



# SAWRIZOR

*All-Round Saw Synthesizer*



## *Manual*

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## **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 VST® 2/3, AAX (ProTools 2020 Native)**
- **Supports x64 Intel macOS 10.11 – 11 VST® 2/3, AU, AAX (ProTools 2020 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 Sawrizer

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).

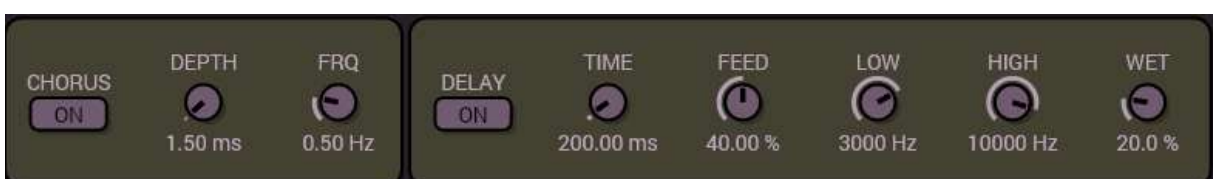
**Damping amount**

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.

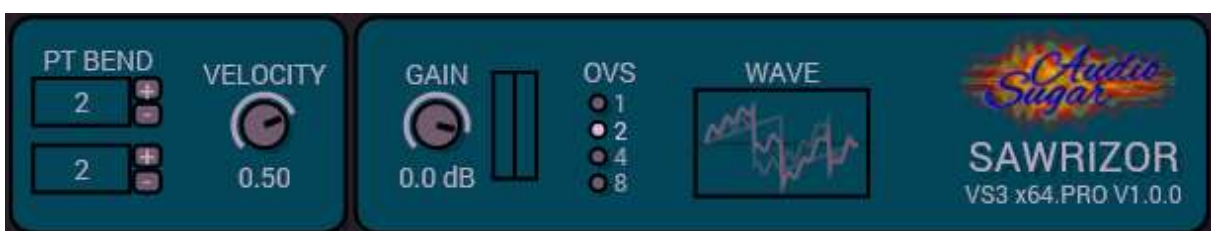
### **Equalizer high frequency**

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**

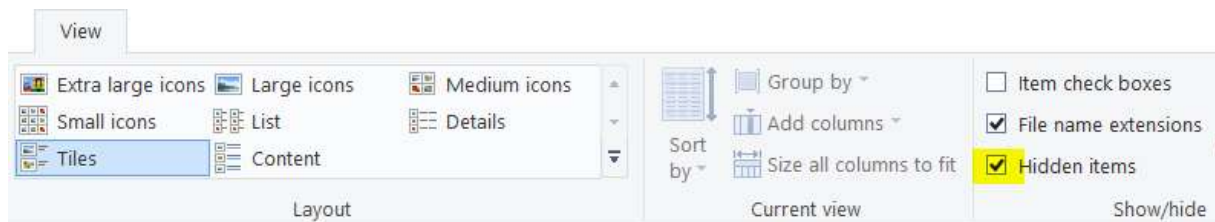
These are the main folders in the file system for preset and theme files:

### ***Mac***

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

### ***Windows***

In Windows Explorer enable hidden items:



Navigate to: \Users\\AppData\Roaming\SugarAudio\Sawrizer

## **Preset system**

Sawrizer 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**

Sawrizer 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**

Sawrizer 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**

Sawrizer 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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