propellerhead

QUAD NOTE GENERATOR PLAYER

OPERATION MANUAL

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Quad Note Generator Player

Introduction

A Player is a special type of device that automatically processes, filters and generates MIDI Notes, based on input MIDI Notes, to an Instrument device in the rack. Players can also play back MIDI on their own, without any MIDI input; this could for example be note generators, like the Quad Note Generator Player described in this manual.

The Player devices can be found in the Players palette below Utilities in the Reason Browser:
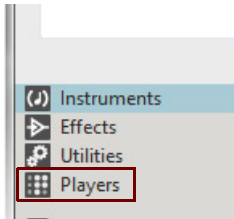
The Players palette in the Browser.

The basic idea behind Players is that you first create an Instrument device (or instrument track), then hook up one or more Player devices to the Instrument device. If the Player device is a note generator, like the one described in this manual, you can have it generate notes in a desired key and scale by just playing single notes on your MIDI Control Keyboard (or have it just play randomly without any note input). Absolutely great for inspiration!

For more general information about Player devices, see the "Working with Players" chapter in the Reason/Reason Intro/Reason Lite Operation Manuals, which can be accessed from the Help menu in the program.

Overview

The Quad Note Generator device is a four-channel, random note generator, ideal for controlling basically any type of instrument device. You could use it for generating monophonic bass lines, or for generating nice random arpeggio-style monophonic or polyphonic (up to 4 notes) melody lines. You don't draw or program the notes, instead they are generated with a combination of algorithms and randomness.

Apart from generating MIDI notes, the Quad Note Generator Player has the following features:

- **Note generation setups can be saved in patches.**
- **For each note channel you can specify the pattern length (1-32 steps), the speed (i.e. resolution), the step probability and note length variation.**
- **Each step can have its own velocity (randomly between 1 and 127) - or a fixed velocity.**
- **A selectable zone of the pattern can be "frozen" so it will play back identically each cycle.**
- **There are also CV outputs for controlling additional devices using Gate, Note and Pitch signals - see "Connections".**
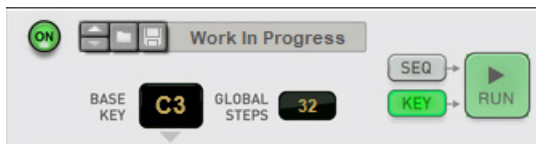
Working with the Quad Note Generator

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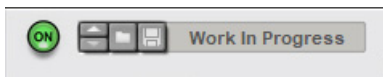
Loading and saving patches is done in the same way as with any other internal Reason/Reason Intro/Reason Lite device. See the "Sounds and Patches" chapter in the Reason/Reason Intro/Reason Lite Operation Manual pdf for details.

Basic global settings

Before getting into the individual settings of the four note generation channels there are a couple of basic global parameters that should be set up:

Base Key
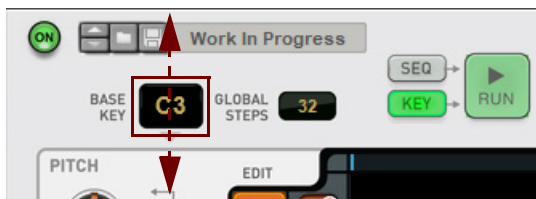
→ **Click the Base Key display and drag up/down to select the desired base key.**
The Base Key is the note from which the Pitch Variation originates, see "Setting up the Note Line Pitch generation".

► **If you want to play the Quad Note Generator device from a MIDI keyboard/On-screen Piano Keyboard, using the "Key" Play mode (see "Play mode"), you don't have to manually select any Base Key (since this is determined from the notes you play on your MIDI Keyboard).**

Global Steps
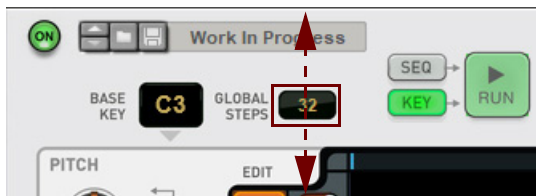
The Global Steps value defines after how many steps (1/16th notes) the Quad Note Generator device should restart the playback of all four channels. This is especially useful if you have different lengths and speeds for the individual channels and want to get some sort of "order" in the playback.

→ **Click and drag up/down in the Global Steps display to select the desired step number.**
Range: 1-32 (1/16th notes).

Play mode
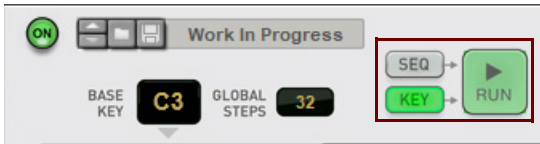
→ **Click the Seq button to have Quad Note Generator start playing back notes (based on the set Base Key) as soon as you click the Run button.**
The Run button is also synced to the Play button in the main sequencer.

→ **Click the Key button to have Quad Note Generator start playing back notes (based on the note you currently play) as soon as you hold down a note on your MIDI keyboard/On-screen Piano Keyboard.**
Playback is synced to the main sequencer tempo and starts on an exact 1/16th note, just like an arpeggiator.

Rhythm and Pitch generation basics

▪ **Rhythm and Pitch generation is done individually for each of the four channels - the Note Lines.**
The four Note Lines are represented by individually colored note lines in the big note display.

▪ **You edit one single Note Line at a time.**

→ **Click the Edit button for the Note Line you want to edit.**

▪ **All Note Lines can be turned on/off individually using the corresponding On/Off switches.**

Setting up the Note Line Rhythm generation

→ **Select the Note Line to edit by clicking the desired Edit button (see "Rhythm and Pitch generation basics" above).**

Steps

→ **Select the number of steps you want for the Note Line, by dragging up/down in the Steps display.**
Since each Note Line can have its own number of steps, this opens up poly-rhythmic possibilities. The big note display indicates the total range by displaying the individual notes.

Range: 1-32 steps of the selected note Rate (see below).

! **Note that the number of steps is also dependent on the Global Steps setting, see "Global Steps".**

Rate

→ **Select the desired rate by dragging up/down in the Rate display.**
Rates: 1/2, 3/8, 1/4, 3/16, 1/4T, 1/8, 1/8T, 1/16, Shuffle, 1/16T, 1/32, 1/32T, 1/64, 1/128.

! **Note that selecting Shuffle could in some cases force notes to overlap and thus be played back as single longer notes (due to the "shuffled" repositioning of the notes). If this is not what you want, set the Note Length parameter to a lower value (see "Note Length" below).**

Shift

→ **Turn the Shift knob to shift the generated Euclidean Pattern back or forth in steps of 1/16th note.**
This makes it possible to e.g. have Note Line 1 start on the first step, Note Line 2 on the second step, and so on.

Range: +/-4 steps.

Pattern

→ **Turn the Pattern knob to define the note "density" in the generated Euclidean pattern.**
The Pattern parameter selects a Euclidean pattern, where notes are distributed evenly over the full 32-step pattern length - from pattern 1 (one note per 32 steps) up to 32 (32 notes per 32 steps).

Range: 1-32.

▸ **To achieve "ratchet" notes (temporary random note repeats) set Rate to 1/32 and the Pattern knob to 16 (to get every other 1/32 note to play back = 1/16 note repeats). Then, raise the "Pattern Vary" knob towards 50% and the "Pattern Vary Bias" knob up to around 50%. This will now generate 1/16 notes with temporary random 1/32 notes.**

Pattern Vary

→ **Turn the pattern Vary knob to introduce random Pattern variation.**
The higher the value the more randomized the pattern.

Pattern Vary Bias

→ **Turn the Bias knob to define whether the random Pattern variation should add (+) or remove (-) notes.**
Positive values adds more notes whereas negative values removes notes from randomized pattern.

! **Note that Bias works in conjunction with the pattern Vary knob - just changing the Bias with Vary at 0 won't change anything.**

Note Length

→ **Turn the Note Length knob to define the length of the generated notes.**
Range: 10-200%.

! **If the Note Lengths become longer than the note interval, i.e., if notes of the same pitch should overlap, they will be "merged" and played back as single longer notes.**

Note Length Vary

→ **Turn the Note Length Vary knob to introduce random Note Length variation.**
The higher the value the more the Note Lengths will vary up and down.

Velocity

→ **Set the Velocity value of the generated notes with the Velocity knob.**
The default Velocity is 100.

Range: 1-127.

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Rack Extension

Velocity Vary

→ **Turn the Velocity Vary knob to introduce random Velocity variation.**
The higher the value the more the Velocity will vary up and down.

Setting up the Note Line Pitch generation

→ **Select the Note Line to edit by clicking the desired Edit button (see "Rhythm and Pitch generation basics" above).**

Pitch Vary

→ **Turn the Pitch Vary knob to introduce random pitch variation of the generated notes.**
At zero, the pitch will be constant for all generated notes, according to the Base Key note. The higher the value the more randomized the pitch variation. You can set the total range of the pitch variation in the Pitch Range displays, see "Pitch Range".

Pitch Spread

→ **Turn the Spread knob to set the pitch spread (divergence).**
When set to 0 (12 o'clock position), any pitch variations from the Vary knob will result in totally random pitches within the set pitch range. Lowering the Spread setting will keep varied notes closer to the Base Key, while raising Spread will make the varied pitches more likely to be near the far ends of the pitch range. With Spread at 100% the pitch will vary between the Base Key, the lowest and the highest key in the set Pitch Range (see "Pitch Range").

Pitch Range

→ **Set the highest and lowest notes for the random pitch variation by dragging up/down in the Range displays.**
The range is defined in number of semitones from the Base Key.

Range: 0 to 24 semitones (high) and 0 to -24 semitones (low).
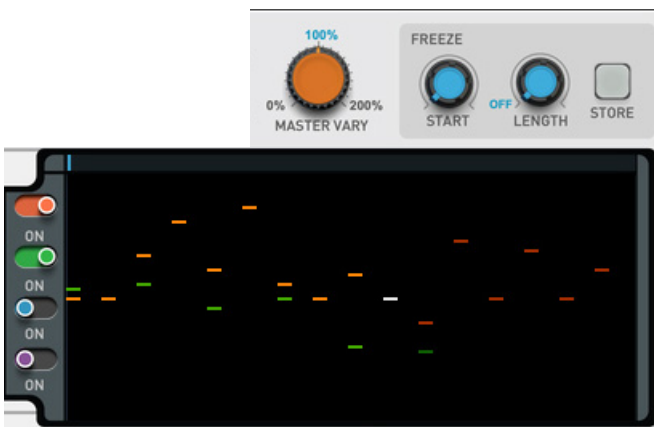
Offset (Note Lines 2-4 only)

For Note Lines 2-4, the Base Key label is replaced by an Offset display.

→ **Set the offset (interval) relative to the Base Key (see "Base Key") by dragging up/down in the Offset display.**
The offset is defined in number of semitones away from the Base Key.

Range: -24 to +24 semitones.

Global functions and settings

The display

The display shows all notes played by all active Note Lines, with the last note highlighted in light gray (like a position marker). All played notes in the current cycle are displayed in lighter colors, whereas the remaining notes from the previous cycle are a little darker. The visual range in the display matches ±24 semitones. Horizontally it covers 32 1/16th notes (i.e. 2 bars in 4/4).

The top row of the display shows the Freeze zone (if any is set), see "Freeze" below.

Master Vary

The Master Vary knob is a global control which scales all Vary parameter amounts of all active Note Lines, as defined by the "Pattern Vary", "Pitch Vary", "Note Length Vary" and "Velocity Vary" controls. Using the Master Vary control is a great way of going from static, monotone rhythm patterns to total chaos.

→ **Turn the Master Vary knob to scale the pattern, pitch, note length and velocity variations of all active Note Lines.**
Range: 0-200%, where 0 is no pattern, pitch, note length or velocity variation at all, 100% is pattern, pitch, note length and velocity variations as set with the "Pattern Vary", "Pitch Vary", "Note Length Vary" and "Velocity Vary" controls for the respective Note Lines, and 200% is twice the pattern, pitch, note length and velocity variation amounts as set with the "Pattern Vary", "Pitch Vary", "Note Length Vary" and "Velocity Vary" controls for the respective Note Lines.

! **Note that if a Vary parameter is set to 0 it will stay on 0 even if you raise Master Vary to 200%.**

Freeze

The Freeze function lets you select a zone in the note display in real-time and temporarily freeze the current pattern and pitch variation shown in the note display. The frozen part will then be excluded from the automatic pattern and pitch (re)generation and will play back identically throughout each cycle.

Setting the freeze zone can be done in two ways:

▪ **By turning the Start and Length knobs in the Freeze section:**

! **Turning the Length knob to 0 will disable the freeze zone altogether.**

▪ **By clicking and dragging in the note display - or in the area just above the display:**

Regardless of which method you use the frozen zone is highlighted in the display.

Here is how you can edit the freeze zone in the display:

▪ **Clicking left of the zone will move the start position.**
This means changing both the Start and the Length value (because the end position of the zone isn't affected).

▪ **Clicking right of the zone will move the end position, changing the Length.**

▪ **Clicking inside the zone will move either the start or the end position, depending on which is closest.**

! **You cannot drag the start past the end position or vice versa (since Length cannot be <0).**

→ **Hold down [Cmd](Mac) or [Ctrl](Win) and click in the display to reset both Start and Length to 0.**
This will remove the previously highlighted freeze zone, since the zone doesn't exist anymore.

- **Shift-clicking in the display will temporarily (while mouse is pressed) unfreeze the Note Line that is currently selected for editing:**

The temporarily "unfrozen" zone disappears from the display and the notes of Note Line 3 will be generated anew during playback.

When you release the mouse button, the zone is frozen again for the Note Line. This lets you change one Note Line without affecting the other frozen Note Lines.

➤ **If you want to change knobs/controls on the Quad Note Generator panel, edit these *before* Shift-clicking.**

- **Similarly to the description above you can also temporarily unfreeze all Note Lines, by holding down [Shift]+ [Option](Mac) or [Shift]+[Alt](Win) and click-hold in the display.**

- **When you make the frozen zone larger (or make it include new data), the Store button lights up.**
  This happens when you increase the Length or move the Start in either direction:

→ **Click the Store button to store the pattern in the currently frozen zone.**
  Doing so will retain the freeze zone in the song and will also allow saving it in a Quad Note Generator patch.
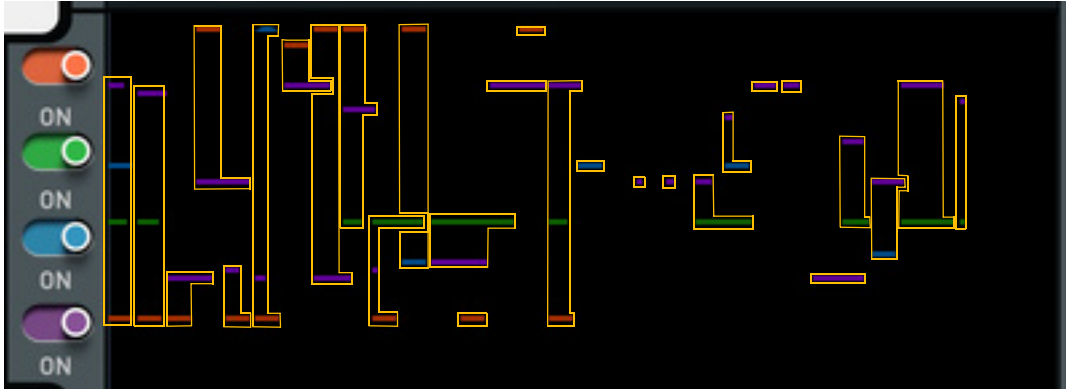
Output settings

Output Mode

Output Mode can be polyphonic (all Note Lines play individually, in parallel) or monophonic, which means that the playing Note Lines are combined in various modes:
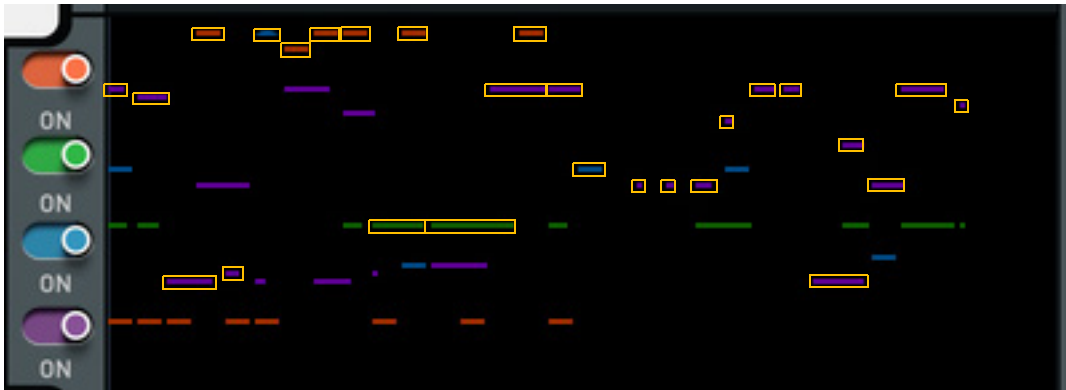
- **Poly**
  All active Note Lines play pack their patterns "in parallel", resulting in polyphonic output:

Poly output mode. The yellow frames show which notes (or groups of notes) will play back at a given moment in time.
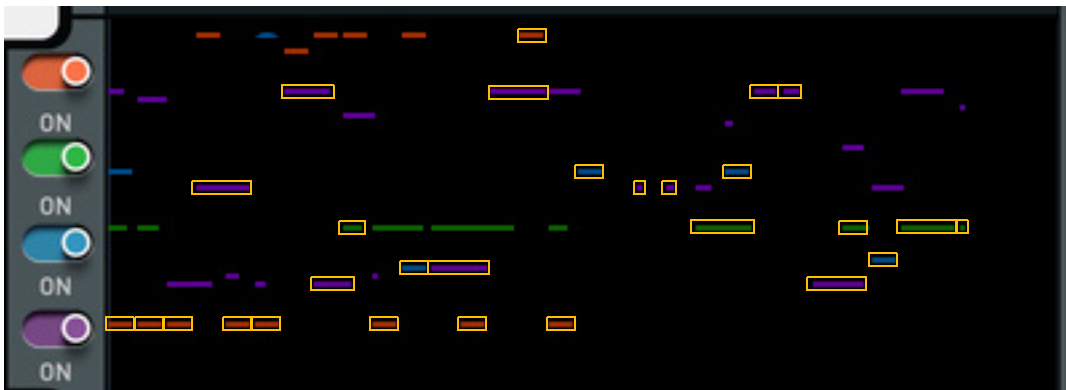
- **Mono High**
  The highest note in any of the active Note Lines has priority - and the output is one note at a time:

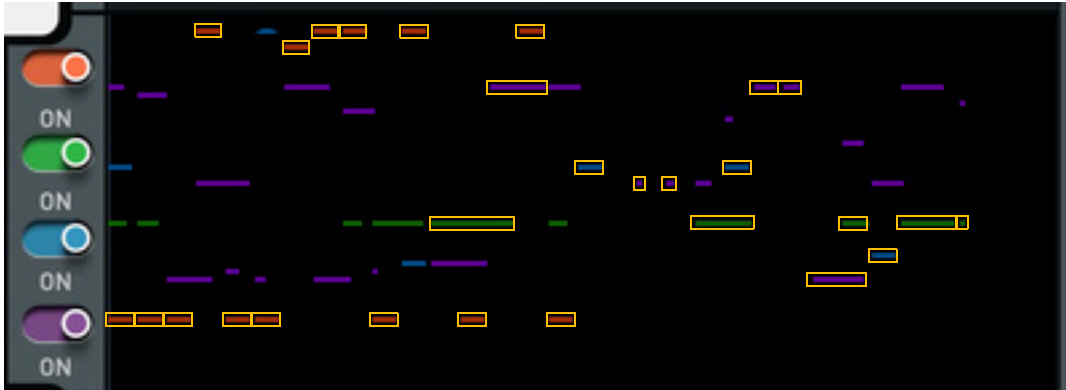
Mono High output mode.

- **Mono Low**
  The lowest note in any of the active Note Lines has priority - and the output is one note at a time:
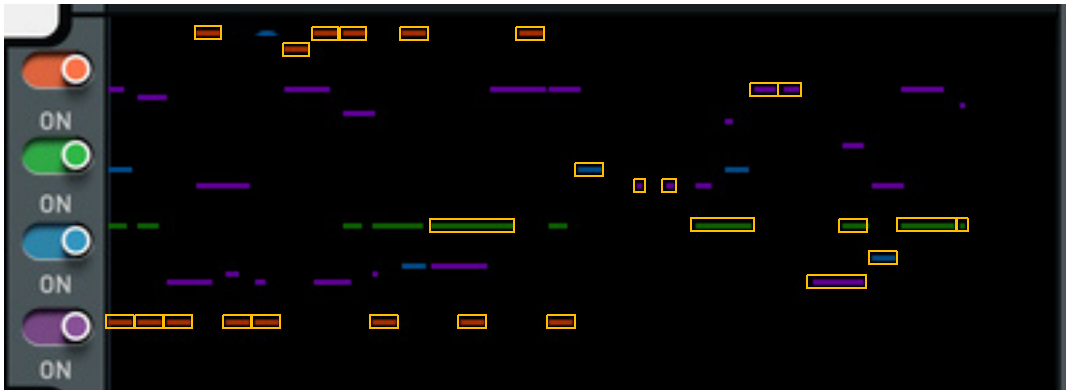

Mono Low output mode.

- **Mono Last**

  The last played note in any of the active Note Lines has priority - and the output is one note at a time. If notes on several Note Lines start at the exact same time, Note Lines with lower number have priority:



Mono Last output mode.

- **Mono Line**

  Notes in Note Line 1 (if active) have priority over notes in Note Line 2 (if active), notes in Note Line 2 (if active) have priority over notes in Note Line 3 (if active), and so on - and the output is one note at a time. If a note from a lower Note Line number is already playing, no new notes from higher Note Line numbers will play back:

Mono Line output mode.

► **Note that the Output Mode parameter can be automated in the sequencer!**

► **It's also possible to route CV Gate, Note and Pitch signals from each individual Note Line, by connecting the CV outputs on the rear panel of the Quad Note Generator Player panel to other devices in the rack, see "CV Output".**

To Scale
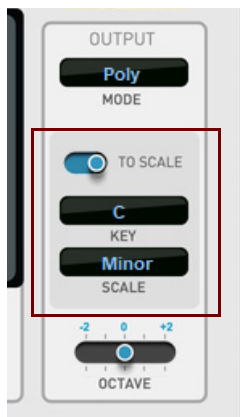
If you want to restrict the generated notes to be output in a certain key and scale you can activate the To Scale switch. Then, select the desired key and scale by clicking and selecting in the Key and Scale displays.

Key

→ **Click to select the desired Key from the list that appears.**
12 Keys are available, from C to B - plus Base, which refers to the Base Key you choose in the "Base Key" display.

Scale

→ **Click to select the desired Scale from the list that appears.**
16 different scales are available:

Major, Minor, Lydian, Mixolydian, Dorian, Phrygian, Locrian, Harmonic Minor, Melodic Minor, Major Pentatonic, Minor Pentatonic, Hemi Pentatonic, Dim Half-Whole, Dim Whole-Half, Whole Tone and Blues.

Octave

→ **Use the Octave selector to transpose the note output down or up in octave steps.**
This can be very useful if you, for example, started out by creating a melody line and then want to hear how it would turn out as a bass line - or vice versa.

Range: +/-2 octaves.

Rendering generated notes to Note clips

When you are satisfied with your note generation settings you might want to "print" the note output as individual notes into a Note clip in Reason's sequencer. By doing so, you could then open the Note clip and edit/arrange the individual notes in the clip manually.
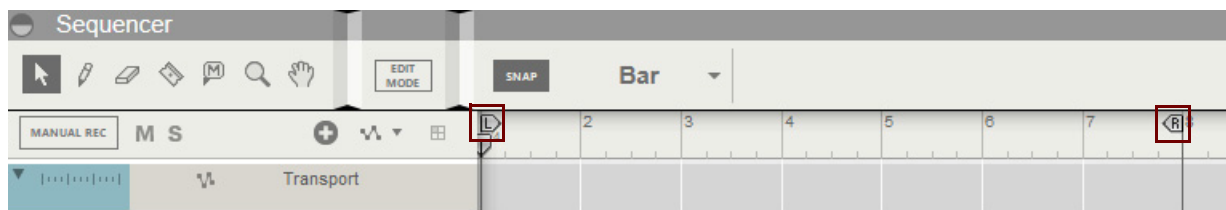
Here's an example of how to render a note generation pattern to a Note clip in the Reason sequencer:

1. **On the Quad Note Generator, set up the note generation parameters to your liking:**

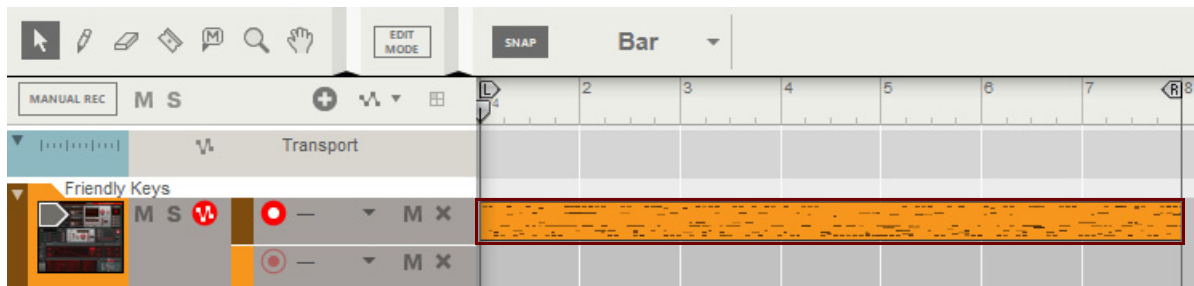2. **Set up the L and R Loop markers in the Reason sequencer.**
   By doing this, you define the range in which the Note clip will be rendered:
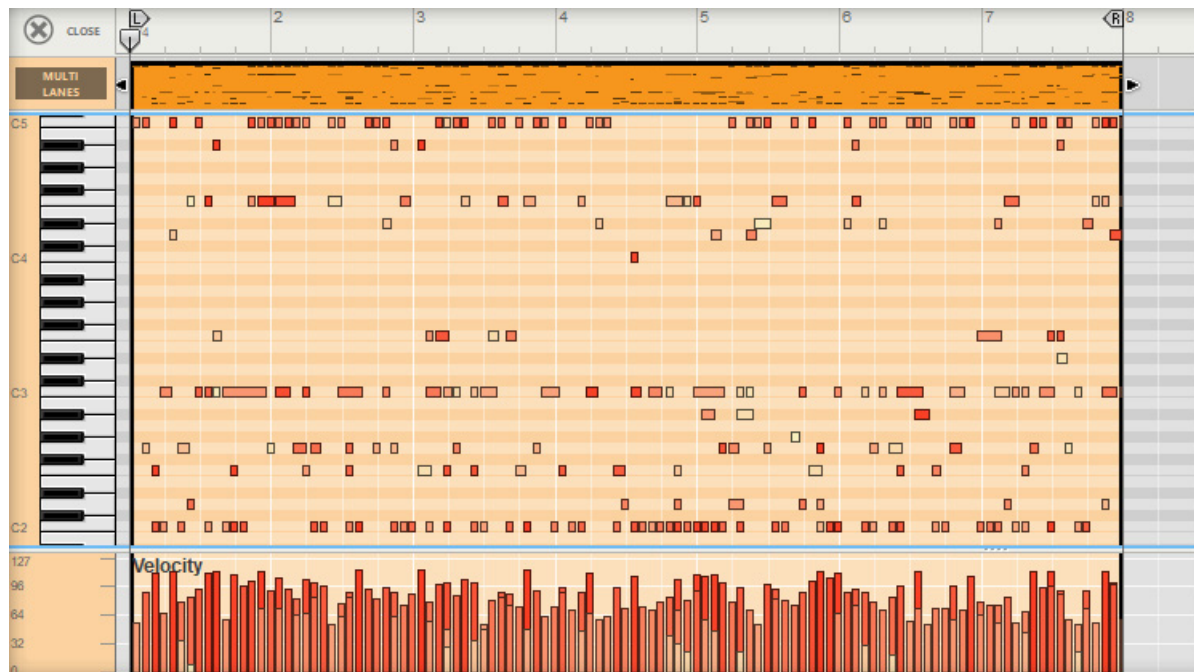
3. Click the Send To Track button to the right above the Quad Note Generator device:

A new Note clip is automatically rendered between the L and R Loop Markers on a new Note Lane on the instrument's track in the Sequencer:
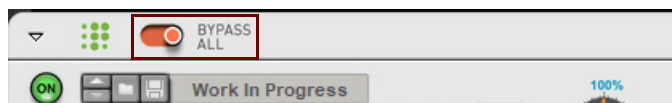

4. Double click the Note clip to open it in Edit mode:

As you can see the pattern steps have now all been rendered into notes in the Note clip - according to the note generation settings of the Quad Note Generator Player device.

5. When you clicked the Send To Track button in step 3 above, the Bypass All switch was automatically activated:

This is so that the Quad Note Generator pattern should not play back from the Player device at the same time as you play back the rendered pattern from the Reason sequencer (since this would generate "doubled" notes, which usually sounds bad).

→ **To continue to use the Quad Note Generator's pattern generation, deactivate the Bypass All switch.**

Connections
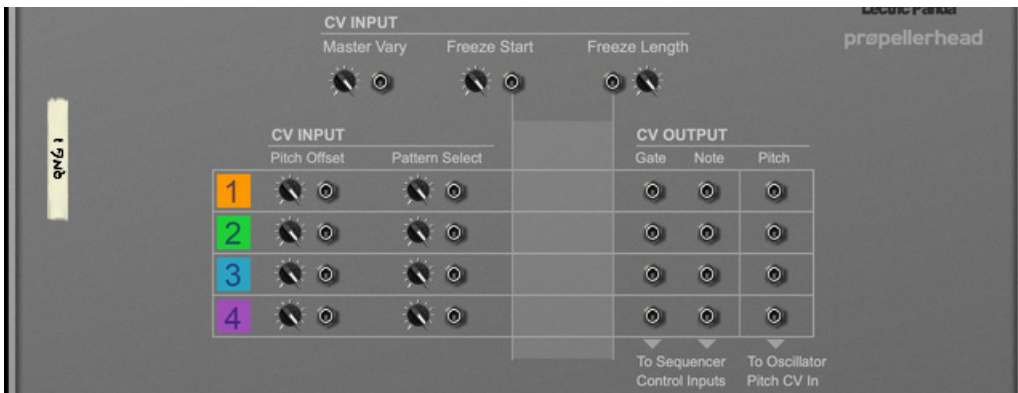
If you flip the rack around you will notice that the Quad Note Generator Player device features CV In and Out connectors.

► **Note that the devices you connect don't have to be in the same Device Group as the Quad Note Generator.**

CV Input

Master Vary

Route a CV signal here to control the Master Vary parameter (see "Master Vary"). Attenuate the input signal with the knob, if desired.

Freeze Start

Route a CV signal here to control the Freeze Start parameter (see "Freeze"). Attenuate the input signal with the knob, if desired.

Freeze Length

Route a CV signal here to control the Freeze Length parameter (see "Freeze"). Attenuate the input signal with the knob, if desired.

Pitch Offset 1-4

Route CV signals here to control the Pitch Offset of Note Lines 1 to 4 respectively. The Pitch Offset is calculated from the Base Key (see "Base Key"). Attenuate the input signal with the knob, if desired.

Pattern Select 1-4

Route CV signals here to control the Pattern parameter (see "Pattern") of Note Lines 1 to 4 respectively. Attenuate the input signal with the knob, if desired.

CV Output

Note Line CV Gate, Note and Pitch outputs

Connect the Gate and Note outputs to the Sequencer Control CV input on devices that feature this. The Pitch output can be used for controlling Oscillator pitches in synth devices that have Oscillator CV Pitch inputs, or allow controlling oscillator pitch via a Modulation Matrix.

Tips & Tricks

Controlling additional instrument devices from each Note Line

By default a Player device is set to control the instrument device it's attached to. However, since the Quad Note Generator Player device features CV Gate and Note outputs for each of its four Note Lines, you can control additional instrument devices from the Note Lines.

1. **Create an instrument device and then drag and drop a Quad Note Generator device onto the instrument device.**

2. **Create one or more instrument devices in the rack.**
   In this example we create a Thor synthesizer.

3. **Press [Tab] to flip the rack around.**

4. **Connect e.g. the Note Line 2 Gate output to the Sequencer Control Gate input on the Thor device.**

5. **Connect the Note Line 2 Note output to the Sequencer CV input on the Thor device.**
   The setup could now look something like this:
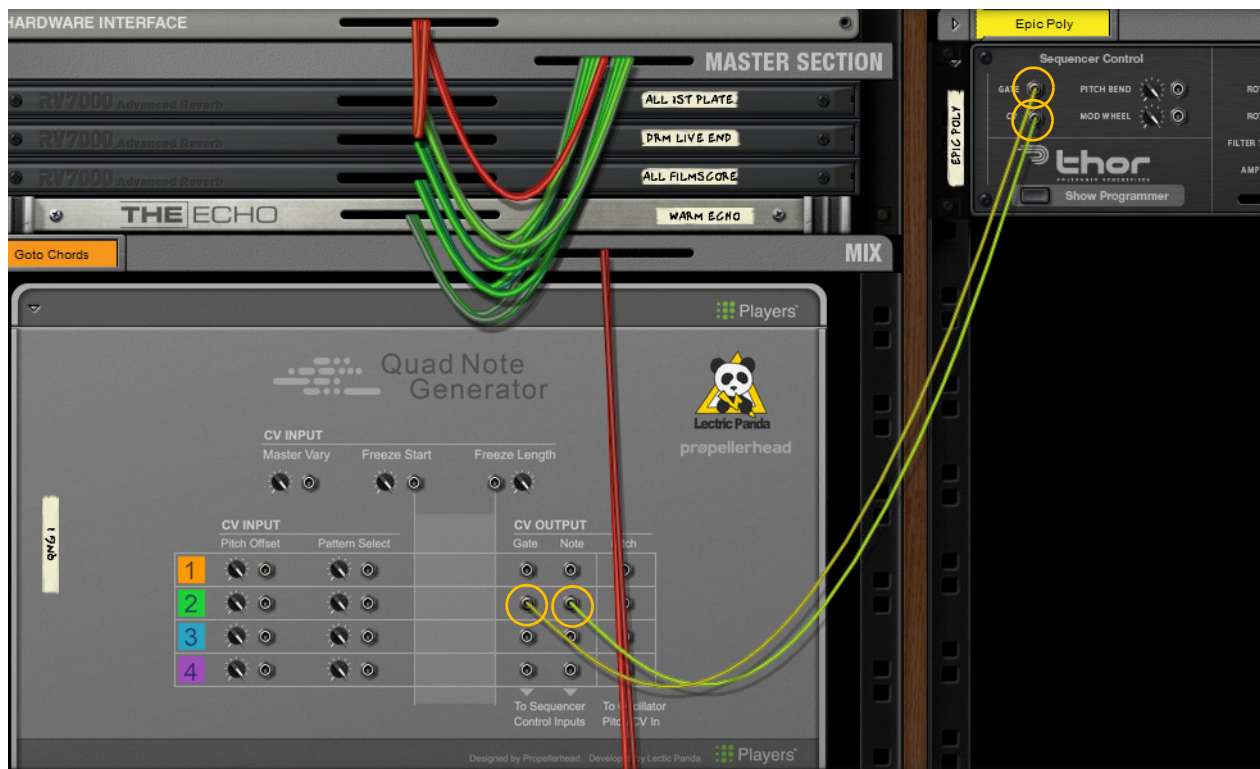
→ **If you like, create more instrument devices and connect the CV Output jacks of the other Note Lines to the these devices as described above.**

6. **Press [Tab] to flip the rack around to the front again.**

7. **Activate Note Line 2 and set up the controls to your liking.**

8. **Click the Key button to the left of the Run button on the Quad Note Generator device and start playing notes on your MIDI keyboard/On-screen Piano Keys.**
   Now, the Thor synthesizer is controlled from Note Line 2's CV outputs.

Auto generating chords

A very nice Player "combo" is to have the Quad Note Generator Player generate notes that trigger chords in the Scales & Chords Player. The setup is really easy to create and is almost guaranteed to give you inspiration!

1. **Cerate an instrument device.**
   In this example we use an Europa Shapeshifting Synthesizer.

2. **Select a nice polyphonic patch in Europa.**

3. **Drag a Quad Note Generator device and drop on the Europa device.**

4. **Drag a Scales & Chords Player device and drop in between the Quad Note Generator device and Europa.**
   This enables the Quad Note Generator to send notes to the Scales & Chords device:

5. **Set up the Scales & Chords device to play chords in the desired Key and Scale.**

6. **Activate one Note Line in Quad Note Generator and set up the Pitch and Rhythm controls to your liking.**

7. **Click the Key button to the left of the Run button on the Quad Note Generator device and start playing notes on your MIDI keyboard/On-screen Piano Keys.**
   Enjoy!