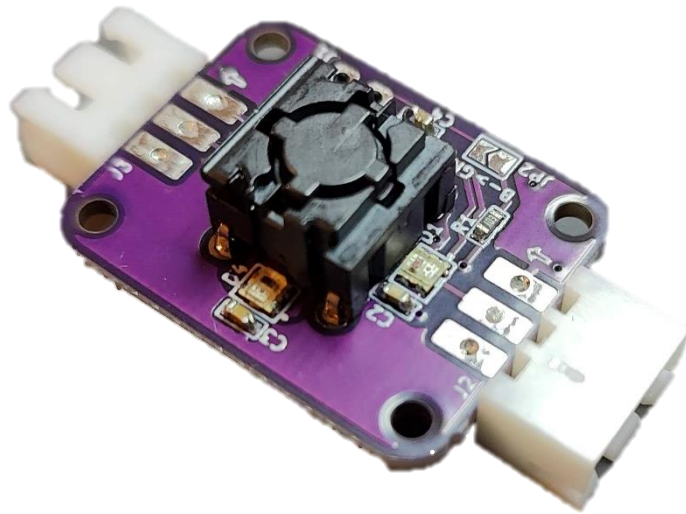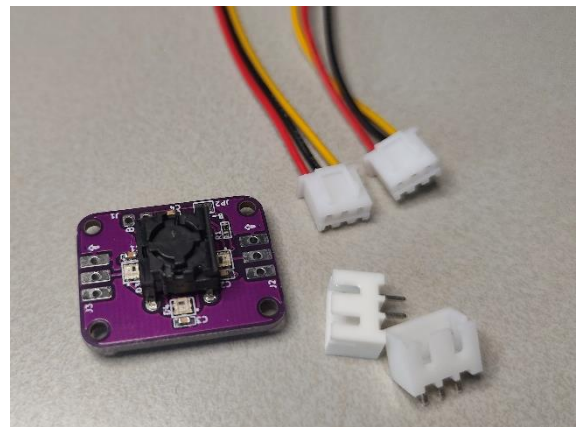# SIMREP

ENGINEERING

DIY PUSH-BUTTON LED MODULE

Thank you for buying

Thank you for buying from us!

We hope you will enjoy the product, if you have any questions, please contact us at: service@simrep-engineering.com

Package content

- 1x Pre-soldered RGB button module
- 1x Button Cap, frosted white
- 1x 2.54mm 2pin male Molex connector (to solder yourself)
- 1x 2.54mm 2pin female Molex connector (10cm wire)
- 2x 2.54mm 3pin male Molex connector (to solder yourself)
- 2x 2.54mm 3pin female to female Molex connector (10cm wire)
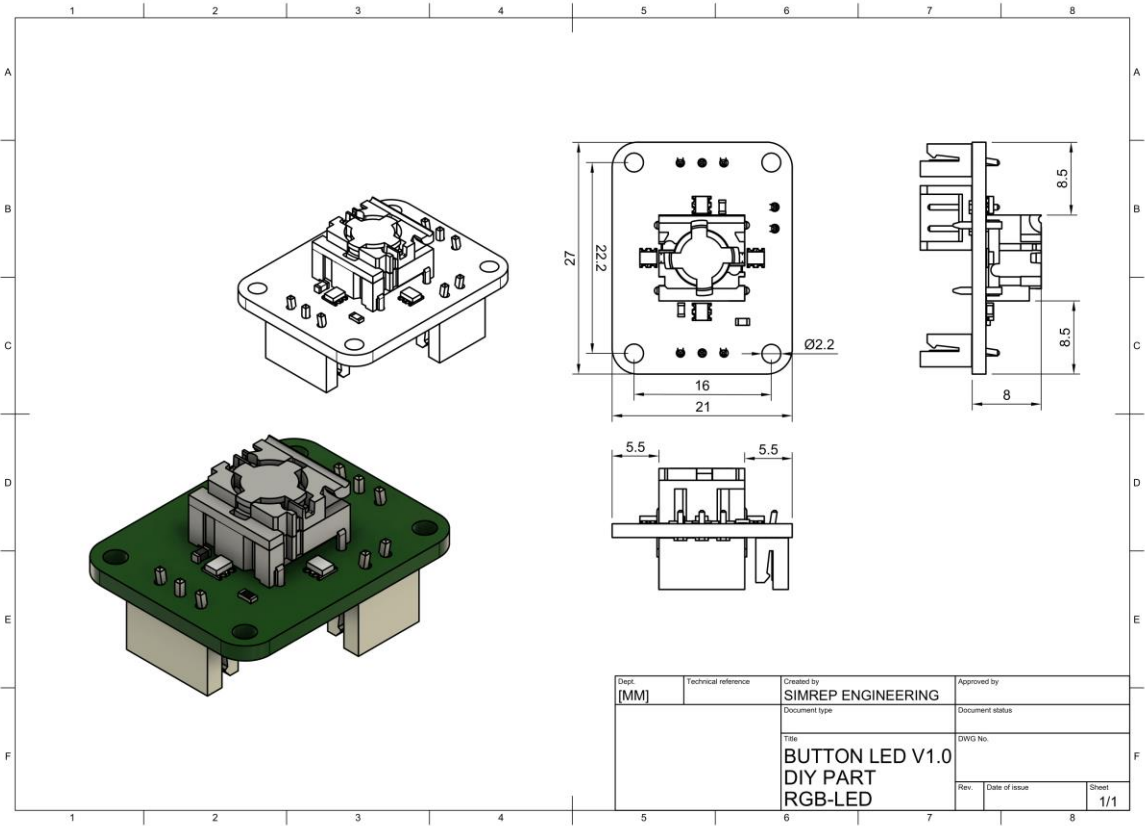- 3D model (.step) which can be found on the website.

Software

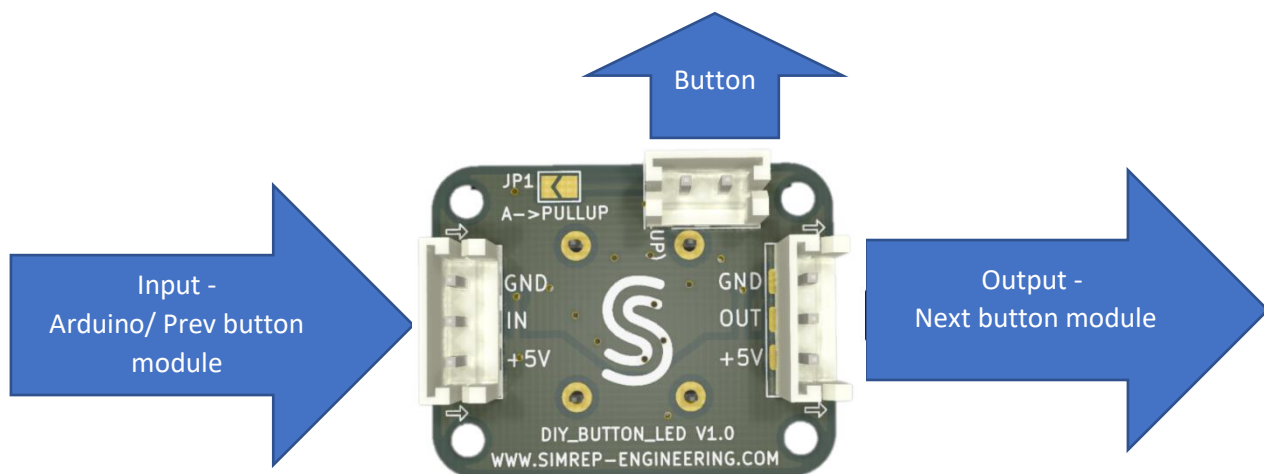This product can be used with SimHub software. To install SimHub download the software at: https://www.simhubdash.com/

In case of missing and/or damaged parts, please contact our customer support at: service@simrep-engineering.com

Mechanical Dimensions
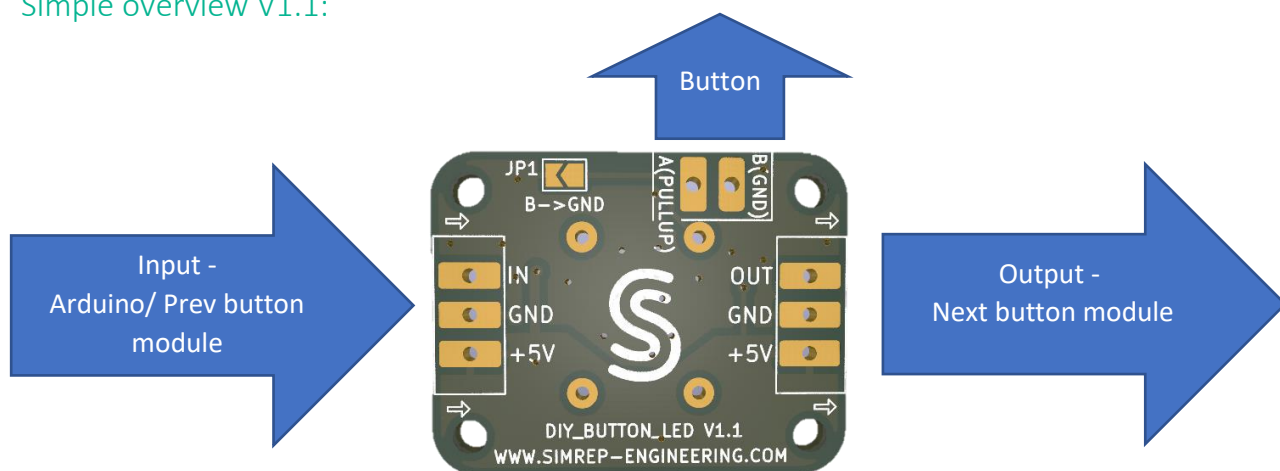
Simple overview V1.0:

Button

Input -
Arduino/ Prev button
module

Output -
Next button module

Simple overview V1.1:

Button

Input -
Arduino/ Prev button
module

Output -
Next button module

Hardware installation

The button modules can be linked together. This way it's easy to use a lot of buttons in combination with RGB lights.

Step 1

First you will need to solder the connectors. You can choose to solder them on top, bottom or side. Depending on your project.

When soldering it's important to match the colour of the wires as follow:
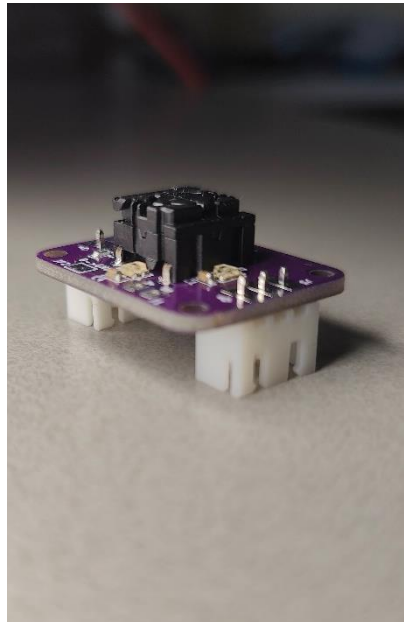
- Red – 5V
- Black – Ground (-)
- Yellow – Led signal

Of course, instead of connectors you can also solder wires directly to the modules. This way you can save even more space!

Ways to mount the connector:

Top mount   Bottom mount   Side mount

Please take notice at the position of the connector. The orientation is important, you can check this through inserting the included cable. That way you can check if the colours line-up correctly. If not? You need to rotate the connector 180 degrees.

Step 2

Connecting the included cables. You can use the cable with 1x molex connector to connect the first module, and solder the other end to your Arduino or other microcontroller.

The Molex to Molex connector can be used to connect the modules together. Make sure to check all the colours line up according to step 1.

Wire connections on button module V1.0:
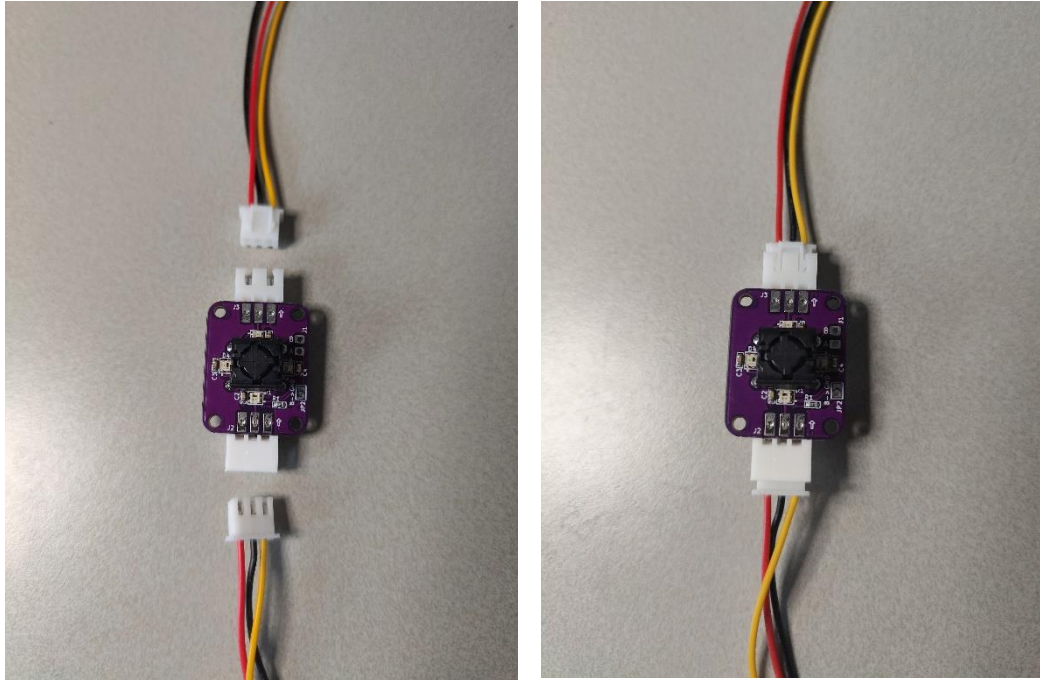
As you can see, one side of the bord is 5V and the other side is Ground (-). **The pinout is slightly different for Module V1.0 and V1.1. So please make sure to double check!** On V1.1 black and yellow are switched.

Step 3

Connecting the button. The button can be connected by using the 2 pin molex connector on pin A and B.

You will see to Jumper pads. JP1: Jumper GND and JP2: Jumper_PULL. The usage is very simple.

- Solder JP1 and you connect one end of the button (contact B) to ground. This way you only need one-wire to connect to your Arduino.
- Solder JP2 and you connect one end of the button (contact A) to 5V. This way an internal pull-up resistor is activated.

You can probably see a lot of combinations are possible. You can make the following combinations:

1. Solder non – now you can simply detect if A and B are connected which means the button is pressed.
2. Solder JP1 – now you can detect on pin A if it gets connected to ground.
3. Solder JP2 – now you can detect on pin B if it gets connected to 5V.
4. Solder JP1 and JP2 – now you can detect on pin A if it goes from 5V to ground, which means it's pressed.
5. Solder JP1 and JP2 – now you can detect on pin B if it goes from ground to 5V, which means it's pressed.

All above can be used. Depending on you project or code (that's already been written) or compatibility with other parallel or series components you can choose the one that fits your requirements.

- JP1 is located on the bottom side and is a ground connection (V1.0 says it's a pullup, this is incorrect)
- JP2 is located on the Top side and is a pullup (V1.0 says it's a GND connection, this is incorrect)
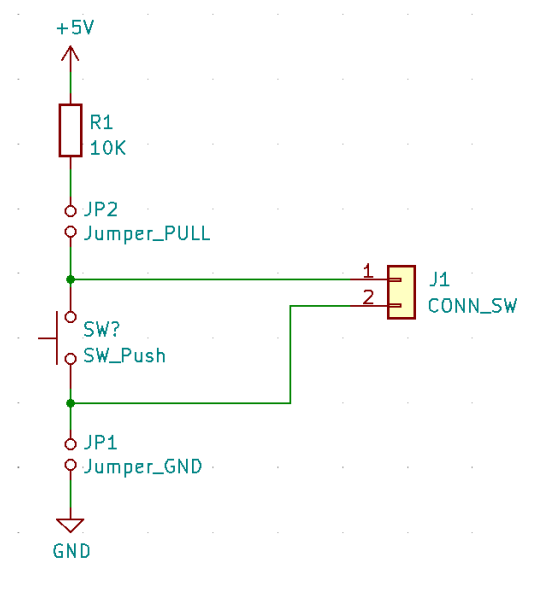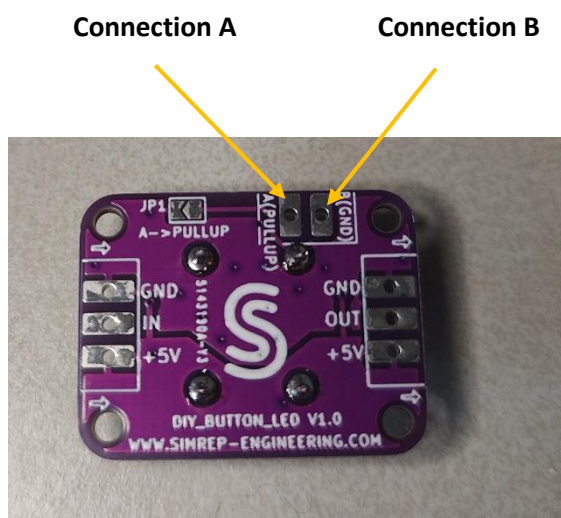
Step 4

Connecting to SimHub.

Step is of course optional, You can open the Arduino setup tool in simhub, this way you can control the RGB leds in your game. Select WS2812B RGB Leds, and choose a pin that you have connected the Yellow wire to.
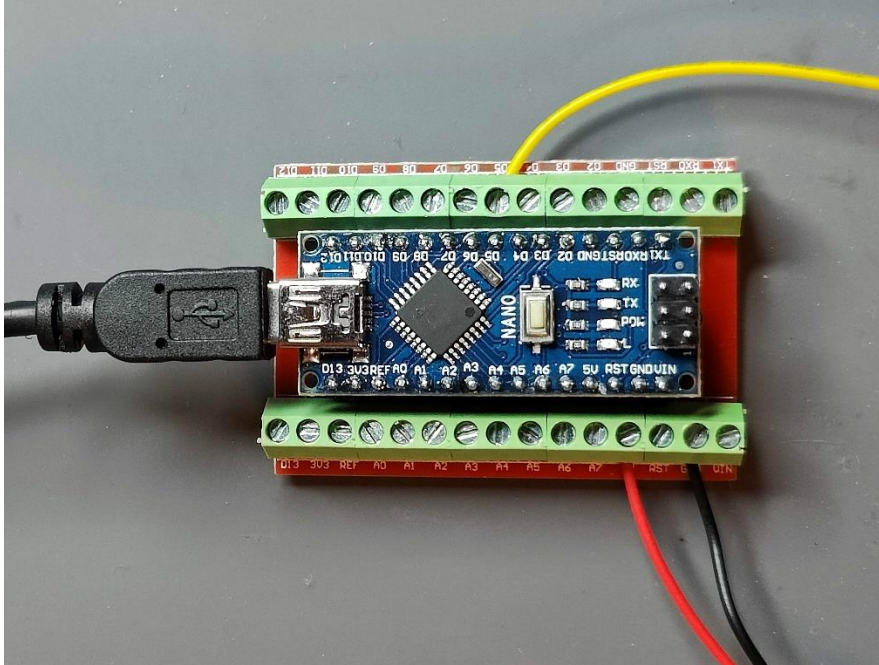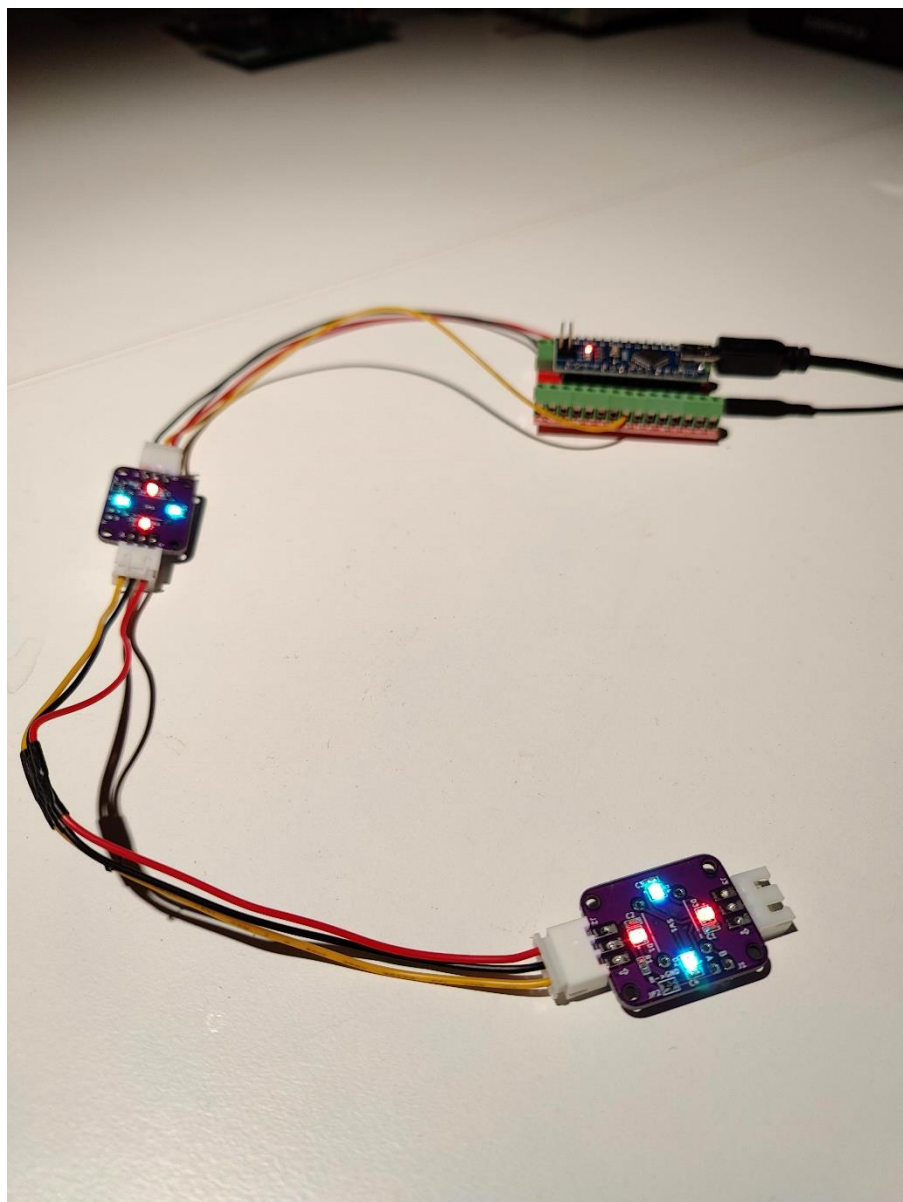

Yellow to pin 5 of the arduion, Red to 5V and Black to GND.

Per PCB there are 4 leds. So if you have connected 6 buttons, select 24 LEDs in the setup tool.

Upload and enjoy!

Thank you for your purchase and supporting our business! We are continuously improving on our products and services. If you experienced any difficulties during installation, please let us know by contacting us at service@simrep-engineering.com or sending a DM to our Instagram profile www.instagram.com/simrep_engineering.

Troubleshooting

1. **No connection on SimHub** – please make sure the USB cable is pluged in. If you are using an USB-adapter or extender, please connect the arduino directly to the USB-port on the computer.
2. **Only the first modules works** – Check if all wires are correctly installed according to step 1. And you have selected enough LEDs in the SimHub setup tool. (4 LEDs per modules).
3. **I can't use to button with 1 wire** – you need to Solder JP1 or JP2 on each button module. Please note that the silkprinting on V1.0 is wrong. JP1 is ground connection (bottom), the PCB says pull-up and JP2 is pull-up (Top), the PCB says GND connection. On V1.1 this is fixed.