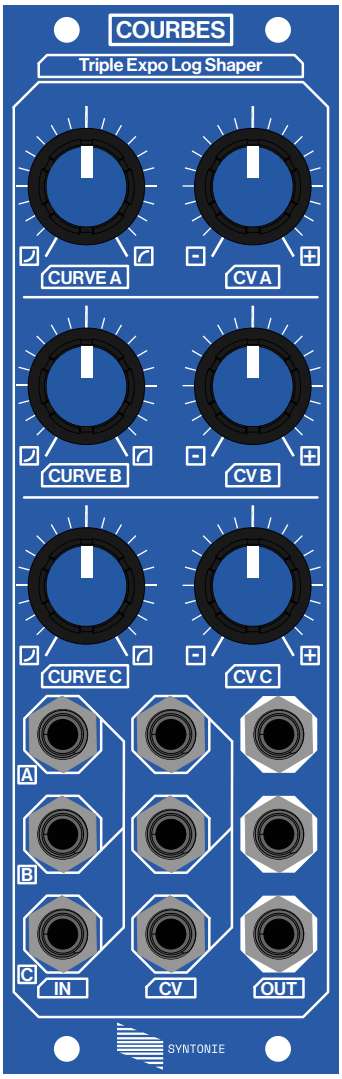
Courbes

Triple Expo Log Shaper

User documentation

SYNTONIE

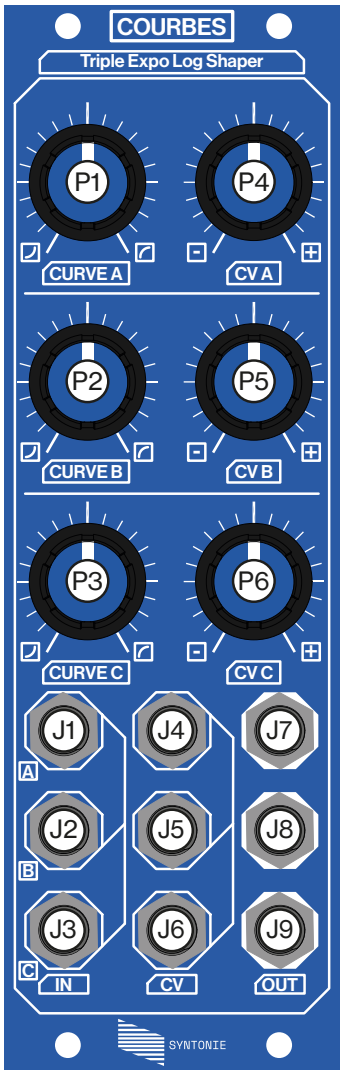


Courbes is a triple exponential and logarithmic shaper with three identical channels, featuring manual control as well as voltage control over the curve of the input signal, smoothly transitioning from exponential to linear to logarithmic, allowing for periodic waveform shaping as well as gamma correction.

Specifications

- 8HP
- 200 mA +12V (16pin or DC)
- 0 mA -12V
- 0 mA +5V
- 42mm depth

Special thanks to: **LZX Team** for the Cadet series of modules 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) Channel A Curve manual control

(P2) Channel B Curve manual control

(P3) Channel C Curve manual control

(P4) Channel A CV attenuverter

(P5) Channel B CV attenuverter

(P6) Channel C CV attenuverter

(J1) Channel A input (jack, 0V/+1V, 100kΩ)

(J2) Channel B input (jack, 0V/+1V 100kΩ)

(J3) Channel C input (jack, 0V/+1V, 100kΩ)

(J4) Channel A CV input (jack, 0V/+1V, 100kΩ)

(J5) Channel B CV input (jack, 0V/+1V, 100kΩ)

(J6) Channel C CV input (jack, 0V/+1V, 100kΩ)

(J7) Channel A output (jack, 0V/+1V, 75Ω)

(J8) Channel B output (jack, 0V/+1V, 75Ω)

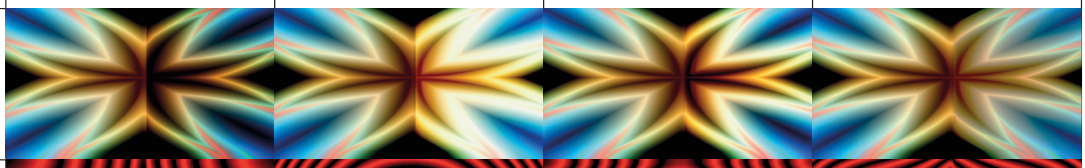
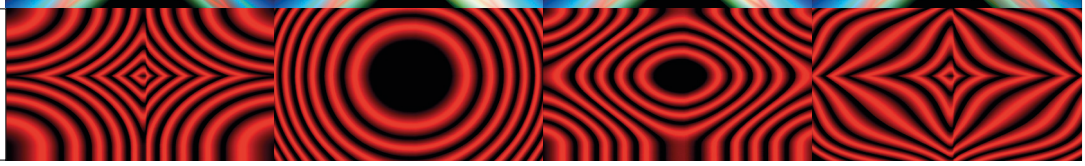
(J9) Channel C output (jack, 0V/+1V, 75Ω)

The most obvious use is to shape ramps and oscillators to produce curved shapes like four branched stars (exponential) and ellipses (logarithmic). However, using Courbes on more complex signals will be akin/similar to gamma correction, allowing to expand the contrast when set to exponential, making the dark parts of the signal darker, as well as compressing the contrast when set to logarithmic, making the dark parts of the signal brighter. It is different than a brightness control, which will move the whole signal towards black or white level, thus loosing information once the signal exceeds the black or white level.

It is also possible to use Courbes as a sine/antisine shaper, by sending the same signal to the input and CV input, with the CV attenuverter allowing to transition from sine (max position) to antisine (min position). On a complex signal, the sine shaping will translate into the dark parts of the signal getting darker, and the bright parts of the signal brighter, and the antisine shaping will make the dark parts brighter and the bright parts darker.

Since Courbes features three channels, it can be used to process RGB signals, allowing to fine tune the gamma of each R, G and B signals. These three channels are independant and can be used to process H and V ramp/oscillator signals separately, allowing for precise shaping of the curve of the resulting shape.

Examples:

	Exponential	Logarithmic	Sine	Antisine
Courbes used as a gamma corrector on a set of RGB signals (source left, processed right)				
Courbes used as a shaper on H and V mirrored ramps, mixed with a crossfader to set aspect ratio				

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