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Frame Editor 2 Manual

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Setup



The Frame Editor device needs to be inserted once onto any MIDI track. It passes the incoming MIDI events through, but it is recommended to use an unused MIDI track for it, since it might introduce a slight latency. Only one instance is needed recommend for the whole Liveset. This device will use other MIDI tracks, which will be connected to your controller(s).

To add a MIDI controller, insert a new MIDI track in your Liveset and set the input and output to the controller. The monitoring state will be changed automatically by the Frame Editor, when a clip is being edited. You can change the track name however you like, it will then be shown inside the Frame Editor.

Next add the corresponding controller device to the track. The LaunchPad device can be used for every LaunchPad version, only the LaunchPad Pro has its own device. Ableton Push uses two devices, one for the main pads and one for all of the other buttons. The input and output for both tracks need to be set to Ableton Push (User Port).

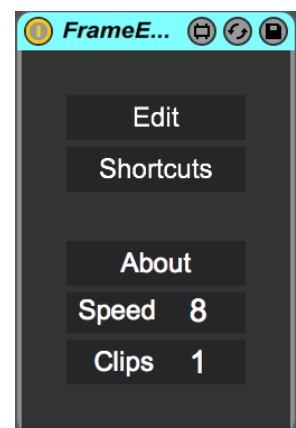
You can use multiple instances of any controller device if you want to use multiple Launchpads for example, but make sure to not use multiple controller devices on the same MIDI track.

The animations for this controller will be stored inside MIDI clips, in order to create a new animation simply create a new MIDI clip in an empty slot.

Editing clips

In the main view of the Frame Editor, which is illustrated on the right, you can set the speed of a new animation and how many clips will be linked together. The default speed 8 means, that 8 frames will fit inside one bar. Not all numbers are allowed to prevent rounding errors to happen.

If you want to use multiple controllers at the same time you need to link clips together by changing the value in the “Clips” box. Note that these values are only needed if you're starting a new animation. Once a clip has been edited, it will remember them by writing them into its name.



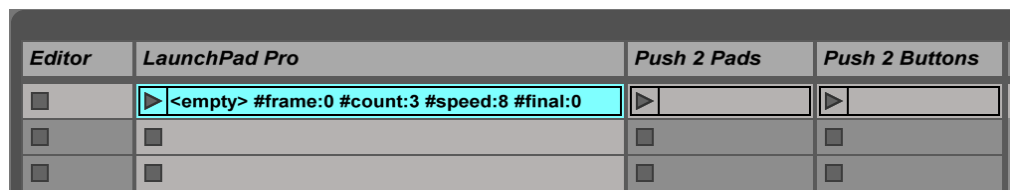
To begin editing, activate the edit mode with the “Edit” button. After that the device waits for you to select the MIDI clip you wish to edit. When multiple clips are linked and edited together, the first one to the left is the one that needs to be clicked on. For



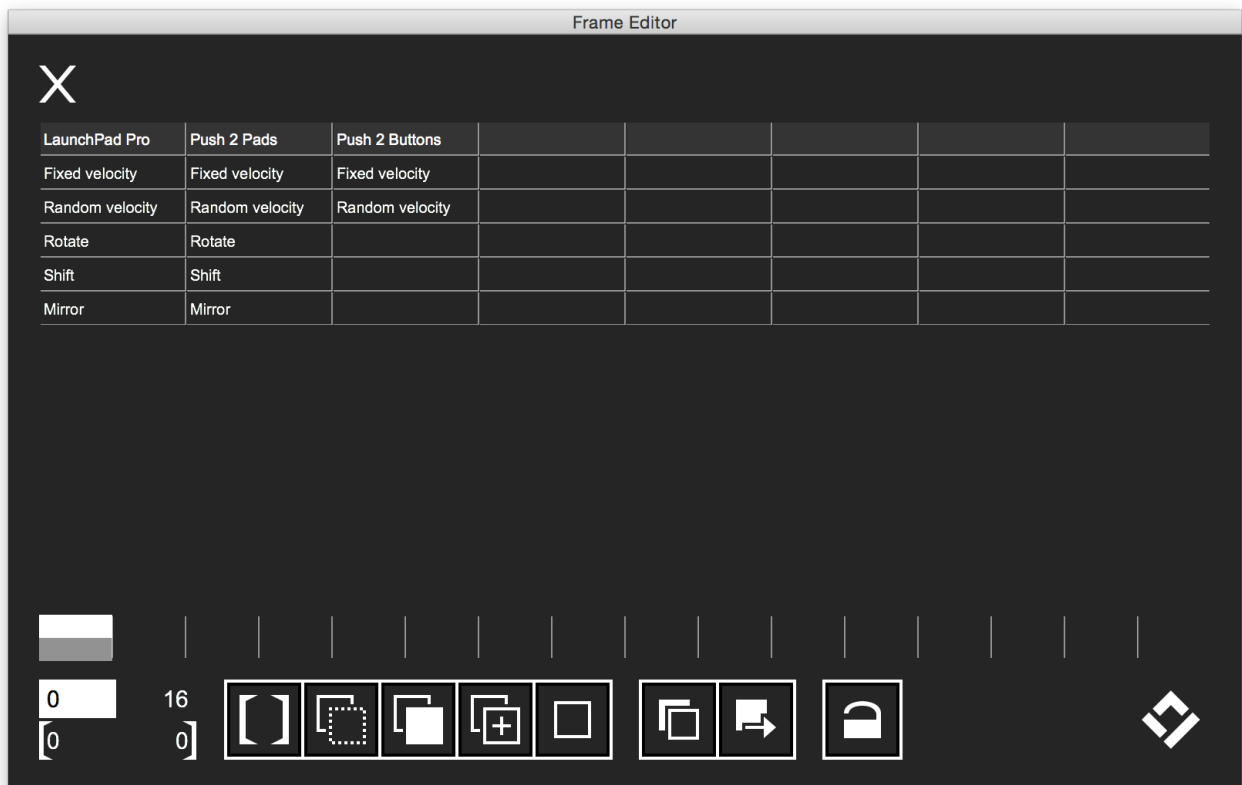
example if the “Clips” value is 3 the device will grab the MIDI clip you select as well as the next 2 to the right on the grid in Live as shown in the following picture:



After the clip has been selected and you have confirmed your selection, it's name will be changed. Important values will be added to it. By using multiple clips only the first clip to the left will hold them. If a clip doesn't have a name, Live will call it “<empty>”. Feel free to change it however you like, but don't remove the values at the end starting with “#”.



As soon as a clip is selected the main window will open, which is illustrated in the following image:





Editing basics



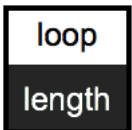
The timeline can be used for navigating the animation. Click or drag on the fields to select the current frame. By doing so all notes on this frame will be played back and your controller(s) will therefore show the current frame of the animation. With the arrow keys you can also move the current frame by 1 or 10 frames. You can select multiple frames by holding down the shift key and by holding down the cmd key (ctrl key on Windows) you can zoom in and out and view more or less steps.



With these numbers in the bottom left you can also set the current Frame, zoom and selection. There is no limit on how many frames can be used. You can even edit frames below frame 0, only the timeline won't be able to show them.



The selection tool can be used to either set the start or the end of the selection to the current frame. Click it on the left or the right side to do so. By holding down the cmd key (ctrl key on Windows) you can access a few options of the MIDI clip.



On the top you can toggle between loop and 1 shot mode for all clips, that are being edited. With the “length” option you can set the start and end points of the MIDI clip to the selection.

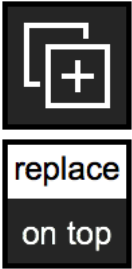


The copy tool can copy either the current frame or the selection of multiple frames. Select “single” for the current frame and “multi” for the selection. It saves the notes inside an internal clipboard, which will be erased by reloading the Liveset or the Frame Editor. You can copy frames from an animation to a different one, but the device will ignore the controller type. Notes from the second clip will always be pasted to the second clip, regardless of what clips are being edited.

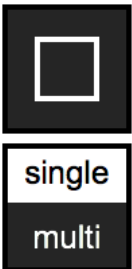


The paste tool will paste the clipboard at the position of the current frame. By selecting “replace” the content of the current frame will be overwritten by the new content. With “on top” the old content will remain and the copied notes will be added to it. When multiple frames were copied the device will then give you two more options. By selecting “reverse” the frames will be pasted in reversed time.





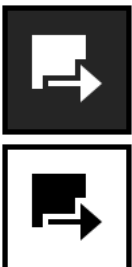
The duplication tool copies the current frame, moves the current frame to the next one and pastes the frame. This is just a shortcut, which means that the same clipboard will be used for this task. Pasting afterwards will paste the duplicated frame. You can set it to replace the content of the next frame or place it on top of it, just like the paste tool.



The erase tool clears the current frame or the selection of multiple frames. Select “single” for the current frame or “multi” for the selection, just as the copy tool.



By default pressing a button on your controller will add its note to the MIDI clip. Pressing it again will remove it. With this button you can change the drawing mode in order to replace a note with a new velocity instead of removing it. By activating it, deleting a note becomes impossible, but if you want to change velocities of a few notes (change the displayed colors) this is a faster approach.



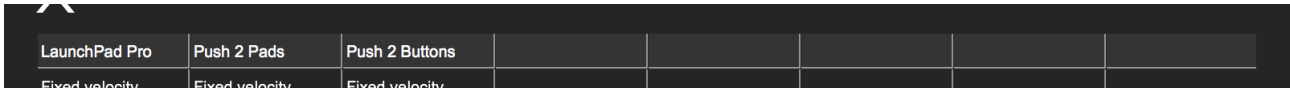
By activating the color picker the device waits for the next input of one of the connected controllers. By pressing on an already lit button, it will read its velocity and use it for future drawing. Selecting and using different colors will be explained later on.



The last button in this interface is the finalizer, an additional feature to the Frame Editor. By finalizing an animation notes with the same pitch and velocity, which are positioned right beside each other, will be connected. It replaces them with a longer note, so that in the end the controller doesn't have to retrigger the same LEDs with the same color, which can cause flickering. A finalized clip is locked and can't be edited, but with this button you can also unlock it and split longer notes into shorter ones again.



Managing colors



The track names are displayed on top of the matrix. By clicking on them you can open up a custom window for each controller, which then allows you to set up a range of colors.

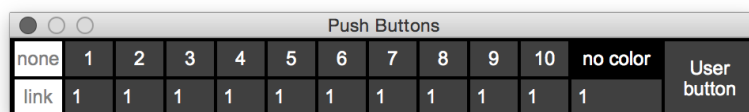
This is the window for the Push pads:



It's possible to switch between 10 different velocities (colors) when drawing with the controller. You can select them by clicking on the numbers in the top row. Below them you can change the velocity number. Changes made on the selected color will be directly shown on the controller to give you a preview of what color this velocity will produce.

By selecting “none” in the top left, no color will be selected and the incoming velocity will be used for drawing without any alteration. The “link” button links the colors for all instances of the same controller type together. This way every Push, regardless of Pads or Buttons, will use the same colors. LaunchPads can sync their color that way as well.

The “Rectangle” button can be used to draw a rectangle on the grid of the controller. After activating it the device will take the next two incoming notes and creates the shape out of them. Please note, that the device will then interpret it as if you would press every button of the rectangle yourself. You can use it to add and remove notes, depending on the drawing mode in the main window of the Frame Editor.



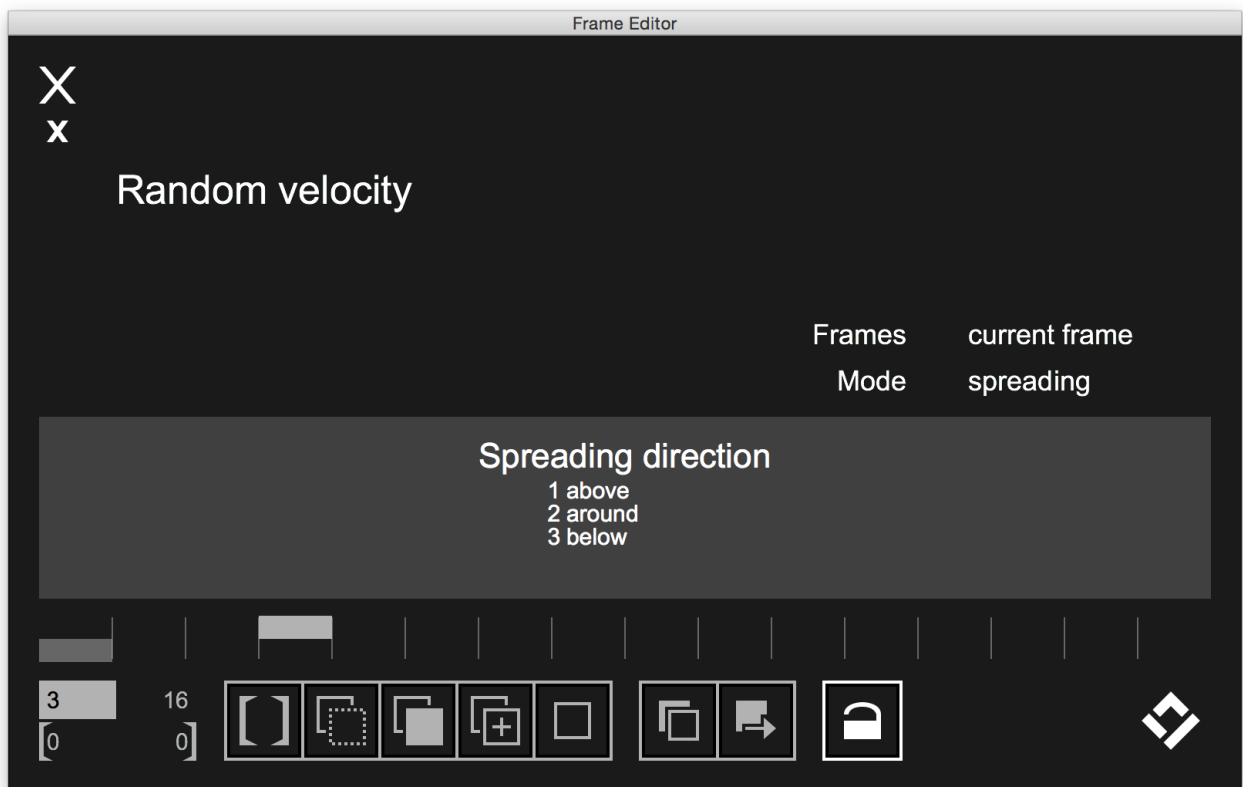
The Push buttons have two more functions. A few buttons on the controller can't produce different colors and therefore the “no color” value is used for the drawing velocity. The 10 colors are only being used for the colorful buttons. Also by clicking on “User button” you can simulate a press on the user button on the controller. Since it would toggle between the user and Live mode, it becomes difficult to use it in an animation without having to toggle back to the user mode all the time.



Using effects

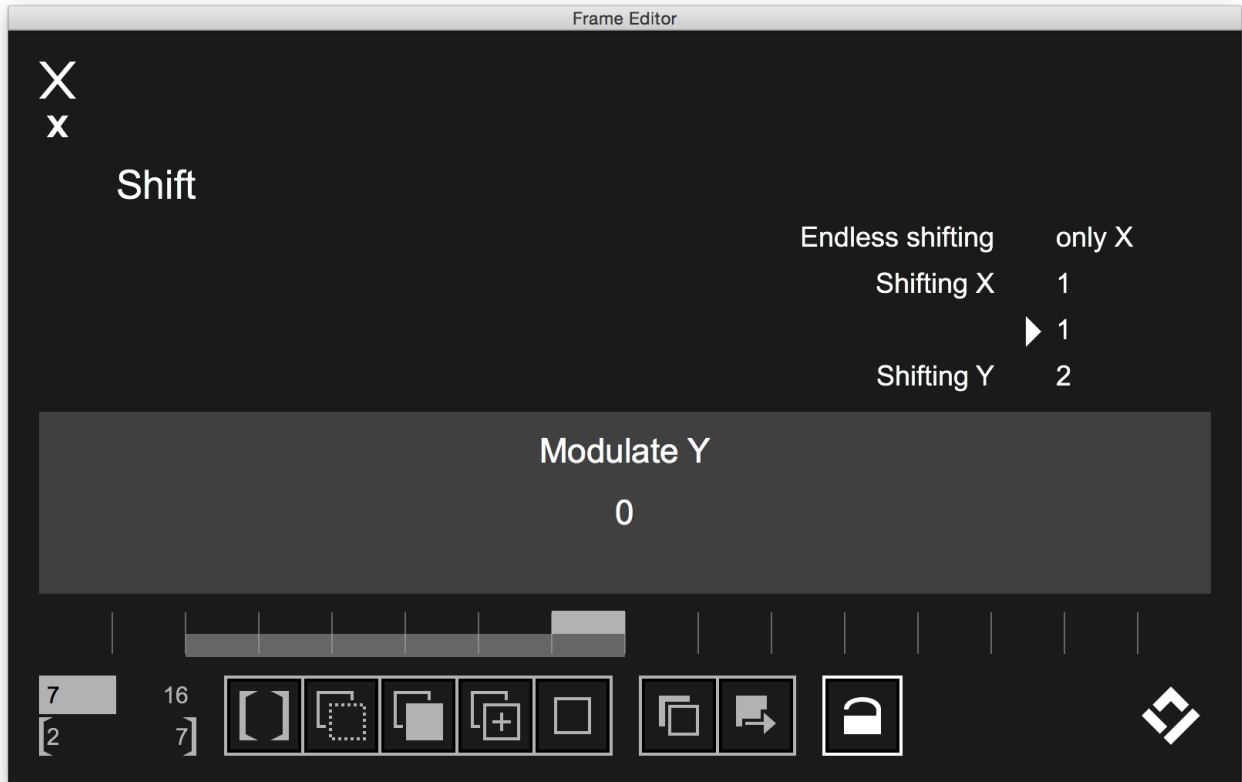
Effect 1	Effect 2	Effect 3					
Fixed velocity	Fixed velocity	Fixed velocity					
Random velocity	Random velocity	Random velocity					
Rotate	Rotate						
Shift	Shift						
Mirror	Mirror						

The effects are a part of the controller devices, while rendering notes are constantly exchanged between them and the Frame Editor. After selecting an effect you can set parameters of it before it starts to change the content. This menu is navigated by the keyboard. Selecting between a number of options is done by pressing the corresponding number:





That way it becomes easy to quickly set up parameters by memorizing the number sequence that needs to be pressed. For a few parameters you have to enter a custom value, which needs to be confirmed with the enter key:



When affecting the selection instead of just the current frame, you will often get the chance to modulate a certain value. The value you're entering will then be multiplied by the frame number, of the selection. The first frame that is being rendered is 0, the second will be 1 and so forth. The resulting value will be added to the original value that is being modulated. A common use of this is to shift an image one spot further for every frame for example.

While entering all the parameters for an effect, a list on the right will be created to visualize what parameters you have entered. Modulating values are illustrated as arrows as shown in the image above.



Descriptions of the effects

The effects might vary from controller to controller, but the general purpose stays the same. Every effect can be used on the current frame (single frame) or the selection of multiple frames. This is usually the first parameter you have to set up for any effect. If pressing the corresponding numbers on the keyboard doesn't affect the device and therefore you can't set up the parameters, click with the mouse on the middle of the Frame Editor device and try again. This will reset the keyboard input.

Fixed velocity

With this effect you can either change a specific or all velocities and change them to a new one. This can be used to change the displayed colors on your controller. In order to set up the source or target velocity, you can either select it with the hotkey colors 1-10, which are explained at "Managing colors" on page 6, or you can enter a custom value between 1 and 127. Note that you can also modulate the source or target velocity by the frame, if you're applying this effect to multiple frames.

Random velocity

Similar to the fixed velocity effect, with this one you can randomize all or a specific velocity. With two modes you can either create a total random velocity for each note or you can set up a range between the original velocity. In order to do so, select the "spreading" mode and choose the direction of the spreading. By selecting "above" the range of the random velocity will be above the source velocity for example. Next enter a spreading range, which will be placed above, around or below the source velocity.

The following effects are unique for grid controllers such as the Launchpads or the Push (Pads).

Rotate

With this effect you can rotate the displayed frame in 90° steps and also modulate the rotation in order to make an animation out of it. It is important to understand that all effects will take the original frame and apply the modifications on it and when it moves to the next frame, it won't use the previous frame. If you want to create a rotating image as an animation, you would have to duplicate this image first over multiple frames and then use this effect on all of them with the selection tool.



Shift

By using the “shift” effect you can move an image on the grid controller. If you're using a Launchpad, which isn't the Pro version, you will be asked if the effect should be applied as if your controller would be the Launchpad Pro. Since the Launchpad Pro has more buttons on the side, the shifting will take place over a 10x10 grid instead of a 9x9 grid, even if your Launchpad still only has a 9x9 grid to begin with. By using endless shifting, a row that will be moved outside the grid will come in again on the other side. As the last step you will have to enter custom values for shifting the image on the X or Y axis and if you're affecting multiple frames, you can also modulate these values in order to create a moving animation. Of course you can use negative values for all of these values as well.

Mirror

With this simple effect you can mirror the image on your grid controller on the X or Y axis. If you're using the selection of multiple frames, you can also toggle the effect on and off every other frame to create a flickering effect.

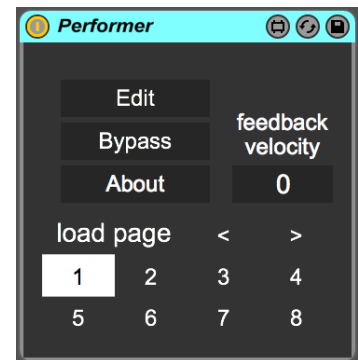


The Performer

The Performer can be used to map the animation clips to buttons on any controller. It reacts to MIDI notes and control changes and saves an unlimited number of clips to each one. It is possible to have an infinite number of instances of this Performer, so that you can trigger clips with different controllers for example.



In order to use it correctly, place it into an empty MIDI track. The input and output needs to be routed to your controller you want to use to trigger the clips. The monitoring state needs to be set to “In” as shown in the picture to the left.



By activating the “Bypass” button, the device won't react to any input. That way you can use the controller for other purposes and don't have to worry about triggering the animations. When editing an animation with the Frame Editor the Performer will also automatically activate the bypass mode. Then you can draw on this controller without playing back animations at the same time.

If you're playing a note, which doesn't have any clips mapped to it, the device will output the incoming MIDI note or control change, so that your controller still has a visual feedback. Use the feedback velocity to fix the output velocity. When this value is set to 0, the incoming velocity will be used.

The Performer works with 8 pages. Each page has different clips mapped to the incoming MIDI events. With this feature it is possible to have different animations on the same buttons for different parts of a song. You can load the pages by clicking on the numbers below. Use the arrows to move to the next or the previous page. Click while holding the cmd key (ctrl key on Windows) to delete the mappings of a whole page. Since you can also change pages with the controller, which aren't limited to the pages, you can also clear these connections by holding the cmd key (ctrl key on Windows) and clicking on the top row.



Mapping clips in the Performer



Once you activated the edit mode by clicking the “Edit” button on the Performer device, you can press a button on the controller and the window illustrated on the left will show up. In here the devices gives you informations about what note or control change you're currently editing in the top right. Now you can click on any clip in your Liveset and it will be mapped to this MIDI event. To indicate them the color of the assigned clip will turn white, unless it was white by default.

When using animations with multiple controllers and clips, the one clip to the left has the information on how many clips are linked with it in its name. By mapping this clip the Performer will read the clip name and also map the other clips, which are a part of the whole animation. Click on a mapped clip again to unlink it. Because of a limitation of the Live API, the Performer device will only receive the information on which clip is currently selected. By selecting a track another clip slot will be selected as well and also selecting an already selected clip won't have any effect.

Inside the window you can select three options, which will determine how note off events are being handled. The clips will be played as soon as the incoming note starts, but when the note ends, when the buttons is being released, it can do following actions. If it's set to “none”, nothing will happen, but if it's set to “stop” the MIDI clip will received a stop notification. This will make the clip stop with the global quantization, which means if the global quantization is set to “1 Bar” the clip will continue playing until the next bar starts. By using the “fire” option, the clip will receive another play notification. This only makes sense if the launch mode of the clip is set to “Toggle” as shown in the picture to the right. With this setup the clip will stop with the quantization of the clip and if it's set to “none” it will stop immediately.

It makes sense for the performance to set all the animation clips without any quantization. This can't be changed by the Live API, so you have to manually select all animation clips and set the quantization to none.





To assign a page to the MIDI event you're currently editing, simply press on the page number in the floating window as shown in the picture to the right. The arrows can also be mapped, so that by clicking on a button on the controller it will always move to the next page.

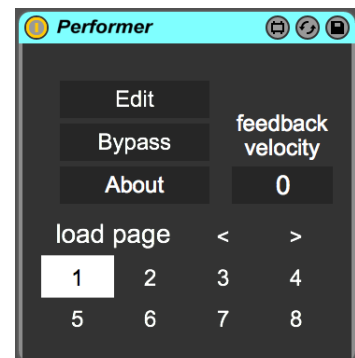
Please note, that these page assignments aren't saved inside the pages themselves. Only the clip mapping will change, but once you mapped page 2 on note 60, as shown in this example, it will always load page 2 in, regardless of what page you're currently on.



The three tools at the bottom are being used for the same tasks as in the Frame Editor. The first one copies the mapping of the clips and pages for the current note or control change and the second one pastes it. The third one clears all mappings for this note or control change.

By clicking on the “x” symbol on the top left, you can save your changes and close the window or you can click it while holding the cmd key (ctrl key on Windows) to cancel and discard the changes you did since activating the edit mode.

You have to close this window and deactivate the edit mode by doing so, in order to change the page. So if you want to edit the clip mappings of another page, you have to load the page first in the main device view inside Live, illustrated in the picture on the right, and then activate the edit mode again.



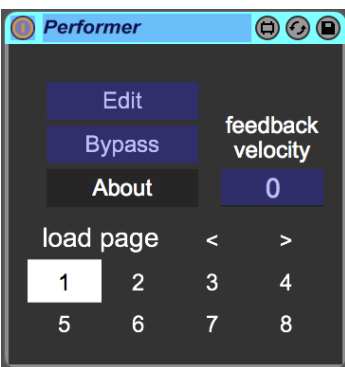
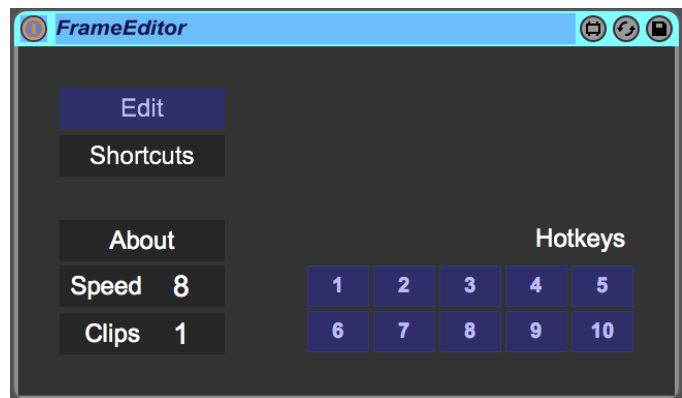


Shortcuts

In the device view inside of Live you can click on “Shortcuts” to show 10 buttons, which can be MIDI or key mapped just as any other parameters in Live. It is not recommend to automate them, since they are also controlled by the device itself and automations would then be deactivated.

The hotkeys on the right will select the color for all controller devices. That way you can quickly change between colors while drawing and have all controllers linked as well.

The “Edit” button can also be MIDI or key mapped. This allows you to quickly edit an animation without having to navigate to the Frame Editor device in Live.



The Performer also allows you to MIDI or key map a few functions. Also the Performer can be used to tell the Frame Editor which MIDI clip to edit. When the Edit mode in the Frame Editor is activated you can press a button on your controller, that is mapped to an animation clip. This way you don't have to memorize where to find the animation you're looking for inside Live. You only have to memorize where the animation is mapped on the controller you're performing on.