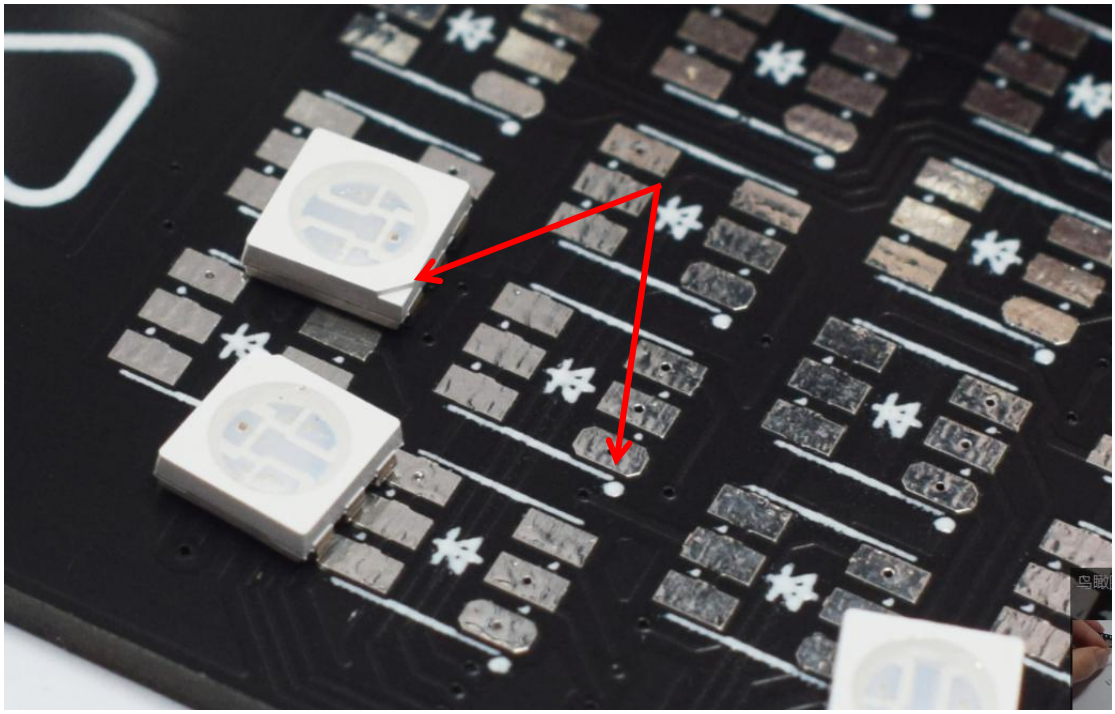
Please read the entire production process carefully and then do it better.

Let me first talk about the issues that need attention before welding.

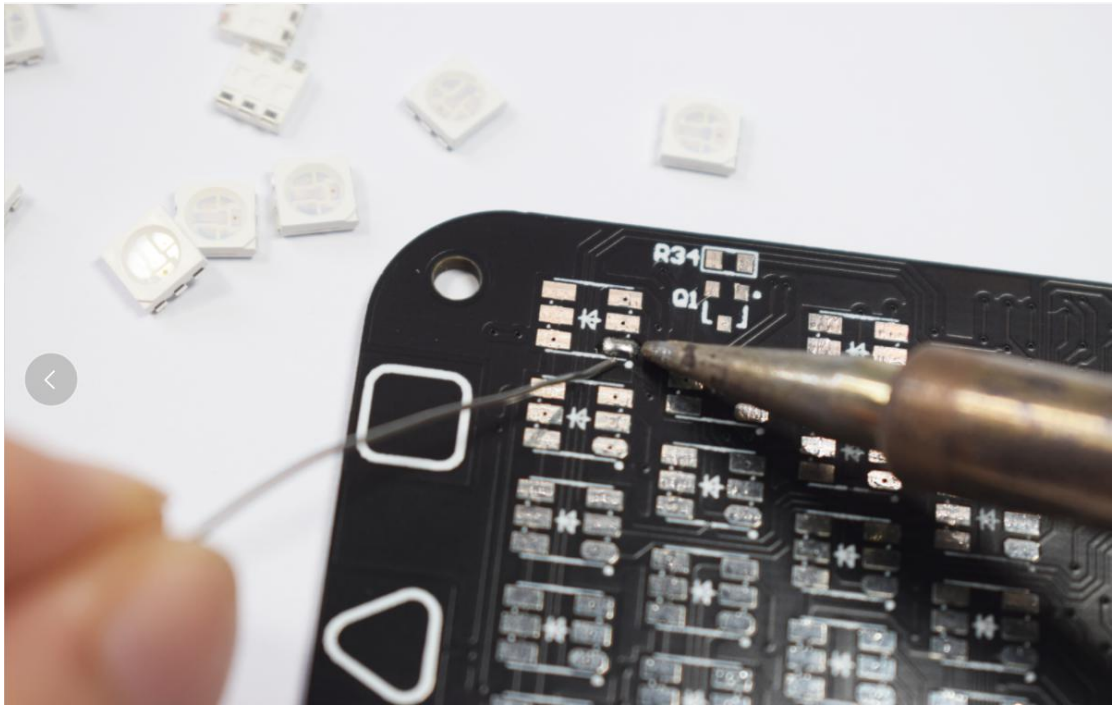
1. The soldering temperature is below 320℃, the soldering iron temperature can not be too high, otherwise it may damage the LED.

2. Soldering LED soldering iron must be grounded and it is best to wear an electrostatic bracelet for grounding welding. The welding speed needs to be fast.

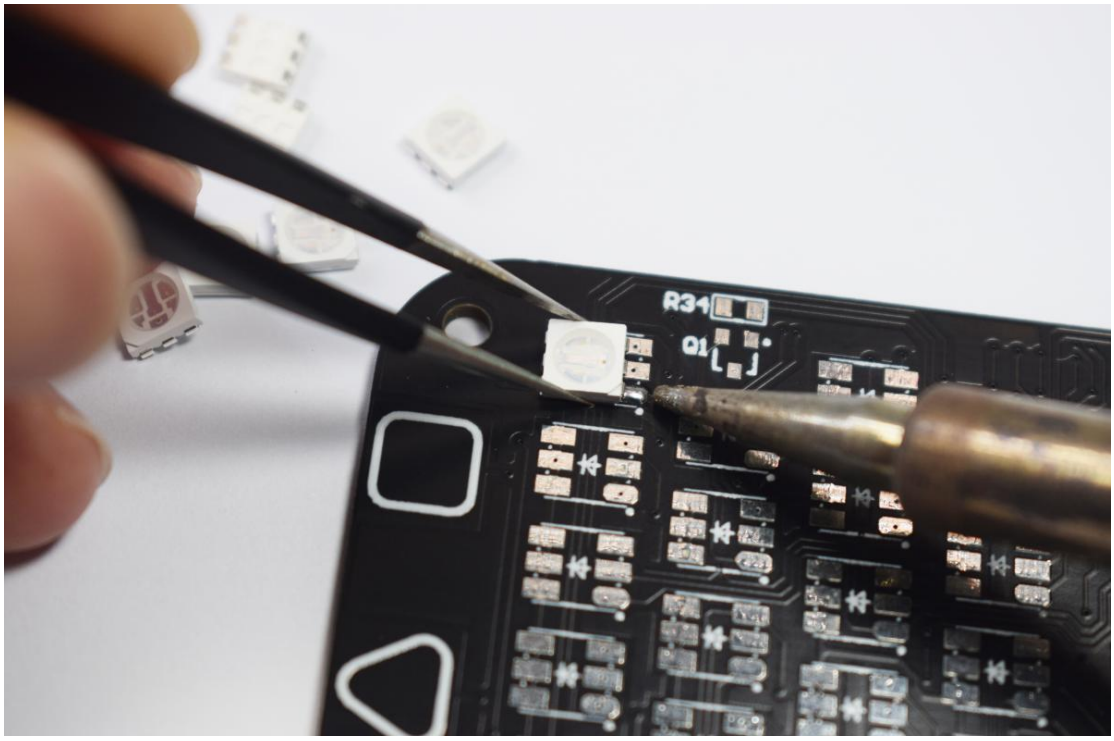
1. Solder the LED, the missing corner on the LED corresponds to the white point



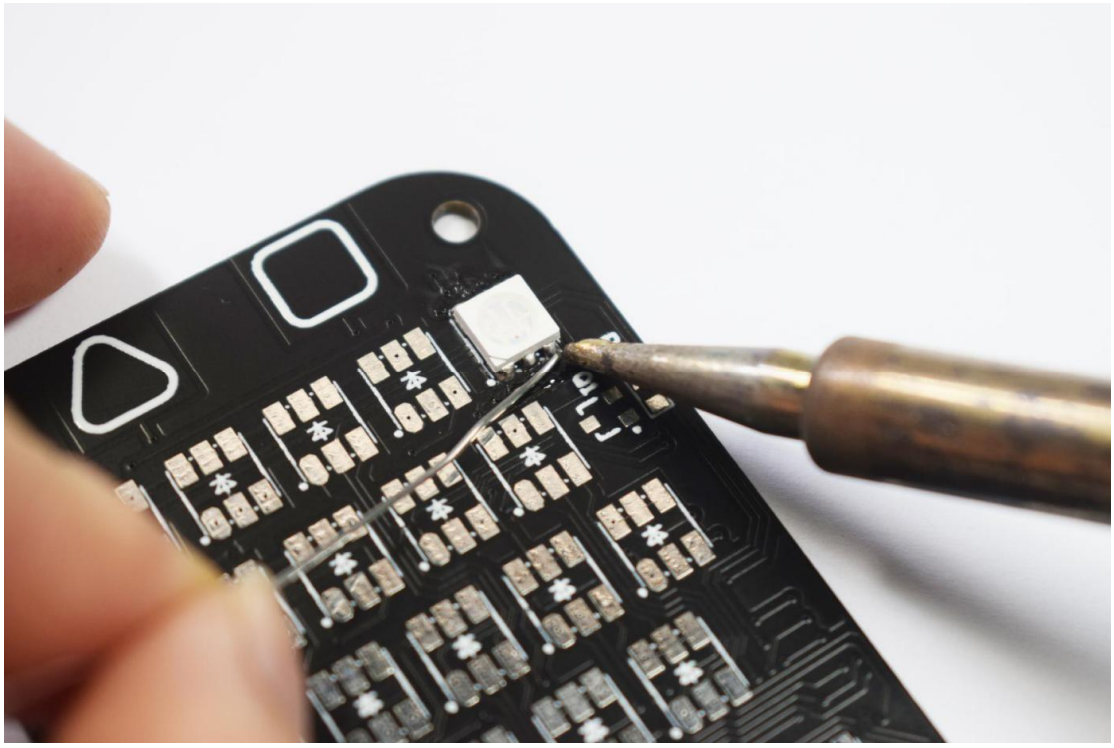
2. Add solder to the pad



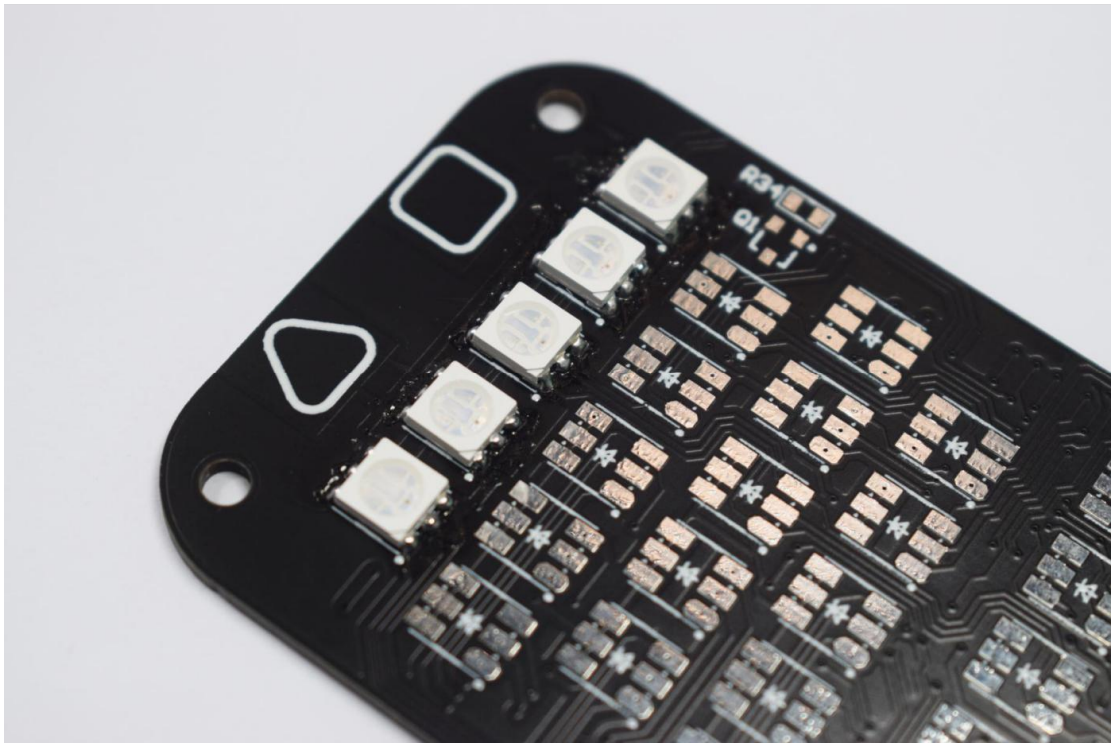
3. Put on the LED, melt the solder to fix the LED

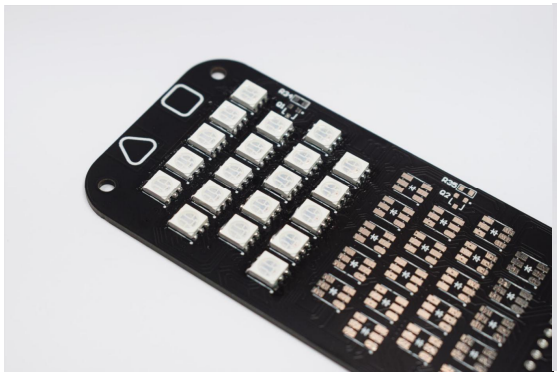


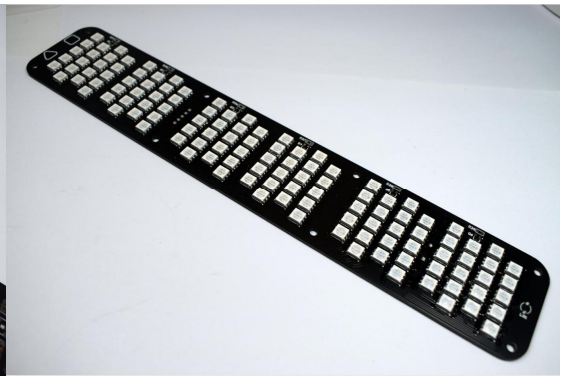
4.Solder other pins



4. **Other LEDs are also soldered in the same way**



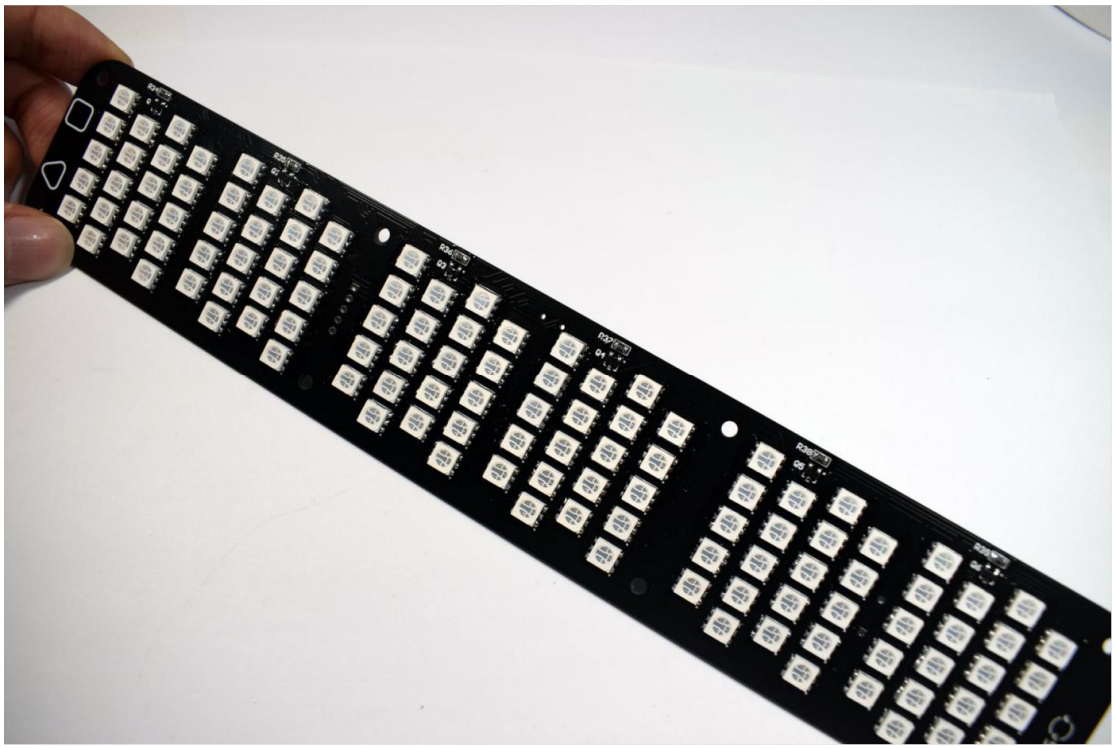




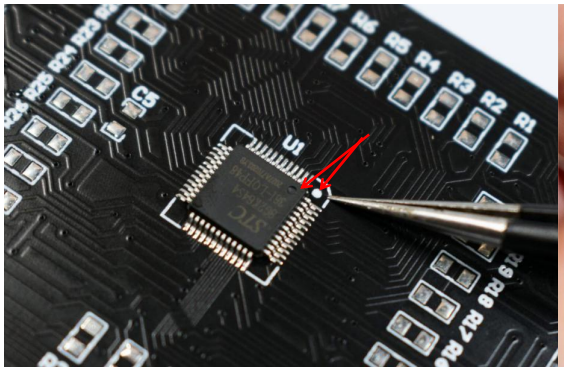
6.Welding transistor Q1-Q6: 9012 (2T1)

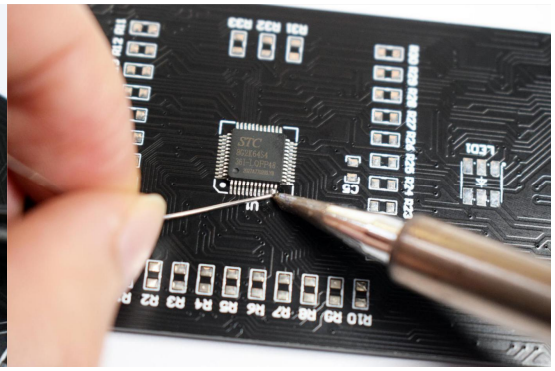
5. Welding resistance: R34-R39: 4.7K(472)

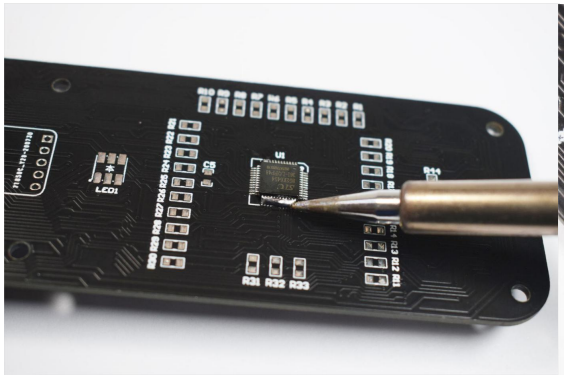
6. **The LED, resistor and transistor are welded as shown below**

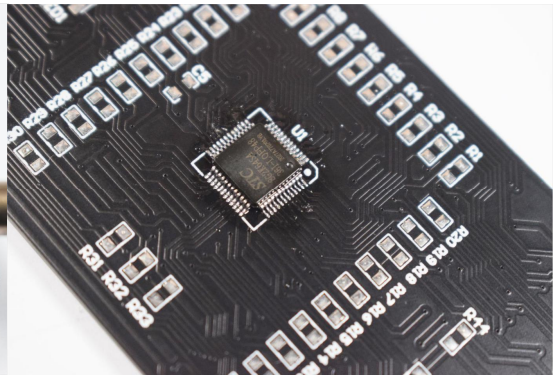


7. **When soldering the MCU, please pay attention to the IC direction**

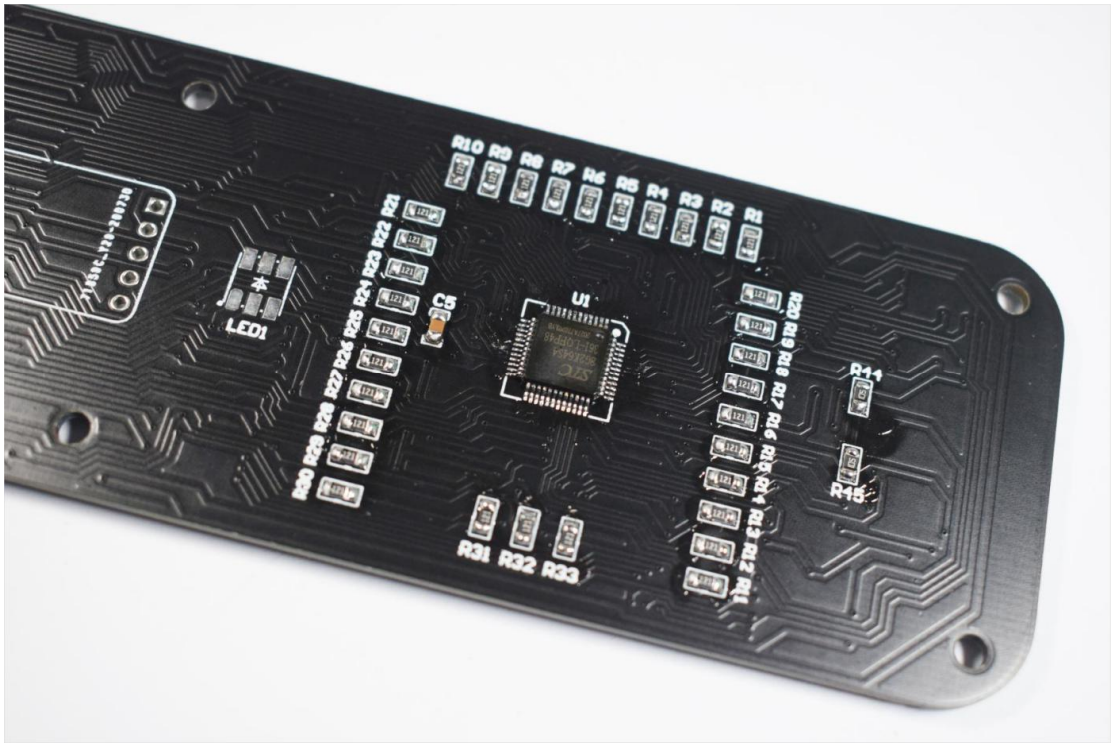




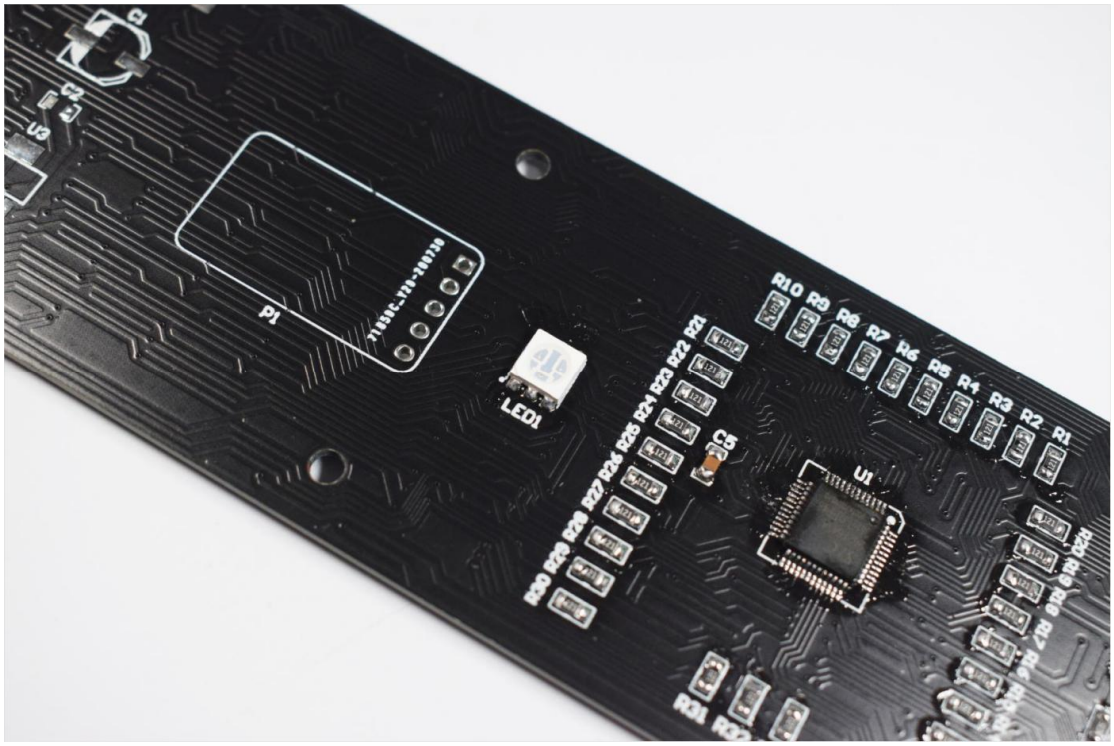




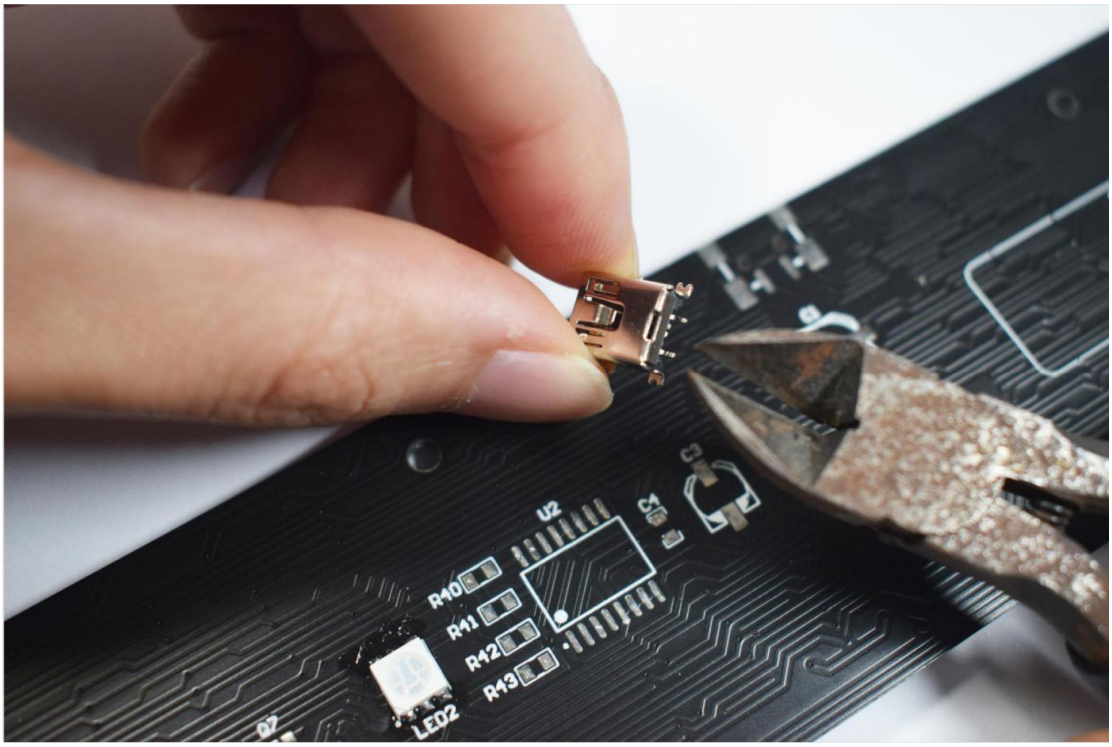
8. **Welding resistance and capacitance: R1-R33: 120Ω (121) R44-R45:1MΩ (105) C5:100nf(104)**



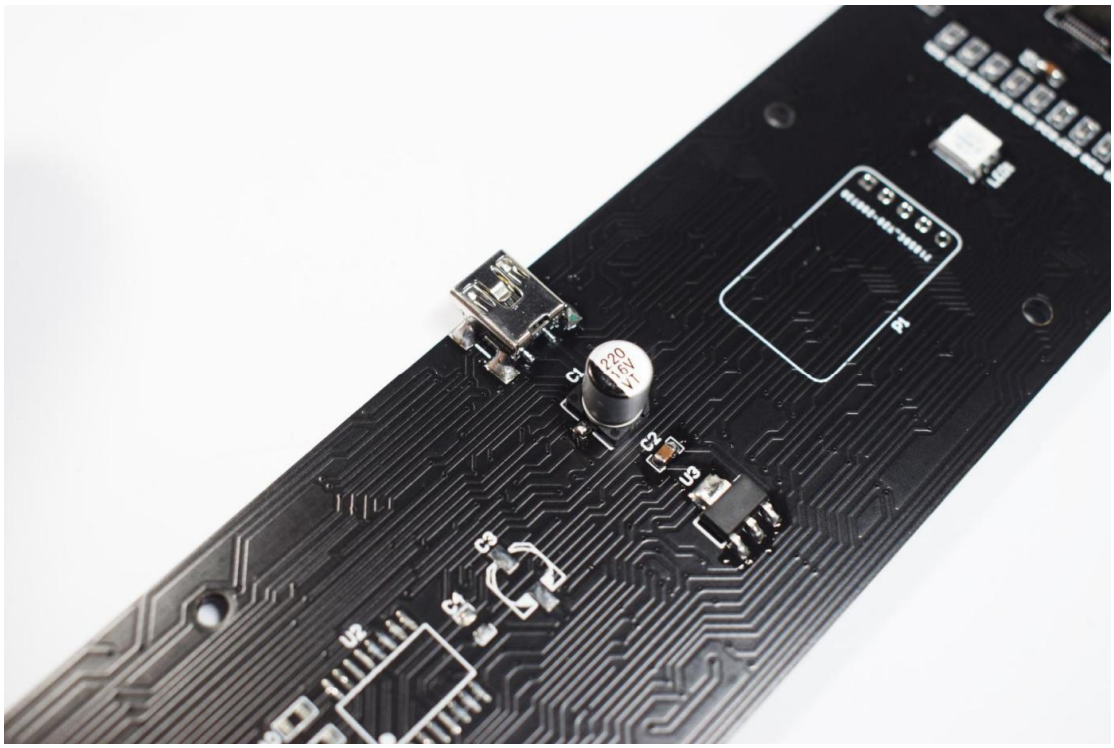
9. **Solder LED1 and LED2 on the back**



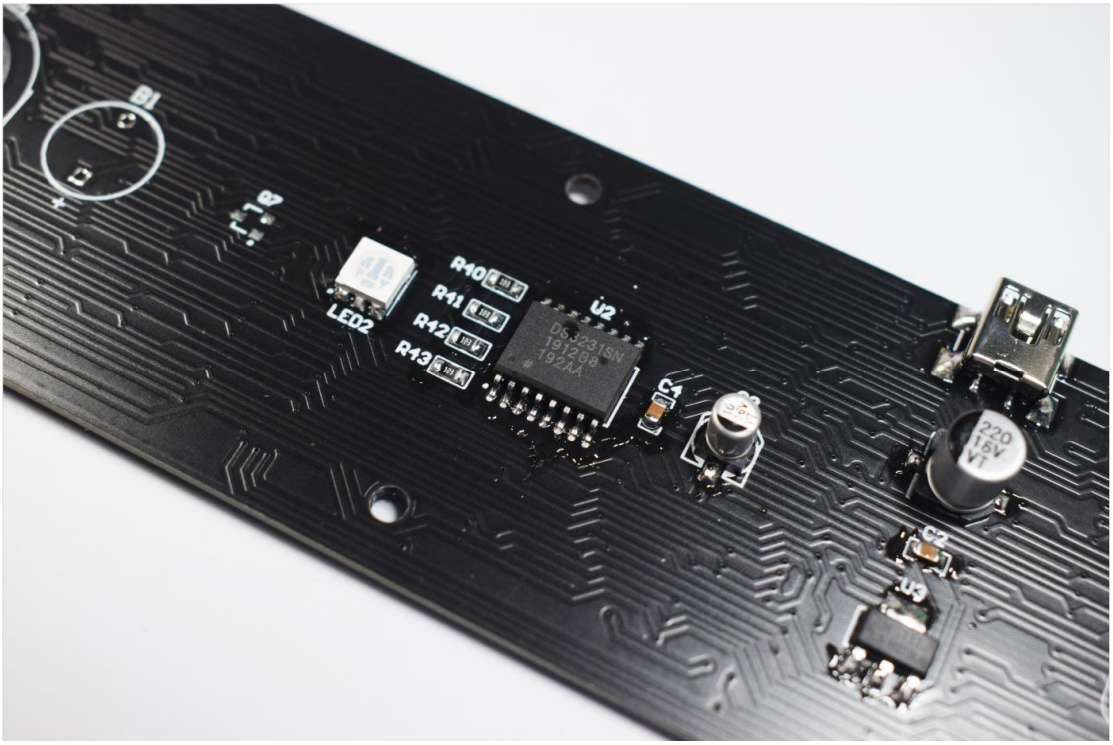
10.To solder the mini USB socket, first cut off the middle three pins, and then solder



11.Welding C1: 220uf C2: 100nf (104) U3: AMS1117

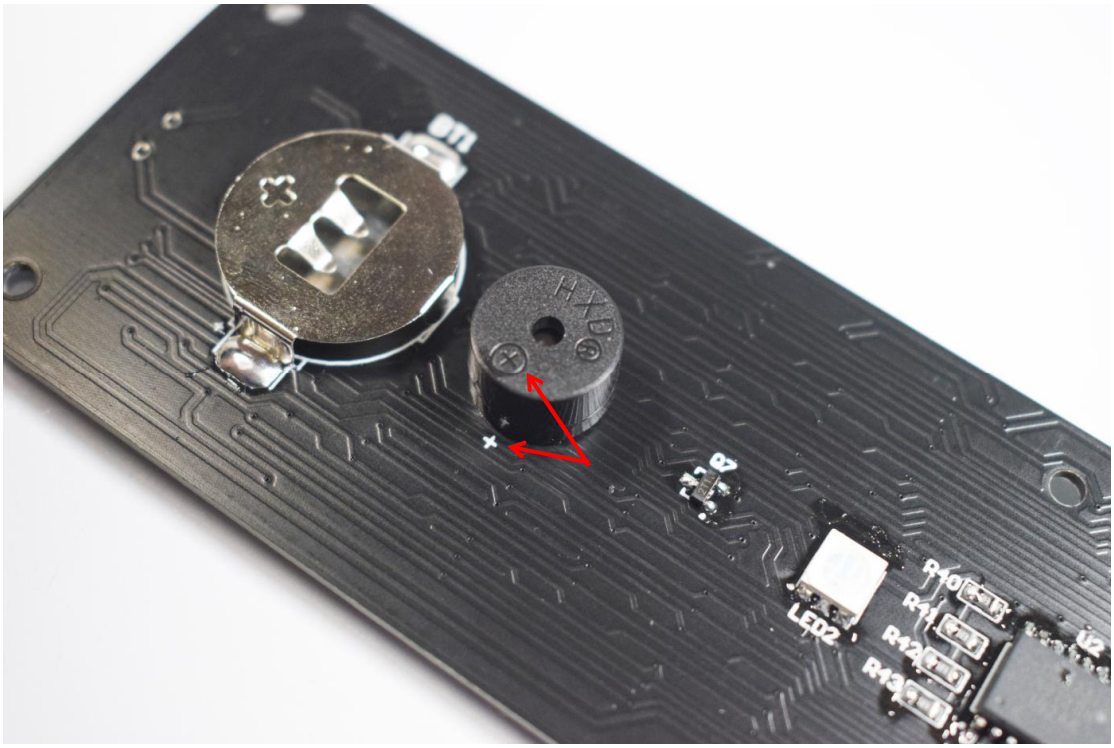


12.Welding C3: 10uF C4: 100nf(104) U2: DS3231 R40-R43: 10K(103) Q7: 9012(2T1)



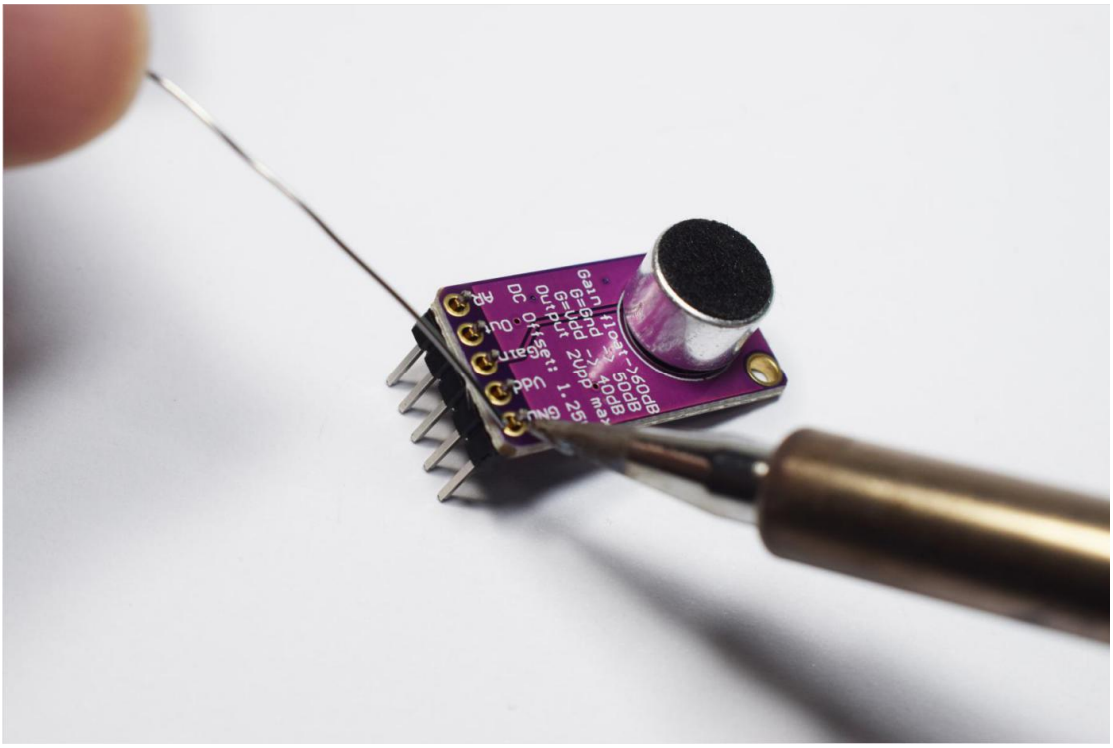
13.Weld the battery holder, please pay attention to the direction

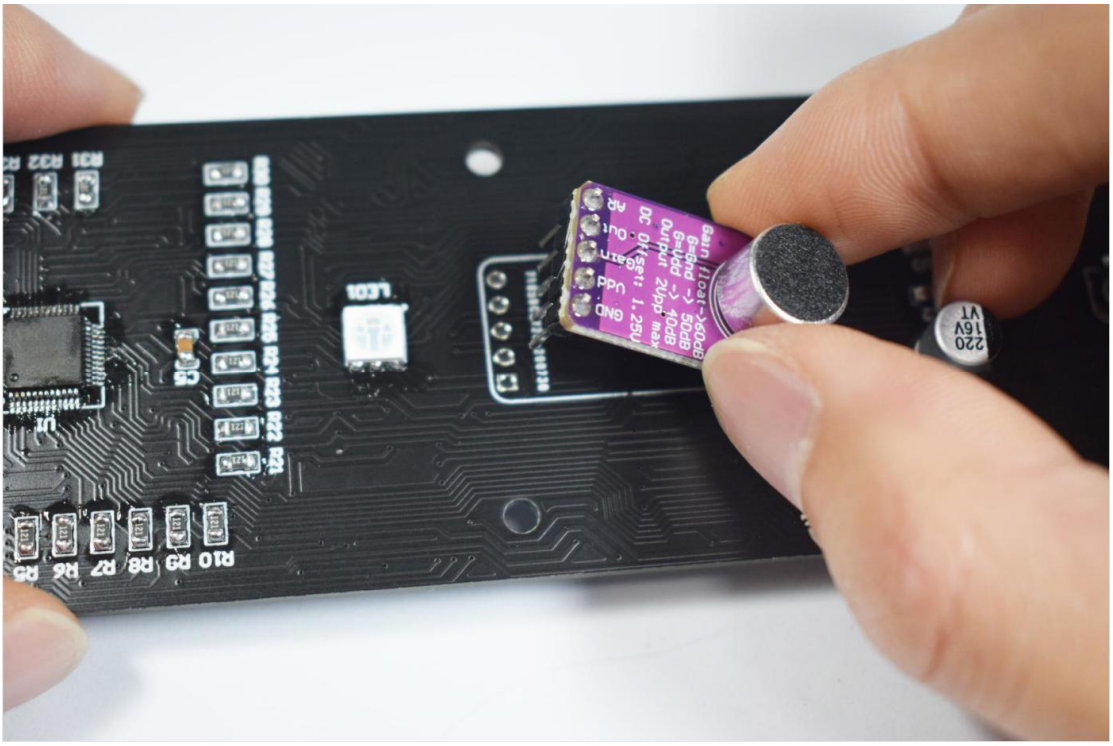
14.Welding buzzer, please pay attention to the direction



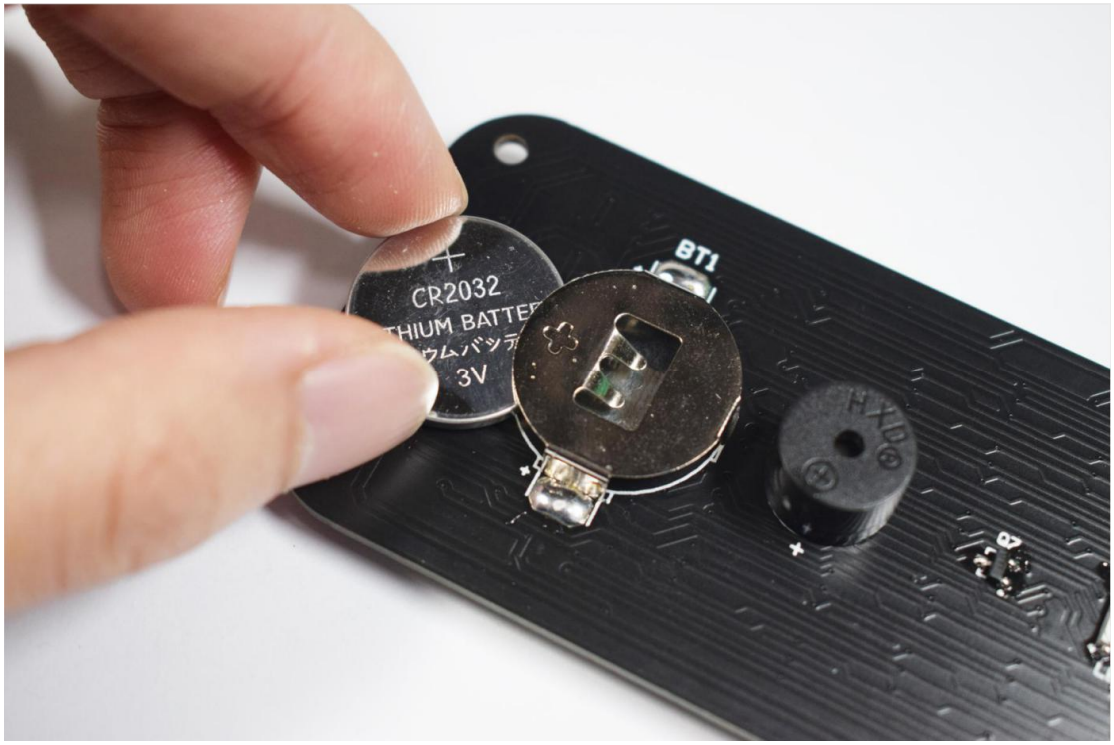
15.Welding the photoresistor, it should be noted here that the photoresistor needs to leave a certain height to prevent the acrylic plate from blocking the light sensor, as shown below

16.Soldering audio module

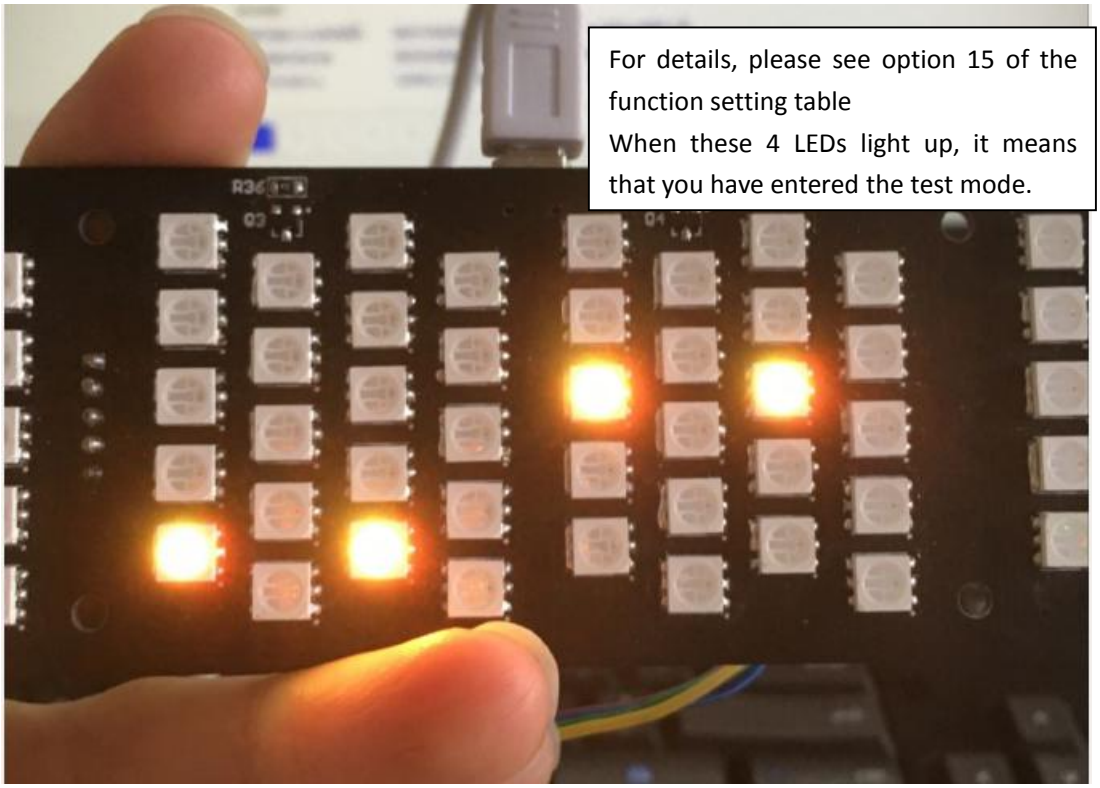




17.Install CR2032 button battery (please buy it yourself)



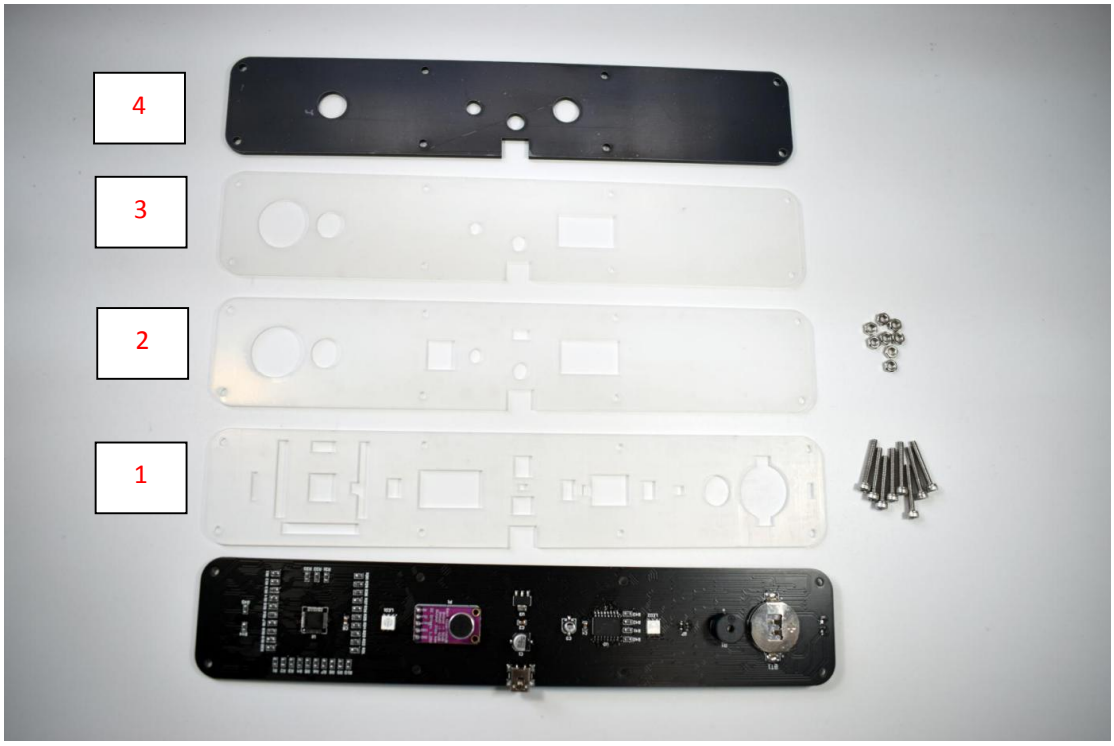
After all the devices are soldered, please power on and set to test mode to check whether the LED light is normal. If the LED can all display red, green, and blue, it means that the LED is normal. Otherwise, you need to check whether the LED is short-circuited.



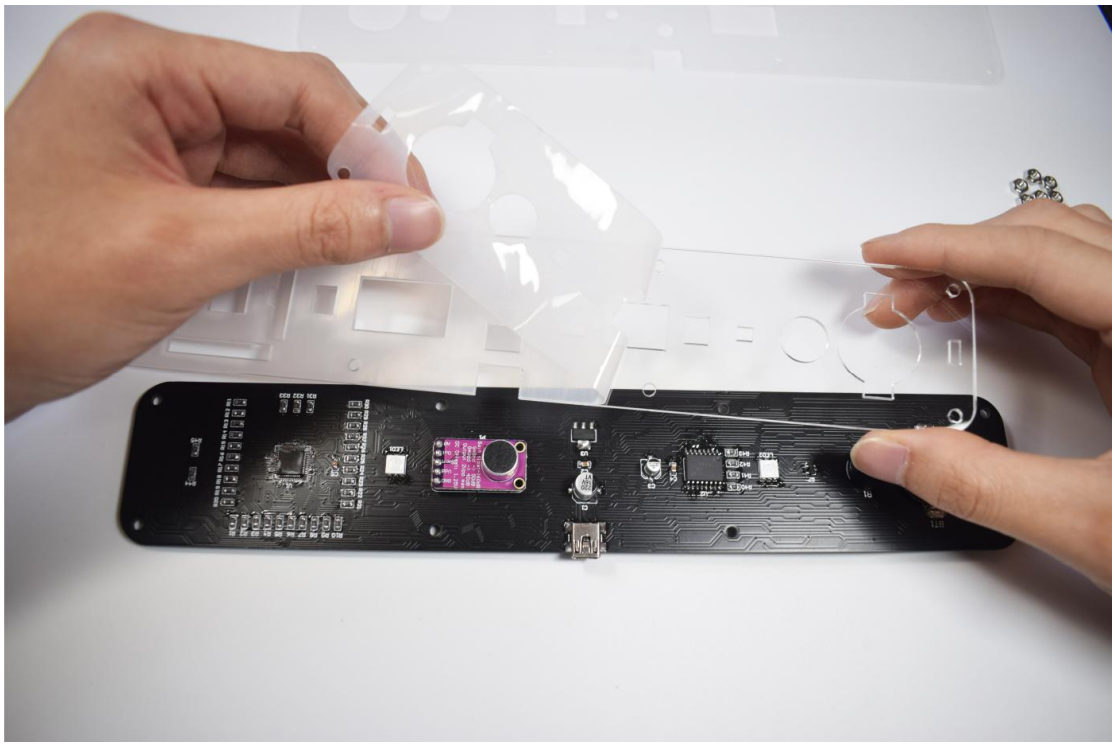
For details, please see option 15 of the function setting table

When these 4 LEDs light up, it means that you have entered the test mode.

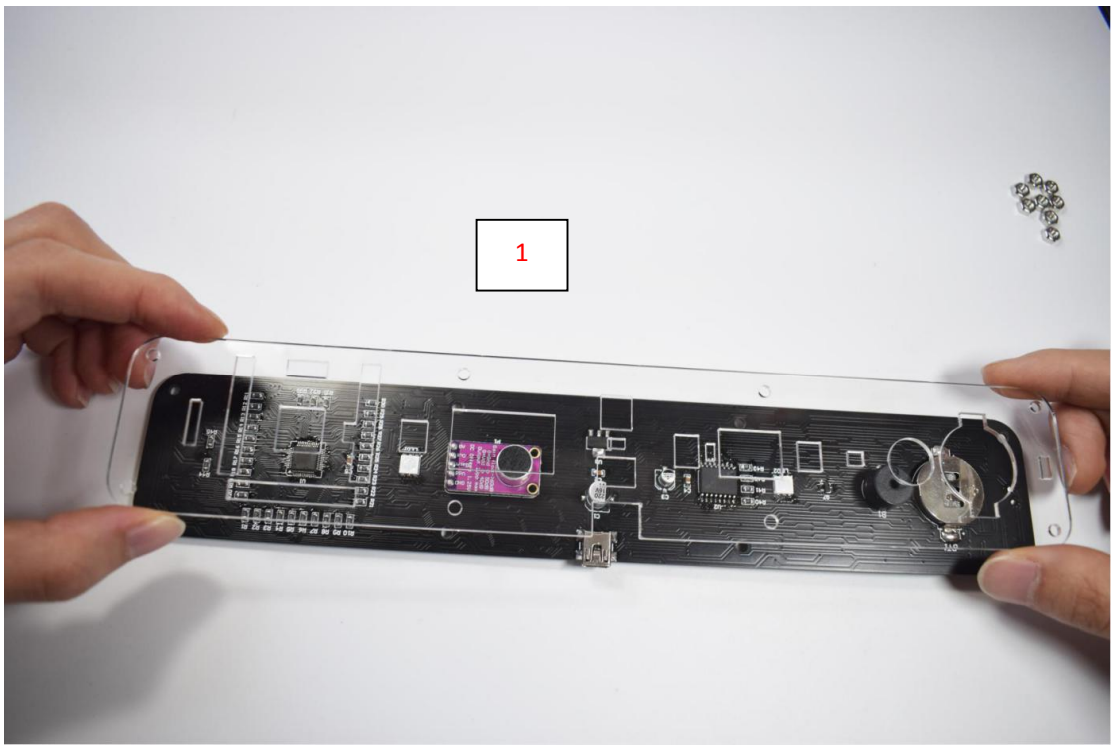
18.Next, start to install the acrylic board, first take out these acrylic boards and the "hexagon socket screws" and nuts

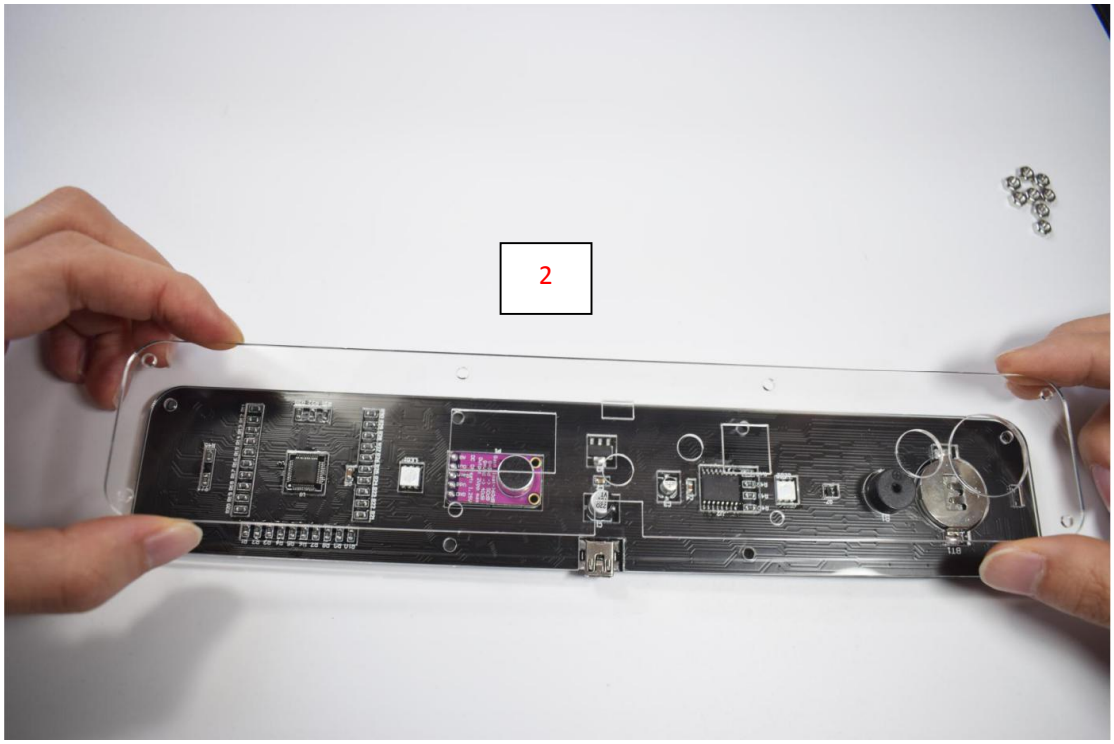


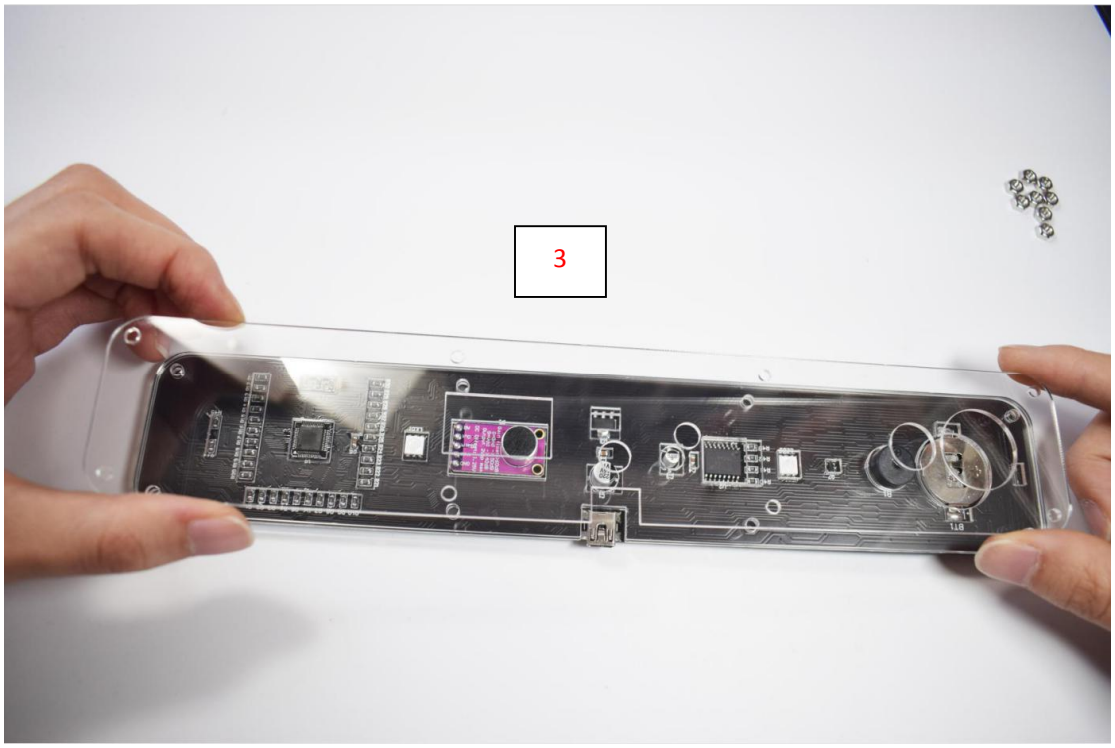
19.Take out the acrylic sheet and tear off the protective film

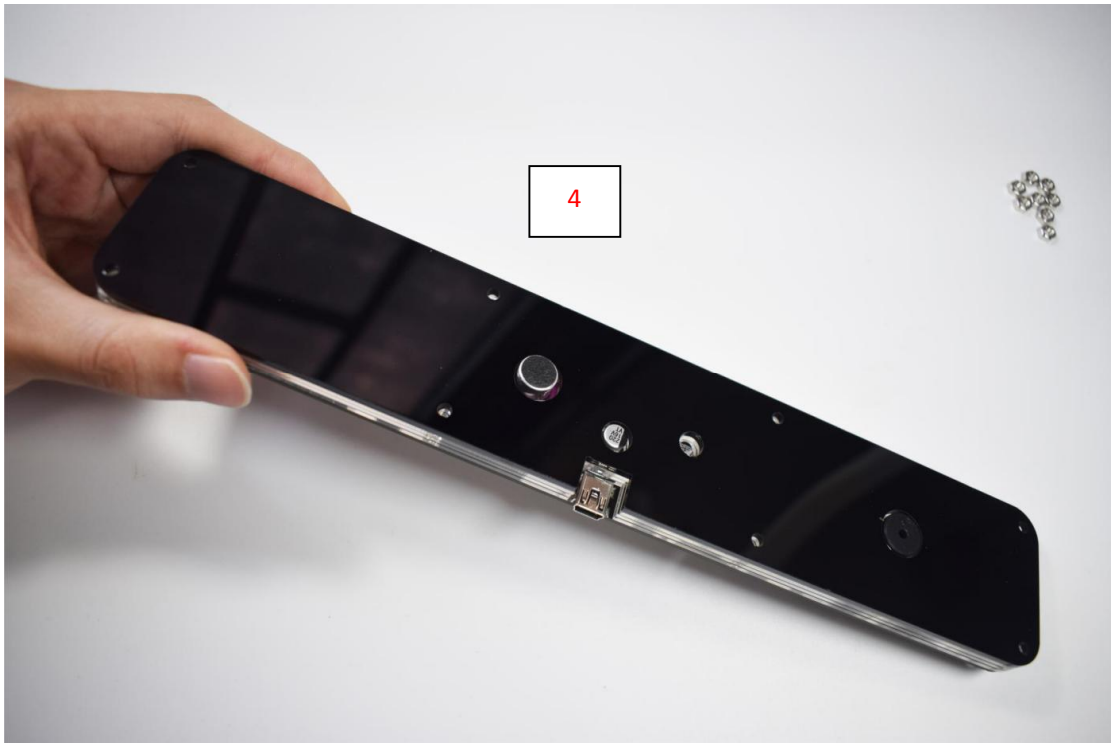


20.Install the acrylic panels in the order of 1, 2, 3, 4





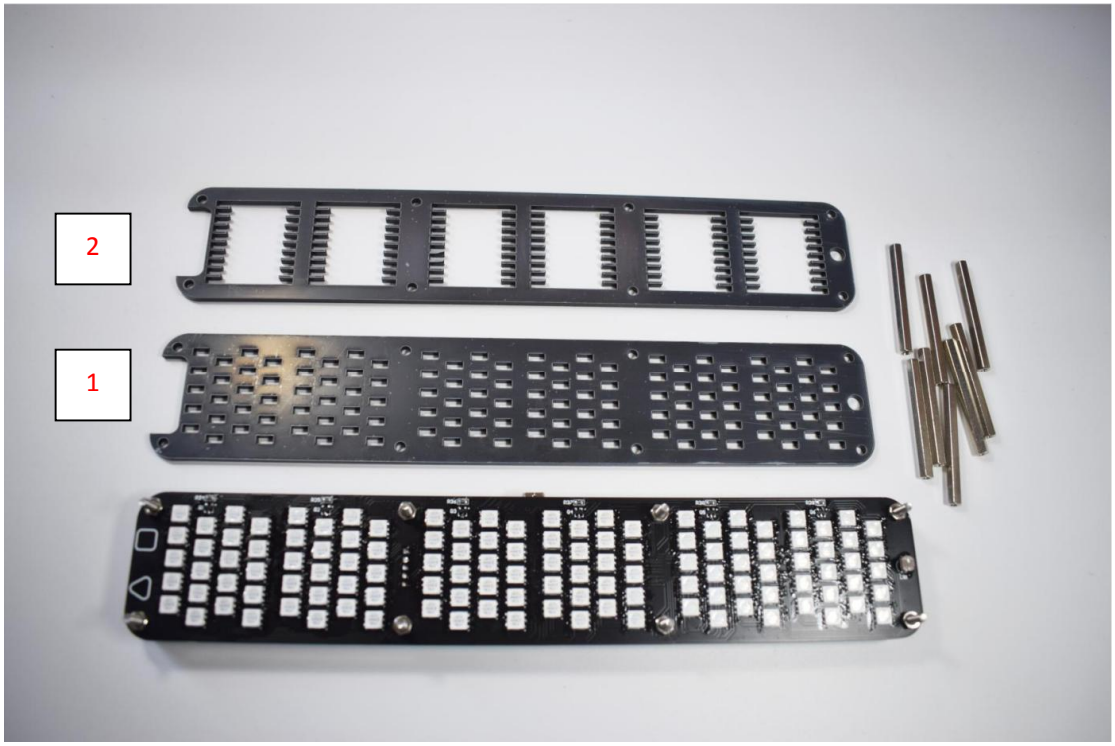

3


4

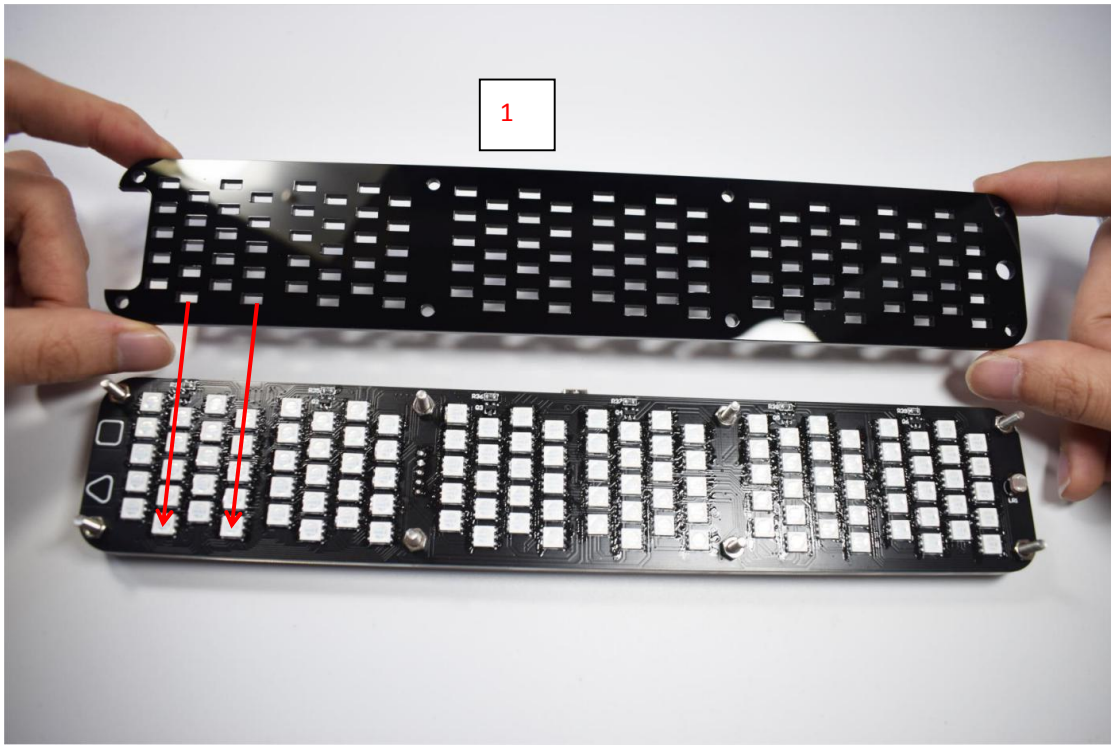
21.Install hexagon socket screws as shown

22.Install nut

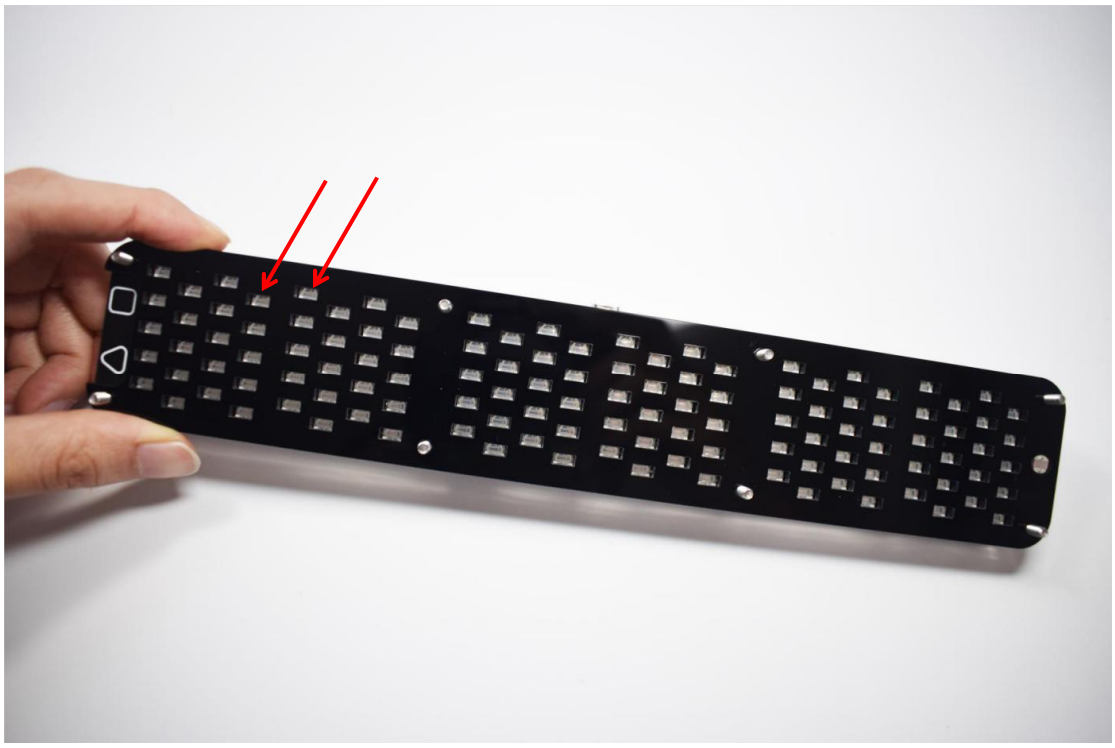
23.Next, take out the following acrylic plates and copper pillars



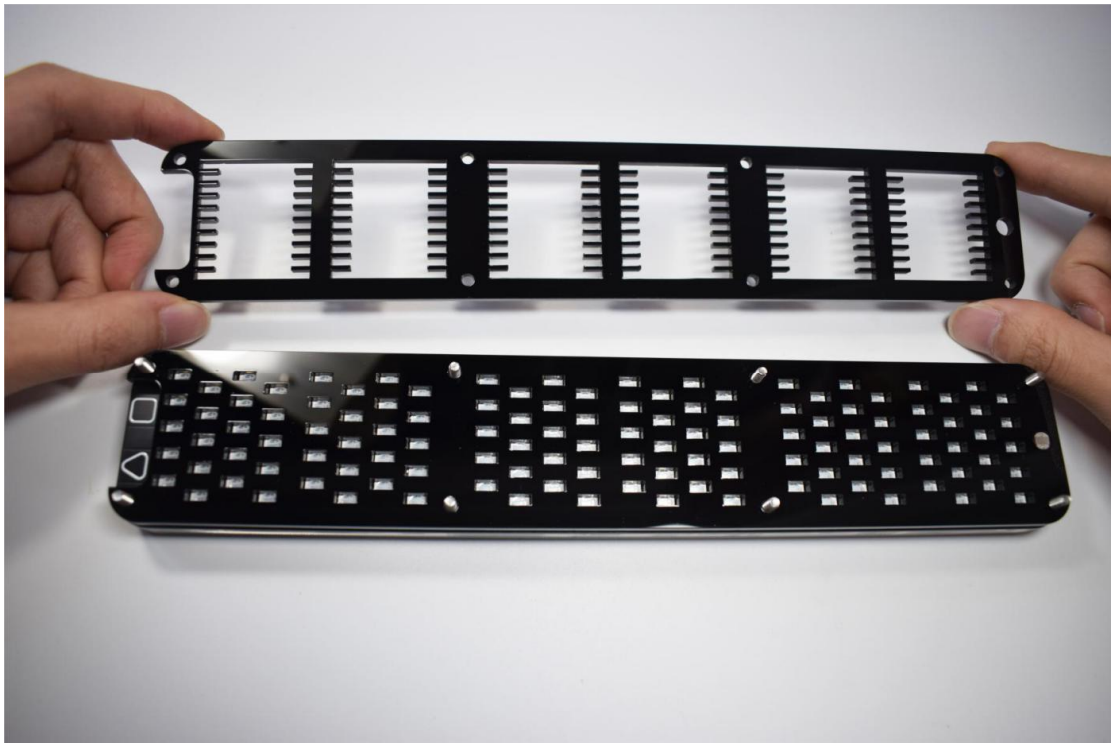
24.Tear off the protective film, and install this acrylic board on the circuit board. Please note that the holes here should correspond one by one, don't install it backwards, the LED will not show light if it is installed backwards



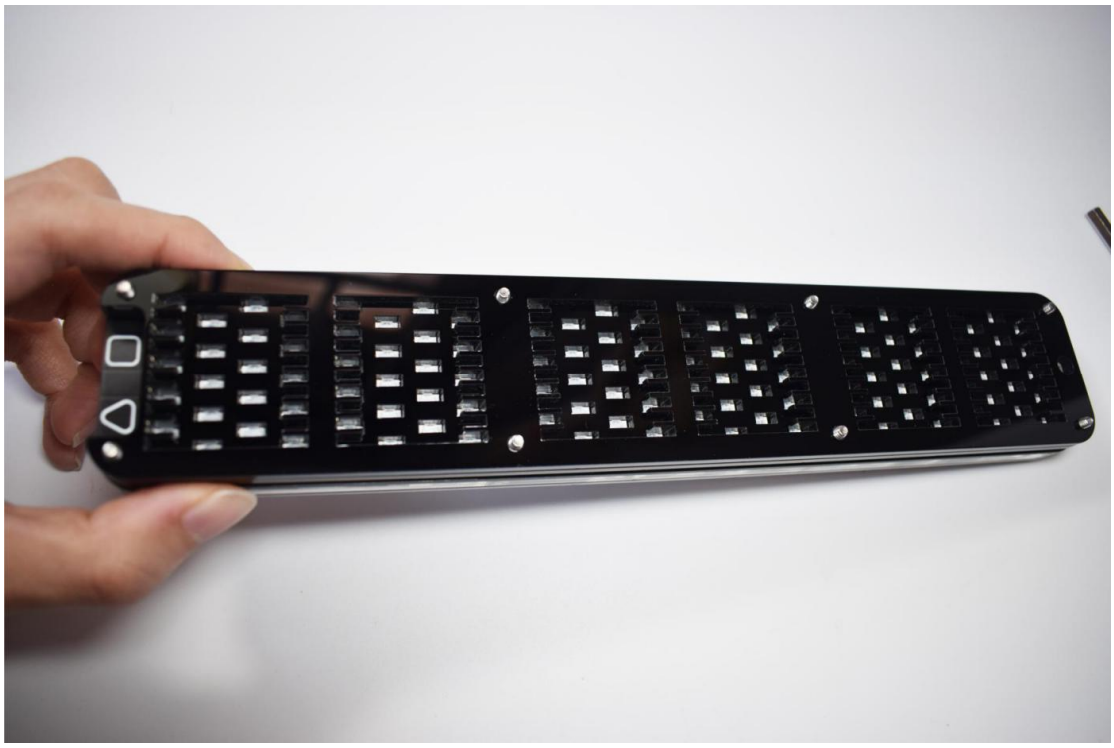
25.As shown below after installation



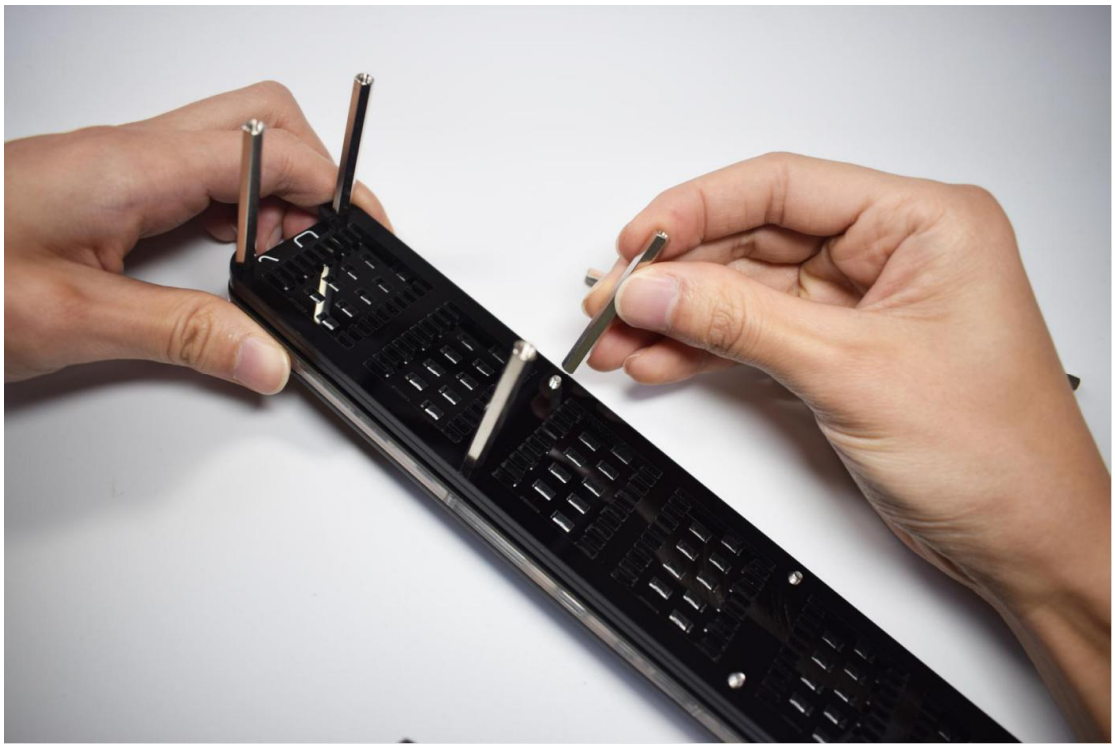
26.安装第 2 张板



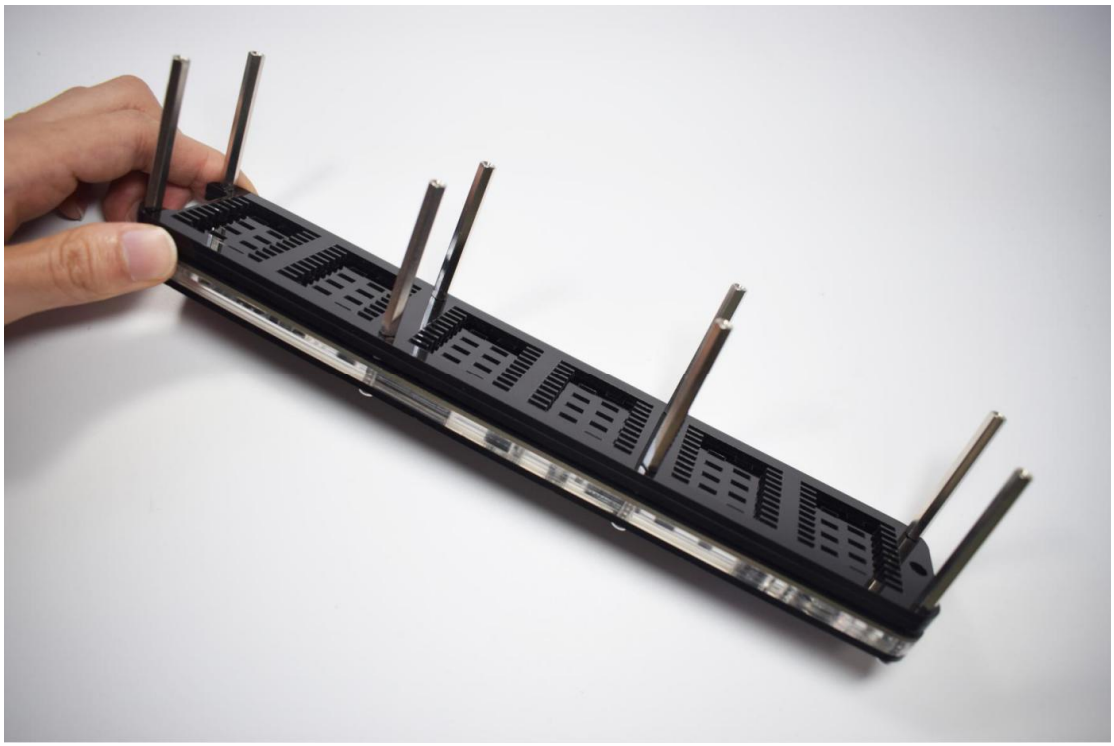
27.As shown below after installation



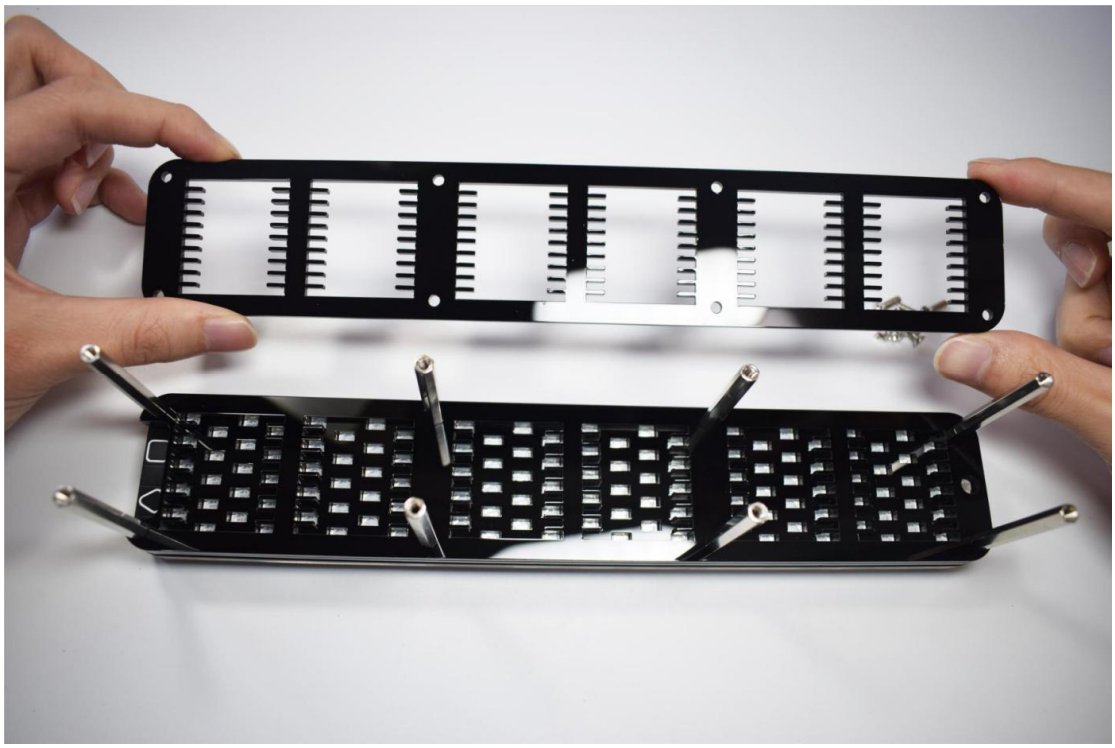
28.Install copper pillars



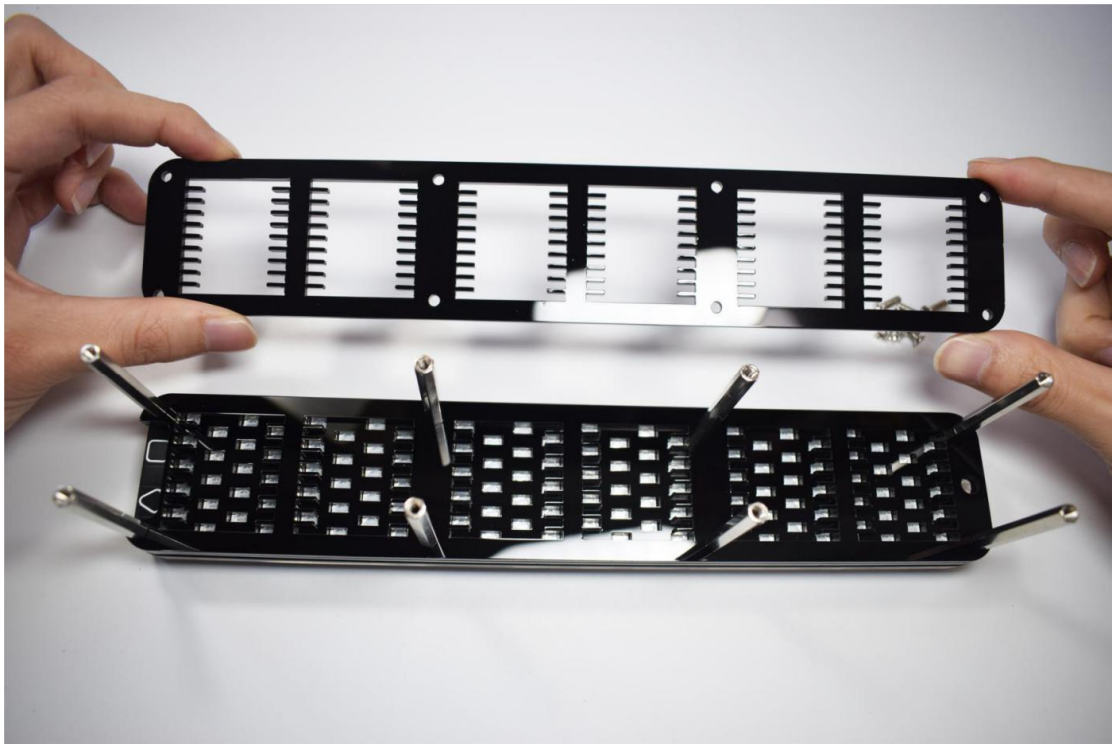
29.As shown below after installation

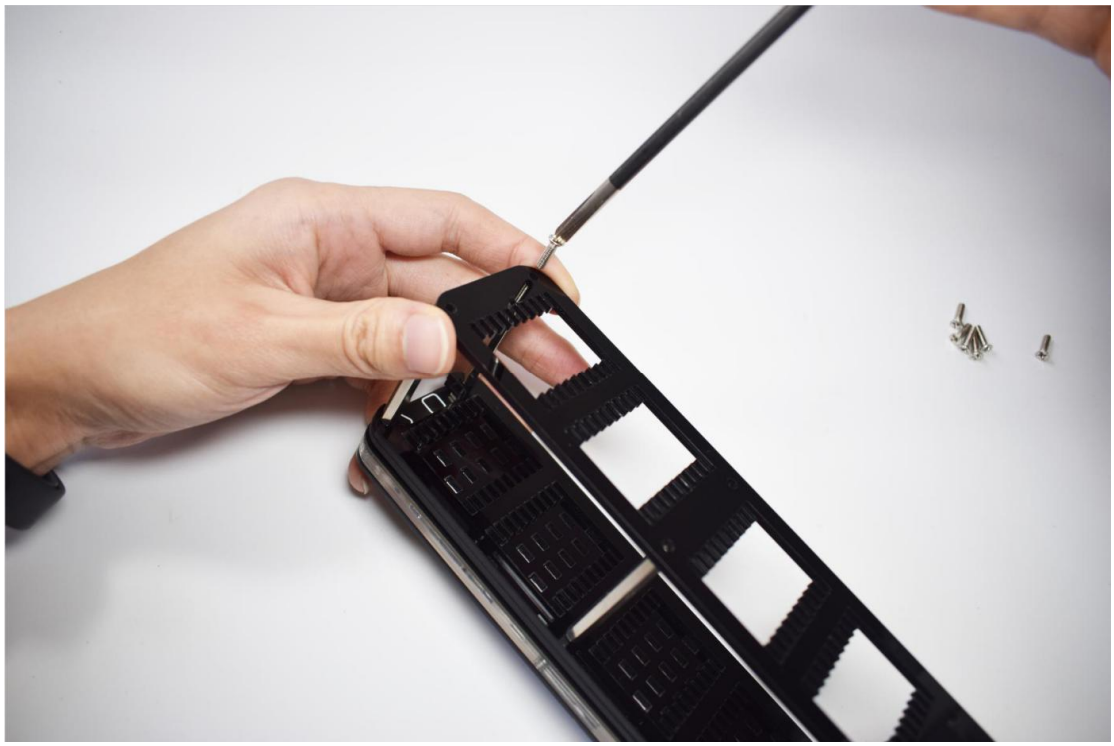


30.Take out this acrylic board and tear off the protective film

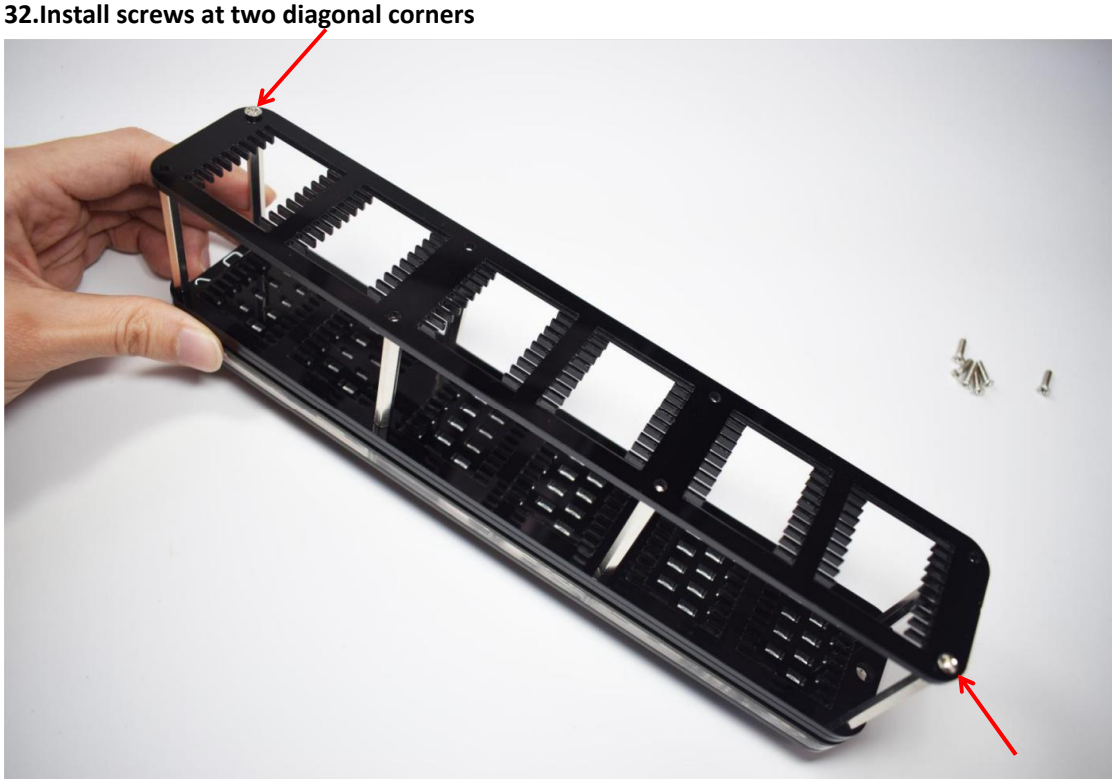


31.Install this acrylic board on the copper pillar



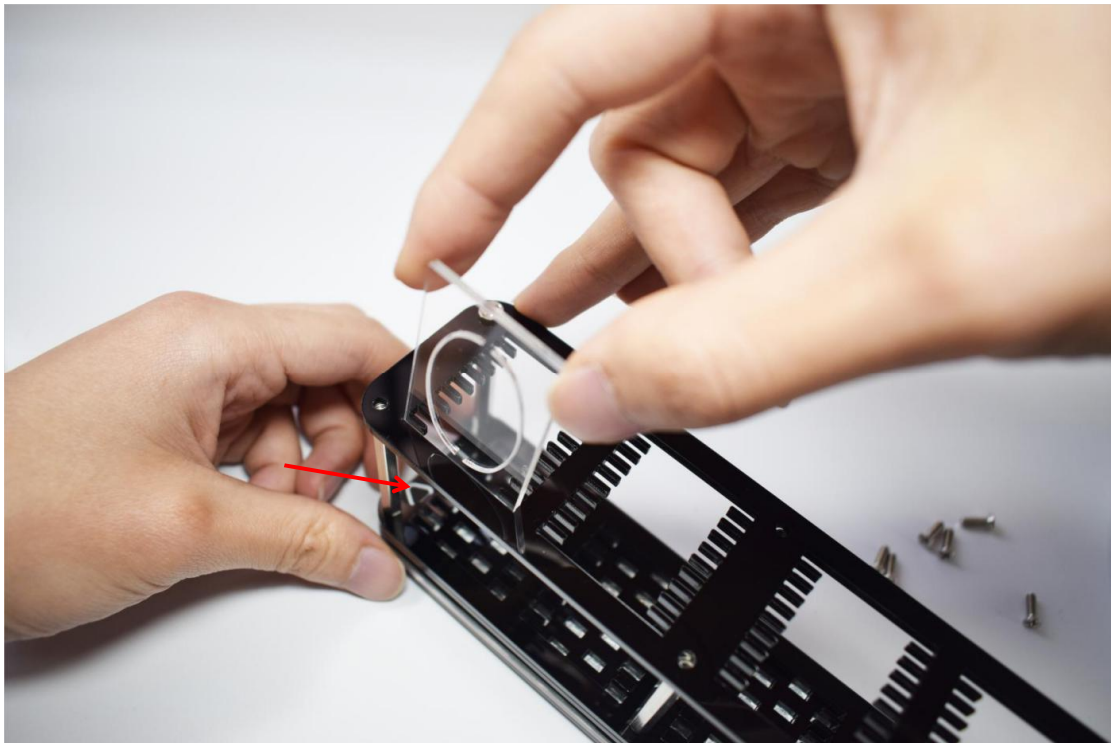


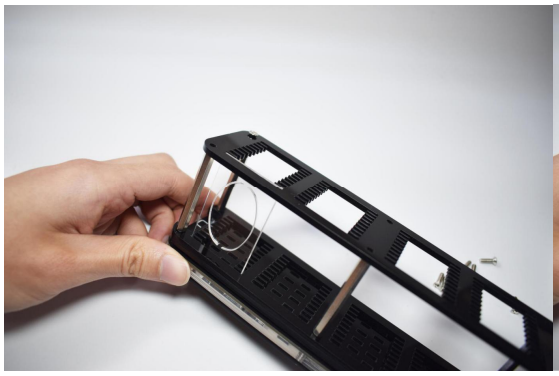
32.Install screws at two diagonal corners

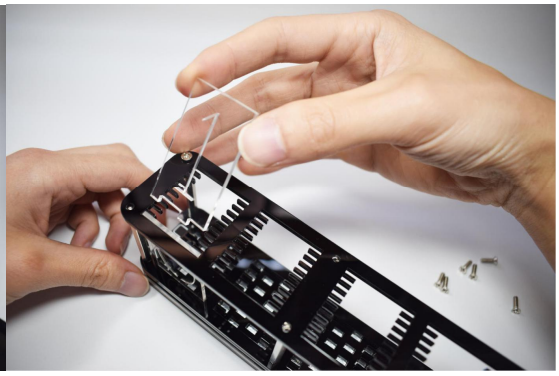


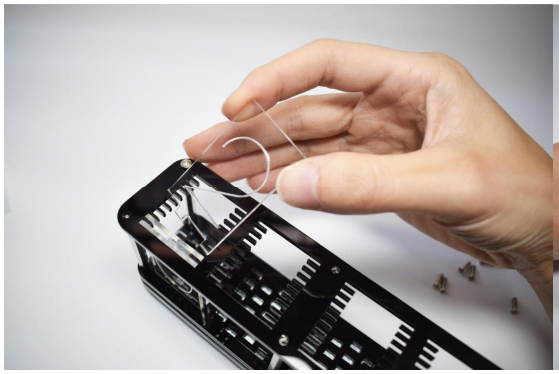
33.Install acrylic number plates one by one

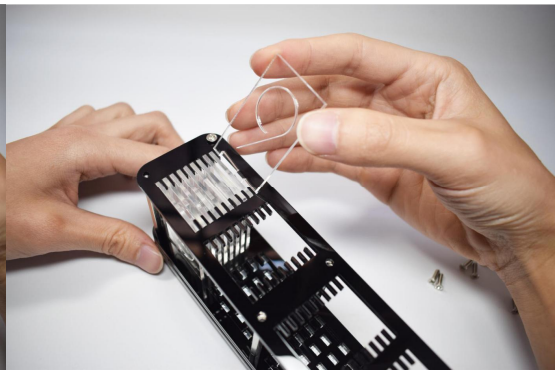
34.Please pay attention to the installation direction, install 0-9 these boards in order from the direction of the touch button



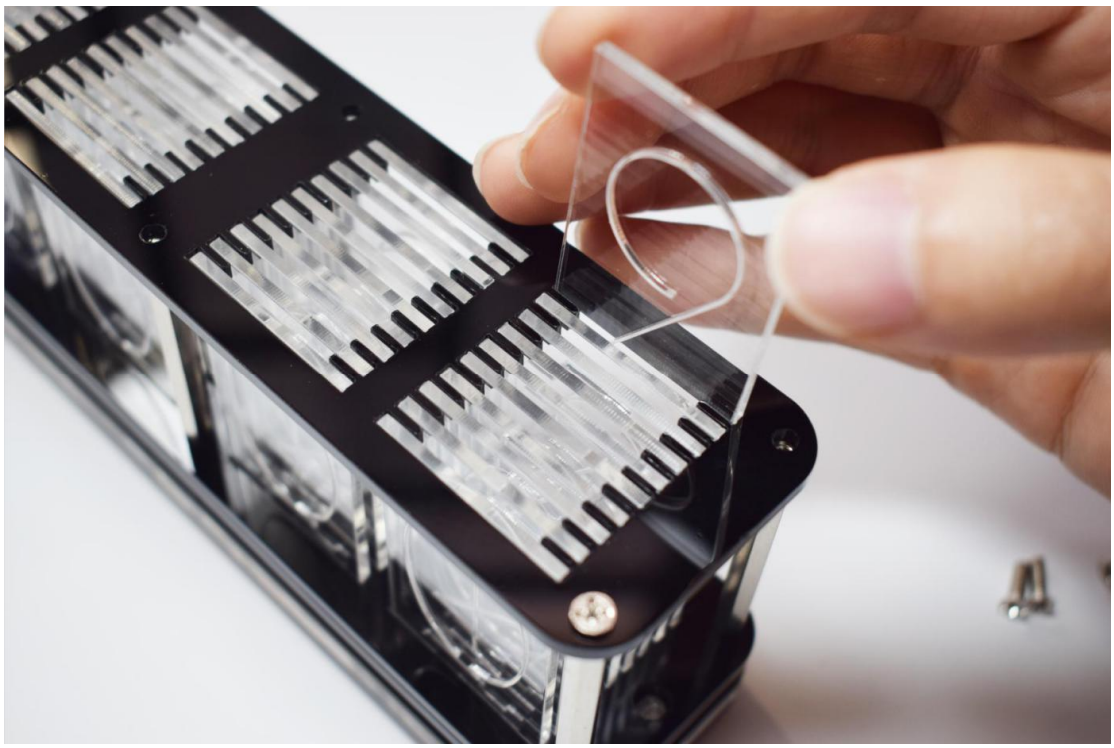






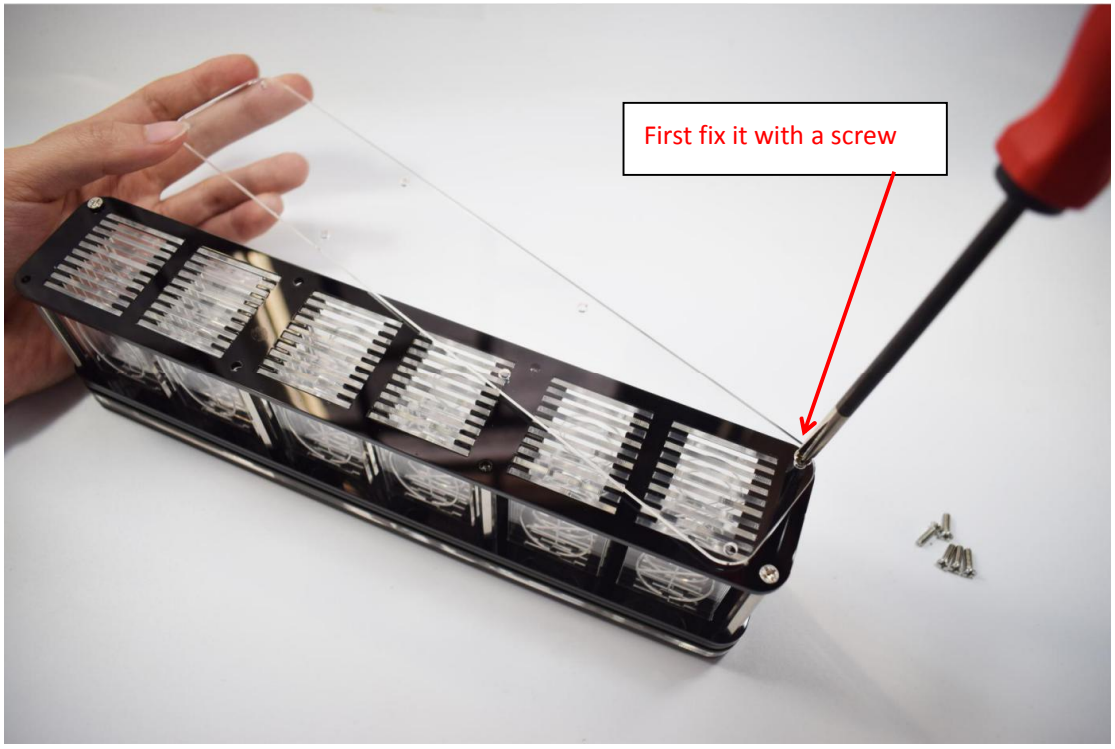


35.Acrylic boards in other positions are also treated in the same way

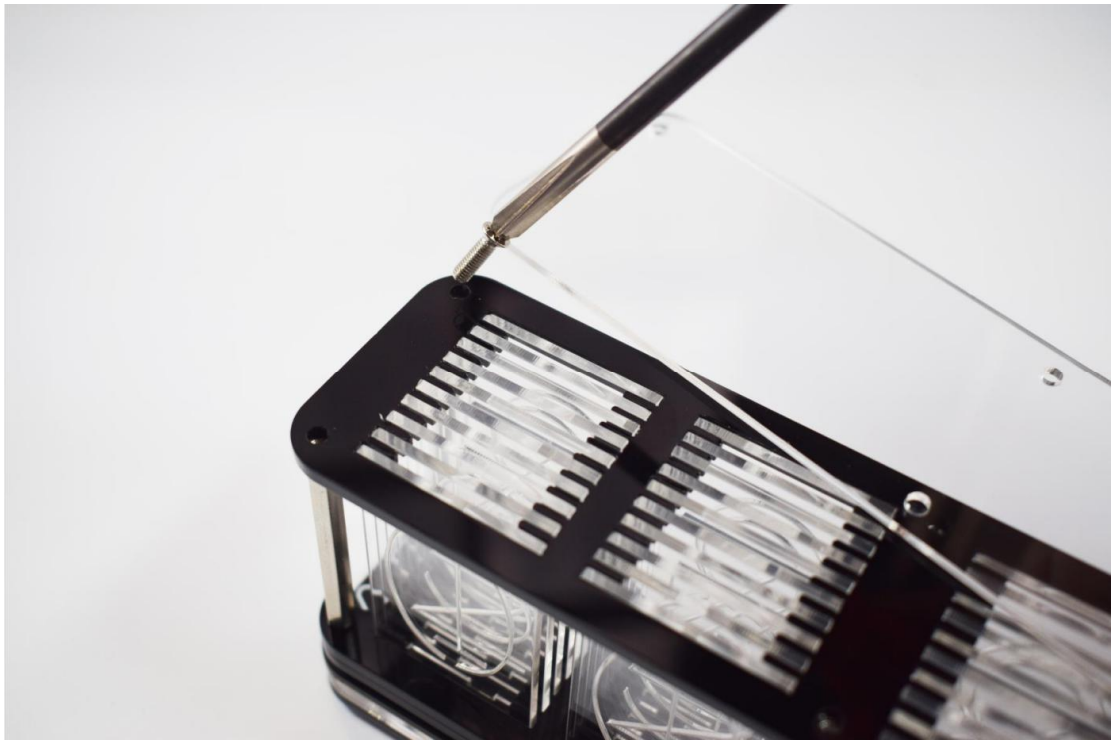


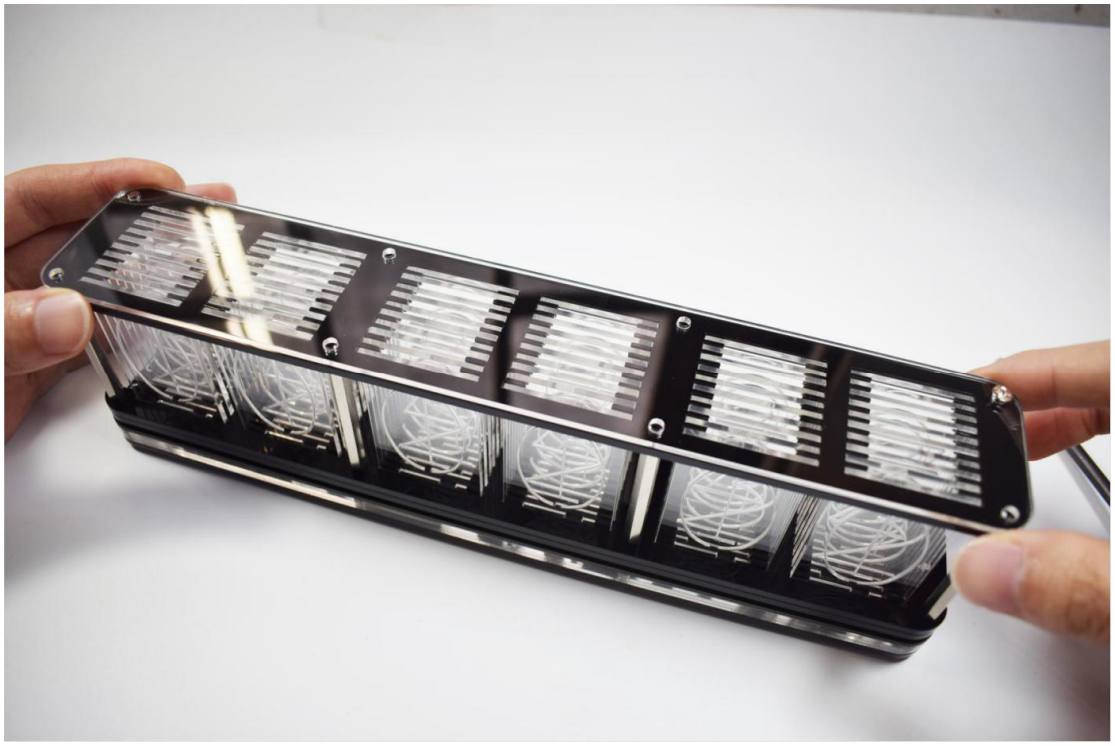
36.Take out the last acrylic and screws

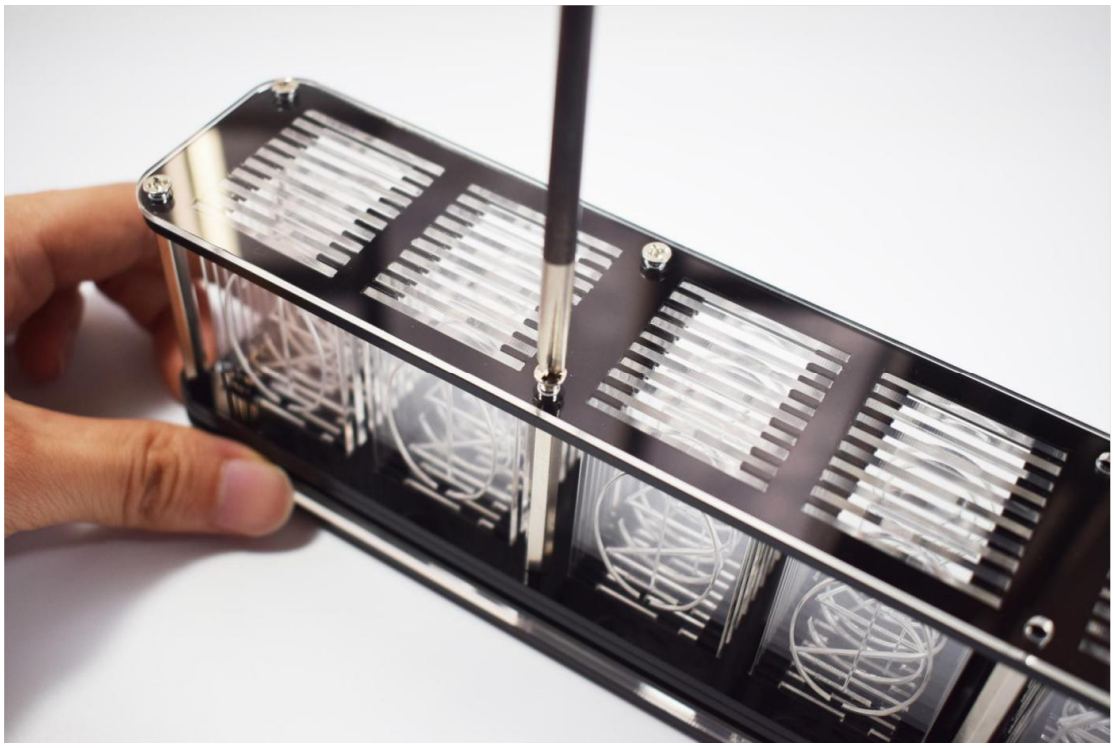
37.When installing this acrylic board, pay special attention to that, when installing the transparent acrylic, you must first install a screw to press it, and then remove the screws that pressed the black acrylic before re-fixing it.



38.Then remove the diagonal screws, carefully move the transparent acrylic to the black acrylic and install the screws, because if the black acrylic shakes, the previous acrylic number plate may fall off







39.mission completed!

40.Plug in 5V USB power supply

Features:

Simulate glow clock effect;
Music spectrum display function;
Highlight RGB color lights;
High precision DS3231 clock chip;
Put in CR2032 backup battery to prevent loss of time data after power failure;
Touch button control;
Multiple color change effects;
Time, temperature, date and week multiple automatic switching effect display;
With alarm function;
Voice-activated wake-up function;
Various bottom side light effects;
Dark light automatically enters the low-brightness display function;
6-digit digital display color function can be customized;
A variety of time hour and half hour reminder animation special effects;
A variety of conversion effects displayed in seconds;
Countdown function;
Stopwatch function;
The speed of color change can be set;
Touch the key to pause the color change at any time;
Long press to switch between time mode and music spectrum mode;
Automatically save setting data when power off;
Multi-layer acrylic shell;
USB DC 5V power supply;
Overall size: 252mm*46mm*70mm;
Weight: 520g;

Function：

Long press the setting key (square icon) to switch: Clock mode function-Music spectrum display function;
Short press the setting button (square icon) to pause the color change;
Short press the switch button (triangular icon) to switch the color effect;
Color effect list:
1- Rainbow gradient effect;
2- Two grid cool color gradient effect;
3- Aurora color gradient effect;
4- Two grid rainbow gradient;
5- Full color gradient effect;
6- Two-cell Aurora color gradient effect
7- Cool aurora gradient effect;
8- Full color same color gradient effect;
9- Display custom colors;

In clock mode:

1: Press setting (square icon) + switch touch key (triangular icon) at the same time to enter or exit the menu;
2: Short touch the switch key (triangular icon) to switch:
[number 0] time setting-[number 1] date setting-[number 2] alarm setting-[number 3] format setting-[number 4] switching effect selection-[Number 5] Switching duration setting-[Number 6] LED effect selection at the bottom-[Number 7] Switch automatic dimming function-[Number 8] Switch voice-activated wake-up function-[Number 9] Custom number color-[Number 10] Set the hourly and half-hourly chime animation effect-[Number 11] Set the second digital conversion effect-[Number 12] Countdown function-[Number 13] Stopwatch function-[Number 14] Set the color gradation speed.
Short press the setting key (square icon) to enter the setting, and then use the switch key (triangular icon) to modify the parameter value.

Clock mode parameter setting:

【Number 0】Time setting:
Switch key (triangular icon) to modify the flashing parameter value, set key (square icon) to confirm the modification;
【Number1】Date setting:
The modification sequence is: year-month-day;
【Number 2】Alarm clock:
1- Turn on the alarm and enter the alarm time setting;
2- 0- Turn off the alarm
【Number 3】 Format setting (Format):
[0] (Hour format): 24-24 hour system mode; 12-12 hour system mode.
[1]: (Date format): 12-31: month-day mode; 31-12: day-month mode.
[2]: (temperature format): Celsius and Fahrenheit;
【Number 4】Switching effect selection:
0-[Only time display];
1- Sweeping effect from left to right;
2- Overall sweeping effect;
3- The middle to the two sides one by one lighting effect;
4- Light up the effect one by one from left to right;
5- Random sweep effect;
6-Sweeping effect from the middle to both sides;
(Note: The order of switching display is: time-temperature-date week)
【Number 5】Switching duration setting:
(5) Switch every 5 seconds;
(10) Switch every -10 seconds;
(30) Switch every -30 seconds;
(60) Switch every -60 seconds;
(5min) Switch every 5 minutes;

(10min) Switch every 10 minutes;
(15min) Switch every 15 minutes;
(30min) Switch every 30 minutes;
(60min) Switch every 60 minutes;
【Number 6】LED effect selection at the bottom:
0-[Turn off the bottom LED effect];
1- Rainbow color gradient;
2- Press the button to turn off the light;
3- Cool color gradient;
4- Candlelight color effect;
5- Aurora color gradient;
【Number 7】Switch automatic dimming function:
0- Turn off dark mode;
1- Turn on the automatic dark mode (when the ambient light is detected to be dark, it will automatically enter the low brightness mode);
【Number 8】Switch voice-activated wake-up function:
0- Turn off the voice-activated wake-up function;
1- Turn on the voice-activated wake-up function (tap the desktop or press any touch button to wake up);

【Number 9】Customize the color of the number:
Switch key (triangular icon) to modify the color value of the flashing number (a total of 17 colors), set key (square icon) to confirm the modified color and enter the color setting of the next number;
【Number 10】 Set the hourly and half-hourly chime animation effect:
0-[No conversion effect];
1- Sweeping effect;
2- Fading effect;
3- Mixing effect (the hourly chime enters the sweep effect, the half-hourly chime enters the fade effect);
【Number 11】Set the digital conversion effect of seconds:
0-[No transformation effect];
1- Digital progressive effect;
2- Digital breathing effect;
3- Mixed effect (automatically switch every day);
【Number 12】Countdown function:
Enter the minutes and seconds, press the set button (square icon) to start the countdown, the countdown ends the buzzer buzzer, and any touch key to exit the countdown;
【Number 13】Stopwatch function:
Press the switch button (triangle icon) to start timing, press again to pause timing, and press again to reset the timer (maximum timing is 99 minutes, 60 seconds, and 990 milliseconds).
Switch key function cycle: start timing-pause timing-timing reset;
Press the set button (square icon) to exit the stopwatch function;

【Number 14】Set the color gradient speed:

Seven level settings 1-7: from fast to slow;

【Number 15】Test the quality of LED:

Press the switch key (triangular icon) to switch the test color. A total of three colors of red, green and blue are tested.

Press the set key (square icon) to exit the test.

In music spectrum mode:

Short press the setting key (square icon) to pause the color change at any time, so that the favorite color can be displayed fixedly;

Short press the switch key (triangle icon) to switch between different color gradient effects;

Enter the music spectrum mode, you only need to put out the music playback device (mobile phone, speaker, MP3 player, etc.) to display the music spectrum bounce effect, the effect is better when placed on the back of the microphone~