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I NEED HELP WITH THE ROM_REVERB_1 BLOCK

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I NEED HELP WITH THE ROM_REVERB_1 BLOCK (#p2715)

by **JRucker00** » Mon May 09, 2016 2:28 pm

Hi,

I am trying to use the ROM_REVERB_1 block in order to make a stereo reverb. Essentially I want the same effect applied to two individual channels that are independent of each other (no mixing, stereo ins and outs). When I build this project and download it to the FV-1, I get no right channel input. The left input goes to both the left and right outputs. Help!

(I have attached a screenshot for your reference.)

Attachments

(./download/file.php?id=154&mode=view)

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Re: I NEED HELP WITH THE ROM_REVERB_1 BLOCK (#p2716)

by **Digital Larry** » Tue May 10, 2016 4:54 am

I noticed this block has a few bugs in it beyond what you've mentioned. I can take a look at it tonight. Another option is to just use the stock code from Spin:

<http://www.spinsemi.com/programs.php> (<http://www.spinsemi.com/programs.php>)

ROM Reverb 1 is near the bottom of the list. I am pretty sure though that all stereo reverb examples have "one" reverb algorithm, where the left and right inputs are mixed together, then

sent into the reverb. The stereo-ness of the output is accomplished by taking different tap points within the reverb delay lines and mixing to left and right outputs (which is still fairly effective).

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Re: I NEED HELP WITH THE ROM_REVERB_1 BLOCK (#p2717)

by **JRucker00** » Tue May 10, 2016 8:21 am

Thank you very much for all of your help!

1) Is the ROM_REVERB_1 block a direct model of the code given on Spin's website? If that is the case, then I will try to figure out how to modify the code for split stereo signals. I am very new to coding and DSP, but hopefully I can figure it out pretty quick.

2) Do you think there is enough memory available for what I am trying to achieve? I was able to get a sound I really liked with the ROM_REVERB_1 block, but it needs two independent stereo channels (fixed settings) otherwise it will not work for my application.

Thank you so much for all of your help. You guys are the real deal 😊

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Re: I NEED HELP WITH THE ROM_REVERB_1 BLOCK (#p2718)

by **Digital Larry** » Tue May 10, 2016 10:11 am

1) Is the ROM_REVERB_1 block a direct model of the code given on Spin's website? If that is the case, then I will try to figure out how to modify the code for split stereo signals. I am very new to coding and DSP, but hopefully I can figure it out pretty quick.

It is supposed to be that code literally, but as I may have said already, I am aware of some issues with the pot assignments being hardwired in the code. Also, I have added some adjustments allowing you to use fewer delay lines and adjust things like all pass coefficients.

So what it sounds like you want is two completely separate reverbs, so that signal coming in on the left does not come out on the right, ever. 🤔

If you look at the lower bar, you'll see the resource allocation for the current patch. Most good sounding reverbs supplied by Spin tend to use almost all of the available resources, so trying to get two going at once will necessitate some tradeoffs. There is a "Minimum Reverb" block that can certainly fit 2 into one patch. It may not have the great smooth sound you like though.

In the reverb control panel, you can reduce delay usage and instruction usage most effectively by reducing the number of delay lines. I can take a closer look at the details tonight.

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Re: I NEED HELP WITH THE ROM REVERB_1 BLOCK (#p2719)

by **JRucker00** » Tue May 10, 2016 3:12 pm

Hi Digital Larry,

That is correct. I am looking for two individual reverb channels that have matching settings. I really appreciate all of your help.

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Re: I NEED HELP WITH THE ROM REVERB_1 BLOCK (#p2720)

by **Digital Larry** » Tue May 10, 2016 10:06 pm

Howdy,

At this time, none of the available reverb structures other than the minimum reverb block lend themselves to having two of them fit into one algorithm.

Now the reverb algorithms are full of nothing if not patterns of instructions. you will generally find:

hipass/lowpass filters for reverb damping

rdfx reg, y
wrhx, reg, z

for hi pass and

rdfx reg, y
wrlx, reg, z

for low pass.

an all pass filter is:

rda mem, kap
wrap mem#, kap

delay lines are:

wra mem ; write to beginning of delay line
rda mem#; read from end of delay line

etc. these all build up to form the structure of the code and some of it can be reduced, all at the expense of the reverb complexity.

I would leave filters in the reverb ring but you might reduce the number of all-pass filters used throughout. You could also use the same lfes for two reverb smoothing oscillators. Make the delay lines fewer and shorter. Try 2 instead of 4.

So, my big helpful suggestion here is to roll up your sleeves, print out a few reverb algorithms and start marking out the sections with a pencil. You will learn a heck of a lot and you are in a better position to shave down a reverb to fit in than using SpinCAD at this point in time. Check out the Spin Knowledge base for the reverb description. Note that the structure shown is just one of several different ones used in Spin programs.

I'll keep it on the list of things to try to do one of these days, but other than having a few sample reverbs, the whole concept of doing reverb design is so incredibly complicated that up to now I haven't wanted to focus on that in SpinCAD.

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Re: I NEED HELP WITH THE ROM_REVERB_1 BLOCK (#p2721)

by **JRucker00** » Wed May 11, 2016 8:25 am

Great! Thanks for all of your responses. I really appreciate your help.

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