

Dual Low Pass Gate

Quick Specs:

Size: 8hp Wide, 1.625 inches deep (including power header)

Power Draw (max): +12V: 10mA, -12V: 10mA

Two channel Vactrol-based Low Pass Gate with dynamics control

Hand matched, high quality film capacitors in the audio path

Hand matched Vactrols between the two channels

CV circuit tuned to compensate for each Vactrol's natural variations

Unique circuit that provides great off-ness, meaning no audio bleed

Limited Release, Handmade in NYC

Installation:

To install the Dual Low Pass Gate, allocate 8hp of space in your modular case. Before installing the module, examine the ribbon cable and ensure that the red stripe aligns with the **RED STRP (-12V)** indicator on the PCB. When installing the ribbon cable on the PSU of your modular case, ensure that its red stripe aligns with the **-12V** or **RED STRIPE** indicator on the power supply PCB. Failure to do so can result in permanent damage to the Dual Low Pass Gate, your power supply, and/or other modules in your case. When the ribbon cable is guaranteed to be in its correct position, place the module in your case, screwing the panel to the rails.

What does it do? :

The dual lowpass gate is a two channel vactrol-based lowpass gate. This module takes inspiration from classic lowpass gates of the past and present, while improving circuit performance.

With a completely unique CV circuit, this lowpass gate is able to tightly follow incoming CV, making it the perfect companion for voltage controlled envelopes. This improved CV circuit allows the module to maintain great off-ness, meaning that when incoming CV is at 0 volts, the module's output is completely silent.

Each channel features a dynamics control alongside the expected CV input, allowing the user to modulate how tightly the lowpass gate follows incoming CV. As the dynamics control is turned counter-clockwise, the lowpass gate will respond in a manner that is shorter and pluckier. Turning the dynamics control fully clockwise will allow the lowpass gate to fully open and decay more gradually.

How to patch it? :

Patching the dual lowpass gate is simple. Apply a standard +/- 5V oscillator to the signal input. Find a CV source, like a decay envelope, and apply it to the CV input. Turn the corresponding CV knob fully clockwise, while doing the same for the dynamics knob. Apply the output of the lowpass gate to the output of your modular system and then trigger your envelope while listening to the output.

Because the audio path utilizes a two-pole voltage controlled lowpass filter coupled with a VCA in a single gain stage, increasing CV will cause the output to become louder and brighter, and decreasing CV will cause the output to become quieter and darker. This characteristic mimics the dynamics of acoustic sounds in the real world, which is why lowpass gates are great tools for building percussive patches.

A little more complex: Turn the dynamics panel control counter clockwise, so that the lowpass gate becomes darker and pluckier. Find another CV source in your system, like an LFO. Apply the LFO to the dynamics CV input. Adjust the dynamics panel control to taste and externally attenuate the LFO, if needed. Listen to how the dynamics circuit acts as a velocity control for the lowpass gate. Sometimes the lowpass gate will open up brightly and loudly, other times it will sound dark and subdued.

a quick note: Some lowpass gates are able to be “pinged”, meaning that a gate or short trigger applied to the CV input will briefly excite the vactrol, causing the lowpass gate to open and then naturally decay. Because of the unique CV circuit, this lowpass gate is unable to be “pinged” and is intended to be used with voltage controlled envelope generators. As the decay/release time of an envelope becomes longer, you will hear the lowpass gate become brighter and louder, and as the decay/release times shorten, the lowpass gate sounds darker and quieter. By modulating envelope times, this lowpass gate becomes incredibly dynamic, providing a lot of musical variation to what would otherwise be a static patch. Long form examples of this behavior can be found on our [SoundCloud page](#).

Low Pass Gate ch. 1

Input:

DC Coupled Signal Input

Expected Range: +/- 5v

Dynamics:

Determines how the Low Pass Gate responds to incoming CV

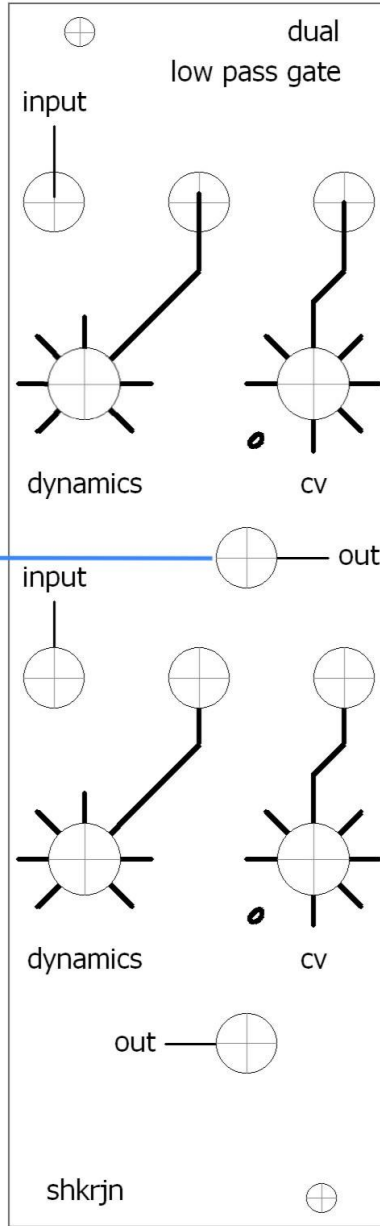
As the knob turns CCW, the low pass gate responds in a manner that is shorter, darker, and pluckier

The associated jack sums external CV with the dynamics panel control

Expected range of this sum is 0 - 10V

Low Pass Gate ch. 2

Functionally Identical to channel 1



CV:

The CV input simultaneously controls the amplitude of a VCA and cut off frequency of a two-pole LPF, which are coupled into a single gain stage

At 0V, the low pass gate is fully closed; the output is fully attenuated to silence

As the CV increases to 10V, the output increases in amplitude and brightness. At 10V the Low Pass Gate is fully open

Apply external CV at the input jack and attenuate it with the associated knob