

## Chapter 3.4: Certain Patch Techniques And Examples

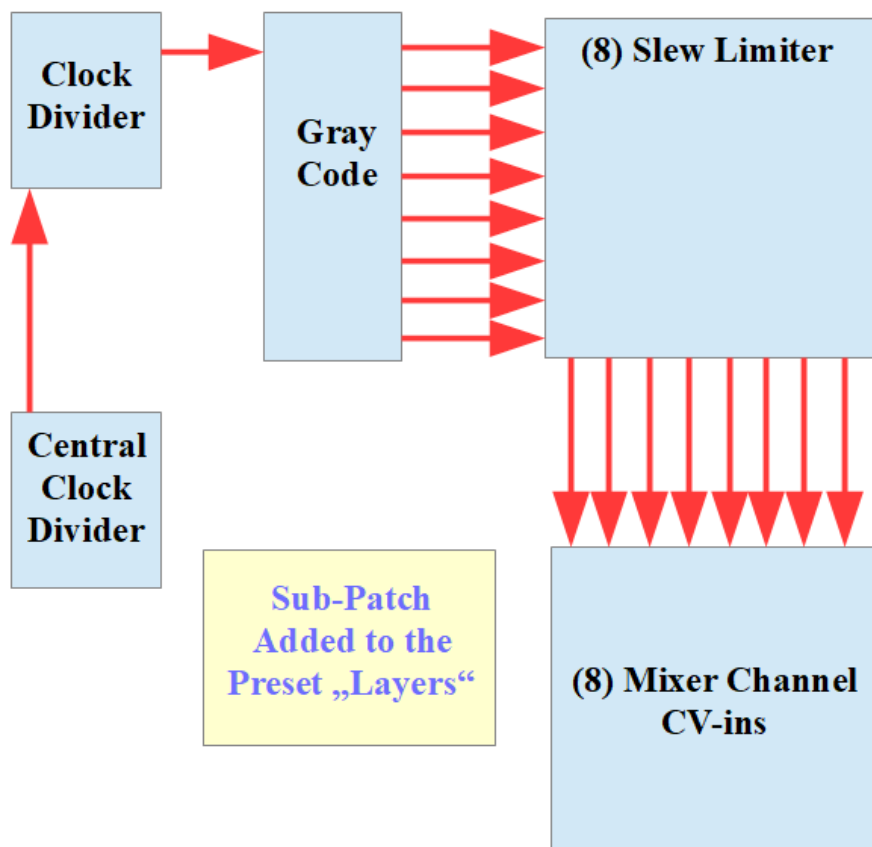
Welcome to article 19. You'll find more – a lot more - about this series and about generative music in general here: <https://www.dev.rofilm-media.net/bookshop-list>

All mentioned presets are only available in the original e-books.

We are approaching chapter 4 about building blocks of generative patching with this sub-chapter 3.4. But whereas in chapter 4 the more technical and organisational aspects prevail, I'd like to talk about a few patches of special musical and compositional meaning here in chapter 3.4 at first.

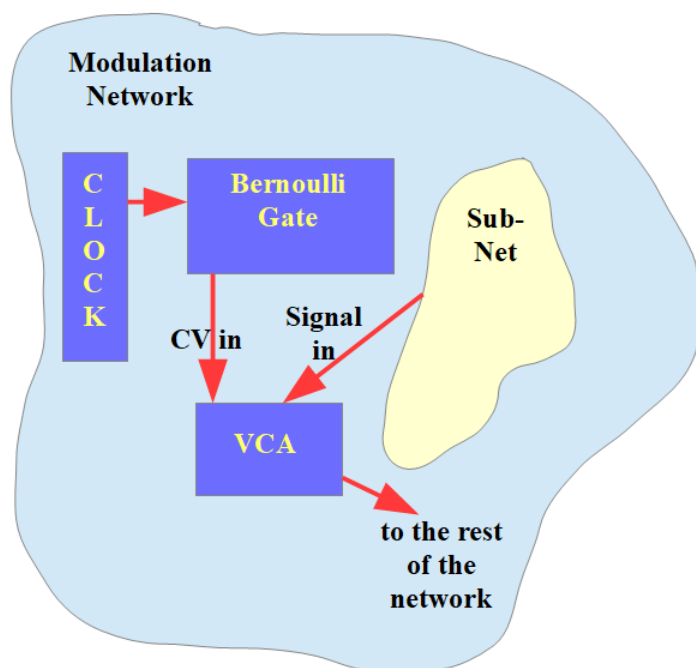
### Chapter 3.4.1: Switching Voices and Larger Parts of the Patch

When we have a couple of voices – different percussion instruments, VCOs etc. - we can switch between different combinations of them. If each of these voices is fed into an individual mixer channel, we can easily do so by (randomly) fading the channels in and out (or “hard switching” between them). This gives the whole piece a structure.



The preset “channelswitch.vcv” and the video behind the following link demonstrate an example. Based on the preset “layers.vcv” there’s a Gray Code module added (and a second clock divider to make the switches take place less often). The eight outputs of the Gray Code module switch different combinations of the 8 mixer channels on and off. Inserting slew limiters between the Gray Code module and the mixer channel CV leads to cross-fades instead of “hard switches”. <https://youtu.be/qxOGreuQ5R0>

We can use the same principle (with or without slew limiters) to switch larger parts of our patch on and off, parts, which are not voices, but parts of modulation networks. Instead of audio mixer channels we switch VCAs or CV mixer channels, which open and close the path to the sub-patches in question. In case we wanted only to switch a single sub-patch on and off we can use a Bernoulli module instead of a Gray Code module.



The preset “subnet.vcv” and the video behind the following link show an example.

[https://youtu.be/8Fy\\_I0APcj0](https://youtu.be/8Fy_I0APcj0)

### **Chapter 3.4.2: Sculpture Randomness and Setting Borders**

By feeding a Sample & Hold module with regular waveforms I can sculpture the random output of the S&H module down to no randomness at all. Instead of feeding in simple regular waves like sine, triangle, saw I can produce my own waves of course (using an LFO network or a cycled envelope or a more versatile LFO etc.). And so I can give the random

voltages, which come out of the S&H module a kind of structure, which I can even emphasize by modulating the pulses, which trigger the Sample & Hold module.

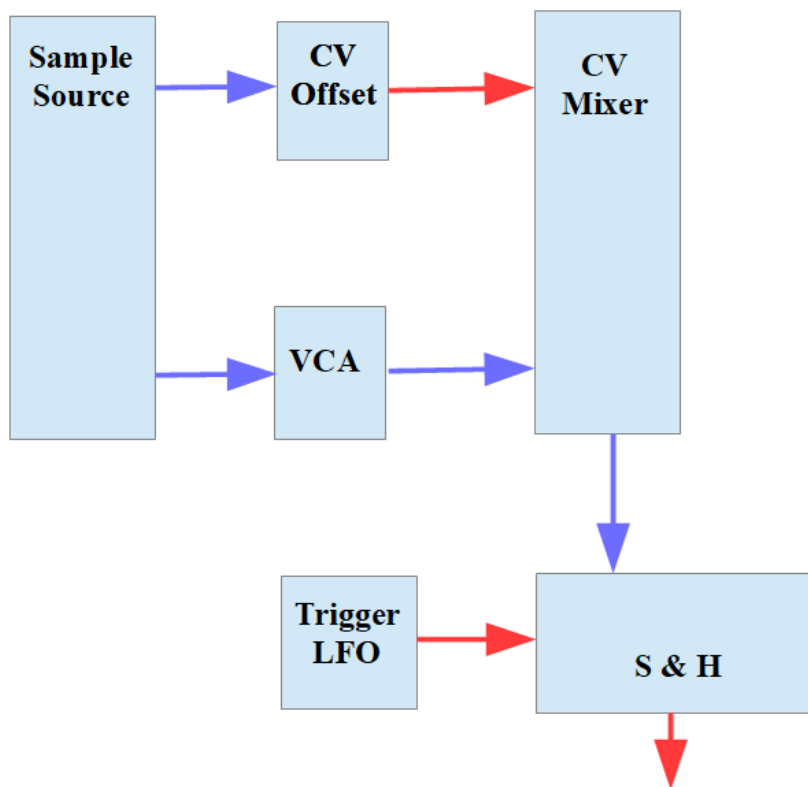
The preset “sculptureRandom.vcv” and the video behind the following link demonstrate this.

<https://youtu.be/hAhIS4FUGNQ>

Sometimes I need the level of the random voltage to be quite precise between certain upper and lower borders. To achieve this I can patch a VCA (setting the upper border) and a CV offset module (setting the lower border) between the sample source and the S&H unit like shown in the following graphic.

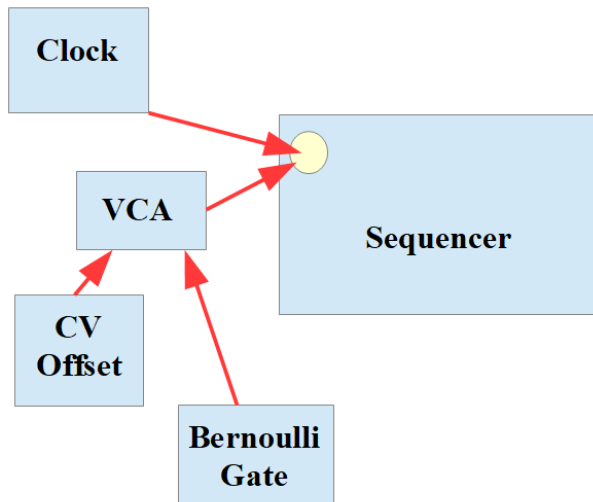
And there is an example of course: the preset “randomborder.vcv” and the video behind the following link.

<https://youtu.be/k0g20ma1utY>



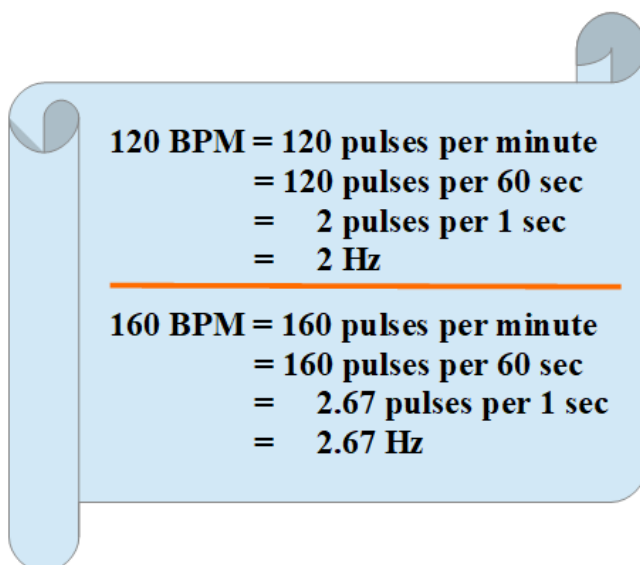
### Chapter 3.4.3: Jumping between certain BPM and Inverting Pitch Lines

There are dedicated BPM LFOs, and a lot (if not most) of the MIDI modules offer easy to handle BPM functionality, but there is also a rather basic way to adjust BPM and to jump between certain BPM rates.



We can do the latter with a switch, e.g. a Bernoulli gate, and an CV offset module, the latter changing the CV input at a sequencer's clock or at other clock generating units.

To choose the right CV offset – what is: choosing the right clock frequency – we have to remember the following relation:

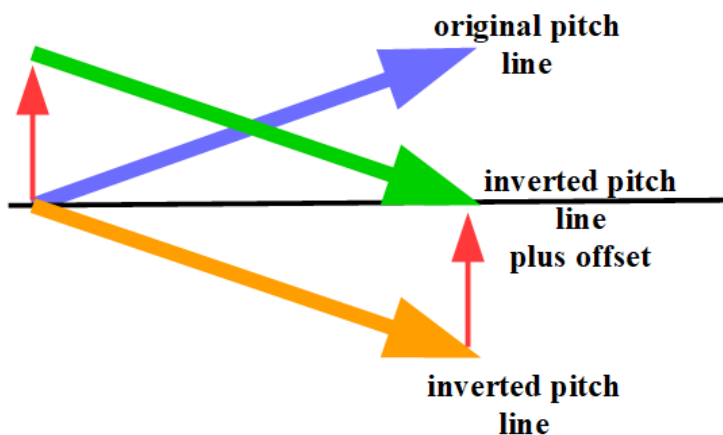


The presets “BPM.vcv” and “BPM2.vcv” as well as the video behind the following link demonstrate this technique.

<https://youtu.be/Nz29MZA7pF4>

A small oscilloscope comes in handy when you want to do things like that. But even if you work exclusively with hardware systems, you can get some quite inexpensive ones. I use the one shown in the photograph. These little helpers come something around 80 dollars and offer a lot of useful functions, even if you don't integrate them as an ordinary part of your system. But integrating these handheld oscilloscopes is not a difficult task. I have made a video about that matter. If you want to know more about it, just send me a message via my website <https://dev.rofilm-media.net>.

When we want to invert a pitch development, e.g. a melody line, a bass line or an arpeggio by simply using an inverter module, we have to be understand, that inverting this way means starting at the same note, but going into different directions. It will be necessary to offset one of the lines by 1 or two octaves most of the times.



Just follow the 1 V/Oct characteristic to choose the right CV offset. The preset “invert.vcv” and the video behind the following link demonstrate this.

<https://youtu.be/ck7q31E2cwk>

### **Chapter 3.4.4: Mixing Stable and Random Elements**

Let's talk about one example of how to mix stable elements with random elements of the piece. You find the preset to this chapter under the name “mix.vcv”, and as always there's also a video about it, which you reach by clicking the next link (below the explanations).

The principle is switching between a regular and stable sequence generated by a sequencer and a random pitch development generated by an S&H

module.

To make things a bit more interesting the key of the sequence changes from time to time as well as the pitch ranges of the S&H unit. Therefore we have 4 different situations:

stable + key 1 (C in the example)

stable + key 2 (F in the example)

random + quite low pitches and a small pitch range

random + a broad pitch range and rather high pitches

Instead of (random) switches I use LFOs to generate the changes from one of the four situations to the next. I have more control over the share, which each of these situations shall have in the piece (respectively part of the piece) this way. The diagram shows the principle, and the preset (“mix.vcv”) and the video demonstrate the details.

<https://youtu.be/ck7q31E2cwk>

