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A few block improvement ideas

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A few block improvement ideas (#p2561)

by **iampoor** » Sat Dec 05, 2015 3:42 am

1. Higher (or selectable) starting cutoff frequency on 2p/4p low pass block. Sometimes less cutoff would be nice.

2. delay division on delay module. A "delay division" input would be awesome, instead of having to make separate patches for different delay divisions

3. external carrier input on ring modulator module?

Would any of these be possible? Thinking out loud after a long night.

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Re: A few block improvement ideas (#p2563)

by **iampoor** » Sat Dec 05, 2015 3:45 am

Oh, and external "attack" and "decay" controls on the envelope block.

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Re: A few block improvement ideas (#p2564)

by **Digital Larry** » Sat Dec 05, 2015 6:29 am

> ***iampoor wrote:***
> 1. Higher (or selectable) starting cutoff frequency on 2p/4p low pass block. Sometimes less cutoff would be nice.
>
> 2. delay division on delay module. A "delay division" input would be awesome, instead of having to make separate patches for different delay divisions
>
> 3. external carrier input on ring modulator module?
>
> Would any of these be possible? Thinking out loud after a long night.

1) I'll have to look at it.
2) Not sure what you mean.
3) Use the volume block.

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Re: A few block improvement ideas (#p2565)

by **Digital Larry** » Sat Dec 05, 2015 7:18 am

> ***iampoor wrote:***
> 1. Higher (or selectable) starting cutoff frequency on 2p/4p low pass block. Sometimes less cutoff would be nice.

What I ALWAYS do with the 2P/4P filter is to put a Scale/Offset block in front of it, then set output low and output high values to set the range. This could be built into the block most likely.

I can probably add a control slider or two to allow you to set the frequency limits without breaking backwards compatibility. I HOPE anyway.

By the way I also found some unused filter bypass code, so probably can save 4 instructions per filter next time I update it.

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Re: A few block improvement ideas (#p2566)

by **iampoor** » Sat Dec 05, 2015 5:29 pm

> ***Digital Larry wrote:***
>
> 1) I'll have to look at it.
> 2) Not sure what you mean.
> 3) Use the volume block.

2. Most delays have a "delay division" setting (Quarter notes, triplets, dotted eight etc). Ive been trying to find a way t implament this without needing seperate programs. Does that make sense?

3. Thanks! I will try that!

> ***Digital Larry wrote:***
>
> > ***iampoor wrote:***
> > 1. Higher (or selectable) starting cutoff frequency on 2p/4p low pass block. Sometimes less cutoff would be nice.
>
> What I ALWAYS do with the 2P/4P filter is to put a Scale/Offset block in front of it, then set output low and output high values to set the range. This could be built into the block most likely.
>
> I can probably add a control slider or two to allow you to set the frequency limits without breaking backwards compatibility. I HOPE anyway.
>
> By the way I also found some unused filter bypass code, so probably can save 4 instructions per filter next time I update it.

I have been doing that as well, but I notice the highest cutoff frequency still seems pretty low? ANy idea what the highest cutoff frequency is?

Awesome!

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Re: A few block improvement ideas (#p2567)

by **Digital Larry** » Sun Dec 06, 2015 9:27 am

For the delay division, I was thinking this:

Use a triple-tap delay. If you want more than 3 options, then put two in series. Set the delay tap points to the various points you like. If you put two triple taps one after the other then of course the taps of the first one are earlier than the later ones.

Run all the taps into the multiple-selector block (which doesn't exist yet). So how many different selections do you want? I might be able to concoct something that has a control panel slider allowing from 2 to 8 inputs and using pot skip routines internally. That would ultimately allow creation of a block with 8 inputs on the top, which might look a little weird, but maybe I can do something clever there.

Anyway the selector block would just pick off one of the taps and send that to the output.

For the filter, I see now you want the max frequency to go higher. As written (this filter code was picked out of some Spin-supplied program), you have the input which goes through:

SOF 0.35, -0.35.

This would take a -1.0 to 0.99999988 signal, scale it to -0.35 to "almost" 0.35, then offset it to -0.70 to "almost" 0.

The normal 0.0 to 0.999... of the pot signal gets scaled to -0.35 to "almost" 0.

Then it goes through:

exp 1.0, 0
C - 1.0, D = 0

result = C * 2^(ACC) + D
(had to look this up)

so when input = 0, then output =

1.0* 2 ^ (-0.35) + 0, which is... 0.784584098

When input = 0.99999988, then output = 0.999999971

And then that value is used as the filter constant. I may have this upside down. You can't make that go any closer to one,but you could shift the range.

What happens (editing Spin ASM) if you do something like:

exp 1.0, -0.25

instead of the exp 1.0, 0 that's in there now?

I stayed out late last night and so maybe my thinking's not as sharp as it could be. But in any case, you have 4 things to deal with. 2 for scale offset and 2 for the exp instruction. If you can fiddle with these at the asm level and then tell me what if anything gives you a filter range that's more to your liking, it will help.

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Re: A few block improvement ideas (#p2572)

by **iampoor** » Mon Dec 07, 2015 1:48 am

> ***Digital Larry wrote:***
> For the delay division, I was thinking this:
>
> Use a triple-tap delay. If you want more than 3 options, then put two in series. Set the delay tap points to the various points you like. If you put two triple taps one after the other then of course the taps of the first one are earlier than the later ones.
>
> Run all the taps into the multiple-selector block (which doesn't exist yet). So how many different selections do you want? I might be able to concoct something that has a control panel slider allowing from 2 to 8 inputs and using pot skip routines internally. That would ultimately allow creation of a block with 8 inputs on the top, which might look a little weird, but maybe I can do something clever there.
>
> Anyway the selector block would just pick off one of the taps and send that to the output.

I was thinking 6. I do like this idea! However, I was thinking....what if we had a block that read a pot skip routine and then sent a constant value

based on the input? Sliders could be implemented to set those values in a control panel. Using a volume block, couldnt we scale the control pots? IE if I had a value of 0.25 then the delay division would be 4 times faster then what the delay pot is set at? Even just access to the tap time" in the triple tap delay would probably produce a similar result?

DOes this make sense? I drew up a very crude picture of what I was thinking.

> ***Digital Larry wrote:***
> For the filter, I see now you want the max frequency to go higher. As written (this filter code was picked out of some Spin-supplied program), you have the input which goes through:
>
> SOF 0.35, -0.35.
>
> This would take a -1.0 to 0.99999988 signal, scale it to -0.35 to "almost" 0.35, then offset it to -0.70 to "almost" 0.
>
> The normal 0.0 to 0.999... of the pot signal gets scaled to -0.35 to "almost" 0.
>
> Then it goes through:
>
> exp 1.0, 0
> C - 1.0, D = 0
>
> result = C * 2^(ACC) + D
> (had to look this up)
>
> so when input = 0, then output =
>
> 1.0* 2 ^ (-0.35) + 0, which is... 0.784584098
>
> When input = 0.99999988, then output = 0.999999971
>
> And then that value is used as the filter constant. I may have this upside down. You can't make that go any closer to one,but you could shift the range.
>
> What happens (editing Spin ASM) if you do something like:
>
> exp 1.0, -0.25
>
> instead of the exp 1.0, 0 that's in there now?
>
> I stayed out late last night and so maybe my thinking's not as sharp as it could be. But in any case, you have 4 things to deal with. 2 for scale offset and 2 for the exp instruction. If you can fiddle with these at the asm level and then tell me what if anything gives you a filter range that's more to your liking, it will help.

\

When I am thinking more clearly I will try this and get back to you. Thank you so much.

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Re: A few block improvement ideas (#p2573)

by **Digital Larry** » Mon Dec 07, 2015 5:48 am

> ***iampoor wrote:***
>
> > ***Digital Larry wrote:***
> > For the delay division, I was thinking this:
> >
> > Use a triple-tap delay. If you want more than 3 options, then put two in series. Set the delay tap points to the various points you like. If you put two triple taps one after the other then of course the taps of the first one are earlier than the later ones.
> >
> > Run all the taps into the multiple-selector block (which doesn't exist yet). So how many different selections do you want? I might be able to concoct something that has a control panel slider allowing from 2 to 8 inputs and using pot skip routines internally. That would ultimately allow creation of a block with 8 inputs on the top, which might look a little weird, but maybe I can do something clever there.
> >
> > Anyway the selector block would just pick off one of the taps and send that to the output.

> I was thinking 6. I do like this idea! However, I was thinking....what if we had a block that read a pot skip routine and then sent a constant value based on the input? Sliders could be implemented to set those values in a control panel. Using a volume block, couldn't we scale the control pots? IE if I had a value of 0.25 then the delay division would be 4 times faster then what the delay pot is set at? Even just access to the tap time" in the triple tap delay would probably produce a similar result?

Okay, how about this? You use a selector block as previously described. Its various inputs are all Constant Blocks. You set each of those to give the desired delay fraction. The output goes to the delay time control input of a delay block. The control input for the selector is your pot. Or you use that along with a "Mulx" block and another pot control to set the overall delay time (Mulx or Multiply is in the control menu and is the exact same thing internally as the volume block).

I'm trying to think of blocks which have more general purpose application where possible. The selector block gives you what you're after in 2 different ways and can be used for a bunch of other things as well.

Actually,now that I think about it, I already have a block in development called the "Pattern Generator". It has a bunch of sliders and you set them to various values. Then you put a ramp inout to the control input (or a pot control) and the output would sequence through the slider settings as the ramp went up or you twisted the knob. I was originally thinking this could be used for filters to give the "Seek-Wah" effect. Then I also was working on a pitch shift sequencer block based on this same concept but with the functions built right into the block since what you want to look at in the control panel is the shift in semitones rather than some decimal value that you can't easily relate to the pitch shift.

The selector block is still a good idea, and the pattern block is OK too because short term it will save a handful of registers and instructions compared to using the selector plus a bunch of constant blocks.

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Re: A few block improvement ideas (#p2579)

by **iampoor** » Thu Dec 10, 2015 10:49 pm

> ***Digital Larry wrote:***
>
> Okay, how about this? You use a selector block as previously described. Its various inputs are all Constant Blocks. You set each of those to give the desired delay fraction. The output goes to the delay time control input of a delay block. The control input for the selector is your pot. Or you use that along with a "Mulx" block and another pot control to set the overall delay time (Mulx or Multiply is in the control menu and is the exact same thing internally as the volume block).
>
> I'm trying to think of blocks which have more general purpose application where possible. The selector block gives you what you're after in 2 different ways and can be used for a bunch of other things as well.
>
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>
> The selector block is still a good idea, and the pattern block is OK too because short term it will save a handful of registers and instructions compared to using the selector plus a bunch of constant blocks.

Yep that sounds perfect!

I LOVE the pattern generator idea. I think that would make some awesome effects along with ther sample and hold block.

Ill try and be patient

Me too. I can already think of multiple uses for this block!

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