Groove Machine

Groove Machine is a multichannel (drum)sampler, multitimbral hybrid synthesizer, sequencer and last but not least a 'Groove Box', inspired by hardware of this genre. Special attention is paid to live performance via MIDI controllers.

▶▶ Groove Machine Videos here 🔗

Overview

Groove Machine consists of a step sequencer, with integrated Note Editor driving 8 sampler tracks, 5 synth tracks and 10 effects for every track. The main parts of the plugin are the:

- Tracks section
- FX section (touchpad + buttons)
- Stutter.
- Synth and sampler section
- Sequencer. In normal mode it works as a keyboard to test the sounds.
- Transport section

One of the most powerful features is **PER** step automation. Right-click any interface control to access the automation graphs for that control.

Linking & MIDI

Groove Machine can make PER-Channel MIDI control links OR generic links to ALL similar targets across Channels (Channels refer to the 8 x Samplers and 5 x Synths). Each time you select a new sampler or Synthesizer Channel a unique set of synthesis & effects controls are exposed for editing. To provide a quick setup Groove Machine has its own internal linking system:

NOTES: Groove Machine provides **PER-Step automation** of all parameters by **right-clicking controls** and editing the value field at the top of the Drum or Note sequencer page. Groove Machine Sampler Channels are pre-mapped to general MIDI keys . This is why the Sampler-Channels are pre-named as BD, SD e.t.c.

When a GUI target is linked using this technique the link will be to the specific target on the specific (Sampler/Synth) Channel selected at the time of linking. To create a link of this type:


1. Select the **LINK** switch. It will turn orange.
2. Tweak a soft knob (**CTRL 1 to 5**).
3. Tweak the GUI target on the **desired Drum/Synth Channel** .
4. Link the soft knob to the external controller (MIDI controller or automation clip e.t.c) according to your DAW softwares usual procedures. In FL Studio, tweak the soft knob and select **TOOLS > Last tweaked > Link to controller** and then tweak the controller knob again.

NOTE: Steps 2 and 3 are reversible.

Quick Link & Keyboard System (ALL Channels PER Target)

When a target is linked using this technique the link will become active for ALL similar targets on the Sampler or Synth Channels when they are selected. To make a link of this type:
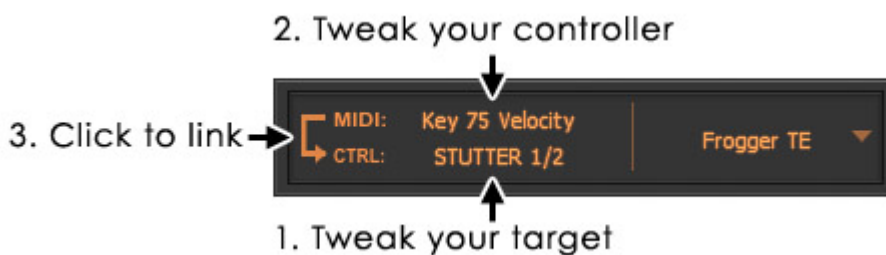
To link Groove Machine GUI targets to external MIDI keys/controllers:

1. This step is **for FL Studio users only:** Open the '**Options (F10) > MIDI settings** ' in FL Studio and select 'Controller type: (generic)'. This enables a custom Groove Machine MIDI mapping 🔗 to assist Groove Machine links with your controller.
2. Tweak the Groove Machine control or click the button to be linked. **Linking momentary switches to MIDI keys** is a great way of mixing up your performances.
3. Tweak the knob, slider or press the MIDI key/pad on your controller.
4. Click the Link symbol as shown above.

To **deactivate a link** select the GUI target and click the link symbol to deactivate it.

NOTES: Steps 1 & 2 are reversible. Try linking MIDI keyboard keys & drum pads to any switch on Groove Machine. Another important capability of this system is to link Keyboard keys (or Pads) to Patterns and other momentary controls such as the stutter effects .

**External Controller Links ALL Channels**

Follow your DAW's normal procedure for linking MIDI controllers or software controllers (e.g. Automation clips) to GUI targets. **NOTE:** These links will work across **all Sampler and Synth Channels** when they are focussed. Not all GUI controls will work with this method, if not see the 'Quick link & keyboard system' below.

In FL Studio:

1. Tweak the GUI target. If you open the '**Browser > Current Project > Generators > Groove Machine** ' folder all targets are available and will focus when tweaked. You can Right-click these and select Link to controller also.

2. Select **Tools > Last tweaked > Link to controller**

3. Tweak the controller knob/control OR select the controller from the Remote control setting pop-up and the link is made.

Options & Controls

Click the **MIDI/EQ** button (showing SYNTH below) in the lower left of the screen to toggle between **SYNTH** and **MIDI/EQ** panels.
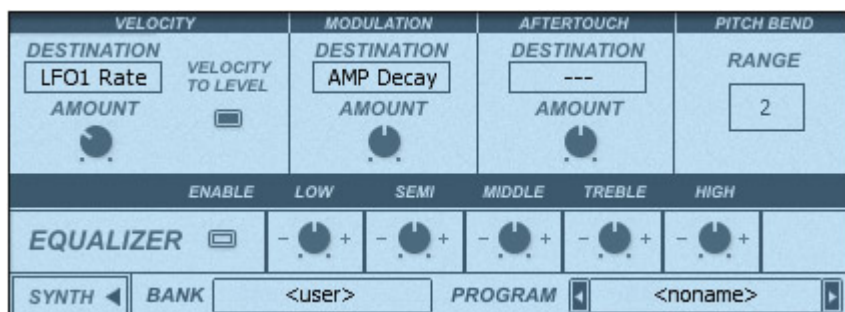
> **MIDI** - From the top section you can set various MIDI controller input to a selected range of Groove Machine targets. Select the target using the **DESTINATION** drop-down menu box.

>> **VELOCITY** - Assign keyboard velocity to control a range of targets in Groove Machine. The **VELOCITY TO LEVEL** switch enables the basic velocity to volume relationship.

>> **MODULATION** - Assign the mod wheel to a range of targets in Groove Machine.

>> **AFTERTOUCH** - Assign aftertouch to a range of targets in Groove Machine. Aftertouch is pressure applied to keys/pads after being played, this feature may not be supported on your MIDI controller.

>> **PITCH BEND** - Set the Pitch Bend wheel to bend-range relationship.

> **EQUALIZER** - The 5 band equalizer is post-FX and covers the range of center frequencies of 60 Hz, 220 Hz, 1500 Hz, 8000 Hz and 12000 Hz respectively. **ENABLE** - Activates the EQ.

Sampler Panel

Groove Machine has 8 independent Sampler Channels. While they are pre-named as BD (Bass Drum), SD1 (Snare Drum 1) e.t.c., this is simply for organizational & standards purposes, you can load any sample/s you want in any Sampler Channel. **However** , Sampler Channels are pre-mapped to the MIDI percussion standard, so stick with the categories and your Groove Machine sampler patches will play from any MIDI percussion file correctly.
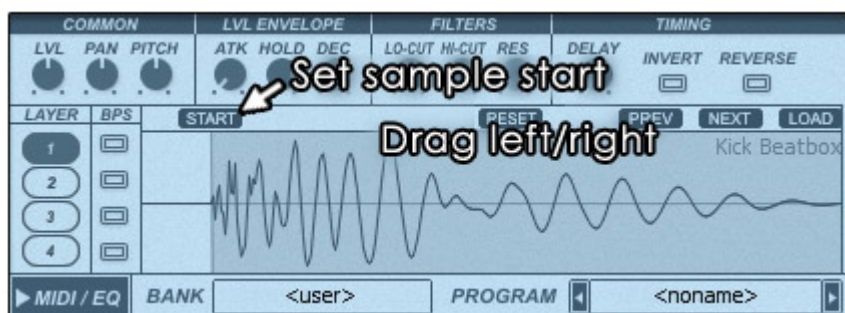
> **COMMON** - Layer controls:

>> **LVL (Level)** - Global level for the selected sample layer.

PAN (Panning) - Pan position for the selected sample layer.

PITCH - Pitch for the selected sample layer.

LVL ENVELOPE - Layer controls:

ATK - Attack time for the selected sample layer.

HOLD - Hold level for the selected sample layer.

DEC - Decay time for the selected sample layer.

FILTERS - Layer controls:

LO-CUT - High-pass filter cutoff.

HI-CUT - Low-pass filter cutoff.

RES - Resonance amount. There is a resonance peak on both the LOW and HI cuts.

TIMING - Layer controls:

DELAY - Sample start delay.

INVERT - Sample phase invert.

REVERSE - Reverse sample playback.

LAYER - There are (up to) 4 sample layers per Sampler Channel. Select a Layer and drop a sample on it from the Browser or the computers standard file explorer.

BPS (Bypass layer) - Switch layers on or off. Automate for additional performance possibilities.

Synth Panel

The synthesizer section in Groove Machine is a hybrid additive, FM & RM design.
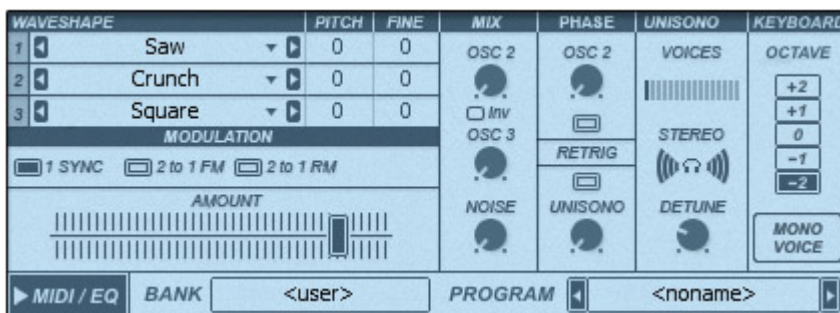
Oscillator section - There are 3 independent oscillators.

WAVESHAPE - Click to select from predefined shapes or load waveforms from .wav files or the library. You can also drop waveforms on each of the 3 oscillators.

PITCH - Pitch change in semitones.

FINE - Pitch change in cents.

MODULATION - Select from one of:

1 SYNC - OSC1 will be synced by the frequency defined by AMOUNT fader.

2 to 1 FM - Oscillator 2 is linked to Oscillator 1 in a Frequency Modulation relationship.

2 to 1 RM - Oscillator 2 is linked to Oscillator 1 in a Ring Modulation relationship.

AMOUNT - Sync, FM or RM amount.

MIX

OSC 2 - Mix for Oscillator 1 & 2.

INV - Invert the phase of Oscillator 2.

OSC 3 - Mix for Oscillator (1+2) & 3.

NOISE - Mix between all oscillators and white noise source.

PHASE

OSC 2 - Oscillator 2 phase.

RETRIG - Oscillator 2 phase retriggering.

UNISONO - Unison phase.

UNISONO - Multiple detuned voices are generated per note for a chorus-like effect.

VOICES - Choose between 1 and 16.
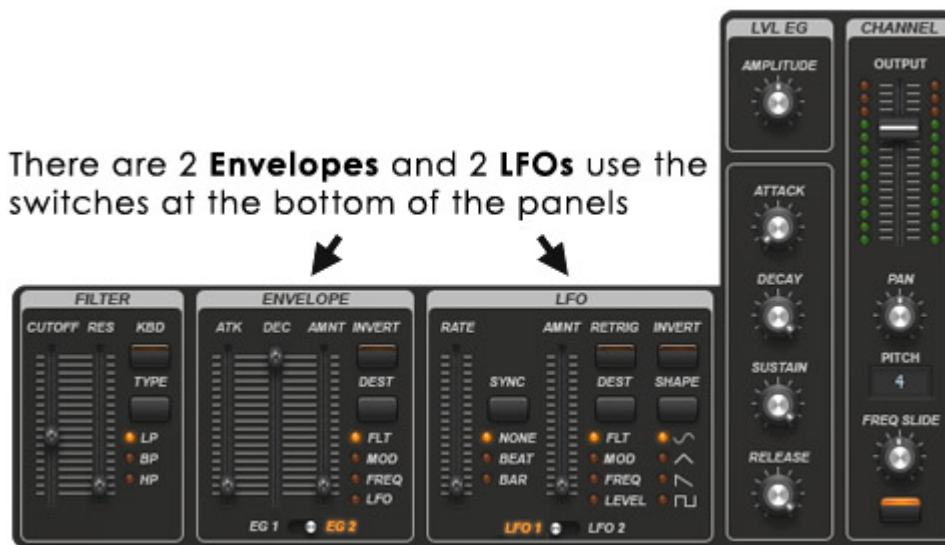
STEREO - Stereo spread of voices.

DETUNE - Detuning of voices.

KEYBOARD

OCTAVE - Octave for all Oscillators.

MONO VOICE - Monophonic mode with portamento.

Articulation

FILTER

CUTOFF - Channel global filter cutoff frequency.

RES - Resonance.

KBD - Keyboard scaling. The filter cutoff will track up and down with the note played. Higher notes having a higher cutoff frequency e.t.c.

TYPE - Switch between **LP** (Low Pass), **BP** (Band Pass) & **HP** (HighPass).

ENVELOPE

ATK - Attack time.

DEC - Decay time.

AMNT - Amount of envelope applied. Envelope scaling.

INVERT - Invert the phase of the envelope.

DEST - Target parameter for envelope modulation.

EG1 / EG2 - There are two envelopes available, switch between them here.

LFO - Low Frequency Modulation is used as a source to rhythmically or otherwise vary synthesis parameters.

RATE - LFO Speed.

SYNC - Synchronize the LFO period to NONE (free running), BEATs or BARs.

AMNT - LFO modulation amount.

RETRIG - Retriggering restarts the LFO phase on each note. Leave off for a free-running LFO effect.

DEST - LFO destination. Select the target to be modulated by the LFO.

INVERT - Inverts the LFO waveform.

SHAPE - LFO waveform shape.

LFO 1 / LFO 2 - There are two LFO sources available, choose the LFO to be edited here.

LVL EG - Envelope Generator Level. The envelope is used to shape the volume contour of the sound of each note played.

Amplitude - Overall gain.

ATTACK - Attack time, low if faster.

DECAY - Decay time, low is faster.

SUSTAIN - Sustain level. Volume for the duration of the held note.

RELEASE - Release time, low is faster. Try increasing this a little if notes 'click' when released.

CHANNEL

OUTPUT - Global Channel volume.

PAN - Global Channel panning (position in the Left to Right stereo field).

PITCH - Global Channel pitch (semitones).

FREQ SLIDE - Slide time for portamento style effects. **Activate** with the switch below the knob.

Effects

Groove Machine has 10 performance oriented effects per Channel. This allows for completely independent operation. **NOTE** Groove Machine is also a multi-output plugin. You can route each sampler and Synthesizer Channel to a unique mixer track for even more in-depth processing.

GLUE - Click this switch to permanently enable the selected effect. **Momentary** activation can be gained by clicking in the X/Y panel.

Effects - There are 10 effects these include:

DIST - Distortion. **X** - Distortion amount. **Y** - Low pass filter cutoff frequency.

CRSH - Bit crusher. **X** - Bit reduction amount. **Y** - Low pass filter cutoff frequency.

FLNG - Flanging. **X** - Depth. **Y** - Feedback.

PHSR - Phasing. **X** - Depth. **Y** - Feedback.

LPF - Low pass filtering. **X** - Low pass filter cutoff frequency. **Y** - Resonance amount.

HPF - High pass filtering. **X** - High pass filter cutoff frequency. **Y** - Resonance amount

ECHO - Delay/Echo. **X** - Feedback amount (echo strength) **Y** - Echo filtering.

> **RVRB** - Reverberation. **X** - Feedback. **Y** - Wet level (reverb amount).
>
> **PAN** - Panning. **X** - Left/Right pan position. **Y** - Binaural effect level. Up/Down.
>
> **TRNC** - Trance effect. **X** - Release time. **Y** - Drop level. Use this effect to induce side-chain style pumping.

STUTTER - Beat related repeat effects. Click to activate or link to a controller for live performance. **Hold the ALT** (bottom) button plus another to get the **alternative mode** printed in yellow under the white labels.

LFO

> **LFO Multiplier** - Select a multiplication factor for the LFO.
>
> **AMOUNT** - LFO multiplier, from 0 to 100% (top).
>
> **SYNC** - LFO can be synced to the Bar or Beat.
>
> **SHAPE** - LFO waveform shape.
>
> **Arm X / Y** - Each effect has a pair of unique performance parameters.

Sequencing

Groove Machine provides three main methods of sequencing performances. Loop Recording , Step entry . Sequencer entry and . Use these methods to enter data for up to each of the **8 PATTERNS** by **8 BARS** x **8 (drum) SAMPLER** Channels and **5 SYNTHESIZER** Channels. Hold the **(Ctrl) Key** and click a PATTERN and BAR to edit them. **Right-click** the Stepsequencer to open the Note Editor for the selected Channel OR any interface control for step-by step automation.
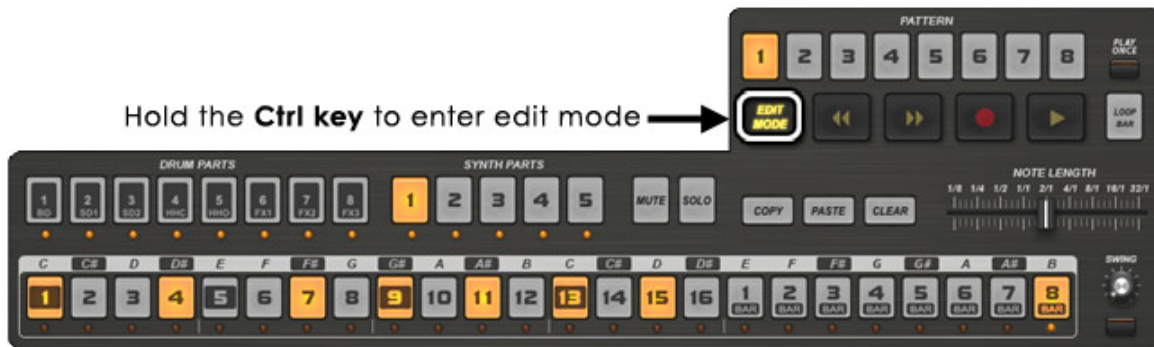
NOTE: If a button is flashing while Groove Machine is not playing, (Ctrl) and click to select, that button is armed for editing.

Transport & Edit Controls

When used in FL Studio Groove Machine will slave to the Master Transport Controls. Pressing play in Grove Machine will start FL Studio also.

> **Transport Buttons** - << and >> step between patterns. Press the **Record** button to arm for recording and **Play** to start the recording. A 1 bar count-in precedes recording.
>
> **EDIT MODE** - (Ctrl) when selected you can select the BAR and Steps to edit.
>
> **PLAY ONCE** - Plays the selected PATTERN and BAR once.
>
> **LOOP BAR** - Loops the selected bar.
>
> **MUTE** - Mutes the selected Channel.
>
> **SOLO** - Solos the selected Channel.
>
> **COPY** - Copies the contents of the selected PATTERN or BAR. Hold (Ctrl) and click to select.
>
> **PASTE** - Pasted the contents of the clipboard to the selected
>
> **CLEAR** - Clears the selected (in edit mode) PATTERN or BAR.
>
> **NOTE LENGTH** - Change the length of selected notes. You can also roll your mouse wheel on notes when using the Note Editor .

SWING - A 'swing' rhythm holds the first note of the bar at the expense of the second note in the bar. The control determines the amount of swing. People seem obsessed with swing rhythms (except Kraftwerk).

Swing enable - The button below the knob enables swing (link it to something!).

Drum Part Mapping

For your convenience the 8 Sampler Channels are premapped to the following MIDI keys (playing notes outside this range will play the selected Sampler Channel unpitched).

Channel Name	Note/Key
BD (Bass Drum)	C5
SD1 (Side Drum 1)	D5
SD2 (Side Drum 2)	D#5
FX1 (Effects 1)	F5
HHC (High Hat Closed)	F#5
FX2 (Effects 2)	G5
HHO (High Hat Open)	G#5
FX3 (Effects 3)	B5

NOTE: Replace octave 5 above with 4 on some DAW software. Anarchists can, of course, load any sample/loop on any Sampler Channel.

Loop Recording

Groove Machine will loop up to and including the number of bars with note data in them provided you press **Play THEN Record** . If you press Record then Play, Groove Machine will loop the entire 8 bars of the Pattern.

1. Select **Bar 1** of the **Pattern (1 to 8)** you want to record into.
2. Select the **Sampler** or **Synth Channel** you want to use.
3. Press **Record** and **Play** to start recording up to the number of bars you want to loop **OR** manually edit in a basic percussion track for the number of bars you want to loop, this is useful as the metronome won't be audible in loop-record mode.
4. **Stop playback**
5. **IMPORTANT** Press **Play** to start playback **THEN Record**
6. Groove Machine will now loop to the total of bars with note data. You can switch between Channels and FX while looping and all movements and notes will be recorded.
7. When you are done, Stop playback and record mode will be cancelled also.

NOTE: See the Sequencer entry section for more details of the options available.

Step Entry/Sequencing

To use the step entry method for **Sampler Channels:**

1. Select a **Sampler/Drum Channel**
2. Select a **Pattern (1 to 8)**
3. **Hold the Ctrl key** - on your keyboard to enter EDIT mode.
4. Select a **Bar(1 to 8)** - When Ctrl is held (in EDIT mode) the last 8 notes of the Step Sequencer select bars.

5. **Click on steps** - to activate them.
6. **Double-click active steps** - to deactivate them.
7. **Release the Ctrl key**

To use the step entry method for **Synth Channels:**

1. Select a **Synth Channel**
2. Select a **Pattern (1 to 8)**
3. **Hold the Ctrl key** - on your keyboard to enter EDIT mode.
4. Select a **Bar(1 to 8)** - When Ctrl is held (in EDIT mode) the last 8 notes of the Step Sequencer select bars.
5. **Click on a step** - to select one for editing (it will start flashing).
6. **Click on notes** - to set the pitch. You can activate any number of notes to create chords.
7. **Click active notes** - to deactivate them.
8. **Release the Ctrl key**

NOTES: Items selected for editing **flash** . See the Sequencer entry section for more details of the options available.

Drum / Synth Part Sequencing

Select a Channel - Select a Sampler or Synthesizer Channel by clicking on a DRUM PARTS or SYNTH PARTS Channel button.

Bars and steps - There are 8 PATTERNS with 8 BARS with 16 STEPS per bar.

Drum/Sampler Range - When opened from a **Synth Channel** there are 2 octaves available. Use the KEYBOARD > OCTAVE control to change octave. When opened from a **Drum Channel** the vertical position maps to the 8 Sampler Channels as shown down the left side (clicking there will preview the sample). **NOTE:** The Sampler Channels are pre-mapped to general MIDI keys so the percussion Channels start with the **BD** from C4 or C5 (depending on your DAW software) and run up one octave. Playing outside this range will sound the sample for the selected Channel (without pitching).

Note Editor - Right-click the steps OR any interface control to open the Note Editor. If you have a **DRUM** Channel selected you will see the **Drum Sequencer** . If you have a **SYNTH** Channel selected you will see the **Synthesizer Note Editor as shown below** .

Moving notes - When you move notes horizontally you are actually moving notes between steps. The Note Editor treats each step as a unique event with associated automation parameters for any right-clicked interface target.

Per step automation - The Note Editor provides **PER STEP** automation of any right-clicked interface parameter. The parameter to be edited appears above the steps in the Note Editor as shown below.

Note entry - There are several ways of entering note data for the DRUM and SYNTH parts:

DRUM step-sequencing - Click on a PATTERN (1 to 8) to edit and then enter EDIT MODE (🎹 **Ctrl**) and select BAR 1 to 8. Then, while still in EDIT MODE click on the steps along the bottom to activate them. Double-click to delete a step. Steps 1 to 16 are available for sequencing DRUM PARTS.

SYNTH step-sequencing - Click on a PATTERN (1 to 8) to edit then enter EDIT MODE (🎹 **Ctrl**) and select BAR 1 to 8. Next Click a step to edit (it will start flashing) then click any or all notes to play on that step. Release and re-engage the (🎹 **Ctrl**) button, click a new step then note/s. Repeat this until you are done.

MIDI recording - Arm the record button, press play and after the 4 beat count-in start playing in your data.

Note Editor entry - Select a PATTERN, Right-click a DRUM or SYNTH part to open the Note Editor (as shown below). Click to add steps/notes.
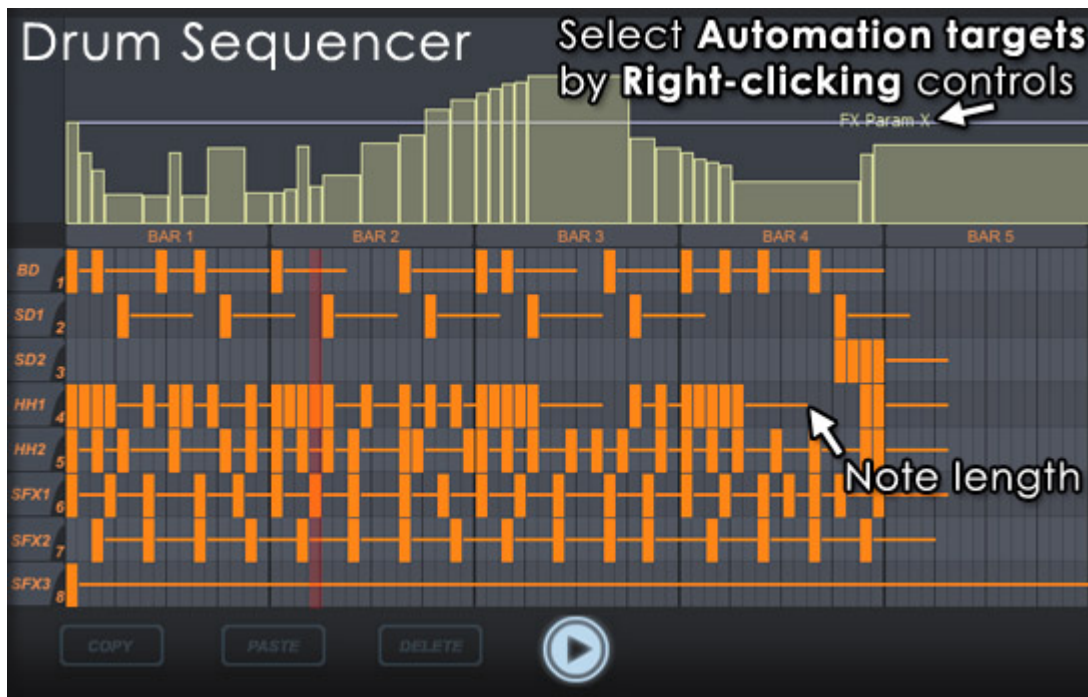
NOTE: DRUM parts are labeled and mapped to General MIDI notes for compatibility. You can however load any sample into any Sampler Channel if you prefer to descend into a world of chaos and confusion.
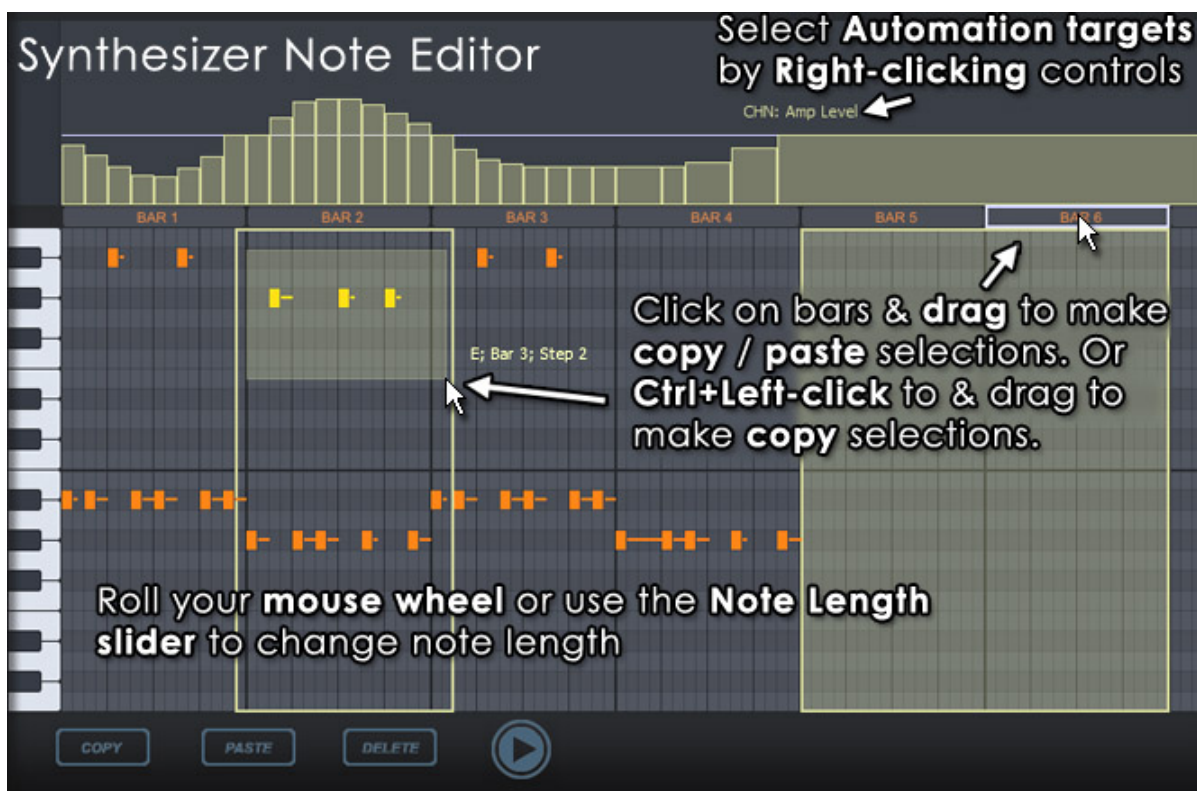
To edit a Synth Channel in the Note Editor:

1. Select the Synth Channel to be edited (1 to 5)
2. Right-click a step OR right-click any control target to pre-select it for step-by-step automation editing in the upper area.
3. Click on the Piano roll area to add or delete notes, add chords

4. Change note-length by hovering over a note or making selections and rolling your mouse wheel or using the front panel note-length slider.

Plugin Credits:

Code: Maxx Claster

Presets: Toby Emerson, Arlo G (nucleon).

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			Automation or Pattern Clips.

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