



HEXINVERTER.NET

presents

jupiter storm

cosmic noise oscillator



USER MANUAL v1.0

Introduction

Jupiter Storm is a cosmic noise oscillator. It creates sounds that can only be described as out of this world! Where it differs entirely from other pure noise generators (such as vcNOIZ) is in the algorithm used to produce the sound. Jupiter Storm has a tonal character very much of its own.

Jupiter Storm does not create pure white noise like the vcNOIZ noise oscillator module from hexinverter.net. Rather, it derives what is similar to noise (but not quite) from three square wave oscillators in a unique algorithm. Some of the sounds possible are reminiscent of the sound of a broken radio being blasted with noise from the cosmos, hence, the name "cosmic noise oscillator". This creates noise with significant harmonic content and other such interesting timbres you will not hear anywhere else!

Engage the Noise Core Disruptor to create horrific sounds. In this mode, part of the noise core is creatively abused in order to generate insane sonic textures.

Voltage control inputs for all three square wave VCOs in the noise core are available as well as a control voltage input that addresses all three oscillators at once. In this way, very dynamic sounds can be achieved with complex modulation routing. For example, you can apply a taste of LFO modulation to all three oscillators, while modulating a select oscillator simultaneously on its own with something more drastic.

This module is based entirely around analogue opamps and discrete logic gates. No microcontrollers are used in the design of this module.

Feature List

- Unique square wave noise core creates everything from pitched square wave ringmod-esque textures to hissing and screeching noise tones
- Noise core square wave VCOs (not v/oct, but close) each have an output so drones can be created simultaneously alongside noise
- Noise Core Disruptor mode creatively abuses the noise algorithm into creating very interesting noise timbres
- Four noise outputs, each with their own unique sound in Noise Core Disruption mode
- Control voltage input for each oscillator as well as ALL oscillators at once. This allows the creation of complex modulation easily

- Planned expansion module adds percussion-specific features that turn Jupiter Storm into a very capable percussion/sound FX synthesis machine

Technical Specifications

Module width: 14HP (eurorack)

Module Depth: 25mm (eurorack)

Current consumption: +30/-30mA @ 12V

Control/Panel Descriptions



OSC1/2/3 Controls -- These knobs control the base frequency of each of the square waves in the Noise Core. A lot of change in sound can be experienced simply from playing with these controls.

OSC3 Switch -- This switch turns OSC3 on/off in the Noise Core, so, the complexity of the resultant noise can be altered. The effect of OSC3 being on or off is most obvious when the Noise Core Disruptor is OFF.

Noise Core Disruptor -- Turning this mode of operation ON creatively abuses the circuitry in the Noise Core, warping the sounds coming out of the module into new sonic territory. Note that outputs function differently based on whether the NCD (Noise Core Disruptor) is on or off.

OSC1/OSC2/OSC3 Outputs -- These output the square waves present in the Noise Core for use elsewhere in your modular environment. Due to the nature of the NCD, when the NCD is enabled, OSC1's output will warp from a square wave into something more resembling noise. THIS IS COMPLETELY NORMAL and is simply a byproduct of the way the NCD operates. OSC2 and OSC3's

outputs should output square waves in all modes of operation.

CV Inputs -- These are exponential response CV inputs (close to but not quite v/oct) that alter the frequency of their respective oscillators in the noise core.

I Output -- This is the primary noise output for the module. It produces noise-like timbres whether the NCD is on or off.

IV, VII and XI Outputs -- These are the alternate noise outputs, named after the moons of Jupiter. They output noise that sounds different than the I output. When the NCD is switched OFF, these outputs spit out square waves lower in frequency than the I output. You could use these brief pulses as triggers for triggering percussion or events based on the noise Jupiter Storm is creating. When the NCD is switched ON, however, these outputs generate noise that is completely different in characteristic from the I output. Try mixing these outputs together and generating different percussion simultaneously by using the different outputs all at once.

Some Patch Ideas

Not sure where to start with Jupiter Storm? Here are some basic ideas to get you started!

Patch Idea 1: Noise Textures

Jupiter Storm's outputs can generate a wide range of frequencies, and thus, the module is very useful for creating intense pads and other thick textures. Try using Jupiter Storm like a regular VCO by patching it into a VCA and applying an envelope with a slow attack and long release to it. Play this with a keyboard or other modulation source. Add in some other elements to the sound -- perhaps a drone going underneath the noise from Jupiter Storm.

Patch Idea 2: Filtered Noise

Jupiter Storm sounds great unfiltered, but, sometimes you are going for a more controlled sound and would like to filter it. Patch the noise through a resonant lowpass filter for those classic "howling wind" type sounds. While this may sound similar to white noise through a filter, guaranteed there are going to be interesting artefacts present in the resultant timbre that are not there with a pure white noise source due to the complex nature of the noise Jupiter Storm creates.

Because Jupiter Storm creates such a wide spectral density of noise, it might be wise to patch it through a bandpass or highpass filter when mixing it with a multitude of other sounds. A highpass filter sounds excellent for crunchy and very intense sounds that cut through a mix with ease.

Patch Idea 3: Filter “pinging”

Jupiter Storm’s Noise Core algorithm is based on square waves. This means that the edges of the noise waveforms produced by the module are often sharp when not filtered. This makes them excellent for “pinging” resonant filters.

Try the IV, VII and XI outputs as input sources for a resonant filter while the NCD is OFF. These outputs will spit out square wave pulses based on the noise being generated by the module at the main outputs, so, you can use these elements together in a performance. By “pinging” a resonant filter like this, you can get cool “water drop” and wooden block like sounds.

Even when the NCD is ON and all of the outputs are noise, the noise still contains a lot of sharp edges that will excite resonant filters irregularly for some very interesting sounds. Experiment!

Patch Idea 4: Percussion Synthesis

The unique sounds Jupiter Storm creates are excellent candidates for synthesizing interesting percussive elements. Use the expansion module for this task (coming in Summer 2013), or, simply patch an output of Jupiter Storm into a VCA being driven by a percussive (fast attack, short decay) envelope.

Passing the resultant sound through a highpass filter is a great way to make crisp cymbal sounds, while using the module through a lowpass filter and adding a short envelope to the CV input of Jupiter Storm can create some really interesting sounding bass drum like sounds.