CV Generator
Build document

Soldering of components
Most of the components are already soldered to the PCB, there are only a few elements left to be soldered by you.

> **Soldering tip:**
> *When it comes to soldering a component, I do it this way all the time:*
> *I solder only one leg of the component. Then I adjust its position. It is indeed easy to apply the soldering iron to the soldered leg and move the component by hand to better replace it.*
> *Typically by making sure that the component is firmly seated in its place. We will see more example bellow.*

BOM :

- 2x5 Pin Header ; 0,100 po (2,54mm) x1 (exemple : PH2-10-UA Adam Tech)
- 3,5mm MONO Jacks x8 (**Thonkiconn**)
- 100Kohm potentiometers x4 ALPHA 9mm Pots (or compatible)
- Knobs x4
  Use same Shaft as your Pots : D-Shaft, T-18 or Round.
  Davies, SIFAM or others styles as you prefer.
- LED RED x12 WP424SURDTK Kingbright
  3mm, T-1
  1,95V
  20mA
  You can use other type of LED, other color or not with a flat tip, but the LED must have the same characteristic.

- SWITCH 2 Positions (SPDT ON-ON) x4 (x2 long, x2 short)
  Use small version, with 2,54mm (0,100 po) between pin.

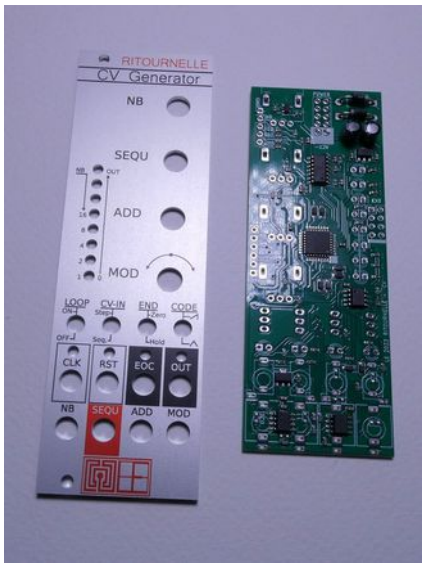
  type 200MSP1**T1**B1M2QEH, long activator:
  200MSP1T1B1M2QEH E-Switch | Commutateurs | DigiKey

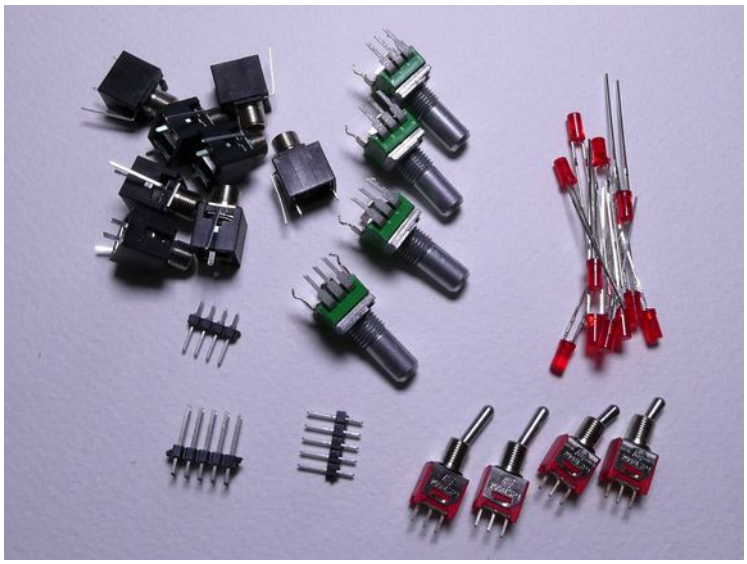
  type 200MSP1**T2**B1M2QEH, short activator:
  200MSP1T2B1M2QEH E-Switch | Commutateurs | DigiKey

On the assembled version, one of the switch have a smaller activator.
You can use the same for both, it's just a question of tast, like :
Sub-Miniature Toggle Switches – Thonk – DIY Synthesizer Kits & Components

OPTIONNAL :

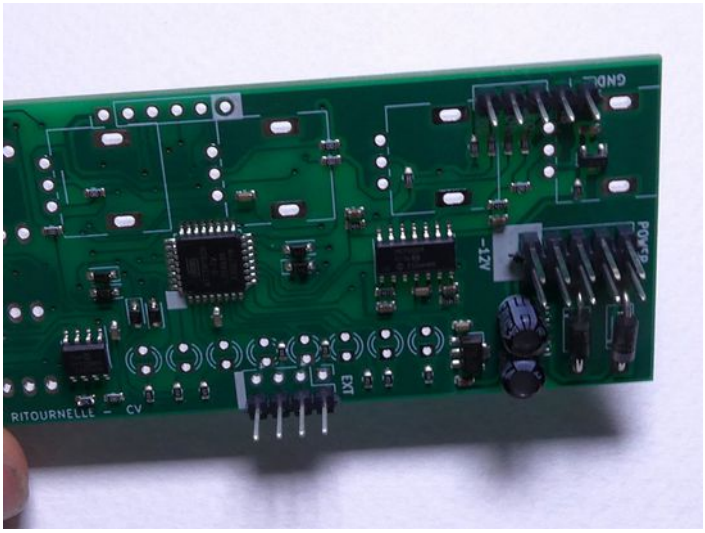
- 1x4 Pin Header x1 (PH1-04-UA Adam Tech)
  You can use longeur Breakable Strip too.
- 1x5 Pin Header x1 (PH1-05-UA Adam Tech)
  You can use longeur Breakable Strip too.





A- components side:

1-PSU connector:
Solder the 2x5-pin connector.



(We see the two options too, see next step...)

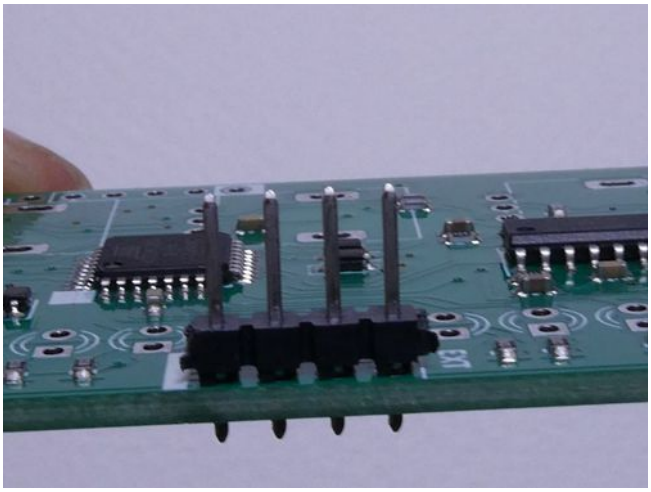
3- Optional connector:

There are two optional connectors:
The 5 pins connector, on the top left.
This is the input of the 4 parameters, the same signal as the one on the front jack.
This connector allows you to connect the **AttV-4**, to add attenuverting control over the CV, without having too much cables on the front panel.
It can also be useful for DIYers. (*Hm...I don't know for what use...*)
If you don't think you need this feature, then there's no need to solder these connectors.

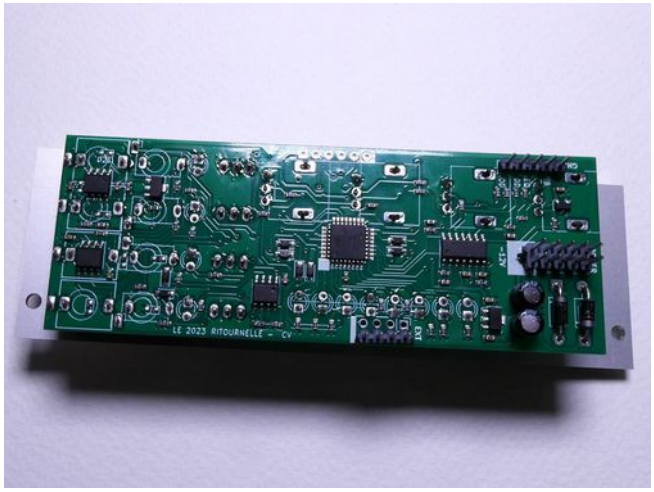
If you think you will need this optional connector, solder it as for the PSU connector.

The 4 pins connector, on the right, under the « Ext. » mark.
This is where you plug the **Shift-R** extension. It adds 8 trigger outputs to the module.

As you can see on the PCB, there is two raw of four holes. This is because at first, the connector uses a ribbon of 8 cables, with a 2x4 connector. But to avoid confusing with the PSU, only one row is used.
You can solder to one of the other of the row. I recommande to use the row close to the border. It will help when soldering the LED.



Zoom on the Ext. Connector

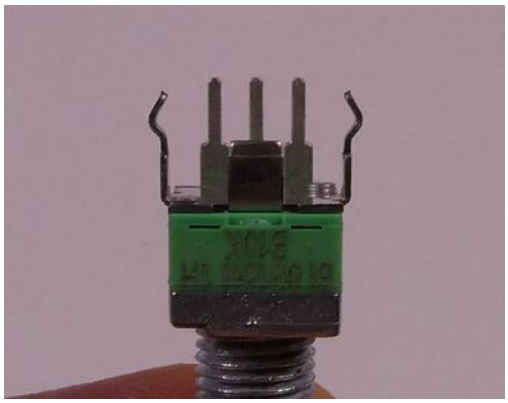


The finished board, you can see the two option and the PSU.

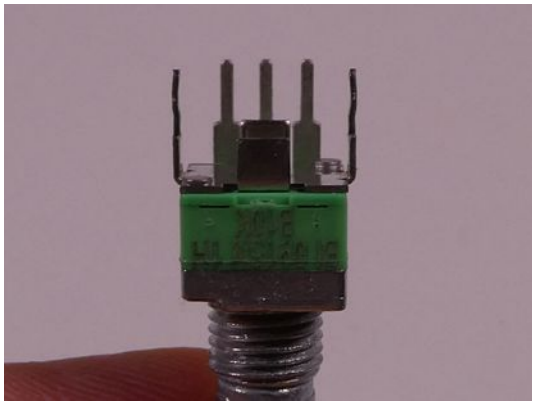
B- Side without components:

All that remains is what will be on the front panel: the jacks, potentiometers, switches and LEDs.

As space was limited, it was necessary to reduce the size of some holes.
"Pinch" the pin of the potentiometer to make it straight:



before

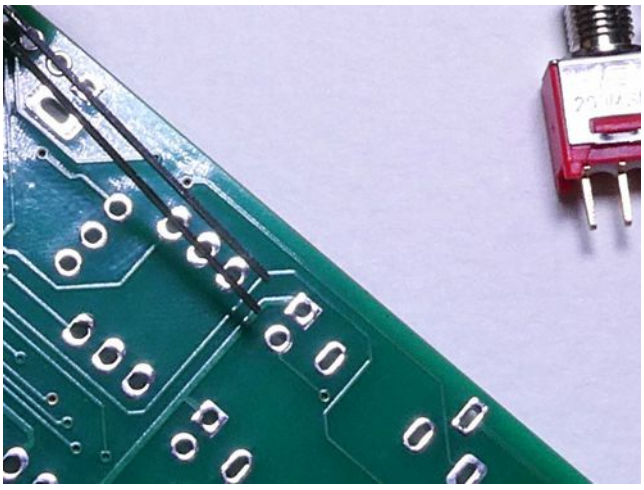


After

JACKs and POTENTIOMETERS
Place all jacks on the PCB. There are **8** in all.
Then place all the potentiometers. There are 3 in all.

LED :
The original module uses RED color, but you can use other colors as you want. Simply use LED with the same characteristics !

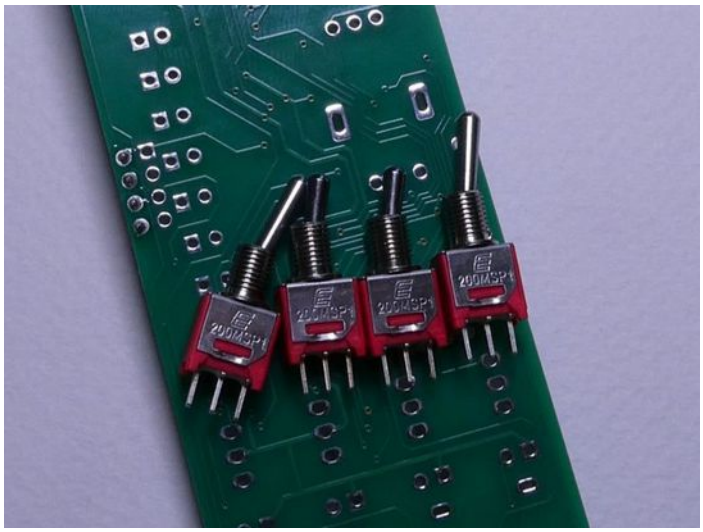
You must pay attention to the direction of the insertion :



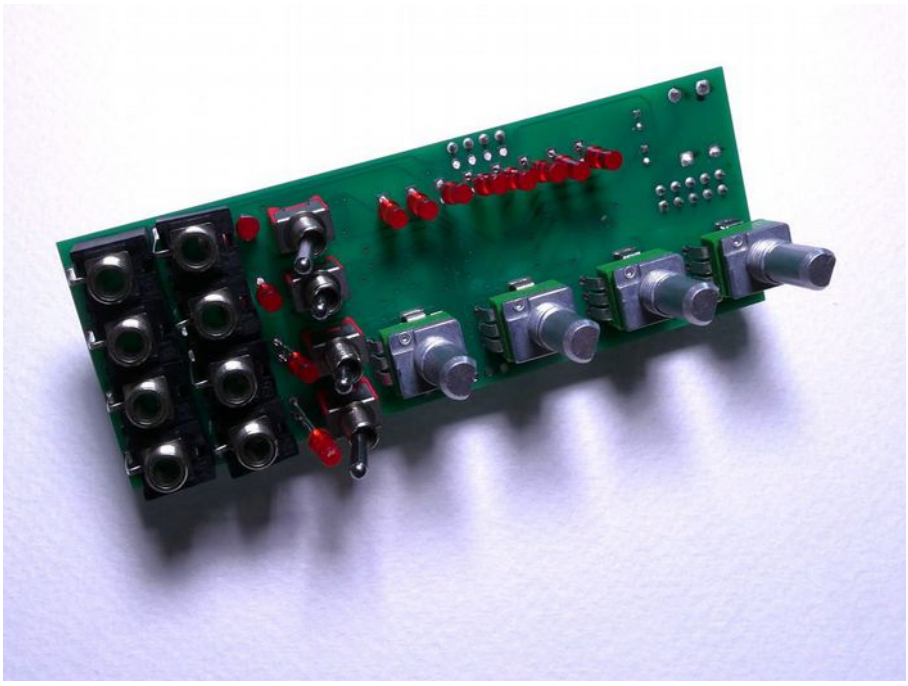
The smallest PIN into the square hole

If you choose the wrong direction, LED will never blink.

The SWITCHES :
There is two kind of switches : 2 positions for both, but with small or long activator.
The middle switches are smaller that the two others. Because it's a less important switches. But you can use the same switch for all the switches.



Order of the switches, left to right :
Long - Short - Short - Long



All components are now in place.

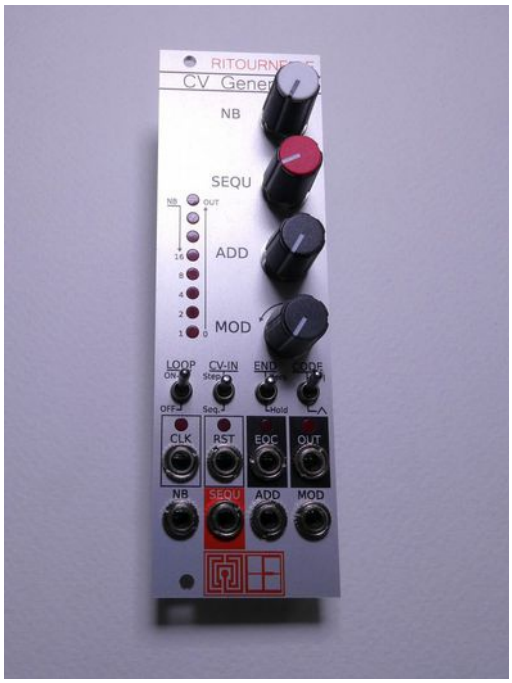
Insert the front panel into the jacks.
Screw 4 jacks onto the front, one of each corner.
Screw at least one potentiometer too.
There is no need to screw them too hard, this is just to fixe everything together.

Before soldering, check that the jacks are firmly inserted in the PCB.

At first, solder all Jacks, potentiometers and switches, not yet the LEDs.
As with the previous steps, solder only one PIN of each Jack.
Check again that all the components are against the PCB befor soldering all the others pins.

Insert the LEDS into their respective hole. After that, it's a question of tast :
You can choose to solder the LED at the same level as the edge of the front panel, especially if you're choosing flat tip LED.

4- Finalize
Screw the last jacks, insert the knobs, and it's done !



C- TESTING YOU MODULE :

There are no adjustments to be made, the module is ready to use.
To test the module, you need a signal generator like an LFO. Something to be controlled by CV, like a VCO.

At first, when connecting the PSU, and switch on the power, you should see the 8 LED blinking.
Turn the NB knob should change the 8 LED value.
Insert the LFO into the CLK IN, you should see the sequencer running. If not, check that the LOOP switch is ON.
The OUT LED should blink according to the CV pattern, and the 8 LED should works as a vumeter.

If something does not work, check that a solder has not been missed. In most cases, that's where the problem comes from !
If a LED does not work as espected, you may have to unsolder it and invert the pin order.

And now,it's time to have fun with your module !

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