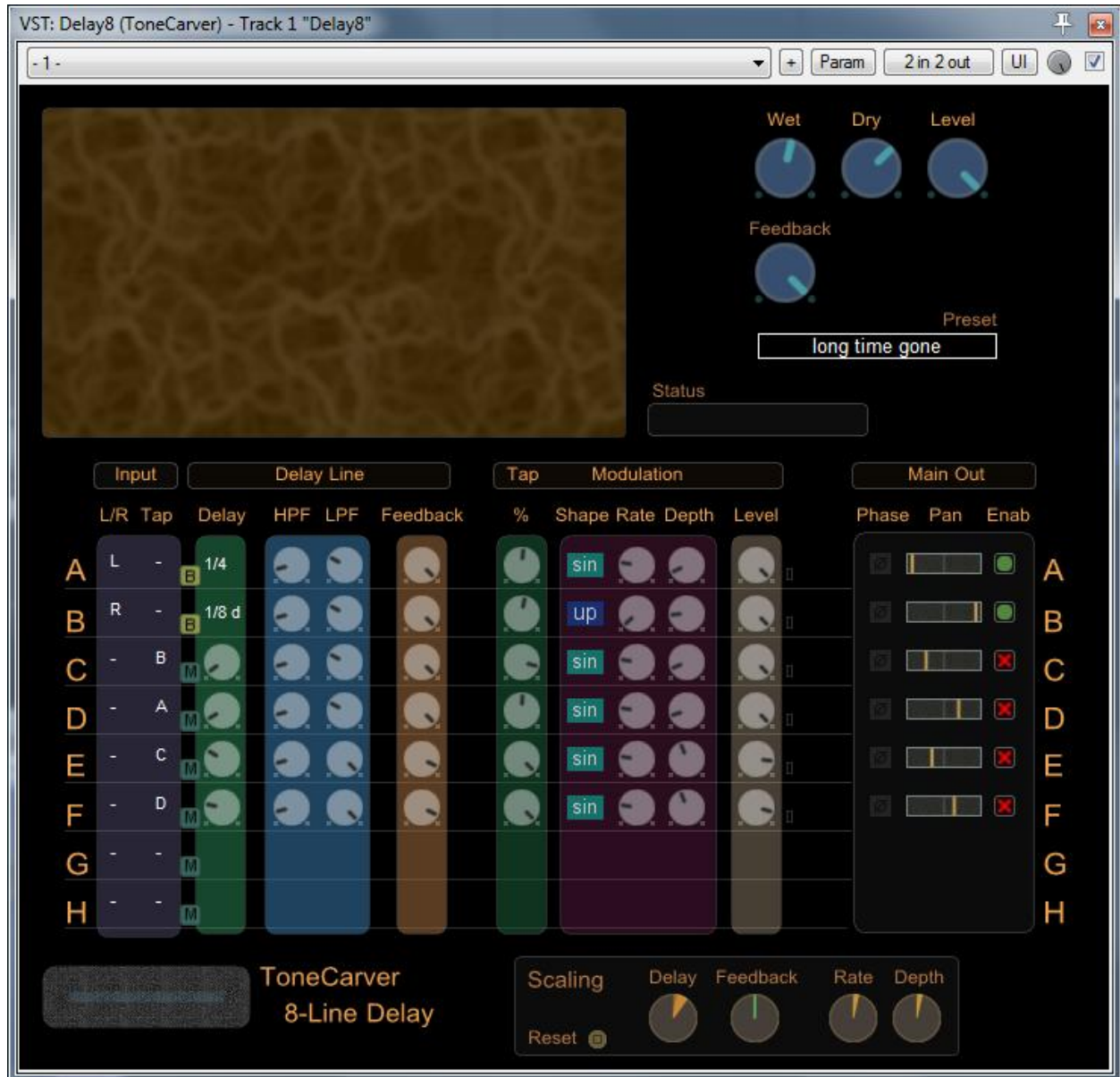


ToneCarver Delay8 8-Line Delay

Delay8 is a VST 2.4 plug-in (Windows x32, x64) that offers 8 delay lines, named A through H, that may be connected in series or parallel to build delay-based effects like choruses and diffusers.



Each delay line:

- Has a maximum delay time of 2 second
- Has delay time in milliseconds or as host tempo beat division
- Has a single tap that can be modulated using Sine, Triangle, Ramp Up, Ramp Down and Random LFO shape.

- Can receive input from the main ins (L = left, R = right)
- Can receive input from the output of one other delay line (A .. H)
- Has feedback gain
- Has separate insert points for the input signal and the feedback signal. This allows the very first echo/delay of a signal to have a different time than the feedback signal. This is convenient for setting up orderly delays, like ping-pong delays, or to just add some additional reflections to increase the diffusion of the overall delay impulse.

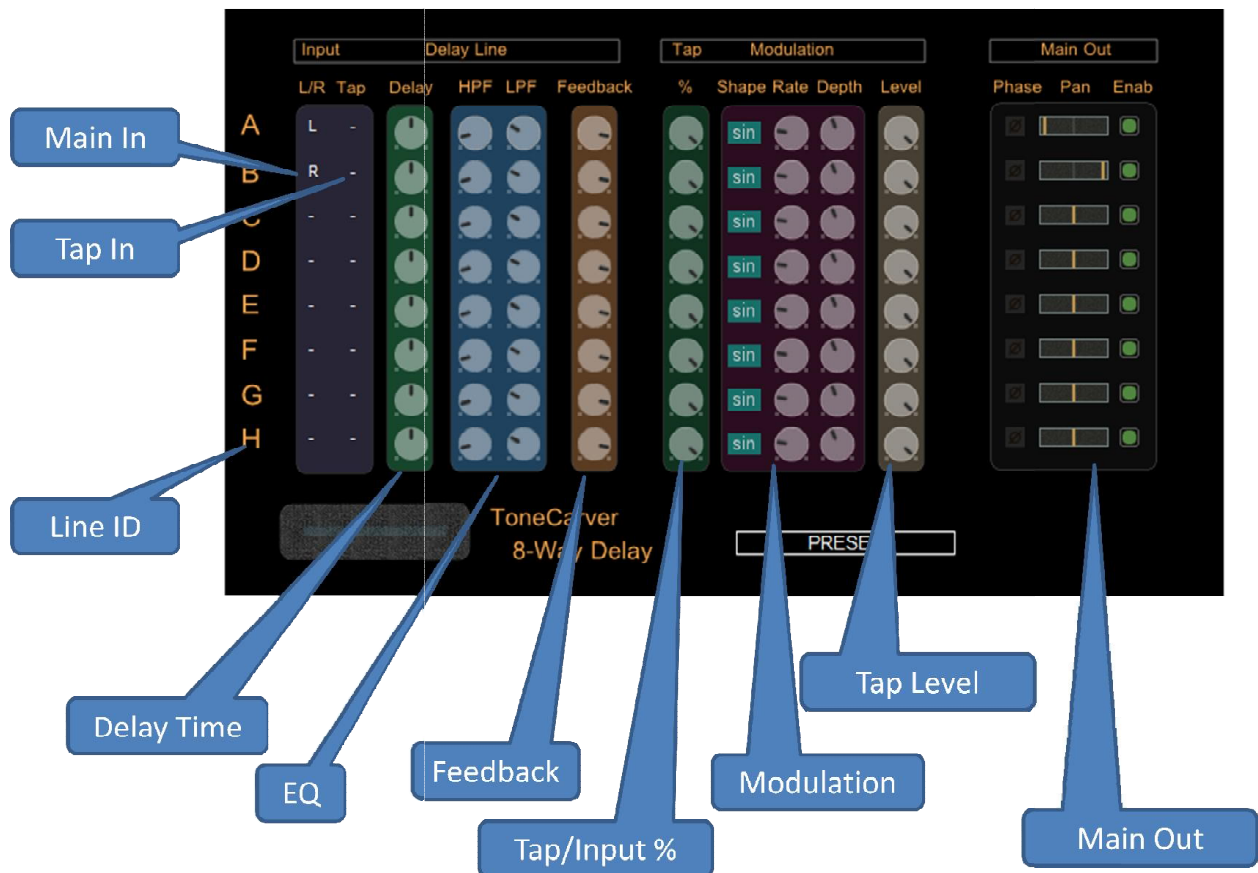
Each delay tap has:

- Modulation with
 - Shape (Sine, Triangle, Ramp Up, Ramp Down, Random)
 - Rate
 - Depth
- A % offset that controls the insert point of the delay line. The insert point controls where new input signals are inserted into the delay line. A tap % of 100 means new input and feedback input are inserted at the same point. A tap % of 50 means that the new input signal is inserted so that the initial delay is 50% of the line delay. If the delay time is 400 milliseconds and the tap % is 50%, then the delay for the input signal (dry and/or output from other line) is 200 milliseconds, and the following delays (due to feedback) are at the delay line time of 400 milliseconds.
- Level that controls the volume/gain of the tap output. This is applied prior to sending the output to downstream delay lines or to the main outputs.
- Output (to mains) :
 - Enable (enable output to main outs)
 - Phase normal/invert
 - Pan

Overall Controls:

- Wet Level
- Dry Level
- Overall Level
- Feedback Scaling: ranges: 0..1, scales all the feedback settings by the specified amount.
- Scaling
 - Delay Time: multiplies all delay times (25 .. 400%)
 - Delay Feedback: multiply feedback (75% .. 125%)
Note: this scaling value is multiplied with the global Feedback Scaling to produce the actual scaling.
 - Modulation Rate: multiplies all LFO rates (25% .. 400%)
 - Modulation Depth: multiplies all modulation depths (25% .. 400%)
 - Scale Reset: resets all scale values to 100% to remove scaling effects

- Preset load/save



Connections

To set a delay line to the dry inputs, right click on the ID marker (-,L,R) in the L/R column for the delay line and select the input to receive.

To set a delay line to receive input from the tap output of another delay line, right click on the ID marker (-,A,B,C,..G,H) in the Tap column of the delay line to receive the input and select the tap to the delay line to receive from. Legal taps are selectable from the menu. Taps that are not legal (due to feedback loops) are visible but grayed-out in the menu and cannot be selected.

As an example, the following configuration uses all 8 delay lines with the following signal flow:

Input		
L/R Tap		
A	L	-
B	R	-
C	-	A
D	-	B
E	-	C
F	-	D
G	-	C
H	-	D

L --> A --> C --> E --> G

R --> C --> D --> F --> H

To enable a tap for output, click the green/red indicator under the Enab column for the delay/tap line. The following configuration shows the first 2 lines enabled for output, the lower 6 lines (C..H) may be used for internal chaining but do not output anything to the main outs.



The scaling parameters provide global scaling of the delay line and tap modulation parameters. The scaling parameters are percentages. Actual values for the individual parameters of the delay lines and tap modulations are computed by multiplying the value selected for the parameter (by the knob in the delay line) by the scaling percentage. Click the Reset button to set all scaling parameters to 100%.



To enter delay time as milliseconds, click the delay time mode button (just left of the Delay Time knob) so that it shows 'M'. Moving the Delay Time knob enters the delay time in milliseconds.

To enter delay time as tempo divisions, click the delay time mode button (just left of the Delay Time knob) so that it shows 'B' (for Beat Division). Right-clicking on the beat division label brings up a menu for selecting the delay time. Alternatively you may click-and-drag the label to cycle through the values. Values whose time exceeds the maximum time of the delay line will be limited/reduced to the maximum time.

The following image shows Line A in BPM (tempo division) mode with a 1/4 note length delay and Line B in Millisecond mode.



The status window shows the value of the most recently changed parameter.

The Panic button silences the output momentarily and clears the delay buffers.

Holding down the Shift or Control keys allows knob movements to be more precise. If you want to enter precise values, most controls take a right click where you can enter text values.

Presets

To load/save a preset, right click on the preset name and select preset from menu, load, save. Etc

Installation

To install the delay:

1. Select the version that is compatible with your system and copy it to your VST DLL directory:
Delay8_32.dll is a 32-bit version (no SSE)
Delay8_64.dll is a 64-bit version (SSE2)
2. Copy the Delay8.ini file to the same directory.
3. Copy the Presets folder to a directory of your choosing.
4. Edit the Delay8.ini file in the Delay8 DLL directory and set the PresetFolder parameters to point to the directory where the Presets folder is located.

Credits

DSP and GUI design - Bill Davies (ToneCarver) 2014

WDL/IPlug Framework - <http://www.cockos.com/wdl>
KnobMan - <http://www.g200kg.com/en/software/knobman.html>
SkinMan - <http://www.g200kg.com/en/software/skinman.html>

History

Feb 9, 2014 Version 1.0 - initial release

Feb 10, 2014 Version 1.1

- added Status Display

Feb 16, 2014, Version 1.2

- added LFO Shape Random
- added Tempo Sync delay times
- added Scaling for Delay Time, Delay Feedback, Mod Rate, Mod Depth
- increased delay time to 2 seconds per lane
- added small RMS meter per delay line
- hide controls for lanes that do not have inputs
- bugfix: recompute initial write position when delay time is changed

Feb 18, 2014, Verion 1.3

- added panic button
- bugfix: fix sample rate compensation bug

Aug 6, 2014, Version 1.4

- added monosum, mid, side input options
- improved input selection controls

To Do

Add all those features that are on the "drawing board" but are not included in this release :-)