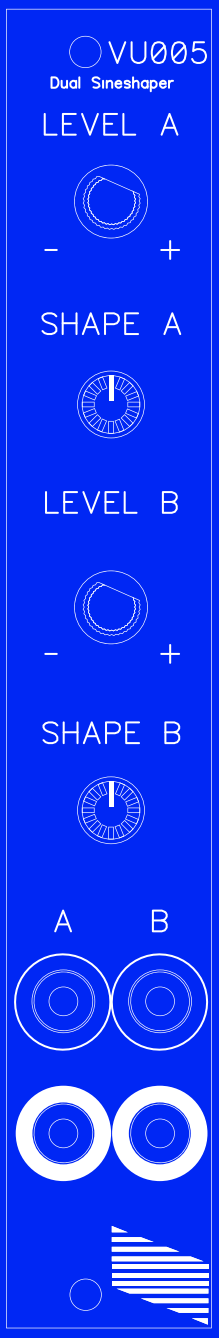
VU005

Dual sinewaveshaper ¬

User documentation / build guide



SYNTONIE

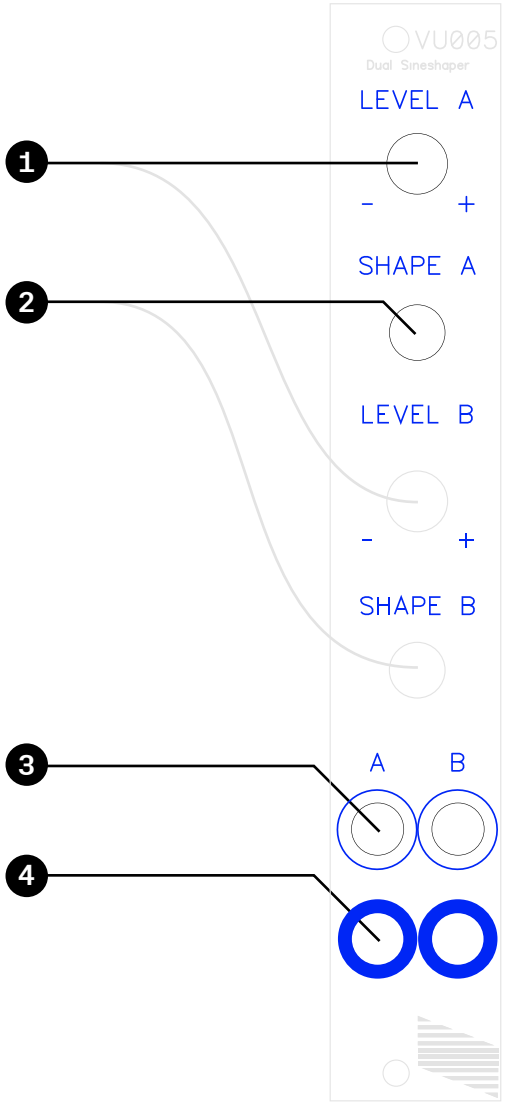
The VU005 is a dual sinewaveshaper aimed at processing linear signals, such as ramp/sawtooth/ triangle, into exponential waveforms. Based around a linear to exponential converter, each waveshaper features an attenuverter potentiometer and an offset trimmer pot to give control over distortion and shape.

Specifications

- 4HP
- 33 mA +12V
- 29 mA -12V
- 0 mA +5V
- 50mm deep

Special thanks to:

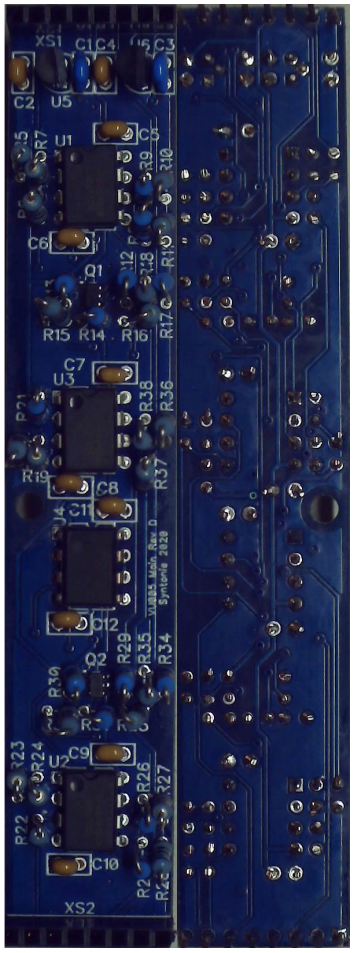
Lorenzo Ferronato for the documentation design // And of course, **everyone who has supported Syntonie until now & those who will support it in the future.**



(1) Attenuates and/or inverts the input signal.
(Max positions will result in a slightly more distorted output than a sinewave)

(2) Offseting the input signal affects the shape of the output signal.
Symmetry is achieved around the center or 12 o'clock position.

(3) Linear signal input / `0-1V, 100k ohm`
(4) Exponential signal output / `0-1V, 499 ohm`

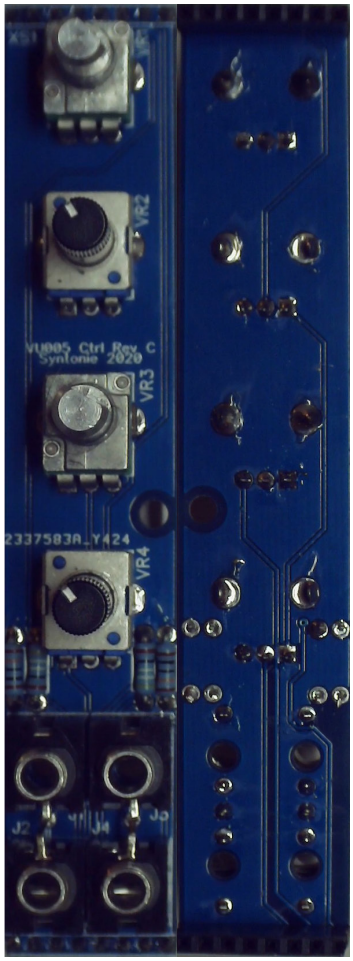


Use the interactive BOM regarding component placement / Find the BOM here

Place and solder the components in the following order:

- **1** Resistors **(be careful not to short leads** as resistors are standing vertically**)**
- **2** Capacitors
- **3** Voltage regulators **(pay attention to the orientation)**
- **4** IC sockets/ICs **(pay attention to the orientation)**
- **5** 8 pin header & socket **(pins go on the solder side, socket on the component side)**

Q1/Q2 comes presoldered with the pcb set & full kit.

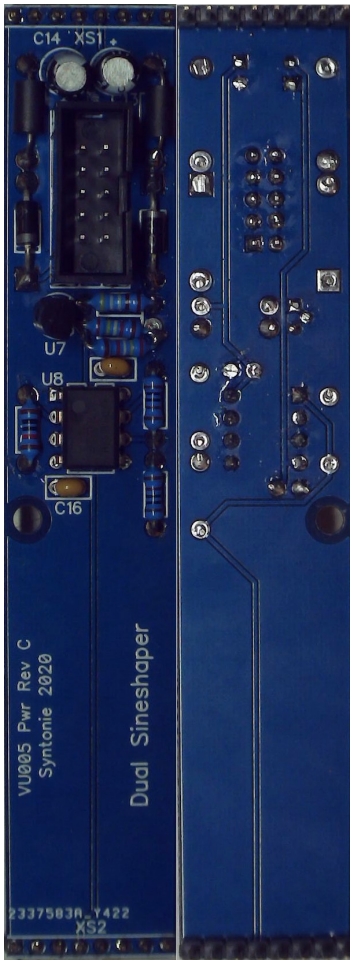


Use the interactive BOM to look for component placement / Find the BOM here

Place and solder in this order :

- **1** Resistors
- **2** Jacks (**solder one pin and check that the jack is sitting flat to the PCB**, if so solder all the other pins)
- **3** Potentiometers/Tall trimmers **(same as above)**
- **4** 8 pin sockets (pins on the component side, socket on the solder side)

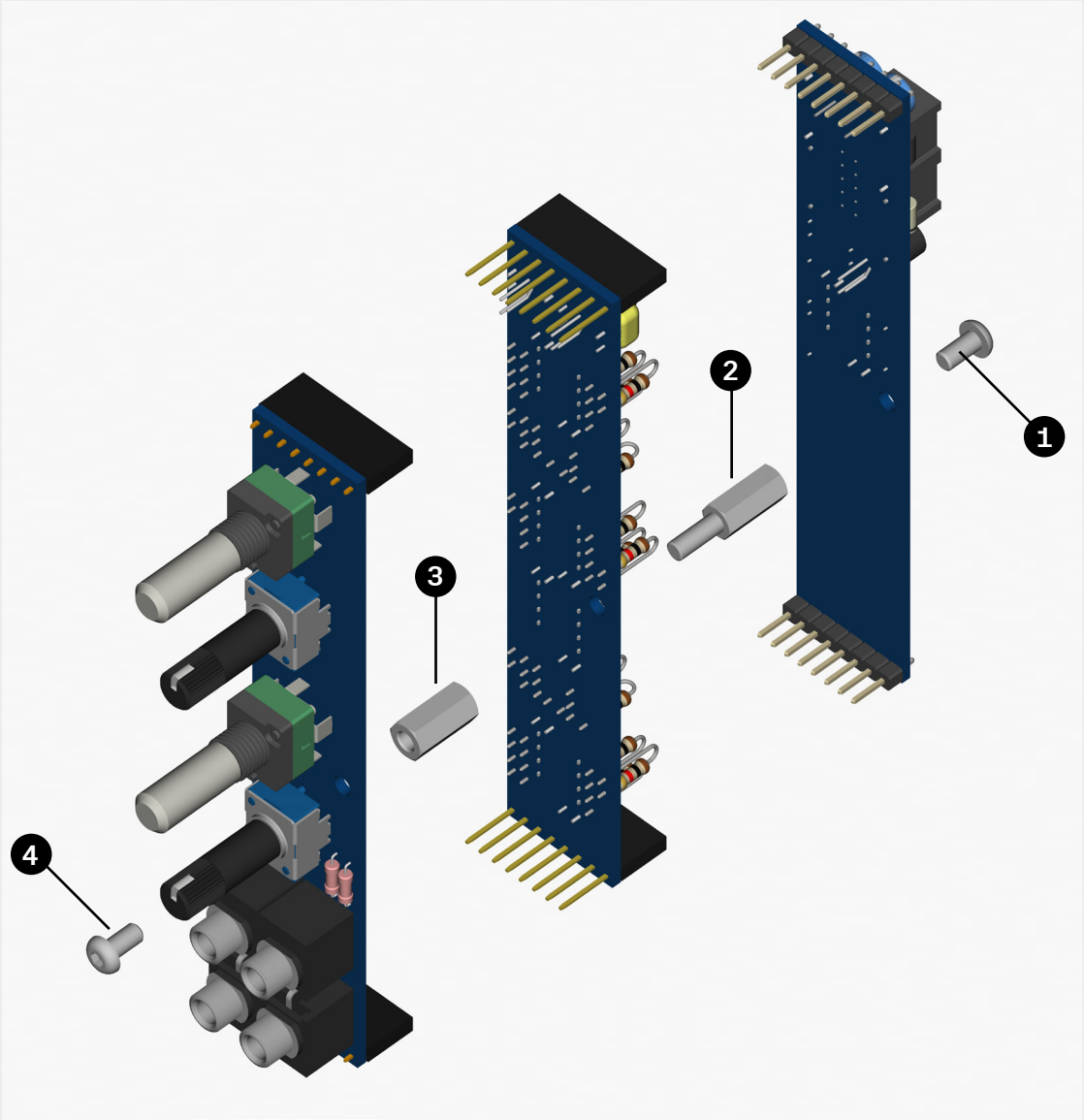
Note: J1/J2 and J3/J4 are sharing the same ground hole, place both jack before soldering ground pins



Use the interactive BOM to look for component placement / Find the BOM here

Place and solder in this order :

- **1** Resistors
- **2** Capacitors **(pay attention to the orientation of the electrolytic capacitors)**
- **3** Diodes **(pay attention to the orientation)**
- **4** Ferrite beads
- **5** Voltage reference
- **6** IC sockets/IC
- **7** 8 pin headers **(short pins on the component side, box header on the solder side)**



(1) 6mm M3 screw
(2) 10mm+6mm M3 spacer
(3) 12mm M3 spacer
(4) 6mm M3 screw

Stackable headers pins can be trimmed of 1-2mm to make the distance between both board closer to 12mm

Revision log

- **Rev C :** initial release
- **Rev D :** +-5V regulators footprint fixed on Mainboard

Note : first pcb sets includes Control Rev C, Power Rev C and Main Rev D

References

- Analog Devices - Lab Activity:
  Generating sine waves from triangle waves
  https://wiki.analog.com/university/courses/electronics/electronics-lab-12sg
- LZX – Reference Designs
  https://github.com/lzxindustries/lzxdocs/blob/master/Reference%20Designs/LZX%20Interface%20Examples%20RevA.pdf
- circuitjs simulation
  https://tinyurl.com/y6yk3hg5

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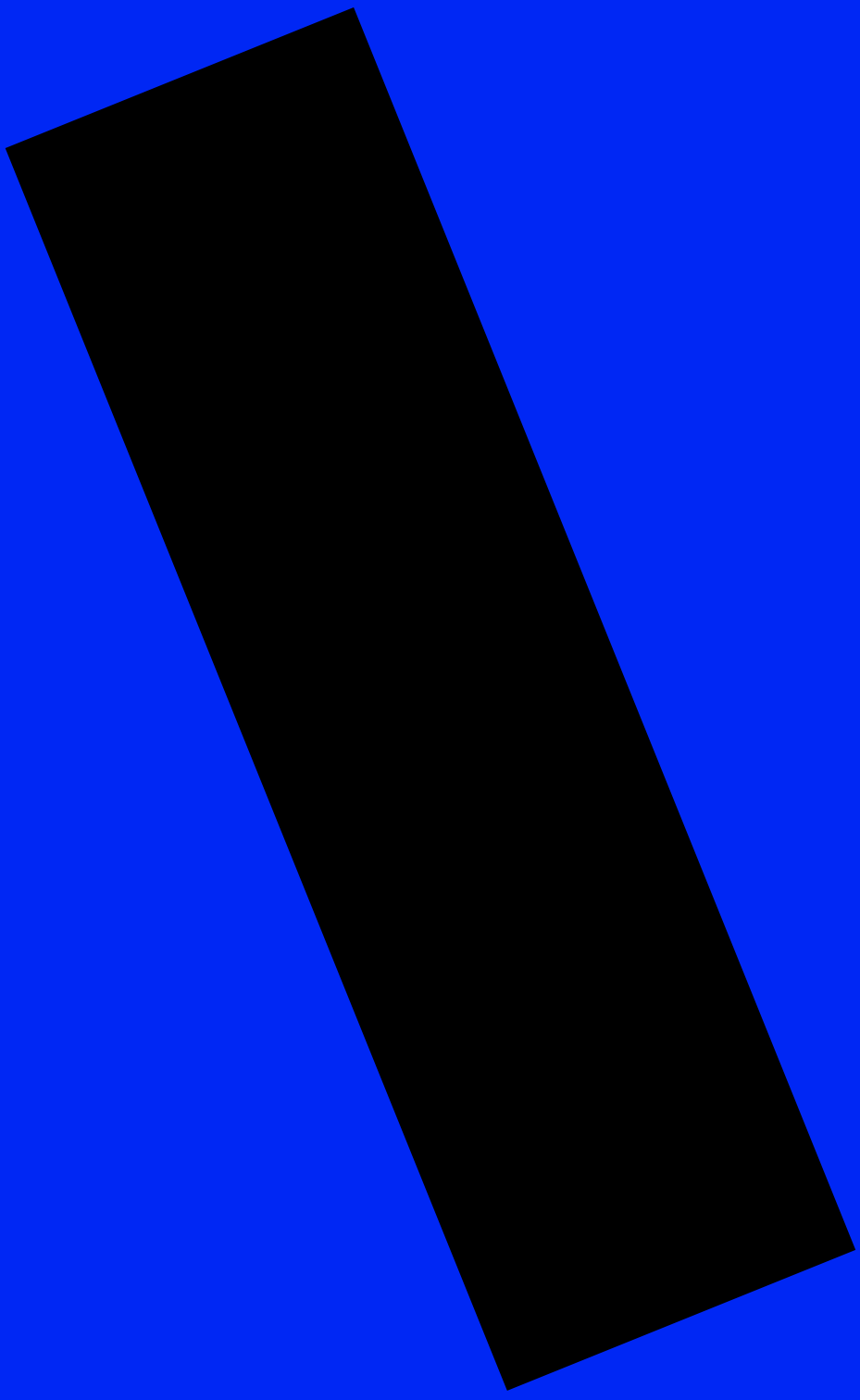

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