

# SHIFT-R

## 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**)
- LED RED    x8            [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.
  
- 1x4 Pin Header    x1            (exemple : [PH1-04-UA Adam Tech](#))  
    You can use longeur Breakable Strip too.

## A- components side:

### 1- PSU connector:

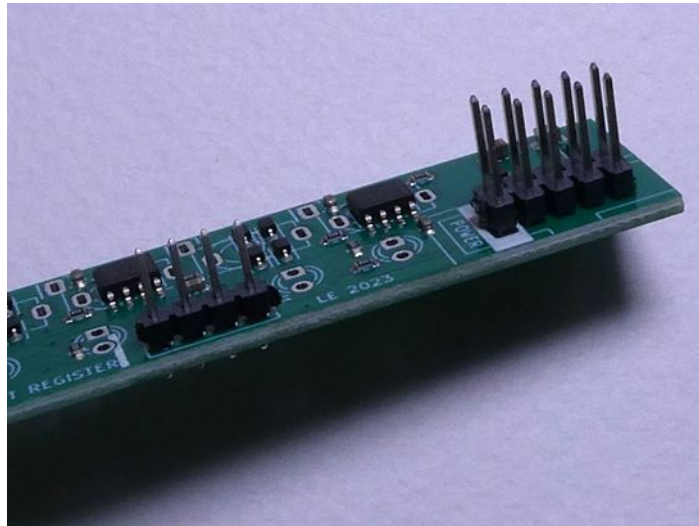
Solder the 2x5-pin connector.

### 2- Ext Connector (4 pins connector) :

This is where you plug the module you want to expand (at this time, 2024, there is only the **CV Generator**).

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.



*The PSU and the Ext. connectors.*

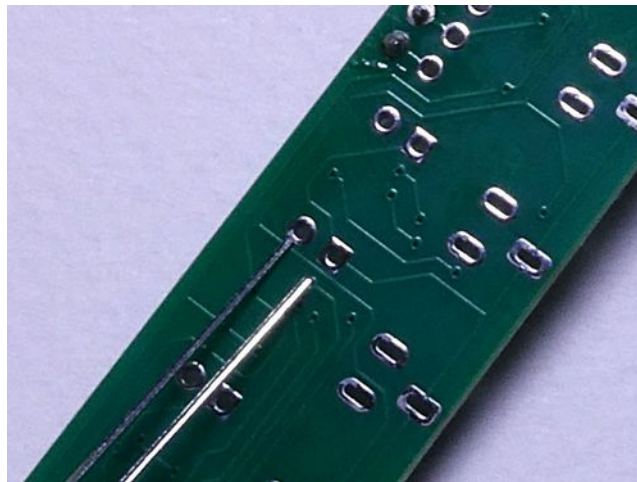
## B- Side without components:

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

### 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 :

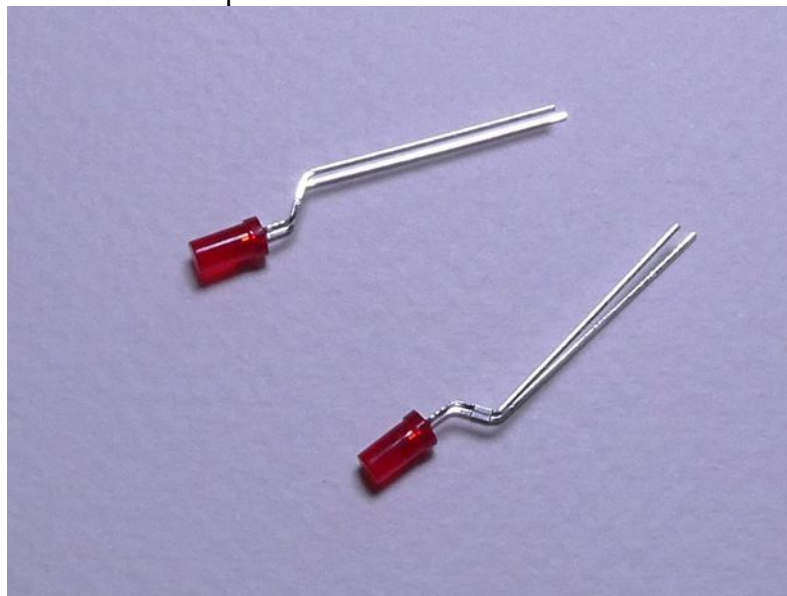


*The smallest PIN into the square hole*

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

There is a small extra task to do : twisting the pins of two LEDs :

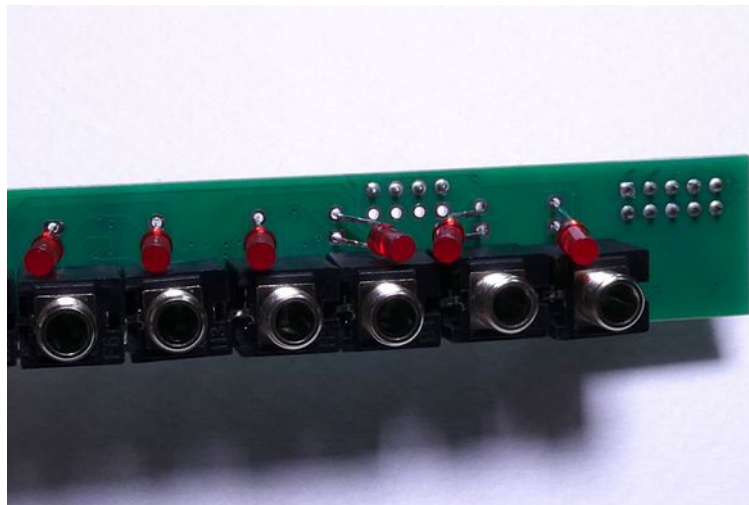
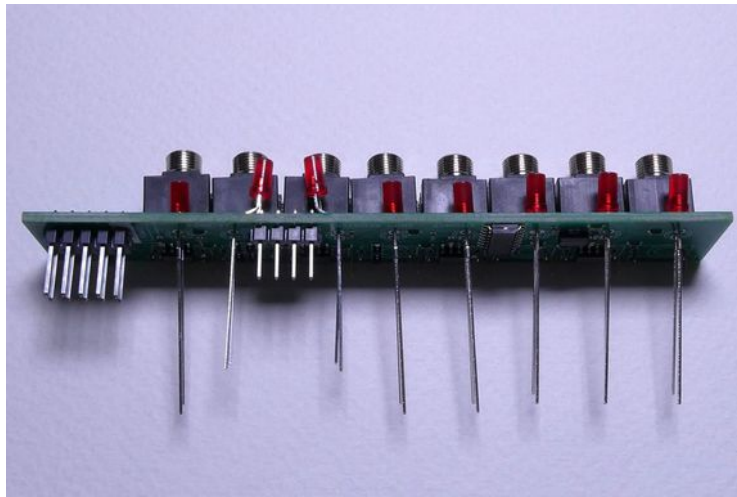
The Ext. Connector is between the LED (not enough place...) so you need to twist the pins to be able to insert the LED into the front panel.



*An image is better than a long explanation, here the result.*

It's not necessary to be precise, twisting the pins just help to insert the LED, no more.

Just thing to twist one LED in one direction, and the other to the other direction like in the image.



Then insert all the jacks.

**And finally the front panel.**

Screw 2 jacks onto the front, one of each corner.

There is no need to screw them too hard, this is just to fixe everything together.

At this step, it's not necessary to insert the LED, when the jacks will be soldered, it will be easier to proceed.

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

At first, solder all Jacks, 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 before 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, 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 compatible module. At this time (2024) there is only the CV Generator.

Note about the connector :

Because it's a proprietary connector, this one is included in the kit.

But not the PSU connector, that you can find easily.

Connect your new Shift-R to your CV Generator, with the connector included in the kit.

Connect the PSU.

Use your CV Generator as usual. The LED of the Shift-R should blink depending on the CV.

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

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