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### Using the Sin/Cos LFO with the "Straight Delay"

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1 post • Page **1** of **1**

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#### Using the Sin/Cos LFO with the "Straight Delay" (#p1625)

by **Digital Larry** » Fri Jun 13, 2014 3:55 pm

The Straight Delay block wants to see values between 0.0 and 1.0 at its control input. With no other processing, the delay value will be adjusted from 100% (at 1.0) to 0% (apparently) at 0.0.

The LFO, when the amplitude is set to maximum, generates output that goes from -1.0 to 1.0. Well, the Single delay REALLY doesn't like getting negative values at its input. If you try it on the simulator, the program "throws an exception" which is similar to throwing a fit but the bottom line is that the simulator won't work because it doesn't like it when ADDR\_PTR is outside of the acceptable range of 0 to 32767.

To prevent this from happening, you HAVE TO run the LFO output through a Scale/Offset block.

The scale/offset should be set as follows:

Input Low = 0.0

Input High = 1.0

Output low = 0.50 or higher

Output high = between output low and 1.0. Lower values deliver less sweep width.

If output low = 0.5 and output high = 1.0, then the full range of the LFO sweep should go through the entire delay RAM. You can use a volume control between the LFO and the Scale/Offset block to add pot control over the width.

For those of you more familiar with the FV-1, you do realize that there are some other ways of doing LFO sweeps through delay RAM that are more efficient. But I haven't implemented an LFO Delay block yet, so for any chorus/flange patches you would want to build, this is the approach you'll need to take.

Top

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1 post • Page **1** of **1**

[Return to Installing and Using SpinCAD Designer](#)

Jump to:

Quick-mod tools:

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