www.resomonics.co.uk

RESOMONICS

REFRACTION - VERSION 1.0

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INTRODUCTION

'Refraction' is an inspiring Analog based Synth Sound Design library, containing everything from deep synth Bass sounds to lush evolving Ambient Pads . It contains over 250 designed presets utilising the Analog samples and has a highly flexible interface with a multitude of tools for shaping your own sounds, rhythms, pulses and arpeggiations.

You can layer up to 3 different sounds which can be selected from menus or randomly. A lot of parameters are available on a per layer basics allowing to apply different effects, envelopes and rhythms to each sound. There are LFO's for pitch, volume, pan and filters as well as an arpeggiator with powerful randomisation. In addition there are a multitude of effects to help design your sound! The Xfade slider allows you to start with 1 layer and gradually fade in the 2nd & 3rd ones.

Refraction includes just over 3.5GB of samples taken mainly from a Korg EX800 analogue synth from 1984 (Desktop version of the Poly 800), with a few samples from a Casio HT-3000 from 1987 (whilst not Analog VCO's it has an analog filter which was used in all sounds). All of the samples were recorded through a tube/valve preamp to add more warmth to the sound, and every note over 4 octaves was recorded to ensure the character of the sound was captured. Some samples were also recorded through a hardware analog filter as well as the preamp.

The majority of patches are mapped from C0 or C1 to C6 and I encourage to try both the low and the high, as they often give a completely different feel/sound. There are a number of rhythmic sounds & pulses included which take advantage of the step and filter sequencers and oscillators, as well as some prepared arpeggiations. These are both meant to showcase what can be done and again, I would encourage you to explore and create your own rhythms and arpeggios - and if the existing ones don't quite match the feel or pace you need, just grab the Sync knobs and change the timings! You are also provided with a powerful randomisation tool in the 'Seq & Arp' page, to quickly look for inspiration and if you find something you like you can save it!

Automating the filters and LFO's can also give some excellent results!

The following information is an overview of the interface showing what is available and what everything does; for the best experience, explore everything and see what you can come up with! All knobs, sliders and buttons also have help text associated with them in Kontakt, so just hover over something and view the help text at the bottom of Kontakt for more info.

As with any Kontakt instrument, Cmd (Mac) / Ctrl (Windows) clicking on any control will set it back to its default value and holding shift will allow finer adjustment of controls.

Happy composing!

INSTALLATION

IMPORTANT: Refraction makes use of Kontakt Snapshots, so it is important that you follow the instructions to install these to get the most out of the instrument. Without them, you will just have the Initial patch with no sounds.

Follow these instructions, or watch a video here: https://youtu.be/7sAk-s-iFGk

1. Extract the entire folder to a location of your choice from where you can load up the single 'Refraction.nki' from within Kontakt's Browser. You can also add it to your quick load menu if you wish.
2. Open 'Refraction.nki' in Kontakt
3. Click the Spanner Icon in the top left of the instrument
4. Click the 'Instrument Option' button (under the spanner and instrument icon)
5. Click on 'Snapshot' on the left hand list and then Click 'Show' to the top right of that options window
6. If this is the first time you have install 'Refraction', you will get a window pop-up saying there are no Snapshots and would you like to create a path. Click Yes.
7. From the unzipped folder that you placed on your drive, open the folder called 'SNAPSHOTS'
8. Copy all of the folders from within that folder in to the Refraction folder that Kontakt created and open.
9. You can now close the folders and the Instrument Options Window and click the Spanner Icon again to return to the instrument.

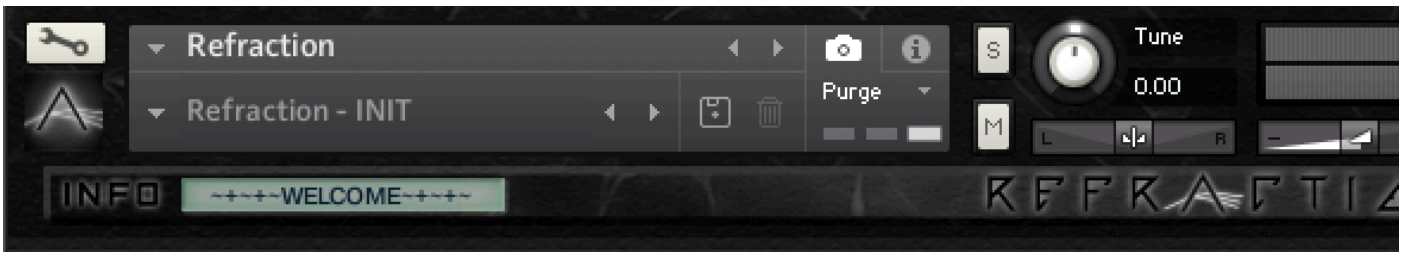
Spanner

Snapshot

10.Now click on the the instrument. Now you from the menu to the left

Camera Icon

Camera Icon in the tope centre of can select a Snapshot / Preset (under where it says Refraction).



SNAPSHOTS

There are just over 250 Snapshots to choose from, which are organised in to the following categories:

01 - Short Synth (Very short sounds with no sustain)
02 - Long Synth (These are longer synth sounds, but still have no sustain)
03 - Sustained Synth (These will sustain for as long as a key is held down)
04 - Rhythmic (Tempo Synced Pads, Bass & Synths, using either the Sequencer or various LFO's)
05 - Arpeggiated (Example Arp sequences)
06 - Bass (Whilst these can be played across the Keyboard, they are designed to work Low down for Bass)
07 - Mono Lead (Does what it says on the tin)
08 - Xfade (These use all 3 layers and utilise the Xfade slider to go fade in layers 2 & 3)
09 - Noise & Hits (Just some odd hits & sounds that 't fit elsewhere!)

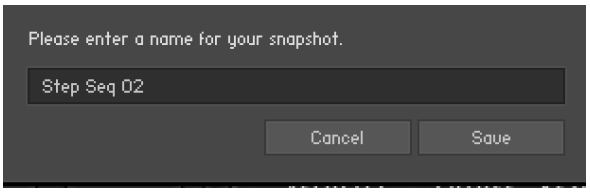
Some categories have sub folders which are self explanatory.

I apologise for the lack of imaginative naming, but well, thinking up 250 meaningful names isn't exactly easy ;)

Save Your Own Snapshots

You can of course save your own Snapshots but clicking on the Disk icon next to the name of the Snapshot.

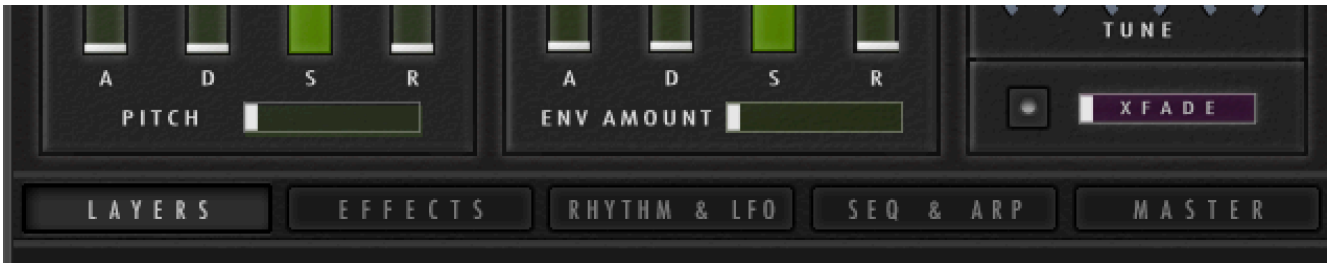
That will bring up a box like this:



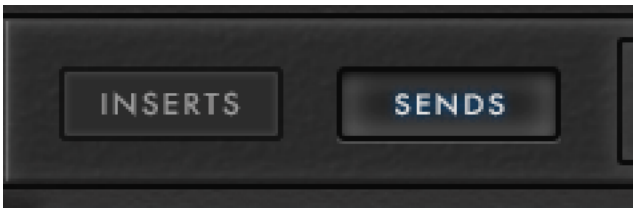
Type in your snapshot name and click Save. Anything you save will be in the main Refraction Snapshot folder rather than a sub-folder and will show at the bottom of the drop-down menu. You can organise your presets by going to the Snapshot folder (as in the installation section) and creating your own sub-folders and moving the snapshot files to it.

INTERFACE

Refraction is divided in to 5 main pages, which can be accessed using the buttons at bottom, as shown here:



The 'Effects' page has 2 sections available (making a total of 6 pages altogether). These can be accessed via the the buttons located at the top left as when here:



Information Panel

This panel is shown top left on every page and displays the parameter for the current control being adjusted and other useful information such as the layer selected or type of filter selected.

THE LAYERS PAGE

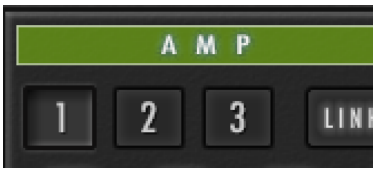
NOTE: There are 3 layers and each can have it's own sound / sample loaded

This is a great starting point for sounds, offering ADSR Amp, Filter and Pitch Envelopes to shape the sounds, a number of different filters, and Sample Start options. Some patches feature 2 or 3 layers of sounds and on this page is where you can see which samples are used, or you can load different ones.

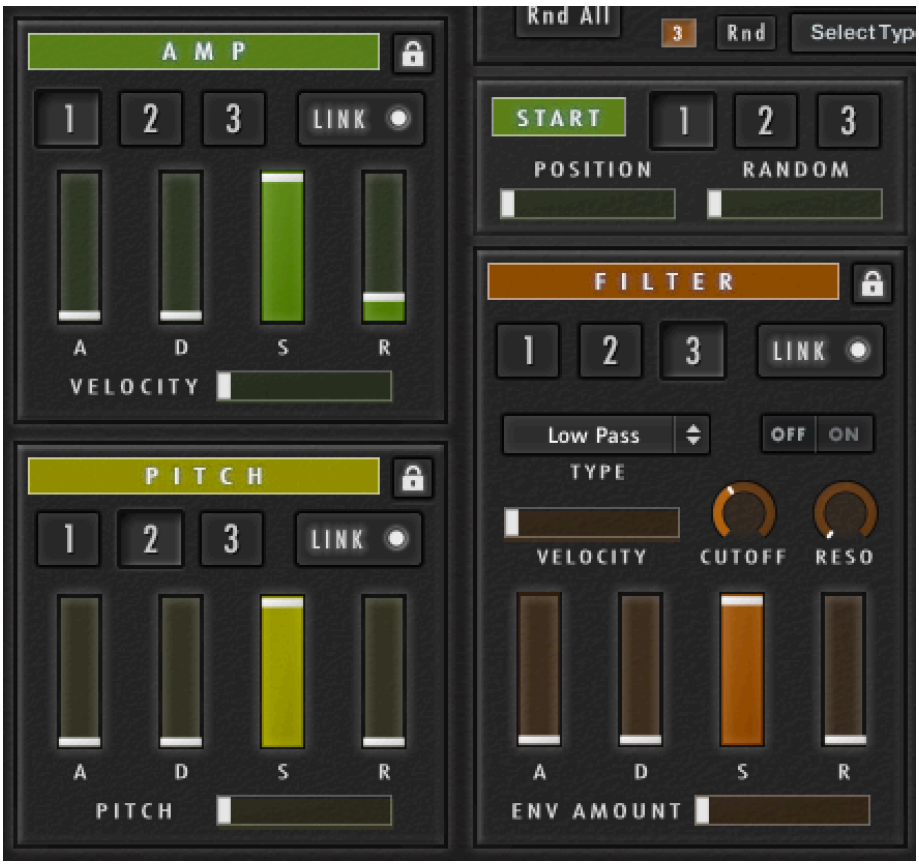
Layer Section

You can access each of the 3 layers via the square numbered buttons, either using the 'all layer' buttons which will switch all of the sections together (Amp, Pitch, Filter and Sample):

Or you can switch each individual section separately using the buttons below the title, for example:



To help you differentiate between layers, they are coloured differently (the same across all pages)



Layer Linking & Locking

The Amp, Pitch and Filter envelopes can have their 3 layers linked if desired. Linking layers means that when you alter setting for one layer, the other 2 layers will be altered to match. E.g. if you have the link on and are on layer 2 of the Filter section, turning on the filter or changing the filter type will also apply to layers 1 & 3 at the same time. Alternatively, if not linked, then each layers parameters will be independent of each other.

To either Link or Un-link a section, click on the button to the right of the layer switches, which will display the current star - 'Linked' or 'Link':

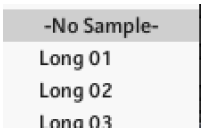
NB: If the layers are not currently linked, then linking them will copy all of the parameters from the currently selected layers to the other 2, making them all the same. E.g. if you are on layer 2 of the Amp section, clicking to enable the link, will set the faders in layers 1 & 3 to exactly the same as layer 2.

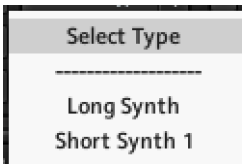
Therefore, a 'Lock' button is provided which will lock the state of the link button and disable it, so clicking on it will not do anything (apart from letting you know that it is locked). To enable this, simply click on the small lock icon to the top right of each section:

Why would you want to lock the link? Well, if you had spent some time designing a sound with completely different parameters for each of the 3 layers, the last thing you would want to do is click to link layers by mistake and lose all of the hard work as each layer is set to the same - locking the button will prevent this from happening. I would encourage you to keep locked at all times until you are absolutely sure you want to use the link button. By default the lock is enabled on all patches provided.

Samples Section

This is where you load the samples / sounds for each of the 3 layers. First you need to select a type from the left menu, and then a sample from the right. Selecting a sample can either be done using the drop down menu, or the left & right arrows. To clear a sample from a layer, either select 'No Sample' from the rich menu or 'Select Type' for the left menu:





Use the 'Rnd' button next to each layer to randomly select a sound: 

Or use the 'Rnd All' button to randomise a sound for each layer at the same time: 

When loading a sample, the Start position and Volume will be reset to default. Xfade will also be disabled. These steps are necessary to make sure samples and Snapshots load correctly.

NB: You cannot use a sample on more than one layer, so if you try to select one that is already in use, it will not load (you will see a message in the info box showing as much)

Sample Start

This section allows you to adjust options relating to sample start which is separate for each layer:

Position - *Adjusts the point at which the sample is played from. All the way to the left, it will play from the start of the sample and all the way to the right it will play from 40% into the sample.*

Random - *This introduces a random element to the start position from between 0-30%. This can be useful to make shorter sounds less repetitive and more realistic.*

Amp Envelope

This section allows you to adjust the ADSR Envelope for the volume of the sample. Adjust the Attack (A), Decay (D), Sustain (S) and Release (R) sliders as required. E.g. Setting the Attack slider to the top will increase the volume gradually from nothing to full over a slow period of time.

The Velocity slider sets how much the keyboard velocity affects the volume; all the way to the left will mean all notes will play at full volume / all the way to the right will give the most velocity sensitivity, where soft is quiet and hard is loud

Pitch Envelope

This section allows you to adjust the pitch envelope parameters for each layer. You set the required pitch using the slider at the bottom and then the Attack (A), Decay (D), Sustain (S) and Release (R) required to achieve the pitch. E.g. setting the pitch to 12.00st and the Attack to the top will start at the original pitch, and slowly rise to 12.00st.

Filter Section

With this section you can apply a filter to each (or all) layers and adjust various parameters and the ADSR envelope relating to the filter.

Off/On - *Turn the filter on for off*

Type - *Select one of the 6 filter types*

Cutoff - *Set the frequency above which the sound is attenuated by the filter*

Reso - *Sets the resonance (boost at the cutoff frequency) for the filter*

Velocity - *Affects how much of the filter is applied based on the velocity.*

Env Amount - *How much affect the Filter Envelope has on the sound; all the way to the right will just be the envelope.*

Layer Mixer

The mixer allows you to adjust the volume, pan and pitch of the individual layers.

The meters will show the volume levels and will flash red at the top if too loud.

The Solo (S) and Mute (M) buttons are useful when designing a sound to be able to work on each layer individually.

The level sliders adjust the volume of the layers.

The Pan dials adjust the position in the stereo field of each layer

The Tune dials adjust the pitch in semi-tones of each layer from -36st to +36st

Xfade

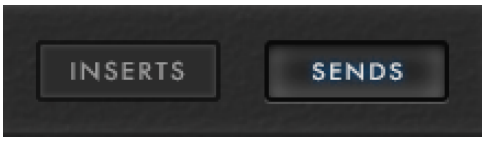
Xfade can be enabled when either 2 or 3 layers are in use by clicking the button to the left. It is designed to fade in subsequent layers to make the sound bigger to different. The fader is mapped to the Modulation wheel by default, but you can right click on it and assign a different controller and remove the mapping to the Mod Wheel.

When the slider is all the way to the left, only the 1st layer will be heard. If there are 2 layers, then moving the fader to the right will gradually fade in the 2nd sound until all the way to the right when you will hear both sound in full. If 3 layers are in use, then put until half way will fade in layer 2 until it is fully heard with the slider central. Then carrying on, the 3rd layer will be fade in until the slider is completely to the right, when all 3 sounds will be heard fully.

NB: When a new sound is loaded from the Samples menu, Xfade will be turned off and reset.

EFFECTS PAGES

The Effects page contains 2 sections; Source and Filters, which are accessed via the appropriate button:



The Mini Mixer

The mini mixer is shown on both the Inserts & Send effects pages.

When adjusting the send level of the different layers it is useful to Solo and Mute layers in order to listen to each individually. Therefore, rather than having to switch to the Layers page constantly, a Mini Mixer is provided. It may be small, but it is very useful and the values are shown in the information panel to help. This is what everything does:

Volume

The square showing the layer number is the volume control - just drag it up and down like a slider to adjust the level - the fill colour moves up and down to indicate the level.

Meter

To the right of the square is a mini level indicator, which has no function other than to show the relative level of the sound.

Solo / Mute

To the right of this are the Solo and Mute buttons. Just click to enable or disable the relevant button.

Pan

Finally, below the above controls is the pan control. Just drag it left or right to pan and the colour fill will show the pan amount.

INSERT EFFECTS PAGE

This page is accessed by clicking the effects tab at the bottom and then the 'Insert Effects' button at the top.

The effects on this page are inserted directly into the sample layer and are therefore fully applied to the sound at source.

Note: The effects are applied to all 3 layers and cannot be applied separately

Power Switch

To enable an effect just click the power button in the related panel:

The button will light up once clicked. When an effect is off, the control knob area will be darkened and you cannot alter any parameters. Once turned on, the panel lightens and can be used.

Keyswitch

The note shown to the left of the power button indicates the Keyswitch for that particular effect. This Keyswitch works by enabling the effects when the key is pressed and will remain on whilst continuing to press. The effect is then disabled once you release the key.

Post Filter Enable

By default, all if the Insert Effects are applied before the filter on the Layers page. Enable this button will switch to the effects being applied after the filter.

The Insert Effects

The effects provided here are primarily for 'dirtying up' the sound.

Transients

This controls the attack and sustain of the sound.

Attack - *Controls the attack portion of the sound's volume envelope. Increasing this parameter will add more punch and decreasing it will reduce sharp attacks.*

Sustain - *Controls the sustain portion of the sound's volume envelope. Increasing this parameter will add more body to the sound and decreasing it will reduce the sound's tail.*

Saturation

This allows you to recreate the effect of tape saturation, which causes an increase of high-level energy in your signal.

Amount - *Adjusts the transfer curve. A negative setting results in a characteristic that will expand the signal – lower sample values will be attenuated, higher values will be amplified. Positive settings do the opposite and thusly simulate the compression-like saturation of an analogue circuit. At a value of 0.0, the signal will pass the module unprocessed.*

Skreamer

This offers an alternative overdrive algorithm that sounds warmer and smoother than the Drive effect.

Tone: *Controls the brightness of the sound. Turning this knob clockwise will result in a more pronounced top-end, which works great on bright, screaming leads and biting rhythms. Turning it counter-clockwise results in a mellower, darker sound.*

Drive - *Adjusts the amount of distortion.*

Bass - *Adjusts the low frequency gain.*

Bright - *Adjusts the high frequency gain.*

Lo-Fi

This adds digital artefacts, like quantisation noise or aliasing and will really 'rough up' a clean sound.

Bits - *Re-quantises the signal to an adjustable bit depth. Fractional bit levels (such as 12.4 bits) are possible and can add considerable "grit".*

S.Rate (Sample Rate) - *Re-samples the signal to an adjustable sample rate. The re-sampling is done without any kind of (usually mandatory) low-pass filtering, which causes all kinds of wonderful aliasing artefacts. The sample rate goes all the way down to 50 Hz, which will not leave much of the original signal.*

Noise - *Adds hiss to the audio signal.*

Colour - *Adjusts the frequency characteristic of the noise and acts as a low-pass filter.*

Distortion

This effect is an emulation of a classic guitar distortion effect pedal.

PreAmp - *Sets the amount of gain added by the preamp. Turning it clockwise adds drive, distortion and edge to the sound.*

Bass - *Adjusts the low frequency response.*

Mid - *Adjusts the midrange frequency response.*

Treble - *Adjusts the high frequency response.*

Drive - *Add dirt to the sound.*

Tone - *Turning this control clockwise accents the midrange while dropping the bass. Counterclockwise takes off the highs and boosts the bass for a warmer sound.*

Output - *Adjusts the module's output level.*

SEND EFFECTS PAGE

This page is accessed by clicking the effects tab at the bottom and then the 'Send Effects' button at the top.

The effects on this page are on the output bus and as such the amount of the effects can be adjusted with the gain controls.

They are also routed to send bus, and the level of how much effects is sent for each layer can be controlled with the send level faders. However, the settings for the effects cannot be different for each layer and will be the same.

Power Switch

To enable an effect just click the power button in the related panel:

The button will light up once clicked. When an effect is off, the control knob area will be darkened and you cannot alter any parameters. Once turned on, the panel lightens and can be used.

Keyswitch

The note shown to the left of the power button indicates the Keyswitch for that particular effect. This Keyswitch works by enabling the effects when the key is pressed and will remain on whilst continuing to press. The effect is then disabled once you release the key.

Gain Level

Each effect has a gain level; this actually determines how much of the effect is 'returned' to the sound, but is effectively a volume level for the effect. This control effects all 3 layers as it is effect based.

Send Level Faders

Each send effect also has a 'send' level fader for each of the 3 layers. Whilst this has a similar affect to the gain knob, it is layer based and can therefore be applied per layer. It determines how much of the sound of the layer is sent to the effect; setting to 0 will mean that no effect is heard, whereas setting to maximum will mean the entire signal will be the effect. Effectively this means you can 'turn off' an effect for a particular layer, or apply a different amount.

The Send Effects

The effects provided can really enhance your sound with modulation, delay and reverbs.

Chorus

The Chorus "thickens" the audio signal by splitting it up and detuning one version in relation to the original. Separate LFOs with an adjustable phase relationship detune each stereo channel independently for creating wide-panorama effects.

Depth - *Adjusts the range of modulated detuning. Higher values give a more pronounced chorusing effect.*

Speed - *Adjusts the LFO speed. To synchronise the speed to your host or Master Editor tempo, click the Speed parameter's unit display and choose a note length value from the drop- down list.*

Phase - *Imparts an LFO phase difference between the left and the right stereo channel. This can considerably increase the width of the output signal's stereo base.*

Delay

A delay which is synced to the host tempo.

Time - *Set the delay time which is synced to the host tempo.*

Damping - *Attenuates high frequencies in the delayed signal. Turning this control clockwise will increase the damping effect. If you have set a feedback level, the signal will gradually lose more high frequency content with each repetition.*

Pan - *Setting a value higher than 0 creates a panning effect, which alternates echoes between the left and the right side of the stereo panorama – this is affectionally called a ping-pong delay. Higher values will result in wider panning; at 100, signals alternate between the far left and far right channel.*

Feedback - *Controls the amount of the output signal that's being fed back into the input of the delay line, thereby creating a series of echoes that gradually fade into silence.*

Reverb

This simulates the natural reverberation that occurs when a sound source is placed in an acoustic environment, thus adding a feeling of spaciousness to the sound.

Pre Delay - *Introduces a short delay between the direct signal and the reverb tail build-up. This corresponds to the natural reverberation behaviour of large rooms, where a short time elapses before the first Refraction of a sound wave returns from a wall.*

Size - *Adjusts the size of the simulated room. This affects the duration of the reverb tail.*

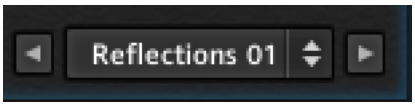
Colour - *This control allows you to adjust the construction material of the simulated room and, consequently, the colour of the reverb tail. Low values simulate softer surfaces like wood, while high values simulate the Refraction behaviour of hard surfaces like concrete.*

Damping - *Sets the amount of simulated absorption that takes place in rooms due to furnishings, people, or acoustic treatments affecting the Refraction behaviour. It is like adding a Low Pass filter to the reverb tail.*

Convolution

A convolution reverb which uses IR's (impulse responses) to affect the sound. This can lead to some very interesting and weird effects as well as some lovely large ambiences.

Select IR - *Use this menu to load an IR file. You can either use as a standard menu by clicking on the name and selecting from a list, or you can use the Previous / Next buttons to browse through them.*



Size - *Artificially compresses or stretches the impulse response in time.*

HighPass - *Adjusts the cutoff frequency below which the signal's frequency content will be attenuated.*

LowPass - *Adjusts the cutoff frequency above which the signal's frequency content will be attenuated.*

Phaser

This effect continually changes the phase relationships in your signal with an all-pass filter. This results in a comb filtering effect, which attenuates some frequencies while boosting others. The sound is similar to that of a flanger, but in a more subtle manner.

Depth - *The amount of LFO modulation. Higher values cause the phaser effect to sweep over a wider frequency range.*

Speed - *The LFO modulation speed.*

Phase - *Imparts an LFO phase difference between the left and the right stereo channel. This can considerably increase the width of the output signal's stereo base.*

Feedback - *This control adjusts the emphasis of the peaks and notches that the comb filter effect imparts on the signal.*

RHYTHM & LFO PAGE

This page allows you to set a number of different LFO's or/and a Filter Step Sequence. These can be set separately for each layer.

Layer Selection

You can access each of the 3 layers via the square numbered buttons to the top left.

To help you differentiate between layers, they are coloured differently in line with the Layers page and Mini Mixer.

Layer Linking & Locking

The 3 layers can be linked if desired; this means that when you alter setting for one layer, the other 2 layers will be altered to match. E.g. if you have the link on and are on layer 2, turning on the pre-filter will also turn on layers 1 & 3 at the same time.

Alternatively, if not linked, then each layers parameters will be independent of each other. This does not apply to the number of table steps and related options and the rate of the sequencer table - these will be the same for all layers wether or not they are linked. The actual pattern and the enable button are separate, as is the random button.

To either Link or Un-link, click on the button to the right of the layer switches. When lit, the layers are linked.

NB: If the layers are not currently linked, then linking them will copy all of the parameters from the currently selected layers to the other 2, making them all the same. E.g. if you are on layer 2, clicking to enable the link, will set all knobs, presets and table pattern to the same on layers 1 & 3.

Therefore, a 'Lock' button is provided which will lock the state of the link button and disable it, so clicking on it will not do anything (apart from letting you know that it is locked). To enable this, simply click on the small lock icon to the right of the link button:

The lock will light up when enabled

Why would you want to lock the link? Well, if you had spent some time designing a sound with completely different parameters for each of the 3 layers, the last thing you would want to do is click to link layers by mistake and lose all of the hard work as each layer is set to the same - locking the button will prevent this from happening. I would encourage you to keep locked at all times until you are absolutely sure you want to use the link button. By default the lock is enabled on all patches provided.

The Mini Mixer

When using the LFO's and Filter sequencer with multiple layers, it is useful to Solo and Mute layers in order to listen to each individually. Therefore, rather than having to switch to the Layers page constantly, a Mini Mixer is provided. It may be small, but it is very useful and the values are shown in the information panel to help. This is what everything does:

Volume

The square showing the layer number is the volume control - just drag it up and down like a slider to adjust the level - the fill colour moves up and down to indicate the level.

Meter

To the right of the square is a mini level indicator, which has no function other than to show the relative level of the sound.

Solo / Mute

To the right of this are the Solo and Mute buttons. Just click to enable or disable the relevant button.

Pan

Finally, below the above controls is the pan control. Just drag it left or right to pan and the colour fill will show the pan amount.

LFO's

There are 3 Low Frequency Oscillators (LFO's) that can be applied to the original sample to create Rhythm's & Pulses. It does so by generating periodic (or in some cases, random) signals, which are applied to the sound. Each layer can have it's own unique LFO or they can be linked so they are all the same.

These 3 LFO's are as follows:

Gain LFO - *This will apply an LFO to volume of the sound at the set rhythm and rate*

Pan LFO - *This will create an LFO which pan's from left to right at the set rate*

Pitch LFO - *This will apply an LFO to the pitch the sound*

A fourth LFO at the bottom of the page is applied to the Pre-FX Filter above it.

LFO Controls

The controls are the same for all 4 LFO's and are as follows:

Amount - *Sets the amount that the LFO affects the sound. All the way to the right will fully effects the sound and to the left the sound is not affected at all.*

Rate - *Sets the rate/speed at which the LFO modulates. If sync is selected the rate will be in time with the host tempo.*

Sync - *Sets whether or not the rate should sync with the host tempo. It is on by default.*

Presets - *Select a preset Rhythm. You can either click on the name to bring up a menu to choose from, or use the Previous / Next arrows to browse the presets.*

Sin / Tri / Saw / Rand / Rect - *Adjusts the amount each waveform shape to be included in the LFO*

Width - *this only applies to the Rectangular waveform and it adjusts the ratio between the high and low parts of the waveform. Turning to the left with give a more pronounced rhythm whilst turning to the right less so.*

Pre-FX Filter

The filter is applied before any insert effects. In order for either the Sequencer or the LFO to work, the filter must be enabled using the power button (Enable). Select which type of filter is rehired from the drop down menu - each layer can have a different filter type if layers are not linked.

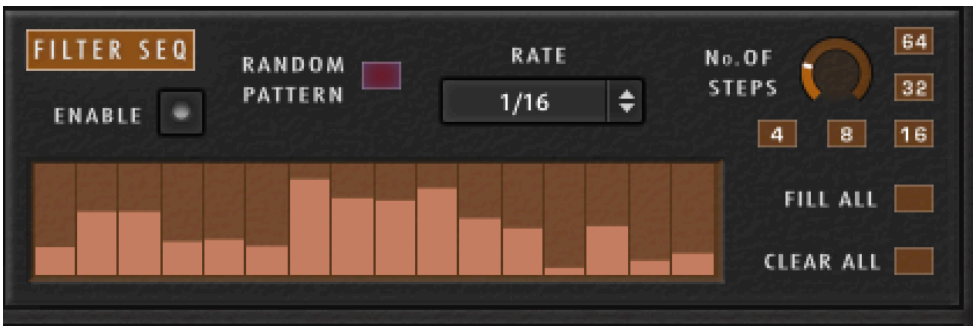
Once the filter is enabled you need to alter the Cutoff and Resonance as required in order to affect the signal:

Cutoff - *Set the frequency above which the sound is attenuated by the filter*

Reso - *Sets the resonance (boost at the cutoff frequency) for the filter*

You can then use the LFO to modulate the filter creating a Rhythm which can be synced to the host tempo.

Filter Sequencer



Once the filter is enabled, you can also use the Step Sequencer to create a Rhythm through the pattern in the table. A filled step will not apply any filter, whereas an empty step will fully apply the filter, with anything in between applying the filter to varying degrees.

Enable the sequencer with the button:

If the filter is not already enabled, this will automatically enable it.

The various controls are as follows:

Random Pattern - *Click the red button will randomise the pattern in the table; great for getting some inspiration (Can be different for each layer)*

Number of Steps - *Adjust this to set how many steps are shown, from 1 - 16 (NB. This will apply to all layers as the number of table steps cannot be different)*

4 /8/16/32/64 - *These are 'quick step' buttons and will instantly show either 4, 8, 16, 32 or 64 steps (Applied to all layers)*

Rate - *Click to bring up a menu to select the rate of the sequencer in sync with the host tempo. (Again this is the same for all 3 layers and cannot be separate)*

Fill/Clear all - *These will either clear all steps or fill all steps (Applies to selected layer, or all if link is on)*

TIP: Right click and dragging on the table areas will draw an imaginary line to which the steps will snap.

SEQ & ARP PAGE

This page contains a Step Sequencer and Arpeggiator for creating inspiring rhythms and arpeggiations, and is complete with a powerful randomiser!

The 2 options are similar in that they use most of the same controls and the same rhythm table the differences being:

Arpeggiator - This will play all of the notes in sequence over and over

Step Sequencer - This will play all notes at once and as such is like a 'Chord' mode if you play more than one note.

Note: This page affects all 3 layers

Mode

This is where you turn on either the step sequencer or arpeggiator and select the desired mode.

Arp - *Click this to enable / disable the Arpeggiator (if the Step Sequencer is enabled, this will disable it)*

Step - *Click this to enable / disable the Step Sequencer (if the Arp is enabled, this will disable it)*

Hold - *The same os 'On', but enables latch mode in which pressed notes will be held even when released, until the same note is pressed again.*

Hold +- - *As 'Hold' but subsequent played notes will also be added to the 'buffer' until played again.*

NB: Hold does not work when the Filter Step Sequencer is enabled

MIDI Thru - *Enable this to allows playing full notes along with the arpeggiated or sequenced notes.*

Timing

Here you set the parameters relating to the timing of the sequence.

Rate - *Use the dial to select the tempo synced rate*

Duration - *Select the length of the played note; to the left will shorten the sound and to the right will lengthen it*

Swing - *Offsets every other note by the selected amount to add a 'swing' feel.*

Note

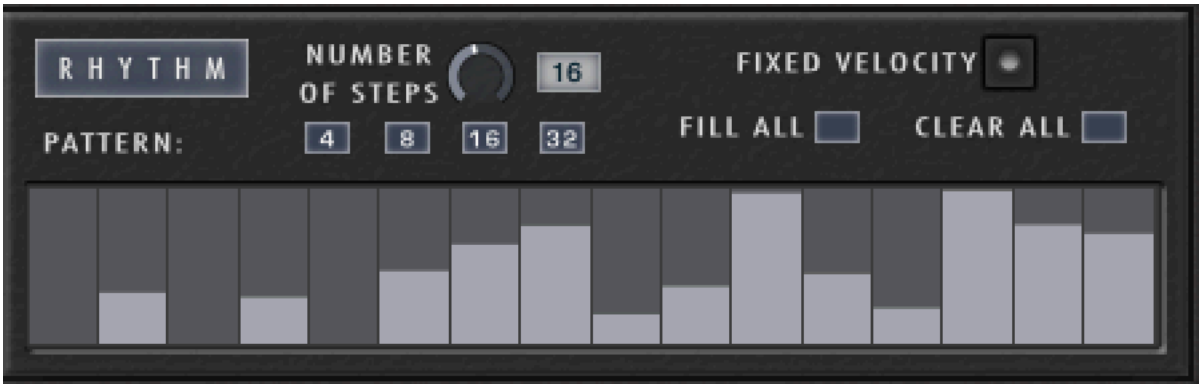
Parameters relating to how the notes are played.

Note Order - *Arpeggiator Only: Select the order in which the notes of the Arpeggiator are played. Each option can give a very different fell. Please note that this menu will be disabled when the Step Sequencer is enabled and it will look like this:*

Octave - *Adds an Octave displacement to the played notes. When set to 0 the sequence will be as played, but setting anything else will repeat the sequence either up or down for the number of Octave selected. For example, selecting -2 will result in 2 further Octaves below being played. For the arpeggiator the entire sequence is play before playing the next Octave, where as with the Step Sequencer it alternates every note.*

Repeat - *Sets the number of times each note is played. E.g. set to 3, each note will be played 3 times per step before moving to the next step.*

Rhythm



This is where you set the rhythm for the sequence or arpeggiation using the pattern table.

Pattern - *Fill each step with the desired amount of the note you which to hear. Any empty step will result in no sound, where as a fully filled step will result in maximum sound (dependent on whether fixed velocity is enabled). E.g. in the extreme, a pattern of 16 steps with alternating steps filled and empty, you would get the most pronounced sequence.*

Note: You need to have the Amp Velocity set to something other than 0 on the Layers page in order for the Arpeggiator and Sequencer pattern to be most effective. Otherwise each step will simply act as note on or off no matter what it is set to.

Number of Steps - *Adjust this to set how many steps are shown, from 1 - 32*

4 / 8/ 16 / 32 - *These are 'quick step' buttons and will instantly show either 4, 8, 16 or 32 steps*

Fixed Velocity - *With this enabled, it doesn't matter how hard you play the keys, the levels will be determined fully by the pattern in the table. When not on, the relative velocity of the played notes will be effected - so there is still a difference in level but how much depends on how hard each key is pressed.*

Fill all / Clear all - *These will either clear all steps or fill all steps.*

Randomiser

This is where the fun starts! Use this section to randomise some or all of the parameters to create instant sequences and arpeggiations for some musical inspiration.

Firstly, use the table to select which parameters you want to include when randomising. To do so, just select the round button next to the name of each parameter.

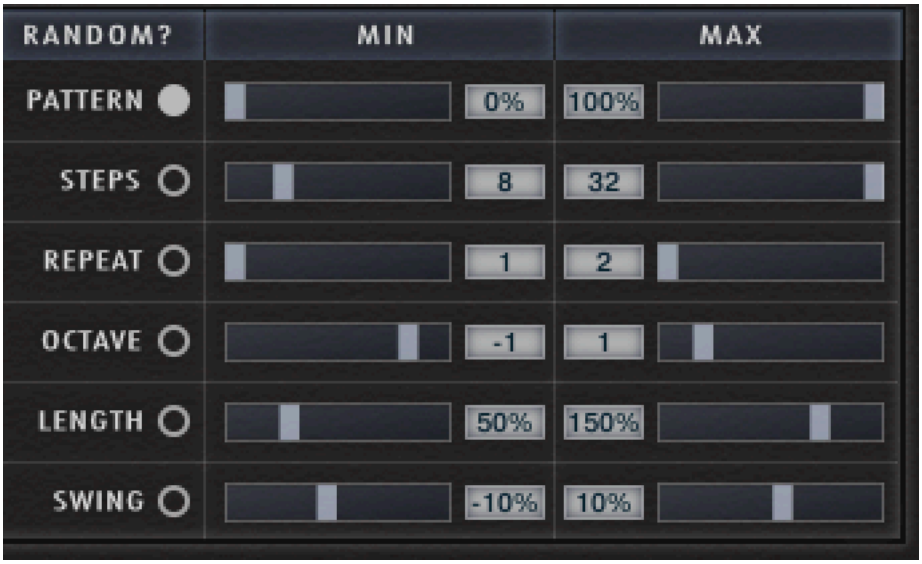
You can use the All, None and Rhythm buttons to quickly select options:

All - *Select all parameters*

None - *Clears all selections*

Rhythm - *Just selects the parameters in the Rhythm section*

You can then use the Minimum / Maximum sliders on the right to select the ranges for each of those parameters. For example, setting a minimum of 25% and a maximum of 75% for the pattern, will result in all steps being filled randomly between 25-75%. Likewise setting the Octave minimum to -2 and maximum to 0 will ensure the setting is always between -2 and 0 when randomising.



Once you have set everything to how you want, simply hit the red Randomise button:

The randomisation process is very quick, so just keep clicking until you hear something you like! You never know what you might come up with that you wouldn't have thought to do previously.

Presets

Should you happen upon a pattern or complete set of parameters that you like, you can save them to use with other patches and sounds!

Note: No presets are provided with the instrument

Click on one of the disk icons which will do as follows:

Save All - *This will save all the parameters in the Mode, Timing, Note and Rhythm section. When you click to save you will be able to browse to a folder of your choosing and name the file whatever you want*

Load All - *Allows you to browse for a previous save file which will apply the settings to the Mode, Timing, Note and Rhythm section*

Save Rhythm - *This will save just the parameters in the Rhythm section. Again you will be able to choose where to save and what to call the file.*

Load Rhythm - *This will load saved parameters for the Rhythm section.*

MASTER PAGE

This page contains effects and options that affect the entire instrument. Everything effects all 3 layers and cannot be set independently apart from the Equaliser.

Mono Mode

The first option available is the Mono option. Enabling either Monophonic or Legato will allow only one note to be played at once. The options are as follows:

Monophonic - *Enables standard Monophonic mode, where samples are re-triggered when a new note is played, silencing the previous sound. This works for any length of sample (Short, Long & Sustained)*

Legato - *Enables a different mono mode, where new samples are not trigged on new notes if there is not gap between playing the notes. This works best on Sustained samples.*

Key-Up Trigger - *If this is enabled, an already held key will play once another is released. If not enabled, then nothing will sound once the next key is released*

Unison

Unison plays more than one note when a key is pressed to fatten up the sound and make it more analog sounding. The options are as follows:

Voices - *This sets how many voices you want Unison mode to play at once. A setting of 1 effectively disables Unison.*

Detune - *Set the amount of detune between each voice. The default is 30 and gives a lovely sound when set to 2 voices. For more than 2 voices, I recommend you reduce this. Lower values can also add just a slight fattening of the sound.*

Spread - *Set how far apart in the stereo filed you want the voices to be. Eg. at 100% and 2 voices, one will be far left and the other far right. Adding a small amount of detune to 2 voices and setting this wide is a good way to get a wide stereo sound.*

The Mini Mixer

The handy Mini Mixer is provided on the Master page to save you switching back to the Layers page when do some final mixing to the sound. This is what everything does:

Volume

The square showing the layer number is the volume control - just drag it up and down like a slider to adjust the level - the fill colour moves up and down to indicate the level.

Meter

To the right of the square is a mini level indicator, which has no function other than to show the relative level of the sound.

Solo / Mute

To the right of this are the Solo and Mute buttons. Just click to enable or disable the relevant button.

Pan

Finally, below the above controls is the pan control. Just drag it left or right to pan and the colour fill will show the pan amount.

Effects

4 Effects are provided on the Output Page. To enable an effect just click the power button in the related panel:

To enable an effect just click the power button in the related panel:

The button will light up once clicked. When an effect is off, the control knob area will be darkened and you cannot alter any parameters. Once turned on, the panel lightens and can be used.

Equaliser

This EQ is modelled on high quality analogue circuitry. It is the one exception to the Layer rule for this page, in that the is an EQ for each layer (which cannot be linked). Each control effects multiple bands around their frequency and are provided for an easy way to equalise the sound rather than be multi-band accurate!

Low - *Adjusts the amount of boost or cut at the Low Frequency band.*

Mid - *Adjusts the amount of boost or cut at the Low-Mid Frequency band.*

High - *Adjusts the amount of boost or cut at the High Frequency band.*

Compressor

This Compressor is modelled on a classic analog bus compressor. It offers a more characteristic dynamic control than a standard compressor.

Threshold - *Sets a level threshold above which the Compressor starts working. Only levels that rise above this threshold will be reduced by the compression; signals that stay below it will be left unprocessed.*

Ratio - *Controls the amount of compression, expressed as a ratio of "input level change" against "output level change". A Ratio of 1:1 means that no compression will be happen- ing. For example, a Setting of 4 represents the ration 4:1, which means for every 4 decibel increase of amplitude above the threshold, the output will increase by only 1 decibel.*

Attack - *Adjusts the time the Compressor will take to reach the full Ratio value after an in- put signal exceeds the Threshold level.*

Release - *Adjusts the time the compressor will take to fall back to non-compression after the input signal falls below the threshold.*

Makeup - *Controls the output gain of the compressed signal. Used to compensate for the gain reduction of the effect.*

Mix - *Controls the dry/wet mix of the compressor. This can be used to create a parallel compression style routing, which increases the quieter signals rather than reducing the louder ones. At a setting of 100% you will only hear the compressed signal, at a setting of 0% you will only hear the unprocessed input signal.*

Stereo

This allows you to control the width of the sound's stereo base and change the panning. The controls are:

Spread - *Collapses (turn left) or expands (turn right) the sound's stereo base. At the far left position, stereo signals will be summed to mono. Positive values will result in an artificial widening of stereo sources.*

Pan - *This control allows you to place the sound within the stereo field.*

Limiter

This allows you to control limit the level of the overall sound. Limiters are actually a special form of compressors with a ratio of one to infinity, a threshold just below the maximum level, and a very short attack time. They act as a "safety net" to keep short signal peaks from overloading the system, which would result in audio clipping.

The controls are:

In-Gain - *Sets the gain of the input signal. The Limiter is different from the Compressor in that it has a fixed threshold.*

Release - *This knob adjusts the time it takes the Limiter to return to an unprocessed signal after the input level falls below the threshold.*

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