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Bypass with Tails

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Bypass with Tails (#p1975)

by **Jacko** » Tue Nov 11, 2014 7:45 am

Here is an idea on how to create a bypass switch with tails... i.e. the reverb sound continues to decay even when you have kicked the bypass switch.

The basic premise is to wire Pot2 as shown in the guitar amp project on the Spin Semi site, where a switch can ground the POT2 input on the FV-1. This is the bypass.

When the bypass is toggled, the POT2 input is pulled to ground and has a value of zero. The code checks the pot and if it is zero, then no new signal is written to the delay line. Eventually, the FXout will tail off to zero once the feedback has decayed, and you will only have direct signal passing through the mixer.

Caveat: not tested yet. I can think of another way to do it but you will get the basic idea from this.

```
; start of code
; tails bypass switch
LDAX POT2          ; POT2 is grounded for bypass, value=0
skp ZRO,pos        ; Skip over instructions if ACC = 0
clr                ; clear ACC
RDAX ADCL,1.0      ; Read input signal
pos:
;....reverb processing.....
;....input is in ACC already....

;----- Mixer 2-1 output-----
RDAX FXout,0.5      ; Save the effects value to ACC
RDAX ADCL,0.5       ; Combine FX and direct signal in ACC
wrax DACL,0         ; write output and clear Acc
```

JACKO

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Re: Bypass with Tails (#p1976)

by **Digital Larry** » Tue Nov 11, 2014 8:33 am

That's cool. Since SpinCAD Designer doesn't really have an arbitrary skip block, you could also put a volume control in front of the reverb block and connect the volume's control input to the switched pot control. When you shorted the switch, the reverb send gain would go to zero.

Thanks Jacko!

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Re: Bypass with Tails (#p1977)

by **Jacko** » Thu Nov 13, 2014 7:12 am

I was using this type of code this morning and it occurred to me that the footswitch method could have another function...

it can be used to allow a Pot input to have two settings; a variable amount set by the Pot position and a preset amount in software.

The footswitch pulls Pot2 to ground and the code detects that the value=0 and directs the software to load a preset value into the register that you have reserved for the Pot2 value. If the footswitch is Off, then the code bypasses the preset and reads Pot2 for the value. Note that though Pot2=0 when the switch is On, the code can load any value into Pot2 register not just the zero that was detected.

Footswitch-ON and whatever is controlled by Pot2 gets a preset value. Footswitch-OFF and whatever is controlled by Pot2 get the control value from the setting of Pot2.

If you had a switch on each of the Pots, then you could have 3 preset values. It is possible to wire more than one Pot to a single switch so that when you go to the preset, two or more Pots are disabled.

The drawback is that you have to hard-code the preset value in the software when you compile the code.

JACKO

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Re: Bypass with Tails (#p1978)

by **Digital Larry** » Thu Nov 13, 2014 9:50 am

I would use the crossfade block. Your switch/control would go to a clip control at max gain, which then goes to the crossfade block's control input. You could use 2 or 3 crossfades if you wanted. For each pot, connect the pot output to the crossfade's input 1, and use a constant block to feed input 2 (or however you want it to work). So yes you can control multiple pots. Cool idea!

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