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Introduction

Welcome to MIDI Modulators, the little brother of Multiclip. This Max for Live device allows you to edit MIDI clips by using a range of modulators along with a few additional features, such as a second pencil tool, which creates a longer note instead of a couple of shorter ones, or hiding pitches that aren't included in a specific scale.

This manual gives a basic overview on how to use the Editor. A lot of mechanics are similar to Lives MIDI editor, you won't have to relearn anything.

Important stuff

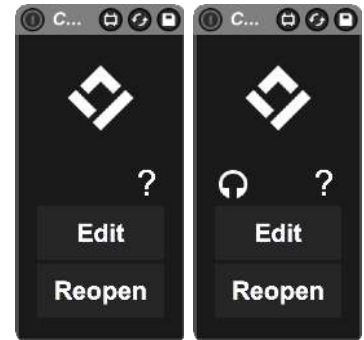
It's very helpful to know, how to use the editor efficiently. The graphics are rendered with OpenGL, which uses CPU instead of GPU. This means that every additional element that has to be rendered will make the whole rendering a lot slower. You can read more under the topic "Performance" on page 13 to find out more about how to make it run smoother.

Because of limitations in the Live API the connection to a clip will be lost if you move it around in the arrangement view and if you change a note in a clip, the editor won't recognize it. The best way of using the editor is to not change the clips while you're editing them and to only use the "Reopen" button if you know the clip hasn't changed. If only the notes of a clip changed you can use the refresh button to reload on the spot. By default the notes will also be refreshed as soon as an overdub is being finished. I personally have the edit button key mapped to my keyboard, so I can edit multiple clips quickly without ever having to navigate to the editor device. The esc key will close the editor again, which makes editing very easy and fast.



Setup

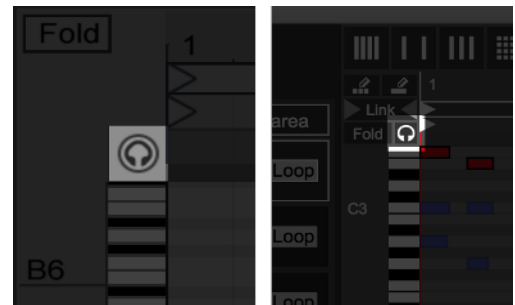
Multiclip consists of two devices, the Editor “CC MIDI Modulators.axmd” and a note preview device “CC Multiclip Note Preview.axmd”. The Editor has two buttons that will either Edit MIDI clips or Reopen the Editor from its last state. You can have multiple instances of this Editor in your project, but usually it makes more sense to only use one. It doesn't matter where you put the Editor device, it makes sense to use an additional MIDI track for it with a simple instrument behind it to preview notes.



The Editor device (left) and the Note Preview device (right).

The Note Preview device is an additional device that will be used to preview MIDI notes from within the Editor. This device does not include the Editor, but the buttons will send specific messages to the Editor device to trigger the Edit mode or Reopen the Editor. These messages are sent globally to *all* Editors in your project and each instance will receive the edit or reopen message!

The Note Preview function works the same as in Live, but in order to output the selected notes for individual tracks, the Note Preview device is needed to be inserted onto all MIDI tracks.



If a MIDI track does not include this device, the Editor itself will output the notes instead. You can use this feature and insert a simple instrument after the Editor. You can still preview notes with this method and even use a specific sound instead of the original instrument.



Editing clips

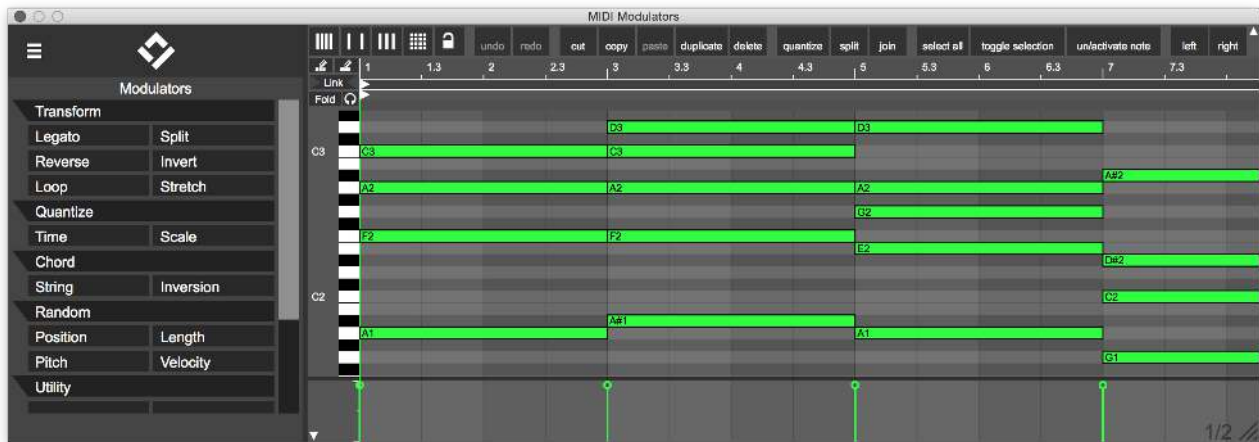
The “Edit” button will activate the Edit mode in which you can select a clip with your mouse cursor by clicking on it. To speed up your workflow, you can key or MIDI map this button to access it quickly without having to go to the track and search for the device. The original clip color will be used for displaying the notes and visuals inside the modulators.

You can close the editor and reopen it with the same clip you edited before with the “Reopen” button which of course can also be key or MIDI mapped.

Instead of key or MIDI mapping you can also trigger these buttons within a Max for Live device by sending the message “logic_edit_button” or “logic_reopen_button” to a send object with the name “ChaosCultureMultiClip”. This might be helpful if you're using a custom Max for Live patch to control things inside of Live. By using this method you can link any input to the MIDI Modulators device and trigger it.



Using the editor



Using the editor is similar to using Lives MIDI editor. You can move notes, double click to create new ones, select multiple notes, move them with the *alt* key to copy them as well as create velocity ramps by dragging on the velocity window while holding the *cmd* key (*ctrl* key on Windows). Even the song position in Live will be updated to the one in the editor (unless Live is currently playing). If you select a time or notes in the editor, pressing the *alt* key and the space bar will play back the song from this position if you're in the arrangement view. Everything should work as usual with only a few differences. The right mouse button will act just as the left one, there is no context menu so far. There are plans for it though, you might see a context menu in future updates. Also the scroll wheel doesn't have any effect. In order to quickly move around on the grid, you can of course use the timeline or the keyboard to zoom and shift the displayed area, but also you can click and drag in the main grid in an empty space while holding the *cmd* key (*ctrl* key on Windows).



At the top of the grid is a range of buttons that performs functions as copy, paste, undo, redo or changing the grid detail. All these buttons can be triggered with the keyboard just like the shortcuts in Live. You simply have to leave out the *cmd* key (*ctrl* key on Windows). Here are a few examples:

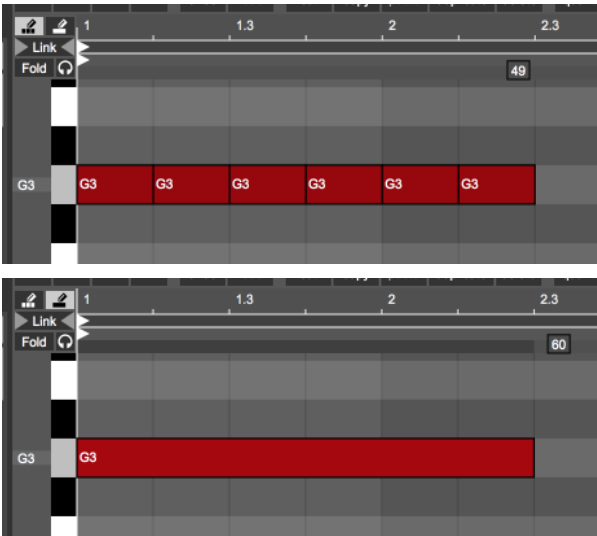
- the “c” button on your keyboard to copy selected notes
- “v” for pasting them
- “z” to undo the last action
- “u” to quantize
- “1” for a more detailed grid
- “4” to turn the grid snapping on and off

If you press the *cmd* key (*ctrl* key on Windows) as normal, the keyboard input will be ignored in the editor and Live will react to it. You can turn off the keyboard input in the settings, if it's getting in the way and just use the buttons on screen to trigger the functions. You can click these buttons with your cursor while holding any modifier keys as well to perform different actions, everything should work as it does in Live. Only the arrow keys have a slight difference. Pressing “up” and “down” while holding the *alt* key will select the previous or next clip as the selected clip.

MIDI Modulators includes a few features that don't exist in Live, one of them is the lock grid option. When activated (shortcut is “5”) the grid won't change when you zoom in the timeline. Another features is the split function (shortcut is “s”). This will let you split notes with or without using the grid. By default you have to manually turn this mode off, but in the settings you can have it turn off automatically after splitting one note. The join function (shortcut is “j”) connects two or more notes if they are on the same clip and pitch. The resulting velocity is an average, but this can also be changed in the settings.



With the buttons at the top left of the grid you can toggle the Fold mode as in Live. If you turn on the MIDI preview button, all note you select will be played back, insert an instrument after the editor device to listen to the notes. As explained earlier you can also insert the Note preview device to any MIDI tracks in your project and if you're editing a clip on that track, the notes will be played back by the Note preview device. It makes sense to insert the Note preview device on all MIDI tracks in your set. The Link button will link the loop handles for all clips together when you're changing the loop area for a clip. Please note, that the clip start and end point can't be changed, because of limitations in the Live API.



The difference between the pencil tool 1 and 2.

At the top of these buttons are two different pencil tools. The first one to the left will work just like the pencil tool in Live. It creates multiple notes depending on the grid size as shown while second pencil tool creates a single note while dragging. The activation of the pencil tool is linked with Lives pencil tool by default. By pressing “b” or by turning the pencil tool in Live on, the last used pencil tool in the editor will also turn on. The other way around if you toggle any of the pencil tools on, Lives pencil tool will as well. You can deactivate this behavior in the settings.



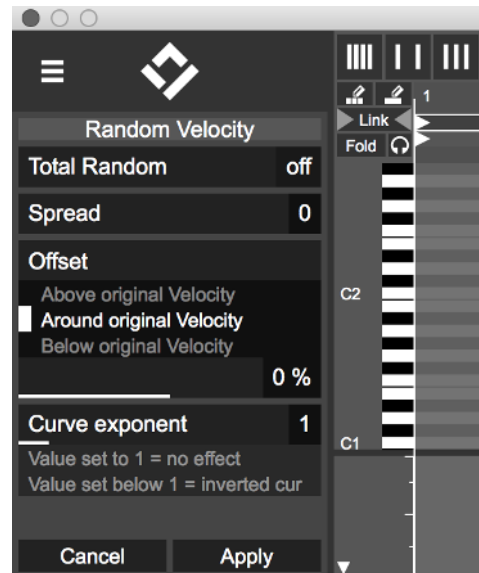
Modulators

On the left you can find a list of all modulators sorted in groups. The modulators will affect the selected notes or all of them if none are selected.

Once you selected a modulator, every interaction outside of the modulator list will automatically cancel the effect. The notes will automatically update and show the changes the modulator will have on them. Unless you deactivate it in the settings Live will update automatically as well, but remember to press the “Apply” button to keep the changes.

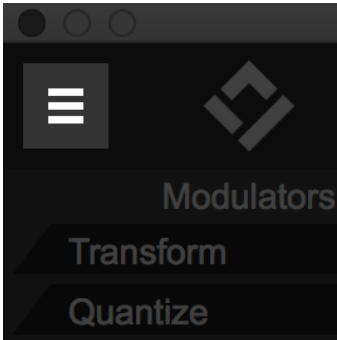
By clicking once on a number value, you're able to enter a specific value. It is possible to enter very precise values, but be aware that the displayed value might be rounded. After you starting dragging a value, holding down the cmd key will let you change the value with more accuracy. If the list is too long and a scroll bar appears to the right, holding down the cmd before clicking and dragging will scroll the list instead of changing the value. This behavior can be changed in the settings as well as the direction you have to drag in order to change a value.

A series of videos explaining every individual modulator can be found on YouTube:
<http://bit.ly/CCModulators>





Settings



On top of the modulator list you can access the settings. You can change the workflow and the appearance of the editor and save your changes. Every parameter you're changing inside the settings will be stored within the device. If you then save your project and reopen it, they will reload. You can also save your changes as a preset and reload the editor anywhere with the exact same settings. Press the “save preset” button in Live and name it however you like. This way you can completely change your

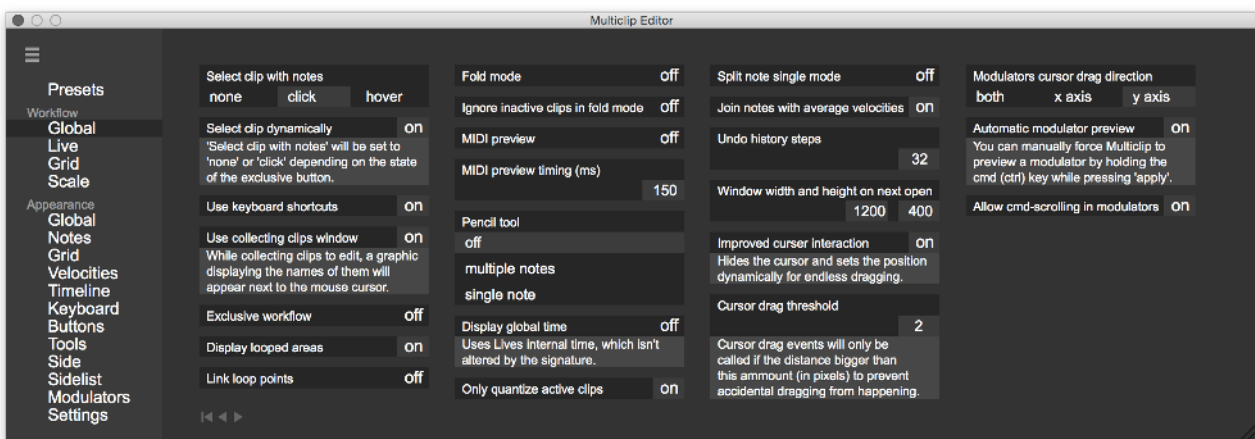


Save the changes and use them in other projects.

workflow and color scheme and you'll never have to set it up again. Simply load your preset next time you want to insert the editor into your project.

If you're changing the colors of the editor you don't have to constantly go back out of the settings window to check what you just changed. If you change any value in the settings while holding the *shift* key, it will automatically show the editor until you release the mouse button. You can then watch how the changes you're currently making effect the editor. This works for any parameter, even toggle switches.

Please note, that only the changes you make within the settings will be stored. You can change the fold mode for example in the settings and if you open the preset the fold mode will be set to your desired state as a default position. But if you press the fold button outside the settings window, no changes will be made to the stored default state. This way you can freely set up default states for every parameter.





In the settings window you can also access a few presets to quickly see what is possible. When calling a preset all parameters will be reset to their default value unless you're holding the *alt* key while doing so.

Every preset, as well as your custom settings, will only store parameters which have been changed. The preset “Bigger fonts” will only change the font size parameters and it will leave the colors alone. If you then select another preset while holding the *alt* key, only the content of “Bigger fonts” will be applied and since there aren't any colors saved, it won't change any colors.

Workflow settings

Global

Select clips with notes	Interacting with a note can change the selected clip and therefore set the focus on it. With this parameter you can change or deactivate this behavior. Please note that this parameter will be changed automatically if the following parameter “Select clip dynamically” is activated. By using the “hover”, you only have to move the mouse cursor on a note and the selected clip will change.
Select clip dynamically	With this function the “Select clips wit notes” parameter will be set to “none” if the exclusive button is active. Otherwise, it will be set to “click”.
Use keyboard shortcuts	If this parameter is turned off, keyboard input will be ignored. This might be useful, if you have the keyboard key mapped in Live, since this device can't grab the focus of the keyboard. Keyboard shortcuts aren't needed, you can still access every function by the tool bar at the top.
Use collecting clips window	When activating the edit mode and selecting clips in Live a graphic will appear next to the mouse cursor to list what clips have already been added. You can hide this graphic by turning this parameter off.
Exclusive workflow	The state of the “Exclusive” button. Changing this value in the settings will store the new value in the preset or your project. By reloading it will get recalled, but if you change this value outside of the settings screen, the change won't get stored.
Display looped areas	The state of the “Looped area” button.
Link loop points	The state of the “Link” button at the top left of the grid. Activating it will link the loop markers of every looped clip together. This allows you to change the loop position and length for multiple clips at the same time.
Fold mode	This value determines if the fold mode is active or not. This can also be changed by the interface, but changing in the settings will save it within your preset or your Live project and it will get called again on reloading it.
Ignore inactive clips in fold mode	If this function is turned on, the notes of inactive clips will be ignored when creating the note rows.
MIDI preview	The headphone symbol at the top left of the grid. If this function is turned on, selected notes will be played back. Place the “CC Multiclip Note Preview.amxd” device on other MIDI tracks and they will output those notes if needed.
MIDI preview timing (ms)	The note length for previewing notes.
Pencil tool	With this parameter you can set the current pencil tool and store it for future reloading.
Display global time	By turning this parameter on, Multiclip will display Lives internal time instead of the clips time, which is altered by its signature. The clip offset in the arrangement view will also be ignored.
Only quantize active clips	When pressing the quantize button, all deactivated clips will be ignored if this value is active.
Split note single mode	If this option is active the split function will automatically turn off after splitting one note.
Join notes with average velocities	When joining notes together with the join tool, the resulting velocity will be an average out of the notes that are being connected. If this option is deactivated, the velocity of the first note will be used.
Undo history steps	This parameter determines how many steps the history will contain.



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Window width and height on next open	When opening the editor, these values will be used. Resizing the window will change them automatically, but if you change them in the settings, the values will get stored and recalled on reloading the preset or your project.
Improved mouse interaction	When clicking and dragging on certain areas, the mouse will be hidden and its position will change. This way you can scroll without reaching the end of your screen. If there are any problems and zooming or scrolling are problematic on your system you can turn this function off.
Cursor drag threshold	This value determines how many pixels you have to drag the cursor until the device will recognize it as a drag. This helps to prevent accidental drags from happening.
Modulators cursor drag direction	When changing a value in a modulator with dragging the cursor, this value will determine the direction you have to move the cursor.
Automatic modulator preview	Live will automatically preview the modulator effect everytime a parameter change has happened. Updating a lot of notes can take a while, by deactivating this function you can still manually preview the modulator by holding the cmd key (ctrl key on windows) while pressing the "Apply" button.
Allow cmd-scrolling in modulators	If this value is turned on, scrolling in the modulators menu can be done by holding the cmd key just like in the clip list and the note grid. Since you can also fine tune the values for the modulators with holding the cmd key after you already started dragging, this behavior could be confusing to some users.

Live

Link clip activation	By deactivating a clip in the editor, the clip will also be deactivated in Live if this function is turned on. By turning it off, deactivating a clip will only hide its notes and leave the clip in Live alone.
Change song position	Unless Live is currently playing, you can change the current song position of Live within the editor. By using Live's shortcut alt + spacebar you can play back from this position and listen to your song from a specific point in time.
Observe song position	This function will observe the time position of Live and display it within the Editor. You can turn it off if you're experiencing performance problems and the device feels slow. You can read more about this subject in "Performance" on page 13.
Observe song position rate	This value determines how often the song position will be refreshed. This heavily influences the performance.
Edit button: add selected clip	By pressing the "edit button" of the device in Live, an already selected clip will be added to the list.
Interface: add selected clip	By pressing the "+" button in the interface twice you can add multiple clips to the list. If this value is turned on an already selected clip will be added to the list.
Change clip while importing	After you selected and confirmed the clips you wish to edit, this function will change the selected clip to the latest one.
Reset zoom while importing	After you selected and confirmed the clips you wish to edit, the zoom on the x and y axis will be reset to display all imported notes.
Refresh clips automatically	The notes for all clips will be refreshed whenever the selected option happens.

Grid

Note handle size	To change the length of a note, you have to grab the start or end part of a note. This value determines the length of this area in pixels. If the displayed note is smaller than twice this value, you can only move the note and not change the length of it. If you have trouble hitting the start or end points of a note, increase this value.
Snap to grid	This value will turn the grid on or off. This can also be changed by the tool bar at the top or by using the keyboard shortcut "4".
Snap detail multiplier	The detail of the grid is influenced by this value. This value will be changed by tool bar or by the keyboard shortcuts "1" and "2".
Note position to grid threshold	When moving a note, its original position will be used as an additional snap point unless it's too close to the grid. If the notes position is too close to a grid point, it won't snap to it's original position. This is a pixel value and it's not affected by zooming in.
Timeline zoom speed	This value influences how quickly the x axis will zoom with the mouse movement.
Timeline zoom threshold	This value determines how many pixels you have to move the cursor until the device starts zooming, which is useful if you only want to offset the viewpoint. It keeps accidental zooming from happening.
Keyboard zoom threshold	The same as "Timeline zoom threshold", but for the keyboard.
Default keyboard zoom	The lowest and highest MIDI pitch values that needs to be shown if there are no notes imported.
Faked velocity window height	Changes how fast a velocity changes by dragging a note while holding the cmd key. Decrease this value and



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the velocity will change faster.

Velocity line hitbox width and height All velocities that are shown in the velocity window at the bottom of the grid have a hidden hitbox you're interacting with. If you have trouble clicking on the velocity points and you miss them often, increase this value.

Velocity for new notes When creating a note by double clicking or by using the pencil tools, the note will have this velocity. This value will be changed as soon as you created a note, so that the next one will match the previous one.

Scale

Use twelve-tone system scale By turning this function on, you can use a specific (twelve-tone system) scale as your fold mode.

Display scale highlights When using a scale, the keyboard will display the notes of it outside of the fold mode and highlight specific ones (Tonic and Dominant by default).

Key With this parameter you can set the key of the scale.

Preset scales You can choose a preset scale with this parameter or set up your own scale with the parameters next to it.

Display notes With these parameters you can create a custom scale. Activate or deactivate the intervals you need. These values will be changed by selecting a scale preset.

Highlight notes With these parameters you can highlight specific intervals in the piano roll. The parameter "Display scale highlights" need to be activated for it.

Use microtonal scale This parameter activates microtonal scales. The following parameters are

Middle root MIDI pitch value The middle root of the microtonal scale is called "R0" and with this parameter you can set it to a MIDI pitch value (0-127).

Note system With this parameter you can determine how many notes there are in one octave. Hold down the shift key while changing the value to immediately see how the note layout will look like.



Performance

The interface is being rendered with OpenGL, which means that it can quickly consume processing speed. It uses CPU instead of GPU, both window size and amount of renderings will affect how quickly the window can be rendered. If you have performance issues and everything seems slow, try to resize the window and make it smaller.

The observed song position can also adversely affect processing speed. By default the line that displays the song position is being rendered every 50 ms (if the song is playing at all). You can change this rendering value in the settings (Live tab). You can also turn it off completely or change the appearance of it to display the position in fields instead of a line (Appearance / Other tab). Then the song position won't have to be rendered as often, which can improve performance speed.

Finally, the amount of notes can adversely affect performance speed. Turning off the “Looped area” mode can help in this case. The MIDI Modulator device has this setting turned off by default.

None of these performance issues are inherent to the Editor, and are contingent upon CPU.

Future updates

There are many plans on things I want to add this editor. Here are a couple of them:

- Creating (drawing) chords instead of just notes
- A lot more modulators and small improvements
- Generative music

Stay in touch and let me know what you would like to see in future (free) updates.



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