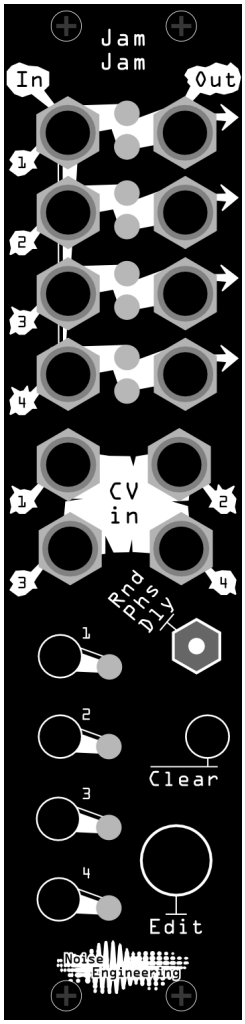
Noise Engineering

Jam Jam

Four-channel trigger/gate/clock processor with three modes.

Overview

Type	Trigger/gate/clock processor
Size	6 HP
Depth	.9 inches
Power	2x5 Eurorack
+12V	40mA
-12V	10mA
+5V	0mA



Jam Jam is a four-channel trigger and gate processor with three modes: Random, Clock Phase, and Gate Delay. JJ is so versatile, you'll find use for it in every patch.

Add a bit of variety to your patch with Random mode: use four channels of individually adjustable probability to process gate or trigger patterns.

Use Clock Phase mode to add some organic feel to your sequences—or break them in and out of sync completely.

Gate Delay mode is a powerful timing tool useful for anything from precise adjustments for latency compensation to big changes for creative patching: delay events from sub-millisecond adjustments to huge delays of over 15 seconds.

Jam Jam is a musical and fun utility you won't want to be without. And with voltage control over each channel in all modes, Jam Jam is a completely new way to work with binary signals in your patches.

Etymology

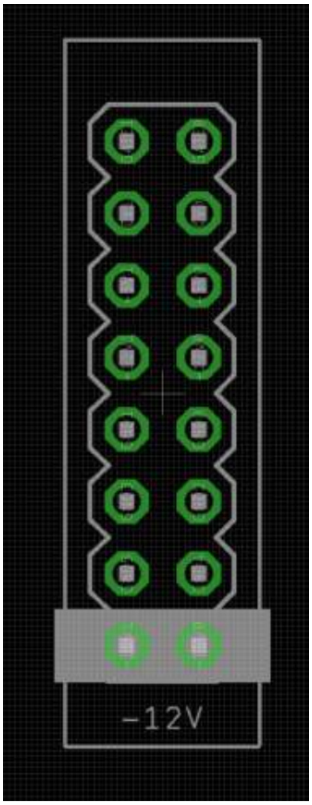
Jam – from English**:** "to improvise on a musical instrument with a group; to take part in a jam session"

Jam – from English: "a difficult situation or state of affairs"

Or **Jam –** from British English: "a fruit spread; very delicious on toast with tea"

"A difficult jam session (we've all been there) but there are great snacks"

Power



To power your Noise Engineering module, turn off your case. Plug one end of your ribbon cable into your power board so that the red stripe on the ribbon cable is aligned to the side that says -12v and each pin on the power header is plugged into the connector on the ribbon. Make sure no pins are overhanging the connector! If they are, unplug it and realign.

Line up the red stripe on the ribbon cable so that it matches the white stripe and/or -12v indication on the board and plug in the connector.

Screw your module into your case BEFORE powering on the module. You risk bumping the module's PCB against something metallic and damaging it if it's not properly secured when powered on.

You should be good to go if you followed these instructions. Now go make some noise!

A final note. Some modules have other headers -- they may have a different number of pins or may say NOT POWER. In general, unless a manual tells you otherwise, DO NOT CONNECT THOSE TO POWER.

Warranty

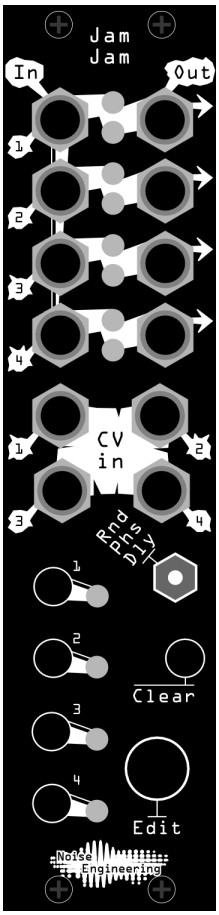
Noise Engineering backs all our products with a product warranty: we guarantee our products to be free from manufacturing defects (materials or workmanship) for one year from the date a new module is purchased from Noise Engineering or an authorized retailer (receipt or invoice required). The cost of shipping to Noise Engineering is paid by the user. Modules requiring warranty repair will either be repaired or replaced at Noise Engineering's discretion. If you believe you have a product that has a defect that is out of warranty, please contact us and we will work with you.

This warranty does not cover damage due to improper handling, storage, use, or abuse, modifications, or improper power or other voltage application.

All returns must be coordinated through Noise Engineering; returns without a Return Authorization will be refused and returned to sender.

Please contact us for the current rate and more information for repairs for modules that are not covered by our warranty.

Interface



Jam Jam is a four-channel trigger and gate processor with three modes. The mode behaviors are described below.

Mode selection applies to all four channels, but channel values can be edited separately. Each channel has a button that enables or disables it for editing; when a channel is enabled for editing, the LED next to its button will flash, and turning the encoder will change its settings.

Multiple channels can be adjusted at the same time. If multiple channels are set to different values and then edited simultaneously, the encoder will respect the difference in their settings as they are adjusted further.

In 1-4: Gate/trigger/clock inputs. Pulsewidth is respected in all modes (minimum 5ms). Inputs are normalled top to bottom. Patching to an input breaks normaling from channels above.

Out 1-4: Gate/trigger outputs

CV in 1-4: CV inputs for each channel. Responds to 0-5V.

Channel buttons 1-4: Used to select which channels are edited by the encoder. Channel selection does not affect CV response. Channel LEDs flash when selected.

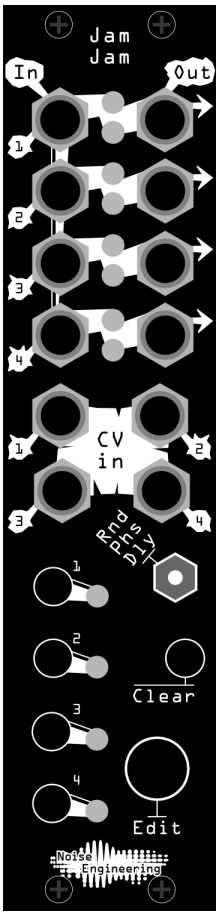
Clear: Resets selected channels to minimum. Tapping again after resetting takes selected channels to their previous settings.

Edit (encoder): Adjusts selected channels. Press and turn for coarse adjustments, or turn for fine tuning. Channel behavior varies depending on mode (described below).

Rnd/Phs/Dly: Mode select switch.

- **Rnd (Random):** A probability mode. Randomly skips gates. The encoder and CV input adjusts likelihood that a gate will be passed through, from 0% to 100%. Tracks the incoming gate pulse width (minimum 5mS).
- **Phs (Clock Phase):** Different from a traditional trigger delay, this algorithm adjusts the phase of an incoming clock based on clock period, useful for creating slightly out-of-sync and varied sequencer timing. The encoder and CV input adjust phase offset. The algorithm used for phasing keeps track of incoming pulses and compensates for incoming modulation, so sequencers will be kept in sync even with extreme modulation and high BPMs (over 80hz/200 BPM at 24ppqn). It also tracks pulse width of incoming clock signals (minimum 5mS).
- **Dly (Gate Delay):** A simple trigger/gate delay. The encoder and CV input adjust delay time, from roughly 50uS (0.05mS) to over 15s. The delay tracks incoming gate pulse width (minimum 5mS).

Patch Tutorial



Random: Set the switch to Rnd. Patch a trigger sequence to Input 1. Patch Out 1 to a triggered voice like BIA. Adjust the randomness by tapping the 1 button (the LED will flash when it's selected) and turning the encoder.

Since the channels are normalled together, you can patch the other 3 outs to different voices and adjust their probability independently, too. This creates randomized but somewhat related patterns from the input rhythm.

Clock Phase: Set the switch to Phs. Patch a clock signal to input 1. Patch output 1 to the clock input of a sequencer like Mimetic Digitalis. Modulate CV 1 with a signal like a slow LFO or a long envelope to vary the timing of the sequencer.

Similar to the Random patch, multiple sequencers can be run off a single clock. By adjusting their phase either with CV as above or manually with their encoder, a huge amount of sequencer variation can be achieved while keeping everything in sync.

Delay: Set the switch to Dly. Patch a slow trigger sequence to input 1, and a few of the outputs to different triggered voices. Add different delay times to each channel: small delays will create flam effects, and long delays will create off-beat patterns and call-and-response effects.

Input and output voltages

Jam Jam's trigger inputs have a threshold of about 1.8V. Its trigger outputs are about 6V. Its CV inputs have a range of 0V to +5V; CV outside of this range will not harm the module but will be clipped.

Design Notes

In October of 2020, JJ Abrams emailed to ask about a module that could do phase delays. After 17 emails back and forth, we were convinced that what he was interested in didn't exist on the market, but hey, we knew some people who might be able to make it happen.

At the beginning, it seemed like one of those charmed modules. We designed a module pretty quickly and had room for more modes. More emails ensued. Ideas were solidified. Prototypes were built. It was all moving along fast and simple.

And then when we were pretty much ready to go to production when the microprocessor that this module (and several others we had in the pipeline) is built on disappeared.

It was obnoxious. Several things were delayed; one of the modules we were excited about got canned because by the time we could release it, there were other, more cost-competitive products out there. But this one? This one we are excited about.

When JJ asked about it, we thought it would be cool, but once we had it running, we couldn't believe what this thing could do. Markus has never gotten distracted from testing this because they were just playing…nope, not at all. It's got all the things we love here at NE: small footprint, immediate usability, tons of functionality. Get Jammin with Jam Jam.

Special Thanks

JJ Abrams

The parts gods who smiled upon us and finally gave us the chips for this module after almost 2.5 years.