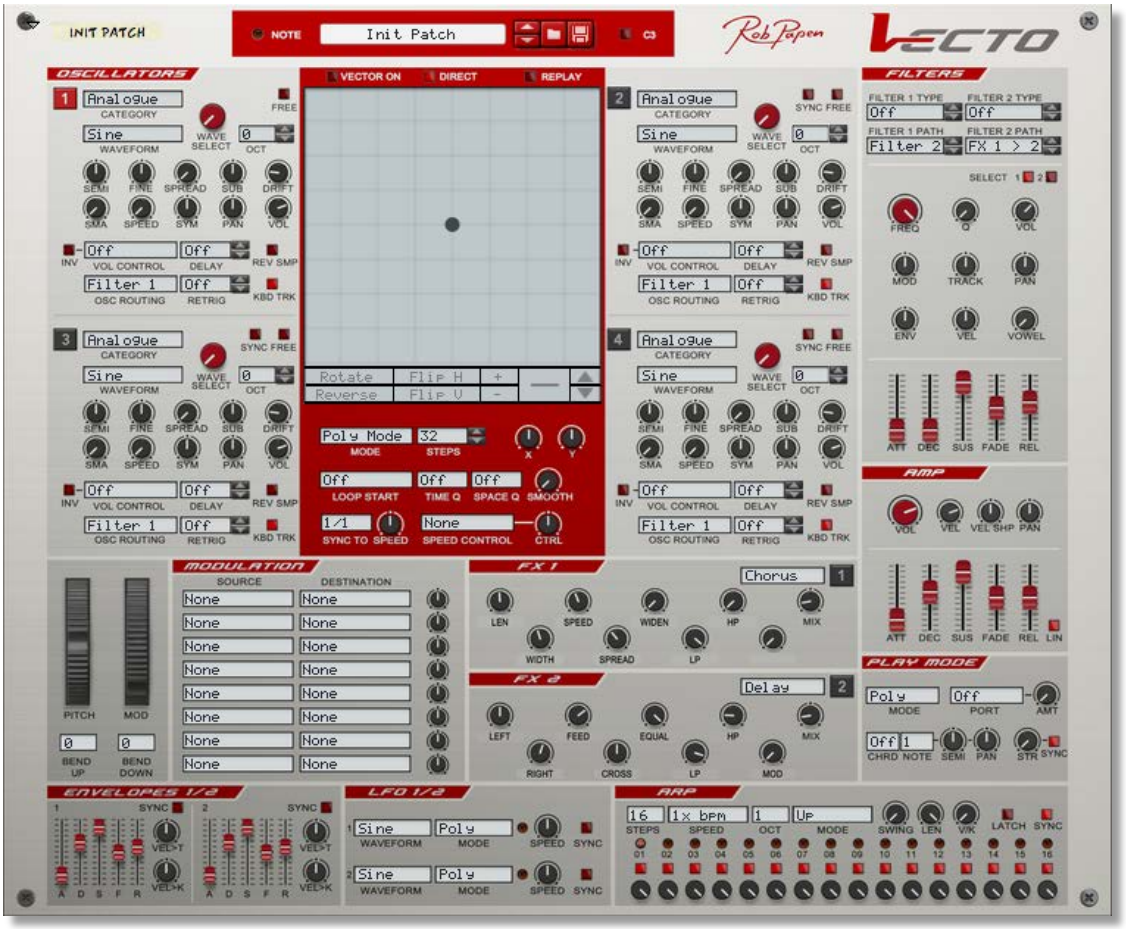



# User Guide

*Powered by RPCX*

# Welcome

Welcome to Rob Papen Vecto !

Vecto is a four-oscillator vector synthesizer that allows users to draw in vector paths to shape the sound in many different ways. Included are a large range of oscillator waves, plus sampled waveforms and lots of different modulation options and preset vector paths to help create the unique Vecto sound!

Due to the interesting range of waveforms, from classic analog modelled ones, Additive, Spectrum and high quality sampled waveforms, the sound options are dazzling deep! Two filters are added with 28 Filter types and 2 top notch effect processors finish the audio route with blister. A lot of interesting modulation options and creative features are added in Vecto, including an arpeggiator. Another dedicated RE synthesizer built by the team of Rob Papen, to let Reason sound as never before.

Rob Papen and the RPCX team, June 2015

# Patches and Mod Section

At the top of the Vecto Panel you find the Patch section and modulation controls.

### Patch Controls

Vecto uses the standard Reason Patch controls. A click on the Patch menu displays a list of patches in the current folder. The up and down buttons take you through all the available patches one by one.

The Folder button opens the patch browser and lets you select a new folder.

The Save Patch button saves the current patch.

The C3 button plays a single note (C3) allowing you to preview or audition the sound while you are editing the patch.

### Pitch Bend and Mod Wheel

Towards the bottom left of the Vecto panel are the Pitch Bend and Mod Wheels.

The pitch bend wheel bends the pitch up and down and jumps back to its centre position as soon as you release it. The Bend Down and Up controls set the maximum pitch bend range. The maximum setting is 48 semitones (4 octaves) up and down

The Mod Wheel generates a modulation signal when you move the wheel up. The Mod Wheel controller can be patched to any target through the modulation matrix.

# Oscillators


An oscillator is a tone generator. It is the first building block in the sound construction process. The frequency setting of the oscillator determines the pitch of the sound. The selected waveform defines the sound's initial tonal character, or timbre. Vecto uses 4 oscillators per voice (note played).

### Oscillator On/Off

Clicking on the numbered LED-style buttons in the label area turns the corresponding oscillator On and Off.

### Waveform Type

The waveform selection is a two-step process. First choose the Wave Category, and then use the Wave Select dial to select the oscillator wave or sample within the Wave Category.

| Wave Category | Waveform |
|---|---|
| *Analogue* | Classic waveforms: Sine, Square, Triangle, Saw, White Noise and Pink Noise |
| *Additive 1 – 3* | Additive waveforms |
| *Spectral 1 – 2* | Spectral waveforms |
| *Samples 1 – 11* | Samples and sample sets (s suffix) |
| *Sample Big Set* | Multi samples with keyboard splits |
| *Tuned Perc* | Tuned percussion samples |
| *Perc 1 – 5* | Drum and percussion samples |

### Free

The Free button is used to select the reset-behaviour of the oscillator. If Free is turned off, the oscillator waveform is reset to its zero phase position each time you play a note. When Free is turned on, the oscillator is free running; i.e. it is not reset when you play a note. In Free mode the attack is less pronounced, which may be useful for pad sounds.

### Track

The track switch enables and disables keyboard tracking. It controls whether the pitch of the oscillator follows the keyboard or is fixed regardless of the note played.

### Sync (Oscillator 2 – 4 Only)

The Sync control allows you to synchronise the pitch of oscillators 2 to 4 to the pitch of Oscillator 1. The synchronised waveform is reset every time Oscillator 1 waveform ends its cycle. This essentially cuts of the synchronised waveform and resets it to zero, in sync with oscillator 1. Because of the reset, the synced oscillator waveform will undergo abrupt changes in its shape. These abrupt changes are audible as additional overtones (harmonics). The pitch controls of oscillators 2 – 4 now operate as a harmonics control.

### Octave

The octave control sets the base pitch of the oscillator in octave steps. An octave is equivalent to 12 semitones. The range of this control is from -2 octaves to +2 octaves.

### Semi

Semi sets the coarse tuning of the oscillator in semitones from -48 semitones (-4 octaves) to +48 semitones (+4 octaves).

### Fine

Fine controls the fine-tuning of the oscillator in cents, from -100 cents to +100 cents.

### Sub

Sub controls the volume of the sub-oscillator. The sub-oscillator is tuned to one octave below the oscillator. The sub-oscillator knob lets you select two different waveforms. A counter clockwise position produces a sinus waveform. Turn it clockwise and it produces a square waveform. The centre position turns the sub-oscillator off. The sub oscillator also works when selected waveform is a sample.

### Spread

Spread adds multiple oscillators to the main oscillator with a slightly higher and slightly lower pitch than the main oscillator. In practice it fattens up the sound. The spread control sets the difference in oscillator pitch and higher settings will make the effect more pronounced. The spread function is only available for analogue, additive and spectral waves.

### Drift

Drift adds slight irregular variations to the oscillator pitch. This can make a sound livelier and is an essential ingredient for when you want to simulate the behaviour of older analogue synthesizers that are built around slightly unstable and temperature dependent electronic circuits.

### Symmetry

This setting controls the symmetry of the Analogue, Additive and Spectrum waveforms. The way it affects the sound differs from waveform to waveform. What it does is that it moves the midpoint of the waveform. It is most commonly used with the Square waveform. Here the symmetry control alters the pulse width of the waveform, from very narrow pulse waveforms to normal square waves. In Vecto it also works for Additive and Spectral waveforms.

### SMA

The Symmetry Modulation Amount is part of a hardwired modulation path that is incorporated in the oscillators. It sets the modulation amount. You will have encountered this function in other synthesizers as Pulse Width Modulation or PWM. In Vecto, the Symmetry function and its modulation work on Additive and Spectral waveforms as well, so we gave it a more generic name.

### Speed

The SMA function is provided by an LFO. The LFO generates a slow running sinus control signal that modulates the symmetry point. The Speed knob sets the frequency of the LFO.

### Volume

This control sets the volume of the oscillator in decibels.

### Pan

The Pan control places the output of the oscillator in a stereo image (Left – Right).

### Volume Control and Inv

Each oscillator has its own modulation source for controlling its volume. The options include X/Y position of the XY Pad, the free LFOs, the Envelopes and the CV input. The Volume Control modulation lets you create dynamic mixes of the four oscillator signals before they go the filter. This dynamic mixing sits at the heart of vector synthesis. The Invert (Inv) button inverts the modulation signal so that when the control signal increases, the oscillator volume decreases. The Inv button is invaluable when you want to create crossfades between oscillators that use the same Volume Control source.

### Routing

The Routing control sets the destination of the oscillator signal. The destination options include Filter 1, Filter 2, Filters 1 & 2, Mod FX, Delay FX, Mod and Delay FX, Oscillators 1- 4 (for FM or Frequency Modulation).

### Delay

The Delay introduces a delay before the oscillator is triggered. Use the Delay setting to create miniature arpeggios or to separate attack from sustain across multiple oscillators.

### Retrigger

The Retrigger function works with sample based waveforms. It retriggers the samples after a set interval.

### Reverse

The Reverse function works with sample-based waveforms and plays back the samples backwards.

### Modulation Matrix and Oscillator control destinations

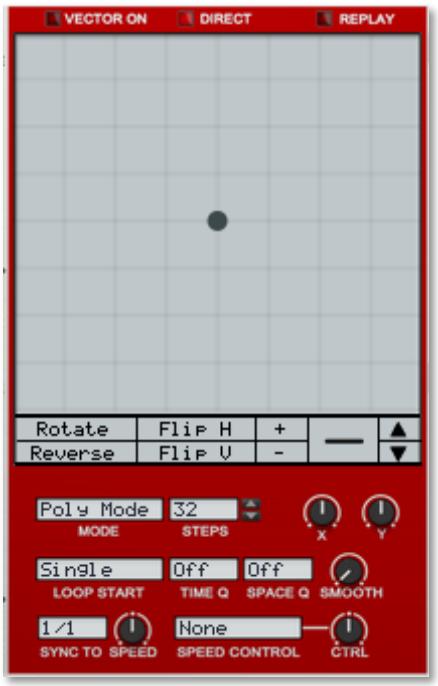
In addition to the controls listed earlier, a number of oscillator parameters can be accessed through the modulation matrix. Use the following as destination in the modulation matrix to gain additional control over the oscillators. There is also an additional Modulation Source.

| | | |
|---|---|---|
| *Phase* | Modulation Destination | Controls the phase of the waveforms |
| *Offset* | Modulation Destination | Controls the start position of the samples |
| *Feedback* | Modulation Destination | Creates a feedback loop around the oscillator through frequency modulation |
| *Retrigger* | Modulation Destination | Allows you to retrigger the oscillator via the Arpeggiator |
| *Osc Retrigger* | Modulation Source | Allows you to retrigger the XY path, the envelopes, the LFOs when the oscillator retriggers |

# X/Y Pad

Vecto uses a central XY controller to create a dynamic mix between the oscillators. This gives you the classic set-up for vector synthesis. The XY Pad is also a generic modulation source. As an example, use X/Y values to control filter cutoff frequency and resonance.

You can move the grey dot manually across the XY pad (use the mouse to click and drag) when the XY pad is in Direct Mode. Use the LED Style buttons at the top of the pad to switch between the different functions of the XY Pad.




### Vector On/Off

When Vector Mode is off then the volume of the 4 oscillators is not controlled by the XY Pad position. When it is turned on, the volumes of the oscillators are under the spell of the XY pad.

### Direct Mode

In Direct Mode, the grey dot and wherever you drag it to, is what determines the X and Y values. You may want to use this in a live situation or when you need absolute control. For even more control, use the dedicated X and Y controls to set the horizontal and vertical position.

### Replay Mode

In Replay mode, the grey dot moves automatically along a programmed path. The path is represented on the XY Pad by a number of dots and transition lines between the dots. You can re-program the path by dragging the dots to where you want them.

To help you create your own paths for playback a number of preset shapes and commands to manipulate the paths are included. Use the black triangle controls to flick through the preset shapes. Note the Rotate, Reverse, Flip H and Flip V functions to change the paths further.

### Mode

The Vecto XY Pad operates in Poly, Free or Mono mode. The mode setting determines how the XY responds when you hit one or more keys simultaneously.

| | |
|---|---|
| Poly Mode | Each note you play has its own XY path and each path starts from the zero position. |
| Free mode | The XY path is free running and all the notes share the same XY path, and is not reset when you press a key. In Free mode the XY path is always looped. |
| Mono mode | Similar to free mode, but the XY path is reset when your press a key. |

### Steps

The Steps control sets the number of points in the XY path. The choices are 4, 8, 16 or 32 steps.

### Time quantization

The time quantization sets the resolution for how often the XY values are being updated as Vecto traverse through the XY path. When the setting is off, the update happens as often as possible and the XY transitions are smooth. Use lower resolution settings for rhythmic effects.

### Space Quantization

The space quantization sets the resolution for the actual XY. When the setting is off, the path follows the XY points exactly. Use other settings to move the path along the XY pad’s grid points.

### Smooth

This controls how much the XY path's shape is smoothed out. At high amounts any sharp angles are smoothed out.

### Loop Start

Loop Start sets the starting point of the XY path. When set to Single, every note played will start at the predetermined start point. In Free mode, the path plays back from wherever it was left, and loops through the complete path.

### Sync To

By default, when the XY path is replayed, it takes the same time for playback as it took to record it. The playback time can also be mapped to a set period, for instance a beat, independently of the recording time. The “Sync-To” menu allows you to set that playback interval. In the Off setting, the XY cursor does not move. You can still invoke the dynamics of the XY Pad by using the XY Path Pos modulation destination. For instance, set one of the modulation slots source to Mod Wheel and the destination to XY Path Pos and the amount to maximum. Move the mod wheel while playing a note and you’ll see the XY cursor.  You don’t need to set the Sync time to Off to use path position modulation. Any modulation will simply be added to the path. For instance adding a LFO modulation will make a path wobbly on playback.

### Speed / Speed Control / Speed Source

As well as being able to sync to a set period, you can also modulate the speed. So The Speed knob changes the playback speed from taking 1/16 of the regular time, to 16 times the regular time. Speed Ctrl / Speed Source allows you to modulate this speed changing using the normal range of modulation sources.

# Filters 1 and 2


Vecto includes two high quality analogue modelled filters that apply subtractive filtering to the soundwaves generated by the oscillators. The filters have their most used modulation parameters hard-wired in the Vecto structure, such as Envelope, Velocity and Modulation Wheel. The controls are the same for both Filter 1 and Filter 2. Select which filter to edit via the LED-style switch in the top right corner of the filter panel.

### Filter Select

The LED-Style buttons 1 and 2 select Filter 1 or Filter 2 for editing.

### Filter Path Routing

The Filter 1 Path and Filter 2 Path controls set the routing of the oscillator signals through the two filter sections (1 and 2). It allows you to use the two filters in series, or in a parallel configuration. For a serial configuration, direct the oscillator signals to Filter 1 and set the Filter 1 Path setting to Filter 2. For a parallel set-up send the oscillators to both filters and set the Filter 1 Path Setting to anything but Filter 2.

Both Filters can be directed to the Mod FX, Delay FX or Dry (bypassing both FX units).

### Filter Type

| | |
|---|---|
| Bypass | The filter is bypassed and the sound passes through unaffected |
| 6dB LowPass | Low frequencies pass through this filter; frequencies above the Cutoff frequency are reduced by 6dB per octave. For example: a frequency 2000Hz is 6dB softer in volume if the Cutoff frequency is set to 1000Hz. |
| 6dB HighPass | High frequencies pass through this filter; those below the Cutoff frequency are reduced by 6dB per octave. The filter is open if the Cutoff frequency knob is turned fully counter-clockwise. |
| 12dB LowPass | Low frequencies pass through this filter; those above the Cutoff frequency are reduced by 12dB per octave. |
| 12dB LowPass 2 | This is an additional 12 dB LowPass filter with an alternative tonal character |
| 12dB HighPass | High frequencies pass through this filter; those below |

| | |
|---|---|
| | the Cutoff frequency are reduced by 12dB per octave. The filter is fully open if the Cutoff frequency control knob is turned fully counter-clockwise. |
| 12dB HighPass 2 | This is an additional 12 dB HighPass filter with an alternative tonal character |

| | |
|---|---|
| *18dB LowPass* | Low frequencies pass through this filter; those above the Cutoff frequency are reduced by 18dB per octave. |
| *18dB HighPass* | High frequencies pass through this filter; those below the Cutoff frequency are reduced by 18dB per octave. The filter is fully open if the Cutoff frequency knob is turned fully counter-clockwise. |
| *24dB LowPass* | Low frequencies pass through this filter; those above the Cutoff frequency are reduced by 24dB per octave. |
| *24dB LowPass 2* | This is an additional 12 dB LowPass filter with an alternative tonal character |
| *24dB HighPass* | High frequencies pass through this filter; those below the Cutoff frequency are reduced by 24dB per octave. The filter is fully open if the Cutoff frequency knob is turned fully counter-clockwise. |

| | |
|---|---|
| *12dB BandPass* | This filter mode is a combination of 12dB LowPass and 12dB HighPass filters. Only those frequencies near the filter Cutoff frequency pass through (a band of frequencies), the resonance (Q), controls the width of this band so that low and high frequencies are removed. |
| *12dB BandPass 2* | This is an additional 12 dB BandPass filter with an alternative tonal character |
| *24dB BandPass* | This filter mode is a combination of a 24dB LowPass and 24dB HighPass filter. Only those frequencies near the filter Cutoff frequency pass through (a band of frequencies), the resonance (Q) controls the width of this band, so low and high frequencies are removed. |
| *24dB BandPass 2* | This is an additional 24 dB BandPass filter with an alternative tonal character |
| *12dB Notch* | The frequencies in the region around the filter Cutoff frequency are reduced in volume (12dB), the resonance controls the width of this region. |
| *12dB Notch 2* | This is an additional 12 dB Notch filter with an alternative tonal character |
| *24db Notch* | The frequencies in the vicinity of the filter Cutoff frequency are reduced in volume (24dB), the resonance controls the width of this region. |
| *24dB Notch 2* | This is an additional 24 dB Notch filter with an alternative tonal character |
| *36dB LowPass* | Low frequencies pass through this filter; those above the Cutoff frequency are reduced by 36dB per octave. |
| *36dB HighPass* | High frequencies pass through this filter; those below the Cutoff frequency are reduced by 36dB per octave. The filter is fully open if the Cutoff frequency knob is turned fully counter clockwise |

| | |
|---|---|
| *Comb Positive* | This is a very short delay, which emphasizes the comb filter frequency. The Cutoff frequency controls the length of this delay and resonance (Q) the feedback of the filter. |
| *Comb Negative* | This is a very short delay, which reduces the comb filter frequency. The Cutoff frequency controls the length of this delay and resonance (Q) the feedback of the filter. |
| *Vox filter* | Vocal Filter, which adds a voice-like filtering to the sound. In Vox filter mode, the distortion knob controls the vowel of the filter. Vowel Sets the vowel formant (a,e,i,o and u) as used by the vox filter |
| *Formant 2 Band* | Vocal Filter, which creates a vocal character based on 2 bands. In Formant 2 mode, the distortion knob controls the separation of the bands. |
| *Formant 4 Band* | Vocal Filter, which creates a vocal character based on 4 bands. In Formant 2 mode, the distortion knob controls the separation of the bands. |
| *Ring* | Ring Modulation effect, Q alters the amount of ring modulation. |

## Filter Controls

### Frequency

The Cutoff Frequency sets the frequency at which point the filter starts attenuating harmonics in the sound. For instance, if you set the Cutoff to 2000Hz and use a 12dB Lowpass filter, it reduces any frequencies above 2000Hz, and frequencies at 4000Hz will be reduced by 12dB. The Cutoff frequency can be static at a single programmed frequency, but for more dynamic sounds, try modulating the Cutoff Frequency with the Filter Envelope, Keyboard tracking, Modulation Wheel and LFO.

### Q (Resonance)

Q is the resonance level of the filter. Sounds at and directly around the filter cutoff frequency are emphasised by the resonance. For the 6dB filters types it has no effect though, because the filter's slope is not steep enough. In the Ring filter it controls the amount of ring modulation. In the Comb Filter it controls the amount of feedback and in the Vox filter the bandwidth of the formant filters.

### Volume and Pan

The volume and panning controls should be self-explanatory: one sets the output volume of the filter, the other positions the filter output in a stereo field.

Tip: Consider setting one of the filters to Bypass and use the panning control to pan the output of the oscillators without filtering them, or use it for panning modulation effects.

### Vowel

In the Vox filter this controls the vowel of the filter. For Formant 2 / 4 filters, it controls the separation of the filter bands.

## Cutoff Frequency Modulation

### Envelope (Env)

The envelope moves the filter cutoff frequency, following the contour of the envelope. The Envelope is part of the Filter section. Keep in mind that if you use negative modulation, the control signal is inverted: as the envelope level rises the filter frequency is lowered.

### Velocity (Vel)

Typically, the harder you strike the keys, the more the filter opens. When you use negative modulation values the filter closes with increasing velocity. If Vecto is in sequencer mode (Play mode) the sequencer velocity settings drive the filter frequency.

### Track

Again typically, the Cutoff frequency increases, i.e. the filter opens, with notes played higher on the keyboard. When you use negative modulation values, the filter closes with increasing note pitch.

### Modulation Wheel (ModWhl)

This control lets the position of the modulation wheel determine the cutoff frequency of the filter. The strength of the Mod Wheel – Filter Frequency coupling is set by the level of this control.

## Filter Envelope

An envelope is a time-based modulation source in a synthesizer. When triggered – typically by playing a note – it moves from 0% up to 100% and back to 0% when you release the key. The Filter Envelope determines how the timbre of a sound changes while holding a note. A typical application of a filter envelope is to sweep through the frequency range of the filter.

The first part of the envelope is known as the attack stage. It represents the time it takes for the envelope to reach 100%. If you open the Attack knob, it takes longer to go from 0 to 100%. With Attack closed, the envelope starts at 100%.

After the attack stage, with the envelope at 100%, the decay stage starts. The decay stage brings the volume down to the sustain level. If the sustain is set to 50%, the decay brings the volume down to 50% and stays there for as long as the key is held. If you use a long decay, it takes long to reach the sustain level. This is useful for evolving pad sounds. Short decay times are a god ingredient for percussive sounds. If the sustain level is 100% the impact of the decay stage is effectively eliminated.

The sustain stage is characterised by a (sustain) level setting. After the attack and decay stage, the envelope reaches the sustain stage and remains here for as long as you hold a key. The sustain level is the level of this sustain stage and as such is main control for the perceived volume of a sound.

If the fade control is set to zero, the envelope behaves as a classic ADSR envelope If you open the fade amount in a positive direction, the sustain turns into a second attack. So after the Decay reaches the Sustain level the envelope level will rise to 100% as set by the Fade time. If you open the fade amount in a negative direction the sustain changes into a second decay. In this case after the Decay reaches the Sustain level the envelope level falls back to 0% in the time set by the fade control.

The envelope release stage starts when you release a key. The envelope fades out from the sustain level to 0% in the time set by the release control.

# Amplifier

While the oscillator section controls the pitch, the filter section the timbre, the amplifier section is responsible for the volume. It amplifies the signal and modifies the volume. An important component of the amplifier section is the Volume Envelope. The envelope defines the loudness contour. The amplifier section also contains the velocity control. This sets the response of Vecto to the velocity information.


**Volume**

The Volume sets the overall volume of the Patches. Use this control to adjust the relative volumes between Patches in a Folder.

**Velocity (Vel)**

The Velocity control determines how the sound's volume responds to changes in note velocity. It applies to notes played on a keyboard and those triggered by the Vecto arpeggiator.

**Velocity shape**

The velocity shape changes Vecto's velocity curvature response to the keyboard input or host input. The control ranges from Exponential (negative values) to linear (0) to Logarithmic (positive values). The default setting is linear (0).
Note: many keyboards already have a built-in velocity curvature response setting. The default of 0 is probably the best to use. This setting is also saved as part of a patch.

**Lin**

With the Line switch activated, all the envelope segments have linear shapes (i.e. a straight line form one envelope point to the next). Leave the Lin switched turned off for the Velocity Shape control to take effect.

**Pan**

The pan control places the sound in a stereo image. The range moves form hard left, through the centre to hard right.

**Volume Envelope**

The Volume Envelope determines the loudness contour of a sound. An envelope is a time-based modulation inside a synthesizer. When triggered – typically by playing a note – it moves from 0% up to 100% and back to 0% when you release the key. The Volume Envelope determines the volume contour of a sound.

The first part is known as the attack stage. It represents the time it takes for the envelope to reach 100%. If you open the Attack knob, it takes longer to go from 0 to 100%. With Attack closed, the envelope starts at 100%.

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The envelope release stage starts when you release a key. The envelope fades out from the sustain level to 0% in the time set by the release control.

# Modulation section


You find Vecto's modulation section in the bottom left hand corner of the panel. The modulation section holds 2 Envelopes, 2 LFOs and a modulation matrix with 8 slots. The modulation section is a treasure trove for subtle or complex sound-shaping options.

### Envelope 1 and 2

An envelope is a time-based modulation source in a synthesizer. When triggered – typically by playing a note – it moves from 0% up to 100% and back to 0% when you release the key. A typical application of a modulation envelope is to sweep a targeted parameter (destination) through a range of values.

The first part of the envelope is known as the attack stage. It represents the time it takes for the envelope to reach 100%. If you open the Attack knob, it takes longer to go from 0 to 100%. With Attack closed, the envelope starts at 100%.

After the attack stage, with the envelope at 100%, the decay stage starts. The decay stage brings the volume down to the sustain level. If the sustain is set to 50%, the decay brings the volume down to 50% and stays there for as long as the key is held. If you use a long decay, it takes long to reach the sustain level. This is useful for evolving pad sounds. Short decay times are a god ingredient for percussive sounds. If the sustain level is 100% the impact of the decay stage is effectively eliminated.

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The envelope release stage starts when you release a key. The envelope fades out from the sustain level to 0% in the time set by the release control.

### Vel > T

This control allows you to change the envelope times based on note velocity (how hard you strike a key). A positive value here means that *forte* notes produce faster envelopes. A negative value has the opposite effect: *piano* notes get the faster envelopes.

### Key > T

This control allows you to change the envelope times based on note pitch. A positive value here means that higher keys produce faster envelopes. A negative value has the opposite effect: higher notes get slower envelopes.

### Sync

Sync is a switch that enables automatic triggering of the envelope, synchronised to Reason's tempo setting.

## LFO 1 and 2

The Vecto modulation section has two LFOs. Both LFOs have an identical set of controls to determine their behaviour.

### Waveform type

The available waveforms are Sine, Triangle, Saw Up, Saw Down, Square and S&H. The waveform determines the modulation pattern of the LFO. Sinus and Triangle are often used because these move the LFO up and down in a smooth fashion. The other waveforms are more suitable for a more pronounced impact.

### Mode

The LFO reset type has three different modes:

| | |
|---|---|
| *Poly* | In poly mode, each note played has its own LFO. |
| *Free* | The LFO is free running and all the notes share the same LFO. The LFO is always running and does not reset when you press a key. |
| *Mono* | Similar to free mode. All notes share the same LFO. However when you press a key in Mono mode, the LFO is reset to its initial phase (start position) |

### LFO Speed

The speed control determines how fast the LFO cycles through its selected waveform. It is measured either in hertz (cycles per second) (Sync Off) or note lengths (Sync On). The speed range runs from 0.03 Hz to 27.5 Hz.

### LFO Sync Off / On

If you turn Sync on, the Speed of the LFO will be based on Reason's tempo. It will synchronise with the song tempo. In Sync Mode, please use the Speed parameter to select the desired beats / divisions setting.

## Free LFO 1 Uni / Free LFO 2 Uni

This is the unipolar value of the Free LFO. The regular LFO values range from –1 to +1. The Unipolar LFO maps this to 0 to 1, so it never reaches a negative value.

## Free Modulation Slots 1 – 8

There are eight different modulation matrix slots, and they are used in order until a blank modulation slot is encountered. You need to ensure that there are no blank slots in-between populated modulation slots.

The source column gives you access to all modulation sources. There are a total of 35 modulation sources available

The amount control defines the modulation strength for each modulation slot. It sets the level of impact the modulation source has on its destination or target. It speaks for itself that depending on the selected source and the amount the effect ranges from subtle variations to outrageous manipulation. The amount control is an intelligent one. It displays its value according to destination type. For example if the destination is pitch, then the modulation amount is shown in semitones. If the modulation targets are time based, such as the Speed of an LFO, the range goes from 25% up to 400%, which is from 25% of the original speed (i.e. ¼ as fast) to 400% of the original speed (i.e. 4 times as fast).

The destination column lists which parameter is subject to the programmed modulations. You have a choice of 159 destinations here.

# Arpeggiator

Vecto incorporates a classic style arpeggiator that plays notes one after another, drawing from all keys that are held down. The playback order happens in a variety of octaves and patterns. The arpeggiator has a built-in pattern sequencer. Each step of the pattern sequencer has individual on/off and velocity settings.

To turn on the arpeggiator, select arpeggiator (Arp) in the Play Mode section.

### Steps

The number of steps in the arpeggiator ranges from 1 – 16.

### Speed

This control sets the speed of the arpeggiator relative to the speed of Reason, for example 2 x tempo or ¼ x tempo.

### Arp Mode

The arpeggiator mode controls the order in which the arpeggiator plays its notes

| | |
|---|---|
| *Up* | The notes are played from low to high |
| *Down* | The notes are played from high to low |
| *Up/Down* | The notes are played from low to high followed by from high to low |
| *Down/Up* | The notes are played from high to low followed by from low to high |
| *Random* | The notes are played in random order |
| *Ordered* | The notes are played in the order in which they were triggered, i.e. first note played first and last note played last |
| *Rev. Ordered* | The notes are played in the reverse order in which they were triggered, i.e. last note played first and first note played last |
| *Ordered Up/Down* | The notes are played from first to last followed by last to first |
| *Ordered Down/Up* | The notes are played from last to first followed by first to last |
| *Chord* | The arpeggiator plays all notes as chord in a rhythmic pattern |

Please Note: when the arpeggiator is not activated in Play Mode, it can still be used as a modulation source.

### Octaves

The octave setting gives you the option to play the arpeggiated notes in multiple octaves, relative to the original notes. For example, an octave setting of 2 means that the original notes will play first, followed by the same notes one octave higher.

### Sync

The Sync switch synchronises the arpeggiator the Reason's tempo. It is on by default.

### Latch

Latch frees your hands. When latch is turned on you don’t need to keep holding notes for the arpeggiator to continue playing. Tip: you can use also the sustain pedal to latch and unlatch the arpeggiator.

### Length

The length control can be used to set the arpeggiator note duration for all steps simultaneously at an identical value. This setting is relative to the step size, i.e. from 1% to 100%. Please note that you will need a 100% value for tied notes.

### Swing

Swing is a control that allows you to change the rhythmic feel of the arpeggiator. It does this by slightly moving every other note relative a fixed timing grid. Whether it suits your work depends very much of the musical piece you are working on, so you we encourage you to experiment with different values here.

### Vel

Vel determines the programmed velocity value for each step. The impact of the programmed value is determined by the setting of the Vel / Key control

### Vel / Key

The velocity of the steps in the arpeggiator sequence can be controlled by their programmed values, by the velocity of the key played that is used to trigger the arpeggiator or a combination of both. The Vel / Key control sets the balance between these.

### Step 1 – 16 On/Off

Click on a step number to mute and un-mute it.

# Play Mode

This panel contains controls to set the Play settings for Vecto.


### Play Mode

| | |
|---|---|
| *Poly* | Multiple notes can be played at the same time. Vecto is polyphonic |
| *Mono* | Only a single note can be played at a time. Any new note will stop previous note. |
| *Legato* | Similar to mono but if you play overlapping notes, the envelopes and LFOs will not be retriggered for the new note. |
| *Arpeggiator* | Any notes played will trigger the sequencer (See the Arpeggiator section) |

### Port Mode

Portamento mode (the amount of portamento is controlled by the Port control)

| | |
|---|---|
| *None* | No portamento. |
| *Constant Rate* | The note pitch changes at a constant rate from one note to the next. Greater keyboard note ranges take a longer time. |
| *Constant Time* | The note pitch changes between notes always take the same time, regardless of note range. |
| *Held Rate* | This mode works the same as constant rate, but only affects overlapping notes (legato style) |
| *Held Time* | This mode works the same as constant time, but only affects overlapping notes (legato style) |

### Port

This control sets the rate or time for the portamento effect.

### Chord Mode

Up to 8 notes can be set up as chord. Vecto will play the chord for every key played.

### Number of Chord Notes

Sets the number of notes in the chord, from 1 to 8. When it's set to 1, chord mode is turned off.

### Chord Note Selector

This control identifies the chord note for editing. Every chord note has its own tuning (Semi) and panning (Pan)

### Chord Note Semi

Sets the semitone offset for the select Chord Note relative to the note played.

### Chord Note Pan

Sets the panning position for the select Chord Note.

### Strum

The Strum function introduces a slight delay between the Chord Notes. The strumming effect is similar to that when playing a chord on a guitar the individual strings are plucked one after another.

Please Note: Chord Mode can be very CPU intensive. Please bear this in mind when activating Chord Mode.

# FX section

Each Vecto Patch incorporates up to two independent high quality effects. The effects are connected in series. Each effect type comes with default parameter settings and can be used straight away upon selection. If you make any changes to the effect controls however, it will remember these. This allows you to experiment with different effect types, while keeping any changes you made intact.

### Effect 1 / 2

The LED-style switches in the top right corner turn the effect sections On and Off.

### Mix

The Mix control sets the balance between the original synth signal and the effect signal. Turn it fully counter clockwise to hear the original signal only. As you start turning the Mix control clockwise, more and more effect signal will become audible.


## Effect Types

Type sets the effect type for the effect units. FX 1 delivers the modulation effects: Chorus, Ensemble, Phaser, Flanger and Widener. FX2 takes care of the delays and reverbs.

### Stereo Delay

The stereo delay is made up of two tempo based delays. One delay for each of the audio channels (left and Right). This is useful for making deep pad sounds if you use 1/8* (Left) and 1/4 (right) settings. The Feed Equal option makes it possible to have equal feedback fade time, even if the left and right delay are have other length settings.

| | |
|---|---|
| *Left Delay* | Left length of the delay set in tempo based settings |
| *Right Delay* | Right length of the delay set in tempo based settings |
| *Feedback* | Feedback of the delay |
| *CrossFeed* | Feedback between the left / right delay |
| *LP Filter* | Low pass filter frequency |
| *HP Filter* | High pass filter frequency |
| *Mod Amount* | Delay modulation amount |
| *Feed Equal* | Equal on makes that both L and R feedback do fade way equal, regardless which length you use. |

### Reverb

This effect reproduces the sound of acoustics in rooms using different sizes and reflections.

| | |
|---|---|
| *Pre-Delay* | Pre-delay amount of the reverb signal |
| *Size* | Reverb room size |
| *Damp* | Reverb damping amount |
| *LP Filter* | Low pass filter frequency |
| *HP Filter* | High pass filter frequency |
| *Spread* | Stereo spreading amount |
| *Length* | Length of reverb |

### Chorus

The chorus is a modulated delay signal, which is useful for thickening up the sound.

| | |
|---|---|
| *Length* | Length of the chorus |
| *Width* | Maximum change or modulation to chorus length |
| *Speed* | Speed that the chorus length changes |
| *Spread* | Difference in speed between the left and right hand channels |
| *LP Filter* | Low pass filter frequency |
| *Widen* | Stereo widening amount |

### Ensemble

This effect uses 6 choruses, each having its own setting, to give the effect of several copies of the sound playing at once.

| | |
|---|---|
| *Length* | Length of the ensemble effect |
| *Width* | Maximum change to ensemble length |
| *Speed* | Speed the ensemble length changes |
| *Feedback* | Amount the choruses differ from each other |
| *Spread* | The amount of panning for each of the chorus units |

### Flanger

The flanger effect is based on a very short modulated delay.

| | |
|---|---|
| *Length* | Length of the delay (time) |
| *Width* | Maximum change to flanger length |
| *Speed* | Speed the flanger length changes, this is midi tempo based |
| *Feedback* | Feedback of the flanger |
| *Pan Mod* | Flanger panning amount |
| *LP Filter* | Low pass filter frequency |
| *HP Filter* | High pass filter frequency |

### Phaser

A phaser is a combination of filters that can create a phasing effect

| | |
|---|---|
| *Stages* | Number of stages in the phaser |
| *Pitch* | Pitch of the phaser |
| *Feedback* | Feedback of the phaser |
| *Width* | Maximum change to phaser pitch |
| *Speed* | Speed the phaser length changes, this is midi tempo based |
| *Spread* | Amount the phaser stages are spread from the central pitch |
| *Pan Mode* | Speed the phaser pans from the left / right hand channels |
| *Q* | Sets the resonance value (Q) which determines the emphasis of the comb filters |

### Stereo Widener

This widener is a spatial effect that broadens a sound's soundstage.

| | |
|---|---|
| *Widen* | Stereo widening amount |
| *Width* | Maximum change to the stereo widening amount |
| *Speed* | Speed that the stereo widening amount changes. |
| *LP Filter* | Low pass filter frequency. |
| *HP Filter* | High pass filter frequency. |

# Back Panel


A click on the Vecto logo will display the back panel. The back panel contains a large number of connection points to hook-up Vecto as part of your Reason set-up.

### Input

The input sockets accept an audio signal to be used as modulation source or to be processed by the effect units.

### Note Input

Vecto has a Note Gate and CV input pair. This allows Vecto to be controlled by other Reason units, such as the Matrix Pattern Sequencer.

### CV Input

There are 8 CV Inputs that can be used to externally control the X and Y positions of the XY Pads, FX1 Mix, FX2 Mix and 4 modulation sources.

### Gate Input

The nine Gate inputs enable triggering of the oscillators, the modulation LFOs, the modulation Envelopes and the Arpeggiator.

### CV Output

The ten CV Outputs present the signals of various Vecto modulation sources to be used to control external Reason modules. The following CVs are available: Envelope 1 and 2, LFO 1 and 2, Arpeggiator Note, Arpeggiator Velocity, Free 1, Free 2, XY Pad Out X and Y.

### Output

Output is a stereo output that presents Vecto’s overall audio signal.

# Modulation Sources

| *Source* | Description |
|---|---|
| *Mod Wheel* | Modulation Wheel (Midi CC 1) |
| *Pitch Bend* | Pitch Bend |
| *Sustain* | Sustain (Midi CC 64) |
| *Expression* | Expression (Midi CC 11) |
| *Breath* | Breath (Midi CC 2) |
| *Note* | Note Midi Value |
| *Velocity* | Note Velocity Value |
| *Aftertouch* | Key Aftertouch |
| *After/Mod Wheel* | Key Aftertouch / Mod Wheel |
| *Random Note 1* | Random Note 1 Value |
| *Random Note 2* | Random Note 2 Value |
| *Offset* | Constant Offset |
| *Random* | Random Value |
| *Free Env 1* | Free Envelope 1 Value |
| *Free Env 2* | Free Envelope 2 Value |
| *Free LFO 1* | Free LFO 1 Value |
| *Free LFO 2* | Free LFO 2 Value |
| *Filter 1 Env* | Filter Envelope 1 Value |
| *Filter 2 Env* | Filter Envelope 2 Value |
| *XY X* | XY Pad X Value |
| *XY Y* | XY Pad Y Value |
| *XY Dist* | Phase Distortion 1 Distance from centre |
| *Arp On* | Current Arp Step On / Off state (1 for On, 0 for Off) |
| *Arp Vel* | Arpeggiator Velocity |
| *Osc 1 – 4 Retrigger* | Retrigger the XY Pad, Envelopes, LFOs via the oscillator retriggers |
| *Smth* | Smoothed Input |
| *Input Left* | Left Input |
| *Input Right* | Right Input |
| *CV 1* | CV Input 1 |
| *CV 2* | CV Input 2 |
| *CV 3* | CV Input 3 |
| *CV 4* | CV Input 4 |

| | |
|---|---|
| *LFO 1 Uni* | Unipolar LFO 1 |
| *LFO 2 Uni* | Unipolar LFO 2 |
| *Osc 1 Delay* | This is used to trigger the XY, envelopes and LFOs after the oscillator’s delay |
| *Osc 2 Delay* | This is used to trigger the XY, envelopes and LFOs after the oscillator’s delay |
| *Osc 3 Delay* | This is used to trigger the XY, envelopes and LFOs after the oscillator’s delay |
| *Osc 4 Delay* | This is used to trigger the XY, envelopes and LFOs after the oscillator’s delay |

# Modulation Destinations

| | | |
|---|---|---|
| *None* | *Semi 3* | *Retrigger XY* |
| *Pitch Semi* | *Fine 3* | *Filter 1 Volume* |
| *Pitch Fine* | *Spread 3* | *Filter 1 Pan* |
| *Portamento Amount* | *Sub Volume 3* | *Filter 1 Frequency* |
| *Strum Time* | *Drift 3* | *Filter 1 Q* |
| *Semi 1* | *SMA Amount 3* | *Filter 1 Vowel* |
| *Fine 1* | *SMA Speed 3* | *Filter 1 Envelope* |
| *Spread 1* | *Symmetry 3* | *Filter 1 Envelope Speed* |
| *Sub Volume 1* | *Pan 3* | *Filter 1 Attack* |
| *Drift 1* | *Volume 3* | *Filter 1 Decay* |
| *SMA Amount 1* | *Phase 3* | *Filter 1 Sustain* |
| *SMA Speed 1* | *Offset 3* | *Filter 1 Fade* |
| *Symmetry 1* | *Feed 3* | *Filter 1 Release* |
| *Pan 1* | *Retrigger 3* | *Retrigger Filter 1* |
| *Volume 1* | *Semi 4* | *Filter 2 Volume* |
| *Phase 1* | *Fine 4* | *Filter 2 Pan* |
| *Offset 1* | *Spread 4* | *Filter 2 Frequency* |
| *Feed 1* | *Sub Volume 4* | *Filter 2 Q* |
| *Retrigger 1* | *Drift 4* | *Filter 2 Vowel* |
| *Semi 2* | *SMA Amount 4* | *Filter 2 Envelope* |
| *Fine 2* | *SMA Speed 4* | *Filter 2 Envelope Speed* |
| *Spread 2* | *Symmetry 4* | *Filter 2 Attack* |
| *Sub Volume 2* | *Pan 4* | *Filter 2 Decay* |
| *Drift 2* | *Volume 4* | *Filter 2 Sustain* |
| *SMA Amount 2* | *Phase 4* | *Filter 2 Fade* |
| *SMA Speed 2* | *Offset 4* | *Filter 2 Release* |
| *Symmetry 2* | *Feed 4* | *Retrigger Filter 2* |
| *Pan 2* | *Retrigger 4* | *Volume* |
| *Volume 2* | *XY X Position* | *Panning* |
| *Phase 2* | *XY Y Position* | *Amp Speed* |
| *Offset 2* | *XY Magnitude* | *Amp Envelope Speed* |
| *Feed 2* | *XY Phase* | *Amp Envelope Attack* |
| *Retrigger 2* | *XY Speed* | *Amp Envelope Decay* |

| | | |
|---|---|---|
| *Amp Envelope Sustain* | *LFO 1 Delay* | *FX Mod Parameter 5* |
| *Amp Envelope Fade* | *LFO 1 Smooth* | *FX Mod Parameter 6* |
| *Amp Envelope Release* | *Retrigger LFO1* | *FX Mod Parameter 7* |
| *Attack Shape* | *LFO 2 Speed* | *FX Mod Parameter 8* |
| *Decay Shape* | *LFO 2 Phase* | *Delay FX Mix* |
| *Release Shape* | *LFO 2 Shape* | *Delay FX Pan* |
| *Envelope 1 Speed* | *LFO 2 Delay* | *Delay FX Parameter 1* |
| *Envelope 1 Attack* | *LFO 2 Smooth* | *Delay FX Parameter 2* |
| *Envelope 1 Decay* | *Retrigger LFO2* | *Delay FX Parameter 3* |
| *Envelope 1 Sustain* | *Mod 1 Amount* | *Delay FX Parameter 4* |
| *Envelope 1 Fade* | *Mod 2 Amount* | *Delay FX Parameter 5* |
| *Envelope 1 Release* | *Mod 3 Amount* | *Delay FX Parameter 6* |
| *Retrigger Envelope 1* | *Mod 4 Amount* | *Delay FX Parameter 7* |
| *Envelope 2 Speed* | *Mod 5 Amount* | *Delay FX Parameter 8* |
| *Envelope 2 Attack* | *Mod 6 Amount* | *Free Out Value 1* |
| *Envelope 2 Decay* | *Mod 7 Amount* | *Free Out Value 2* |
| *Envelope 2 Sustain* | *Mod 8 Amount* | *XY Path* |
| *Envelope 2 Fade* | *FX Mod Mix* | |
| *Envelope 2 Release* | *FX Mod Pan* | |
| *Retrigger Envelope 2* | *FX Mod Parameter 1* | |
| *LFO 1 Speed* | *FX Mod Parameter 2* | |
| *LFO 1 Phase* | *FX Mod Parameter 3* | |
| *LFO 1 Shape* | *FX Mod Parameter 4* | |

# CC Remote Names

| *CC #* | **Value** |
|---|---|
| *4* | Pitch Bend Up |
| *5* | Pitch Bend Down |
| *7* | Main Volume |
| *8* | Velocity > Volume |
| *10* | Velocity Shape |
| *12* | Pan |
| *13* | Volume Envelope Attack |
| *14* | Volume Envelope Decay |
| *15* | Volume Envelope Sustain |
| *16* | Volume Envelope Fade |
| *17* | Volume Envelope Release |
| *18* | Linear |
| *19* | Oscillator 1 On |
| *20* | Oscillator 1 Free |
| *21* | Oscillator 1 Track |
| *22* | Oscillator 1 Oct |
| *23* | Oscillator 1 Semi |
| *24* | Oscillator 1 Fine |
| *25* | Oscillator 1 Spread |
| *26* | Oscillator 1 Sub |
| *27* | Oscillator 1 Drift |
| *28* | Oscillator 1 SMA |
| *29* | Oscillator 1 Speed |
| *30* | Oscillator 1 Sym |
| *31* | Oscillator 1 Pan |
| *33* | Oscillator 1 Volume |
| *34* | Oscillator 2 On |
| *35* | Oscillator 2 Free |
| *36* | Oscillator 2 Track |
| *37* | Oscillator 2 Sync |
| *39* | Oscillator 2 Oct |
| *40* | Oscillator 2 Semi |

| | |
|---|---|
| *41* | Oscillator 2 Fine |
| *42* | Oscillator 2 Spread |
| *43* | Oscillator 2 Sub |
| *44* | Oscillator 2 Drift |
| *45* | Oscillator 2 SMA |
| *46* | Oscillator 2 Speed |
| *47* | Oscillator 2 Sym |
| *48* | Oscillator 2 Pan |
| *49* | Oscillator 2 Volume |
| *50* | Oscillator 3 On |
| *51* | Oscillator 3 Free |
| *52* | Oscillator 3 Track |
| *53* | Oscillator 3 Sync |
| *54* | Oscillator 3 Oct |
| *55* | Oscillator 3 Semi |
| *56* | Oscillator 3 Fine |
| *57* | Oscillator 3 Spread |
| *58* | Oscillator 3 Sub |
| *59* | Oscillator 3 Drift |
| *60* | Oscillator 3 SMA |
| *61* | Oscillator 3 Speed |
| *62* | Oscillator 3 Sym |
| *63* | Oscillator 3 Pan |
| *65* | Oscillator 3 Volume |
| *66* | Oscillator 4 On |
| *67* | Oscillator 4 Free |
| *68* | Oscillator 4 Track |
| *69* | Oscillator 4 Sync |
| *70* | Oscillator 4 Oct |
| *71* | Oscillator 4 Semi |
| *72* | Oscillator 4 Fine |
| *73* | Oscillator 4 Spread |
| *74* | Oscillator 4 Sub |
| *75* | Oscillator 4 Drift |
| *76* | Oscillator 4 SMA |

| | |
|---|---|
| *77* | Oscillator 4 Speed |
| *78* | Oscillator 4 Sym |
| *79* | Oscillator 4 Pan |
| *80* | Oscillator 4 Volume |
| *81* | Filter 1 Frequency |
| *82* | Filter 1 Resonance |
| *83* | Filter 1 Vowel |
| *84* | Filter 1 Volume |
| *85* | Filter 1 Pan |
| *86* | Mod > Filter 1 Frequency Amount |
| *87* | Filter 1 Keytracking |
| *88* | Velocity > Filter 1 Frequency Amount |
| *89* | Filter 1 Envelope Amount |
| *90* | Filter 1 Envelope Attack |
| *91* | Filter 1 Envelope Decay |
| *92* | Filter 1 Envelope Sustain |
| *93* | Filter 1 Envelope Fade |
| *94* | Filter 1 Envelope Release |
| *95* | Filter 2 Frequency |
| *102* | Filter 2 Resonance |
| *103* | Filter 2 Vowel |
| *104* | Filter 2 Volume |
| *105* | Filter 2 Pan |
| *106* | Mod > Filter 2 Frequency Amount |
| *107* | Filter 2 Keytracking |
| *108* | Velocity > Filter 2 Frequency Amount |
| *109* | Filter 2 Envelope Amount |
| *110* | Filter 2 Envelope Attack |
| *111* | Filter 2 Envelope Decay |
| *112* | Filter 2 Envelope Sustain |
| *113* | Filter 2 Envelope Fade |
| *114* | Filter 2 Envelope Release |
| *115* | Port Speed |
| *116* | Chord Strum in MS |
| *117* | Chord Strum in QB |

| | |
|---|---|
| *118* | Arp Speed |
| *119* | Arp Steps |
| *128* | Arp Note Length |
| *129* | Arp Swing |
| *130* | Arp Latch |
| *131* | Arp Sync |
| *132* | Free Envelope 1 Attack in MS |
| *133* | Free Envelope 1 Decay in MS |
| *134* | Free Envelope 1 Sustain MS |
| *135* | Free Envelope 1 Fade in MS |
| *136* | Free Envelope 1 Release in MS |
| *137* | Free Envelope 1 Attack in QB |
| *138* | Free Envelope 1 Decay in QB |
| *139* | Free Envelope 1 Sustain QB |
| *140* | Free Envelope 1 Fade in QB |
| *141* | Free Envelope 1 Release in QB |
| *142* | Key > Free Envelope 1 Speed |
| *143* | Vel > Free Envelope 1 |
| *144* | Free Envelope 2 Attack in MS |
| *145* | Free Envelope 2 Decay in MS |
| *146* | Free Envelope 2 Sustain MS |
| *147* | Free Envelope 2 Fade in MS |
| *148* | Free Envelope 2 Release in MS |
| *149* | Free Envelope 2 Attack in QB |
| *150* | Free Envelope 2 Decay in QB |
| *151* | Free Envelope 2 Sustain QB |
| *152* | Free Envelope 2 Fade in QB |
| *153* | Free Envelope 2 Release in QB |
| *154* | Key > Free Envelope 2 Speed |
| *155* | Vel > Free Envelope 2 |
| *156* | Free LFO 1 Speed in HZ |
| *157* | Free LFO 1 Speed in QB |
| *158* | Free LFO 1 Sync |
| *159* | Free LFO 2 Speed in HZ |
| *160* | Free LFO 2 Speed in QB |

| | |
|---|---|
| *161* | Free LFO 2 Sync |
| *162* | Mod 1 Amount |
| *163* | Mod 2 Amount |
| *164* | Mod 3 Amount |
| *165* | Mod 4 Amount |
| *166* | Mod 5 Amount |
| *167* | Mod 6 Amount |
| *168* | Mod 7 Amount |
| *169* | Mod 8 Amount |
| *170* | Mod FX On / Off |
| *171* | Mod FX Mix |
| *172* | Mod FX None |
| *173* | Mod FX None |
| *174* | Mod FX None |
| *175* | Chorus Length |
| *176* | Chorus Width |
| *177* | Chorus Speed |
| *178* | Chorus Spread |
| *179* | Chorus Lowpass Filter |
| *180* | Chorus Widen |
| *181* | Chorus Highpass Filter |
| *182* | Ensemble Length |
| *183* | Ensemble Width |
| *184* | Ensemble Speed |
| *185* | Ensemble Feedback |
| *186* | Ensemble Amount |
| *187* | Ensemble Spread |
| *188* | Ensemble Lowpass Filter |
| *189* | Ensemble Highpass Filter |
| *190* | Flanger Length |
| *191* | Flanger Width |
| *192* | Flanger Speed |
| *193* | Flanger Feedback |
| *194* | Flanger Pan Modulation |
| *195* | Flanger Lowpass Filter |

| | |
|---|---|
| *196* | Flanger Highpass Filter |
| *197* | Phaser Stages |
| *198* | Phaser Pitch |
| *199* | Phaser Feedback |
| *200* | Phaser Width |
| *201* | Phaser Speed |
| *202* | Phaser Spread |
| *203* | Phaser Pan Modulation |
| *204* | Phaser Q |
| *205* | Widener Amount |
| *206* | Widener Width |
| *207* | Widener Speed |
| *208* | Widener Lowpass Filter |
| *209* | Widener Highpass Filter |
| *210* | Delay FX On / Off |
| *211* | Delay FX Mix |
| *212* | Delay FX None |
| *213* | Stereo Delay Left Length |
| *214* | Stereo Delay Right Length |
| *215* | Stereo Delay Feedback |
| *216* | Stereo Delay Crossfeed |
| *217* | Stereo Delay Lowpass Filter |
| *218* | Stereo Delay Highpass Filter |
| *219* | Stereo Delay Mod Amount |
| *220* | Stereo Delay Equal Feed |
| *221* | Reverb Pre-delay |
| *222* | Reverb Size |
| *223* | Reverb Damping |
| *224* | Reverb Lowpass Filter |
| *225* | Reverb Highpass Filter |
| *226* | Reverb Spread |
| *227* | Reverb Length |
| *228* | XY Vector On |
| *229* | XY X Position |
| *230* | XY Y Position |

| | |
|---|---|
| *231* | XY Speed |
| *232* | XY Speed Control |
| *233* | XY Smooth |
| *234* | Arp Mode |
| *235* | Arp Vel / Key |
| *236* | Osc 1 Reverse |
| *237* | Osc 2 Reverse |
| *238* | Osc 3 Reverse |
| *239* | Osc 4 Reverse |

# Sample Waveform List

The samples used in Vecto are largely mono samples. This has been done deliberately so you can make full use of Vecto's synth architecture to create a stereo image. As an added benefit, the mono samples take up less space and load faster.

Where required though, as in the Big Sample Set category, stereo samples are used.

### Sample sets

The s as a suffix at the end of a samples name indicates that the sample set is made up of multiple samples. They might be stacked, use split points across the keyboard, velocity switched or alternated between two individual samples. The table below lists all the sample sets.

| | |
|---|---|
| *Bass01s* | Multi-sample electronic bass sound |
| *Bass02s* | Multi-sample electronic bass sound with a different bass sample in the lower end |
| *Bass03s* | Multi-sample electronic bass that alternates between samples. Play the same note twice to hear the different samples. |
| *Bass04s* | Multi-sample electronic bass with velocity switch. The switch is at velocity value 097. |
| *BottleHisS* | Stack sound of bottle with sfx metal sound |
| *BottleWaveS* | Stereo made bottle blow waveform |
| *FXBoil02s* | Stereo made bowl scrape fx sound |
| *Glass08s* | Wine glass hit with velocity switch. From velocity 097 another sample plays |
| *Glass09s* | Wine glass hit with alternating samples. Play the same note twice to hear the different samples. |
| *Glass10s* | Wine glass hit with alternating samples. Play the same note twice to hear the different samples. |
| *Glass11s* | Wine glass hit with random stereo spreading |
| *Glass12s* | Wine glass hit with random stereo spreading |
| *Glass13s* | Wine glass hit with stereo image |
| *Glass14s* | Wine glass hit with stereo image |
| *Glass15s* | Wine glass combi sound with stereo image |
| *Glass16s* | Wine glass hit with stereo image |
| *GlassFX01s* | Wine glass fx with stereo image |
| *GlassFX02s* | Wine glass fx with stereo image |
| *GlassFX03s* | Wine glass fx combination sound with stereo image |
| *MboilHit02s* | Metal bowl hit with stereo image |
| *MuteG01s* | Multi-sample muted guitar |

| | |
|---|---|
| *MuteG02s* | Multi-sample muted guitar with different lower range |
| *MuteG03s* | Multi-sample muted guitar with stereo image |
| *MuteG04s* | One sample muted guitar with stereo image |
| *Panflute01s* | Multi-sample pan flute |
| *Panflute02s* | Alternating samples. Play the same note twice to hear the different samples. |
| *Panflute03s* | Alternating samples. Play the same note twice to hear the different samples. |
| *Panflute04s* | Velocity switch. The switch is at velocity value 097. |
| *Panflute05s* | Multi-sample pan flute with alternating samples. Play the same note twice to hear the different samples. |
| *Pole01s* | Sampled Metal Pole, stereo setting |
| *Pole02s* | Sampled Metal Pole, octave setting |
| *Pole03s* | Sampled Metal Pole, stacked with other sample |
| *RingFX01s* | Rob Papen patent sample with stereo image |
| *RingFX02s* | Rob Papen patent sample with stereo image |
| *RingFX03s* | Rob Papen patent sample with stereo image |
| *RingFX04s* | Rob Papen patent sample with stereo image |
| *RingFX05s* | Rob Papen patent sample with stereo image |
| *RingFX06s* | Rob Papen patent sample with stereo image |
| *R-Tube01s* | Mixed and looped rain tube sample with stereo image |
| *R-Tube02s* | Looped rain tube sample with stereo image |
| *R-Tube03s* | Mixed looped rain tube sample with stereo image |
| *Valve01s* | Flute valve finger played and tuned, stereo image |
| *Valve02s* | Flute valve finger played and tuned, stereo image |
| *Valve03s* | Flute valve finger played and tuned, stereo mix of two sounds |
| *Vox-Aah01s* | Multi-sample Aah choir with stereo image |
| *Vox-Aah02s* | Aah choir variation (mix), stereo image |
| *Vox-Aah03s* | Aah choir variation (mix), stereo image |
| *Vox-Aah04s* | Aah choir variation, stereo image |
| *Vox-Aah05s* | Aah choir variation, stereo image |
| *Vox-Aah06s* | Aah choir variation (mix), stereo image |
| *Vox-Aah07s* | Aah choir variation, stereo image |
| *Vox-Aah08s* | Aah choir variation (mix), stereo image |
| *Vox-Aah09s* | Aah choir variation (mix), stereo image |
| *Vox-Aah10s* | Aah choir variation (mix), stereo image |

| | |
|---|---|
| *Vox-Aah11s* | Aah choir variation, stereo image |
| *Vox-hmmm01s* | Hmmm choir, stereo image |
| *Vox-hmmm02s* | Hmmm choir, stereo image |
| *Vox-hmmm03s* | Hmmm choir variation (mix), stereo image |
| *Vox-hmmm04s* | Hmmm choir / synthvox variation (mix), stereo image |
| *Vox-hmmm05s* | Hmmm choir / synthvox variation (mix), stereo image |
| *Vox-hmmm06s* | Hmmm choir / synthvox variation (mix), stereo image |
| *Vox-oe01s* | Multi-sample oeeh choir, stereo image |
| *Vox-ooh01s* | Multi-sample ooh choir, stereo image |
| *Vox-ooh02s* | Multi-sample ooh choir variation, stereo image |
| *Vox-ooh03s* | Multi-sample ooh choir (mix), stereo image |
| *Vox-ooh04s* | Multi-sample ooh choir (mix), stereo image |
| *Vox-syn01s* | Synthesized vox, stereo image |
| *Vox-syn02s* | Synthesized vox (mix), stereo image |
| *Vox-syn03s* | Synthesized vox (mix), stereo image |
| *Vox-syn04s* | Synthesized vox, stereo image |
| *Vox-syn05s* | Synthesized vox, stereo image |
| *Vox-syn06s* | Synthesized vox (mix), stereo image |
| *Vox-syn07s* | Synthesized vox (mix), stereo image |
| *Vox-syn08s* | Synthesized vox (mix), stereo image |
| *Vox-syn09s* | Synthesized vox, stereo image |
| *Wglass01s* | Wine glass finger tone, stereo image |
| *Wglass02s* | Wine glass finger tone, stereo image |
| *Wglass03s* | Wine glass finger tone, stereo image |
| *Wglass04s* | Wine glass finger tone with a different sample start point, stereo image |
| *Wglass05s* | Wine glass finger tone with a different sample start point, stereo image |
| *Wglass06s* | Wine glass finger tone and mix of two samples |
| *Wglass07s* | Wine glass finger tone with a different sample start point, stereo image |
| *Wglass08s* | Wine glass finger tone with a different sample start point and mix of 2 samples |
| *Wglass09s* | Wine glass finger tone with a different sample start point and mix of 2 samples |
| *XMetal01s* | Rob Papen patent sample with stereo image |
| *XMetal02s* | Rob Papen patent sample with stereo image |

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|---|---|
| *XMetal03s* | Rob Papen patent sample with stereo image |
| *XMetal04s* | Rob Papen patent sample with stereo image |
| *XMetal05s* | Rob Papen patent sample with stereo image |
| *XMetal06s* | Rob Papen patent sample with stereo image |
| *XMetal07s* | Rob Papen patent sample with stereo image |
| *XMetal08s* | Rob Papen patent sample with stereo image |
| *XMetal09s* | Rob Papen patent sample with stereo image |
| *XMetal10s* | Rob Papen patent sample with stereo image |
| *XyloOcts* | Xylophone in octaves and with stereo image |

### Sample Big Set

This selection is built on bigger stereo samples. Please note that the patches that use these samples may take a little longer to load.

| | |
|---|---|
| *OddStr* | Classic strings with a modified sample start |
| *Strings* | Classic strings |
| *Vox-Epic01* | A big choir sound |
| *Vox-Epic02* | A big choir sound, like Epic01 but with a different sample start point |
| *Vox-Hoe01* | A choir singing h-o-e vowels |
| *Vox-Hoe02* | A choir sound, like Vox-Hoe01 but with a different sample start point |

### Tuned Percussion

This sample group is a combination of tuned acoustic percussion, acoustic drums and electronic drum sounds.

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|---|
| *Cajon01* |
| *Cajon02* |
| *Conga* |
| *Djembe* |
| *E-BD* |
| *FrameDrum* |
| *Orch-BD* |
| *Taiko* |
| *TomTom01* |
| *TomTom02* |
| *TomTom03* |
| *Udo* |
| *Xylo* |

**Percussion 1 – 5**

| | |
|---|---|
| *BD* | Bass drums (acoustic and electronic) |
| *SN* | Snare drums (acoustic and electronic) |
| *HH* | Hi-Hats which appear as closed HH and open HH (acoustic and electronic) |
| *Clap* | Hand Claps (acoustic and electronic) |
| *Perc* | Percussion sounds (acoustic and electronic) |
| *FX* | Percussive effect sounds (acoustic) |

Please Note: for Tom-Tom sounds, use the Tuned Percussion category