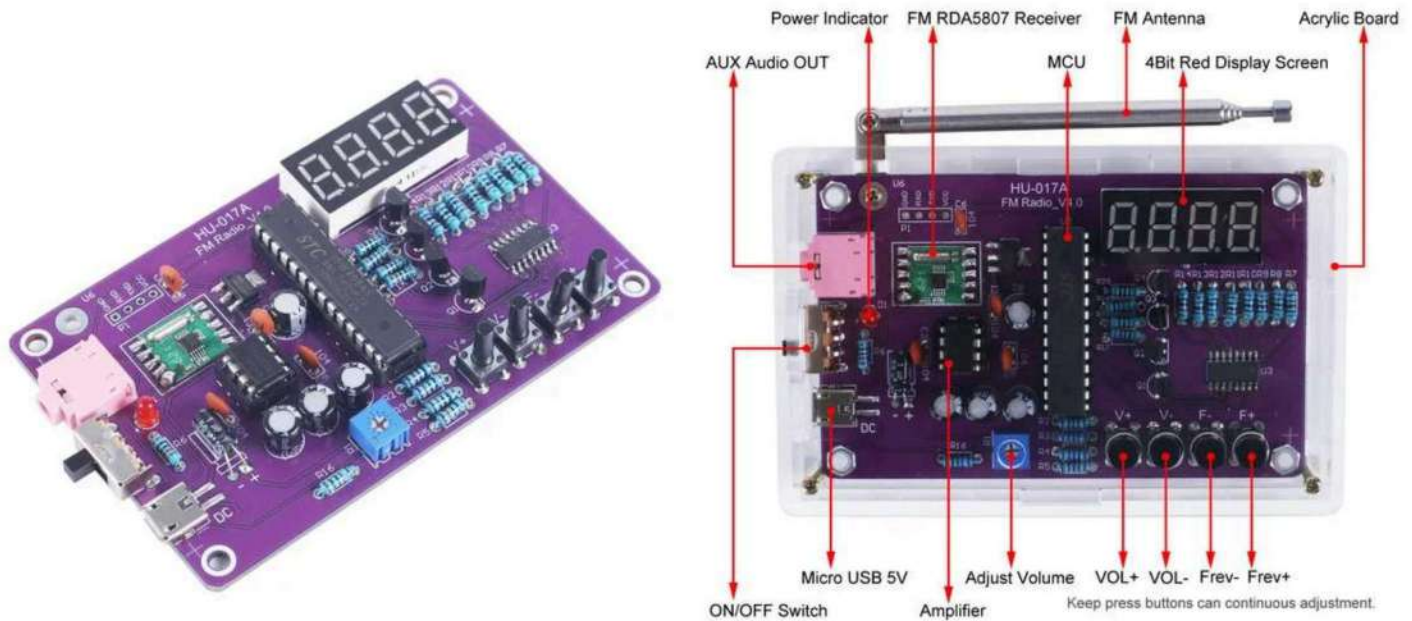


Electronic FM Radio DIY Kit

Instruction Manual



Introduction:

HU-017ASW is an RDA5807 87.0MHz-108.0MHz Wireless [FM Radio Receiver DIY Kit](#) with 4bit digital tube. It uses the 87-108MHz global FM receiving frequency band, which can meet the FM needs of users around the world. It provides two power supply modes for users to use at home or outdoors.

It is a very interesting DIY electronic product which enables users to understand the circuit more clearly and learn soldering skills.

Feature:

1.87.0MHz-108.0MHz FM Radio: Built in RDA5807 FM data processor with standard FM receiving frequency band, applicable to any country and region in the world. Adjustable FM frequency by press F+ and F- buttons.

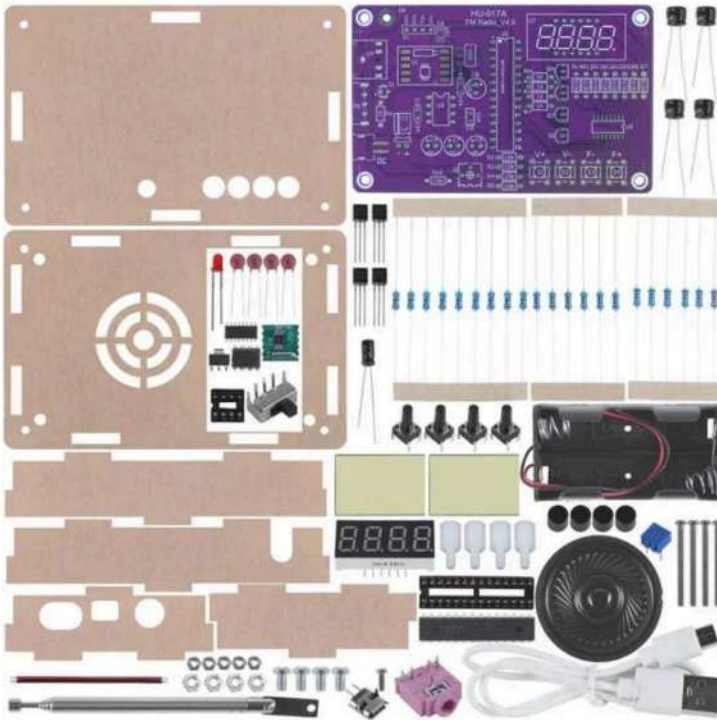
2.Adjustable Volume: It provides two volume adjustment methods: button and potentiometer. 15 volume levels.

3.Active & Passive Audio Output: It not only has built-in 0.5W power amplifier to directly drive 8ohm speakers,but also outputs audio signal to the headset or loudspeaker with AUX interface.Realize personal listening and sharing of FM audio.

4.Configure 25cm dedicated FM antenna and 4Bit red digital tube.Real time display of FM radio frequency.Transparent acrylic shell protect the internal circuit board. Dual power supply methods: 5V USB and 3V battery.

5.DIY Hand Soldering. It's a DIY kit which comes with various components. User need to install each component by hand. It not only can exercise and improve soldering skills, but also increase the interest in electronic technology. Great for electronics hobbyists, beginners, school and home education.

Supplies



Component Listing				
No.	Component Name	PCB Marker	Parameter	Quantity
1	RDAS807M FM Receiver	U1	SMD	1
2	STC15W404AS MCU	U2	DIP-28	1
3	IC Socket	U2	DIP-28	1
4	74HC595D Register	U3	SOP-16	1
5	TDA2822M Amplifier	U9	DIP-8	1
6	IC Socket	U9	DIP-8	1
7	AMS1117-3.3V Voltage Converter	U10	SOT-223	1
8	Metal Film Resistor	R2-R5,R16	10kohm	5
9	Metal Film Resistor	R6,R17-R20	1kohm	5
10	Metal Film Resistor	R7-R14	510ohm	8
11	Potentiometer	R1	200kohm	1
12	Ceramic Capacitor	C1,C2,C6,C9	0.1uF 104	4
13	Electrolytic Capacitor	C3	1uF 50V	1
14	Electrolytic Capacitor	C4,C5,C7,C8	100uF 16V	4
15	S8550 Transistor	Q1-Q4	TO-92	4
16	Red LED	D1	3mm	1
17	4Bit Digital Tube	U7	Red	1
18	Toggle Switch	P5		1
19	SMD Micro USB Socket	DC	2Pin	1
20	Radio Antenna	U6	7.5cm-25cm	1
21	AUX Audio Socket	U4	3.5mm	1
22	Black Button	S1-S4	6*6*8mm	4
23	Button Cap	S1-S4		4
24	0.5W 8ohm Speaker	U8	D40mm	1
25	Red/Black Wire			1
26	Double-sided adhesive			2
27	AA*2 Battery Box			1
28	USB Power Wire			1
29	Acrylic Board			6
30	Nylon Column Screw		M3*8+6mm	4
31	M3 Screw		M3*5mm	4
32	M3 Nut			4
33	M2*22mm Screw			4
34	M2*6mm Screw			1
35	M2 Nut			5
36	PCB		95*58*1.6mm	1

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

Practical DIY Kit

This is a radio electronics soldering kit, come with a package of electronic components and shells, users need to use soldering tools (not included) for assembly.

Perfect for electronics hobbyists and beginners to learn soldering skills and abilities while getting a practical radio.

2 Power Supply Modes

Come with USB power cable, plug in the power supply can be used. In addition, you can solder a battery case yourself, install the battery and take it with you.

With A Headphone Jack

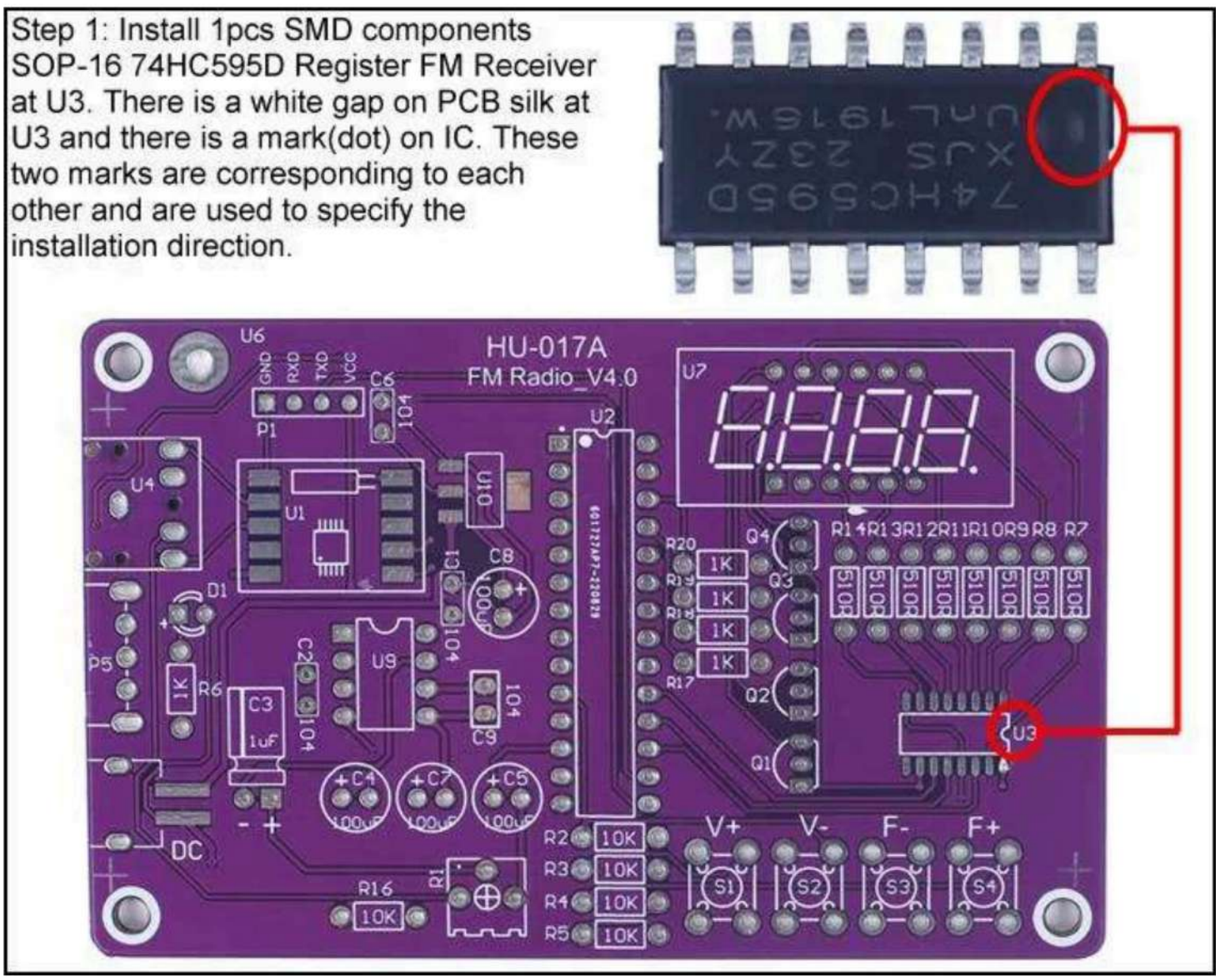
After assembled, you will get a functional radio that has a headphone jack so that you can plug in your headphones and enjoy the channels yourself.

Free Adjustment

You can freely adjust the channel and the volume you want to listen to, and in addition, you can adjust the volume by adjusting the potentiometer on R1.

Step 1: Install 1pcs SMD Components SOP-16 74HC595D Register FM Receiver at U3

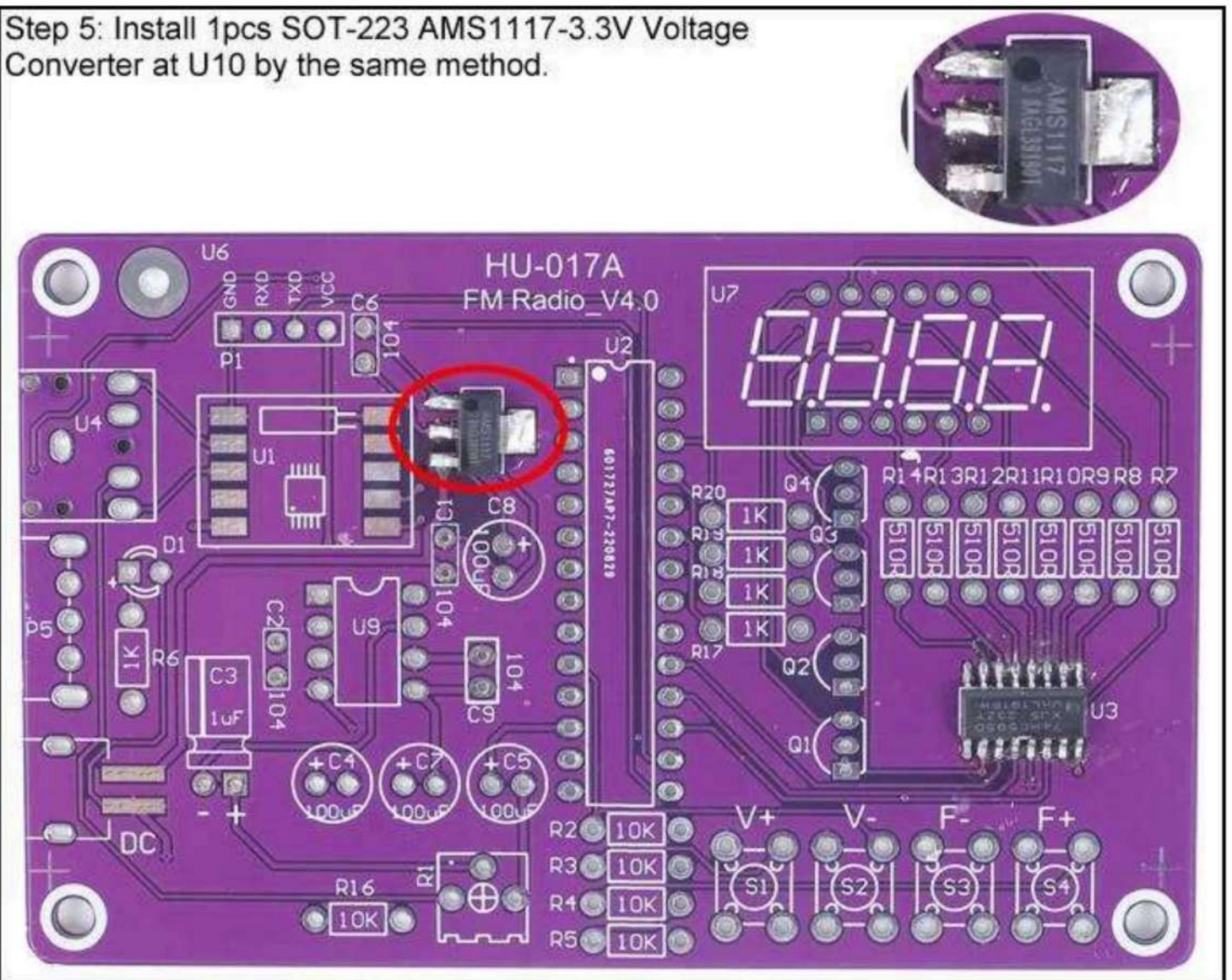
Step 1: Install 1pcs SMD components SOP-16 74HC595D Register FM Receiver at U3. There is a white gap on PCB silk at U3 and there is a mark(dot) on IC. These two marks are corresponding to each other and are used to specify the installation direction.



There is a white gap on PCB silk screen at U3 and there is a mark(dot) on IC. These two marks are corresponding to each other and are used to specify the

Step 2: Install 1pcs SOT-223 AMS1117-3.3V Voltage Converter at U10 by the Same Method.

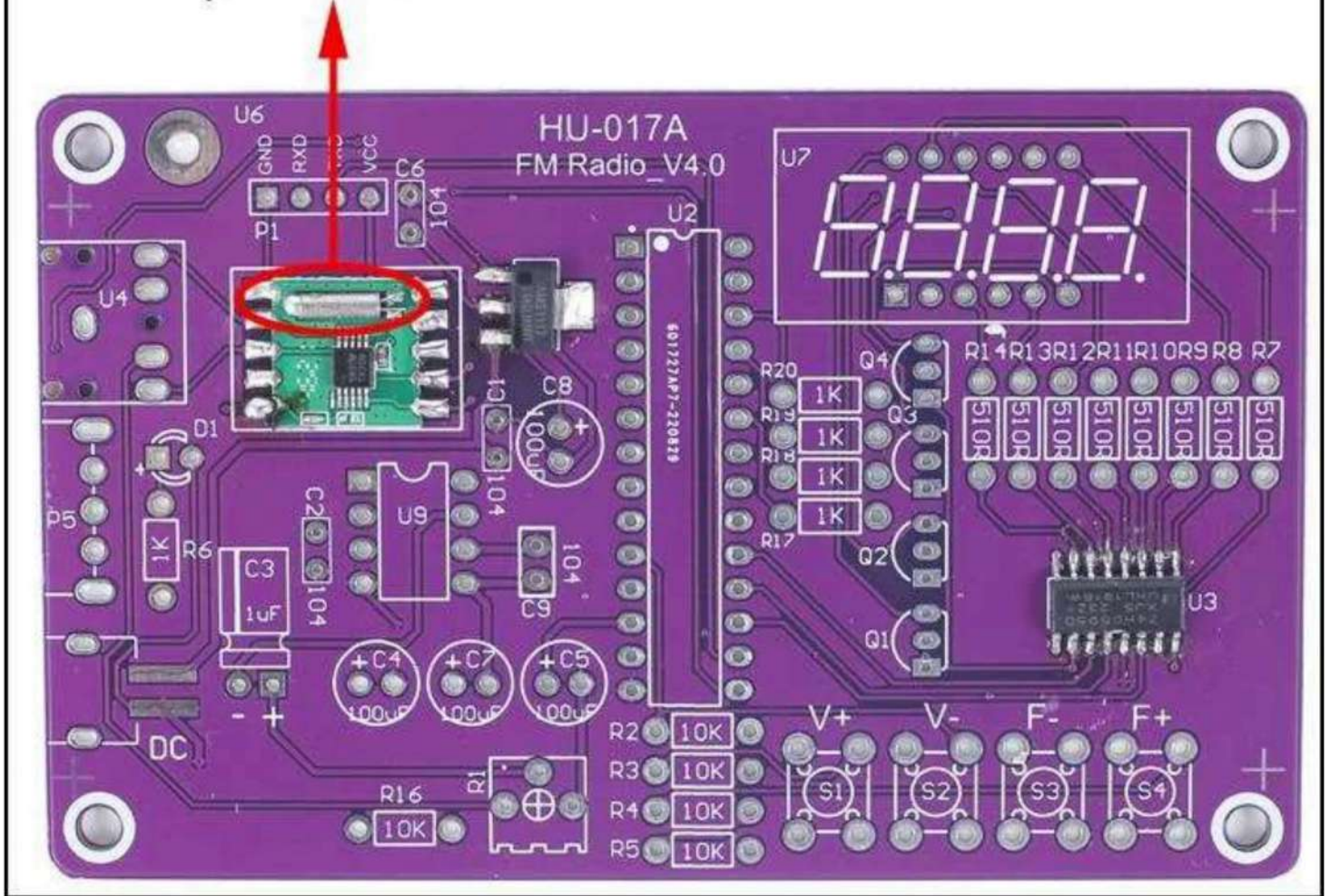
Step 5: Install 1pcs SOT-223 AMS1117-3.3V Voltage Converter at U10 by the same method.



Step 3: Install 1pcs SMD RDA5807M FM Receiver at U1 by the Same Method.

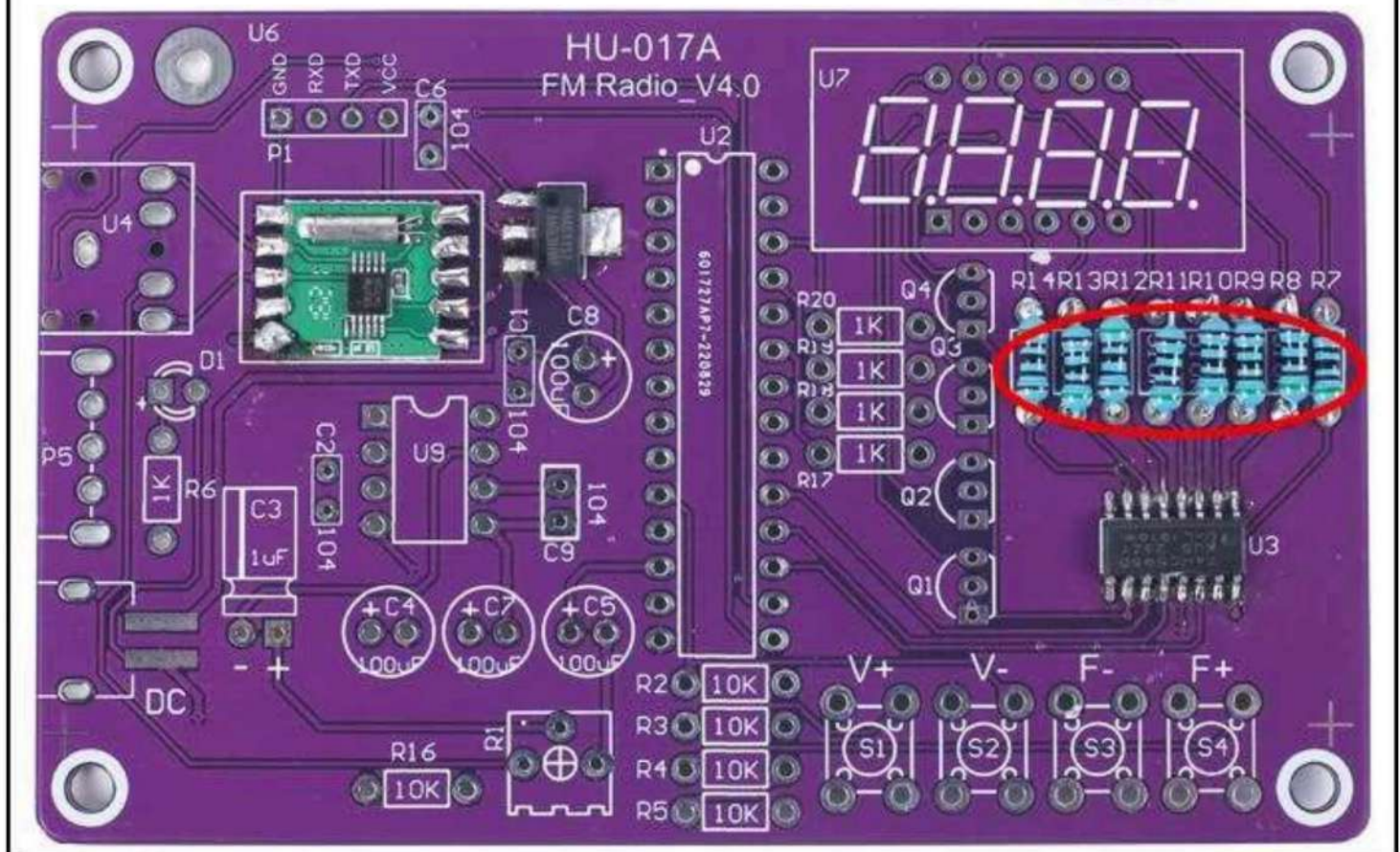
Step 6: Install 1pcs SMD RDA5807M FM Receiver at U1 by the same method.

Pay attention to the installation direction



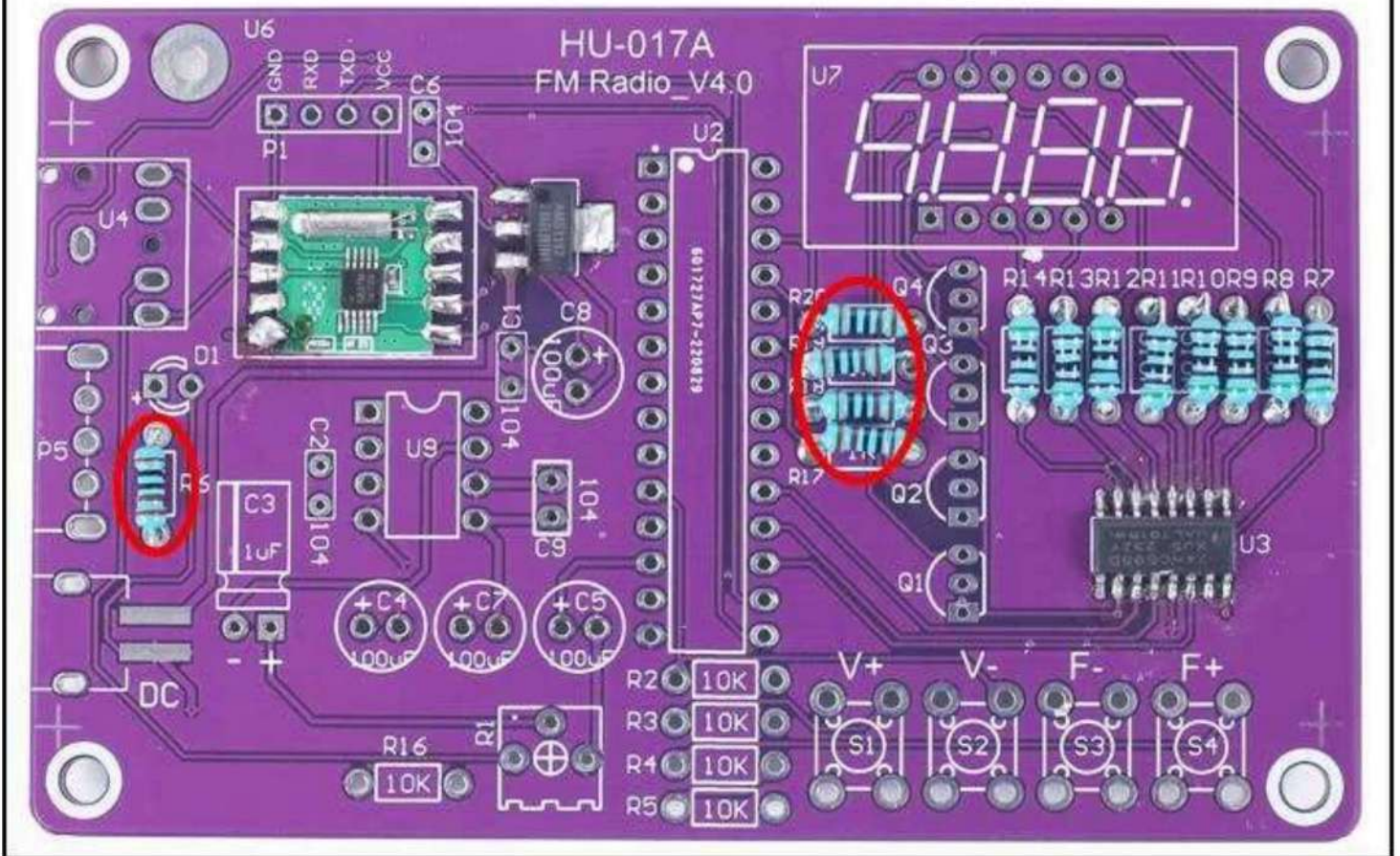
Step 4: Install 8pcs 510ohm Metal Film Resistor at R7-R14

Step 7: Install 8pcs 510ohm Metal Film Resistor at R7-R14.



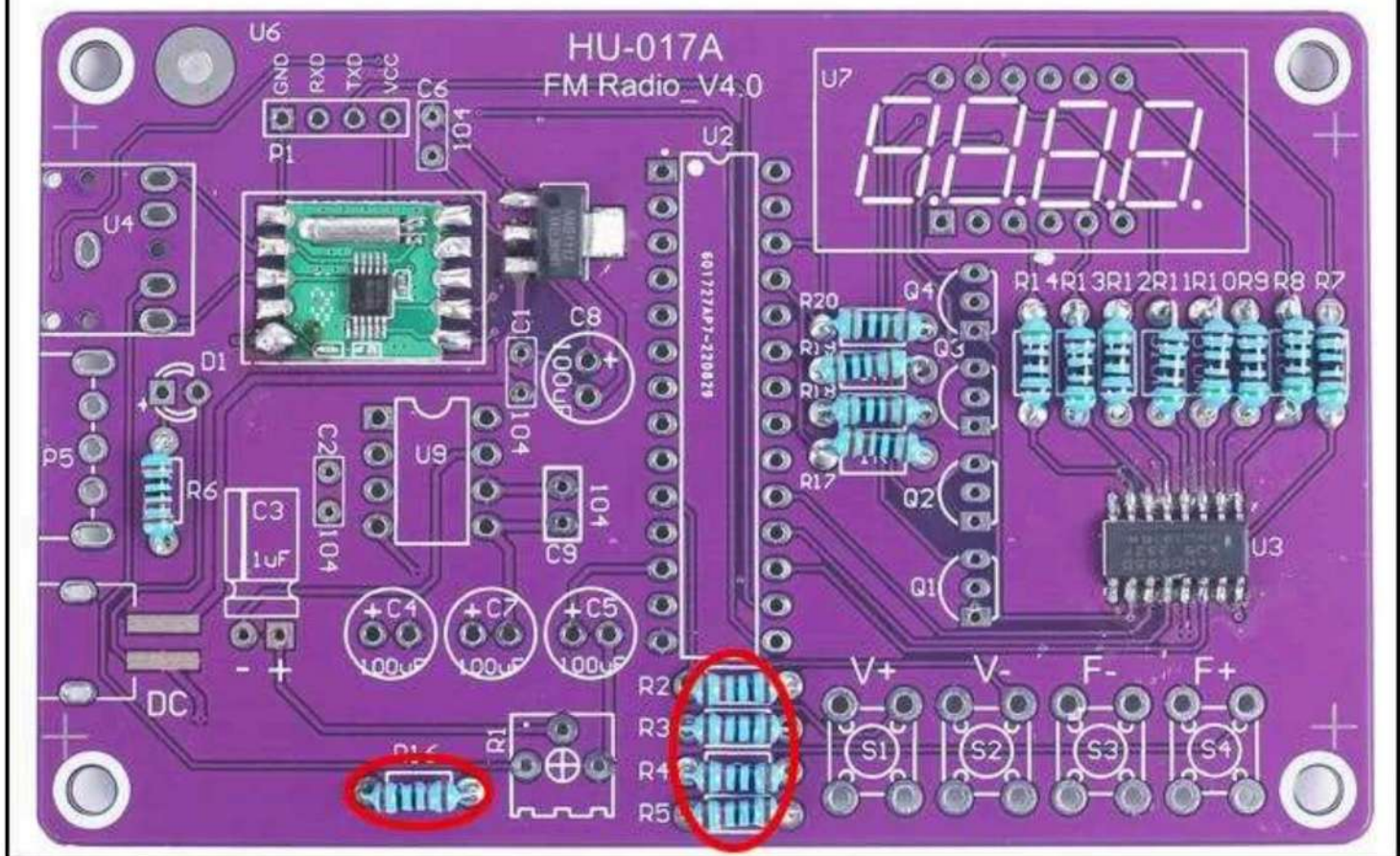
Step 5: Install 5pcs 1Kohm Metal Film Resistor at R6,R17-R20

Step 8: Install 5pcs 1Kohm Metal Film Resistor at R6,R17-R20.



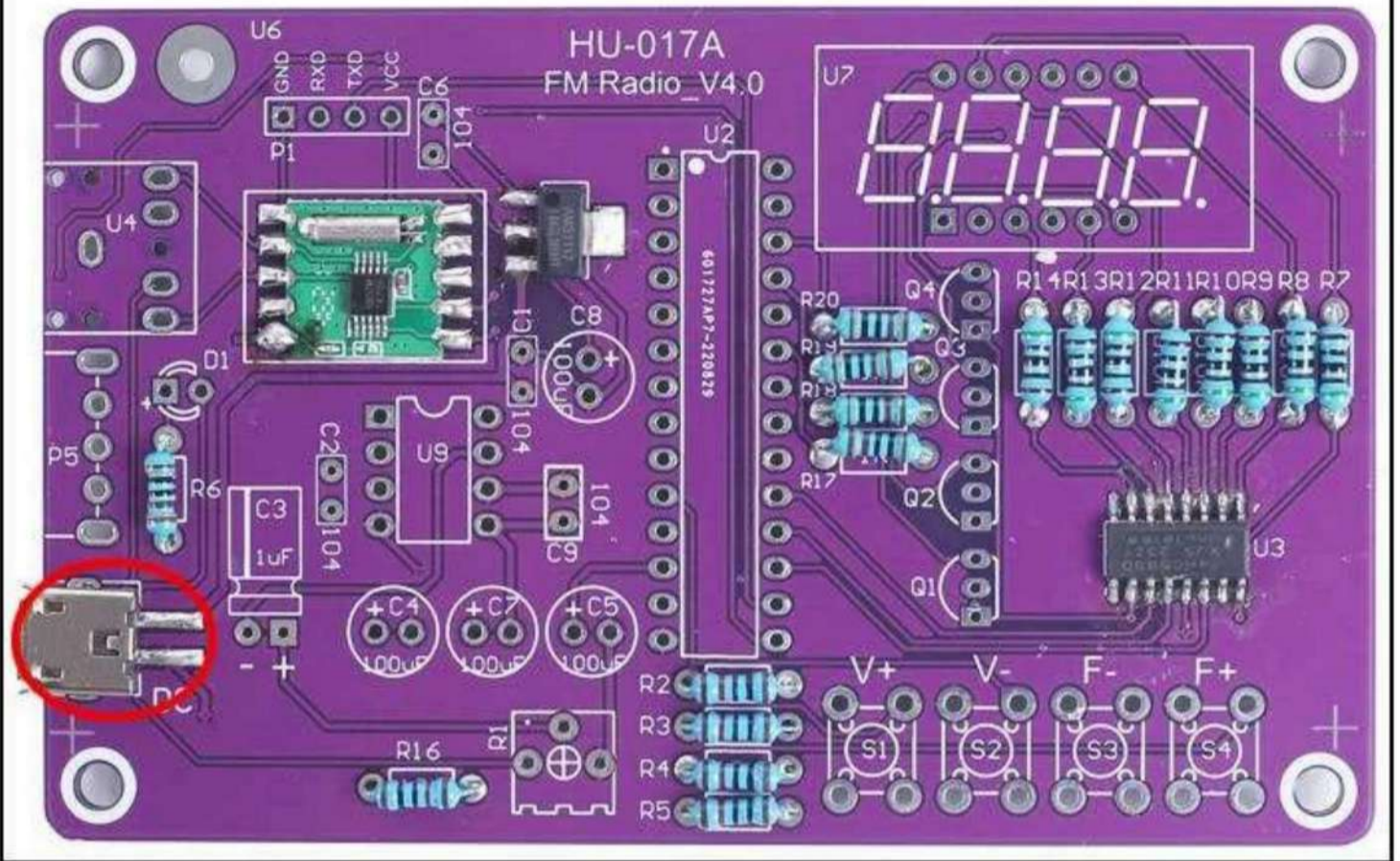
Step 6: Install 5pcs 10Kohm Metal Film Resistor at R2-R5,R16

Step 9: Install 5pcs 10Kohm Metal Film Resistor at R2-R5,R16.



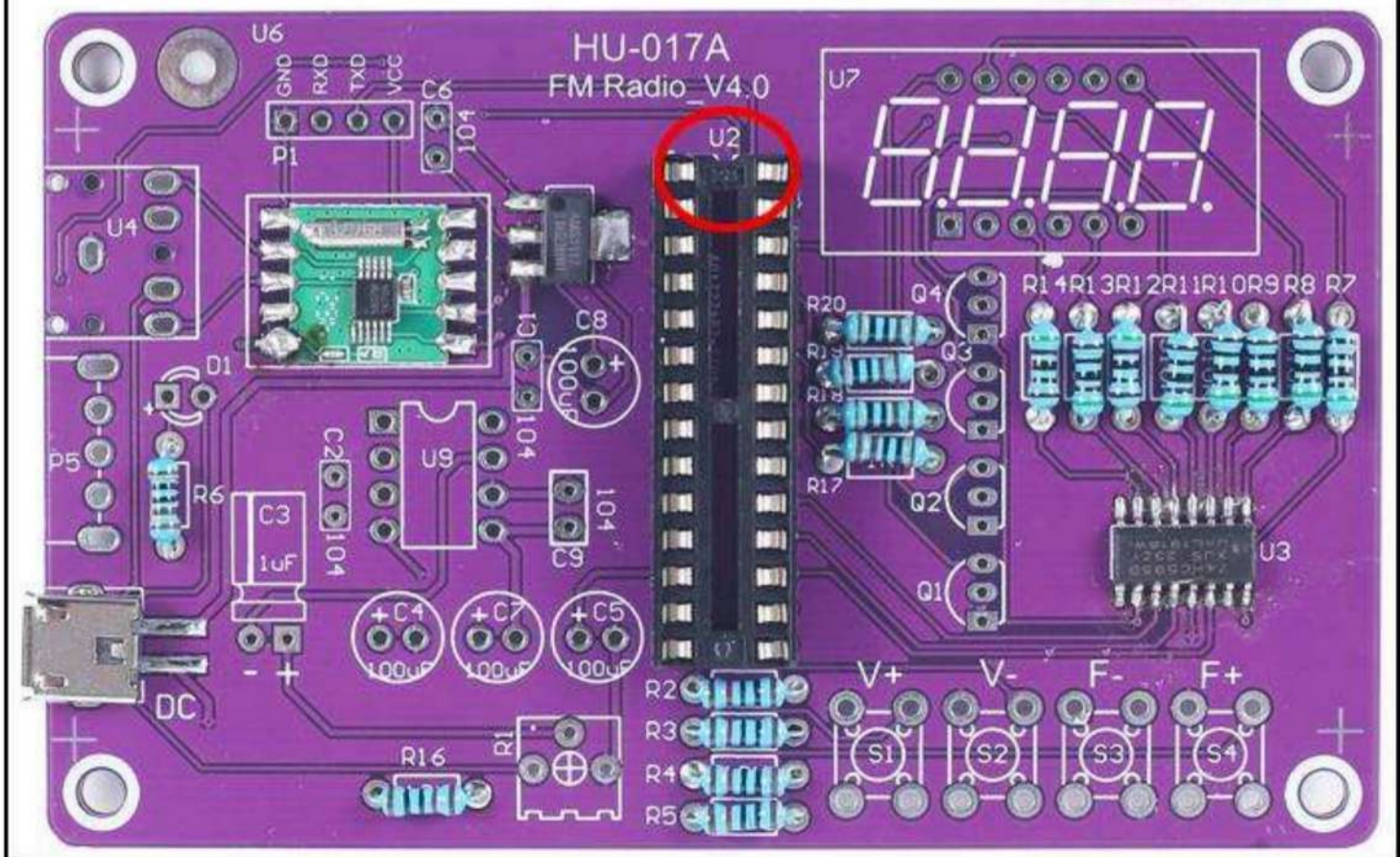
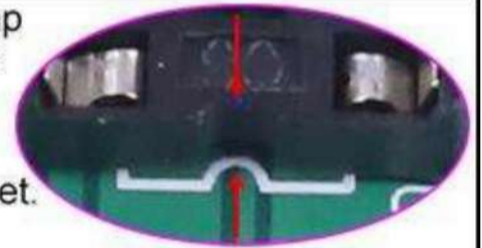
Step 7: Install 1pcs 2Pin SMD Micro USB Socket at DC

Step 10: Install 1pcs 2Pin SMD Micro USB Socket at DC.



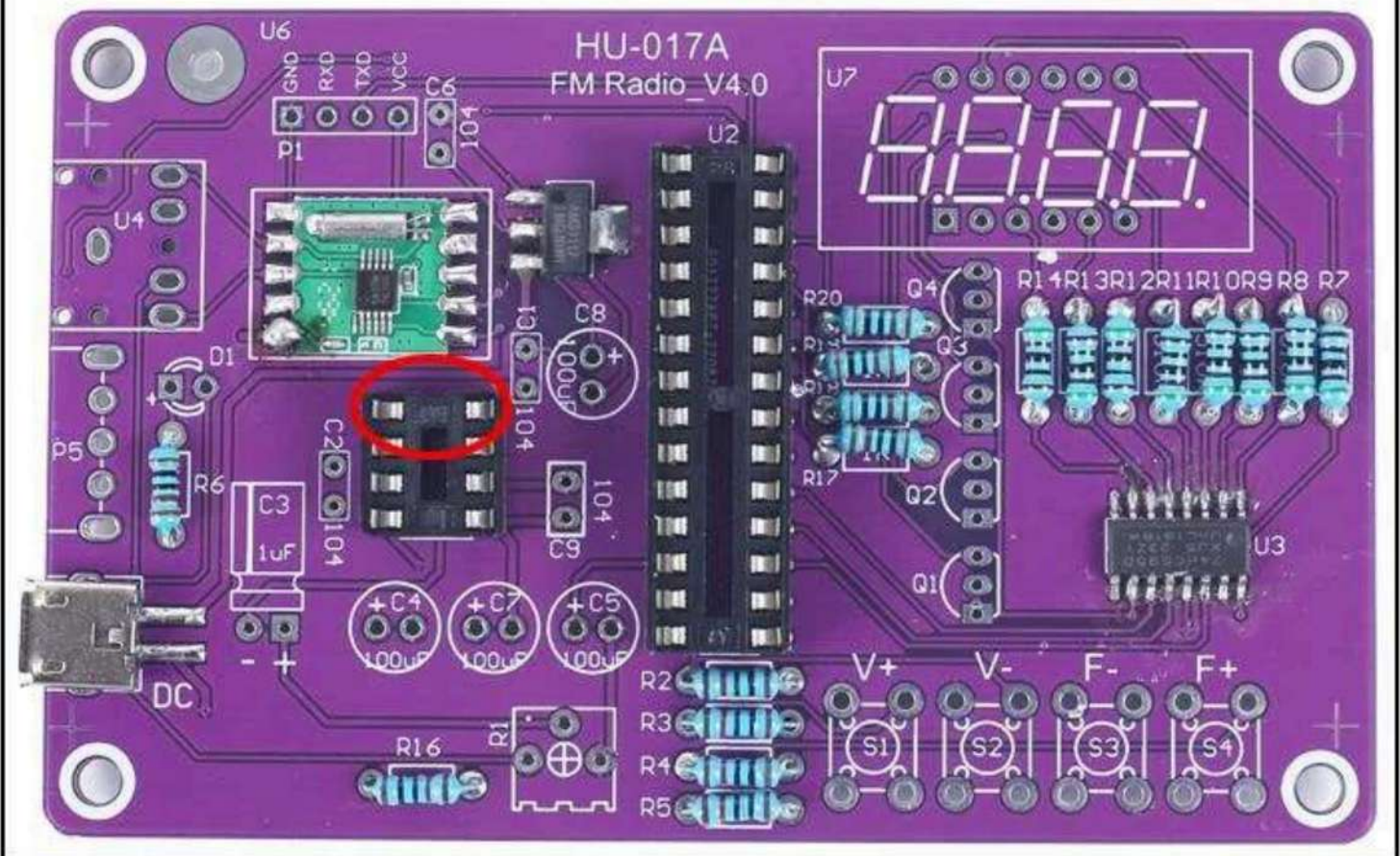
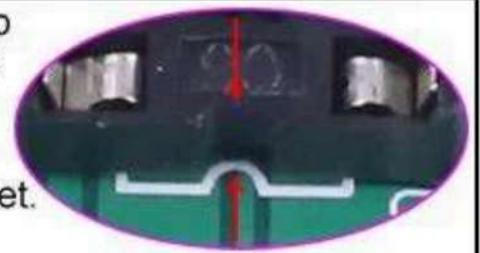
Step 8: Install 1pcs DIP-28 IC Socket at U2

Step 11: Install 1pcs DIP-28 IC Socket at U2. There is a gap mark on one end of the IC Socket and there is a gap mark on PCB silk screen 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.



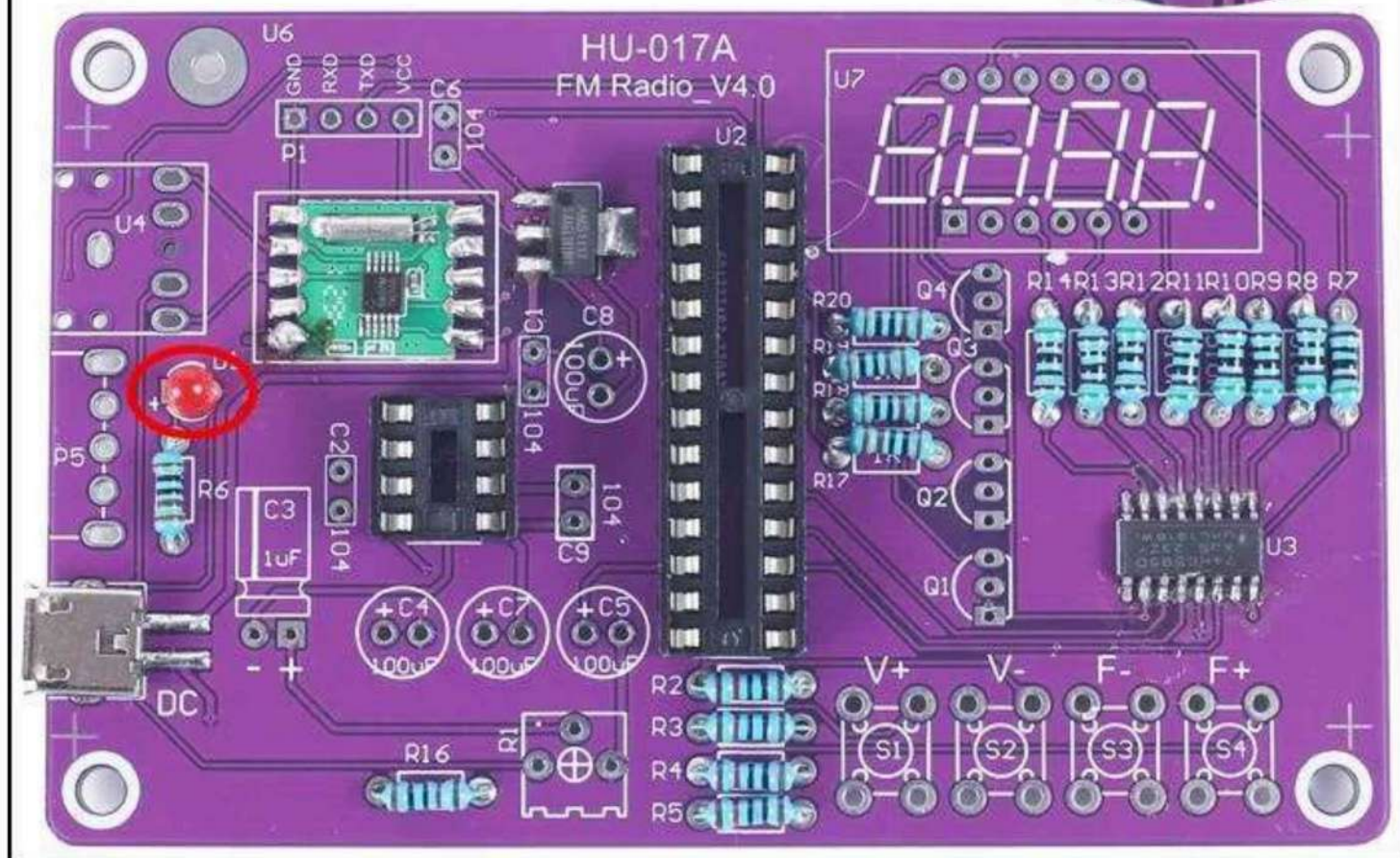
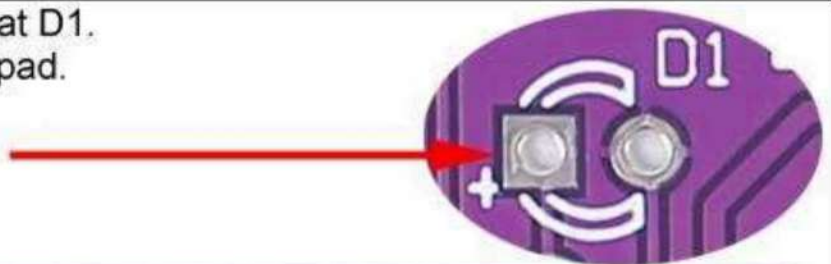
Step 9: Install 1pcs DIP-8 IC Socket at U9

Step 12: Install 1pcs DIP-8 IC Socket at U9. There is a gap mark on one end of the IC Socket and there is a gap mark on PCB silk screen 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.



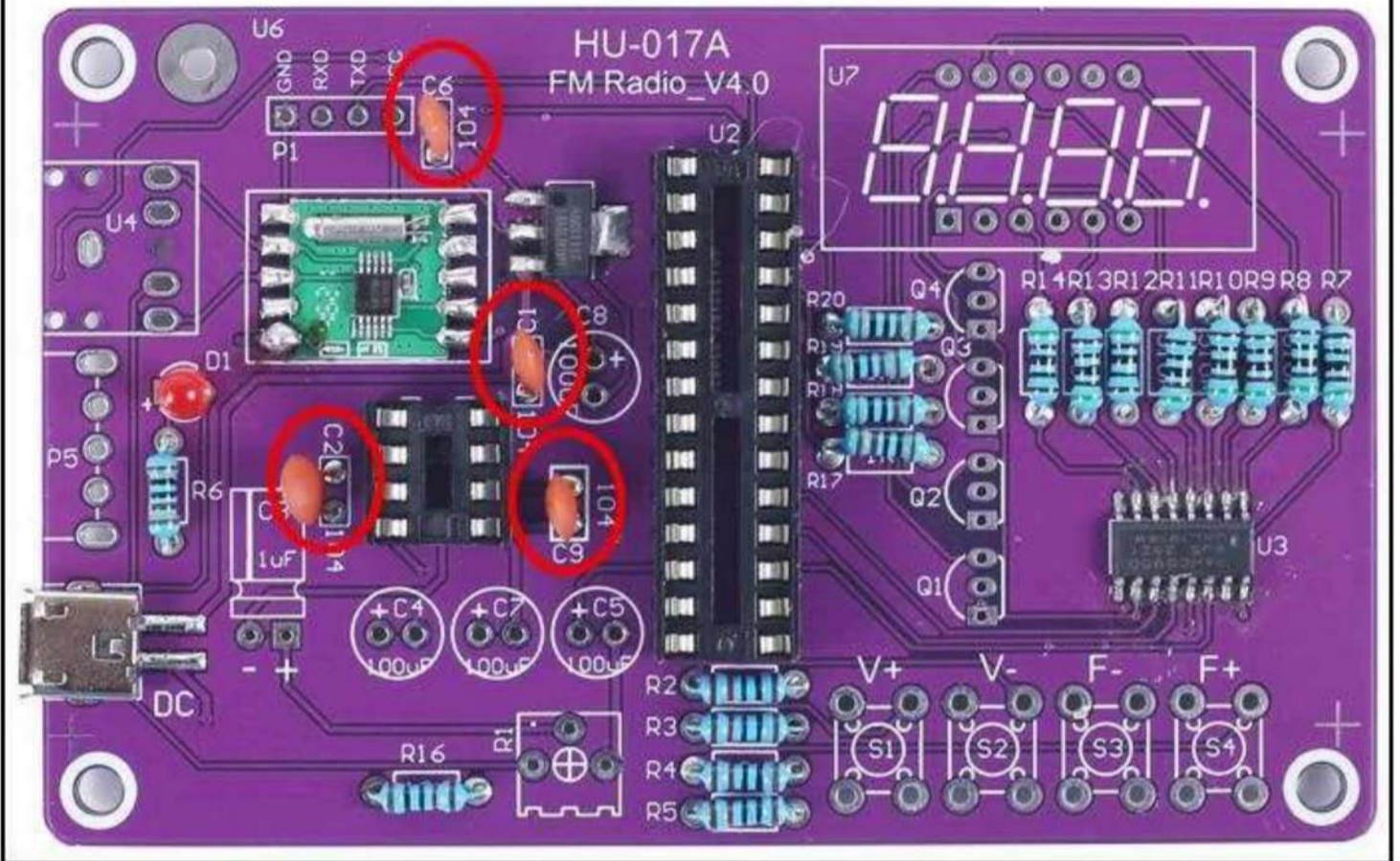
Step 10: Install 1pcs 3mm Red LED at D1

Step 13: Install 1pcs 3mm Red LED at D1.
Note: The longer pin connect to '+' pad.



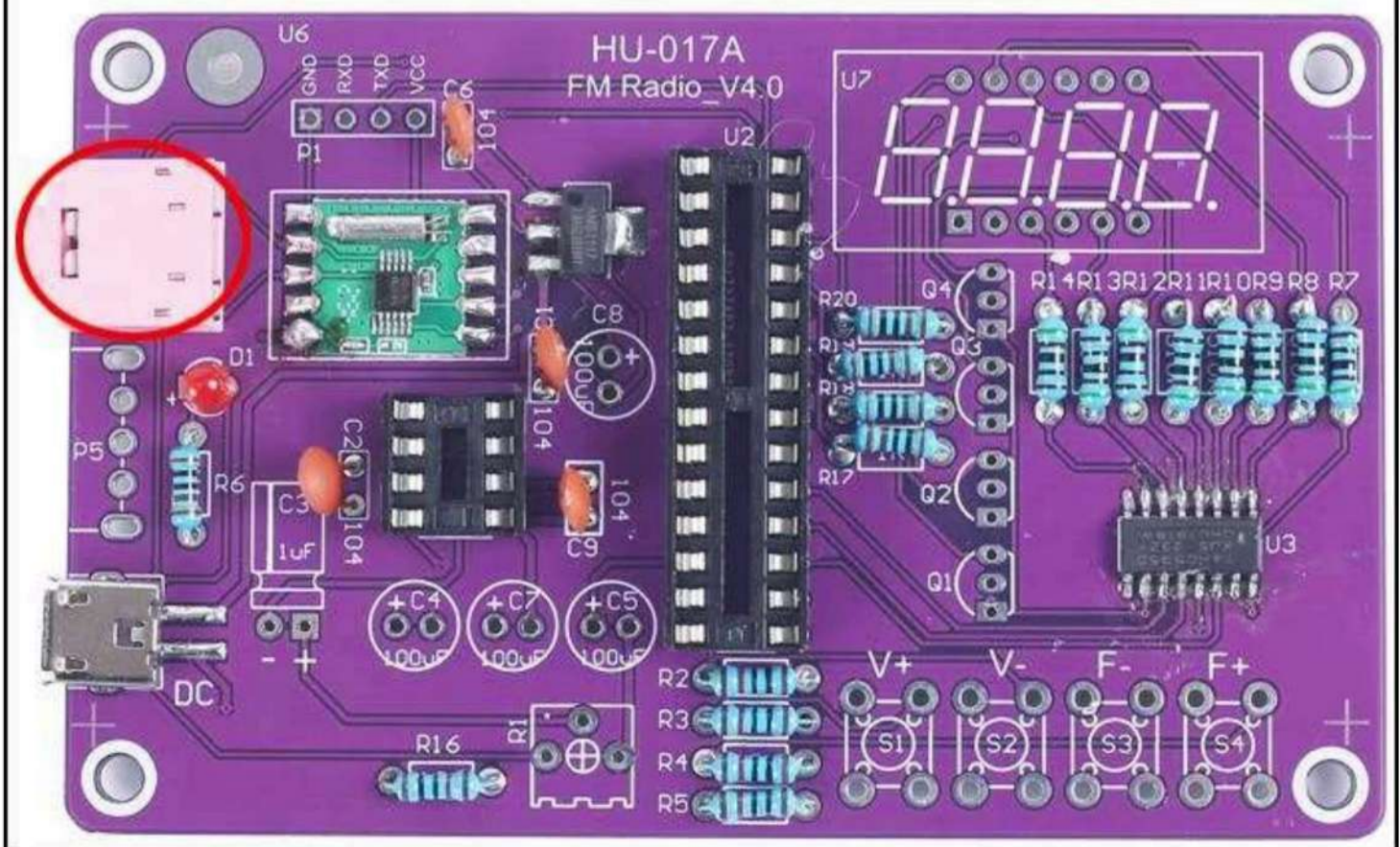
Step 11: Install 4pcs 0.1uF 104 Ceramic Capacitor at C1,C2,C6,C9

Step 14: Install 4pcs 0.1uF 104 Ceramic Capacitor at C1,C2,C6,C9.



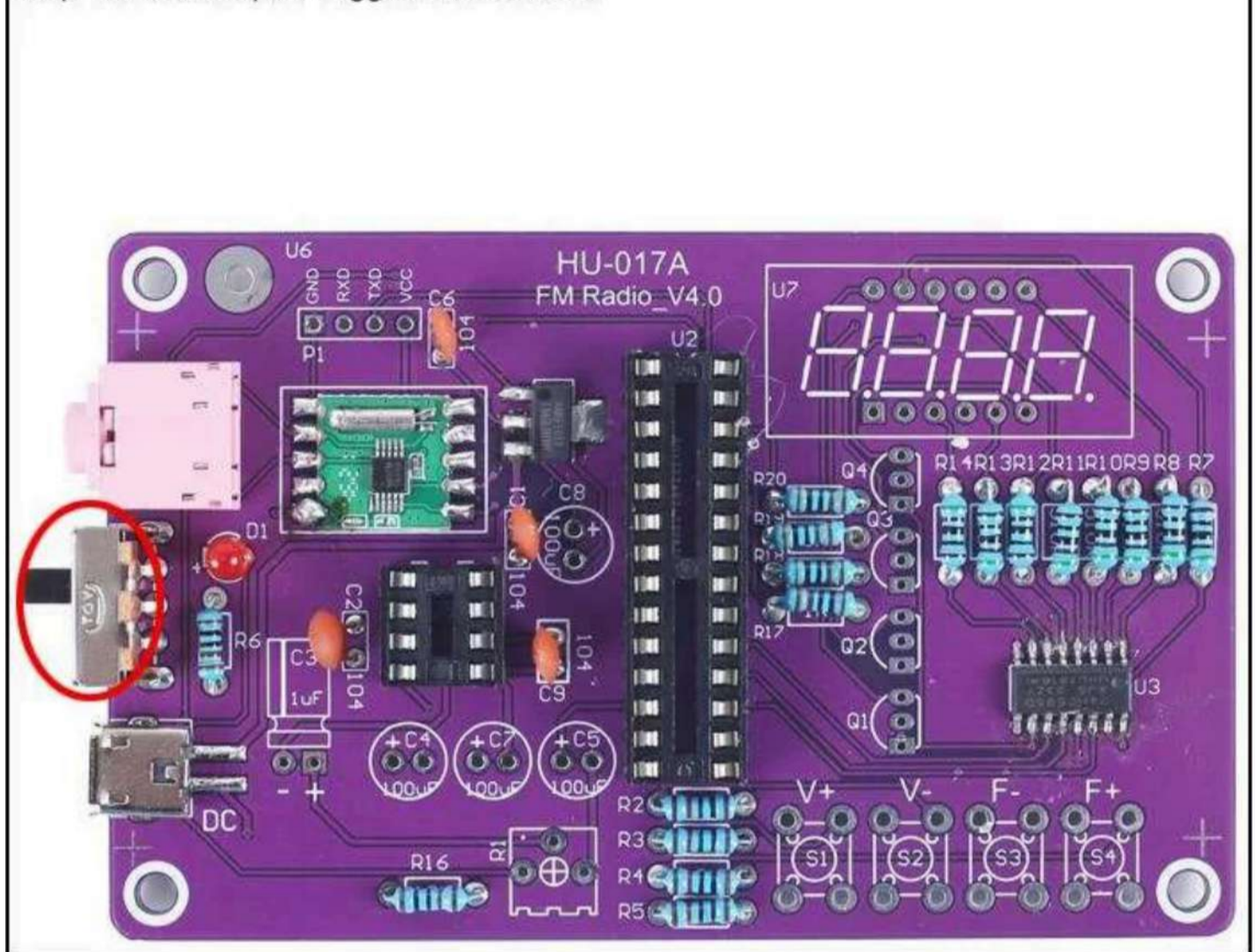
Step 12: Install 1pcs 3.5mm AUX Audio Socket at U4

Step 15: Install 1pcs 3.5mm AUX Audio Socket at U4.



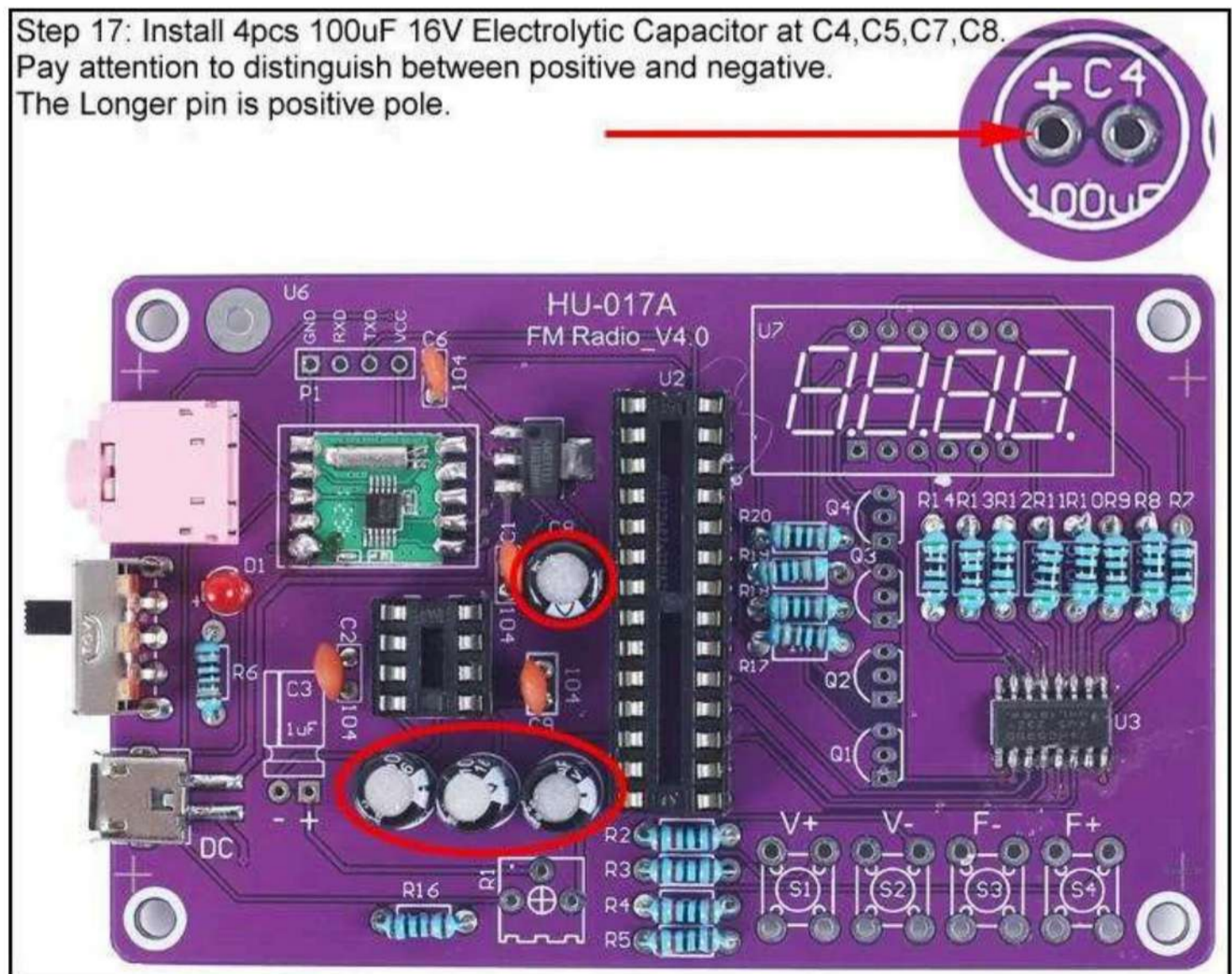
Step 13: Install 1pcs Toggle Switch at P5

Step 16: Install 1pcs Toggle Switch at P5.



Step 14: Install 4pcs 100uF 16V Electrolytic Capacitor at C4,C5,C7,C8

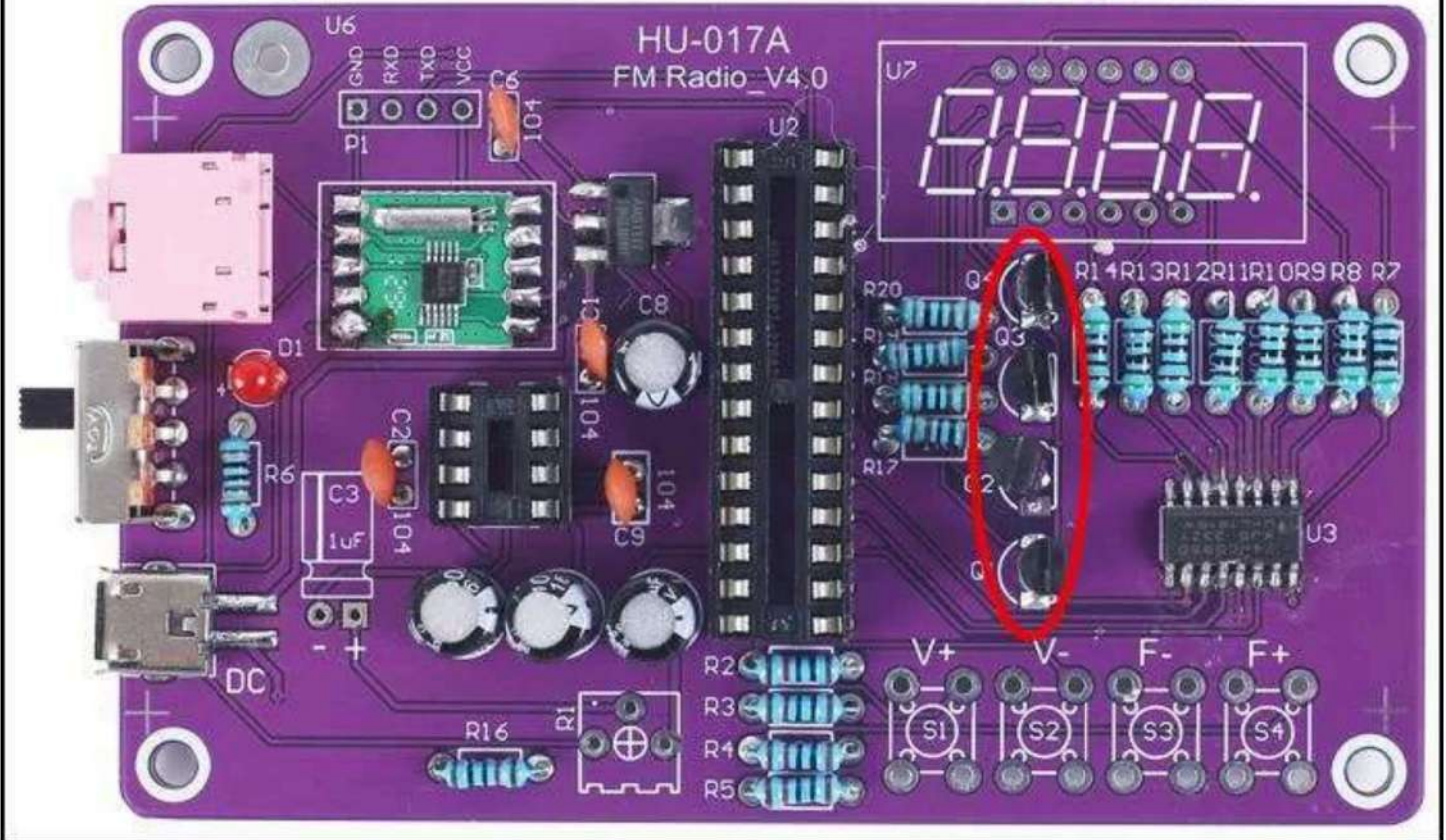
Step 17: Install 4pcs 100uF 16V Electrolytic Capacitor at C4,C5,C7,C8. Pay attention to distinguish between positive and negative. The Longer pin is positive pole.



Step 15: Install 1pcs TO-92 S8550 Transistor at Q1-Q4

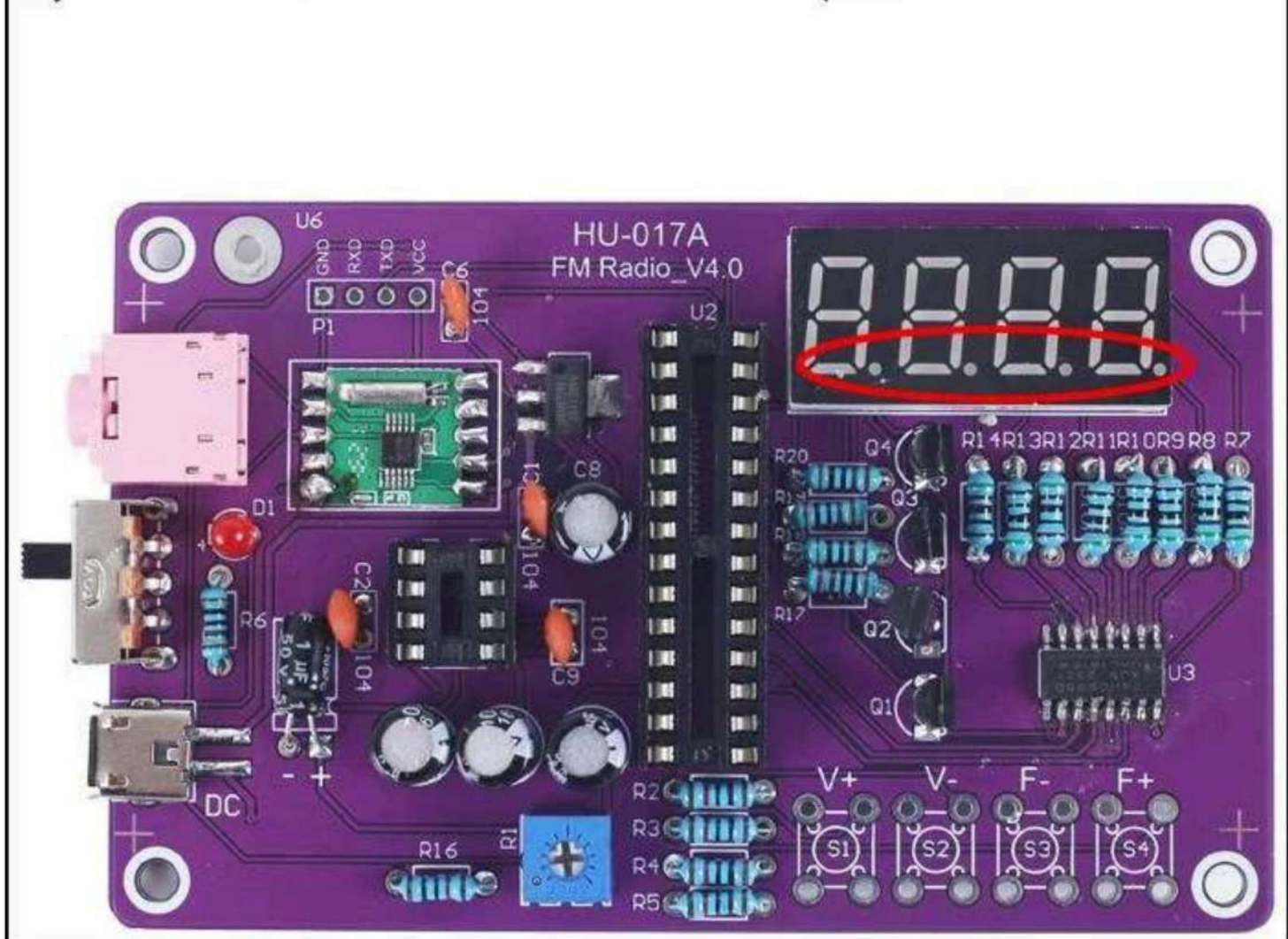
Step 18: Install 1pcs TO-92 S8550 Transistor at Q1-Q4.
Pay attention to the installation direction.
The arc on the PCB corresponds to the arc of the components.

arc-shaped



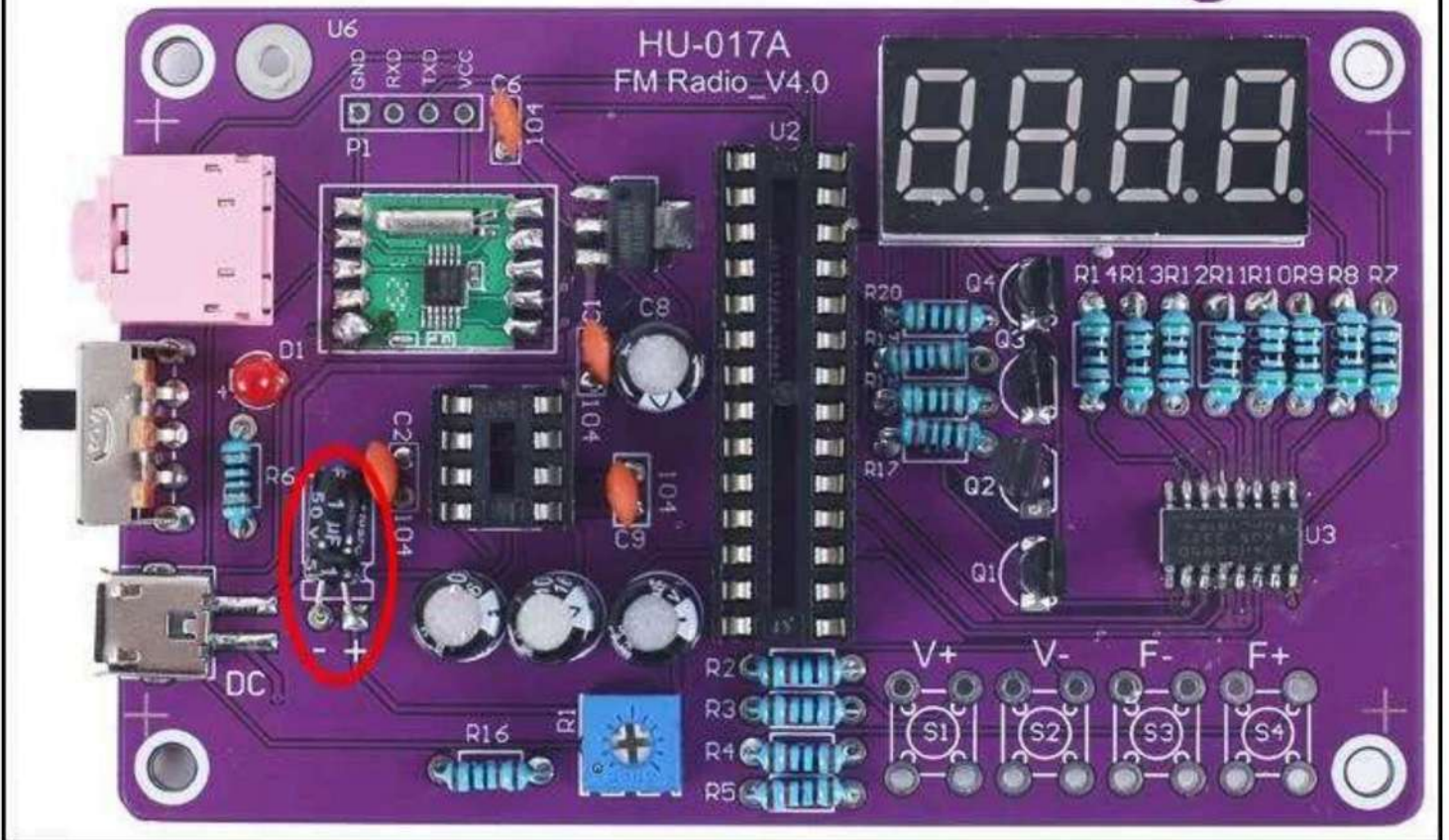
Step 16: Install 1pcs 4Bit Red Digital Tube at U7

Step 19: Install 1pcs 4Bit Red Digital Tube at U7.
Pay attention to the installation direction of the decimal point.



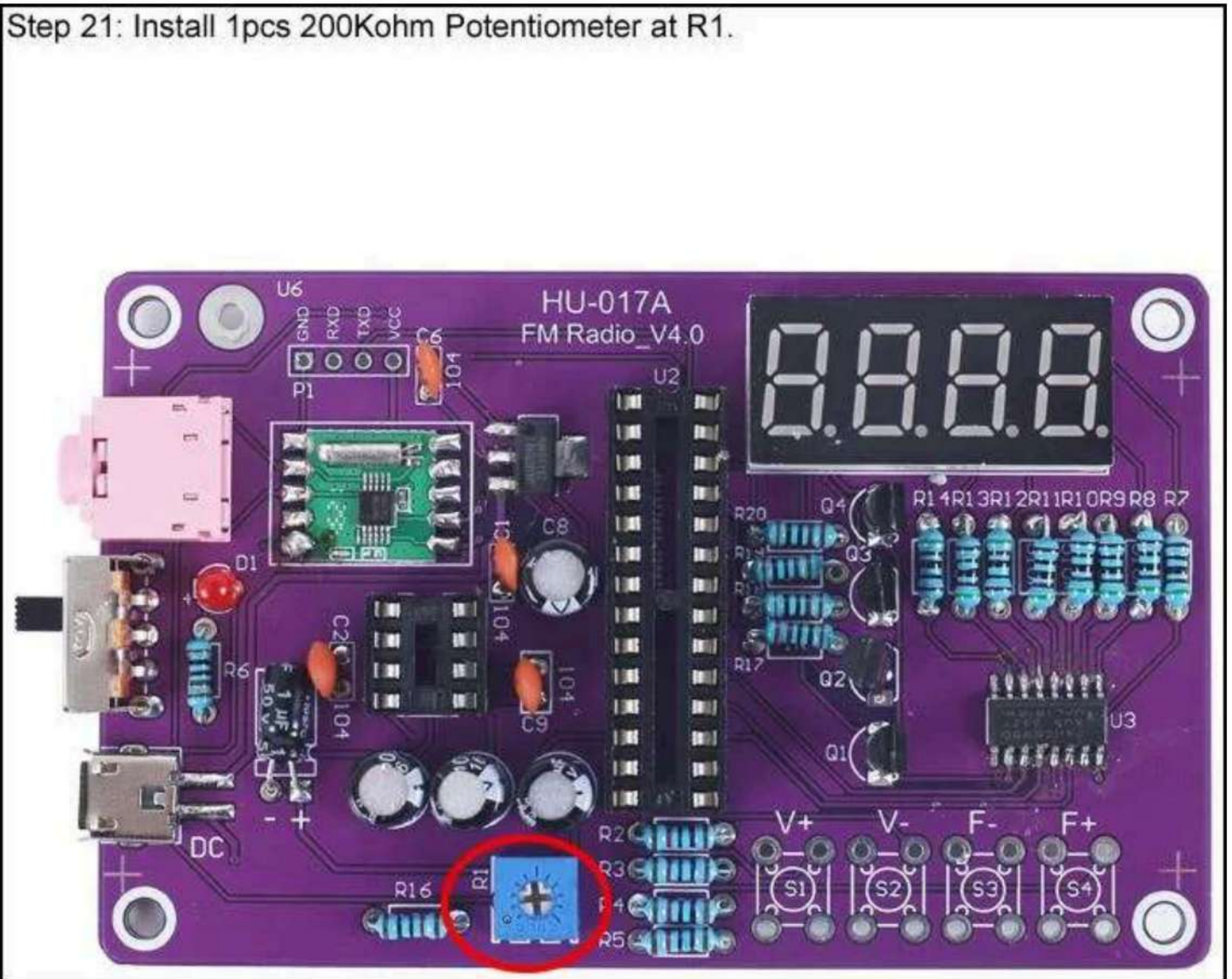
Step 17: Install 1pcs 1uF 50V Electrolytic Capacitor at C3

Step 20: Install 1pcs 1uF 50V Electrolytic Capacitor at C3.
Pay attention to distinguish between positive and negative.
The Longer pin is positive pole.
Note: The capacitor needs to be placed horizontally, keep
a distance of 2mm between the capacitor and the PCB
when installing.



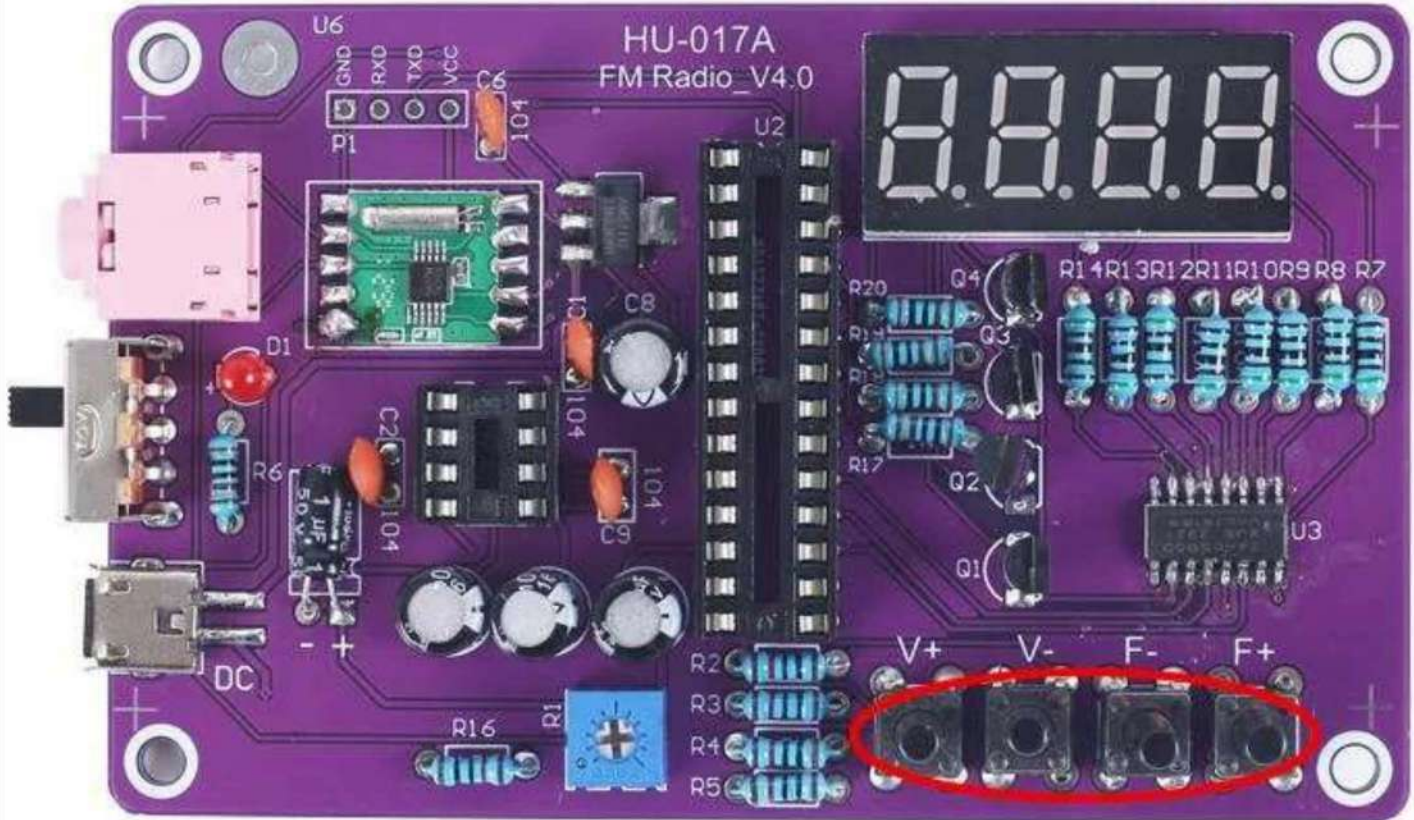
Step 18: Install 1pcs 200Kohm Potentiometer at R1

Step 21: Install 1pcs 200Kohm Potentiometer at R1.



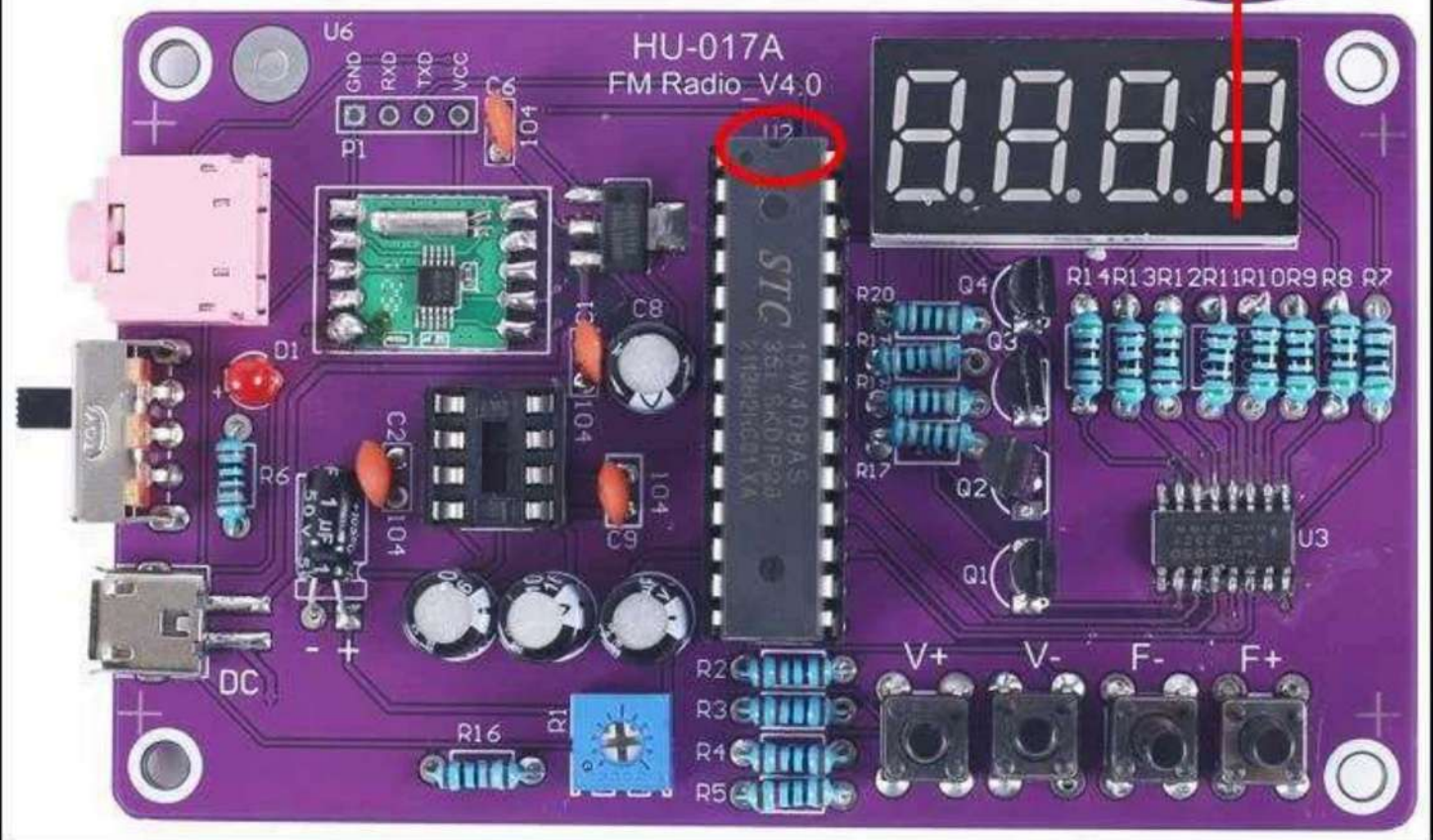
Step 19: Install 4pcs 6*6*8mm Black Button at S1-S4

Step 22: Install 4pcs 6*6*8mm Black Button at S1-S4. Ensure that the buttons are installed vertically to avoid affecting the next installation of acrylic plates.



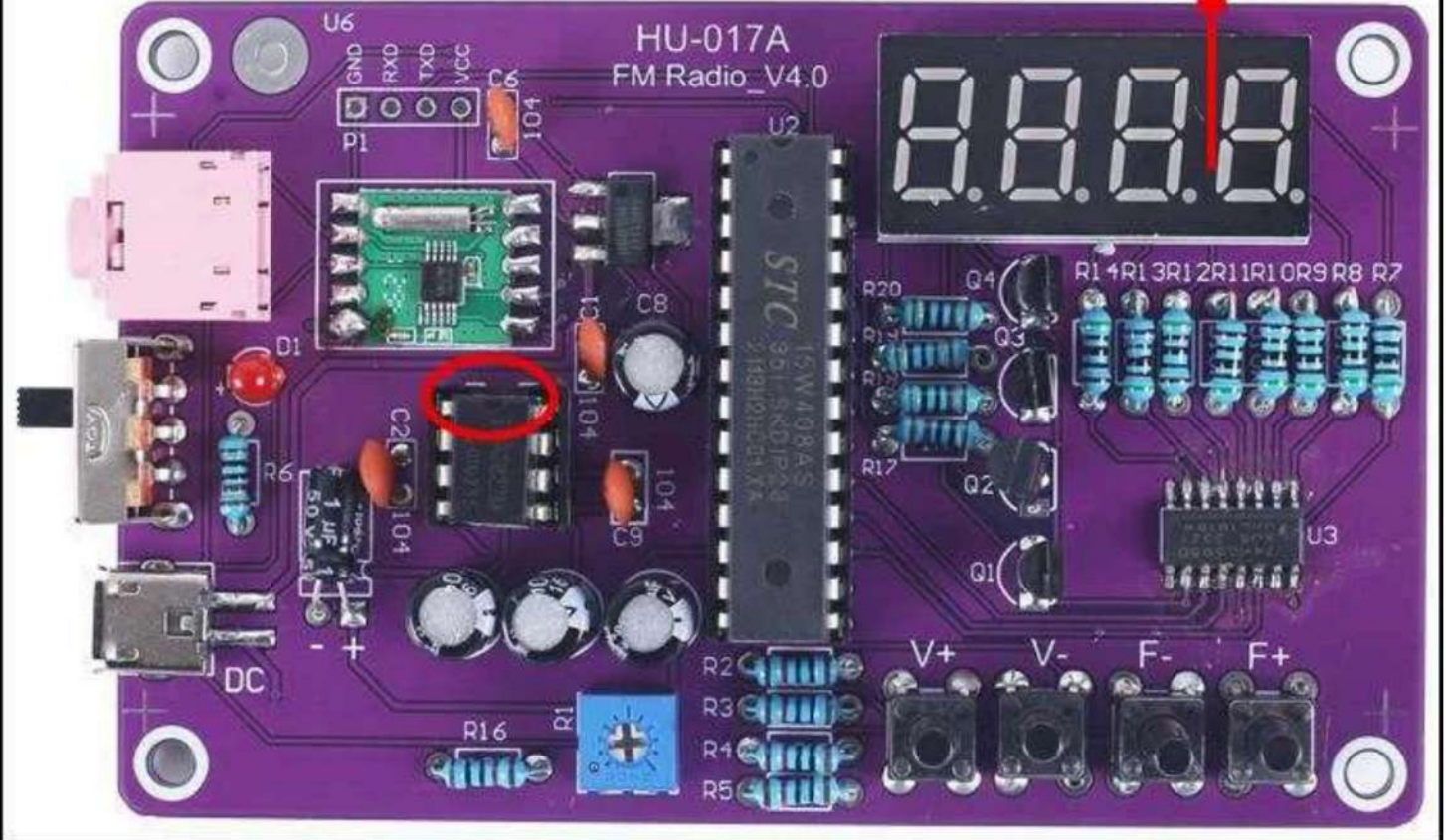
Step 20: Install 1pcs DIP-28 STC15W404AS MCU at U2

Step 23: Install 1pcs DIP-28 STC15W404AS MCU at U2. There is a gap mark on one end of the IC and there is a gap mark on DIP-28 IC Socket 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.



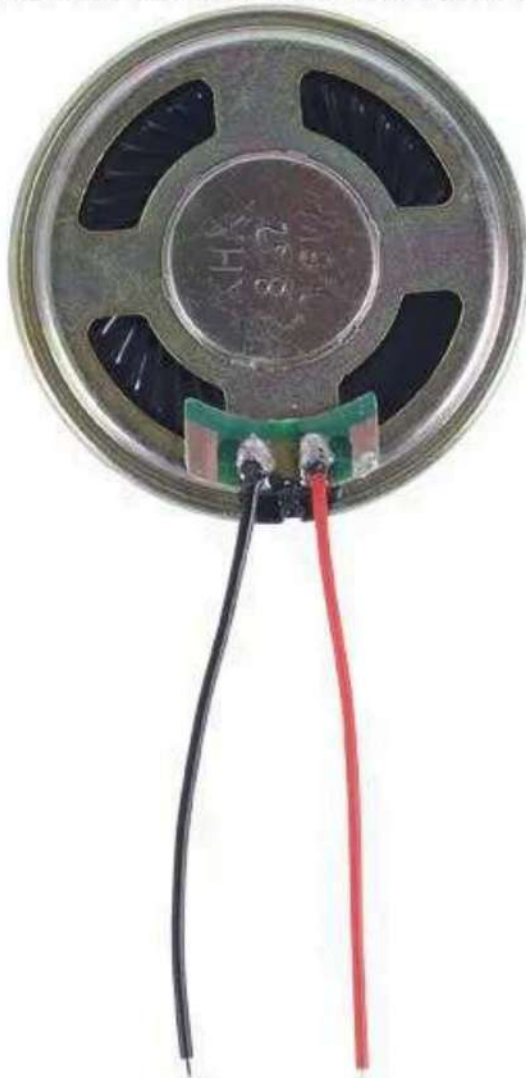
Step 21: Install 1pcs DIP-8 TDA2822M Amplifier at U9

Step 24: Install 1pcs DIP-8 TDA2822M Amplifier at U9. There is a gap mark on one end of the IC and there is a gap mark on DIP-8 IC Socket 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.



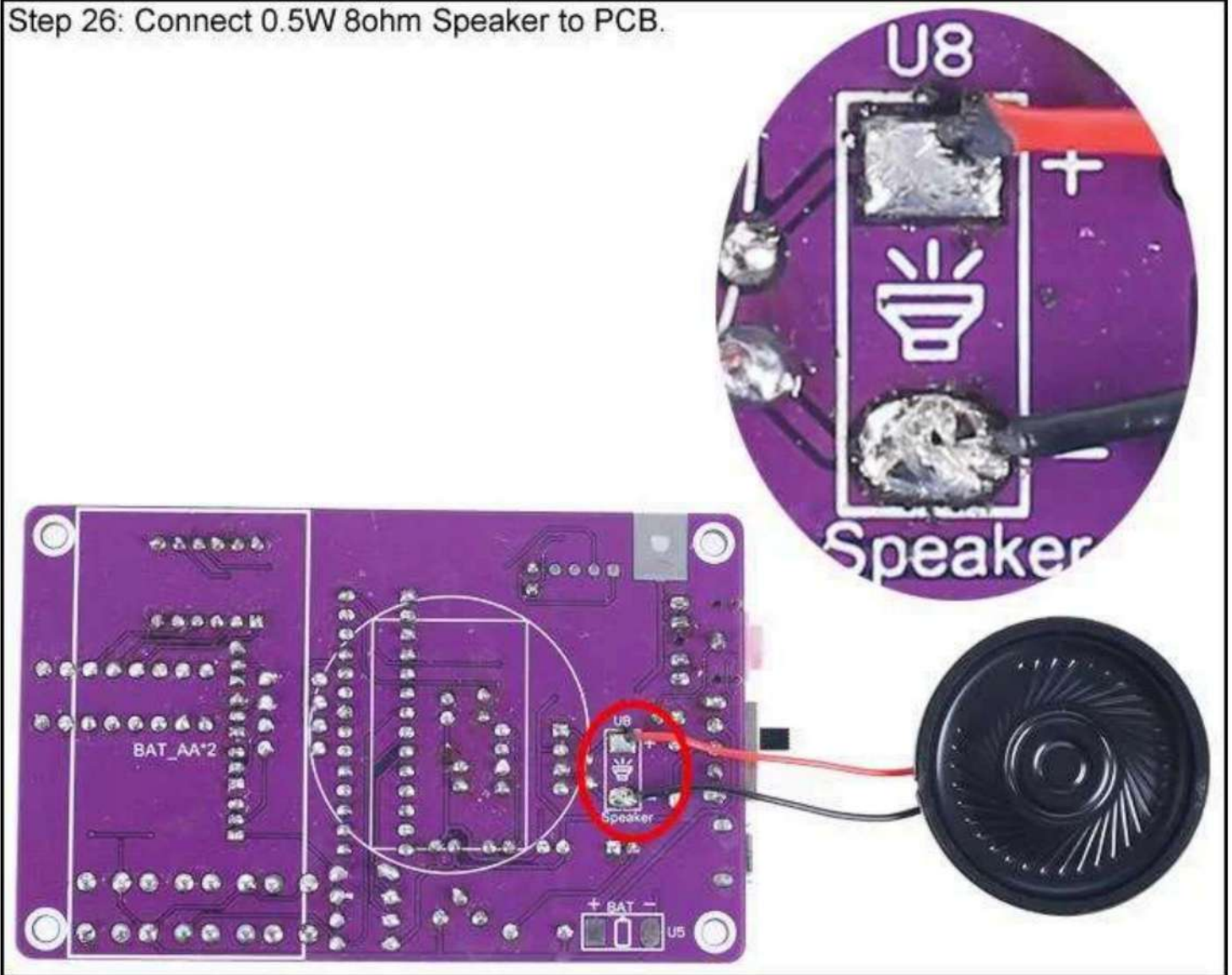
Step 22: Install 1pcs Red/Black Wire to 0.5W 8ohm Speaker.

Step 25: Install 1pcs Red/Black wire to 0.5W 8ohm Speaker.



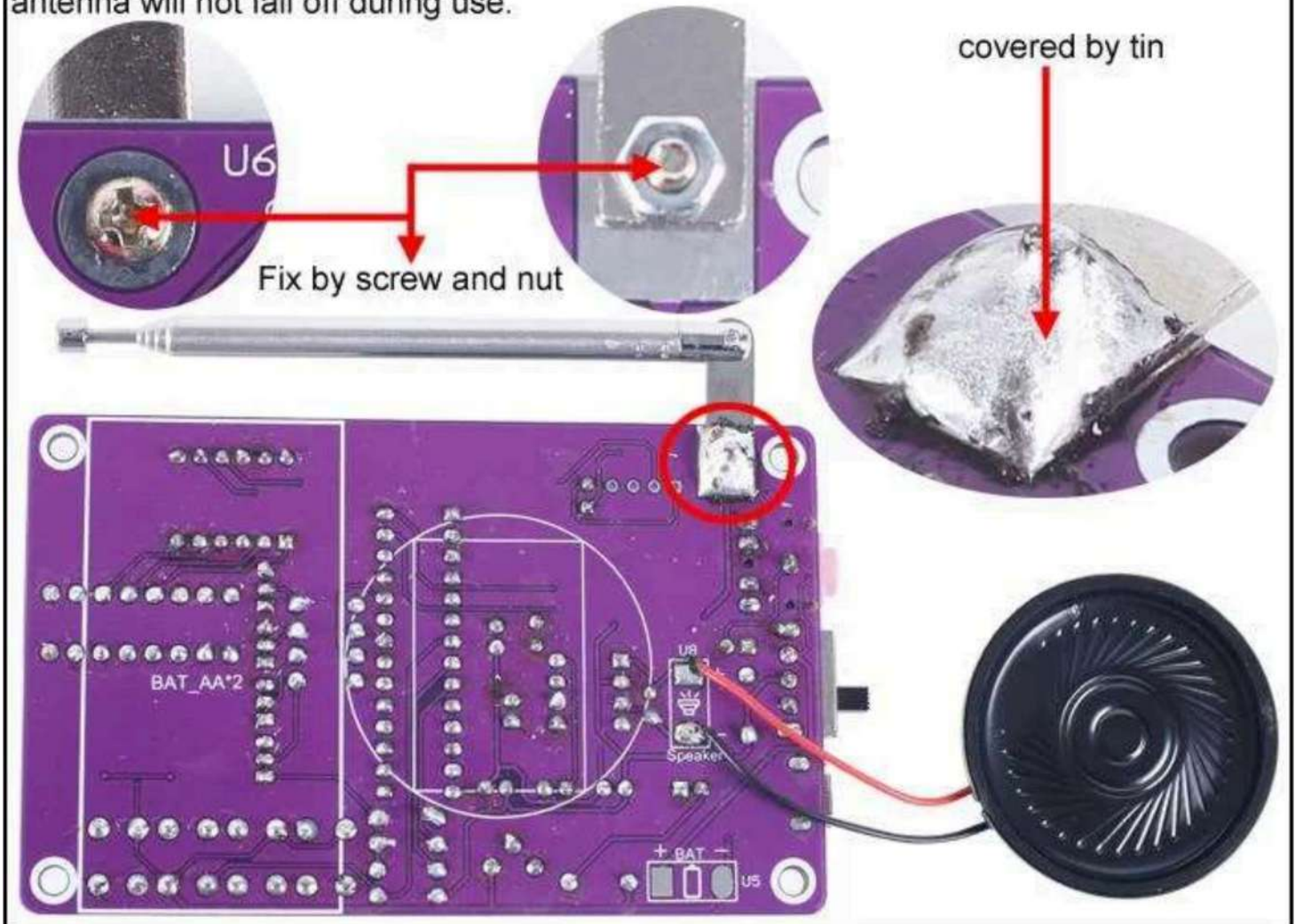
Step 23: Connect 0.5W 8ohm Speaker to PCB

Step 26: Connect 0.5W 8ohm Speaker to PCB.



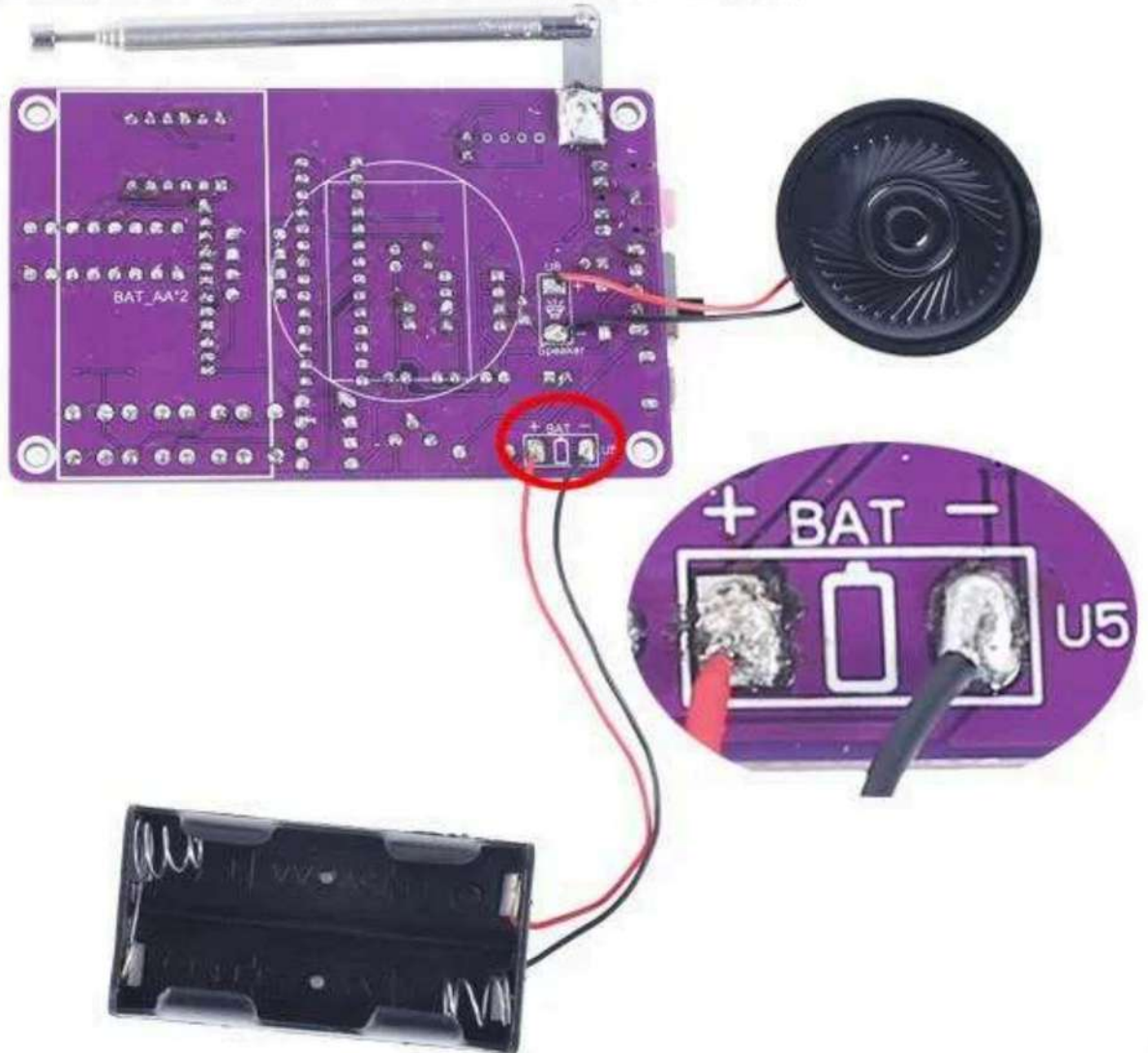
Step 24: Fix FM Radio Antenna at U6 on PCB Back by M2*6mm Screw and M2 Nut

Step 27: Fix FM Radio Antenna at U6 on PCB back by M2*6mm Screw and M2 Nut. Then use a large amount of solder tin to cover the screw and nut to ensure that the antenna will not fall off during use.



Step 25: Connect AA*2 Battery Box to PCB. Red Wire to ' + ' Pad

Step 28: Connect AA*2 battery box to PCB. Red wire to ' + ' pad.



Step 27: Fix 4pcs M3*8+6mm Nylon Column Screw on PCB by 4pcs M3 Nut

Step 30: Fix 4pcs M3*8+6mm Nylon Column Screw on PCB by 4pcs M3 Nut.

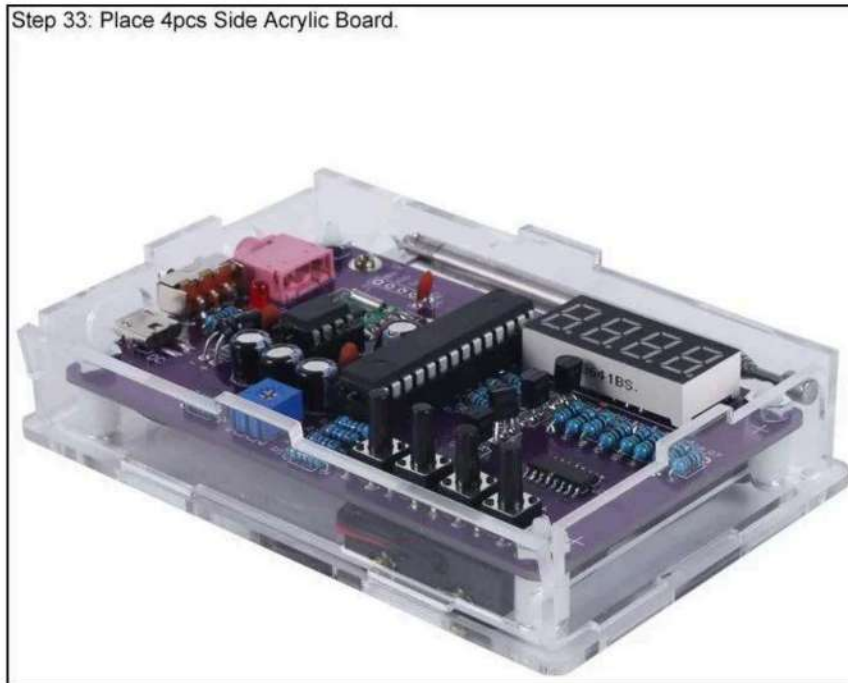


Step 29: Fix Bottom Acrylic Board by 4pcs M3*5mm Screw

Step 32: Fix Bottom Acrylic Board by 4pcs M3*5mm Screw.



Step 30: Place 4pcs Side Acrylic Board

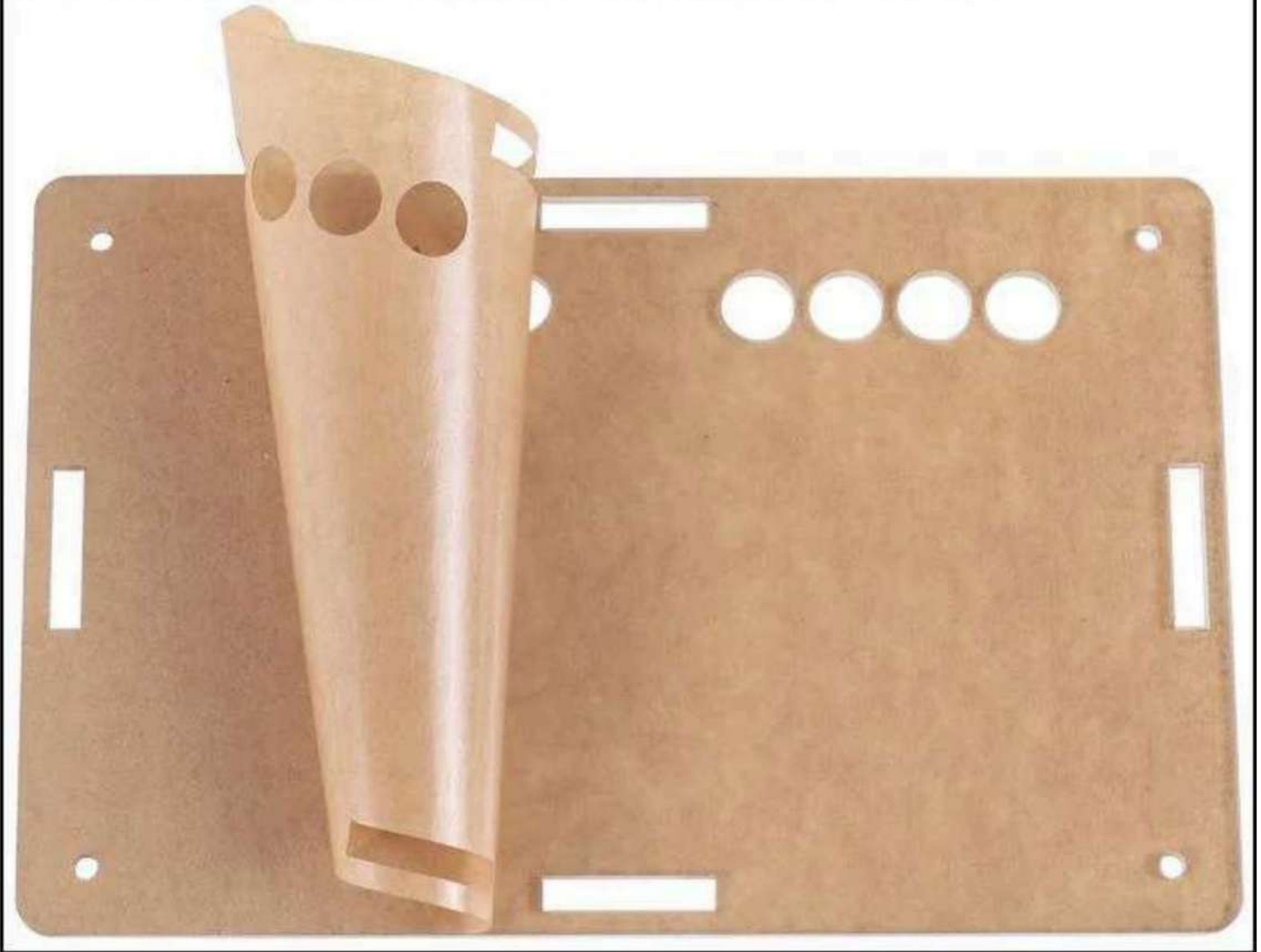


Step 31: Fix Top Acrylic Board by 4pcs M2*22mm Screw and 4pcs M2 Nut



Step 28: Tear Off the Protective Film on the Surface of the Acrylic Shell

Step 31: Tear off the protective film on the surface of the acrylic shell.



Step 26: Paste the Speaker and Battery Box on the PCB Back With Double-sided Adhesive Tape, and Pay Attention to the White Line Area on the PCB to Define Their Positions

Step 29: Paste the speaker and battery box on the PCB back with double-sided adhesive tape, and pay attention to the white line area on the PCB to define their positions.

