Noise Engineering
Zularic Repetitor

Dynamic Rythmic Generator

Overview

Type	Rhythm Generator
Size	8HP Eurorack
Depth	.8 Inches
Power	2x5 Eurorack
+12 mA	50
-12 mA	5

Zularic Repetitor is a rhythmic gate generator based on African music theory. A core pattern forms the basis and variation is achieved by offsetting this pattern in time relative to the base.

This module contains 30 mother rhythms from African, Indian, Latin, Funk and Rock roots. Each pattern outputs four parts and allows the offset of three parts relative to the mother. The offset is CV and knob controllable. It requires only a beat clock to run.

Also included are two special modes. One turns Zularic Repetitor into a 3 section CV/knob controllable divider. The other generates random gates where the probability is determined by the knob/CV.
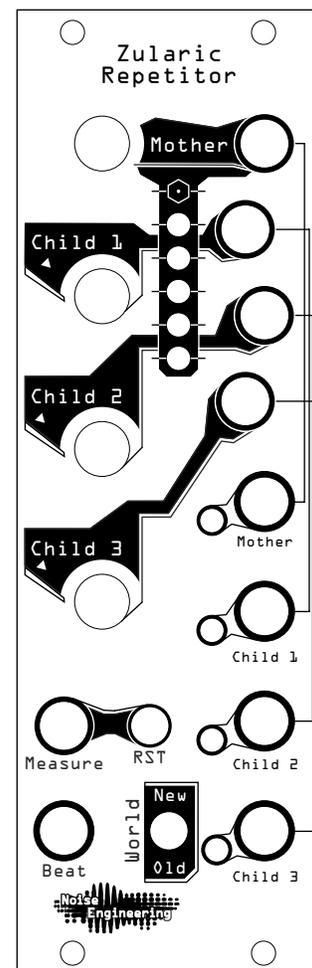
Input & output voltages

Zularic Repetitor's trigger inputs trigger around 2.5v. Its CV inputs have a range of about 7v and its outputs are around 6v.
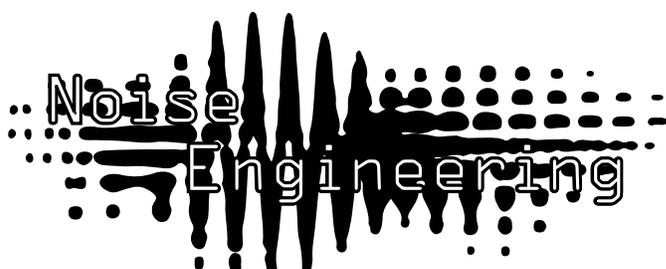
Power

To power your Noise Engineering module, turn off your case. Plug one end of your ribbon cable into your power board so that the red stripe on the ribbon cable is aligned to the side that says -12v and each pin on the power header is plugged into the connector on the ribbon. Make sure no pins are overhanging the connector.

Line up the red stripe on the ribbon cable so that it matches the white stripe and/or -12v indication on the board and plug in the connector.

Screw your module into your case BEFORE powering on the module. You risk bumping the module's PCB against something metallic and damaging it if it's not properly secured when powered on.

You should be good to go if you followed these instructions. Now go make some noise!

A final note. Some modules have other headers -- they may have a different number of pins or may say NOT POWER. In general, unless a manual tells you otherwise, DO NOT CONNECT THOSE TO POWER.
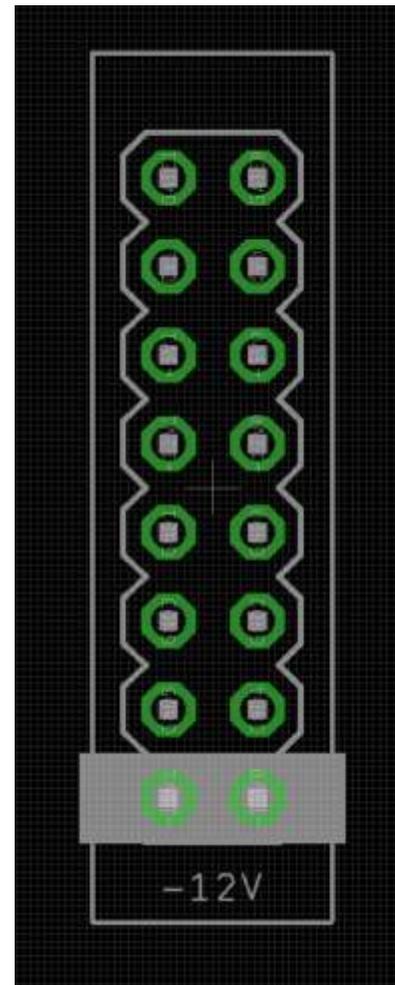
Warranty

Noise Engineering backs all our products with a product warranty: we guarantee our products to be free from manufacturing defects (materials or workmanship) for one year from the date of the original retail purchase (receipt or invoice required). The cost of shipping to Noise Engineering is paid by the user. Modules requiring warranty repair will either be repaired or replaced at Noise Engineering's discretion. If you believe you have a product that has a defect that is out of warranty, please contact us.

This warranty does not cover damage due to improper handling, storage, use, or abuse, modifications, or improper power or other voltage application.
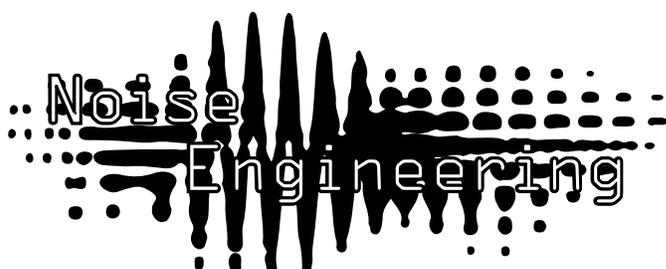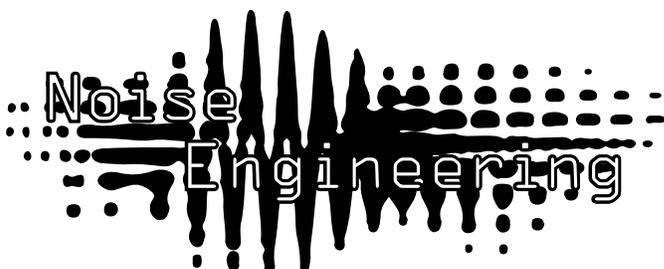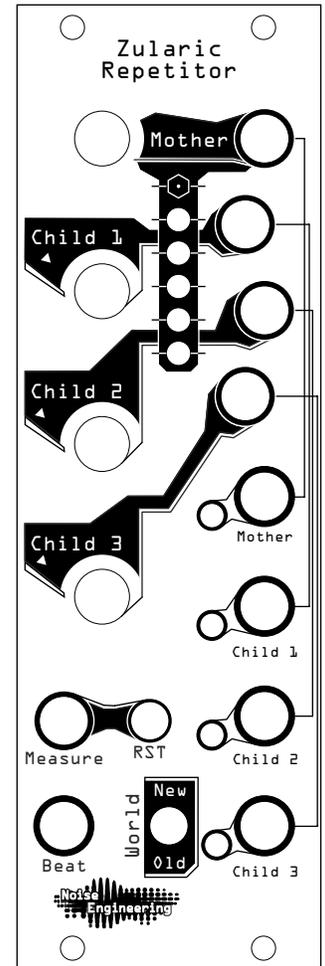
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Patching Suggestions

The simplest way to get to know Zularic Repetitor is to simply patch a master clock into BEAT and connect each of the four outputs to the gate of four different percussion modules. You can get an idea of the patterns included by adjusting the MOTHER knob and a feel for how the time offset works by playing with the CHILD knobs.

The next step is to patch a CV. A CV sequencer or just a simple gate input are both useful for controlling either the MOTHER pattern or the CHILD offset. These can be used to generate a wide variety of related rhythms and dynamic variations. A simple CV example is to take the beat clock being sent to Zularic Repetitor and divide it by 64. Send this divided beat in to one of the CHILD inputs. Adjust the related CHILD knob to control the amount of time offset that occurs to the CHILD every 64 beats.

Many more complicated schemes are possible to dynamically vary the rhythms. Any slow control voltage or gate might produce an interesting variation!

Zularic
Repetitor

Mother

Child 1

Child 2

Child 3

Mother

Child 1

Child 2

Measure   RST   Child 2

World

New

Beat   Old   Child 3

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Design Notes

The Zularic Repetitor was conceived of when I was reading "Rhythm and Transforms" by William Sethares. This book provided the initial rhythms for the very first prototype of Zularic Repetitor. It was developed on a Texas Instruments MSP430 microcontroller. The first prototype was compelling from the start though it took more than a year of use, feedback and polish to produce what was finally released.
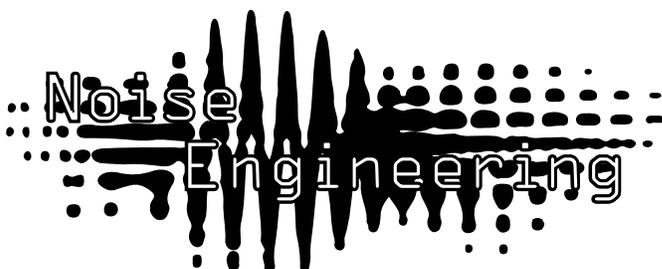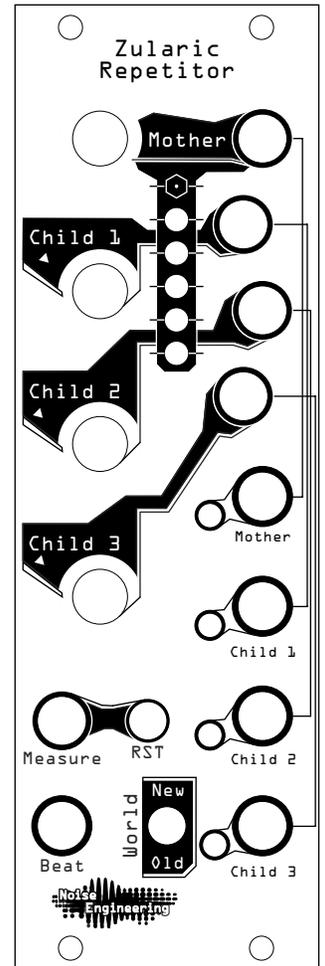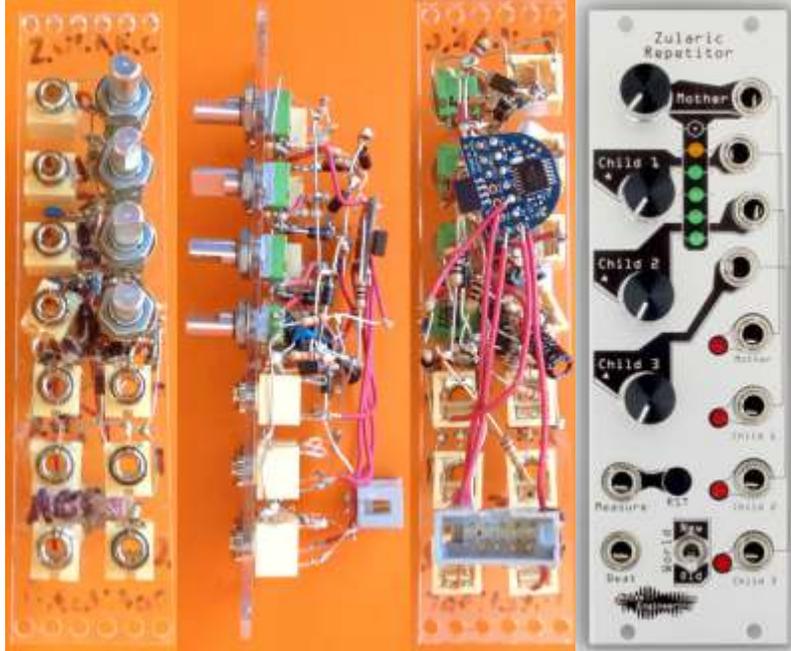
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Interface

MOTHER (knob)

The MOTHER knob selects the pattern set that is output. The MOTHER knob acts as a scalar for the MOTHER CV. The current patch is displayed on the LEDs near the center top. A key to the patterns is included later in the manual. The knob acts as an attenuator for the input CV

CHILD 1-3 (knob, input CV)

The CHILD knobs control the offset in beats of each part versus the mother rhythm. The knob acts as an attenuator for the input CV.

WORLD

The WORLD switch selects which bank of patterns to use. They are grouped by world. Old world contains Indian, African and African relatives such as Vodou. New world contains Funk, Rock and other more modern rhythms. The status of the WORLD switch is indicated by the orange LED.

BEAT

The BEAT input is a clock input that advances the time on the rising edge and returns any active gates to zero on the falling edge.

MEASURE

The MEASURE input resets the beat to the start of the measure on a rising edge.

RST

The RST button will pause the advancement of time while depressed and when released reset the time back to the start of the measure.

MOTHER (output)

MOTHER outputs a 6v low impedance gate suitable for controlling most any gate driven device.

CHILD 1-3 (output)

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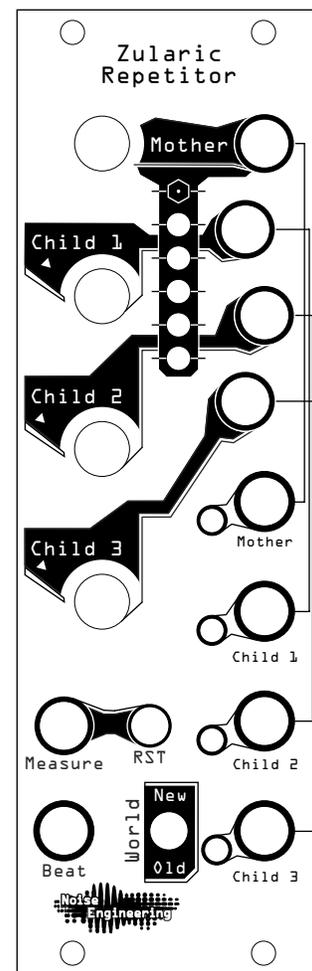
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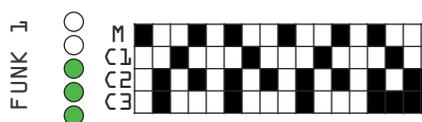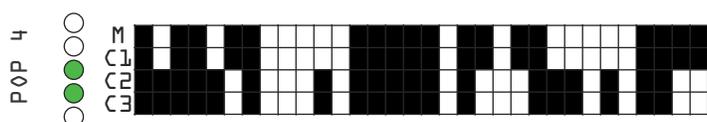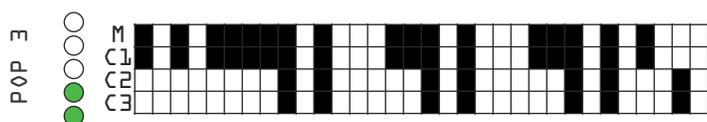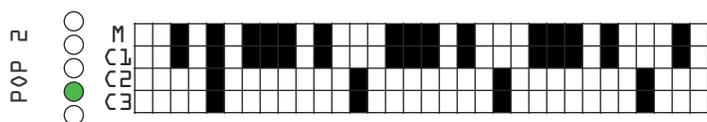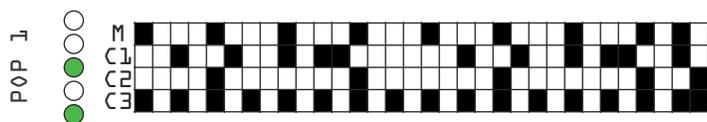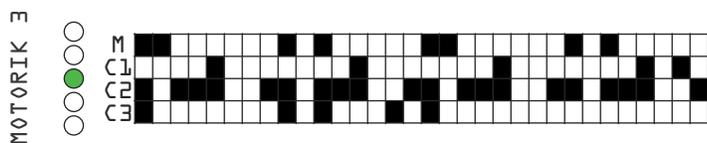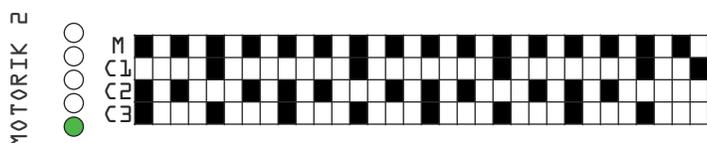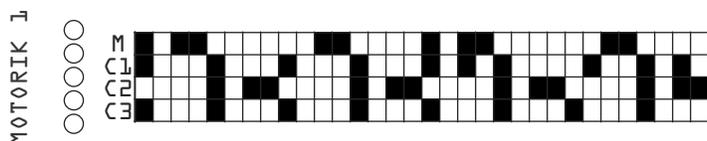
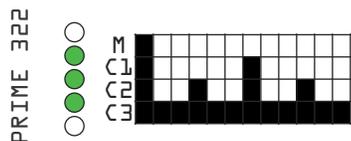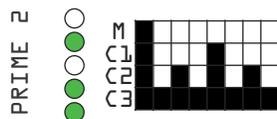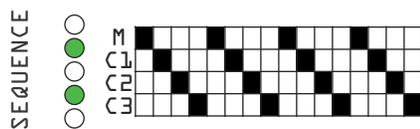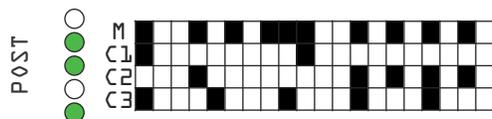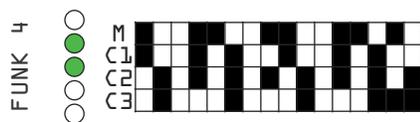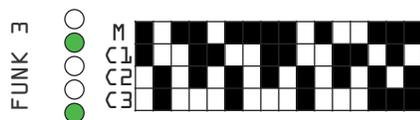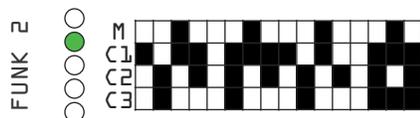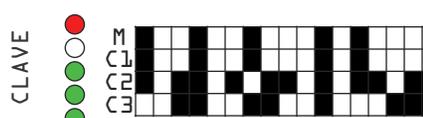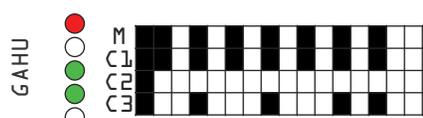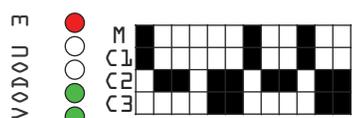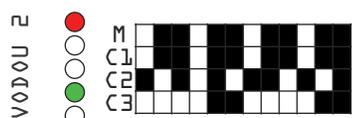Dynamic Rythmic Generator

Patterns: New World

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Patterns: New World

FUNK 2

FUNK 3

FUNK 4

POST
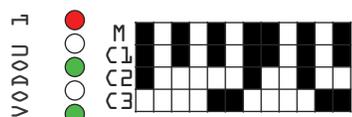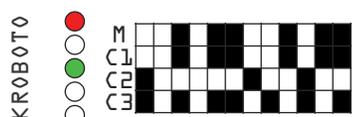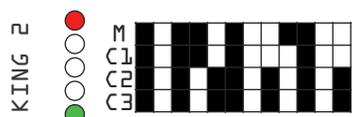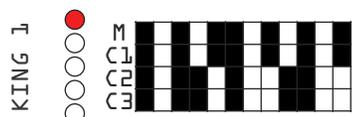

SEQUENCE

PRIME 2

PRIME 322

RANDOM

M BEAT at 25% probability
C1 BEAT at probability given by C1 (CV/knob)
C2 BEAT at probability given by C2 (CV/knob)
C3 BEAT at probability given by C3 (CV/knob)

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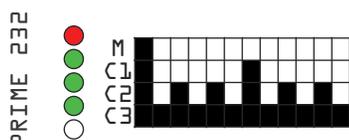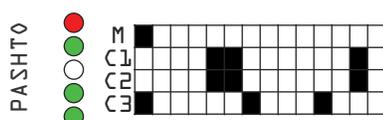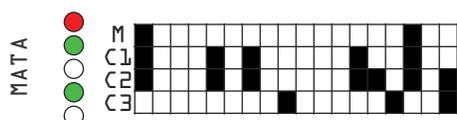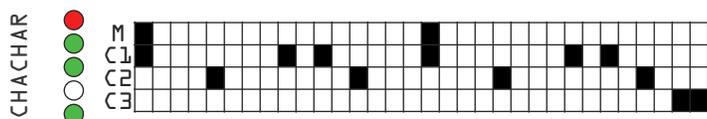Dynamic Rythmic Generator

Patterns: Old World

KING 1 — M C1 C2 C3

KING 2 — M C1 C2 C3

KROBOTO — M C1 C2 C3

VODOU 1 — M C1 C2 C3

VODOU 2 — M C1 C2 C3

VODOU 3 — M C1 C2 C3

GAHU — M C1 C2 C3

CLAVE — M C1 C2 C3

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Patterns: Old World
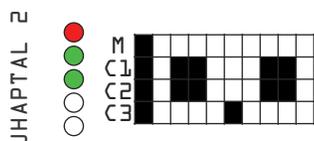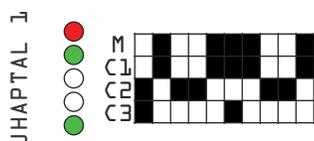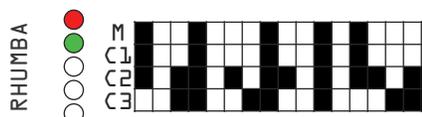
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