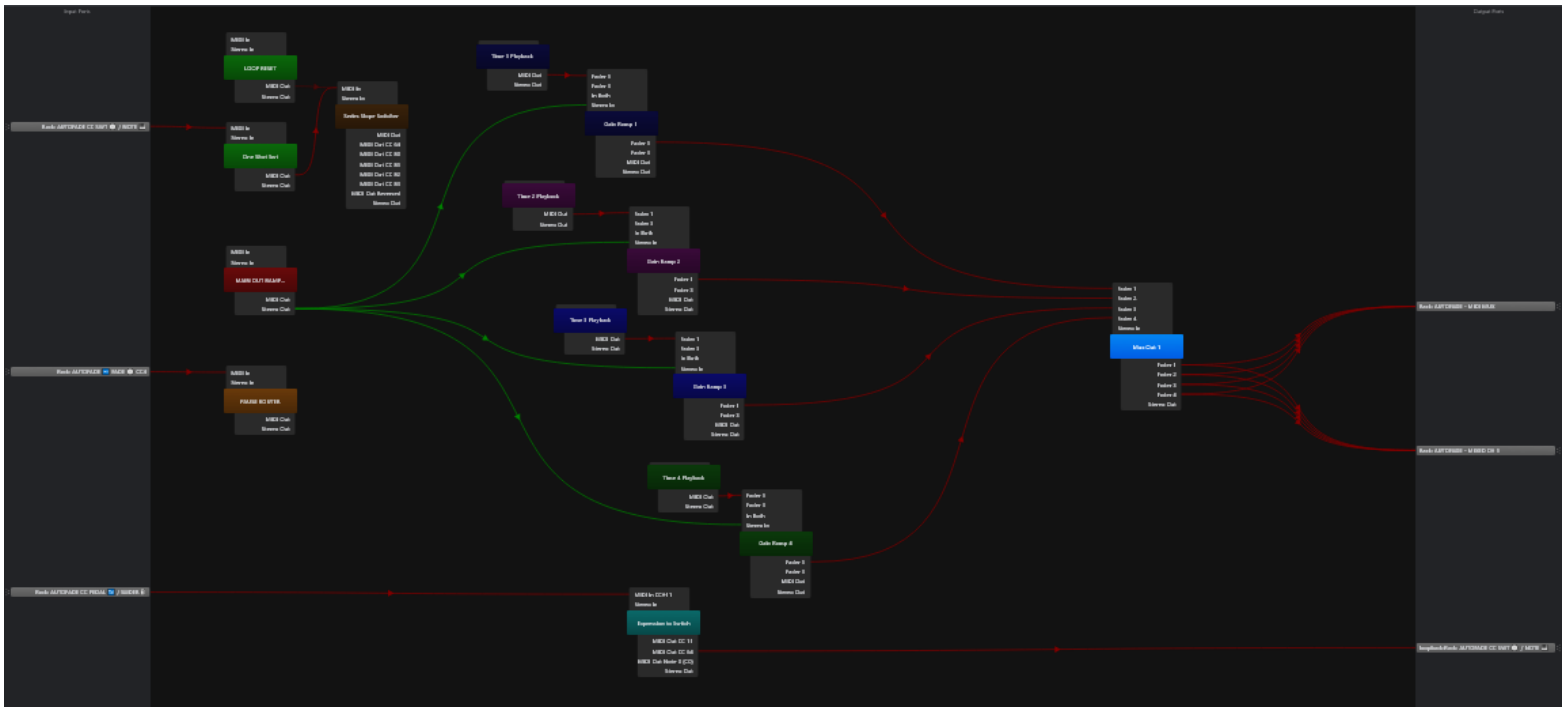
AutoFader MK III for Cantabile 3 Performer©



Features

- Triggered by any MIDI Note or CC Switch or variable Slider or Pedal *

- Two Modes of Triggering :

  A) Free Sequential Trigger (you can start the next fade before the first one is finished)
  B) Safe Sequential Trigger (the fader ignores triggers until the sequence of fades is complete)

- Up to 4 ramps each with it own direction (up or down) and variable playback speed to control duration of that ramp.

- Envelope Oscillating mode that can be used to create a host of drones using any sources in new and creative ways and includes Pause/Resume capability

- One shot non interrupt-able sequences of fades

- One shot envelope playback for any MIDI CC parameter (usually Gain) with the option to re- trigger when complete.

- Multiplexed MIDI out for use with external synths

Auto Fader Applications

- Timed oscillating envelope gain programs

- Smoothing out swell pedal changes

- Stable Sequential repeatable live fade ins and outs for any MIDI device

- Multiple event cross fading

- Accelerate-able or decelerate-able fades (begin at a fixed rate but can be slowed or sped up by pedal input)

To install place the rack (or racks if you use more that one at a time) and the MIDI CC 7 files folder into the Racks folder of your Cantabile 3 Performer installation.

Getting Started

The new design for the fader rack has some terminology changes from the previous versions so that where I'll start. The rack has 4 independent slope engines that are made to be used in sequence in most cases but also can be used in parallel and also in a new feature they can be looped. Each fader slope engine has a media player with three basic speed files that can be further speed controlled by the speed control of the C3 media player. They also have a slope table with the slope presets. You can make your own custom slope values but a good knowledge of Cantabile MIDI filters would be a good thing.

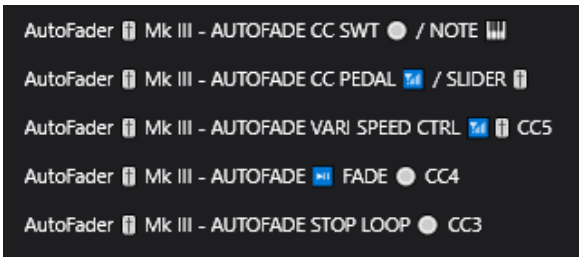
The inputs are pretty simple. You can send almost any MIDI note or CC number with a button action (127-0) to the CC SWT/NOTE input port.

There is also a CC PEDAL/SLIDER input port for continuous slider or pedal use, these inputs are turned into CC switches internally and looped back to the common Notes/CC trigger input.

There is also a STOP LOOP CC 3 input for a switch to break the loop when in that mode of operation and to reset the current rack state to default start point when it was locked.

Also included is the PAUSE/PLAY CC4 input port for pusing the fader slope currently executing with a footswitch. There is control access to each slope engine via MIDI channels 1-4.

And the last input port I will mention is the VARI SPEED CTRL CC5 which is a MIDI channelized means of exercising the media player speed control on each of the fader engines in real time. MIDI input channels 1-4 are used to access each engine.



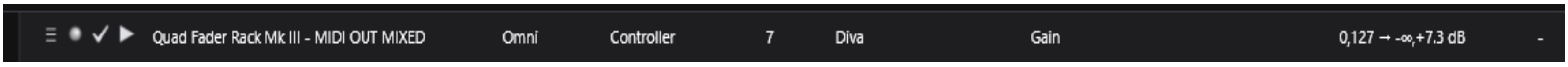
On the output port side of the rack there are also a few ports to take note of. First there is the MIDI MIXED Out which outputs the sequenced fades to channel 1. This is the common simple output for most uses to a target or targets.

Next is the MIDI OUT - MIDI MUX port which has the output of each slope engine assigned to different MIDI channels. This was mostly included to allow complex parallel fades to multiple internal or external targets set to the different assigned MIDI channels.

The last Output ports are for producing CC button triggers at the beginning and end of each fader engine playback. They are labeled FADE END CC64 which are the End of Fade triggers for each of the 4 fade players and FADE START CC63 and both outs are MIDI Muxed to channels 1 to 4 for fader engines 1 through 4.

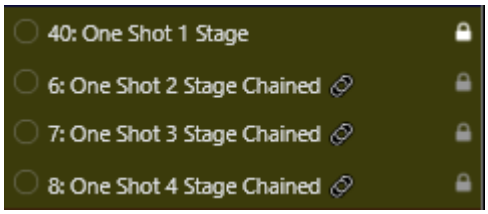
In a typical setup the Rack is added to the object list and the bindings are used to trigger it. The auto created MIDI route that Cantabile creates should be disabled or deleted when using bindings because the CC/Notes input accepts almost everything till you focus it down. Bindings do this quite well so that is why I recommend it. You can however use this route with MIDI suppression filters to isolate what will pass to the rack if you prefer that method.

When triggered the slope engine will play back a CC7 stream of values at the assigned speed while also producing a trigger at the beginning and end of playback for routing to Cantabile Gain sliders or any other MIDI CC value for sending to a synth or sampler. The various series chaining modes provide several ways to use it. The following list sums up the modes that are set up so far into locked presets

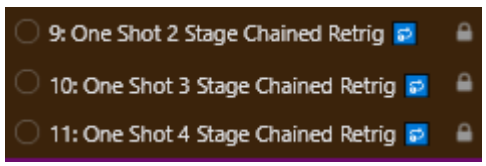


The Looped Series type of preset plays back the series of fades over and over until you interrupt the loop with a CC3 input that is provided in the ports for this purpose. There 1, 2, 3 and 4 stage fade sequences available to loop. These presets work well for creating envelopes for use in gain, pitch and other synth parameters of drones and ambient background loops with movement.

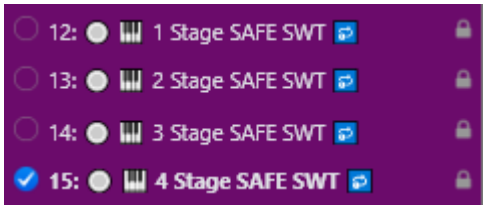
The One Shot chained series type work so that after receiving the trigger the sequence of fades play back until done, not allowing re- triggering at any point during the chain of fader events. Useful when you only need to execute the sequence once and have it resist re-triggering. There are 1, 2, 3 and 4 stage chains available.



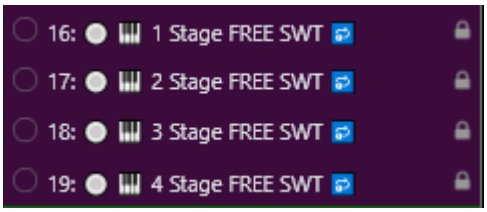
The One Shot chained series Retrig type are the same as the previous type but can be triggered again after the sequence of fades finished. There are 2, 3 and 4 stage sequences available (the 1 stage was redundant and available as a different type).



The SAFE SWT type of preset advances the sequence of fader playbacks one staep at a time via switch input. There are 1, 2, 3 and 4 stage presets available. These are good for turning things up and down smoothly and repeatably. The reason they are called SAFE is because they won't allow another swt trigger until the current fade is finished.



The FREE SWT type are like the previous type except that you can trigger the next step as fast as you can switch it. The single channel MIDI MIXED output is disabled on these to prevent jerky reactions and the working outputs are the individual slope outputs 1 - 4 and the MIDI MUX out channel 1 - 4. This is useful for setting of different fade events on different targets at random intervals.

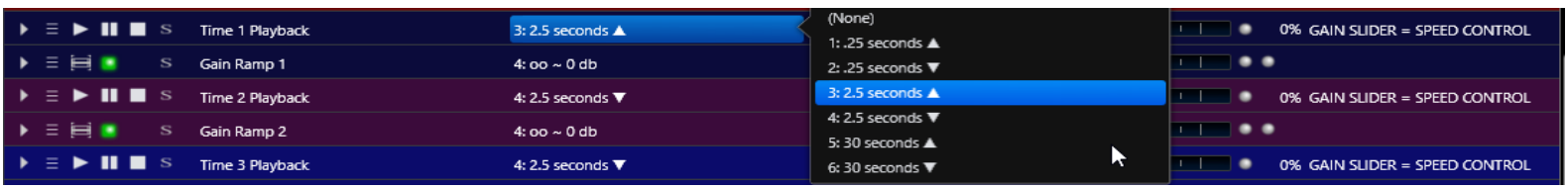


The 1 Trigger Parallel type play back all the chosen faders on the same trigger input in a parallel fashion. These outputs are sent to the individual slope out ports 1 - 4 and the MIDI MUX channels 1 - 4. These are good for setting off simultaneous fades of different lengths to different targets.

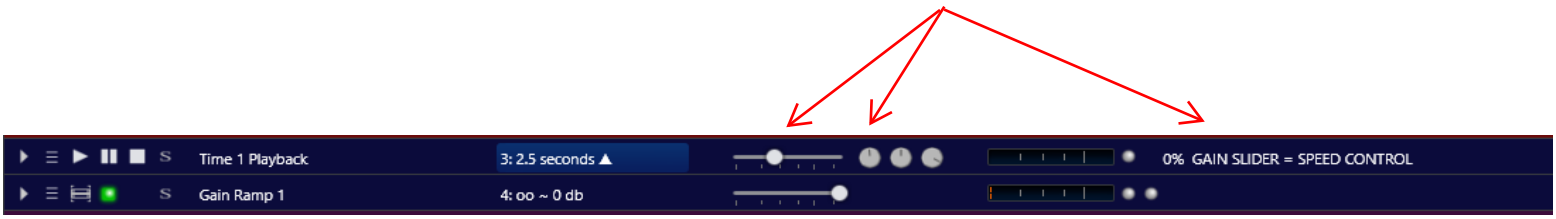
The rack is configured so the relevant rack state behaviors are saved with the song but can also be saved as new states for use as startup presets. This allows the rack file to stay roughly the same size and makes it more generic. However there are some things to remember when using it. First, remember to save the song when you have the parameters set where you want them on the startup preset state you are on. When you recall the song the fader parameters will load according to the song. If you change rack states while that song is loaded and then return to the state you had used when saving the song the state will revert back to the locked rack state returning it to default startup preset patch. It will reload on the next song load so no worries.

To fine tune your own preset I recommend you first select a locked preset that is close to what you want. Then click 'New State' on the rack states list and name it however you want, then save it right away. Next go to the Speed and Slope control sections of the open rack to edit the parameters.

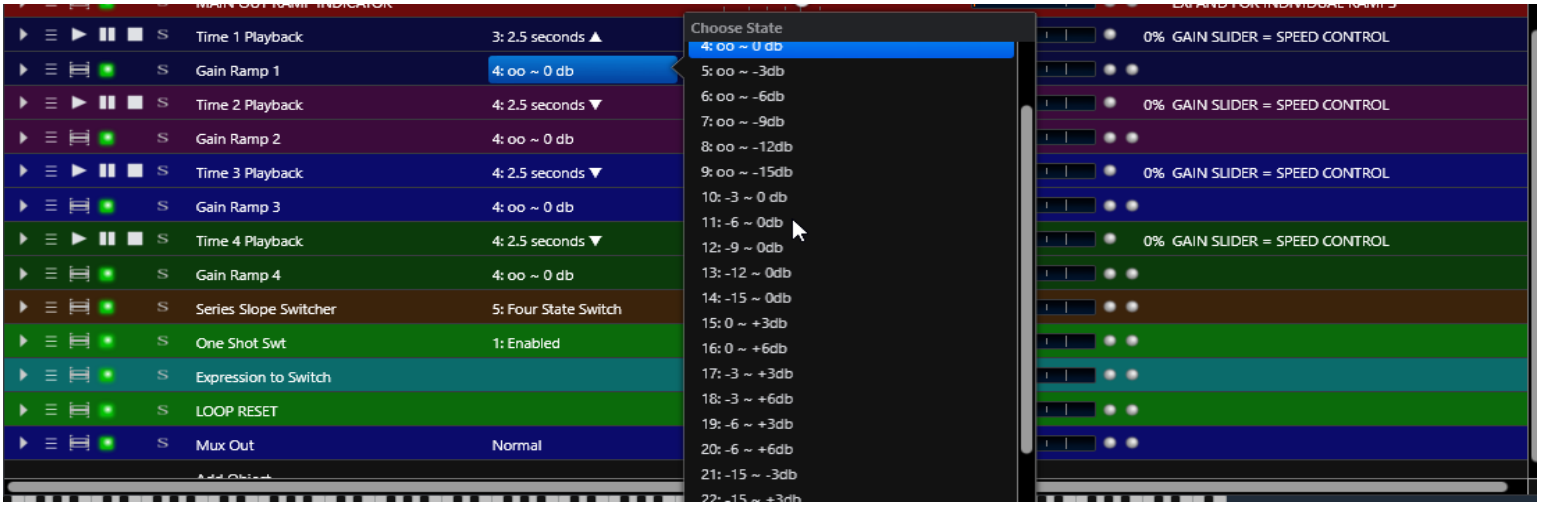
On the Speed of each engine you have the base speed of the MIDI file that is loaded in the player and the variable speed of the media player for further fine tuning of your desired speed. The file that is loaded also determines whether it is a boost slope or an attenuation slope and is indicated by the arrows on the file name



The gain slider of the media player is linked to the speed control for easier setting of the speed if you like.

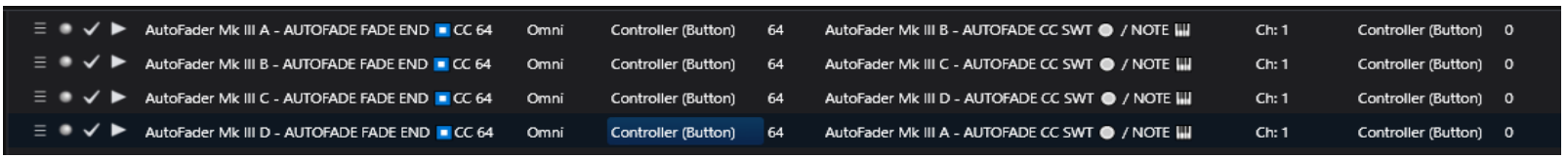


On the Slope settings you choose the values from the sandwich menu that gets you the slope values you want. They are calibrated to Cantabile NEW scaling with +7 db = digital FS

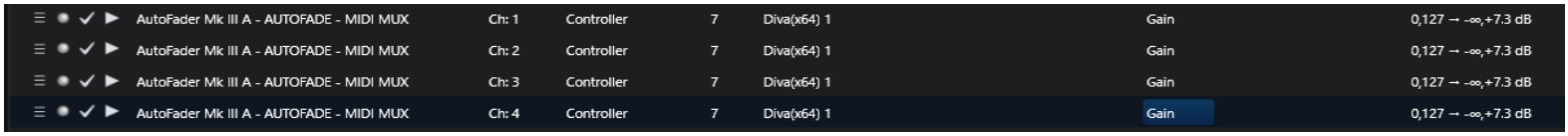


Once you have the settings where you want them you save again and then lock the rack state and save one more time.

With the addition of the start and end triggers for the faders you can set off a wide variety of delayed events with the rack as well. This allows for chaining of multiple fader racks using bindings at song level to link them together. Here is an example of 4 racks linked together, each with 4 stage fades going on. When one finished it fade sequence it triggers the next one and so on. This action also allow for looping the 4 racks in a super daisy chained loop as another feature so I included a binding to break the loop by disabling the first engine.

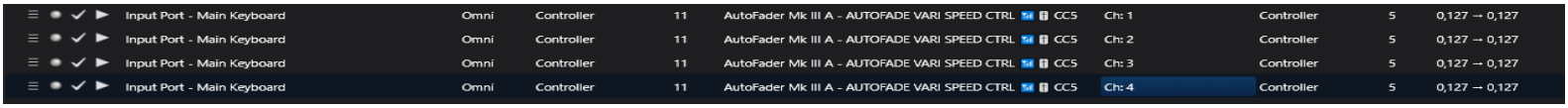


When routing the MIDI MUX output to different targets you use a MIDI channelizer in Cantabile to get it done. MIDI channel 1 is the first slope output and 2 the second and so on so you set the source channel to the one you desire and then set the target route according to suit your setup. Most times it will be channel 1 so a typical channel setup would look like this for slope 4 out to go to MIDI channel 1 for use with Diva's gain.

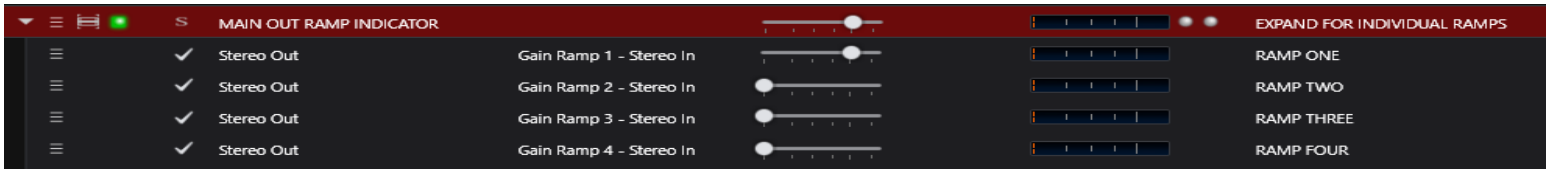


The start and end triggers can also be use to change the rack state to another preset if desired for complex multiple preset songs. An example binding would look like this where the initial state of the rack loads with the song but when the first fader rack state completes it's sequence it switches to the next preset on the same rack and is ready for another trigger.

As mentioned earlier you can manually change the playback speed of the ramp using a continuous CC input from a slider or pedal. This is also channelized using MIDI channels 1 - 4 to correspond with each fader engine. This example shows an Expression pedal CC11 mapped to the 3rd fader engine speed control. It's all controlled by MIDI channel selection.



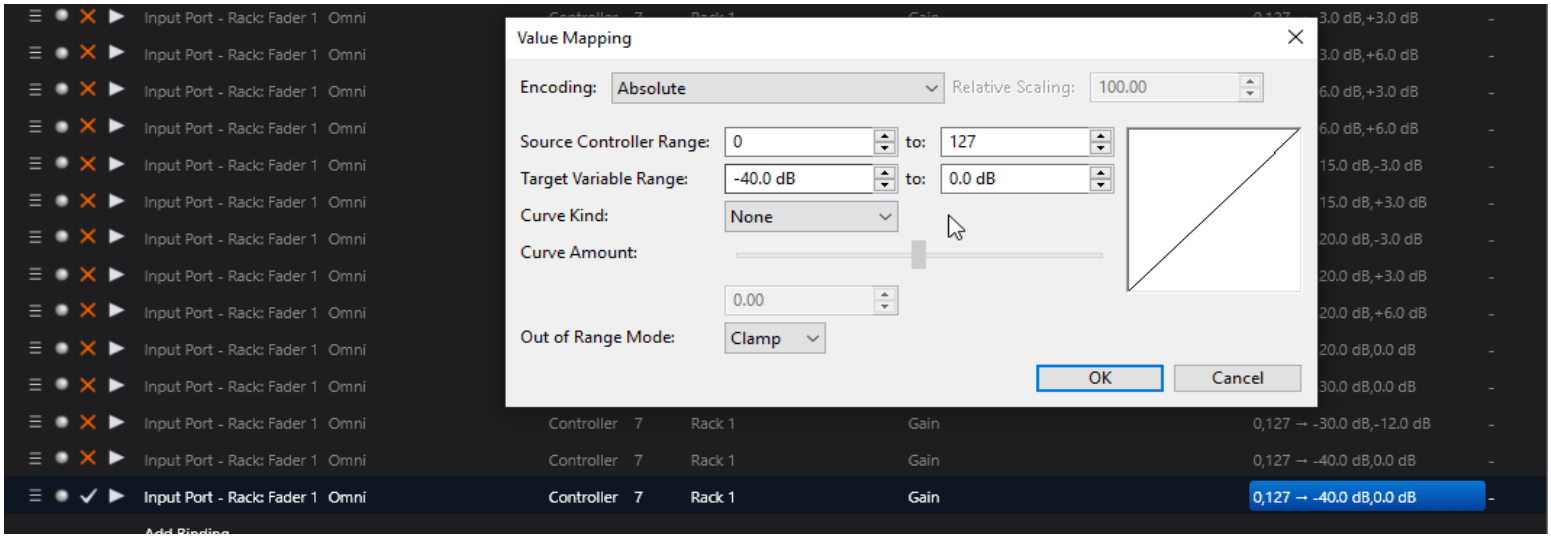
There are several indicators built in to the rack. At the top of the object list is a dummy embedded rack that shows the MIDI MIXED output on channel 1 on the embedded rack Gain slider. Expanding the rack reveals separate sliders for each of the slopes on the pseudo audio output routes that are shown.



As you can see there have been some serious re-organizing and design changes that made the rack more stable and reliable. Made with all Cantabile embedded racks, routes and bindings, the only outside parts are the 6 MIDI Base timing slope files that were created and calibrated here at home. I hope this tool finds use in some projects or setups.

rack created by David Doré - September 18, 2019

The way to create custom slope presets for the ramp generators has been changed to hopefully make it more straight forward to do. First determine the low value of the gain slider in db and then the high value in db for the slope you want make. All the slopes are programed low to high in terms of the db value. Next open the ramp generator embedded rack (there are 4) you want to add the slope definition to. Locate the bottom of the bindings list and copy a disabled binding and paste it to the bindings list. Create a new rack state and name it and then make sure the only binding in the list that is enabled is the one you just added and save the rack. Next open the value field for the binding and enter the low and high db values for the slope you want like in the example.



You can repeat this for each ramp if you want it in all the stages but you can only put it in the ones where you need it too if that works better. I found it easier to be able to add actual values in db instead using the conversion tables that had the midi cc values and you then entered those directly into routes instead of bindings.