



ICStation GS1299 FM Radio Receiver DIY Kit

1.Introduction:

It is an 76.0MHz-108.0MHz Wireless FM Radio Receiver Stereo DIY Kit. It is a very mini rechargeable radio that users can carry and use anytime, anywhere to receive the latest news.

2.Feature:

- 1>.Support 76Hz-108MHz receiver frequency
- 2>.Built-in rechargeable lithium battery and charging circuit
- 3>.High sensitivity, low noise, strong anti-interference ability

3.Parameter:

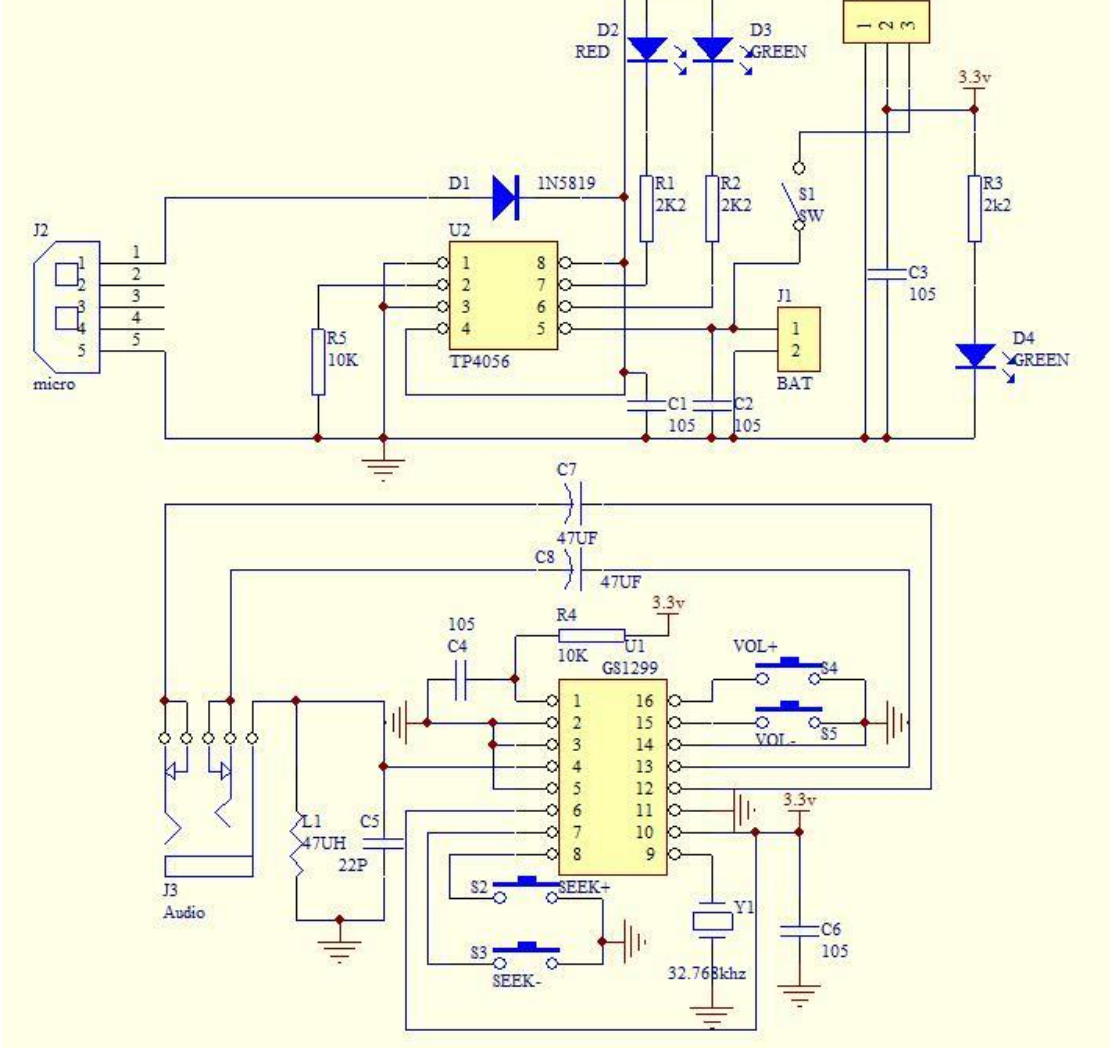
- 1>.Product Name:GS1299 FM Radio Receiver DIY Kit
- 2>.Work Voltage:DC 3.70V~4.2V
- 3>.Output channel:Dual channel stereo
- 4>.Frequency:76.0MHz~108.0MHz
- 5>.Power indicator: Blue
- 6>.Charging indicator: Red
- 7>.Charged indicator: Blue
- 8>.Output type: AUX output (connect headset)
- 9>.Work Temperature:-40℃~85℃
- 10>.Work Humidity:5%~95%RH
- 11>.Size(Installed):67x51x20mm

4.Component List:

NO.	Component Name	PCB Marker	Parameter	QTY
1	GS1299 FM Receiver	U1	SOP-8	1
2	TP4056 Lithium Battery Charging IC	U2	SOP-16	1
3	AMS1117-3.3	U3	SOT-223	1
4	Metal Film Resistor	R1,R2,R3	2.2Kohm	3
5	Metal Film Resistor	R4,R5	10Kohm	2
6	Inductor	L1	47uH	1
7	1N5819 diode	D1	DO-41	1
8	Red LED	D2	3mm	1
9	Blue LED	D3,D4	3mm	2
10	Crystal oscillator	Y1	32.768KHz	1
11	Ceramic capacitor	C5	22pF	1
12	Monolithic Capacitor	C1,C2,C3,C4,C6	0.1uF 104	5
13	Electrolytic Capacitor	C7,C8	47uF	2
14	SK-12D07 Switch	S1	1P2T	1
15	Black Button	S2,S3,S4,S5	6*6*12mm	4
16	USB Micro Socket	J2	SMD	1
17	AUX Audio Socket	J3		1
18	3.7V 250mAh Lithium Polymer Battery	BAT+,BAT-	50*20*3mm	1
19	Acrylic Board			6

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

3.3V



1>.Headphone must be connected as it is also FM antenna.

- 2>.It cannot receive radio while it is charging.
- 3>.It is a wireless module. So do not use it in an environment with signal interference.
- 4>.Input charging voltage form micro USB socket.

1>.User needs to prepare the welding tool at first.

- 1.1>.Soldering iron (<50 Watt)
- 1.2>.Rosin core ("radio") solder
- 1.3>.Wire cutters

- 1.4>.Wire strippers
- 1.5>.Philips screwdriver
- 2>.Please be patient until the installation is complete.
- 3>.The soldering iron can't touch the components for a long time(1.0 second), otherwise it will damage the components.
- 4>.Pay attention to the positive and negative of the components.
- 5>.Strictly prohibit short circuit.
- 7>.User must install the LED according to the specified rules.Otherwise some LED will not light.
- 8>.Install complex components preferentially.
- 9>.Make sure all components are in right direction and right place.
- 10>.It is strongly recommended to read the installation manual before starting installation!
- 11>.Please wear anti-static gloves or anti-static wristbands when installing electronic components.

8.Installation Steps(Please be patient):

- 1>.Step 1: Install 1pcs SMD component SOP-16 GS1299 at U1. Verify and confirm the installation direction of GS1299 .
- 2>.Step 2: Randomly choose a pad on the PCB, and then melt the solder on this pad.
- 3>.Step 3: Fix GS1299 : Use a soldering iron to melt tin on the pad just now and hold GS1299 with tweezers in the other hand to place/press on U1 to prevent movement. Take care to match and align each pads. Then remove soldering iron. Then remove tweezers after solder tin cooling and solidification.
- 4>.Step 4: Connect others pads on GS1299 to pads on PCB by tin and soldering iron.
- 5>.Step 5: Install 1pcs SOP-8 TP4056 Lithium battery charging IC at U2 by the same method.
- 6>.Step 6: Install 1pcs 32.768KHz Crystal oscillator at Y1.Note: Bend the pins before installing.
- 7>.Step 7: Install 2pcs 10Kohm Metal Film Resistor at R4,R5.
- 8>.Step 8: Install 3pcs 2.2Kohm Metal Film Resistor at R1,R2,R3.
- 9>.Step 9: Install 1pcs 47uH Inductor at L1.
- 10>.Step 10: Install 1pcs SOT-223 AMS1117-3.3 Power IC at U3 by the same method.
- 11>.Step 11: Install 1pcs DO-41 1N5819 diode at D1.Pay attention to the installation direction. Note: The white mark on Diode and the white mark on PCB are corresponding.
- 12>.Step 12: Install 1pcs USB Micro Socket Switch at J2.
- 13>.Step 13: Install 1pcs 22pF Ceramic Capacitor at C5.
- 14>.Step 14: Install 5pcs 0.1uF 104 Monolithic Capacitor at C1,C2,C3,C4,C6.
- 15>.Step 15: Install 1pcs 3mm Red light LED at D2. Note: The longer pin is positive pole which need connect to '+' pad.
- 16>.Step 16: Install 1pcs 3mm Blue light LED at D3,D4. Note: The longer pin is positive pole which need connect to '+' pad.
- 17>.Step 17: Install 1pcs 1P2T SK-12D07 Switch at S1.
- 18>.Step 18: Bend the pins of 47uF electrolytic capacitor about 2mm and then install these 2pcs Electrolytic Capacitor at C7,C8. Pay attention to distinguish between positive and negative. The Longer pin is positive pole. Note: The capacitor needs to be placed horizontally. Otherwise, the following components cannot be installed.

19>.Step 19: Install 1pcs 3.5mm AUX Audio Socket at J3.

20>.Step 20: Install 4pcs 6*6*12mm Black Button at S2,S3,S4,S5.

21>.Step 21: Install 3.7V 250mAh Lithium polymer battery. Red wire connect to BAT+ pad and black wire connect to BAT- pad.

22>.Step 22: Tear off the protective film on the surface of the acrylic board.

23>.Step 23: Fix 4pcs Nut and 4pcs M3*10mm Copper Pillar by 4pcs M3*8mm Screw on Acrylic bottom board.

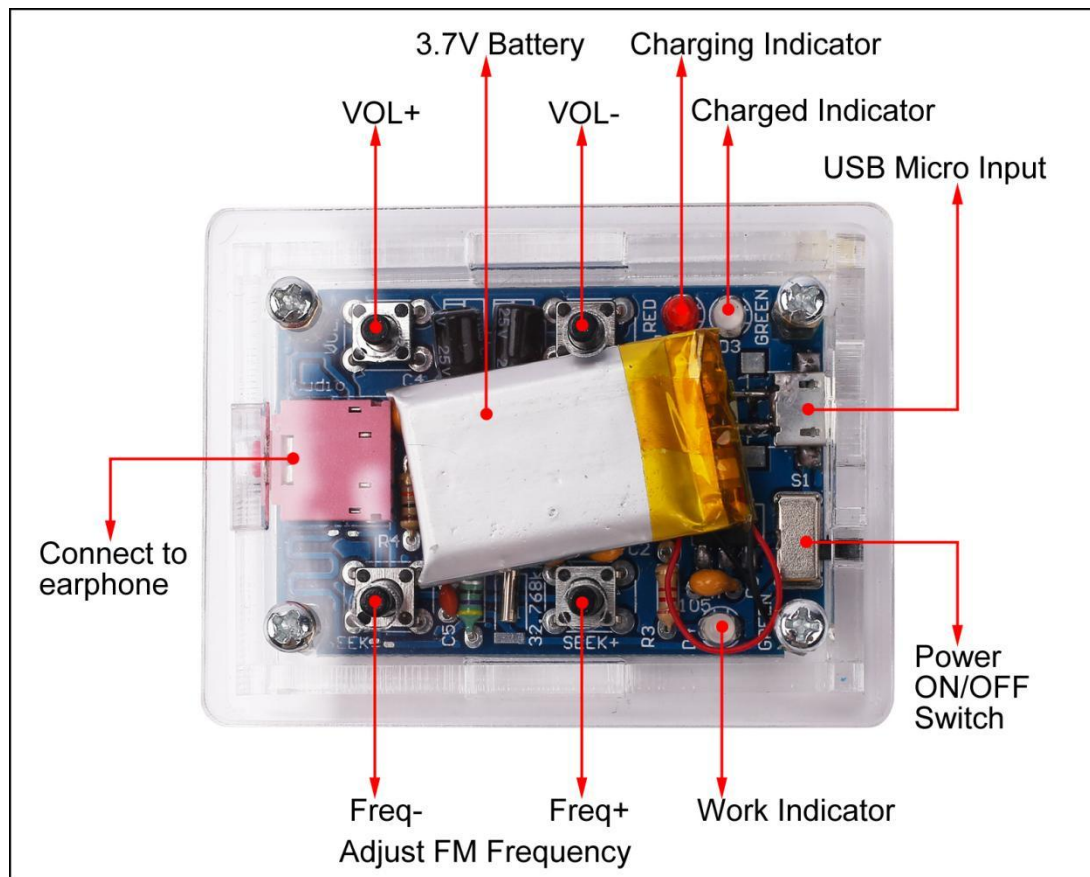
24>.Step 24: Place PCB on M3*10mm Copper Pillar.

25>.Step 25: Install 4pcs acrylic plate on the side.

26>.Step 26: Fix top acrylic plate by 4pcs M3*8mm Screw.

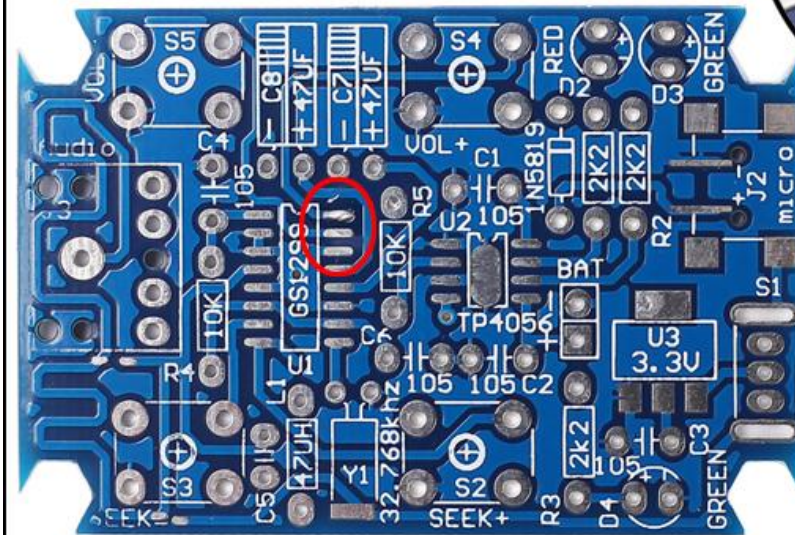
27>.Step 27: Connect to earphone and enjoy the effect. Note: The headset is also an FM antenna at the same time.

9.Install shown steps:

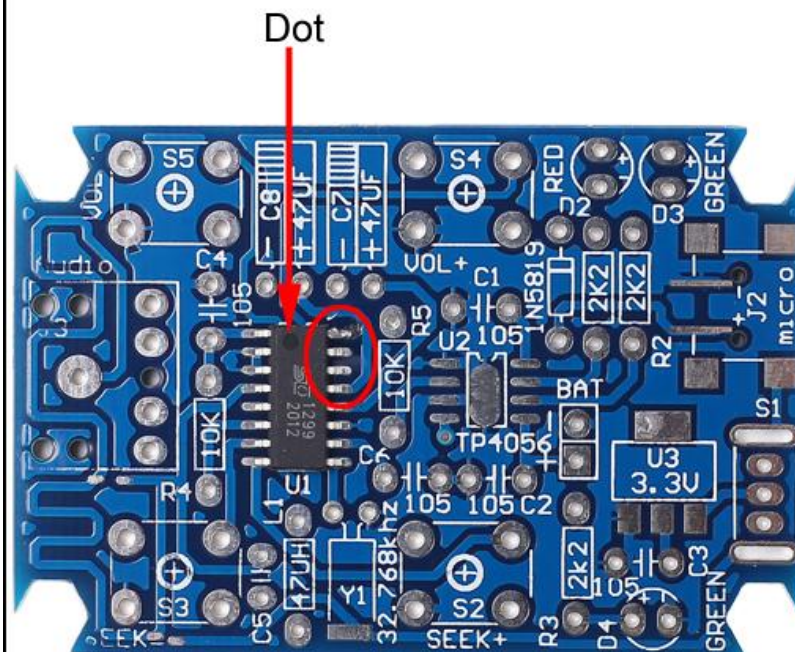


Step 1: Install 1pcs SMD component SOP-16 GS1299 at U1.
Verify and confirm the installation direction of GS1299 .

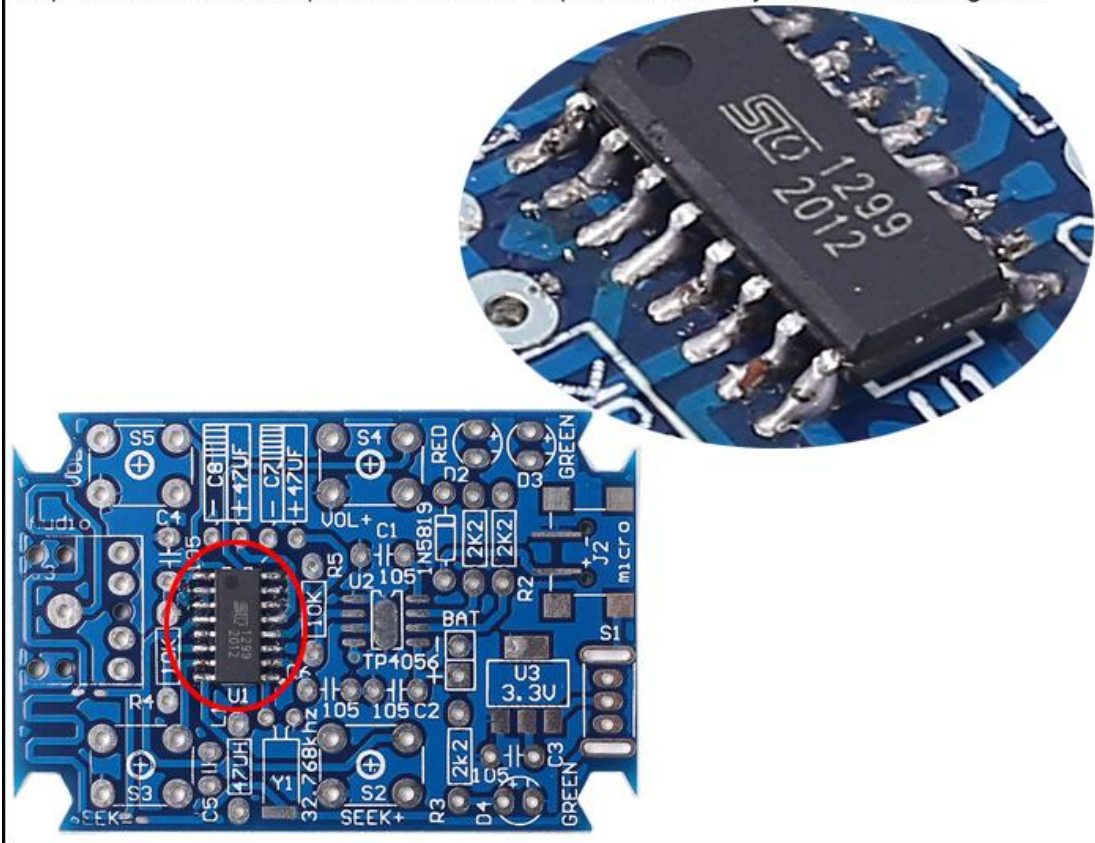
Step 2: Randomly choose a pad on the PCB, and then melt the solder on this pad.



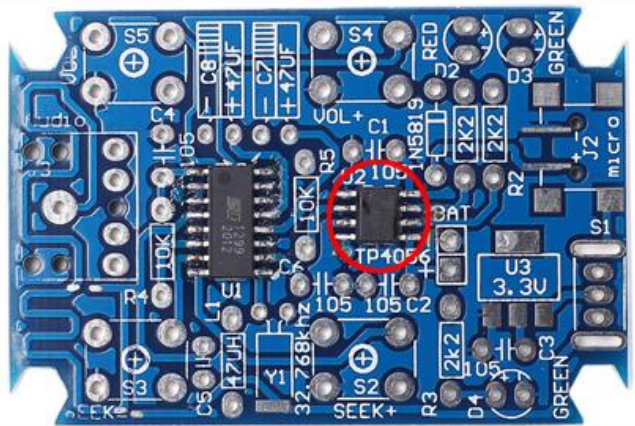
Step 3: Fix GS1299 : Use a soldering iron to melt tin on the pad just now and hold GS1299 with tweezers in the other hand to place/press on U1 to prevent movement. Take care to match and align each pads. Then remove soldering iron. Then remove tweezers after solder tin cooling and solidification.



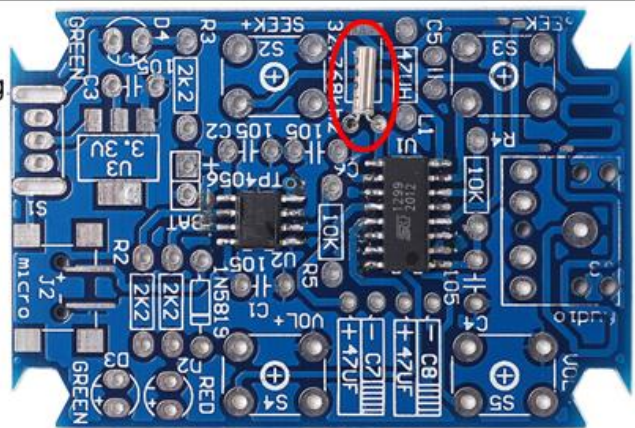
Step 4: Connect others pads on GS1299 to pads on PCB by tin and soldering iron.



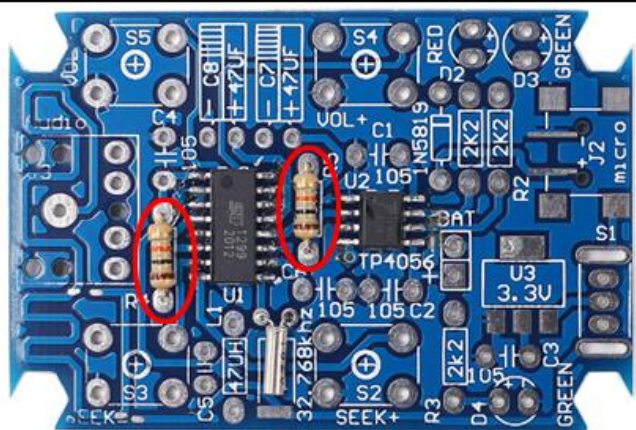
Step 5: Install 1pcs SOP-8 TP4056
Lithium battery charging IC at U2
by the same method.



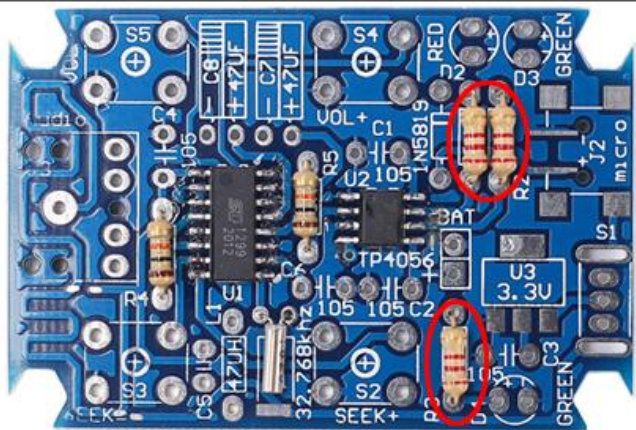
Step 6: Install 1pcs 32.768KHz
Crystal oscillator at Y1.
Note: Bend the pins before installing



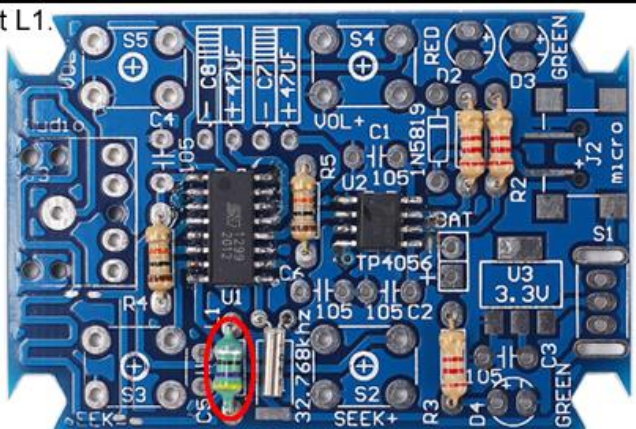
Step 7: Install 2pcs 10Kohm Metal Film Resistor at R4,R5.



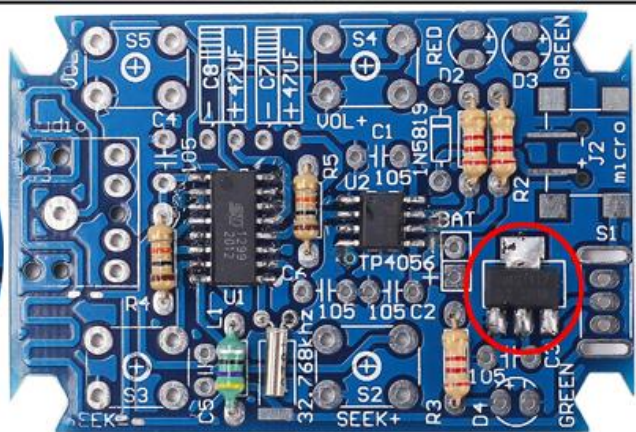
Step 8: Install 3pcs 2.2Kohm Metal Film Resistor at R1,R2,R3.



Step 9: Install 1pcs 47uH Inductor at L1.

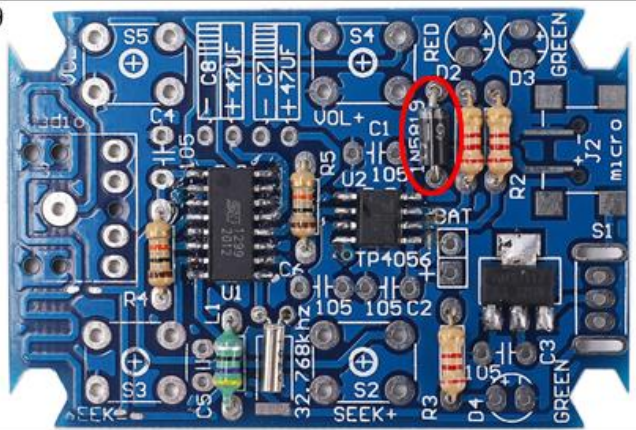


Step 10: Install 1pcs SOT-223 AMS1117-3.3 Power IC at U3 by the same method.

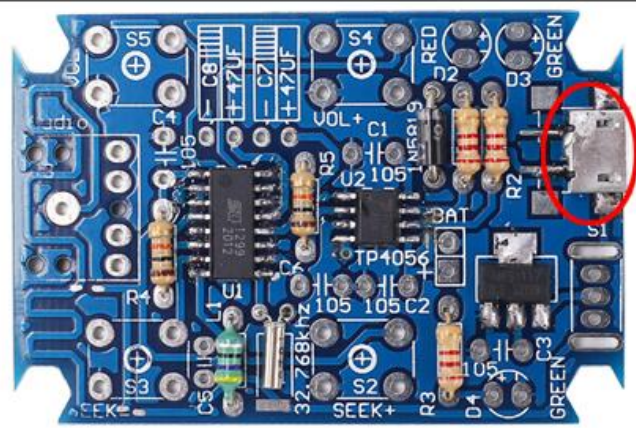


Step 11: Install 1pcs DO-41 1N5819 diode at D1. Pay attention to the installation direction.

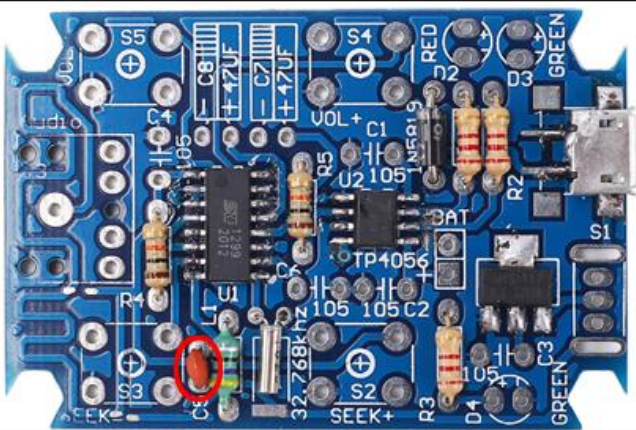
Note:
The white mark on Diode and white mark on PCB are corresponding.



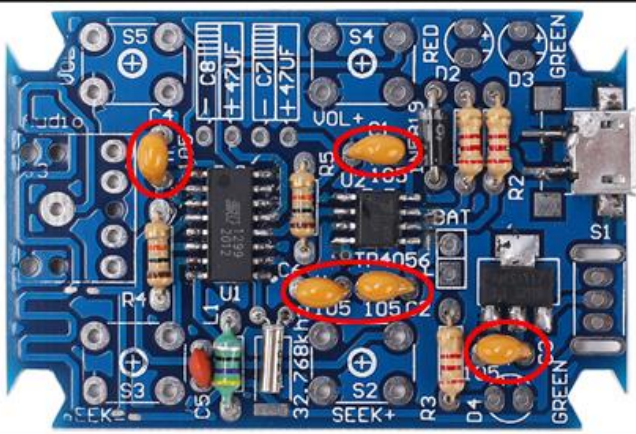
Step 12: Install 1pcs USB Micro Socket Switch at J2.



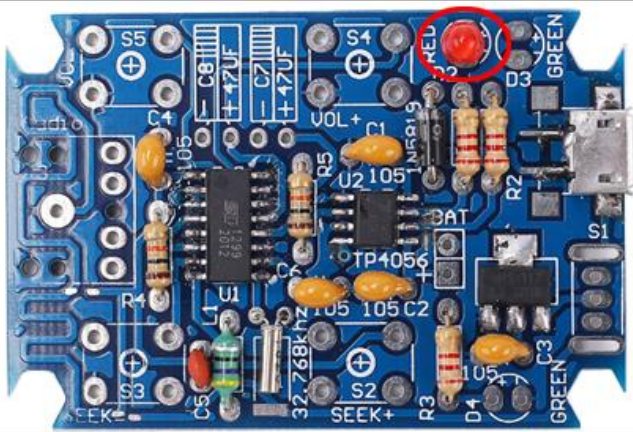
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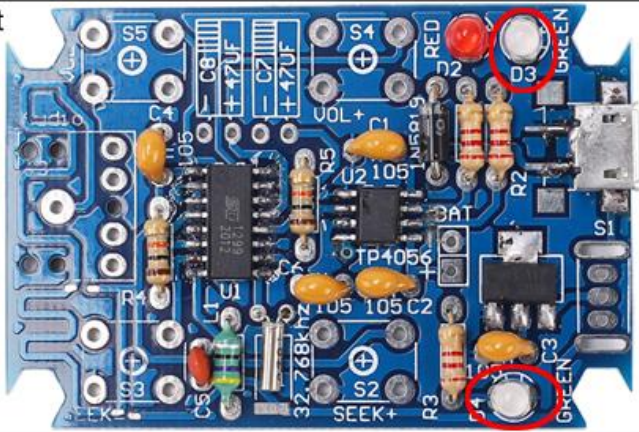
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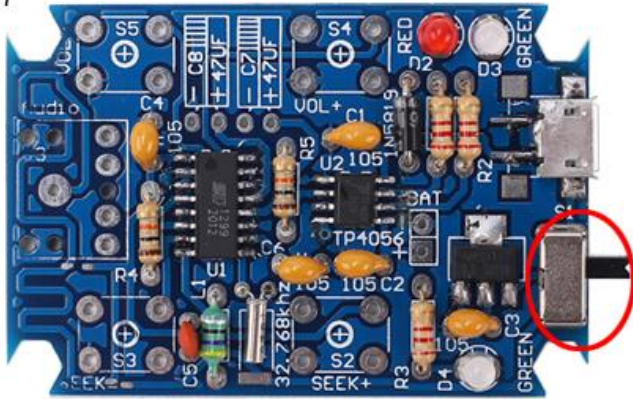
Step 15: Install 1pcs 3mm Red light LED at D2. Note: The longer pin is positive pole which need connect to '+' pad.



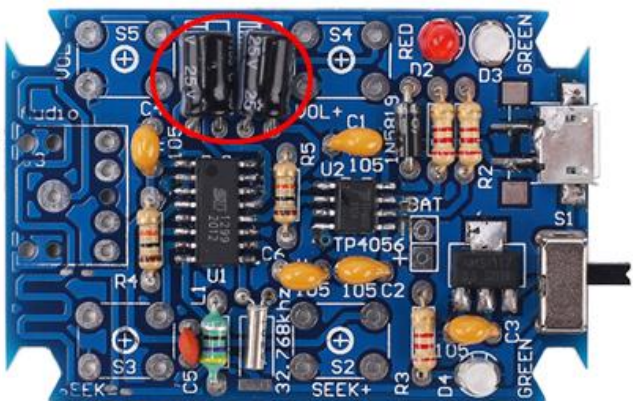
Step 16: Install 1pcs 3mm Blue light LED at D3,D4. Note: The longer pin is positive pole which need connect to '+' pad.



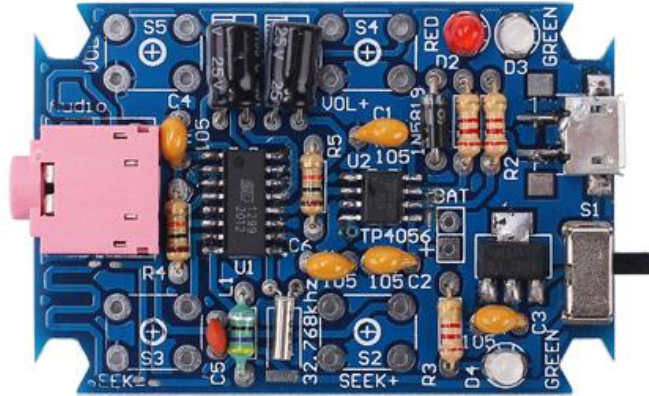
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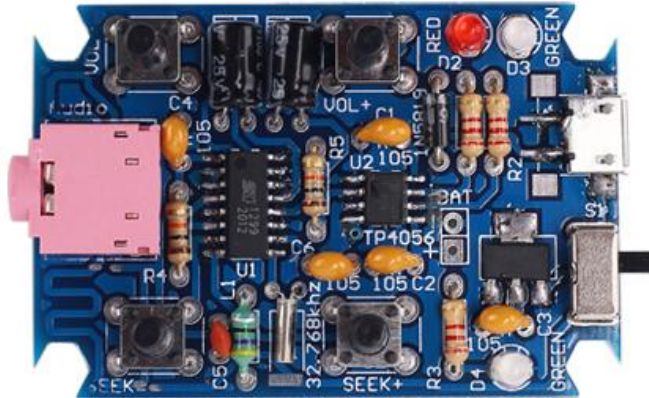
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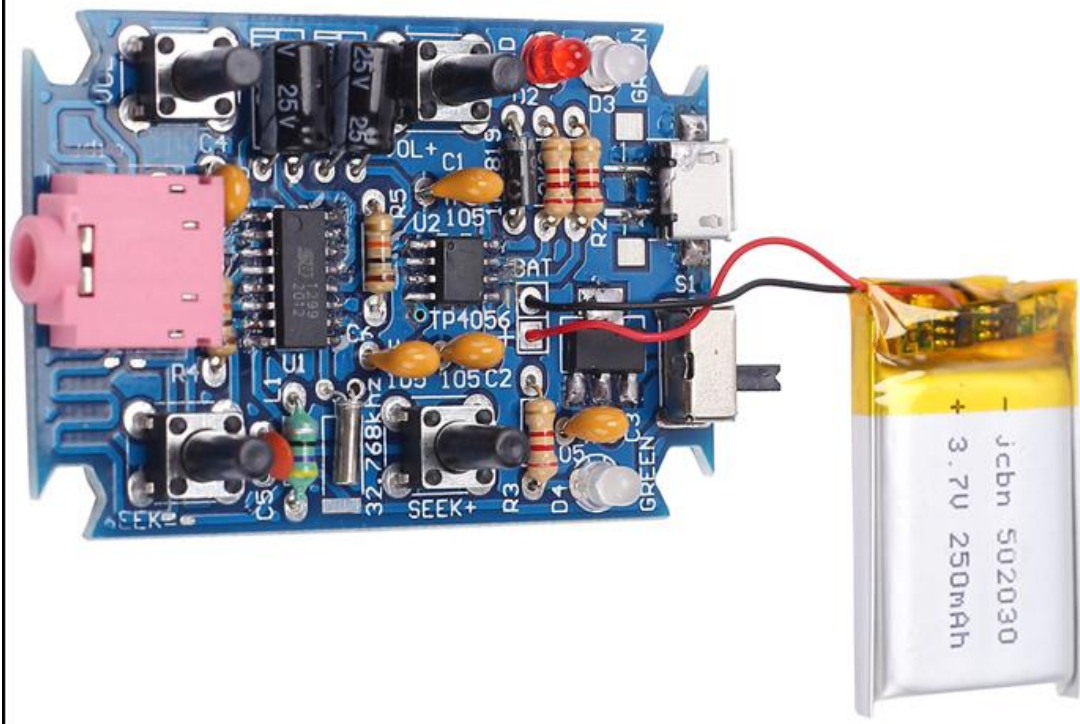
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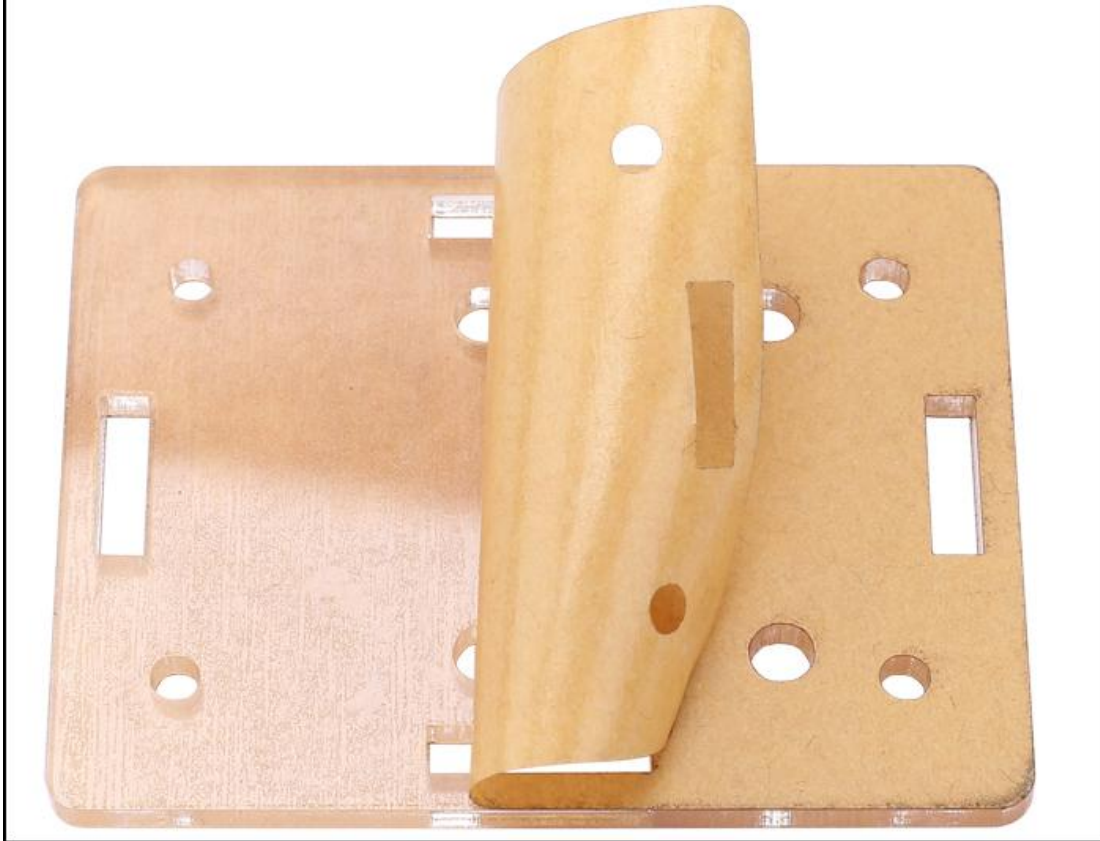
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