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## 1.Introduction:

SFT-RD66 is an TEA5767 87.5.0MHz-108.0MHz Wireless FM Radio Receiver DIY Kit. It has a red 4Bit segment display screen which can clearly display the receiving frequency.

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

## 2.Feature:

1>.87.5Hz-108MHz Frequency: It adopts the universal FM reception frequency with 0.1MHz accuracy. Directly set and change the receiving frequency by two buttons.

2>.4ohm 3W Speaker: Built-in power amplifier that can drive mono 4ohm 3W speakers directly and the sound is very clear.User also can connect headset. Adjust the volume by potentiometer

3>.Power Saving Mode: 0.56in 4Bit Digital Display Tube Screen can display and query the current FM frequency at any time. Automatically turn off the display after 5s without any operate to energy conservation.

4>.Power-off memory FM station: continue to play the FM radio station before the power turn OFF, when the power is turned on again.

5>.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.

#### 3.Parameter:

1>.Product Name:SFT-RD66 TEA5767FM 87.5-108MHz Radio Receiver DIY Kit

- 2>.Work Voltage:DC 4.5V~5.5V
- 3>.Output impedance:40hm
- 4>.Output power:3W
- 5>.Output channel:Mono
- 6>.Audio source:FM
- 7>.Output type: Speaker or AUX
- 8>.Receiver Frequency:87.5.0MHz~108.0MHz
- 9>.Work Temperature:-40°C~85°C
- 10>.Work Humidity:5%~95%RH
- 11>.Size(Installed):89\*81\*47mm

#### 4.Use Methods:

1>.Press KG switch to turn ON/OFF work power.

- 2>.Press K1 button to increase receiving frequency.
- 3>.Press K2 button to decrease receiving frequency.
- 4>.Rotate potentiometer to adjust the volume.

5>.Display screen automatically turns off to save power if there is no any operate within 5second. That is to say, after the screen is displayed for 5 seconds, it will automatically turn off. Press any buttons to wake up the display.

Note: It is not only used to save power, but also to avoid signal interference from digital tube displays.

#### 5.Component Listing:

NO. Component Name FOB Marker Farameter QTT		NO.	Component Name	PCB Marker	Parameter	QTY
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1	LM386 Amplifier	U2	DIP-8	1		
2	IC Socket	U2	DIP-8	1		
3	STC89C52RC Controller	U1	DIP-40	1		
4	IC Socket	U1	DIP-40	1		
5	TEA5767 FM Receiver	U3	SMD	1		
6	0.56in 4Bit Digital Display Tube	SMG	Red	1		
7	Crystal Oscillator	Y1	12MHz	1		
8	RGB LED	D1	5mm	1		
9	Red LED	D1	5mm	1		
10	Electrolytic Capacitor	C5,C7	10uF	2		
11	Electrolytic Capacitor	C9	100uF	1		
12	Electrolytic Capacitor	C1	470uF	1		
13	Monolithic Capacitor	C2,C8,C11	0.1uF 104	3		
14	Monolithic Capacitor	C6,C10	0.22uF 224	2		
15	Ceramic Capacitor	C3,C4	30pF	2		
16	Metal Film Resistor	R1-R5	10Kohm	5		
17	Metal Film Resistor	R6	4.7ohm	1		
18	Resistor Network	R7	470ohm	1		
19	B50K Potentiometer	RP	50Kohm	1		
20	Black Button	K1,K2	6*6*17mm	2		
21	DC005-2.1 Power Socket	DC005	90cm	1		
22	USB Power Wire			1		
23	Self-locking Switch	KG	8.5*8.5mm	1		
24	Black Self-locking Switch Cap			1		
25	AUX Audio Socket	P2,P3	3.5-5P	2		
26	FM Antenna	P3	250mm	1		
27	4ohm 3W Speaker	J4	52*52mm	1		
28	Red/Black Wire	J4	10cm	1		
29	Acrylic Board			6		
30	Copper Pillar		M3*28mm	3		
31	Metal Screw		M2*12mm	8		
32	Metal Screw		M3*8mm	10		
33	M3 Nut			4		
34	M2 Nut			8		
35	РСВ		76*68*1.6mm	1		
Note:Users can complete the installation according to the PCB silk screen and component list.						

## 6.Note:

1>The frequency can be adjusted continuously by keep press button.

- 2>.It is a wireless module. So do not use it in an environment with signal interference.
- 3>.The display can only show for 5 seconds and then enter to power saving mode.
- 4>.There is a SMD component so that you can place it on PCB and then fix by tin.

# 7.Installation Tips:

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 package is DIY kit.It need finish install by user.

4>.The soldering iron can't touch the components for a long time(1.0 second), otherwise it will damage the components.

5>.Pay attention to the positive and negative of the components.

6>.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 components TEA5767 FM Receiver at U3. Verify and confirm the installation direction of TEA5767. The rectangular silk screen on the PCB coincides with the crystal oscillator on the TEA5767 to locate the installation direction.

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

3>.Step 3: Fix TEA5767: Use a soldering iron to melt tin on the pad just now and hold TEA5767 with tweezers in the other hand to place/press on U3 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 TEA5767 to pads on PCB by tin and soldering iron.

5>.Step 5: Install 5pcs 10Kohm Metal Film Resistor at R1-R5.

6>.Step 6: Install 1pcs 4.7ohm Metal Film Resistor at R6.

7>.Step 7: Install 1pcs 12MHz Crystal Oscillator at Y1.

8>.Step 8: Install 1pcs DIP-8 IC LM386 Amplifier or IC Socket at U2.There is a gap mark on one end of the IC and there is a gap mark on PCB silk screen 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.

9>.Step 9: Install 1pcs DIP-40 IC Socket at U1. 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.

10>.Step 10: Install 2pcs AUX Audio Socket at P2,P3.11>.Step 11: Install 2pcs 30pF Ceramic Capacitor at C3,C4.

12>.Step 12: Bend the pins of only one 10uF electrolytic capacitor about 2mm. Then install it at C5. 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.

13>.Step 13: Install 3pcs 0.1uF 104 Monolithic Capacitor at C2,C8,C11. 14>.Step 14: Install 2pcs 0.22uF 224 Monolithic Capacitor at C6,C10.

15>.Step 15: Install 1pcs 470ohm Resistor Network at R7. Pay attention to the installation direction. 16>.Step 16: Install 1pcs 5mm RGB or Red LED at R1. The Longer pin is positive pole and connect to ' + ' pad.

17>.Step 17: Install 1pcs 4Bit Red Digital Tube at SMG.Pay attention to the installation direction of the decimal point.

18>.Step 18: Install 1pcs DC005-2.1 Power Socket at DC005.

19>.Step 19: Install 1pcs Self-locking Switch at KG.

20>.Step 20: Install 1pcs 100uF Electrolytic Capacitor at C9.Pay attention to distinguish between positive and negative.The Longer pin is positive pole and connect to ' + ' pad.

21>.Step 21: Install 1pcs 10uF Electrolytic Capacitor at C7.Pay attention to distinguish between positive and negative.The Longer pin is positive pole and connect to ' + ' pad.

22>.Step 22: Install 1pcs 470uF Electrolytic Capacitor at C1.Pay attention to distinguish between positive and negative.The Longer pin is positive pole and connect to ' + ' pad.

23>.Step 23: Install 2pcs 6\*6\*17mm Black Button at K1,K2.

24>.Step 24: Install 1pcs B50K Potentiometer at RP.

25>.Step 25: Install 1pcs DIP-40 IC STC89CRC Controller.There is a gap mark on one end of the IC and there is a gap mark on DIP-40 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.

26>.Step 26: Connect 1pcs 4ohm 3W Speaker to PCB at J4. The speaker does not need to distinguish between positive and negative poles.

27>.Step 27: Tear off the protective film on the surface of the acrylic shell.

28>.Step 28: Fix speaker on Acrylic Board by 4pcs M3\*8mm Metal Screw and 4pcs M3 Nuts.

29>.Step 29: Fix 3pcs M3\*28mm Copper Pillar on the same Acrylic Board by 3pcs M3\*8mm Metal Screw. Note: Install the black key cap on the self-locking button.

30>.Step 30: Fix PCB by 3pcs M3\*8mm Metal Screw.

31>.Step 31: Install and fix Potentiometer Acrylic Board by 1pcs M2\*12mm Metal Screw and 1pcs M2 Nut.

32>.Step 32: Install and fix Power Acrylic Board by 1pcs M2\*12mm Metal Screw and 1pcs M2 Nut.

33>.Step 33: Install and fix TOP Acrylic Board by 1pcs M2\*12mm Metal Screw and 1pcs M2 Nut.
34>.Step 34: Install and fix Bottom Acrylic Board by 1pcs M2\*12mm Metal Screw and 1pcs M2 Nut.
35>.Step 35: Install and fix the last Acrylic Board by 4pcs M2\*12mm Metal Screw and 4pcs M2 Nut.



## 9.Install shown steps:

Step 1: Install 1pcs SMD components TEA5767 FM Receiver at U3. Verify and confirm the installation direction of TEA5767. The rectangular silk screen on the PCB coincides with the crystal oscillator on the TEA5767 to locate the installation direction. SFT-RD66 DN: GL822122 SHG P3 P7 R6 - 4R7 -. c? 2100 000 () C5 10U @12M@ Y1 )LM386 U2 ξΩ 10 00 C4 30P AT89552 343067A\_P69-221229 .......... (0) (0) (0) Ô (0) R30-(10K)-0 8 470 10K (IOK) R1 C 0 0 2005



Step 3: Fix TEA5767: Use a soldering iron to melt tin on the pad just now and hold TEA5767 with tweezers in the other hand to place/press on U3 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 8: Install 1pcs DIP-8 IC LM386 Amplifier or IC Socket at U2. There is a gap mark on one end of the IC and there is a gap mark on PCB silk screen 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 9: Install 1pcs DIP-40 IC Socket at U1. 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. 000 SFT-RD66 DN: GL822122 SMG 0 0 R7 R6 4 63 100 ġ: -470U (111)-0 5U.º D DI 0 TEA5





Step 12: Bend the pins of only one 10uF electrolytic capacitor about 2mm. Then install it at C5. 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.









Step 16: Install 1pcs 5mm RGB or Red LED at R1. The Longer pin is positive pole and connect to ' + ' pad.









Step 20: Install 1pcs 100uF Electrolytic Capacitor at C9.Pay attention to distinguish between positive and negative.The Longer pin is positive pole and connect to ' + ' pad.





Step 22: Install 1pcs 470uF Electrolytic Capacitor at C1.Pay attention to distinguish between positive and negative.The Longer pin is positive pole and connect to ' + ' pad.







Step 25: Install 1pcs DIP-40 IC STC89CRC Controller. There is a gap mark on one end of the IC and there is a gap mark on DIP-40 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 26: Connect 1pcs 4ohm 3W Speaker to PCB at J4. The speaker does not need to distinguish between positive and negative poles.











Step 32: Install and fix Power Acrylic Board by 1pcs M2\*12mm Metal Screw and 1pcs M2 Nut.



Step 33: Install and fix TOP Acrylic Board by 1pcs M2\*12mm Metal Screw and 1pcs M2 Nut.



Step 34: Install and fix Bottom Acrylic Board by 1pcs M2\*12mm Metal Screw and 1pcs M2 Nut.



