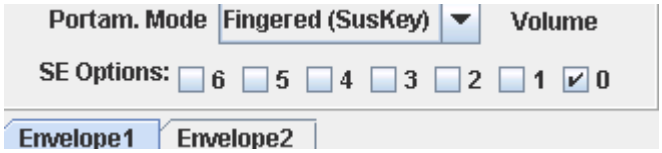
There is not so much information available about this new mode, which was introduced with v1.7303 (a link to the beta version is published in this forum article: http://www.midibox.org/forum/index.php?topic=6098.0)

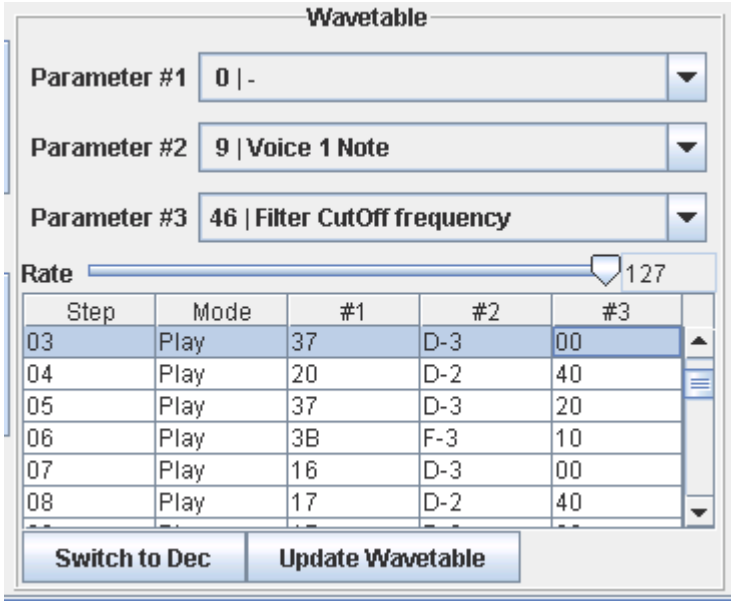
Here some first demo samples:
http://www.ucapps.de/tmp/tb303_test2.mp3 (Accent test)
http://www.ucapps.de/tmp/tb303_test3.mp3 (303 mode with external Moog filter)
http://www.ucapps.de/tmp/tb303_test4.mp3 (303 mode with internal SID filter)
(Note: the accent and slide handling has been improved in the meantime)

If somebody wants to try this, here a quick-start:
with JSynthLib load the TB303 init patch from the patches/midibox_sid_tb303.patchlib file

Ensure that the 303 mode is enabled (sound engine option, bit #0)



Edit the wavetable sequence:



first row *always* controls the accent, gate and slide

Accent: bit 0-3 (the right digit) - controls sustain of VCA OSC1, if value >= 8, the note will be accented, which means, note will be played louder (due to the higher sustain value), decay of ENV1/ENV2 will be decreased (for filter, which is normaly only assigned to ENV1), and resonance will be slightly higher.

In difference to the original TB303, the VCA sustain has 16 possible values (0...F), but normaly switching between 6 (=no accent) and C (=accent) is enough

Gate: bit 4 (if 1, note will be played)
Slide: bit 5 (if 1, current note will be hold until next note, portamento will be activated)

Examples: 16: plays common note without accent
1C: plays accented note

0C: plays no note, but accent will be set (which means: ENV1/ENV2 decay decreased - nice effects are possible with large envelopes) 36: note will be played with activated slide
3C: note + slide + accent
26: note not played, but slide activated - means: the current note will be the starting point for the slide to the next note, but the current note won't be played (this is something which is very hard to control via MIDI, and which makes TB303 sequencers so special!)

Second row defines the note (see also CC# assignment).
assigned to OSC1 by default (which is enough for the typical TB303 sound), but can also be assigned to other oscillators, or to all three at the same time

Third row: free for use. You can control any CC - or you could play different notes on another oscillator, which results into a very SID like sound. Try also ringmodulation and oscillator synchronization (note that for ringmodulation the triangle waveform must be selected, and that for osc synchronization one oscillator should be heavily detuned)

Most important sound parameters:
Waveform - Saw/Pulse of course. Pulsewidth should be about 70 for typical TB303 sound, with pulsewidth modulation it sounds more SID like

CutOff and Resonance: of course  The range of the cutoff parameter is optimized to the TB303 typical range (I compared this with diversal TB303 emulators)
ENV1: most important element to control the sound characteristic
depth behaves different in TB303 mode (→ “EnvMod”) - the Envelope is only positive (= added to Modulation Target), and the “gain range” goes from 0-127
Attack: normaly not available on a TB303, but can produce great effects
Decay: very important - just tweak it during the sequence is played
Sustain: should be used to control the CutOff offset
Curve: assigned to Decay, try different Curve and Decay values

Hint: set CutOff to 0, Resonance to max, start a simple sequence, and change following parameters during runtime: ENV1 Depth, Decay, Curve - change also from Pulse to Saw wave, and back to Pulse

Start to change the notes in Wavetable Row #2, and change the Slide/Gate/Sustain in Row #1

Hint for advanced users - for MIDI clock synchronization with a host sequencer the “MIDI Sync: Wavetable/Arp.” flag must be set, and the wavetable rate should be set to maximum (127)

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