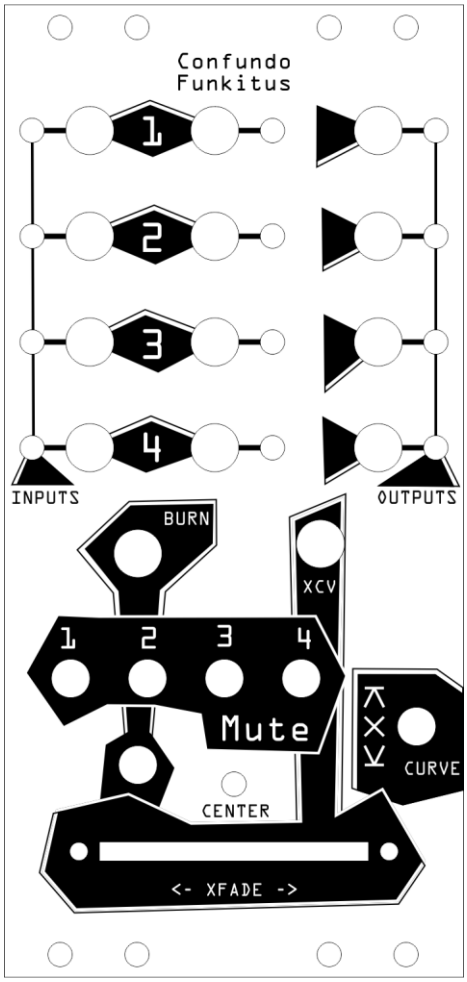
Noise Engineering
Confundo Funkitus
Four-part probabilistic rhythm crossfader

Overview

Type	Rhythm Crossfader
Size	12HP Eurorack
Depth	.8 Inches
Power	2x8 Eurorack
+12 mA	50/20 mA
-12 mA	11 mA
+5 mA	0/20 mA



Confundo Funkitus crossfades between two sets of four rhythms using probability. Three different probability curves can be selected to control the behavior of the crossfader. Per-part switch mutes are included with live performance in mind.

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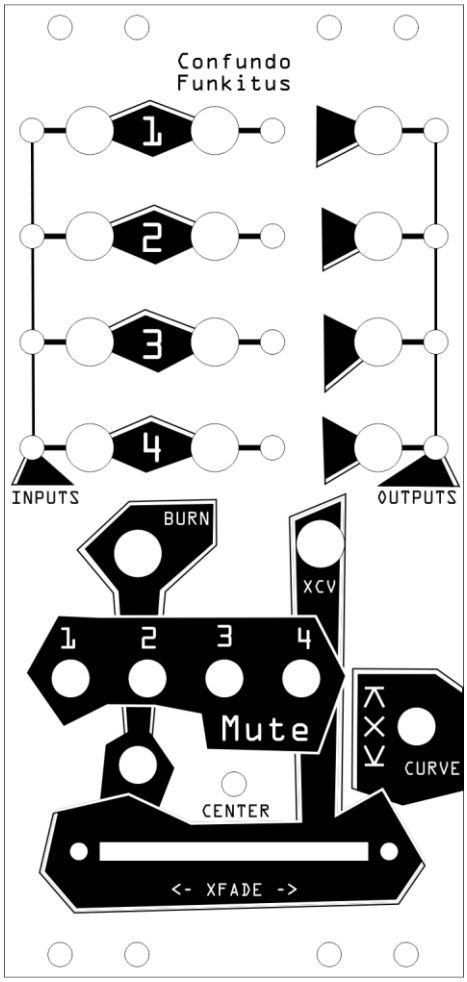
Patch Tutorial



Connect up to four rhythm outputs to each of the two sets of inputs (for example, Numeric Repetitor or Zularic Repetitor). Connect the outputs to modules that take triggers. Drums that take triggers such as Basimilus Iteritas are perhaps the easiest.

Toggle the Curve switch to the top position. If the crossfader is fully left, then only inputs on the left will create gates. If the crossfader is positioned in the middle, the Center light is illuminated the two rhythms are blended together: gates are generated any time either rhythm is played. If the crossfader is all the way to the right the gates generated come from the second (right-hand) set of inputs.

Between these extremes the produced rhythm is a combination of both sets of input weighted by the position of XFADE and which curve is selected.

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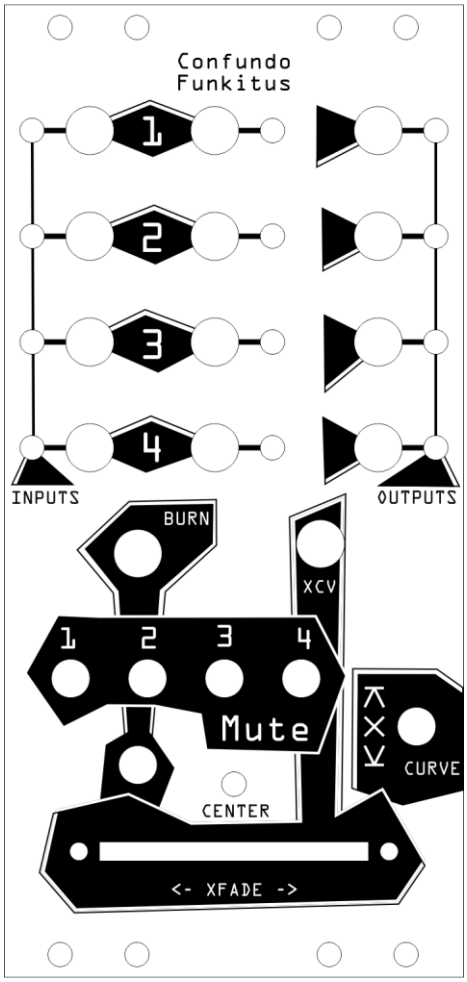
Interface



Inputs 1-4 Left
These are gate inputs that feed into the crossfader core. They represent the rhythm that will have 100% probability when the crossfader is fully left.

Inputs 1-4 Right
These are gate inputs that feed into the crossfader core. They represent the rhythm that will have 100% probability when the crossfader is fully right.

Outputs 1-4
Where the combined rhythm emerges. Each output is a probabilistic combination of its two similarly numbered inputs.

Mutes 1-4
These switches mute their respective output channels.

Curve
Three probability modes are available to set the probability function used by the crossfader. The behavior is best understood by discussing what happens when XFADE is centered.

 In this position both parts have 100% probability in the center. This is equivalent to adding them together.

 In this position each part has a 50% probability when the crossfader is in the center: the output rhythm is an equal blend of each part.

 In this position the output rhythm is silent when the crossfader is in the center. This allows either rhythm to be faded to silence.

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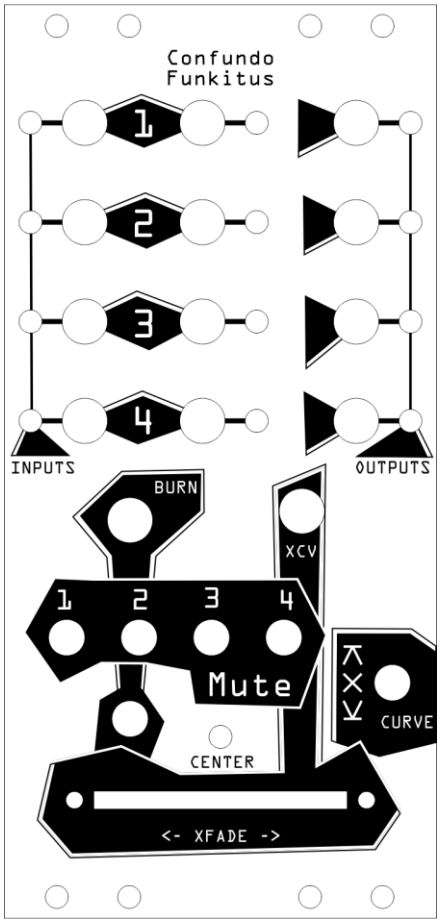


Interface

XFADE
XFADE is the heart of the Confundo Funkitus. Its position, along with the current Curve mode, controls the probability that an individual input gate will be sent to the output.

XCV
XCV grants CV control over the XFADE controller. XCV is additive with the XFADE control and allows XCV to be unipolar, bipolar and negative unipolar, depending on XFADE's position. If XFADE is fully left, XCV acts as a unipolar input. When centered, it acts as bipolar. When fully right, it becomes a negative unipolar input.

BURN
Burn is a button and gate input that pushes all 8 inputs to their outputs, providing a quick way to trigger a short, intense burst of rhythm.

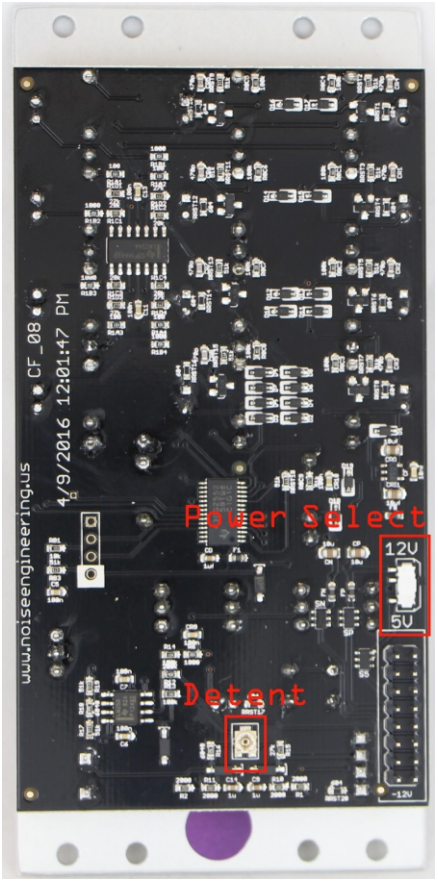
Center
The LED will illuminate when the XFADE is centered. This is used for giving visual feedback that the crossfader is in the center position as well as for calibrating the position of the detent (see below).

5v/12v (rear panel)
This switch controls if the digital core runs on the 5v or the 12v rail.

Running on the 5v rail will reduce noise on the 12v bus, but as not all power supplies offer 5v, Confundo Funkitus can also run on 12v.

Detent Calibration (rear panel)
New Confundo Funkitus **should not** need this adjustment, but over time parts can drift. The relationship between the detent position and the center light can be adjusted with the detent calibration.

Simply center the XFADE, then adjust the calibration trimmer until the Center LED lights.



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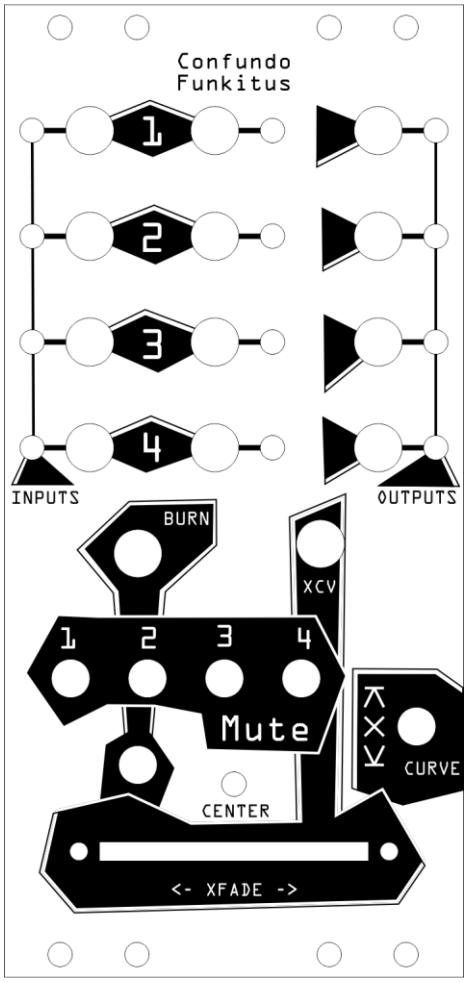
Design Notes

The idea for Confundo Funkitus was suggested to me by Aaron Funk in 2014, who wanted to be able to crossfade between two sets of rhythms. A prototype was in hand pretty quickly, but a fair amount of polish has since gone into the final version.



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