

RG

The screenshot shows the Rob Paper RG Electric Car Wah synthesizer interface. At the top, it displays 'ELEC CARWAH' and 'Elec CarWah'. The main interface is divided into several sections:

- FILTER:** Mode 12dB LP, with knobs for Cutoff, Q, Vowel, Distortion, Envelope, Velocity, Mod Wheel, and LFO.
- FILTER LFO:** Mode Mono, Type Tri, with Speed, Sync, and Amount Control knobs.
- FILTER ENV:** Attack, Decay, Sustain, Fade, and Release knobs.
- MODULATION:** Seq Free, Amp Reles, with Src, Dest, and Amount knobs.
- PITCH LFO:** Speed, Sync, and Amount knobs.
- PITCH BEND:** Bend Up, Bend Down, and Amount Control knobs.
- AMP:** Volume, Vel-Vol, Pan, Attack, Decay, and Release knobs.
- FX:** Chorus, Autowah, and Reverb sections, each with various knobs for Len, Width, Speed, Spread, Type, Low, High, Amount, Pre, Size, Len, Damp, and Spread.
- SEQUENCE:** A 32-step sequence editor with columns for Tie, Down, Up, Ghost, Extra, Vel, and Free. The grid shows various patterns of 'X' marks.

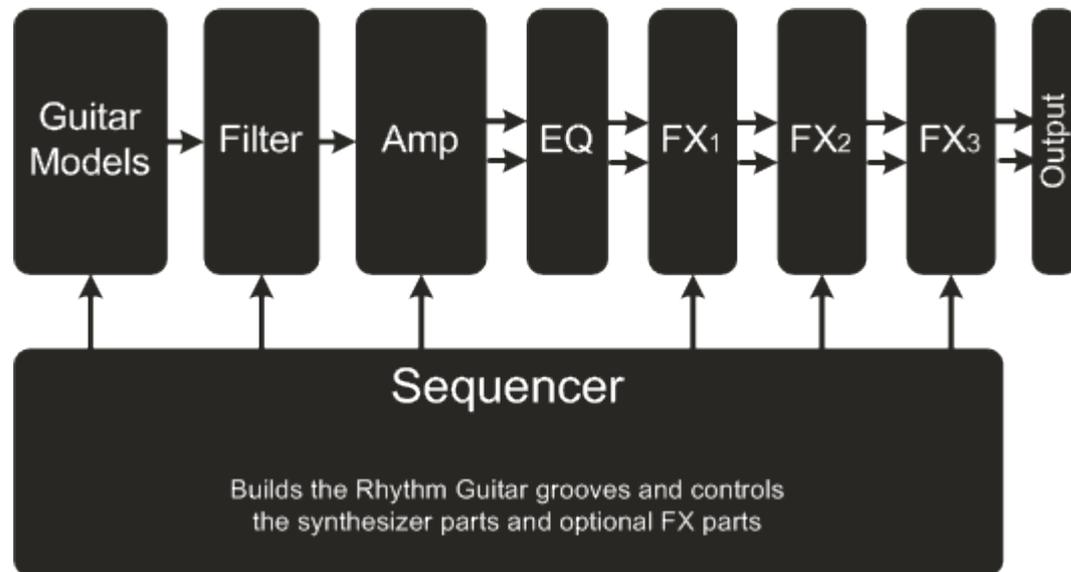


User Guide

Introduction

The audio route

The RG-RE concept is new and the best description is Rhythm Guitar Synthesizer. Many features found in a conventional synthesizer are present in RG-RE, including a sequencer and effects. Instead of oscillators RG-RE uses guitar samples (strokes) as its basic sound source. The diagram below shows the RG-RE architecture.



The instrument panel

The instrument panel gives access to all the RG-RE components. In the top left hand side we select the Guitar Model and the strokes it produces. For instance the Electric model has Down stroke, Up stroke, Ghost Note and Glide samples to choose from. At the bottom of the panel you will find the sequencer which triggers the strokes and thus creates the rhythm. Each stroke, i.e. sequencer step, uses playback settings that determine length, velocity and tuning. The Guitar Model and the sequencer are the fundamental building blocks for creating your own phrases.



Make a groove

The bottom section of the RG-RE GUI is used to create and manipulate grooves. This is the sequencer where you program the individual strokes of the guitar.

Now, strokes are one thing, but what about chords? Songs and arrangements are built up using chords with the song set in a certain key.

Major and minor chords are mapped across two octaves. The first octave of your keyboard (C1 - B1) plays major chords. So for example, if you hit the note E1, it plays an E major groove. The second octave (C2 - B2) plays minor / minor 7th chords, so if you hit the note E2, it plays an E minor groove.

If you look again at the picture you can see sequence A and B located to the top left of the sequencer. RG has two extra octaves to play sequence B as a variation. The 3rd octave (C3 - B3) is again major chords but plays sequence B as opposed to sequence A. The 4th octave (C4 - B4) is again minor/minor7 chords but plays sequence B. So by using one single finger you can produce a groove. Bear in mind you can also control the length of the note, how the sequence plays and trigger points for the pattern.

The user interface Step 2:

The next step of the RG-RE signal path is the filter. The sound that is produced from the Guitar strokes is then sent to the Filter section of RG-RE and there the fun really starts! The picture below shows you the Filter parts of RG-RE, which includes the Filter LFO and Filter Envelope.



The user interface Step 3:

Next stage is the amplifier section or Amp which should not be confused with a guitar amplifier. This is the synthesizer amplifier of RG-RE, which works very differently from a guitar amplifier. So here we also need to keep in mind that RG-RE is a Rhythm Guitar Synthesizer and the Amp is a synthesizer part. In the picture below you can see that the Amp also has an envelope built in to control the length of each stroke by the sequencer.



The user interface Step 4:

The next controls that are shown below are the modulation section and the overall pitch control. As an example, within the modulation section you could assign the downstroke parameter to control the panning of the Amp. These are all synthesizer parts.



The user interface Step 5:

If you look once more at the audio path diagram you can see that RG-RE goes from the Amp into the EQ and then into the FX section. RG-RE has 3 effect units plus a Gater effect, which are configured in series. The fun part of RG-RE is that you can control the FX by using the modulation matrix, which has endless possibilities, like upstroke from the sequencer could be set to control the mix of an effect.



By now it should be clear that RG-RE goes beyond just being a Rhythm Guitar simulator. The real power of RG-RE lies in its synthesizer elements. Please read the next sections for more details about all of RG-RE's capabilities.

Patches and Controls



You find the patch control section and modulation controls near the top of the RG-RE panel.

Patch Controls

RG-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 through 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 Seq A button plays a preview of sequencer A. The Seq B button does the same for sequencer B.

The Note Display shows the currently playing sequence and note. The Note In LED lights up with any incoming MIDI notes.

Pitch Bend Wheel

The pitch bend wheel applies bends notes up and down when activated

Mod Wheel

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

Guitar Models



Model

The Model menu selects the type of guitar (sample). The available models are Electric, Steel 8th, Steel 16th and Distorted.

The Electric guitar is based on the classic Fender Stratocaster. The available strokes are:

- Down stroke
- Up stroke
- Ghost stroke (percussive stroke with dampened strings)
- Glide stroke (the glide-up stroke)

The Steel 16th is a steel string guitar. It works well for acoustic rhythm guitar grooves. 16th indicates that it is best suited for 16th note grooves. The stroke types are listed below::

- Down stroke
- Up stroke
- Ghost stroke (percussive stroke with dampened strings)
- The Glide stroke is not used.

The Steel 8th is a steel string guitar. It works well for acoustic ballads. 8th indicates the suitability for grooves based on 8th notes. The stroke types are listed below:

- Down stroke
- Up stroke
- Ghost stroke (percussive stroke with dampened strings)
- The Glide stroke is not used.

Distorted is based on powerchords. It is well suited for rock and rock ballads. The stroke types are listed below:

- Down stroke
- Up stroke
- Ghost stroke (percussive stroke with dampened strings)
- Extra stroke - Sustained chord

Powerchord is the common term for this sample set. The absence of 3rds (only 5ths are present) in chords is the key characteristic. It is complemented by overdrive and/or distortion. The absence of 3rds means these chords can be used in either a major or a minor context. The chord assignments for the first and second octave are identical for this guitar model.

PLEASE NOTE: Some grooves may sound as if they are in the wrong key. We have programmed the fact that some guitar players tune down the Low E string to D. This can be heard in patches like 030 Dost BizzSaw JoMal, 076 Dist Knot JoMal or 090 Dist MoveAlong JoMal.

We have achieved this tuning by detuning the sound by -2 semitones and sometimes even greater detuning. This means that you need to adjust the notes you play according to this semi-tone detuning. For example you need to play a D note for playing a C groove in case the pitch is detuned by -2 semitones.

Please check RG-REs modulation section to confirm the tuning of the Patch. Hover the mouse over the amount knobs and watch the readout field (above the patch name). Now you can confirm whether the pitch is detuned by -2 semitones. If required, compensate for this detune setting by changing the notes (pitch) that you play.

Muted Low and Muted High are single guitar notes used to generate muted guitar grooves. So unlike the other models, no chords are involved. The classic muted groove is a down stroke of the string followed by a ghost note and then upstroke of the string, followed by upstroke ghost.

- Down stroke – Down stroke of string
- Up stroke – Up stroke of string
- Ghost stroke – Down stroke ghost note
- Extra stroke – Up stroke ghost note.

In total about 3 octaves are used which are divided between the Muted Low and Muted High model types. Muted Low starts from the lowest e-guitar note, which is the E string. This is note E1 in the RG-RE keyboard layout. Instead of Major and Minor, the range of the RG keyboard is used for playing about 2 octaves of single strokes.

Muted low:

- C1 – B2 (sequence A)
- C3 – B4 (sequence B)

Muted high:

- C1 – B2 (sequence A)
- C3 – B4 (sequence B)

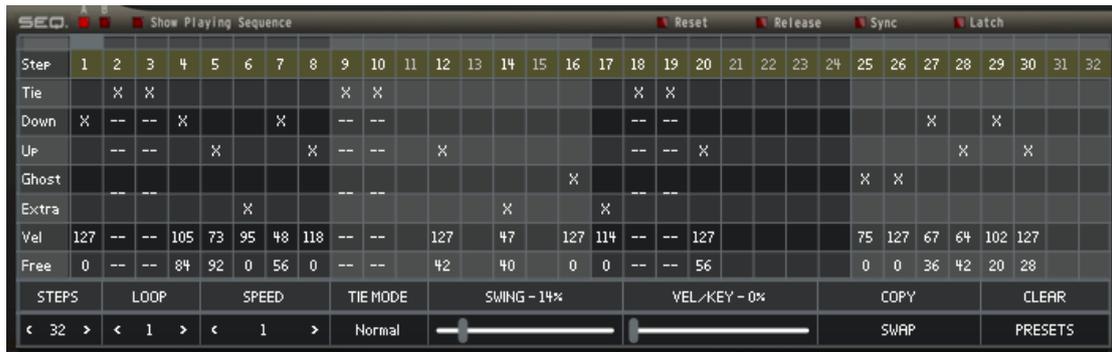
Volume controls

The Volume controls set the relative loudness between the different stroke types. Please note: the Glide stroke volume is set by, and identical to, the Down stroke volume.

Decay controls

The Decay controls determine the fade time for each stroke type. Use these controls to change the percussive character of the strokes. Please note: these settings are independent of the RG-RE's synthesizer parts, including its Amp Envelope. The decay time is set in milliseconds. At its maximum value the Decay is turned off and the stroke samples will play through the full length of the samples. The Glide stroke decay time is set by, and identical to, the Down stroke decay time.

Sequencer



The sequencer is the groove heart of RG-RE. The sequencer triggers the guitar chords. RG-RE uses two sequences for each Patch: A and B. There are buttons to directly choose between A and B. The A and B versions of the sequence get selected automatically when you play a note in their corresponding keyboard range.

- Midi Notes 36 C1 to 47 B1 plays sequence-A major chords
- Midi Notes 48 C2 to 59 B2 plays sequence-A and minor chords
- Midi Notes 60 C3 to 71 B3 plays sequence-B major chords
- Midi Notes 72 C4 to 83 B4 plays sequence-B minor chords

Each sequencer step plays a guitar stroke, a rest note or a tied note. The sequencer uses up to 32 steps. If the sequencer speed scaling is set to 1x bpm, each step represents a 16th note.

Step number

Indicates the current step number. A click on the number turns the step on and off.

Tie

Links (ties) a step to the previous one. In practice it increases the length of the previous step. When using tied notes, choose from two different modes via the Tie Mode button.

- normal: tied steps do not use their individual velocity and free settings
- special: tied steps retain their individual velocity and free settings

Try patch 123 Seq Special Mode to hear how the free row of the sequencer changes the vowel of the filter.

Down stroke, Up stroke, Ghost stroke, Glide / Extra stroke

Each sequencer step plays one chord type of the chosen guitar model. The available options are listed below:

Electric Guitar

- Down stroke
- Up stroke
- Ghost stroke (percussive stroke with dampened strings)
- Glide stroke (the glide-up stroke)

Steel 16th

- Down stroke
- Up stroke
- Ghost stroke (percussive stroke with dampened strings)
- The Glide stroke is not used.

Steel 8th

- Down stroke
- Up stroke
- Ghost stroke (percussive stroke with dampened strings)
- The Glide stroke is not used.

Distorted

- Down stroke
- Up stroke
- Ghost stroke (percussive stroke with dampened strings)
- Extra stroke - Sustained chord

Velocity

Sets the velocity setting for each step of the sequencer. Note: this is used in combination with the Vel/Key control slider, which determines how the velocity of the sequencer affects the RG-RE synthesizer parts. This Vel/Key parameter needs to be fully turned to Vel to make the velocity settings of the steps work! If you use tie in a step, the velocity does not apply to that step if the sequencer is in normal tie mode.

Free/Release

Free control allows you to control other sound parameters of RG-RE (i.e. panning, filter frequency) using the sequencer. The Free control in the is a programmable modulation source. Set the source to be Seq Free..

The Release button adds Release control. The Free modulation source now also controls the Release time of the Filter Envelope and Amp Envelope. A setting of 0 leaves the Release time unchanged. Negative or positive values of the Free row are applied to the release time.

The Free modulation source is a useful tool to make your enhance the dynamics of the programmed rhythm grooves. Listen to patch 119 Dist SlowHand JoMal in bank 05 Distorted RG grooves 01. Experiment with the Release control setting on and off to observe the impact.

Keep in mind that the Release in RG only works if a step is followed by a rest step or another stroke. If a step is extended by a Tie step, the Release is not active.

Sequencer Controls

The controls listed below the sequencer allow you to alter the properties of the sequencer.

Steps

Number of steps in the sequencer. This can be from 1 to 32 steps. Sequencer A & B can have different number of steps.

Loop

Controls the loop start position. So if you have 8 steps and step the loop start at 5, it will play 1, 2, 3, 4, 5, 6, 7, 8, 5, 6, 7, 8, 5, 6, 7, 8...

Speed

Speed sets the speed of the sequencer relative to the host tempo. It ranges from ¼ of the tempo up to 4 times the tempo. Sequencer A and B speed settings are independent of each other.

Swing

This controls the swing feel of the sequence. The setting reflects the difference in timing between consecutive notes and may give a more human/swing feel to the sequence. Sequencer A & B can have different swing settings.

Vel/Key

This controls whether RG-RE's velocity parameter settings are controlled by the sequencer step settings (at 0%), or the key's velocity (at 100%), or a combination of the two. Sequencer A & B can have different velocity settings.

Sequencer Reset

With Sequencer Reset On, if you play Legato style, the Sequencer will reset to the first step when it plays the next note.

With Sequencer Reset Off, Legato playing style will simply move the sequencer to the next step..

Latch

When Latch is active the sequencer continues to play, even when you release the key. You may also use the sustain pedal to Latch and Unlatch the sequencer.

Sync

This turns the sequencer host synchronisation On and Off. In most situations you will want Sync to be On.

Copy

Copies the current sequence to the other sequence. Sequence A will be copied to B, and sequence B would be copied to sequence A

Clear

Clears the current sequence

Swap

Swaps the A and B sequences

Presets

The screenshot shows the SEQ sequencer interface. At the top, there are buttons for 'Reset', 'Release', 'Sync', and 'Latch'. Below these is a grid with 24 steps (columns) and 8 parameters (rows). The parameters are: Tie, Down, Up, Ghost, Extra, Vel, and Free. The 'Dist' column on the right shows the distance to the next step for each parameter. Below the grid is a control panel with buttons for 'STEPS', 'LOOP', 'SPEED', 'TIE MODE', 'SWING - 0%', 'VEL/KEY - 0%', 'COPY', and 'CLEAR'. The 'STEPS' button shows '32', 'LOOP' shows '1', 'SPEED' shows '2', and 'TIE MODE' is set to 'Normal'. There are also 'LOAD' and 'SEQUENCER' buttons.

Step	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Dist
Tie		X	X	X										X	X	X	X								Dist_001a
Down	X	--	--	--					X					--	--	--	--								Dist_001b
Up	--	--	--	--				X		X				--	--	--	--								Dist_002a
Ghost	--	--	--	--										--	--	--	--								Dist_002b
Extra	--	--	--	--									X	--	--	--	--					X			Dist_003a
Vel	126	--	--	--				49	111	56	126	--	--	--	--								120		Dist_003b
Free	1	--	--	--				-24	68	59	55	--	--	--	--								-24		Dist_004a
Free																									Dist_004b

STEPS: 32 LOOP: 1 SPEED: 2 TIE MODE: Normal SWING - 0% VEL/KEY - 0% COPY: LOAD CLEAR: SEQUENCER

A click on the Presets button opens the sequencer Presets display. This gives you access to a library of pre-programmed sequencer patterns. Clicking Load will load the selected Preset. Clicking on Sequencer will close this display.

Filter



RG-RE offers a high quality analogue modelled filter for subtractive filtering. An extensive collection of filter types is available.

Filter Controls

Freq

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

Q (Resonance)

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

Distortion

Distortion sets the pre-filter overdrive amount. Use the distortion control to fatten up the sound and to give it an edge to stand out in a mix.

Vowel

The Vowel control applies to the vocal filter types. It controls the vowel of the filter.

Filter Type

<i>Bypass</i>	The filter is bypassed and the sound passes through unaffected
<i>6dB LowPass</i>	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.
<i>6dB HighPass</i>	High frequencies pass through this filter; those below the

	Cutoff frequency are reduced by 6dB per octave. The filter is open if the Cutoff frequency knob is turned fully counter-clockwise.
<i>12dB LowPass</i>	Low frequencies pass through this filter; those above the Cutoff frequency are reduced by 12dB per octave.
<i>12dB HighPass</i>	High frequencies pass through this filter; those below the Cutoff frequency are reduced by 12dB per octave. The filter is fully open if the Cutoff frequency control knob is turned fully counter-clockwise.

<i>18dB LowPass</i>	Low frequencies pass through this filter; those above the Cutoff frequency are reduced by 18dB per octave.
<i>18dB HighPass</i>	High frequencies pass through this filter; those below the Cutoff frequency are reduced by 18dB per octave. The filter is fully open if the Cutoff frequency knob is turned fully counter-clockwise.
<i>24dB LowPass</i>	Low frequencies pass through this filter; those above the Cutoff frequency are reduced by 24dB per octave.
<i>24dB HighPass</i>	High frequencies pass through this filter; those below the Cutoff frequency are reduced by 24dB per octave. The filter is fully open if the Cutoff frequency knob is turned fully counter-clockwise.

<i>12dB BandPass</i>	This filter mode is a combination of 12dB LowPass and 12dB HighPass filters. Only those frequencies near the filter Cutoff frequency pass through (a band of frequencies), the resonance (Q), controls the width of this band so that low and high frequencies are removed.
<i>24dB BandPass</i>	This filter mode is a combination of a 24dB LowPass and 24dB HighPass filter. Only those frequencies near the filter Cutoff frequency pass through (a band of frequencies), the resonance (Q) controls the width of this band, so low and high frequencies are removed.
<i>12dB Notch</i>	The frequencies in the region around the filter Cutoff frequency are reduced in volume (12dB), the resonance controls the width of this region.
<i>24db Notch</i>	The frequencies in the vicinity of the filter Cutoff frequency are reduced in volume (24dB), the resonance controls the width of this region.
<i>Comb Filter</i>	This is a very short delay, which emphasizes the comb filter frequency. The Cutoff frequency controls the length of this delay and resonance (Q) the feedback of the filter.
<i>Vox filter</i>	Vocal Filter, which adds a voice-like filtering to the sound. In Vox filter mode, the distortion knob controls the vowel of the filter. Vowel Sets the vowel formant (a,e,i,o and u) as used by the vox filter

Cutoff Frequency Modulation

Envelope (Env)

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

Velocity (Vel)

Typically, the harder you strike the keys, the more the filter opens. When you use negative modulation values the filter closes with increasing velocity.

LFO

Similar to Envelope modulation, the LFO changes the filter frequency in a pattern that is based on its wave shape.

Modulation Wheel (ModW)

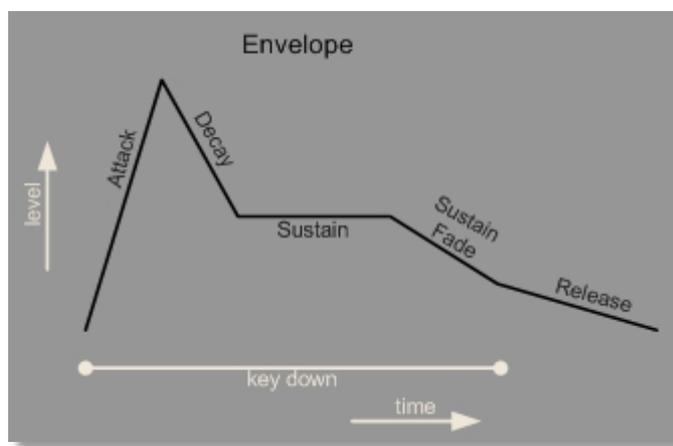
This control lets the position of the modulation wheel determine the cutoff frequency of the filter. The strength of the Mod Wheel – Filter Frequency coupling is set by the level of this control.

Filter Envelope

The Filter Envelope is assigned to the filter Cutoff Frequency 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.

The envelope controls determine how it moves from 0% to 100% and back again. 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.

Fade adds an additional control to the sustain level. When it is positive, the sustain level goes up to 100% over a set period. A negative value fades the envelope to 0% over a set period.



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. If you use a long decay setting, 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 and decay stage, the envelope goes into the sustain stage and remains here for as long as you hold a key. 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 fades out 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 which runs at a very low pitch/frequency. The RG-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. The most popular waveform is a sine wave. It produces gradual up and down movements of the filter frequency, that you may know as a wah-wah effect

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 smooth modulation signal. The other waveforms are more suitable for FX or special sounds. Experiment with different waveforms to familiarise yourself with the effect.

Speed

Speed 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 Free and Mono modes determine how the LFO responds to when you play multiple keys.

<i>Free mode</i>	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.
<i>Mono mode</i>	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

The Amount control settings enable any modulation source to control the depth of LFO modulation. A typical use would be to fade in an LFO by opening up the modulation wheel.

Pitch section



The Pitch section gives you control over the overall pitch of the sound. Think of using an LFO to generate vibrato or bending notes with the pitch bend controller.

PLEASE NOTE: the Pitch LFO may be used as a generic modulation source. Try Patch 124 London Town in which the Pitch LFO is used for panning effects and connected using RG-RE's modulation matrix.

Pitch Modulation LFO

Amount

This control sets base level of the modulation depth of the LFO. At its maximum position the vibrato covers one semitone up and down.

Amount control

The Amount control settings enable any modulation source to control the depth of LFO pitch modulation. A typical use would be to fade in a vibrato effect by opening up the modulation wheel.

Speed

Speed 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.

Pitch bend

The Bend Down and Up settings 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) up or 4 octaves down

Amplifier



While the guitar model determines the basic sound and the filter section the timbre, the amplifier section is responsible for the sound's volume and panning. It amplifies the signal and modifies the volume. An important component of the amplifier section is the Volume Envelope. The envelope defines the loudness contour. The amplifier section also contains the velocity control. This sets the response of RG-RE to the velocity information.

Volume

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

Pan

The Pan control places the sound in a stereo image. Fully counter clockwise is left and clockwise represents right.

Velocity (Vel)

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

Volume Envelope

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

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

After the attack stage, with the envelope at 100%, the decay stage starts. The decay stage brings the volume down to the 0% while you are holding the key. Short decay times are a good ingredient for percussive sounds.

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

PLEASE NOTE: The RG-RE amplifier envelope does not use a sustain section.

Free Modulation Slots



The modulation slots define modulation paths where a source is assigned to change a destination parameter. Internal modules such as envelopes and LFOs, and external MIDI controllers such as pitch bend, aftertouch and other control messages defined in the midi-standard may be used a source. Possible modulation targets are a large set of RG-RE's internal parameters. A full list is provided at the back of this manual.

There are 2 separate modulation matrix slots.

The source field gives you access to all modulation sources. There are 33 possible modulation sources. These sources connect to 22 possible modulation destinations within RG-RE's synth engine.

The amount control defines the level of impact the modulation source has on its destination or target. It speaks for itself that depending on the selected source and the amount the effect ranges from subtle variations to outrageous manipulation.

Special modulation sources are the Down stroke, Up stroke, Ghost stroke and Glide stroke from the sequencer. Try Patch 125 Saturn groove, which uses the Up stroke from the sequencer to change the Cutoff of the Filter, or Patch 126 16th Modular 01 which uses the Up stroke to change the attack time of the Amp Envelope.

EQ



RG-RE includes a 5-band equalizer to further shape the sound. The LED-Style button turns the equalizer On and Off. The equalizer uses 5 bands at the following frequencies:

- 60Hz
- 200Hz
- 600Hz
- 2000Hz
- 8000Hz

The control knob for each band controls the band's attenuation or emphasis, from -20db to +20db.

FX Section



RG-RE uses three effect slots for each Patch. This means you may choose up to three independent effects for each Patch. The effects are connected in series. FX 1 feeds into FX slot 2 which in turn feeds into FX slot 3.

On / Off

The LED-Style button in the top left corner turns all FX slots On and Off.

Type

Type selects the effect type for FX-A chorus effects.

Mix

The Mix control sets the balance between the original signal and the effect signal.

Pan

The Pan control places the effect output in a stereo image.

By(pass)

The By button bypasses the corresponding FX slot.

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 sequenced or lead sounds. To make the sound a bit spacey, modulation of the length is possible which makes the delay swirl.

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

<i>Left Delay</i>	Left length of the delay set in tempo based settings
<i>Right Delay</i>	Right length of the delay set in tempo based settings
<i>Feedback</i>	Feedback of the delay
<i>CrossFeed</i>	Feedback between the left / right delay
<i>LP Filter</i>	Low pass filter frequency
<i>HP Filter</i>	High pass filter frequency
<i>Mod Amount</i>	Delay modulation amount
<i>Feed Equal</i>	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.

<i>Comb 1 Freq</i>	Comb Filter 1 Frequency
<i>Comb 1 Feed</i>	Comb Filter 1 Feedback amount
<i>Comb 1 Mod</i>	Comb Filter 1 Feedback modulation amount
<i>Comb 2 Freq</i>	Comb Filter 2 Frequency
<i>Comb 2 Feed</i>	Comb Filter 2 Feedback amount
<i>Comb 2 Mod</i>	Comb Filter 2 Feedback modulation amount
<i>Mod Speed</i>	Feedback tempo based modulation speed

Reverb

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

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

Chorus

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

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

Chorus/Delay

This is a combined chorus / delay effect. It saves you having to use two separate effect slots, with the trade-off of having fewer parameters to tweak the effect settings.

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

Flanger

The flanger effect is a very short modulated delay.

<i>Length</i>	Length of the flanger
<i>Width</i>	Maximum change to flanger length
<i>Speed</i>	Speed the flanger length changes, this is midi tempo based
<i>Feedback</i>	Feedback of the flanger
<i>Pan Mod</i>	Flanger panning amount
<i>LP Filter</i>	Low pass filter frequency
<i>HP Filter</i>	High pass filter frequency

Phaser

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

<i>Stages</i>	Number of stages in the phaser
<i>Pitch</i>	Pitch of the phaser
<i>Feedback</i>	Feedback of the phaser
<i>Width</i>	Maximum change to phaser pitch
<i>Speed</i>	Speed the phaser length changes, this is midi tempo based
<i>Spread</i>	Amount the phaser stages are spread from the central pitch
<i>Pan Mode</i>	Speed the phaser pans from the left / right hand channels

Ensemble

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

<i>Length</i>	Length of the ensemble effect
<i>Width</i>	Maximum change to ensemble length
<i>Speed</i>	Speed the ensemble length changes
<i>Feedback</i>	Amount the choruses differ from each other
<i>Spread</i>	Spread

FX Filter

This is an analogue modelled stereo Multimode Filter, which has all the properties of Blue IIs main filter.

<i>Type</i>	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.
<i>Frequency</i>	Sets the Cutoff frequency of the filter
<i>Q</i>	Sets the Resonance level of the filter
<i>Distort</i>	Sets the pre-filter distortion of the filter
<i>Smooth</i>	Sets the pre-filter distortion as smooth or edgy in sound.

Wah/Delay

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

<i>Low Range</i>	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.
<i>High Range</i>	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.
<i>Speed</i>	The rate the filter frequency changes over time. Tempo based.
<i>Resonance</i>	Controls the resonance of the used low-pass filter.
<i>Delay</i>	Length of the wahwah delay. This delay is after the WahWah FX.
<i>Feedback</i>	Amount the wahwah delay feeds back into the sound
<i>Delay Vol</i>	Volume of the delay

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

Auto Wah

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

<i>Type</i>	Type of auto-wah filter, lowpass or bandpass
<i>Low Frequency</i>	Lowest frequency of auto-wah filter
<i>High Frequency</i>	Highest frequency of auto-wah filter
<i>Amount</i>	How much the volume of the signal alters the filters frequency
<i>Q</i>	Resonance / Bandwidth of autowah filter
<i>Smooth</i>	How much signal volume is smoothed

Amp Sim

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

<i>Type</i>	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.
<i>Distort</i>	Amount of distortion added to the sound. Also works if the none speaker setting is selected.
<i>Bass</i>	Bass EQ Volume. Adds or removes low end from the speaker simulator.
<i>Treble</i>	Treble EQ Volume. Adds or removes high frequencies from the speaker simulator.
<i>Volume</i>	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).

Cabinet

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

<i>Type</i>	Type of cabinet simulation. Settings are: None, Fender, Marshall and Off Axis. The None speaker setting is useful if you want to only use the distortion in the FX effect..
<i>Distort</i>	Amount of distortion added to the sound. Also works if the none cabinet setting is selected.
<i>Bass</i>	Bass EQ Volume. Adds or removes low end from the speaker simulator.
<i>Treble</i>	Treble EQ Volume. Adds or removes high frequencies from the speaker simulator.
<i>Volume</i>	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).

Low-Fi

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

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

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.

<i>Top Amt</i>	The amount positive input is waveshaped.
<i>Bottom Amt</i>	The amount negative input is waveshaped.
<i>Rect</i>	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.
<i>Filter</i>	Low pass filter frequency. This filter does not filter the high frequencies.
<i>LFO Amount</i>	The amount the low pass filter frequency can change.
<i>LFO Speed</i>	The rate the low pass filter frequency can change.

Multi Distort

Select from several different types of distortion effects

<i>Type</i>	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
<i>Pre-Boost</i>	How much the signal is boosted before going into the distortion
<i>Amount 1</i>	Control how much the signal is distorted
<i>Amount 2</i>	Additional distortion parameter for Fuzz
<i>Normalize</i>	How much the output volume is normalized to the input volume, at 100% the output volume should be the same as the input volume.
<i>Low Filter</i>	Post distortion low-pass filter
<i>High Filter</i>	Post distortion high-pass filter
<i>Post-Boost</i>	How much the output of the distortion is boosted

Stereo Widener

This effect widens the stereo sound.

<i>Widen</i>	Stereo widening amount
<i>Width</i>	Maximum change to the stereo widening amount
<i>Speed</i>	Speed that the stereo widening amount changes.
<i>LP Filter</i>	Low pass filter frequency.
<i>HP Filter</i>	High pass filter frequency.

AutoPan

Autopan pans the sound between the left and right outputs.

<i>Amount</i>	Amount the autopan moves the sound in the stereo field.
<i>Speed</i>	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)

Compressor

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

<i>Threshold</i>	This sets the threshold on which the compressor starts to work
<i>Ratio</i>	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.
<i>Attack</i>	This sets how fast the compressor kicks in.
<i>Release</i>	This sets how long the compressor takes to react to a reduction in volume
<i>Volume</i>	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).

Gater



The gater uses a 16 step sequencer to alter the volume of the sound to give a trance-gate type effect. Basically it is a sequencer controlled audio gate.

<i>Speed</i>	The speed of the gater. 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.
<i>Smooth</i>	How much the volume changes are smoothed out. This helps to avoid clicks.
<i>Mode</i>	Whether the gater affects the left & right channels, the left channel only or the right channel only or both.
<i>Sync</i>	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 presets is auto. So if you have problems with these settings, try off.
<i>Left</i>	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.
<i>Right</i>	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).

FX Modulation Slots



The FX modulation slots work similar to the generic Matrix modulation slots. The difference is that as modulation destinations, you can only choose from effect parameters as specified in the effects type section. A full list is provided at the back of this manual.

There are 2 independent FX modulation matrix slots.

The source field gives you access to all modulation sources. There are 33 possible modulation sources. These sources connect to any of the effect parameters within RG-RE's synth engine.

The amount control defines the level of impact the modulation source has on its destination or target. It speaks for itself that depending on the selected source and the amount the effect ranges from subtle variations to outrageous manipulation.

For instance you can increase the Reverb length by using the Mod Wheel. Please listen to Patch 127 Surprise delay and Patch 128 slow me electr 2fx to hear what you can do with the FX modulation matrix.

Back Panel



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

Input

Here you connect audio input into RG-RE to be processed by RG-RE's filters and effects. There are two controls to smooth the input and adjust the level of the signal.

Note Input

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

CV Input

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

Gate Input

RG-RE has three Gate inputs, which are used to reset and trigger the filter and pitch LFOs and the Gator.

CV Output

The 8 CV Outputs allow you to send the value of a number of RG-RE modulation sources (such as the Free LFO or envelopes) out to other Reason instruments and effects. The various signals are sourced from the Sequencer, LFOs and Gator

Output

The Output sockets contain the RG-RE Left and Right audio signal.

Default Midi CC

CC	Description
4	Bend Up
5	Bend Down
7	Amp Volume
8	Amp Velocity To Volume
10	Model Type
12	Down Stroke Volume
13	Up Stroke Volume
14	Ghost Stroke Volume
15	Down Stroke Decay
16	Up Stroke Decay
17	Ghost Stroke Decay
18	Filter Mode
19	Filter Frequency
20	Filter Q
21	Filter Vowel
22	Filter Distortion
23	Filter Envelope Amount
24	Filter Velocity To Frequency
25	Filter Mod Wheel To Frequency
26	Filter LFO Amount
27	Filter LFO Mode
28	Filter LFO Type
29	Filter LFO Sync
30	Filter LFO Speed MS
31	Filter LFO Speed QB
33	Filter LFO Mod Amount Source
34	Filter LFO Mod Amount
35	Filter Envelope Attack
36	Filter Envelope Decay
37	Filter Envelope Sustain
39	Filter Envelope Fade
40	Filter Envelope Release

41	Mod Source 1
42	Mod Amount 1
43	Mod Destination 1
44	Mod Source 2
45	Mod Amount 2
46	Mod Destination 2
47	Pitch LFO Amount
48	Pitch LFO Sync
49	Pitch LFO Speed MS
50	Pitch LFO Speed QB
51	Pitch LFO Mod Amount
52	Pitch LFO Mod Source
53	Amp Pan
54	Amp Attack
55	Amp Decay
56	Amp Release
57	EQ On / Off
58	EQ 60hz
59	EQ 200hz
60	EQ 600hz
61	EQ 2khz
62	EQ 8khz
63	FX On/Off
65	FX 1 Bypass
66	FX 1 Type
67	FX 1 Mix
68	FX 1 Pan
69	FX 2 Bypass
70	FX 2 Type
71	FX 2 Mix
72	FX 2 Pan
73	FX 3 Bypass
74	FX 3 Type
75	FX 3 Mix
76	FX 3 Pan

77	Gater On
78	Gater Mix
79	Gater Pan
80	Gater Speed
81	Gater Smooth
82	Gater Mode
83	Gater Sync
84	FX Mod Source 1
85	FX Mod Amount 1
86	FX Mod Destination 1
87	FX Mod Source 2
88	FX Mod Amount 2
89	FX Mod Destination 2
90	Sequence Selected
91	Sequencer Reset
92	Sequencer Release
93	Sequencer Speed
94	Sequencer Latch
95	Show Playing Sequence

Modulation Sources

Source	Description
<i>None</i>	None
<i>Mod Wheel</i>	Modulation Wheel (Midi CC 1)
<i>Pitch Bend</i>	Pitch Bend
<i>Sustain</i>	Sustain (Midi CC 64)
<i>Expression</i>	Expression (Midi CC 11)
<i>Breath</i>	Breath (Midi CC 2)
<i>Note</i>	Note Midi Value
<i>Note Rnd 1</i>	Random Note 1 Value
<i>Note Rnd 2</i>	Random Note 2 Value
<i>Velocity</i>	Note Velocity Value
<i>Aftertouch</i>	Key Aftertouch
<i>Mod / After</i>	Key Aftertouch / Mod Wheel
<i>Filter Env</i>	Filter Envelope
<i>Filter LFO</i>	Filter LFO
<i>Pitch LFO</i>	Pitch LFO
<i>Seq Free</i>	Sequencer Free Row
<i>Seq Vel</i>	Sequencer Velocity
<i>Down</i>	Down Stroke (1 if on, 0 otherwise)
<i>Up</i>	Up Stroke (1 if on, 0 otherwise)
<i>Ghost</i>	Ghost Stroke (1 if on, 0 otherwise)
<i>Extra</i>	Extra Stroke (1 if on, 0 otherwise)
<i>Offset</i>	Constant Offset
<i>Random</i>	Random Value
<i>Gater L Gater</i>	Left Step (1 if on, 0 otherwise)
<i>Gater R Gater</i>	Right Step (1 if on, 0 otherwise)
<i>Smth Input</i>	Smoothed Input
<i>Input Left</i>	Left Input
<i>Input Right</i>	Right Input
<i>CV 1</i>	CV Input 1
<i>CV 2</i>	CV Input 2
<i>CV 3</i>	CV Input 3
<i>CV 4</i>	CV Input 4

Modulation Destinations

<i>None</i>	<i>FX 1 - 5</i>
<i>Main Pitch</i>	<i>FX 1 - 6</i>
<i>Pitch LFO Speed</i>	<i>FX 1 - 7</i>
<i>Pitch LFO Amount</i>	<i>FX 1 - 8</i>
<i>Filter Frequency</i>	<i>FX 2 Mix</i>
<i>Filter Q</i>	<i>FX 2 Pan</i>
<i>Filter Vowel</i>	<i>FX 2 - 1</i>
<i>Filter Distort</i>	<i>FX 2 - 2</i>
<i>Filter Envelope Amount</i>	<i>FX 2 - 3</i>
<i>Filter Envelope Speed</i>	<i>FX 2 - 4</i>
<i>Filter Attack Time</i>	<i>FX 2 - 5</i>
<i>Filter Decay Time</i>	<i>FX 2 - 6</i>
<i>Filter Sustain Level</i>	<i>FX 2 - 7</i>
<i>Filter Sustain Fade Time</i>	<i>FX 2 - 8</i>
<i>Filter Release Time</i>	<i>FX 3 Mix</i>
<i>Filter LFO Speed</i>	<i>FX 3 Pan</i>
<i>Filter LFO Amount</i>	<i>FX 3 - 1</i>
<i>Volume</i>	<i>FX 3 - 2</i>
<i>Panning</i>	<i>FX 3 - 3</i>
<i>Amp Envelope Speed</i>	<i>FX 3 - 4</i>
<i>Amp Attack Time</i>	<i>FX 3 - 5</i>
<i>Amp Decay Time</i>	<i>FX 3 - 6</i>
<i>Amp Release Time</i>	<i>FX 3 - 7</i>
<i>FX 1 Mix</i>	<i>FX 3 - 8</i>
<i>FX 1 Pan</i>	
<i>FX 1 - 1</i>	
<i>FX 1 - 2</i>	
<i>FX 1 - 3</i>	
<i>FX 1 - 4</i>	