

Flash Christmas Tree DIY Kit

1. Introduction

Flash Christmas tree kit consists of three circuit board, allows 55pcs LED flash alternately, showing a Christmas tree in the space of three-dimensional profile (the night environment has better viewing). And flash with music.

2. Parameter

NO.	Parameter	Value
1	Model	RGB Christmas tree
2	Work Voltage	DC 5V
3	Power Type	MINI USB
4	Installation Size	88*88*218mm

3. Function

- 1>. Automatically flashing after power on;
- 2>. Support MP3 format music;
- 3>. Support TF card;
- 4>. Support U disk;
- 5>. Built-in 2W amplifier function;
- 6>. Comes with 4ohm 3W speaker;
- 7>. Support music output;
- 8>. Support volume adjustment;

9>. Support voice control: Previous,Next,Start/Pause.

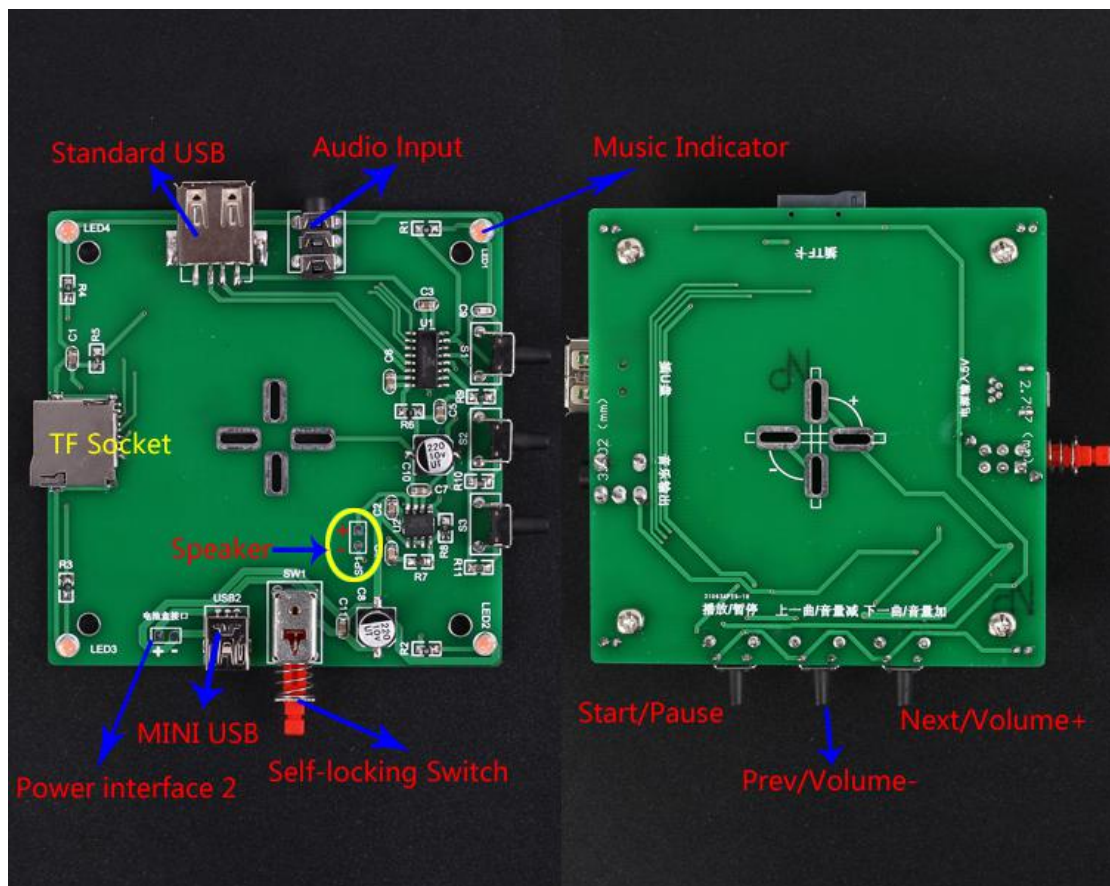
4. Component listing

NO.	Component Name	PCB Marker	Parameter	QTY
PCB-A&PCB-B				
1	Metal Film Resistor	A/B:R2,R4,R6	100ohm	6
2	Metal Film Resistor	A/B:R1,R3,R5	4.7K	6
3	S9014 Transistor	A/B:Q1-Q3	TO-92	6
4	Electrolytic Capacitor	A/B:C1-C3	47uF 16V	6
5	RGB LED	A:D1-D27;BD1-26	5mm	53
6	PCB	PCB-A&PCB-B		2
PCB-C				
7	0805 SMD Capacitor	C1-C3,C5-C7	1uf 105	6
8	0805 SMD Capacitor	C4,C11	0.1uf 104	2
9	0805 SMD Capacitor	C9	100pf	1
10	0805 SMD Resistor	R1-R4	1K	4
11	0805 SMD Resistor	R5	4.7R	1
12	0805 SMD Resistor	R6	0R	1
13	0805 SMD Resistor	R7	20K	1
14	0805 SMD Resistor	R8	47K	1
15	0805 SMD Resistor	R9	22K	1
16	0805 SMD Resistor	R10	33K	1
17	0805 SMD Resistor	R11	51K	1
18	IC	U1	SOP-16	1
19	MD8002B	U2	SOP-8	1
20	TF Card Socket	TF	SMD	1
21	Standard USB Female Socket	USB1		1
22	MINI USB Female Socket	USB2		1
23	SMD Electrolytic Capacitor	C8,C10	220uF 16V	2
24	Switch	S1-S3	6*6*10mm	3
25	LED	LED1-LED4	3mm	4
26	Audio Socket	P1		1
27	Self-locking Switch	SW1		1
28	PCB-C			1
29	Speaker	SP1	3W 4ohm	1
30	Cable	SP1	10cm	2
31	MINI USB Cable		80mm	1

32	Copper pillars		M3*12mm	4
33	M3 Screw		M3*5mm	8
34	M3 Screw		M3*9mm	4
35	M3 Nut			4
36	M2 Screw		M2*10mm	12
37	M2 Nut			12
38	Acrylic shell			6

NOTE:Users can complete the installation by PCB silk screen and component listing

5. Basic instruction



1>. MINI USB:Power interface(It is recommended to use USB power supply);

2>. Power interface 2:Another way of power supply,such as battery box(Not recommended);

3>. Self-locking Switch:Power Switch;

4>. Speaker:Connect to speaker.Note the direction;

5>. Standard USB:U disk interface;

6>. TF Socket:TF card interface;

7>. Audio Input:Input audio from 3.5mm audio socket on PC or phone;

8>. Music Indicator:LED will flash when playing music;

9>. Start/Pause:Start or pause playing music;

10>. Prev/Volume-:Short press to play previous music;Long press to decrease the volume;

11>. Next/Volume+:Short press to play next music;Long press to increase the volume;

6. Operating instruction

1>. Power on and switch on power.LED will automatically flash.

2>. Insert U disk or TF card within MP3 music and wait for a few seconds.

3>. Press Start button to play music.

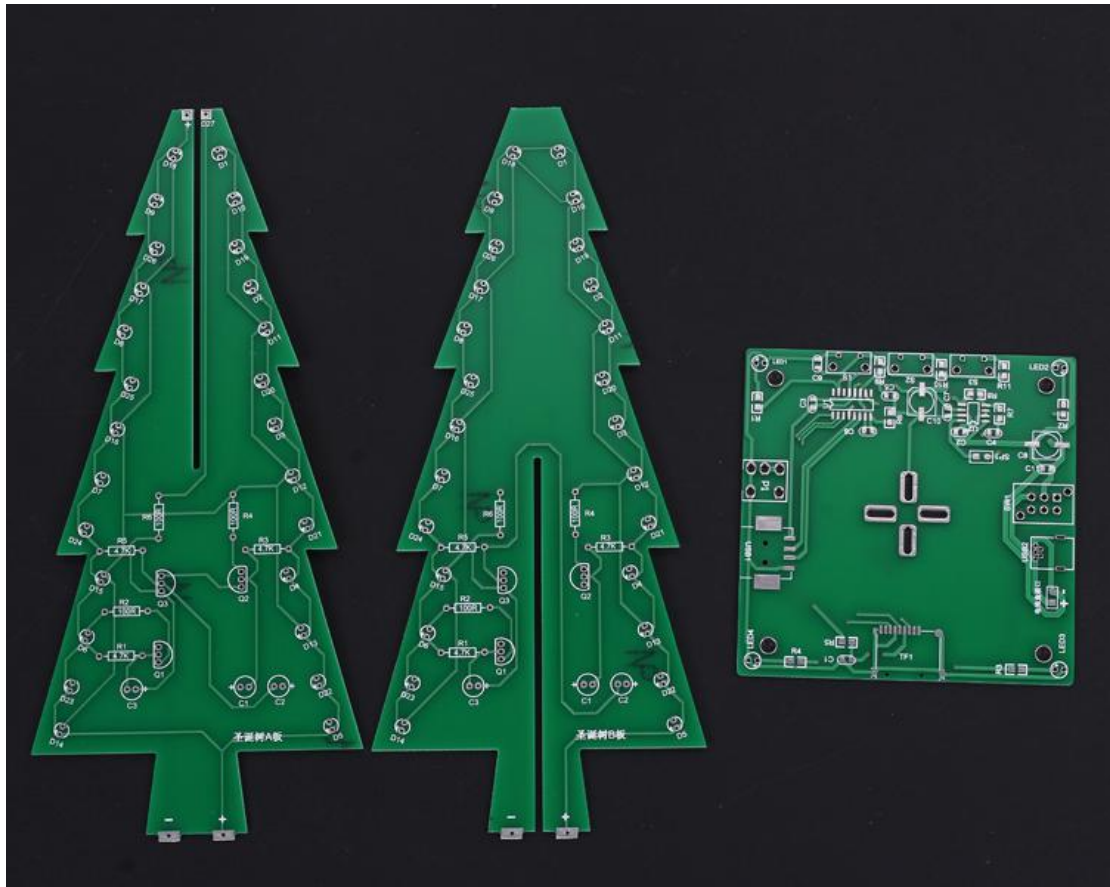
4>. Switch music or adjust volume.

5>. Press Pause button to stop music.

6>. Switch OFF power;

7>. Unplug U disk or TF Card.

7. Installation Steps



1>. Install PCB-A

Step 1: Install 3pcs 100ohm Metal Film Resistor on R2,R4,R6



Step 2: Install 3pcs 4.7K Metal Film Resistor on R1,R3,R5

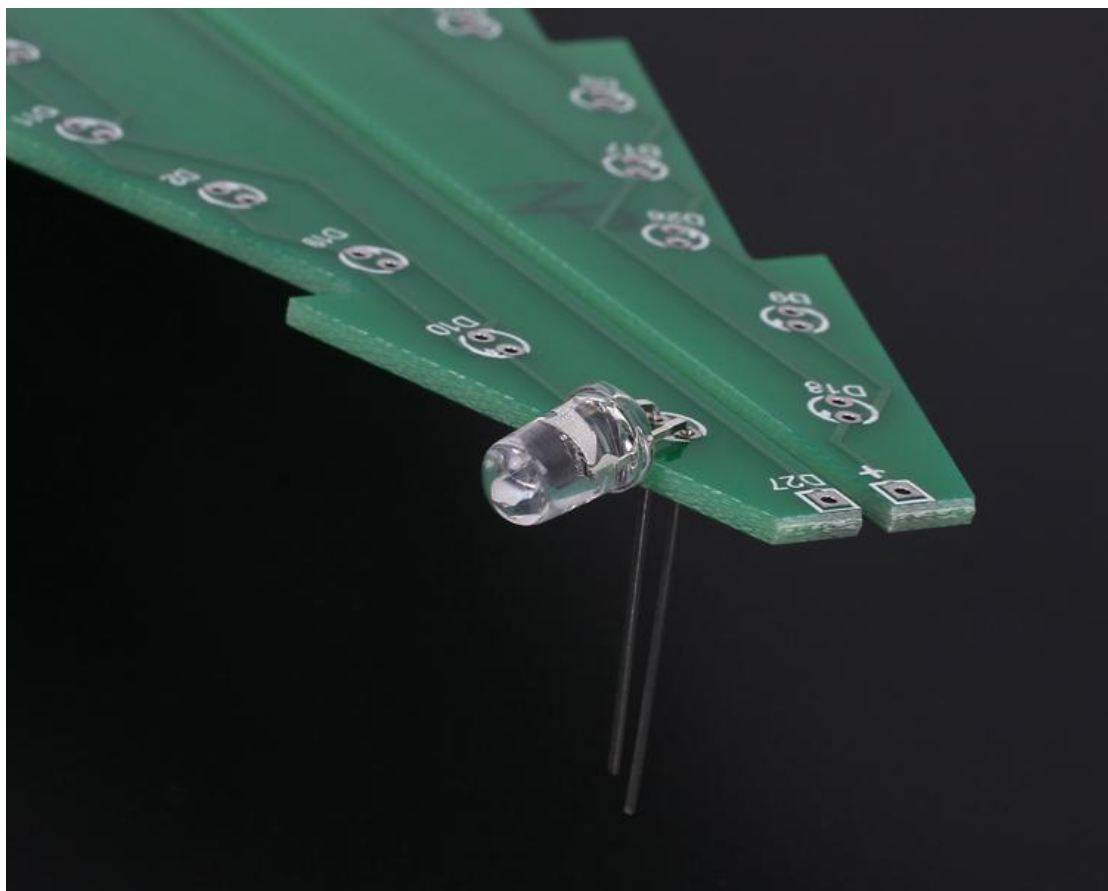
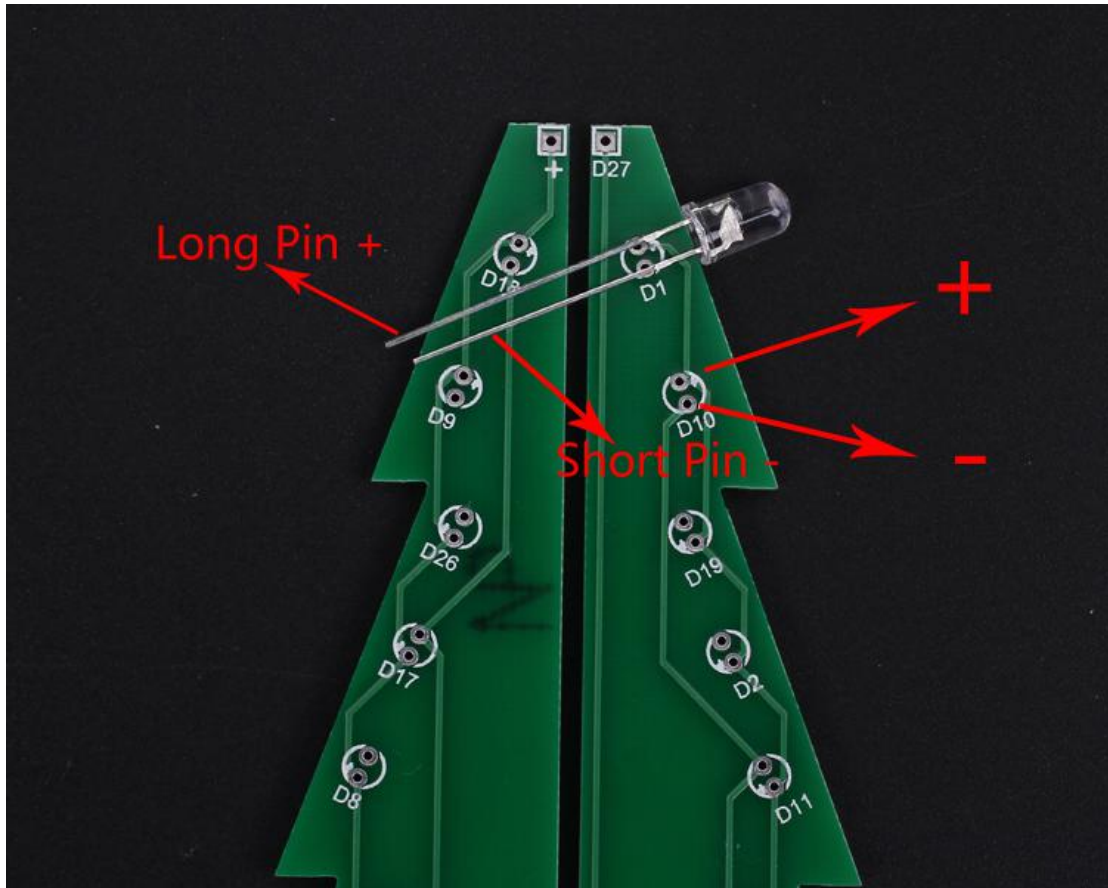


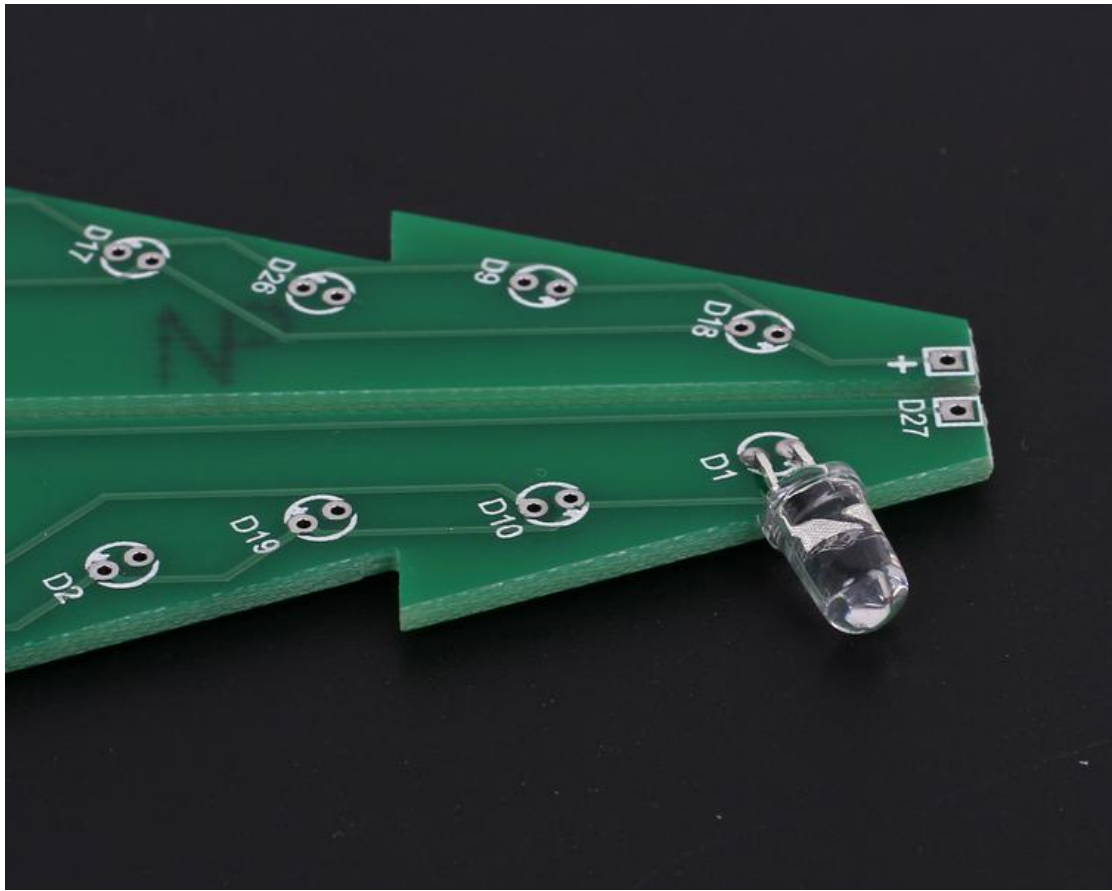
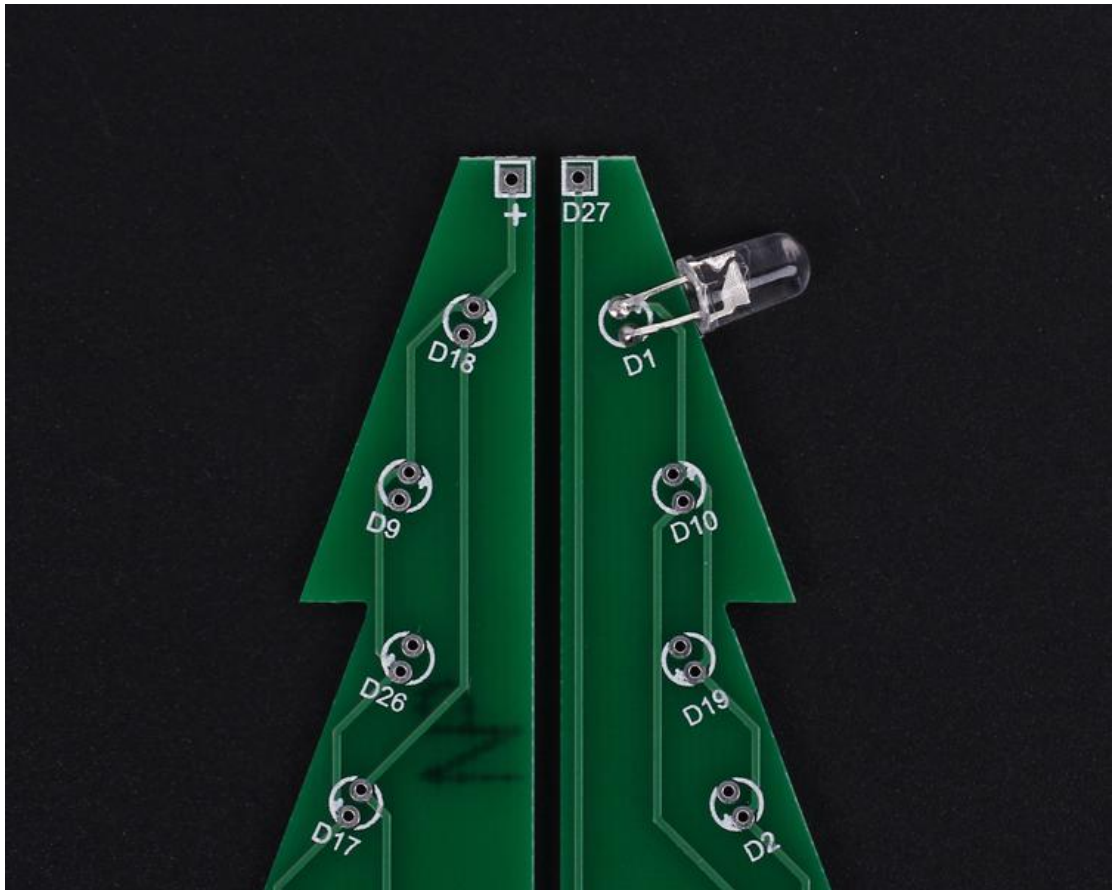
Step 3: Install 26pcs LED.

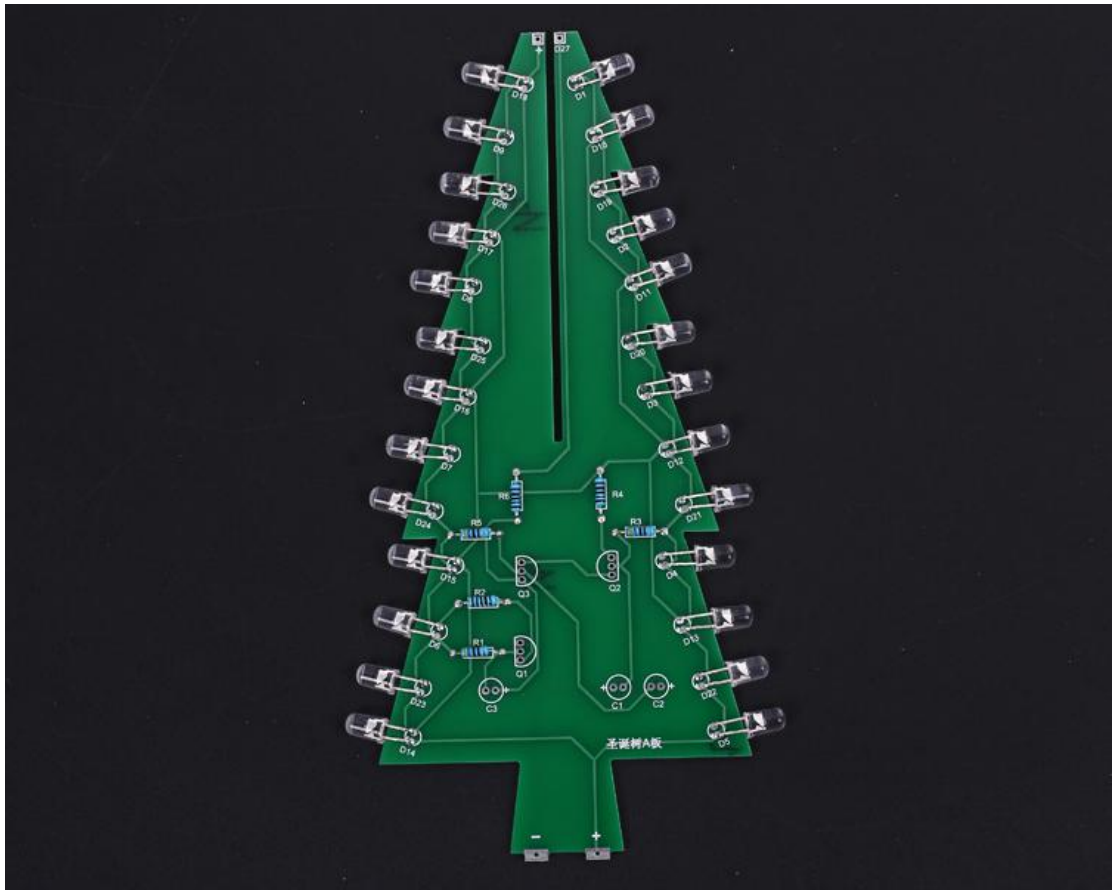
NOTE:LED D27 Not installed at this moment

Tips:

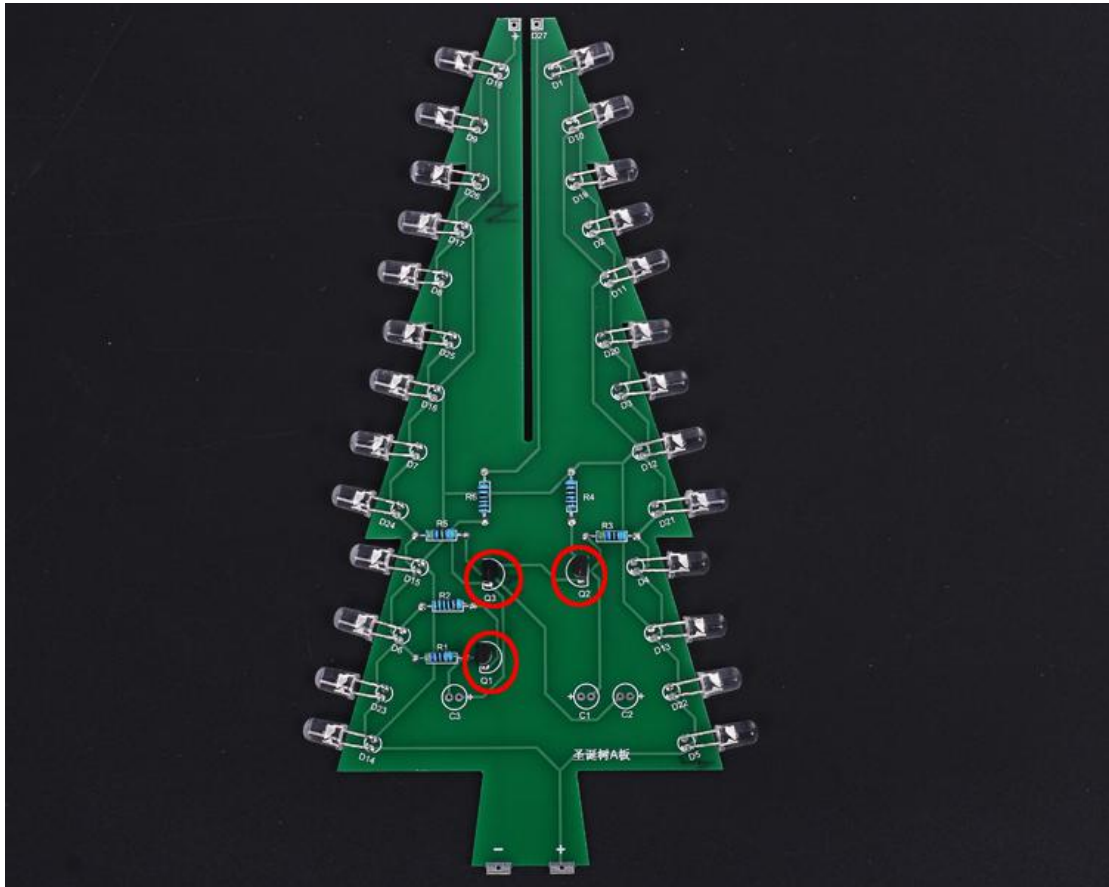
- A. Note the direction of the LED
- B. Control distance between PCB edge and LED head(Two ways).
 - 1). User can bend the LED pin at first after determining the distance and then insert LED to PCB through hole;
 - 2). Insert LED to PCB through hole at first.Then determine the distance.Bend the LED pin at last.



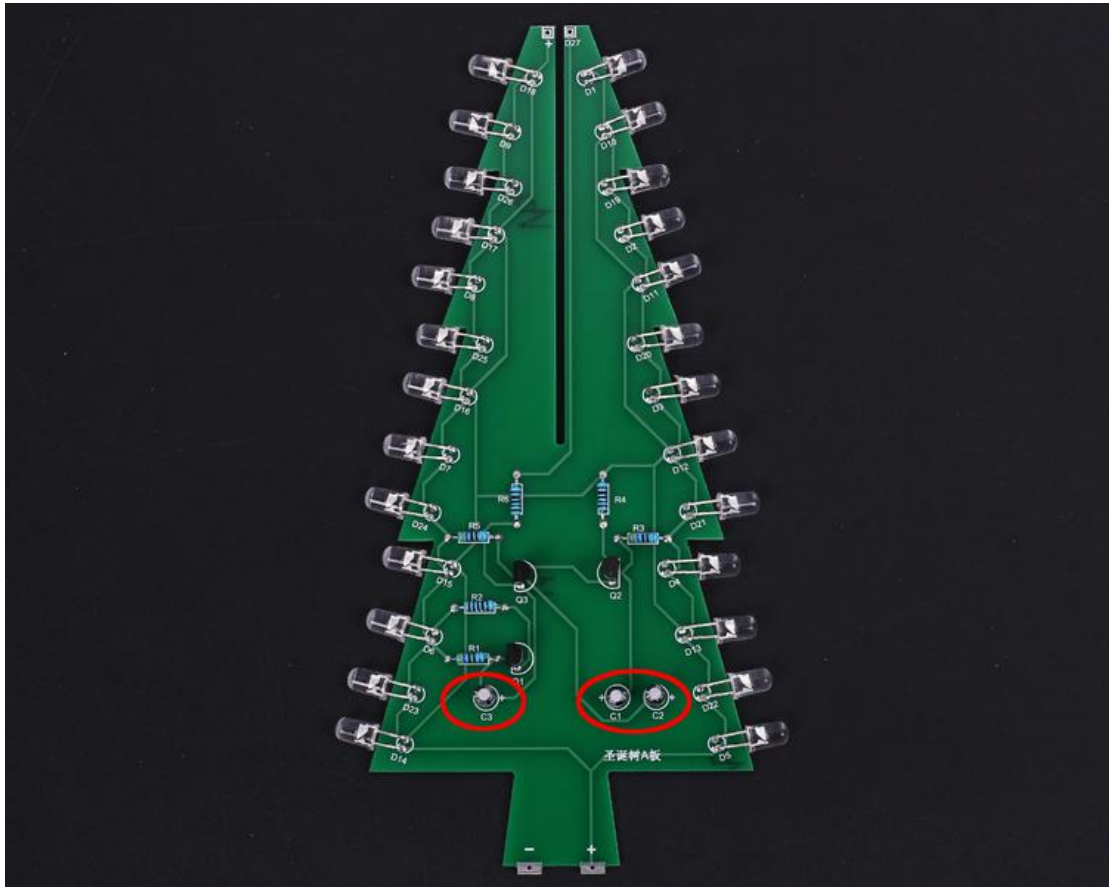




Step 4: Install 3pcs TO-92 S9014 Transistor



Step 5: Install 3pcs 47uF 16V Electrolytic Capacitor



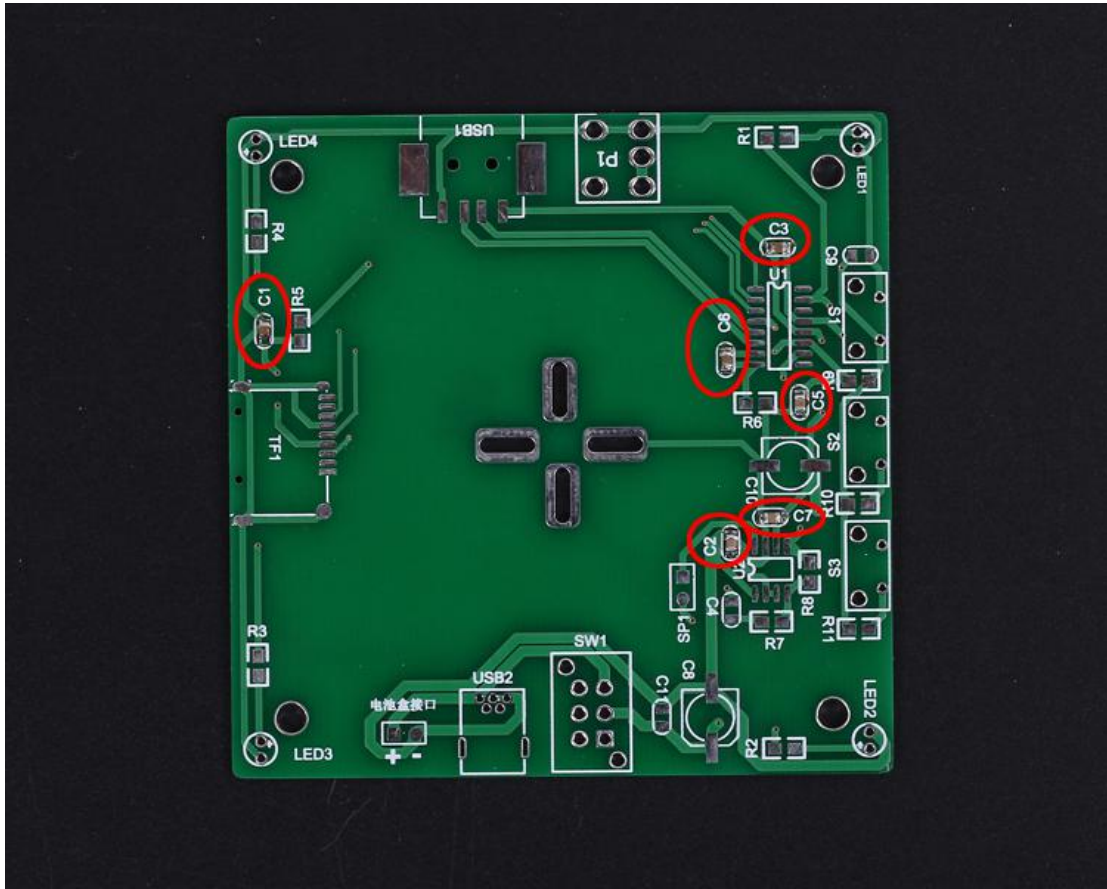
OK, PCB-A has been installed completed.

Step 6: Install PCB-B in the same way.

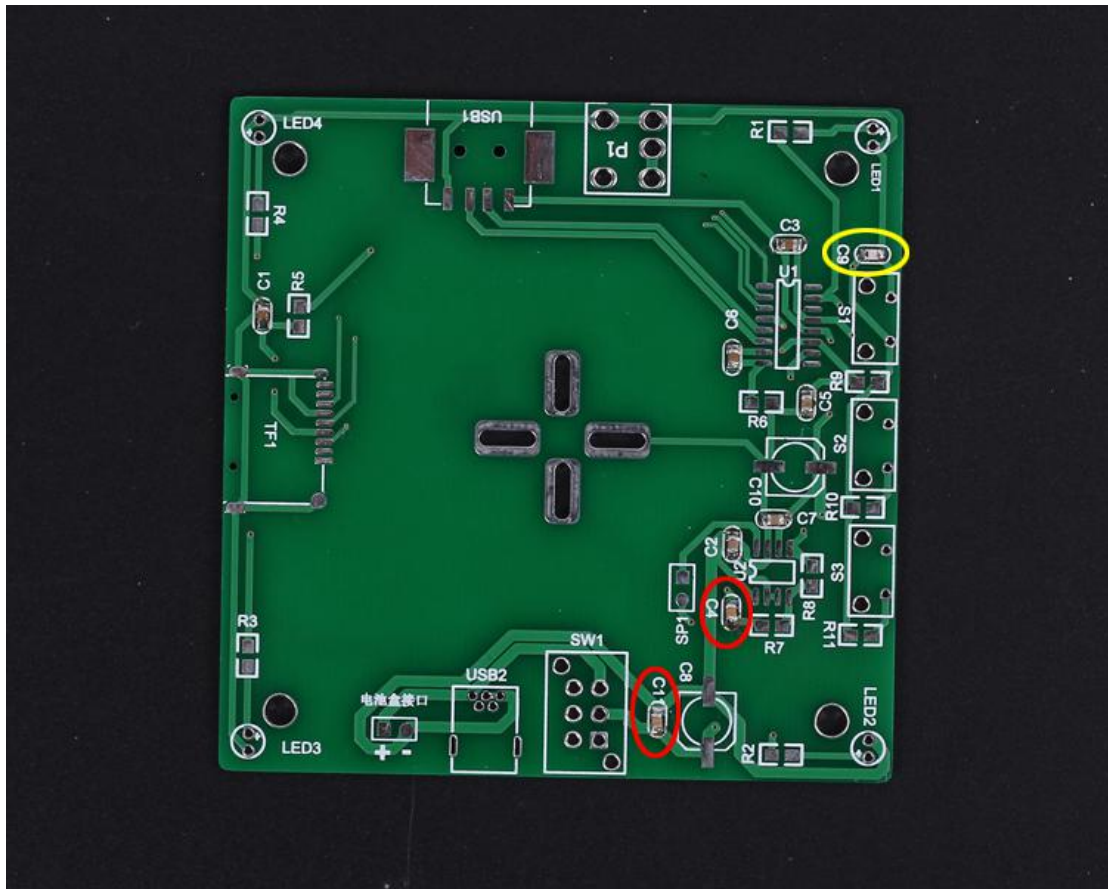
Step 7: Connect 5V to PCB-A and PCB-B. Preliminary welding success if LEDs are blinking automatically.

2>. Install PCB-C

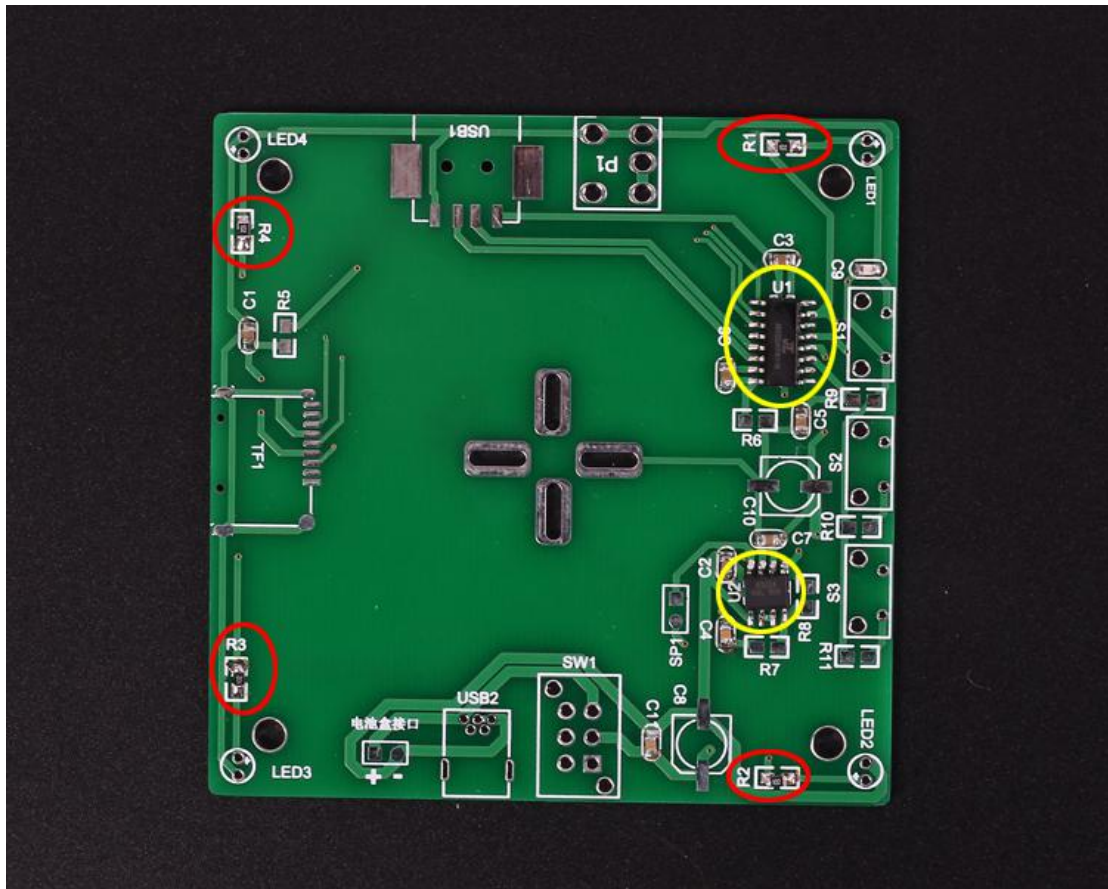
Step 8: Install 6pcs SMD 0805 1uf capacitor on C1-C3 and C5-C7.



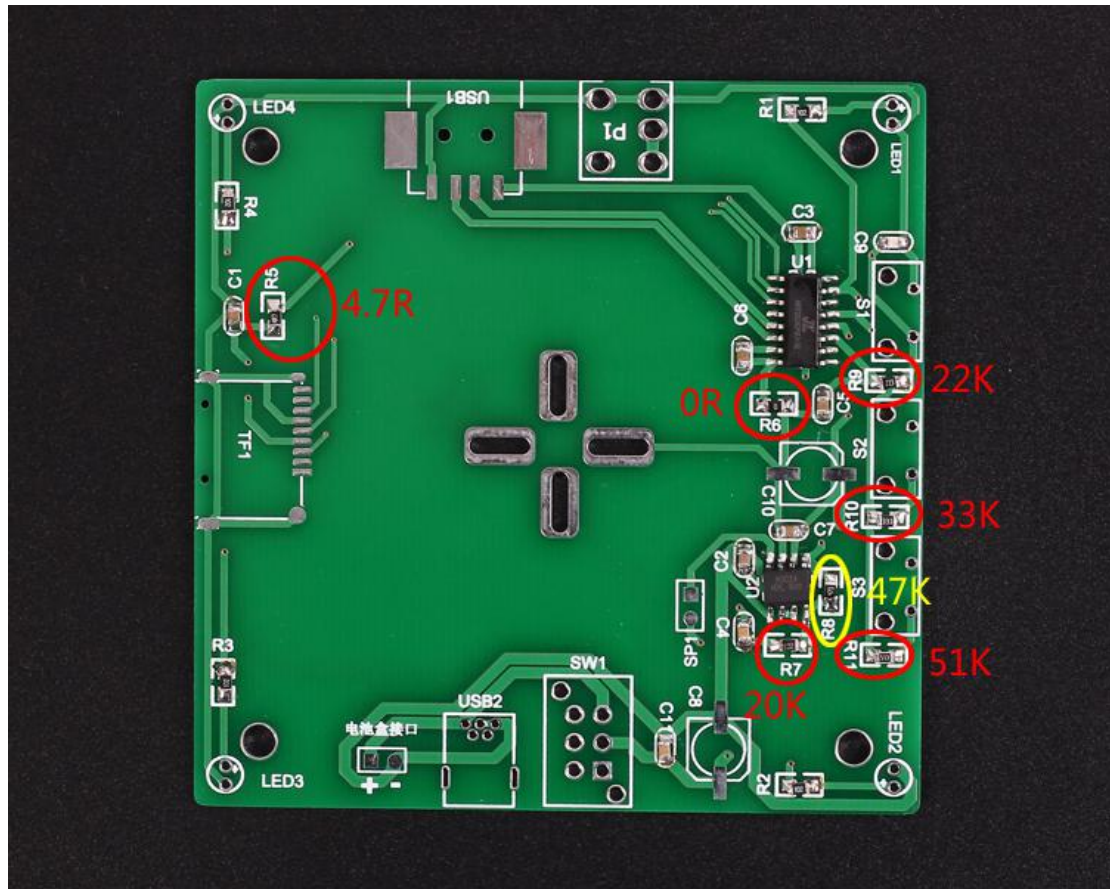
Step 9: Install 2pcs SMD 0805 0.1uf capacitor on C4,C11 and 1pcs 100pf on C9.



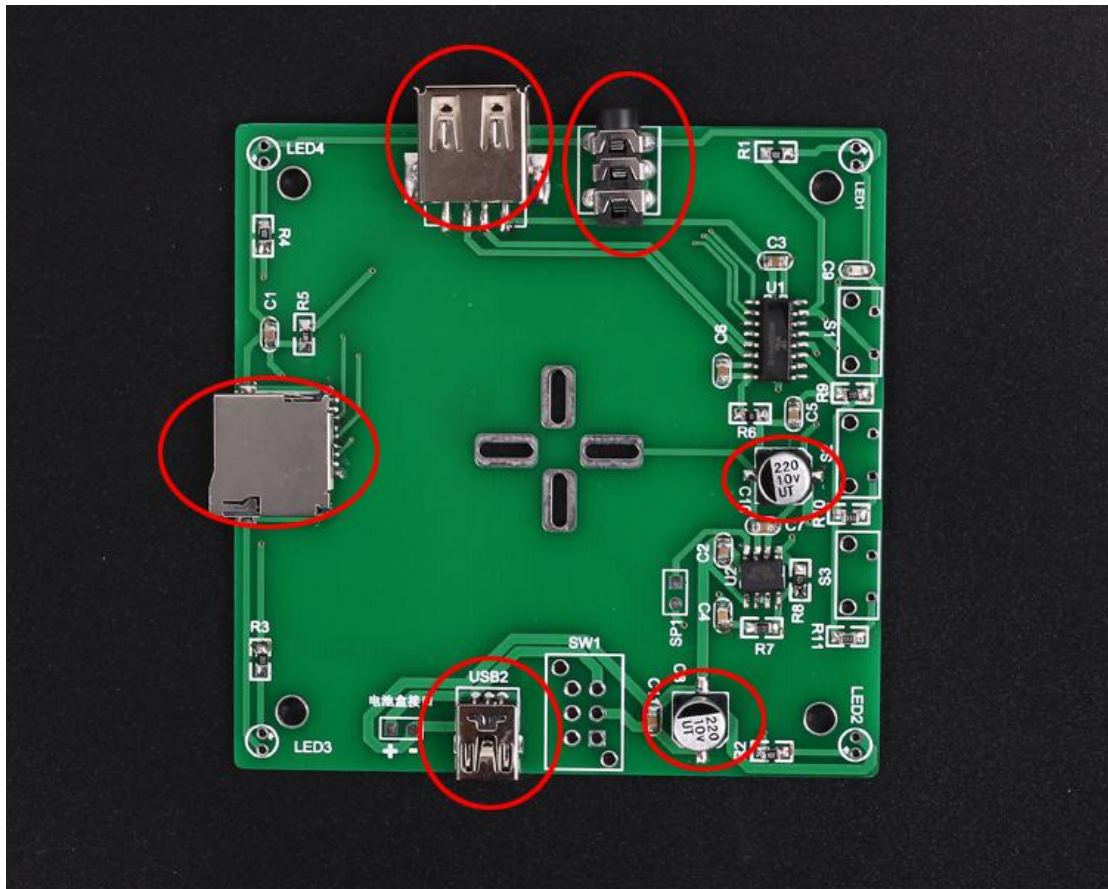
Step 10: Install 4pcs SMD 0805 1K resistor on R1-R4 and 2pcs IC on U1-U2. Pay attention to the direction of IC!!



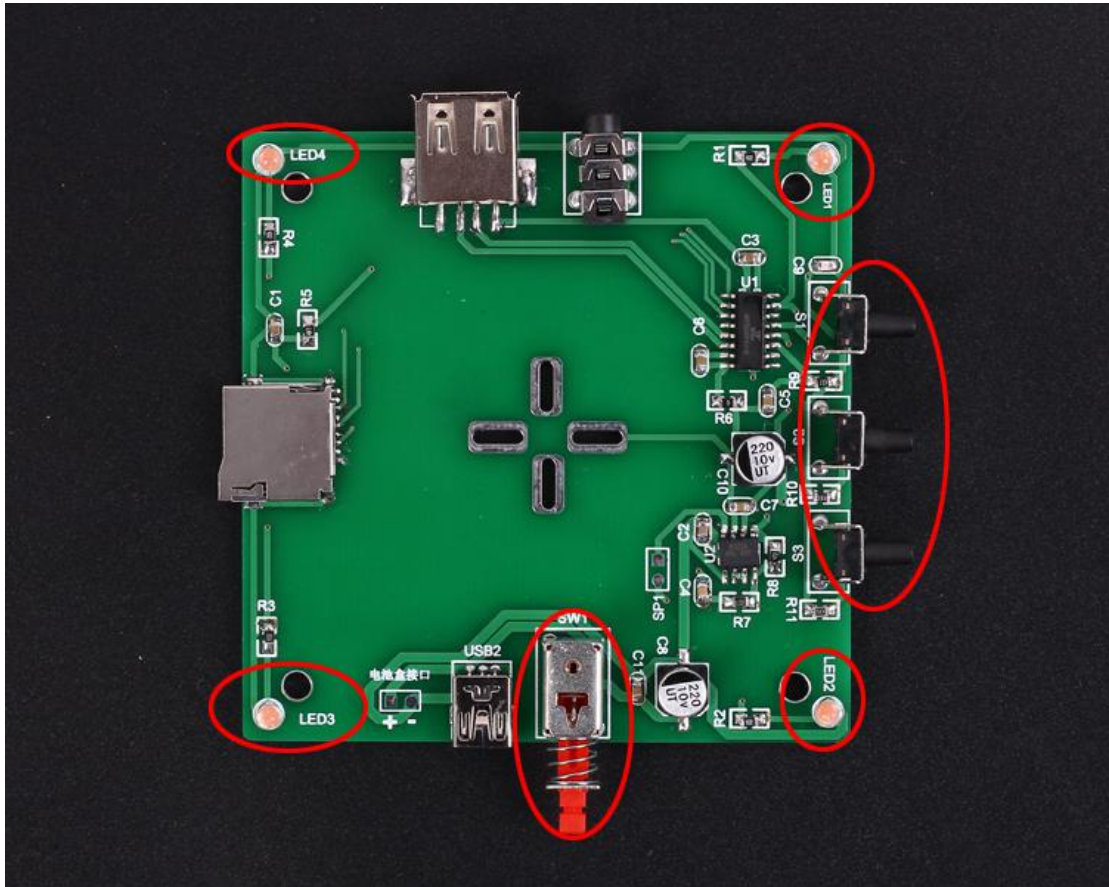
Step 11: Install R5-R11. Please check the location carefully, do not mistakenly install.



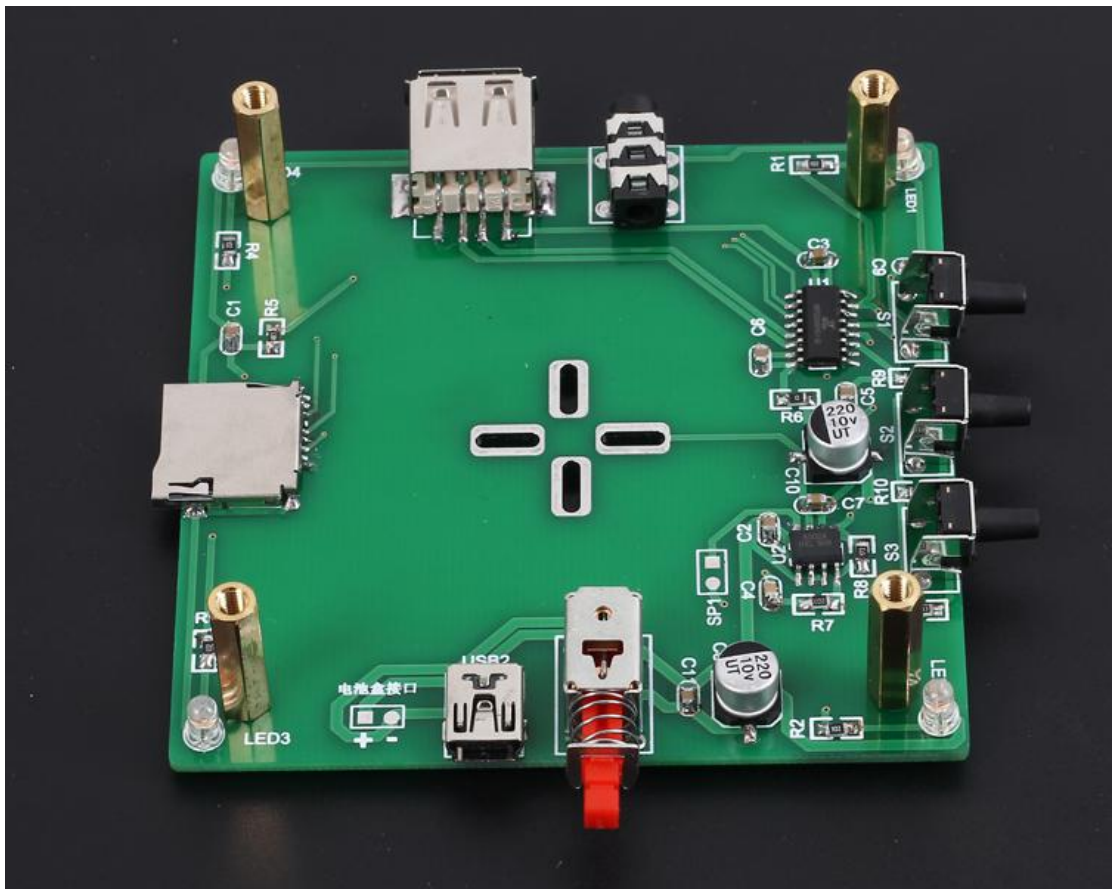
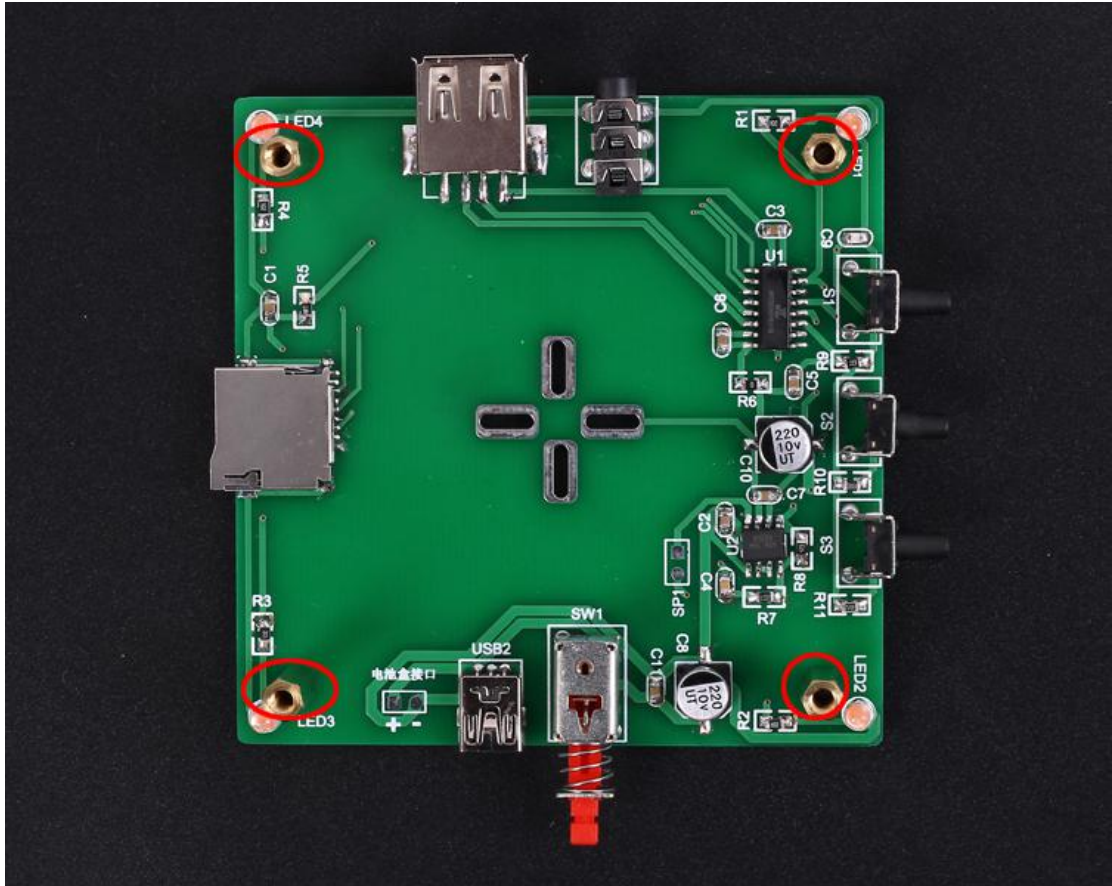
Step 12: Install 2pcs 220uf capacitor on C8,C10.Install 2pcs USB socket, audio socket,TF card socket.

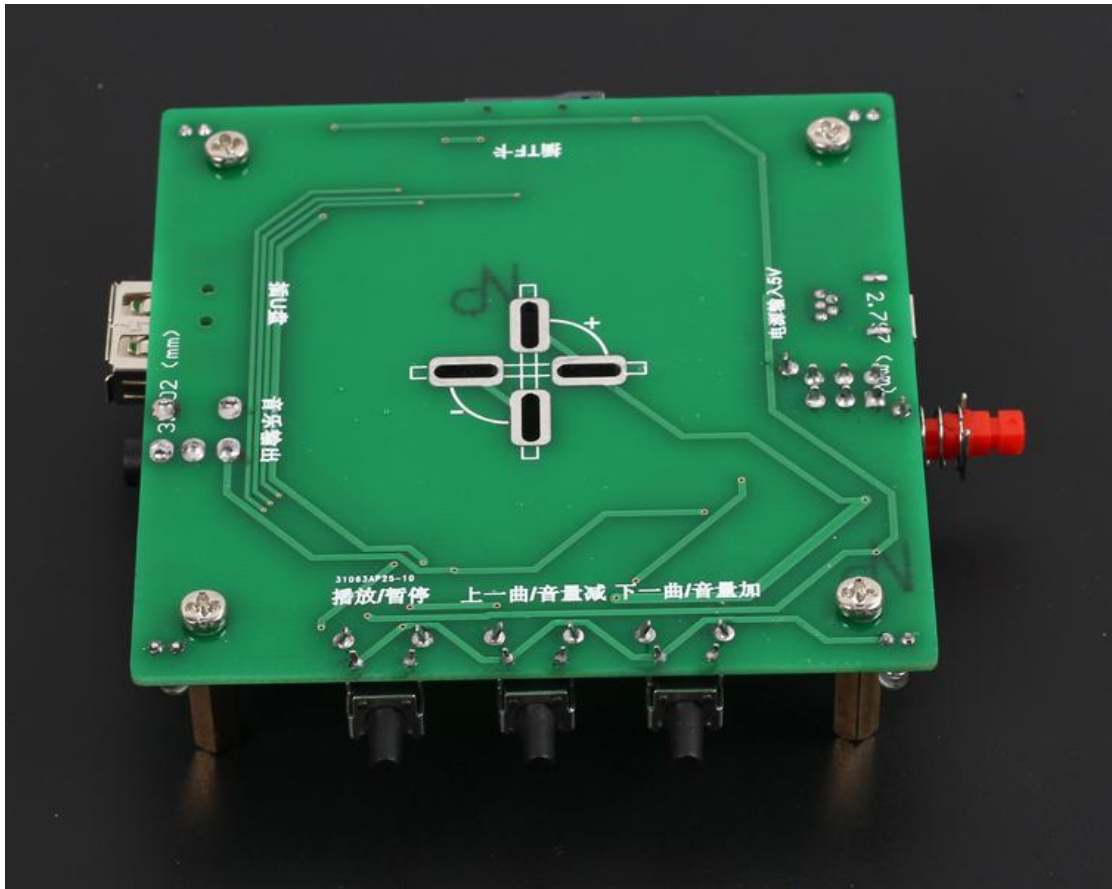
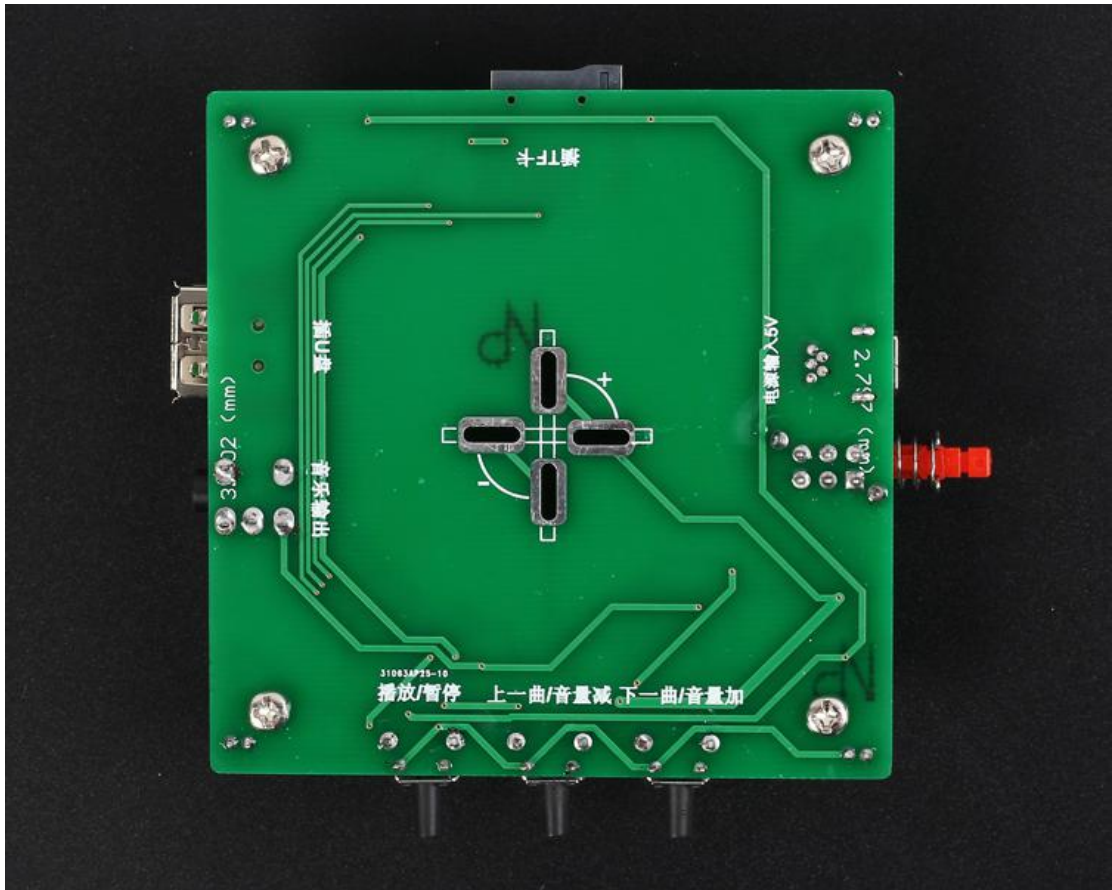


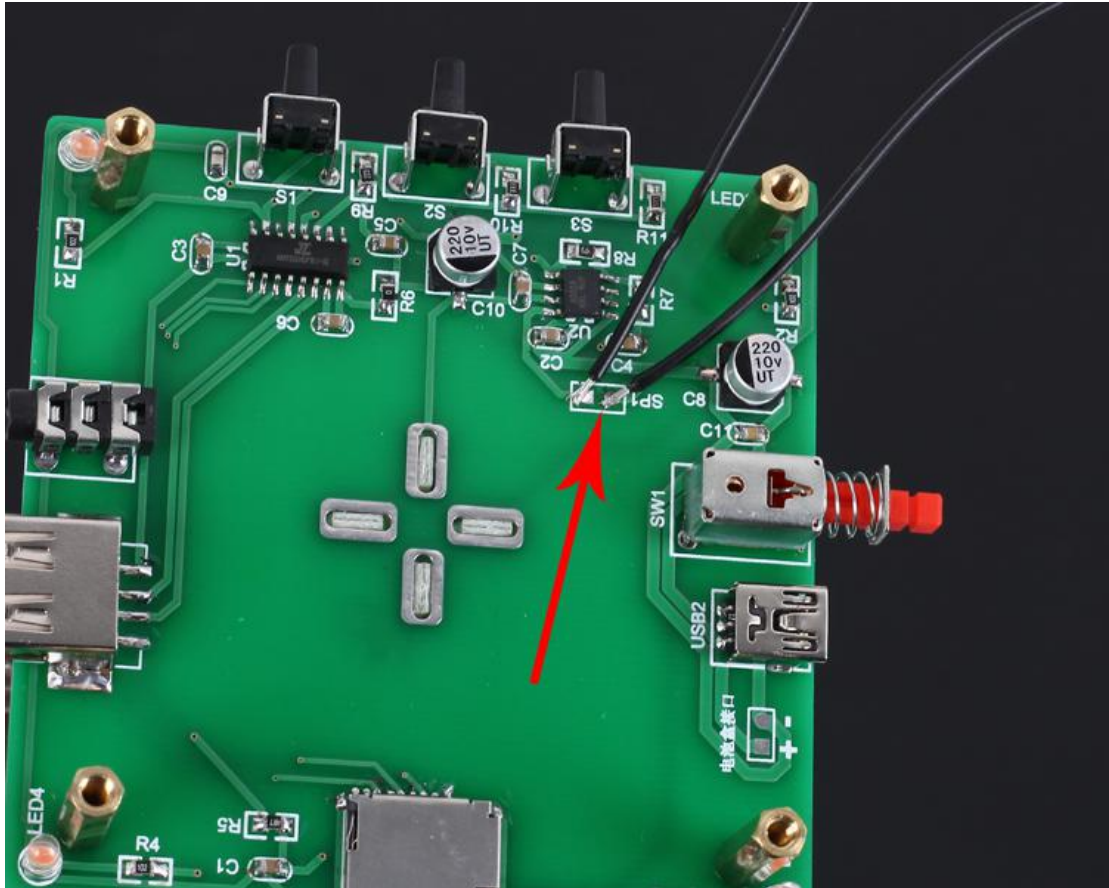
Step 13: Install 4pcs 3mm LED and 4pcs switch.



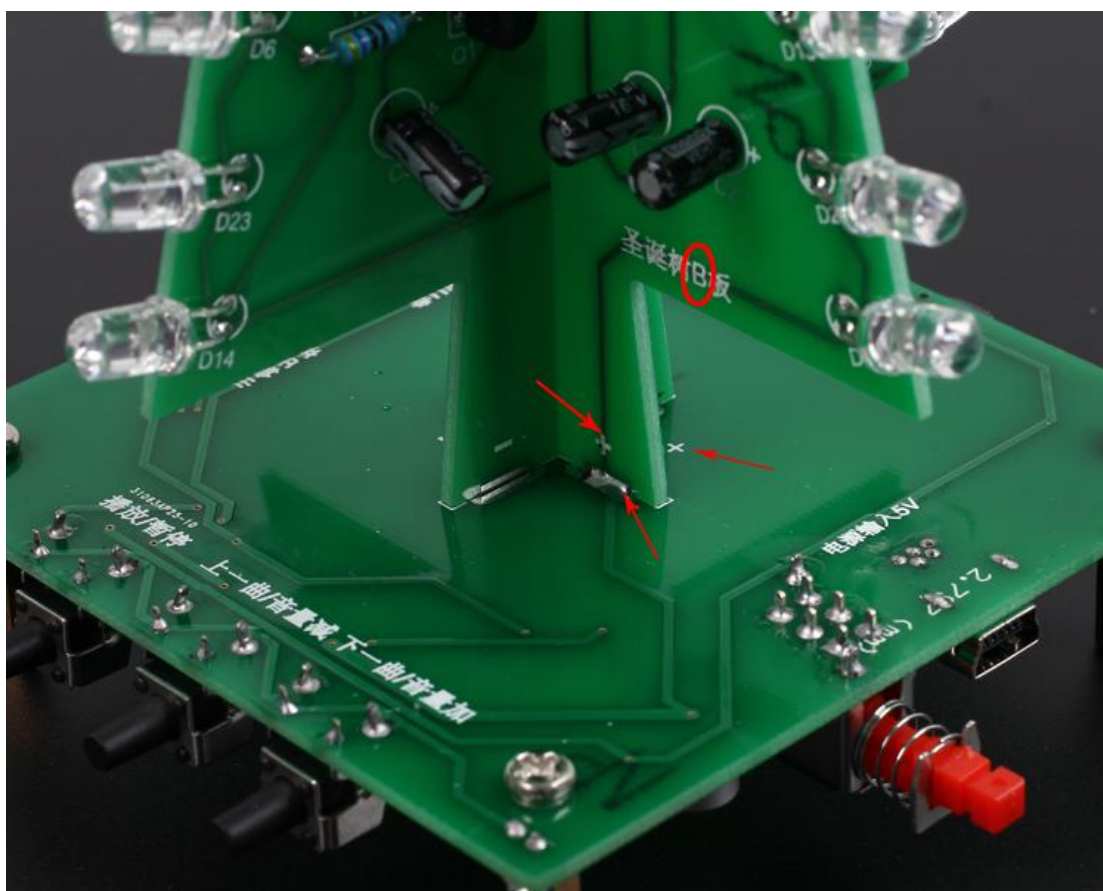
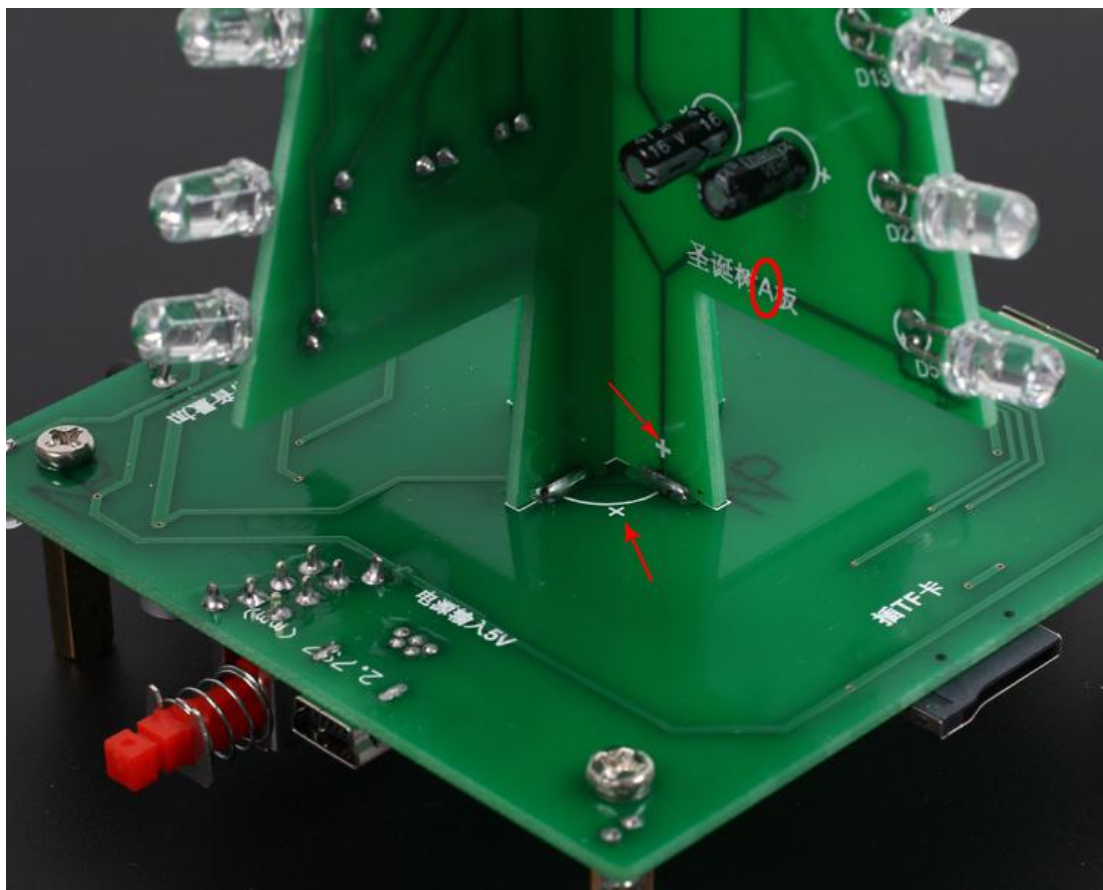
Step 14: Install copper pillars. At this time user can fix 2pcs cable on SP1 or speaker





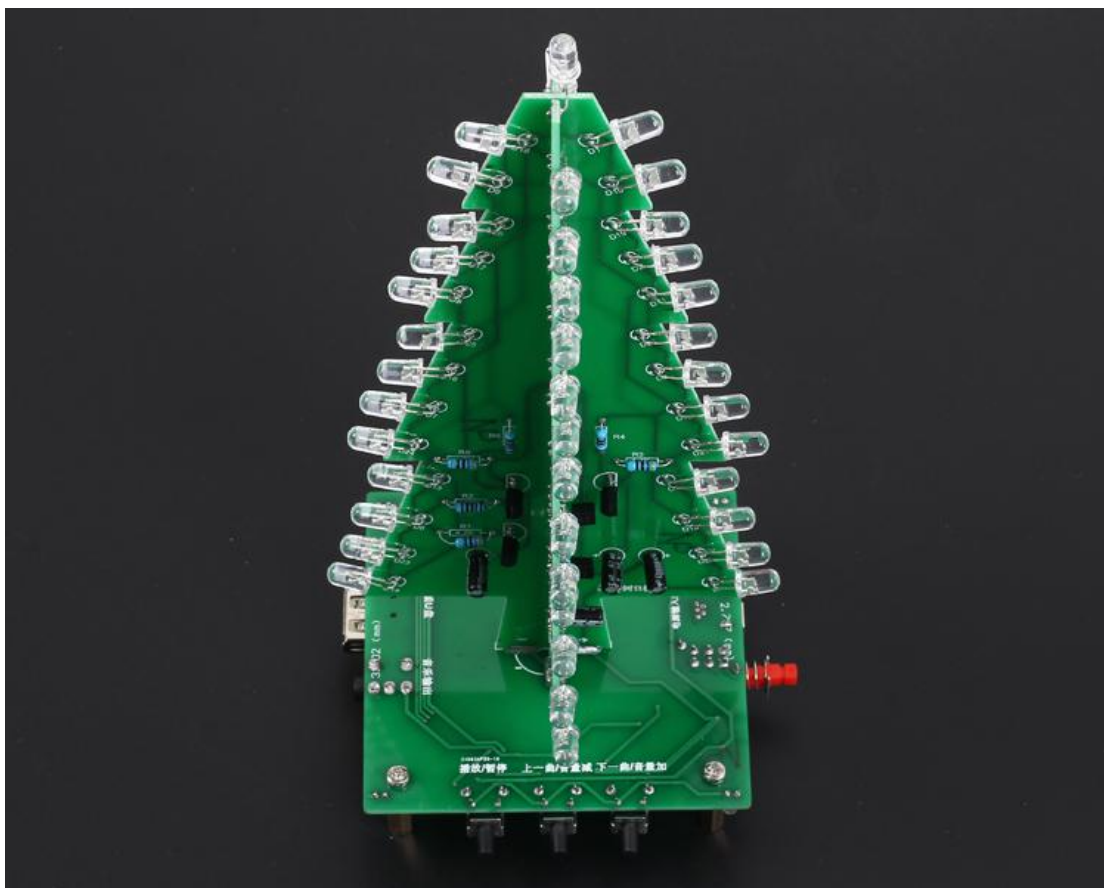


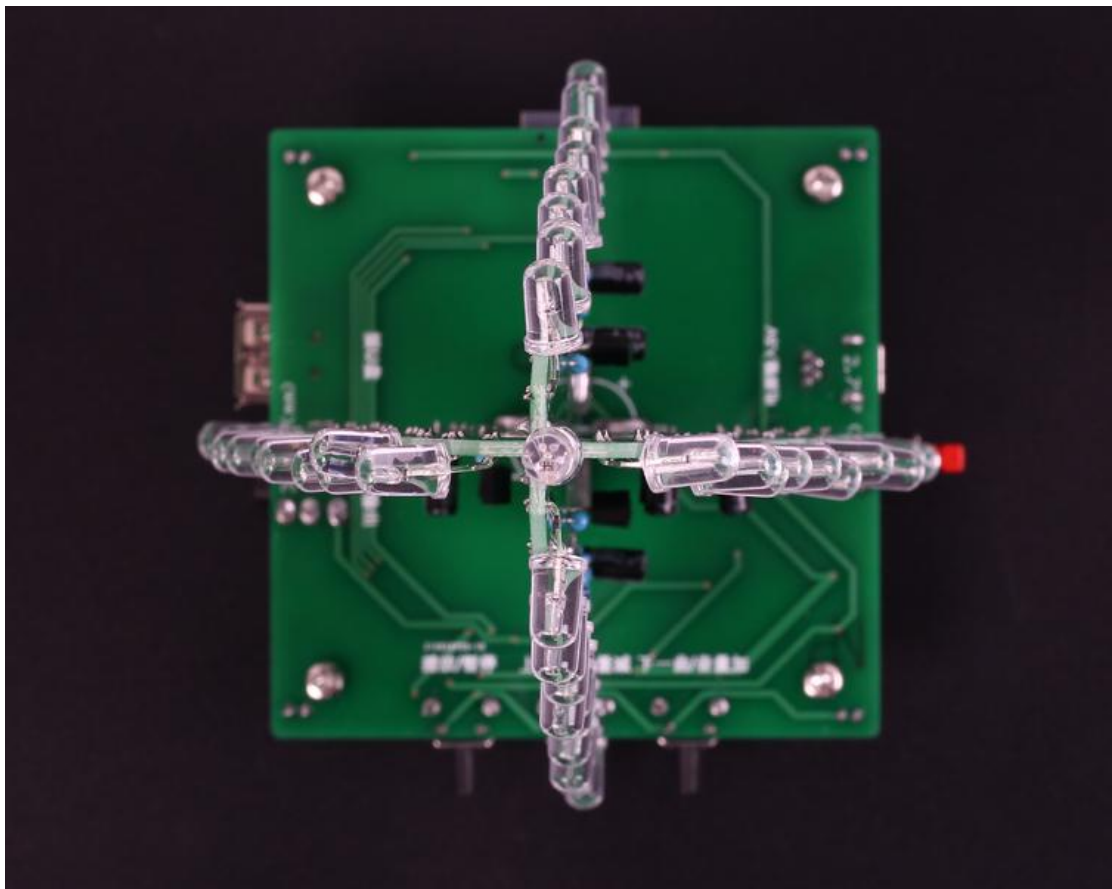
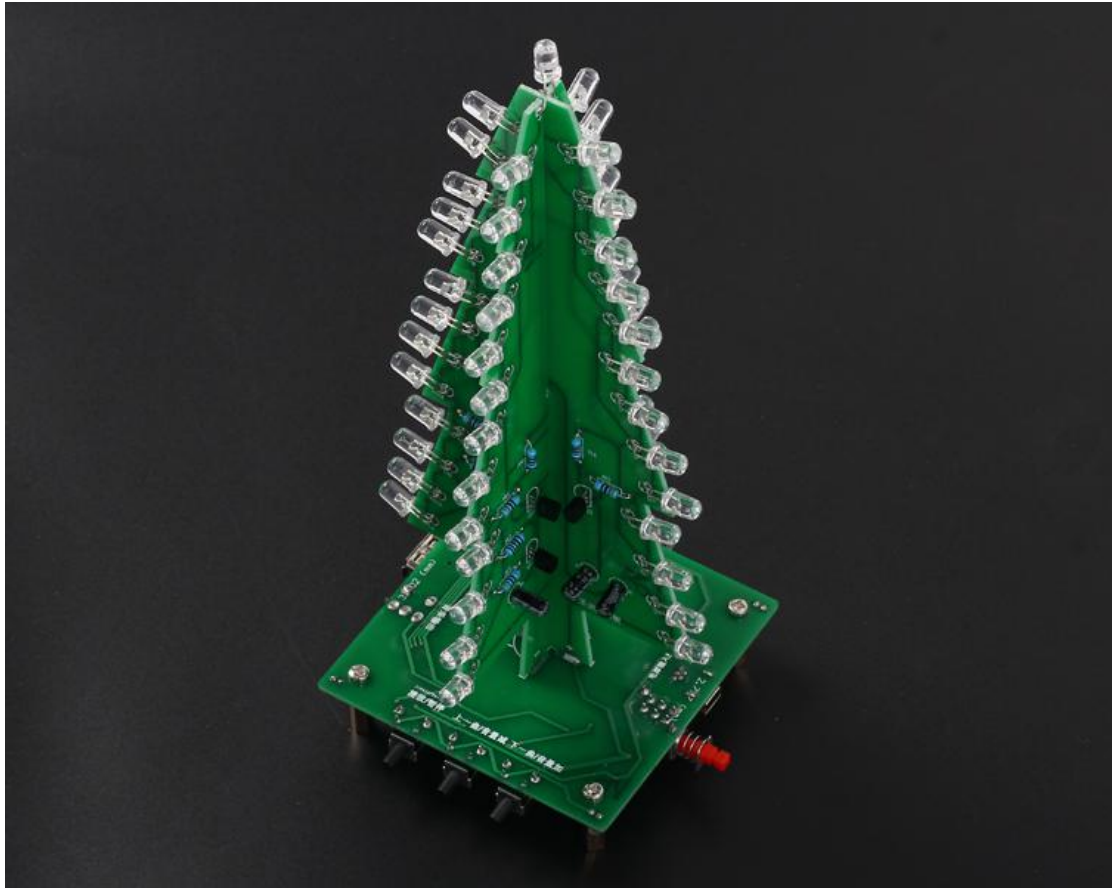
Step 15: Fixed PCB-A and PCB-B on PCBC.Align the two positioning heads and then fixed with tin.



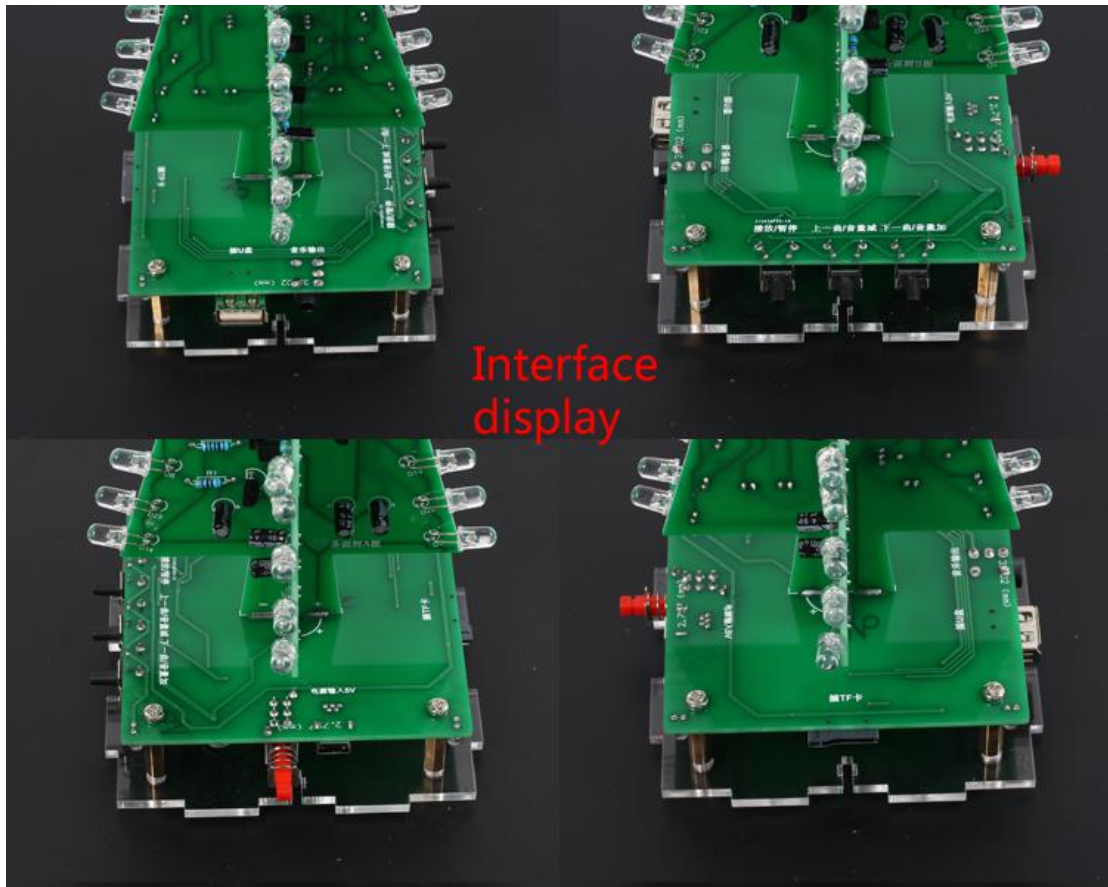
Step 16: Install the top LED. Note the positive and negative of LED.







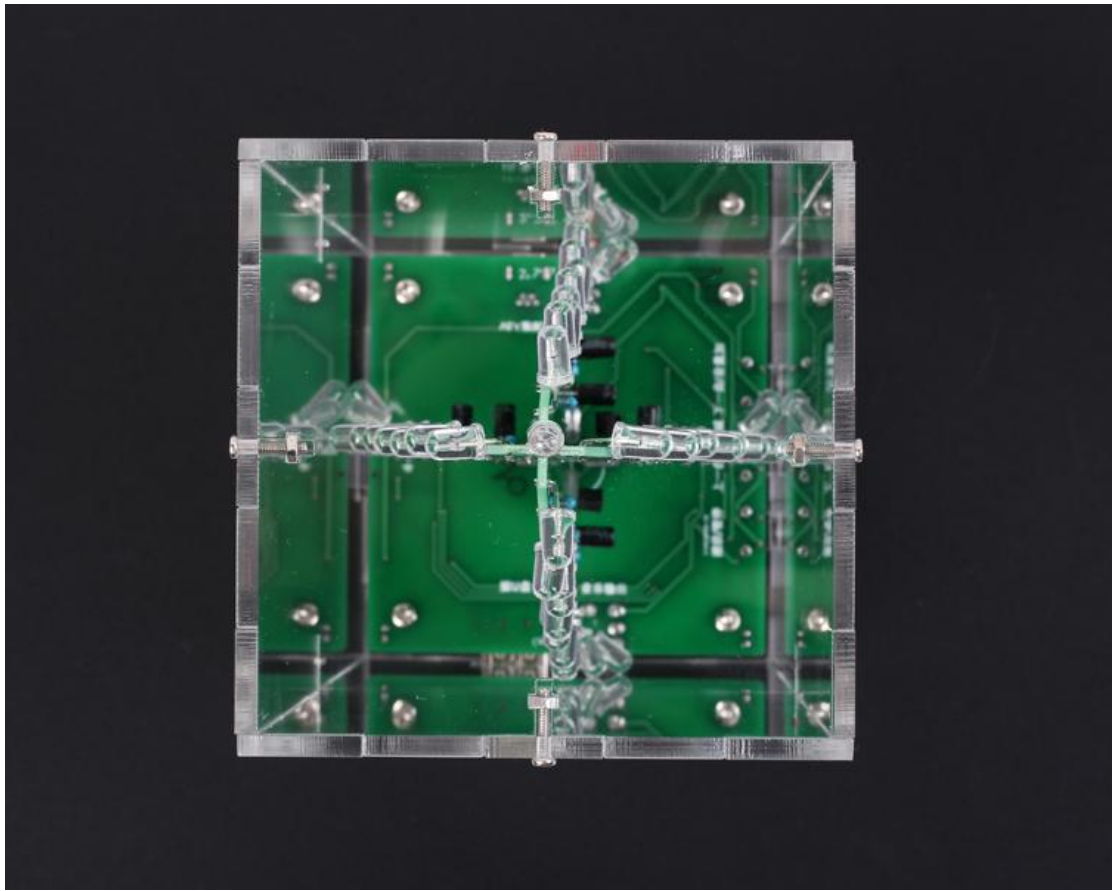
Step 17: Install Speaker and fixed base.

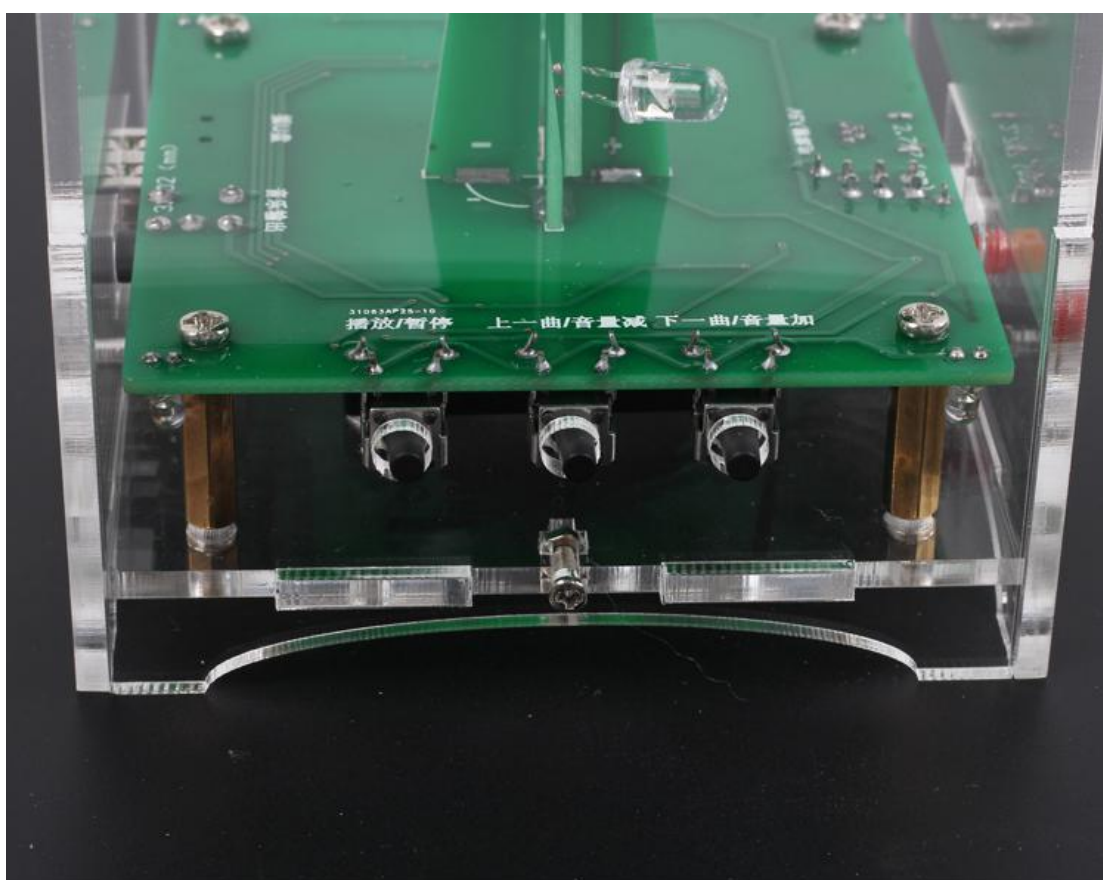
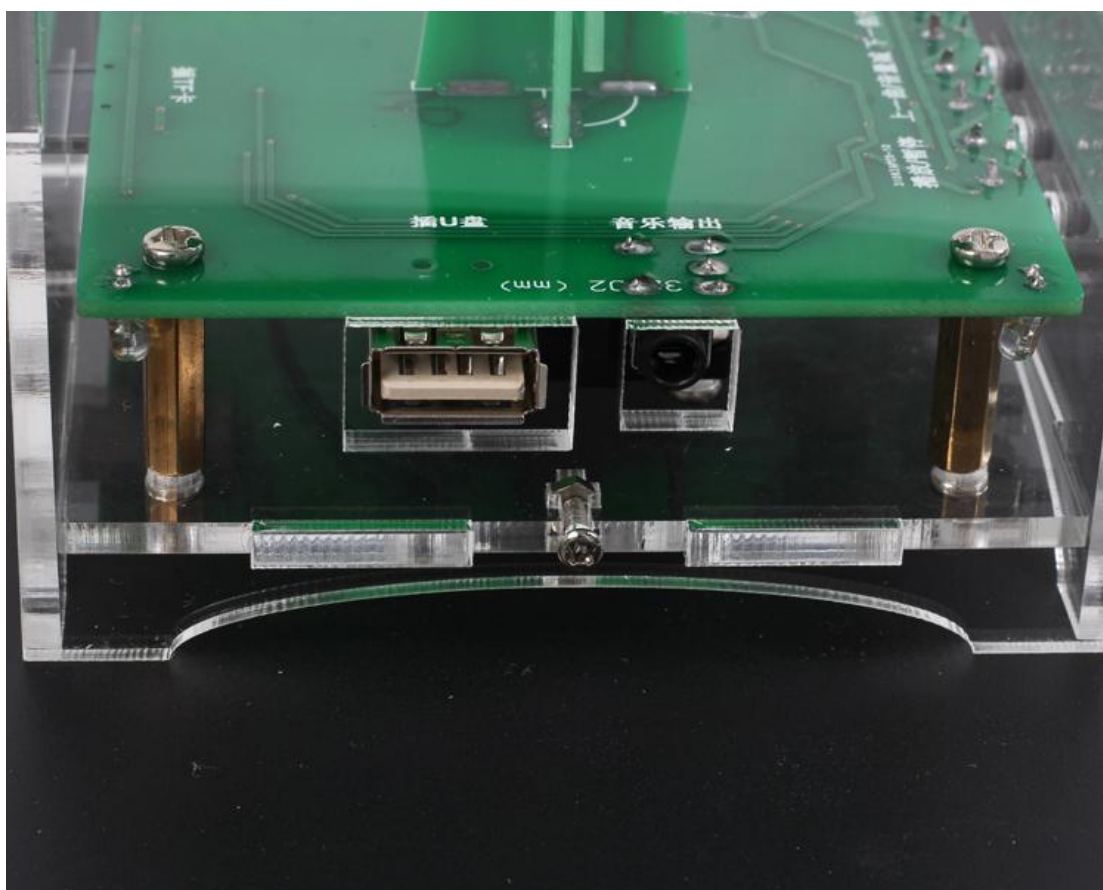


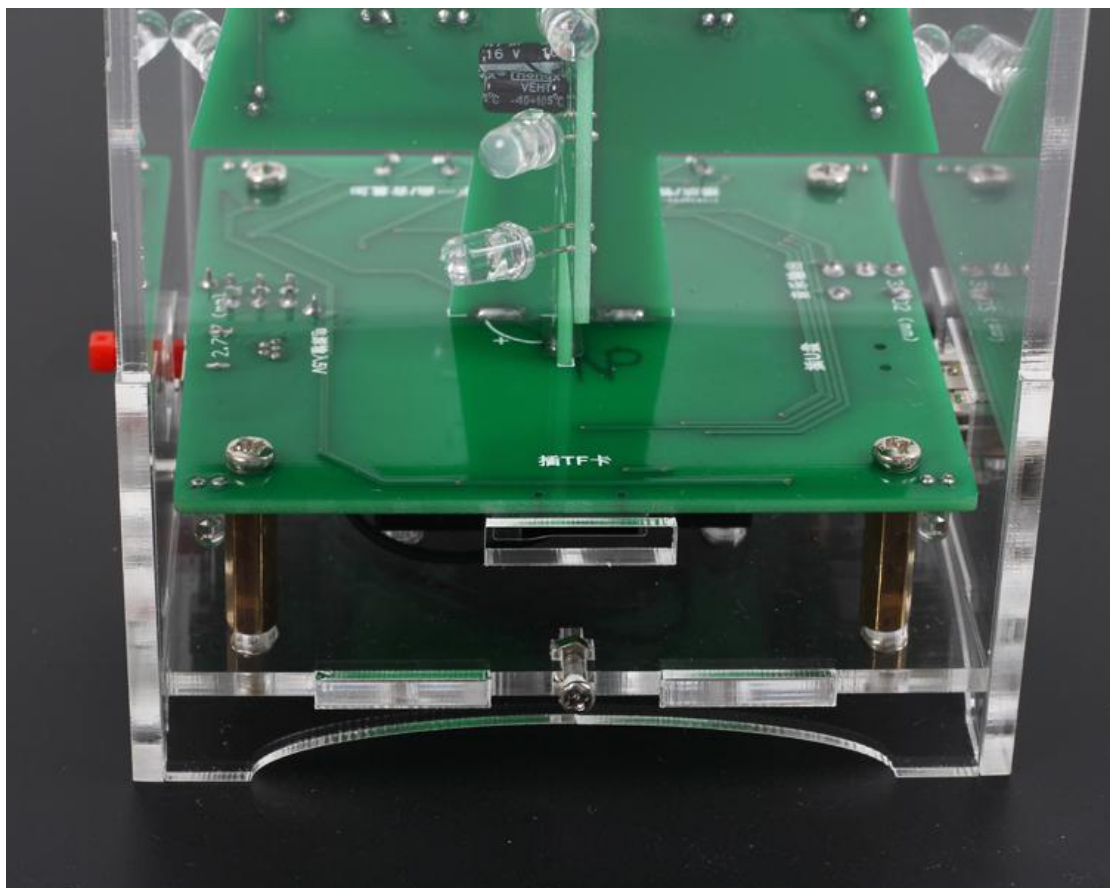
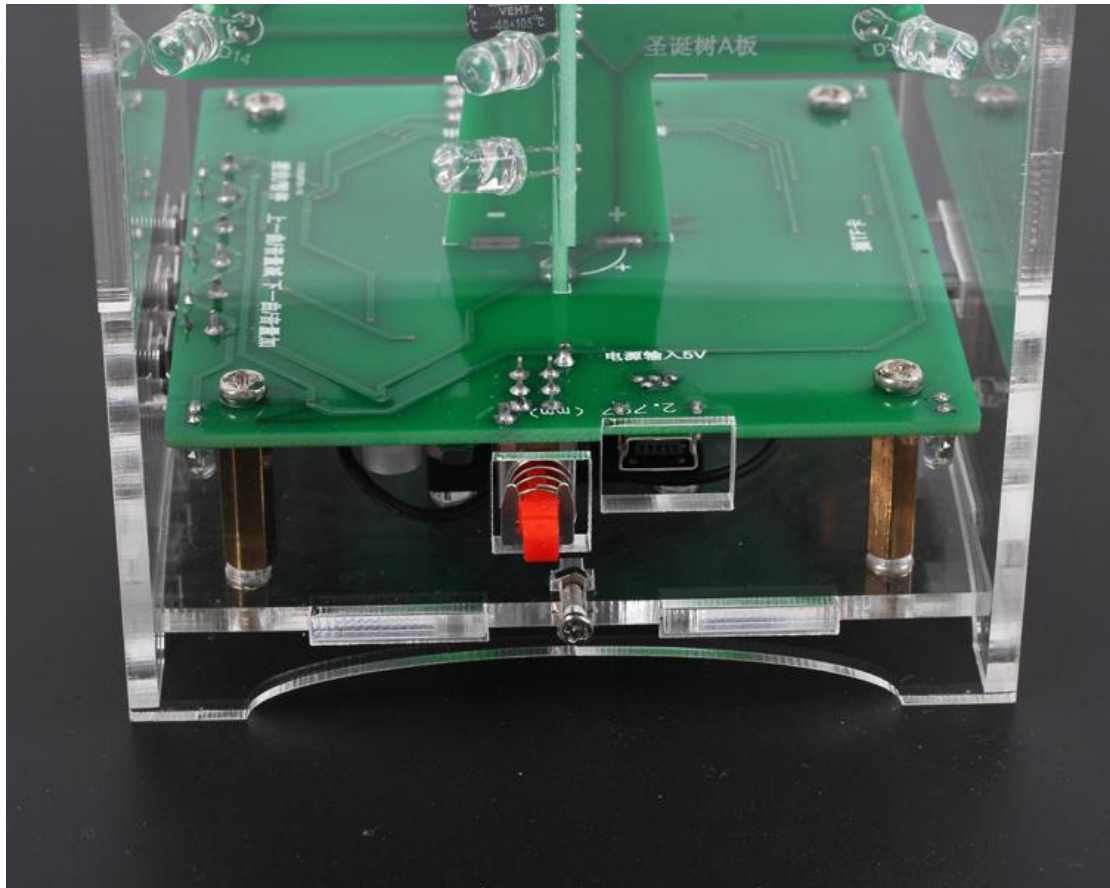
Step 18: Install acrylic shell. At this point, the installation is complete!!

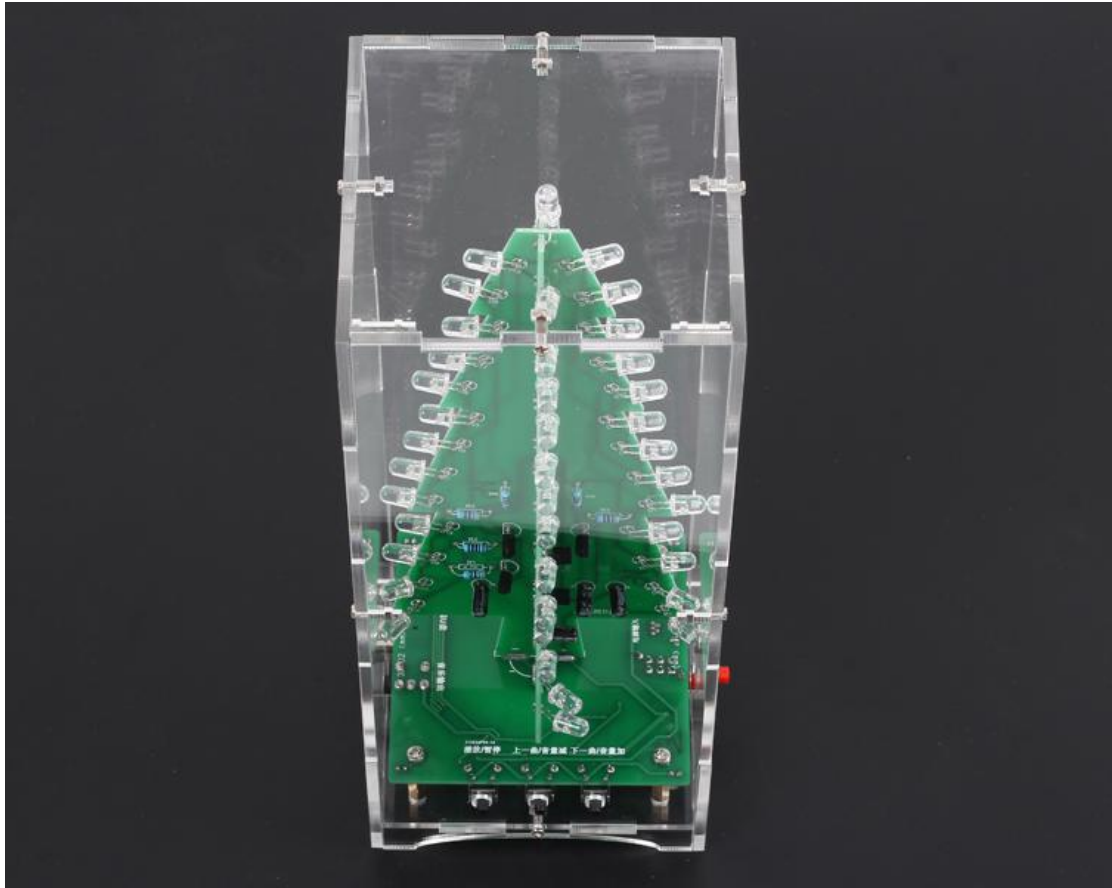
Tips:

Put nuts on notch and then insert screw.









7.Effect demonstration







