

# RUNG DIVISIONS

## Quick-start

1. Plug a signal into the clock input (it can be anything that crosses 0.6V). The clock divider leds will light up.
2. Plug a signal into the data input (it can also be any signal that crosses 0.6V, any of the modules outputs work well). *The rungler is not active until at least one of the bus switches is on!*
3. Flick the switch labelled "clk" the rungler is now clocked by the clock signal. Turn on the switch corresponding to a clock division to clock the rungler from that dividers output. Turn on more than one switch to mix the divisions together, this signal is available at the output labelled "BUS". *Mixing some divisions together will have no effect as they are derivitave of each other. eg. mixing /3 and /6, or /2 and /4 will have no perceivable effect.*
4. Turn the loop pot completely counter clockwise, and flick the loop switch to the "16" position. This is the default "rungler" state - new data is taken from the data input on every clock pulse. As you turn the loop pot clockwise the derived data signal becomes a mixture of the data input and noise at 12 o'clock, and then a 16 step loop when fully clockwise. The loop switch can make the loop 8 steps long. *The 8 step loop setting is unaffected by the loop potentiometer!*
5. Put a signal into the reset input (must have a sharp rising edge eg. pulse or saw). Any of the modules outputs work well, especially the /7 output.
6. Hold the write switch to the left or right to manually add a high or low state to the shift register on a clock pulse. The switch must be held during the clock pulse to work. *With a fast (audio) clock signal, the write switch will immediately saturate the rungler with high or low values!*

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## Calibration procedure

**All Rung Divisions modules ship callibrated. Only follow this procedure if for some reason you have adjusted the trim-pot on the back of the module - or wish to alter the response of the loop potentiometer.**

The callibration for Rung Divisions is very simple, and affects the response of the loop potentiometer when the module is in 16 step loop mode.

To callibrate the module: patch in an audio rate clock and data signal, set the module in 16 step loop mode and clock the rungler with the clk switch. Turn the loop potentiometer fully counter-clockwise - you should hear a continuous tone that never changes. If this isn't the case then turn carefully turn the trim pot on the back of the module until you hear a continuous tone. Then back off the loop potentiometer to about 3 o'clock, you should hear a tone that changes very infrequently - if not adjust the trim pot slightly again until you have a continuous tone with the loop potentiometer fully counter clockwise, and the tone changes very infrequently when you back off the loop potentiometer slightly.