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LAYERS QUADRASONIC SAMPLE PLAYER
OPERATION MANUAL



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Layers
Quadrasonic
Sample Player

Introduction



The Layers Quadrasonic Sample Player Rack Extension is a quad layer sample player designed for creating great impressive sounds in a very straight-forward and uncomplicated way.

Each of the four sound engines in Layers can hold one multi-sampled instrument each. The instruments can be filtered, processed and sculpted individually. Each sound engine also features individual distortion and flanger effects. You can then layer the Sound Engines to create really massive and evolving sounds.

Layers also has global stereo delay, reverb and compression effects to spice up the sound even more. In addition to this there is a built-in trig sequencer which lets you create really nice rhythmic and animated patterns in your sounds.

The multi-samples in Layers originate from various popular 80s and 90s analog synths and from the Reason Factory Sound Bank.

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Panel overview

The Layers front panel contains the following sections:



The Layers front panel sections.

- **1. Patch Selector (for browsing, loading and saving patches).**
- **2. Master Volume.**
- **3. Trig Sequencer.**
- **4. Layer A-D Sound Engines.**
- **5. Global LFO (common for all four Sound Engines).**
- **6. Global performance and “play” controls (common for all four Sound Engines).**
- **7. Programmer (Controls for currently selected Sound Engine).**
- **8. Global Effects section.**

Using Layers

Loading and saving patches



Loading and saving patches is done in the same way as with any other internal Reason/Reason Essentials device. See the “Sounds and Patches” chapter in the Reason/Reason Essentials Operation Manual pdf for details.

Global performance and “play” controls



Pitch

The Pitch bend wheel can be used for bending note pitches up and down. Layers also responds to Pitch Bend MIDI data from a connected MIDI master keyboard. You set the desired Pitch bend Range with the “P. Range” control to the right of the Mod wheel.

P. Range

→ **Set the desired Pitch Bend range for the “Pitch” wheel with the up/down buttons, or by click-holding on the display and dragging up/down.**

Range: +/-12 semitones (+/-1 octave) in steps of +/-1 semitone.

Mod

The Mod wheel can be used for controlling a number of predefined parameters in Layers. These parameters have a corresponding control named “Wheel”.

Mode

Here you choose how Layers should respond to MIDI Note data:

- **Poly**
Select this if you want to play Layers polyphonically (chords).
- **4 Mono**
Select this if you want to play Layers in a monophonic fashion and always retrigger the envelopes as soon as you play a new note. Note that the four Sound Engines are monophonic individually. This means that if you use the Trig Sequencer (see “Trig Sequencer”), there might be up to four separate monophonic sounds sounding at different pitches at the same time - one for each Sound Engine - depending on the Amp Envelope settings.

Panel controls

Sound Engines



Layers features four identical Sound Engines (Layer A-D), which can be layered together. Each Sound Engine can hold a multi-sampled instrument, which can be modulated and controlled from the Sound Engine panel, as well as from the Programmer panel below Sound Engine D, see ["Programmer"](#).

The four Sound Engines feature identical parameters and controls:

Instrument selector



→ **Click on the display to bring up a list of the included instruments, and then select the desired instrument from the list.**

Alternatively, click the Up/Down buttons to step up/down in the list and load an instrument.

The initial letters in the instrument name indicate which synthesizer the sound was sampled from:

A6= Alesis Andromeda A6

J60= Roland Juno-60

JP4= Roland Jupiter 4

KM= Korg Mono/Poly

KP8= Korg Poly 800 MkII

MP= Moog Prodigy

MS= Korg MS-20

MW= Waldorf Microwave XT

MX= Oberheim Matrix-1000

(PH= Reason Factory Sound Bank)

In addition to the sampled instruments there are also five basic analog style waveforms:

Saw, Square, Triangle, Sine and Noise

Edit



→ **Click the Edit button to select the corresponding Sound Engine for editing from the Programmer, see ["Programmer"](#).**

One Sound Engine at a time can be edited from the Programmer panel.

Mute



→ Click the Mute button to mute, and thereby exclude, the corresponding Sound Engine from the mix.

Oct



→ Set the octave for the corresponding Sound Engine.
Range: 7 (+/-3) octaves.

The Filter section



→ Click on and drag up/down on the Filter display to select one of the available filter types - or step through the filter types by clicking the Up/Down arrow buttons.

The available filter types are:

- **LP24**
A lowpass filter with 24db/octave slope.
 - **LP18**
A lowpass filter with 18db/octave slope.
 - **LP12**
A lowpass filter with 12db/octave slope.
 - **LP6**
A lowpass filter with 6db/octave slope.
 - **BP**
A bandpass filter with 12db/octave slopes.
 - **HP**
A highpass filter with 12db/octave slope.
- **Set the resonance amount with the RES knob.**
The resonance parameter amplifies the frequencies at, and around the cutoff/center frequency.
- **Set the cutoff/center frequency with the CUTOFF knob.**
The cutoff parameter sets where in the frequency range you want the resonance and attenuation to appear.
- **With the ENV knob you set how much you want the Filter Envelope in the Programmer section to affect the CUTOFF frequency.**
See "Filter" for information on how to use the Filter Envelope in the Programmer section.

The Effects control section



In this section you set what effects you want to use and/or how much of the effects you want to mix with the corresponding Sound Engine signal.

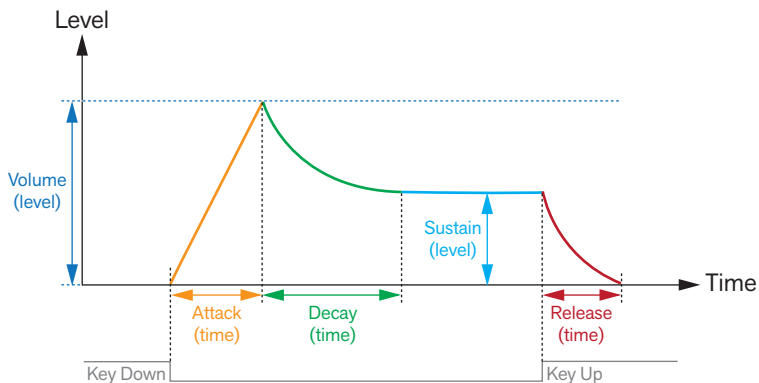
- **Click the DIST button to switch on/off the Dist effect in the Programmer section.**
Set the Dist effect amount with the AMT knob. See “Dist” for information on how to set up the distortion parameters in the Programmer section.
- **Click the FLANGER button to switch on/off the Flanger effect in the Programmer section.**
See “Flanger” for information on how to set up the Flanger parameters in the Programmer section.
- **Turn the DELAY knob to set the signal level to the global Delay send effect.**
See “Delay” for information on how to set up the Delay effect.
- **Turn the REV knob to set the signal level to the global Reverb send effect.**
See “Reverb” for information on how to set up the Reverb effect.

The Amp Envelope section



- **Set the panning of the output of the corresponding Sound Engine in the stereo panorama with the PAN knob.**

The Amp Envelope is a standard ADSR envelope which controls the amplitude of the corresponding Sound Engine over time. The picture below shows the various stages of the ADSR envelope:



The ADSR envelope stages.

- **A(ttack)**
When you play a note on your keyboard, the envelope is triggered. This means it starts rising from zero to the value set with the Volume slider (see “Vol”). How long this should take, depends on the Attack setting. If the Attack is set to “0”, the Volume value is reached instantly. If the Attack value is raised, it will take longer time before the Volume value is reached.

- **D(ecay)**

After the Volume value has been reached, the level starts to drop. How long this should take is governed by the Decay parameter.

If you want to emulate the volume envelope of a note played on a piano for example, the Attack should be set to "0", the Decay parameter should be set to a medium value and the Sustain level should be set to "0", so that the volume gradually decreases down to silence, even if you keep holding the key down. Should you want the decay to drop to some other value than zero, you raise the Sustain parameter.

- **S(ustain)**

The Sustain parameter determines the level the envelope should rest at, after the Decay stage. If you set Sustain to full level, the Decay setting is of no importance since the volume of the sound is never lowered.

If you want to emulate the volume envelope of an organ, you theoretically only really need to use the Sustain parameter set to full level, as a basic organ volume envelope instantly goes to the maximum level (Attack "0") and stays there (Decay "0"), until the key is released and the sound instantly stops (Release "0").

But often a combination of Decay and Sustain is used to generate envelopes that rise up to the Volume value, then gradually decreases to finally land to rest on a level somewhere in-between zero and the Volume value. Note that Sustain represents a level, whereas the other envelope parameters represent times.

- **R(elease)**

The Release parameter works just like the Decay parameter, except it determines the time it takes for the volume to drop back to zero after you release the key.

- **Vol**

Here you set the maximum output volume of the Sound Engine.

Programmer



The Programmer is where you set up the parameters for the Layer Sound Engine that currently has edit focus.

→ **Set edit focus to the desired Sound Engine, either by clicking the Edit button in the Sound Engine section, or by clicking the desired Edit Focus button in the Programmer section:**



The Edit button in the Layer B Sound Engine.



The Edit Focus buttons in the Programmer.

Pitch controls



- **SEMI**
 - Turn the **SEMI knob to change the Sound Engine pitch in semitone steps.**
Range: +/-12 semitones (two octaves).
- **FINE**
 - Turn the **FINE knob to change the Sound Engine pitch in steps of 1 cent.**
Range: +/- 50 cents (down or up half a semitone).
- **LFO1**
 - Turn the **LFO1 knob to set how much the Sound Engine's pitch should be modulated by LFO1.**
See "[LFO 1](#)" for information about the LFO1 parameters.
- **LFO2**
 - Turn the **LFO2 knob to set how much the Sound Engine's pitch should be modulated by the global LFO2.**
See "[LFO 2 Global](#)" for information about the LFO2 parameters.

S.Start (Sample Start)



- Turn the **S.Start knob to set where in the sample the playback should start.**
Note that the effect could be different depending on the selected instrument. Also, certain settings might also generate a click, if the sample start position shouldn't be on a zero crossing.

Trig Delay



With the Trig Delay function you can force the sound of a Sound Engine to start a certain time after Note On. This could give really nice rhythmic character or sequential/gradual introduction of the sounds from the different Sound Engines.

- **Click the Trig Delay button to activate the Trig Delay function.**
- **Set the Trig Delay time with the TD TIME knob.**
Selectable values: 1/64, 1/32, 1/16T, 1/16, 1/8T, 3/32, 1/8, 3/16, 1/4, 3/8 and 2/4.
- ! **Since the Trig Delay is an audio delay, the Note Off is also delayed by the set delay time.**

Filter



The Filter section in the Programmer

In the Filter section in the Programmer you can set how you want to modulate the selected filter type of the corresponding Sound Engine:



The Filter parameters on the Sound Engine panel.

- **ADSR Filter Envelope**
The standard ADSR type envelope controls the filter cutoff frequency modulation over time. The ADSR envelope characteristics are described in detail in [“The Amp Envelope section”](#).
- **LOW CUT**
This is a highpass filter which lets you cut out low frequencies in the sound.
- **KBD**
 - **Turn the KBD (Keyboard Track) knob to set how much the cutoff/center frequency should track incoming MIDI Notes.**
Range: -100% (-1 semitone per key) via 0% (no tracking (constant frequency)) to 100% (1 semitone per key).
- **VEL**
 - **Turn the VEL knob to set how much the cutoff/center frequency should be modulated by Keyboard Velocity.**
Range: -100% via 0% to 100%. A negative value means that the filter cutoff frequency is lowered with increasing velocity.
- **LFO1**
 - **Turn the LFO1 knob to set how much the cutoff/center frequency should be modulated by LFO1.**
See [“LFO 1”](#) for information about the LFO1 parameters.
- **LFO2**
 - **Turn the LFO2 knob to set how much the cutoff/center frequency should be modulated by the global LFO2.**
See [“LFO 2 Global”](#) for information about the LFO2 parameters.
- **WHEEL**
 - **Turn the WHEEL knob to set how much the cutoff/center frequency should be modulated by the Mod Wheel.**
A negative value means that the filter cutoff frequency is lowered when the Mod Wheel is turned up.

Dist



The Dist parameter in the Programmer.

In the Dist section in the Programmer you can select the distortion type for the corresponding Sound Engine:



The Dist parameters on the Sound Engine panel.

→ In the Programmer, drag up/down in the Dist display - or click the Up/Down selector buttons - to select the desired distortion type.

The distortion types are:

- **Drive**
This produces an analog-type overdrive effect.
 - **Scream**
Scream is similar to Fuzz (see below), but with a bandpass filter with high resonance and gain settings placed before the distortion stage.
 - **Fuzz**
Fuzz produces a bright and distorted sound.
- **Activate the distortion effect and set the distortion amount on the Sound Engine panel.**

Flanger



The Flanger parameters in the Programmer.

In the Flanger section in the Programmer you can set the Flanger effect parameters for the corresponding Sound Engine:



The Flanger On/Off switch on the Sound Engine panel.

- **RATE**
→ Set the rate of the flanger sweep.
- **MAN**
→ Set the center frequency of the flanger sweep.
- **FB**
→ Set the feedback amount of the flanger effect.

- **INT**
- **Set the sweep range of the flanger effect.**

Pan



The Pan parameters in the Programmer.

In the Pan section in the Programmer you can select how to modulate the Pan parameter in the corresponding Sound Engine:



The Pan parameter on the Sound Engine panel.

- **VEL**
- **Set if/how much you want keyboard velocity to modulate the Pan parameter on the Sound Engine panel.**
Note that the VEL control is bipolar, which means that you can modulate the Pan parameter in either direction.
- **LFO1**
- **Turn the LFO1 knob to set how much the Pan parameter should be modulated by LFO 1.**
See “LFO 1” for information about the LFO 1 parameters.
- **LFO2**
- **Turn the LFO2 knob to set how much the Pan parameter should be modulated by the global LFO 2.**
See “LFO 2 Global” for information about the LFO 2 parameters.

Amp



The Amp parameters in the Programmer.

In the Amp section in the Programmer you can select how to modulate the Amp Envelope in the corresponding Sound Engine:



The Amp Envelope on the Sound Engine panel.

- **VEL**
- **Set if/how much you want keyboard velocity to modulate the Amp Envelope on the Sound Engine panel.**
Note that the VEL control is bipolar, which means that you can modulate the Amp Envelope in either direction.
- **VEL CURVE**
- **In the Programmer, drag up/down in the Vel Curve display - or click the Up/Down selector buttons - to select the desired velocity curve type.**
The velocity curve types are: Linear, Exponential and Logarithmic.
- **LFO1**
- **Turn the LFO1 knob to set how much the volume should be modulated by LFO 1.**
Use this for creating Tremolo effects, for example. See “LFO 1” for information about the LFO 1 parameters.
- **LFO2**
- **Turn the LFO2 knob to set how much the volume should be modulated by the global LFO 2.**
Use this for creating Tremolo effects, for example. See “LFO 2 Global” for information about the LFO 2 parameters.
- **WHEEL**
- **Turn the WHEEL knob to set how much the volume should be modulated by the Mod Wheel.**
A negative value means that the volume is lowered when the Mod Wheel is turned up.

LFO 1



An LFO (Low Frequency Oscillator) is used for generating cyclic modulation. A typical example is to have an LFO modulate the pitch of a signal to produce vibrato, but there are countless other applications for LFOs. LFO 1 applies modulation polyphonically (one LFO per voice), i.e. if LFO 1 is assigned to modulate a parameter, an individual LFO will be started for each note you play.

- **Select an LFO waveform by clicking the spin controls to the right of the waveform display, or by click-holding in the display and moving the mouse up or down.**
Besides the standard waveforms (sine, triangle, pulse, etc.) there are random, slope and stepped waveforms. The shape of the selected waveform is shown in the display.
- **Turn the DELAY knob to introduce a delay before the LFO modulation kicks in after a note is played.**
Turn clockwise for longer delay times.
- **Set the LFO frequency with the RATE knob.**
- **Click the TEMPO SYNC button to sync LFO 1 to the main sequencer Tempo in Reason/Reason Essentials.**
The Rate parameter now controls the time divisions.
- **Click the KEY SYNC button to restart the LFO 1 each time you press a new note.**
- **Click the WHEEL button to control the LFO 1 modulation amount from the Mod Wheel.**

LFO 2 Global



LFO 2 Global is monophonic and affects all voices equally.

- **Select an LFO waveform by clicking the spin controls to the right of the waveform display, or by click-holding in the display and moving the mouse up or down.**
Besides the standard waveforms (sine, triangle, pulse, etc.) there are random, slope and stepped waveforms. The shape of the selected waveform is shown in the display.
- **Set the LFO frequency with the RATE knob.**
- **Click the WHEEL button to control the LFO 2 modulation amount from the Mod Wheel.**
- **Click the TEMPO SYNC button to sync LFO 2 to the main sequencer Tempo in Reason/Reason Essentials.**
The Rate parameter now controls the time divisions.

Global effects



The three global effects - Delay, Reverb and Compressor - work as "send effects" for the respective Sound Engines/Layers. You set the desired modulation amount in the respective Sound Engine sections:



The Delay and Reverb amount knobs on the Sound Engine panels.

Delay



This is a stereo delay which affects all voices globally.

- **On/Off**
- **Click the red On/Off LED button to switch the Delay effect on/off.**
- **SYNC**
- **Click the Sync button to sync the delay time to the main sequencer Tempo.**

- **TIME**
This sets the time between the delay repeats. If Sync is active (see above), the Time parameter now controls the time divisions.
- **FB**
The Feedback parameter determines the number of delay repeats.
- **PING PONG**
Activate this to get the delay repeats alternating from the left and right channels. Note that this also doubles the delay tempo.

Reverb



This is a stereo reverb which affects all voices globally.

- **On/Off**
→ Click the red On/Off LED button to switch the Reverb effect on/off.
- **PRE**
This sets the pre-delay time of the reverb.
- **TIME**
This governs the length of the reverb effect. Middle position is the default decay time.
- **LOW CUT**
This is a highpass filter that cuts the low frequencies of the reverb signal, to make the reverb effect less “muddy”.
- **DAMP**
Raising the Damp value cuts off the high frequencies of the reverb, thereby creating a smoother, warmer effect.

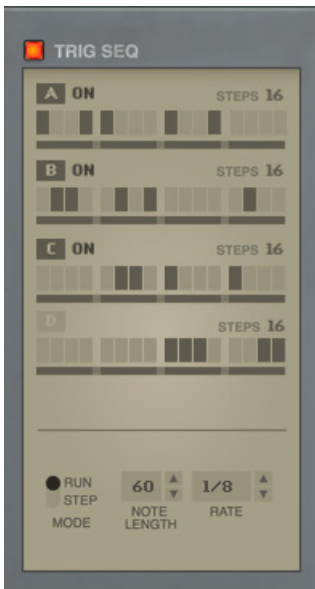
Compressor



This is a stereo compressor which affects all voices globally.

- **On/Off**
→ Click the red On/Off LED button to switch the Compressor effect on/off.
- **AMOUNT**
This sets the compression amount. A high setting makes the sound less dynamic and more “even” in level.

Trig Sequencer

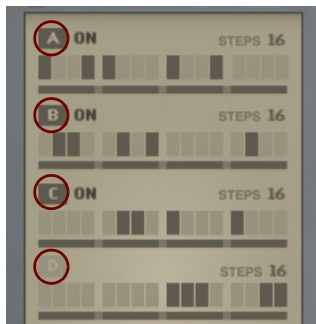


The Trig Sequencer can be used for creating really catchy rhythmic animations with the sounds from the four Sound Engines/Layers. The Trig Sequencer can either be run continuously, synced to the main sequencer Tempo in Reason/Reason Essentials, or run in Step mode, where each new Note On will advance the sequencer one step at a time.

It's also possible to set different step lengths for each of the Sound Engines to create poly-rhythmic patterns.

The Trig Sequencer is polyphonic, which means you can play and trig entire chords!

- **TRIG SEQ On/Off**
- Click the red On/Off LED button to switch the Trig Sequencer on/off.
- **Pattern Enable**



- Click a letter button to enable the Trig Sequencer for the corresponding Sound Engine. Any disabled Sound Engine will play back its sound in the regular fashion (without the trig sequencer pattern).
- To deactivate a Sound Engine altogether, use the Mute button on the Sound Engine panel, see **"Mute"**.

- **STEPS**



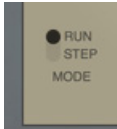
- Click and hold the step number and drag up/down to change the number of steps in the corresponding pattern.
- Alternatively, click and drag the step indicator bar up/down. Range: 1-16 steps.

- **Step Enable/Disable**



- **Click the steps you want to activate in the pattern.**
Click on an active step to disable it.

- **MODE**



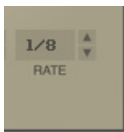
- **Select RUN to start the Trig Sequencer pattern at every new Note On.**
This is the mode of choice if you want to play back the pattern continuously.
- ! **Note that every new Note On will start on step one in the pattern. Any previously held notes will not restart but continue from where they currently are. This opens up really complex and animated pattern combinations.**
- ! **To get the notes to play back together exactly on time when playing chords, make sure you quantize your recorded notes in the main sequencer after/during recording.**
- **Select STEP to make the pattern advance one step at a time for every new Note On.**
This mode is great for creating melody lines where the sound is altered for every new note.

- **NOTE LENGTH**



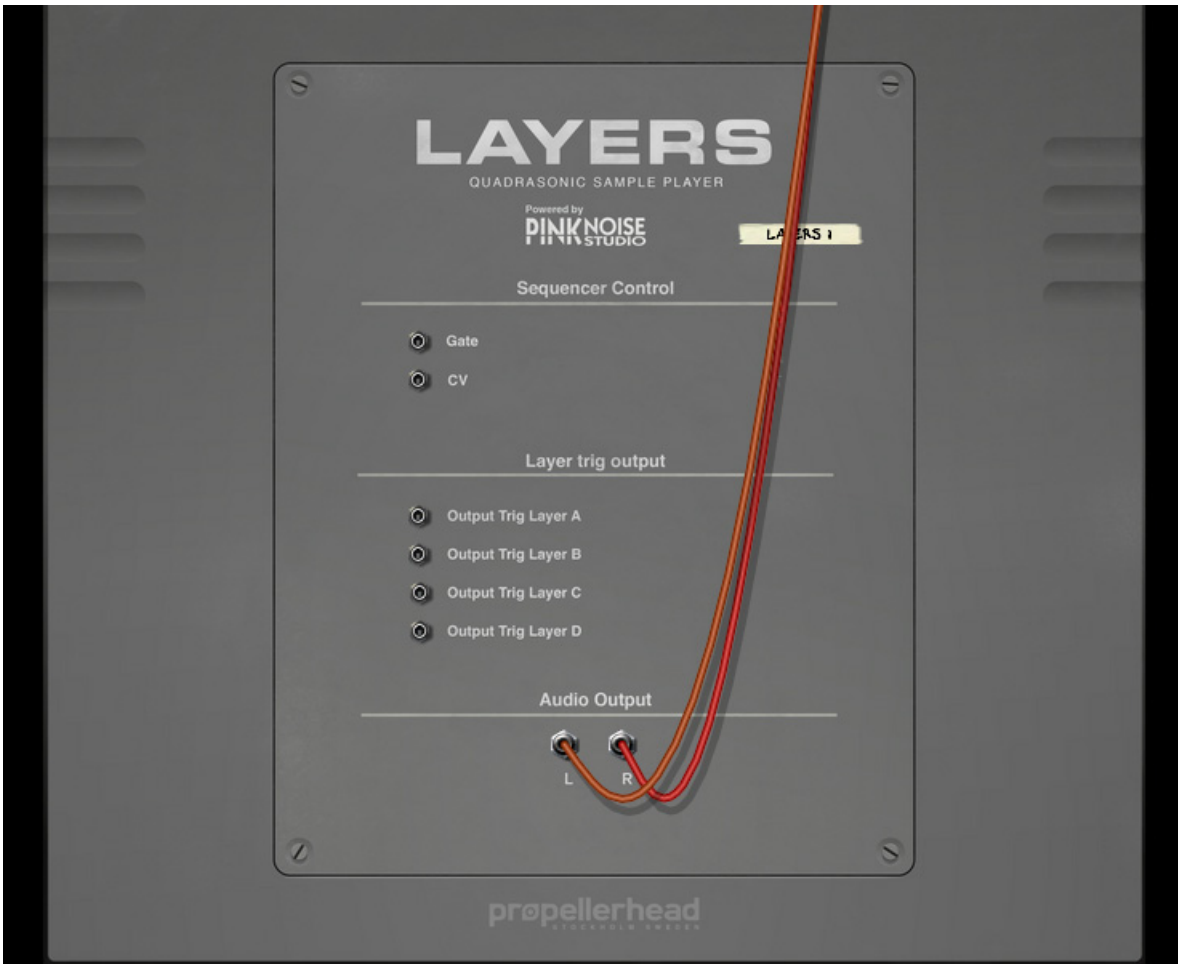
- **Select the desired Note Length by clicking the spin controls to the right of the display, or by clicking in the display and selecting from the list.**
The selectable values are: 20, 40, 60 or 99.

- **RATE**



- **Select the desired Trig Sequencer Rate (in relation to the main sequencer Tempo in Reason/Reason Essentials) by clicking the spin controls to the right of the display, or by clicking in the display and selecting from the list.**
The selectable rates are: 1/4, 1/8 or 1/16.

Connections



! Remember that CV connections are NOT stored in the Layers patches! If you want to store CV connections between devices, put them in a Combinator device and save the Combi patch.

Sequencer Control inputs

The Sequencer Control CV and Gate inputs allow you to play Layers from another CV/Gate device (typically a Matrix or an RPG-8). The signal to the CV input controls the note pitch, while the signal to the Gate input delivers note on/off along with velocity.

Layer Trig Outputs

These control voltage (CV) outputs can be used for sending trig signals from the “Trig Sequencer” patterns to the desired destinations - a Redrum, for example.

Audio Output

These are the main audio outputs. When you create a new Layers device, these outputs are auto-routed to the first available Mix Channel in the Reason/Reason Essentials main mixer. If there is no Mix Channel available, a new one will be automatically created.

Credits

The Layers factory sound library features patches created by the following sound designers:

Ludvig Carlson

J Chris Griffin

Andras Haasz

Mats Karlöf

Tom Pritchard

Daniel Thiel

Kristoffer Wallman

