

Introduction

The *VenomControl* suite of Max for Live plugins allows integration and full control of the *M-Audio Venom* synthesizer *within Ableton Live*. The package provides tools for automation, action recording, synthesis and preset handling (storage, recall, morphing), integrated in Live's native GUI.

The toolset includes the following devices:

- **Venom-Control.amxd**. Control surface mapping all tweaking and synthesis parameters available on the Venom synthesizer, arranged in sections. A Max for Live MIDI device.
- **Venom-BankManager.amxd**. Manager for recalling and storing Venom on board presets (single patches)
- **Venom-BankMorpher.amxd**. Little app for morphing between two onboard presets and creating new sounds.
- **Venom-PatchManager.amxd**. Manager for preset banks, which can be recalled and stored on your computer.
- **Venom-PatchMorpher.amxd**. Little app for morphing between three file presets and creating new sounds.
- **SysExRouter** standalone application. Utility for enabling MIDI System Exclusive message handling in Live, as required by the apps mentioned above (excluding the **Venom-Control.amxd**, which does not require them). You can find it in the "VenomControl – SysExRouter" folder once you unpacked the zip file (versions for both Mac and Windows).

The following explains how the apps work and how to use them.

Have fun.

Cheers

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MIDI Setup

The VenomControl suite utilizes MIDI to communicate with the Venom synthesizer. In order to be able to use the plugins be sure you have communication with the Venom in place.

The synth offers two ways to connect to Ableton Live: the *direct USB connection* (the Venom can be used simultaneously as synth sound source, audio interface, MIDI interface and controller) or the *“traditional” MIDI connectivity* (that is the Venom is accessed through the MIDI IN and OUT ports on its rear panel, through a third party MIDI interface available to Live, and with audio otherwise integrated). *BOTH ways of connecting are supported.*

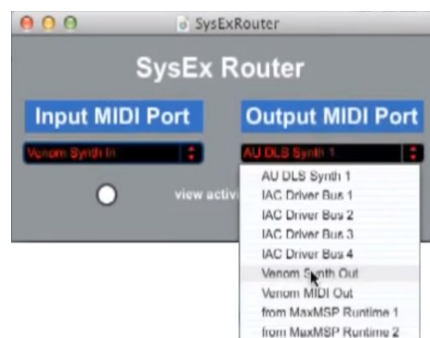
Below the example of Live MIDI Preferences in the first case.



This configuration is actually enough for using the Venom-Control.amxd control surface device: in this case MIDI Control Change messages are used to communicate and control the synthesizer.

Anyway this is not sufficient to use all other, more advanced features such as preset handling, morphing, storage. In this case the Venom requires MIDI System Exclusive communication which in Ableton Live, as it is well known, gets filtered out. In order to overcome this shortage of Live an additional little software is added to the mix: the *“SysExRouter”*.

You just need to run this in the background, its configuration being extremely simple: select the MIDI input and output interface used to communicate from and to the Venom, actually the same interface you specified in Live MIDI Preferences and there you go. The setup of the patch will look like in this picture:



Here a short **check-list** to get it all set up correctly:

1) Let's check first which MIDI channel is used on the Venom synth and see if MIDI communication works:

- To verify the MIDI channel to use: press the "Edit" button on the synth, The number shows the configured MIDI channel. This is the channel you must also use on Ableton Live.
- To test if MIDI communication works:
 - Activate the MIDI ports in Live MIDI Preferences, if you have not done this yet (see previous description)
 - Create a MIDI track in Ableton Live. DOT NO place the VenomControl. Put only Live External Instrument
 - Configure the External Instrument with "MIDI To" set to the MIDI port and channel used to reach the Venom, being the MIDI Channel the one you discovered in the steps above.
 - Configure the External Instrument with "Audio from" using the audio port you need to get audio in Live
 - Make a simple test MIDI Clip in this track, just with some notes (only notes for now)
 - Play this MIDI clip: the synth must play now. If it does not play, you have still a MIDI communication problem with the synth and go back to the start of the chapter to check everything is set up as it should.

2) If you got 1) working, let's test now the "Venom-Control.amxd" automation and control capabilities:

- Drop the "Venom-Control.amxd" on the same MIDI track as at 1)
- Play the MIDI again: the synth must still play
- Now try to move a knob on the VenomControl user interface in Live, for instance the Filter Cutoff: you should hear the sound changes (assuming no Filter bypass is applied, otherwise you can try another parameter).
- Activate the "overdub" button in Live and move this knob: your movements should be recorded as automation in the MIDI clip and played back (looped) in along with the MIDI notes.
- If you cannot achieve this, check the versions of Ableton Live and Max for Live are up to date, see information at the bottom of this page.

3) If you got 2) working, let's finally add MIDI SystemExclusive communication with the Synth for patch management:

- Start the "SysExRouter" standalone application. If your OS asks you to allow network communication, be sure to ACCEPT THAT (the software uses OSC communication between Max for Live and the standalone).
- Configure the "SysExRouter" MIDI input and output ports (menu's) to let the software communicate with the Venom synth. You must use the same MIDI ports as you used in Live to communicate with the Venom.
- Back in Live either:
 - Drop the "Venom-PatchManager.amxd" in the same MIDI track as the "Venom-Control.amxd". Load a preset-bank file (see map "VenomControl - Preset Banks" on the unzipped package) and change the preset number,
OR
 - Drop the "Venom-BankManager.amxd" in the same MIDI track as the "Venom-Control.amxd". Load a preset from bank A/B/C/D.
- If you change the preset number you should see that the Venom-Control interface updates all its knobs & parameters **and** that the synth changes sound.
- If this does not happen contact the maker (information on the website specified below).

Important things to check: be sure you have an up-to-date Ableton Live and Max for Live installation. The supported versions are specified on the Venom-Control page: <http://fabriziopoce.com/VenomControl.html>

On this page you'll also find the email coordinates for issues you cannot solve using this manual.

At this stage you are ready to go!

The Control Surface: Venom-Control.amxd

The control surface “Venom-Control.amxd” device does exactly what its name suggests. It maps all Venom featured controlled in a clear GUI and offers them to tweak, automation and recording in Live. Its GUI is divided in sections which recall the typical subtractive synthesizer sonic path (in emulation, as the Venom is a virtual analog synthesizer):



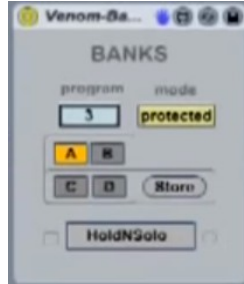
- **VCO:** The Voltage Controlled Oscillator section, with the three oscillators waveforms, individual volumes (levels) and pitch (de)tuning (coarse and fine). The waveforms can be selected from the choice menu, the levels set from 0 (min) to 127 (max) and the (de)tuning from 0 (-64 semitones in coarse) to 127 (+64 semitones in coarse) – being the value 64 in this case the perfect tuning state.
- **Key:** this section includes settings for polyphony (Mono and Poly), unison (multiple voices stacking and relative detuning) and gliding.
- **FM/Ring/PWM:** in this section synthesis options can be set. In particular:
 - Sync (in phase) of OSC2 and/or OSC3 to OSC1 (toggles ON means synchronized)
 - Ring modulation OSC2*OSC1 (value 0 means no modulation)
 - Frequency modulation (FM) of OSC3 in OSC1 (value 0 means no modulation)
 - Pulse Width modulation (PWM) (value 0 means no modulation)
 - Oscillators drift and mod start (specific to the Venom)
- **VCF:** The Voltage Controlled Filter section offers a menu for selecting the filter type and the knobs for Cutoff, Resonance, Envelope and Key-tracking amounts (in all cases 0 is the minimum).
- **ENV:** The Envelope section includes ADSR (attack, decay, sustain, release) controls for the three available envelopes (ENV1 is always mapped to the VCA, ENV2 to the VCF, ENV3 is unmapped by default)
- **LFO:** The Low Frequency Oscillators sections provides controls for the three independent LFO's, including the LFO shape waveform and the rate (the amount is set in the Matrix/modulation section if an LFO is selected).
- **Matrix (or modulation):** this section defines how the modulation is set. 16 modulation slots are available, each one with a source (i.e. an LFO or control), a destination (i.e. Cutoff, OSC-x Pitch, Resonance etc) and an amount knob (64 being the central value, typically a “zero” value). Please note that modulation slots 1 and 2 cannot be modified (mod 1 is assigned to VCF Envelope, mod 2 to VCF KeyTracking).
- **XY Pad/Spring:** simultaneous modulation of two separate parameters, as incremental values (+/- 100%) on top of their knob value. The area can be used as spring (value returns to central spot) or toggled to manual.
- **Effects:** this area reports the effect settings for Insert and mixer stage Aux1 and Aux2. Each one has a selector for the type of effect and knobs for the settings of the values.
- **Output:** Volume and Panning controls for the signal output.

There is no particular side comment for the GUI. Just tweak and hear the result by yourself.

The Bank Manager: Venom-BankManager.amxd

The Venom has 4 banks of 128 slots each for hosting single patches (sounds). The little “Venom-BankManager.amxd” app manages the onboard bank selection and storage of the Venom Synth directly from Ableton Live.

Note: When this app is loaded the “SysExRouter” little module is supposed to be running in the background.



Selecting a preset

Its usage is quite simple. The setting on the little square boxes labeled A/B/C/D defines the bank you are in, the program number box selects the preset number. So if you like to select C-112 you need to click (select) the C square and set the preset number to 112. No rocket science.

Note: If communication with the Venom is working, you will see the preset name change.

Important: If the “VenomControl.amxd” control surface is opened, changing preset through the BankManager will synchronize the knobs of the GUI to the preset values. This is quite an important feature to tweak stuff consistently!

Storing a preset

If you modify the GUI (you tweak the preset and change it) and wish to store the new patch on the Venom memory (onboard) you can use the BankManager. The Venom offers in fact the possibility to store custom patches in banks C and D (A and B are ROM only). To do this, do:

1. Tweak what you like on the GUI (Tip: you can use Ableton Live for undo!)
2. Set the [mode] toggle in the BankManager to “writable” (by default it says “protected”, meaning the slots are write protected). From now on you are allowed to select a destination slot and to save.
3. After choosing the destination (bank C or D, any program number) click on the “store” button of the BankManager: the patch will be stored on the Venom.

Other controls

There are two additional tiny buttons on the BankManager, just right and left to the preset name. They are a form of shortcut. To what? Well if you just like to skip through preset, you may want to do it quickly. In normal conditions the synchronization taking place between BankManager, Venom and VenomControl GUI takes a couple of seconds. If you set the little toggle left to the name to OFF (dark stand), the GUI update will not be done and the preset program can be changed quickly. The other one on the right? Simple, let's say you got a preset which is good for tweaking, but now your GUI is not representative, right? The little button on the left of the program name just does a manual synchronization, anytime you need it. The GUI, this way, will be again in sync.

The Bank Morpher: Venom-BankMorpher.amxd

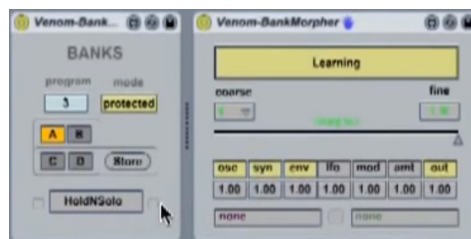
Loading preset is ok, modifying them by hand tweaking is nice, the possibility of storing the result is good. What about other possibilities? Yes, there is another way to get to sounds: Morph between patches!

Morphing, in this context, means linear interpolation. Let's say you have preset A with Cutoff set to 10 and Resonance to 20, and preset B with Cutoff 100 and Resonance 0. Morphing allows you to interpolate those values. So an interpolation at 50%-50% will give you Cutoff $(10+100/2=)$ 55 and Resonance $(20+0/2=)$ 10; an interpolation 10%-90% give you Cutoff $(10*0.1+100*0.9=)$ 91 and Resonance $(20*0.1+0*0.9=)$ 2 and so on.....

The Venom-BankMorpher allows you to do just that. It can be set to learn two patches (the ones received from onboard – see next about the file presets possibilities) and morph between them, for all sections together, for some sections only, for all sections separately or any mix of these....

How to use it

Place the Venom-BankMorpher in a track which also holds the Venom-BankManager. The GUI appears like this:



Let's say you like to morph between patch A-3 and C-55. Do the following:

1. Select the first preset for morphing on the BankManager: bank A, program 3.
2. Press the big toggle on the top of the BankMorpher device (what we will call the Learn-button, normally showing "Inactive"). The button shows now "Learning". The Morpher is ready to learn the next preset that will be recalled.
3. As the preset was already set, we will use the tiny button on the BankManager [right to the preset name] (at the bottom of the device) to do recall it again. This assures the current preset is re-called and cause the BankMorpher to learn it. You will see the learning toggle changing automatically to Inactive. This means the preset has been successfully learned.
4. Repeat the steps again: select the second preset for morphing on the BankManager: bank C, program 3.
5. Press the Learn-toggle on the top of the BankMorpher device again. The button shows now "Learning".
6. Press the tiny "recall" button on the BankManager [right to the preset name]. The preset will be recalled and the learning toggle on the BankMorpher will change again to Inactive.
7. You are ready to morph using the BankMorpher GUI.

Morphing controls on the GUI

Apart from the Learn toggle, there are several controls for performing the morphing. Let's see what they do:

- **Morpher bar:** this long bar can morph all sections/knobs altogether, between 0.0 (100% of first preset loaded) and 1.0 (100% of the second preset loaded). Which section is included and excluded in the morphing is defined by the section-toggles specified below.
- **Coarse box:** exactly as the Morph bar, only with discrete steps of 0.1 gap between 0.0 and 1.0
- **Fine box:** exactly as the Morph bar, but in numeric form (easy for fine tuning)
- **Section-toggles:** each section can be enabled or disabled individually for the Morpher bar (and coarse/fine boxes). A toggle is OFF when gray and will disable morphing for that section. A toggle is ON when yellow, and enable morphing for that section.
- **Section numeric box:** you can morph a section only using this numeric boxes. The morphing will not effect other sections (and previously done morphing actions).

Ok, done with onboard bank management. Let's now have a look at file preset management.....

The Patch Manager: Venom-PatchManager.amxd

The Venom is a hardware synth and is therefore important to have, program and manage onboard memory/patch slots. No doubt about it. Anyway, when working in the studio this is quite limiting. First of all only 256 slots can be used for custom patches. Then what if the memory get accidentally erased or cancelled (things can always fail....).

In the modern world, where we have computer integrated studios, it is far better to store and manage presets on computers. That's what the PatchManager is for. Do what the BankManager does for the onboard patch memories, but virtually using a file to store and recall presets. This way no limitations will apply on the amount of slots available and, if you backup your preset files properly, the risk of losing work (custom patches) will be minimized.

How to use it.

The PatchManager is a simple device. It opens and saves preset files, allows you to recall them and communicates with its preset morpher companion ("Venom-PatchMorpher.amd", see next).



Here its controls:

- [read-library] This button opens a file browser. A Preset file can be loaded this way.
- [copy] Copies a preset in RAM (for later possible Paste)
- [paste] Paste the RAM-copied preset into a preset slot
- [program] box. Allows you to select a program (slot) number.
- [commit] If you made changes (i.e. using the GUI) allows you to commit the results on the program slot.
- [save] Save back to the preset file any change committed using the [commit] button
- [dump] Receive the current preset from the Venom synthesizer (eventually loaded from the Vyzex editor)
- [send] Sends the preset to the preset morpher companion ("Venom-PatchMorpher.amd")
- [write_library] Allows you to save the current (committed) setup to a new preset file

Important: If the "VenomControl.amxd" control surface is opened, changing preset through the PatchManager will synchronize the knobs of the GUI to the preset values. This is quite an important feature to tweak stuff consistently!

Note: You can transfer sounds from Vyzex / Venom to the PatchManager utilizing the following sequence of actions:

- Load a sound (single patch sound on Vyzex or Venom onboard)
- Do the following on the PatchManager: [dump] + [copy] + [paste] + [commit]

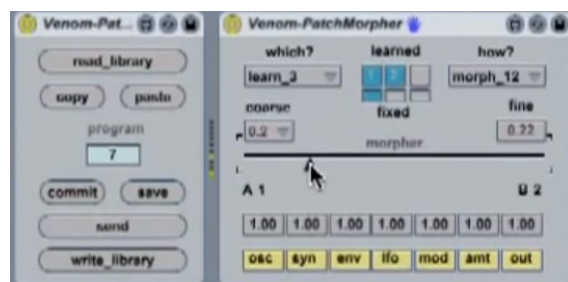
The Patch Morpher: Venom-BankMorpher.amxd

The Venom-PatchMorpher is very similar to the Venom-BankMorpher, with just a few differences:

- It supports three (3) morphing slots where to hold a patch to be used for morphing
- It allows to select which slot to learn and which sources to use for morphing
- It allows to optionally block some parameter “category” for one of the sources (morphing the others)

How to use it.

Place the Venom-PatchMorpher in a track which also holds the Venom-PatchManager. The GUI appears like this:



You have three slot to store sources for morphing. Let's see how can you load a patch to a slot:

1. On the PatchManager select the patch number you like to import for morphing.
2. On the PatchMorpher select the location you wish to store this morphing source to (use the [which?] menu)
3. On the PatchManager press the [send] button.

Once you loaded the source patches in the PatchMorpher, you can start morphing. Important settings before you go:

- Set, if you wish, the *[fixed]* toggle on the patch you like to “block” for its discrete parameters (i.e. the OSC wave form types, VCF filter type, modulation routes etc. - anything which is a toggle or menu in the control surface GUI). Do this if you like the structure of a patch and like to keep it, while morphing all other continuous values (basically all the knobs, varying from 0 to 127). You can select either 1, 2, 3 or none.

Note: you are free to fix the discrete setting for one of them (let's say 1) and morph for continuous parameters between the other two (in this example 2 and 3). You are also free to not select any fixed toggle (leave them all gray/unselected): in this case you will morph the discrete parameters as well (the menu's, the toggles) – getting a bit more random results (as the structure of the patch can change more radically).

- Select *[how?]* to morph. This selects which pair of patches will be used for morphing, excluding the fixed toggle influenced settings (that is, if a fixed toggle is set, the [how?] choice will scope only for the continuous parameters, in practice all knob values, but not to the menus or toggle in the control surface GUI).

Morphing controls on the GUI

Similarly to the BankMorpher, these are the other controls for performing the morphing:

- Morpher bar: this long bar can morph all sections/knobs altogether, between 0.0 (100% of first preset loaded) and 1.0 (100% of the second preset loaded). Which section is included and excluded in the morphing is defined by the section-toggles specified below.
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- Section-toggles: each section can be enabled or disabled individually for the Morpher bar (and coarse/fine boxes). A toggle is OFF when gray and will disable morphing for that section. A toggle is ON when yellow, and enable morphing for that section.
- Section numeric box: you can morph a section only using this numeric boxes. The morphing will not affect other sections (and previously done morphing actions).

Notes: If you like the result of a morphing action you can use the [copy] / [paste] buttons on the PatchManager to copy/paste the results. A typical sequence of actions for creating a new patch this way could be:

- a) Load patches to PatchMorpher and morph as you like (see previously mentioned steps and controls)
- b) When you like a result choose [copy] on the PatchManager. The result is now in RAM.
- c) Select a new slot (a free one or one you like to overwrite) on the PatchManager. Do [paste] and then [commit].
- d) The results are stored in RAM as long as the PatchManager stays open. If you like to save the results on the same preset file you opened initially, hit [save]. This will cause the preset to be overwritten. If you like to save to a new, different preset file choose [write_library] and give th new file a name (must be a .txt extension)

Tips: If you forget to do [commit] and move to another slot, the changes will be lost (you may have still in RAM if it was the last [copy] action though), so pay attention. Anyway even if you did a [commit], changes will be hold in RAM only and remain there only until the PatchManager device is active/present in the liveset. So if you delete it or change liveset, also in this case you will lose changes. So do not forget: if you like to keep the changes do [commit] and then either a [save] or [write_library] action.

That's it folks. And have fun with the filthy, white one!