

# Seeds of Change

by FrozenWasteland

Pseudo Random Value Generator with Seed setting



## Description

The Seeds of Change module is a pseudo random value generator with a seed setting that offers four random CV sources each synced to the incoming clock signal. Each of the four sections has its own multiply function manually via the knob or from an external CV modulation signal and an offset possibility also manually via the knob or from an external CV modulation signal. In addition you will find four random gate generators with probability setting also manually via knob or from an external CV modulation signal. In the CV section the Multiply knob has a range from 0 to 10 and the Offset knob a range from -10 to +10. While the Probability knob in the gate section has a range from 0 to 2.

You may say oh no, just another random module, but this one is something very special!

All the calculation of this module starts from one value, the seed value, this gives you the possibility to replay the new generated sequence again from this starting point. This is called pseudo or semi random behavior. There is a very informative Wikipedia article you will find under pseudo randomness for further information.

The use of this module is very simple, you have to set a seed value by turning the Seed knob to a desired value or sending a CV signal within the 0V to 10V range, resulting in a display range from 0 to 99, reset the module by pressing the reset button or feeding a reset gate to the reset CV input. After receiving the reset signal the module shows the selected seed value within its digital display. So you have 100 different start points for the sequence calculation of the Seeds of Change module. Now its time to send a clock signal to the module via the clock CV input and with the first clock the calculation sequence starts. After sending a reset signal to the module again it is forced to restart the calculation sequence and the same sequence of values as before were generated. This is only true if you do not change the seed value and made a reset in the mean time!

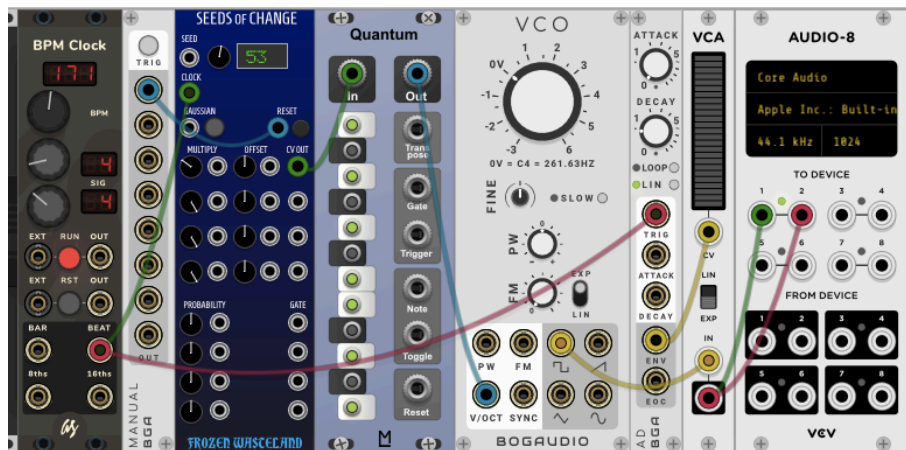
The other thing you should think of is that after loading a patch with this module it is needed to reset it to its original seed value because it loads only with its initial state 0! To make this happen please use the Bogaudio Manual module that offers the possibility to Trigger on load via its context menu.

There is a button and a CV input to switch the gaussian function or normal distribution of the CV outputs on or off. The Gaussian button could only been used as long as NO connection is done to the Gaussian CV input!

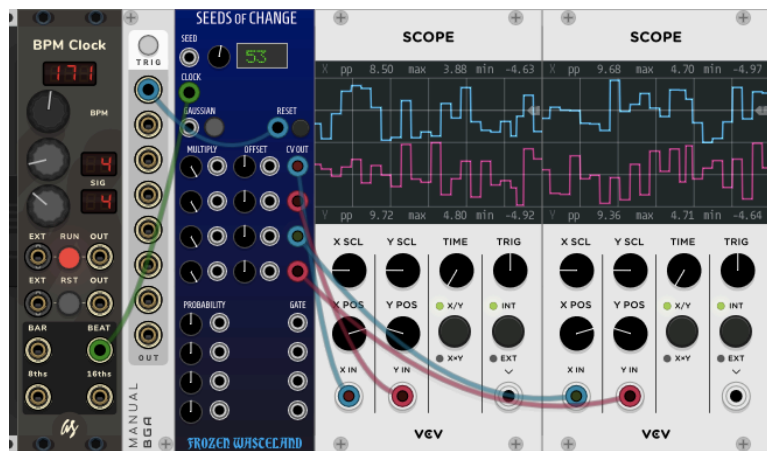
There are very informative Wikipedia articles you will find under gaussian function or normal distribution for further information.

All this functionalities you could not get from other VCV random modules because you could not set a starting point there and if you try this to do with several LFOs with reset functionality you will not get this kind of randomness that is possible with the Seeds of Change module.

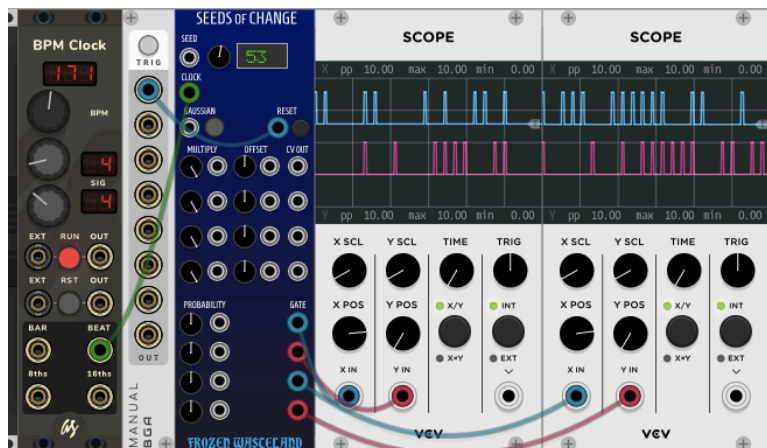
Here an example for generating a simple synth voice:



Here an example to show the CV outputs of the module:



Here an example to show the GATE outputs of the module:



#### The knobs:

- SEED for setting the seed value manually
- MULTIPLY 1 - 4 for setting the multiplication manually
- OFFSET 1 - 4 for setting the offset manually
- PROBABILITY 1 - 4 for setting the probability manually

#### The inputs:

- SEED for the setting of the seed value
- RESET for the reset signal

CLOCK                           for the clock signal  
MULTIPLY 1 - 4           for the modulation of the multiplication  
OFFSET 1 - 4           for the modulation of the offset  
PROBABILITY 1 - 4   for the modulation of the probability

**The outputs:**

CV OUT 1 - 4           for the random CV outs  
GATE 1 - 4           for the random gate outs

This shows the context menu of the module that could be reached via a right click on the modules user interface:

