

Recurse Manual

Version 1.0.0

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General Information

Recurse is a “Recursive Audio Processor” designed to work with the AU and VST3 plugin standards, on Windows & Mac OS. This manual serves as a full explanation into every parameter and system featured within the scope of the plugin. It will be updated along with the program itself.

Standard Features

If you want to save a bit of CPU, you can click on the Lese logo to enter a menu, and you can select “Disable Metering” to stop drawing the spectrum (as well as stop performing the analysis necessary to generate that spectrum internally).

The small triangle on the bottom right of the interface can be dragged to rescale the interface, and the program will remember it’s previous size for next time (and will also remember regardless of your host; so any DAW you use will have the same size setting).

The Dry / Wet mix control is located on the bottom right of the interface.

Ordering

The main feature of Recurse is its reorderable effect chain. At the bottom of the interface, five different boxes labeled “Looper”, “Degrade”, “Filter”, and “Reverb” can be reordered by dragging them left or right. The first effect to be processed is the leftmost in the effect chain. These effects can be disabled with the circular button on each of them, and a small meter monitors their outgoing level.

Presets

Recurse features a number of “factory presets”, which are embedded into the program itself for ease of transportability, meaning that they can’t be deleted or overwritten. You can reset the preset back to default by clicking on the Lese logo and selecting the “Initialize” option.

Selecting

You can select between them with the buttons on the top of the interface, and click the “down” button to enter a preset browsing interface, which can sort and filter the presets by author and whatever tags are applied.

Saving

Presets can be saved by clicking the “save” icon. Don’t know what the save icon looks like? Ask your parents, kid. You will get a popup menu inside the plugin to save your details about the preset, including the author name, name of the preset itself, and whatever tags you want to give it (and the tags should be comma-separated, single words).

Recursion / Looping

The whole point of Recurse is to loop through the effects over and over again, slowly (or quickly) transforming your sound over time.

Controls

The looping system controls are pretty straightforward:

- Length / Sync: The delay loop’s length. The button above that knob controls whether or not the length is synced up to the host’s tempo.
- Forward / Backward: the button determining which direction the looping blocks are moving in. If the looping doesn’t work, you probably need to select this (or you could use it for something different than just looping). The arrow’s direction will change when you change this option.
- Clear: Clears the looper’s internal delay line. Useful for dealing with unwanted sounds.
- Feedback: How much of the signal is fed back into the loop. Higher values = more persistent sound.
- Ramping: How quickly or slowly the delay line’s delay time moves to the new target position.

Effects

Degrade

The degradation module features a number of “sub-effects” which, when chained together, can significantly change the feeling of your incoming sound either subtly or significantly. The effects run in series, left to right (or more simply put, in the order they are explained upon in this manual).

Warp

How much the sound drifts in pitch. Increasing the Rate increases the speed of the drifting. A low rate can be almost unnoticeable, while a high rate can be so fast that it makes the sound unrecognizable.

Wear

The three filter control handles on the audio spectrum screen allow you to transparently add distortion to your signal, in specific parts of the spectrum, without adding extra volume. The first and last ones (Red & Yellow) are low and high shelves, and the middle one (Blue) is a peaking filter. You can also change the Wear slider to change the level of wear that you have applied.

Aging

The Aging control reduces your sound's frequency range, down to frequency ranges reminiscent of old vinyl records.

Dropout

The dropout section has your sound periodically cut out, either subtly, or totally based on the Dropout parameter value. The rate at which it happens, as well as the randomness of the cutting out, can be determined by the Frequency and Variance knobs.

Dust

Dust adds crackling to your sound (similar to vinyl dust). The Density control determines how much dust crackling is occurring.

Filter

The filter is, simply put, a 4-band equalizer. You can set the frequency, gain, and bandwidth of each of the bands, as well as enable and disable them with the circular buttons. In addition, you can also adjust the Scale of the filter curve with the knob on the left, which changes the volume of each of the filters (and can also be inverted).

Reverb

The Reverb effect is designed to be reminiscent of some of the earliest digital reverberator systems, but can also have highly-custom diffusion applied for a smoother sound.

The Size knob controls the delay time of the early reflections, the Predelay knob sets the length of time it takes before sound makes it into the delay network. The Decay knob sets the feedback levels of the internal delay matrix. The Width controls the stereo image of the reverberator. Depth and Speed are related to the reverb's modulation system, and turning both of them up can result in an intense modulation effect. The Mix knob controls the dry / wet mix of the signal.

Diffusion

The Diffuse knob controls the amount of short-length delays (too short to perceive individually) are added to the internal delay network. The two filters on the spectrum screen (Red and Blue) are low and high shelf filters which control the internal filtering within the diffusion network. Having them set to the highest value doesn't do much filtering, but setting one to have a large gain reduction can make your reverb dark (if it's the high one) or tinny (if it's the low one).

Extra Information

Versioning

The plugin's Version Number on the header can be clicked for a pop-up dialog that provides extra information to the user which might be necessary for dealing with potential technical problems. In this case you will get the version number, build date, and your activation key.

Feedback Handling Tips

Recurse is fun to use, but dealing with the headaches (and earaches!) that might come with having a feedback loop can be troublesome. All of the factory presets have been tested so that no "feedback explosions" will occur in most situations, but it is still good to get some tips on what to avoid / consider when designing presets for Recurse:

Looper

Keeping the feedback low until you know what you're doing (and also keeping it under 50% in most settings) helps to avoid explosive feedback loops.

Reverb

Avoiding excessive reverb inside of the loop works well, considering the value of the Decay parameter is important as well, as it is related to feedback of the internals of the reverberator.

Filter

The filter / EQ is primarily designed to "cut" frequencies from the incoming sound as opposed to "boosting" them. If you want to have a certain section of the frequency spectrum remain as time goes on, it is recommended to remove everything that you don't want, instead of boosting the parts that you do want.