
BOH!NGLER
CLOCK
CLK IN
10.00Hz
8.00Hz
USE RND
USE VCO
BITSHIFT
1
INNER VCO
8.000Hz
8.000Hz
XOR
EXT IN
SCL-OFF
UNI
NYSTHI & DISSOCIATES - SGAC - NA

WHAT THE ?!

(1) (2) (3) (4) (5)

1) CLK IN: external clock input

2) Trigger outputs converted from external/ internal clock pulses

3) Square output synced to clock (seems to shift starting position slightly from external clock)

4) Ramp output synced to clock

5) Saw output synced to clock

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(1)

(2)

(3)

(4)

1) Attenuator for cv modulation input (2) of clock frequency that triggers sample & hold

2) CV input for modulation of clock frequency

- responds to unipolar or bipolar signal
- modulation in proportion to current frequency (i.e. if frequency is 8Hz , a bipolar lfo is inserted, and attenuator is fully clockwise, then the frequency will fluctuate from 4-12Hz)

3) Manual setting of clock frequency that triggers sample & hold (will be overridden by external clock input)

4) Current clock frequency that triggers sample & hold (will reflect external clock frequency or reflects manual setting if no external clock is inserted)

(3)

(1) (2)

(9) (4)

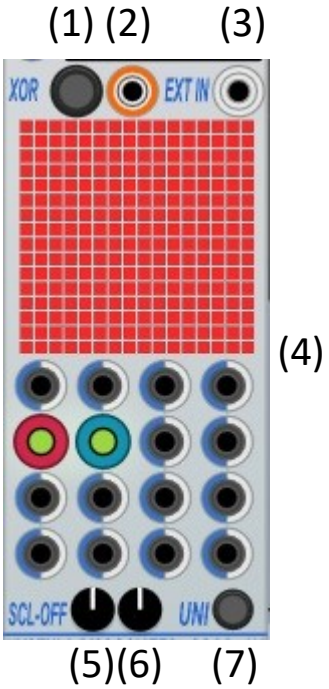
(5) (7)

(6) (8)

1) *USE RND*: manual toggle for use of random source fed to sample and hold
2) *USE VCO*: manual toggle for use of internal vco fed to sample & hold
3) Trigger input for toggling between random source & internal vco
4) *INNER VCO*: output for the internal triangle vco
5) Attenuator for cv modulation input (6) of internal vco frequency
6) CV input for modulation of internal vco frequency
   - responds to unipolar or bipolar signal
   - modulation in proportion to current frequency (i.e. if frequency is 8Hz , and a bipolar lfo is inserted, and attenuator is fully clockwise, then the frequency will fluctuate from 4-12Hz)
7) Manual setting of internal vco frequency
8) Current internal vco frequency

**Note about internal vco frequency: If you set the vco frequency to a whole# multiple of the sample & hold frequency, then you will get a minimum constant voltage for even #'s and a maximum voltage for odd #'s (minimum/maximum voltage refers to –5v/+5v for bipolar and 0v/10v for unipolar). However, if the vco frequency to a division of the sample & hold frequency then you can get a repeating pattern of output voltages. For instance, if the s&h is 2Hz, and you set the vco to 1Hz , then you will get a simple square shape. More complex repeating patterns are producing by further division or non-whole # multiplication.

9) *BITSHIFT*: each time a value is sampled, it moves down the column and eventually to the adjacent column, and so on. This controls how many squares between 1-16 to skip as the bit is shifted.



1) XOR: manual toggle for the XOR function (not sure how exactly the XOR compares, seems like one of the great NYSTHI mysteries).
2) Trigger input that toggles the XOR function on/off
3) *EXT IN*: insert an external source for the sample and hold that overrides the random source or the internal vco
4) The red squares are the "bits" or the sampled voltages from the s&h that are moved along in a shift register fashion. As a new bit is introduced, it starts at the top left-hand corner and moves down the first column, it then moves over to the next column to the right, and so on till it reaches the last square on the bottom right-hand corner. Each column contains 16 voltages that are summed together and sent to one of the 16 cv outputs below the grid. The outputs (from left to right and then to the next row below) correspond to the bit columns (from left to right).

5) *SCL:* this knob scales the cv output voltages. Turning clockwise will amplify and counterclockwise will attenuate.

6) *OFF*: this knob offsets the cv output voltages. Turning clockwise will add and counterclockwise will subtract voltage.

7) *UNI*: this button will toggle on the conversion from a bipolar signal to a unipolar signal at the cv outputs.