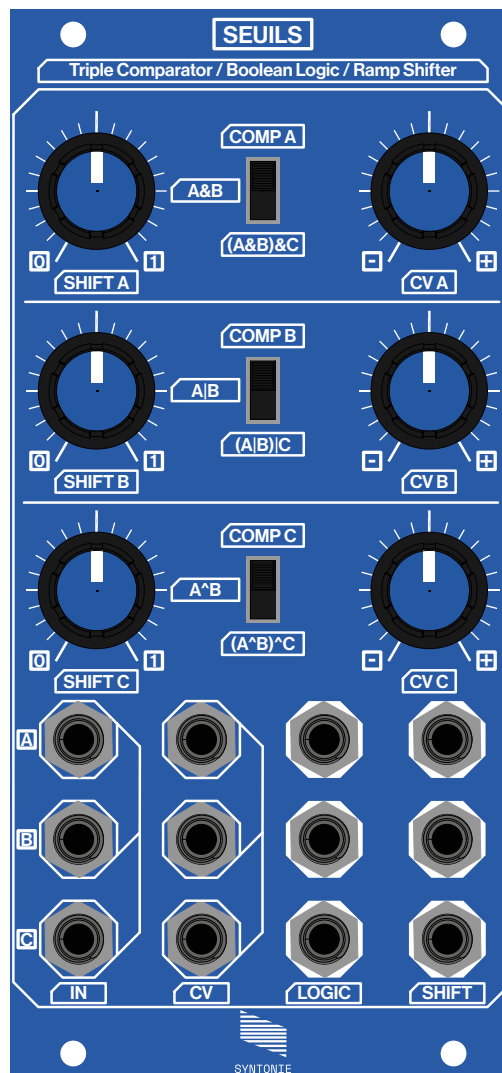

Seuils

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Triple Comparator / Boolean Logic / Ramp Shifter
User documentation



SYNTONIE

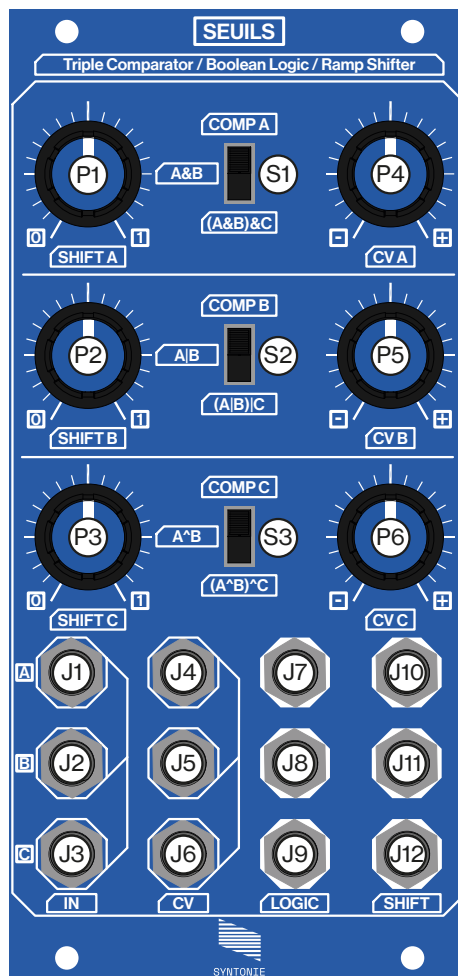


Seuils, french word for thresholds, is a module based around a saw animator circuit, with exposed comparator output and boolean logic. It's first intent is to shift ramps on the XY axis, however, using it on more complex signals produces interesting waveshaping, further enhanced by the logic combinations between the channels.

Specifications

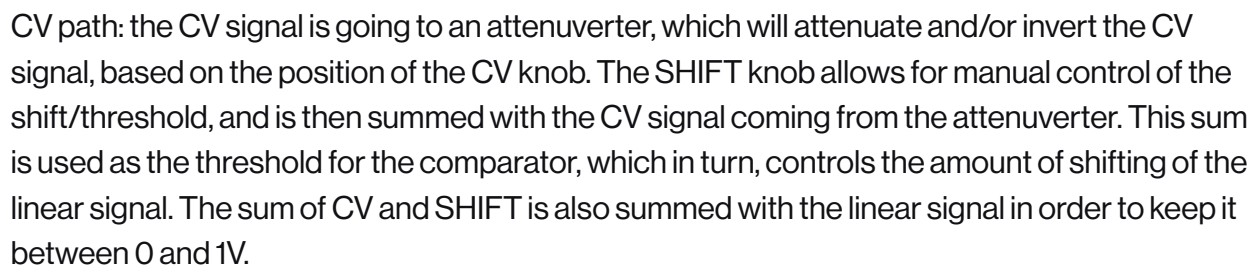
- 12HP
- 200 mA +12V (16pin or DC)
- 0 mA -12V
- 0 mA +5V
- 42mm depth

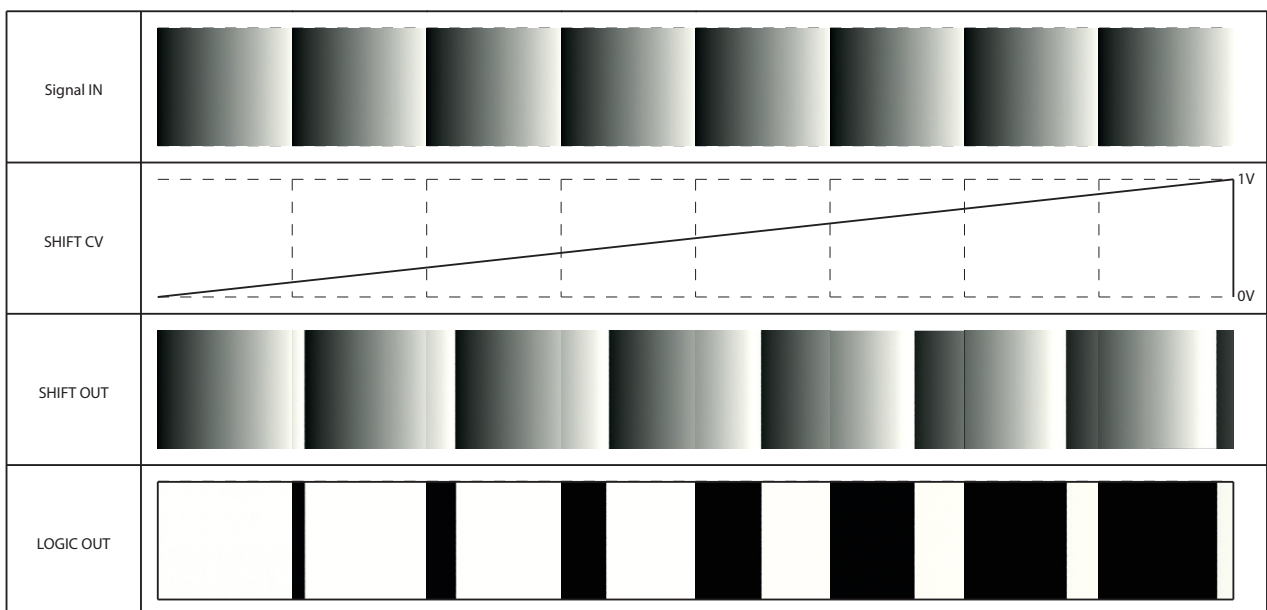
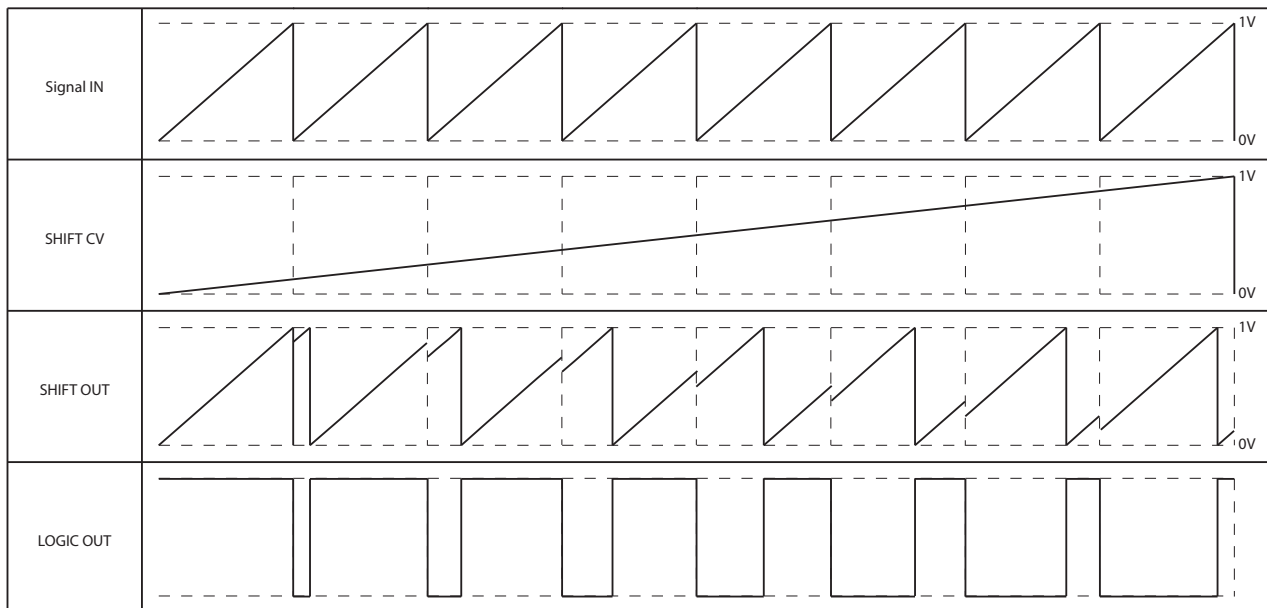
Special thanks to: Yves Usson for the Saw Animator design which have been the starting point to develop this module. **Lorenzo Ferronato** for the documentation design // And of course, **everyone who has supported Syntonie until now & those who will support it in the future.**



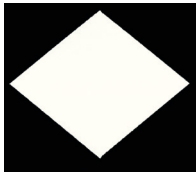




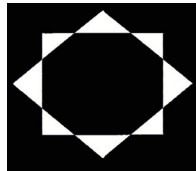

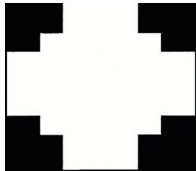
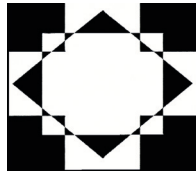
- (P1) Shift manual control Ch. A
- (P2) Shift manual control Ch. B
- (P3) Shift manual control Ch. C
- (P4) Shift CV attenuverter Ch. A
- (P5) Shift CV attenuverter Ch. B
- (P6) Shift CV attenuverter Ch. C
- (S1) Logical AND switch
- (S2) Logical OR switch
- (S3) Logical XOR switch

- (J1) Signal in Ch. A
- (J2) Signal in Ch. B (normalled to Ch. A)
- (J3) Signal in Ch. C (normalled to Ch. B)
- (J4) Shift CV in Ch. A
- (J5) Shift CV in Ch. B (normalled to Ch. A)
- (J6) Shift CV in Ch. C (normalled to Ch. B)
- (J7) Logic output Ch. A
- (J8) Logic out put Ch. B
- (J9) Logic output Ch. C
- (J10) Shift output Ch. A
- (J11) Shift output Ch. B
- (J12) Shift output Ch. C



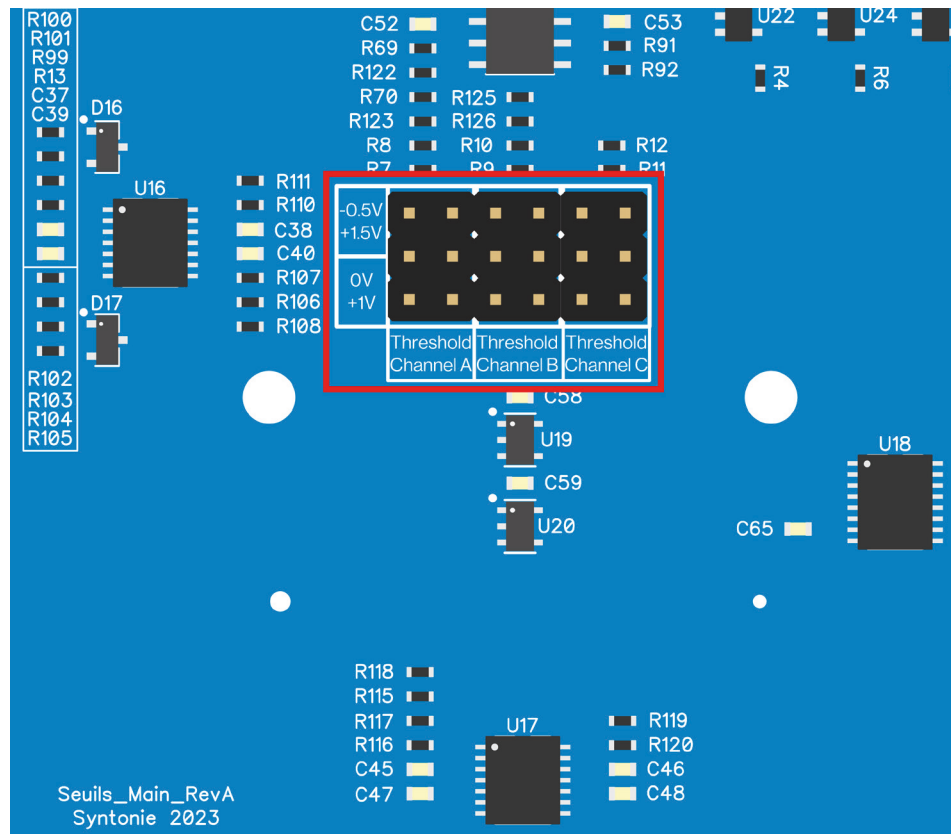


Graphic representation and video captures of the shift feature with a rising ramp as the input signal: as the SHIFT CV signal rises from 0V to 1V, the SHIFT output results in a horizontal displacement of the ramp, and also controls the length of the pulse present at the LOGIC output.

	Channel A AND	Channel B OR	Channel C XOR
COMPARATOR			
A / B			
(A / B) / C			

Captures showing the different logic operations possible with three simple shapes from Ramp-
es as the input (channel A -> Diamond, channel B -> Rectangle, channel C -> Cross).

Note: when setting channel C to $A \wedge B$, the SHIFT knob and CV input will generate an offset on
the SHIFT output unrelated to channel A and B.



Seuils has 3 jumpers accessible from the back of the module. The jumpers are used to set the threshold of each comparators individually. The default mode is 0V/+1V threshold as this is the standard amplitude for modular video. However, it is possible that some modules generates signal under 0V and/or above 1V, which translates by the range of the shift knob not being enough to fully key the input signal. To help with this, the jumpers can be set to -0.5V/+1.5V, however this may also cause an additional offset at the shift output, especially visible when processing a 1V ramp.

Note: if, by any chance, one of the jumpers is removed and misplaced, the corresponding channel will be set to default mode (0V/+1V). Since the 2-positions jumper are not really common, it can be replaced by 2x standard 1-position jumpers, make sure they're set on the same mode, as one jumper sets the amplitude of the input signal, and the other jumper sets the amplitude of the CV signal.

