SAWRIZOR

All-Round Saw Synthesizer

Manual

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Contents

Introduction

Sawrizor is an all-round saw synthesizer, that combines two saw oscillators by mixing different generators for each oscillator, resulting in a matrix of recorded and hand made audio material of the last decades and unique new saw combinations. Both units have voice unison features with detune, mix and other sound fattening abilities.

The sub oscillator adds punch and more character to the sound. Chorus, delay and reverb effects enrich the sound with depth.

Sawrizor is aliasing free where necessary and allows up to 8x oversampling for high SNRs. Analogue sounding resonance/damp filters and an EQ complete the clearness of the digital synthesizer.

Features

- **Double aliasing free wavetable synthesizer with unison and sub oscillator**
- **Resonance damping filter**
- **FX section with chorus, delay, reverb and equalizer**
- **Freely resizable GUI from very small up to Ultra-HD & 5K Retina**
- **Auto off feature**
- **Preset manager**
- **No dongle required (except AAX)**
- **Supports x64 Windows 10 − 11 VST® 2/3, AAX (ProTools Native)**
- **Supports x64 macOS 10.11 − 12 VST® 2/3, AU, AAX (ProTools Native)**
- **Supports 16-32 bits sample resolution @ 44.1−96 kHz sample rate**
- **System requirements: Minimal 2 GB RAM & C2D 2.66 Ghz, 4 GB RAM & i5 and better recommended for polyphonic and more complex settings**

Demo version limitations

The demo version is time limited to 10 min usage per session, introduces a 2 second audio gap every 30 seconds and is limited to 1 instance per session.

Software installation

Mac

Mount the .dmg, CTRL/right click → Open the package file and follow the steps.

Windows

Run the installer and follow the steps. Your DAW host software should find the plugin automatically or let the host rescan your plugins. Or install the files from the zip archive to your system manually.

License installation

The plug-in automatically searches for the license file at program start. The license, that you will receive when you purchase the Pro version, has to be simply saved to one of the following directories of your system drive(!). Please restart your DAW to get the license recognized.

Mac

/Library/Audio/Plug-Ins/VST

/Library/Audio/Plug-Ins/VST3

/Library/Audio/Plug-Ins/Components

/Library/Application Support/Avid/Audio/Plug-Ins

Windows

The first item is the environment variable (if set on your system).

PROGRAMFILES → Subfolder Sawrizor

VST_PATH

VST_64_PATH

VST3_PATH

VST3_64_PATH

PROGRAMFILES → Subfolder Vstplugins

PROGRAMFILES → Subfolder Steinberg\Vstplugins

COMMONPROGRAMFILES → Subfolder VST3

COMMONPROGRAMFILES → Subfolder Avid\Audio\Plug-Ins

Your desktop

\Users\admin\AppData\Roaming\SugarAudio\<plugin> → also the place for theme and preset files

Example:

If your System drive is C and you didn't move your Program Files folder to an other location than the standard folder, then one possible path would be: C:\Program Files\Steinberg\VstPlugins

User Interface

Questionmark
Shows this help file (if it is installed correctly).

Preset Navigator & Reset

Previous slot
Navigates to the previous slot.

Slot name
1.character F = factory slot / U = user slot
2.character = slot from A to Z

Next slot
Navigates to the next slot.

Presets
Opens/closes the preset manager.

Previous preset
Navigates to the previous preset of the slot.

Preset name
1.character = preset of slot from A to Z

Next preset
Navigates to the next preset of the slot.

Reset
Resets all voices (not effects).

Oscillators

Oscillator volume
Changes the volume of the oscillator.

Oscillator waveform
Selects the waveform of the oscillator. Full numbers are single waveforms and two neighboring waveforms can be mixed for each of both oscillators.

Oscillator unison voices
Changes the number of unison voices of the oscillator. Caution: high values use much CPU power!

Oscillator panning
Changes the panning of the oscillator.

Oscillator octave
Changes the octave of the first oscillator.

Oscillator semi tone
Changes the semi tone offset of the first oscillator.

Phase, Tuning & Mix

Oscillators random phase
Changes the phase randomness of the oscillators.

Oscillators unison voices detuning
Changes the unison voices detuning of the oscillators.

Oscillator voices mixing
Changes the mixing between the original waveform and the additional unison voices.

Oscillators coarse tuning
Changes the interrelated coarse tuning of the oscillators.

Oscillators fine tuning
Changes the interrelated fine tuning of the oscillators.

Stereo Spread, Low Cut & Sub Oscillator

Oscillators unison voices spreading (width)
Changes the unison voices stereo spreading/width of the oscillators.

Oscillators low cut frequency
Adjusts the frequency of the oscillators low cut filter.

Oscillator sub volume
Changes the volume of the sub oscillator.

Oscillator sub waveform type

Changes the waveform type of the sub oscillator.

Oscillator sub octave
Changes the octave of the sub oscillator.

Envelope & Damping

Envelope attack time
Adjusts the envelope attack time.

Envelope decay time
Adjusts the envelope decay time.

Envelope sustain level
Adjusts the envelope sustain level.

Envelope release time
Adjusts the envelope release time.

Damping on/off
Switches the damping filter on/off.
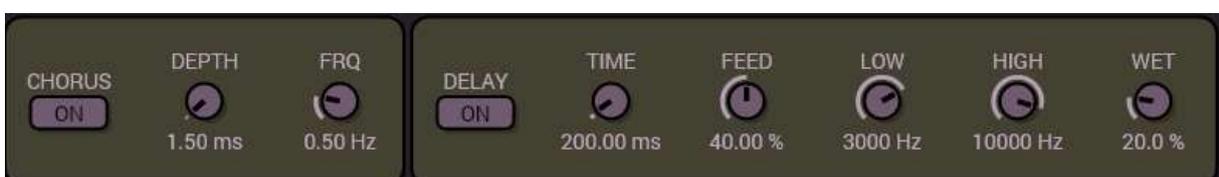
Damping time
Adjusts the damping time (s).

Damping amount
Adjusts the damping amount of the frequency scale.

Damping resonance
Adjusts the damping resonance.

Chorus & Delay

Chorus on/off
Switches the chorus on/off.

Chorus depth
Adjusts the depth amount.

Chorus frequency
Adjusts the hz (frequency).

Delay on/off
Switches the delay on/off.

Delay ms
Adjusts the delay time in milliseconds.

Delay feedback
Adjusts the feedback amount.

Delay low cut
Adjusts the low cut frequency.

Delay high cut
Adjusts the high cut frequency.

Delay wet
Adjusts the wet signal level.

Reverb

Reverb on/off
Switches the reverb on/off.

Reverb time
Adjusts the time.

Reverb low cut
Adjusts the low cut frequency.

Reverb high cut
Adjusts the high cut frequency.

Equalizer

Equalizer on/off
Switches the equalizer on/off.

Equalizer low gain
Adjusts the low gain level.

Equalizer low frequency
Adjusts the low/mid cut-over frequency.

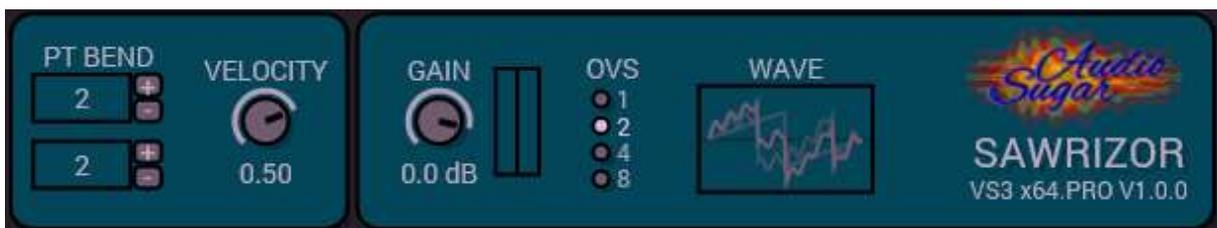### Equalizer mid gain
Adjusts the mid gain level.

Equalizer high frequency
Adjusts the mid/high cut-over frequency.

Equalizer high gain
Adjusts the high gain level.

Settings, Wave & About

Pitch bend up
Sets the number of semi tones for the pitch wheel bend up.

Pitch bend down
Sets the number of semi tones for the pitch wheel bend down.

Velocity transpose
Adjusts the velocity (volume) transpose curve for incoming midi notes.

Gain & RMS meter
Applies a gain adjustment to the outgoing signal and shows the output rms level.

Oversampling
Sets the oversampling factor, 1 = worst quality but low CPU usage, higher values use much more CPU time for better sound quality.

Logo
A mouse click at the logo opens the about box.

Bottom right window edge
Freely resize the window dimensions.
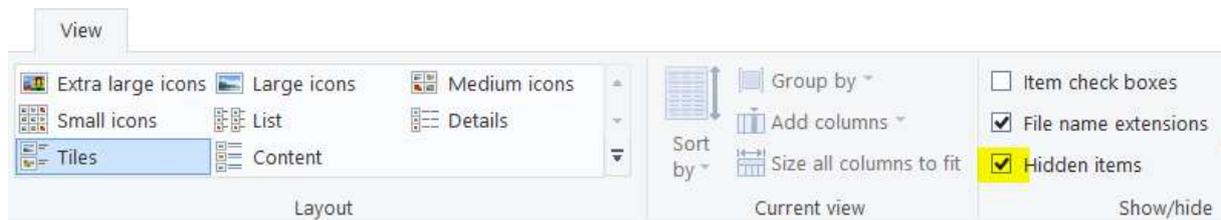
File system & folders

These are the main folders in the file system for preset and theme files:

Mac

In Finder navigate to: /Library/Application Support/SugarAudio/Sawrizor

Windows

In Windows Explorer enable hidden items:

Navigate to: \Users\<youruser>\AppData\Roaming\SugarAudio\Sawrizor

Preset system

Sawrizor is delivered with some presets and a preset manager for a good starting point of your work. The presets are system independent (Mac and Windows). The files are stored at the above locations in the sub-folder "Presets" and can be freely copied/renamed (within the preset naming conventions). Extract your preset files from here to distribute them to other systems and the community.

Naming conventions for the presets
1.character F = factory preset / U = user preset
2.character = slot from A to Z
3.character = preset of slot from A to Z
The extension „.slo" is a slot file (without presets, description only) and „.pre" is a preset file.

User / factory presets

Switches between the user defined and developer delivered presets.

Slots

These items are the 26 available slots from A to Z. A right click at selected text fields edits this text.

Presets

These items are the 26 available presets within the selected slot. A double left click loads a presets. A right click at selected text fields edits this text.

Delete slot

Deletes the current slot with all of its presets.

Load preset

Loads the selected preset.

Save preset

Saves and overwrites the current preset to the selected slot and preset.

Delete Preset

Deletes the selected preset.

About (default) presets

Sawrizor has a factory and custom preset system. However, most of the modern DAWs have a built-in and plug-in independent preset system by themselves and in most cases you can also define a default preset with your favorite plug-in settings.

Hint : *So please check the manual of your DAW software to save a default preset.*

Theme support

Simply copy a Theme.txt from one of the theme sub-folders into the above data folder (overwrite the existing Theme.txt).

After changing the theme you have to restart your DAW or reopen your project to see the changes take affect.

The Theme.txt file contains the RGB (red, green, blue) color combinations for all texts, knobs, background, indicators (extra) and the four panel rows. These can be edited manually with the system in-built text editor for your own creation. The values in the file can be entered in decimal (0 - 255) or hexadecimal values (0x00 – 0xFF). Please have a look at common paint apps, search the web for "color palettes" or use a palette generator from the web to get an idea and nice examples of palette creation and color codes.

Oversampling

The in-build up to 8x oversampling guarantees a perfect sound quality. A factor of 2 will work fine for most use cases and higher values will have an impact on your CPU usage.

Anti-aliasing

Sawrizor has aliasing free wavetable oscillators and other anti-aliasing strategies in-built e.g. oversampling, special downsampling filters and interpolators/smoothers. However, if you overdo things e.g. high octave sub oscillator octaves or sub with sawtooth/square waveforms, it's possible that aliasing could occur (maybe sometimes intentionally as creative effect).

Performance guide

Sawrizor is highly optimized and many hours have been spent in making it as quick as possible. But at a certain point you could reach your system limits especially if you have an older system with little RAM or slower CPU. Audio frame drop outs and clicks could occur. However here are some hints, how to reduce CPU and memory usage of the plug-in, if you push your system to the limits.

- Render/freeze your DAW tracks to waveform samples
- Use less automation, don't change automation constantly over a long time range
- Reduce the number of unison voices
- Set unused/unnecessary oscillators, filters and effects to off / zero volume
- Use smaller plug-in window resolutions
- Close the plug-in UI if you don't need it
- Buy better hardware :-) especially with better CPU

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