

Element VST Manual

<http://www.xoxos.net>

Element is a quick wrapper of a sampler SEM module I made for SynthEdit.. this VST makes it available for those who don't use SynthEdit. I expect it is quite similar to any other VST sampler with loop modulation options, with minor exceptions (crossfade, loop modulation). The SEM was released to make use of the SE SDK easier for new users. Because of this, the wav loading function is extremely underdeveloped in comparison to commercial expectations.

Element is prepared to load 8 or 16 bit wavs in mono or stereo. It is not prepared to handle the diverse number of wav file formats, or deal with embedded information, however upon testing it opened all of the 8 and 16 bit wavs in my collection.

Top Left Panel

'Center' selects a key between C2 and C4 to be the center of tracking modulation.. this doesn't affect the pitch, only key tracking for the filter, and any key tracking assigned using the sends.

Other Panel on the Top You Can See There

Start, end, file, reset on gate, pitch track... hey, you know with pitch tracking A3 is the original pitch.

Interpolation - there's a nice diagram in a couple pages that illustrates what the options are (eg. progressively more cpu intensive and fancy).

There are two looping modes - wrap, and bounce.. wrap is normal old looping.. bounce plays to the end of the loop, then reverses direction and plays the loop backwards, then reverses direction again! That's a crazy mode.

Wrapping activates crossfading, and there are two crossfading modes.. to turn crossfading off, set the 'fade' knob to zero. When crossfading is active, the file is now read in two places.. which means more cpu, especially if you are using a fancier interpolation mode.

The default crossfade mode is set as a time constant.. the knob ranges from 0 ms to 1000 ms (a square curve is applied so the center position equates to 250 ms, which allows shorter times to be set more easily). When the player reaches the end of the loop and goes back to the beginning, the second read position continues past the end of the loop. A short crossfade time is recommended for addressing those horrid clicks produced from the discontinuity of jumping around in the file. Longer times are included for making funny sounds, but if the loop wraps again before the fade ends, it will start fading from the new position.

This is really simple really, much less confusing than a written description.

The other crossfading mode is 'loop relative' and it's a good one - the crossfade length is proportional to the loop length, so the loop will never end before the crossfade does. If you try it, it may be easier to understand than reading about it.

The loop position can be translated into a modulation contour and applied to the filter cutoff.

All of that stuff is implemented in the open source SEM module 'sample4'. To build this VST, I coded a separate multimode filter module with a 'bitcrusher' before the filter. Because updating filter cutoff on every sample is cpu intensive, the user can set how often filter params are updated.. usually eg. every 4 samples is sufficient and will significantly lower the cpu cost.

There are three filter algorithms.. the famed Stilson/Smith Moog ladder, Andrew Simper's (Cytomic) open source trapezoidal SVF (which is nice because it attenuates around nyquist), and the regular old Bristow-Johnson cookbook biquads. Each algorithm has low, band, high, cut and peak modes. Note that some of the modes are forcefully wrung out of the Moog emulation (eg. the band cut filter gets a nice pointy peak next to the cut with high resonance.. the cutoff determines if the peak is above or below the cutoff, so real weird.. and the 12dB moog discards the latter two stages.. I happen to like that one).

Send Panel

Internal and external sources can be applied to various destinations here. What you need to know is the modulation heirarchy...

LFO2 > ENV2 > SENDS > ENV1 > LFO1 > all the stuff

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Envelope Panel

My envelopes can be curved, the bottom knobs do that, the ones above them and directly below the sliders assign velocity to the attack, decay/release and amount respectively.

Pan.. if you intend to veer the signal towards one side or the other, use the send panel to assign the '+10v constant' to pan. Or an envelope, or something. That's normal panning. The knob that says 'pan' is actually key track to pan position.. which has four modes.. left to right, right to left, and both modes wrapped around (double arrows).. if you use an extreme amount of this pan with a wrap mode, each key will have a faux random stereo location. And your arms will turn into giant meaty nightcrawlers, so be careful with that.

LFO Panel

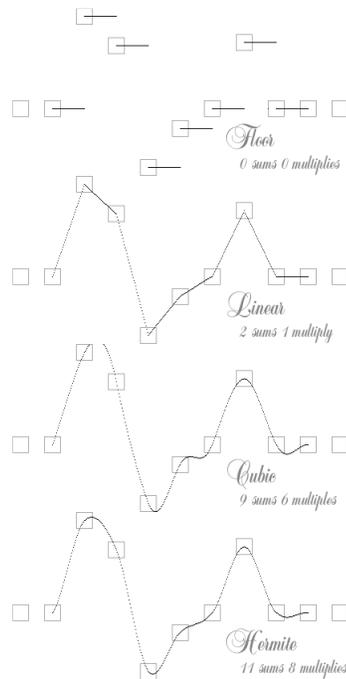
Aren't my LFOs great? Buttons.. first one resets LFO to phase position on gate.. you can kind of call that 'sync'. Next one syncs the rate.. and that's definately called 'sync'. Far left is long 2^n values (eg. 64, 32, 16 measures) to shorter 2^n values, then shorter to longer values outside of 2^n (eg. mainly beat divisions by 3, with a few 5s and stuff in there..).

The last button selects between polyphonic and monophonic LFOs in case you want each voice to be different or the same.

There's a 'mod' control which varies a few of the contours.. not all of them. Eg. pulsewidth, tri-saw, and s&h. There are separate tri and saw contours which save a bit of cpu if you don't need the variation. Note that for a 50/50 duty cycle pulsewidth, 'mod' has to be set in the middle position.. shouldn't be hard, the knobs have 101 frames, so if it looks straight up, it probably is exactly half way.

The s&h contour modulates between equal cycle (conventional s&h, where each step has the same duration) and increasing variation in step length. Neat!

That's basically it, hopefully it will load some of your samples. Here's an illustration of the interpolation modes.. if you make the pdf view larger it will probably be more visible.



About: I've been making this crap forever and written tons of bloody manuals, it's really dull, and I don't have any weed.

I basically couldn't give a fuck about legality, but I hate to see people selling free stuff on ebay. So here's the (c) 2012 and forever notice for assholes, if you do anything fucked up I'll put a you sized whole in your fucking you, and you don't want that, so don't fucking do it. <http://www.xoxos.net/temp/internetoughguy.jpg>