

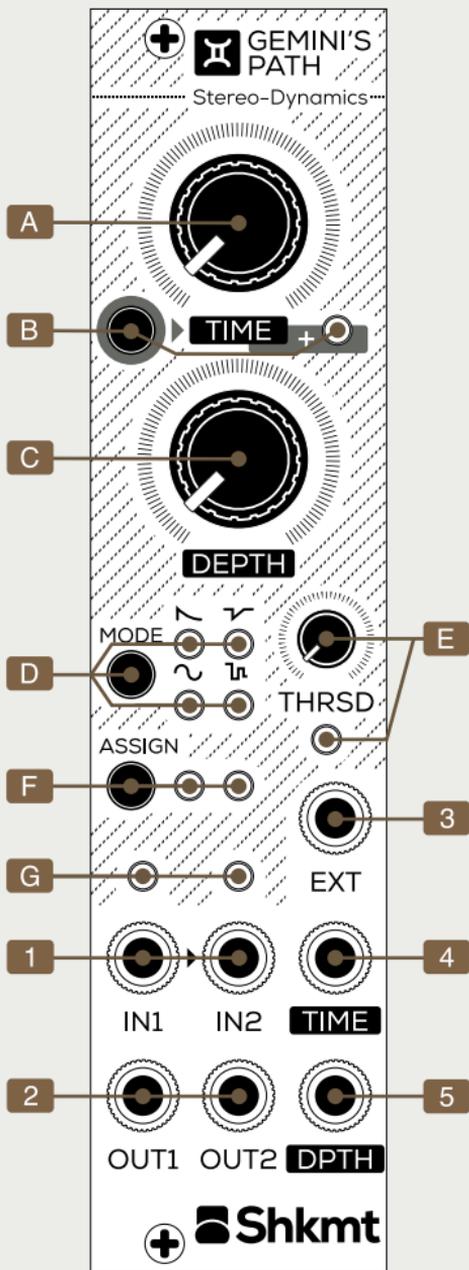


Shakmat Gemini's Path

● 6HP Eurorack Module

● Built & designed in Belgium

● www.shakmat.com



Introduction

With its ups, downs, tortuous turns and happy-go-lucky surprises, the Gemini's Path is a real swiss army knife for your stereo and dynamics duties. The Gemini's Path consists of two analog VCAs controlled by a handy modulation source which can take the shape of an expander, an intuitive compressor-like device, offer different panning solutions, and more! Thanks to its trigger detector, the Gemini's Path extracts triggers from any CV or audio signal source and reacts to transients, allowing for quick reactivity in dynamic contexts.

- 1 Audio inputs
- 2 Audio outputs
- 3 External input
- 4 Time CV input
- 5 Depth CV input
- A Time potentiometer
- B Time+ button & LED
- C Depth potentiometer
- D Mode button & LEDs
- E Threshold potentiometer & trigger detection LED
- F Control assign button & LEDs
- G Activity LEDs

Installation

The Gemini's Path requires a standard 2x5 pin eurorack power cable. Make sure the red stripe on the cable matches the -12V side of the Gemini's Path power header.

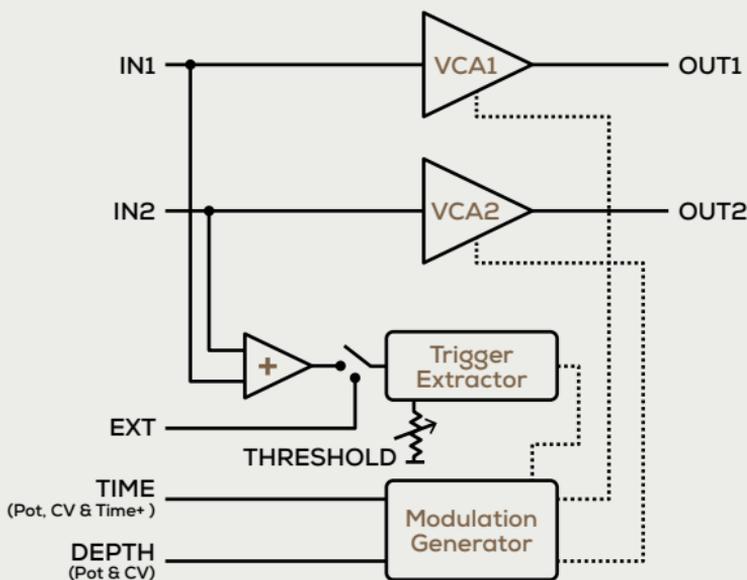
Basics

The Gemini's Path contains 3 separate parts:

A pair of VCAs that process the audio signal and provide a completely analog signal path.

A trigger extractor composed of a full wave rectifier, an envelope follower & a trigger detector. The sum of the audio inputs [1] is normalised to this input section, which can also be driven by inserting a jack into the External input [3]. The Threshold potentiometer [E] sets the detection level of the trigger detector. The Threshold LED [E] indicates when a trigger is detected.

A Modulation Source : receiving the incoming trigger from the precedent section, the modulation source generates envelopes, LFOs or random signals, and drives the VCAs control input. Each channel amplitude is shown by its activity LED [G].

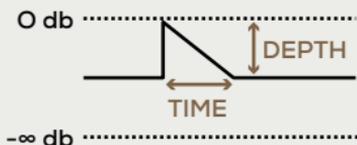


Modes

The mode defines which kind of modulation is produced by the modulation generator. To switch between the modes, press the Mode button [D], the four Mode LEDs show which mode is operating. There are 4 basic modes:

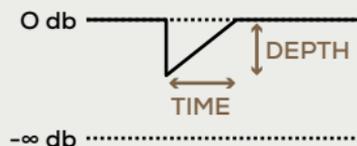
Expander

This mode generates a release type ramp at each detected trigger, the Time [A] parameter acts onto the release time and the Depth [C] defines to which level the expander closes.



Pump

This mode simulates a compressor's behaviour. As the module is normally at a 0dB attenuation, the gain drops to a level defined by the Depth [C] parameter and goes back to 0dB during the period defined by the Time [A] parameter.



LFO Pan

In this mode a sine LFO is controlling the panning of the signal. The Time [A] parameter controls the LFO speed while the Depth [C] parameter acts on the stereo spread. The trigger acts as a soft (reverse) sync on the LFO.

Random Pan

Similar to the previous one, this mode generates a slewed random signal to control the position of the audio within the stereo image. Time [A] acts on the random signal's rate and Depth [C] on the stereo spread. Triggers cause the random generator to pass to another value.

Alternative Modes

Holding the Mode button [D] for 2 seconds let you access a set of four alternative modes indicated by blinking Mode LEDs :

Hold Expander

Same as the expander, only difference is that the VCAs are controlled by a hold function rather than a release envelope.

Animated Pump

Same as the pump function but the curve includes a positive saw LFO.

Auto Pan

Each time a trigger is received the panning goes to the other side of the stereo image. Time [A] defines at which speed the panning effect occurs and Depth [C] sets how far the signal goes within the stereo image.

Granuliser

This mode produces random sharp gates for a random duration defined by the Time [A] parameter. The stereo spread is controlled by the Depth [C] parameter. It simulates a granular like synthesis processing but in an analog way! Works best with high pitched and continuous material.



Holding the Mode button for 4 sec. activates the VCA mode. This mode disables the trigger section and gives simple control of the pan & volume of the stereo signal.

Time+

Want to play it smooth and easy? Activate the Time+ function which slows down the time range and limits the slew of the generated modulations. To do so press the Time+ button [B], the Time+ LED turns on when the function is active.

Control assignment

The control assignment defines the way the modulation generator is controlled by the user interface. To switch between the configurations, press the Assign button [F]. The config is shown on the Assign LEDs:

Shared Controls



Both channels are controlled by the Time potentiometers [A], and CV inputs [4], same for the depth.

Dual Channel Controls



The Time potentiometer [A] & CV input [4] act on the time of the first channel, the Depth potentiometer [B] & CV input [5] act on the time of the second channel. Both depths are at the maximal value. Note that the LFO & Random Pan modes are now turned into two LFOs / Random Generators controlling each channel's amplitude. In VCA mode, you now simply control each channel's amplitude.

By holding the Assign button [F] for 2 sec. you can switch to Single Channel Configuration. This configuration is not accessible in VCA mode and the CV inputs only act on the first channel's parameters:

Single Channel: 1



This configuration offers full control of the first channel's modulation. Same as above, the LFO & Random modes act on the amplitude of the channel.

Single Channel: 2



Same as above but controls are now set to channel 2.



**Did you know the inputs are DC coupled?
So the Gemini's Path is also a great tool
to mangle modulations amplitude !**

Trigger/Gate setting

By default the module reacts to triggers, which means each time the audio signal exceeds the threshold level of the trigger extractor section, the modulation generator is triggered, no matter how long the signal exceeds the threshold.

It is possible to select whether the module should react to gate or trigger. In the gate mode setting the modulation section is kept in a waiting phase as long as the incoming signal exceeds the threshold. In this waiting phase, pump is keeping the attenuation up & expanders are open.

To switch between trigger & gate, hold the Time+ button [C] when powering on the module. The Time+ LED will blink for a second, then the module will start normally.

Current state storage

To store the current state of the module & return to it at start, hold the Time+ button [C] for two seconds. The Time+ LED will blink to confirm the saving. This operation stores the selected Modes, Time+ configs & Control assignment.

Patch ideas

Expander & Hold Expander

Obvious application is a decay on a stereo source (external triggering, shared control, with depth at max). With Dual Channels assignment, you can feed the inputs [1] with a sine wave & a noise, then mix the two outputs [2] and you get a snare drum generator with decay control on both sources. You can also auto accentuate drum groups, think side chain with a filtered version of the signal to select part of the spectrum that accentuates. In the Hold Expander mode, think about sustain duration applications such as in the old samplers.

Pump & Animated Pump

Feed the input [1] with a stereo pad, a bass or whatever, send the kick drum in the External input [3], adjust the Threshold [E] & there you go! You can also use this as two mono side chain compressors, triggered from the same element.

The Gemini's Path is not a *real* compressor, but we encourage the user to use it that way, especially on percussive sources. Even without an external triggering, the Pump & Animated Pump modes can lead to very special compression effects.

Pannings

The normalised input [1] allows to easily turn a mono source into a stereo signal. Create special panning effects while using the LFO Pan in two / independent channels. Mono Sine modulation leads to tremolo effects, mono "auto panning" can be used to mute & unmute signals. Mixing the outputs [2] opens the door to crossfading, which can be easily controlled in Auto Pan mode.

Specifications

Size

6 HP

Depth

29 mm

Current Draw

50 mA @ +12V

30 mA @ -12V

0 mA @ +5V

CV Inputs

0 to 5V

Analog Inputs & Outputs

-10 to +10V

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 **Shakmat**

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