Make Noise Rene — Sequencer Module

René is deep, but all you really need to know: Patch one clock to XCLK, and a second clock to YCLK, adjust clock rates and/ or divisors, tune voltages per location (the knobs) as desired. Adjusting those two clocks relative to each other will create seemingly innite variations on the theme that is your sequence.

René is the world's first and only Cartesian sequencer for music synthesizers. It uses Descarte's cartesian coordinate system to unlock the analog step sequencer from the shackles of linearity. Like the classic analog sequencers, there are only 16 steps, each having an associated knob with which the note for that step is tuned. However, using René, the patterns are not limited to 16 steps in length because the path taken through those steps is, for all practical purposes, infinite. In fact, René does not "step" at all, but rather it maps coordinates to locations in a grid. As a result, it is possible to move in ways that you would never imagine. The 16 steps on René are called "locations," and rather than one clock input, there are two; the X axis, and the Y axis.

X-CLOCK IN: Clock/ Gate signal (of width >.5ms and amp >2.5V) input drives the X-axis counter. If using Maths to clock, then set Vari-Response to Linear. When René counts Snake style, X-CLK steps linearly through a stored set of coordinates; it drives the sequence.

X-MOD IN: The state of this input (either high or low) further determines behavior of René, depending on the selections made in the X-Fun PGM page. For example, when CLK-RST is selected under X-Fun, a logic high at this input will Reset the X-axis counter to 0.

X-CV IN: CV at this input generates a number that is added to the number generated by the X-axis counter, to create the X coordinate. When René counts Snake style, X-CV scans linearly through a set of stored coordinates. X-CV is normalled to +5V so that with nothing patched the attenuator acts as an offset generator.

Y INPUTS: Identical to the X-inputs, but applied to the Y-Axis. See the X- inputs for an explanation.

QCV OUT: The quantized CV of the currently active location. QCV may also yield a stored quantized CV (if selected on Q Page), in which case the corresponding location potentiometer is no longer "live." Range: 4 octaves.

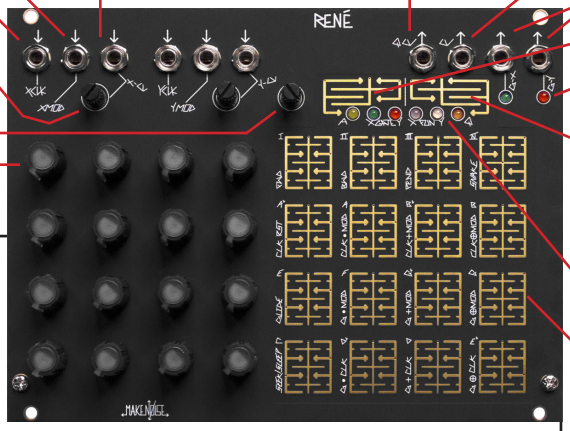
CV OUT: The un-quantized CV of the currently active location. At the CV Out, the location potentiometers are always "live." Range: 0 to 4.5V.

GATE X & Y OUTS: These outs reflect the X- & Y-Gate Page programming. When René hits a location, and it is on (lit) on the X- and/or Y-Gate PGM Page, the out(s) go high for a duration determined by the X-CLK width and any PGM logic operations for that axis clock or gate. When counting Snake style, the Gate Out is always a skinny pulse (2ms). Range: 0V (off) or +8V (on).

X IN CV ATTENUATOR: Attenuates the incoming X-CV input signal.

TOUCH PLATE SENSITIVITY CONTROL: To decrease sensitivity, turn CCW. To increase sensitivity, turn CW.

CV PROGRAMMING GRID: Pots used for programming (PGM). LED lights indicate currently active location(s).



PGM 1: Used to cycle through the six programming (PGM) Pages.

GATE-X & -Y LEDS: Flashes to indicate gate activity at the output.

PGM 2: When in a PGM Page, press to return to "play" mode. While in "play" mode, press to latch currently-held locations. Also used to store module settings on power-down. When in "play" mode, press and hold until all PGM LED's blink (about 2-3 seconds).

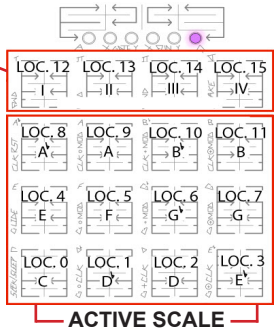
PGM PAGE LEDS: Lights when associated PGM Page is accessed.

TOUCH PLATE GRID: Used to select locations for programming (PGM) and latching.

RENE CONCEPTS: The primary goal of René is to have a maximum amount of artist-controlled musical variation, with a minimum amount of data input. There are no menus. All editing is done real-time, and the programming becomes a key performance element.

The basic concept: each axis is being driven by the corresponding clock and CV, to generate a number from 0 to 3. These numbers together make up the coordinates for the jump to the next location (ex.: If X hits 2 and Y is at 3, then René goes to Loc.14).

Stored Quantized Voltages (SQV - Q PGM Page - Locations 12, 13, 14, and 15)



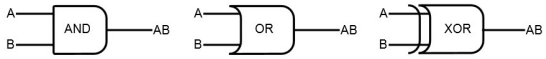
To store all 16 Voltages as set by the potentiometers and the PGM Scale as set by touch grid Locations 0 thru 11, touch and hold either Location 12, 13, 14, or 15 until all 6 PGM LEDs flash. When one of these four locations are on (lit), the QCV Out produces voltages per location as well as the scale in which they were initially stored. The scale may still be edited on the fly, but the pots on the CV Programming Grid is no longer "live." To turn off the active SQV, press it once again to toggle off.

With the scale and the voltages you have programmed stored, you effectively have two channels of CV. The most common use would be to apply the QCV to 1V/ Octave input on your VCO, program your scale and the notes you want to use in your composition, and store those to one of the 4 locations (12, 13, 14, 15). If you want variations, then store those variations to the remaining locations. Now, patch the CV Out (un-quantized) to a timbre control, such as FM Index, wave shape, or filter resonance. Because your QCV is using the SQV to drive the VCO, the un-quantized CV Out is now independent, and you are able to turn the pots on the CV Programming Grid to program new timbre CV, without changing the notes/pattern driving your VCO pitch. Apply the Gate Outs to EG/VCA combo, or Low Pass Gate, and you have full control of one voice.

René Logic (X-Fun / Y-Fun PGM Page)

There are 3 rows of the logic processing. **CLK by MOD**, **Gate by MOD** and **Gate by opposing CLK**. With the Clock Logic Ops (locations 9, 10, 11) the MOD input is **AND**, **OR**, **XOR** against the CLK, and the result drives the counter for the associated axis. With the Gate Logic Ops (locations 5, 6, 7) the MOD is AND, OR, XOR against the CLK and the result drives the gate programming logic (X gate or Y gate pages). The last part of the chain is the gate on/ off, thus giving gate programming top level control. When you want a location to not generate an event, turn off the gate.

(NOTE: 0 = FALSE = OFF, 1 = TRUE = ON)



A	B	Out
0	0	0
0	1	0
1	0	0
1	1	1

A	B	Out
0	0	0
0	1	1
1	0	1
1	1	1

A	B	Out
0	0	0
0	1	1
1	0	1
1	1	0

For CLK by MOD logic ops, the results apply to both the sequence movement and the associated gate outs. For Gate by MOD logic ops, the results apply only to the associated gate outs.

Programming (PGM) Pages

Access Page (A): Allow access (on; lit) or deny access (off; unlit) to a location.

X-Gate & Y-Gate: Turn on/off locations that generate a gate at the G-X / G-Y Outs.

X-Fun & Y-Fun: Edit the behavior of the X & Y axis. **FWD:** counts forward. **BWD:** counts backward. **PEND:** counts forward, then backward. **SNAKE:** Scans linearly through 8 preset coordinate patterns. Uses both X- and Y-axes, so this can be set on either "FUN" page. **CLK RST:** Pulse at the MOD Input will reset the associated axis counter to 0. Used to reset the counter. **GLIDE:** Glides between locations when a gate is present at the MOD In. Only one axis needs to be programmed for glides to function. **SEEK** (on; lit)/**SLEEP** (off; unlit): Lets you program rests in sleep mode. When an Access location is off, the step is counted and silent. In Seek mode, this same location is ignored, and next available location is played (without the rest between locations).

Quantize (Q): Lets you select scales to be used at the QCV Out. You can also store quantized voltages (see SQV section).

8 Snake Mode Memorized Coordinate Sets *(conceived & illustrated by yerpa58).*