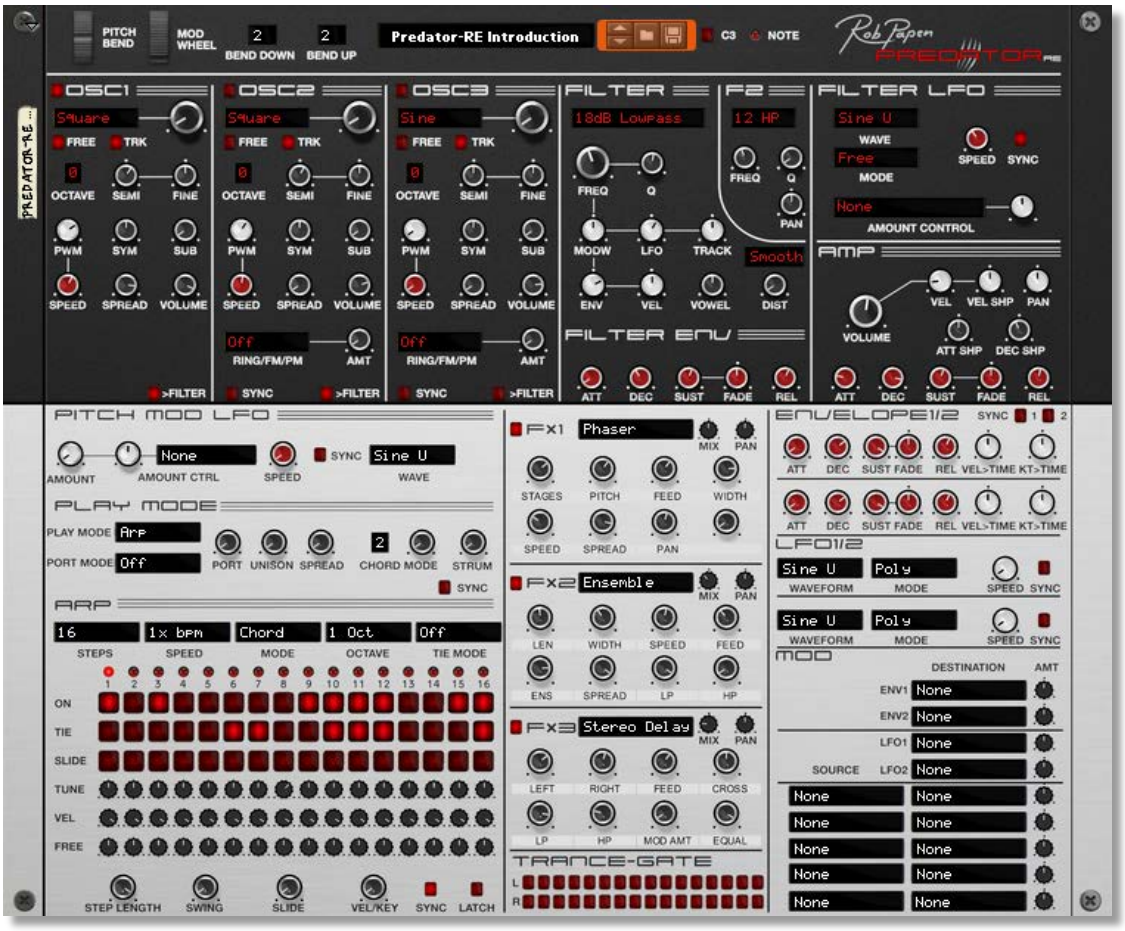
PREDATOR RE



User Guide

Powered by RPCX

Welcome

Thank you for purchasing Rob Papen Predator-RE.

Predator-RE is a killer synthesizer that combines inspiring patches and first-class features to make this your ‘go-to’ synthesizer for contemporary music production.

The user interface has been designed so that all controls are visible on screen, making it fun and incredibly easy-to-use.

Predator-RE is packed with powerful features such as oscillators which can also modulate each other, two filters which can be combined in a very wicked way and offer 27 different filter types including comb and vocal-filter, 3 top quality fx units with 25 fx types, Unison Detune, Chord Memory and an extremely versatile Arpeggiator.

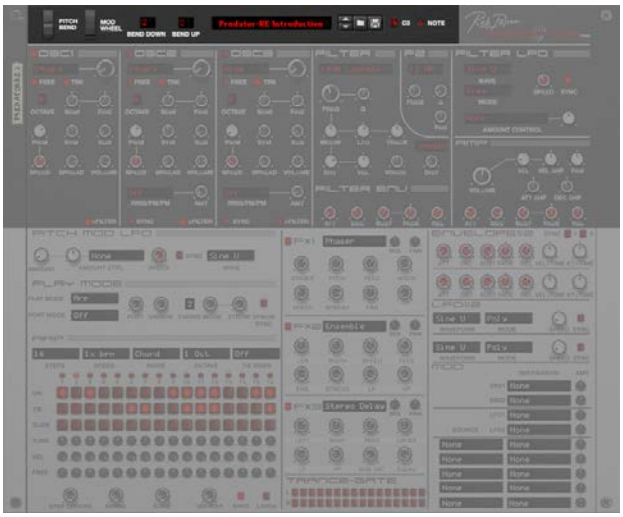
Predator-RE also offers inputs into the filter, 3 fx units and vocoder, and access to Reason's unique CV and GATE features available on the back panel. And last but not least, Predator-RE's arpeggiator has outputs, so can be used to control other Reason plug-ins.

Included are almost 4000 patches divided into several style folders. There is no contemporary music style that is not covered by the sound of Predator-RE!

Rob Papen and the RPCX team, October 2012

Patch and Modulation Controls

At the top of the Predator-RE panel you find the patch control section and modulation controls.



Patch Controls

Predator-RE uses the standard Reason patch controls. Clicking on the patch menu brings up a list of all patches in the current folder and clicking on the up / down buttons next to the menu allows you to scroll though these patches one by one.

The Patch Browser button will bring up the patch browser, allowing you to load in patches from other folders.

The Save Patch button saves the current patch.

The C3 button previews the current patch.

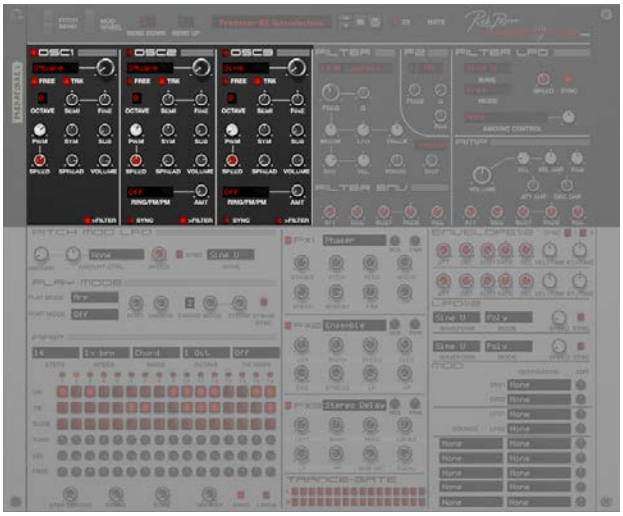
Pitch Bend Controls

The pitch bend wheel applies pitch-bend to the currently played sound. The Bend Down and Up controls, determine the maximum pitch change when you move the pitch-bend wheel all the way down or up. It ranges from Off, to a maximum of 48 semitones (4 octaves)

Mod Wheel

This applies a mod wheel (MIDI Controller #1) control signal to the currently selected Predator-RE patch.

Oscillator section



Predator-RE's sound begins with the oscillator section. Predator-RE can use up to 3 oscillators to generate its basic sound. Of course you don't need to use them all...it all depends on the type of sound you want to produce.
We have added FM and Ring Modulation options to Oscillator 2 and 3, to further shape the sound. This adds an extra dimension to Predator-RE's soundscape.

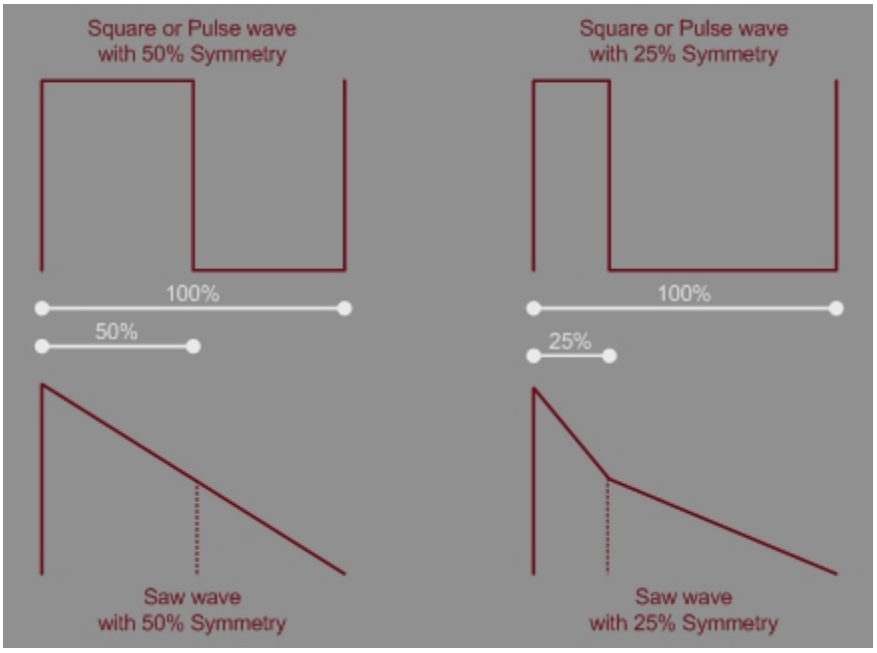
Oscillator on/off

Next to the Oscillator label you find a button to switch the oscillator on or off.

Waveform

This control sets the basic shape or harmonic content of the oscillator. It is known as its waveform. Predator-RE has a total of 128 waveforms, ranging from classic analog style waveforms, including saw and square, to additive and spectral waveforms.

Symmetry (Sym.)



This controls the symmetry of the selected waveform. The effect it has differs from waveform to waveform, but basically 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.

Free on/off

When this is turned off, it returns an oscillator to its initial waveform position (phase) every time you play a new note. When it's on, the oscillator phase continues from its last position, it is "free-running". This is useful in spread sounds because it spreads the initial 'attack' part of the sound.

Sync on/off (Osc.2 and Osc.3)

Sync is only available for Oscillator 2 and Oscillator 3. If you switch it on, the oscillator frequency synchronizes to Oscillator 1. This means that when oscillator 1 finishes the wave cycle, it resets the synced oscillator to the initial position. This means that the oscillator gest reset and its frequency bound to Oscillator 1. You can hear it very well if you detune, for instance, Oscillator2 and then turn Sync on.
The detuning disappears, and it now has the same pitch as Oscillator 1. However, Oscillator 2 will sound different because Oscillator 1 resets Oscillator 2 whenever it reaches the end of its wave cycle. Typically this will add to the harmonic content (additional overtones) to the basic waveform.
Listen to patch "Predator-RE SyncLead" of the first folder for an example.

Semi

This controls the root pitch setting of the oscillator, with semitones you can alter the tuning from -48 semitones down (-4 octaves) to 48 semitones up (+4 octaves) from the base note.

Fine

Located next to the semi knob, fine sets the fine-tuning of the oscillator with a range of -100cent up to +100cent.

Track

The track button is located at the very top of the semi button. With track set to on the oscillator follows the keyboard in pitch. When it is off the pitch of the oscillator stays the same independent of what key is played. In the case of FM or Ring Modulation, or for FX sounds it can be handy if you can turn this setting off.

Octave up/down

Next to the track control you can find an up and down arrow. Pressing up increases the oscillator tuning by an octave, pressing down decreases the oscillator tuning down by an octave.

Sub

This knob controls the volume of the oscillator's sub-oscillator. The sub-oscillator is a square wave, which is one octave lower than the normal oscillator pitch. The sub-oscillator pitch is always connected to the oscillator pitch, so if you detune the oscillator, the sub-oscillator detunes along with it.

Spread

This is a special Predator-RE function. If you open this control knob, a multiple oscillator sound is generated using one oscillator. The spread knob controls the level of detuning for these multiplied oscillators. If you keep spread to 0 level, a normal oscillator is generated.

PWM

PWM stands for Pulse Width Modulation. This controls the maximum PWM modulation amount of the LFO (see speed parameter). PWM alters the symmetry setting (the middle point) of the oscillator over time. You can use PWM on any waveform, but it is most commonly used with the square wave where it alters the pulse width of the waveform.

Speed

The amount of PWM (Pulse Width Modulation) is altered over time by a sine-wave LFO. With speed you control the speed of this LFO. Of course you need to open the PWM amount to hear the result of any speed changes.

Volume

With volume you control the volume of the oscillator before it goes into the 'Filter section'.
Note: if you set the filter "pre-filter distortion" to edgy, the volume of the oscillator drives the distortion of the filter, and so you can add distortion with lower oscillator volume settings.

Output

This controls whether an oscillator is output to the 'filter section'. With FM and Ring modulation in use, you may not want the modulating oscillator output to be fed into the filter. So with Osc.1 and Osc.2 you have the option to shut off the output to the filter, when you are using them as a modulation oscillator.

Oscillator Cross Modulation

This controls the cross modulation options for Osc 2 and Osc 3. When you use either in FM or ring modulation, you'll need to keep the modulation oscillator on but not heard, so you can turn off the output of the oscillator to the filter using the output button.
With FM modulation the oscillator modulates the pitch of the target oscillator, so you get overtones to the original sound. With Ring modulation, both oscillators are multiplied together and you get sound that uses a combination of both sources.

Modulation Type

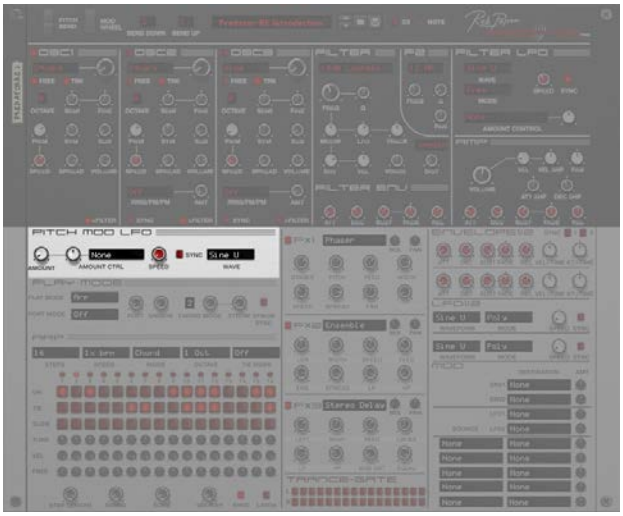
The following cross modulation types are available. All of these generate additional overtones in a slightly different manner. Please try and experiment with modulation type and amount to accommodate yourself with the subtle and not so subtle characteristics of each modulation type.

Ring 1 (Classic ring modulation)
PM 1 (Phase Modulation)
FM 1 (Frequency Modulation)
Sign 1
Max 1
Min 1
S&H 1
Mix 1

Modulation Amount

This controls the amount of cross modulation applied to Osc2 and Osc 3.

Pitch Modulation section



This section shows how you can alter the overall pitch of the sound, either using an LFO to change the pitch over time (vibrato) or how much the pitch bend controller alters the pitch.

Pitch Modulation LFO

Amount

The amount of LFO modulation applied. At the full amount, the pitch goes up / down by one semitone (sine, triangle and S&H waves) & up only by one semitone for the square and saw waves.

Amount control

Here you can select the controller (for instance Modulation Wheel) that controls the amount of Pitch LFO modulation. Listen to "Predator-RE SyncLead" in the first folder. The control amount can be set to positive as well as negative values.

Speed

This control determines how fast or slow the LFO is running.

Sync

If you turn sync on, the speed of the LFO will be tempo based. To find the correct setting you need to adjust the Speed parameter.

Waveform

Sine, Triangle, Saw Up, Saw Down, Square and S&H Sinus and Triangle are most often used for pitch because they produce a modulation that goes up and down smoothly. The other waveforms are more suitable for FX sounds or special sounds.

Pitch bend

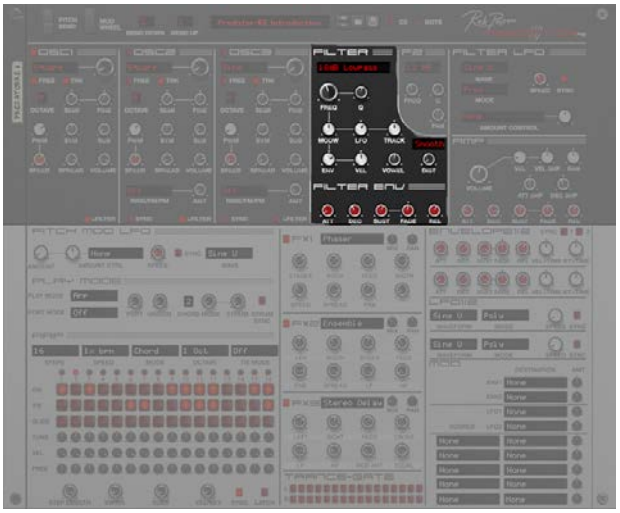
Down

This sets the pitch change when you move the pitch-bend wheel Down. It ranges from Off, down to - 48 semitones (-4 octaves)

Up

This sets the pitch change when you move the pitch-bend wheel Up. It ranges from Off, up to + 48 semitones (+ 4 octaves).

Filter section



The sound generated in the oscillators is passed on the filter section. The filter type alters the harmonic content of the sound coming from the oscillators. Predator-RE also has an extra secondary filter, labelled F2, for those situations where you need to combine different filter types.

Main Filter

Cutoff

This sets the filter's frequency where the filter starts altering the sound. For instance, if you set the Cutoff to 2000Hz and use a 12dB Lowpass filter it reduces any frequencies above 2000Hz, so the volume of the frequencies at 4000Hz will be reduced by 12dB. The Cutoff frequency can be static at one frequency, but you can also modulate the Cutoff frequency with the Filter Envelope, Keyboard tracking, Modulation Wheel and LFO. This is indicated on the Predator-RE front panel, by lines that lead to the Cutoff Frequency.
The modulation doesn't move the Cutoff control knob from its initial position, but if you add any kind of modulation (change the silver colour control knobs) the Cutoff frequency is internally modulated.

Resonance (Q)

The resonance controls how much the sound at the Cutoff frequency is the increased, the resonance "emphasises" this frequency. As you increase resonance it gets more and more pronounced till the filter "self-oscillates". So basically the resonance is feedback onto the Cutoff frequency.
Note: the 6dB filter types are unable to self-oscillate, and in Comb filter the resonance controls the comb filters feedback.

To hear what resonance does, the best thing to do is to try changing it while you play a note. If you open the LFO modulation you will hear that the Cutoff frequency starts to move. Opening the Resonance emphasises this movement.

There is a special mode to create resonance sounds without using the oscillators. This was originally only possible with analog synthesizers. To use these special resonance sounds, you need to turn off all the oscillators. One word of caution: this type of resonance sound can be very loud, so be careful with the volume. Also it produces a bit of noise artefacts.

Filter Mode

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 fully turned left.
12dB LowPass	Low frequencies pass through this filter; those above the Cutoff frequency are reduced by 12dB per octave.
12dB LowPass 2	12db 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 fully turned left.
12dB HighPass 2	12db 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 fully turned left.
24dB LowPass	Low frequencies pass through this filter; those above the Cutoff frequency are reduced by 24dB per octave.
24dB LowPass 2	24dB 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 fully turned left.
24dB HighPass 2	24dB HighPass filter with an alternative tonal character

12dB BandPass	This filter mode is a combination of 12dB LowPass and 12dB HighPass filters. Only those frequencies near to the filter Cutoff frequency pass through (a band of frequencies), the resonance (Q), controls the width of this band so that low & high frequencies are removed.
12dB BandPass 2	12dB 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 & high frequencies are removed.
24dB BandPass 2	24dB BandPass filter with an alternative tonal character
12dB Notch	Those frequencies near to the filter Cutoff frequency are reduced in volume (12dB), the resonance controls the width of this removal region.
12dB Notch 2	12db Notch filter with an alternative tonal character
24db Notch	Those frequencies near to the filter Cutoff frequency are reduced in volume (24dB) , the resonance controls the width of this removal region.
24db Notch 2	24db 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 fully turned left.
Comb Positive	This is a very short delay, which emphasises 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.
Formant 2 Band	Vocal Filter, which creates a vocal character based on 2 bands
Formant 4 Band	Vocal Filter, which creates a vocal character based on 4 bands

Vowel

Sets the vowel (a,e,i,o and u) used by the vox filter

Pre-Filter Distortion

It is possible to overdrive the oscillator sound ahead of going into the Filter. This can be done in a smooth way or in an edgy way. For the edgy setting, the following applies:

- Overdrive of the filter starts at about -3dB with a sinus waveform using only 1 oscillator
- Overdrive of the filter starts at -9dB with a sinus waveform using 2 oscillators
- Overdrive of the filter starts at -12dB with a sinus waveform using 3 oscillators

So be careful with the volume of the oscillators if you are in edgy filter overdrive mode. The smooth overdrive is more "subtle" and less aggressive than the edgy setting. Also distortion in smooth setting starts only if you open up the drive amount. Try it out yourself and open the resonance (Q) to hear the difference in sound with both distortion modes.

Cutoff Frequency Modulation

Envelope

Adds a positive or negative Cutoff frequency Envelope amount. The 'Envelope' is part of the Filter section itself. Keep in mind that if you use negative modulation, the effect of the envelope is reversed.

Velocity

Adds a positive or negative Cutoff frequency modulation by the amount of velocity used. If Predator-RE is in arpeggiator mode (Play mode) the arpeggiator velocity settings are active.

Keytrack

Adds a positive or negative Cutoff frequency modulation by the keyboard note position. With positive amount, the Cutoff frequency goes up the higher you play the keyboard With negative amount, the Cutoff frequency goes down the higher you play the keyboard.

LFO

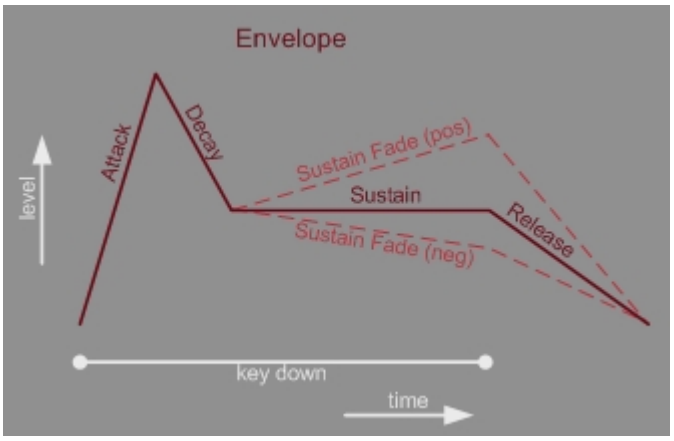
Adds negative or positive Cutoff frequency modulation by the 'Filter LFO'.

Mod.Wheel

Adds negative or positive Cutoff frequency modulation by the 'Modulation Wheel'.

Filter Envelope

The Filter Envelope is assigned to the main filter Cutoff Frequency of Predator-RE and the amount is controlled by the Env amount in the Filter section. An envelope is a time-based modulation section in a synthesizer. If you press a key it moves from 0% up to 100% and back to 0% when you release the key.
Between this you can adjust the time how it does do this. The first part is known as the attack, this is the time it takes to reach 100% The second part is known as the decay, this is the time it takes to reach the sustain (the final) level. If this level of sustain is for instance 50, the decay goes down to 50% and stays there. Finally when you release the key, the envelope goes to 0%, during the period that you just set.
An extra feature of the Predator-RE envelopes is Fade. Fade adds a second part to the sustain level, when it is positive, the sustain level goes up to 100% over a set period, if it is negative then the sustain level goes down to 0% over a set period. This is a handy feature if you want the Cutoff frequency of the filter to rise whilst holding the keys. Listen to patch "Syntho Brass" in the first folder.



To hear the full effect of the Filter Envelope you have to open the Env amount, which you can find in the filter section next to the Cutoff Frequency. The amount can be positive or negative.

Attack

An envelope always rises from 0 to 100% and back to 0% when the key is released. Attack controls how fast it rises to 100%. So if you open the Attack control knob, it takes longer to go from 0 to 100%. With Attack closed, the envelope starts at 100%.

Decay

After the attack stage, with the envelope at 100%, the decay stage is reached. Decay reduces the envelope level to the sustain level over a set time. So if you use a long decay, it takes longer to reach the sustain level. If the sustain level is 100% the Decay has nothing to fall to and so the sustain stage is reached immediately after the attack.

Sustain

This is level of the sustain stage. After the attack & decay stage, the envelope goes into the sustain stage and remains here for as long as you have a key pressed down. The sustain level is the level of this sustain stage. Sustain level in the Filter envelope means the level of where the Cutoff frequency parameter stays as long as you hold the key(s).

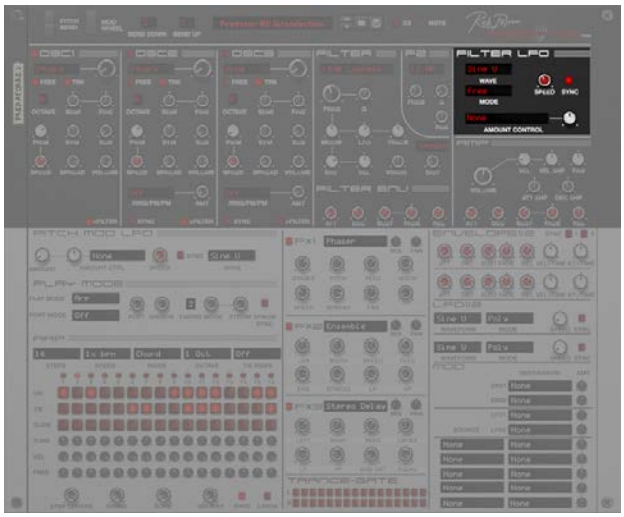
Sustain fade

If the fade is set to off, the sustain remains at the sustain level i.e. it is a classic sustain. If you open the fade amount in a positive direction the sustain changes into a second attack. So after the Decay reaches the Sustain level it starts rising to 100% again and the time it takes to reach 100% is set by the Fade time. If you open the fade amount in a negative direction the sustain changes into a second decay. So after the Decay reaches the Sustain level it starts falling to 0% again and the time it takes to reach 0% is set by the Fade time.

Release

After you have released a key (note), the release stage starts. The envelope then decays from the sustain level to 0%, the time it takes is set with the release knob.

Filter LFO



An LFO (Low Frequency Oscillator) is an oscillator at a very low pitch/frequency. In Predator-RE the LFO can have a frequency between 0.03Hz and 27.50Hz. The Predator-RE Filter LFO produces changes to the Filter Cutoff frequency. You need to open the LFO amount in the 'Filter section' to hear the results. Often used is the sine waveform, here the Filter Cutoff frequency rises up and down. But also using other waveforms with the LFO can be used to produce interesting results.. Predator-RE has the option to "tempo base" the LFO, which makes it a great feature for changing sounds in a musical tempo based way.

Waveform

Sine, Triangle, Saw Up, Saw Down, Square and S&H Here you can set the type of wave, this modulates the Filter Cutoff Frequency. Sinus and Triangle are often used because they produce a modulation that goes up and down smoothly. The other waveforms are more suitable for FX or special sounds. Try selecting another waveform with the patch "Moving Filter", which you can find in the first folder of Predator-RE, and see what it sounds like.

Speed

This controls how fast or slow the LFO is running. If the control Sync is set on then the speed is tempo based.

Sync

If you turn Sync on, the Speed of the LFO will be tempo based. So it will synchronise with the song tempo. To find the right setting you need to adjust the Speed parameter.

Mode

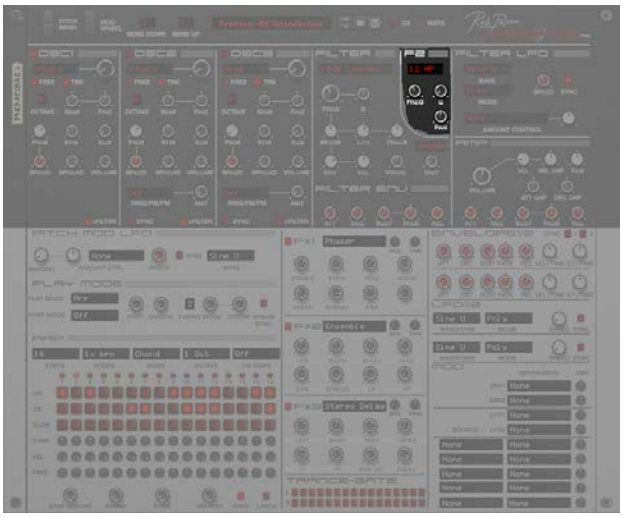
The Poly, Free and Mono modes determine how the LFO responds to when you play multiple keys simultaneously.

Poly mode	Each note you play has its own Filter LFO and each LFO starts from the zero position. Poly mode is useful for complex sounding Filter LFO modulation.
Free mode	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 mode	Similar to free mode. All the filter LFOs have the same value, however when you press a key in Mono mode, all LFOs are reset to their initial start position

Amount control

Here you can select the controller to adjust the LFO modulation inside the 'Filter section'. This can be a positive or a negative amount. So you can increase the modulation or decrease the impact of the modulation.
Look at patch "Moving Filter" in the first folder as an example. You can see that in this patch the Mod Wheel is assigned with -38% amount. So if you open the Mod Wheel the LFO modulation of the 'Filter section' will be reduced. In fact with a fully open Mod Wheel the LFO does not modulate the filter anymore. This happens because the LFO amount in the filter is 38% and the modulation control is set to -38%.

Filter 2 section



Filter 2(F2) is an extra filter after the main filter that you can turn on or off. Great if you want to take away bass from a sequence sound or as an extra filter to shape the sound. In the 'Free modulation section' you can select the Filter2 Cutoff frequency as a destination. So you can still use a 'Free Envelope', 'Free LFO' or any other midi controller to dynamically control filter 2's Cutoff frequency.

Cutoff

This sets the filter's frequency where the filter starts altering the sound. For instance, if you set the Cutoff to 2000Hz and use a 12dB Lowpass filter it reduces any frequencies above 2000Hz, so for instance a sound at 4000Hz will be reduced by 12dB. The Cutoff frequency can be static at one frequency, but you can also modulate the Cutoff frequency with the Filter Envelope, Keyboard tracking, Modulation Wheel and LFO. Therefore there is a line on Predator-RE front-end which shows that these controls alter the Cutoff frequency.
The modulation doesn't move the Cutoff control knob from its initial position, but if you add any kind of modulation (change the silver colour control knobs) the Cutoff frequency is internally modulated.

Resonance (Q)

Resonance / Q of Filter 2

Pan

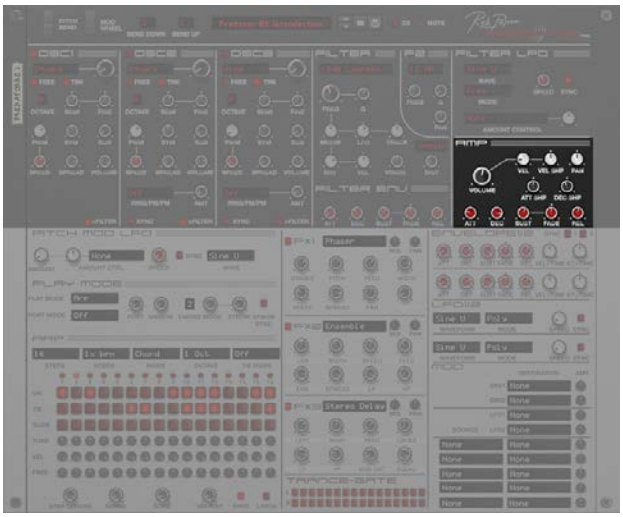
Used in Split 1 / 2 mode, please see below for more information.

Filter mode

The secondary filter (Filter 2) can operate as any of the filter types that are available for the main filter section. In addition it offers two additional modes, which involve the cascading and routing of filters and oscillators. These are explained below.

Split 1	In this mode, Filter 1 and Filter 2 are in parallel, so that Filter 2 has the same properties, such as envelope, filter tracking etc, as Filter 1. The only difference is that Filter 2's frequency can be altered independently from Filter 1's. Using Filter Pan in the advanced screen, you can pan Filter 1 and Filter 2, from both being centred, to Filter 1 being panned left and Filter 2 being panned right.
Split 2	In this mode, Oscillator 1 goes into Filter 1, Oscillator 2 goes into Filter 2 and Oscillator 3 goes into both Filter 1 and 2. Filter 1 and Filter 2 are also in parallel and joined, so that Filter 2 has the same properties, such as envelope, filter tracking etc, as Filter 1. The only difference is that Filter 2's frequency can be altered independently from Filter 1's. Using Filter Pan in the Advance screen, you can pan Filter 1 and Filter 2, from both being centred, to Filter 1 being panned left and Filter 2 being panned right.

Amplifier section



The audio that comes from the 'Filter section' moves on to the 'Amp section'. This section amplifies the signal and controls the volume and panning. An important controller of the Volume is the Volume Envelope. This controls the volume contour over time. Also in the Amp section is velocity control. This controls the response of Predator-RE to the velocity of the keyboard or arpeggiator.

Volume

This sets the overall volume of the patch.

Pan

This sets the overall panning of the patches, from totally left, to centred, to totally right.

Vel > vol

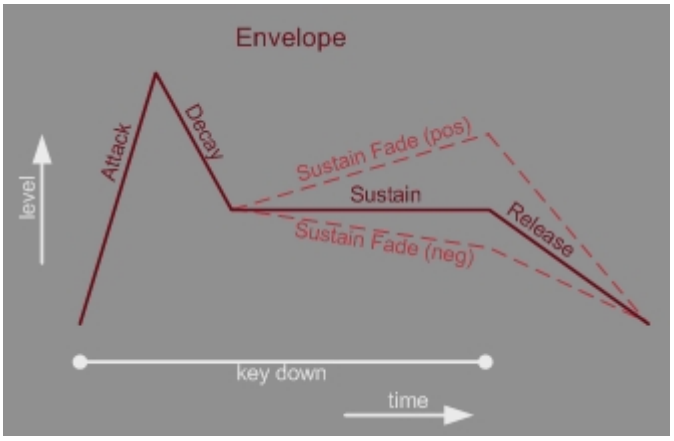
This sets the amount volume depends on the velocity of the keys pressed (how hard you strike the key), either normally or in the arpeggiator if selected.

Velocity shape

The velocity shape changes Predator-RE's velocity curve response to the keyboard input or host input. Negative values generate an exponential curve. A value of zero, 0, creates a linear response, while positive values give a logarithmic response. The default is linear (0).
Note: many keyboards already have a built-in velocity curve response setting. The default of 0 is probably the best to start off with. This setting is also saved inside each patch.

Volume Envelope

This envelope controls the volume contour over time.



An envelope is a time based modulation inside a synthesizer. If you press a key it moves from 0% up to 100% and back to 0% when you release the key. By using the Volume Envelope you can adjust the amount of time it takes to do this.

The first part is known as the attack stage, this is the time it takes to reach 100% The second part is known as the decay, this is the time it takes to reach the sustain (the final stage) level. If this level of sustain is for instance 50, the decay goes down to 50% and stays there. Finally when you release the key, the envelope goes to 0% , during the period that you have set. An extra feature of Predator-RE's envelopes is Fade. Fade adds a second part to the sustain, when it is positive the sustain level goes up to 100% over a set period, if it is negative the sustain level falls to 0% over a set period. The amp envelope controls how the main volume of each note sounds.

Attack

An envelope always rises from 0 to 100% and back down to 0% when the key is released. Attack controls how fast it rises to 100%. So if you open the Attack knob, it takes longer to go from 0 to 100%. With Attack closed, the envelope starts at 100%.

Decay

After the attack stage, with the envelope at 100%, the decay stage is reached. Decay reduces the envelope level to the sustain level over a set time. So if you use a long decay, it takes longer to reach the sustain level. If the sustain level is 100% the Decay has nothing to fall to and so the sustain stage is reached immediately after the attack.

Sustain

This is the level of the sustain stage. After the attack and decay stage, the envelope reaches the sustain stage and remains here for as long as you have a key pressed down. The sustain level is the level of this sustain stage. Sustain level in the volume envelope means that the level of the volume parameter will stay as long as you hold the key(s).

Sustain fade

If the fade is set to off, the sustain remains at the sustain level i.e. it is a classic sustain If you open the fade amount in a positive direction the sustain changes into a second attack. So after the Decay reaches the Sustain level it starts rising to 100% again and the time it takes to reach 100% is set by the Fade time. If you open the fade amount in a negative direction the sustain changes into a second decay. So after the Decay reaches the Sustain level it stars falling to 0% again and the time it takes to reach 0% is set by the Fade time.

Release

After you have released a key (note) the release stage starts. The envelope then decays from the sustain level to 0% the time it takes is set the release knob.

Attack Shape

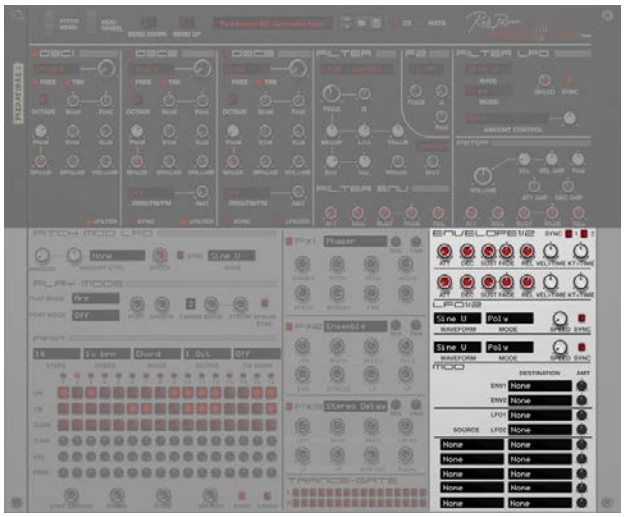
The attack shape changes the curve of the attack stage of all Predator-RE's envelopes. Negative values generate an exponential curve. A value of zero, 0, creates a linear response, while positive values give a logarithmic response. The default is linear (0).
Note: This setting is saved as part of each patch.

Decay / Release shape

The attack shape changes the curve of the decay and release stages of all Predator-RE's envelopes. Negative values generate an exponential curve. A value of zero, 0, creates a linear response, while positive values give a logarithmic response. The default is linear (-20%), which is good for most synth sounds.
Tip: for Pad sounds 0% is an excellent setting.
Note: This setting is saved as part of each patch.

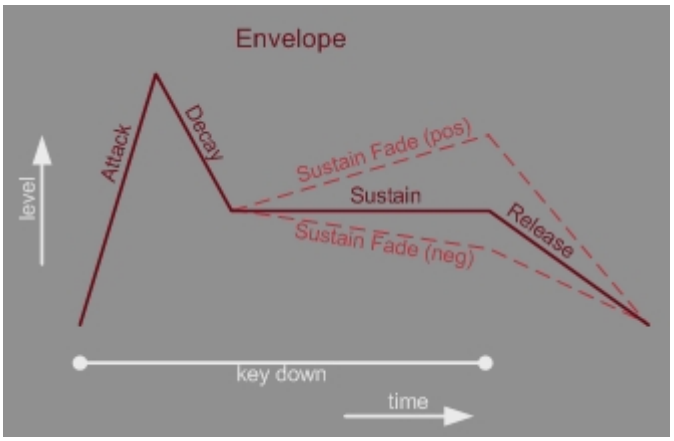
Free modulation section

You find the free modulation section is at the bottom right hand corner of the Predator panel. This section holds 2 Envelopes, 2 LFO's and a Modulation matrix with 8 slots. The free modulation section is added to give you extra tools for additional soundshaping options. For instance, if you wish to make an FM synthesis sound you can address the Envelope to the FM amount inside oscillators 2 and 3. Or maybe you would like a stereo panning effect by an LFO. Another option is to connect the arpeggiator free or velocity row to other parameters inside Predator-RE.



Envelope 1 and 2

Each envelope has its own destination. The destination parameter is selected in the 'MOD' section and is the one that will be changed over time by the Envelope; for example the pitch of an oscillator. Listen to patch "Pred Brass" in the first folder.
An envelope is a time-based modulation section in a synthesizer. If you press a key, it rises from 0% up to 100% and back down to 0% when you release the key. Between this you can adjust the time how it does do this.
The first part is known as the attack, this is amount of time it takes to reach 100% The second part is known as the decay, this is the time it takes to reach the sustain (the final) level. If the level of sustain is for instance 50, then the decay falls to 50% and stays there. Finally when you release the key, the envelope lowers to 0%, during the period that you have set.
An extra feature inside Predator-RE is Fade. Fade adds a second part to the sustain, when it is positive the sustain level rises to 100% over a set period, if it is negative then the sustain level falls to 0% over a set period.



Attack

An envelope always rises from 0 to 100% and back to 0% when the key is released. Attack controls how fast it rises to 100%. So if you open the Attack control knob, it takes longer to go from 0 to 100%. With Attack closed, the envelope starts at 100%.

Decay

After the attack stage, with the envelope at 100%, the decay stage is reached. Decay reduces the envelope level to the sustain level over a set time. So if you use a long decay, it takes longer to reach the sustain level. If the sustain level is 100% the Decay has nothing to fall to and so the sustain stage is reached immediately after the attack.

Sustain

Next we have the sustain stage. After the attack & decay stage, the envelope reaches the sustain stage and remains here for as long as you have a key pressed down. The sustain level is the level of this sustain stage. Sustain level in the Free Envelope means that the "level"(amount) selected in the destination parameter stays for as long as you hold down the key(s).

Sustain fade

If the fade is set to off, the sustain remains at the sustain level i.e. it is a classic sustain If you open the fade amount in a positive direction the sustain changes into a second attack. So after the Decay reaches the Sustain level it starts rising to 100% again and the time it takes to reach 100% is set by the Fade time. If you open the fade amount in a negative direction the sustain changes into a second decay. So after the Decay reaches the Sustain level it starts falling to 0% again and the time it takes to reach 0% is set by the Fade time.

Release

After you have released a key (note) the release stage starts. The envelope then decays from the sustain level to 0%, the amount of time this takes is set by the release knob.

VEL > time

This controls how the envelope responds to the velocity of notes pressed. If you use a positive amount, the envelope times get shorter for higher velocities. If you use a negative amount, the envelope times get longer for higher velocities.

KT > time

This controls how the envelope responds to the notes pressed. If you use a positive amount, the envelope times get shorter for higher notes. If you use a negative amount, the envelope times get longer for higher notes.

Sync

If you would like to trigger the free envelope to the host sequencer’s tempo, click the sync button so that the red LED lights up.

Destination Envelope 1 (MOD Section)

This is where you can select the destination the Envelope 1 modulation. Listen to patch "Pred Brass" in the first folder. In this patch the fine pitch of Oscillator1 is modulated by Envelope 1.

Amount Envelope 1 (MOD Section)

This is where you can select the amount of Envelope 1 modulation. This can be positive or negative modulation depending on the selected parameter. Listen to patch "Pred Brass" in the first folder. Again, in this patch the fine pitch of Oscillator1 is modulated. Increase or decrease the amount to hear how this changes the sound.

Amount control Envelope 1

This is where you select the controller for controlling the amount Envelope 1 parameter. With amount you can set the how deep it controls the amount Envelope1 parameter. This can be a positive or negative amount. So that you can either increase the modulation or decrease the modulation.
Listen to the patch "Psy FX 01" in the first folder. In this patch the Mod.Wheel controls the amount of Envelope 1 modulation. If you open the Mod.Wheel you will hear that the pitch fall stops in this patch.

Destination Envelope 2

This is where you can select the destination and amount of Envelope 2 modulation. Listen to patch "Pluck FM" in the first folder. In this patch the FM 3 amount of Oscillator3 is being modulated by Envelope 2.

Amount Envelope 2

This is where you select the amount of Envelope 2 modulation. This can be a positive or negative amount of modulation depending on the selected parameter. Listen to patch "Pluck FM" in the first folder. In this patch the FM 3 amount of Oscillator3 is being modulated by Envelope 2. Decrease the amount to hear the results.

LFO 1 and 2

Each LFO has its own destination. To select the destination, visit the 'MOD' part below the LFOs. The Predator-RE LFO continuously changes this destination control over time With LFO 1 you also have the option to control the amount of modulation by midi or synth part. An LFO (Low Frequency Oscillator), is an oscillator at a very low pitch/frequency. In Predator-RE the LFO can have a frequency between 0.03Hz and 27.50Hz. Used often is the sine waveform. But the other waveforms of the LFO can also be used and produce interesting results.. Predator-RE has the option to "tempo base" the LFO, which makes it a great feature for changing sounds in a musical tempo based way. Predator-RE has the option to "tempo base" the LFO, which makes it a great feature for changing sounds in a musical tempo based way.
TIP: if you would like to increase the LFO speed, use the 'offset' as modulation source and the LFO speed as the target.

Waveform

Sine, Triangle, Saw Up, Saw Down, Square and S&H. This is where you can set the type of wave that modulates the LFO destination. Sinus and Triangle are often used because they produce a modulation that goes up and down smoothly. The other waveforms are more suitable for FX sounds or special sounds.

Speed

This controls how fast or slow the LFO is running. If the control Sync is set on then the speed is tempo based.

Sync

If you turn Sync on, the Speed of the LFO will be tempo based. So it will synchronise with the song tempo. To find the right setting you need to adjust the Speed parameter.

Mode

Poly, Free and Mono. This controls how the LFO responds when you hit one or more keys.

Poly mode	Each note you play has its own Filter LFO and each LFO starts from the zero position. Poly mode is useful for complex sounding Filter LFO modulation.
Free mode	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 mode	Similar to free mode All the filter LFO's have the same value, however when you press a key in Mono mode, all LFO's are reset to their initial start position.

Destination LFO 1 (MOD Section)

This is where you can select the destination of the LFO 1 modulation. Listen to patch "Hipass arp" in the first folder. In this patch the Filter2 Cutoff frequency is modulated by LFO1.

Destination amount LFO 1 (MOD Section)

This is where you can select the amount of LFO1 changes the LFO 1 destination control. This can be a positive or negative modulation depending on the selected parameter. Listen to patch "Hipass arp" in the first folder. In this patch the Filter2 Cutoff frequency is modulated. Increase or decrease the amount to listen to what it does.

Destination LFO 2 (MOD Section)

This is where you can select the destination of the LFO 2 modulation. Listen to the patch "Hipass arp" in the first folder. In this patch the Amp panning is modulated by LFO2.

Destination amount LFO 2 (MOD Section)

This is where you can select the amount of LFO2 changes the LFO 2 destination control. This can be a positive or a negative modulation depending on the selected parameter. Listen to the patch "Hipass arp" in the first folder. In this patch the Amp panning is modulated. Increase or decrease the amount to listen to what it does.

Free Mod 1 - 5

Predator-RE has 5 slots to set your own modulation connection. Clicking on a modulation number label bypasses that modulation. There are 44 modulation sources that include midi sources and synth sources. These sources connect to 112 modulation destinations inside the Predator-REs synth. There is also an amount control for each connection. So you could for instance control a modulation by a Free Envelope.

Source 1 - 5

This is where you can select one of the 40 modulation sources. Listen to the patch "Control arp" in the first folder. In this patch at source 1, the Arpeggiator velocity is selected as modulation source. In source 2, the Arpeggiator free row is selected as modulation source.

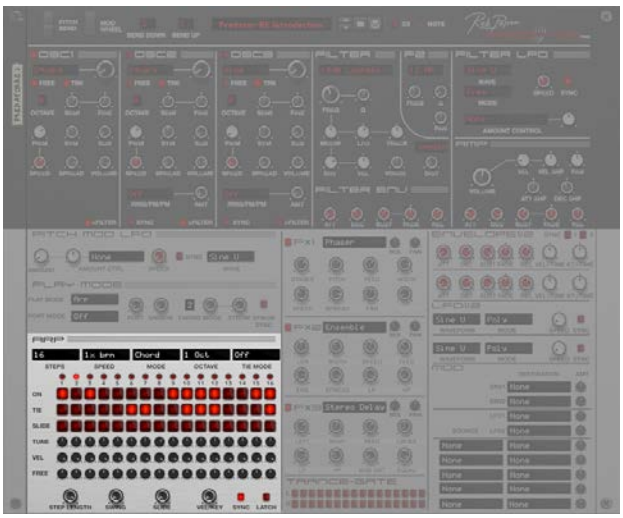
Destination 1 - 5

Here you select one of the 65 modulation destinations. Listen to patch "Control arp" in the first folder. In this patch destination 1 modulation is sym (symmetry) of Osc.1. In source 2, the Filter Resonance is selected as modulation destination.

Destination amount 1 - 5

This is where you select the amount of the modulation. This can be a positive or a negative modulation depending on the selected parameter. Listen to the patch "Control arp" in the first folder and do change the amount of destination 2 to hear what it does.

Arpeggiator section



Predator-RE offers a unique and very powerful arpeggiator, because it not only offers many features, but it can also be used as a kind of sequencer. This is because you have the option to tune a step and to tie a step in two different ways. A classic arpeggiator (arp) plays one note after another of all the keys that are held down. Predator-RE also offers a chord mode which triggers the played notes as a chord.

The arpeggiator has a built in sequencer for making rhythmic patterns. Each step of the pattern sequencer offers on/off, Tie, Slide, Tune, Velocity settings and also, Free modulation settings. To turn on the arpeggiator select the 'Play Mode section' of Predator-RE. To see the arpeggiator controls click on the > Arp button if the 'Free modulation section' is open.

Steps

Number of steps in the arpeggiator sequencer. This can be from 1 to 16 steps

Speed

Speed of the arpeggiator relative to the host tempo, from ¼ the tempo up to 4 times the tempo.

Mode

This controls how the arpeggiator plays any keys that are held down.

Up	the notes are played in the order they are pressed
Down	the notes are played in the reverse order to which they are pressed
Up/Down	the notes are played in the order they are pressed then in reverse order
Down/Up	the notes are played in reverse order then normal order
Random	from the pressed keys a random one is played
Ordered	the notes are ordered from lowest to highest and are played in that order
Rev. Ordered	the notes are ordered from highest to lowest and are played in that order
Ordered Up/Down	the notes are ordered and then played from the lowest to highest and then back to lowest
Ordered Down/Up	the notes are ordered and then played from the highest to lowest and then back to highest
Chord	chord is a special mode where all the pressed keys are played at the same time so producing a chord
Mod	the arpeggiator can be used as modulator in "free mod" section.

Octaves

Determines how many octaves the arpeggiator plays. For instance, if you set octave to 2, it will play the held notes first in the original octave and then the held notes an octave higher. So pressing A4, C4 and E4 in the up mode with octave set to two plays A4, C4, E4 then A5, C5 and E5.

Tie mode

normal	steps with tie do not have an individual slide, tune, velocity and free setting
special	steps with tie do have still individual slide, tune, velocity and free settings

Listen to the patches "SeqArp tie normal" and "SeqArp tie seq" to see what great things you can do using this feature.

Host sync

This turns the arpeggiator synchronisation to the Reason sequencer on and off. The synchronisation works with a 1/16th note quantisation. If you would like to shift the whole apreggiator relative to the Reason sequencer and make it start at the moment you play a note, set it to off. The default setting is on.

Latch

When latching is turned on you don't need to keep a key pressed down for that note to be included in the arpeggiator. For instance if you have pressed C4 then released it and then pressed A4 and then released it, when the latching is on the arpeggiator will play C4 and then A4. Turning the latching on and off will clear the arpeggiator of any notes.
Tip: you can also use the sustain pedal to Latch and Unlatch the arpeggiator.

Step length

This controls how long each arp note/step is. Note that a 100% setting is needed if you use a tied step!

Swing

This controls the swing of the arpeggiator, this is the difference in timing between consecutive notes and it gives a more human/swing feel to the arpeggiator.

Slide

This control sets the time taken for notes to slide from the previous note's pitch to the current one. This only applies to notes which have sliding on in their steps. Note, always open the slide amount if you use slide in steps.

Vel / keyboard

This controls whether Predator-RE's velocity parameter settings are controlled by the arpeggiator sequencer step settings (at 0%) or the pressed key's velocity (at 100%) or a combination of the two values.
Try patch "Arpoharp velocity keyb." and look at the setting. Here the input of the keyboard is in control. The velocity settings in the steps make no difference. Also try patch "Arpoharp velocity arp" and look at the settings. Here the input of the keyboard has no influence. The velocity settings of the steps determine the way that Predator-RE responds to velocity. Of course you can also mix between these two settings.

Pattern/sequencer section

The main section of the arp screen is taken up with the Arpeggiator pattern/sequencer screen. This sequencer allows you to have much more complex arpeggiator patterns than in most other synthesizers. The arp sequencer can have up to 16 steps. The number of steps is set using the Step selector. Each step in the arp sequencer has individual settings that deermine how that arpeggiated note is played.

Step 1-16 on/off

This shows the arp sequencer step number. Clicking on it turns this step On or Off. If it is set to off when an arpeggiator is played a 'rest' occurs rather than a new note at this step.

Tie

Tie controls whether the note is 'tied' at the selected step. You can toggle tie by clicking in the step box. When a step is in tie, the current arp note continues to play the step ahead. So it allows you to play notes which are twice (or more) as long as the normal arp notes. In other words, you can tie notes together using this function.
Keep two options in mind when using notes with tie:
1. You need to have the arp step length control set to 100% to make the steps tied.
2. You have two ways of using tie notes:

normal	steps with tie do not have an individual slide, tune, velocity and free setting
special	steps with tie do have still individual slide, tune, velocity and free settings

Listen to the patches "SeqArp tie normal" and "SeqArp tie seq" to see the excellent results you can achieve using this feature.

Slide

The Slide control determines whether the note slides from the previous note's pitch to the current note's pitch or not. The speed of sliding is controlled by the Slide amount knob. Clicking on the slide box turns the slide function on and off.
Note: Slide does not work in 'Chord' mode.

Tune

Tuning offset of the arp note, from -36 semitones to +36 semitones. If you use tie in a step, the tune does not work at that step if the arpeggiator is in tie mode normal.

Vel

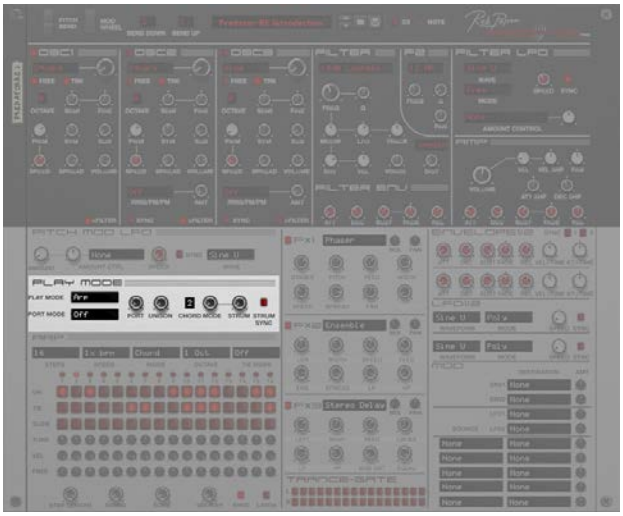
Velocity of the arp sequencer step/note. This is used in combination with the Vel /Keyboard control to control how the velocity of each arp sequencer step is controlled by the arp sequencer and how much by the velocity of the played note. If you use tie in a step, the velocity does not work at that step if the arpeggiator is in tie mode normal.

Free

Free control allows you to control other properties of Predator-RE (i.e. panning etc) using the arpeggiator. This is because you can use the Free control in the Free modulation section to modulate other controls by selecting the source to be Arp Free. If you use tie in a step, the free setting does not work at that step if the arpeggiator is in tie mode normal.

Play mode section

In Play Mode you can control how Predator-RE responds to notes played, either polyphonic or monophonic or by passing them into the arpeggiator.
The portamento is set here as well as the chord memory.



Play modes

Poly	Synthesizer is in polyphonic mode and has 16 voices.
Mono1	Synthesizer is in monophonic mode 1 and uses 1 voice. Only a single note can be played at once, pressing another key releases the previous note.
Mono2	Synthesizer is in monophonic mode 2 and uses 1 voice only. If you have a key pressed down and then press another key the new note plays, and if you then release this note the original held note is retriggered.
Mono3	Same as Mono 2 mode but any new note's amp envelope level starts at the level of the last played note.
Legato	Synthesizer is in monophonic mode and uses 1 voice. Similar to mono, but if you have a key pressed down and then press another key the note is not retriggered (i.e. envelopes don't restart), and if you release this second key the pitch returns to the original note
Legato2	Same as Legato mode but any new note's amp envelope level starts at the level of the last played note
Arp	Arpeggiator is played. See arpeggiator section for the settings.
Unison2	This combines 2 voices on one note. If you use the unison detune these 2 voices are detuned resulting in a phat sound. Note in Unison2 you only have 8 notes polyphonic limit
Unison4	This combines 4 voices on one note. If you use the unison detune these 4 voices are detuned resulting in a phat sound. Note in Unison4 you only have 4 notes polyphonic limit
Unison6	This combines 6 voices on one note. If you use the unison detune these 6 voices are detuned resulting in a phat sound. Note in Unison6 you only have 2 notes polyphonic limit

Uni detune

Unison detune controls the detuning between the stacked voice in Unison2/4/6 play modes. So Predator-RE has to be in unison2/4/6 mode for this feature to work.

Stereo Spread

Stereo spread places the unison voices in a stereo image, and in doing so widens the sound and creates a spatial effect.

Port

Portamento speed sets the time or rate of how notes change in pitch from the previous note played to the current note played.

Port modes

Off	No portamento , the note goes immediately to the played one
Constant Rate	The portamento changes at a constant rate, greater keyboard note ranges take a longer time.
Constant Time	Always takes the same time to portamento between any notes.
Held Rate	Same as Constant Rate but portamento only appears if you are holding a note and then playing another.
Held Time	Same as Constant Time but portamento only appears if you are holding a note and then playing another

Chord

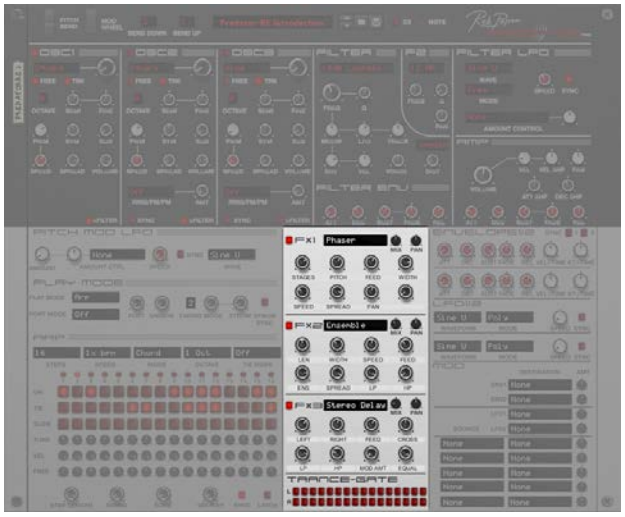
The Chord memory control enables you to record chords. Up to 8 notes can be memorised and will be saved as part of the patch. You can select the note, using the chord note menu, and the chord note offset, from the base note, using the chord note dial. The Chord function plays all notes offset to from the base note, until it encounters an offset value of Off.

Strum

In chord mode, you can set timing offset between the play chord notes, so creating strum effects. The sync button allows you to set this timing in ms or in quarter beats, synced to the host's tempo.

Listen to the "cluster" sounds in the "Ambient folder" of Predator-RE for some inspirational cool things achieved with the strum settings. The advanced panel can be reached by clicking at it in the patch section. Great to test audio from Predator-RE and also a good way of previewing sounds.

FX section



In this section you can configure up to 3 effects for a Predator-RE patch. These are connected in series. The output of FX1 feeds into FX2, and the output of FX2 feeds into FX3. A special feature of Predator-RE is that you can control all Fx parameters by midi or use a Predator-RE modulation source.

Type

Here you can select one of the 24 effects for each of the 3 FX units of Predator-RE.

Mix

Here is where you determine the balance between the original (direct) signal and the effect output. Turn is fully left and only the original signal is output. The more you move the knob to the right, the more of the effected signal will be added.

Pan

Controls the Panning of the selected Fx.

Fx No

This is where you can select which one of the 3 Fx units that you want to select or edit

Bypass

This bypasses all the 3 Fx units at once. So only the dry signal is heard.

Effect Types

Mono Delay

A mono tempo based delay, great for making rhythmic grooves. For instance the 1/8* (1/8 dotted) is nice for all kinds of arpeggiator or lead sounds. To make the sound a bit spacey, modulation of the length is possible which makes the delay swirl.

Length	Length of the delay set in tempo based settings
Feedback	Feedback of the delay
LP Filter	Low pass filter frequency
HP Filter	High pass filter frequency
Widen	Stereo widening amount
Mod Amount	Delay modulation amount
Mod Speed	Delay modulation speed

Stereo Delay

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.

Comb

The Comb Filter effect uses two joined comb filters where the output of one is fed back into the other one. Comb filters that are very short in delay and has a frequency, which in turn determines the length of this delay.

Comb 1 Freq	Comb Filter 1 Frequency
Comb 1 Feed	Comb Filter 1 Feedback amount
Comb 1 Mod	Comb Filter 1 Feedback modulation amount
Comb 2 Freq	Comb Filter 2 Frequency
Comb 2 Feed	Comb Filter 2 Feedback amount
Comb 2 Mod	Comb Filter 2 Feedback modulation amount
Mod Speed	Feedback tempo based modulation speed

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 and making it sound 'fatter'.

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

Chorus/Delay

This is a combined chorus / delay. Specially developed in case you want to use another effect in combination with Chorus without losing a delay function.

Length	Maximum length of the chorus in milliseconds.
Width	The amount how much the chorus length will change
Speed	The rate the chorus length changes
Spread	The amount the chorus length differs between left and right channels.
Delay	Length of the chorus delay. Delay is behind the chorus.
Feedback	Amount the chorus delay feeds back into the sound
Delay Vol	Volume of the delay.

Flanger

The flanger effect is a very short delay which changes overtime, to make a whooshing type sound.

Length	Length of the flanger
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

Wah/Delay

This effect produces a wah-wah type effect by running the sound through a low pass-filter that's frequency is changed over time. There is a built in delay which adds delays to the sound.

Low Range	Lowest Frequency of the filter. Here you can adjust how deep the LP filter ranges. The more you move the dial to the left, the lower the filter goes.
High Range	Highest Frequency of the filter. Here you can adjust how high the LP filter goes. The more you move the dial to the right, the higher the filter goes.
Speed	The rate the filter frequency changes over time. Tempo based.
Resonance	Controls the resonance of the used low-pass filter.
Delay	Length of the wahwah delay. This delay is after the WahWah FX.
Feedback	Amount the wahwah delay feeds back into the sound
Delay Vol	Volume of the delay

Distort (distortion)

This distorts the audio by saturating, limiting, rectifying and bandpass filtering the input.

Limit	Hard limiter threshold
Rect	Amount of rectification, from -100% (no change) , 0% half to 100% - full
Distort	Amount of Distortion
Tone	Frequency of the band pass filter
Emphasis	Bandwidth of the band pass filter
Post-Boost	Amount the filter signal is boosted
MWheel > Tone	Amount the band pass filter frequency is changed by the modulation wheel

Clipper Distortion

This distorts the audio clipping the tops and troughs of the input signal waveform.

Drive	Pre-boost amount
Limit	Sets the signal level above which the clipping comes into effect
Symmetry	Sets the balance between the clipping of the negative and positive parts of the waveform signal
Tone	High pass filter to set the tonal character of the distortion
LP	Low Pass Filter
HP	High Pass Filter
Post-Boost	Boosts the signal post-clipping

Low-Fi

This effect reduces the digital audio quality of the sound, which results in old style computer sound effects.

Bits	Bit level of the signal.
Sample Rate	Sample rate of the signal.
LP Filter	Frequency of the low pass filter.
MWheel > Filter	Amount the low pass filter frequency is changed by the modulation wheel.

Amp Sim

Several types of amp types are simulated. Great for creating edgy sounds.

Type	Type of amp simulation. Settings are:- None, 4x10" guitar speakers, 4x12" guitar speakers, Bass speaker, Combo speaker and Radio speaker. The "none" speaker setting is useful if you want to only use the distortion in the FX effect.
Distort	Amount of distortion added to the sound. Also works if the "none" speaker setting is selected.
Bass	Bass EQ Volume. Adds or removes low end from the speaker simulator.
Treble	Treble EQ Volume. Adds or removes high frequencies from the speaker simulator.
Volume	Volume boost. Adjusts the volume of the processed sound.

Note: with the Amp simulator FX it is recommended to fully open the Mix control knob (wet).

WaveShaper

The waveshaper effect shapes the in-going sound to a kind of distorted version of it. It is then passed through a low pass filter that's frequency is changed over time by a tempo based LFO.

Top Amt	The amount positive input is waveshaped.
Bottom Amt	The amount negative input is waveshaped.
Rect	The amount the sound is rectified, at -100% the sound goes through as normal, at 0% no negative output is heard and at 100% any negative output is made positive.
Filter	Low pass filter frequency. This filter does not filter the high frequencies.
LFO Amount	The amount the low pass filter frequency can change.
LFO Speed	The rate the low pass filter frequency can change.

Stereo Widener

This effect widens the stereo sound.

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.

AutoPan

Autopan pans the sound between the left and right speakers.

Amount	Amount the autopan moves the sound in the stereo field.
Speed	The rate at which the autopan moves the sound. This is Tempo based so for example 1/1 does mean that the pan moves from left to right within 1bar.

Note: for maximal effect you also need to open the Fx Mix control knob fully right (wet)

Gator

The gator uses a 16 step sequencer to alter the volume of the sound to give a 'trancegate' type effect. Basically it is a sequencer controlled audio gate.

Speed	The speed of the gator. Speed is time based from 16/1 up to 1/32T speed. If for example the speed is set to 1/1 each step is 1/16 note. If for example the speed is set to 2/1 then each step is 1/8 of a note.
Smooth	How much the volume changes are smoothed out. This helps to avoid clicks.
Mode	Whether the gator affects the left & right channels, the left channel only or the right channel only or both.
Sync	Turns on / off the host syncing. For example if you do not hear the gator FX in standalone host, then switch to off. Inside a host sequencer program the best setting is auto or sync. The default setting in most patches is auto. So if you have problems with these settings, try off.
Left	Left channel sequencer. Clicking here turns on / off that step in the gator. When a step is on (light colour) the gate is open and you can hear the audio. When a step is off (dark colour) the audio is muted.
Right	Right channel sequencer. Clicking here turns on / off that step in the gator. When a step is on (light colour) the gate is open and you can hear the audio. When a step is off (dark colour) the audio is muted.

Note: FX Mix sets how much of the Gator FX is added. With the Gator FX it is wise to fully open the Mix control knob (wet).

Vocoder

Predator-RE features a 32 band vocoder. The vocoder uses audio input to modulate the sound generated by Predator. So for example if you use a speech it can create a classic robot "vocoder'" effect. The base sound of a vocoder is the "carrier". This can be Predator-RE's synth sound, but also the input itself.

How to use it.

Firstly you need to connect audio input into the back of Predator-RE. Then turn on Vocoder input in the Input section, the volume there can be used to change the volume of this input. This input will be then used as carrier or modulator depending on the vocoder mode.

Note: you can only use the Vocoder in one FX slot, if you try to use two Vocoder slots, it will cause the sound to be distorted.
The vocoder has several dedicated controls described below:

Mode

This selects whether the sound in (sample or input) is the modulator or the carrier in the Vocoder. For most purposes you want it set so that the sound in is the modulator i.e. Car Mod, but you can experiment with the other settings, here the sound of Predator-RE modulates the input (the sample or input)

Next are the dials controlling the Vocoder filter properties

BandWidth	Controls the width of the vocoder's filters, smaller settings give a sort of ringing comb filter's sound, larger ones a more traditional vocoder sound
Shift	This controls how much the vocoder output is pitch shifted, from -36 semitones to +36 semitones
LP Filter	Built in lowpass filter
HP Filter	Built in highpass filter
Boost	Overall volume of the vocoder , from -40db to 0db
In Volume	The volume of the input into the vocoder (either from a sample or via direct input into Predator-RE)

FX Filter

This is an analogue modelled stereo Multimode Filter, which has all the properties of Predator-RE's main filter.

Type	Sets the type of filter, offering 6dB LowPass and HighPass, 12dB, 18dB and 24dB LowPass, HighPass , 12dB and 24dB BandPass, 12dB and 24dB Notch and Comb Filter modes.
Frequency	Sets the Cutoff frequency of the filter
Q	Sets the Resonance level of the filter
Distort	Sets the pre-filter distortion of the filter
Smooth	Sets the pre-filter distortion as smooth or edgy in sound.

Equalizer

The equalizer uses 5 bands at 60Hz, 200Hz, 600Hz, 2000Hz and 8000Hz frequencies. The control knob for each band controls that bands volume, from -20db to +20db When using the equalizer, it is recommended that you use a fully (100%) wet signal.

Compressor

The compressor is an audio effect that changes the dynamic range and response of a signal.

Threshold	This sets the threshold on which the compressor starts to work
Ratio	This sets the amount of dB reduction. So if a signal exceeds the threshold the 4dB gets 2dB with a ratio setting of 1:2.
Attack	This sets how fast the compressor kicks in.
Release	This sets how long the compressor takes to react to a reduction in volume
Volume	This allows you to correct the volume after the signal has been compressed.

Note: FX Mix sets how much of the Compressor FX is added. With the Compressor FX it is wise to fully open the Mix control knob (wet).

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	Spread

Cabinet

Several types of cabinets are simulated. Great for creating edgy sounds.

Type	Type of cabinet simulation. Settings are: None, Fender, Marshall and Off Axis. The “none” speaker setting is useful if you want to use only the distortion in the Cabinet effect..
Distort	Amount of distortion added to the sound. Also works if the "none" cabinet setting is selected.
Bass	Bass EQ Volume. Adds or removes low end from the speaker simulator.
Treble	Treble EQ Volume. Adds or removes high frequencies from the speaker simulator.
Volume	Volume boost. Adjusts the volume of the processed sound.

Note: with the Amp simulator FX it is recommended to fully open the Mix control knob (wet).

Multi Distort

Allows you to use several different types of distortion effects

Type	Different type of distortion allowed, they are None, Atan, Cos, Cross, Foldover, Fuzz, Limiter, Overdrive, Power, Rectifier, Saturator, Square. None means no distortion is used
Pre-Boost	How much the signal is boosted before going into the distortion
Amount 1	Control how much the signal is distorted
Amount 2	Additional distortion parameter for Fuzz
Normalize	How much the output volume is normalized to the input volume, at 100% the output volume should be the same as the input volume.
Low Filter	Post distortion low-pass filter
High Filter	Post distortion high-pass filter
Post-Boost	How much the output of the distortion is boosted

Auto Wah

Autowah uses a low/band pass filter to filter the signal using the volume of signal to alter the frequency of the filter.

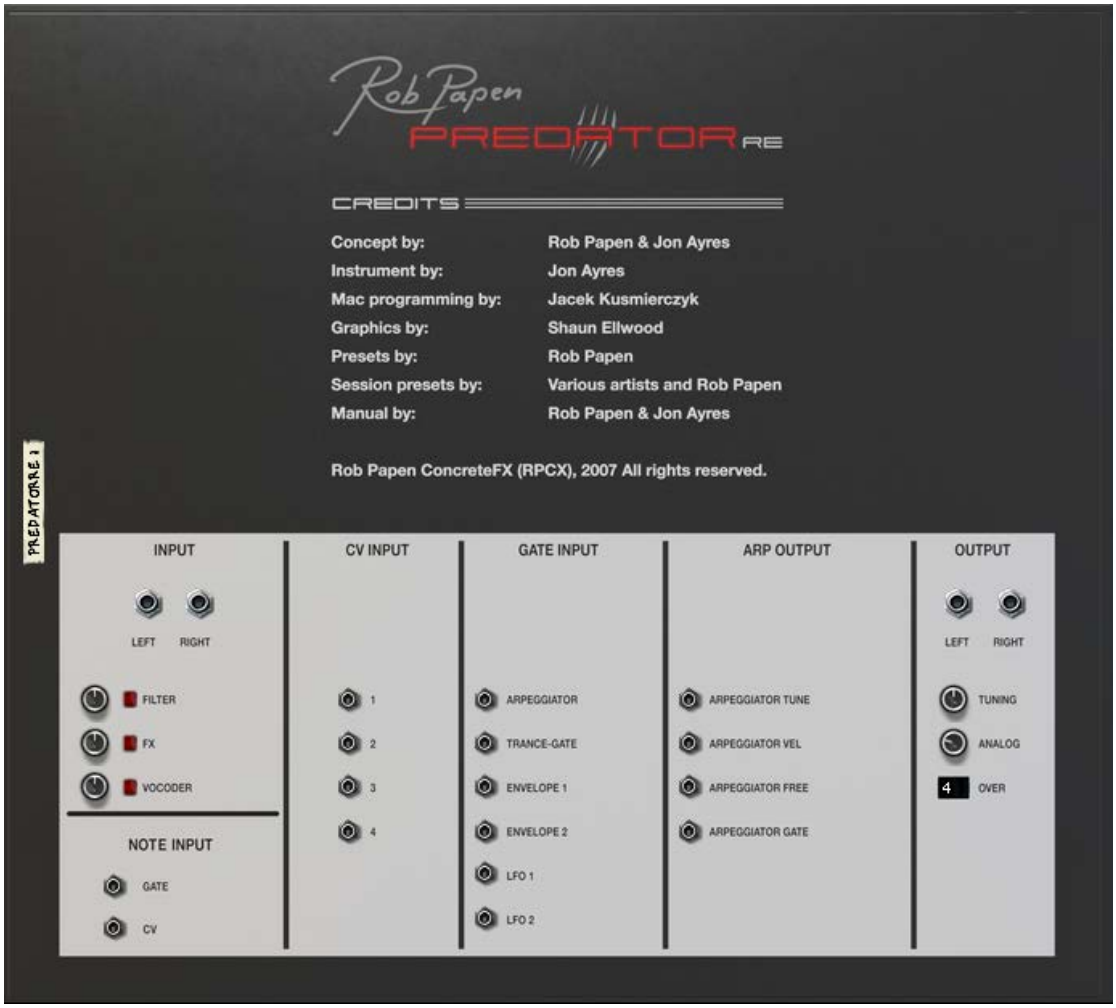
Type	Type of auto-wah filter, low pass or band pass
Low Frequency	Lowest frequency of auto-wah filter
High Frequency	Highest frequency of auto-wah filter
Amount	How much the volume of the signal alters the filter's frequency
Q	Resonance / Bandwidth of autowah filter
Smooth	How much signal volume is smoothed

Analogue Phaser

The analogue phaser effect emulates the classic phasing effect built up from discrete analogue electronic components. The phaser is built out of a number comb filters that sweep back and forth through the frequency spectrum

Stages	Sets the number of stages of the phaser
Pitch	Tunes the comb filter phaser building blocks
Feedback	Determines how much of the effect signal gets fed back to the input
Width	Control to adjust the intensity of the phaser effect
Speed	Control to adjust the speed of the comb filters sweeping through the frequency bands
Spread	Sets the distance in frequency between the comb filters
Q	Sets the amount of emphasis of the comb filters
Pan	*P*anning of the effect signal

Back Panel



The Predator-RE back panel shows a number of controls and connections. It also displays program credits.

Input

Here you connect audio input into Predator-RE to be processed by Predator-RE's filters and effects. There are three switches which control where the audio input is routed to. For each section you can turn on / off the input and adjust the level of the signal.

Filter	The input is routed to the filter section
FX	The input is routed to the fx section
Vocoder	The input is routed to the vocoder. Please see the vocoder section on how the signal is processed.

Note Input

Predator-RE has Note Gate and CV inputs, which allow Predator to be controlled by other units, such as the Matrix Pattern Sequencer.

CV Input

Predator-RE has four CV inputs, which can be used as modulation sources.

Gate Input

Predator-RE has six CV Gate inputs, which are used to reset and trigger the arpeggiator, the trancegater, free envelope 1 and 2 and free LFO 1 and 2 respectively.

Arp Output

This section makes the control signals available to be patched and used in other modules. The control signals available are velocity, the programmed free value, and also a CV and gate signal with every note or step that the arpeggiator plays.

CV Output Free 1 & 2

The two CV Outputs allow you to send the value of Predator-RE modulation sources (such as the Free LFO or envelopes) out to other Reason instruments and effects. This allows you to synchronise Predator-RE modulations with other Reason modules.

To put this to use you select CV Out 1 or CV Out 2 as the modulation destination in either the Free Envelope, LFO or the modulation slot. This will send the modulation source value (Envelope, LFO or selected modulation source) out through the CV Output Free 1 or 2 sockets.

Please note that the CV Free Output is based on the monophonic version of the source. E.g. for the most predictable behaviour of the CV Output you would use a Free LFO in its Mono or Free mode.

Output

Here you grab Predator-RE's output signal, and also set global tuning, oversampling and analog settings.

Tuning

This sets the global tuning of a patch. The default is 440Hz. Note: this setting is stored as part of each patch.

Analog

This sets the amount of analog drifting, similar to that of an old analog synthesizer. The higher the setting, the more the Predator-REs oscillator pitch will drift over time. The setting is stored as part of each patch. The default is 20%, which is a great setting.

Over Sampling (Over)

This sets the Predator-RE's oscillators over---sampling mode. You can select 4x,8x,16x and 32x oversampling. The higher oversampling levels use more CPU but the sound produced is calculated at a higher quality setting and there is less aliasing noise. The settings you use depend on the type of sound you wish to make for Predator. For lead sounds and sounds played in the higher keyboard region 8x and 16x is best. If the sound is mostly played in the lower keyboard ranges (such as bass lines), the setting 4x is usually sufficient.

Modulation Sources

ModWhl	Mod Wheel
ModAft	Mod Wheel / Aftertouch
After	Aftertouch
Velocity	Last note velocity
Pitchbend	Pitch
Breath	Breath (midi CC 2) input
Foot	Foot (midi CC 4) input
Expressn	Expression (midi CC 11) input
CC16	Midi CC 16 input
CC17	Midi CC 17 input
CC18	Midi CC 18 input
CC19	Midi CC 19 input
CC20	Midi CC 20 input
CC21	Midi CC 21 input
CC84	Midi CC 84 input
CC85	Midi CC 85 input
CC86	Midi CC 86 input
CC87	Midi CC 87 input
CC88	Midi CC 88 input
CC89	Midi CC 89 input
CC90	Midi CC 90 input
Env1	Free Envelope 1
Env2	Free Envelope 2
LFO1	Free LFO 1
LFO2	Free LFO 2
ArpFree	Arp Free Row
ArpVel	Arp Velocity Row
Note	Last note played
Offset	Constant offset
FilterEnv	Filter Envelope
FilterLFO	Filter LFO
WhiteNoise	White Noise
PinkNoise	Pink Noise
Input	External input into Predator-RE
Osc1	Oscillator 1 output
Osc2	Oscillator 2 output
Osc3	Oscillator 3 output
OscMixOut	All Oscillator output
FilterOut	Filter output
CV1	External CV input 1
CV2	External CV input 2
CV3	External CV input 3

CV4	External CV input 4

Modulation Destinations

Global Controls

Main Pitch
Port
Pitch LFO Speed
Pitch LFO Amount

Oscillator 1

Volume 1
Semi-tuning 1
Fine-tuning 1
Symmetry 1
Sub-Oscillator 1
PWM Amount 1
PWM Speed 1
Wave 1

Oscillator 2

Volume 2
Semi-tuning 2
Fine-tuning 2
Symmetry 2
Sub-Oscillator 2
PWM Amount 2
PWM Speed 2
FM Amount 2
Wave 2

Oscillator 3

Volume 3
Semi-tuning 3
Fine-tuning 3
Symmetry 3
Sub-Oscillator 3
PWM Amount 3
PWM Speed 3
FM Amount 3
Wave 3

Filter

Filter Frequency
Filter Q
Filter Distort
Filter Vowel
Filter Envelope Amount
Filter Envelope Speed
Filter LFO Amount
Filter LFO Speed
Filter Attack
Filter Decay
Filter Sustain
Filter Fade
Filter Release
Filter2 Frequency
Filter2 Q
Filter2 Pan

Amp

Volume
Panning
Amp Speed
Amp Attack
Amp Decay
Amp Sustain
Amp Fade
Amp Release

Free Modulations

Free Envelope 1 Speed
Free Envelope 1 Amount
Free Envelope1 Attack.
Free Envelope1 Decay.
Free Envelope1 Sustain.
Free Envelope1 Fade
Free Envelope1 Release.
Free Envelope1 Mod Amount
Free Envelope 2 Speed
Free Envelope 2 Amount
Free Envelope2 Attack
Free Envelope2 Decay

Free Envelope2 Sustain
Free Envelope2 Fade
Free Envelope2 Release
Free Envelope2 Mod Amount
Free LFO1 Amount
Free LFO 1 Speed
Free LFO 1 Mod Amount
Free LFO 2 Amount
Free LFO 2 Speed
Free LFO 2 Mod Amount
Mod 1 Mod Amount
Mod 2 Mod Amount
Mod 3 Mod Amount
Mod 4 Mod Amount
Mod 5 Mod Amount

FX 1

FX 1 Mix
FX 1 Pan
FX 1 1
FX 1 2
FX 1 3
FX 1 4
FX 1 5
FX 1 6
FX 1 7
FX 1 8

FX 2

FX 2 Mix
FX 2 Pan
FX 2 1
FX 2 2
FX 2 3
FX 2 4
FX 2 5
FX 2 6
FX 2 7
FX 2 8

FX 3

FX 3 Mix
FX 3 Pan
FX 3 1
FX 3 2
FX 3 3
FX 3 4
FX 3 5
FX 3 6
FX 3 7
FX 3 8

CC Remote Names

#	Remote Name
4	Midi CC4
7	Volume
10	Pan
16	Midi CC16
17	Midi CC17
18	Midi CC18
19	Midi CC19
20	Midi CC20
21	Midi CC21
22	LFO 1 Amount
23	LFO 2 Amount
24	LFO 1 Speed in MS
25	LFO 1 Speed in QB
26	LFO 2 Speed in MS
27	LFO 2 Speed in QB
45	Osc 1 Type
46	Osc 1 Semi-tune
47	Osc 1 Fine-tune
48	Osc PWM 1 Amount
49	Osc 1 PWM Speed
50	Osc 1 Symmetry
51	Osc 1 Sub-Volume
52	Osc 1 Spread
53	Osc 1 Volume
54	Osc 2 Type
55	Osc 2 Semi-tune
56	Osc 2 Fine-tune
57	Osc PWM 2 Amount
58	Osc 2 PWM Speed
59	Osc 2 Symmetry
60	Osc 2 Sub-Volume
61	Osc 2 Spread
62	Osc 2 Volume
63	Osc 2 Modulation Amount
70	Osc 3 Type
71	Osc 3 Semi-tune
72	Osc 3 Fine-tune
73	Osc PWM 3 Amount
74	Osc 3 PWM Speed
75	Osc 3 Symmetry
76	Osc 3 Sub-Volume

77	Osc 3 Spread
78	Osc 3 Volume
79	Osc 3 Modulation Amount
80	Filter Type
81	Filter Frequency
82	Filter Q
83	Envelope > Filter
84	Midi CC84
85	Midi CC85
86	Midi CC86
87	Midi CC87
88	Midi CC88
89	Midi CC89
90	Midi CC90
91	Velocity > Filter
92	Keytrack > Filter
93	LFO > Filter
94	Filter Envelope Attack
95	Filter Envelope Decay
102	Filter Envelope Sustain
103	Filter Envelope Fade
104	Filter Envelope Release
105	Filter LFO Speed in MS
106	Filter LFO Speed in QB
107	Filter 2 Type
108	Filter 2 Freq
109	Filter 2 Q
110	Filter 2 Pan
111	Velocity > Volume
112	Amp Attack
113	Amp Decay
114	Amp Sustain
115	Amp Fade
116	Amp Release
117	Envelope 1 Amount
118	Envelope 2 Amount
128	Osc 1
129	Osc 1 Octave
130	Osc 1 Free Running
131	Osc 1 Tracking
132	Osc 1 Output
133	Osc 2
134	Osc 2 Octave
135	Osc 2 Mode

136	Osc 2 Free Running
137	Osc 2 Tracking
138	Osc 2 Sync
139	Osc 2 Output
140	Osc 3
141	Osc 3 Octave
142	Osc 3 Mode
143	Osc 3 Free Running
144	Osc 3 Tracking
145	Osc 3 Sync
146	Osc 3 Output
147	Filter Smoothing
148	Filter LFO Sync
149	Filter Distort
150	Filter Vowel
151	Mod Wheel > Filter
152	Filter LFO Mod Amount
153	Filter LFO Wave
154	Pitch LFO Sync
155	Pitch LFO Amt
156	Pitch LFO Mod Amount
157	Pitch LFO Speed in MS
158	Pitch LFO Speed in QB
159	Pitch LFO Wave
160	Velocity Shape
161	Attack Shape
162	Decay/Release Shape
163	Unison
164	Portamento
165	Strum Timing in MS
166	Strum Timing in QB
167	Strum Syncing
168	Arp Step Length
169	Arp Swing Amount
170	Arp Slide Amount
171	Arp Vel / Key
172	Arp Speed
173	Arp Octaves
174	Arp Steps
175	Free Envelope 1 Sync
176	Envelope 1 Attack in MS
177	Envelope 1 Decay in MS
178	Envelope 1 Unsynced Sustain
179	Envelope 1 Fade in MS

180	Envelope 1 Release in MS
181	Envelope 1 Attack in QB
182	Envelope 1 Decay in QB
183	Envelope 1 Synced Sustain
184	Envelope 1 Fade in QB
185	Envelope 1 Release in QB
186	Envelope 1 Vel > Time
187	Envelope 1 Key > Time
188	Free Envelope 2 Sync
189	Envelope 2 Attack in MS
190	Envelope 2 Decay in MS
191	Envelope 2 Unsynced Sustain
192	Envelope 2 Fade in MS
193	Envelope 2 Release in MS
194	Envelope 2 Attack in QB
195	Envelope 2 Decay in QB
196	Envelope 2 Synced Sustain
197	Envelope 2 Fade in QB
198	Envelope 2 Release in QB
199	Envelope 2 Vel > Time
200	Envelope 2 Key > Time
201	Free LFO 1 Wave
202	Free LFO 1 Sync
203	Free LFO 2 Wave
204	Free LFO 2 Sync
205	Mod 1 Amount
206	Mod 2 Amount
207	Mod 3 Amount
208	Mod 4 Amount
209	Mod 5 Amount
210	Fx 1 Pan
211	Fx 2 Pan
212	Fx 3 Pan
213	FX 1
214	FX 2
215	FX 3
216	Fx 1 Type
217	FX 2 Type
218	FX 3 Type
219	Chord Note 1
220	Chord Note 2
221	Chord Note 3
222	Chord Note 4
223	Chord Note 5

224	Chord Note 6
225	Chord Note 7
226	Chord Note 8
227	Chord Note 9
228	Pitch Bend Up
229	Pitch Bend Down

Note: CC1, 4, 7, 10, 16-21 & 84-95 are all used internally and should not be used to control parameters.

v1.06