Black Cloud Industries

Gated Comparator

Hybrid Comparator/Shift Register

Introduction

This is a gate sequencer that combines the functions of a comparator with a shift register. It also generates pseudo-random CV sequences that can be used for note patterns or other modulations.

An adjustable voltage comparator monitors the”In” input and generates a positive gate signal on "Comp. Out" whenever the input signal meets or exceeds the threshold set via the "Thres." knob and CV Input/Attenuverter combination.

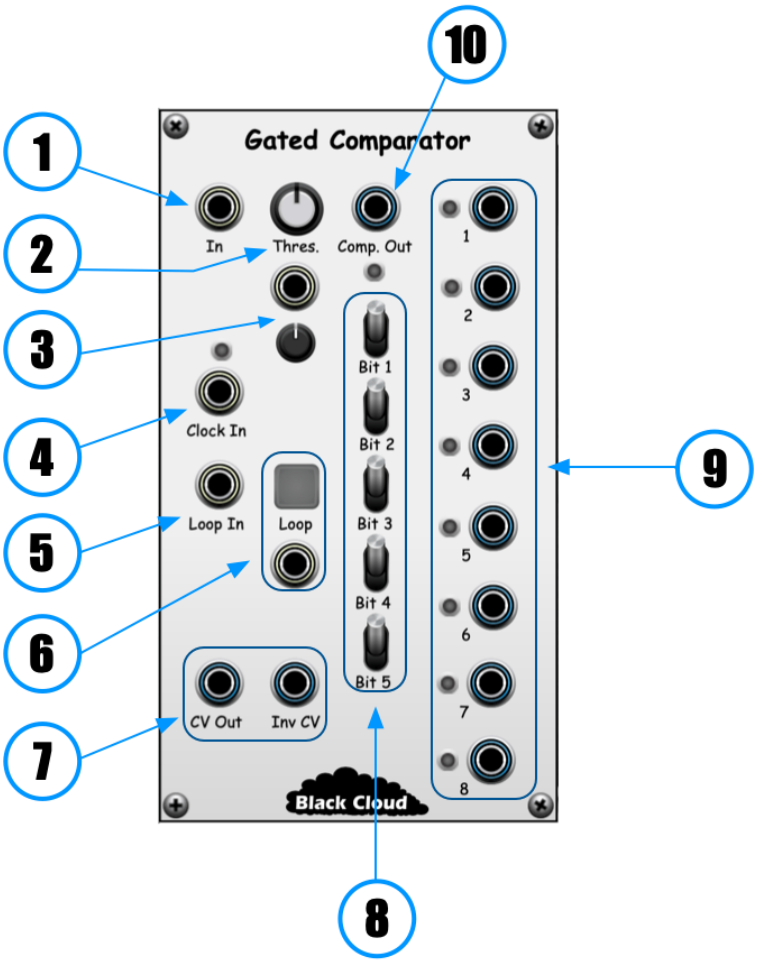
An 8 stage Shift Register is driven by the clock pulses received at the "Clock In" jack, with the Comparator result when being added as a new value at the first stage.

The Shift Register can be commanded to loop the current values either manually or via a gate signal at the "Loop" CV input. A "Loop In" jack is provided to chain the shift register from another Gated Comparator module.

Two pseudo-random CV outputs are provided ("CV Out" and "Inv CV Out") which produce stepped 0 to 5 volt outputs based on the current contents of the Shift Register.

Five "Bit Switches" control whether or not bits 1 (LSB) through 5 from the shift register should be used when generating the CV voltages.

Knobs, Buttons and Sliders



1	**In** Input for a variable CV source to be compared to the Threshold.	**6**	**Loop Button and CV Input** Activate the blue Loop button manually or with CV. When Loop is on, the current state of the shift register is locked and will not be affected by the Comparator. Note that this doesn't lock the *Comp. Out* (10). Note also that *Loop In* (5) can still affect the shift register.
2	**Thres(hold).** Set the Threshold to be compared with the voltage at the In.	**7**	**CV Out / Inv CV Out** Two outputs provide a sequence of stepped voltages (0v to +5v, -5v to 0v) derived from values in the shift register.
3	**Threshold CV Input and Amount** Modulate the Threshold with an external CV source.	**8**	**Bits 1-5 Switches** Choose whether or not Bits 1-5 from the shift register should be used when generating the *CV*/*Inv CV* outputs.
4	**Clock In** Input for a clock to drive the Shift Register	**9**	**Shift Register Outputs** Output a series of gate signals generated

	(9).		by the Comparator or Loop In.
5	**Loop In** Allows for an external CV input that is added to the Comparator output to set step one of the shift register. This only functions in Loop mode (6).	**10**	**Comp Out** Outputs the original gates resulting from the action of the Comparator.