**Manuals+** — User Manuals Simplified.



# INSTRUo tagh Hybrid Random Voltage Generator User Guide

**Contents**

**INSTRUo tagh Hybrid Random Voltage Generator**



**Product Information**

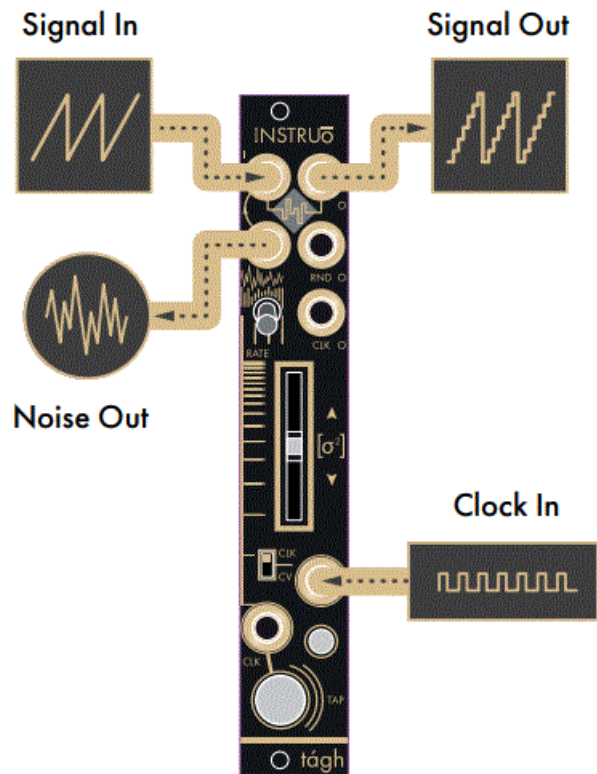The Analogue Sample & Hold device has the following inputs and outputs:

- Signal In
- Signal Out
- Noise Out
- Clock In (x2)
- Internal BPM / Tap
- External
- Dynamic Phase Alignment
- Subdivision Probability
- Increasing Fader
- BPM Fader Control Definition
- Clock Probability & Algorithm Parameter
- Button Combinations (for Factory Reset, Offset and Attenuation, and Algorithm Selection)
- CV 0 Volts
- CV Positive voltage sums with the fader offset
- CV Negative voltage reduces sampling chance
- Fader defines number of step repeats (up to 16)
- CV Gate at CV Input
- Pattern repeat (up to 16 step repeating pattern)
- CV -/+ extends range
- Waveshape Interpolation (Same as Algorithm 4)
- LFO rate matches the tempo, but is not phase-aligned.
  Tempo/frequency changes are fully interpolated and completely smooth.
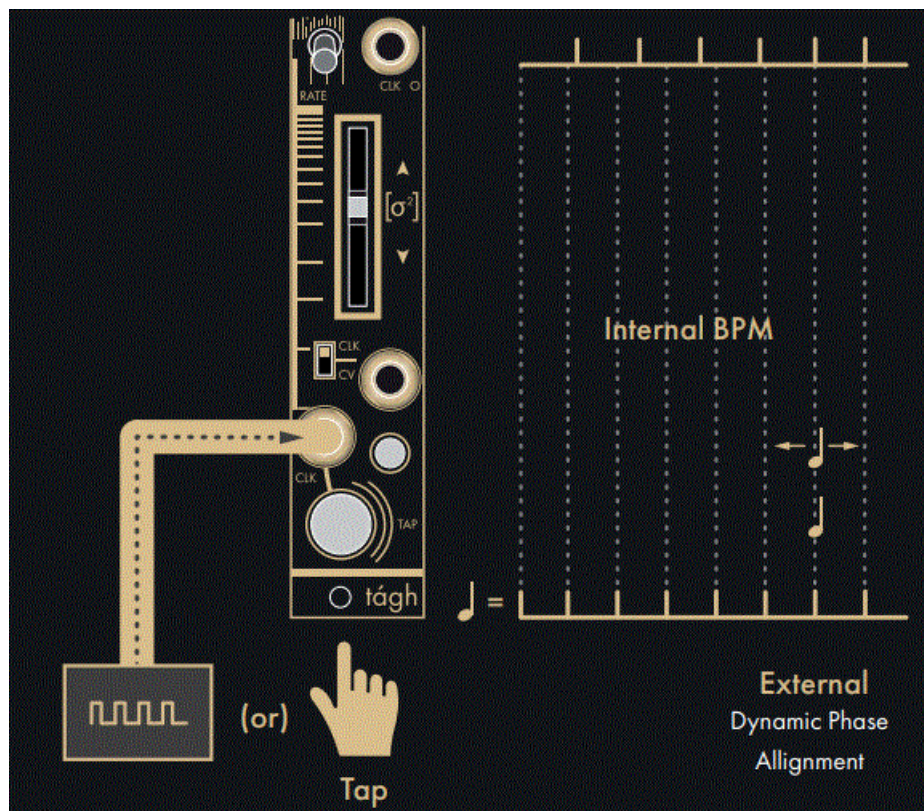- Down Sample (BPM Related)

## Product Usage Instructions

To use the Analogue Sample & Hold device, follow these instructions:

1. Connect the Signal In to the desired audio source.
2. Connect the Signal Out to the desired destination.
3. Connect the Clock In to a clock source.
4. Use the Internal BPM / Tap or External clock input to set the tempo.
5. Adjust the Dynamic Phase Alignment and Subdivision Probability settings as desired.
6. Use the Increasing Fader to increase the available range of subdivisions and increase probabilistic chance of new subdivisions.
7. Use the BPM Fader Control Definition to define the function of the fader.
8. Adjust the Clock Probability & Algorithm Parameter settings as desired.
9. Use the Button Combinations to perform a Factory Reset, adjust Offset and Attenuation, or select an algorithm.
10. Use the CV inputs to control the device with external voltages.
11. Use the Pattern repeat function to create up to a 16 step repeating pattern.
12. Use the Waveshape Interpolation function for smooth transitions between steps.
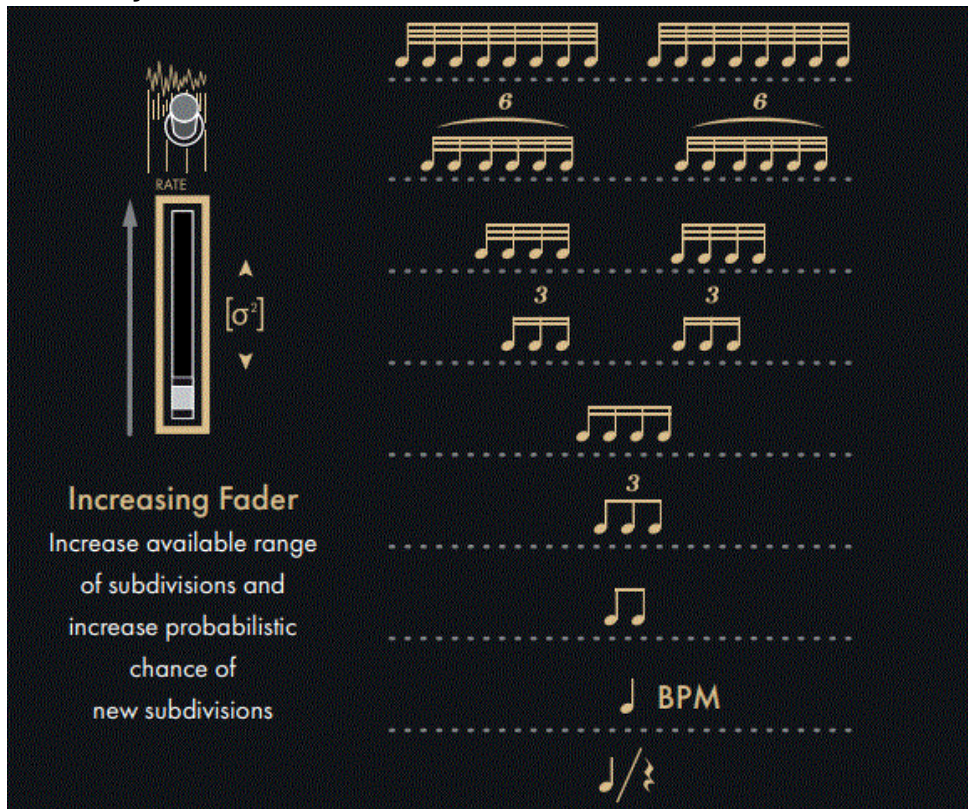13. Use the Down Sample function for BPM related down sampling.
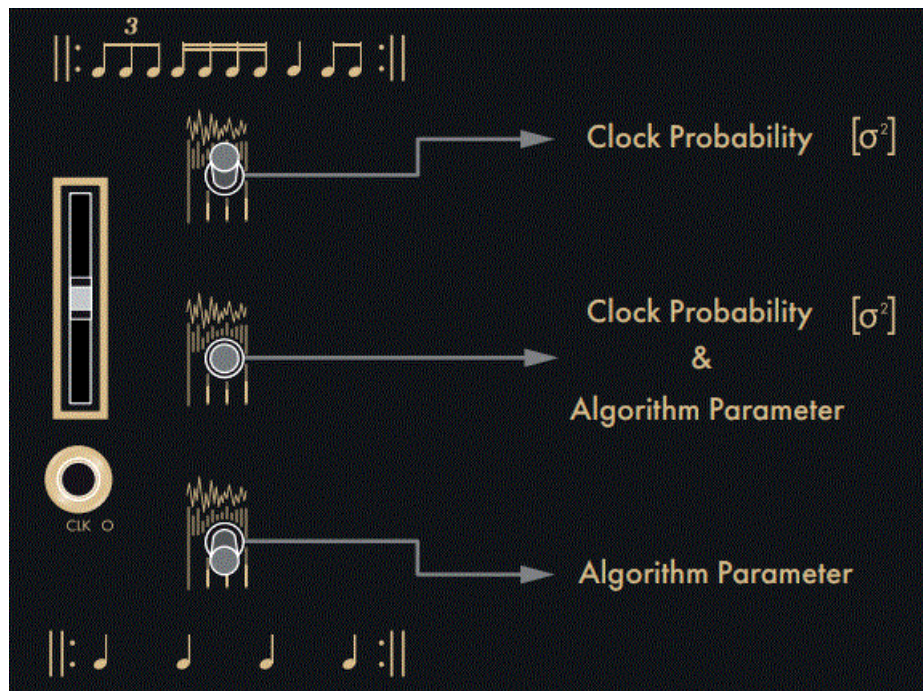
## Analogue Sample & Hold

Signal In

Signal Out

Noise Out

Clock In

## Clock In

Internal BPM

$\downarrow$ =

External
Dynamic Phase
Allignment

(or)

Tap

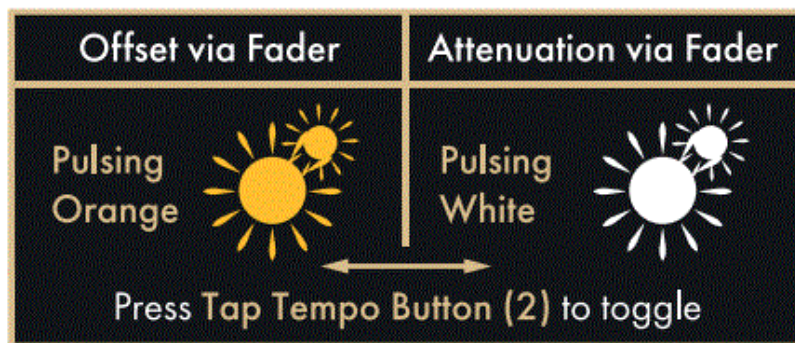## Subdivision Probability



## Fader Control Definition



The Random Toggle defines the function of the fader.

**Button Combinations**



- Factory Reset – Press and hold both Shift Button (1) and Tap Tempo Button (2) and switch Random Toggle (3) up and down 3 times.



- Offset and Attenuation – Press the Shift Button 3 times and hold it on the third press. Press Tap Tempo Button (2) to toggle.
- Algorithm Selection – Press and hold the Shift Button (1) to display the currently selected random algorithm. Shift Button (1) and Tap Tempo Button (2) will cycle through  algorithms. Algorithms are expressed by animated LED cycles.Ascending patterns indicate 1, 2 and 3. Descending patterns indicate 4, 5 and 6.

| | | |
|---|---|---|
| **LEDs** | Algorithm 1 - Classic Stepped Random | Algorithm 2 - Repeatable Stepped Random | Algorithm 3 - Chaos |
| **LEDs** | Algorithm 4 - LFO | Algorithm 5 - Probability - Synced LFO | Algorithm 6 - Downsampled LFO |

**Algorithm 1 – Classic Stepped Random**

Digitally generated random steps derived from pseudorandom number generation. This is the most "traditional" random algorithm.
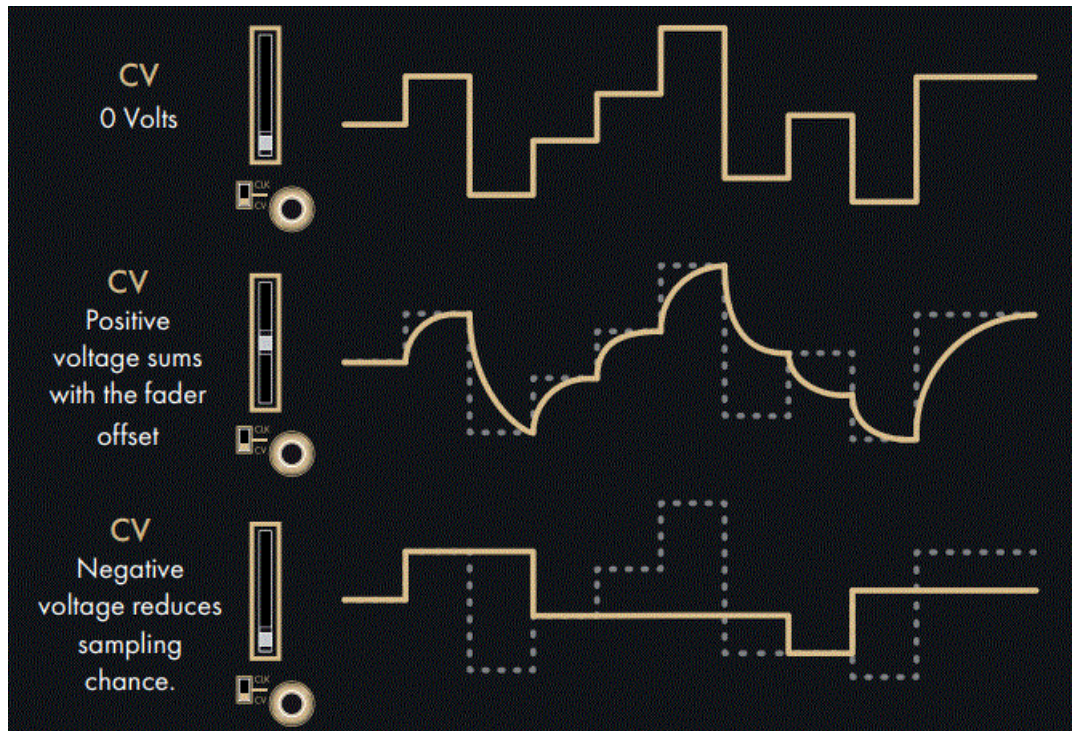


**Algorithm 2 – Repeatable Stepped Random**

Digitally generated random steps derived from pseudorandom number generation.

Fader defines number of step repeats

Pattern repeat
Up to 16 step repeating pattern
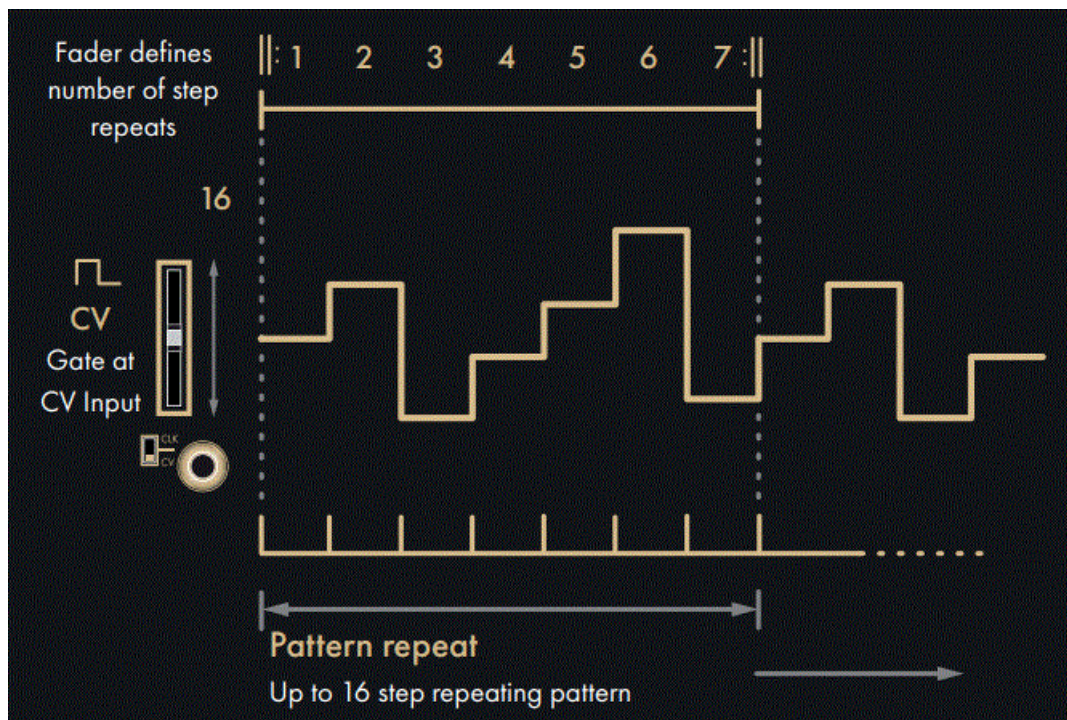
## Algorithm 3 – Chaos

On each clock cycle, the algorithm might flutter, cycle, wobble, produce a random control voltage, or drift. Best suited for slower tempo clocking.
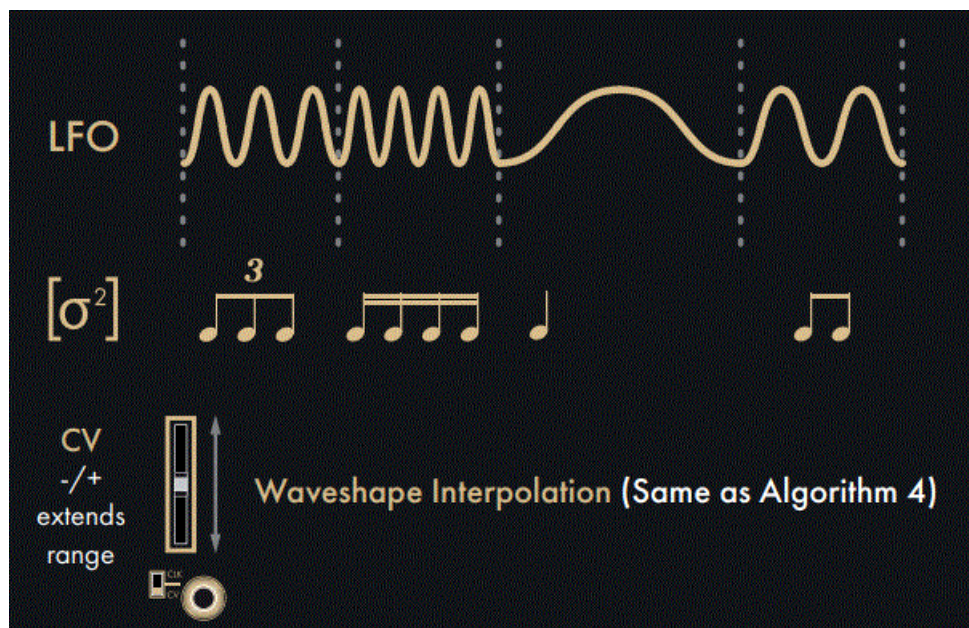


CV sums with fader
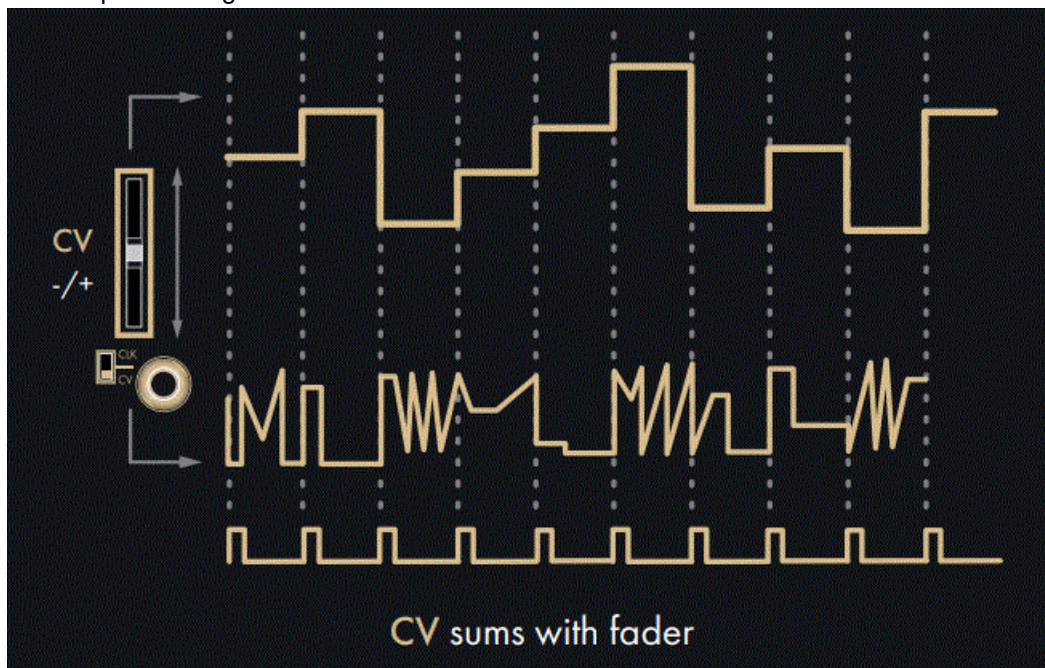
## Algorithm 4 – LFO

LFO rate matches the tempo, but is not phase-aligned. Tempo/frequency changes are fully interpolated and completely smooth.

Waveshape Interpolation
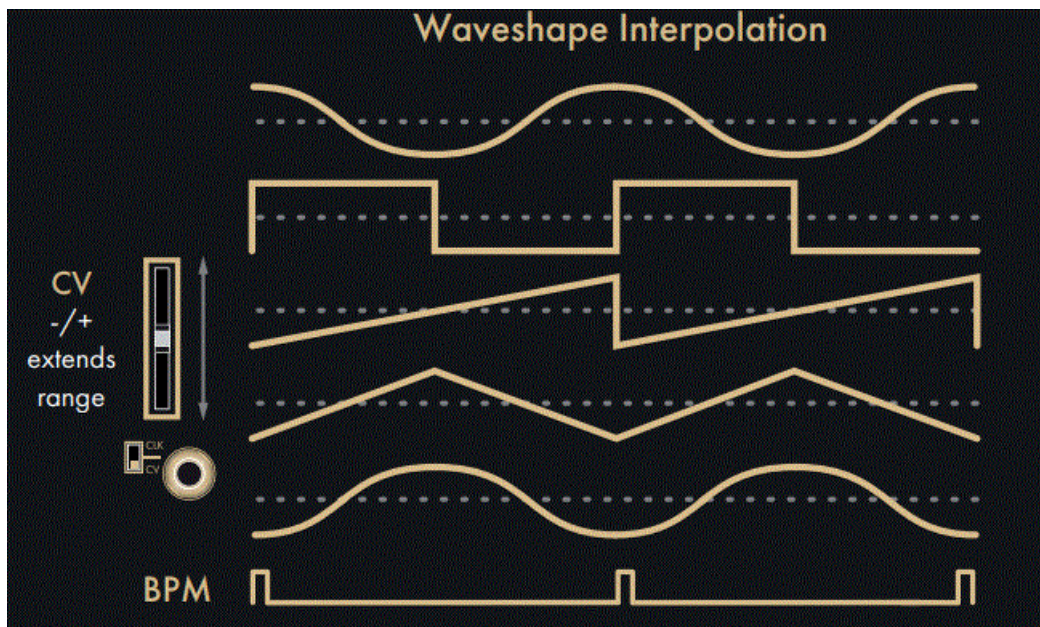
## Algorithm 5 – Probability-Synced LFO

LFO rate matches the rhythmically-relevant subdivisions if the clock probability engine is enabled. Functionally, this algorithm is the same as Algorithm 4, but the LFO frequency will adapt and follow the rhythmicallyrelated subdivisions



## Algorithm 6 – Downsampled LFO

LFO rate matches the tempo, but is not phase-aligned.
Tempo/frequency changes are fully interpolated and completely smooth.
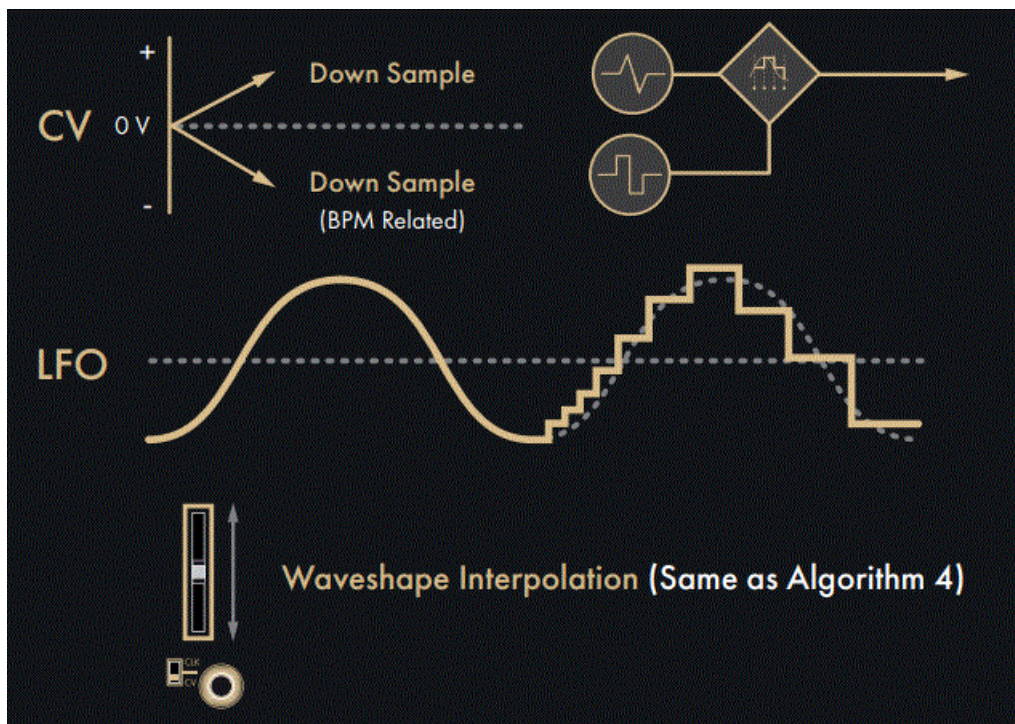
## Documents / Resources



**INSTRUo tagh Hybrid Random Voltage Generator** [pdf] User Guide
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