



String Theory v.1.0.1 Reference Guide

Installation

Just put the .dll file into your host's VST directory.

Description:

String Theory is a flexible physical modeling string synth that offers a very wide range of plucked string and hybrid synth sounds. Experimentation is very much encouraged as it can lead you in directions you may never have thought the synth could go.

Known Bugs:

- Switching between arp patches with the keys still held down may cause a note to stick. If you notice a stuck note or notice that the synth's CPU usage is higher than it was a second ago, turn the arp button off, then back on again.
- On some hosts, the two arps will not sync up unless the host's sequencer is running (and sending the arps a clock to sync to). Once you turn off the sequencer, the arps will stay in sync until you change the patch, then they fall out again. So if you are auditioning patches, you may want to keep a sequencer loop running.

General Usage

This thing can be a real cpu hog if you are not careful. To keep the cpu under control...

- Keep the release times lower than you probably want to, especially if you've got the arp running. Long release times keep a voice active and moderate/fast playing (or an arp) will just keep layering voice tails, thus eating up polyphony and cpu.
- Watch out for those stuck notes. That will eat up extra cpu too. You can hear them during sustained notes or when the arp is on. You can't hear them when you've got a fast release and no arp,

but they can still be there eating up a voice. just like leaving a key held down.

- This is delay based synth and its common to run into frequency spikes on some notes. In order to keep these extreme frequency spikes from happening (or being too harsh), work carefully with:

- The oscillator delay when the sliders are maxed out in either direction (especially when you've got a sustained/bowed sound.)
- The Metal Module...this is another series of tuned delays, which are prone to frequency spikes of their own.
- The filters when you've got the resonance cranked.

Description of the controls and functions:

Oscillator Section:

The oscillators in String Theory are built from two parts: pitched delays and the waveforms that feed them.

VOL - master volume

PRT - portamento

Feedforms - The output of the waveforms selected here merge into a single signal which is then fed to both pitched delays.

Note: Pink noise usually works best for plucked strings.

Delay OSC 1 and 2 - These sliders control the feedback for the pitched delays.

- All the way up = higher pitch
- All the way down = lower pitch
- Towards the middle = short, percussive/muted sound.

Pitch MOD SP / DP - These set the speed and depth of the pitch modulation, which is hardwired to a sine wave LFO. **Note:** They are both also wired to the mod wheel for some fun (and a bit excessive) real time pitch modulation.

PK - Adds in a very short attack noise to help simulate the sound of a pick hitting the string.

BOW - Raising this will give you a bow-like drone. This is actually the sustain portion of the attack envelope.

ADR - The rest of the amp envelope...attack, decay and release.

Tremelo - This is an LFO thats wired to the volume. Use it as you would a tremolo guitar pedal.

Filter Section:

LP1 / KEY - This is a 6db low pass filter that is wired for key tracking so you can warm up the low end. This is the first filter in the signal path. Its output then splits off to the BP+BR and HP filters.

BP+BR CUT / RES - This is a combination band pass and band reject filter with standard cutoff and resonance controls. This filter arrangement to be very useful in getting a better string sound, especially in the mid range.

Note: This combo filter has an interesting side effect. If you max out the resonance and start dropping the cutoff, you'll get the typical pitched filter effect...but as the pitch gets closer to the bottom, it eventually starts beating, essentially turning its self into a sort of tremolo effect.

LP2 CUT / RES - After the signal goes through the BP+BR filter, its wired in series into this basic low pass filter.

LADSR - This is the envelope for the LP2.

L - sets the level for the envelope.

MOD - LFO for LP2. The slider controls the LFO depth and the buttons select the LFO waveform and the speed...which is listed in BPM divisions since the LFO syncs to your host's MIDI clock.

HP VOL / CUT / RES - This is a high pass filter that gets its signal directly from LP1, so it is running in parallel to the BP+BR / LP2 combo. This filter also has its own volume control.

LADSR - envelope for the HP filter.

MOD - LFO modulation section for the HP.

Arp Section:

One of String Theory's more unique features is its dual phrase arpeggiator. Both arps can be run at the same time, playing the same synth engine, but can be set to different speeds, gates, octave ranges, and directions. This opens up a much wider range of rhythmic possibilities that what you would get from a normal arp and allows you to create interesting plucked patterns that are a bit more like finger picking a guitar.

Also, since this is a phrase arp, the note order is determined by the order that you press the keys down in.

Arp Button - Turns the arps on/off.

1/2 - This lets you choose whether you want to use only arp 1 or 2, or have them both going at the same time. (The latter begin the the more exciting option.)

CH - This sets the mdi channel that the arps.

Gate - These sliders adjust the note gate times for arps 1 and 2.

DIV - These set the note division / speed of the arps.

OCT - Sets the octave ranges for the arps.

DIR / HOLD - these controls set the direction of the arps and whether or not the arps will continue to play after you have released the keys.

Effects Section:

METAL

This consists of two pitched delays which provide a clangerous, metallic effect. This can also be used to help simulate an instrument body. Its not an accurate effect by any stretch, but it does help add some extra character and "air" to the sound.

These two pitched delays are wired in parallel but you can also mix the output of delay 1 into delay 2 to get a more extreme effect.

Metal Button - Turns the effect on/off.

ML - Adjust the level / volume of the metal effect.

MW - Raising this slider will add warmth to the metal effect, which helpd simulate something a little woodier...or at least less metallic.

T1 - This sets the time of the metal effect's first pitched delay.

F1 - Sets the feedback of the first delay.

Note: just as with the oscillator delay's, the closer to the middle the feedback is set, the shorter the sound gets.

1 > 2 - This lets you mix the output of delay 1 into the input of delay 2 to make the overall effect more powerful.

T2 - sets the time for delay 2

F2 - sets the feedback for delay 2.

Metal MOD - This LFO modulates the time for both delays, providing a sort of flanger effect.

Delay

This is a dual digital delay setup with independant speed and pan settings you can create a wider, more spacious effect.

MIX - Sets the mix between the dry signal and the delay.

- up = wet

- down = dry

VOL - Sets the volume of the delay signal.

For average delay use, this control would be redundant with the mix control around...but if you crank the mix to fully wet, you will only get the delay signal. Then you can use the delay volume control to fine tune the level of your patch without the need to push the master volume.

FBK - Sets the feedback level for both delays.

PAN 1 and PAN 2 - Sets the pan for each delay.

DIV - Sets the speed / clock divisions for the delays.

DOT - Gives you dotted notes for each delay.

Credits:

String Theory v.1.0 - created by Ugo (Chris Sciorba)

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This VSTi features modules and prefabs by:

Chris Kerry (www.chriskerry.f9.co.uk)

Bones (www.novakill.com)

e-phonic (www.e-phonic.com)

ikaldor

Patches By:

Tim Conrardy (TC)

Matthew DeMeritt - Geeseaplenty (GSE)

Mark Stolk - Mystahr (MY)

Ugo (all others)

Additional thanks to the SynthEdit Users list, www.kvr-vst.com, Steinberg for their VST format, and...of course...Jeff McClintock for creating SynthEdit.

Version History:

6/08/04 - v.1.0.1

Improved note sticking problem

6/06/04 - v.1.0

First public release.

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