

Morpher CV Utility

Macro controls with snapshot morphing

Rack Extension for Reason



USER MANUAL
version 1.2.0

Table of Contents

Morpher CV Utility	1
1. Introduction	4
2. Overview	5
Front	5
Back	6
3. Usage	7
CV output connections	7
Snapshot Click CV Out	11
Creating Snapshots	13
Copy/Paste/Clear Snapshots	14
Renaming a Snapshot slot	16
Morphing Snapshots	17
Mute and Solo buttons	18
Macro Settings	19
Randomizing Macros	21
Connecting External CV signals	22
Controlling Morphing via CV	23
Recording Automation (Reason DAW)	24
Recording Automation (Reason Rack VST)	26
Triggering Snapshots by MIDI	27
4. MIDI Implementation Chart	31

5. Remotable Items	32
6. Version History	34

1. Introduction

Morpher is a utility device with 8 macros which can be used to control parameters via CV on any connected device(s). The state of the macros can be saved in snapshots and one can smoothly morph from one snapshot to another by moving the cursor in the display area. With one movement, many parameters can be affected at once.

There are 8 snapshots slots with editing functions to copy, paste, save and delete snapshots. Snapshots can be labelled with custom text.

The macro controls have dedicated mute and solo buttons. When a macro is muted, it stops sending its CV value. Min and max values can be set for each macro to constraint the range of the CV output. This is done via the Settings page (press Alt + click in the display).

A randomize function allows to assign random values to the macros which can then be stored as snapshots. By connecting Morpher to your favorite instruments, you can use it to create random patch variations and then do morphing between them!

The device offers CV inputs for external modulation signals. When there is a CV signal connected into one of the 8 CV inputs, the corresponding macro acts like a trim pot for that CV signal. For example, if the signal from an LFO is connected into the CV 1 input, macro 1 sends out the LFO signal “trimmed” according to its position (position 0 completely trims the signal, position 127 allows the full signal to pass through).

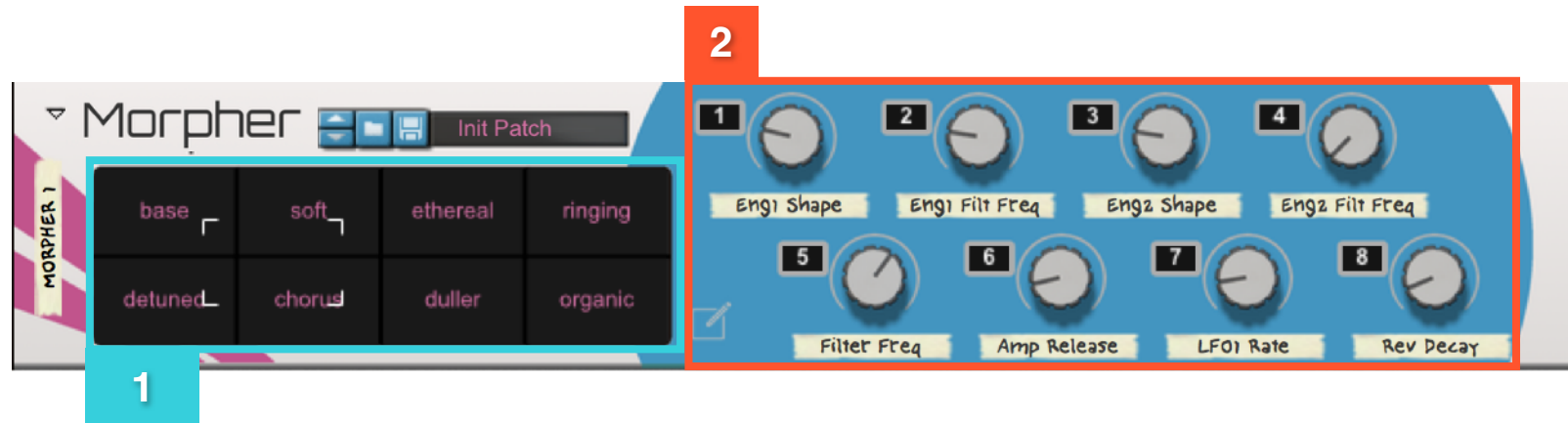
The device also provides inputs for morphing via CV. This makes it possible to create automatic morphing configurations which do not require any mouse input from the user.

Morpher is a nifty little device which can bring new life to your patches. Give it a try and see how fun and useful it can be!

2. Overview

The main interface elements on the front and back panels are illustrated below.

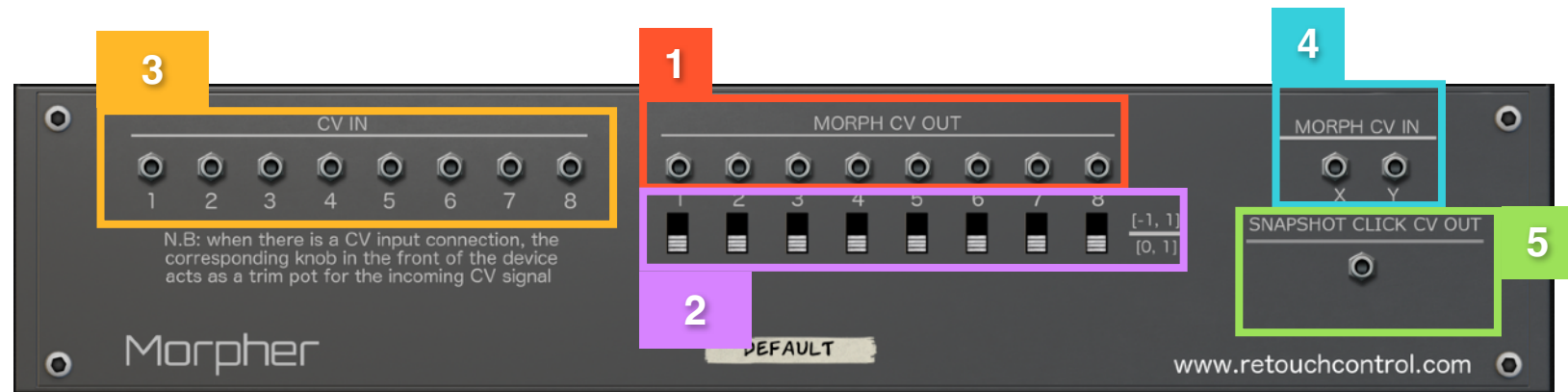
Front



1. Morphing display divided in 8 sections, each corresponding to a snapshot. Moving the white rectangular cursor morphs the values of the macro controls through the different snapshots. Dragging the cursor produces gradual morphing from one snapshot to the other. Clicking directly on another snapshot, produces an immediate change of the macro controls to the new values. Pressing **Alt** + clicking in the display opens the snapshot edit menu.

2. Macro controls each with a mute/solo button and tape strip for labelling purposes

Back

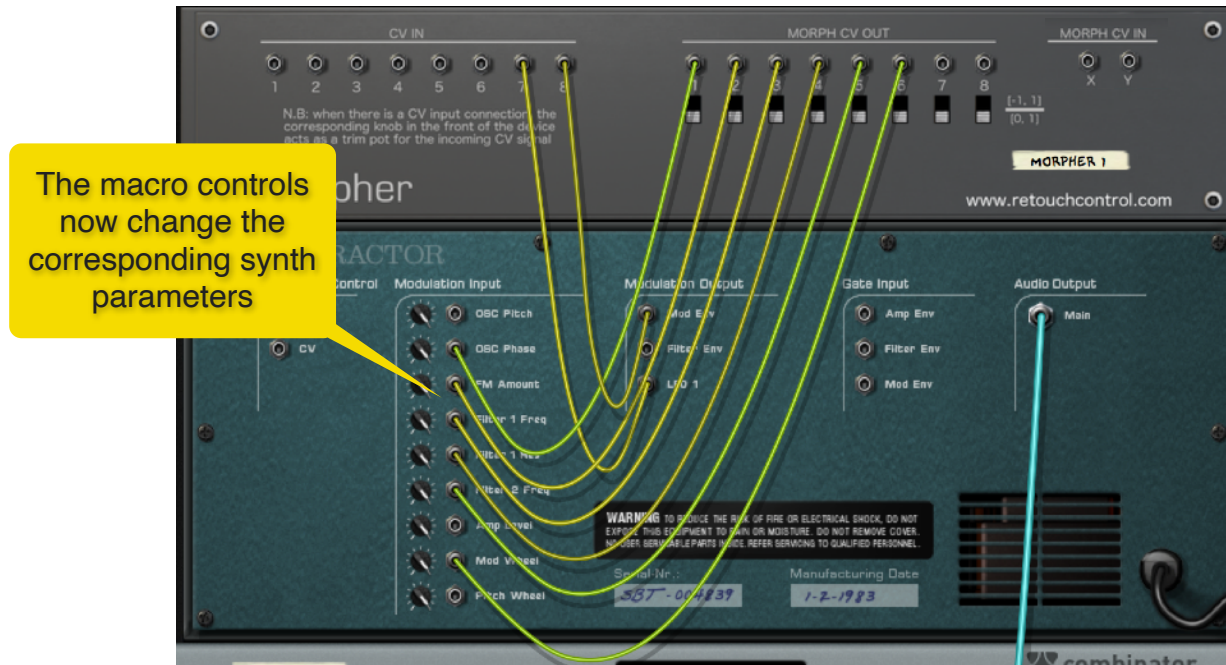


1. CV outputs for the position of the macro controls. Each numbered output corresponds to the same numbered macro control in the front of the device.
2. Polarity switches for each CV output. By default, the CV signal is scaled in the range $[0, 1]$. If a switch is turned on, the signal for that particular CV output is scaled in the range $[-1, 1]$
3. Inputs for incoming CV modulation signals. If a given numbered input has a connection, then the corresponding numbered macro control in the front of the device acts as trim pot for the incoming CV signal. If the macro control is at position 0, the input signal is completely trimmed. If the macro control is at position 127, the full input signal passes through.
4. Inputs for moving the morphing rectangle via CV from external devices. Please note, both the X and Y inputs need to be connected for the CV morphing to be activated.
5. CV output for when a snapshot is clicked. If the CV is connected, when clicking within the trigger area inside the cursor with the mouse (see the next chapter for details), a value of 1 is sent. When the mouse is released, a value of 0 is sent.

3. Usage

CV output connections

For the device to have any effect, there has to be a valid connection among the CV outputs in the back of Morpher and the CV inputs of another device. The example below shows connecting several of the CV outputs to modulation inputs in the back of the Subtractor synth (you can find this patch with the connections already made in the “Template” folder of the factory patches).



Once you have made your connections, moving a macro control in the front of the device now affects the synth parameter to which it is connected. In order to keep things organized so that you know what you are controlling, each macro control has a piece of labelling tape. Just double click on it to type your text descriptions.

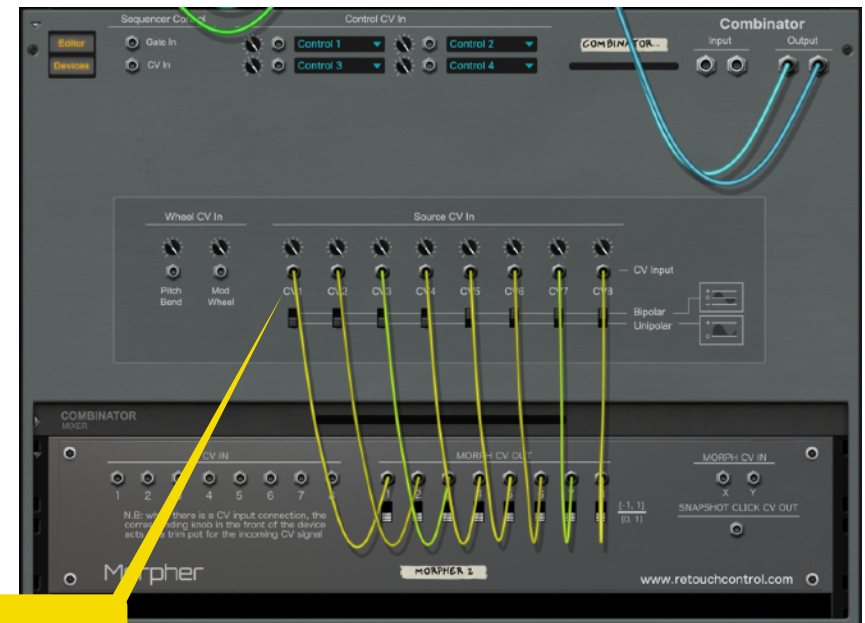


A more convenient way to start incorporating Morpher in your Rack is by making use of the blank combinator template inside the Factory Soundbank. You can find it at “*Reason Library/Rack Extensions/Morpher CV Utility/Templates*”, and it’s called “**Combinator_Start**” (please make sure to have the “All Types” tag selected in the browser in order to see the combinator patches).

If you take a look at the back of the combinator, as shown below, you’ll notice that the Morpher macros CV outs have been connected to the 8 CV inputs of the combinator. This will allow you to assign device parameters to the CV input inside the combinator’s editor, and then control them via Morpher! In this fashion, you’ll be able to access many more parameters than what’s usually available in the back of devices.



“Combinator_Start”
template



Macros CV outs connected
to the combinator’s
CV inputs

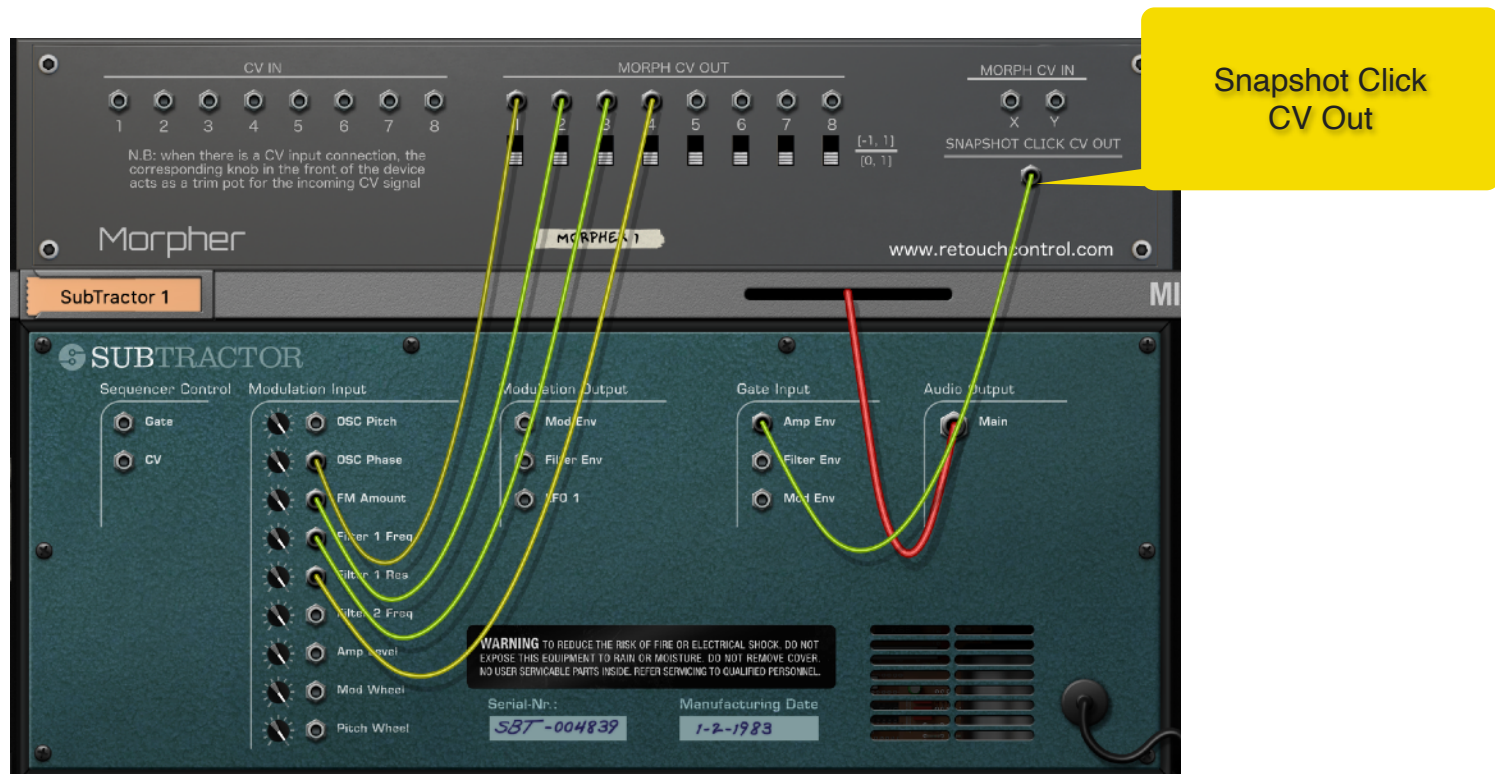
Combinator's assignable CV inputs controllable from Morpher's macros

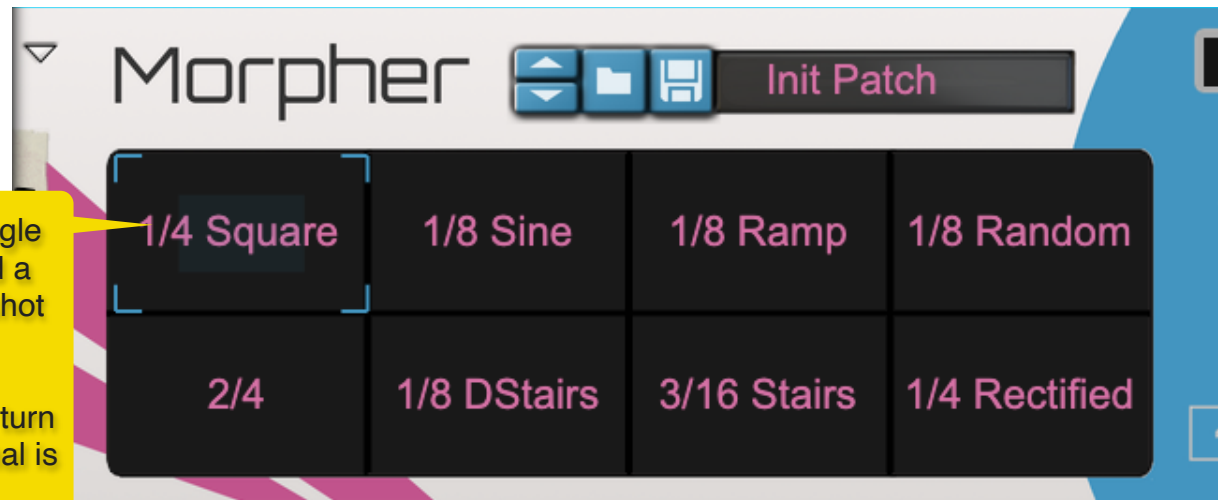
More device parameters are available for being controlled from Morpher



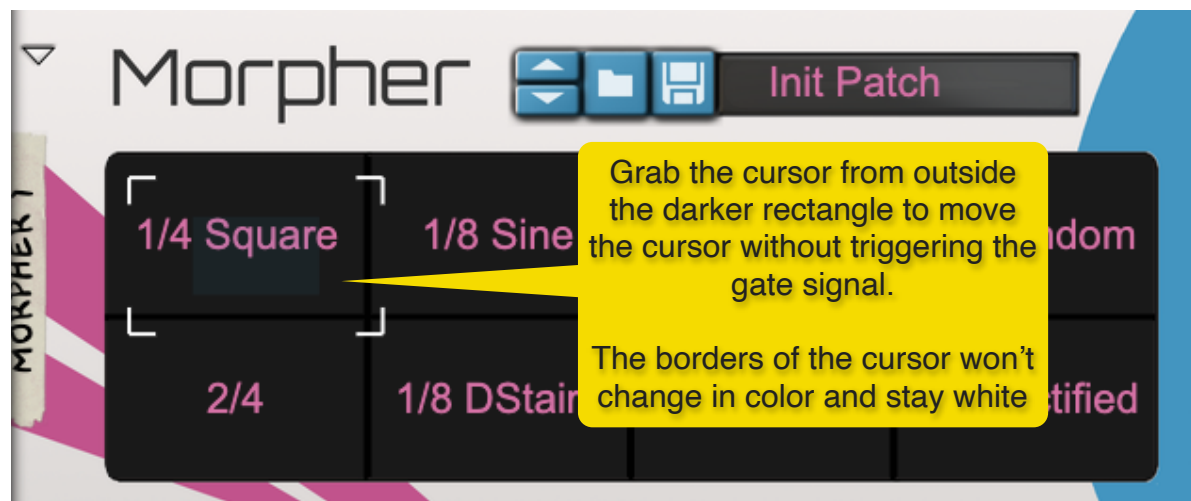
Snapshot Click CV Out

In addition to the macros, the “Snapshot Click” CV output can send a message whenever the mouse clicks inside the cursor “trigger” area. This trigger area is shown as a darker rectangle which appears when there is a cable connected to the Snapshot Click CV outlet (see below). This can be useful for triggering specific events when the mouse is clicked, for example a modulation source like an envelope, or even a sampler or a synth. Basically anything which responds to a CV message!





The borders of the cursor turn blue to indicate that a signal is being sent out.



Creating Snapshots

To create a snapshot, first move the cursor to one of the 8 snapshot slots. Then adjust the macro control positions to your liking. Finally go to the display area and *Alt*+click to open the edit menu. From there, choose “Save Snapshot”. Once a snapshot has been correctly saved, the text color changes from blue to magenta.

1. Move the cursor to the desired snapshot slot

2. Adjust the macro controls

3. *Alt*+click in the display to open the edit menu and choose “Save Snapshot”

Save Snapshot
Clear Snapshot
Copy Snapshot
Paste Snapshot
Paste Snapshot to All
Settings
Disable Morph CV In
Randomize Few
Randomize Most
Randomize All

Shortcut to Save a Snapshot:
a quick way to save a snapshot is by pressing *Shift* and then clicking on the desired pad.

The text's color changes from blue to magenta

Morpher

1 2 3 4
Osc Phase FM Amount Filt 1 Freq Filt 1 Res

5 6 7 8
Filt 2 Freq Mod Wheel LFO1 → Rot1 Mod Env → Rot1

Form Oct Semi Cent FM

Link → FILTER 1 FILTER 2

Notch

Morpher

A B C D
E F G H

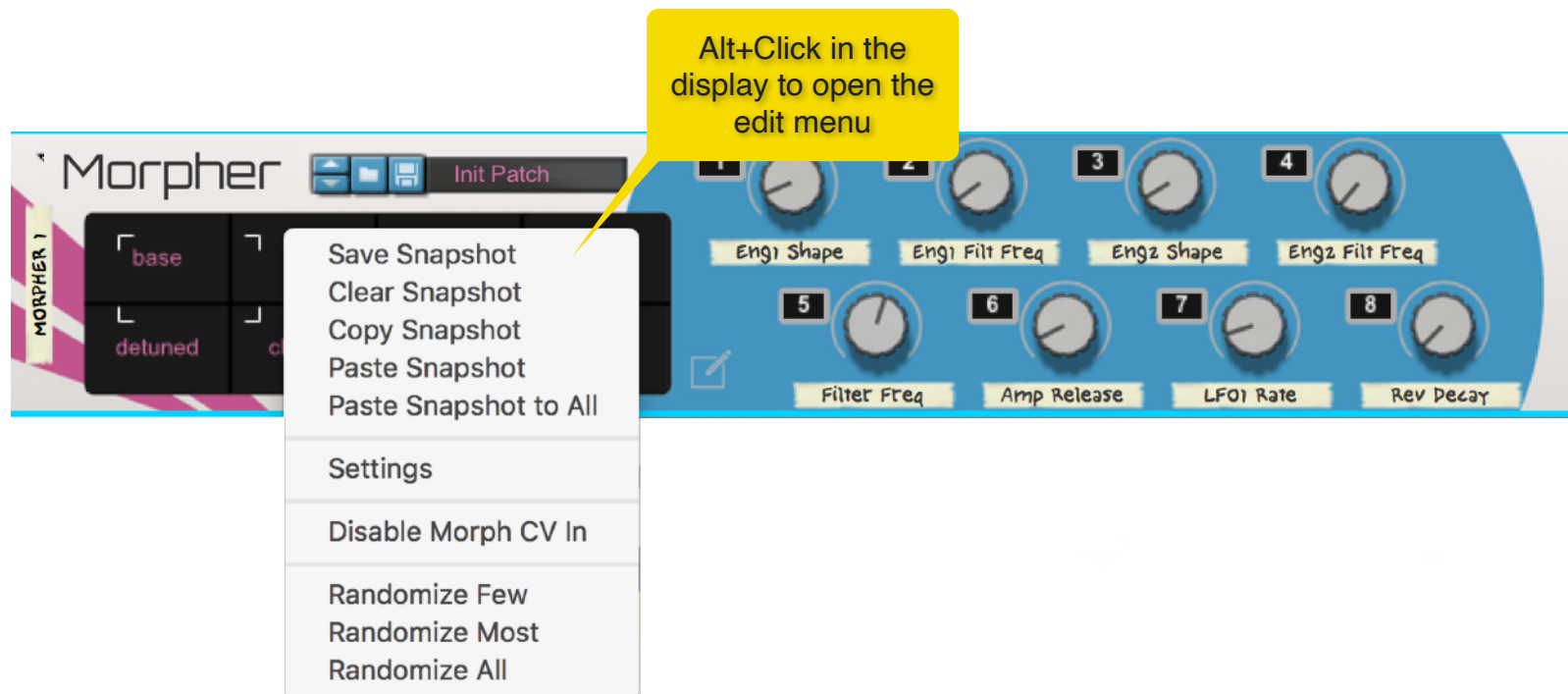
Copy/Paste/Clear Snapshots

The edit menu offers several helpful editing functions which make the process of creating snapshots a lot easier.

Copy Snapshot: place the cursor in the snapshot slot you wish to copy. Press Alt + click in the display and choose “Copy Snapshot” from the edit menu. Both the values of the macro controls and the snapshot’s name are copied and are ready to be copied unto another snapshot slot

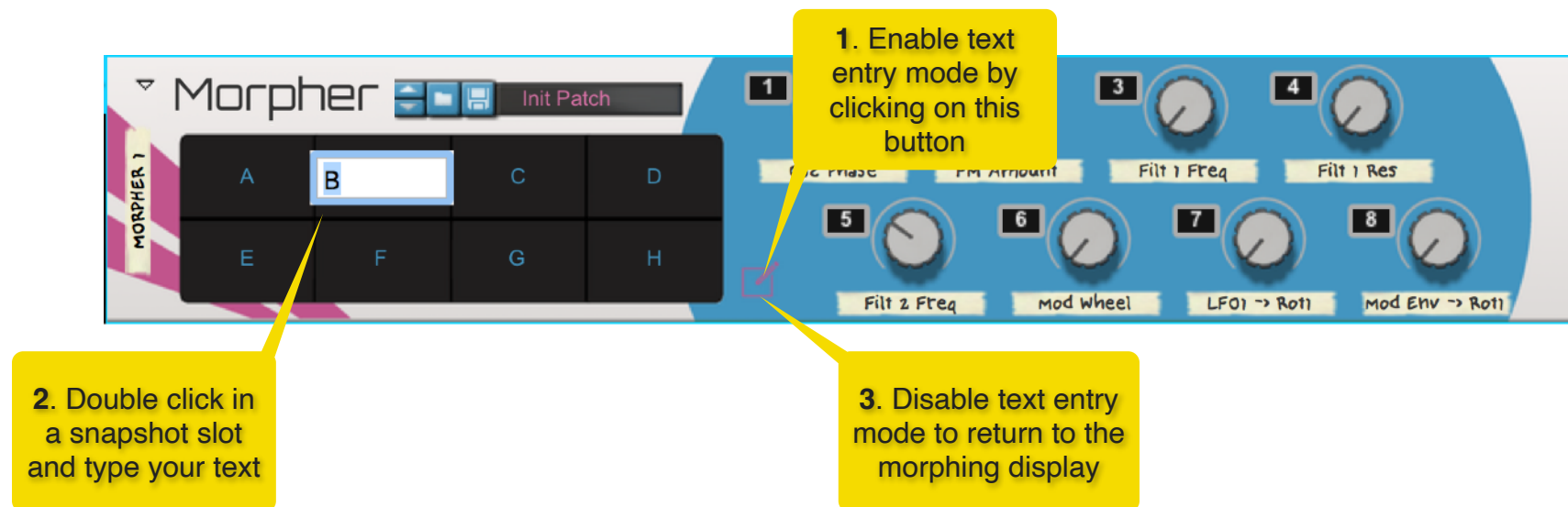
Paste Snapshot: once you have copied a snapshot, move the cursor to another snapshot location. Then press Alt + click in the display and choose “Paste Snapshot” from the edit menu. Both the values of the macro controls and the copied snapshot’s name are pasted into the new snapshot slot. If instead of “Paste Snapshot”, you chose “Paste Snapshot to All”, then values are copied to all snapshot slots at once!

Clear Snapshot: choose “Clear Snapshot” to reset the macro control and the text to the default settings



Renaming a Snapshot slot

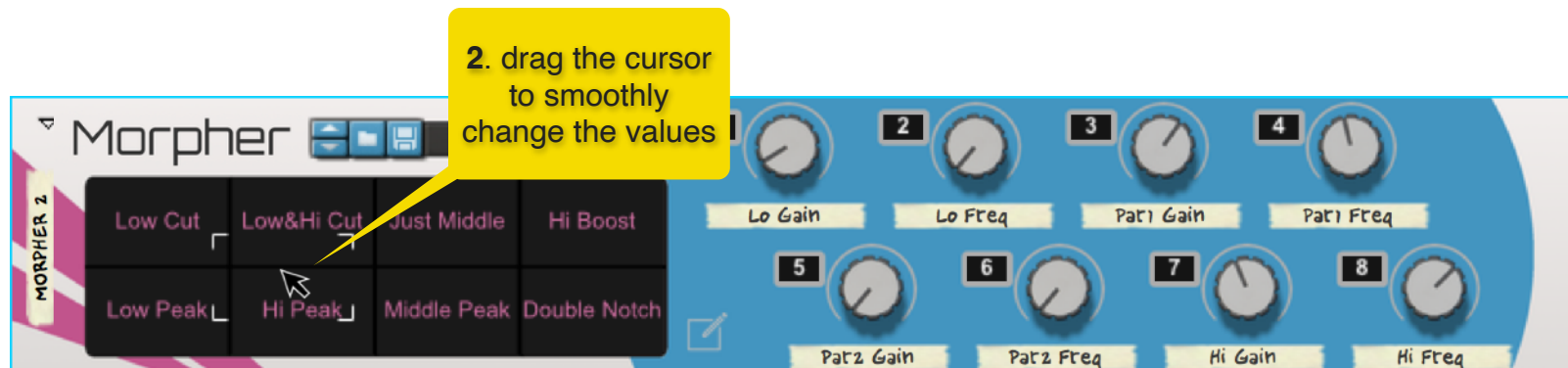
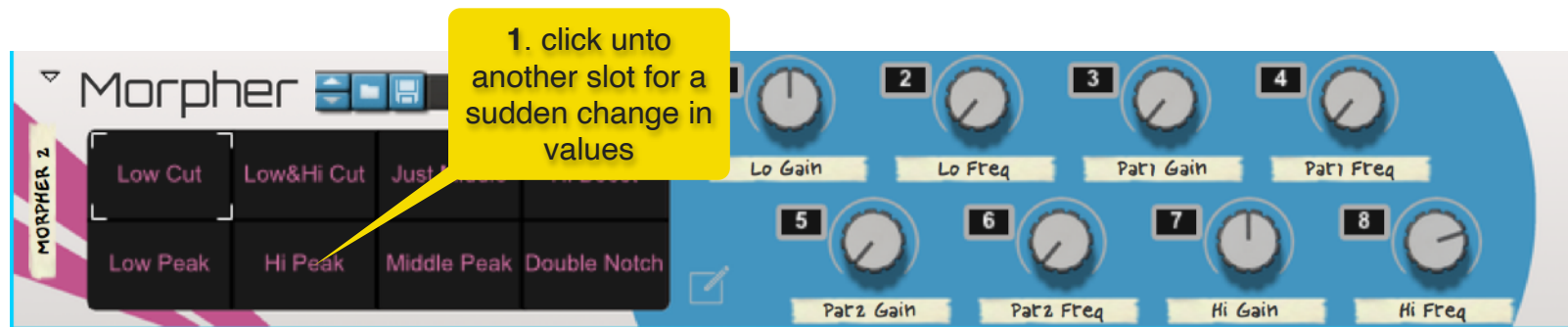
You can give each snapshot slot a short text description. You first need to enable “text entry” mode by clicking on the text entry button next to the lower right corner of the display. Then double click on a snapshot and enter your desired text in the text field. Disable the “text entry” mode by clicking on it to return to the regular morphing display.



Morphing Snapshots

Once you have populated the various snapshot slots, you can go from one to the other in basically two ways:

1. if you just click inside a new snapshot location, the cursor will immediately jump to that location and the macro controls will suddenly change their value from the previous snapshot to the new snapshot
2. if you click and drag the cursor from the current to a new snapshot location, the macro controls values will gradually morph from the old values to the new values

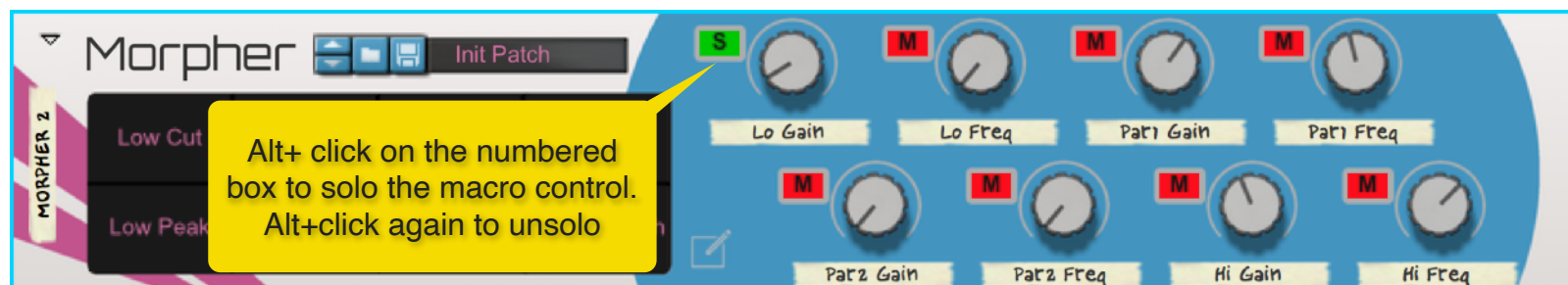
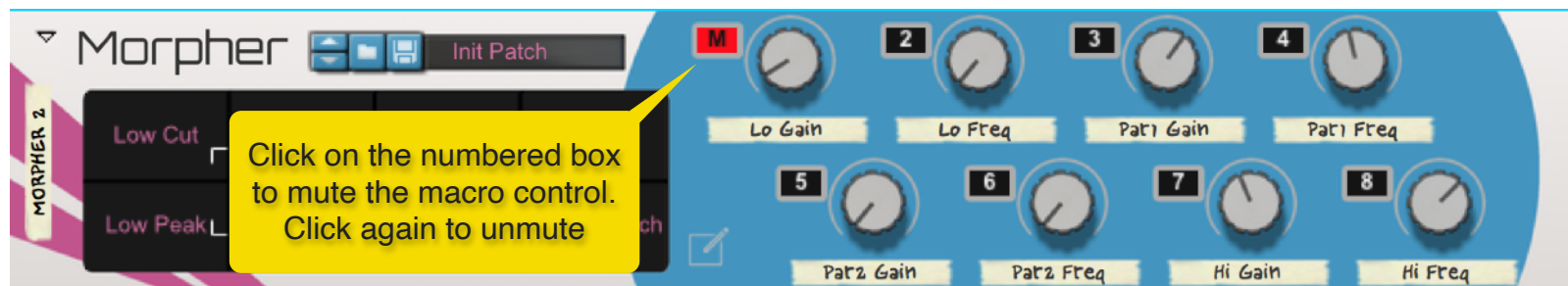


Mute and Solo buttons

Each macro control has a dedicated mute/solo button.

In order to mute a macro control, click on its numbered box. If the mute is engaged, then no CV is sent out of its corresponding macro control's CV socket. This is useful when you want to avoid changes to a certain parameter during morphing and it expands the number of possible variations that you can obtain from a existing set of snapshots.

In order to solo a macro control, Alt + click on its numbered box. If the solo button is engaged, then only the corresponding macro control has CV sent out of its output socked, while all other controls have no CV being sent out.



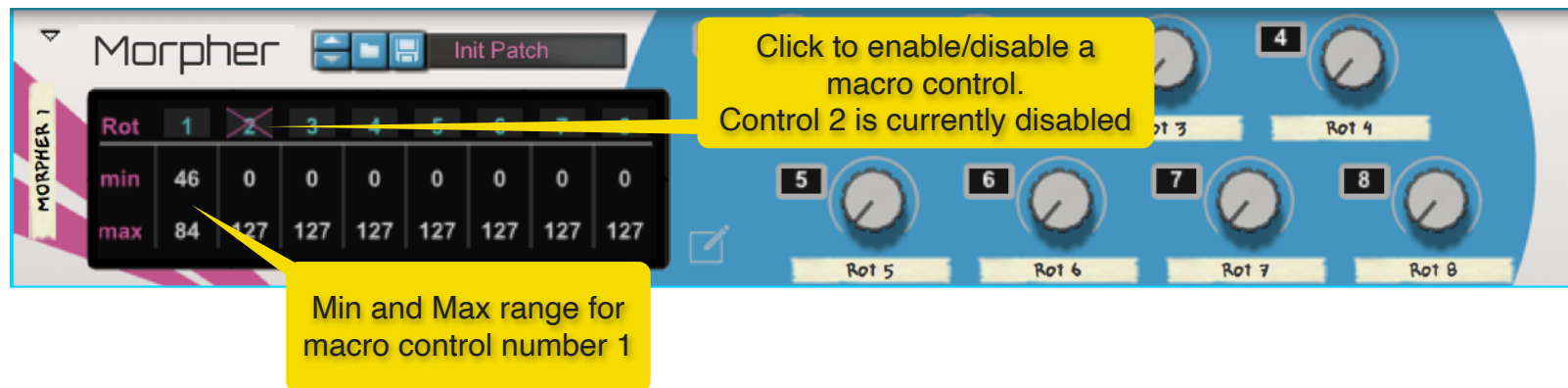
Macro Settings

To access the macro settings page, Alt+click in the display and choose “Settings” from the menu.



From this page, you can enable or disable each macro control by clicking on its number. When a control is disabled, the macro number is crossed.

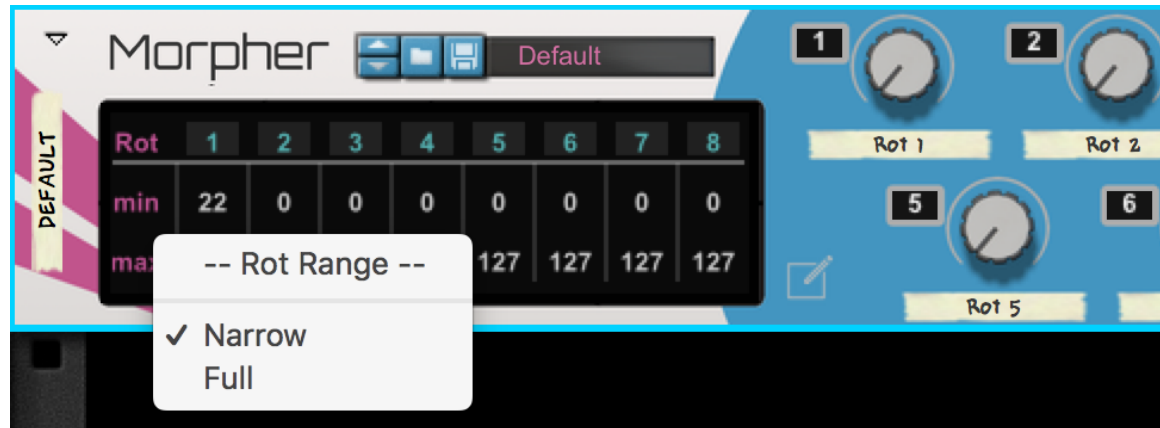
Also from this page, you can set a min/max range for the CV out sent by the knob. For example, if you set the min to 46 and the max to 84, then the knob will only send out values in between these two numbers.



You have two options for how the knobs behave when Min and Max values are set:

1. Narrow Range: the knob only sends values when its position falls between the min and max setting
2. Full Range: the knob sends values through its entire range, and the end ranges are re-mapped to the chosen min and max

These options are selected by clicking in the "min max" area of the display as shown below.



Narrow Range: knob only sends values between the min and max positions

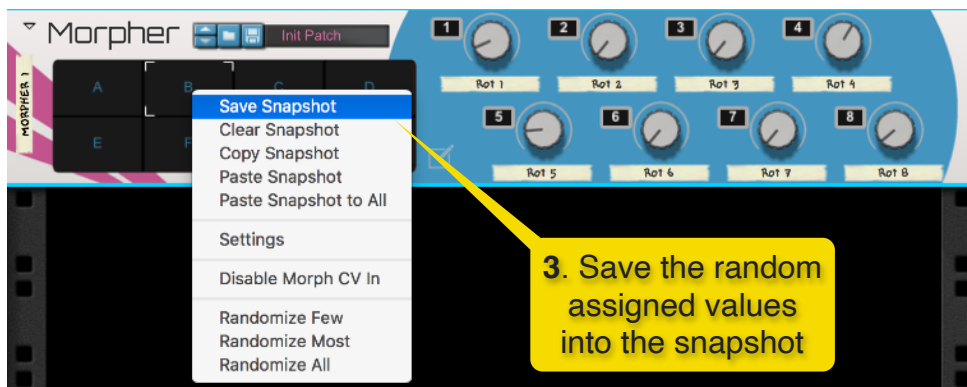
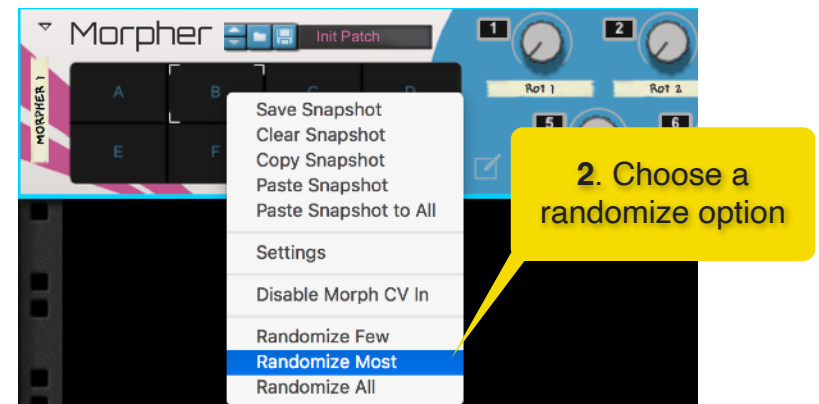
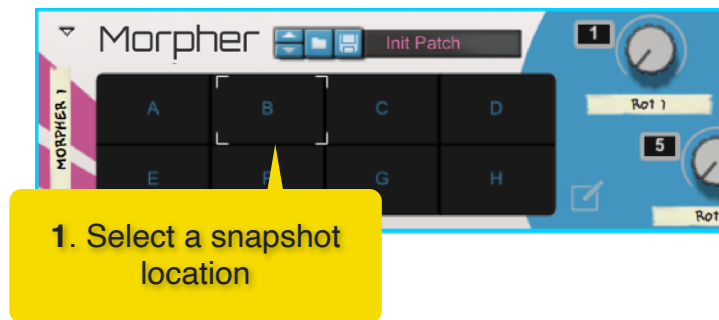


Full Range: knob sends value throughout the entire range with min and max mapped to the end ranges



Randomizing Macros

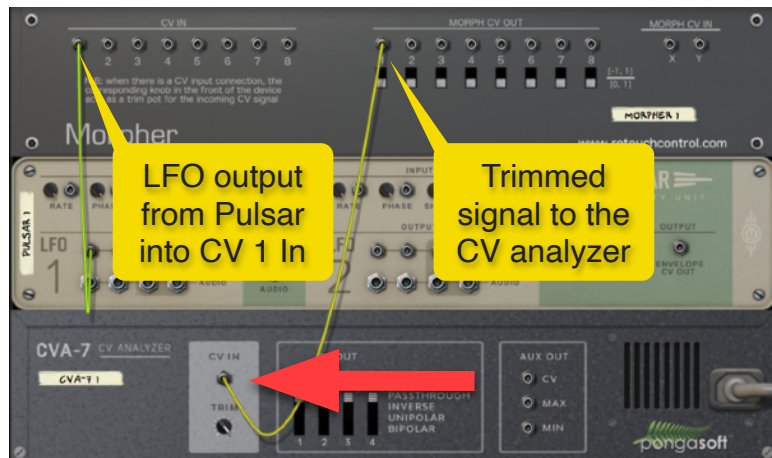
It is possible to randomize the value of the macro controls. This can yield interesting results when creating snapshots. The randomize function is accessed from the display context menu (Alt+click). There you have the option to randomize only a few of the macros, most of the macros or all of them. If you plan to save these values in a snapshot, please first select the snapshot location, then randomize and then save the snapshot, following the sequence shown below.



Shortcut to Randomize a Snapshot: a quick way to randomize a snapshot is by pressing *Cmd(Mac)/Ctrl(Win)* and then clicking on the desired pad.

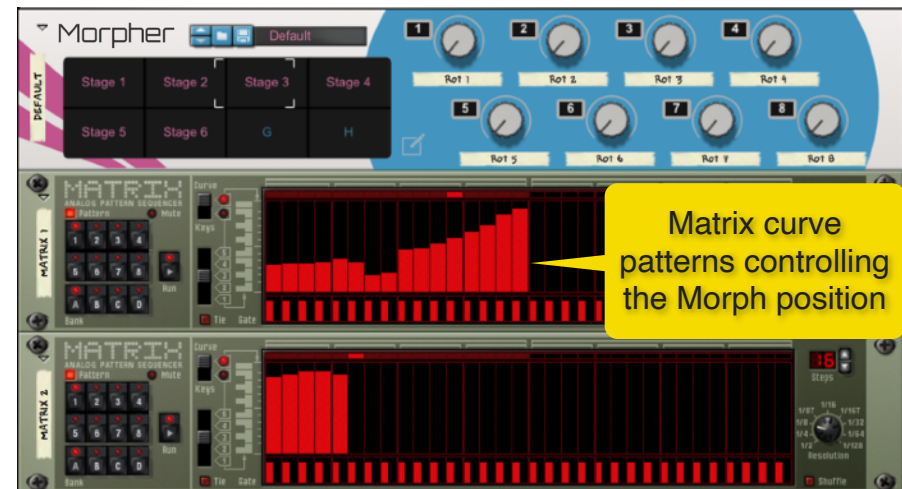
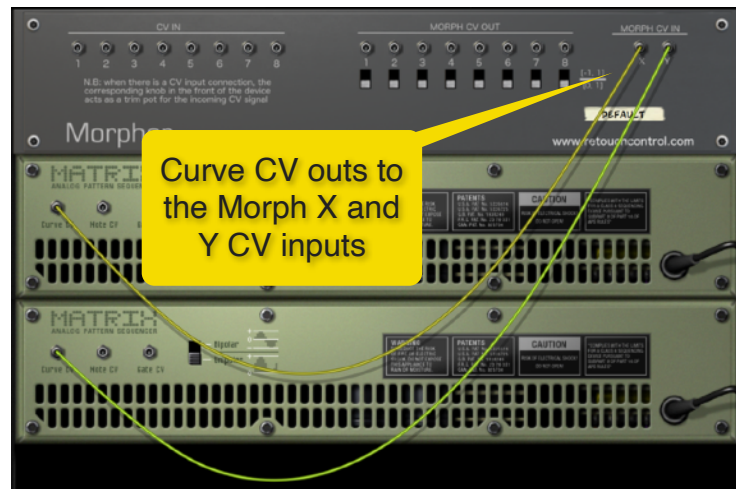
Connecting External CV signals

The back of the device offers 8 CV inputs for external signals. In the example below, the LFO signal from a Pulsar device is connected to the CV 1 input. The corresponding macro control now acts as a trim pot for this signal. When the macro is at the zero position, none of the signal goes out of the CV 1 output. When the macro is at the 127 position, the signal goes out of the CV 1 output at its full strength.

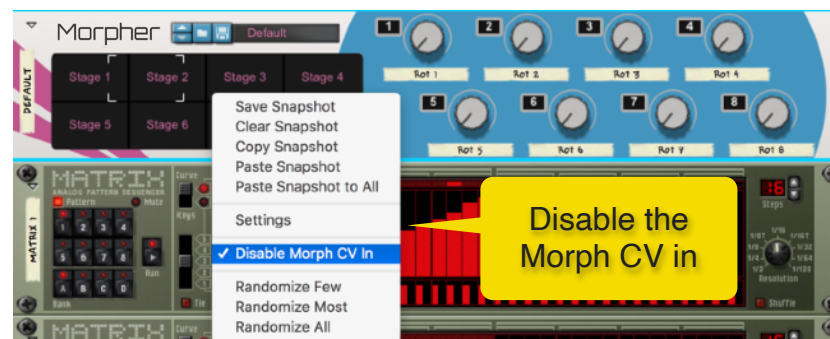


Controlling Morphing via CV

Instead of using the mouse to morph between snapshots, it is possible to use CV signals. There are two CV inputs in the back of the device, one for the X and one for the Y position. Please note, both of these inputs need to be connected in order for the CV signals to morph the snapshots. The example below shows two Matrix devices connected to the Morph X and Y CV inputs. The CV curve output of each Matrix is used to control the morphing position.

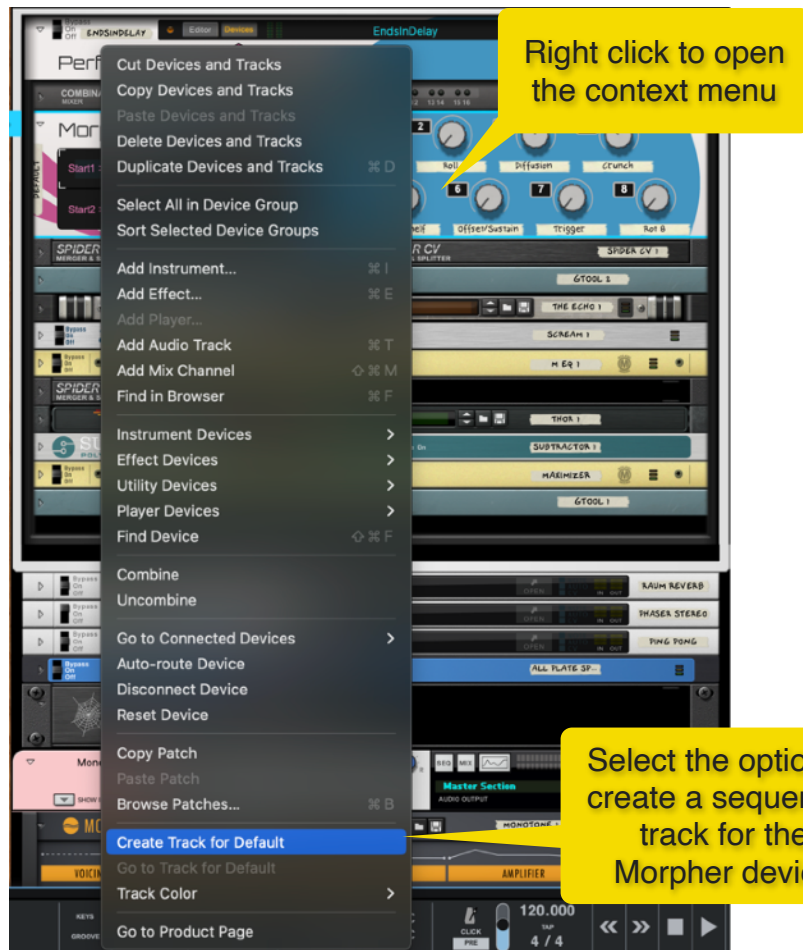


It is possible to disable the CV control of morphing without the need to disconnect the cables in the back of the device. When Alt+clicking in the display area, choose from the menu to “disable Morph CV in” as shown below.

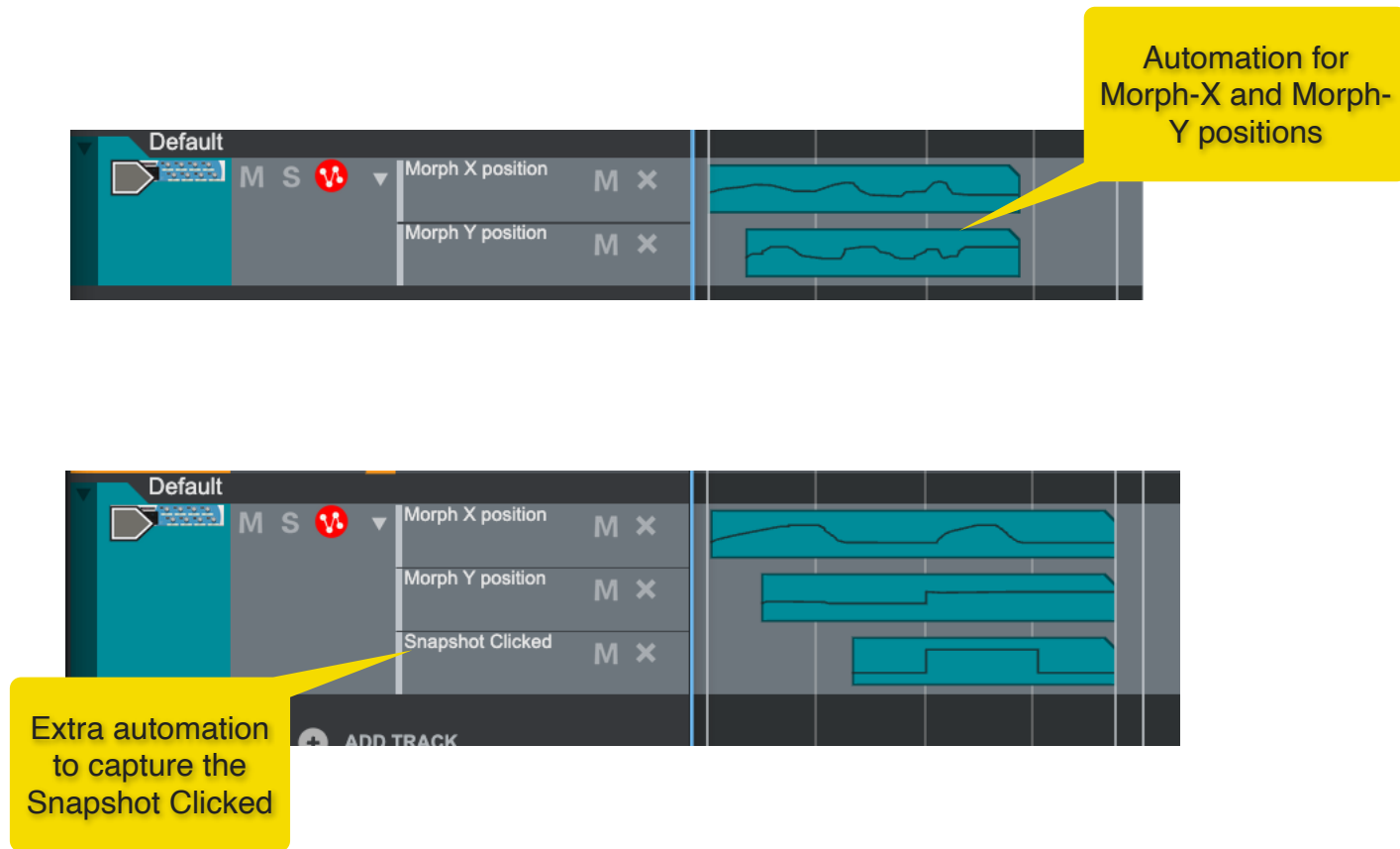


Recording Automation (Reason DAW)

You can record the cursor movements in the sequencer. First, make sure that the Morpher device has a corresponding sequencer track. Please note, if you are using Morpher inside a combinator, this track is not created automatically, so you'll need to create it manually as shown below.

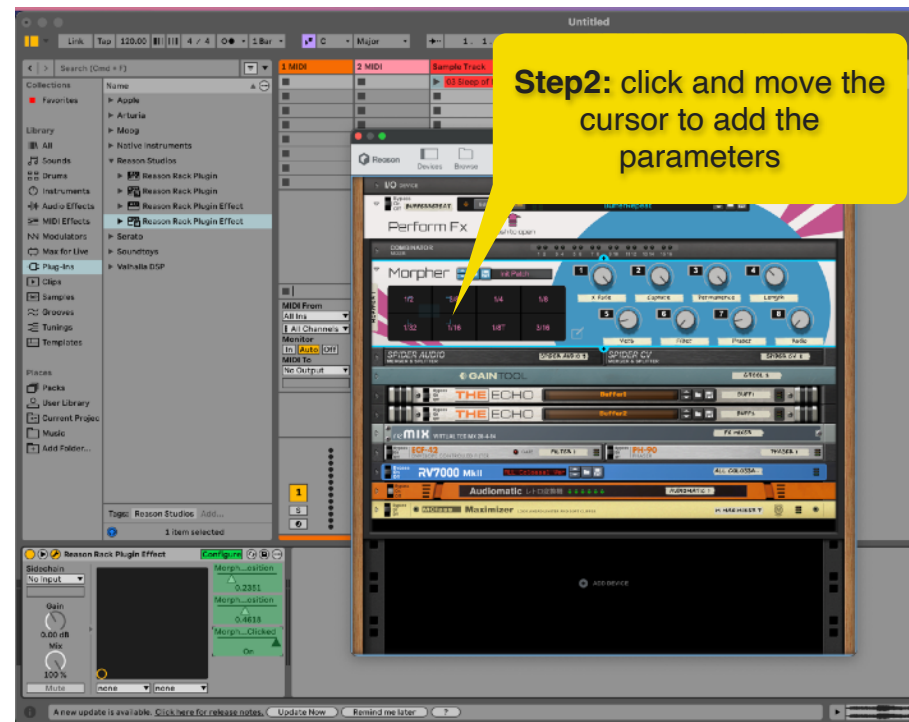
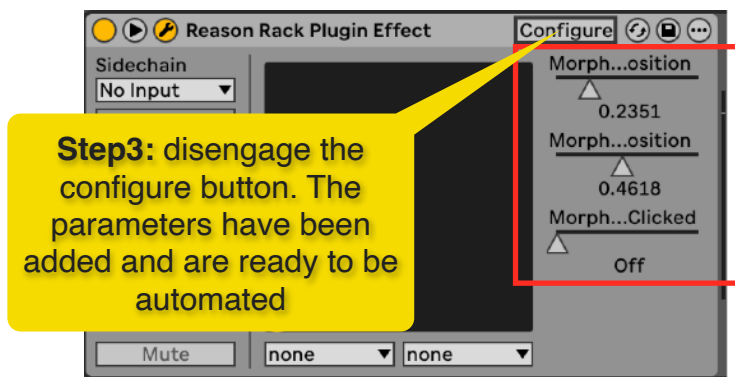
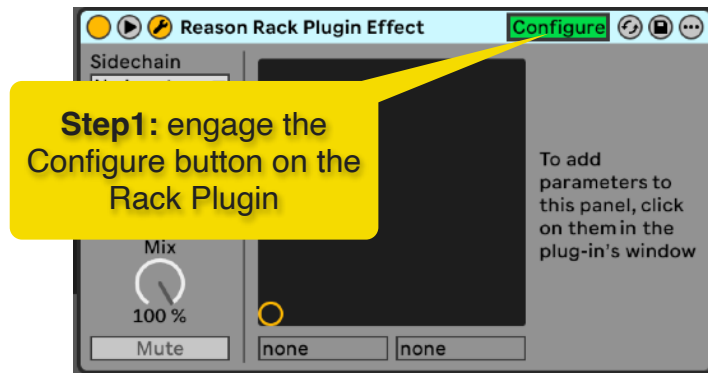


Once there is a track for the Morpher device, you can record automation just by hitting the “record” button in Reason and then moving the cursor with the mouse. If the “Snapshot Click” CV outlet is connected, in addition to the “Morph X Position” and “Morph Y Position”, you’ll also see an automation lane for the “Snapshot Clicked”, as shown below.



Recording Automation (Reason Rack VST)

Depending on your Host DAW, recording automation might require some configuration. Please consult your DAW's manual for information about automating VST parameters. Here it is shown how to configure the Reason Rack Plugin inside Ableton Live.



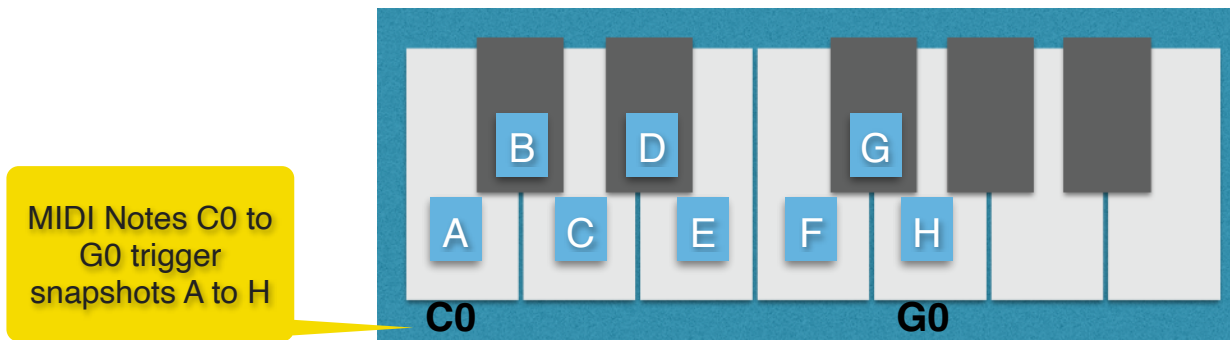
Triggering Snapshots by MIDI

It's possible to switch snapshots by using MIDI notes. The device responds to midi notes C0-G0 which trigger snapshots A to H, as shown below. Please make sure the Morpher track is selected in the sequencer when triggering snapshots by MIDI. You might have to create a new note lane to record the MIDI. This is done by right clicking on the Morpher track and choosing "New Note Lane" from the context menu, as shown on the next page.

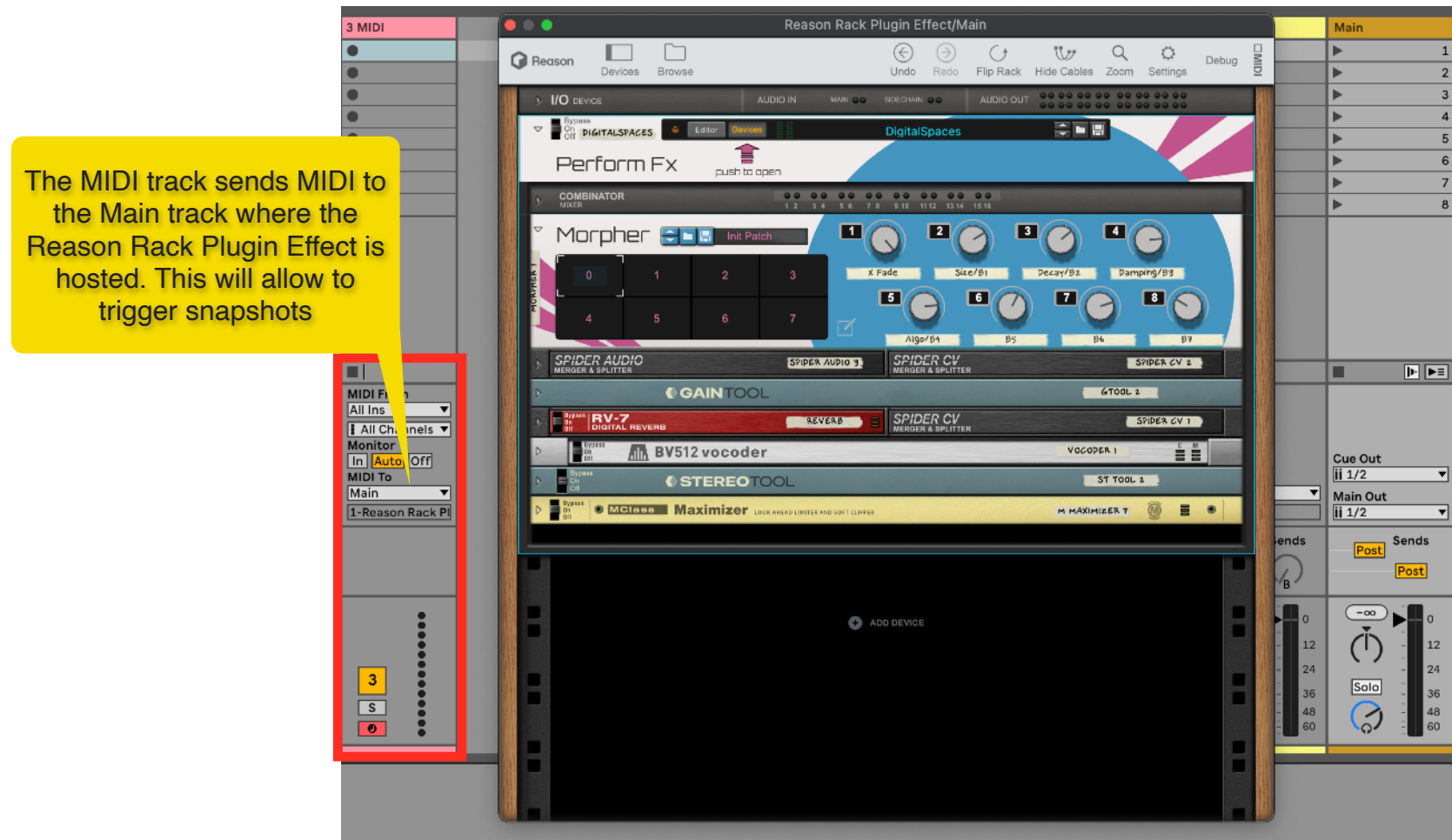




If Morpher is in a combinator, enable "Receive Notes", as shown below.



For triggering the snapshots via MIDI notes inside another DAW, you need a MIDI track which sends MIDI notes to the track hosting the Reason Rack Plugin. In the example below, we show a MIDI track in Ableton Live sending MIDI notes to the “Main” track where the Reason Rack Plugin is hosted.



4. MIDI Implementation Chart

CC	PARAMETER
----	-----------

[28]	"Mute_1"
[29]	"Mute_2"
[30]	"Mute_3"
[31]	"Mute_4"
[33]	"Mute_5"
[34]	"Mute_6"
[35]	"Mute_7"
[36]	"Mute_8"
[37]	"Solo_1"
[39]	"Solo_2"
[40]	"Solo_3"
[41]	"Solo_4"
[42]	"Solo_5"
[43]	"Solo_6"
[44]	"Solo_7"
[45]	"Solo_8"
[46]	"Morph_X"
[47]	"Morph_Y"
[48]	"Snapshot_Clicked"

5. Remotable Items

Scope

Manufacturer

Retouch Control

Model

com.retouchcontrol.Morpher

Remotable	Min	Max	Input type	Output type
Ch1 Velocity Level	0	4194304	Value	ValueOutput
Ch2 Velocity Level	0	4194304	Value	ValueOutput
Ch3 Velocity Level	0	4194304	Value	ValueOutput
Ch4 Velocity Level	0	4194304	Value	ValueOutput
Ch5 Velocity Level	0	4194304	Value	ValueOutput
Ch6 Velocity Level	0	4194304	Value	ValueOutput
Ch7 Velocity Level	0	4194304	Value	ValueOutput
Ch8 Velocity Level	0	4194304	Value	ValueOutput
Ch1 Mute	0	1	Toggle	ValueOutput
Ch2 Mute	0	1	Toggle	ValueOutput
Ch3 Mute	0	1	Toggle	ValueOutput
Ch4 Mute	0	1	Toggle	ValueOutput
Ch5 Mute	0	1	Toggle	ValueOutput
Ch6 Mute	0	1	Toggle	ValueOutput
Ch7 Mute	0	1	Toggle	ValueOutput
Ch8 Mute	0	1	Toggle	ValueOutput
Ch1 Solo	0	1	Toggle	ValueOutput
Ch2 Solo	0	1	Toggle	ValueOutput
Ch3 Solo	0	1	Toggle	ValueOutput
Ch4 Solo	0	1	Toggle	ValueOutput
Ch5 Solo	0	1	Toggle	ValueOutput
Ch6 Solo	0	1	Toggle	ValueOutput
Ch7 Solo	0	1	Toggle	ValueOutput
Ch8 Solo	0	1	Toggle	ValueOutput
Morph X position	0	4194304	Value	ValueOutput
Morph Y position	0	4194304	Value	ValueOutput
Snapshot clicked	0	1	Toggle	ValueOutput
Device Name	0	0	-	TextOutput

Patch Name	0	0	-	TextOutput
Select Patch Delta	0	0	Delta	TextOutput
Select Previous Patch	0	0	Trig	TextOutput
Select Next Patch	0	0	Trig	TextOutput

6. Version History

Version 1.0.0 - Initial Release

Version 1.0.2 - bug fixes (polarity switches and CV in)

Version 1.1.0 - added save and randomize shortcuts + MIDI keys trigger of snapshots

Version 1.1.1 - added Narrow and Full range options when setting min and max values for the knobs

Version 1.2.0 - added "Snapshot Clicked" CV Output

- added Morph_X and Morph_Y to the MIDI CC list for simpler automation*
- added "Snapshot Clicked" to the Remote list
- added demo patches for the "Morpher Perform FX" Refill
- updated device and combinator graphics and templates

*** IMPORTANT:** If you are updating to version 1.2.0 and you have older songs with automation of the Morpher macros, please note that these have been replaced by direct automation of the X and Y cursor positions. This change greatly simplifies the process of automating snapshot morphing. However, the older automation clips won't work any longer. Therefore it is recommended that you render any audio which is being affected by Morpher automation before updating to the 1.2.0 version.