ICStation Bluetooth Audio Amplifier Electronic Kit   https://www.icstation.com/
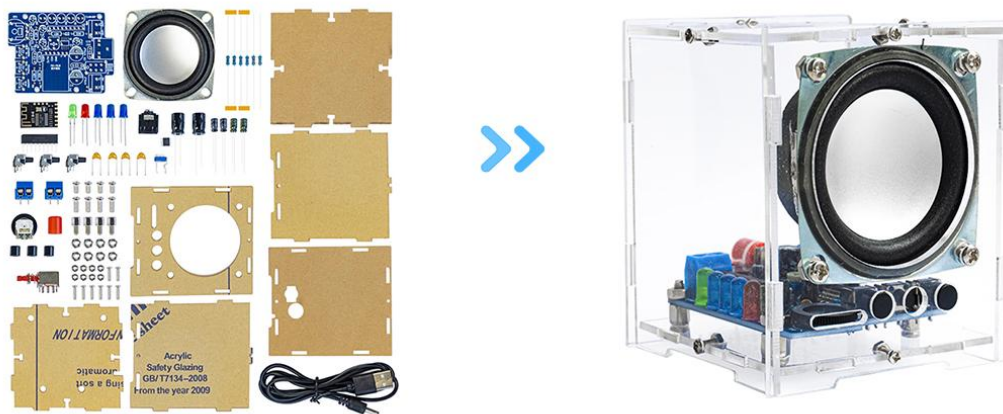
1. Description:

The sound quality of this Bluetooth kit is excellent and it comes with sound spectrum rhythm lights, making it a truly unique and fun product. Perfect for home, school or hobbyists for soldering practice.

2.Parameter:

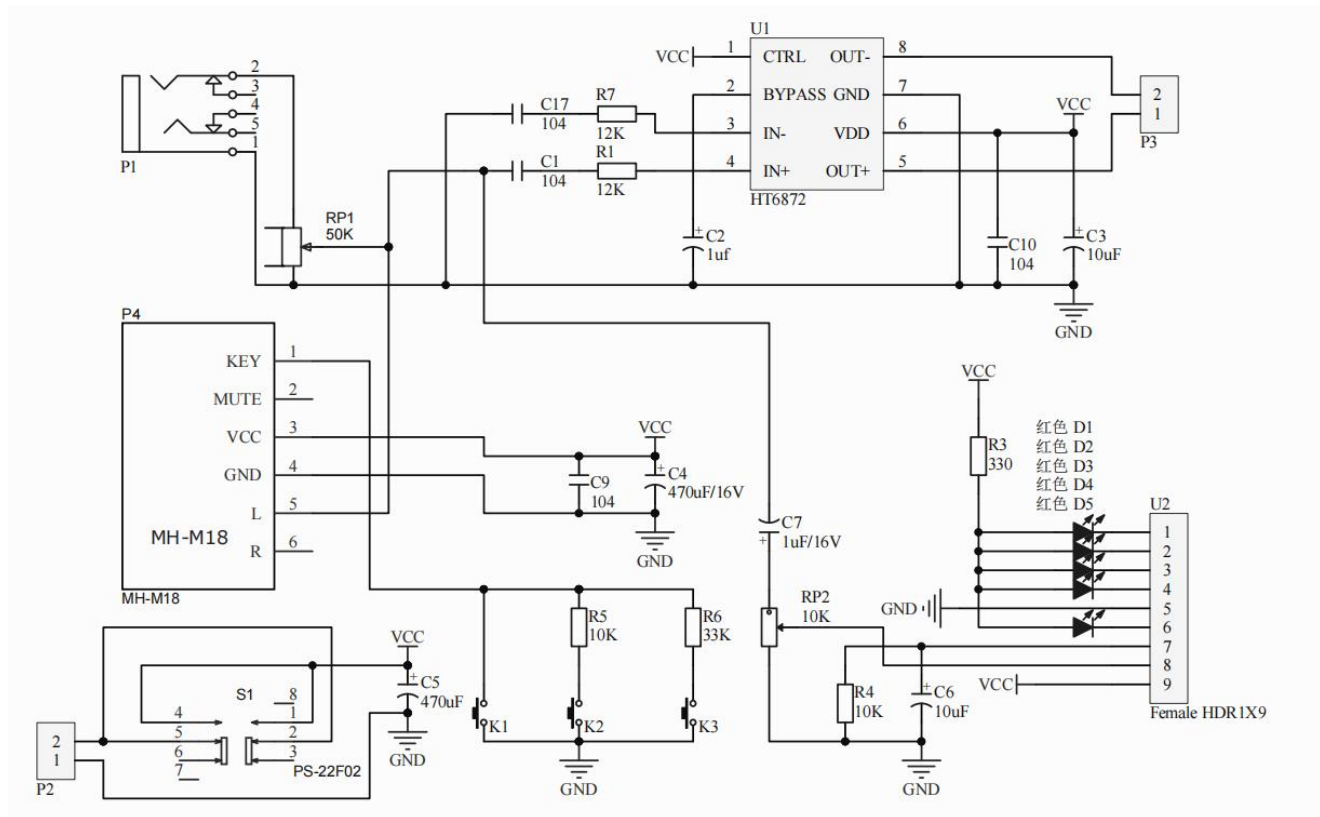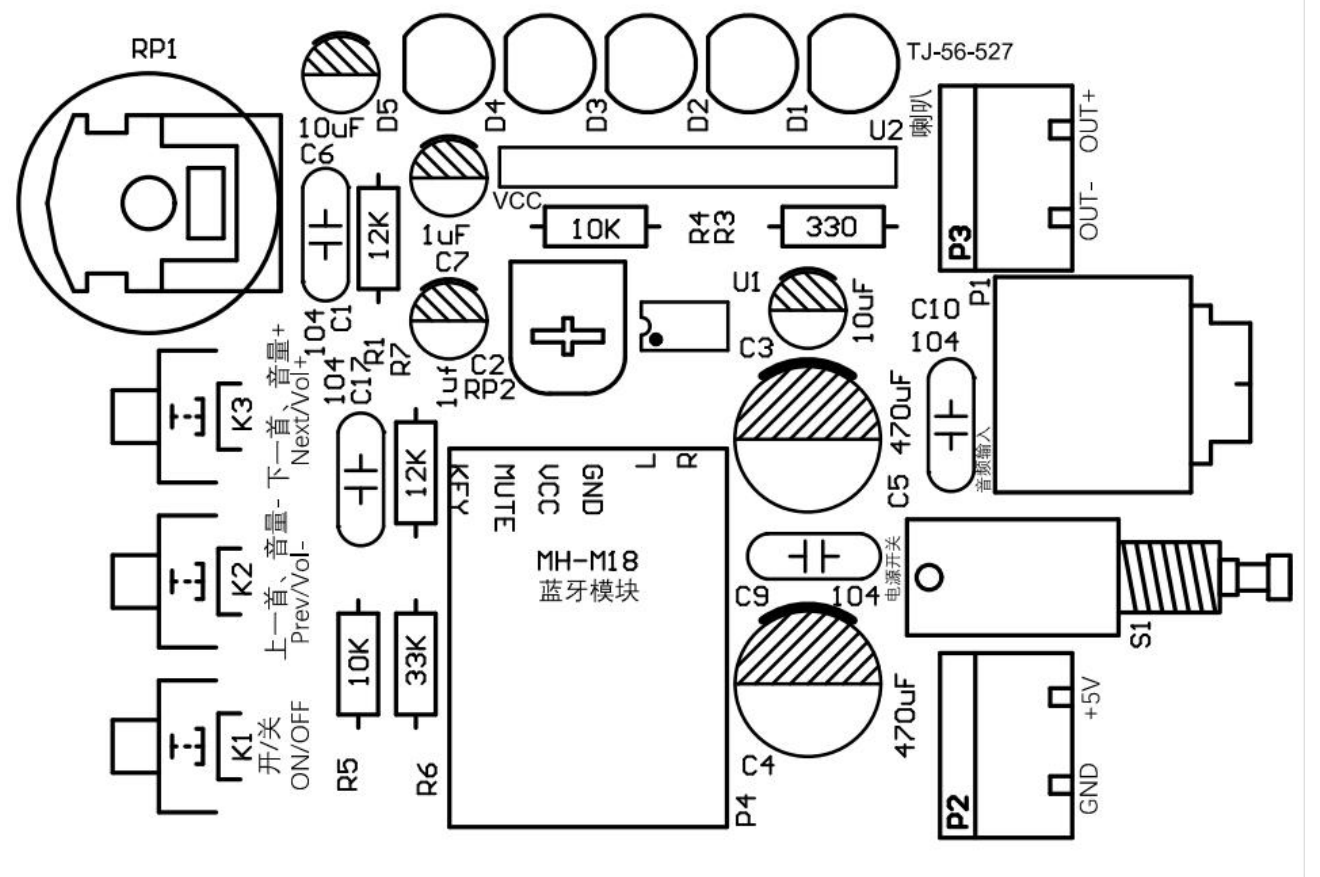 1>.Work Voltage:DC 5V
  2>.Work Temperature:-25℃~85℃
  3>.PCB Board Size:65x49mm
  4>.Shell Size:70x70x80mm
  5>.Speaker Power:4ohm 3W

3.Circuit and Diagram:

U1 — HT6872
CTRL 1 OUT- 8
BYPASS 2 GND 7
IN- 3 VDD 6
IN+ 4 OUT+ 5

VCC
C17 104 R7 12K
C1 104 R1 12K
P1
RP1 50K
C2 1uf
C10 104
C3 10uF
P3
GND

P4 — MH-M18
KEY 1
MUTE 2
VCC 3
GND 4
L 5
R 6
MH-M18

C9 104
C4 470uF/16V
GND
C7 1uF/16V
RP2 10K

VCC
R3 330
红色 D1
红色 D2
红色 D3
红色 D4
红色 D5

U2
Female HDR1X9

R5 10K R6 33K
K1 K2 K3
GND

R4 10K C6 10uF VCC
GND

VCC
C5 470uF
S1
4 8
1
5 2
6 3
7
PS-22F02
P2

4.Components Layout

RP1
10uF D5 D4 D3 D2 D1 TJ-56-527
C6
12K
1uF C7 VCC U2 喇叭
104 C1 R4 R3 OUT- OUT+
C17 R1 12K 10K 330 P3
104 R7
1uf C2 U1 10uF C10 104
RP2 C3 P1
音频输入
C5 470uF
K3 Next/Vol+ 音量+ 下一首、
上一首、音量- Prev/Vol- L R
K2 KEY MUTE VCC GND 电源开关
MH-M18 C9 104 S1
蓝牙模块
10K 33K C4 470uF +5V
K1 开关 ON/OFF P4 GND
R5 R6 P2

2

5.Components List:

| No.	Component Name	PCB Marker	Parameter	Quantity
	Component Listing			
1	Ceramic Capacitor	C1,C9,C10,C11	0.1uF(104)	4
2	Electrolytic Capacitor	C2,C7	1uF	2
3	Electrolytic Capacitor	C3,C6	10uF	2
4	Electrolytic Capacitor	C4,C5	470uF	2
5	5mm Red LED	D5		1
6	5mm Green LED	D4		1
7	5mm Blue LED	D1-D3		3
8	6*6*5mm Button	K1,K2,K3		3
9	3.5mm Earphone Socket	P1	3F07_BK	1
10	2Pin Connector	P2,P3	HDR-1X2	2
11	Bluetooth Module	P4	MH-M18	1
12	Metal Film Resistor	R1,R7	12K	2
13	Metal Film Resistor	R3	330ohm	1
14	Metal Film Resistor	R4,R5	10K	2
15	Metal Film Resistor	R6	33K	1
16	Potentiometer	RP1	50K	1
17	Potentiometer	RP2	10K	1
18	Self-locking Switch Cap			1
19	Button Cap			3
20	Self-locking Switch	S1		1
21	SMD HT6872 Chip	U1		1
22	KA2284 LED Controller	U2		1
23	4ohm 3W Speaker			1
24	USB Wire			1
25	Audio Wire			1
26	PCB Board			1
27	Acrylic Shell			6
28	M2*8 Screw			8
29	M3*5+6 Copper Pillar			4
30	M3*6 Screw			4
31	M2 Nut			8
32	M3 Nut			8
33	M3*10 Screw			4

6. Installation Steps:

Step1: Install the 6pcs color ring resistor. 12K resistors at R1, R7; 330ohm at R3, 10K at R4, R5; 33K at R6.

The resistors are regardless of direction. The color ring readings of the color ring resistors are shown in the figure below. If the resistance value cannot be determined, then please use a multi-meter to measure it, and install each color ring resistor according to the component list.

Color	1st Band (1st Digit)	2nd Band (2nd Digit)	3rd Band (3rd Digit)	Multiplier	Tolerance	Temperature Coefficient
Black	0	0	0	$\times 10^0\ \Omega$	N/A	250 ppm/K
Brown	1	1	1	$\times 10^1\ \Omega$	± 1% (F)	100 ppm/K
Red	2	2	2	$\times 10^2\ \Omega$	± 2% (G)	50 ppm/K
Orange	3	3	3	$\times 10^3\ \Omega$	N/A	15 ppm/K
Yellow	4	4	4	$\times 10^4\ \Omega$	N/A	25 ppm/K
Green	5	5	5	$\times 10^5\ \Omega$	± 0.50% (D)	20 ppm/K
Blue	6	6	6	$\times 10^6\ \Omega$	± 0.25% (C)	10 ppm/K
Violet	7	7	7	$\times 10^7\ \Omega$	± 0.10% (B)	5 ppm/K
Grey	8	8	8	$\times 10^8\ \Omega$	± 0.05%	1 ppm/K
White	9	9	9	$\times 10^9\ \Omega$	N/A	N/A
Gold	N/A	N/A	N/A	$\times 10^{-1}\ \Omega$	± 5% (J)	N/A
Silver	N/A	N/A	N/A	$\times 10^{-2}\ \Omega$	± 10% (K)	N/A

12K (Brown Red Black Red Brown)
10K (Brown Black Black Red Brown)
330 (Orange Orange Black Black Brown)
12K (Brown Red Black Red Brown)
10K (Brown Black Black Red Brown)
33K (Orange Orange Black Red Brown)

Step 2: Install SMD integrated circuit HT6872.

Note: there is a small pit on the chip when installing, and the direction is consistent with the figure below
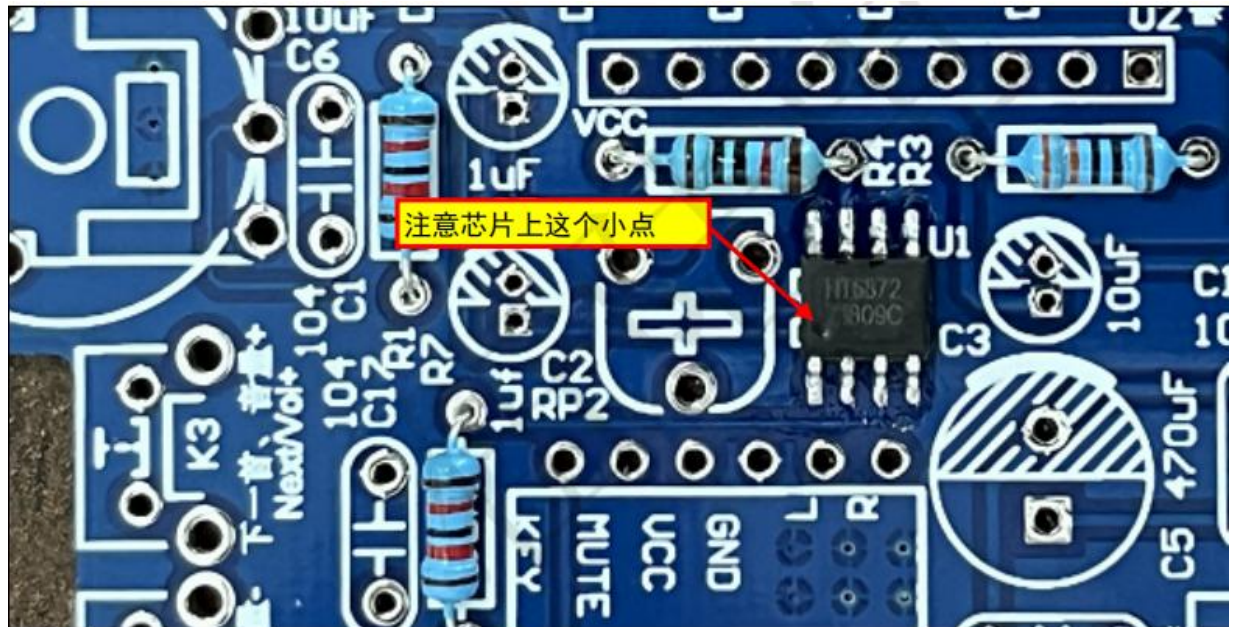
Step 3: Install Ceramic/monolithic capacitors.

Monolithic capacitors have no distinction between positive and negative poles.
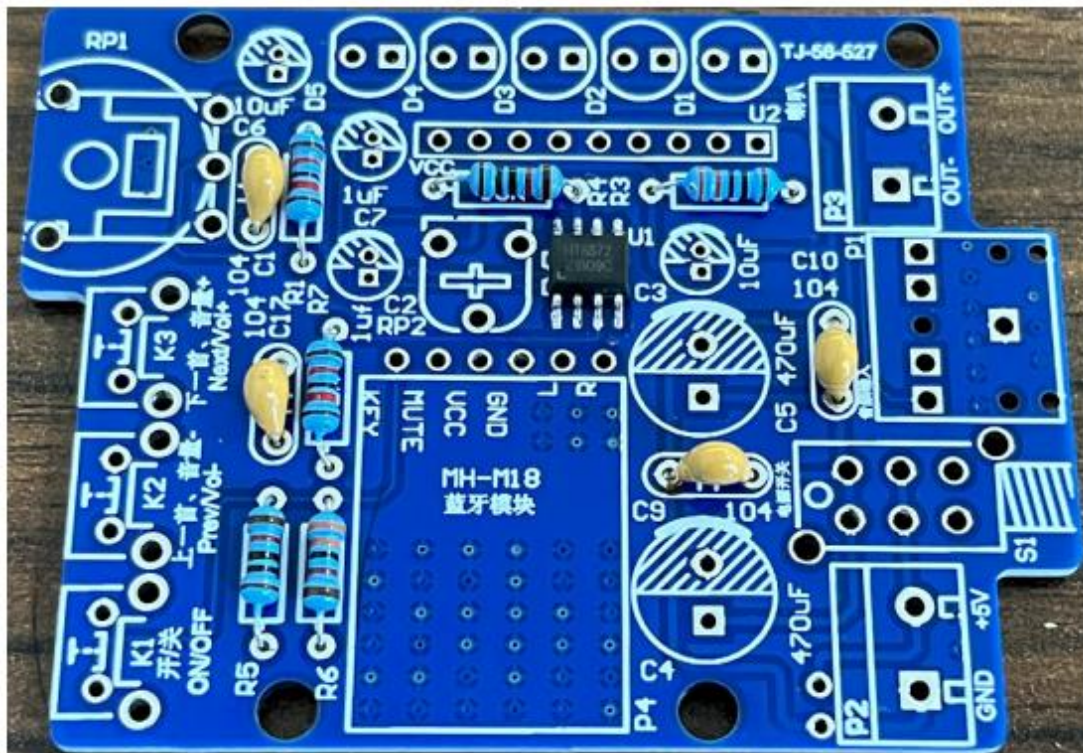
Step 4: Install the Bluetooth module.

Place the components of the Bluetooth module face up on the circuit board.

焊接蓝牙模块的 6 个邮票孔

Solder the stamp hole of the Bluetooth module and the corresponding round hole on the bottom plate
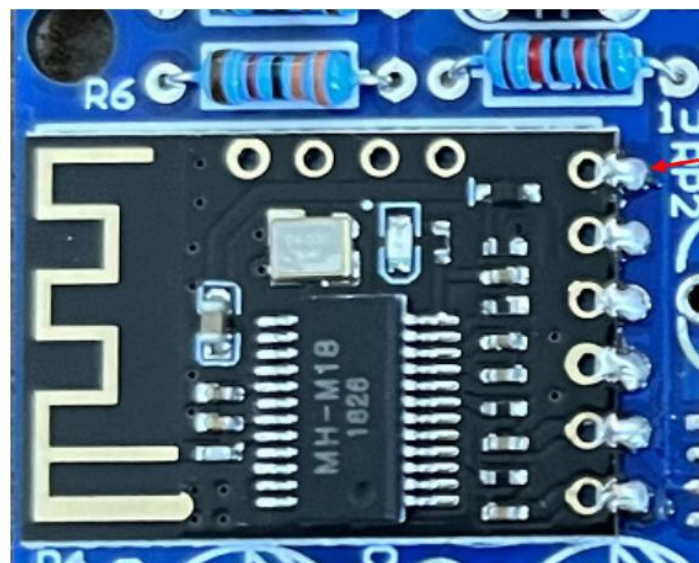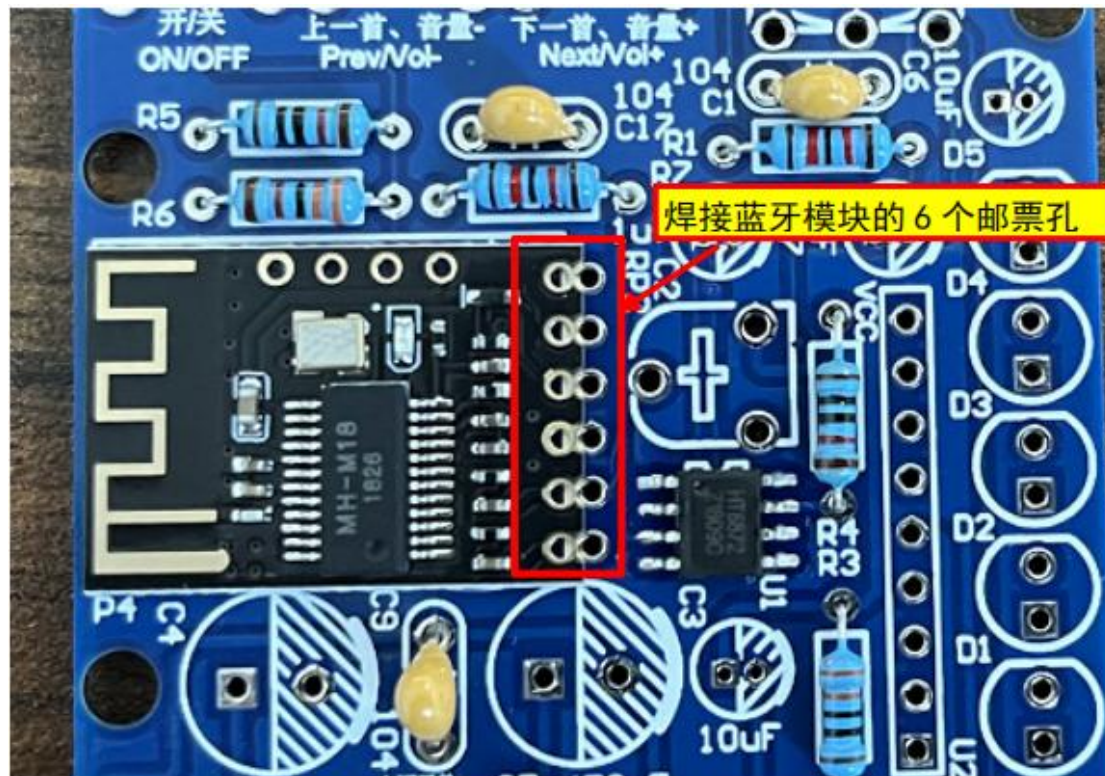
Step 5: Install electrolytic capacitors at C2, C3, C4, C5, C6, C7.

Note: The long leg of the electrolytic capacitor is the positive pole, and the short leg is the negative pole.

On the corresponding installation position of the circuit board, the side of the hollow semicircle is connected to the positive pole, and the side of the semicircle with shadow is connected to the negative pole.

有阴影半圆的一边接负极
Negative pole

空心半圆的一边接正极
Positive pole
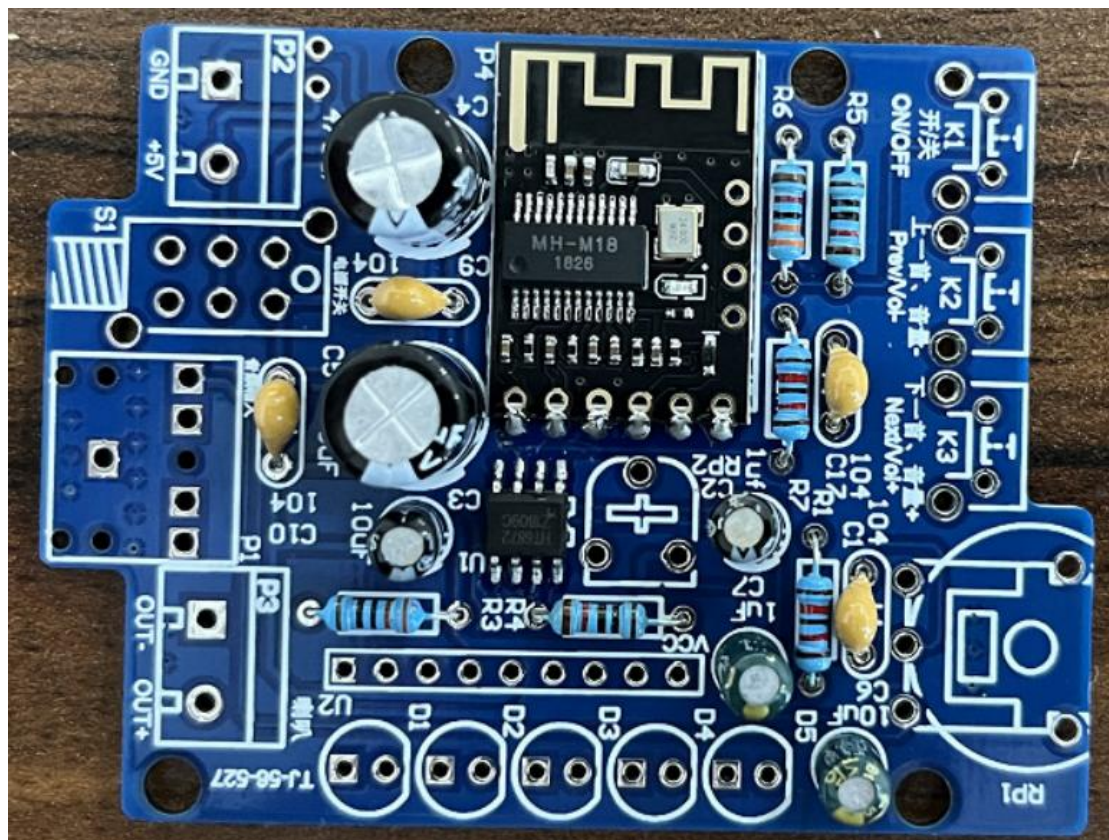
Step 6: Install blue and white adjustable resistors.

The blue and white adjustable resistor RP2 is used to control the display range of the LED volume column.
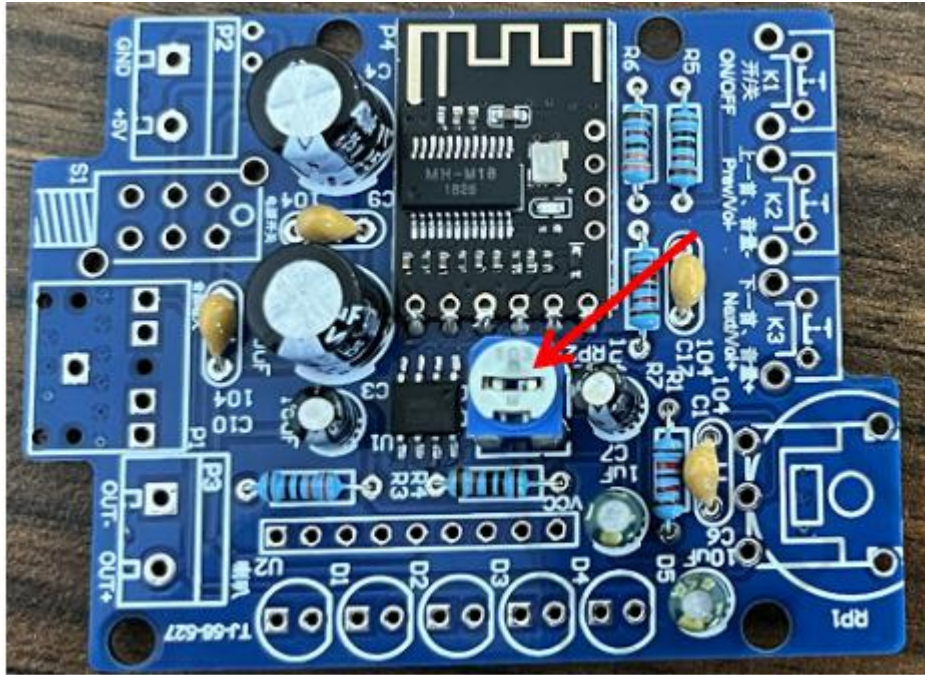
Step 7:Install IC KA2284

KA2822 is an LED volume level indicator circuit. Facing the KA2284, there is a literal, the leftmost pin is the first pin, and at the installation position of the circuit board, the side with the square pad on the side is connected to the first pin (as shown in below picture).

Step 8: Install in-line LEDs.

Note: The long leg of the light-emitting diode is the positive pole, and the short leg is the negative pole. The color is based on personal preference, and there is no fixed format.

At the installation position on the circuit, the flat side is connected to the negative pole of the LED.
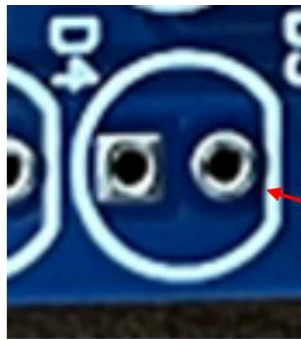
flat side connect to the negative pole of LED.
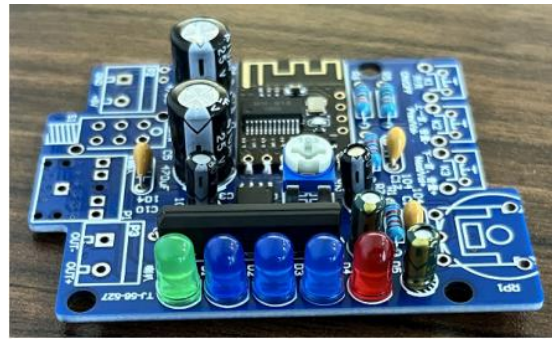
Step 9: Install the 3F07 audio stand.

The audio socket is used as the audio signal input port. When the Bluetooth signal is not connected, the audio signal can be input from the following port to make the speaker sound.
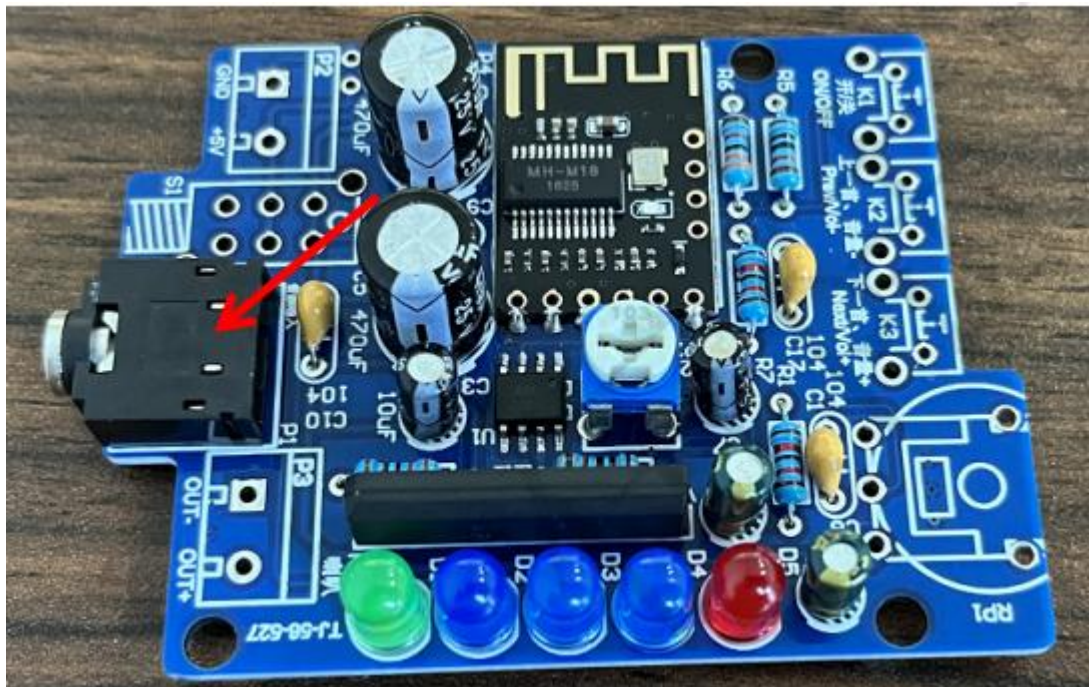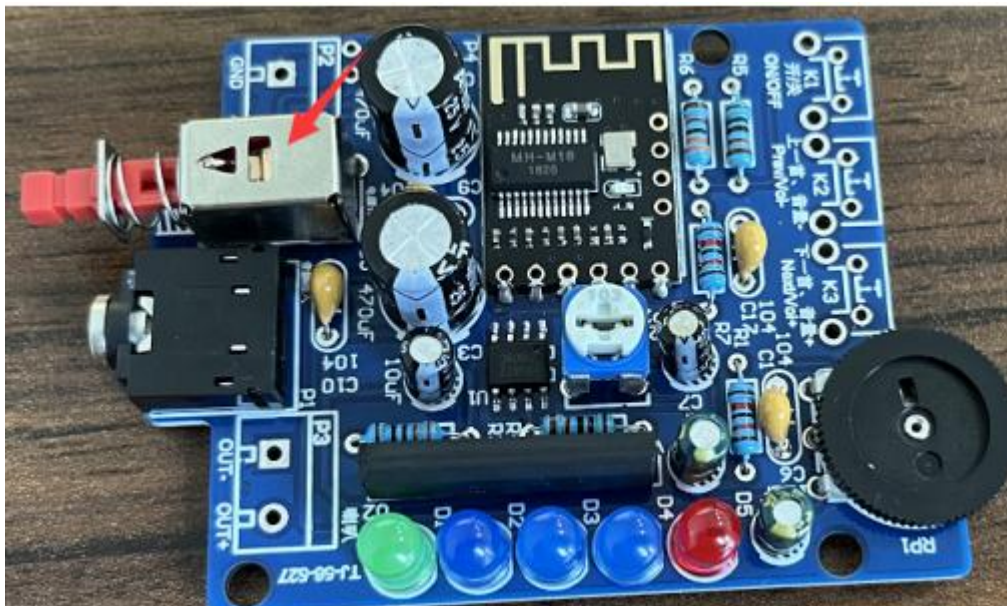

Step 10: Install the Dial Potentiometer.

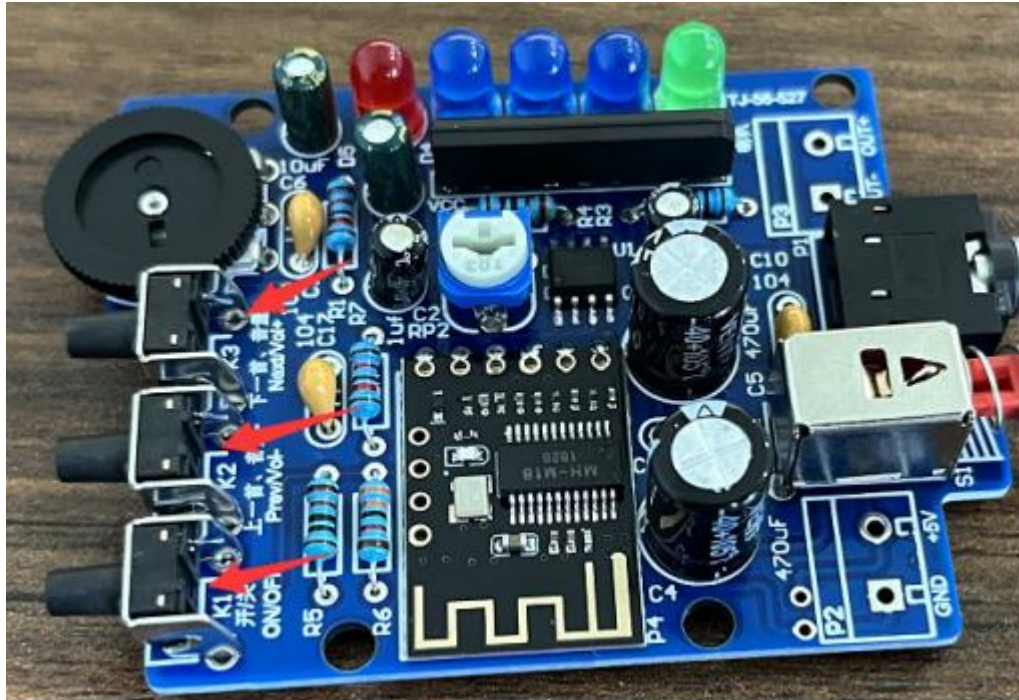The dial potentiometer is used to adjust the speaker volume.
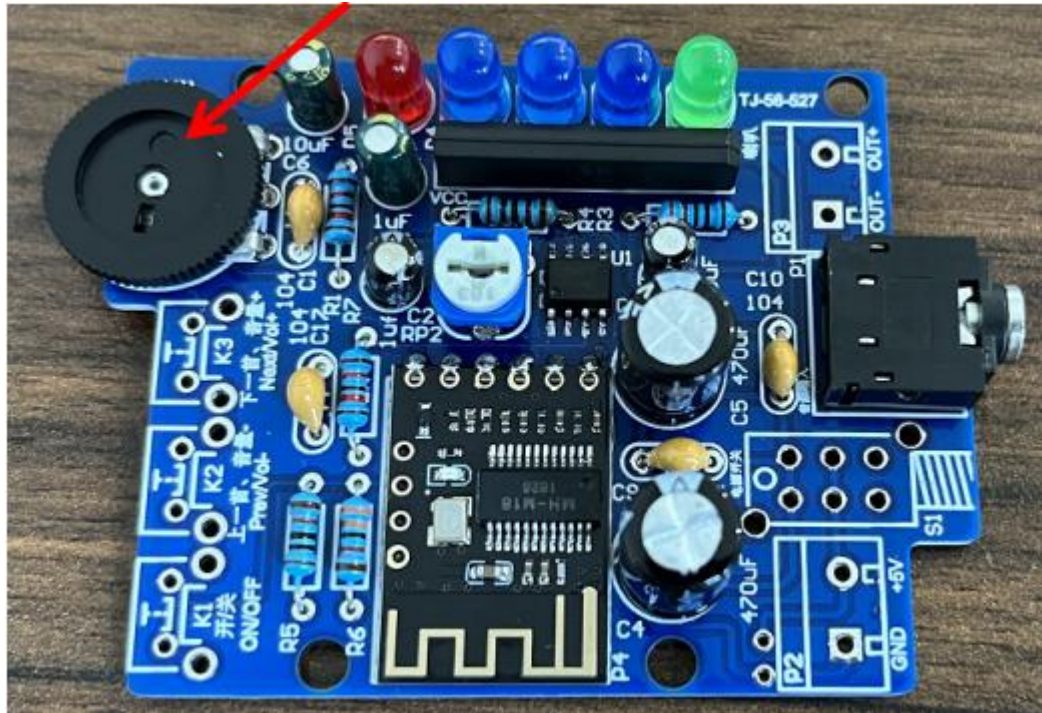
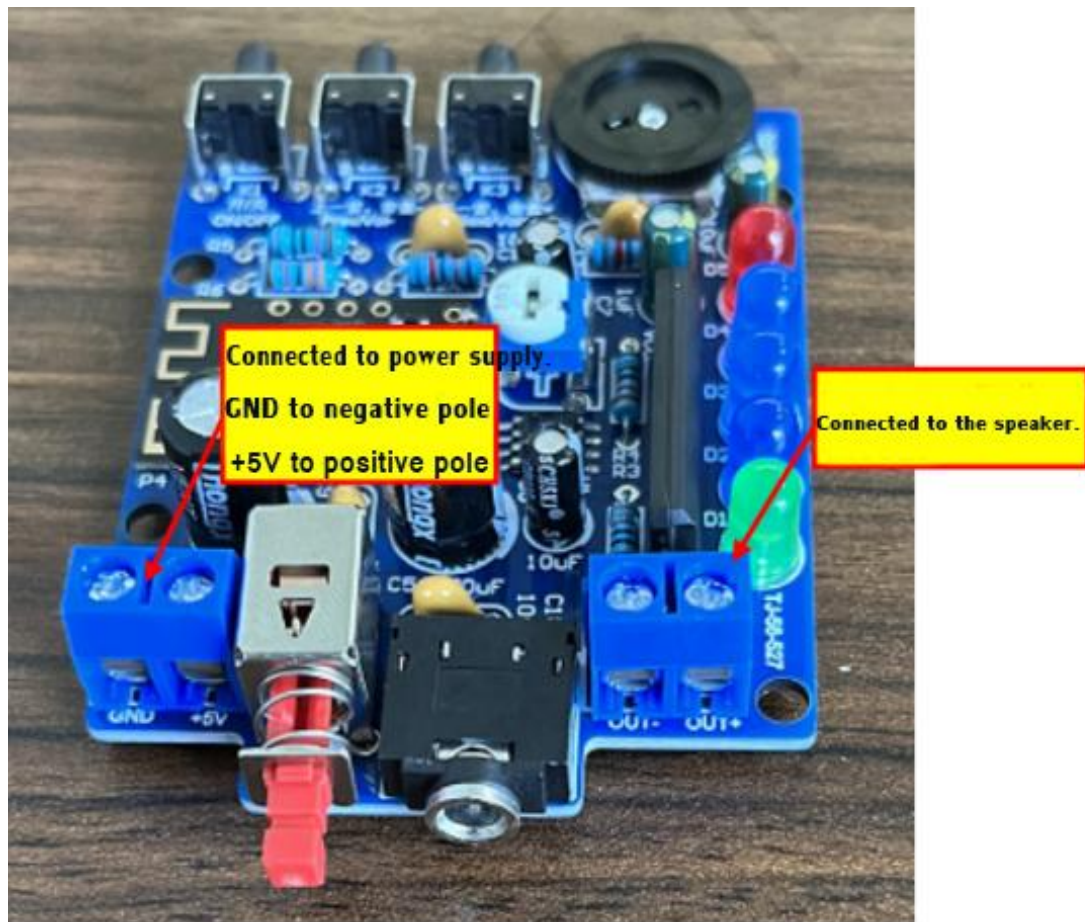**Step 11: Installing the key switch.**

Key switch for power switch

Step 12: Install Tact Switch

The touch switch is used for Bluetooth module functions, such as volume, song selection and other functions

Step 13: Install 2P Terminal Blocks.

The opening of the wiring terminal is outward, and the wiring terminal marked with +5V and GND is connected to the power supply, the positive pole of the power supply is connected to the position of +5V, and the negative pole of the power supply is connected to GND. OUT+ and OUT- terminals connected to the speaker, regardless of positive and negative poles.

Connected to power supply.
GND to negative pole
+5V to positive pole

Connected to the speaker.

Step 14: Install the shell
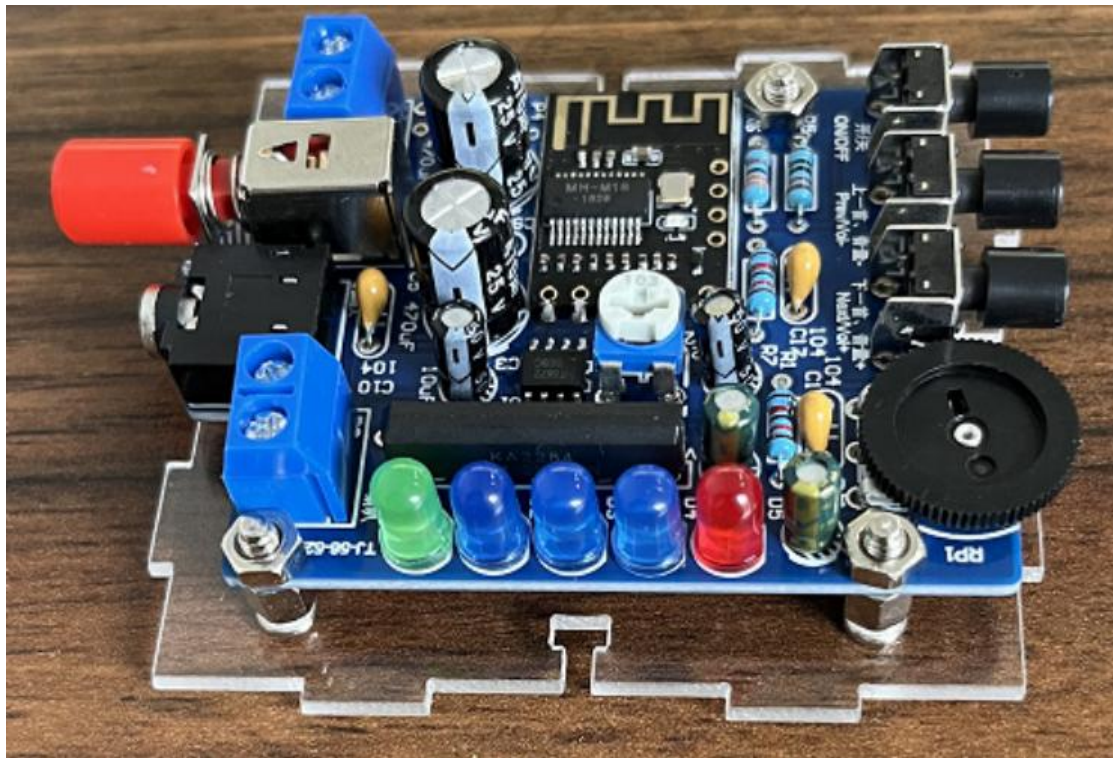
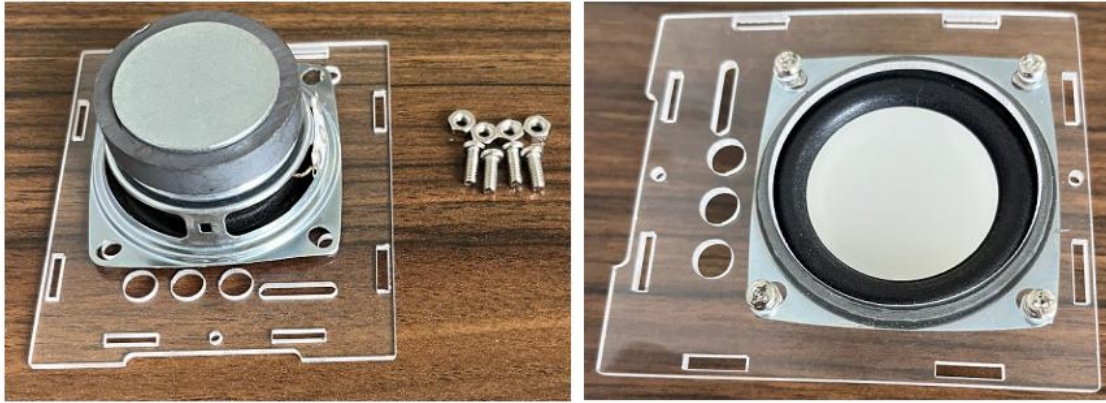1. Use M3*6 screws to fix 4 one-way posts on the bottom plate
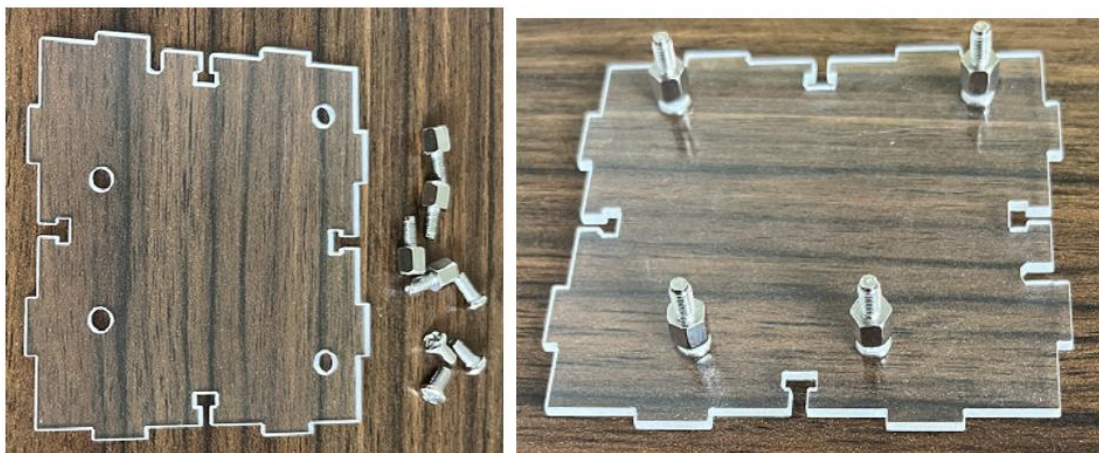
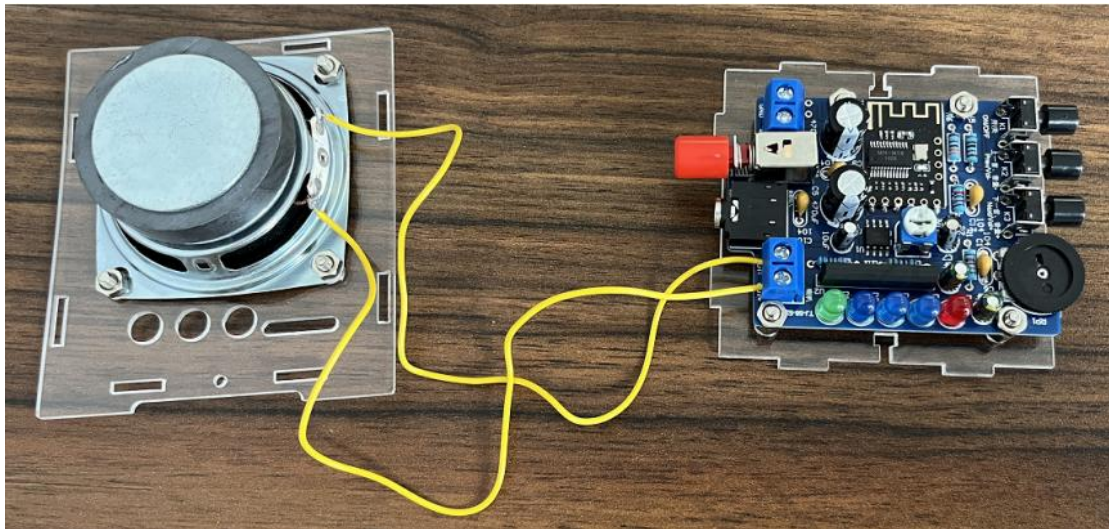2. Install the key caps for the key switch and tact switch

3.Fix the circuit board to the copper post with M3 nuts.

4. Use 4pcs M3 screws and nuts to fix the speaker to the shell

5. Connect the speaker wire and the circuit board with a wire.
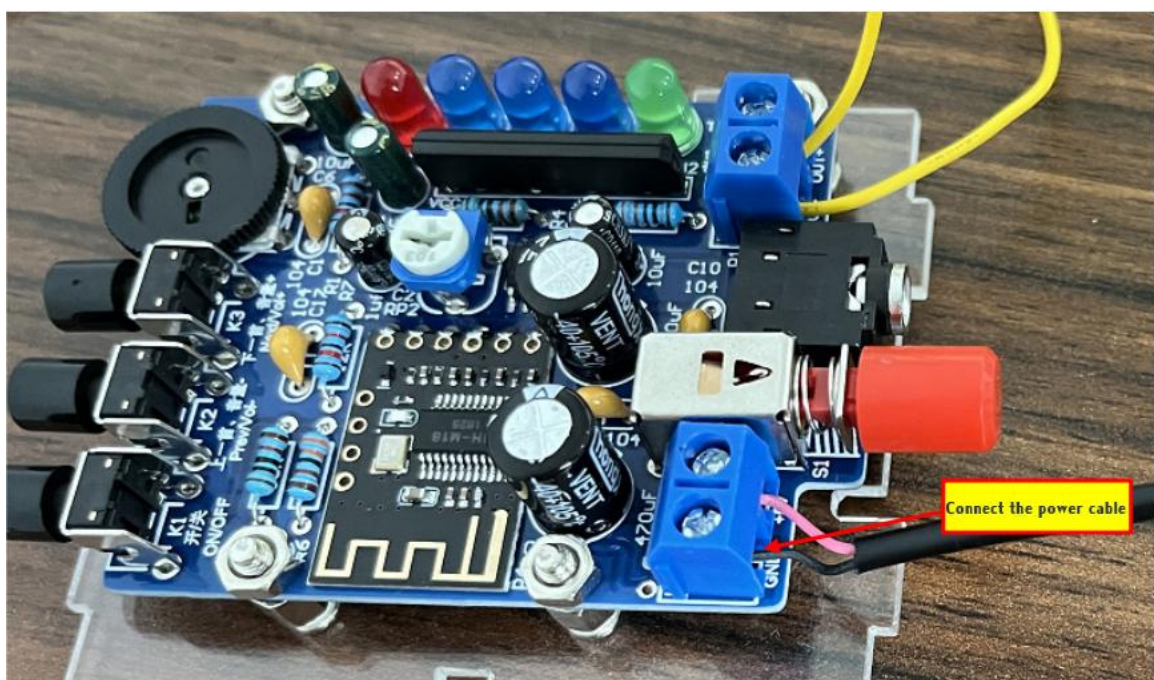

6. Connect the power cord.

Cut off the DC head, if you have a USB power cable without DC, the please ignore the picture below.

Before **Cut off the top of wire**

After

Plug the USB into the power supply.

Test the positive and negative poles of the other end of the two wires.

Generally, the red wire is positive and the black wire is negative.

Connect the power cable

7. Combined speaker shell

8. After 2 seconds when the power is turned on, the LED on the Bluetooth module will start to flash, and the name of the Bluetooth module displayed on the mobile phone is "MH‐M18", click to connect directly (without a password).