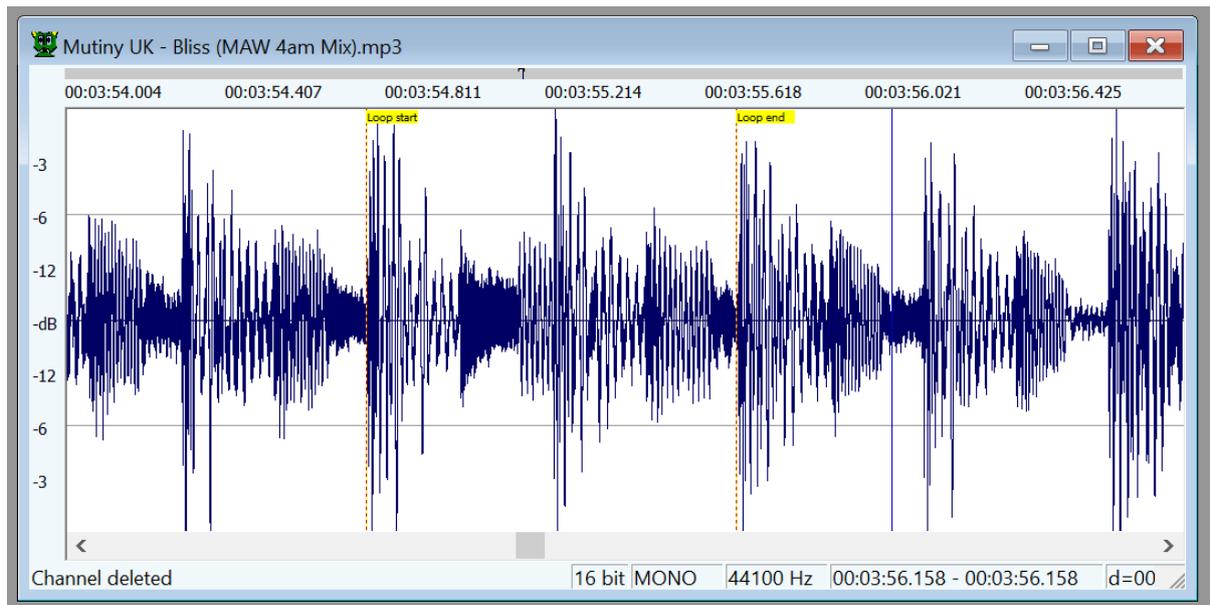


7. Advanced features:

7.1. Loop points & markers:

7.1.1. Loop points:

Wavosaur can recognize loop points and markers information embedded in .wav files. You can also create loop points and insert markers in Wavosaur. These informations are saved in the .wav file.



To insert loop points in your file, press the "L" key or go in menu Tools → Loop → Create loop points.

Loop points are inserted at selection start & stop, if there's no selection, loop points are inserted at file start and file end.

You can drag the loop points with the mouse. Double click inside the loop points make out a selection.

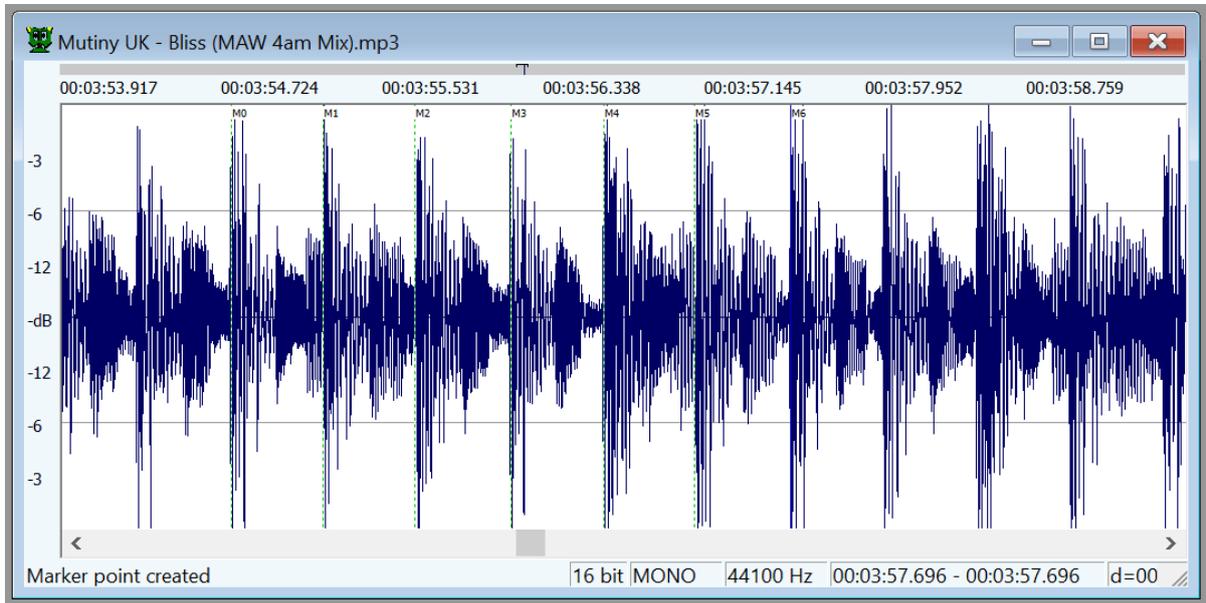
7.1.2. Crossfade loop:

Go in menu Tools → Loop → Crossfade loop
For the moment, the crossfade looping is set to equal volume and 50 or 100% fading.



7.1.3. Markers:

Markers are useful to set "regions" in your audio file.



You can manage the markers with keyboard shortcuts, menu or the marker toolbar:



To kill one marker at once, select it with the mouse, click the left mouse button and press the DELETE key without releasing the left mouse button.

you can drag the markers with the mouse (left click and drag).

Some features in Wavosaur automatically insert markers:

- record auto
- detect region
- set markers at BPM

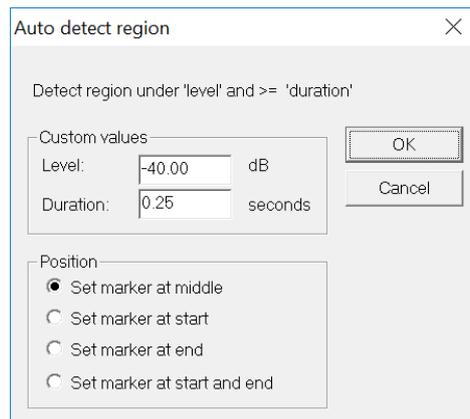


7.2. Tools:

7.2.1. Interpolate:

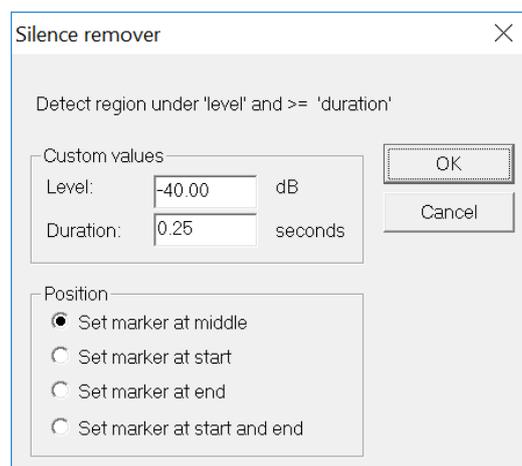
Interpolates linearly the samples values between samples in a selection, it can be useful to remove very short clicks.

7.2.2. Auto detect region:



Insert markers automatically, based on time and amplitude threshold set by user. Can be useful to delimit regions separated by silence.

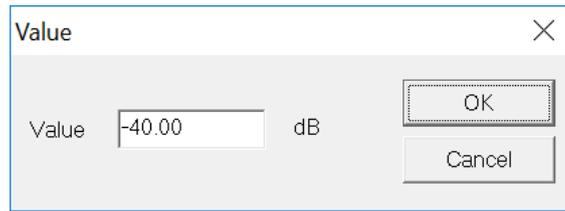
7.2.3. Silence remover:



Automatically removes the silence in a file. "silence" can be defined by user, by setting threshold for minimum time and minimum amplitude.



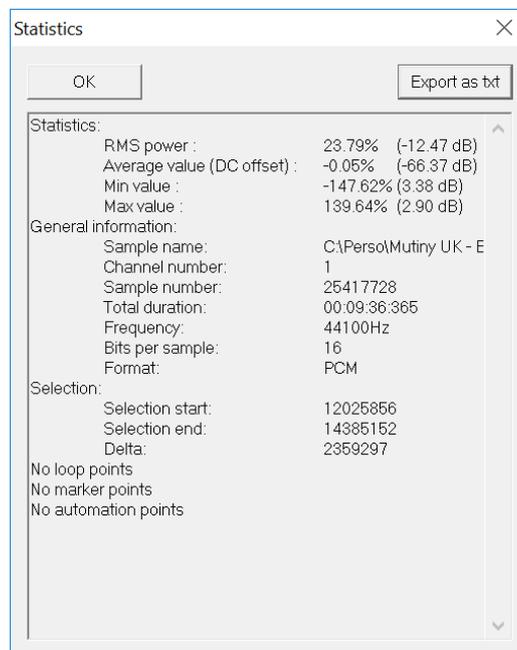
7.2.4. Auto trim:



Removes silence at start and end of file, user can set a min volume level for "silence".

7.2.5. Statistics:

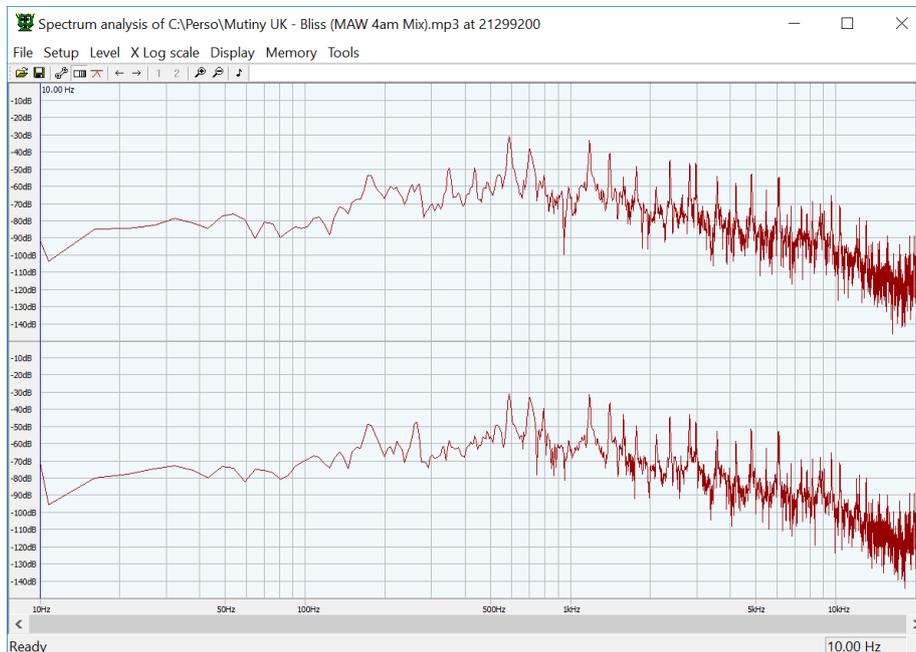
Displays statistics about the selection (or the entire file if there's no selection). RMS power, min & max sample values, average value.





7.2.1. Spectrum analysis:

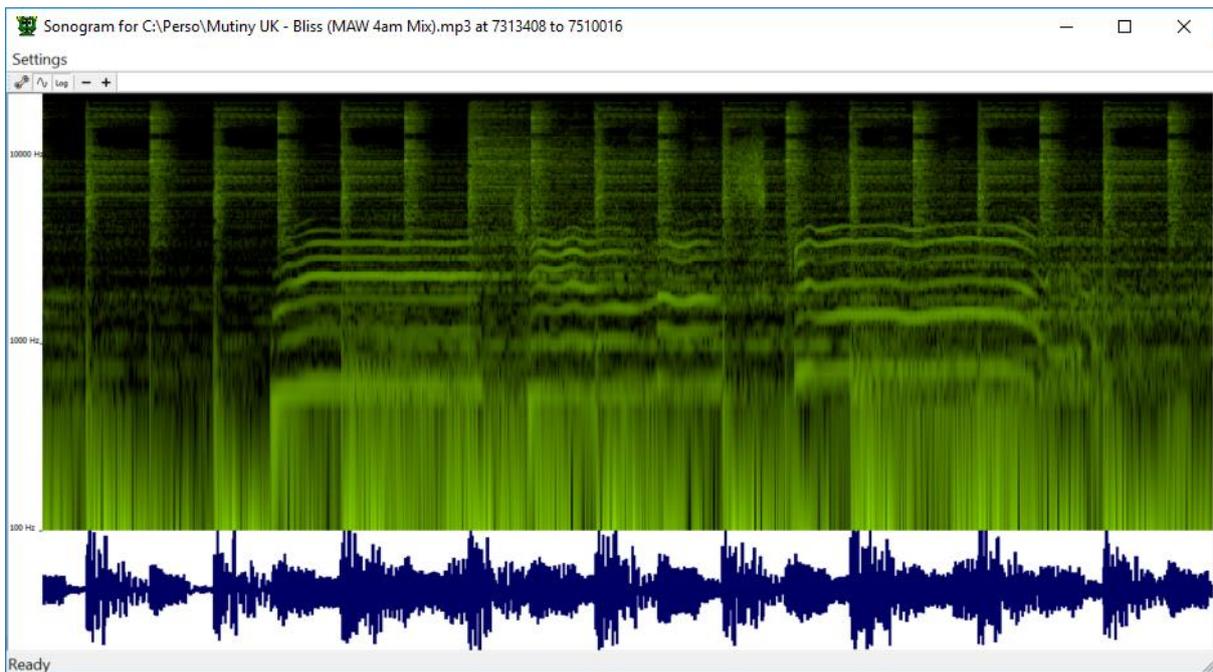
Show the frequency spectrum of the selected range. You can change the visualisation settings in the 2D spectrum windows.



- | | |
|----------------------|--|
| File | to open or save 2D spectrum analysis |
| Setup->Display | change the appearance |
| Setup->Windowing | to change the digital windowing for computation |
| Setup->Configuration | to change buffer size or transformation type |
| Level | the minimum level of display |
| X Log scale | frequency in logarithmic scale |
| Display | option to auto refresh the FFT during sample playing |
| Memory | to memorize (in RAM) different FFT waveforms |



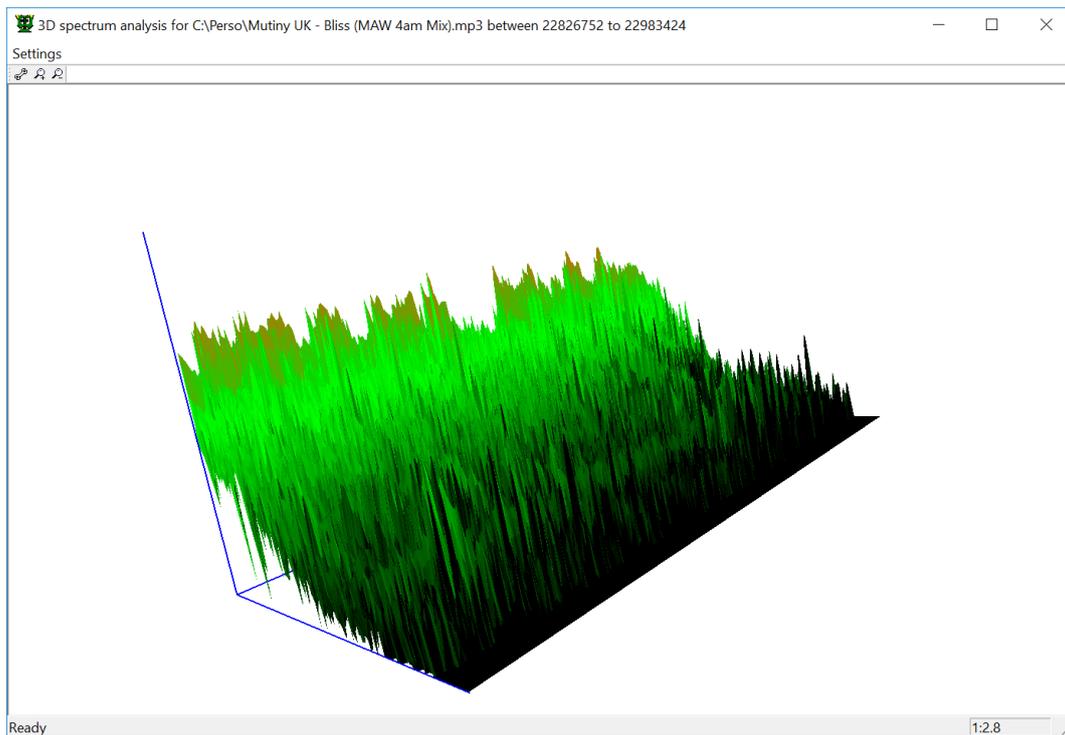
7.2.2. Sonogram:



Tool to display the spectrum analysis in 2D along the audio file.



7.2.1. 3D spectrum analysis:

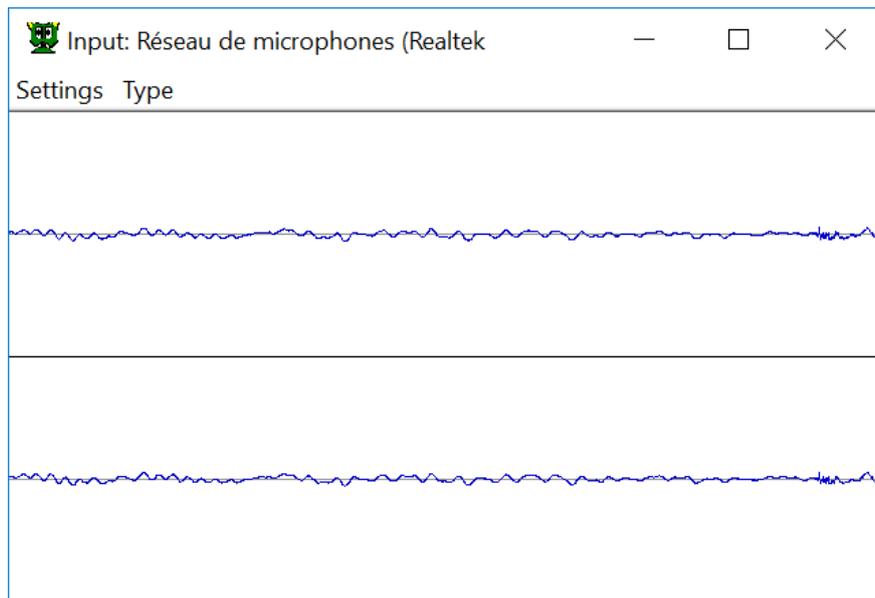


Display: options to display the view in colour or black and white

Use zoom buttons to increase the display, and mouse to mode the global 3D view.



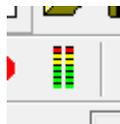
7.2.1. Input oscilloscope:



Input oscilloscope shows the signal coming from audio input (microphone for example) before or during recording.

The view can be change for FFT, stereo panning analysis.

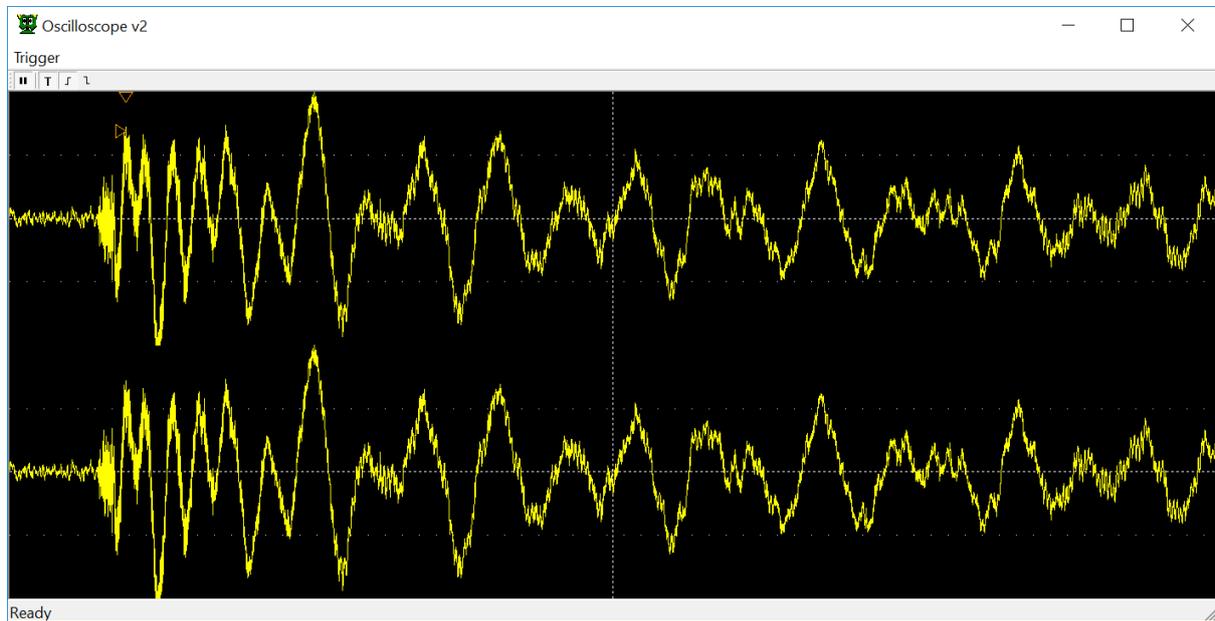
Note: to activate input listening, click on the “Monitor input” button:





7.2.2. Output oscilloscope:

Display in real time the output signal of audio engine.

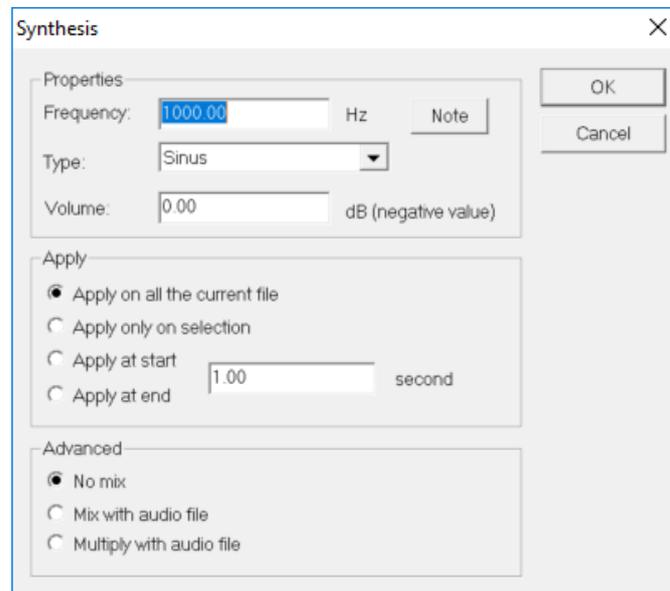


Trigger: functions to stop the signal capture when trigger level is reached.

Change the trigger level and position with mouse



7.2.1. Simple synthesis:



Properties:

You can generate simple waveform:

- Sinus
- Square
- Ramp up
- Ramp down
- Triangle
- White noise
- Absolute sinus
- Red noise (Brownian)
- Dirac train
- Linear sweep
- Exponential sweep

You can choose the frequency, waveform, volume and duration except for noises and sweeps.

Apply:

You can overwrite the entire file, only the selection or append the waveform.

Advanced:

Mix with audio file will sum the generated waveform with the current file
Multiply let you do some kind of ring modulation



Note:



To change the value of frequency of chosen note.

7.2.2. Advanced synthesis:

This feature is not yet available.



7.2.3. Misc. synthesis:

These features are interesting to perform data signal processing, like filters, resampling and so on.

Dirac at cursor	insert a 0dB sample at cursor
Step at cursor	insert a step at cursor (replace the current file)
Frequency impulse train	insert frequency impulse train (replace all datas)
Frequency sweep	generate a sweep signal from 0Hz to sampling frequency divided by two.

7.2.4. Delay calculator:

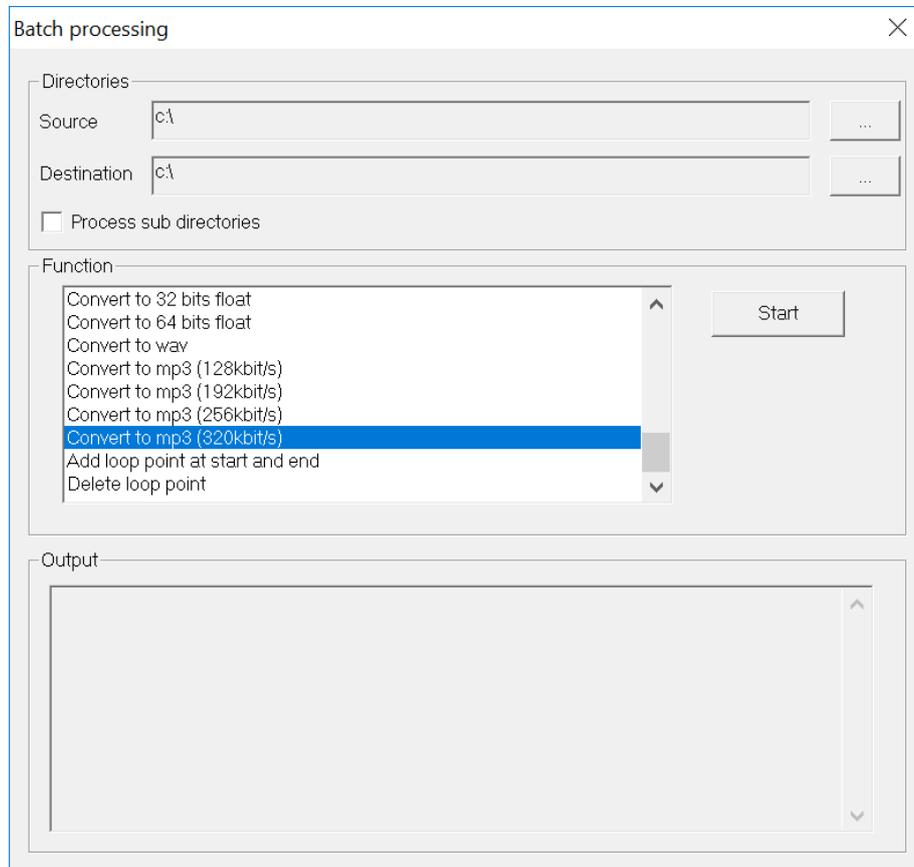
Multiplier	Period (ms)	Frequency (Hz)
2x	1000.00	1.00
1x	500.00	2.00
1/2	250.00	4.00
1/3	166.67	6.00
1/4	125.00	8.00
1/6	83.33	12.00
1/8	62.50	16.00
1/12	41.67	24.00
1/16	31.25	32.00
1/24	20.83	48.00
1/32	15.63	64.00

A simple converter between BPM, frequency and period



8. Batch processing:

To launch the batch processor, go in menu Tools → Batch processor. You can also press the "B" key.



Select a source and a destination folder.

Choose feature in the "Function" tab.

Press "Run" to start the processing.

Chose "Subdirectories" to go inside subdirectories of the selected path.

If you set destination folder = source folder, the source files will be overwritten.

Now, Wavosaur only write .wav files. The other formats in source folder are converted to .wav

You can select only one feature at a time for batch processing.

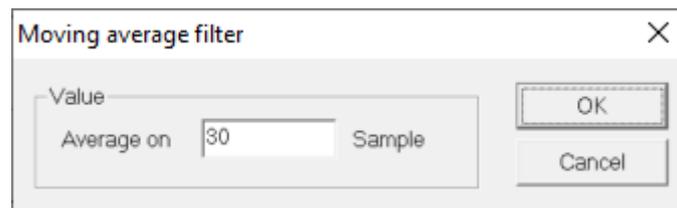


9. Wavosaur Effects:

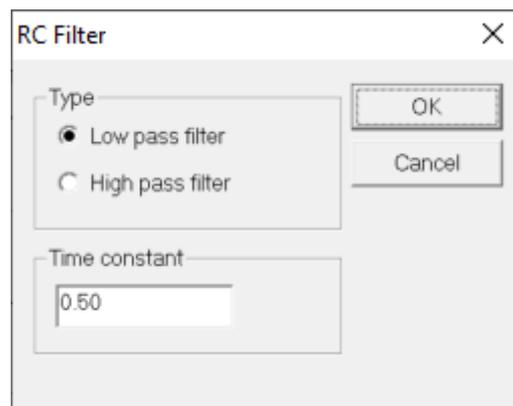
Wavosaur embeds DSP effects.

9.1. Filtering:

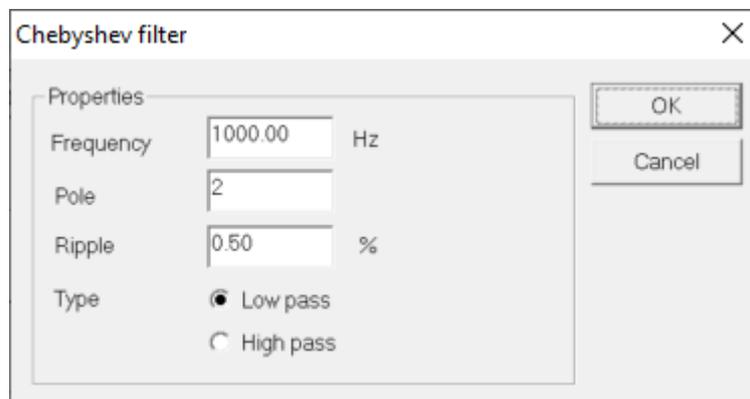
Moving average:



Electronical RC filter (resistor/capacitor model):

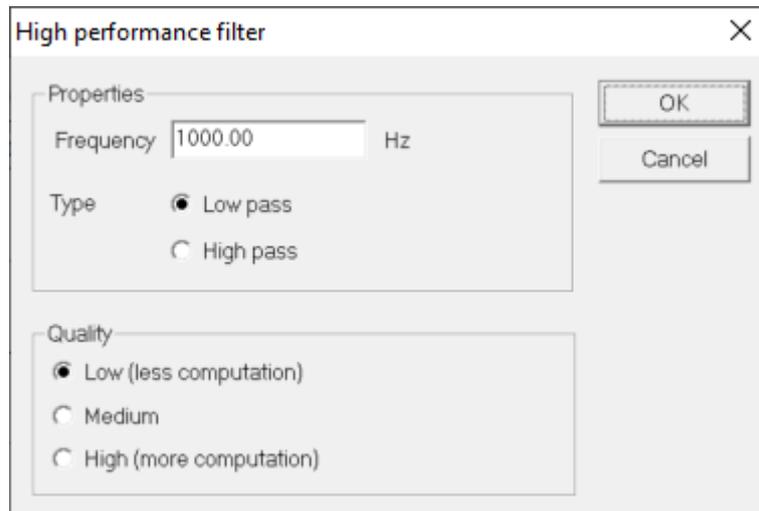


Chebyshev IIR filter:

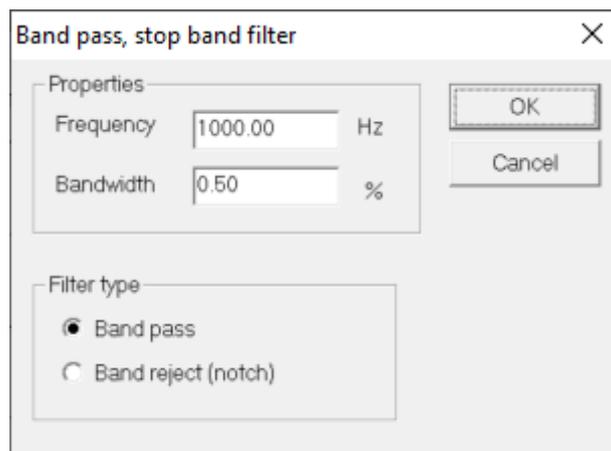




High performance filter FIR:

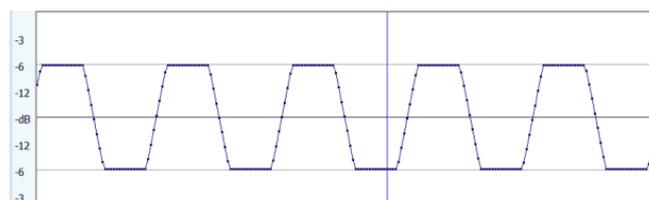


Band pass/stop/reject:



9.2. Truncate:

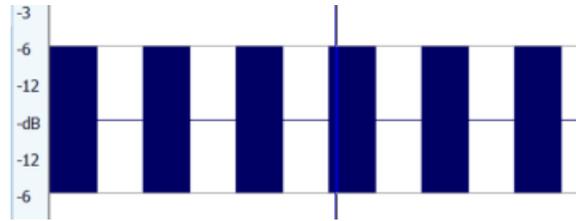
Truncate signal at specific value:





9.3. Gapper:

Mute parts of the sound file at given frequency:





10. Troubleshooting:

No sounds can be heard:

- check your selected audio drivers (menu→Options→Audio configuration).
- depending on your soundcard & drivers be sure there's no other program that use the drivers.
- check also the audio routing (menu→Options→Audio routing).

There are some glitches/crackles when playing/recording:

- try to increase the buffer size in the audio configuration

The latency is too high:

- go for ASIO, if your soundcard doesn't support it, try ASIO4ALL

I lost my skin!

- if you change/move/rename the .skin file, Wavosaur can't open the skin informations and reset to the default editor look.

MIDI control doesn't work:

- check the MIDI configuration if the right MIDI in port is set,
- set the MIDI CC (editable in the wavosaur.cfg) to match with your hardware.

11. Help:

Wavosaur Team provides online help with:

- Complete features description
- Blog <https://blog.wavosaur.com/>
- Forum <https://www.wavosaur.com/forum/>



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