SoftSynth

Users and Systems Manual

### PREPARED FOR

CI103-061

### PREPARED BY

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# Summary of SoftSynth (Abstract)

SoftSynth is a plug-in developed by several undergraduate students in Drexel University’s College of Computing and Informatics. It is designed to help music producers find the right sound for them to use in creating music. In addition, it also functions as an introduction for beginners to learn various music production techniques and effects through trial-and-error randomization and user-feedback. Through these two features, SoftSynth aims to provide anyone the ability to design their own unique sound and make music.

# System Requirements

**Minimum:**

* Intel Core i5-XXXX, Dual-core.
* 4GB RAM
* 1GB available storage space HDD/SSD
* 32/64 bit Operating System
* Windows 7 or higher, OS X 10.11.6 or later
* Integrated Sound Card

**Additional Software:**

A Digital Audio Workstation that allows for external plug-in functionality (if available).

If you wish to modify SoftSynth, then please install HISE ver 2.0.0. Knowledge of C++ and JS is preferred. Refer to the tutorial section on <http://hise.audio/> to learn how to use HISE.

# Installation Guide

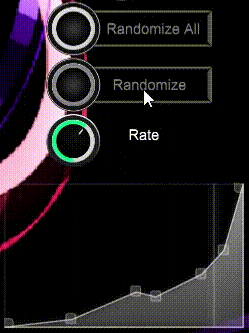
1. Download the build contained within a .zip folder.
2. If you are using a VST, put it in your respective plugin folder. Refer to your VST’s guide on how to import plugins.
3. If you are using the standalone application, extract it anywhere and run it. It comes as an executable file (.exe).

# Features and How to Use Them

SoftSynth has a collection of features that we are required to explain, or otherwise be left confused.

### They are as follows:

## Randomize

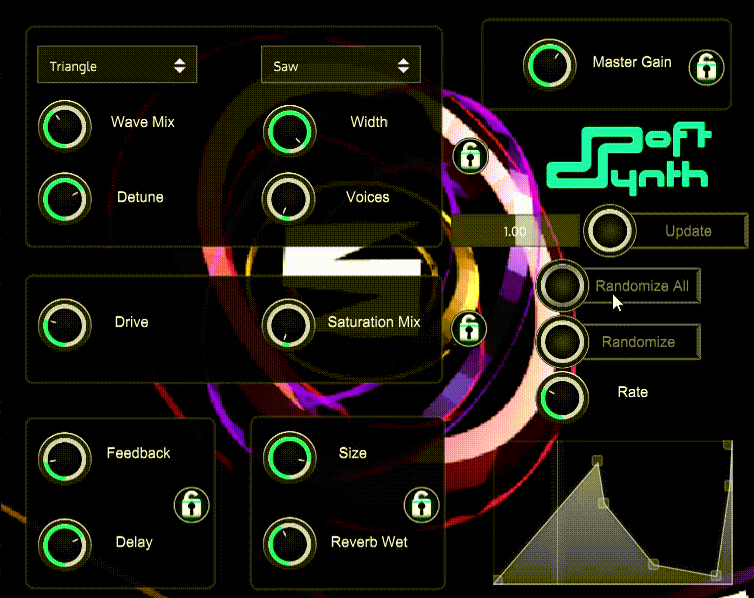


Randomize is used to specifically change the wavetable. With a click of the button, the wavetable changes the positions of the points above.

#### This goes in tandem with the fact that the wavetable itself can be manually edited:

* Click on empty space to add points
* Highlight your cursor on a line between points and use the scroll wheel to change it’s slope (linear, exponential, logarithmic)
* Click and hold on a point, then drag to move it

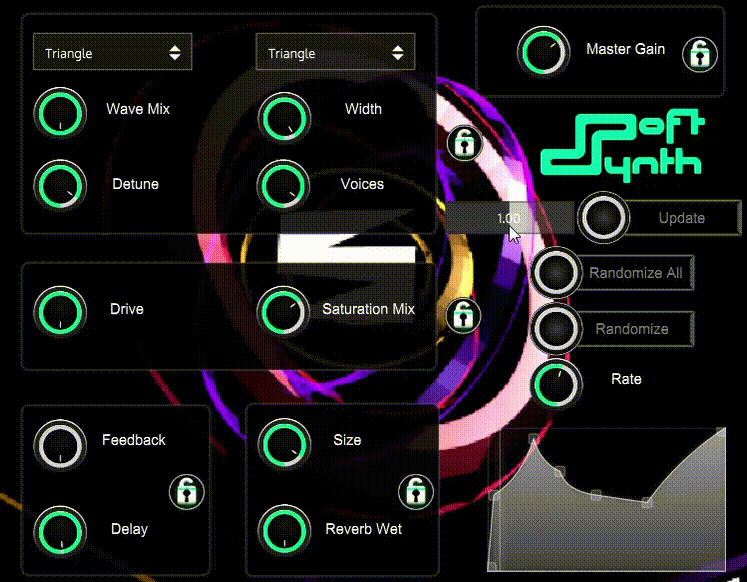
## Randomize All



Randomize All, on click of the button, changes the values on most parameters. The name is slightly misleading, in that it actually doesn’t randomize every parameter and activate Randomize.

As such, the few parameters not affected by Randomize All and other methods are the Delay Feedback, the wavetable, and the wavetable Rate.

## Update



Update comes in the form of a slider and button. Depending on how large or small the number on the slider is (relative to 1), most parameters will increase or decrease by a similar magnitude once the button is clicked. An amount (maximum of 1.50, minimum of 0.50) can also be typed into the slider by double clicking it.

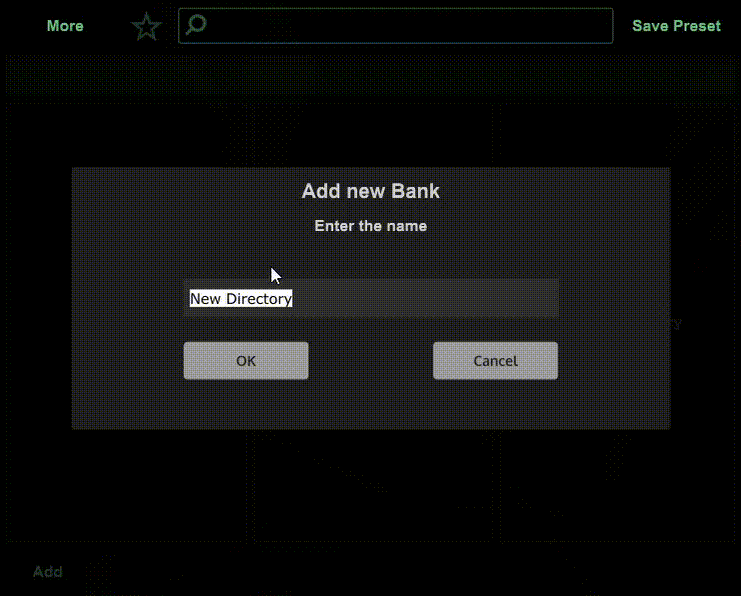
Just like with Randomize All, the Delay Feedback, the wavetable, and the wavetable Rate are not affected.

## Lock



Lock is fairly simple, in that all it does is toggle whether a section of the synth is able to changed by Randomize All and Update or not. Click and the answer either becomes yes or no.

## Presets - Saving and Loading



Before getting into the Preset interface in detail, it would be wise to first explain how to set up the saving and loading of presets.

* Create a new Bank (basically a folder) by clicking “Add” on the lower left hand corner of the interface. You can name it whatever and then click “OK” to add it.
* Create a new Category (basically another folder) by doing nearly the same procedure, but instead in the following rectangle
* Select your Category by clicking it, and in the next rectangle over click “Add” once again to create a **default Preset folder**.

**When trying to save a Preset using a newly made preset folder, *DO NOT CLICK ON THE FOLDER BEFORE SAVING. SAVE FIRST*. When a preset folder is made, it’s automatically selected AND HAS A DEFAULT VALUE. As such, it’s recommended to first the make parameters you like, then create a preset folder, and finally save it by overwriting the default parameters.**

Accessing and loading presets is fairly simple, as it only requires clicking on the specific Bank and Category. From there, a single click on any preset immediately loads it into the synth. Presets can be favorited and searched for easy access. They can also be deleted and renamed with the click of a button.

# The Technical Side - System Architecture

SoftSynth’s unique features come from the user-defined functions found in the OnInterface and OnControl section of the Scripting Workspace.

## OnInit:

The first part of the OnInit script is dedicated to constructors and creation of some specific labels and knobs, in addition to a custom keyboard (as a Floating Tile).

The UpdateParameters function will update all the parameters FROM the KNOBS and INTO the Synthesizer Group found in the Main Workspace. This is called at the end of the RandomizeAll and FeedbackUpdate function.

The RandomizeAll function randomizes in a specific set of range. This specified range differs according to which parameter is selected. It also takes into account whether the lock button for the panel is on or off.

The FeedbackUpdate, will change the parameters based on the value of the Range knob (Note: The range is called a knob, but the design is different. It can be found to the left of the Update button on the interface). The feedback algorithm works as such:

Current Value of Parameter + (Max Value of Parameter X (Value of Range Knob - 1))

## OnControl:

The program’s buttons recognize on/off states in binary form ( 1 is on, 0 is off). The OnControl Script runs whenever an event is handled on the interface. There are two events that will be checked: The RandomizeAll button and the Update button. If the state of the button is on, then the code within the if statements will execute, and it will the state will be set back to off.

# Troubleshooting

\* SoftSynth was built to be syntax-wise, errorless. All features in the main interface were tested to be error-proof, and the program would not have internal problems. The problems the Troubleshooting section covers are external problems.

### I can’t hear anything!

If you have the program opened up, and connected it to an external audio output, then the reason you can’t hear anything is that SoftSynth is still connected to your computer’s audio system and not the external. Simply close SoftSynth and open it again, without disconnecting from the external output.

### I can’t find/import presets!

After installation, presets for HISE can be found under Users/appdata/roaming/\*SoftSynth\*/\*Project Name\*/UserPresets. In the folder, you can locate presets or import presets.

# Contact Information

For any issues not specified above, please email one of the following developers:

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