

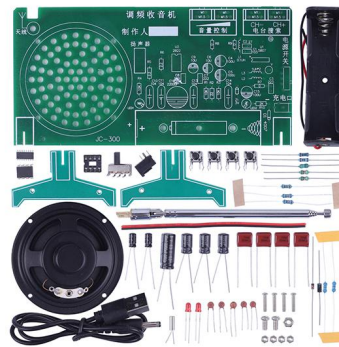
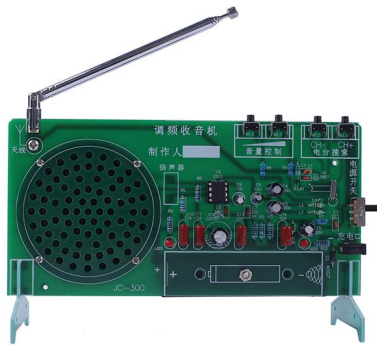


JC-300 RDA5807 FM Radio Receiver DIY Kit

1.Introduction:

JC-300 is a 3.7V RDA5807 87MHz-108MHz FM Radio Receiver DIY Kit.
It is a simple FM receiver and can be used all over the world with power by 18650 rechargeable battery.

Very suitable for users to learn electronic circuits, practice soldering skills, and enhance electronic professional knowledge and interest.



2.Feature:

- DIY soldering project, good kits to learn electronic circuits and proficient soldering skills.
- Universal frequency 87MHz-108MHz
- Stable fixing bracket
- Support battery charging function

3.Parameter:

Product Name:JC-300 RDA5807 FM Radio Receiver DIY Kit
Product Number:JC-300
Work Voltage:DC 3.7V
Power Type:18650 Battery(Not Included!)
Work Temperature:-25°C~85°C
Work Humidity:5%~95%RH
Size(Installed):170*110*60mm

4.Function:

- 1>.Left two buttons are used to adjust volume.
- 2>.Right two buttons are used to switch FM stations.
- 3>.The switch on the side is the power switch. UP is ON and down is OFF.
- 4>.Power socket is used to charging for 18650 rechargeable battery.

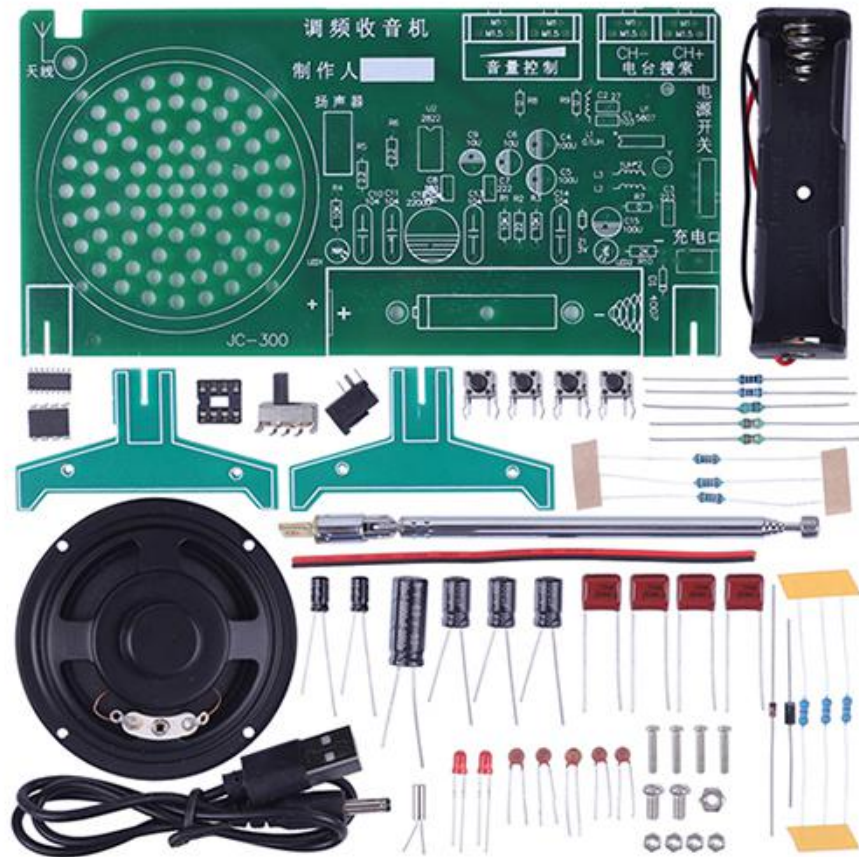
5. Component List:

| NO. | Component Name | PCB Marker | Parameter | QTY |
|-----|------------------------|-----------------|------------|-----|
| 1 | Metal Film Resistor | R7,R8,R9 | 0ohm | 3 |
| 2 | Metal Film Resistor | R5,R6 | 2.2ohm | 2 |
| 3 | Metal Film Resistor | R2 | 22ohm | 1 |
| 4 | Metal Film Resistor | R1,R3,R4 | 10Kohm | 3 |
| 5 | Metal Film Resistor | R10 | 1Kohm | 1 |
| 6 | Zener Diode | Z1 3V | DO-35 | 1 |
| 7 | 1N4007 Diode | D1 | DO-41 | 1 |
| 8 | Inductor | L1 | 0.1uH | 1 |
| 9 | Inductor | L2,L3 | 1uH | 2 |
| 10 | RDA5807 FM Receiver | U1 | SOP-16 | 1 |
| 11 | Crystal Oscillator | Y | 32.768KHz | 1 |
| 12 | IC Socket | U2 | DIP-8 | 1 |
| 13 | TDA2822 Amplifier | U2 | DIP-8 | 1 |
| 14 | Ceramic Capacitor | C2 | 27pF | 1 |
| 15 | Ceramic Capacitor | C1,C8 | 0.01uF 103 | 2 |
| 16 | Ceramic Capacitor | C7 | 2.2nF 222 | 1 |
| 17 | Ceramic Capacitor | C3 | 22nF 223 | 1 |
| 18 | Red LED | LED1,LED2 | 3mm | 2 |
| 19 | Electrolytic Capacitor | C6,C9 | 10uF | 2 |
| 20 | Electrolytic Capacitor | C4,C5,C15 | 100uF | 3 |
| 21 | CBB Capacitor | C10,C11,C13,C14 | 0.1uF 104 | 4 |
| 22 | Electrolytic Capacitor | C12 | 2200uF | 1 |
| 23 | Power Socket | J1 | 2.5mm | 1 |
| 24 | Power Switch | K1 | | 1 |
| 25 | Black Button | S1-S4 | | 4 |
| 26 | Speaker | | D:66mm | 1 |

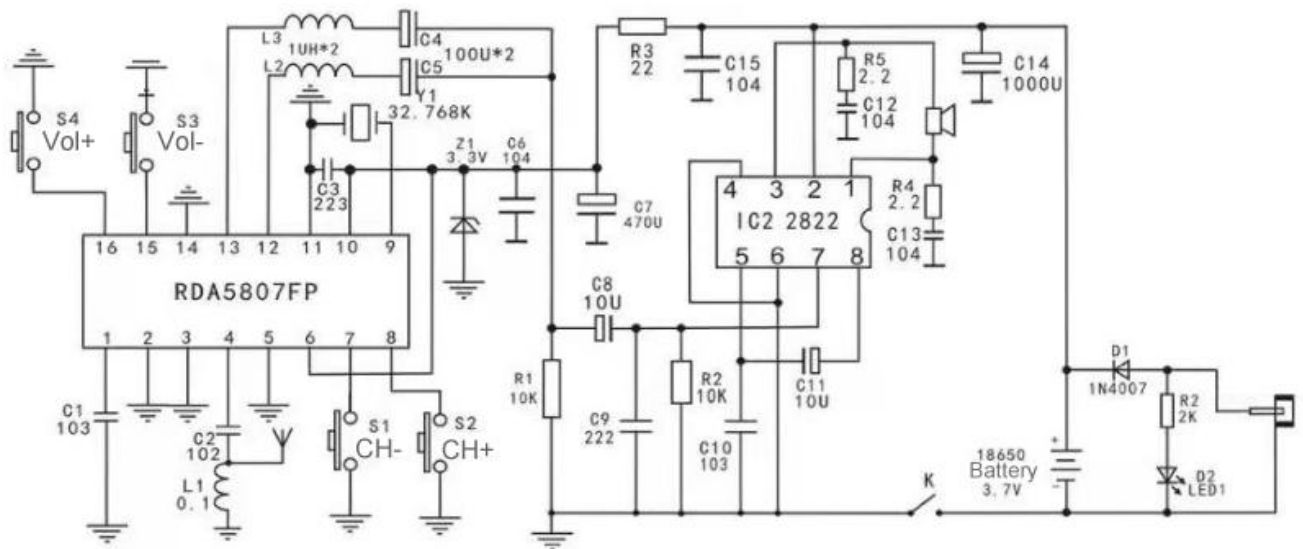
| | | | | |
|----|-------------------|--|--------------|---|
| 27 | Black/Red Wire | | 10cm | 1 |
| 28 | 18650 Battery Box | | | 1 |
| 29 | USB Power Wire | | 80cm | 1 |
| 30 | FM Antenna | | 75ohm | 1 |
| 31 | M3*6mm Screw | | | 2 |
| 32 | M3 Nut | | | 1 |
| 33 | M2*10mm Screw | | | 4 |
| 34 | M2 Nut | | | 4 |
| 35 | Main PCB | | 160*80*1.6mm | 1 |
| 36 | PCB Bracket | | 60*33*1.6mm | 2 |

Note:Users can complete the installation according to the PCB silk screen and component list.

Component Lists

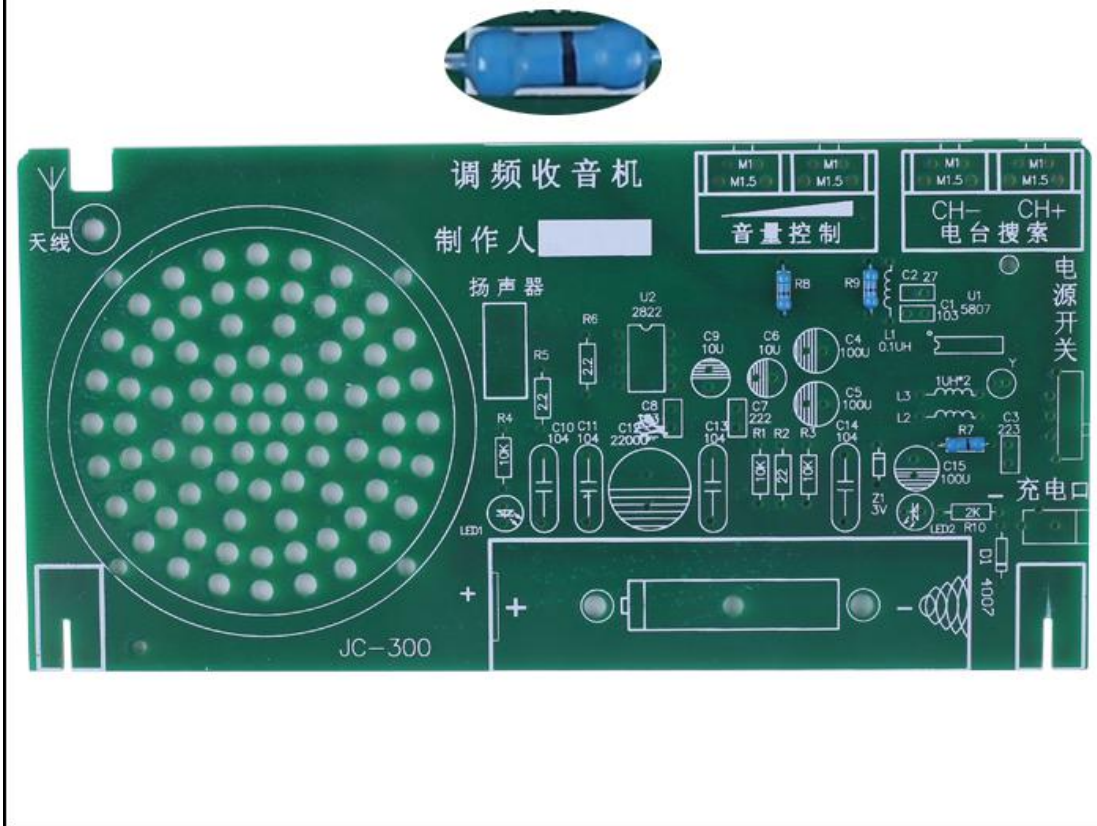


6. Schematic diagram:

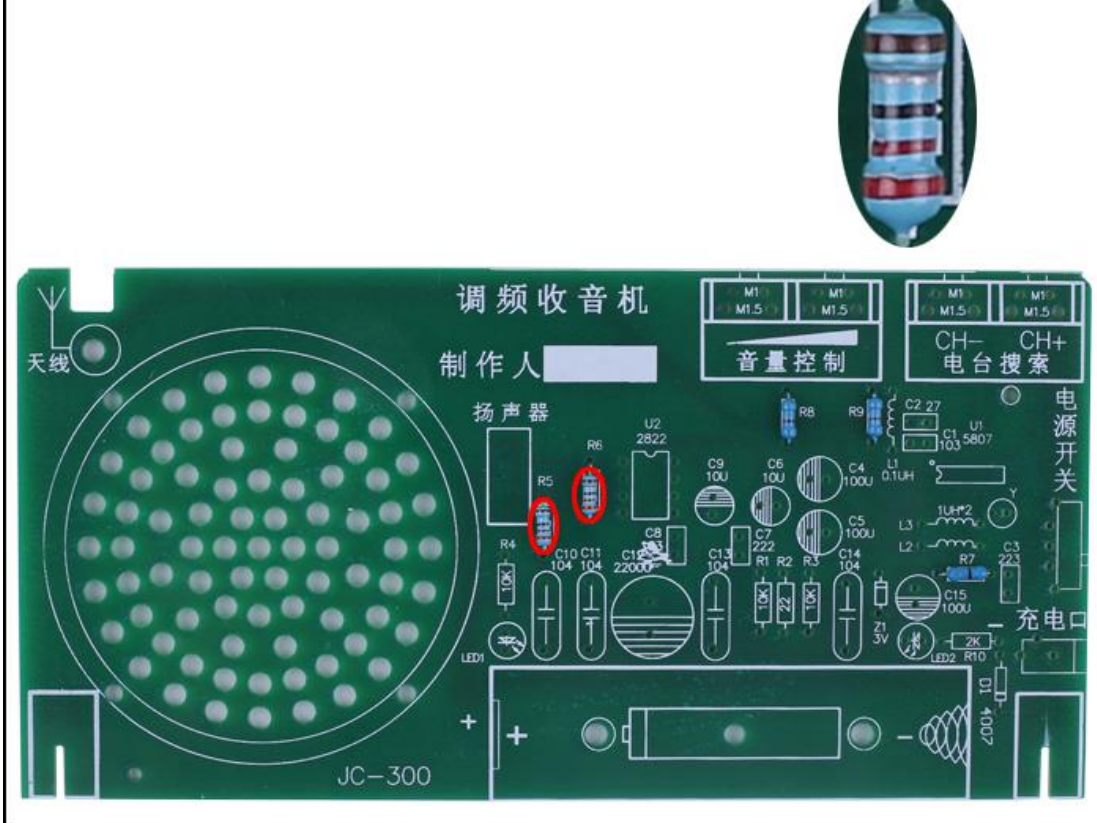


7. Install shown steps:

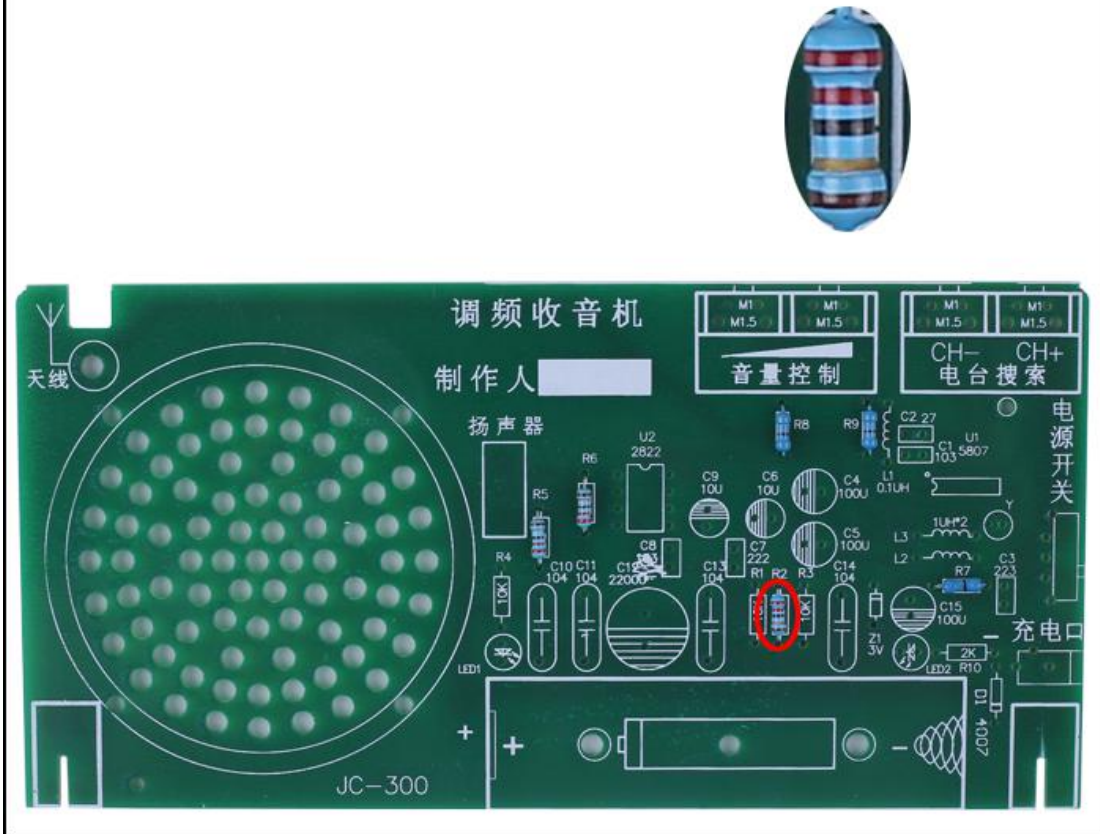
Step 1: Install 3pcs 0ohm Metal Film Resistor at R7,R8,R9.



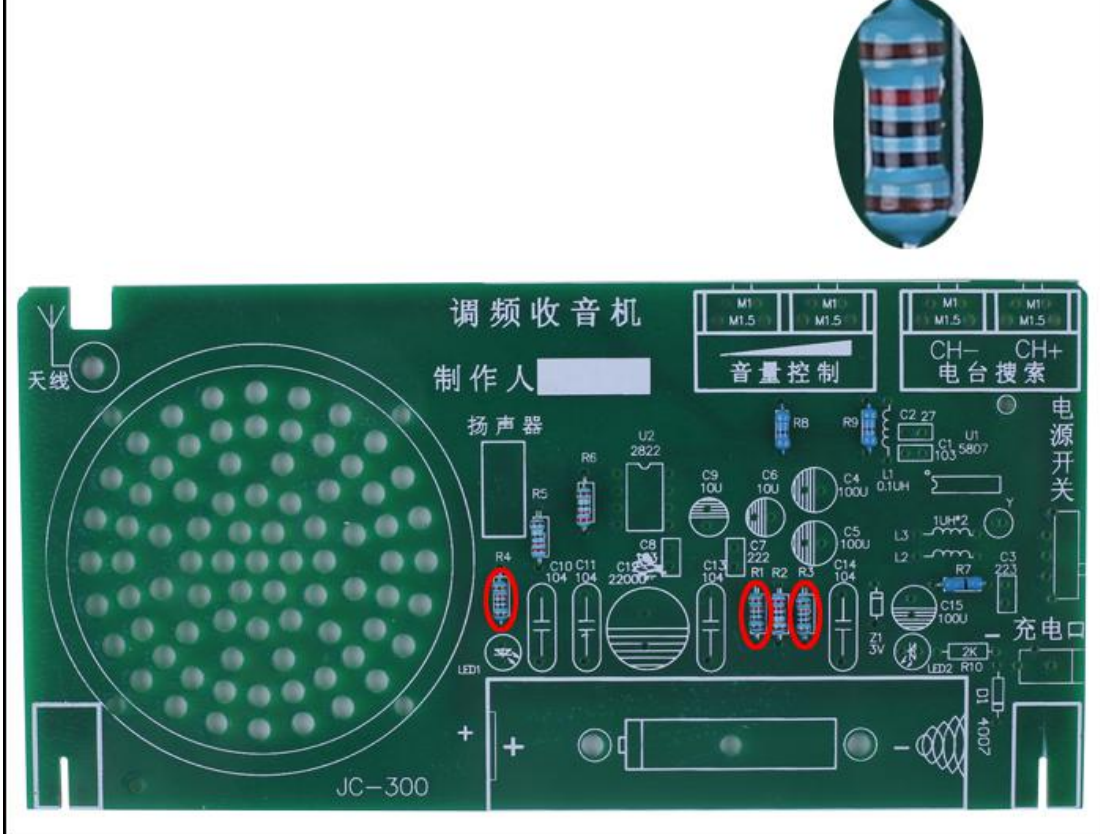
Step 2: Install 2pcs 2.2ohm Metal Film Resistor at R5,R6.



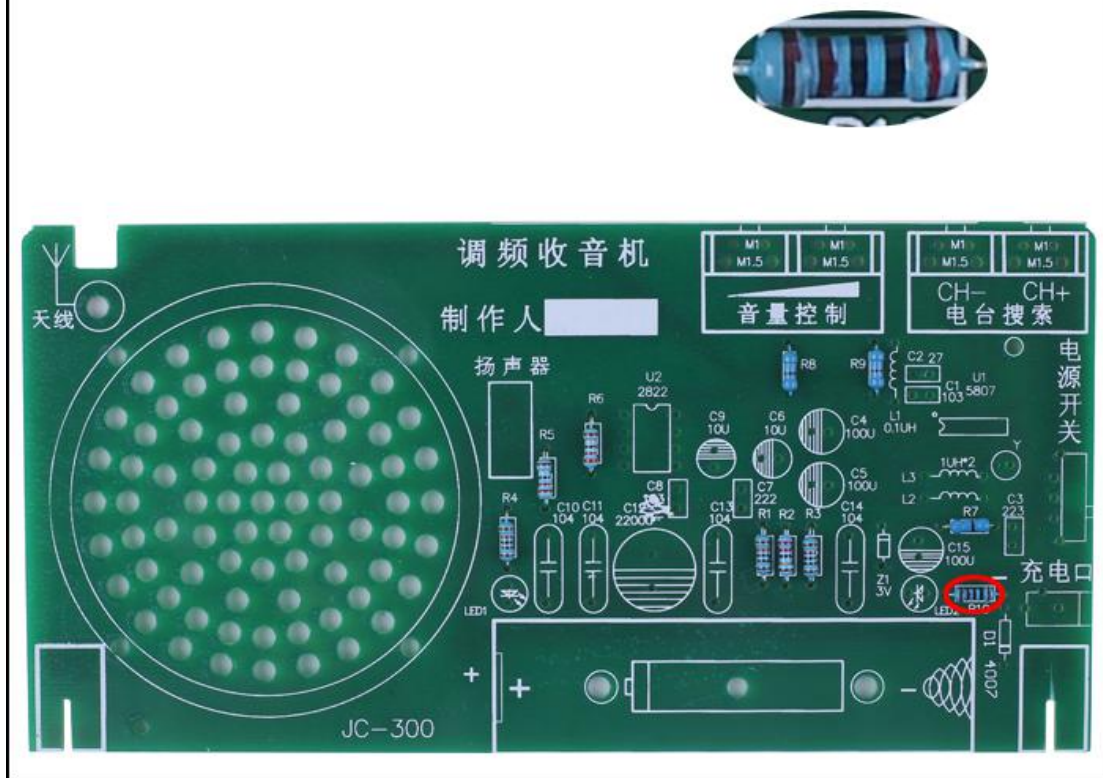
Step 3: Install 1pcs 22ohm Metal Film Resistor at R2.



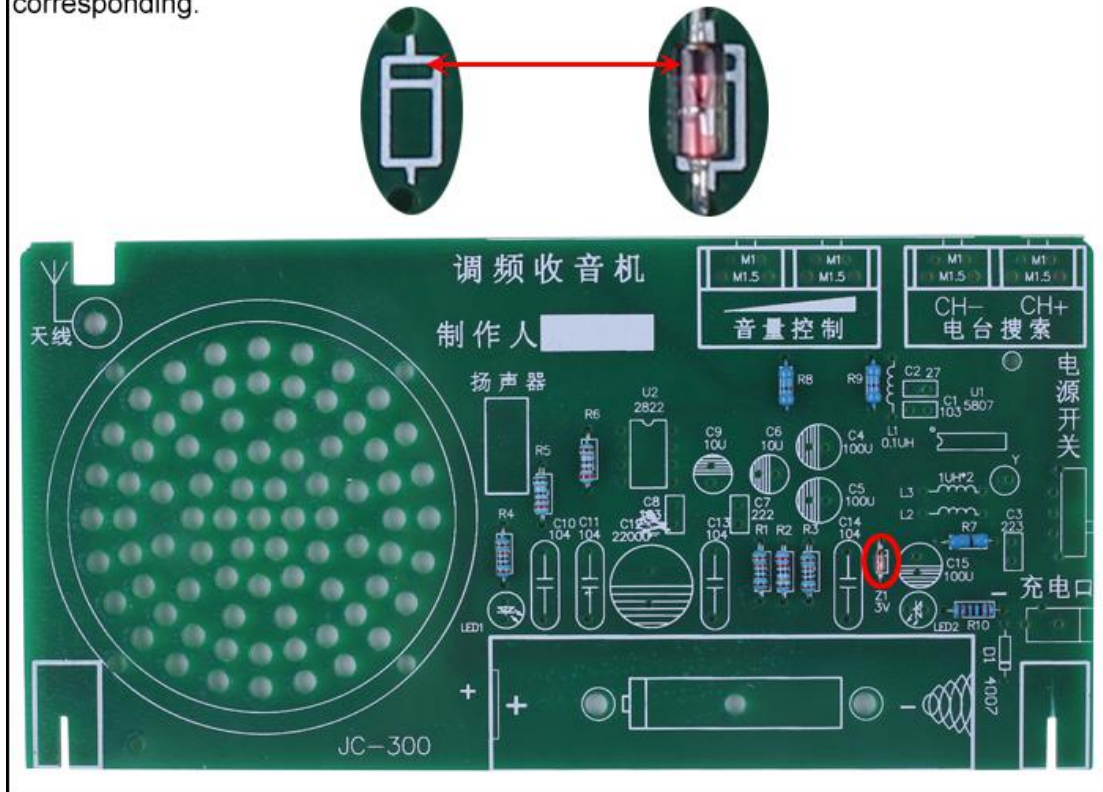
Step 4: Install 3pcs 10Kohm Metal Film Resistor at R1,R3,R4.



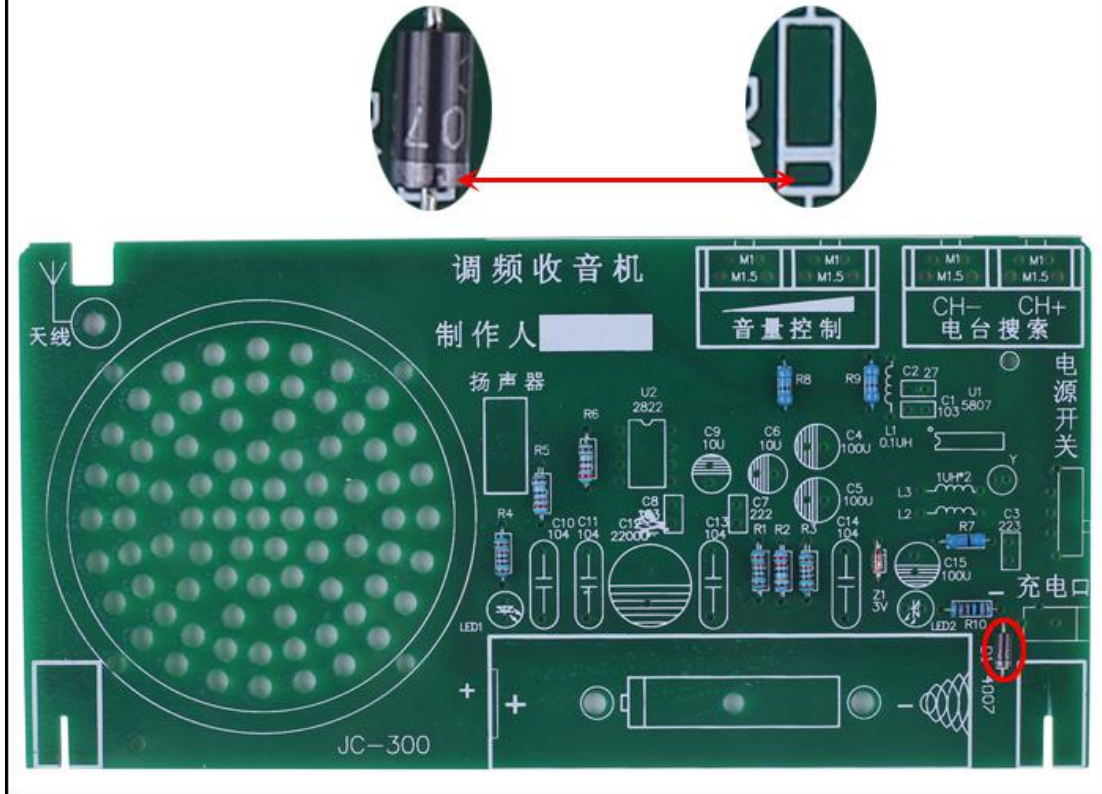
Step 5: Install 1pcs 1Kohm Metal Film Resistor at R10.



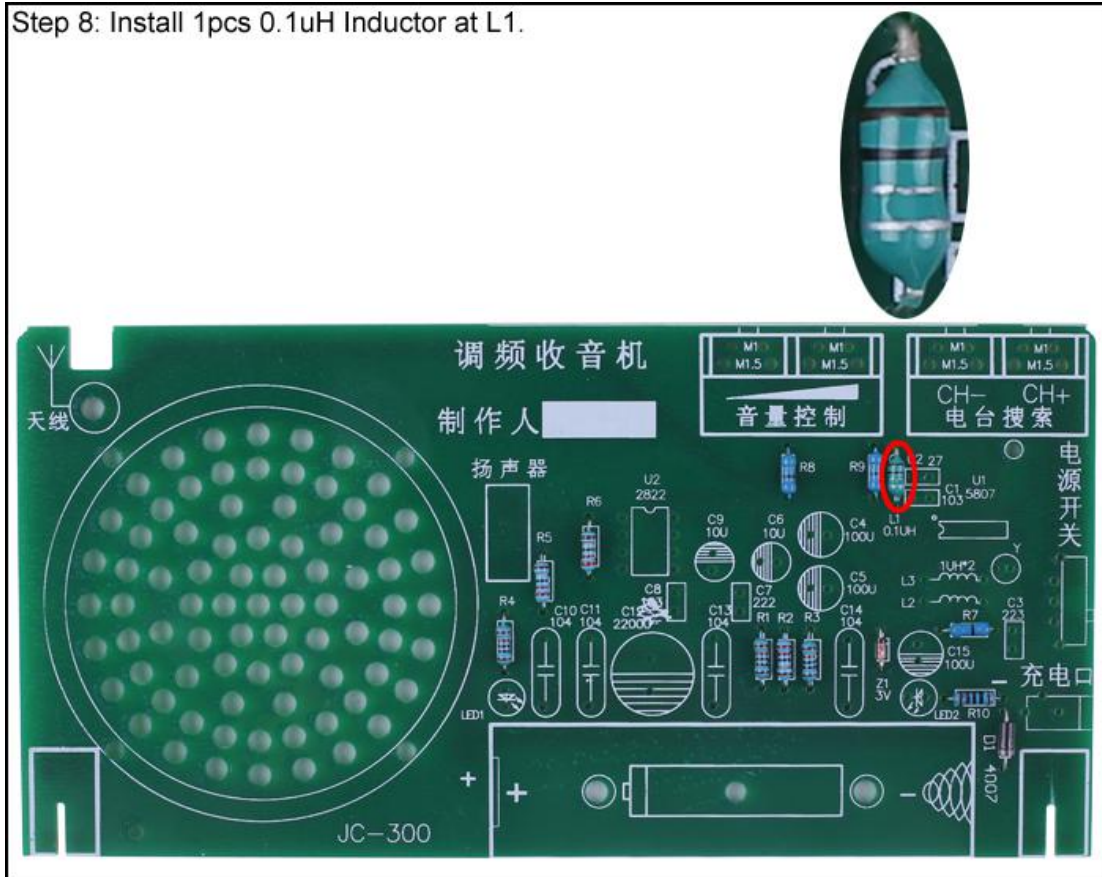
Step 6: Install 1pcs DO-35 Zener Diode at Z1 3V. Pay attention to the installation direction. Note: The black mark on Diode and the white mark on PCB are corresponding.



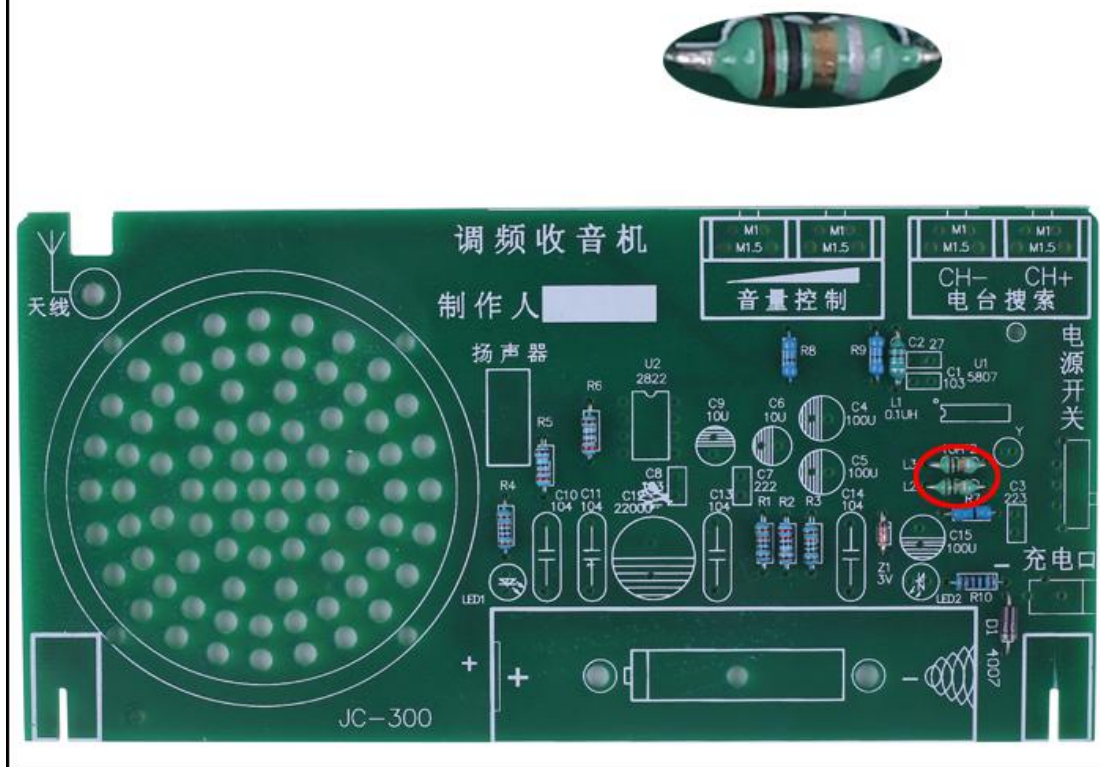
Step 7: Install 1pcs DO-41 1N4007 Diode at D1. Pay attention to the installation direction. Note: The white mark on Diode and white mark on PCB are corresponding.



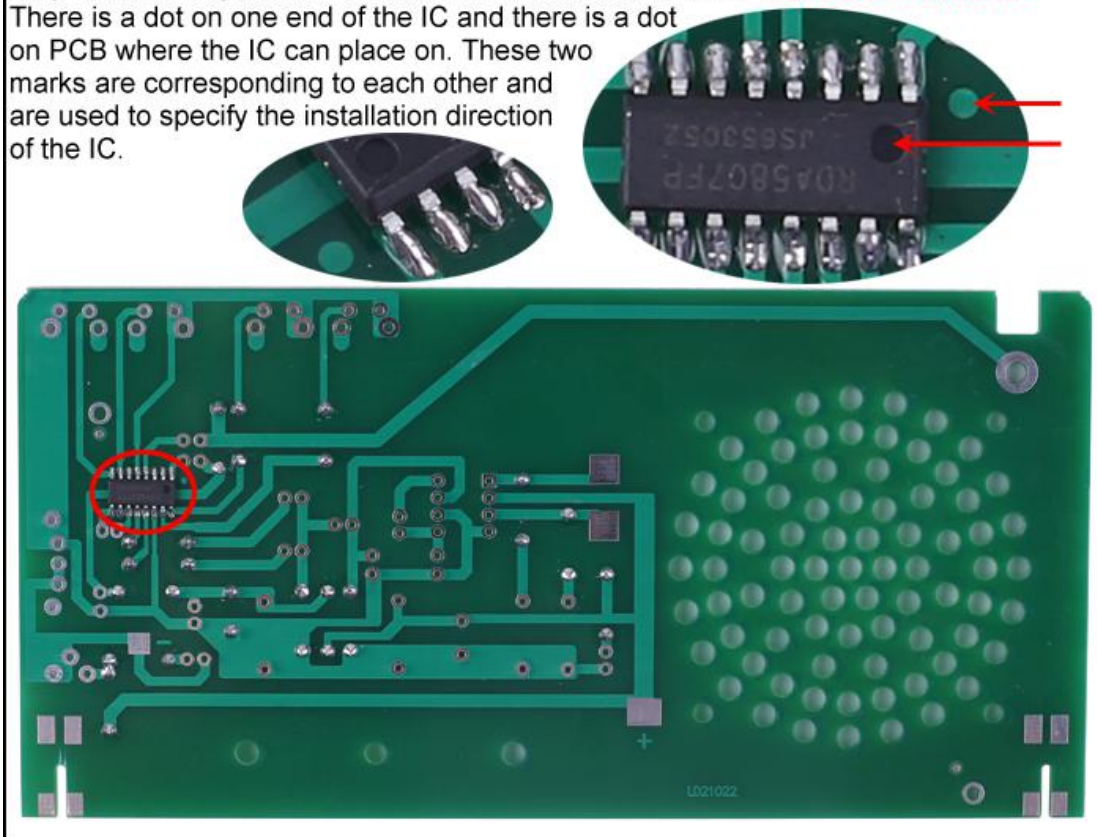
Step 8: Install 1pcs 0.1uH Inductor at L1.



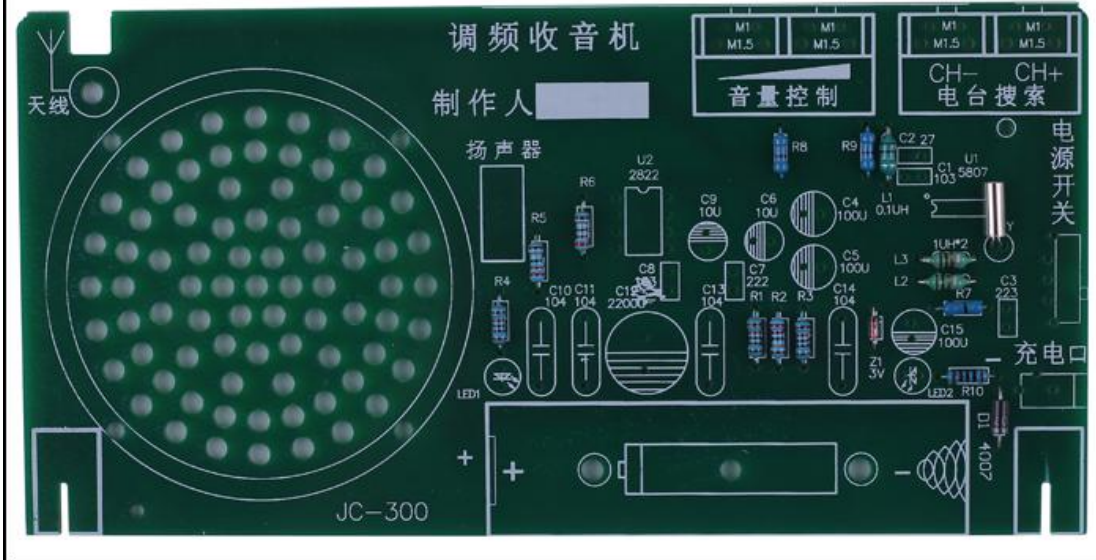
Step 9: Install 2pcs 1uH Inductor at L2,L3.



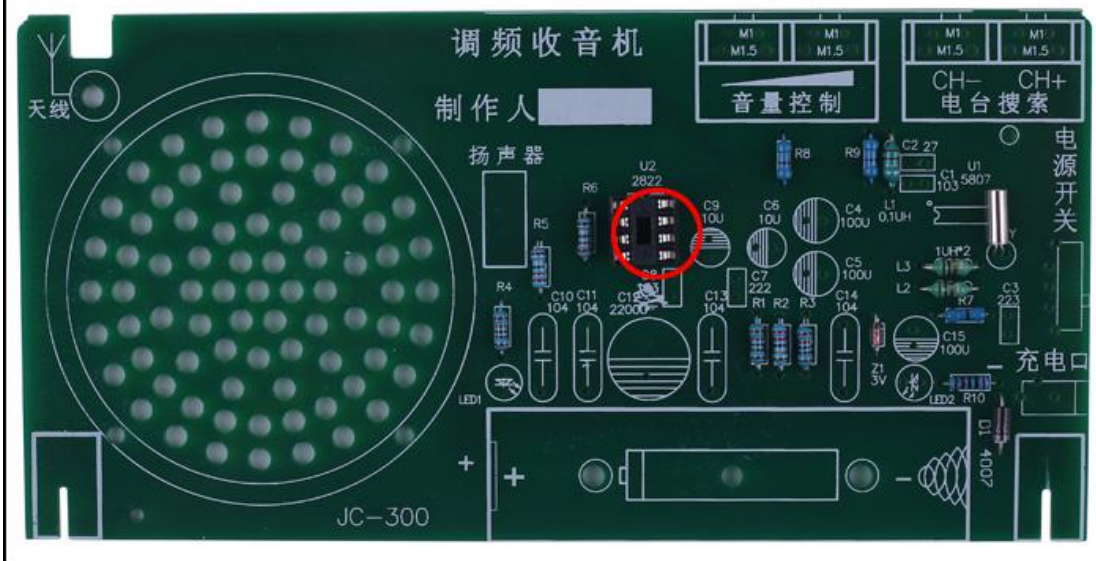
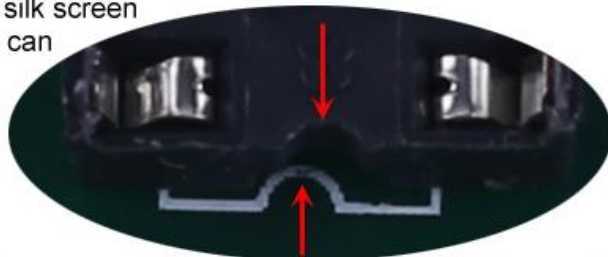
Step 10: Install 1pcs SOP-16 RDA5807 FM Receiver at U1 on **PCB another side**. There is a dot on one end of the IC and there is a dot on PCB where the IC can place on. These two marks are corresponding to each other and are used to specify the installation direction of the IC.



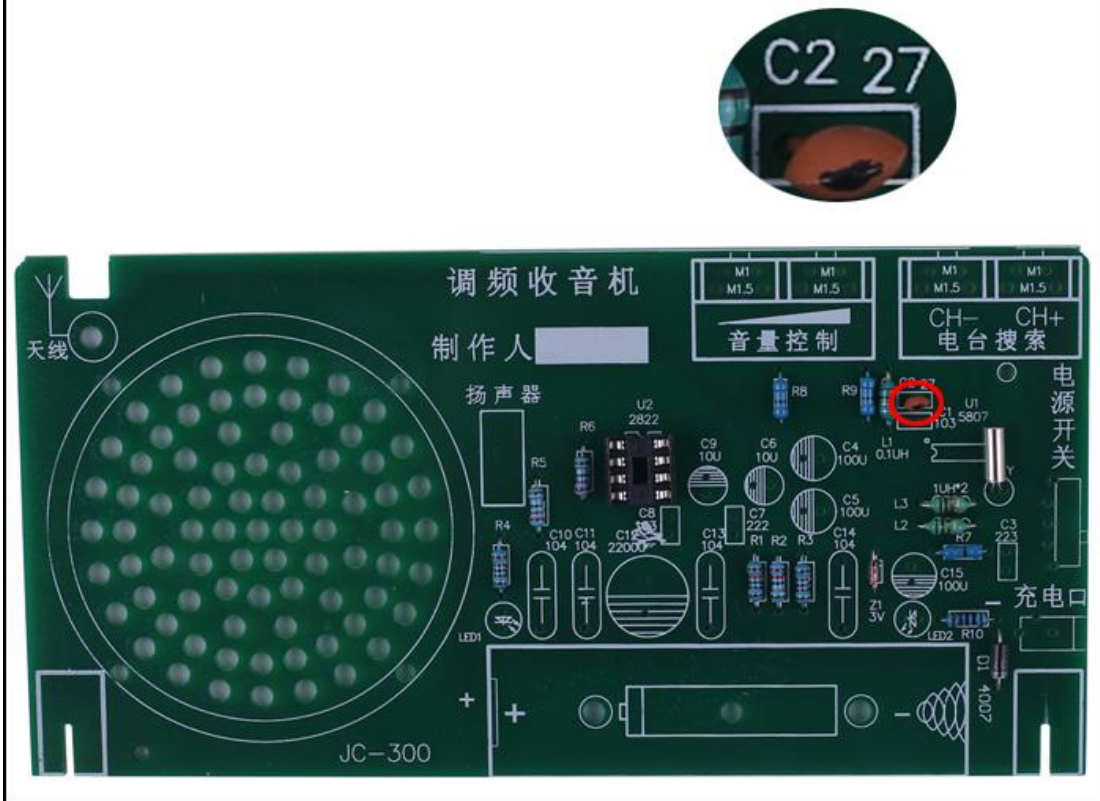
Step 11: Install 1pcs 32.768KHz Crystal Oscillator at Y.



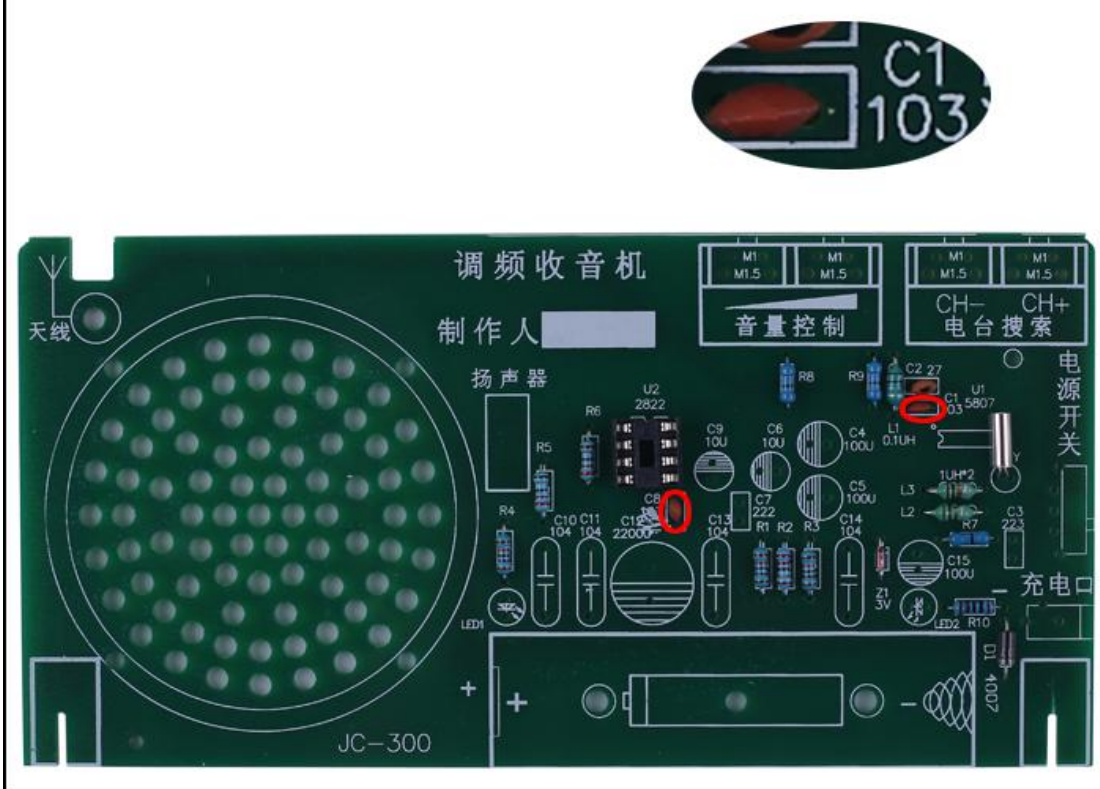
Step 12: Install 1pcs DIP-8 IC Socket at U2. There is a mark(notch) on one end of the IC Socket and there is a mark(curved silk screen printing) on PCB where the IC Socket can place on. These two marks are corresponding to each other and are used to specify the installation direction of the IC Socket.



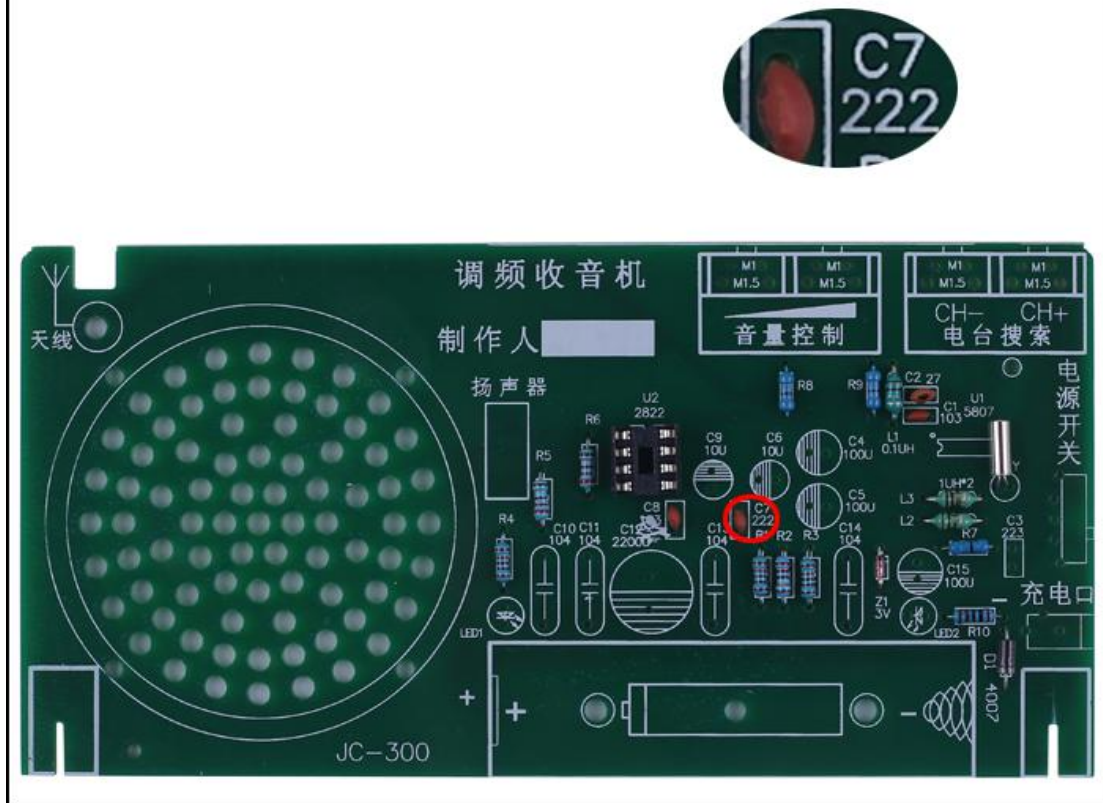
Step 13: Install 1pcs 27pF Ceramic Capacitor at C2.



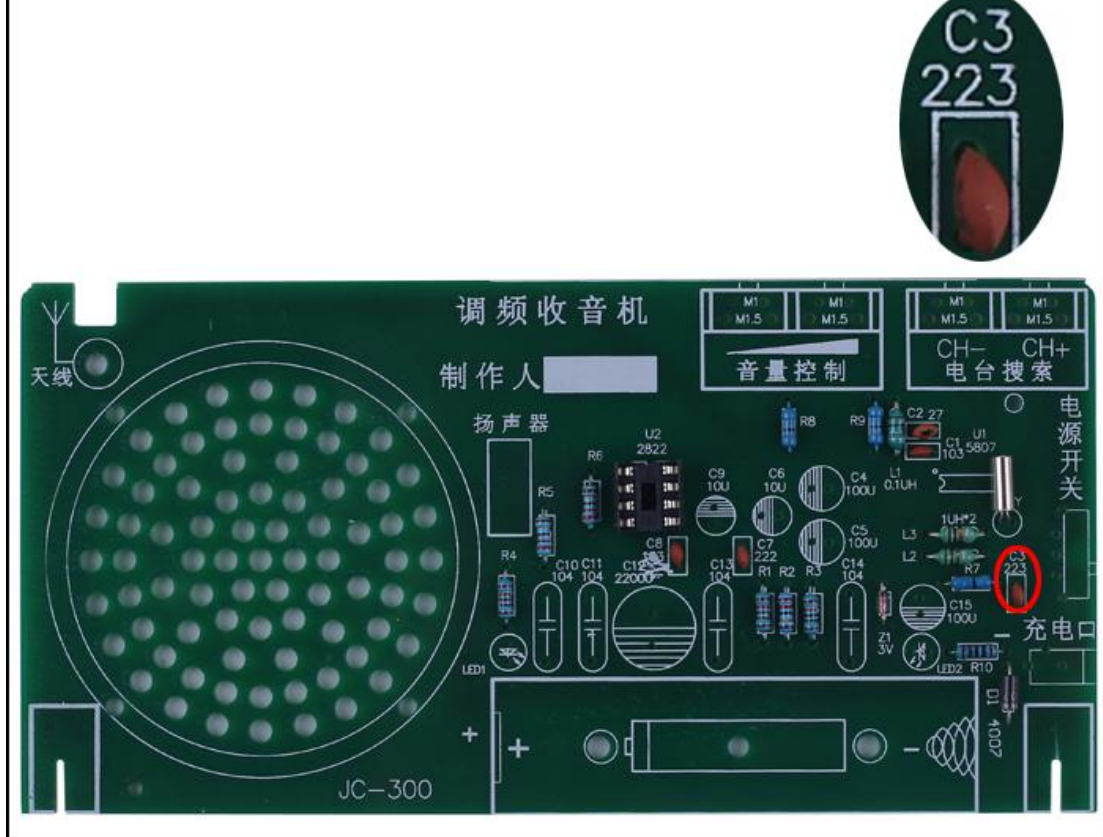
Step 14: Install 2pcs 0.01uF 103 Ceramic Capacitor at C1,C8.



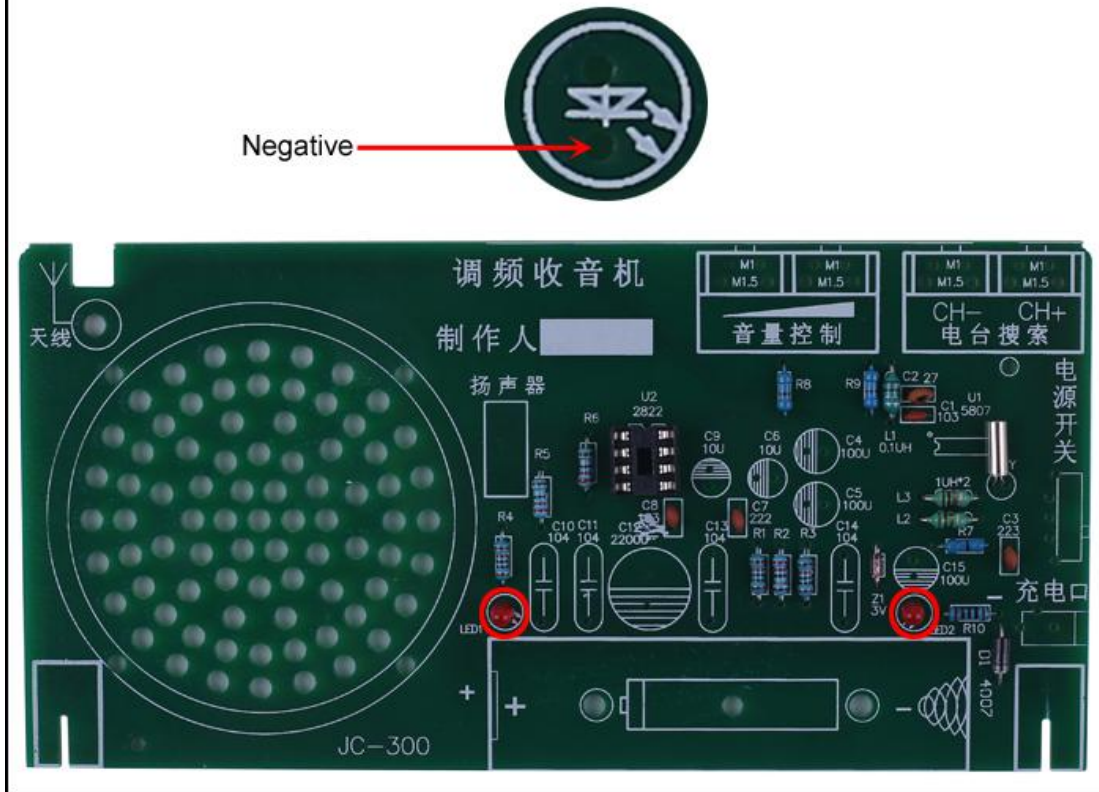
Step 15: Install 1pcs 2.2nF 222 Ceramic Capacitor at C7.



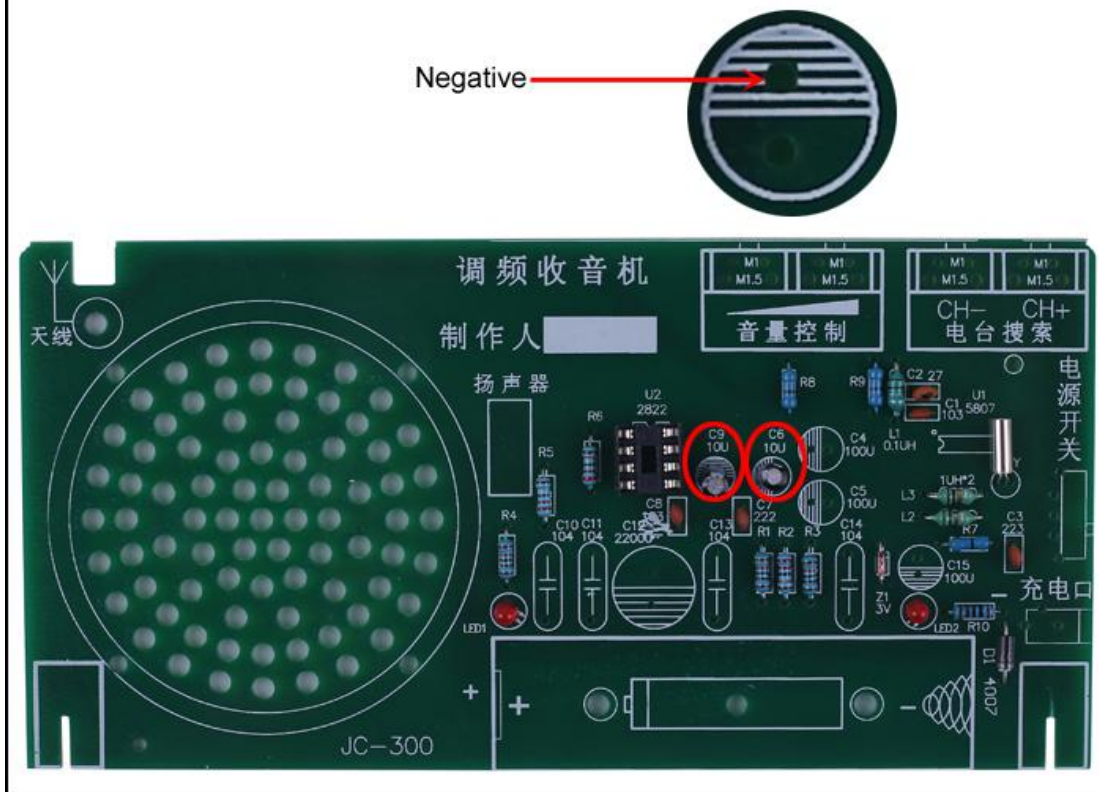
Step 16: Install 1pcs 22nF 223 Ceramic Capacitor at C3.



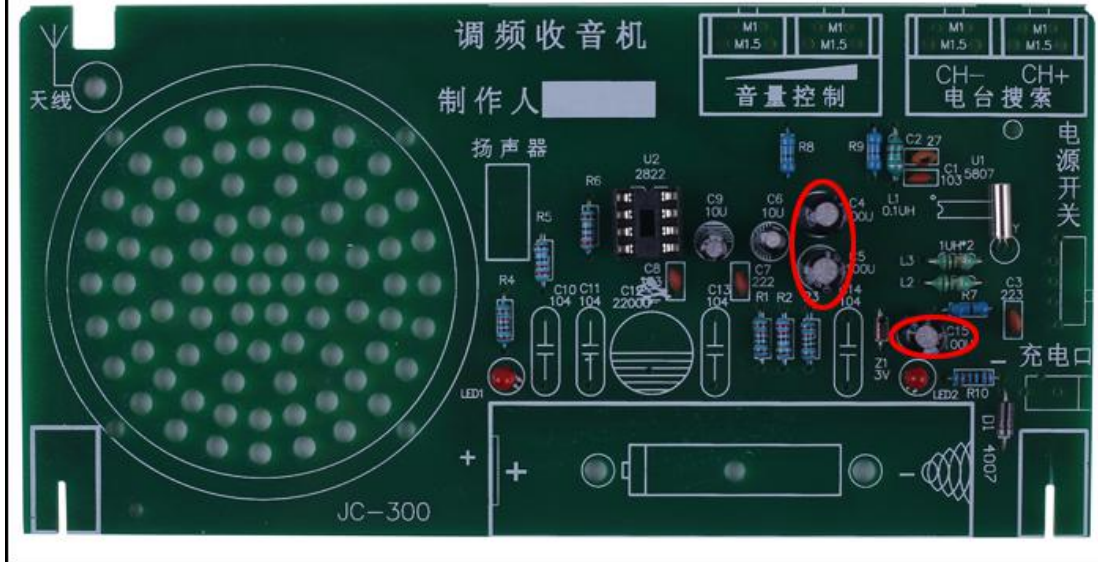
Step 17: Install 2pcs 3mm Red LED at LED1,LED2. Pay attention to the installation direction. The shorter pin is negative pole.



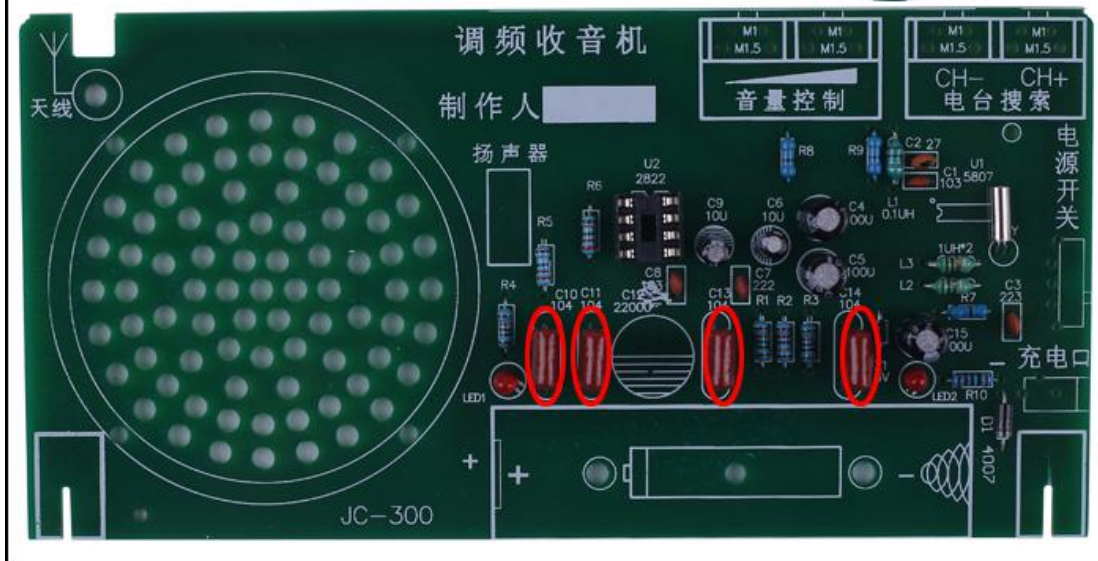
Step 18: Install 2pcs 10uF Electrolytic Capacitor at C6,C9. Pay attention to distinguish between positive and negative. The shorter pin is negative pole.



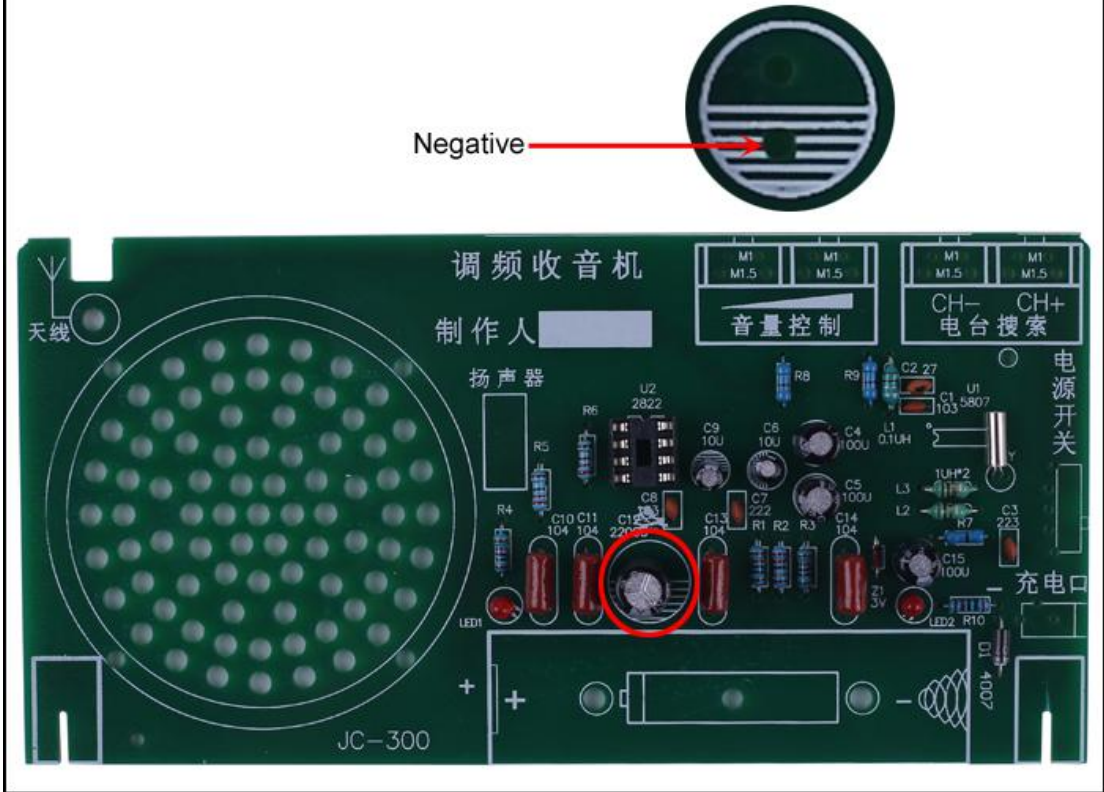
Step 19: Install 3pcs 100uF Electrolytic Capacitor at C4,C5,C15. Pay attention to distinguish between positive and negative. The shorter pin is negative pole.



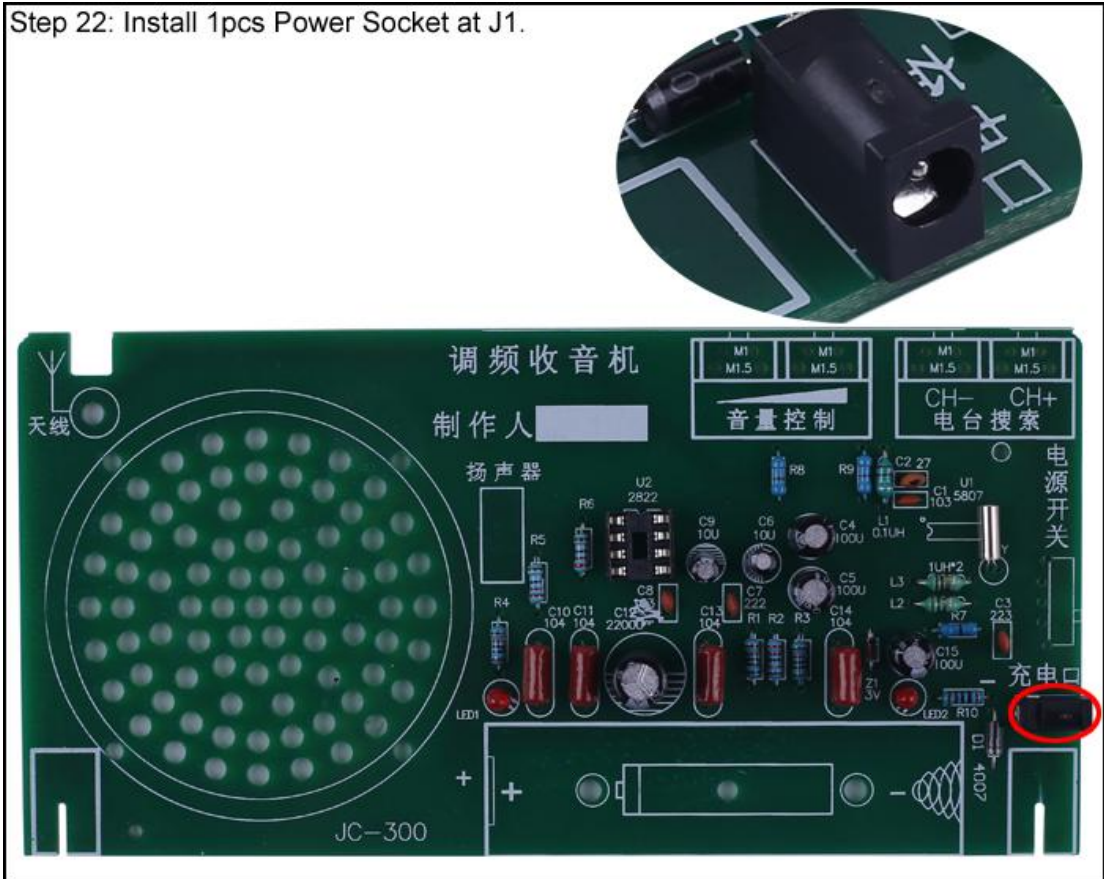
Step 20: Install 4pcs 0.1uF 104 CBB Capacitor at C10,C11,C13,C14.



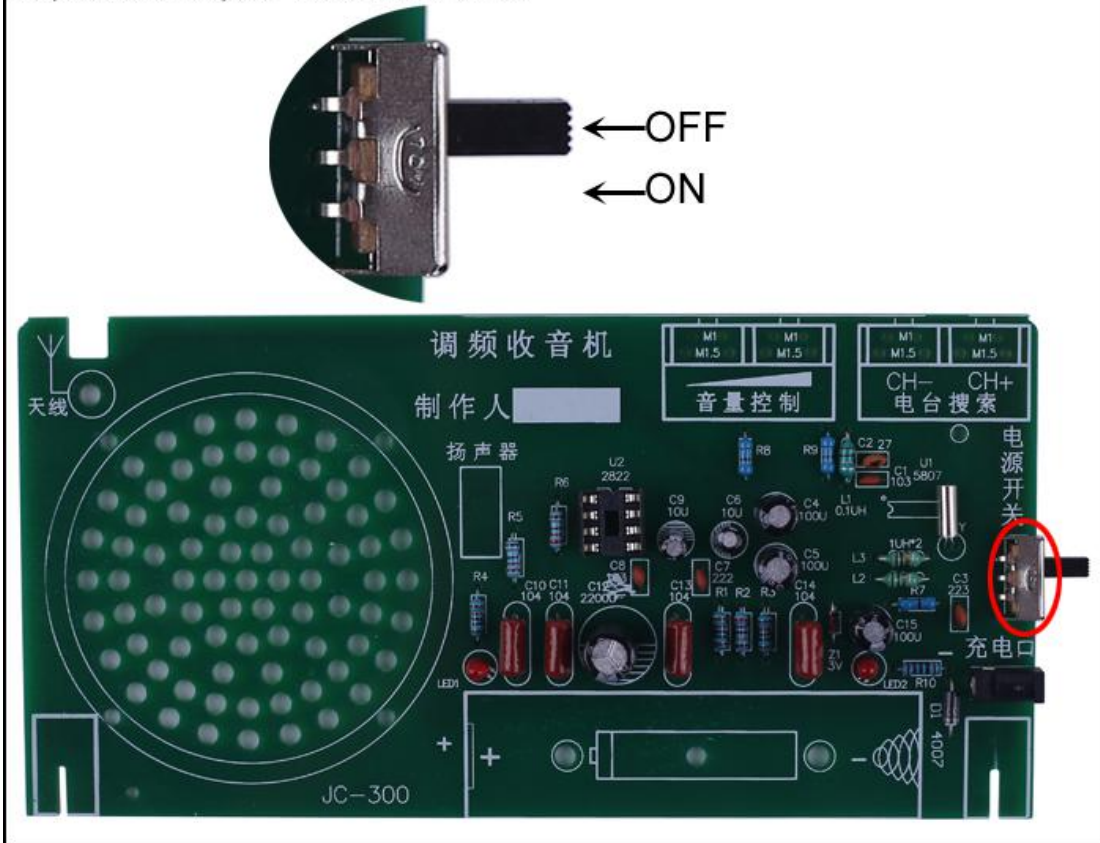
Step 21: Install 1pcs 2200uF Electrolytic Capacitor at C12. Pay attention to distinguish between positive and negative. The shorter pin is negative pole.



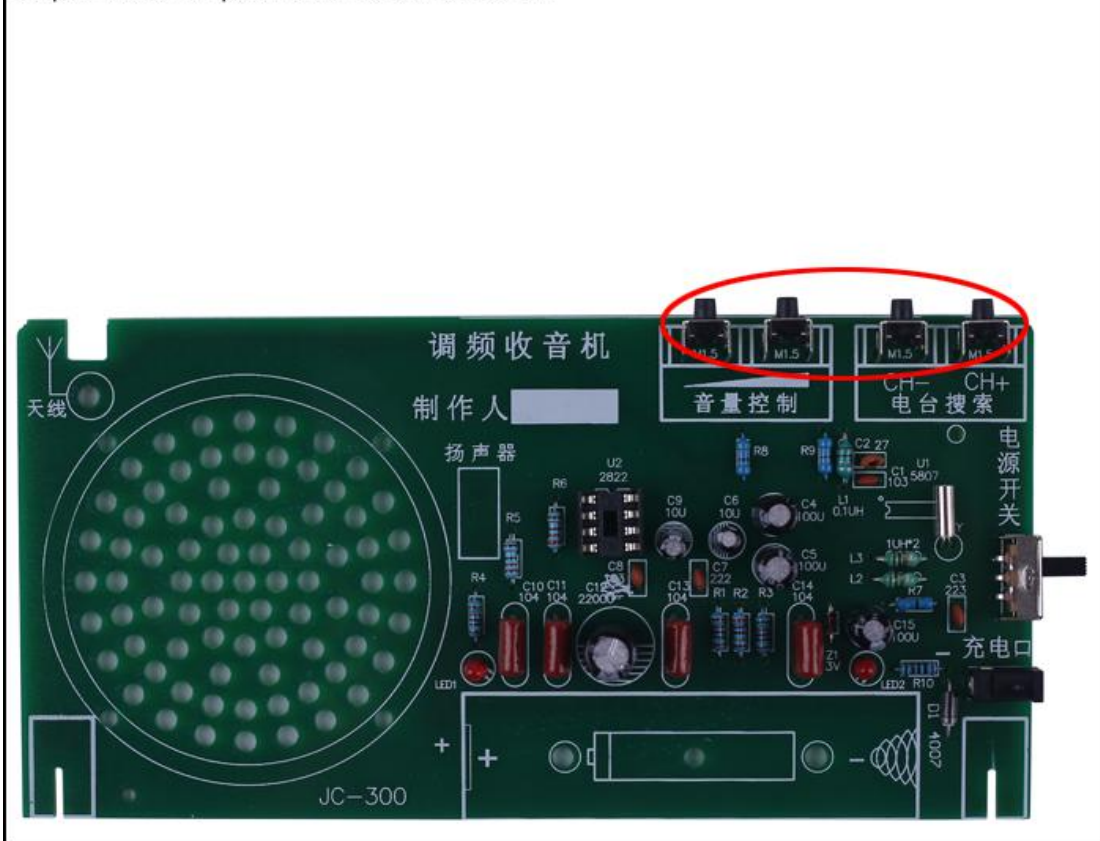
Step 22: Install 1pcs Power Socket at J1.



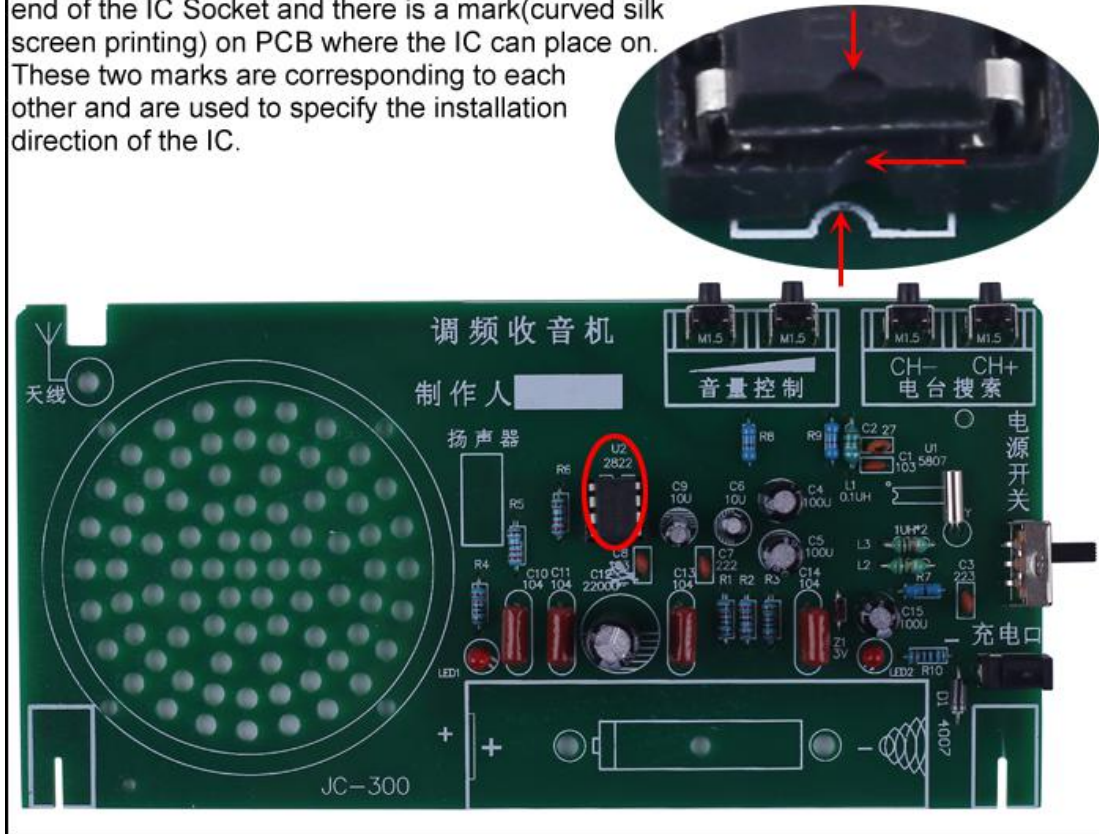
Step 23: Install 1pcs Power Switch at K1.



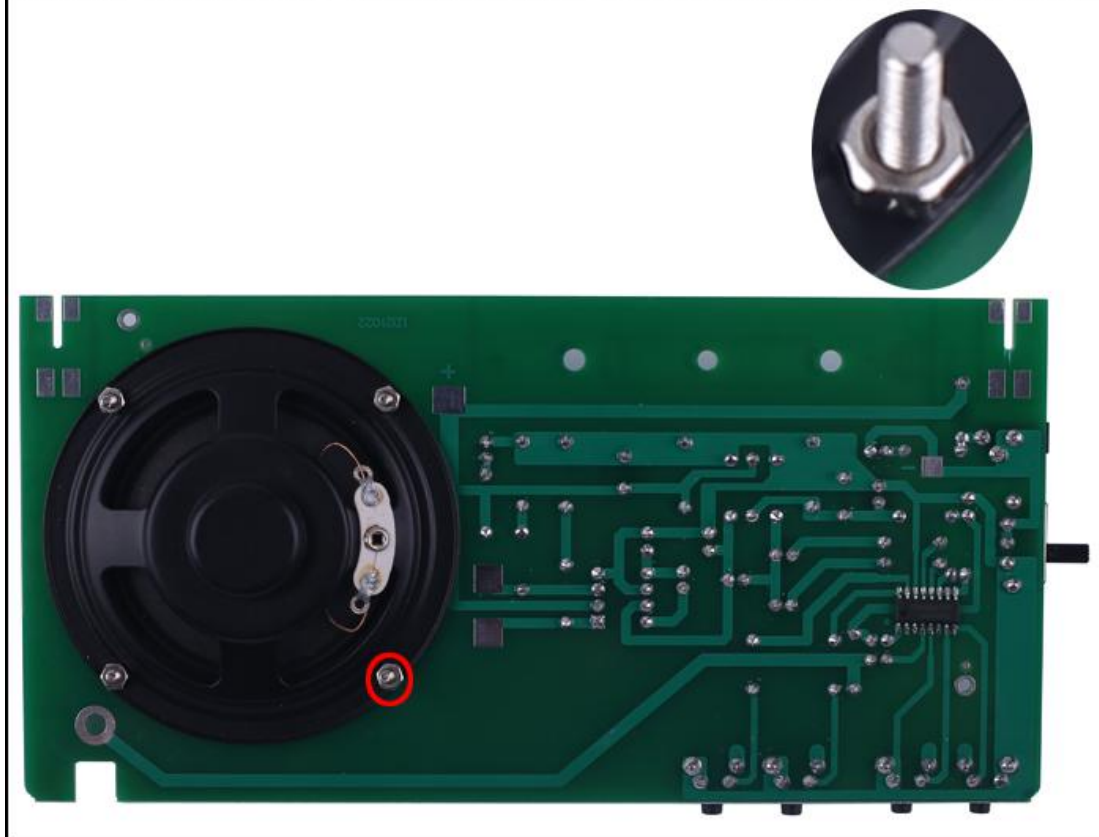
Step 24: Install 4pcs Black Button at S1-S4.



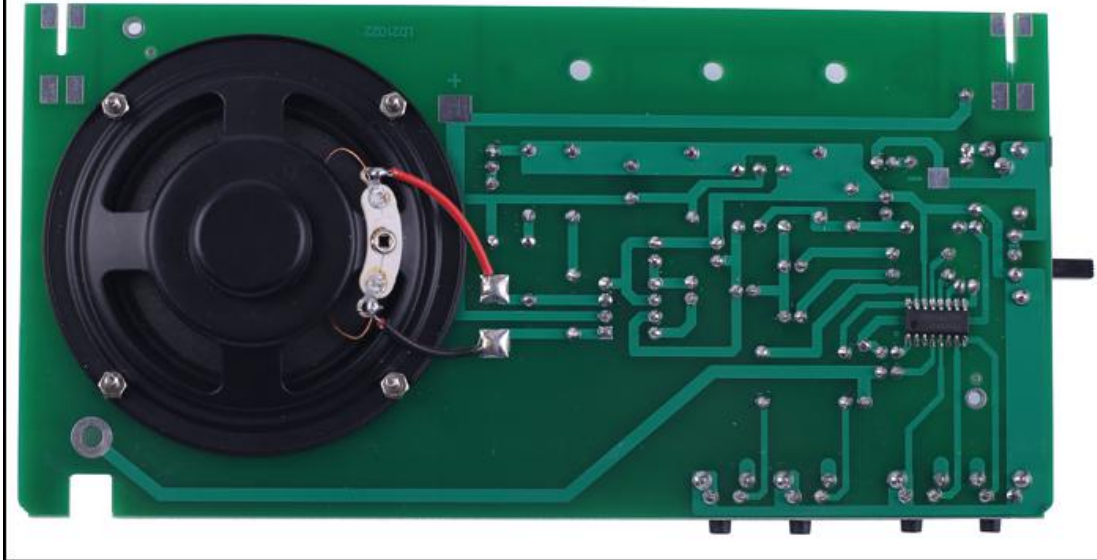
Step 25: Install 1pcs DIP-8 IC TDA2822 Amplifier at U2. There is a mark(notch) on one end of the IC Socket and there is a mark(curved silk screen printing) on PCB where the IC can place on. These two marks are corresponding to each other and are used to specify the installation direction of the IC.



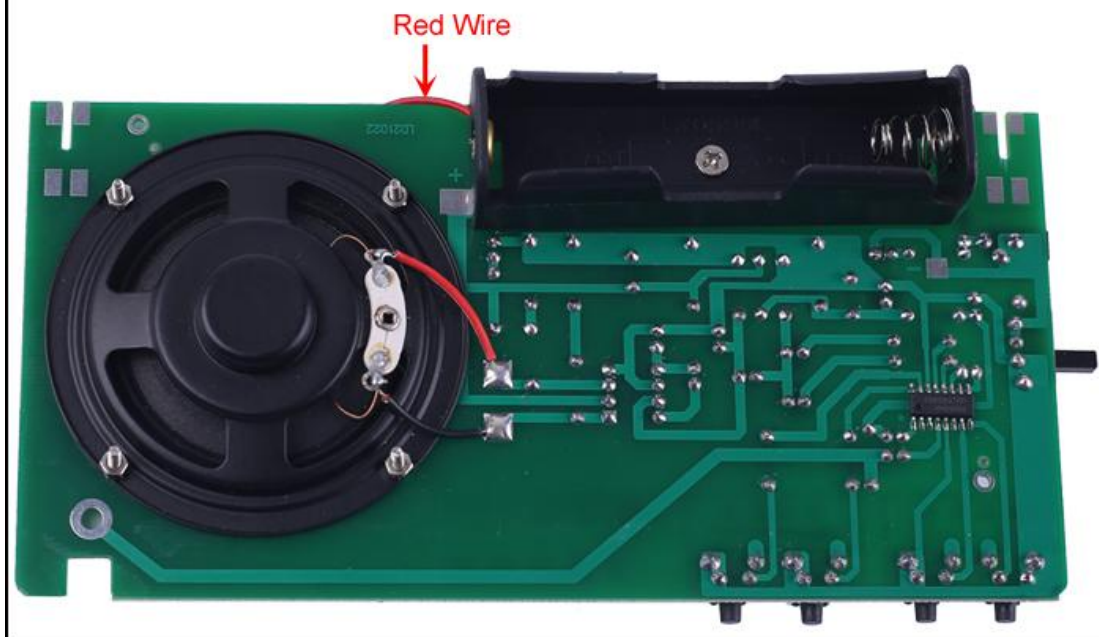
Step 26: Fix Speaker on PCB another side by 4pcs M2*10mm Screw and 4pcs M2 Nut.



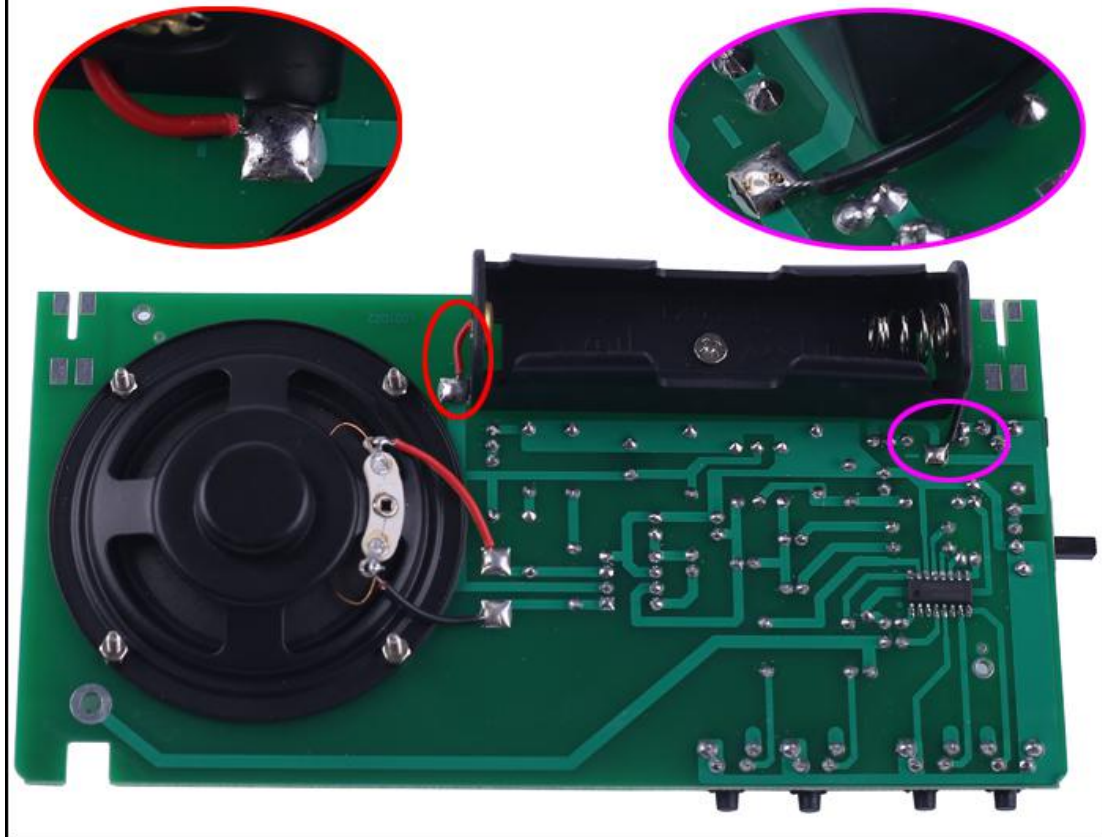
Step 27: Connect speaker to PCB by red/black wires.



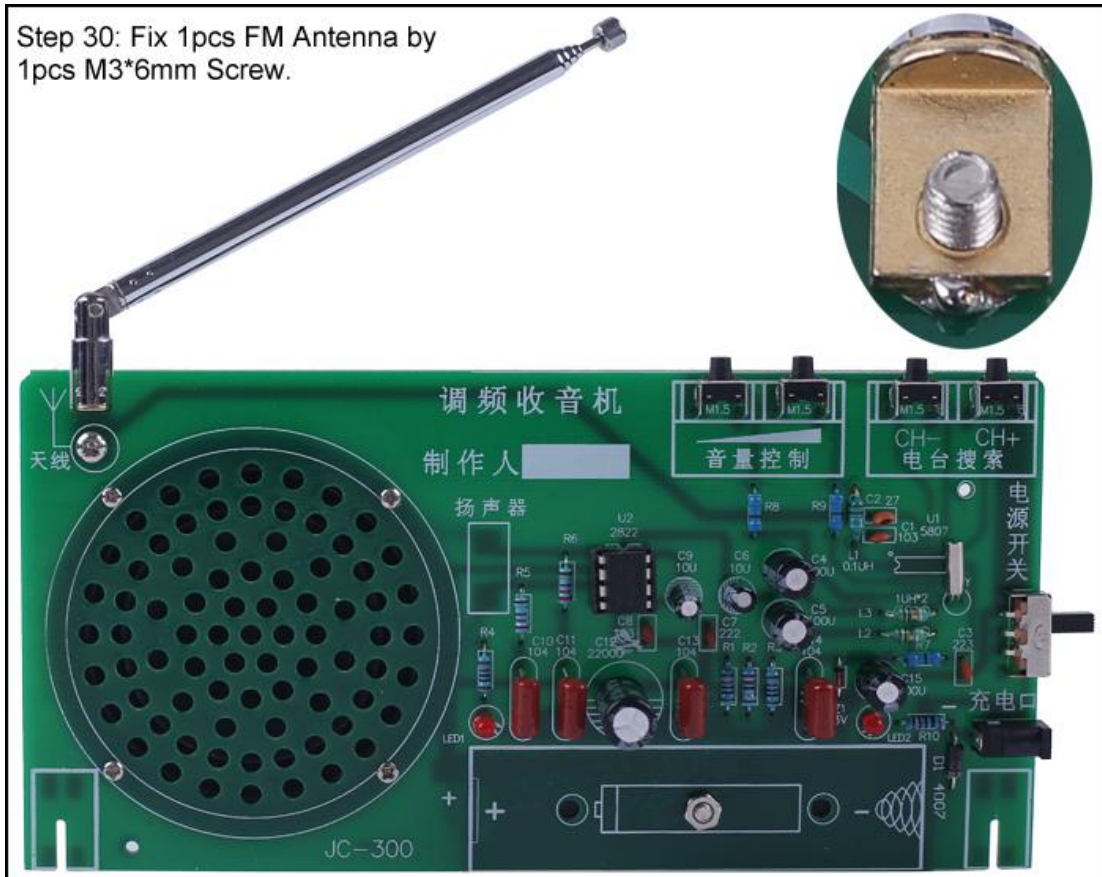
Step 28: Fix 18650 battery box by 1pcs M3*6mm Screw and 1pcs M3 Nut. Pay attention to the installation direction.



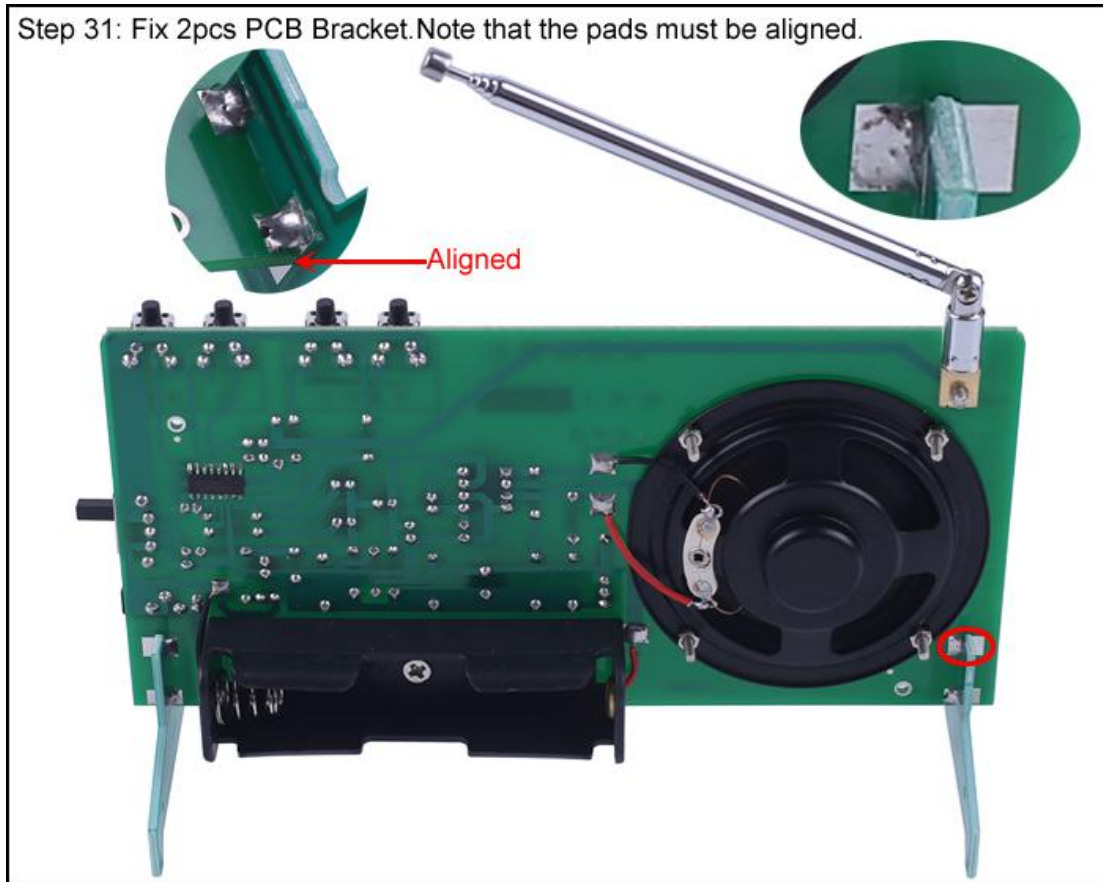
Step 29: Connect battery wire to PCB: Red connect to '+' and black connect to '-'.



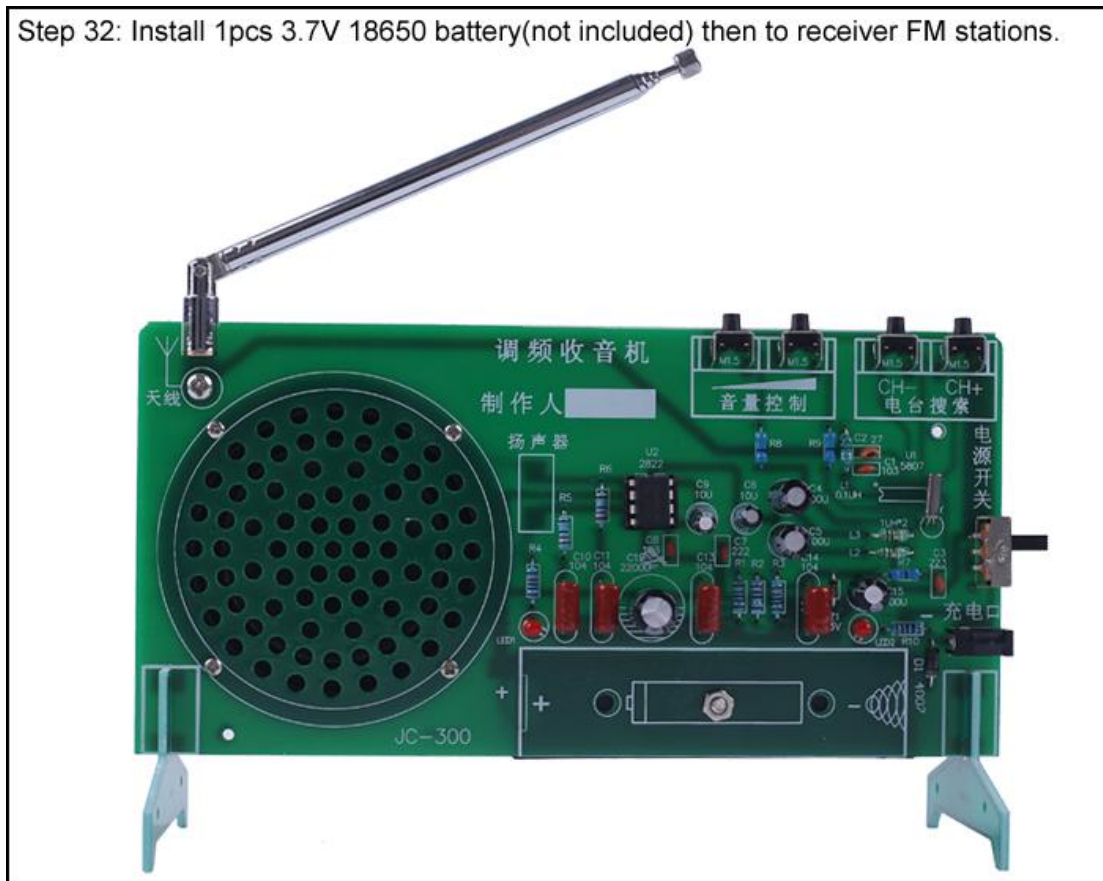
Step 30: Fix 1pcs FM Antenna by 1pcs M3*6mm Screw.



Step 31: Fix 2pcs PCB Bracket. Note that the pads must be aligned.



Step 32: Install 1pcs 3.7V 18650 battery(not included) then to receiver FM stations.



Website: <https://www.icstation.com/>
Tindie Store: <https://www.tindie.com/stores/icstation/>
Email: orders@icstation.com ; activity@icstation.com