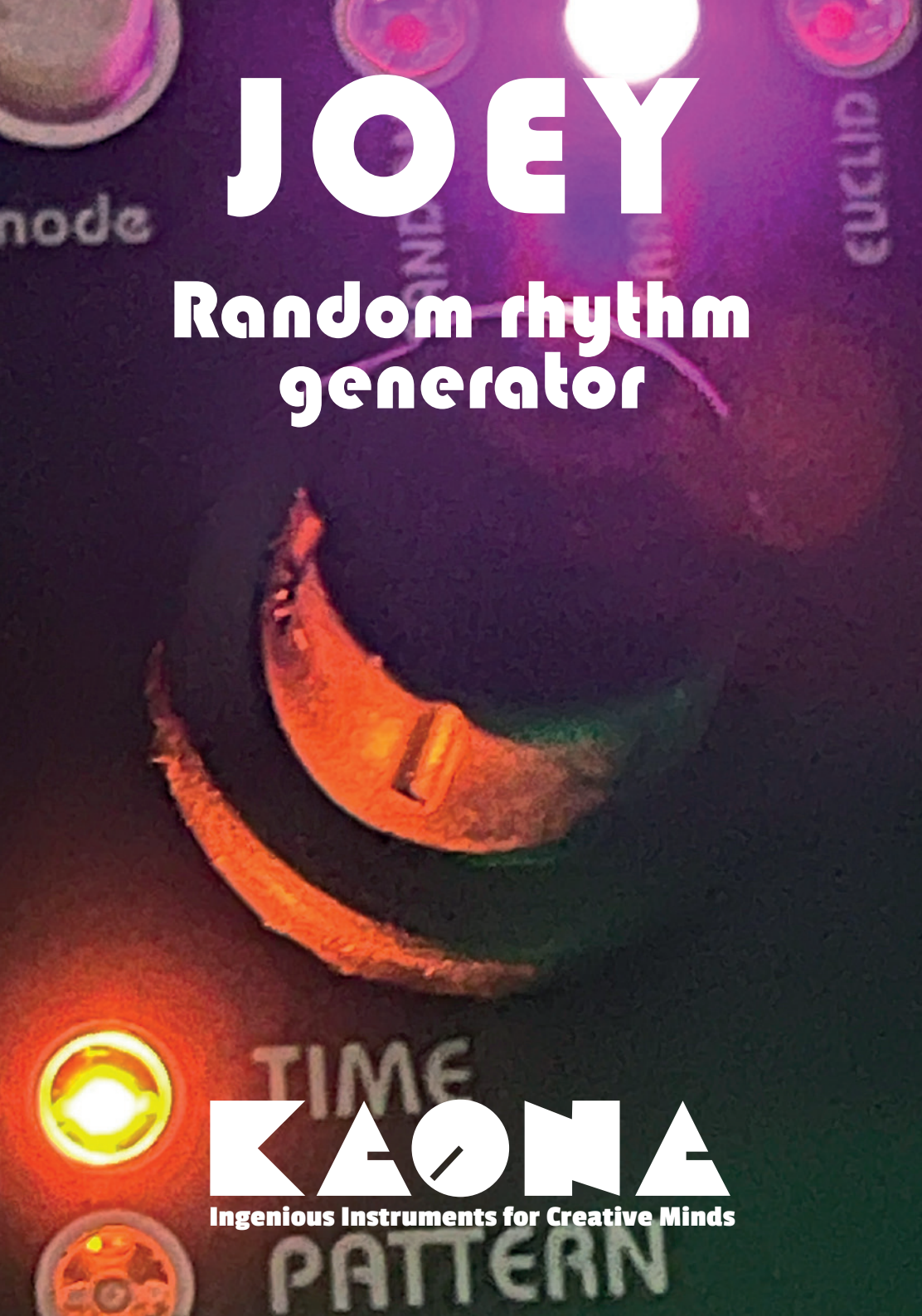
JOEY
Random rhythm generator
TIME
PATTERN
KAONA
Ingenious Instruments for Creative Minds

INTRODUCTION

Joey is a Eurorack module that generates random gate sequences. It is the offspring of Skippy (Kaona's polyrhythmic sequencer), without simply copying it: it's a very straightforward module that provides unexpected yet controllable sequences.

It offers three main modes:

Random: for random triggers controlled by an internal speed or an external clock.

Fractal: a unique algorithm sprinkled with 5% chaos, creating evolving and surprising patterns.

Euclid: generates four different Euclidean patterns for complex and evolving rhythms.

Each mode has three adjustable parameters set via a clickable encoder: speed, a mode-specific parameter (probability, fractal root, or Euclidean pattern), and gate length. An external gate input can take over to synchronize speed. A PLAY/STOP button instantly suspends or restarts the gates.

QUICK START

Gate In (external input): Connect an external clock or gate source here if desired.

Mode Selection: Press the mode button repeatedly to choose Random, Fractal, or Euclid.

Encoder: Use it to adjust parameters (TIME, PATTERN, GATE LENGTH). Press the encoder to cycle between parameters.

Parameter LEDs: Indicate which parameter is currently being edited.

Gate Outputs (1–4): Connect these to envelopes, sequencers, or other gate-driven modules.

PLAY/STOP Button: Stops or restarts the gate cycle.

Mode LEDs: Indicate which mode is active.

Gate Activity LEDs: Each output has an LED showing when its gate is active.

SPECIFICATIONS

Width: 6 HP

Power Consumption:

+12 V: 50 mA

–12 V: 0 mA

+5 V: 0 mA

Depth: 28 mm

Installation

Connect Joey to a Eurorack power source using the provided ribbon cable (the cable is keyed to prevent inversion—make sure the orientation is correct). The module only uses +12 V.

You can also run Joey in a 5V-only modular environment by connecting a 5 V power source to the internal USB port (cable not included).

Acknowledgements

A big thank you to everyone supporting Kaona's journey. Your requests, feedback, and suggestions are always welcome!

Many thanks as well to all the beta testers who thoroughly and intensively used the first versions of Joey, especially Gildas, Arthur, and Maëlle.

Finally, thanks to Jutta—she knows why.

Gilles from Kaona

HOW IT WORKS

Modes

Select the modes by pressing the Mode button repeatedly. The three available modes are Random, Fractal, and Euclid. The corresponding LED lights up when a mode is selected.

RANDOM

This mode randomly generates gates on the four tracks. You can adjust the speed and the probability that a pulse will be sent. While it does not produce repetitive patterns, the identical speed across all four tracks creates a certain regularity among them.

FRACTAL

The Fractal mode is based on a cellular automaton applied to a set of elements. At each step (determined by the speed), the set's content is transformed according to a fractal rule: the new state of each element depends on its immediate neighbors and itself.

Additionally, a touch of randomness is periodically introduced to break overly predictable patterns and generate even more unexpected sequences. You can choose the starting root (i.e., the initial state of the elements in the set). This "starting grid" defines how the fractal evolves: two different roots lead to two distinct fractal evolutions and therefore unique gate patterns over time.

EUCLID

Euclid mode generates Euclidean sequences—i.e., a given number of steps is distributed across a pattern such that their spacing is as even as possible. In this module, four independent Euclidean sequences are generated, each slightly offset from the others. Joey uses 16-step Euclidean patterns. Depending on the number of active steps in each

pattern, you get more or less dense rhythms—ideal for evolving rhythmic sequences while remaining coherent and repeatable.

Parameters

Each mode's parameters are adjusted using the encoder. Pressing the encoder successively cycles through the parameters; the corresponding LED lights up to indicate which parameter is currently being edited. The three parameters are TIME, PATTERN, and GATE LENGTH.

TIME

Adjusts the interval between each gate. Turning clockwise makes the gates faster; counterclockwise makes them slower. The time between gates ranges from 3 s to 20 ms (roughly 20 to 3000 BPM).

By turning the encoder while keeping it pressed, the increment changes 10 times faster (or slower, depending on the rotation direction).

PATTERN (depends on the mode)

Random: Sets the probability of gate occurrence. For example, with a very slow speed and a low probability, Joey will produce extremely sparse and irregular gates—ideal for slowly changing ambiences. Conversely, with a high probability and fast speed, gates will appear almost continuously on each track, perfect for regular drum sequences but still with possible breaks.

Fractal: Chooses the starting root for the fractal gate progression. There are 256 possible roots. Each root steers the rhythm in a different direction but will always yield a coherent chaining of gates relative to one another. Double-clicking on the encoder with the selected PATTERN parameter resets the sequences.

Euclid: controls the distribution of Euclidean rhythms. 65,536 combinations are possible. A double-click on the encoder with the selected PATTERN parameter resets the sequences.

GATE LENGTH

Sets the duration of each gate. This setting is tied to TIME so that gates on a single track cannot exceed the defined interval. However, they can match that interval and thus overlap.

Gate In Input

This input synchronizes Joey's speed (TIME) to an external source, overriding the internal speed. One pulse at this input corresponds to one time step. You can use the output of a sequencer, LFO, etc. It is also possible to use the clock output from modules that can be set to a 1:1 clock ratio and provide a sufficiently long trigger. Joey automatically detects the presence of an external clock. If that clock stops, Joey also stops. To switch back to Joey's internal clock, double-click on the encoder with the TIME parameter selected.

Gate Outputs

Four outputs (gate out 1 to gate out 4) can feed envelopes, sequencers, or any other module expecting gate signals. The output voltage is about 4.5 V, allowing the module to be used in both analog and digital environments.

PLAY/STOP Button

Instantly activates or deactivates all gate outputs. Fractal or Euclidean sequences are not reset; they resume exactly where they left off when reactivated.

Saving

Joey automatically saves its configuration, so when you power it on again, it will load with the same settings as before.By holding down PLAY/STOP during startup, the initial values are restored.