RGB LED Audio Visualizer DIY Kit

1.Introduction:

This DIY kit is a unique circular music spectrum display composed of two kinds of LED. The inner circle is designed by 10pcs full-color 5050 RGB LED. The inner circle can produce different color variations according to different music beats. The outer circle is designed by white 0805 LED. The effect is outward spread by the center, and each vertical LED represents a different music frequency. The LED combination of the inner and outer circles will display different music beating effects in real time after the program analyzes the music when playing different music and bringing you a unique musical visual experience. Simple and creative and it is the best choice for electronics enthusiasts.

2.Feature:

1>.Inner/Outer unique circular shape of the music spectrum display
2>.10pcs 5050 RGB LED Flashing
3>.135pcs 0805 White Highlight LED
4>.4-kinds display mode for outer circle
5>.4-kinds different enhancements mode
6>.Automatic color change for inner circle
7>.Touch control
8>.Dual audio input design
9>.The automatic gain function can be adapted to different music devices
10>.Acrylic panel reduces light interference and preventing high brightness

3.Parameter:

1>.Work Voltage:DC 4.5V~5.5V
2>.Work Current:500mA
3>.Work Module:Automatic and Touch Button Control
4>.Work Temperature:-40℃~85℃
5>.Work Humidity:0%~95%RH
6>.Size(Installed):125*125*17mm

4.Set Method:

1>.Keep press touch button about 3second enter into the enhanced effect menu setting mode.
2>.Short press touch button to switch select 4-kinds enhancement effect.
3>.Keep press touch button about 3second again enter into the spectrum display

effect menu setting mode.

    4>.Short press touch button to switch select spectrum display effect:

        4.1>.Normal display mode

        4.2>.Floating point display mode

        4.3>.Single point display mode

        4.4>.Automatic switching display mode

    5>.Keep press touch button about 3second again to save parameters and exit.

5.Component listing:

NO.	Component Name	PCB Marker	Parameter	QTY
1	STC8A4K32S2A12-28I	U1	LQFP-44	1
2	SMD Electrolytic capacitor	C1	220uF 16V	1
3	SMD 0805 Capacitor	C2-C4	0.1uF(104)	3
4	SMD 0805 Resistor	R1-R3	1Kohm(102)	3
5	SMD 0805 Resistor	R4	1Mohm(105)	1
6	SMD 0805 Resistor	R5	330ohm(331)	1
7	RGB LED		SMD 5050	10
8	White LED		SMD 0805	135
9	MINI USB Female Socket	J1	5Pin	1
10	USB Audio Cable		50cm	1
11	Audio Converter Cable		22cm	1
12	Screw Bolt		M3+15mm	3
13	Nut		M3	9
14	Black Acrylic board		125*117*2mm	1
15	Transparent Acrylic board		125*117*2mm	1
16	PCB		125*117*1.6mm	1
Note:Please refer to the installation manual to complete the installation and use.				

6.Application:

    1>.Training welding skills

    2>.Student school

    3>.DIY production

    4>.Project Design

    5>.Electronic competition

    6>.Gift giving

    7>.Crafts collection

    8>.Home decoration

    9>.Souvenir collection

    10>.Graduation design

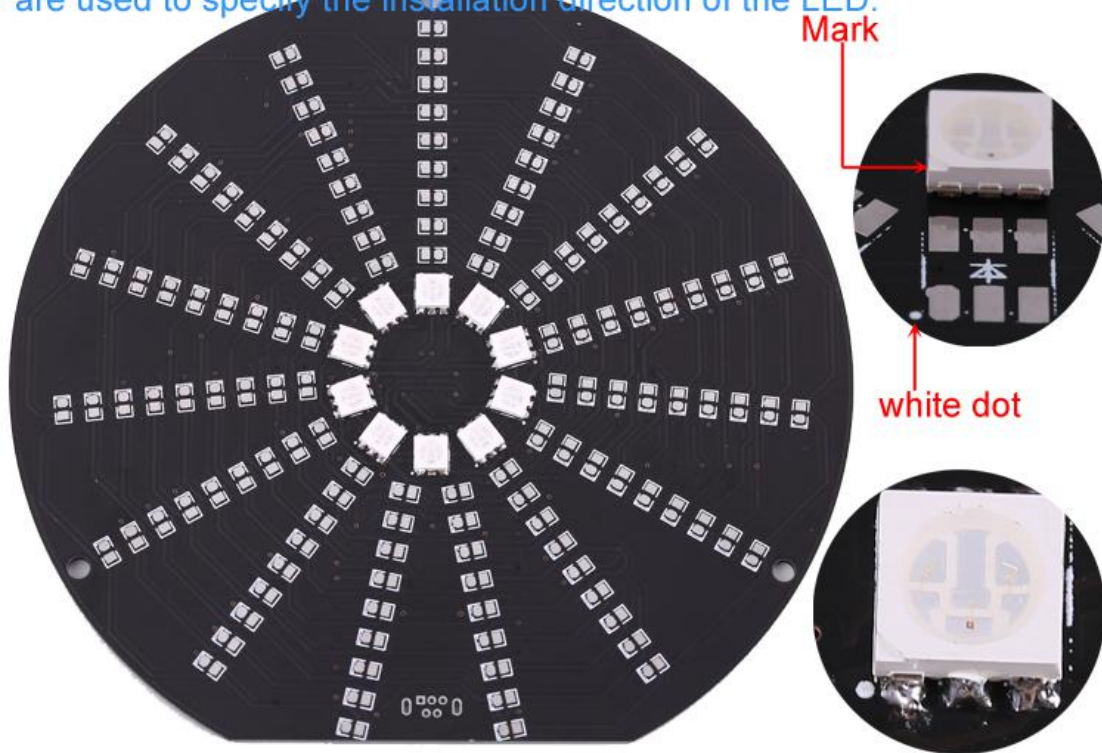   11>.Holiday gifts

7.Installation Tips:

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

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>.Check that all of the LED can be illuminated.

11>.It is strongly recommended to read the installation manual before starting installation!!!

12>.The default code inside the chip, the function is more abundant,So please do not update the code inside arbitrarily!!!
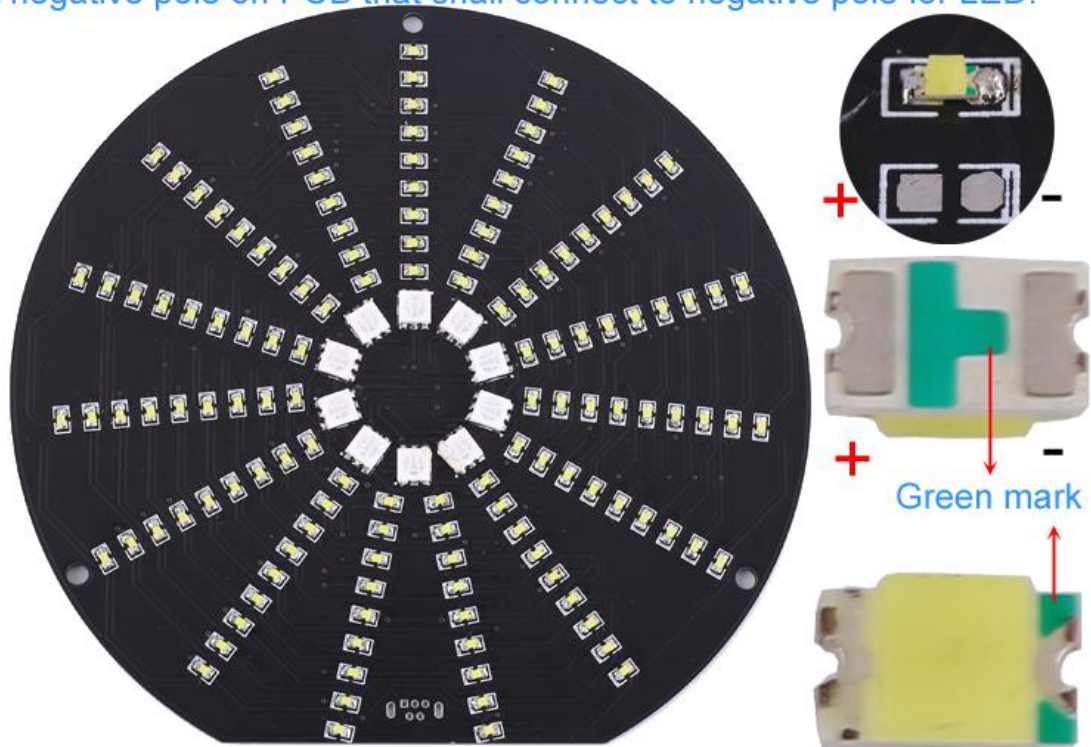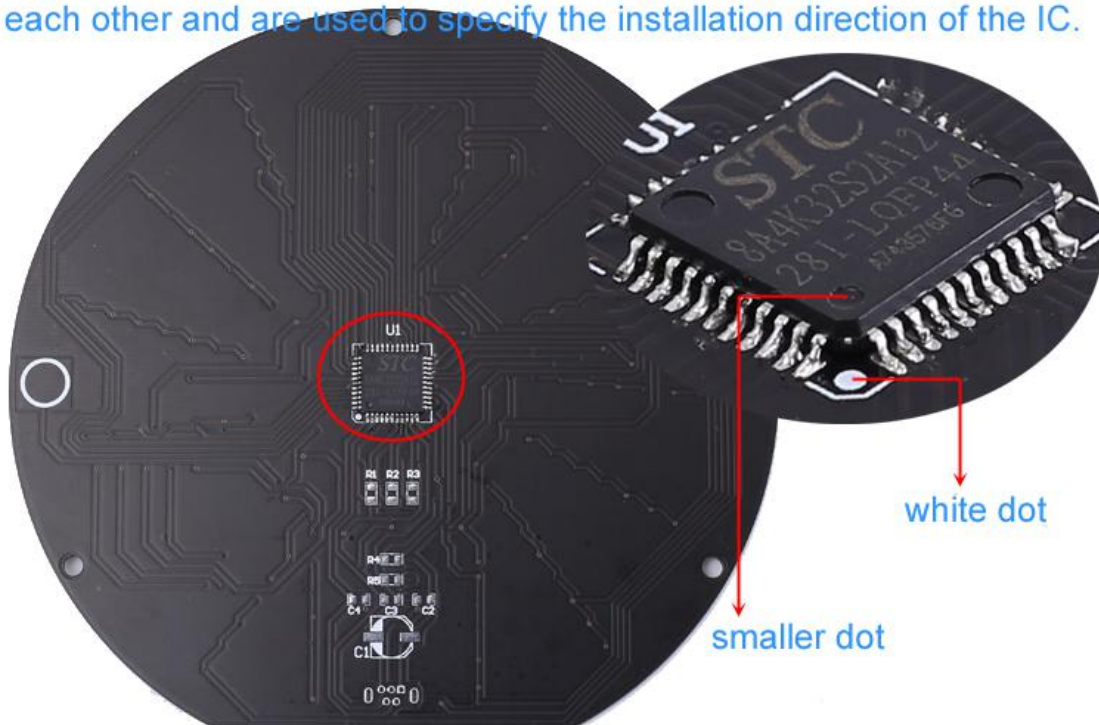
8.Installation Steps(Please be patient install!!!):

1>.Step 1: Install 10pcs SMD 5050 RGB LED. There is a mark on one corner of the LED and there is a white dot on PCB where the LED can place on.These two marks are corresponding to each other and are used to specify the installation direction of the LED.

2>.Step 2: Install 135pcs SMD 0805 White LED. It is negative pole for LED where there are green mark on LED pin. The ellipse pad is negative pole on PCB that shall connect to negative pole for LED.

3>.Step 3: Install 1pcs STC8A4K32S2A12-28I LQFP-44 at U1.There is a smaller dot on one corner of the IC and there is a white 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.

4>.Step 4: Install 3pcs 1Kohm(102) 0805 SMD Resistor at R1~R3.

5>.Step 5: Install 1pcs 1Mohm(105) 0805 SMD Resistor at R4.

6>.Step 6: Install 1pcs 330ohm(331) 0805 SMD Resistor at R5.

7>.Step 7: Install 3pcs 0.1uF 0805 SMD Capacitor at C2~C4.

8>.Step 8: Install 1pcs 220uF 16V SMD Electrolytic capacitor at C1.

9>.Step 9: Install 1pcs MINI USB Female Socket at J1.

10>.Step 10: Remove the protective film from the acrylic surface.

11>.Step 11: Fixed Acrylic Board by Screw Bolt and Nut.Black acrylic placed in front.

12>.Step 12: Connect to power supply and audio to enjoy the effect.Press touch button to switch display mode.

9.Install shown steps:

Step 1: Install 10pcs SMD 5050 RGB LED. There is a mark on one corner of the LED and there is a white dot on PCB where the LED can place on.These two marks are corresponding to each other and are used to specify the installation direction of the LED.
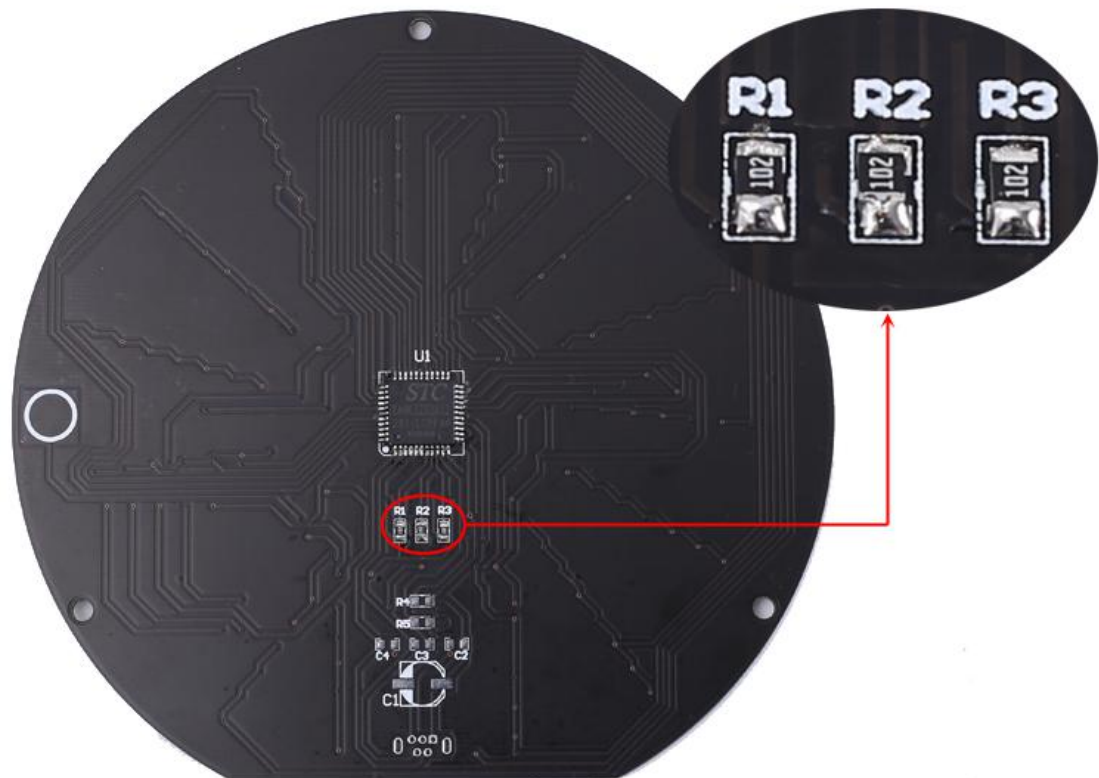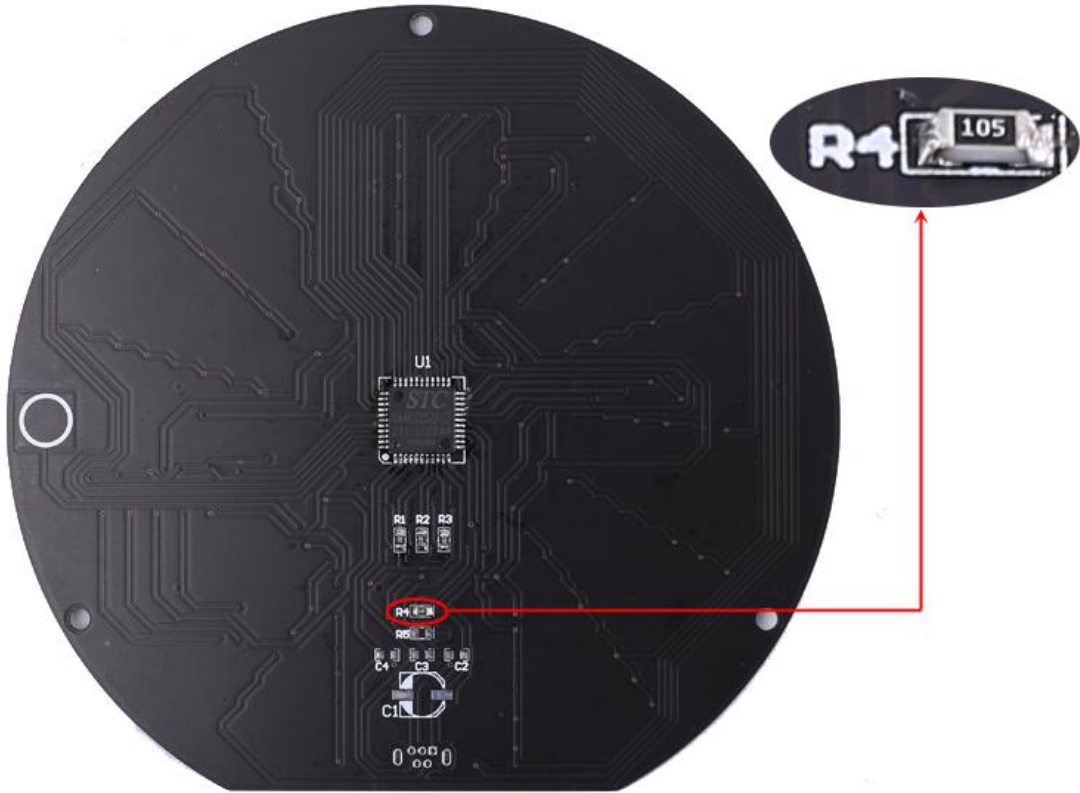

Mark

white dot

Step 2: Install 135pcs SMD 0805 White LED. It is negative pole for LED where there are green mark on LED pin. The ellipse pad is negative pole on PCB that shall connect to negative pole for LED.

+   −

+   Green mark   −

Step 3: Install 1pcs STC8A4K32S2A12-28I LQFP-44 at U1.There is a smaller dot on one corner of the IC and there is a white 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.
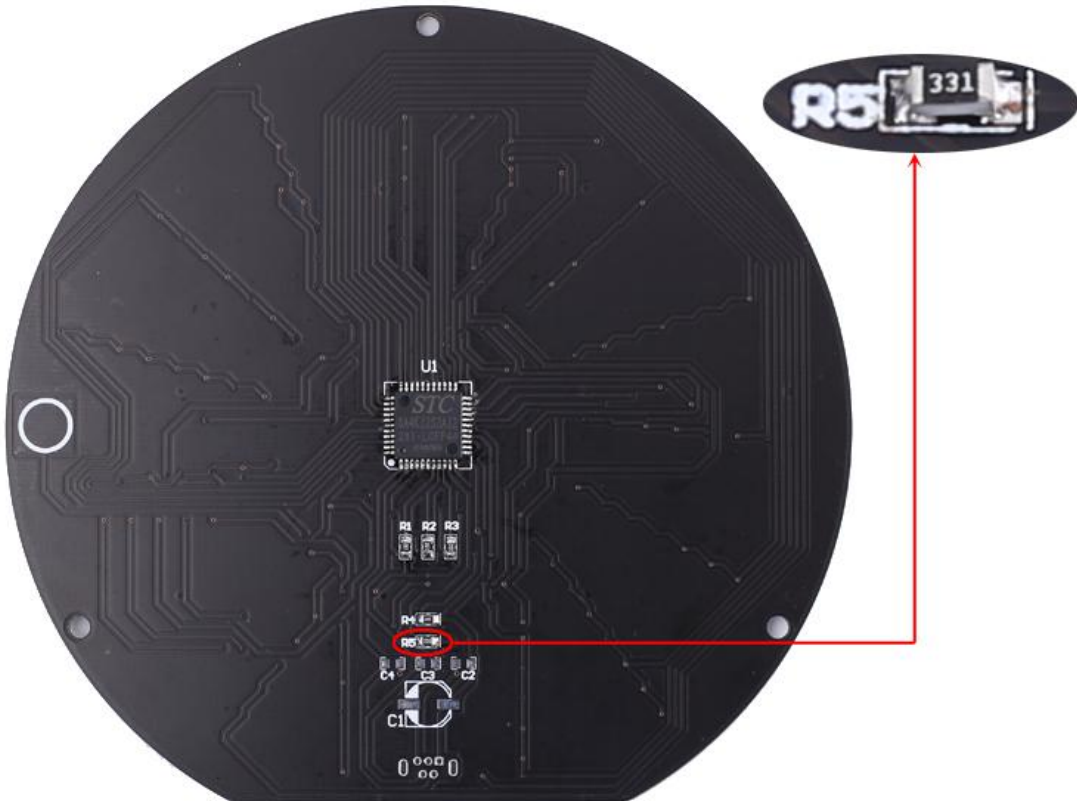

white dot

smaller dot

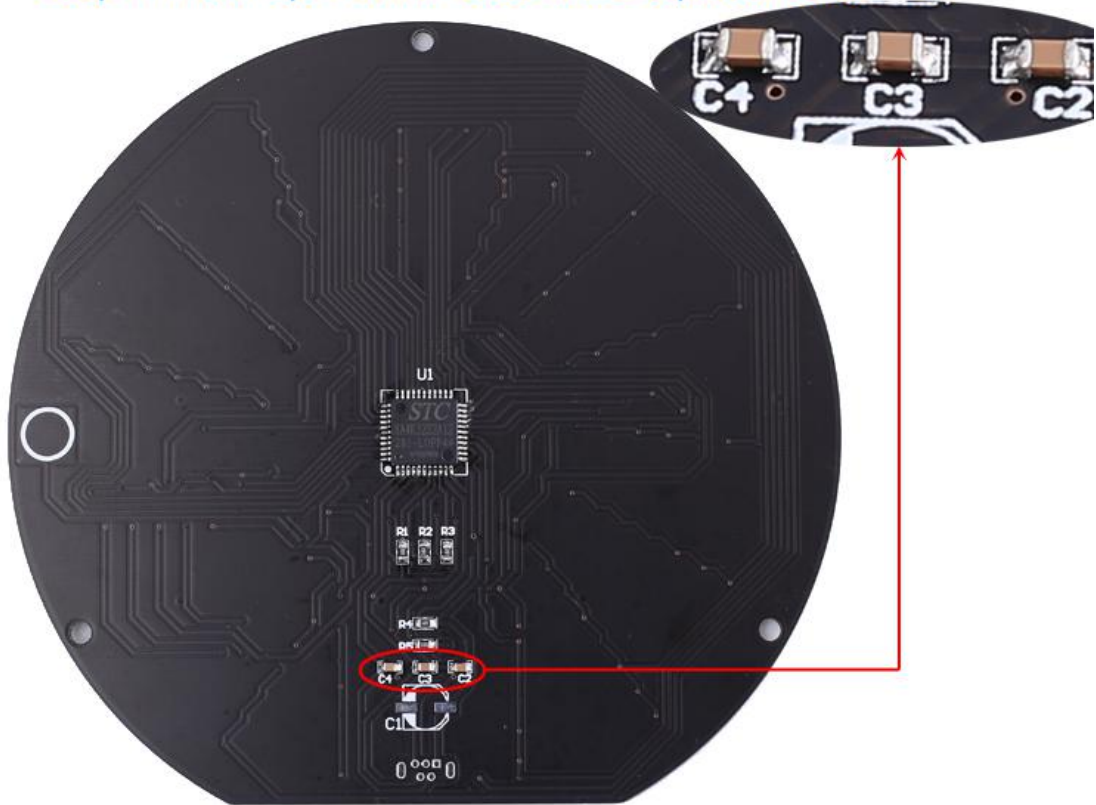Step 4: Install 3pcs 1Kohm(102) 0805 SMD Resistor at R1~R3.

Step 5: Install 1pcs 1Mohm(105) 0805 SMD Resistor at R4.

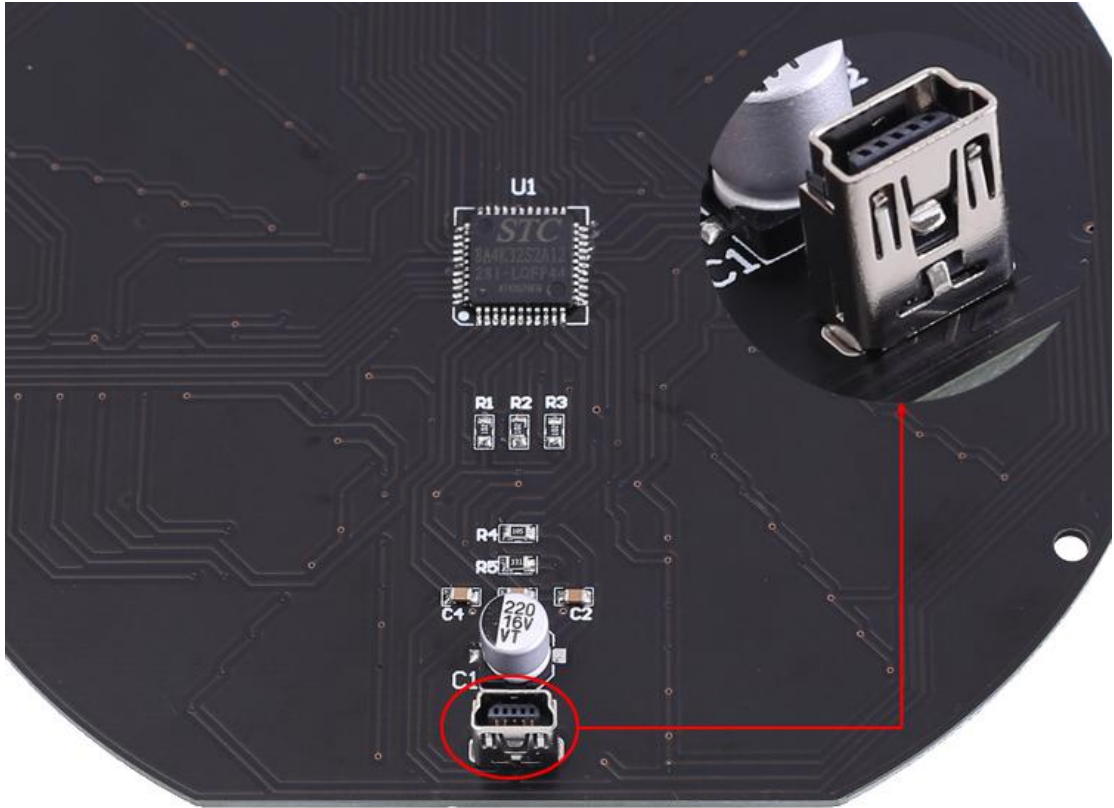Step 6: Install 1pcs 330ohm(331) 0805 SMD Resistor at R5.

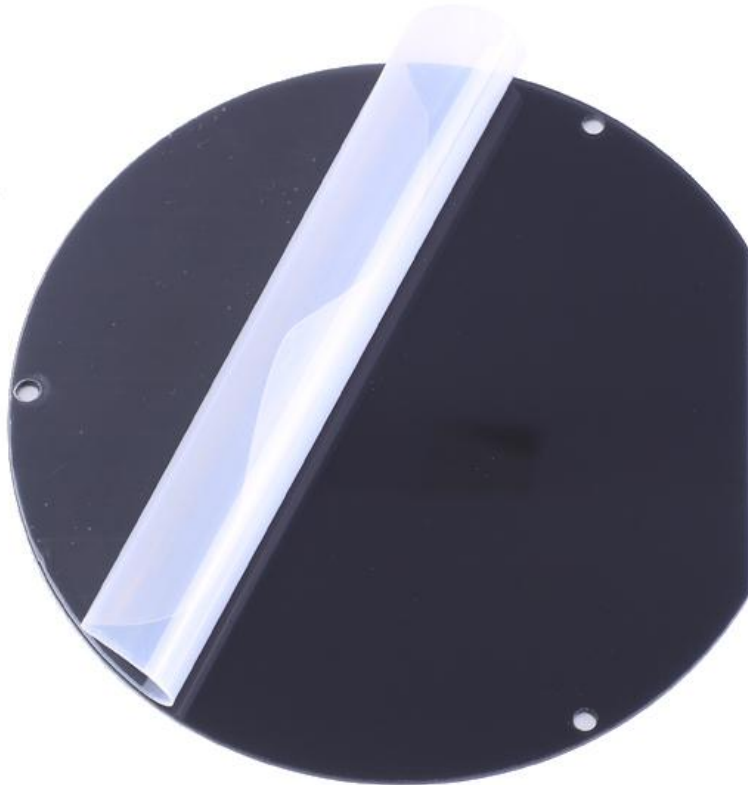Step 7: Install 3pcs 0.1uF 0805 SMD Capacitor at C2~C4.

Step 8: Install 1pcs 220uF 16V SMD Electrolytic capacitor at C1.

Mark

Step 9: Install 1pcs MINI USB Female Socket at J1.

Step 10: Remove the protective film from the acrylic surface.

Step 11: Fixed Acrylic Board by Screw Bolt and Nut.
Black acrylic placed in front.

Step 12: Connect to power supply and audio to enjoy the effect.
Press touch button to switch display mode.

Touch Button