

DENSITY - controls the density or "distribution" of the burst. In the center position the burst is linear (evenly spaced). Fully counter clockwise the burst starts slow and becomes faster (accelerates). Fully clockwise the burst starts fast and becomes slower (decelerates).

LENGTH - selects the number of triggers or "pulses" that are generated each time a pulse is received at the TRIG input. The length is adjustable from 1 (no burst) to 32 pulses per burst.

CV Inputs- provide external CV control over Length and Density of the burst generator.

CLOCK IN/OUT - allow for synchronization of the clock with other modules. Pathogen has a fixed rate internal clock that can be overridden with an external clock via the CLOCK IN. There are two CLOCK outputs. The output marked with a B is a buffered output of the input clock - which means Pathogen can be clocked with an LFO etc without degradation or loss of the input signal. The second clock output is non-buffered and may have a small amount of reduction in the fidelity of the signal.

MODE - selects one of eight different modes of operation for the pattern generation section.

1. Counter
2. Divider
3. Arrhythmia
4. Basic Drum Patterns
5. Random (1 of 4)
6. Random (4 of 4)
7. Probability (1 of 4)
8. Probability (4 of 4)

RATE - selects the rate at which the burst generator is clocked. In the center position the burst generator clock is 1:1 with the input clock. Moving RATE counter-clockwise from the center position selects a division of the input clock. Moving RATE clockwise from the center position selects a multiple of the input clock.

TRIG IN & BURST OUT - every time a trigger or "pulse" is received on the TRIG input, a burst pattern of 1 to 32 triggers (or pulses) is generated on the BURST output based on the settings. The LED flashes on each burst.

PARAM - provides adjustment to the pattern or selection of the pattern depending upon the selected mode.

RESET - this input resets the pattern generator back to the start of the pattern.

Pattern Generator Outputs 1 to 4
The pattern generator provides four trigger/gate outputs that change in different ways in sync with the clock. The pattern generator has a separate RATE control that operates independently of but in the same manner as the BURST RATE control.





PATHOGEN

USER MANUAL

Modes

1. Counter

Clock/measure/beat counter mode. PARAM selects one of 32 different counting patterns. The patterns are arranged in eight groups of four, each group of four has a different time signature. Starting from 2 through to 9. Use this mode to do boring predictable 2/4, 3/4, 4/4 stuff OR go wild and spice up sequences, extend notes and clock sequencers in odd but super cool ways.

2. Divider

4 pattern outputs, each is assigned a different clock division. PARAM selects 1 of 32 different clock divisions for each output. Use this with a logic AND/OR gate to spice up rhythms or sequences or any trigger/gate related function really!

3. Arrhythmia

Mathematically (and deliberately) messed up euclidean rhythms - each of the 4 outputs on a cycle that never quite align but still seem to work. There are 32 of them - PARAM selects a patch from 1 to 32. Each of the 32 patterns has an alternate pattern that is activated when a RESET signal is received. A subsequent RESET signal will revert back to the original pattern. The 32nd pattern has a special twist - each time a RESET is received a new rhythmically awkward pattern will be generated.

4. Basic Drum Patterns

Sometimes you just need a basic drum pattern to noodle or perform over. Pathogen delivers! 32 x basic patterns, each 16 steps in length. PARAM selects which rhythm and RESET input will do what you would expect (it goes back to the start of the pattern!).

5. Random (1 of 4)

A random pattern of 1 to 32 steps where ONLY one of the four outputs can be active at a time. PARAM sets the number of steps from 1 to 32. Each time a RESET is received a whole new random sequence is generated.

6. Random (4 of 4)

Kind of like the previous algorithm except any of the outputs can be active at a time. PARAM sets the number of steps from 1 to 32. Each time a RESET is received a whole new random sequence is generated.

7. Probability (1 of 4)

Probability based 1 of 4 pattern. So what does this actually mean?? The PARAM control adjusts the probability from 0% to 100%. On each step a random number is generated. If the random number is greater than the probability, then a new pattern is generated where only ONE of the four outputs is active.

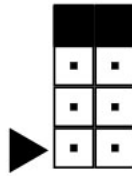
8. Probability (4 of 4)

Again, just like the previous algorithm EXCEPT any of the four outputs can be active.

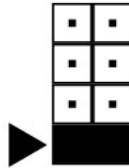


Configuration Jumpers

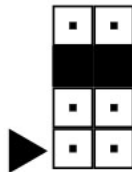
By default the trigger/pulse length is 4 milliseconds to ensure maximum compatibility with other modules. Placing a jumper as shown below will reduce the trigger/pulse duration to 1 millisecond.



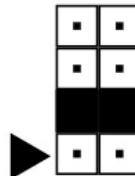
Placing a jumper as shown below will extend the range of the clock divider and multiplier to cover a greater range.



The pattern generator can be configured to generate Gate signals (default – no jumper) or Trigger/"Pulse" Signals. Pulse signals can be generated either on each step when the Gate signal is ON (e.g. fast hi-hat on each step) or on the "leading edge" of the Gate signal (one pulse when the Gate signal transitions from OFF to ON but not on each step while the Gate signal remains high).

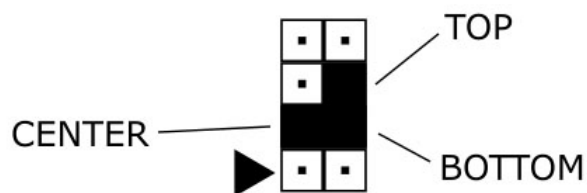
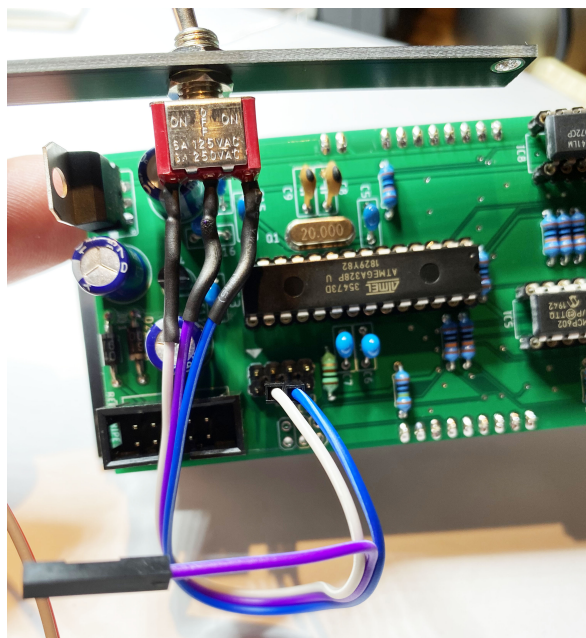


Trigger On Step

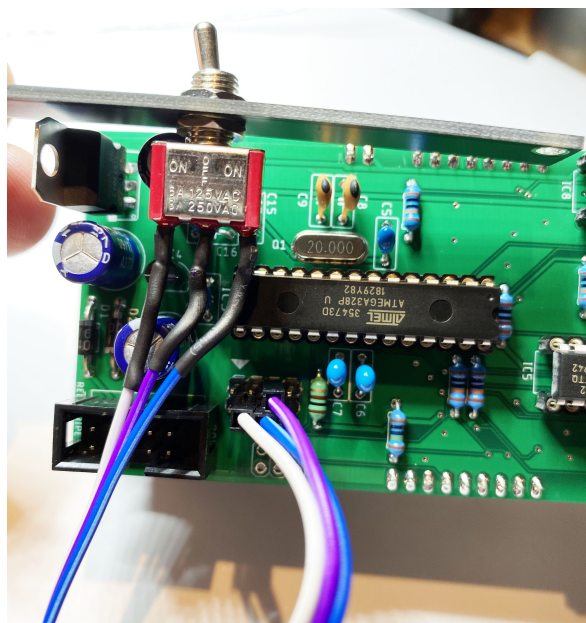


Trigger On Edge

Connection Of PG Expander



TOP - BLUE
CENTER - PURPLE
BOTTOM - GREY



Connection Of PG Expander

