Holy City Audio Forum

Former Home of SpinCAD Designer

Creating Effects From Scratch, Pt. 3 - MULX!

Creating Effects From Scratch, Pt. 3 - MULX! (#p2045)

by **disasterarea** » Sat Dec 27, 2014 3:24 pm

So if the Volume Block is just a clever way to use MULX, how about a clever way to use the Volume Block?

One of the neat uses of MULX is to simulate a logarithmic or "audio" taper for a control.

Example:

```
RDAX POT0
MULX POT0
MULX POT0
```

This multiplies the value of POT0 by itself twice. If POT0 is zero or one, the end result is of course zero or one. If the pot is somewhere in between the end result is more interesting. Low values are made smaller than they would be ordinarily (0.25 * 0.25 * 0.25 = 0.0156) and larger values are not attenuated quite so much (0.75 * 0.75 * 0.75 = 0.422.) When you get really close to one, the results are near one. (0.97 * 0.97 * 0.97 = 0.913.) The final result is a curve that looks like this:

Image

Cool, right? The more times you MULX, the more pronounced that curve becomes. This is pretty much the same thing as the Power Block, so you're not really saving any instructions here but it's useful for translating code you find from other sources.

Here's how you MULX stuff in SpinCAD Designer:

First up we'll use the RAMP LFO as a control source since we really just want to see a linear input going from 0 to 1. Run that to the output and enable the control viewer to see what happens.

Image

We can see the odd way that the simulator treats the ramp, but it's good enough to get an idea.

Next, we run the output of the ramp to the input AND the control input of a Volume Block. This essentially MULXes the ramp output BY the ramp output.

Image

You can see that the output shape is now more rounded. Again, the ramp LFO is a bit funky in the simulator but it's close enough to see the difference.

If we use a second volume block, we get this:

Image

Neat, right? Again, you can do the same thing and more with the Power Block but it's still kind of an interesting application for a block you might not have thought too much about.

Top

Re: Creating Effects From Scratch, Pt. 3 - MULX! (#p2046)

by **Digital Larry** » Sun Dec 28, 2014 6:29 am

Thanks for another tutorial!

Keep in mind that the simulator display's vertical axis is itself logarithmic. Not only that, it takes the absolute value of the signal at the output block and averages it a little bit. I've found it quite handy for visualizing control signals as you demonstrate here.

Top

Display posts from previous: All posts Sort by Post time Ascending Go

Post a reply

2 posts • Page **1** of **1**

Return to Installing and Using SpinCAD Designer

Jump to: Installing and Using SpinCAD Designer Go

Quick-mod tools: Lock topic Go

Who is online

Users browsing this forum: Digital Larry and 0 guests

Administration Control Panel