Clocker

Clocker is an add-on for a Soma Ornament-8 sequencer.

It is an analog counter device designed to get more creative control over the timings of the Soma Ornament-8 sequencer and to easily synchronize the Ornament with any other system.

Clocker takes a regular or irregular pulse signal in and turns it's cells on, one by one, "stepping" through them.

It can use clock sources from any synth system as well as any lfo and gates/ triggers from the Ornament itself.

Key features

- distribution of pulse signals to 8 Ornament cells
- voltage controlled sequence start and reset
- output mode switch enables integration with other devices besides the Ornament-8
- pulse inverter for better Eurorack to Ornament-8 integration

Specifications

power supply: 12v 500ma

standard DC barrel jack

positive center, 5.5x2.1mm

input:

all inputs are triggered with voltage higher than 4V

output gates:

8 gates provide voltage output.

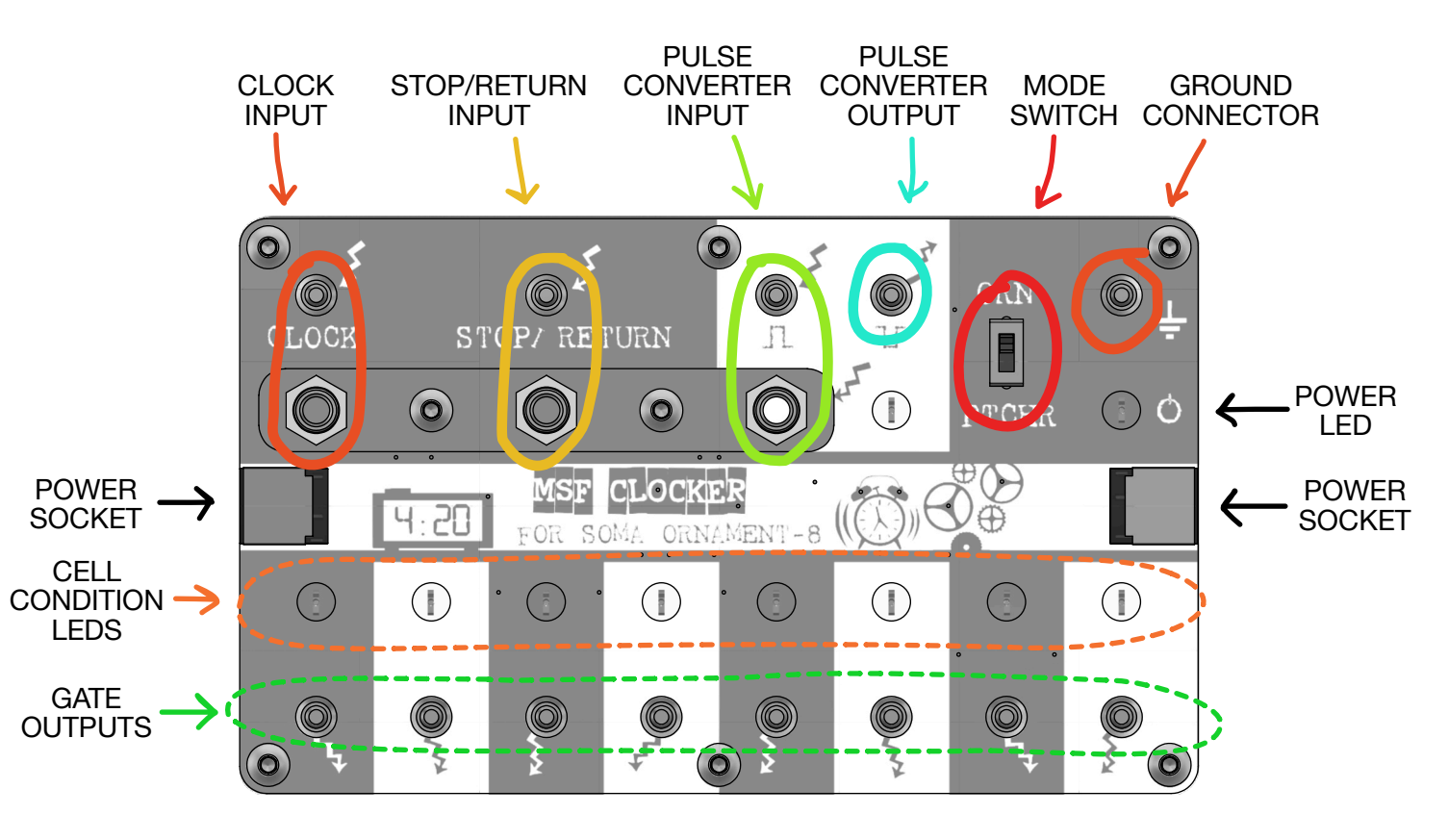
High level is equal to power supply voltage (12V).

Basic principles

The idea behind the Clocker is quite simple. The organic nature of the Ornament-8 leads to ever evolving chaotic patterns, it's not a king of even, repetitive structures and external syncronisation, and this is where Clocker can help, decreasing entropy to a reasonable level.

Clocker distributes the clock signal to a row of gate cells, one by one, left to right. Each time the clock signal is rising — the currently active gate cell deactivates and the next gate cell is generating the gate output.

It seems pretty straight forward thing to just patch all 8 outputs to Ornament's trigger inputs, but this basically kills all Ornament's peculiar behavior, it is much better to find "middle ground", a balance between pure chaos and some pinch of complex order.



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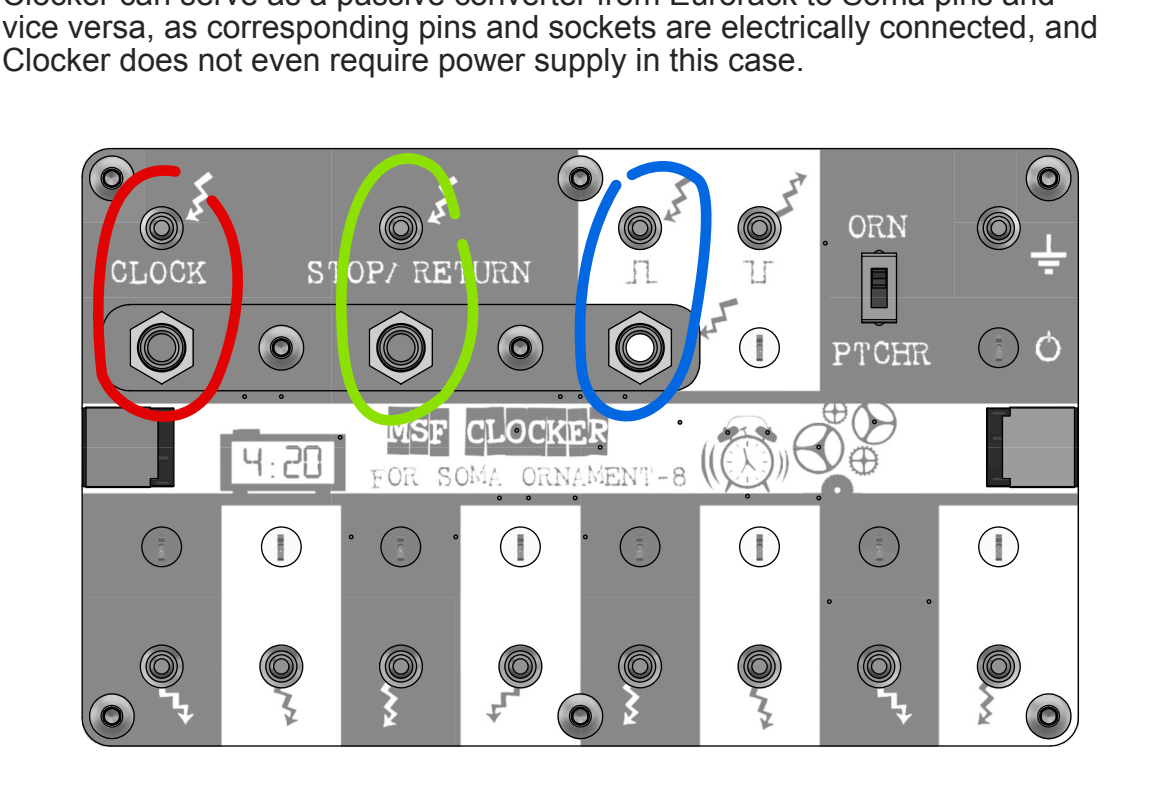
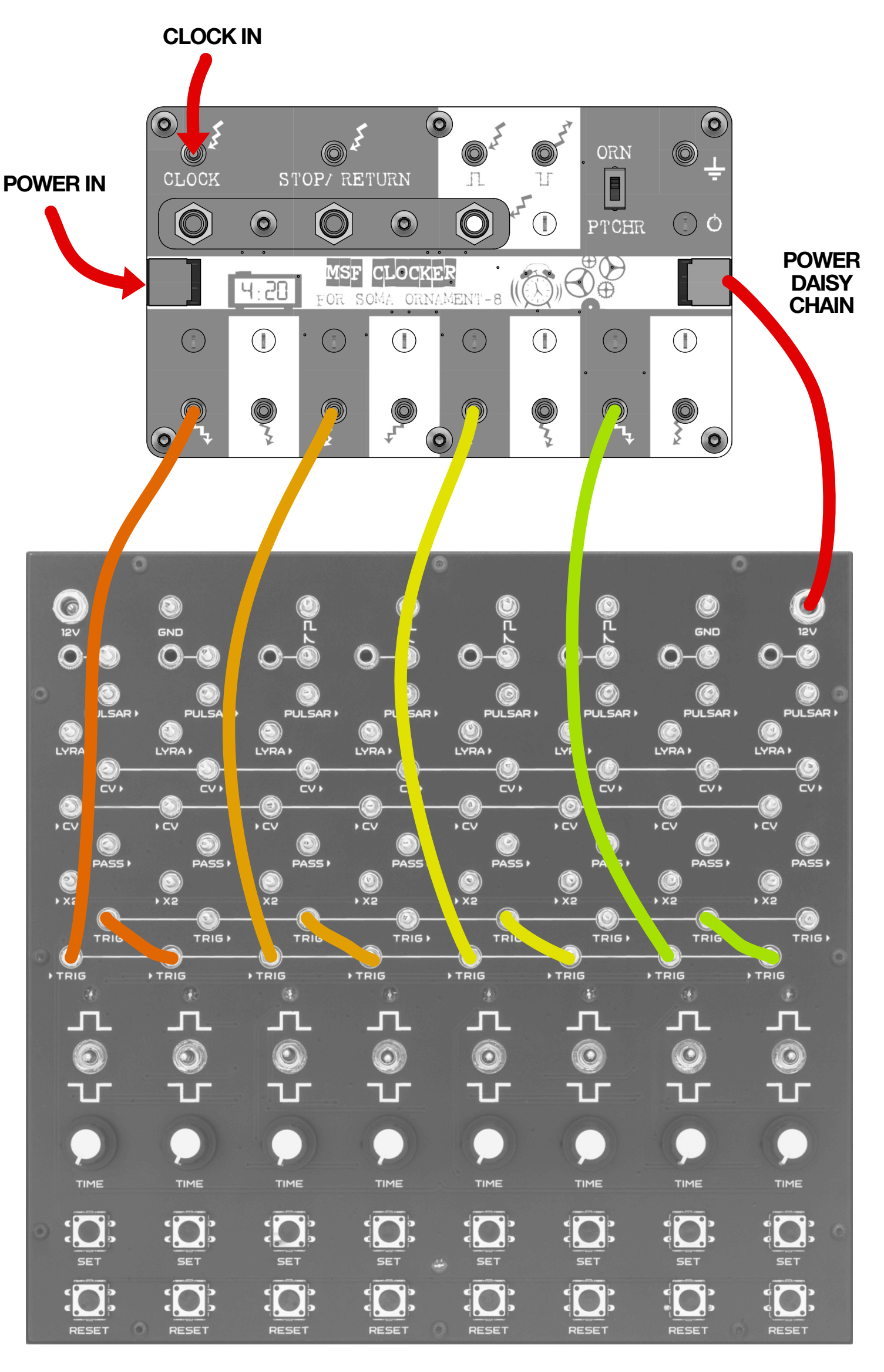
Clocker can serve as a passive converter from Eurorack to Soma pins and vice versa, as corresponding pins and sockets are electrically connected, and Clocker does not even require power supply in this case.

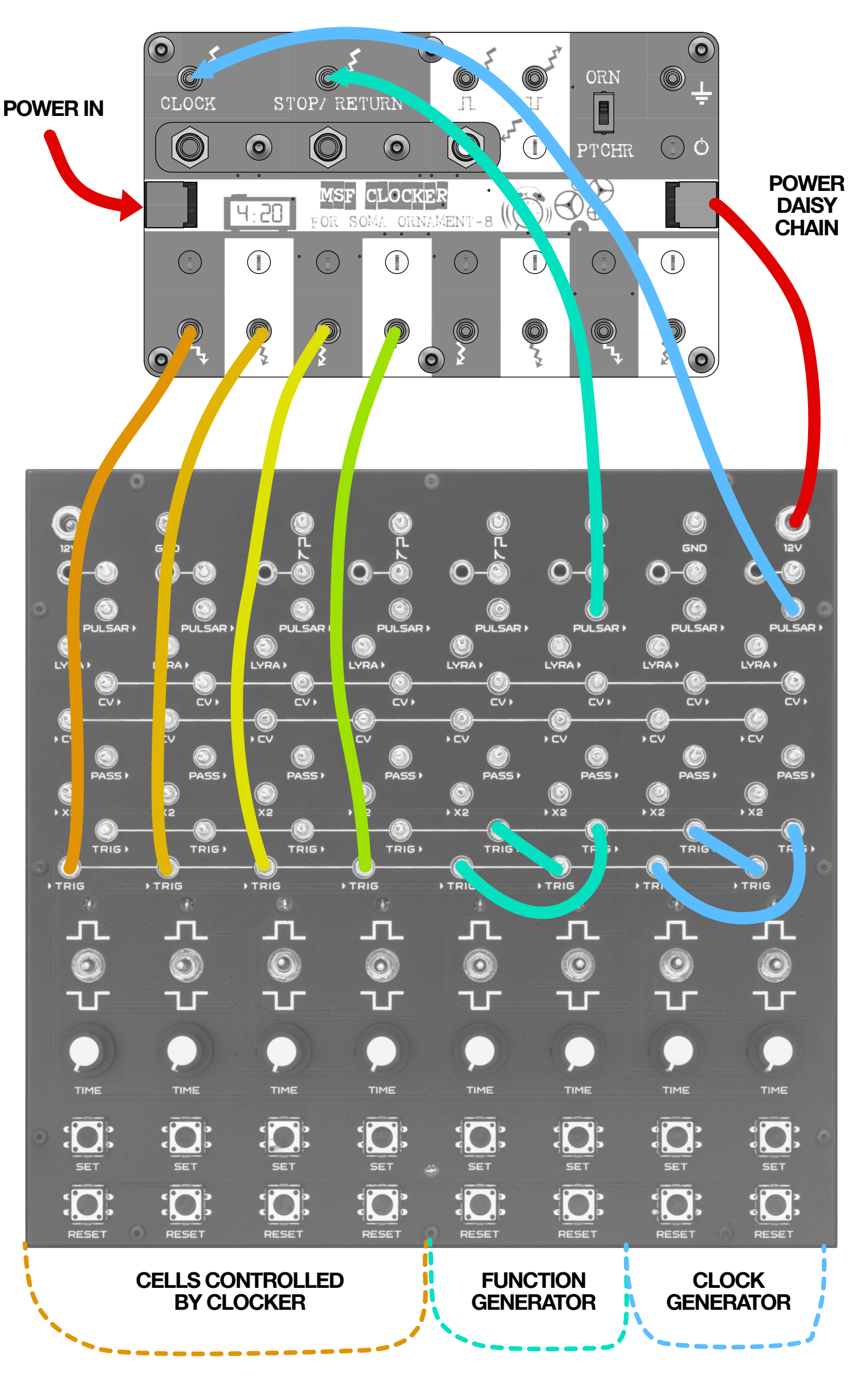


In this picture, we use even outputs of the Clocker to activate even-numbered cells in the Ornament. You can still mess with the timings of odd-numbered cells, keeping the even ones in perfect timings.



In this case, we use a pair of Ornament's cells to generate a "clock" signal, another pair to generate a signal for stop/return pin and 4 leftover cells are connected to Clocker. this patch allows to create a sequence of silence and 4 events.

We encourage you to play and break the straight structures. Try different timing patches with the Ornament and find some new grooves between the hits. inject Clockers commands into Ornament patterns, living on its own. mutate sequences. but don't forget to connect the grounds of your devices.



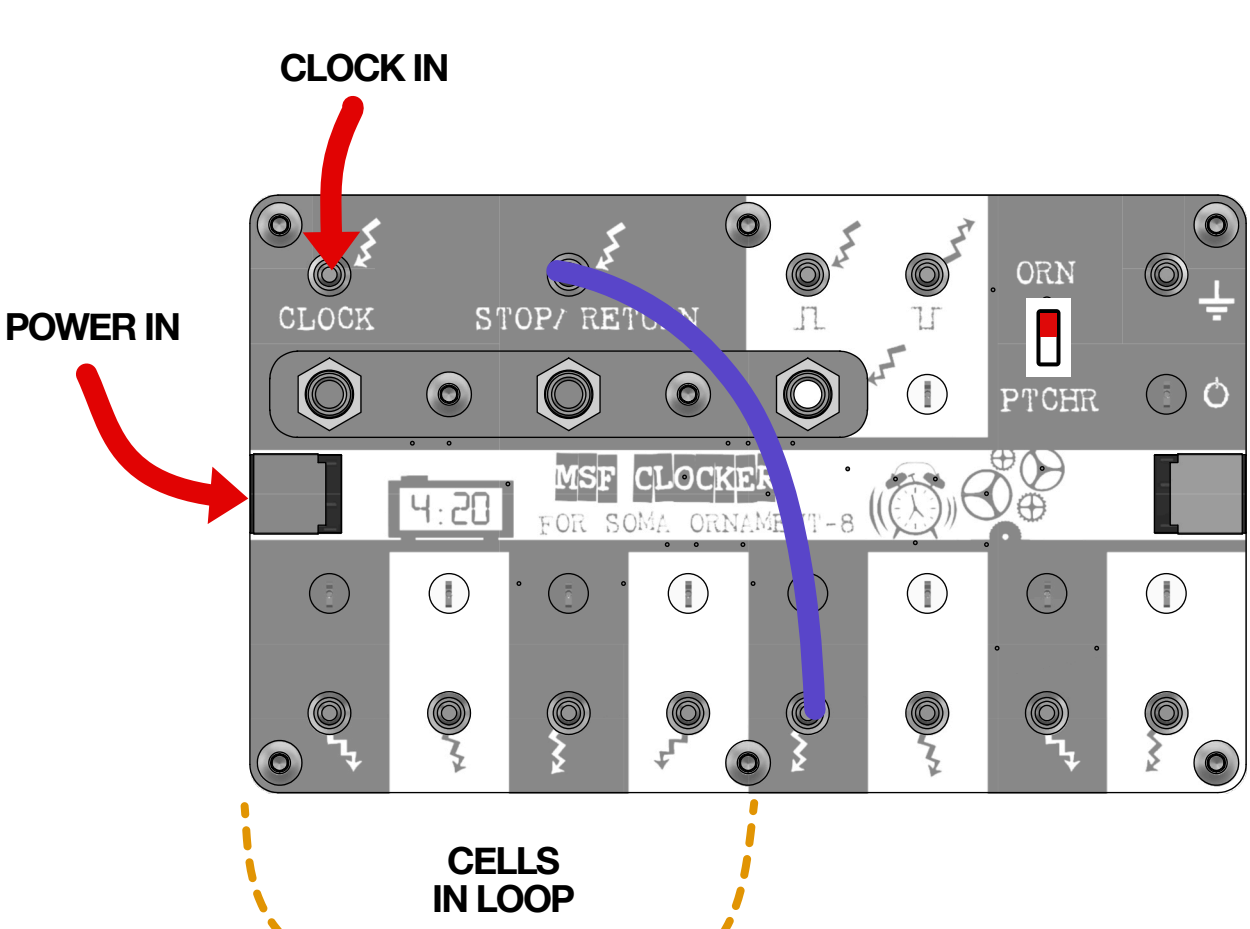
Stop-reset input

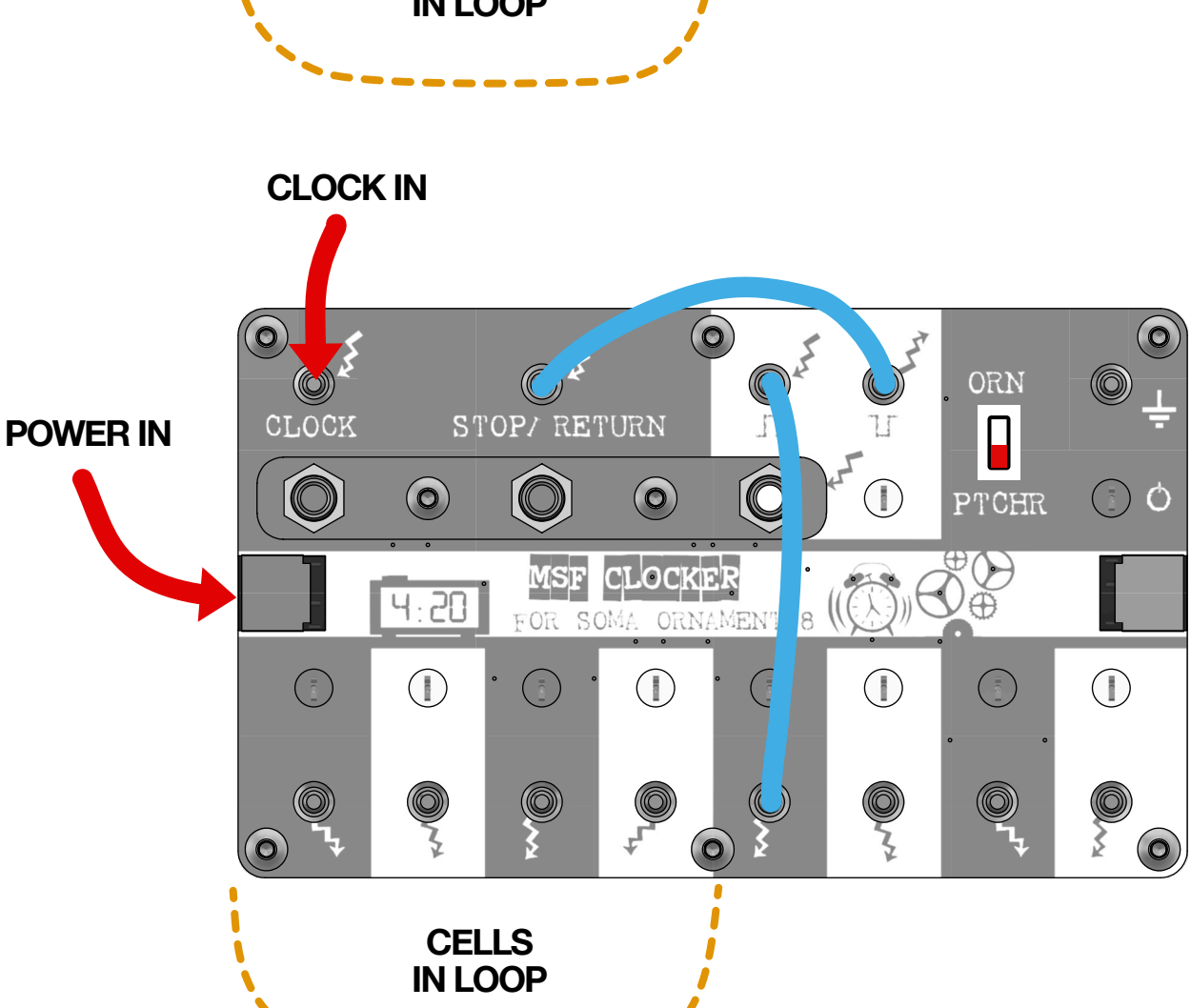
High level (4V and above) on this input will reset the sequence to start, used to set the sequence length.

You can trigger the stop-return from the gate cell output — it will effectively shorten the sequence. if you want a 4-step sequence, patch the 5th gate cell output of the Clocker to stop-return.

This patch will work only when the output level switch is set to "ptchr", when it is set to "orn" — you will need to use the pulse inverter, as shown in the picture.

You can play with this feature in a creative way with tempo-synchronized square lfo, or just experiment with slow S&H.

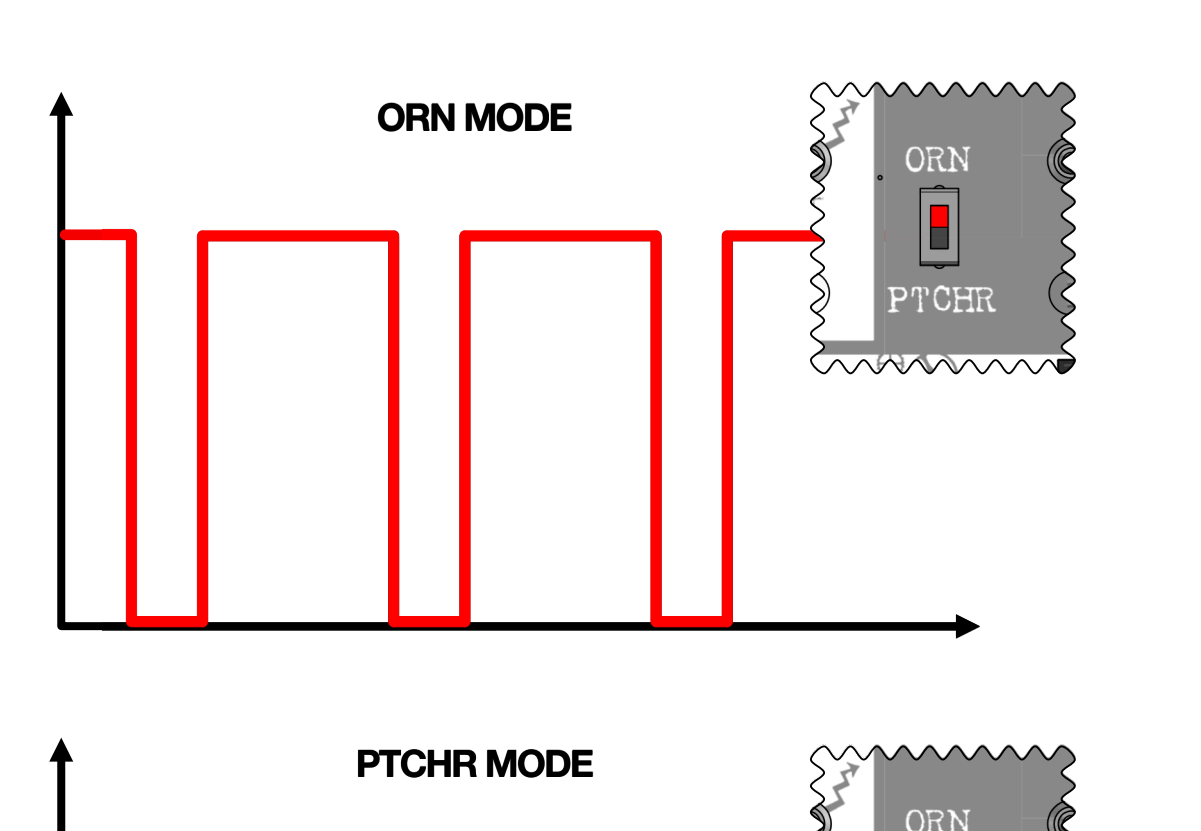


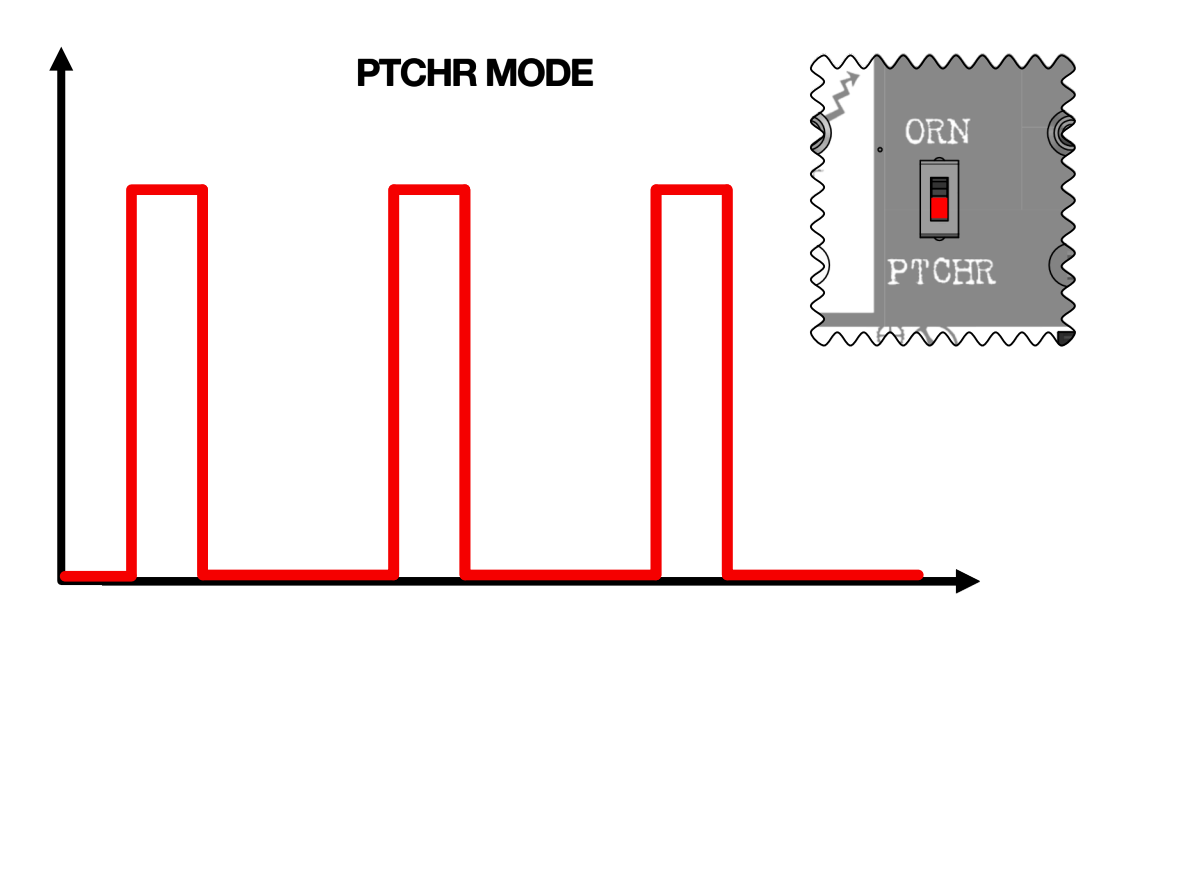


Output mode switch

Ornament is using "inverted" type of trigger signals: it triggers on low level and rests on high.

Clocker outputs low level signal when the cell is active in "orn" position, fully compatible with Ornament. The "ptchr" position inverts the output (out is high on active cell), making it compatible with classic modular gear.

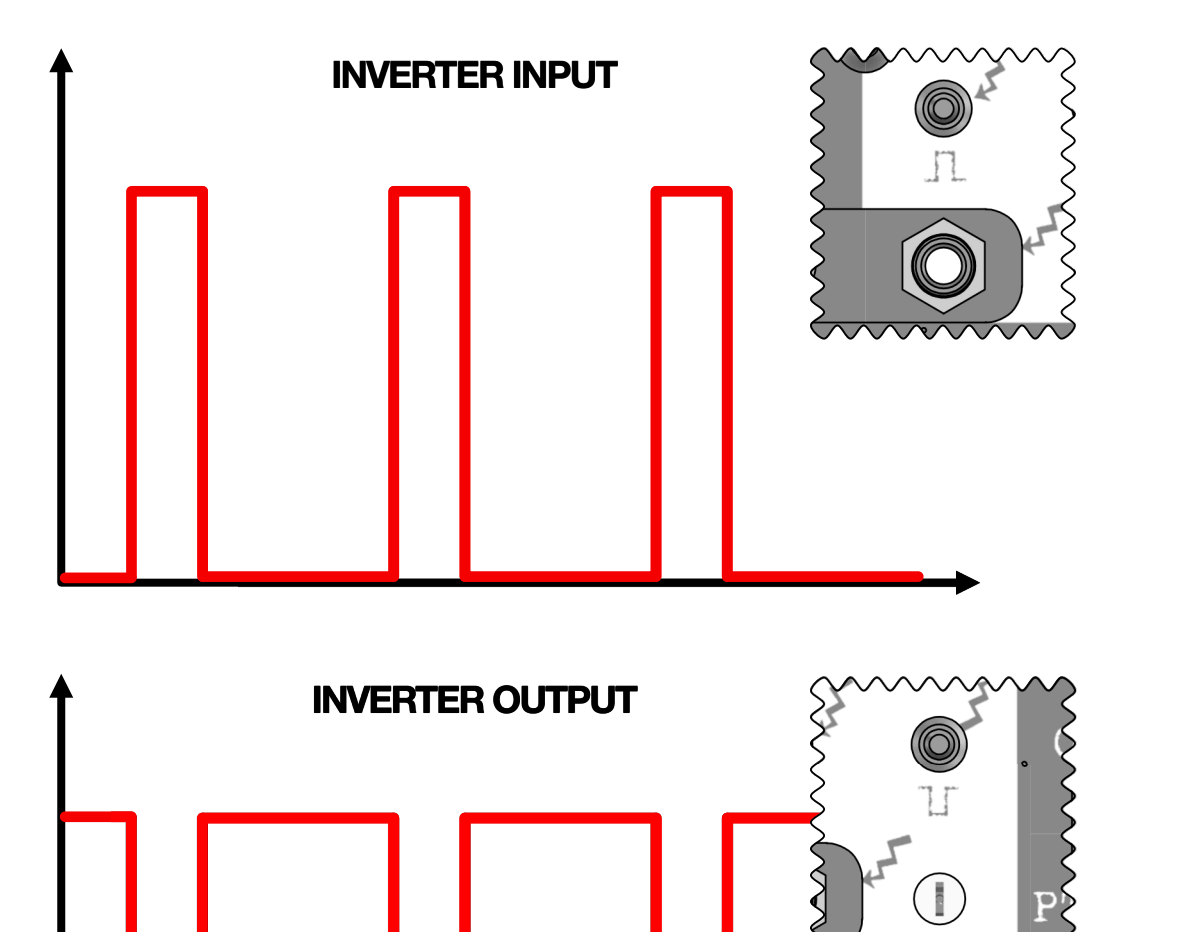


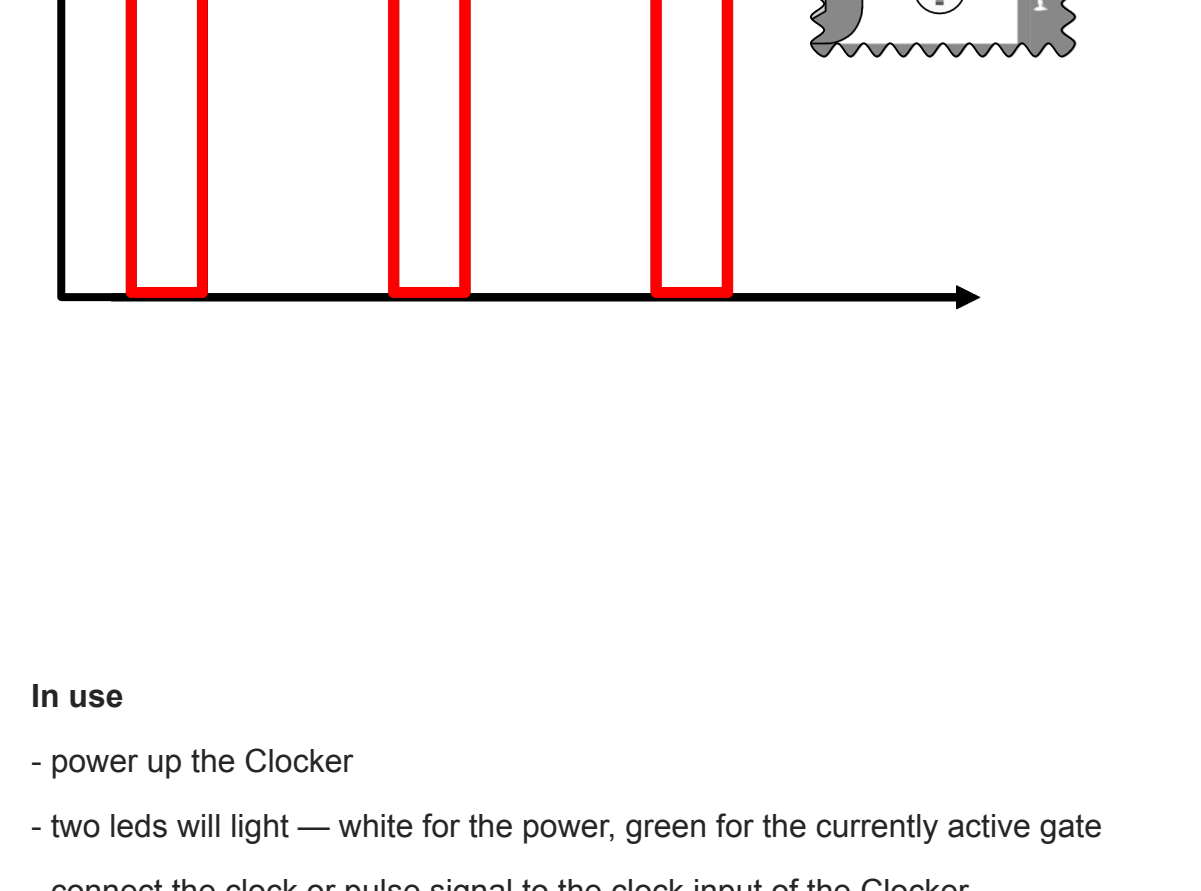


Pulse inverter

Converts modular synth's trigger signal (active level is high) to the Ornament's trigger signal (active level is low), or vice-versa.

Great for syncing Ornament's cells with any other modular gear. Patch any pulse source from your synth and you will get the pulse that fits to the "trig in" pins of the Ornament.





In use

- power up the Clocker
- two leds will light — white for the power, green for the currently active gate
- connect the clock or pulse signal to the clock input of the Clocker
- when Clocker get the clock signal, green led will step further on gate cells row
- start patching gate outs to the Ornament's trig inputs. The most interesting results comes from the non-linear sequence patches, be creative here.
- obtain the basic time structure.
- make a random binary signal in sync with the clock — and apply it to the stop/return input on the Clocker. make it switchable.
- make a synced square lfo signal about half of the sequence long and apply it to stop/return input. after that, detach lfo sync. make the lfo sync switchable.
- expand the patching. take a gate from the Clocker and apply a slew generator. use this function to modulate something. create complex grooves.
- time for modulation games and micro timings observation!
- expand the patching even further — add a second Ornament-8 to the setup. it plays really well.

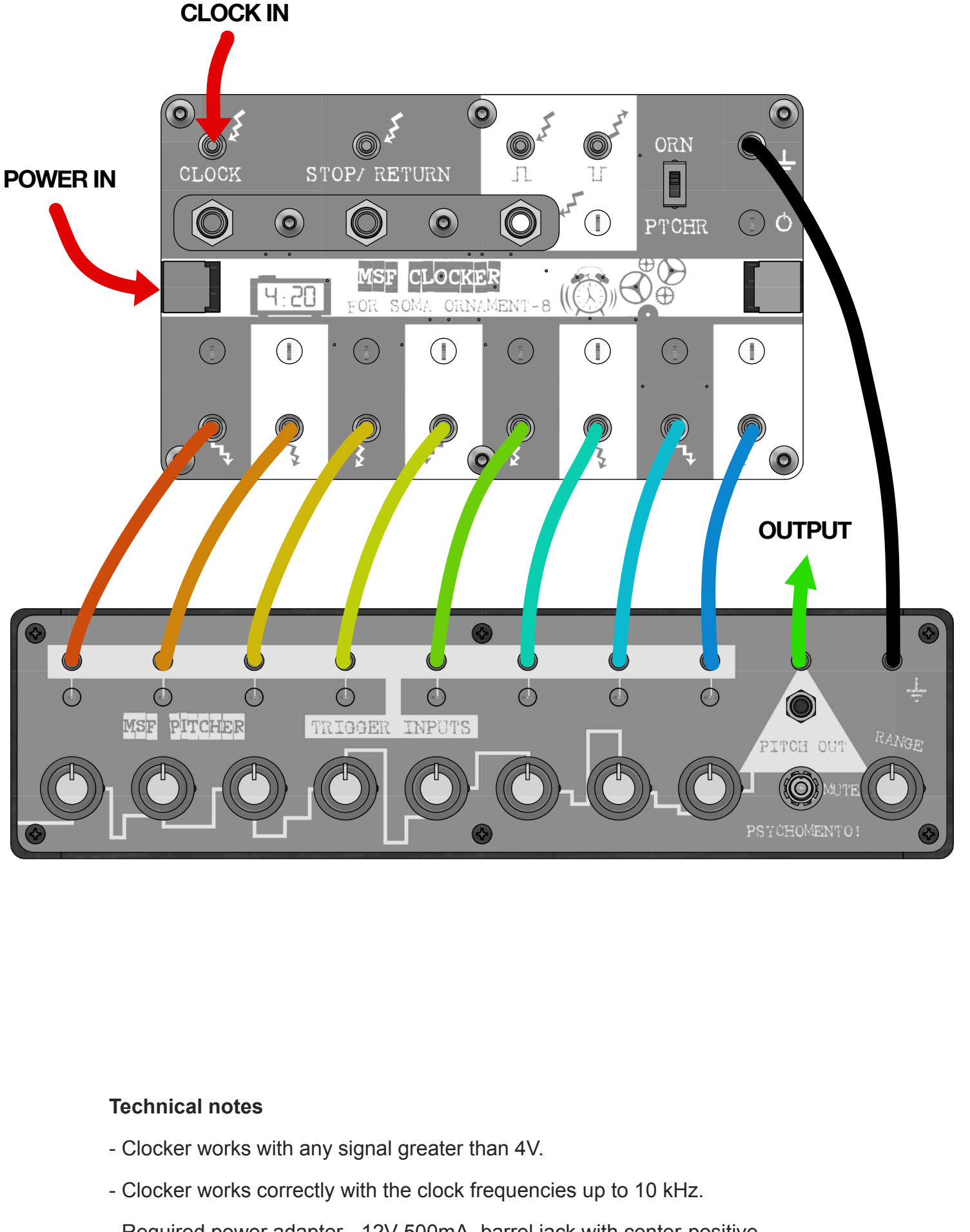
Patch Example

MSF Clocker and MSF Pitcher as sound generator

You can use Clocker in some weird ways: it can work with audio-rate pulses on its clock input, which basically converts it to a sub-harmonic oscillator.

In its default patch, the output wave will drop its frequency 8 times relatively to clock input. You can shorten the sequence using stop/reset input, which lets you choose between 8:1 to 2:1 times frequency division.

If you patch the Clocker to the Pitcher, you'll get a custom-shape oscillator, with the waveform "drawn" with Pitcher's knobs. The output wave voltage range is 0 to 12V.



Technical notes

- Clocker works with any signal greater than 4V.
- Clocker works correctly with the clock frequencies up to 10 kHz.
- Required power adapter - 12V 500mA, barrel jack with center-positive connection.
-You can daisy-chain several compatible MSF or Soma devices via power-thru socket.

We have tested the set-up with the following gear:

- Soma Ornament-8
- Soma Pulsar-23
- Soma lyra-8 + adapter
- Soma enner
- MSF Midiator

Basically, you can connect any gear that uses DC 12V power, and has center positive barrel jack connection.

In case of two or more devices connected with power-thru socket, there's no need for making a patch between grounds.

Do not overload the power adapter with too many gear connected to one chain — we recommend no more than 3 devices at a time.