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# Spexx Audio Plug-In Documentation

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## Introduction

This document contains the user manual and typical usage examples of the plug-in Spexx. Videos demonstrating specific software functionalities can be found at <https://www.youtube.com/recompose>.

Spexx is an audio plug-in for the generation of spectral images for new, unusual sound experiences. A base effect with seven additional, modular, matched effects in two processing chains — one controlling space and the other frequency — enable the user to penetrate the depths of sonic structure with visual feedback.

The tool is designed for experimentation to create a unique signature sound. Activate, deactivate, and string together the various effects in a desired order to create a chain reaction resulting in a radiant sonic experience.

The results can best be described with the following set of terms: signature sound, hyperspace, weird, ghostly, angelic, warped, radiant, shimmering, grainy, glowing.

The plug-in is delivered in the VST2, VST3, Audio Unit, and AAX formats (64-bit) for macOS and in the VST2, VST3, and AAX (32 and 64 bit) formats for Microsoft Windows.

Hosts that support the VST, AU, and AAX formats can load Spexx. This includes Ableton Live, Logic, Cubase, Reaper, Bitwig, Pro Tools, and many more.

Spexx is compatible with Pro Tools 11 and later versions.

## Installation

Start the installation wizard and follow the instructions. The installer will install the plug-in system-wide, for all users of the system. You can choose to only install certain parts of the full package (32-/64-bit plug-ins, VST/VST3/AAX/AU formats, factory presets).

**Note for Windows users:** If the plug-in search path in your VST host application is set to a custom value, you may choose a different installation path for VST plug-ins in the installer. Please check the manual of your DAW for further details.

## Uninstall

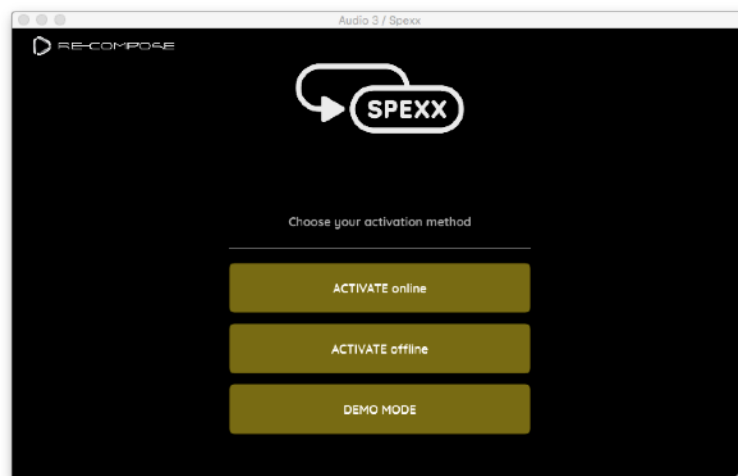
On Microsoft Windows, use the facilities provided by the operating system (choose “Apps and Features” from the Start Menu) to uninstall the plug-in.

On macOS, simply delete these files/directories:

- /Library/Audio/Plug-Ins/Components/Spexx.component
- /Library/Audio/Plug-Ins/VST/Spexx.vst
- /Library/Audio/Plug-Ins/VST3/Spexx.vst3
- /Library/Application Support/Avid/Audio/Plug-Ins/Spexx.aaxplugin
- /Library/Audio/Presets/ReCompose/Spexx

## Unlocking

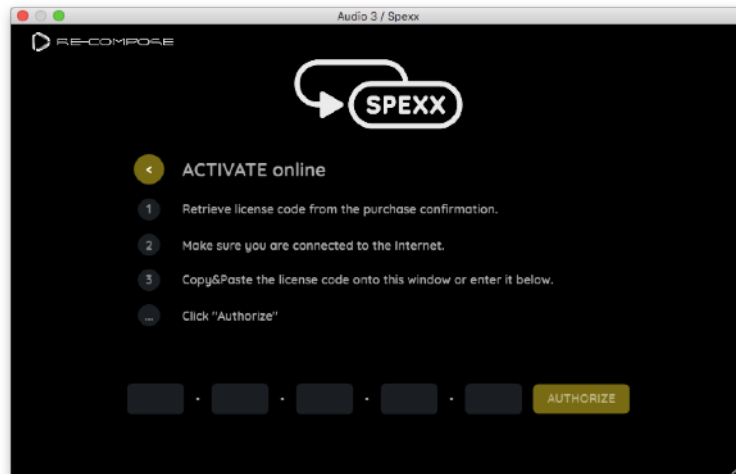
Spexx supports both online and offline activation. Further, a demo mode is included in the software.



## Online Activation

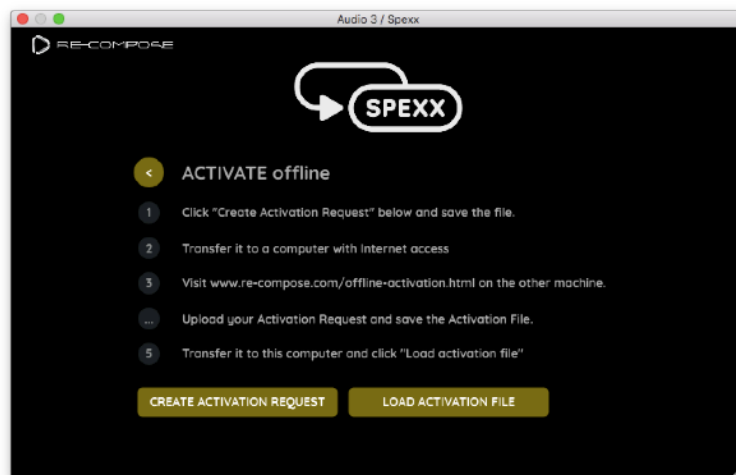
After starting the plug-in for the first time, click “Activate Online” on the welcome screen. This will display the online activation screen (see next page).

Copy and paste your serial code into the application window or enter it manually in the blank fields.



### Offline Activation

Click on “Activate Offline” on the welcome screen. This will display the offline activation screen.



Click on the button “Create Activation Request”, then save the file to a portable drive (e.g. a USB flash drive) and transfer it to a computer connected to the Internet. On that computer, open the page <http://www.re-compose.com/offline-activation.html>, enter your serial code, and upload the “Activation Request File” followed by “Submit”. Save the “Activation File” to your portable device, transfer it back to the original computer, and import it by clicking on “Load Activation File”.

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### Deactivation

If you wish to deactivate the plug-in on one or all of your computers, please contact the Re-Compose Support at [support@re-compose.com](mailto:support@re-compose.com).

### Demo Mode

On the welcome screen, click on “Demo Mode” to test Spexx. Every ten seconds, you will hear a signal interruption of 0.5 seconds.

## Tutorial

### Usage of audio effects in Digital Audio Workstations

Spexx is a typical VST/AU/AAX audio effect plug-in. In popular DAWs such as Live, Logic Pro, Cubase, or Pro Tools, all of which can host these formats, you simply insert the plug-in from the host's browser into the dedicated audio effects area. When using AU, the plug-ins are categorized by their manufacturer. In the case of Spexx, this is "ReCompose". When using VST plug-ins, the folder architecture can be customized.

In Ableton Live, Spexx will appear in the respective AU or VST folder under the "Plug-ins" tab in the browser, where all third-party plug-ins are located. To load Spexx, simply drag it to the respective audio track, or double-click on it. It can be repositioned freely along the horizontal device axis.

In Logic Pro, plug-ins are accessed by clicking on the Audio FX tab of any given channel on the mixer. In the drop-down menu, navigate to "Audio Units" and then "ReCompose", then click on Spexx, and it will appear in the chain.

### Structure of the user interface

The user interface of Spexx is structured as presented below (for a description of the elements see next page):



- A. Spectral snapshot representation of the input and output signals
- B. Setting of the spectral resolution: determines how “smooth” the result will sound. A higher value leads to a higher resolution.
- C. Setting of the temporal granularity: determines how fast the effect will react to parameter changes and also how it will sound due to such changes. A lower value leads to a higher resolution by a reduced jumping distance.
- D. Preset manager: Activate by clicking on the centered area with the current preset name
- E. Display of the mix between the input and output signal
- F. Reset to empty the buffer
- G. Switch between single-threading and multithreading. Activate in case you can hear audio dropouts (active by default)
- H. Display of the CPU load. With multithreading activated, because of background processes running directly in Spexx the host may not compute CPU load and show 0%.
- I. Undo and redo all actions to freely experiment with settings.
- J. Setting of the input gain. Signal amplification up to 6 dB
- K. Setting of the output gain. Signal amplification up to 6 dB
- L. Effects of the First Stage (feedback chain). These four effects can be shuffled freely via drag and drop within their process chain, which will lead to different results.
- M. Effects of the Second Stage (direct output). These three effects can be shuffled freely via drag and drop within their process chain, which will lead to different results.
- N. Floating panel for effect settings. The panels can be moved around by drag and drop.
- O. Information about UI elements on mouse rollover

## Audio effects

Spexx is composed from a continuous base effect (Spectral Freeze) plus additional modular, matched effects. The effects Damping, Decay, Feaze, and Focus are located in a feedback chain (First Stage). The effects Mirror, Pitch, and Slope generate a direct output from the input signal (Second Stage). These effects can be activated independently and are freely connectable via drag and drop in any order. The effects operate meaningful in combination and, within the whole system together with Freeze, they build a dynamic and flexible framework for extraordinary sound modulation.

Over time, the base effect (Spectral Freeze) generates a “spectral image with a long exposure time” from an input signal. It contains the frequency components of the entire previous audio signal.

In technical terms, the freeze function preserves the buffer that Spexx samples at initialization and plays it indefinitely. This resembles a photograph during continuous exposure, showing a very specific snapshot in time.

Upon starting Spexx, you hear the snapshot of the spectral image which can change as a function of the input signal. With the mix controller, it is possible to add a portion of the original signal. Spexx generates an output signal with a strong effect by default. With the mix control set to 1 (100%), only the spectral image will be audible.

In sonic terms, this effect washes over the frequencies and creates a sense of timelessness that lends itself to being manipulated in various ways by the seven modular effects contained within Spexx.

### Effects of the First Stage (feedback chain)

This stage is destructive. As soon as the signal has been manipulated by an effect, there is no way back. At the same time, the current state is being altered by continuously incoming new audio material. In the case of silence at the input, it is possible for the Freeze Stage to arrive at steady stages, e.g. with a full Freeze without additional effects, or with a Feaze which preserves the peaks.

#### Decay

The entire frequency range decreases uniformly within an adjusted duration (**Time**).

**Time: 0.0 s – 95.0 s** (default setting: **5.0 s**)

#### Damping

All frequency bands outside of **Low** and **High** decrease gradually. **Factor** determines the speed of the decrease. The lower the value of **Factor**, the larger the amount of the decrease.

Without any further input signal, only the frequency portion between **Low** and **High** will remain audible.

**Factor: 0.3 – 1.0** (default setting: **0.9**)

**Low: 0.0 Hz – 20000.0 Hz** (default setting: **0.0 Hz**)

**High: 0.0 Hz – 20000.0 Hz** (default setting: **300.0 Hz**)

#### Feaze

The loudest spectral components of the spectral image (peaks) are identified and remain unchanged while the rest of the frequency range is gradually decreased. The speed of the decrease is determined by **Power**. This results in a kind of fraying with a spectral structure looking like a comb.

**Power: 1.0 – 16.0** (default setting: **1.0**)

#### Focus

Like Feaze, only with the most salient spectral component remaining.

**Power: 1.0 – 16.0** (default setting: **1.0**)



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### Effects of the Second Stage (direct output)

The effects of the Second Stage are only applied to a momentary snapshot of the “frozen signal” and have therefore solely an impact on the current step in time. If one of these effects is reset to its original settings or turned off, the spectral image of the First Stage remains unaffected.

#### Mirror

The spectrum is mirrored at a set mirror frequency (**Frequency**). The mirroring is applied logarithmically and is scaled around 440 Hz. Therefore, the parameter range from 44 Hz to 4400 Hz is sufficiently large.

**Frequency: 44.0 Hz – 4400.0 Hz** (default setting: **440 Hz**)

#### Pitch

The signal is shifted along a frequency axis in a musically correct way, i.e. not by parallel transition of components but through an energy shift in a logarithmically scaled frequency grid. Existing frequency ratios and intervals are retained. **Shift** determines the extent of the shift (+/- 2 octaves).

**Shift: -2.0 Octaves – 2.0 Octaves** (default setting **centered at 0.0**)

#### Slope

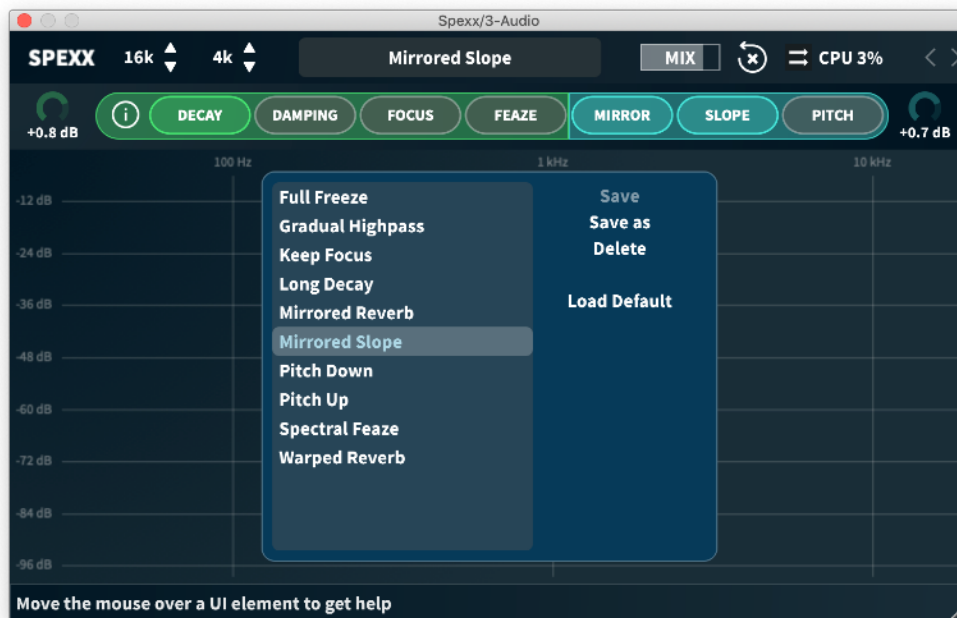
The spectrum is pulled apart around an initial frequency (**Center**) according to the value of **Slope**. This results in a distortion of the spectral snapshot. The central value for **Center** has been specified with 440 Hz.

**Slope: 0.3 – 4.0** (default setting: **1.0**)

**Center: 44.0 Hz – 4400.0 Hz** (default setting: **440.0 Hz**)

## Preset Manager

Use the preset manager function to load, save, and delete effect presets.



- Save:** overwrites the selected preset with the current settings
- Save as:** saves the current preset with a different name
- Delete:** deletes the current preset
- Load Default:** loads a default factory preset from a selection

## Sound examples

Following the link below, you will find a few examples of spectral manipulation by Spexx. The examples with the input signal have been marked with “Dry”: <https://soundcloud.com/recomposemusic/sets/spexx-interactive-spectral-manipulation-of-audio-signals-in-real-time>.