# DIY a Router that Can Indicate network status

修订历史

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# Contents

# 1. DIY a Router that Can Indicate the network status

## 1.1 Brief

This is a DIY router that can Indicate the network status including net speed and number of devices connected to the network.
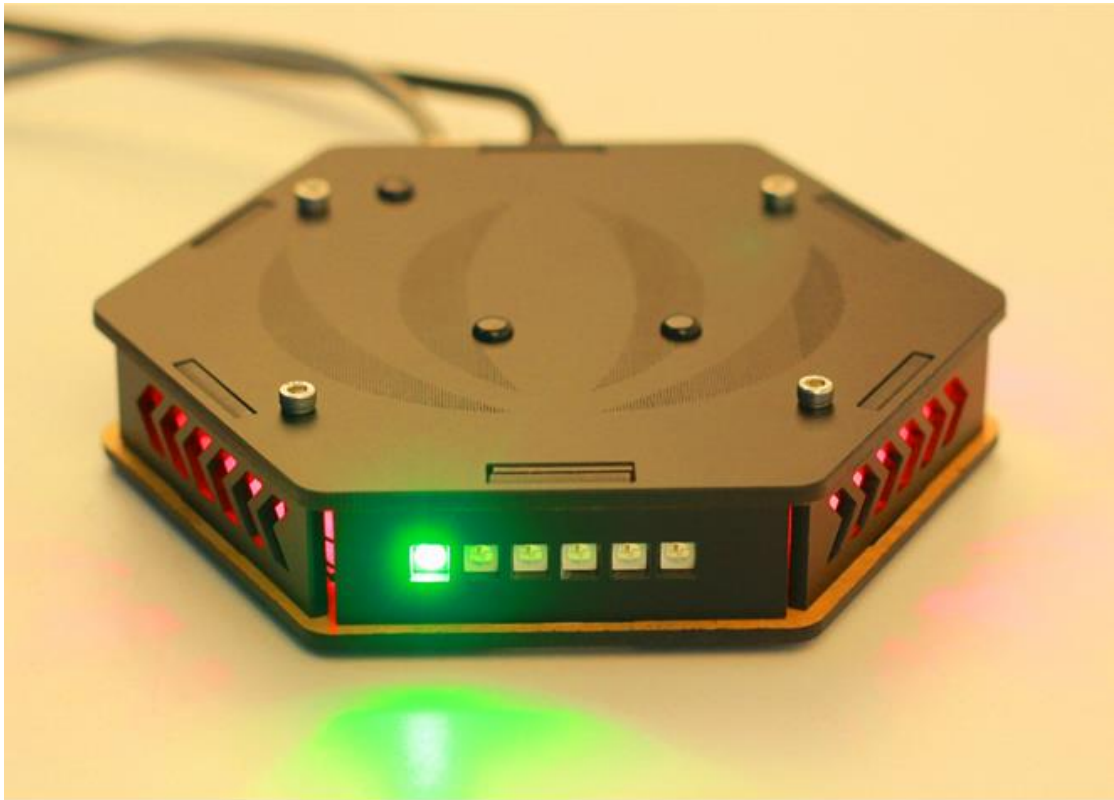
## 1.2 About this project

Sometimes, I would like to know if anyone use my network without my permission, and I'm curious on how many devices are connected to my router. So I made this DIY router and share this project to you. If this project is useful to you, don't forget to share on SNS.

I used a RGB LED Strip to indicate the network status. For example, the led color as the picture below shows represent net speed.
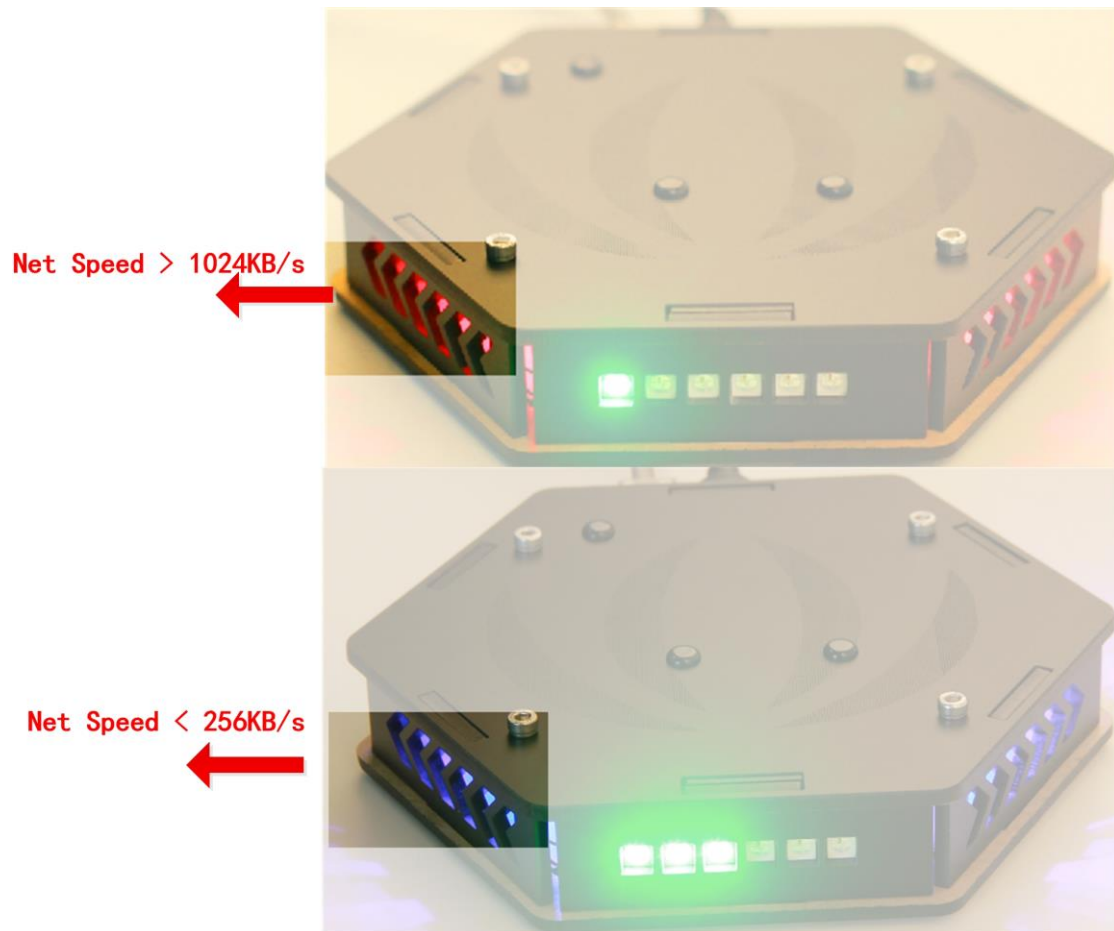


The number of green led as the picture shows indicates how many devices has connected to the router.
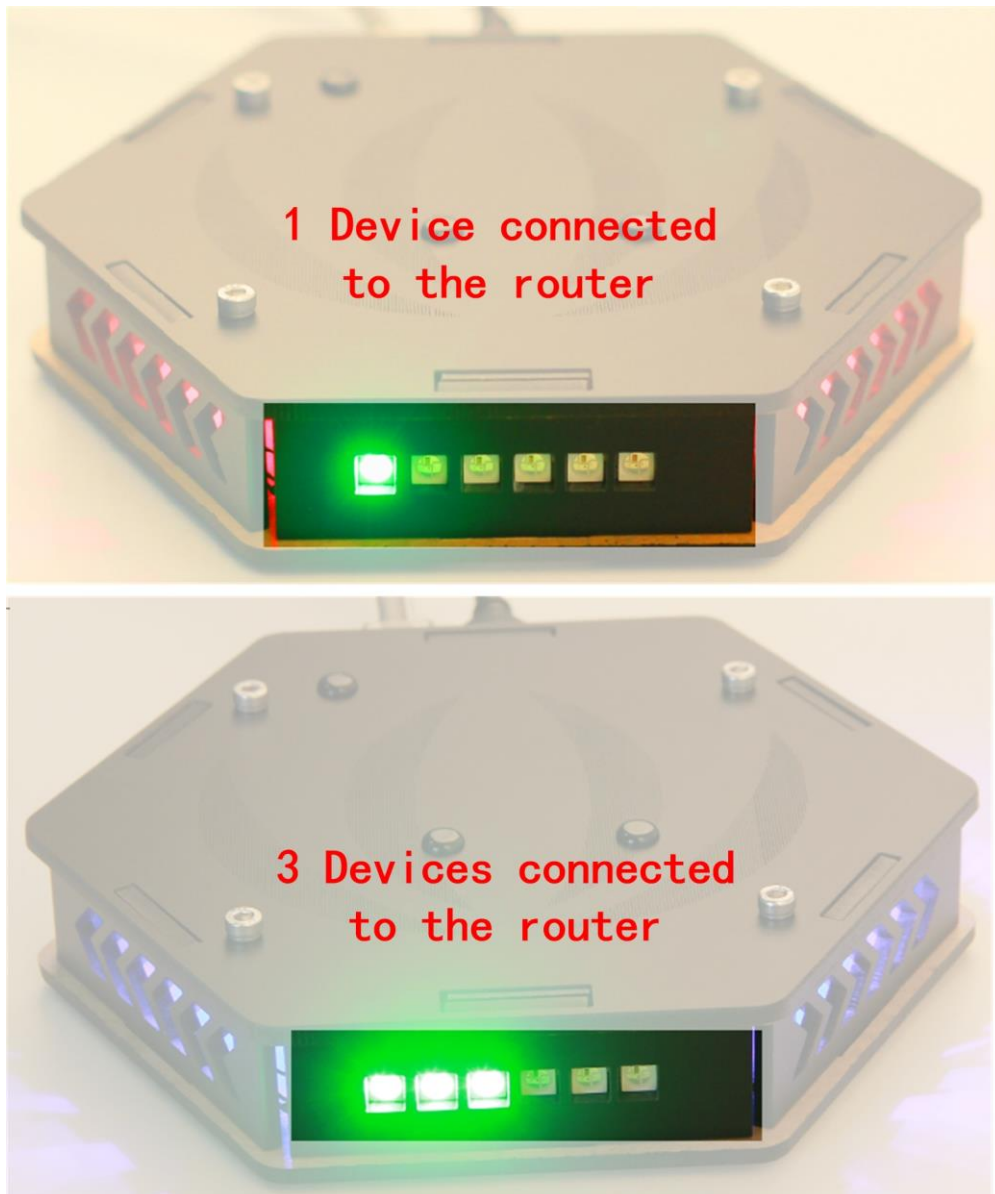
Well, Let's start now and enjoy the journey of making.

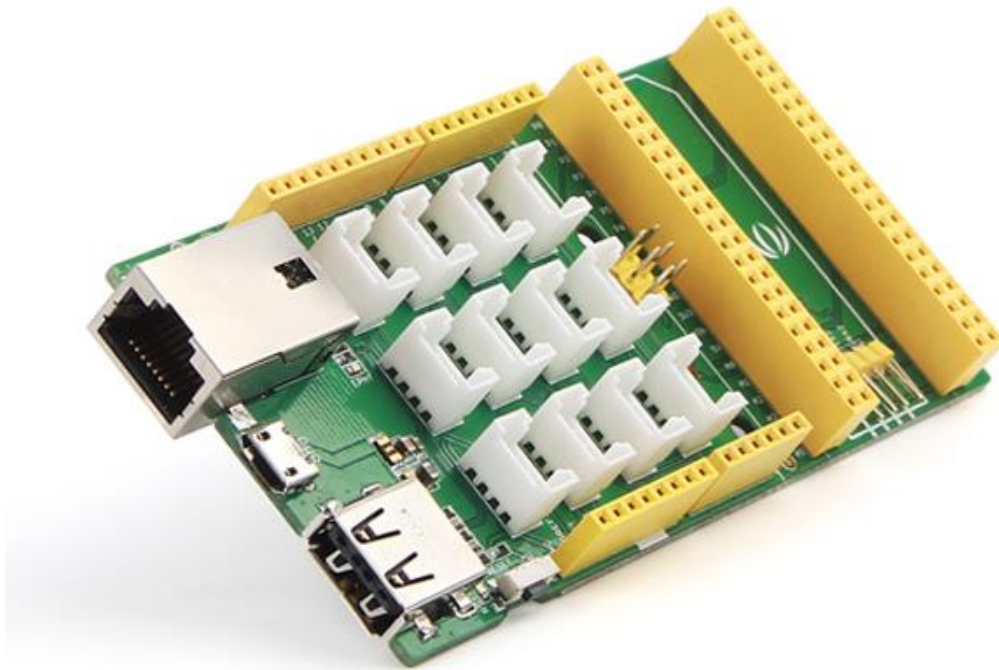You can also find this project on Instructable website.

https://www.instructables.com/id/Make-a-Colorful-Smart-Router/

## 1.3 What do we need



- LinkIt Smart 7688 Duo

http://www.seeedstudio.com/depot/LinkIt-Smart-7688-Duo-p-2574.html



- Arduino Breakout for LinkIt Smart 7688 Duo

  http://www.seeedstudio.com/depot/Arduino-Breakout-for-LinkIt-Smart-7688-Duo-p-2576.html

- Digital RGB LED Flexi-Strip
  http://www.seeedstudio.com/depot/WS2812B-Digital-RGB-LED-FlexiStrip-144-LED-1-Meter-p-1868.html?cPath=81_79
- Some nuts and screws

## 1.4   Hardware Work

### 1.4.1 Download the Drawings

I did some work on structures just as the picture below shows. It's made up of 3mm matte black acrylic board. My friend Xu from seeed help me cutting the board. I guess you don't have a laser cutting at home, you can find some in the hacker space near from you easily. If there's no hacker space nearby, you can try the Laser Cutting Service supply by Seeed.
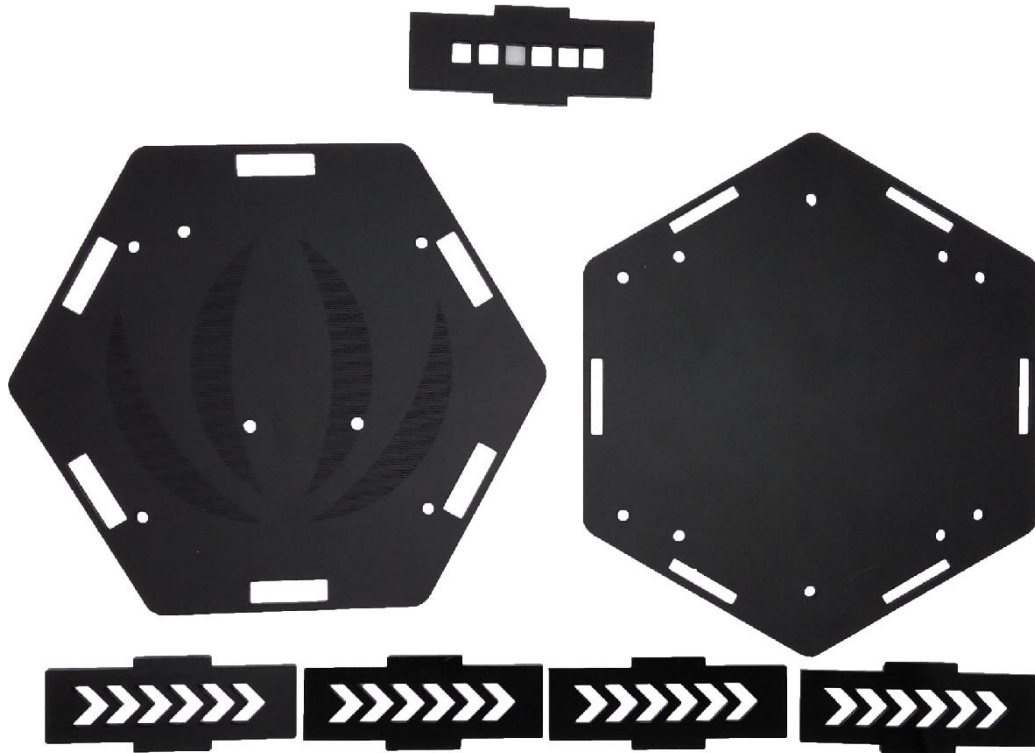
You can download my drawing shown as below by click here
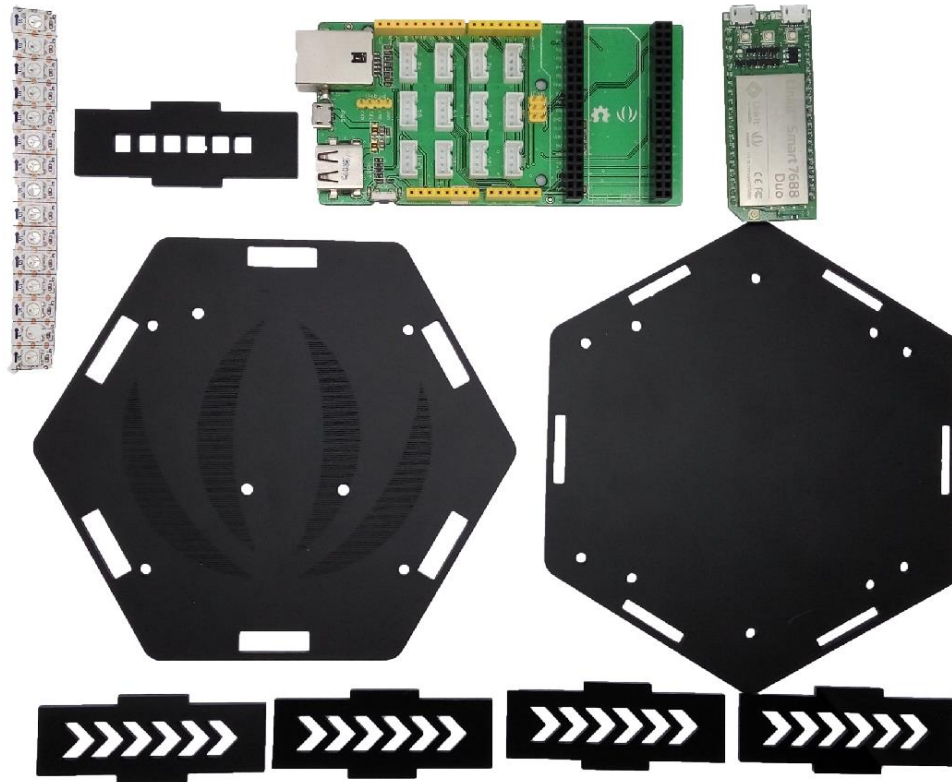https://github.com/Lee-Kevin/13.DIYaRouter/tree/master/Drawing
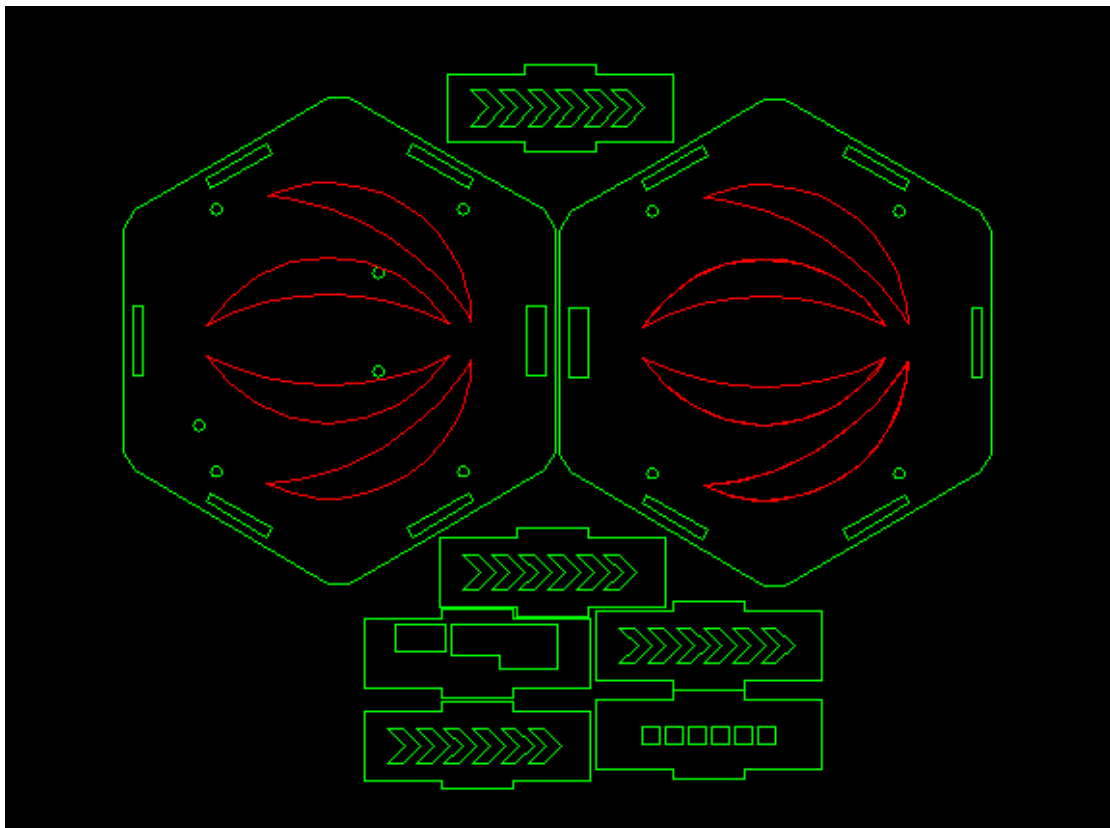
### 1.4.2 Laser cutting

Now, you'll need one piece of matte black acrylic (3mm 40cm*60cm), and cut the acrylic according by the drawing that you have already downloaded.
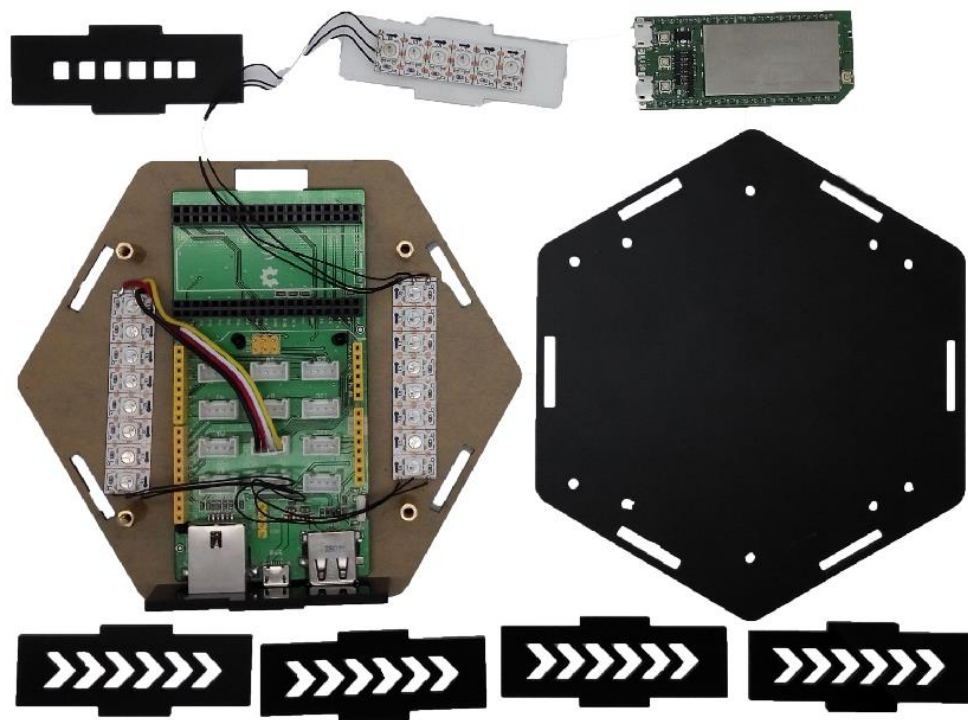


### 1.4.3 Modules Connect

Prepare the cutting acrylic sheet and the circuit modules as the picture below shows.

Connect Arduino Breakout for LinkIt Smart 7688 Duo board to the acrylic board using screws and nuts. The Grove Led Strip is connected to the D6 port on the breakout board.



Then, insert LinkIt Smart 7688 Duo board to the Arduino Breakout board. And as shown in the following picture, assemble the router box.
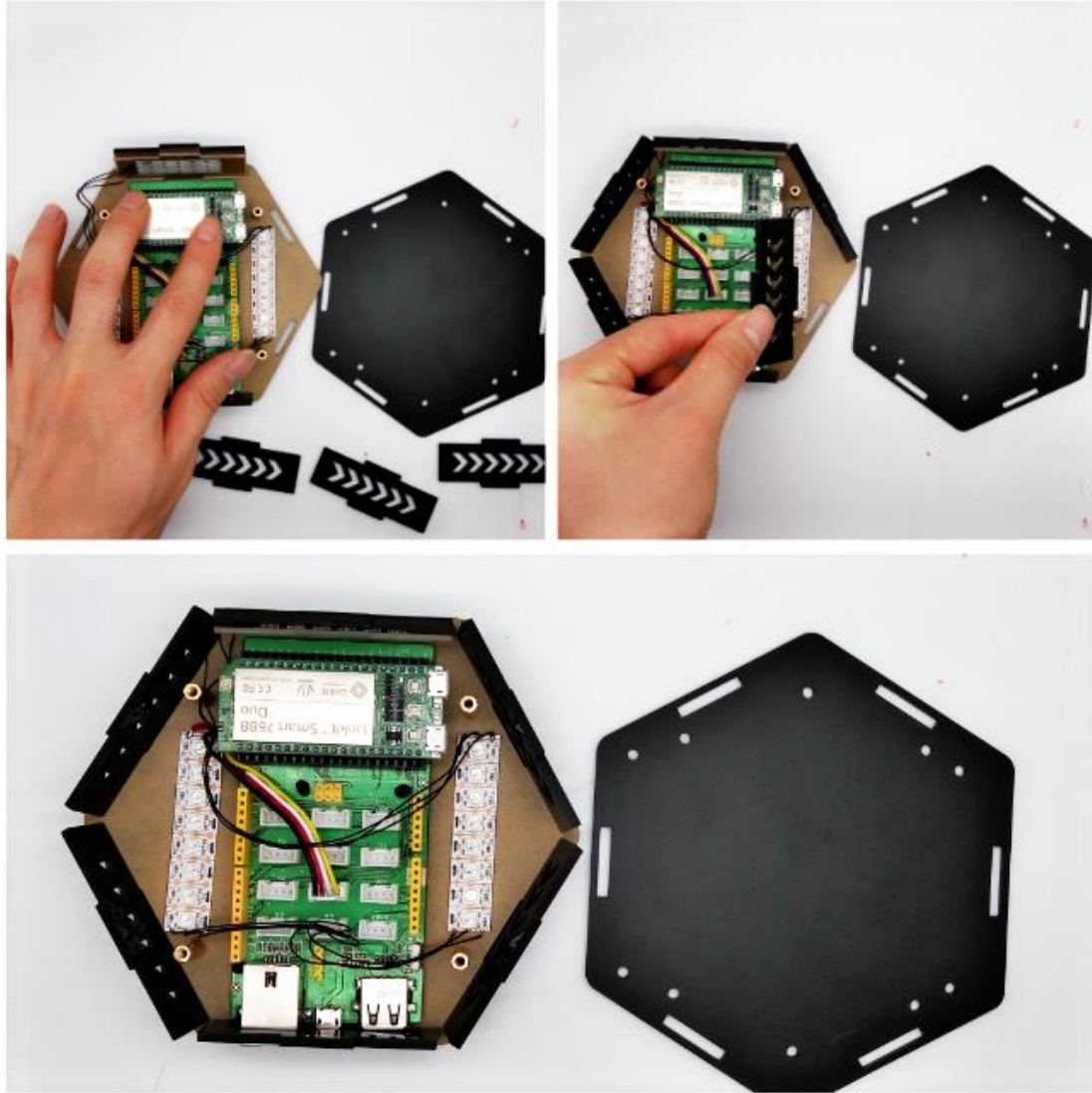
At last, you can fix the last piece of acrylic sheets. And now the hardware work is done.

## 1.5 Software Work

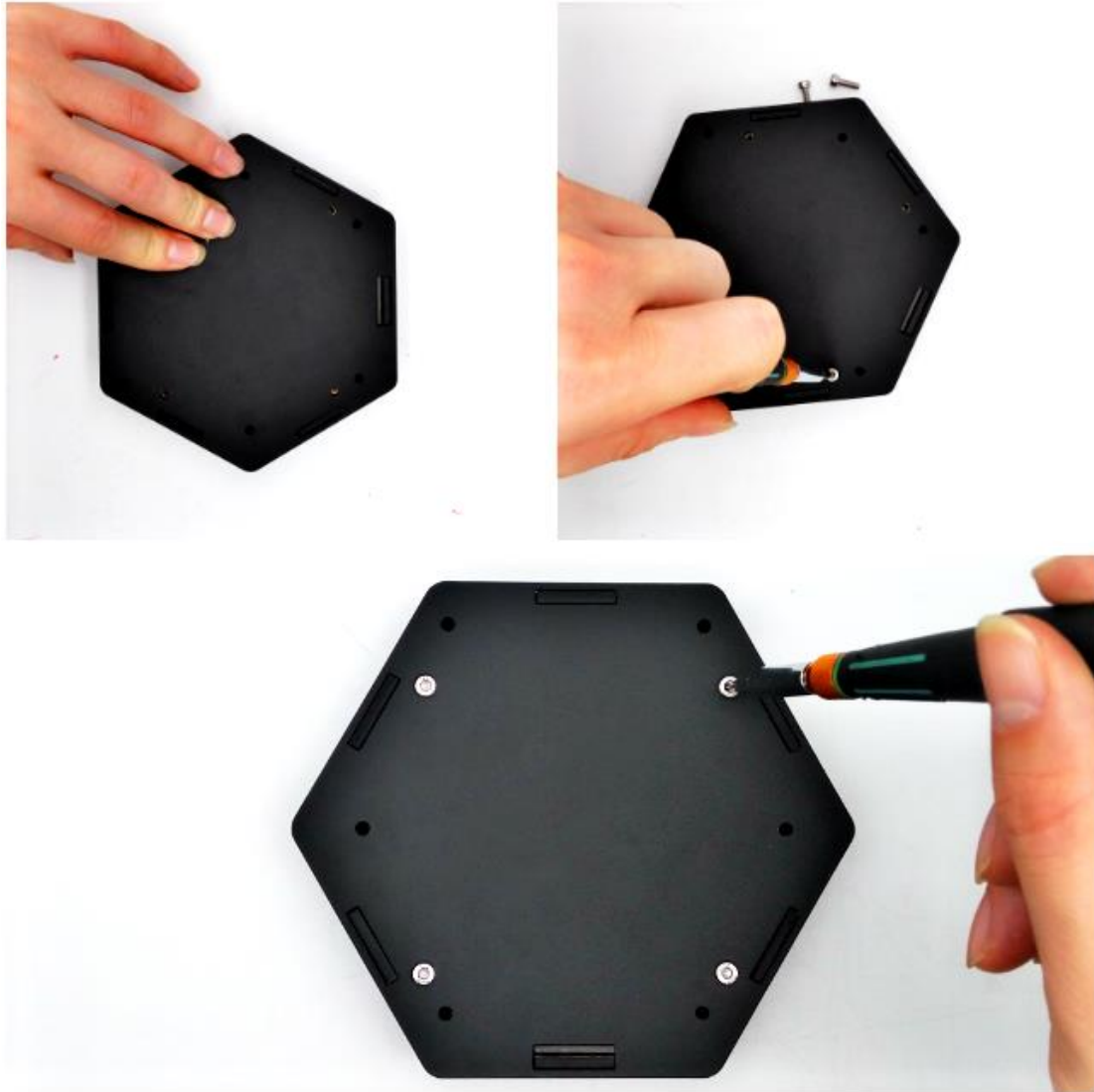Now, we should do some software work, if this is your first time to use MT7688, please put hand on http://www.seeedstudio.com/wiki/LinkIt_Smart_7688_Duo to get started.

### 1.5.1 Set up MT7688

I assume you have been familiar with LinkIt Smart 7688, go to the MT7688 terminal by SSH or Serial.

● Modify the configure file to change MT7688 Duo into router mode.

```
vi /etc/config/network
```

```
config interface 'lan'
    option proto 'static'
    option netmask '255.255.255.0'
    option ipaddr '192.168.100.1'

config interface 'wan'
    option ifname 'eth0'
```

option proto 'dhcp'

- Enable yunbridge

> uci set yunbridge.config.disabled='0'

> uci commit

- set startup script

> chmod +x script/netDetermineBox

> cp script/netDetermineBox /etc/init.d/

> /etc/init.d/netDetermineBox enable

> /etc/init.d/netDetermineBox start &

> reboot



### 1.5.2 Using Arduino IDE to upload Arduino sketch

Download                     demo                     code                     at
   https://github.com/Lee-Kevin/MT7688_Demo/tree/master/mt7688routerBox
Click "Download zip" button on right side of webpage to download all codes.
Decompress the downloaded zip files to"C:\Users\Administrator\Documents\Arduino\" and
remove "-master" in decompressed file name.
Launch Arduino IDE.
Click        Sketch>Add       file       to       add       routerBox_Arduino.ino       file
from"C:\Users\Administrator\Documents\Arduino\MT7688_Demo\mt7688routerBox\"
Press CTRL +U to upload codes to your board. Wait a while, there will be prompt like following
figure:

Done uploading.

Congratulations, you have already completed the whole of the work.

## 1.6  The result

Now，Power up the router, and access it to the network. Let your device connect to the "LinkIt_Smart _7688_xxxxxx", and you'll find the Green LED is light up.





## 1.7  Make. Invent. Do.

This project is made as an Open Source Project. It's a starting point. Let your creativity go wild with the mechanical, electrical and software design. Make the demo your own. Decorate it. Improve the work. No matter what, write a recipe about it.

To share and progress together.