BEAST TEK

# MUTAGEN

## USER MANUAL

**Probability** - these two knobs select the probability of each of the independant probability switches (also known as Bernoulli gates). When fully counter-clockwise the trigger/gate input will be routed to OUT A 100% of the time. When fully clockwise the trigger/gate input will be routed to OUT B 100% of the time. When in the center position there is a 50% chance the input will be routed to OUT A and a 50% chance the input will be routed to OUT B.

**TRIG** - each of the probability switch has its own trigger input which is randomly routed to either OUT A or OUT B based on the selected probability.

**CV** - each of the Bernoulli has its own CV input so that the Probability can be modulated by external control voltage.


**LED** - the bi-colour leds display the selected output.
Green - OUT A is selected
Red - OUT B is selected

**ALG** - Selects the logic type or "algorithm" for use by the 3 input multi-logic gate.

**AND Gate** - these two jacks are inputs for the AND logic gate

**CV** - CV input for the logic type/"algorithm"

**OR Gate** - these two jacks are inputs for the OR logic gate

**IN 1, IN 2, IN3** - the three inputs for the multi-logic gate.
IN3 is normalled to IN2 so that is is possible to utilize the multi-logic gate as either a 2 or 3 input logic gate.

**OR OUT** - this is the output for the two input OR logic gate. If either of the inputs are "high"/"ON" then the output will also be "high"/"ON". Useful for combining two trigger or gate signals into a single trigger/gate.

**AND OUT** - this is the output for the two input AND logic gate. If both of the inputs are "high"/"ON" at the same time then the output will also be "high"/"ON". Also useful for combining two trigger or gate signals into a single trigger/gate.

**Multi-Logic OUT** - this is the output of the multi-logic gate.

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# Clock Divider Option

Mutagen has two configuration jumpers on the back, CFG A and CFG B. When a jumper is placed on CFG, the probability switch on the left hand side of the module turns into a clock divider. Similarly when a jumper is placed on CFG B then the probability switch on the right hand side is turned into a clock divider.

In clock divider mode, the probability knob (and CV) selects one of sixteen different clock divider options. An optional 2HP expander (MG) is available to bring the clock divider option permanently to the front of your modular.

| OUT A | OUT B |
|---|---|
| 1 | 8 |
| 2 | 16 |
| 3 | 24 |
| 4 | 32 |
| 5 | 40 |
| 6 | 48 |
| 7 | 56 |
| 8 | 64 |
| 9 | 72 |
| 10 | 80 |
| 11 | 88 |
| 12 | 96 |
| 12 | 104 |
| 14 | 112 |
| 15 | 120 |
| 16 | 128 |

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# Connection of MG Expander

The DD expander utilizes toggle switches to modify the jumpers on the back of Double Dragon without having to remove the module from the case. The jumpers are simple connections of the active wire to ground.