

QuikQuak

Audio plug-ins

Glass Viper

User guide

Glass Viper is a synthesizer with unique waveform shaping, which has a deep and natural sense of movement. Going beyond analogue simulation, into a truly organic sound, from simple old synths to grungy filthy basses, or delicate pianos to strange unnatural film effects.

Instead of taking a sample or oscillator and applying just filters and FX techniques, Glass Viper bends the actual shape of its waveforms through a series of moving control points. Up to four of these swirling and changing sounds can be layered together to create a huge range of instruments. Glass Viper allows you to really shake things up with a deep, natural sense of movement.



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Overview

From conception, Glass Viper's goal was to make sound creation visual, and distance itself from mathematics. Making something with a unique sound was also a priority, and in a world full of synthesizers, this was a challenge. Without the complexity of many changeable modules, Glass Viper encourages play and experimentation. Most of the presets available were born from experimentation, rather than setting out to make a particular sound.

Glass Viper is a polyphonic synthesiser plug-in, played through a VST or Audio Unit host. The sound presets are called instruments, each comprised of up to four voices. Each voice has its own sets of filters, envelopes, delays, EQ settings and wave shapers. Voices can also be multiplied by another to create very complex sounds.

Glass Viper's layout is designed for very fast editing and understanding, there are not vast layers of hidden and complex ways of doing things, it's simply just all there in front of you.

In brief, each instrument has the following:

4 editable waveforms, that can move independently during play.

16 independant LFOs for waveform movement.

8 bass and treble boost EQs.

4 unique waveshapers, with distorted top settings.

Multiple copy and paste options for quick editing and layering.

4 delay lines with BPM synchronisation option.

12 LFO's with independant speed and gain envelopes.

Multiple ring modulation.

4 volume envelopes, with velocity sensitivity for amount and speed.

4 filter envelopes, using over sampled biquads with up to 24db slope per octave.

4 pitch envelopes.

Stereo chorus with feedback.

Reverb unit with simple EQ.

256 categorised factory presets.

Installation

PC: The file you download is in a simple plug-in format. Once you have 'unzipped' it you will have a file with the plug-in name and extension '.dll'. Copy this file directly into your plug-in folder. This folder is host specific but often found somewhere like "C:\Program Files\Steinberg\Vstplugins." Please consult your host's manual for plug-in locations.

Mac: The zipped file contains a basic package installer, this will place the VST and Audio Units (AU) version in a standard place. Which is "HD/Library/Audio/Plug-ins/" the Component sub folder from there is for AU, and the other is VST. You are free to move these to any location.

Note: Some hosts do not recognise new plug-ins, and a complete rescan is needed to pick up on their existence.

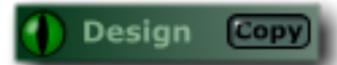
Getting Started

The best place to start is with the presets sounds. The 256 presets have a wide selection of sounds that are a good starting point for experimentation.



From the 'preset' menu you can access the various categories and instantly access these sounds. The categories and names are a playing guide for the sounds. The Pad sounds are often background washes, the Key category is for keyboard/piano like playing, and so forth.

Glass Viper consists of paneled sections. Each panel has a green selector next to the title. Left clicking this header button causes the main display to show a panel's relevant information.



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Each panel has a 'copy' button, this brings up a useful copy and paste menu. Each panel can be copied to a similar panel elsewhere. Whole voices can be copied at once, which is useful for layering voices quickly. Whole instruments can also be copied. This copy and paste process greatly increases experimentation time.

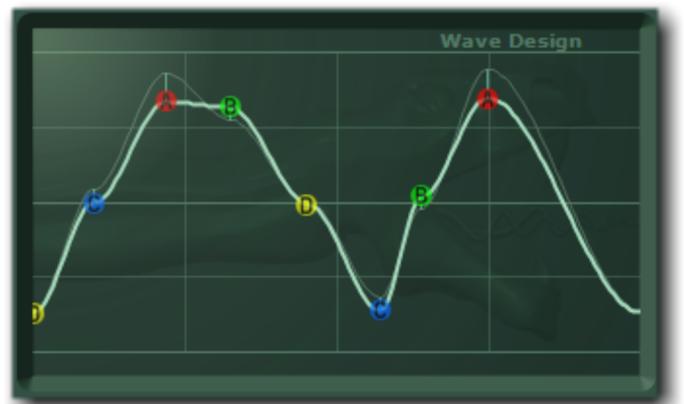
On the 'Voice' menu there is a row of buttons marked 1 to 4, these are used to switch between one of the voices that make up an instrument. Under these are two self-explanatory buttons marked 'on' and 'solo.'



Use 'solo' isolate a voice from the preset and uncover what layers make up the instrument.

Try clicking 'solo' on one of the voices, making sure that it is 'on'. Now click on the wave 'Design' selector. Play a note at the same time as dragging one of the control points, and you will hear the changes of the waveform.

Left click into an empty space to add a point, and right click to remove one. The different labels are for real-time movement of points and will be described in detail in the wave design section.



Moving the waveform around as you go through the presets, demonstrates how easy it is to really change the sounds. You'll soon get to see what shapes create what kind of sounds. Smooth rounded shapes create flutes and soft sounds, whereas spiky and sharp edged sounds create similarly bright sounds. This is only a

general rule though, and the main trick is to use your ears more than your eyes, when editing the waveform.

If you don't generally create synthesiser sounds, this will hopefully show that just a short amount of experimentation can quickly create new sounds.

Panels

Main display

The large screen displays useful information relating to each panel. The 'global' display shows the actual waveform output of the plug-in. The 'voice' display shows the four (if they are on) basic waveform outputs with their phase, movement and shape values operating - this directly reflects the current note being played. All waveform and envelope editing use this panel.

Information bar

The narrow window under the main display shows information about the currently edited control. It also shows the current value if the mouse is 'hovered' above. When the mouse cursor is away from a control, the display reverts back to showing the preset name. Click on the information bar to rename the current preset.

Preset menu

The panel on the bottom left of the plug-in has the preset controls. All instruments fall into various categories making them easier to find, you can change the current instruments category by simply selecting it with the button on the right.

You can use the left and right arrow to step through them one at a time, or simply use the menu to select a preset from a category. From here you can also load and save a preset, or reset the program to its 'factory' settings. Also you can sort all the presets into category and name order - sorting the preset category also physically moves the patches.



Global panel

Volume:

This is the global volume control for the whole instrument, adjust this to prevent clipping when using a heavy polyphonic playing style. It is good practice to keep the levels in the high range, and use your host to alter the overall plug-in output level.

Poly:

Sets the polyphonic (maximum number of channels playing at the same time). Bases for example are generally set at one, and keyboard sounds sixteen.

Porta:

Sets the speed of portamento for the instrument, and only works for instruments of one channel.

Audio P.

Stands for Auto Panel. When selected the main display will automatically change to reflect the current parameter being altered. For example if you adjust a filter parameter, then the main display will show the filter envelope.

E. Trig:

This means envelope trigger. When selected, any legato notes will be played without restarting all the envelopes. Useful when a monophonic instrument like a synth bass is played with two keys, and you want the note to slide rather than fire again.

HELP:

Displays this manual inside the plug-in window.

Stereo Chorus:

This is the first effect to be processed, and has five controls.

Stereo Chorus: Ratio

The ratio between the effect and the original sound. I.e. 50|50 is half the dry signal and half the chorus.

Stereo Chorus: Time

Length in milliseconds for the doubling effect.

Stereo Chorus: Speed

The speed of oscillation.

Stereo Chorus: Depth

The amount of oscillation.



Stereo Chorus: Feedback

How much of the effect goes back into the chorus, which can make flange type effects. With negative and positive values for different tones.

Reverb: Wet

Volume of the reverb.

Reverb: Dry

Volume of the original sound.

Reverb: Length

Time in seconds of the reverb tail.

Reverb: LP

Low Pass filter; everything below this value is let through.

Reverb: HP

High Pass filter, every above this frequency is let through.

Voice panel

The main display shows the four moving voices and their phases.

Voice selectors:

The large numbered buttons 1-4 causes all the dials to reflect that particular voice for editing.

On & Solo:

The enable the selected voice, with solo option for testing each voice.

Pan:

Left or right panning for selected voice.

Phase:

Phase offset for the waveform start, this value is shown graphically, ranging across the whole wave.

Shape:

A form of effect, that causes the waveform to compress to the upper limits, in extreme values this also distorts, which is useful for harpsichord or other spiky sounds.

X By:

This is the 'multiply by' selector, commonly known as ring modulation. The value shows the voice number that is multiplied by this voice. For example, if voice 4 has an 'X By' 1, then output waveform of voice 1 is multiplied by voice 4 before being outputted as voice 4. The voice selected by this is multiplied BEFORE the volume envelope so you can turn the volume right down for the multiplied voice.

Bass:

This is the bass boost; all frequencies below this value are given a boost by the 'B. Gain' value (see below). Useful for adding bass boost to basses.

B. Gain:

This is the Bass boost gain.

Treb:

This is the treble boost, all frequencies above this value a given a boost by the T. Gain' value (see below). Very useful for adding air and sparkle to a voice.

T. Gain:

This is the treble boost gain. Each voice has its own single tap delay:

Delay FX: Gain

The volume of the delay.

Delay FX: Time

The time between delay taps. This can either be in BPM or synchronised to the host tempo.

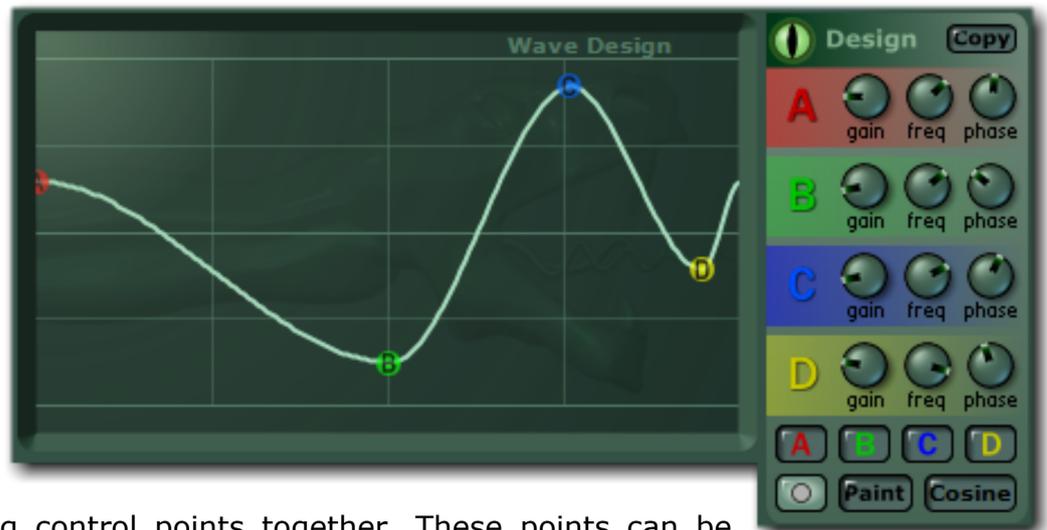
Delay FX: F. Back

How much of the delay is feed back into itself.

Delay FX: SYNC and BMP

Selects how the time dial is used. With Sync selected the delay will be a fraction of the hosts tempo settings.





Design panel

The basic waveforms are built by connecting control points together. These points can be red(A), green(B), blue(C), yellow(D), or basic(o).

The different colour control points oscillate up and down, controlled by each of the four colour band panels. For instance, the red(A) control points are ALL controlled by the first row of dials.

The basic white dot points do not move.

You can create wacky, shimmering sounds or far more subtle movements.

When the voice is played, and actual moving waveform is displayed in real-time, and is shown as a thin line moving around the control points.

Gain:

Sets the amount of movement, up to the whole vertical range.

Freq:

Sets the frequency of oscillation.

Phase:

Oscillation start phase is set with this, which is useful for creating varied and none synchronised movements.

'A B C D' and 'o' buttons:

These designate the next control point's colour type. The white 'o' button means a control point with NO oscillator will be created. This also changes a points colour type if the 'paint' options is set.

Paint:

Makes the currently edited point change to the selected colour type.

Line, Cosine, Cubic button:

This changes the interpolation type of the waveform. 'Line' is the simplest; 'Cosine' creates a curve between two points that resemble half a cosine plot. Cubic creates a complex curve that tries to smoothly fit between four consecutive points. It is best to experiment with these types to get a good grasp of the differences.

Main display:

Use the left mouse button to add and move points around. If the 'PAINT' button is on, then edited points will change to the select colour type.

Use the right button to delete points. The point on the furthest left cannot be removed or move right, as one point is always needed to define a waveform.

When the voice is played, and actual moving waveform is displayed in real-time, and is shown as a thin line moving around the control points.

Notes:

When the moving waveform exceeds the waveform vertical limits, it gets clipped to the limits. Although a necessity, it also adds another variety in waveform control, producing periodically distorted waveforms.

There is a maximum of 16 points allowed for each waveform.

The waveform will be automatically centred to prevent top or bottom heavy output. For example, if a top heavy waveform was played with multiple layers, then the sound would become very quickly clipped to the top of the plug-in limits. So the waveform is centred for you internally. Even so, it's sometimes useful to know what the output is doing, so simply click on the Gobar panel, and the main display will change to the actual plug-in output.

Volume panel

Main display:

Edit the envelope by left clicking on the control points. You cannot add or delete envelope points. Point values are given by height, and the slope gives the time it takes to reach this value. When a value is edited two values are displayed, first is the time in seconds it takes to get from the previous point (or the start), and the second is its actual value, between zero and one.

The light green part of the envelope is the release part, which is the point the envelope goes to when a voice note is released.

This dial alters how much the gain the volume envelope has on the voice's output.

Vel.Gn:

Velocity Gain. This causes the note velocity to affect the envelope gain. High positive values will make the gain higher for harder hit notes, and lower for softer playing. Negative values will do the opposite. Use this control to enable expressive playing to alter the volume.

Vel.Sp:

Velocity Speed. This causes the note velocity to affect the envelope's speed. If set to a positive value then playing harder will speed through the envelope quicker. Useful for giving faster attacks with more aggressive playing.

Kbf:

Keyboard Follow. This changes the overall volume of the note depending on the note played. Positive values will make the note sound louder the further up the keyboard you play from middle C. Negative values will mean the opposite, therefore notes played at C8 for example will be quieter.

Noise:

Noise gain. There is a built in random noise generator for each voice, use this control to mix it. The noise follows the envelope gain. This is useful for giving a little dirt to the sound, or simply creating breath or whoosh effects.

Volume controller and type:

The dial at the bottom left of the panel enables you to change the amount of gain a controller will have. The controller type is selectable underneath this. You can use pitch, modulation, and breath controllers. Use this to give expression to your playing style.



Filter panel

Main display:

Edit the envelope by left clicking on the control points. You cannot add or delete envelope points. Point values are given by height, and the slope gives the time it takes to reach this value. When a value is edited two values are displayed, first is the time in seconds it takes to get from the previous point (or the start), and the second is its actual value, between zero and one. The light green part of the envelope is the release part, which is the point the envelope goes to when a voice note is released.

Env.:

This dial alters how much the gain the filter envelope has on the voice.

Vel.Gn:

Velocity Gain. This causes the note velocity to affect the envelope gain. High positive values will make the gain higher for harder hit notes, and lower for softer playing. Negative values will do the opposite. Use this control to enable expressive playing to alter the filter cut-off.

Vel.Sp:

Velocity Speed. This causes the note velocity to affect the envelope's speed. If set to a positive value then playing harder will speed through the envelope quicker. Useful for giving faster attacks with more aggressive playing.



Kbf:

Keyboard Follow. This changes the overall filter cut-off of the note depending on the note played. Positive values will make the note filter higher the further up the keyboard you play from middle C. Negative values will mean the opposite, therefore notes played at C8 for example will have a lower filter cut-off.

Type:

This cycles through the various filters types. Low, band, and high pass filters of 24 and 12dB cut-off slope are available.

Freq:

Set the base filter frequency with this dial. This panel's envelope value is added to this value.

Res:

Resonance can be added to these filters. High values give a strong ringing emphasis at the selected frequencies. Useful for sharp sounds, and old analogue synth bass lines.

Filter controller and type:

The dial at the bottom left of the panel enables you to change the amount of gain a controller will have, which can be negative and positive amounts. The controller type is selectable underneath this. You can use pitch, modulation, and breath controllers. Use this to give expression to your playing style.

Pitch panel

Main display:

Edit the envelope by left clicking on the control points. You cannot add or delete envelope points. Point values are given by height, and the slope gives the time it takes to reach this value. When a value is edited two values are displayed, first is the time in seconds it takes to get from the previous point (or the start), and the second is its actual value, between zero and one. The light green part of the envelope is the key release phase.

Env.:

This dial alters how much the gain the pitch envelope has on the voice.

Vel.Gn:

Velocity Gain. This causes the note velocity to affect the envelope gain. High positive values will make the pitch envelope stronger for harder hit notes, and lower for softer playing. Negative values will do the opposite.

Vel.Sp:

Velocity Speed. This causes the note velocity to affect the envelope's speed. If set to a positive value then playing harder will speed though the envelope quicker. Useful for giving faster attacks with more aggressive playing.

Kbf:

Keyboard Follow. This changes the overall pitch difference depending on the note played. Setting to zero will play the notes normally. Positive values will make the pitch increase more with each consecutive note. Negative values will mean the opposite; a value of -1.0 will mean that each note on the keyboard has the same pitch. Useful for special effect patches where you want the pitch to remain the same across the notes.

Oct:

Octave selector. Changes base pitch to one of seven octaves.

Note:

Alters the base note within the above octave.

Fine:

Alters the base pitch with the above note. Useful for slightly detune a voice to give interesting beating effects with other voices.



Pitch controller and type:

The dial at the bottom left of the panel enables you to change the amount of gain a controller will have.

The controller type is selectable underneath this. You can use pitch, modulation, and breath controllers. Use this to give expression to your playing style.

The pitch controller has a range of -24 to 24 semitones, and they can be different for each voice some very strange textures can be created.

LFO panels

Each of the three Low Frequency Oscillators has a separate speed and gain envelope.

Gain and Speed:

Each envelope can be toggled with the blue buttons. You must have some gain AND speed to hear the effect of the LFO. The light green part of the envelope is the key release phase.

Type:

You can cycle through the five types of LFO - Sine wave, triangle, square, saw tooth and random. Random creates a different value at each phase cycle.

Trig:

Trigger. Enabling this forces the LFO cycle to reset when a new note is played.

Volume controller and type:

The dial at the bottom right of the panel enables you to change the amount of gain a controller will have.

The controller type is selectable underneath this. You can use pitch, modulation, and breath controllers.

Hints and Ideas

- * The presets are very diverse, so use them to build new sounds by picking one that is close to what you need.
- * Use the copy and paste to copy voices from different presets together to make quick and unique sounds.
- * Many of the pad and background sounds use heavy amounts of reverb, try dropping out the reverb on these presets to find out more about how they're made.
- * 'Solo' is useful in isolating a voice when building an instrument, but it can also help in understanding how the presets can be made. Note how the bell and percussion sounds use a voice just to make the short sharp hit at the beginning of the sound.
- * Velocity speed sensitivity can be very useful for percussion and other struck instruments like a piano. You can set it so when the note is hit with higher velocity, the note has a faster envelope creating the effect of more immediacy and aggression in the sound.
- * Use a slow moving waveform to create slight instability in the voices, and if the same waveform is copied to another voice, try varying the speed and phase of the waveform design points, just to make a more varied output.
- * Slight differences in fine tuning of similar layered voices can create a thickening of the sound, also panning and phase changing can make a fatter, wider stereo sound.
- * Notice how many of the string presets have a couple of voices that are an octave or so apart. This technique makes a broader symphonic sound, giving the impression of more instruments playing together.
- * Using a band pass filter with high resonance creates a spike in the chosen frequency, this is useful for picking out certain characters of the sound. Again, skim through the presets to see which ones take advantage of this.
- * Solo also isolates any voice that depends on ring modulation, so you will not get the same resulting sound. Simply use the 'on' toggle to achieve the required isolations.
- * If you only want to hear the noise part of a voice, then delete all but the first waveform point, and make that point a basic white point to prevent it from moving.