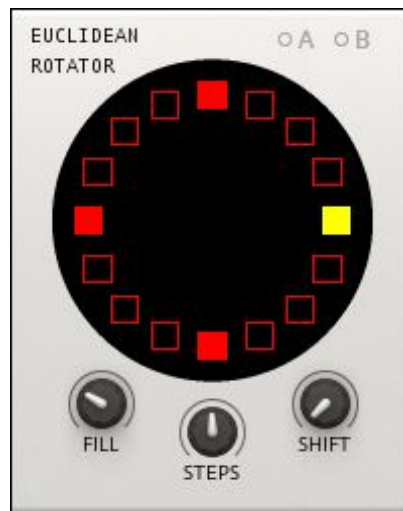# EUCLIDEAN ROTATOR

Reaktor 6 Block

EUCLIDEAN ROTATOR

The Euclidean Rotator block is based on the 'Euclidean Rhythm' concept.

It can be used for a variety of tasks including sequencing, clock dividing, modulation and even as an oscillator.

Controls

Steps

The number of steps from 1 to 32. The fill and shift settings are proportional to the number of steps.

Fill

How many steps are filled or active. From zero to the total number of steps.

Shift

Pattern offset from zero to the total number of steps

Inputs

Gate

A positive zero-crossing at the gate input will advance the internal clock by 1 step. If the step is ON (filled) then the incoming gate signal is converted to a boolean / logic value (0 or 1) and sent out of the Gate output.

Reset

A positive zero-crossing at the reset input will sent the internal clock back to the zero position (the first step)

Mod A / B

All modulations run at 15khz so can be used with all types of audio signal.

For example using an oscillator as a modulation source can generate interesting waves via the 'Val' output.

Outputs

Gate

For active steps this is the logical value of the incoming clock (1 if above zero, 0 otherwise)

Reset

This is 1 when the first step is active and zero otherwise.

Val

The Val output is calculated by treating the current sequence as binary and then scaling that value between 0 and 1.

For example, if the number of steps is 4 the maximum value is 15.

A binary sequence of 1 0 0 0 as an integer value is 8.

This value of 8 is divided by the maximum 15 and the output is 0.5333...

Keeping the **Fill** and **Steps** values constant and changing **Shift** is equivalent to the binary shift left / right operator (<< and >>) and will either double or halve the value depending on the direction.

To extend the 4 bit example :

Shift 0 : 1 0 0 0 -> 0.5333..

Shift 1 : 0 1 0 0 -> 0.2666..

Shift 2 : 0 0 1 0 -> 0.1333..

Shift 3 : 0 0 0 1 -> 0.0666..

Clk Pos

The current internal clock position from zero to Steps - 1.