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Tap Tempo example (#p2444)

by **the_boris** » Mon Jun 22, 2015 12:39 pm

Would it be possible to get an example of how to use the tap tempo block? I'm doing a hybrid thing, where a use SpinCAD to generate a block which I then weave into existing code, and it's unclear what I can do with the output.

It's also not clear where the Pot1 control is being pulled in. Thank you for your time.

```
;------ Tap Tempo
SKP RUN ,5
WLDR 0, 0, 4096
SOF 0.0000000000,0.9900000000
WRAX REG23,1.0000000000
SOF 0.0000000000,0.3300000000
WRAX REG24,0.0000000000
LDAX 16
SOF 1.0000000000,-0.5000000000
SKP NEG,4
LDAX 33
SOF 1.0000000000,0.0100000000
WRAX REG25,0.0000000000
SKP ZRO,3
LDAX 33
SOF 1.0000000000,-0.0100000000
WRAX REG25,0.0000000000
LDAX 33
ABSA
SOF 1.0000000000,-0.9000000000
SKP NEG,13
LDAX 33
SOF 1.0000000000,-0.9000000000
SKP NEG,3
SOF 0.0000000000,0.9990000000
WRAX REG22,0.0000000000
SKP ZRO,7
LDAX 34
SKP NEG,5
SOF 0.0000000000,-0.9990000000
WRAX REG22,0.0000000000
LDAX 35
SOF -1.0000000000,0.0000000000
WRAX REG23,0.0000000000
LDAX 35
SKP NEG,4
JAM 2
LDAX 36
WRAX REG26,0.0000000000
SKP ZRO,12
SOF 0.0000000000,0.0625000000
```

```
WRAX RMP0_RATE,0.0000000000
CHO RDAL,2
SOF -2.0000000000,0.9990000000
SOF 1.0000000000,0.0010000000
WRAX REG24,1.0000000000
SOF 1.0000000000,-0.9990000000
SKP NEG,4
LDAX 37
WRAX REG24,0.0000000000
SOF 0.0000000000,0.9990000000
WRAX REG23,0.0000000000
```

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Re: Tap Tempo example (#p2445)
by **Digital Larry** » Mon Jun 22, 2015 3:08 pm

Slacker contributed the tap tempo block so you can try to chase down his description, probably at DIYSB.

Here's what I remember...

The tap tempo button goes from ground to the wiper of the control pot. The top end and bottom end of the control pot have series resistors in line. Top end to limit current when tap tempo pressed and pot is all the way up. Bottom end so pot setting of "0" is actually a positive voltage, and control input readings less than this mean the button is depressed.

Then it counts up every sample. Max output value of "1.0" at one second (meaning 32768) would go to a RMPA instruction and with all 32768 delay memory dedicated to this, tap tempo synchronizes the delay. If you want tap tempo to synchronize something else like LFO rate, then you probably need to scale it.

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Re: Tap Tempo example (#p2446)
by **disasterarea** » Tue Jun 23, 2015 6:56 am

In my opinion, having the FV-1 manage tap tempo is less than optimal. It's so much easier to use an inexpensive microcontroller running at 3.3v to feed PWM into a pot input. If you know what you're doing you can implement tap tempo with selectable divisions for less than a dollar in parts. If you insist on having the DSP do the tap stuff, you lose a ramp LFO and a whole bunch of instructions. It's a neat trick but there are much easier ways to do it.

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Re: Tap Tempo example (#p2447)
by **the_boris** » Tue Jun 23, 2015 12:30 pm

Thanks for the quick response. I'm not after delay... When I saw that it writes to the ramp rate, I thought I'd be able to use the ramp value for calculations. Assuming it swings from 0 to 1 at the rate tapped in, that's exactly what I need. I've been trying to read it in just as a volume control, and it doesn't seem to be working.

Example below.

```
; tap test
equ ramp reg0;

;------ Tap Tempo
SKP  RUN  ,5
WLDR 0, 0, 4096
SOF 0.0000000000,0.9900000000
WRAX REG23,1.0000000000
```

```
SOF 0.0000000000,0.3300000000
WRAX REG24,0.0000000000
LDAX 16
SOF 1.0000000000,-0.5000000000
SKP NEG,4
LDAX 33
SOF 1.0000000000,0.0100000000
WRAX REG25,0.0000000000
SKP ZRO,3
LDAX 33
SOF 1.0000000000,-0.0100000000
WRAX REG25,0.0000000000
LDAX 33
ABSA
SOF 1.0000000000,-0.9000000000
SKP NEG,13
LDAX 33
SOF 1.0000000000,-0.9000000000
SKP NEG,3
SOF 0.0000000000,0.9990000000
WRAX REG22,0.0000000000
SKP ZRO,7
LDAX 34
SKP NEG,5
SOF 0.0000000000,-0.9990000000
WRAX REG22,0.0000000000
LDAX 35
SOF -1.0000000000,0.0000000000
WRAX REG23,0.0000000000
LDAX 35
SKP NEG,4
JAM 2
LDAX 36
WRAX REG26,0.0000000000
SKP ZRO,12
SOF 0.0000000000,0.0625000000
WRAX RMP0_RATE,0.0000000000
CHO RDAL,2
SOF -2.0000000000,0.9990000000
SOF 1.0000000000,0.0010000000
WRAX REG24,1.0000000000
SOF 1.0000000000,-0.9990000000
SKP NEG,4
LDAX 37
WRAX REG24,0.0000000000
SOF 0.0000000000,0.9990000000
WRAX REG23,0.0000000000


cho rdal, rmp0
wrax ramp, 0


rdax adcl, 1;
mulx ramp;
wrax adcr, 0;
```

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Re: Tap Tempo example (#p2448)
by **Digital Larry** » Wed Jun 24, 2015 7:46 am

As far as I know the tap tempo code was excerpted from some code Slacker wrote. If you rummage around over at DIYSB you may be able to find his upload there. Think he used it for LFO rate control on tremolo or phaser there. Couple things to keep in mind:

There's always this scaling issue between integers and audio values. Can't say that I've internalized that. So when I say "1.0" it was meant perhaps not literally, but in the context of what the effect is doing.

I have NOT used this code in any real world pedal. I "think" it might work as I've been able to get something out of the simulator, but I didn't write it, I've never sat down to analyze it, and I don't have time to dive into it right at the moment.

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Re: Tap Tempo example (#p2449)

by **the_boris** » Wed Jun 24, 2015 8:07 am

thank you

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