Motherly

VST/AU Plugin | User Guide

Rainbow Circuit

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www.rainbowcircuit.co

Rainbow Circuit

Installation: Mac OS

Open the installer .pkg file and follow the installation guidelines.

Installation: Windows

Uncompress the .zip file, and move the .vst3 file into:

C:\Program Files\Common Files\VST3

To install the preset file, find:

C:\Users\Public\Documents
And add a child folder **\ Rainbow Circuit \ Motherly**

The directory should look as follows:

C:\Users\Public\Documents\ Rainbow Circuit \ Motherly

(For the demo version the directory should read: \ Rainbow Circuit \ Motherly Demo)

Move the contents of the Preset folder into the new directory.

The host DAW may require a plug-in rescan, or a computer restart for Motherly to appear in the DAW.

Is it lack of imagination that makes us come
to imagined places, not just stay at home?

Elizabeth Bishop

Motherly Overview

Motherly is a percussion synthesizer with an eight-step sequencer and a semi-modular patch bay.

Its synth voice mimics the character of acoustic membranes through an extended FM synthesis technique.

The layout nods to the Moog DFAM — but it's more distant, more abstract. Not quite Mother… just motherly.

The Step Sequencer

The step sequencer allows per-step configuration of the note pitch, tone, pitch envelope, and note repeat. The sequencers start/stop state and the rate is clocked to the host DAWs transport.

The note pitch is correlated to the amp envelopes decay time –
Low notes decay slowly, while high notes decay quickly.

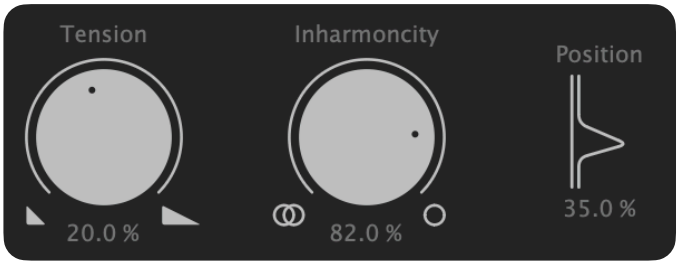
Tone adds body to the note, with a
mixture of FM and internal soft clipping.

Repeat triggers smaller subdivisions on each step.

Pitch envelope allows scoops up or down into the note pitch.

Global Controls

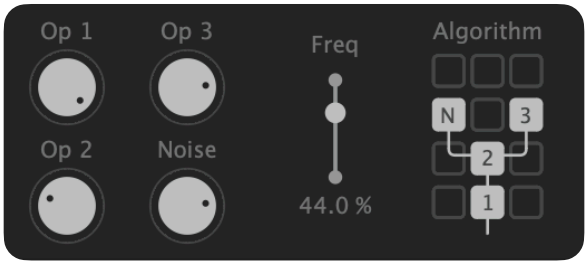
Motherly utilizes a voice architecture featuring three operators and a filtered noise generator. Each operator includes internal soft clipping to better emulate the membrane-like quality of a drumhead.



Tension mimics tightening or loosening of the drum head – affecting decay length.

Inharmonicity introduces pitch instability – much like real membranes.

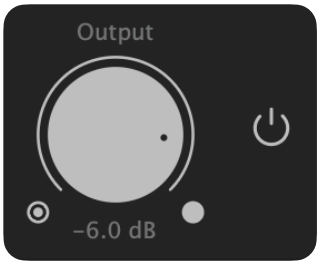
Position shifts the virtual strike point, subtly shifting the fullness of the timbre.



The **operator and noise level,** controls the amplitude of the three operators and noise generator.

Noise frequency controls the cutoff frequency of the noise generators lowpass filter.

Algorithms describes the routing of operators**.** *See **Understanding Algorithms** for more details.*



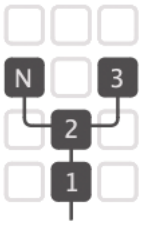
Output controls the overall output level of the instrument.

Active starts and stops the synth voice without affecting the sequencer.

Understanding Algorithms

Algorithms describe the routing of operators using a top-to-bottom signal flow. The bottom-most operators are ***carriers*** — meaning they are routed to the output. All other operators are ***modulators*** — meaning they provide modulation to another operator.

Modulator 2 & 3

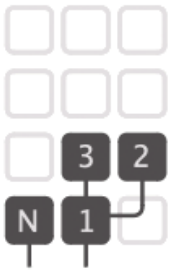


Carrier 1

Modulator 3

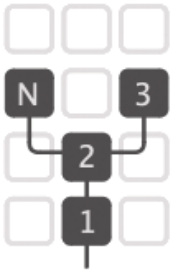
Carrier 1 & 2

Each operator level controls how much of the signal is routed to another operator, or in the case of carriers, the output.



In this algorithm, we can see that **operators 2 and 3 are routed to operator 1**. If we turn down the level of operator 2 and 3 and the noise generator, we'll hear a smooth sine wave-like timbre without any modulation.

As we turn up operator 2 and operator 3, we'll hear overtones added to the timbre. We can describe this algorithm as a having **two modulators routed to a single carrier**.



In this algorithm, **operator 3 is routed to operator 2**, which is then **routed to operator 1**.

If we turn down the level of operator 2 and 3 and the noise generator, we'll again hear a sine wave-like timbre without any modulation.

Turning up operator 3 the timbre remains unchanged as it is routed to another modulator. Now turning up operator 2 we'll hear more complex overtones added to the timbre. We can describe this algorithm as utilizing **second order modulation**, with two modulator operators modulating each other before it is routed to the carrier.

Patch Bay

Motherly utilizes the patch bay to reconfigure the internal architecture of the instrument. Outputs are labeled in white, while inputs are labeled in black.

All output signals are *biased* by existing values from the step sequencer or global controls. This means patching something into an input modifies rather than replaces the current setting.

Patching the step output to the pitch input, the pitch will ascend as the step sequencer moves forward.

Inverting the step output, the pitch will descend as the step sequencer moves forward. Outputs can be inverted by **command or control clicking on the patch point.**

Outputs

Pitch, tone, and repeat outputs bipolar control rate signals corresponding to the controls on the step sequencer.

Envelope generator outputs a unipolar control rate signal.

Step outputs a bipolar control rate signal corresponding to its position on the step sequencer.

Random outputs a bipolar control rate signal triggered at each step.

VCA and Noise outputs a bipolar audio rate signal.

Mod wheel output allows the patching of the modulation from outside the instrument as a bipolar control rate signal.

Lastly

Thank you for purchasing Motherly. If you have any questions, comments or just want to say hi, reach out to hey@rainbowcircuit.co.

Rainbow Circuit is dedicated to creating instruments of our times. For more information, visit www.rainbowcircuit.co.

Developed by Takuma Matsui.