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Former Home of SpinCAD Designer

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Reverse delay module (#p3404)

by **p_wats** » Wed Mar 20, 2019 6:12 am

I've only recently started messing with SpinCAD (thanks for all the work on this!) and have no background in SpinASM, so I have a lot of silly questions.

A lot of the modules are pretty straightforward with regards to their i/o and control connections, but I can't figure out the reverse delay. I've been able to get the reverse sound to the output, but have no real control over it, etc.

Is there something I should be connecting to the "ramp" nodes (what is a ramp in this case)?

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Re: Reverse delay module (#p3405)

by **Digital Larry** » Thu Mar 21, 2019 8:25 am

I'm pretty sure that the reverse delay code that went in here was supplied by someone else and I just put it in for testing. Given that SpinCAD Designer is an open source project, it provides an opportunity for anyone to contribute - though admittedly the technical bar is pretty high. I am not actively developing it at this time simply because I am way too busy working for a living. I suggest that you look on the Spin Forum as there have been discussions there about how to do reverse delays.

Thanks for your interest.

DL

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Re: Reverse delay module (#p3408)

by **p_wats** » Thu Mar 21, 2019 9:54 am

> ***Digital Larry wrote:***
> I'm pretty sure that the reverse delay code that went in here was supplied by someone else and I just put it in for testing. Given that SpinCAD Designer is an open source project, it provides an opportunity for anyone to contribute - though admittedly the technical bar is pretty high. I am not actively developing it at this time simply because I am way too busy working for a living. I suggest that you look on the Spin Forum as there have been discussions there about how to do reverse delays.
>
> Thanks for your interest.
>
> DL

Thanks for the reply, Larry!

I'm not desperate for reverse, but just thought it would be fun. I'm having a good enough time playing around with the other modules though. Thanks again for all your efforts.

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Re: Reverse delay module (#p3473)

by **btschock** » Thu May 09, 2019 2:17 pm

i found this it works really well maybe someone can make a module for it. im still really new to all this so sorry if i posted this wrong.

```
; reverse-delay by igor@shift-line.com (mailto:igor@shift-line.com) 2018
; simplified part of A+ Paradox delay

equ size 32767
mem mem_dly size

equ FC0 0.98 ; фильтр хвостов

equ out_fwd reg0 ; выход прямого дилея
equ out_bwd reg1 ; выход реверсного дилея

EQU f1 reg3 ; LPF хвостов
EQU f4 reg4 ; hpf петли
EQU f5 reg5 ; lpf огибающей кроссфэйда

equ fbk reg6 ; фидбэк с хвоста на вход. у меня задержан на 1 тик.

EQU cf1 reg10 ; cross-fade
EQU th1 reg11 ; threshold1 кроссфэйд реверса часть до перескока
EQU th2 reg12 ; threshold2 кроссфэйд реверса часть после перескока

equ ad_fbk reg14 ; current address (forward) fbk. Реверс подстраивается под него
equ ad_reg reg15 ; current address reverse

EQU temp reg16

equ f2 reg31

; equ pot_unzip pot0
equ pot_delay pot2
equ pot_feedback pot1


skp run , start
clr
wrax ad_reg , 0
start:

;{ controls


;}

; ####################################################
;{ DELAY


;rdax fbk , 1
ldax fbk
rdax adcl, 1.0/2 ; Порцию сигнала фильтранули и прибавили к памяти. Просто писать к памяти
```

```
чревато еще более громкими щелчками.
wra mem_dly , 0

;{{ dly
or size*256
mulx pot_delay ; |задержка|
wrax ad_fbk , 1
wrax addr_ptr, 0
rmpa 1
;}}

;filter HPF
rdfx f4, 0.003202 ; HPF remove highs to avoid constant voltage accumulation. could be WRHX
wrax f4 , -1
rmpa 1 ; экономия команды на сохранении и чтении
; wrax flt_in , 1

; LPF dummy for repeats
RDFX f1 , FC0 ; LPF fbk
WRAX f1 , 1
wrax out_fwd , 1 ; output of forward delay

mulx pot_feedback ; feedback value 12 +/-
mulx pot_feedback

sof 1.1 , 0
wrax fbk , 0
;} end delay


;{ REVERSE read
or 0xFFFE00
rdax ad_reg , 1
skp gez , ok1
ldax ad_fbk
wrax ad_reg , 1
ok1:
and 0x7FFFFF
; wrax dacr , 1 ; ***

wrax ad_reg , -1 ; +1 = орган, -1 = обратка (+1 = octave up , -1 = reverse read)
wrax addr_ptr, 0 ; посчитать кроссфэйд . Если адрес 32767-256 или 0..256 - убавлять громкость.
; здесь отмасштабировать память
rmpa 1
mulx f5
wrax out_bwd , 0
;}



; ********************************
```

```
; подготовка огибающей для фэйда
; ********************************
; fade envelope
;{
clr
rdax ad_reg , -1
and 0x7FFFFF
; wrax dacl , 1 ; ***
wrax temp , 1 ; temp 2 == LFO
; в аккумуляторе LFO (A=LFO value)


; начало рампы (ramp begin)
sof 1 , - 1/256 ; порог сравнения первая (последняя?) доля (compare)
skp gez , gez1
clr
wrax th1 , 0
skp run , gez2
gez1:
sof 0 , 0.998
wrax th1 , 0
gez2:
; конец рампы (ramp end)


ldax temp
sof 1 , - 255/256 ; порог сравнения первая (последняя?) доля (compare)
skp gez , gez3
sof 0 , 0.998
wrax th2 , 0
skp run , gez4
gez3:
clr
wrax th2 , 0
gez4:
ldax th2
mulx th1 ; аккум = общий триггер времени срабатывания кроссфэйда (sum of fades)

rdfx f5, 0.0006*64 ; capacitor for declicking (smooth angles of square)
wrax f5 , 0
;}


;{ ========= OUT ==============
rdax out_bwd , -2
wrax dacl , 0 ; ***
;}



eof:
```

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Re: Reverse delay module (#p3474)

by **Digital Larry** » Fri May 10, 2019 5:02 am

Thanks for the code contribution. Looks like it uses the entire delay memory. I'll have to sit down with this someday and see how it works. Code that is written expecting the delay buffer address starts at zero has to be adapted for use in SpinCAD as in general, a memory block could start anywhere. Of course anyone else is free to try to make a block out of it also.

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