# PM Pesets – PMSequencer 2

**Edit 2022-02-28**

## Overview

This setup is based on another principle than Sequencer 1. Here is a Tone Event module not be used as part of a step stage but as a control voltage source for a distinct tone frequency. One could think, simple Voltage DC-Source could be used too. That's true, but first with Tone Event it is much simplyer to hit the right tone and second a sequencer needs a way for key tracking.



## Functional Sections

### Clock Generator

A *Voltage Mini LFO* creates basic clock and determines stepping speed. *Voltage Clock Divider* is used to form normal and half speed clock with matching phases. Half speed clock is used to trigger the *P.moon Stepper*, normal clock is used for the random ratcheting effect.

## "Transport Control"

Simple *P.moon Buttons 2/1* module lets you reset all counters with one click on button 2. Toggle buttons 3 works as play switch.

## Step Generator

*P.moon Stepper* is the heart of the sequencer. All eight stages are used. <u>Circle Run Mode</u> lets step counter restart counting at ninth trig pulse.
Stage outputs are labeled with "cv out". That is, because either GATE or TRIG signals can be obtained at the output jacks.
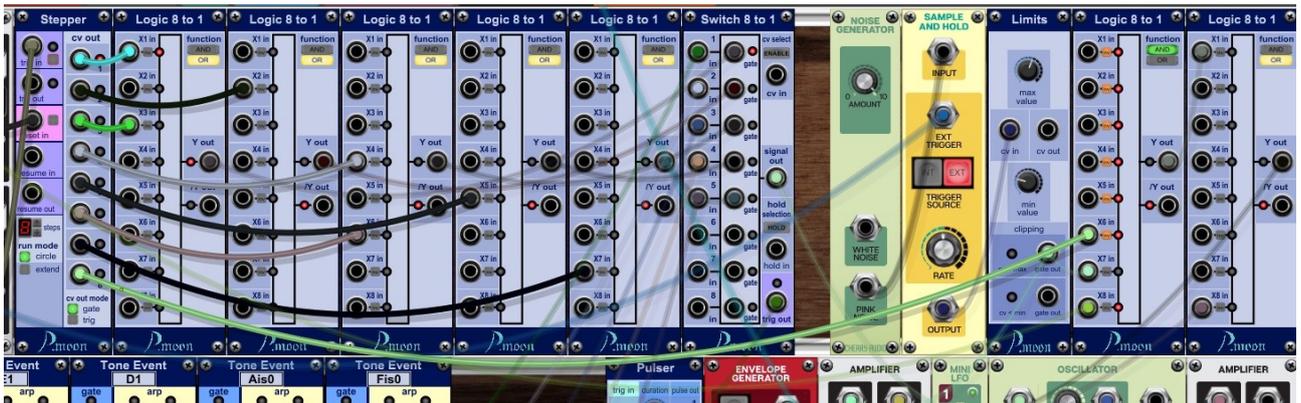


With "gate cv out mode" stepper outputs deliver a gate signal of just one step duration. That is what we need to determine, which tone should be active in which step. P.moon Logic 8 to 1 modules collect all step signals for even one tone frequency.

## KEYB signal

All *Tone Event*'s KEYB sections are chained. First "keyb in" gets signal from host, so that keyboard tracking is possible.
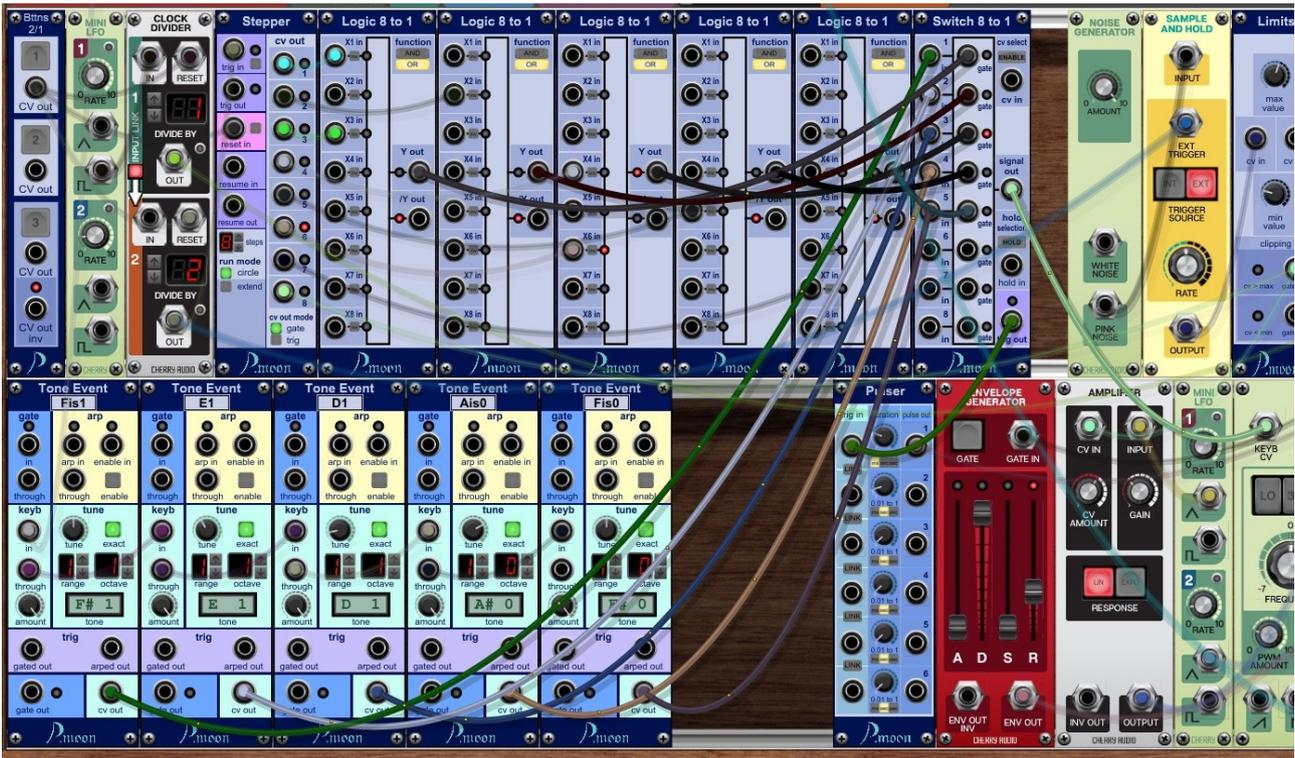
Only *Tone Event*'s "cv outs" are used in this setup. A *P.moon Switch 8 to 1* collects these signals to a single KEYB voltage for the tone oscillator.

## GATE signal

The GATE signal for the envelope generator is made of two parts, that are put together with most right *Logic 8 to 1* with OR function. First is needed to get a regular tone at every step. Second will trigger an effect.



To get the common GATE signal for the stepping melody, a special function of *Switch 8 to 1* is used. It creates a "trig out" pulse of 5 milliseconds everytime, when port selection by "gate in" or "cv in" changes between "1" and "8". So we get 7 pulses at every *Stepper* cycle.

This short pulse will be enlarged by *Pulser*. Please note, that enlarged pulse must be shorter than a *Stepper's* step. Otherwise it's output will stay ON continuously and ADSR will remain at "S" level.



Second GATE part is made to get a ratcheting effect as "illustration". A *Voltage Noise Generator* and a *Voltage Sample and Hold* deliver the random CV. With *P.moon Limits* we can adjust, how often the effect is active. First *Clock Divider*'s output will provide a double note at given steps.



We don't want to get this effect during step 8, when no tone frequency is selected. With AND function of another *Logic 8 to 1* module and inverted step 8 "cv out" this problem is solved.

Output of "*Limits*" goes also to a *Voltage Amplifier*. It controls frequency modulation of tone oscillator at same time, when a ratcheting effect happens.

Example preset:        PM Sequencer 2.voltagepreset