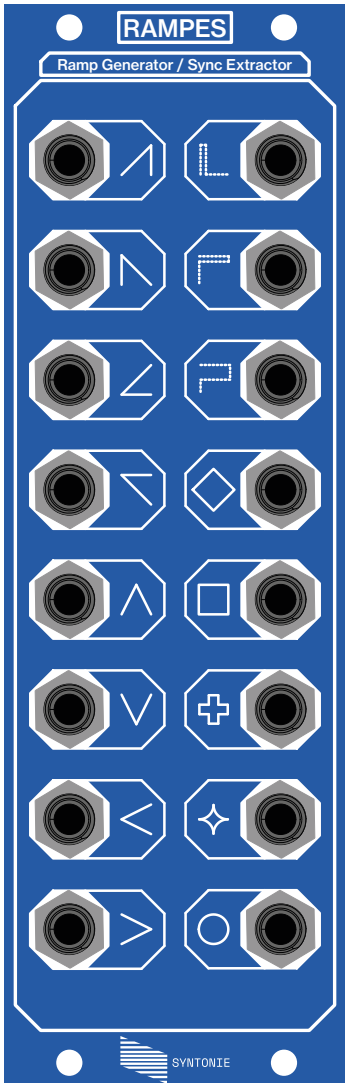
Rampes

Ramp Generator / Sync Extractor¬

User documentation

SYNTONIE

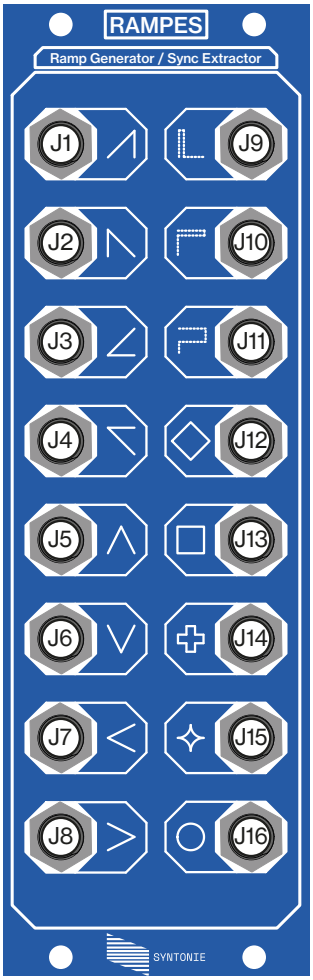


Rampes is a multi-format ramp/2D shape generator and sync extractor. It features eight linear ramp/mirrored ramp outputs, ideal to generate gradients and create your own shapes by processing and mixing them, as well as five 2D shape outputs. Three positive sync outputs allow the user to synchronize audio and video modules.

Specifications

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

Special thanks to: the **LZX team** for the Cadet IV/Ramp design which was the starting point to develop this module, and more specifically, **Lars Larsen** for helping on the format autodetection feature. **Lorenzo Ferronato** for the documentation design. And of course, **everyone who has supported Syntonie until now & those who will support it in the future.**

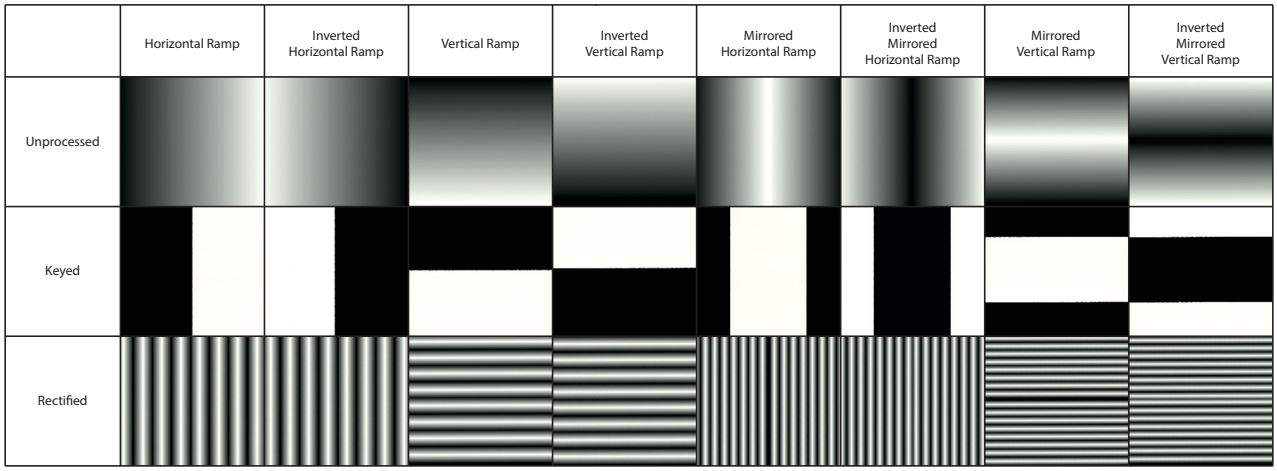


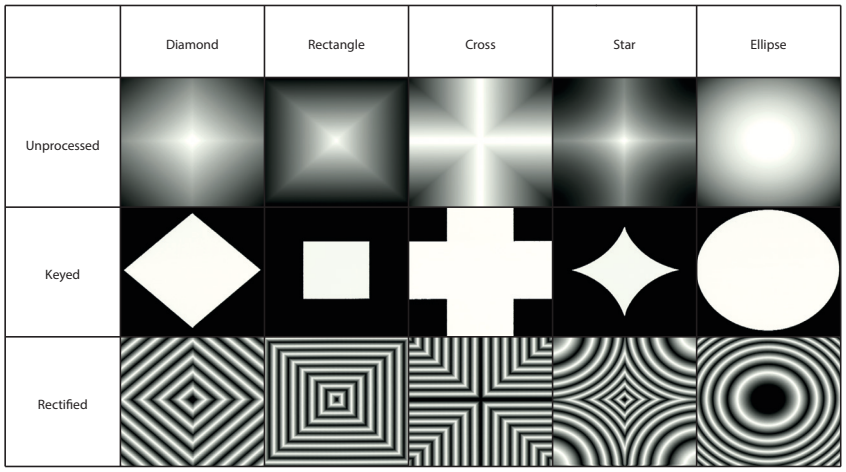
- **(J1)** Horizontal ramp output
- **(J2)** Inverted horizontal ramp output
- **(J3)** Vertical ramp output
- **(J4)** Inverted horizontal ramp output
- **(J5)** Mirrored horizontal ramp output
- **(J6)** Inverted mirrored horizontal ramp output
- **(J7)** Mirrored vertical ramp output
- **(J8)** Inverted mirrored vertical ramp output
- **(J9)** Horizontal sync output
- **(J10)** Vertical sync output
- **(J11)** Odd/Even output
- **(J12)** Diamond output
- **(J13)** Rectangle output
- **(J14)** Cross output
- **(J15)** Star output
- **(J16)** Ellipse output

Note: all ramp and shape outputs are 0V/+1V.

Sync outputs are 0V/+5V positive sync, which makes it easier to interface with audio modules, while ensuring compatibility with video modules that require front panel sync input over minijack.

Hsync output ranges from 15.625kHz to 45kHz.
Vsync output ranges from 50Hz to 60Hz.
Odd/Even output ranges from 25Hz to 30Hz (only available in interlaced formats).



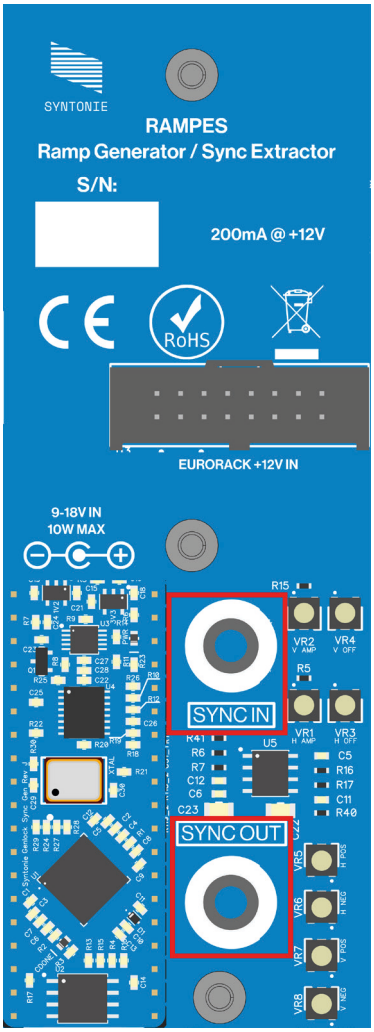


Here are captures of each of the ramp and shape outputs:

- unprocessed: ramp/shape output patched directly into the RGB inputs of **VU007B**.

- keyed: ramp/shape output patched into a channel **Seuils** and then sending it's LOGIC output into the RGB inputs of **VU007B**.

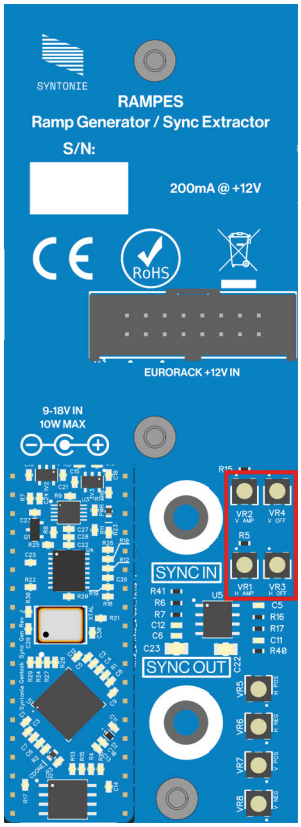
- rectified: ramp/shape output patched to **Solaire**'s 1st rectifier input and using the 4th rectifier output into the RGB inputs of **VU007B**.

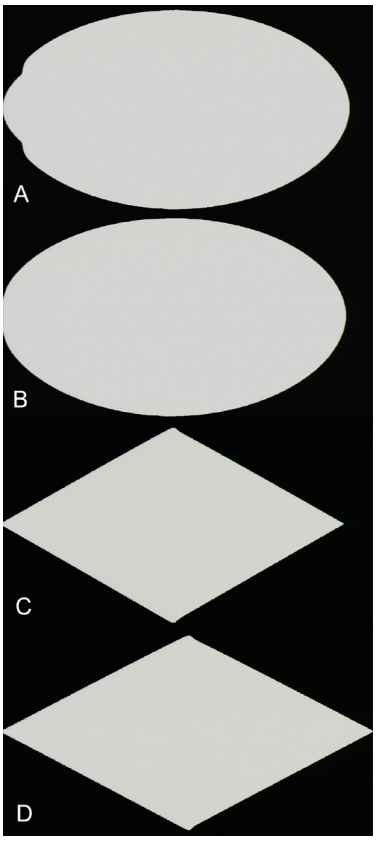


In order to generate in-sync ramps and shapes, Rampes needs to be synchronised to the sync generator (ie: **VU007B**) or the external Composite/Component (Y) video source it will be used with.
In the first case, the sync output of **VU007B** is connected to Rampes' SYNC IN, and Rampes' SYNC OUT is connected to the next module in the chain. If other modules are already connected to the sync generator, Rampes can be placed after them or anywhere in the sync chain.
In the second case, Rampes can accept any Composite or Component Y signal as a sync source, as long as it is stable enough to ensure proper sync.

The format of the sync generator/external video will be automatically detected and Rampes will switch to the correct format. Here is the list of all the supported formats:

- 288p50
- 240p59.94
- 576i50 (PAL)
- 480i59.94 (NTSC)
- 576p50
- 480p59.94
- 720p50
- 720p59.94
- 720p60
- 1080i50
- 1080i59.94
- 1080i60
- 1080p23.98
- 1080p24
- 1080p25
- 1080p29.97
- 1080p30





Rampes will come already calibrated, however, since it is an analog ramp generator, it is possible that the amplitude and offset of the ramps varies slightly with temperature, resulting in the shapes not being perfectly centred. Here is the procedure to calibrate it without an oscilloscope:

1) Let Rampes warm up in the case for 15 to 20 minutes and set the sync generator to the format you'll be using the most
2) Monitor the ellipse output through a key generator (like **Seuils**)
3) If the H ramp offset is not calibrated correctly, a glitch may appears on the left side of the ellipse **(A)**
4) Using a screwdriver (preferably made of plastic/non-conductive material to avoid shorting the nearby components), turn the **H. OFF** trimmer clockwise until the glitch disappears **(B)**
5) Then monitor the Diamond output through a key generator again, the shape may appear off-center **(C)**
6) Turn the **H. AMP** trimmer until the diamond shape is centred horizontally **(D)**
7) Repeat the same procedure for the vertical axis

Note 1: the glitch on the ellipse shape is more visible in HD formats, so if you're switching back and forth between SD and HD, calibrate the offsets in HD and it should be correct for SD as well.

Note 2: since the ramp generators are analog, it is not really possible to have the shapes exactly centred in all formats, there will be a bit of amplitude variation between all the formats.

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