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Pitchshifter limitations

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- Edit post (./posting.php?mode=edit&f=31&p=3013)
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- Warn user (./mcp.php?i=warn&mode=warn_post&f=31&p=3013&sid=d6d1dcc4501596550704606791e62b4c)
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- Reply with quote (./posting.php?mode=quote&f=31&p=3013)

Pitchshifter limitations (#p3013)

by **iampoor** » Sat Aug 12, 2017 2:56 am

Hello

I have been playing around with the pitchshifter blocks and have a few questions.

What are the limitations that limit to to 1.5 octaves of pitchshifting? In the adjustable pitchshifter block, I noticed that changed the "coefficent" from 16k to 32k brings it up a 5th, while changing it from 0 to 16k Brings it up an octave.

I tried cascading two 1 octave pitchshifters, and while the result was...well...lets just say it was amusing , sonically it wasnt great, and the delay was very noticeable. Would 2 full octaves of pitchshifting need a buffer past 4096 samples?

Top

- Edit post (./posting.php?mode=edit&f=31&p=3015)
- Delete post (./posting.php?mode=delete&f=31&p=3015)
- Report this post (./report.php?f=31&p=3015)
- Information (./mcp.php?i=main&mode=post_details&f=31&p=3015&sid=d6d1dcc4501596550704606791e62b4c)
- Reply with quote (./posting.php?mode=quote&f=31&p=3015)

Re: Pitchshifter limitations (#p3015)

by **Digital Larry** » Sat Aug 12, 2017 11:24 am

It's possible that I have imposed some limitations in the blocks that don't need to be there. This could be deduced by someone so inclined by looking at the code generated with settings at the limits and then comparing this to what the Spin FV-1 documentation says. Let me know if you find anything like that and I could be compelled to issue a "bug-fix" release as it's pretty easy to do that.

Far as I know the pitch shift ratio for shifting up is controlled by the ramp LFO cycle. The length of the buffer plays into the frequency range that will get shifted as it really wants to have a full cycle in the buffer at a minimum. The shorter the buffer, then the shift up will only affect the higher frequencies. As far as I know, shifting down does not suffer that same problem. I haven't used pitch shifting a lot in my own patches because of the artifacts, though they can be somewhat hidden in a shimmer reverb. Questions about the basic operation of the FV-1 can probably be answered with more accuracy by Frank over at the Spin forum.

Top

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

Post a reply

2 posts • Page **1** of **1**

Return to SpinCADBlocks

Jump to: SpinCADBlocks Go

Quick-mod tools: Lock topic Go

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