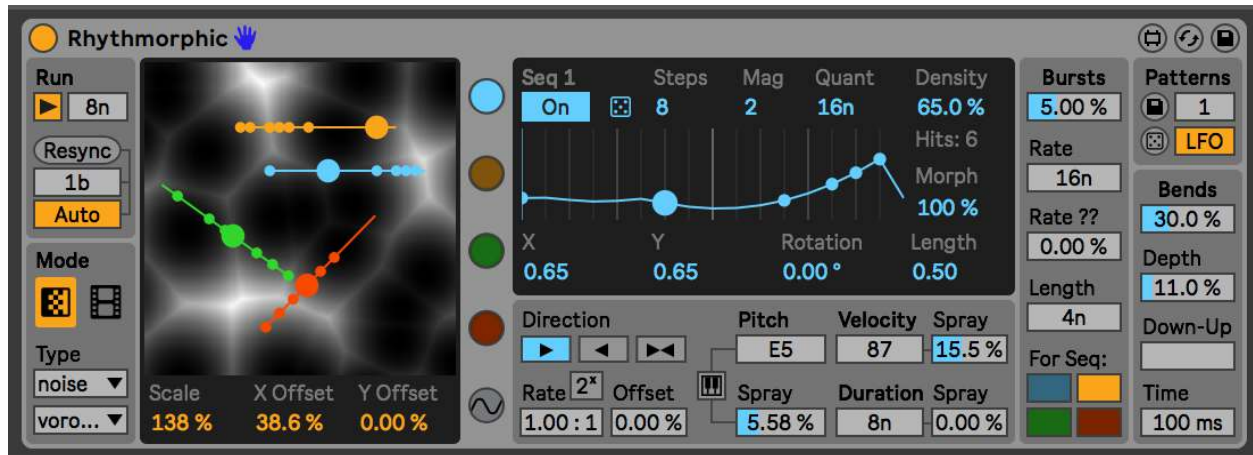


## Rhythmorpic User Manual



Rhythmorpic is a max for live MIDI Effect. It has four sequencers that can create “*non*”-euclidean sequences (patterns that are not evenly distributed) through *morphing* or warping a euclidean sequence by the topology (brightness values) of an image or video. This allows for complex and unique patterns to be generated and modulated.

### To install:

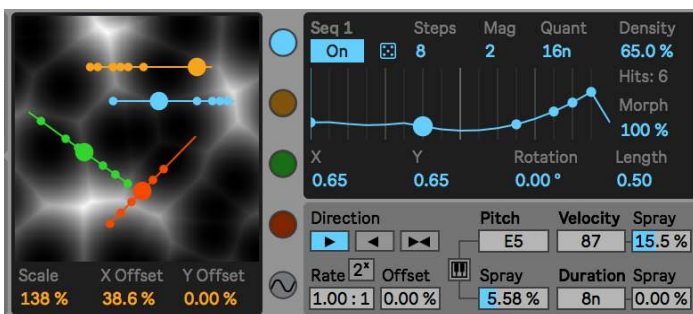
Unzip the folder and drop the folder called “Rhythmorpic” in this exact location in order for presets to load correctly: *ableton/user library/presets/midi effects/max midi effect*

For best results or if you are having issues, make sure you are using the latest version of max/msp. You do not need to have a license if you are using Live suite. Download the newest version here: <https://cycling74.com/downloads> and once downloaded go to the ableton Preferences > Library and set the newly downloaded version of max to the one ableton should use. (Also you can try to see if it works fine with your bundled version first).

### To setup Ableton Live to work with videos in Windows:

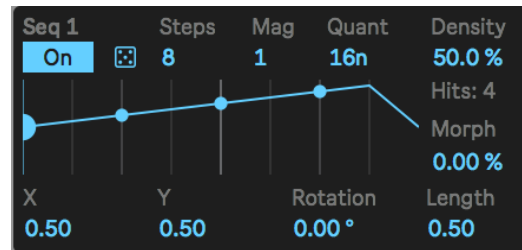
Dropping video and image files may not work in windows. Following these instructions seems to resolve it. I’m not sure if video/image files will work with windows below Live11 or not. Mac it is no problem. <https://help.ableton.com/hc/en-us/articles/209773125-Using-Video>

### How it works



As mentioned, an image morphs a euclidean pattern into something unevenly distributed. This allows for a lot more complex patterns than ordinary euclidean rhythms offer (although you can create typical euclidean sequences with Rhythmorpic). The sequences are derived by value changes in a line.

When no morphing is on, the sequence is a typical euclidean pattern like seen on the right. This is the equivalent to a straight diagonal line, whose value changes evenly and thus an even euclidean pattern emerges. When morphing is turned up, the line curves based on the image brightness values below it. Image the brightness of the image being actually its height (dark is low, bright is high) and that the line on top of image bends its shape from the images height. The curvature of the line then has a different pattern of value changes than the straight euclidean line. The more value changes, the more hits occur. So an image with a lot of brightness changes (a busy image) will have busier curvature of the line and thus generally more hits or accents in the pattern.



## Global Transport



Here you can **run** or stop the device (Live's transport must also be running for it to run). Next to the Run button is a parameter for the **global step interval** (the speed). Sequencers have individual parameters to adjust their step speed, but by default they will go step by step at this rate. Below are the resync options. Changing a sequencers on/off state, speed, number of steps, direction, etc can send it out of sync (in terms of the pattern if you restarted the transport). Pressing **Resync** resynchronizes the patterns on the next **quantized beat** set just below the button. If **Auto** resync is enabled, everytime a parameter changes that would send the overall pattern out sync a reync is automatically retriggered. If you are modulating parameters that would trigger an automatic resync you have to either adjust the resync quantization to match the period of your modulator or just turn Auto off.

## Image Source



There are several options for creating source images to morph the sequence from. The two main **Modes** are texture and video/files. Texture allows you to create various textures from the bfg object. You have a few **types** of textures with various options. For the video mode you can either enable a **live camera** feed or **drop video or image** files. Each mode has different parameters for changing the image. For texture you can change the **scale** of the texture and offset the **X** and **Y** position. For video playback you can change the **start** position, the **length** of the playback loop and the **speed** of playback. For images you can **zoom** and offset the **X** and **Y** position. Finally, for the live camera you can choose the **feed source**.



### Texture Options

Scale	X Offset	Y Offset
240 %	0.00 %	0.00 %

### Video Options

Start	Length	Speed
0.00 %	1.00 s	100.0 %

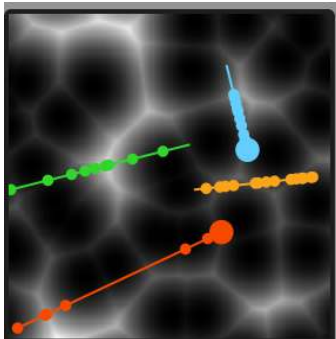
### Image Options

Zoom	X Offset	Y Offset
79.5 %	-73.2 %	-59.8 %

### Camera Options

Camera Source
FaceTime HD Camera (...)

## Main Display



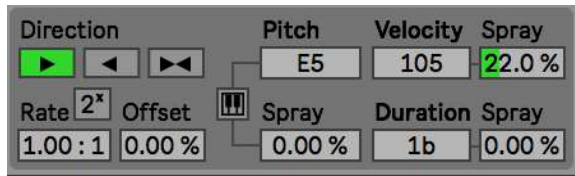
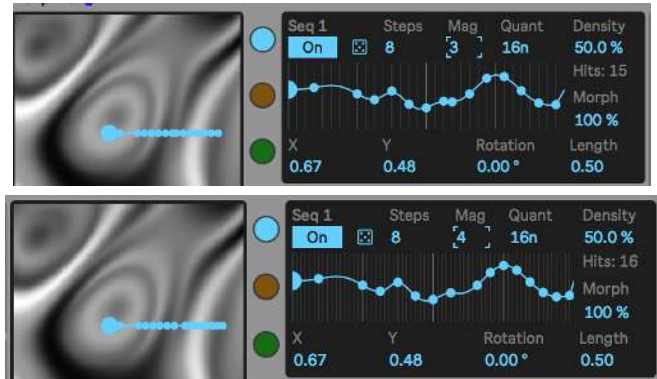
The main display shows the image source with the sequencer lines on top of it. Each circle in the line represents a hit in the sequence. Bigger circles are the last hit that was triggered. Although it could be done in the sequencer parameter section, you can use your mouse on the main display to move the sequencer positions by clicking and dragging. If shift is held while clicking and dragging, then this changes a sequencer's rotation and length.

## Sequencer Parameters

In this section you can change the settings of the sequencers. The buttons to the far left choose the different parameter menus for each sequencer (except for the bottom button which shows the LFO settings). The top section changes what the actual sequence pattern will be while the bottom section deals with how the pattern is played and the MIDI notes it outputs. In the top section, you can **activate** the sequencer, **randomize** all its values (randomization doesn't change the scale, tonic, and smart quantization settings) and set the number of baseline **steps** in a sequence. **Density**

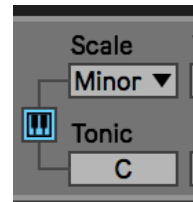
works similar to setting the number of hits in a euclidean sequence, however if the image is morphing the sequence the number of hits is not fixed and so instead you control the overall density of hits. **Mag** sets the precision or magnification of the line in a sense. For example, if there were only 8 baseline steps in a sequence, it might not capture the details of the curves in the image below the line. By turning up Mag, the number of steps are consecutively doubled, but also the rate of playback is internally doubled as well. By doubling both the steps and rate, the sequence takes the same amount of time to

playback. However, it captures more of the curvature and hits may happen at faster intervals than the global rate. Refer to the images to the right to get an idea of this, in each image the Mag value is increasing. The **Quant** parameter is a sort of smart quantization. This does not quantize every hit to the selected quantization, but instead it groups neighboring hits in a sequenc based on the selected quantization, then it evens out their intervals and shifts the group to the nearest steps of the quantized interval. This helps to keep rhythms at intervals over 16n to sound cleaner, although you can play around with settings to get a desired result. The lowest value “off” disables smart quantization. The **morph** parameters mixes between a plain euclidean sequence (0%) and one warped by the image (100%). Below the line visualization are the **X**, **Y**, **Rotation**, and **Length** parameters that control the line’s transformation in the main display over the image.

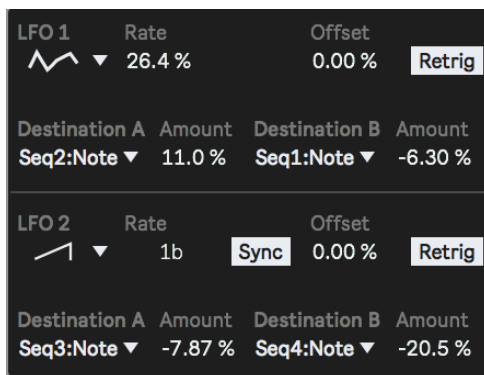


The bottom section controls the playback of the sequence. You can change the **direction**, **offset** the starting step of the sequence, and scale the **rate** or speed of the playback. The **2x** parameter makes it so the rate can only be

in powers of 2 (0.25, 0.5, 1, 2, 4, etc). To the right are the MIDI note output options. You can set the **Pitch**, **Velocity**, and **Duration** of the note sent out and there are random **spray** options as well for each of them. By pressing the **keyboard** icon, there are options for **Scales** and **Tonics** for the pitch. The bottom scale “Drums” automatically detects the pitches in an adjacent drum rack and scales the pitches to the drum pitches.

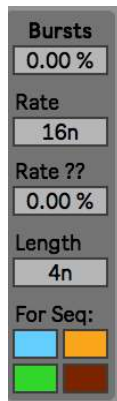


## LFOs



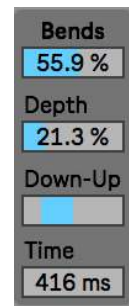
There are two LFOs for modulating many of the parameters about the sequencers and images. You can select the **shape** (there is an option for perlin noise as well), change its **rate**, **offset** the **phase** and allow for **retriggering** when Live’s transport is started or Resync is triggered. You have two **destinations** with independent bipolar **attenuators**.

## Bursts



Here you can set a random repeat burst. At the top is the **probability** of a burst happening. Bursts occur as a quarter note is approached. Below is the burst **rate**, **randomize** the rate, set the **length** and choose which **sequencer** can have random bursts.

## Pitch Bends



Similarly, random pitch bend envelopes can be triggered. The top parameter sets the **probability** of a bend occurring. Below you can set the **depth** of the bend, the probability it will bend up or down, and the length of the pitch bend envelope.

## Patterns



Patterns save snapshots of the sequencer settings so that you can transition between different rhythms. By pressing the **floppy disk** icon button you can save a pattern into the set index number. By changing the **index** number, a saved pattern is loaded (if there is no saved pattern in an index, nothing happens). To avoid loading a preset when the index is changed, you must hold the ALT/Option button while changing the index. The **LFO** button allows for the LFO settings to also be saved in a pattern, allowing for transitioning between even more complex rhythms. However, if LFO is on, then patterns cannot be modulated with the internal LFOs (of which they usually can). The **dice** button randomizes all sequencer settings (except for the scale, tonic, and smart quantization settings).

I hope you enjoy this device! Please email me if you have bugs or other issues:

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More: <http://dillonbastan.com>