PAM8406 Multifunctional Radio Welding and Assembly Instructions

1.Product Introduction:

This is a multifunctional radio accessory that includes FM radio, Bluetooth audio, external audio input, decoding MP3 player, and other functions.

2.Product parameters:

Power supply voltage: 5V
Current: 500MA-2A
Horn: 4 ohms and 3W
Channel: Dual channel
Volume level: Level 50
FM receiving frequency adjustment range: 87.0MHz-108.0MHz
Shell size: 11.9CM * 6.6CM * 6.6CM

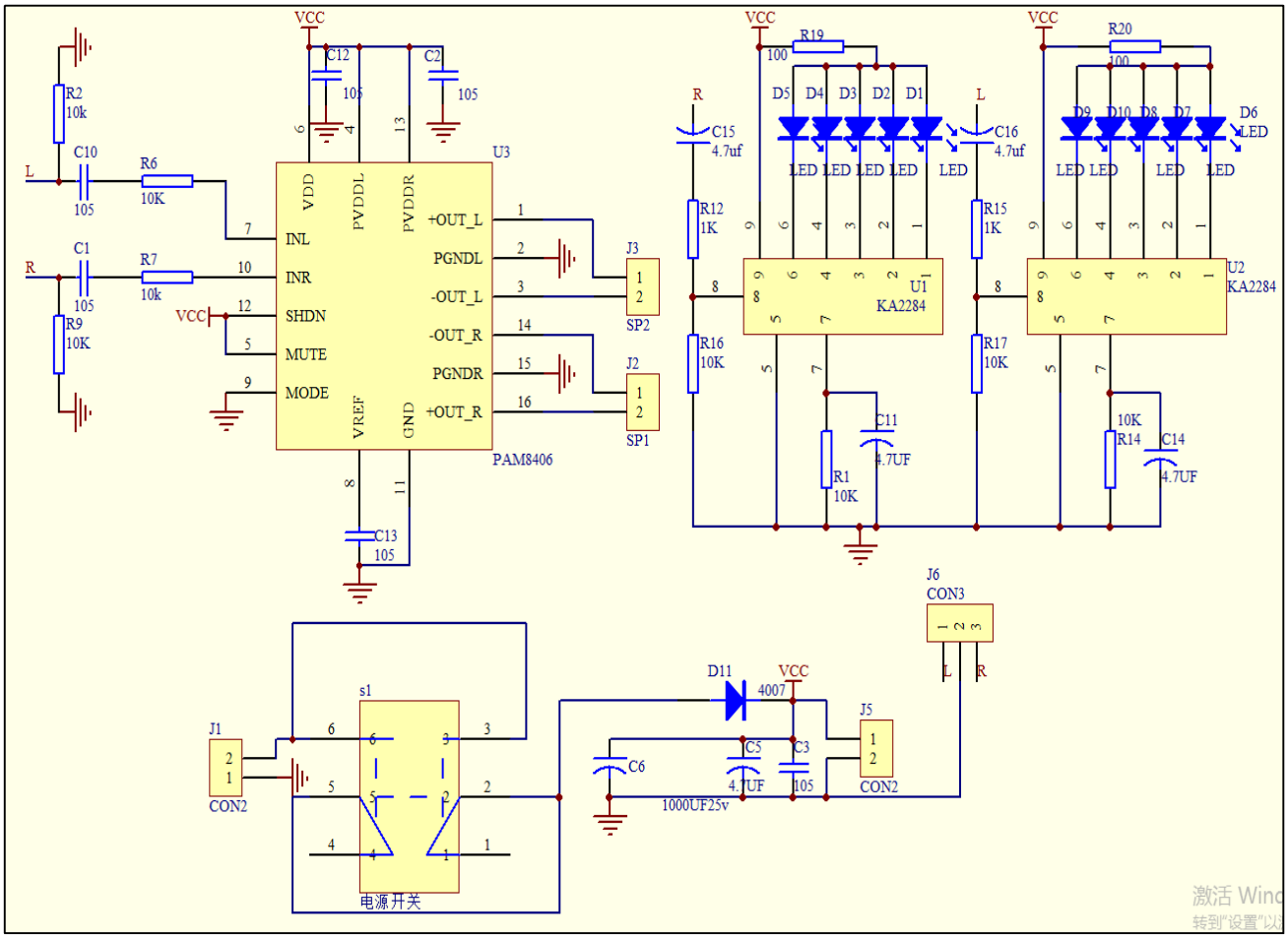
3.Function Introduction

1. Supports Bluetooth wireless reception function, with a distance of 5-10 meters
2. Support external audio input LINE IN (3.5 audio interface)
3. Support FM radio (87.5MHZ-108.0MHZ)
4. Supports decoding MP3 players
5. Power outage memory function
6. Support infrared remote control operation at a distance of 5-10 meters

4. Shipping List

Component Name	Quantity	Component Name	Quantity
PCB	1	PAM8406	1
1N4007	1	A03 switch	1
A03 Hat	1	5MMLED	11
KA2284	2	Radio Module	1
1000UF25	1	4.7UF	6
105	6	100	2
1K	2	10K	9
Speaker	2	25CM pair	1
DC022	1	Antenna	1
USB cable	1	Acrylic shell	1
M2*16 screw	1	M2 nut	2
Foot pad	4	M3*8 screw	28
M3*10screw	4	M3 nut	35

5. Circuit diagram



6.Application:

>Welding skill training
>Student School
> DIY production
>Project design
>Electronic sports
>Gifts
>Collection of handicrafts
>Home decoration
>Souvenir series
>Graduation Design
>Holiday gifts

7. Attention:

1. It is a wireless module. Therefore, do not use it in environments with signal interference.

2. There is a SMT component that you can place on the PCB, fix one pin with solder, and then solder the other pins. The distance between the pins is very close, to prevent excessive soldering and short circuits during soldering.

8. Installation Tips:

1. Users need to prepare welding tools first.

. 1>. Solder iron (<50 watts)

. 2>. Rosin

. 3>. Scissors

. 4>. Stripper

. 5>. Cross screwdriver

. 6>. Tweezers

. 7>. Art knife

2. The packaging is a DIY toolkit. It needs to be installed by the user themselves.

3. The soldering iron should not touch the components for a long time (1.0 second), otherwise it is easy to damage the components.

4. Pay attention to the positive and negative terminals of the components.

5. Short circuits are strictly prohibited.

6. Users must install LEDs according to the specified rules. Otherwise, some LEDs will be damaged.

7. Priority should be given to welding lower components.

8. Ensure that the direction and position of all components are correct.

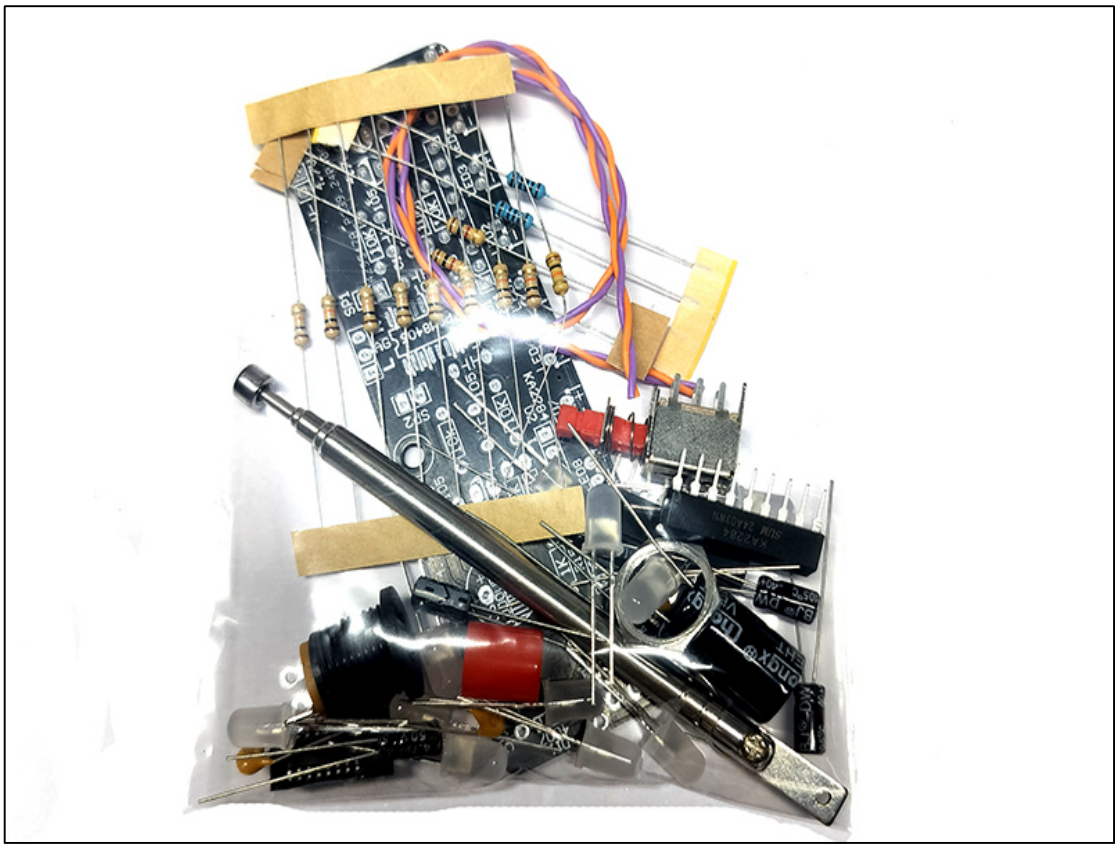
9. It is strongly recommended to read the installation manual before starting, please be patient and wait for the installation to complete.

10. When installing electronic products, please wear anti-static gloves or anti-static wrist strap components.

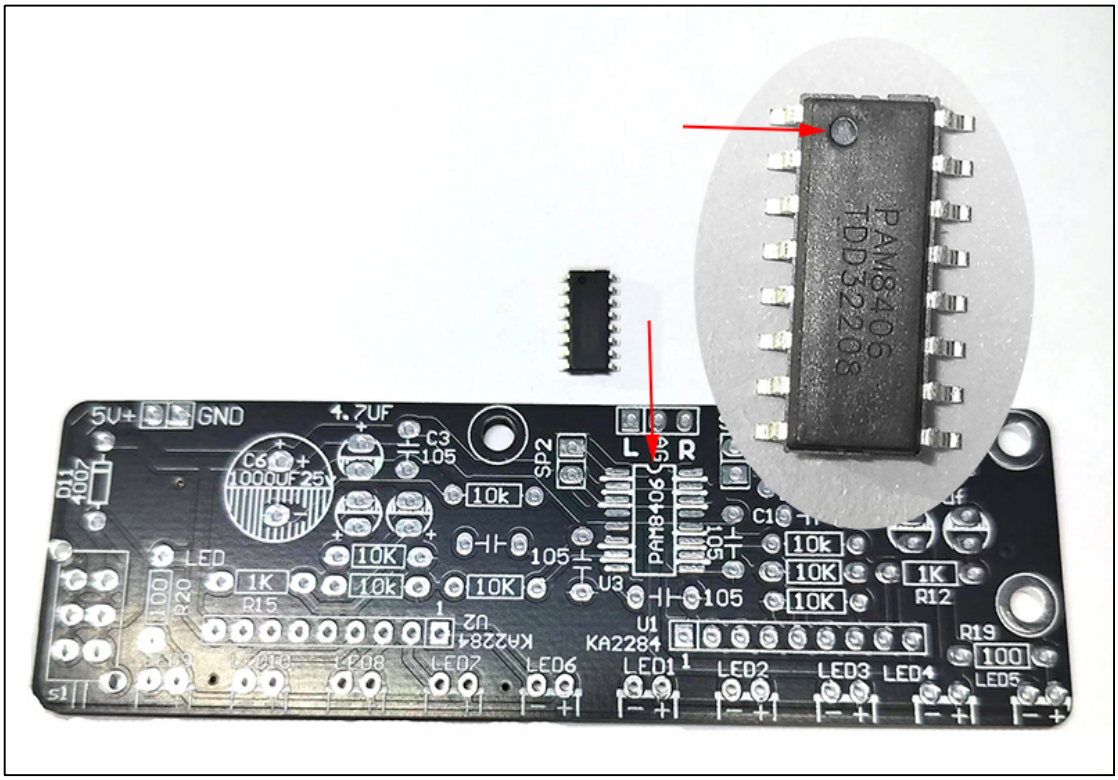
9. Installation steps

1. Check the components in the loose parts

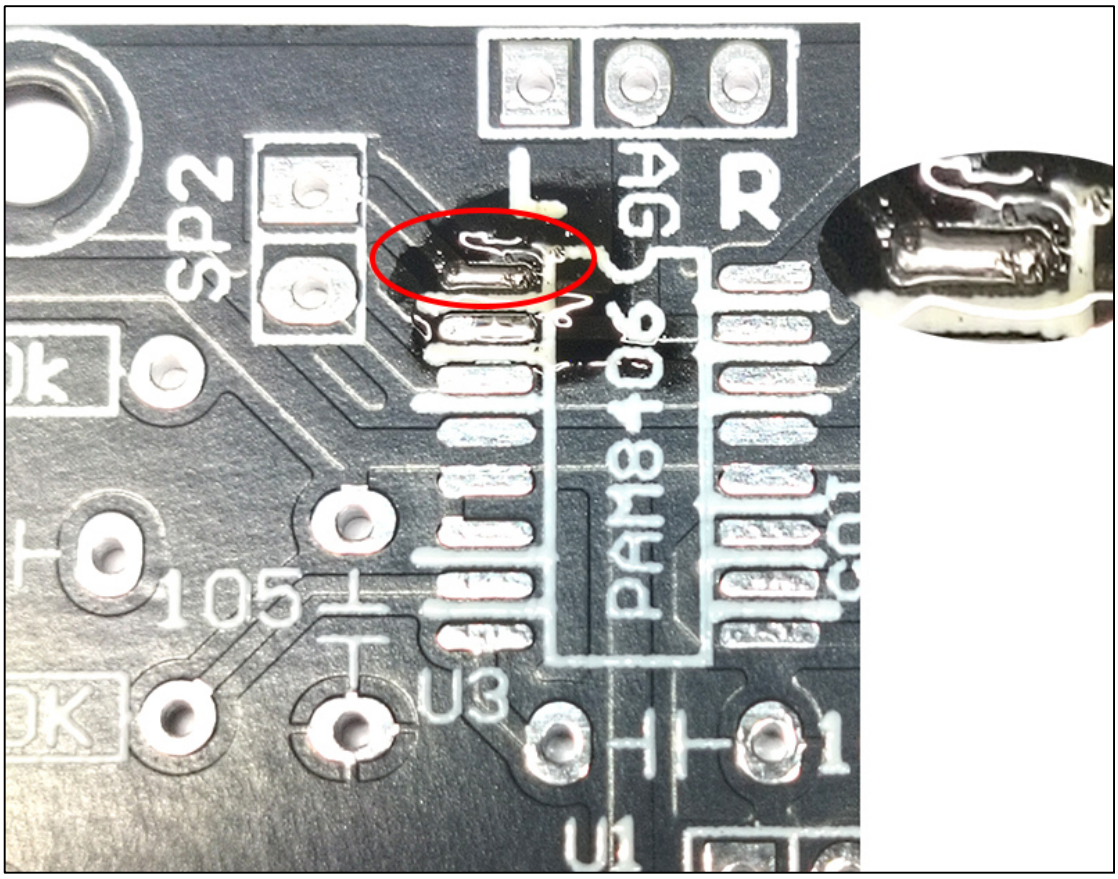
2. Find the accessory package, take out the PCB circuit board and chip PAM8406, and solder the SMT



3.The end marked with a dot on the chip PAM8406 corresponds to the concave end of the PAM8460 silk screen on the PCB



4. Randomly select a solder pad with tin at the placement position on the PCB



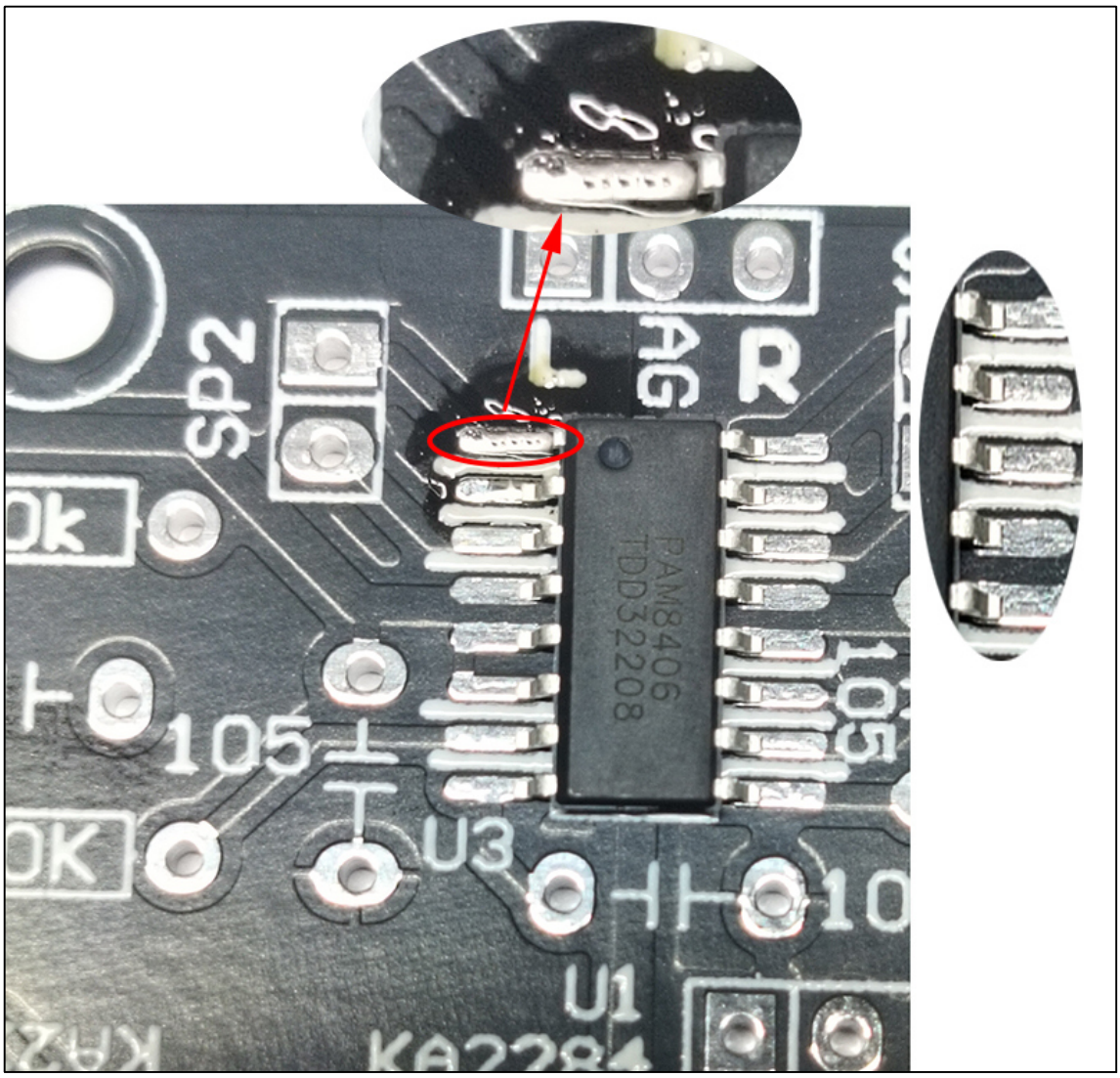
5. Weld one foot of PAM8406 to secure the chip.

1> Melt the solder on the solder pad with a soldering iron, and use tweezers with the other hand to hold PAM8406 in place on U3 to prevent it from moving.

2> Ensure that each pin matches and aligns with its respective solder pads.

3> Align the pins and remove the soldering iron.

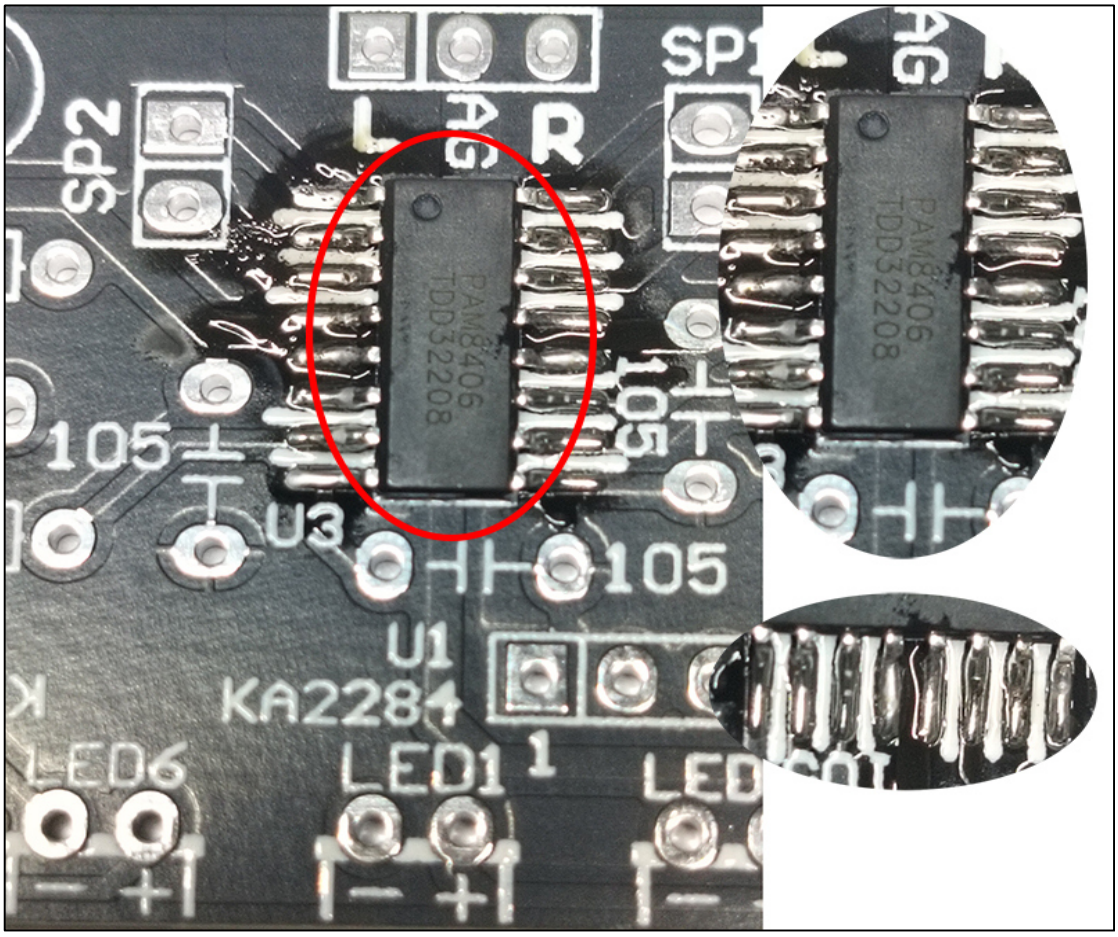
4> After the solder has cooled and solidified, remove the tweezers.



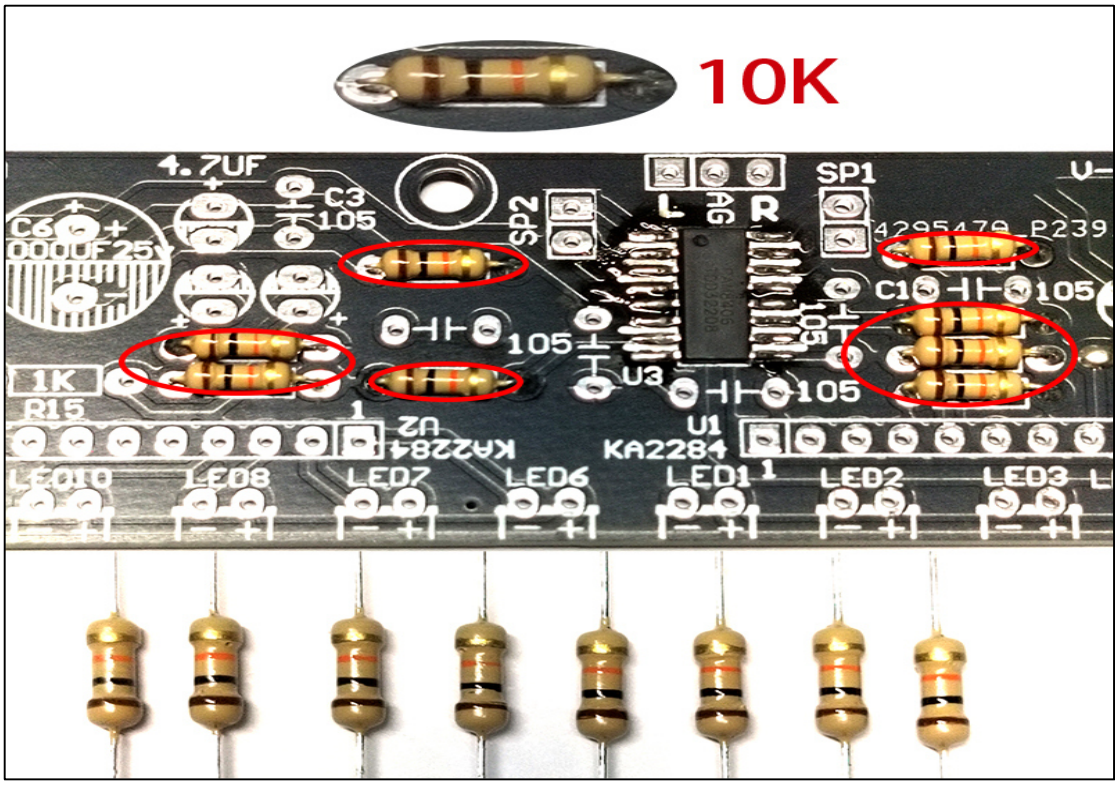
6. Use solder and soldering iron to connect the remaining pins of PAM8406 to the solder pads on the PCB.

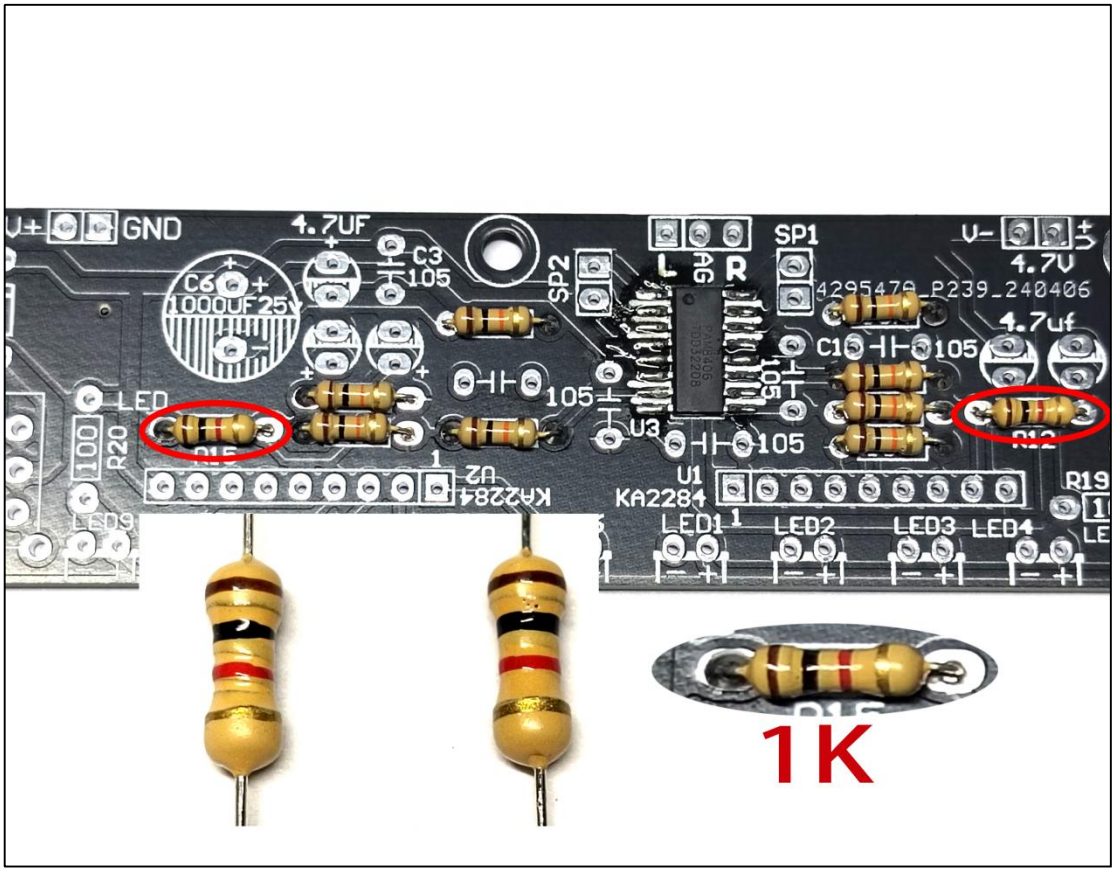
Special reminder:

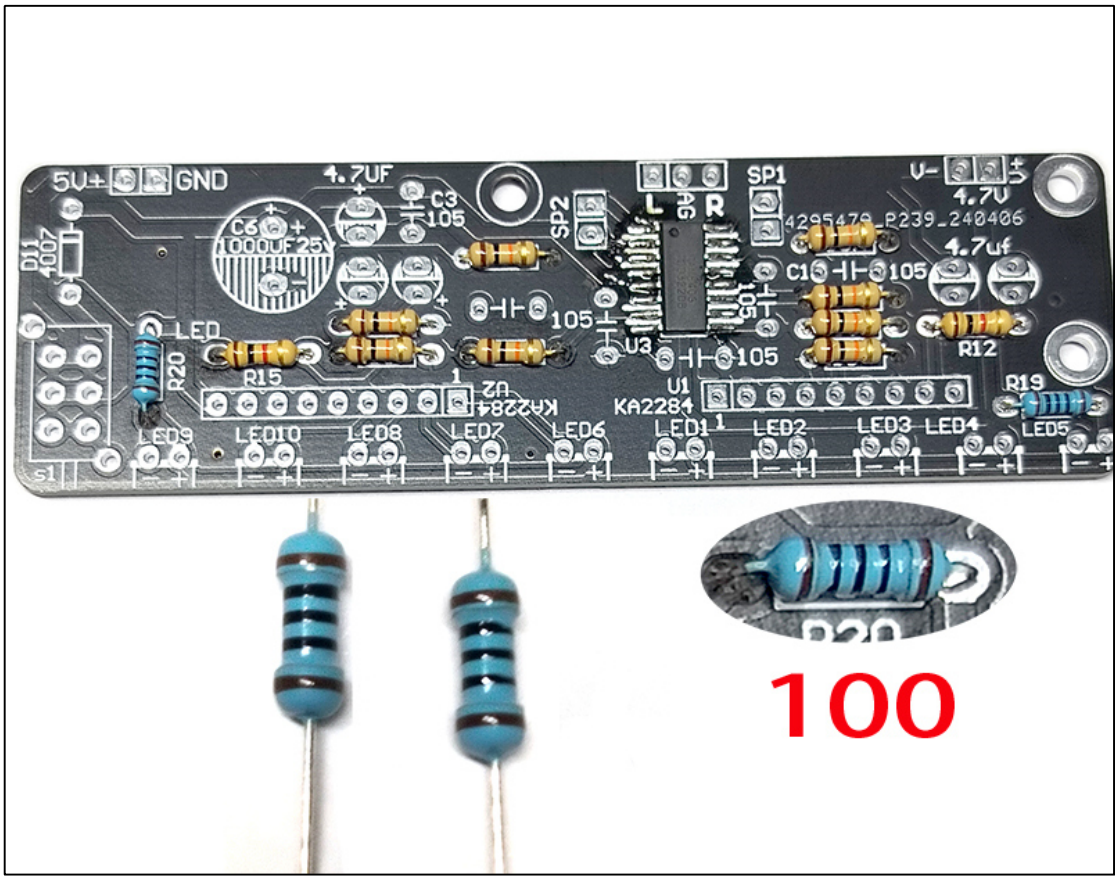
Use solder to remove excess solder between solder pads to prevent short circuits and damage to the



7. Weld low resistance components, 8 10K, 2 1K, and 2 100 ohm resistors



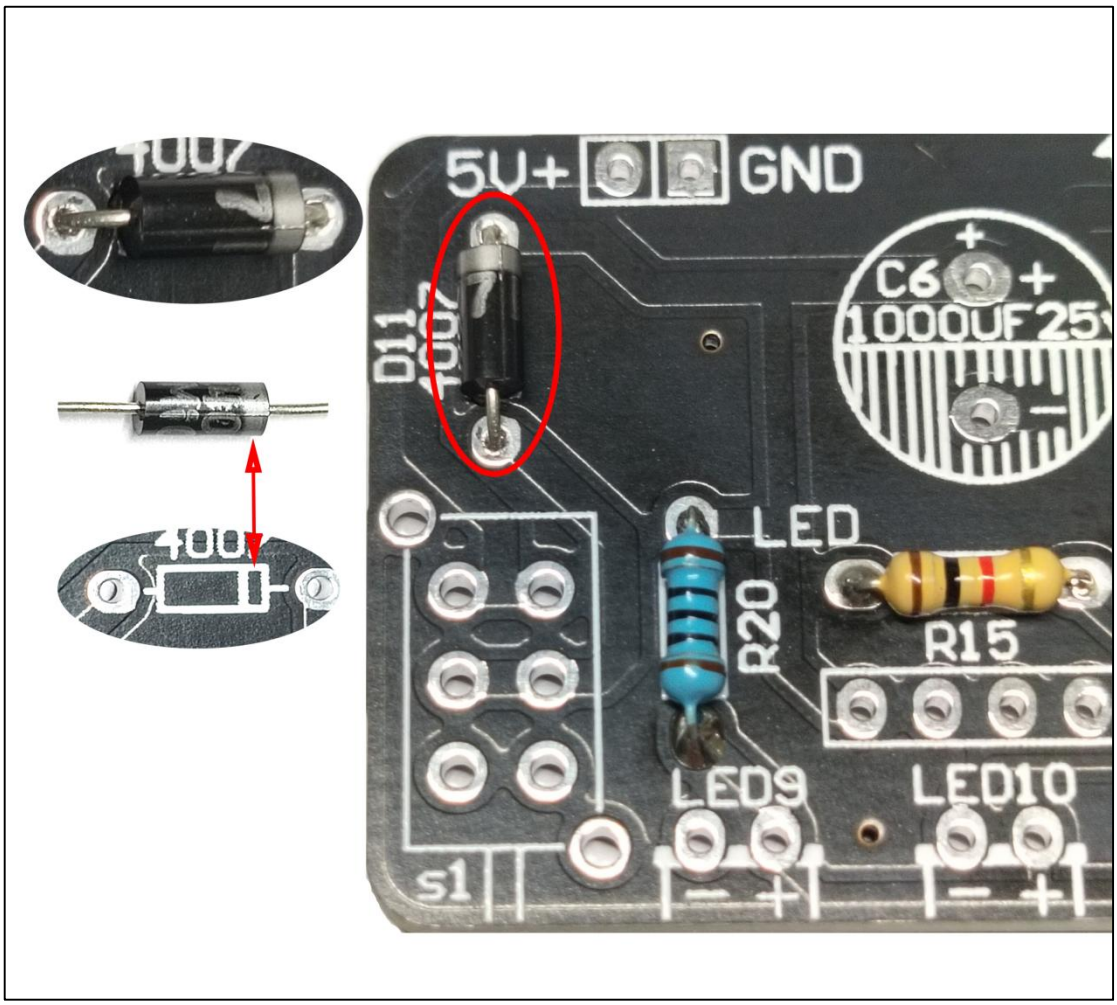

GND
4.7UF
C6
1000UF 25V
C3
105
SP2
SP1
L
R
V-
4.7V
4295479_P239_240406
4.7uf
C15
105
LED
R15
R20
100
U3
105
R12
U1
KA2284
R19
LED9
LED1
LED2
LED3
LED4
1K


5V+
GND
4.7UF
C6
1000UF 25V
C3
105
SP2
SP1
L
R
V-
4.7V
4295479_P239_240406
4.7uf
C15
105
D1
4007
LED
R15
R20
U3
105
R12
U1
KA2284
R19
LED9
LED10
LED8
LED7
LED6
LED1
LED2
LED3
LED4
LED5
100

8.Install one 1N4007 diode at D11.

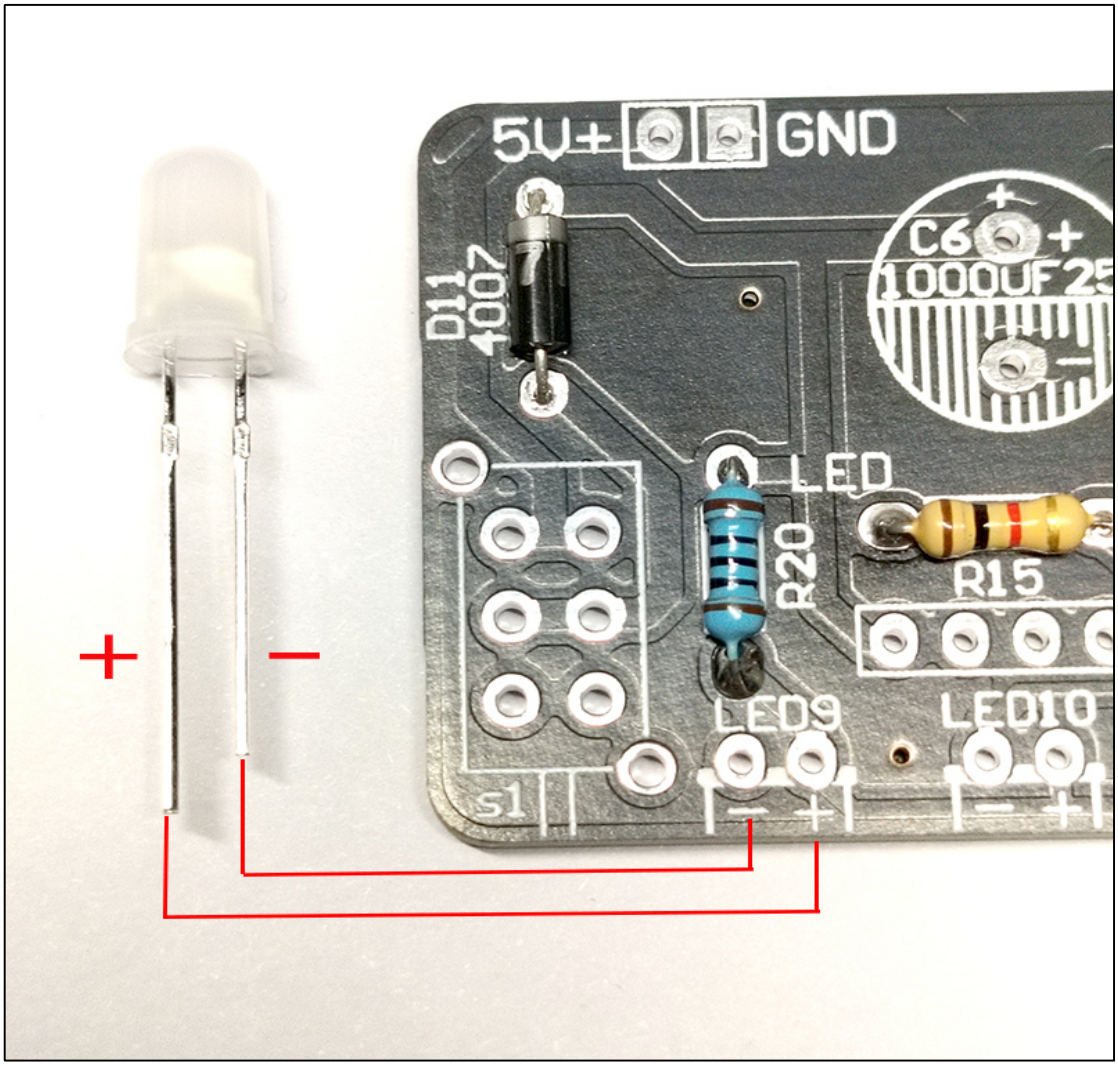
Pay attention to the installation direction. Align the white marked end on 1N4007 with the white marked end on the

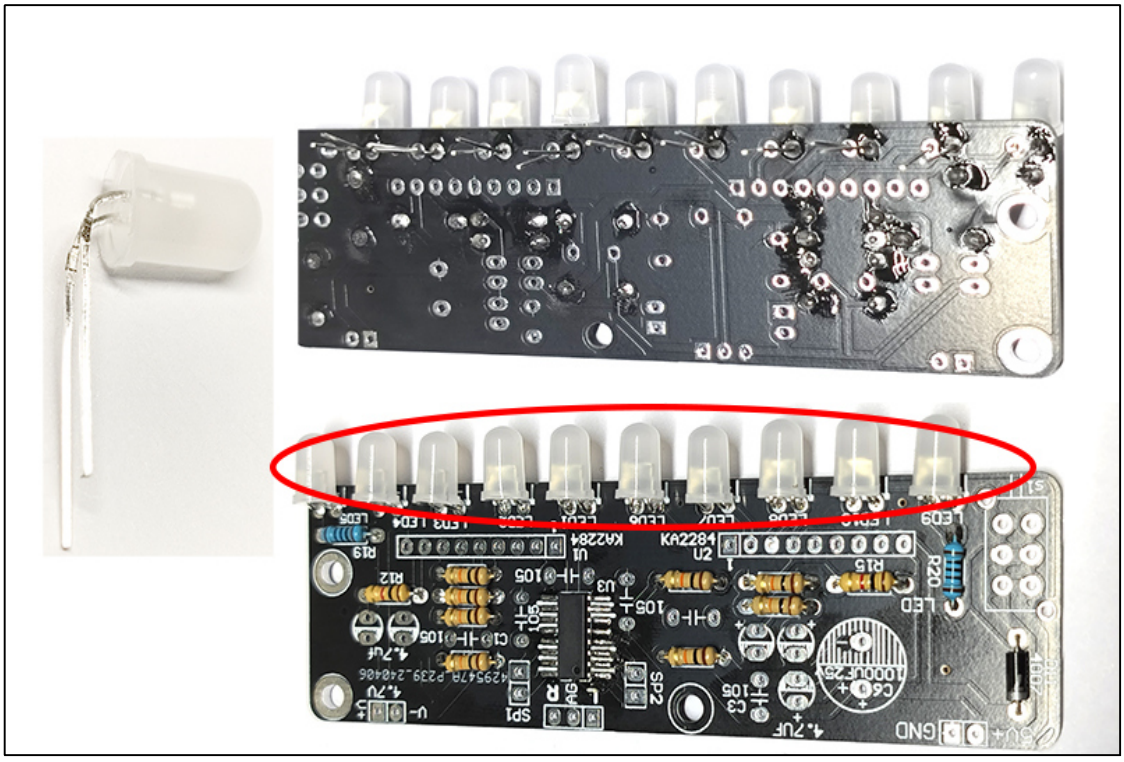
PCB.



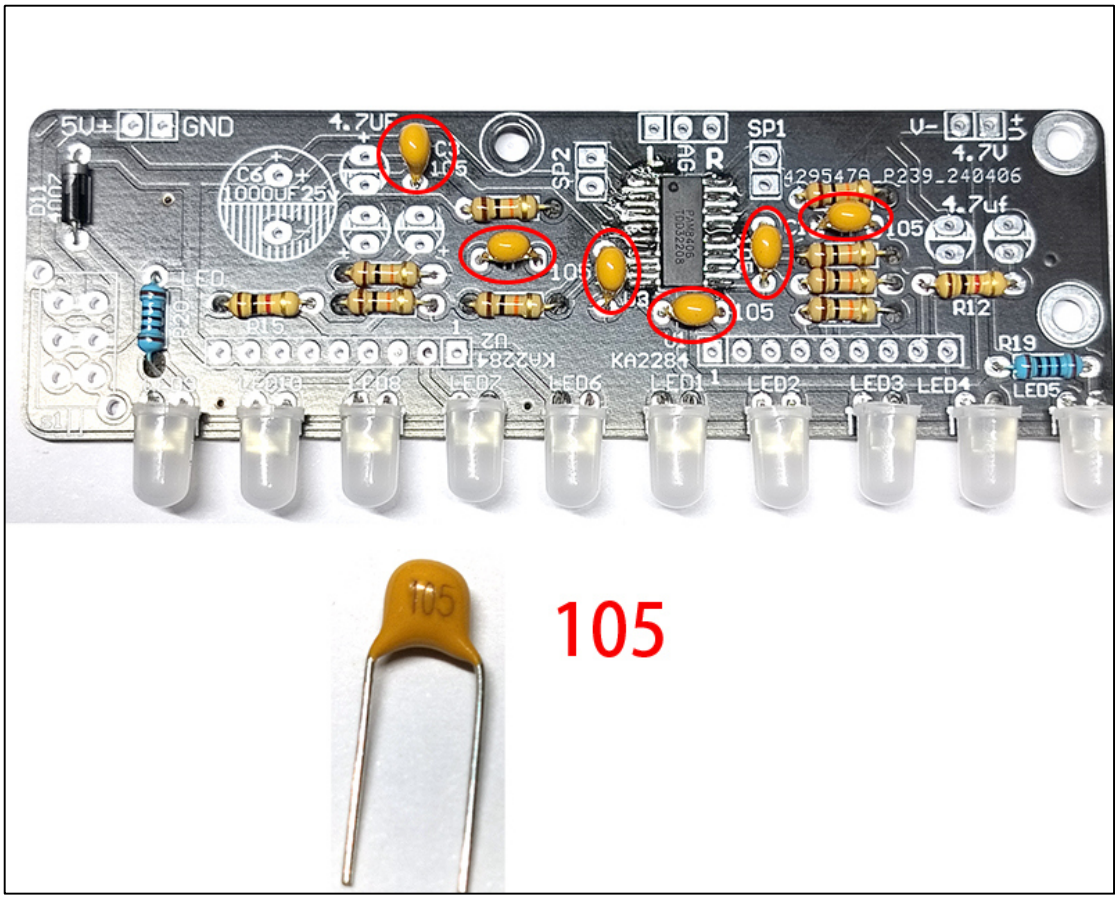
9. Weld 10 5mm LED lights and distinguish the positive and negative poles based on the length of the LED leads. The longer pin is positive+, and the shorter pin is negative -. Bend the pins of 10 LEDs, paying attention to the bending direction, as shown in the

figure.

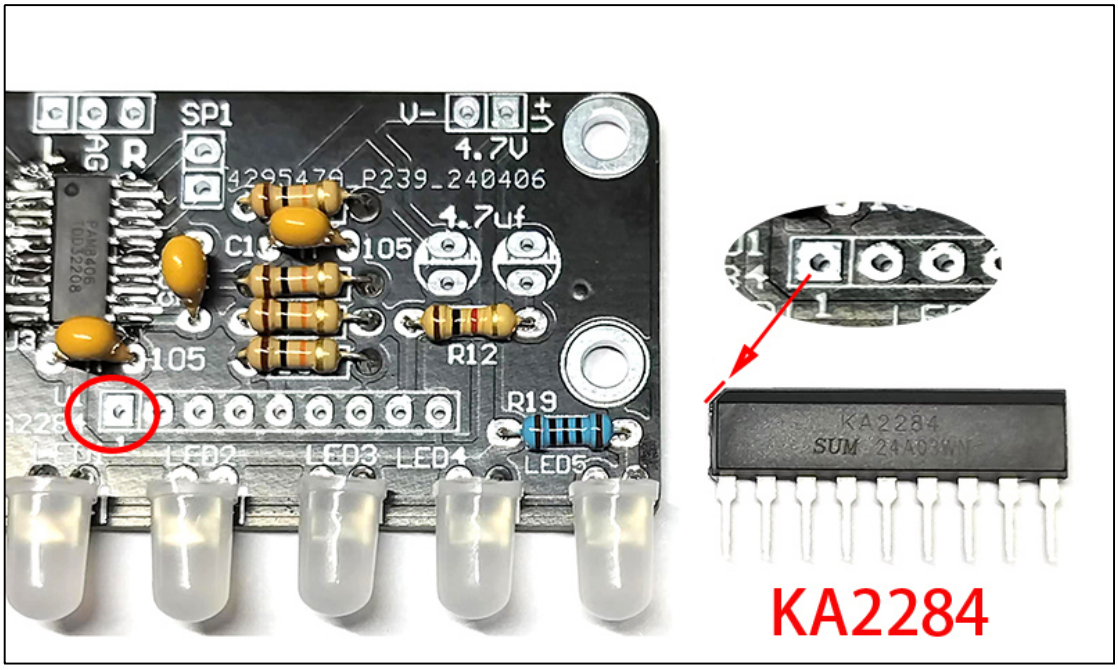

5V+
GND
D11
4007
C6
1000UF25
LED
R20
R15
LED9
LED10
S1
+
−

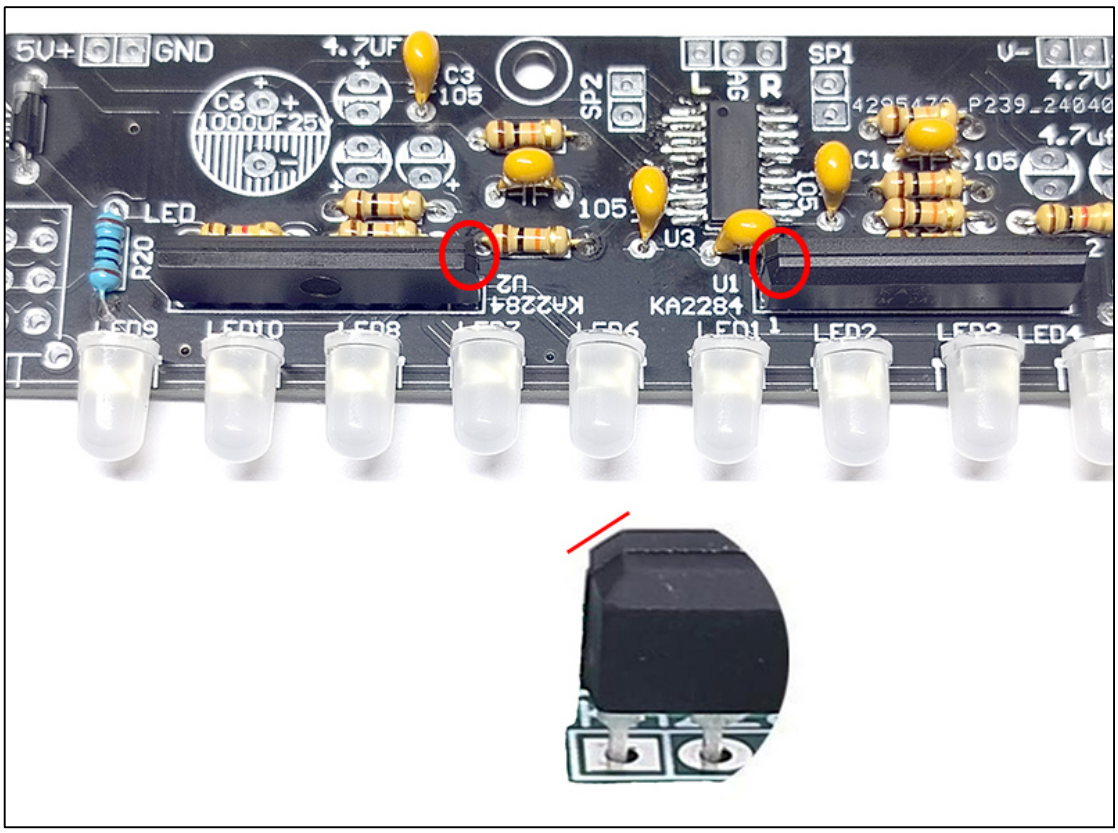

KA2284
U2
R15
R20
LED
C6
1000UF25
GND

10. Install 6 0.1uF 105 single stone capacitors without any distinction between positive and negative
poles.

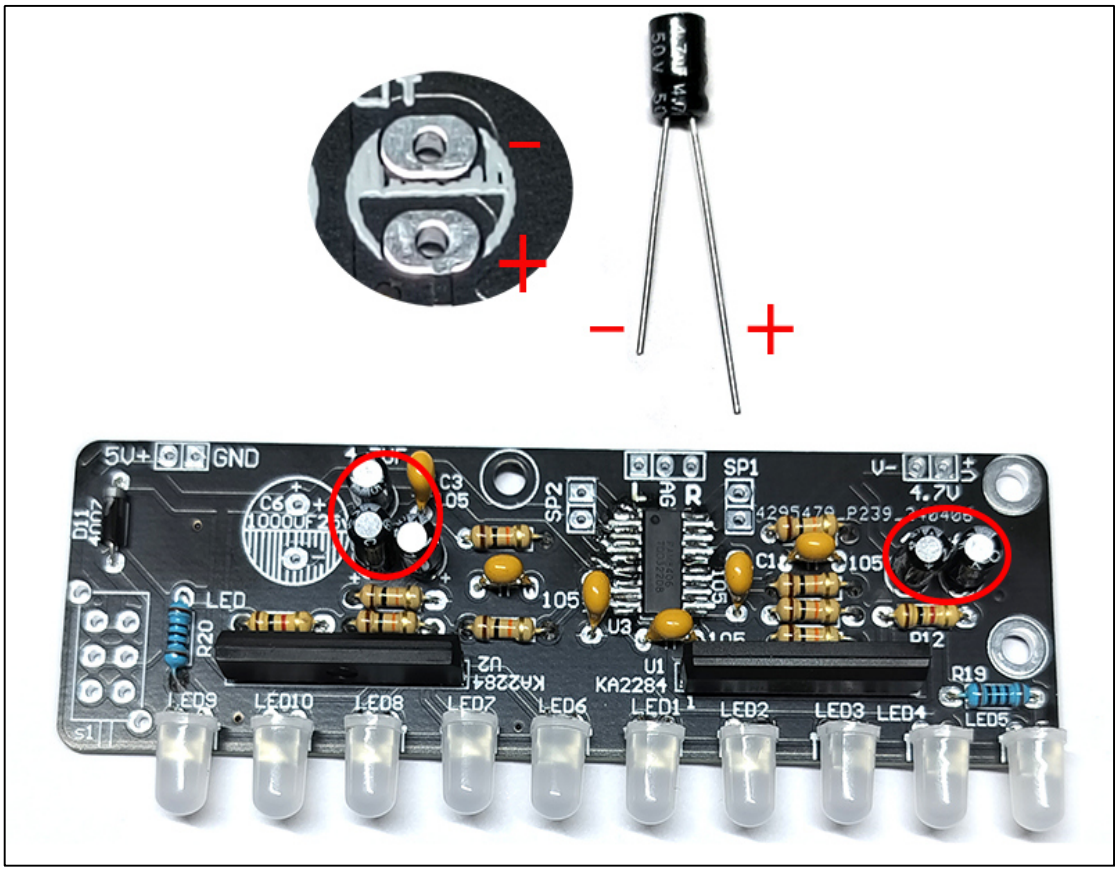


11. Confirm and identify the installation direction of KA2284, and install two KA2284 LED drivers on U1 and
U2.

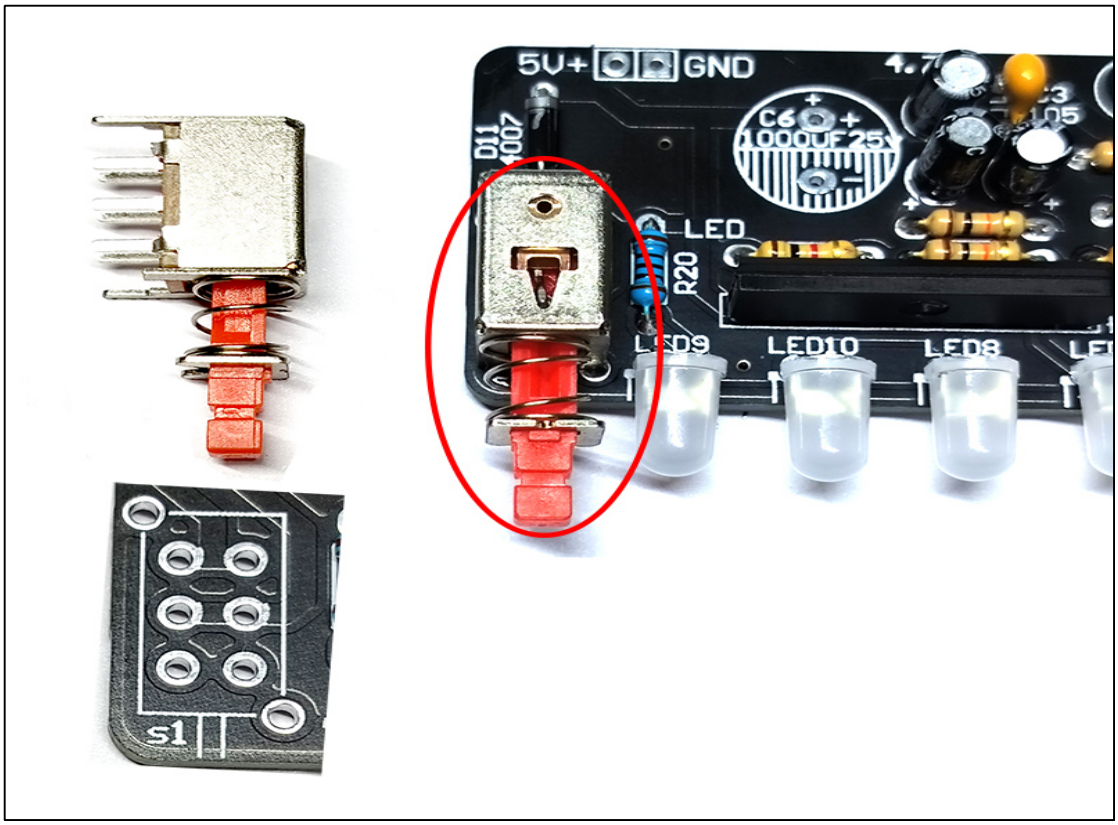




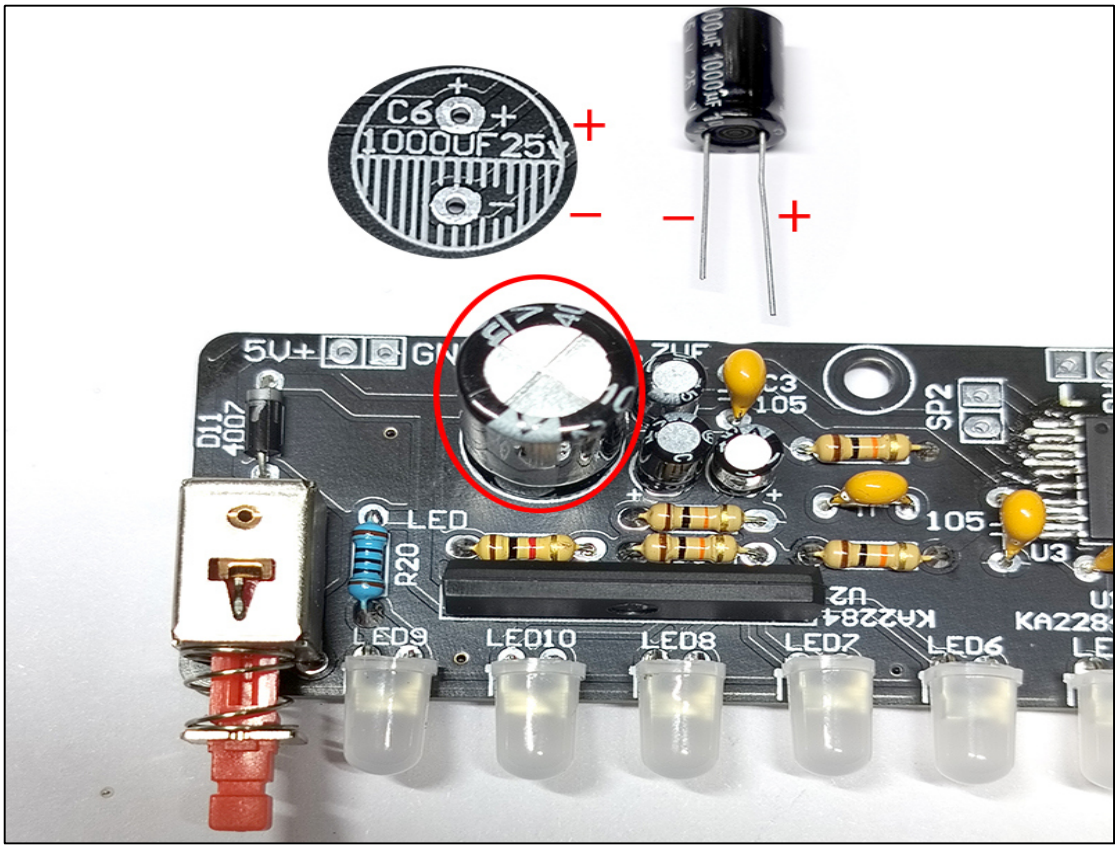
12. Install 5 4.7uF electrolytic capacitors. Note: The longer pin is the positive pole and connected to the "+" solder pad. The white side on the PCB board is the negative electrode.



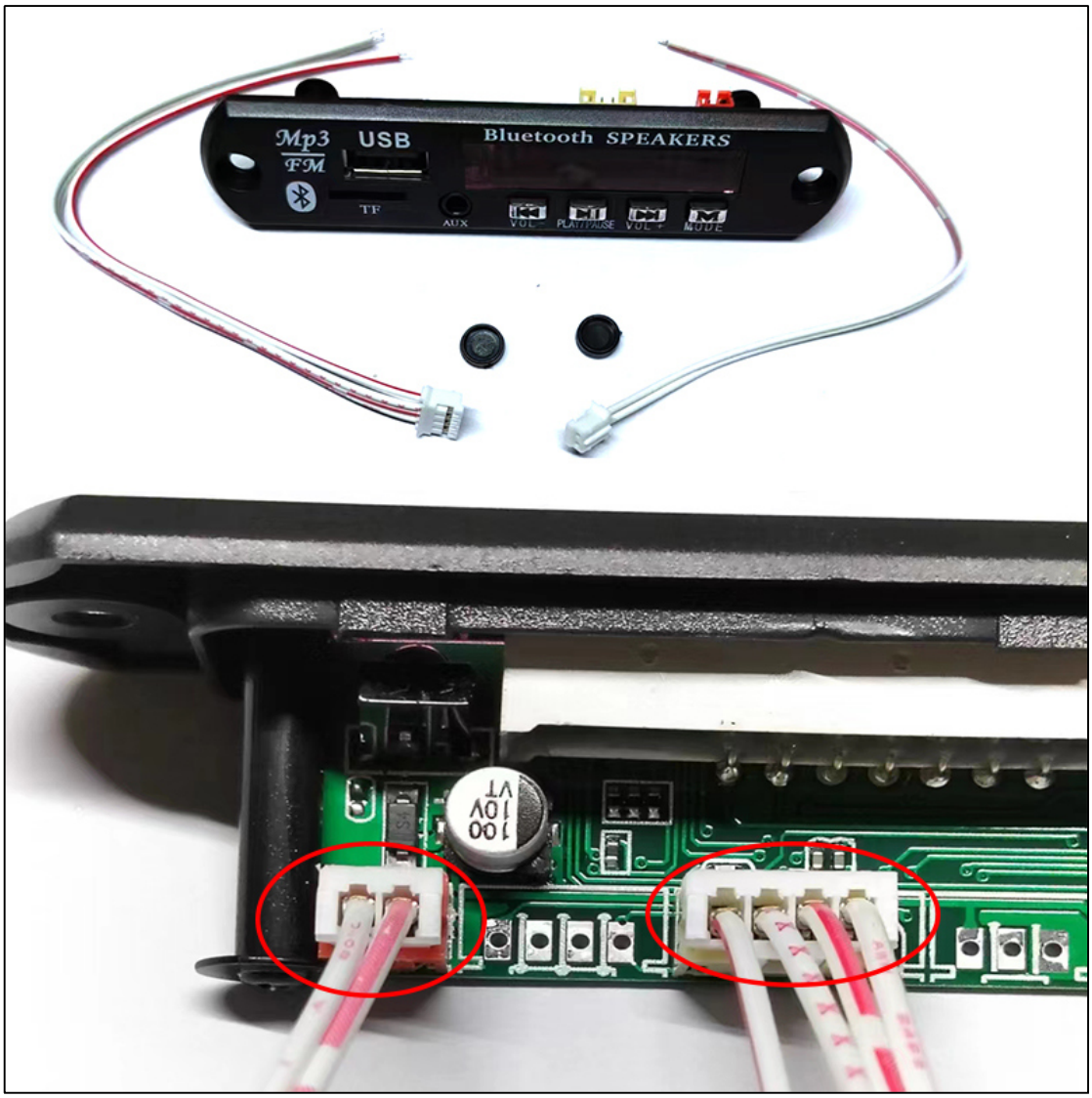
13. Install A03 red power button at S1



14. Install one 1000uF electrolytic capacitor. Note: The longer pin is the positive pole and connected to the "+" solder pad. The white side on the PCB board is the negative pole



15. Find the multifunctional radio module and plug in the connecting cable.

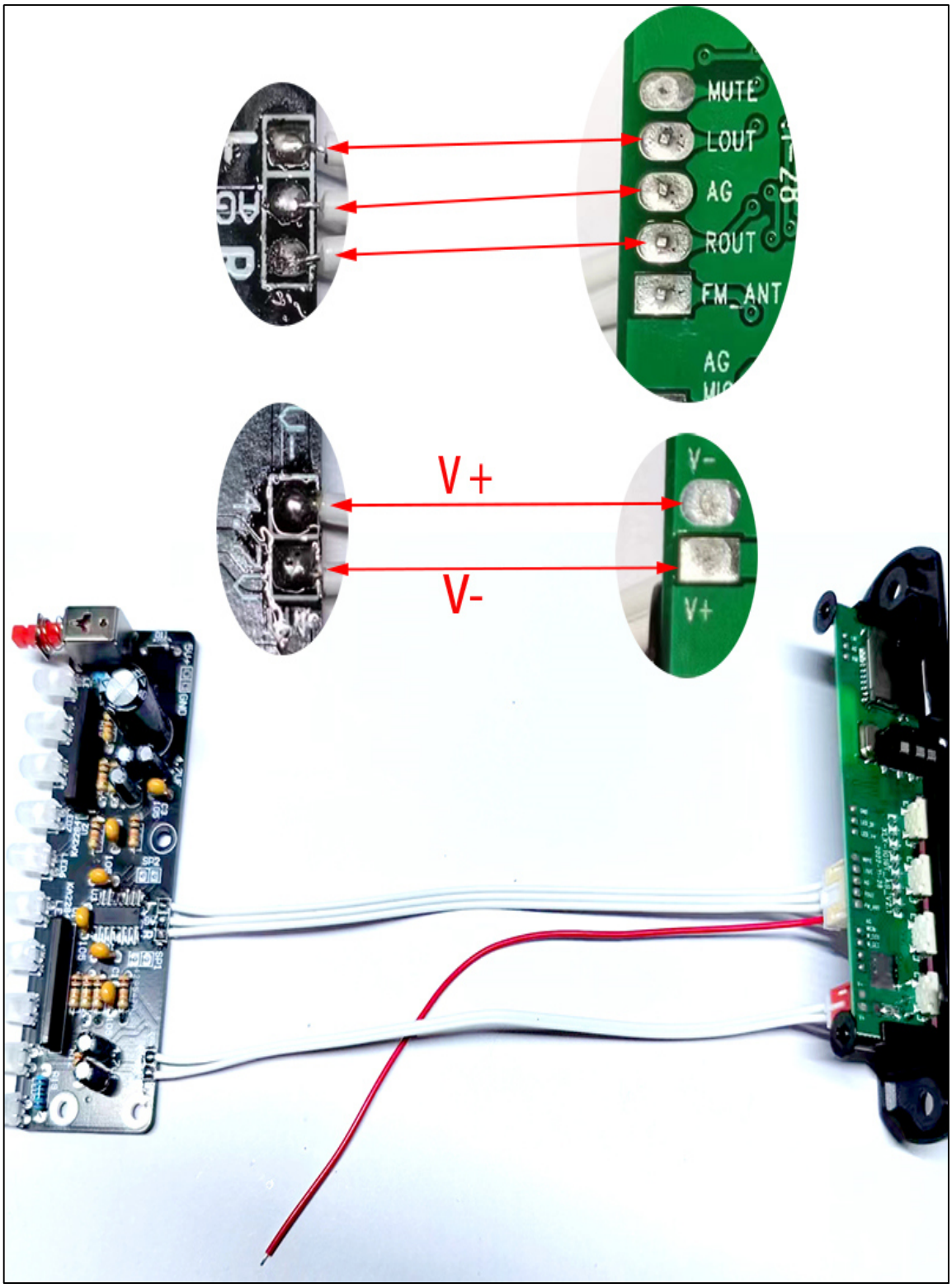


16. Weld the wires of the multifunctional radio module to the corresponding solder pads on the PCB circuit board.

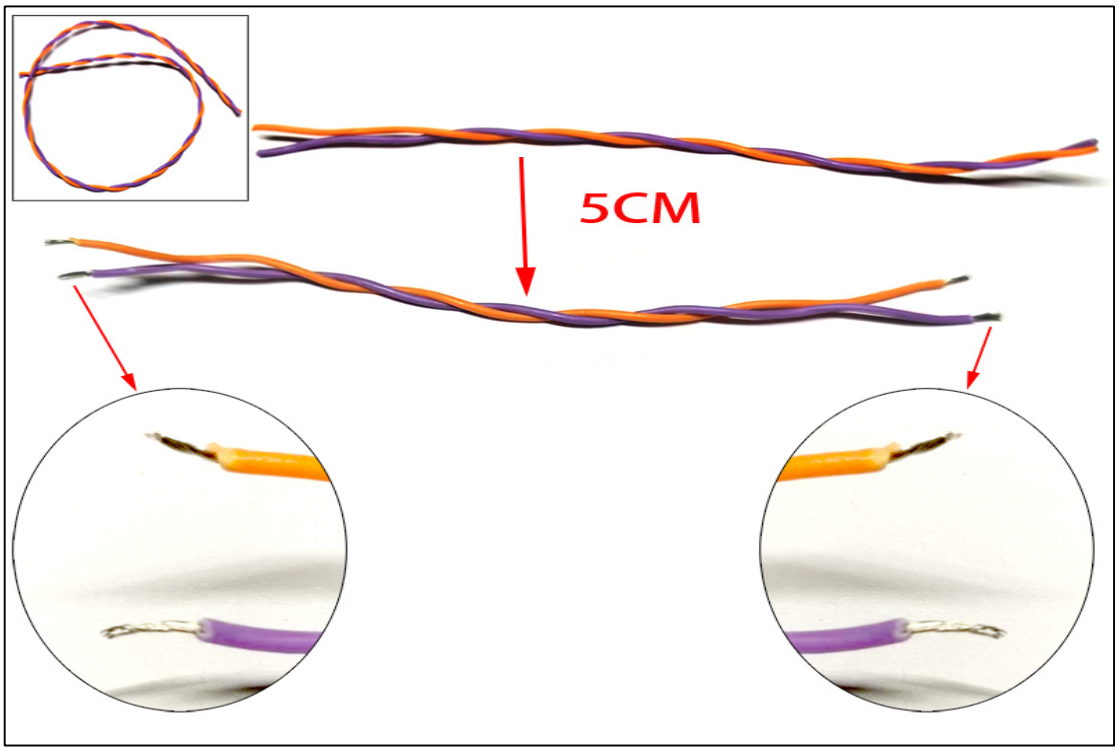
LOUT —L 、AG—AG、ROUT—R、V-—V-、V+—V+。

Attention: The power cord must not be reversed, otherwise it may damage the multifunctional radio

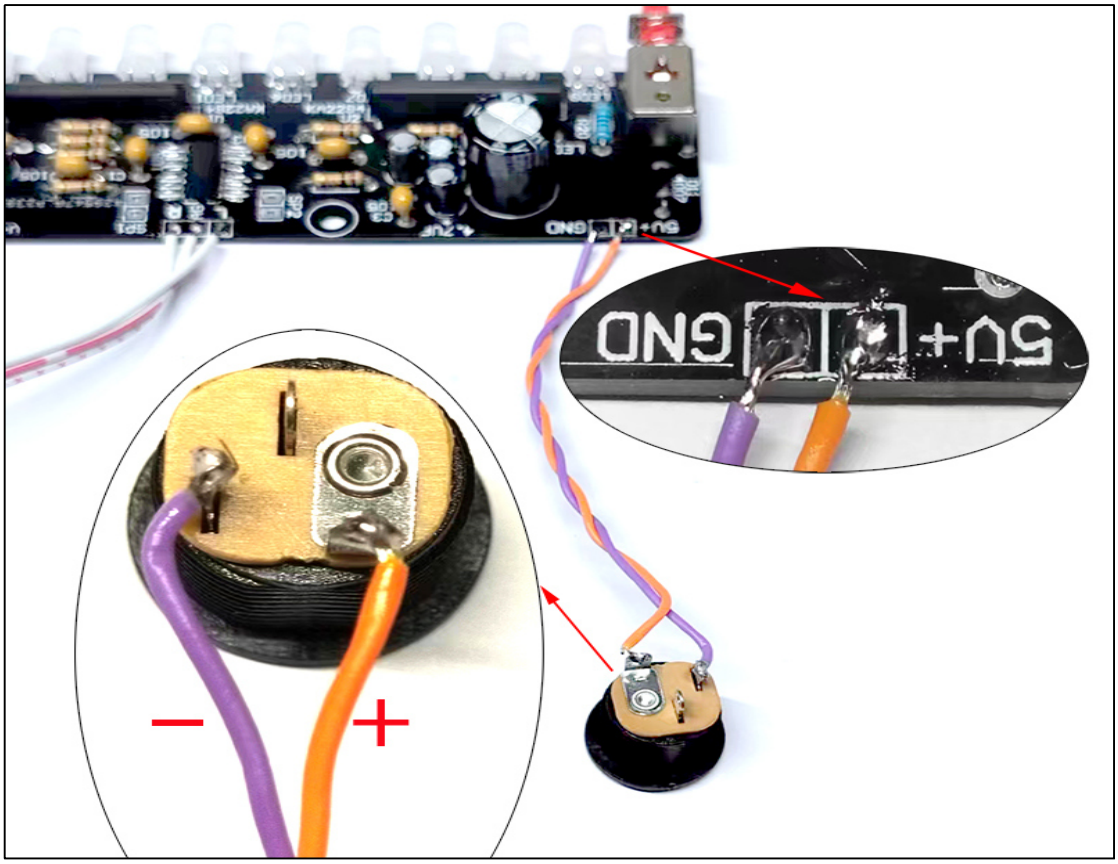
module.



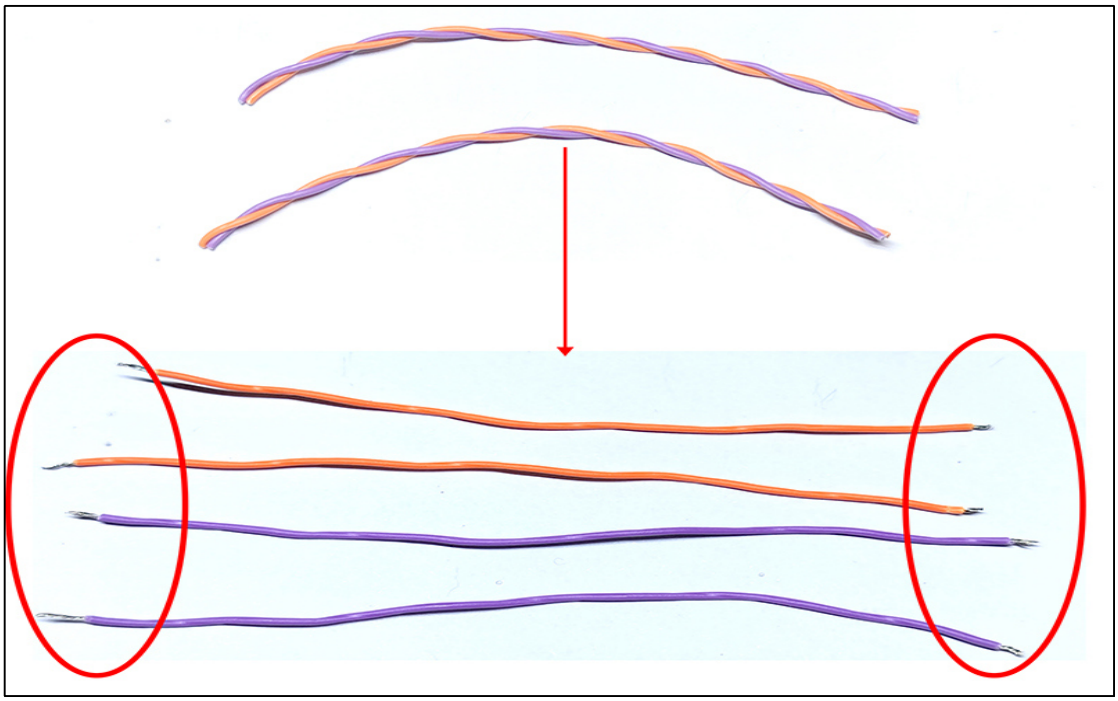
17. Find the wire, cut off a section of about 5cm, and use wire stripping pliers to peel off the insulation sheets at both ends of this section of wire.



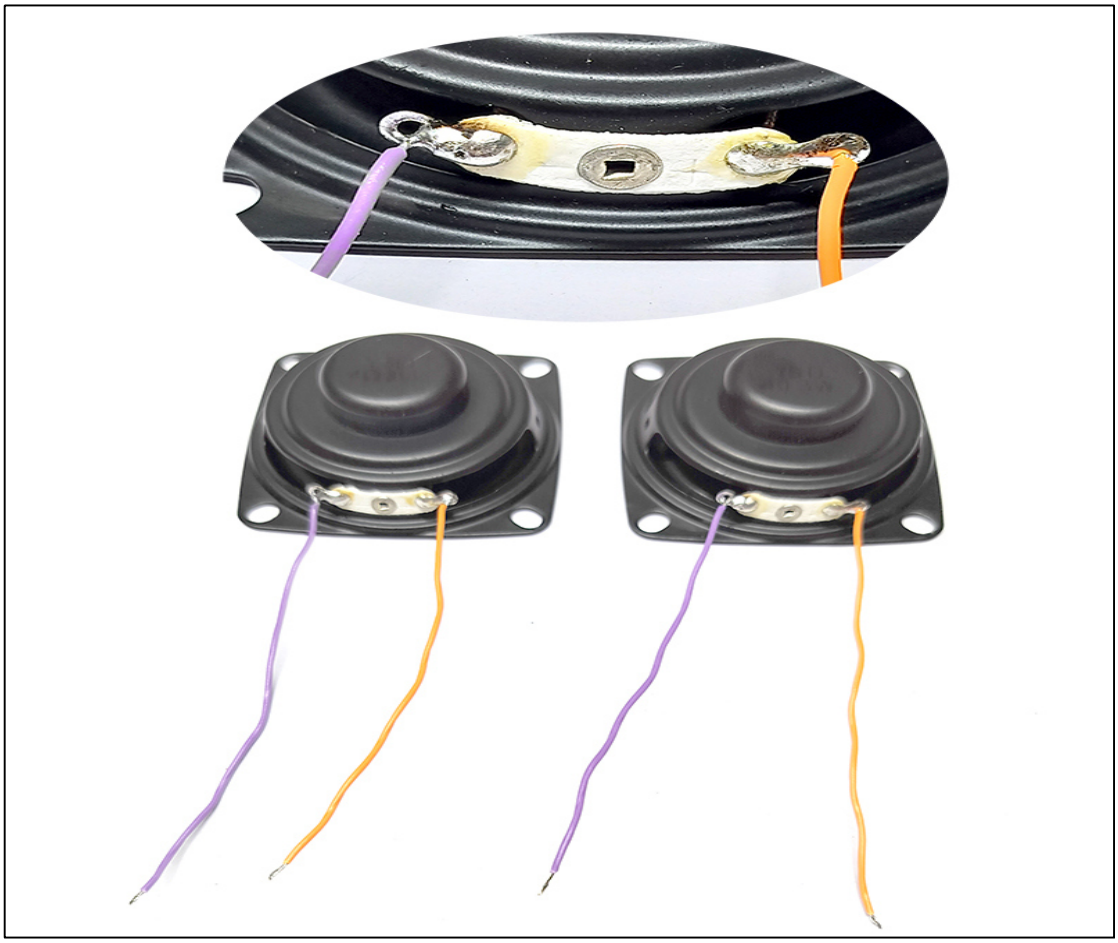
18. Connect the power button and PCB board with wires.



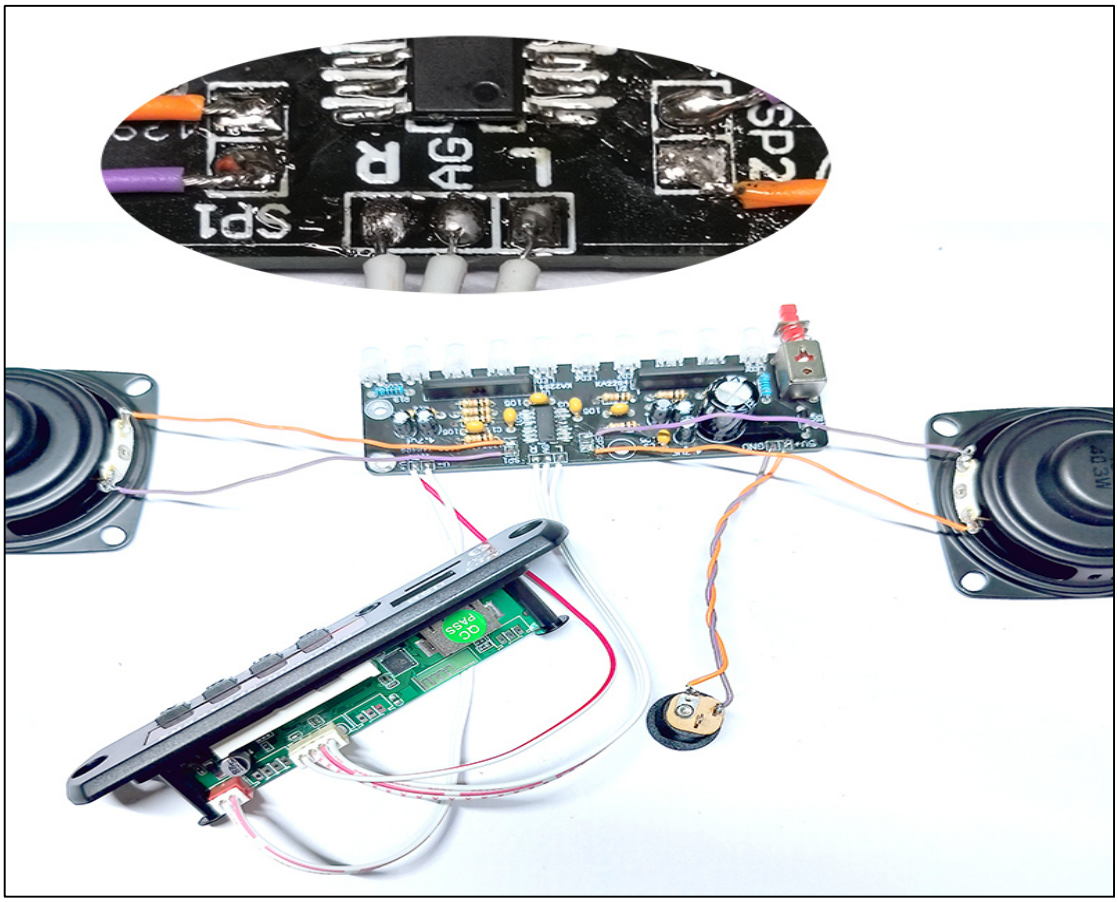
19. Cut the remaining wires into two sections and peel off both ends of the wires.



20. Weld the wires to the horn

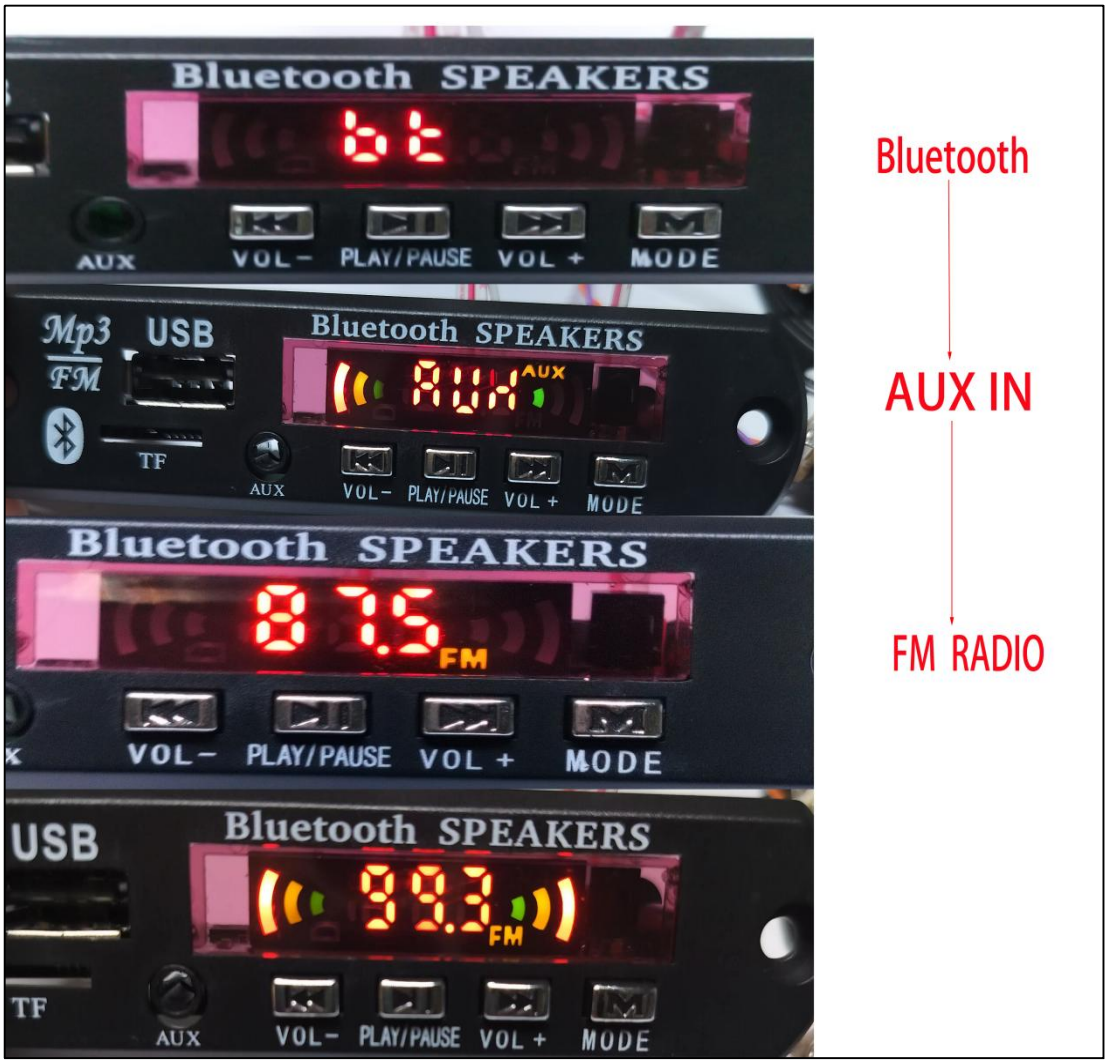


21. Connect the speaker to the circuit board.



22. Now that all components have been connected, connect the 5V USB cable to test whether the module is working.

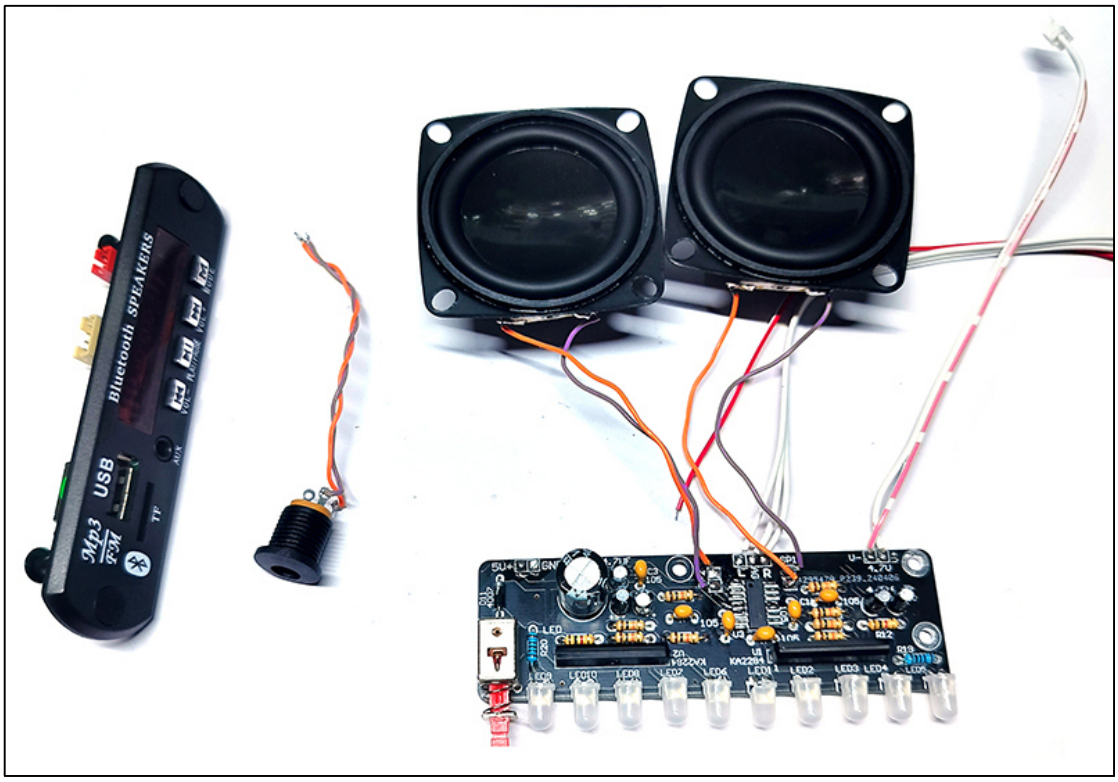
23. After powering on, you will hear sound and initially enter Bluetooth audio mode. Press the MODE key to
switch.



Bluetooth mode, which can be used as a Bluetooth speaker through a mobile phone Bluetooth connection.
AUX IN external audio input, can be connected to a computer or mobile phone through a 3.5 audio cable, and used as a speaker.
FM RADIO radio mode, long press the PLAY/PUSE key to enter automatic radio mode, store it, and then switch between the previous and next radio stations through VOL - and VOL+.
If it is possible to switch between different modes, the radio can receive the radio normally, and the level indicator light can also jump normally, congratulations. Your module welding has been successful, and now we will proceed with the installation of the outer shell.

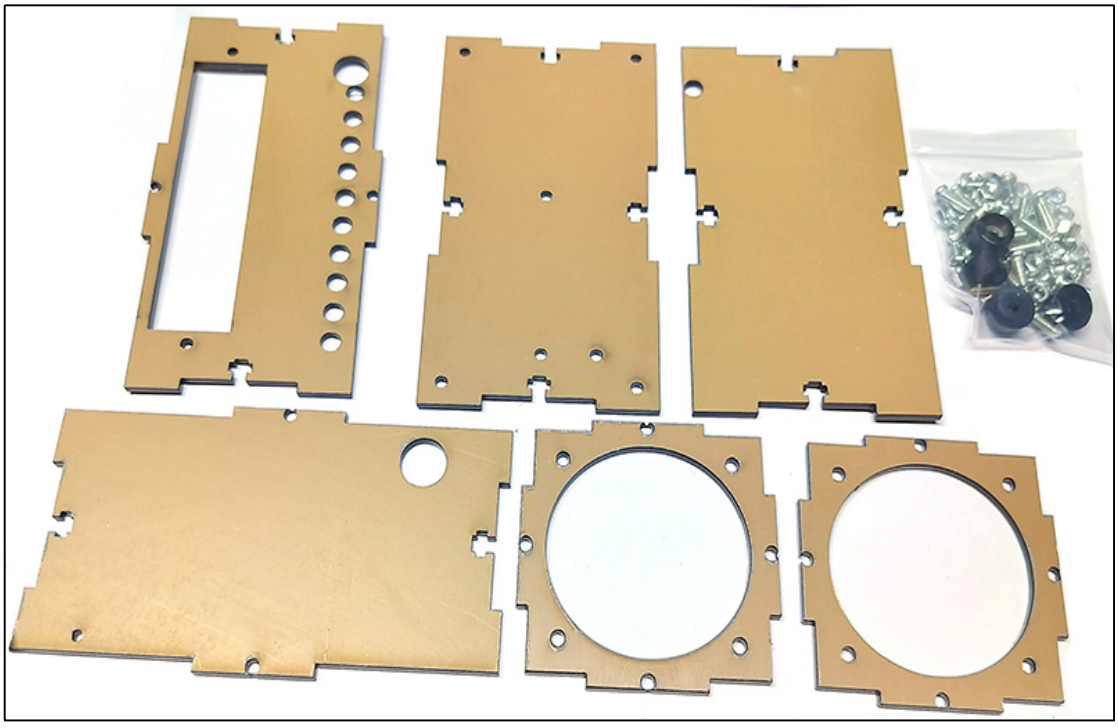
10、 Assembling the casing

1. First, unplug the multifunctional radio module from the circuit board and remove the power switch with a soldering
iron.

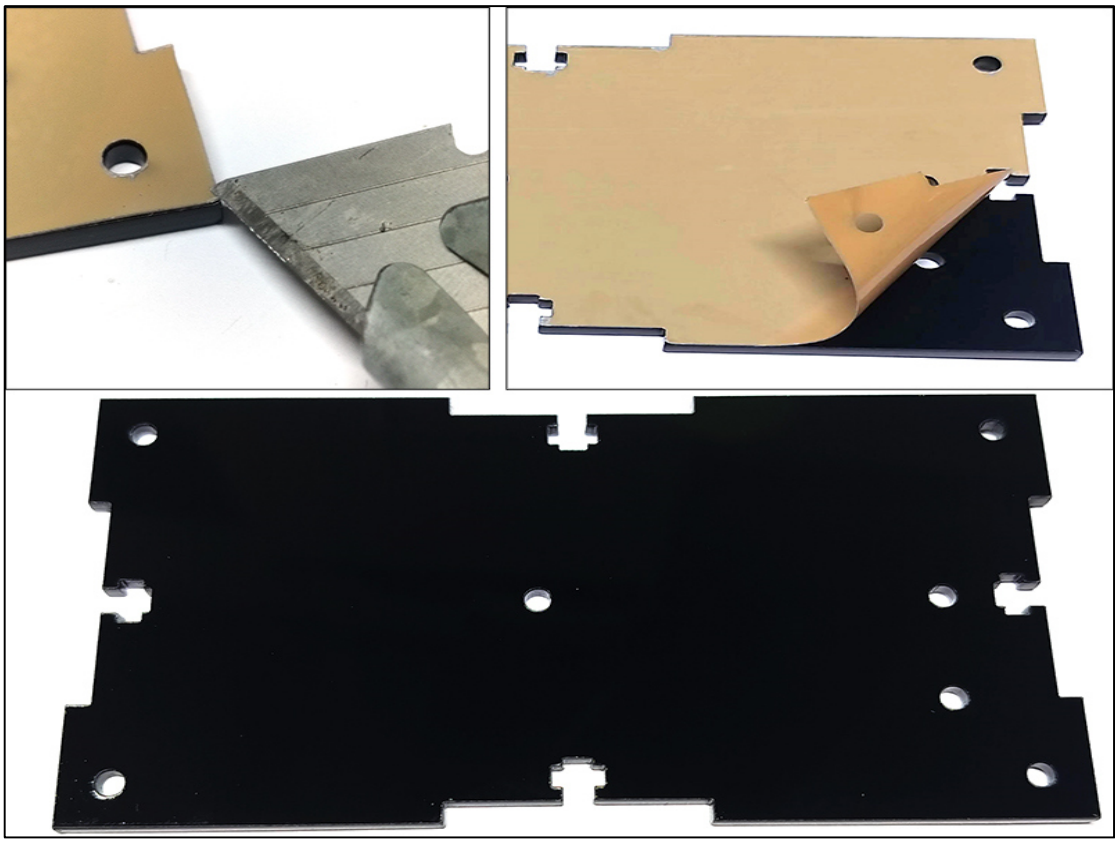


2. Find the housing

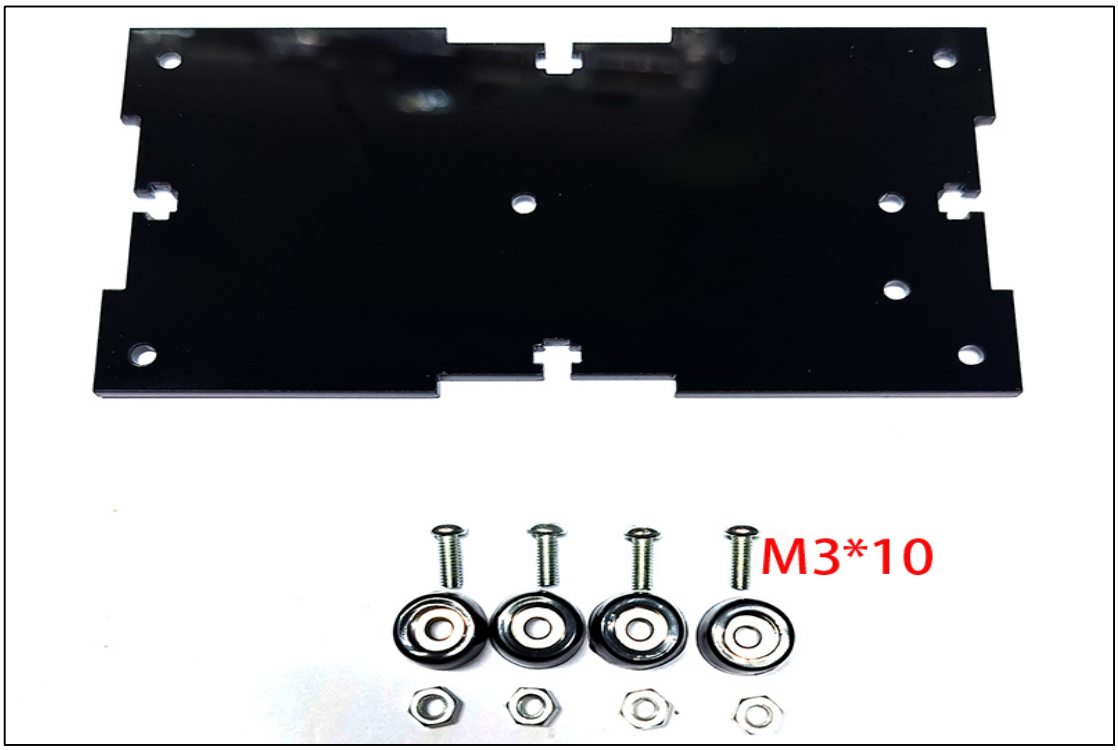
kit



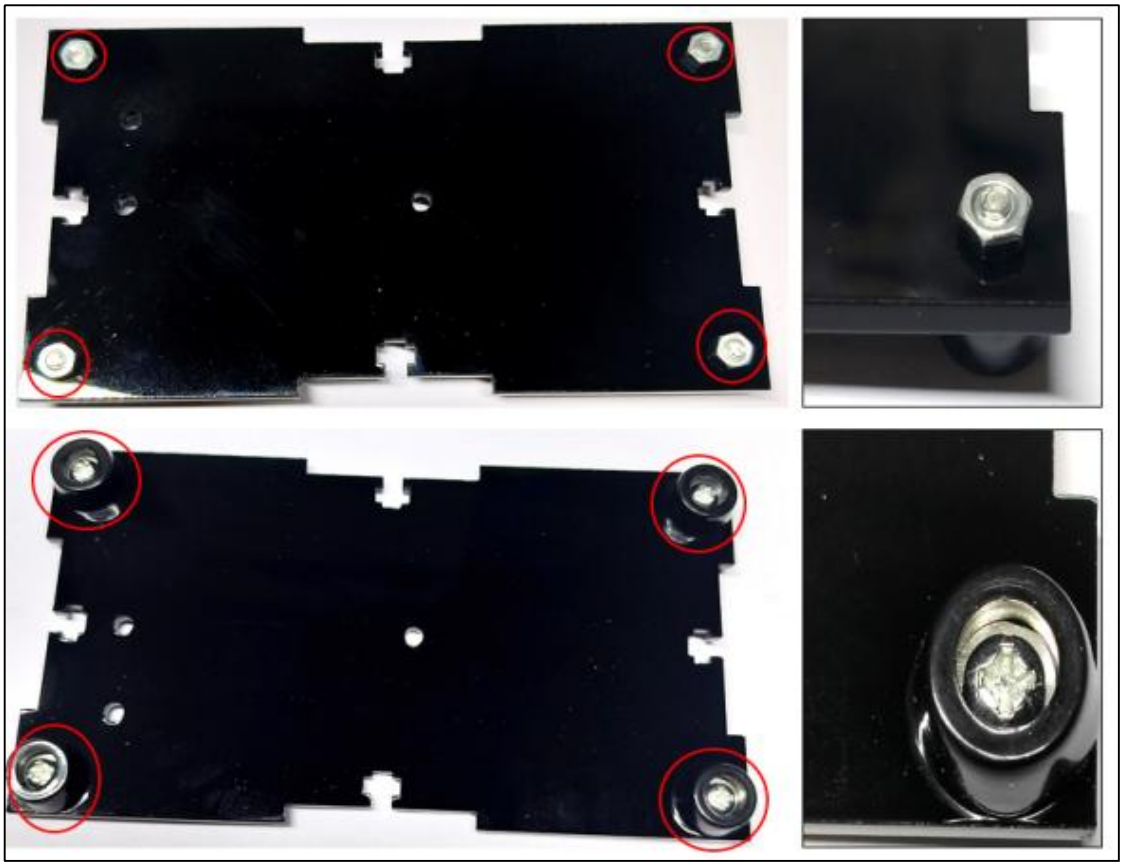
3. Use an art knife to lift one corner of the protective film on the outer shell, and then tear off the protective film, both sides.



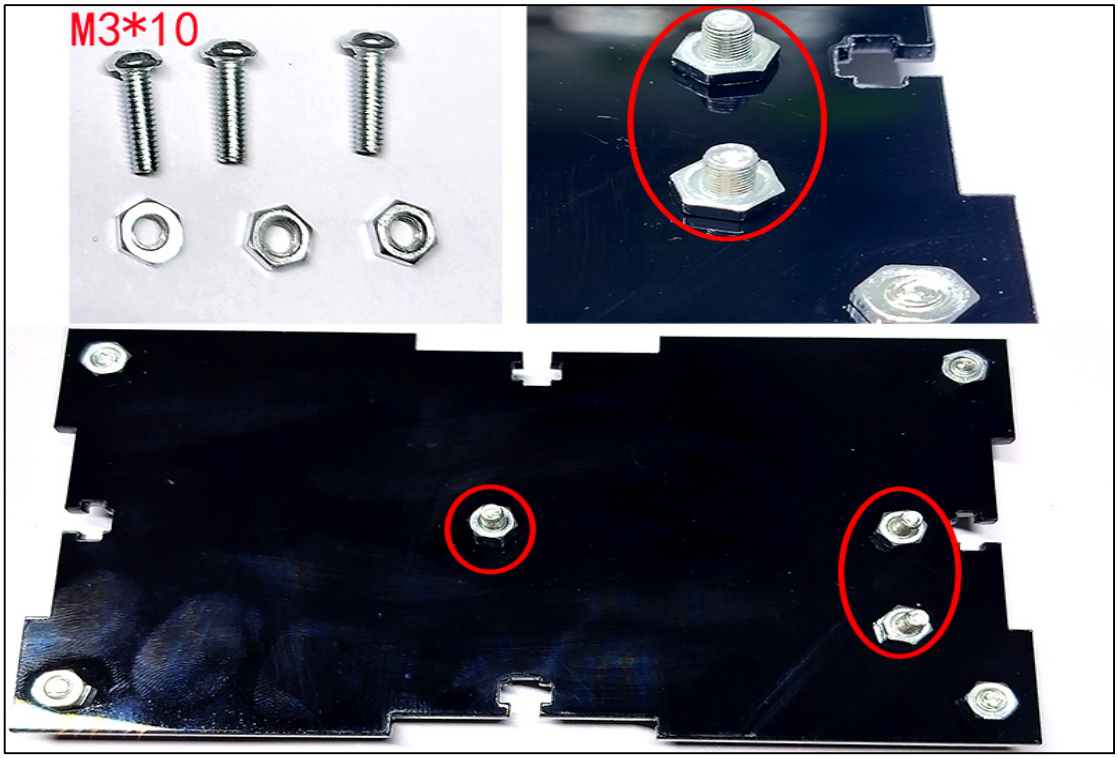
4. Find the bottom shell plate, tear off the film, and install 4 M3 * 10 screws, 4 nuts, and 4 black foot
pads.



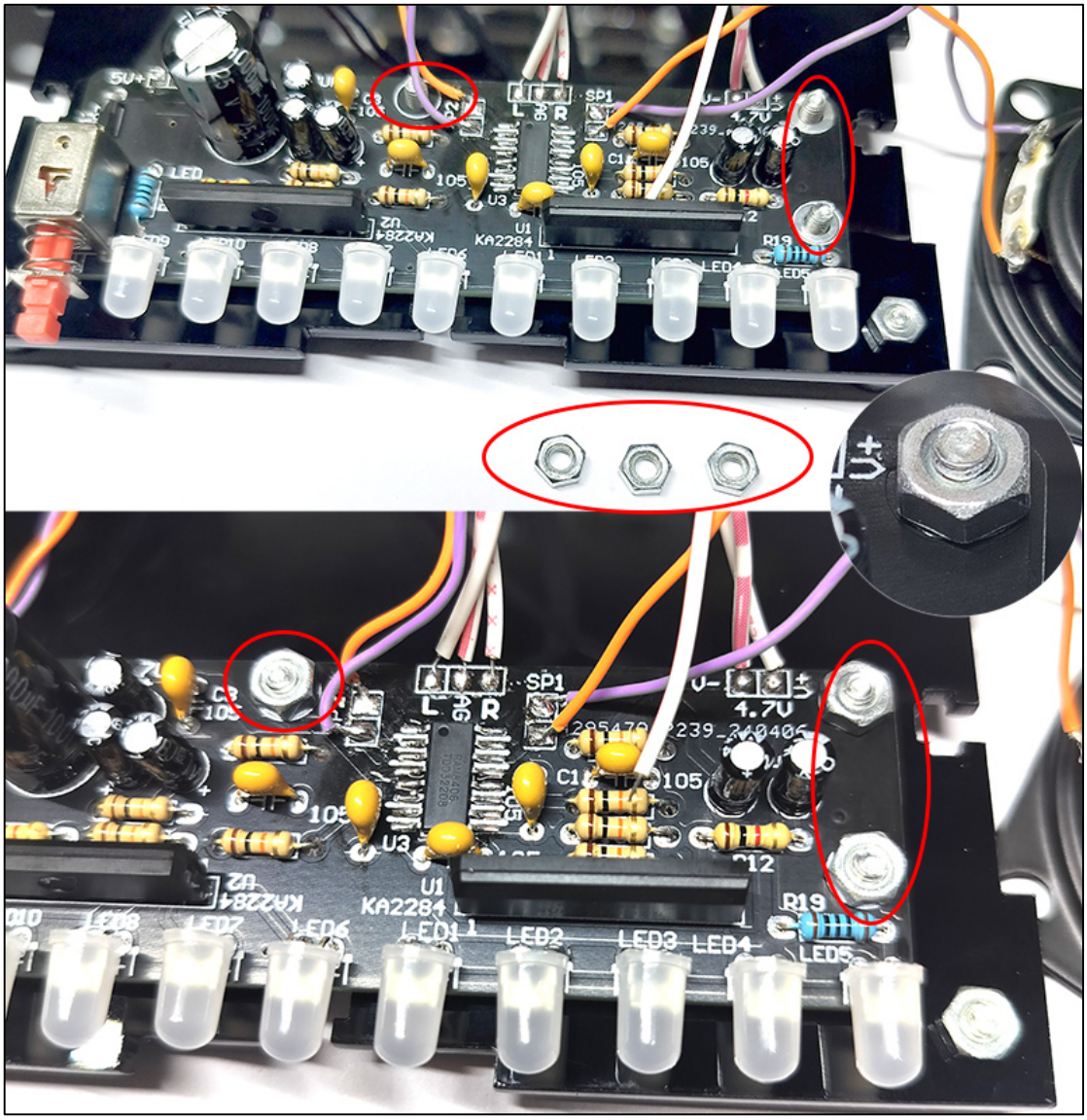
5. Install four foot
pads



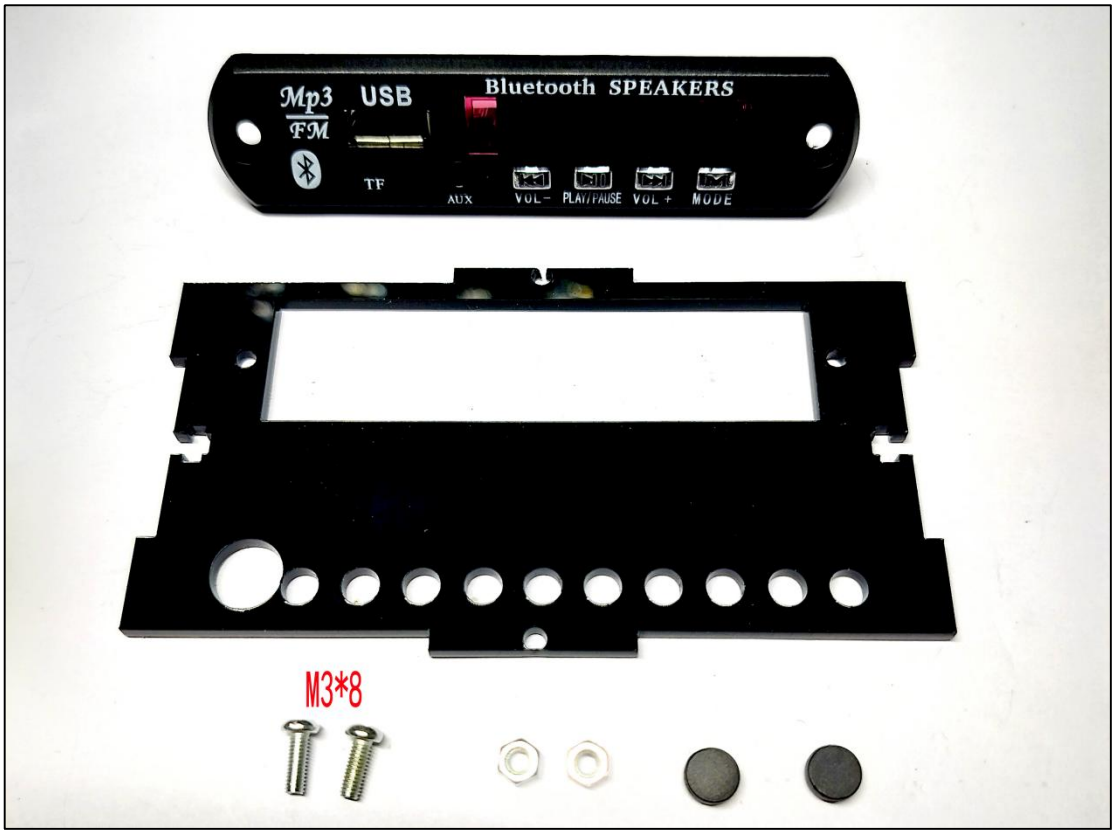
6.After installing the foot pads, find 3 M3 * 10 screws and M3 nuts and install them on the bottom
shell.



7. Install the soldered circuit
board

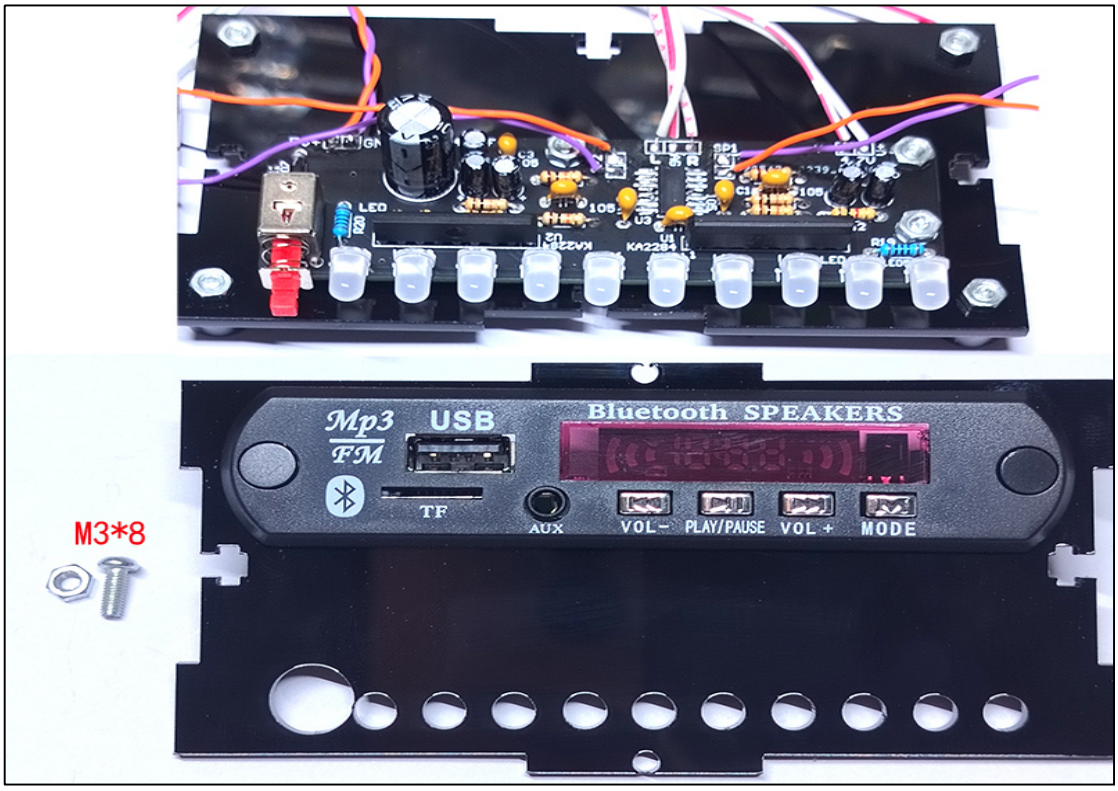


8. Install the multifunctional radio module onto the front housing using two M3 * 8 screws and two M3
nuts.

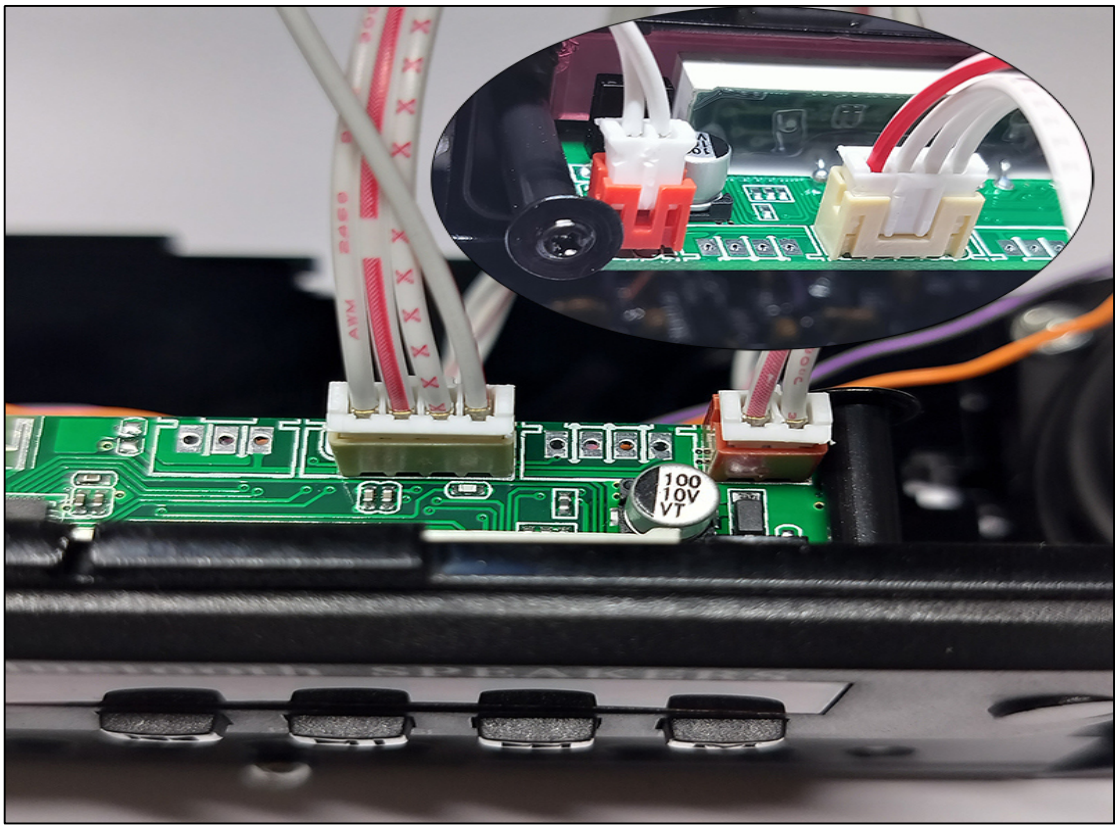

Mp3
FM
USB
Bluetooth SPEAKERS
TF
AUX
VOL-
PLAY/PAUSE
VOL+
MODE
M3*8


Mp3
FM
USB
Bluetooth SPEAKERS
TF
AUX
VOL-
PLAY/PAUSE
VOL+
MODE

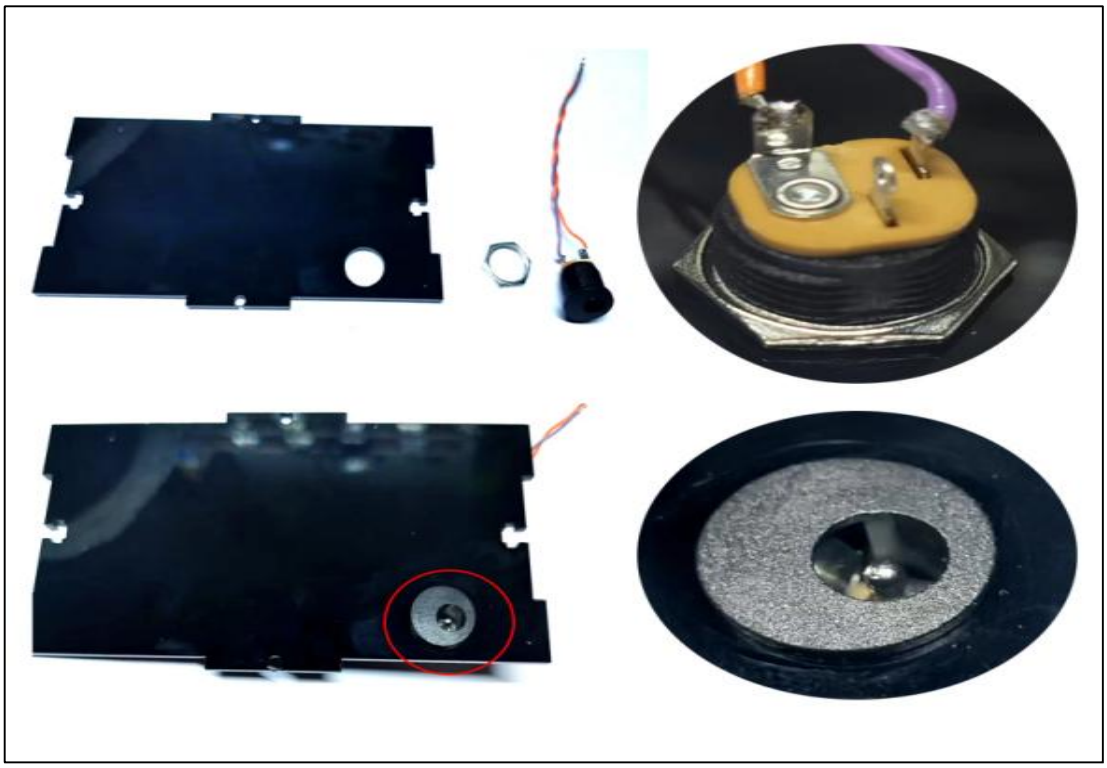
9. Use an M3 * 8 screw and an M3 nut to install the front and bottom shells together.



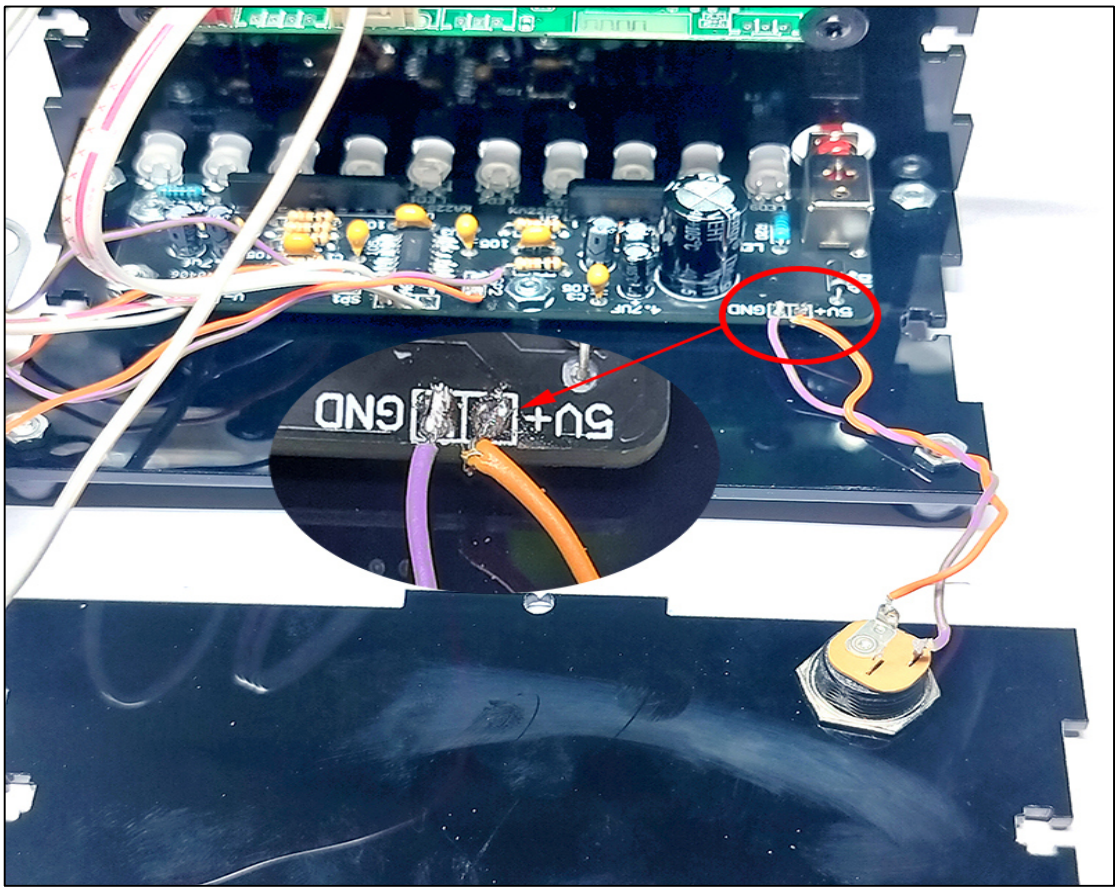
10. Finally, insert the wire and connect the multifunctional radio module to the bottom circuit
board



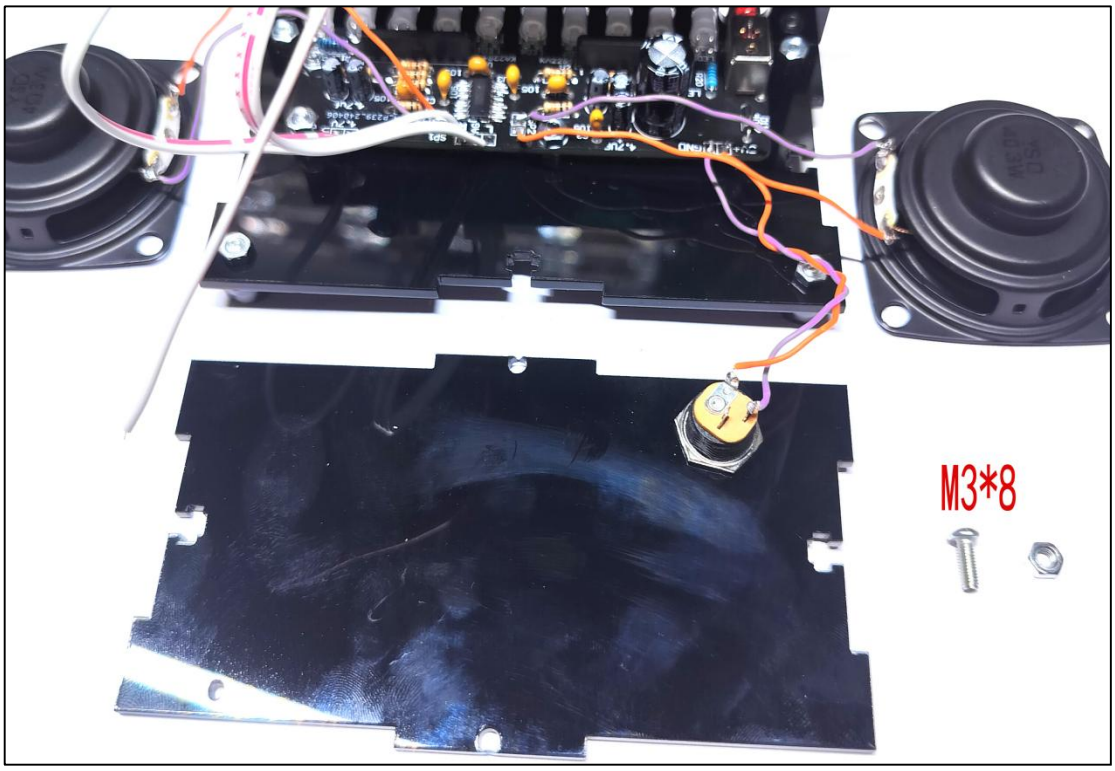
11. Install the DC022 power socket onto the back shell board, paying attention to the installation position of the power socket, as shown in the figure.



12. Weld the wires on the power socket to the position of the circuit board power solder
joint



13. Install one M3 * 8 screw and one M3 nut onto the bottom shell plate

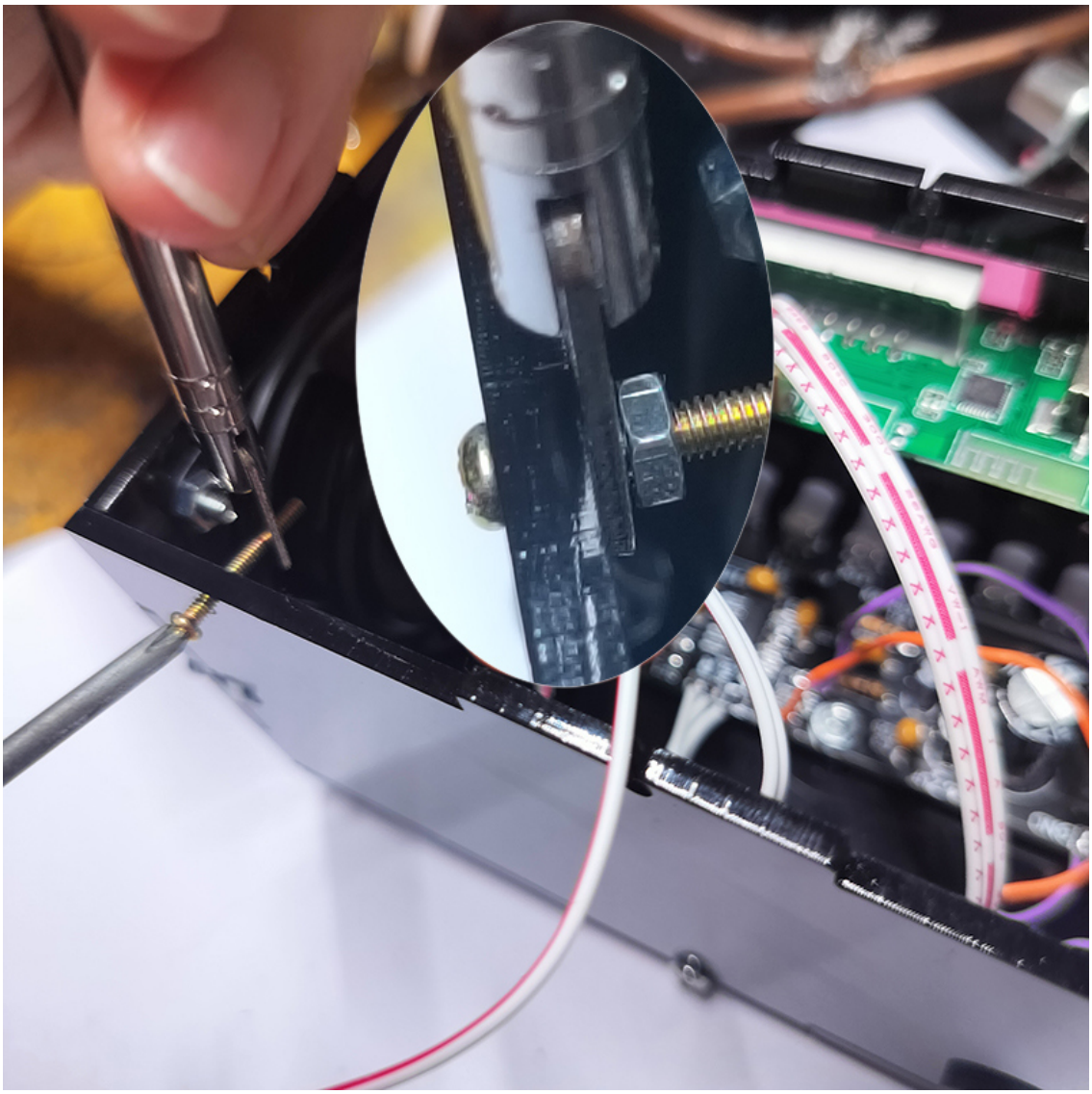

M3*8

14. Install the horn onto the two side shell panels.

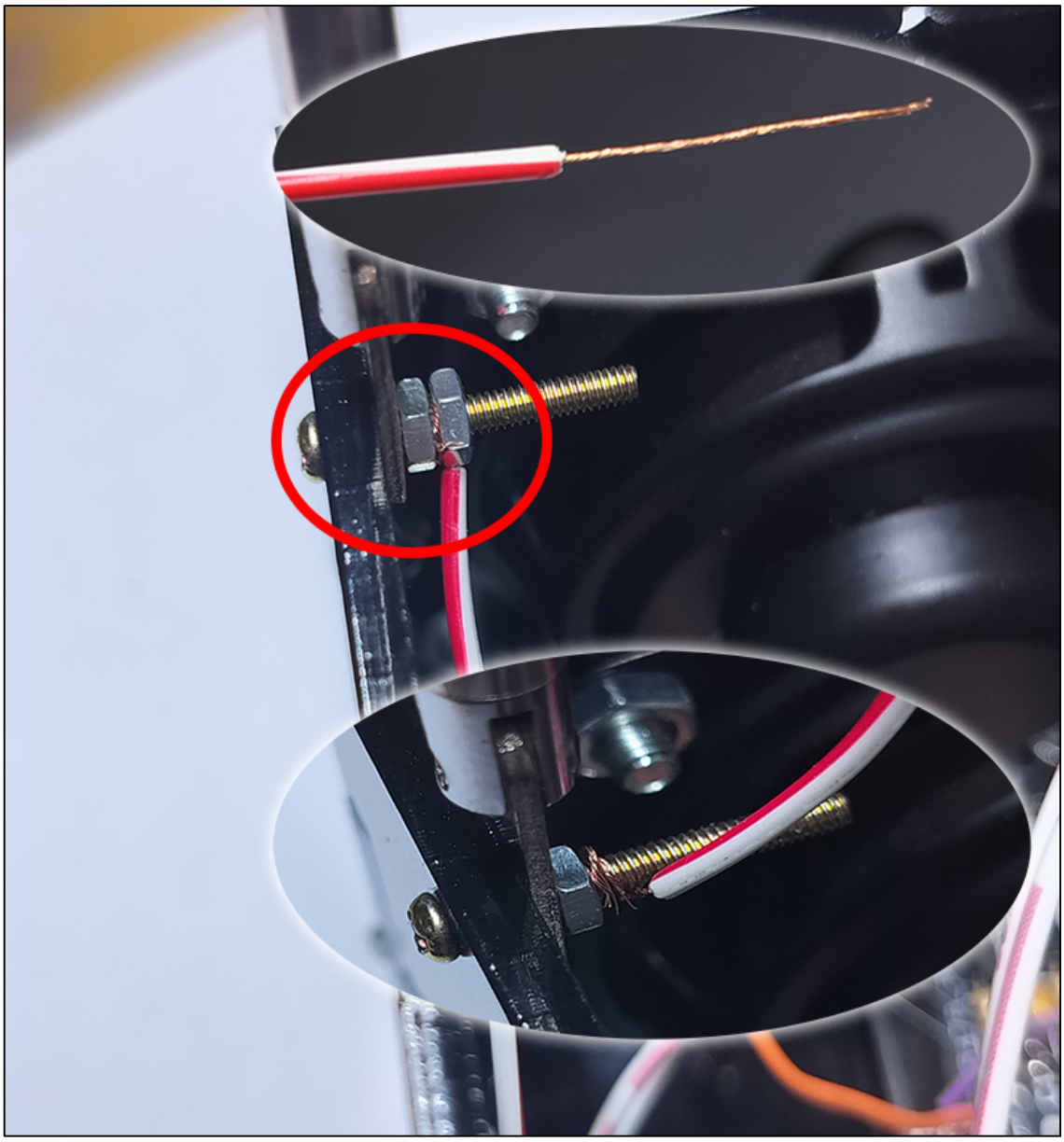
15. Install the two side panels onto the bottom shell board again, being careful not to pull the wires off during installation.15. Install the two side panels onto the bottom shell board again, being careful not to pull the wires off during installation.

16. Find one M2 * 16 screw and two M2 nuts, and use the screws to install the antenna onto the back

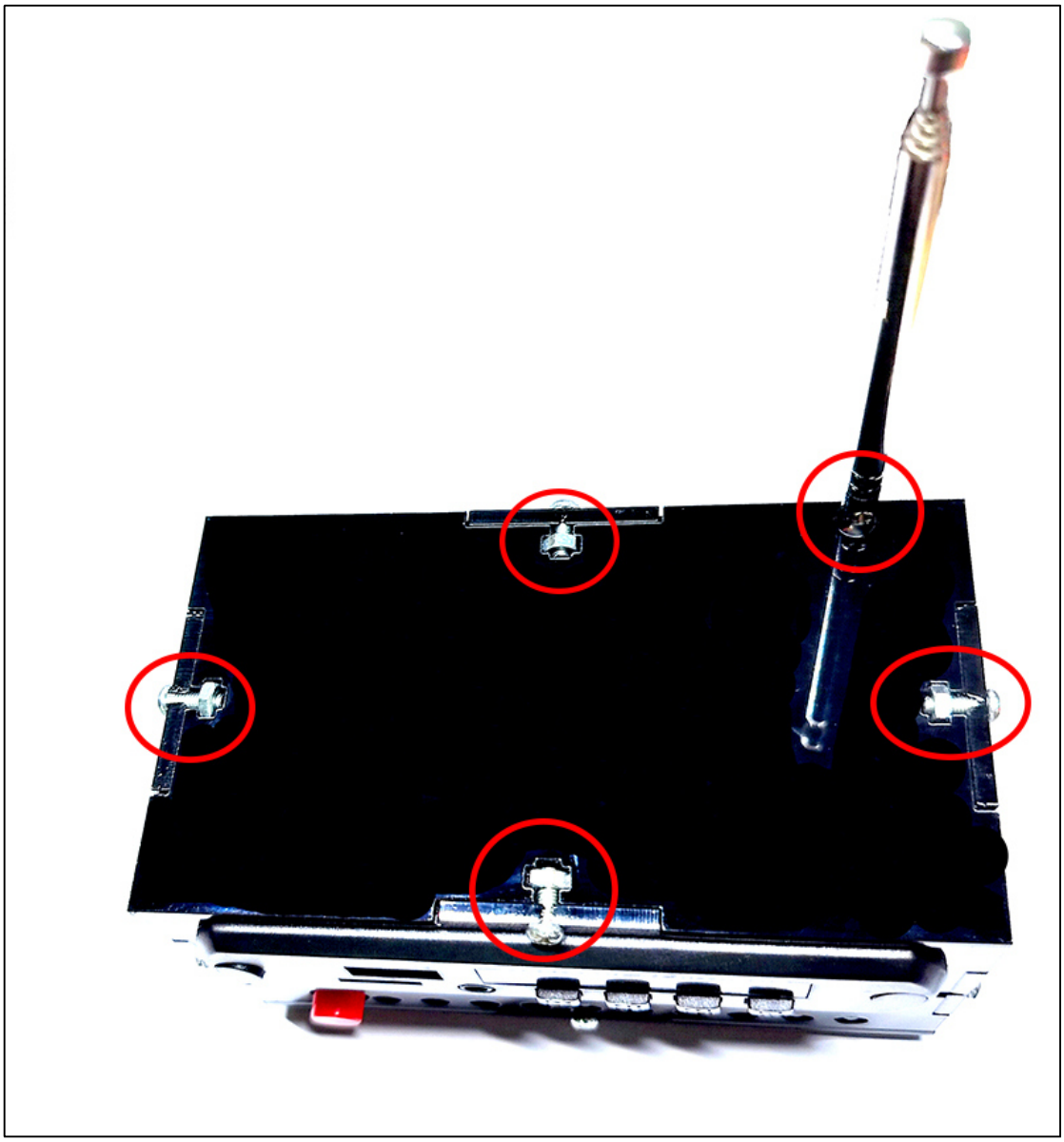
shell.



17. Use wire stripping pliers to peel off the insulation at the end of the wire connecting the antenna on the multi-functional radio module, exposing the copper wire. Then, wrap the copper wire around the M2 * 16 screw and secure it with another M2 nut to prevent the wire from falling
off.



18. Pull the antenna to a vertical angle of 90 °, pass the antenna hole on the outer shell board through the antenna, install it in the upper position, and fix it with 4 M3 * 8 screws and 4 M3
nuts.



At this point, the outer shell is fully installed and can be plugged into a 5V DC power supply for testing.

12.Key operation details:

VOL button:

Long press to decrease the volume;

In USB/SD/FM/BT mode, short press once to select the previous song or FM radio station; In USB/CARD mode, double-click to play the previous music file

Music;

VOL+button:

Long press to increase the volume;

In USB/TF/FM/BT mode, short press once to select the next song or FM radio station; In USB/CARD mode, double-click to play the next music file

Music;

PAUSE button:

In USB/SD/BT/AUX/FM mode, short press once to pause and play;

In the listening mode, long press to automatically receive and coexist with the radio station. After receiving, the radio station will automatically play the first frequency point of the stored radio station;

MODE button:

Short press once: function conversion; Convert Bluetooth TFcard USB - Radio Audio Input;