



Red-Green LED Music Spectrum Display DIY Kit

1.Introduction:

Red-Green LED Music Spectrum Display DIY Kit with LED flashing.

Its display effect changes automatically according to the input audio which can presenting a very gorgeous effect.

It has six built-in display modes, users can freely choose according to their needs.

It also support AUX audio input and then output to amplifier or earphone or digital speaker.

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

2.Feature:

Built-in 6-Kinds display mode

Adjustable display brightness

Audio input/output AUX socket which convenient to connect speakers

Dual LED colors are brightly displayed

DIY soldering project

3.Parameter:

Product Name:Red-Green LED Music Spectrum Display DIY Kit

Work Voltage:DC 5V

Display Color:Red&Green

Audio Input Mode:AUX audio input

Work Temperature:-20℃~85℃

Work Humidity:5%~85%RH

Size(Installed):149*60*32mm

4.Function:

- 1.Display mode:

The left button is used to switch display.

Display Mode 1: Traditional blinking mode.

Display Mode 2: Single point blinking mode.

Display Mode 3: Traditional blinking and Single point blinking.

Display Mode 4: Reverse display for Traditional blinking.

Display Mode 5: Reverse display for Traditional blinking and Single point blinking.

Display Mode 6: Automatically switch display randomly

- 2.Adjustable display brightness.
 The right button is used to switch display brightness.
 There are a total of 11 brightness levels.
- 3.AUX Audio Socket.
 There are two AUX audio socket. User can choose any one of them as the audio input interface and then the another must be the audio output interface.

5.Note:

- ✧ Please do not use mobile power supply to provide working voltage for it. Otherwise it will damage the IC!
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6. Components List:

No.	Component Name	PCB Marker	Parameter	QTY
1	Metal Film Resistor	R1,R2	10Kohm	2
2	Crystal Oscillator	Y3	32.768MHz	1
3	IC Socket	U1	DIP-40	1
4	STC12C5A60S2 Controller	U1	DIP-40	1
5	Ceramic Capacitor	C3,C26	22pF	2
6	AUX 3.5mm Audio Socket	J1,J2	4Pin	2
7	XH2.54 Female Socket	P	16Pin	2
8	XH2.54 Male Pin	L	40Pin	1
9	Electrolytic Capacitor	C1	100uF	1
10	DC-005 Power Socket	DC5V_IN		1
11	Black Button	S1,S2		2
12	Red LED		2*5*7mm	64
13	Green LED		2*5*7mm	64
14	USB Power Wire		100cm	1
15	M3*10mm Screw			15
16	M3 Nut			15
17	Acrylic Board			6
18	Main PCB		141*52*1.6mm	1
19	LED PCB		141*52*1.6mm	1

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

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(3.0 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.Please wear anti-static gloves or anti-static wristbands when installing electronic components.

8.Installation Steps(Please be patient install):

Step 1: Install 2pcs 10Kohm Metal Film Resistor at R1,R2.

Step 2: Install 1pcs 32.768MHz Crystal Oscillator at Y3.

Step 3: Install 1pcs DIP-40 IC Socket at U1.There is a mark(notch) on one end of the IC Socket and there is a mark(curved silk screen printing) on PCB 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 4: Install 2pcs 22pF Ceramic Capacitor at C3,C26.

Step 5: Install 2pcs AUX 3.5mm Audio Socket at J1,J2.

Step 6: Cut 1pcs 8Pin XH2.54 Female Socket from 16Pin. Take care to avoid scattered metal pins.

Step 7: Install 1pcs 8Pin Female Socket at P00~P07 and 1pcs 16Pin Female Socket at P20~P37.

Step 8: Install 1pcs 100uF Electrolytic Capacitor at C1.Pay attention to distinguish between positive and negative.The shorter pin is negative pole and connect to the white mark on PCB.

Step 9: Install 1pcs DC-005 Power Socket at DC5V_IN. Note that the extra pins on the back must be cut off to facilitate the subsequent installation of the shell.

Step 10: Install 2pcs Black Button at S1,S2.

Step 11: Install 1pcs DIP-40 IC STC12C5A60S2 Controller at U1.There is a mark(notch) on one end of the IC Socket and there is a mark(curved silk

screen printing) 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.

Step 12: Cut 1pcs 8pin Male Pin and 1pcs 16Pin Male Pin from 40Pin Male Pin.

Step 13: Install 1pcs 8pin Male Pin and 1pcs 16Pin Male Pin on the back of LED PCB board.

Step 14: Identify the positive(anode) and negative(cathode) lead of LED. The leads of the LED must be installed correctly, otherwise the LED cannot be turned on. Here are four methods as following:

- According to the length of the LED lead to distinguish. The longer pin is positive(anode) lead. The shorter pin is negative(cathode) lead.
- Identify the negative(cathode) of the LED is to look into the plastic case where one can see that the negative(cathode) is much thicker/bigger inside the plastic case than the anode lead.
- Test by 3V battery or multi-meter. The pin is positive(anode) lead which has connect to the positive of 3V if LED can light up after connect 3V power supply. (LED should not be powered directly from the 3V for a short time: less than 0.5second)
- It is positive(anode) where the white mark "+" pointing to on PCB.

Step 15: Install 64pcs 2*5*7mm Red LED. Interval one column and then install the next column. Note: The longer pin connect to '+' pad.

Step 16: Install 64pcs 2*5*7mm Green LED. Note: The longer pin connect to '+' pad.

Step 17: Tear off the acrylic surface protective film.

Step 18: Install 1pcs Acrylic bottom plate by 3pcs M3*10mm Screw and 3pcs M3 Nut. Be careful not to tighten the screws too tight.

Step 19: Insert the LED board into the main PCB board.

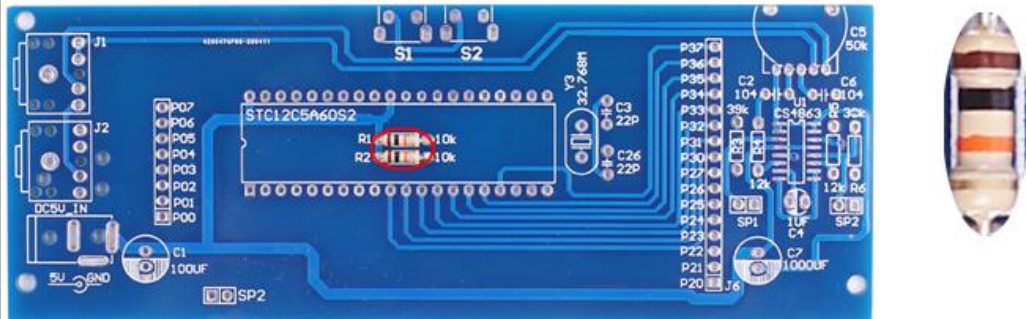
Step 20: Install the 4pcs acrylic panels on the side and fix by 2pcs M3*10mm Screw and 8pcs M3 Nut. Users can use tweezers to clamp the nut and fix the screw when installing M3 screws.

Step 21: Install 1pcs Acrylic top board by 4pcs M3*10mm Screw and 4pcs M3 Nut on the top of the PCB.

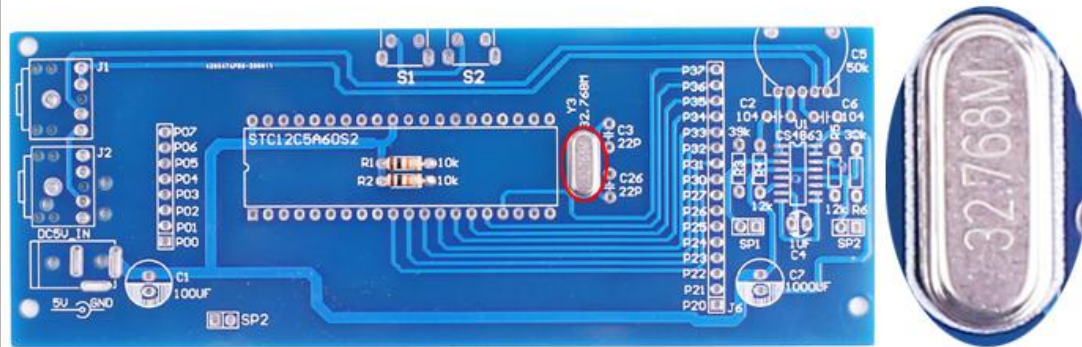
Step 22: Connect to power supply and music audio to enjoy the effect.

10. Install shown steps:

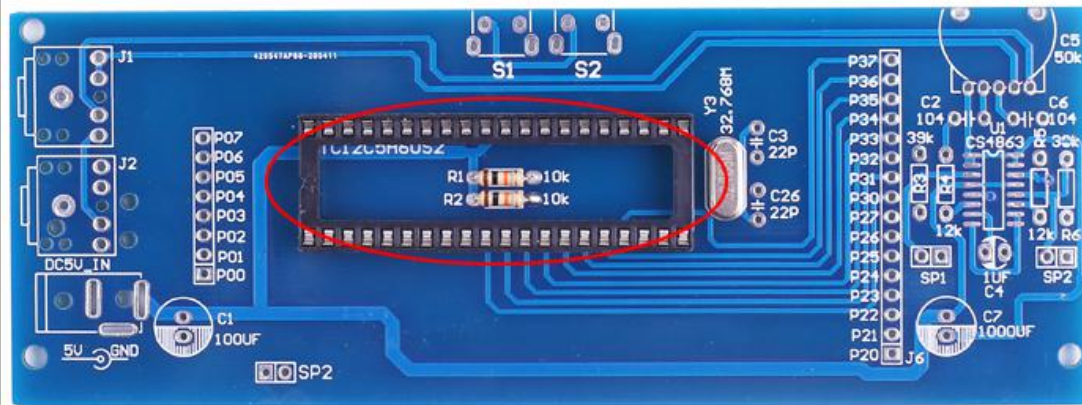
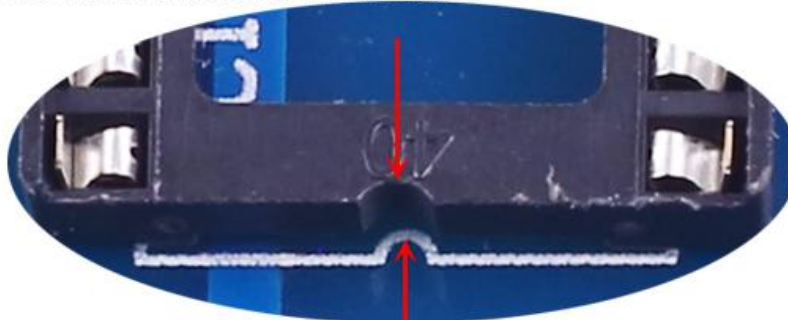
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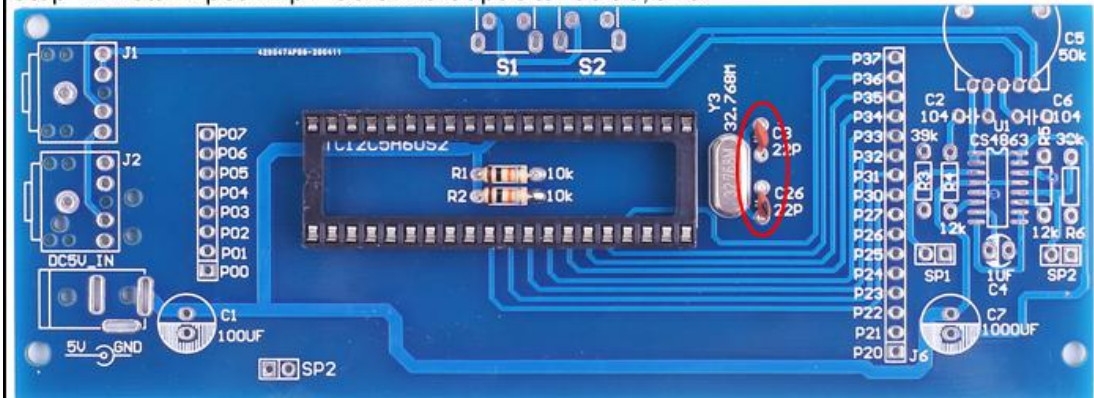
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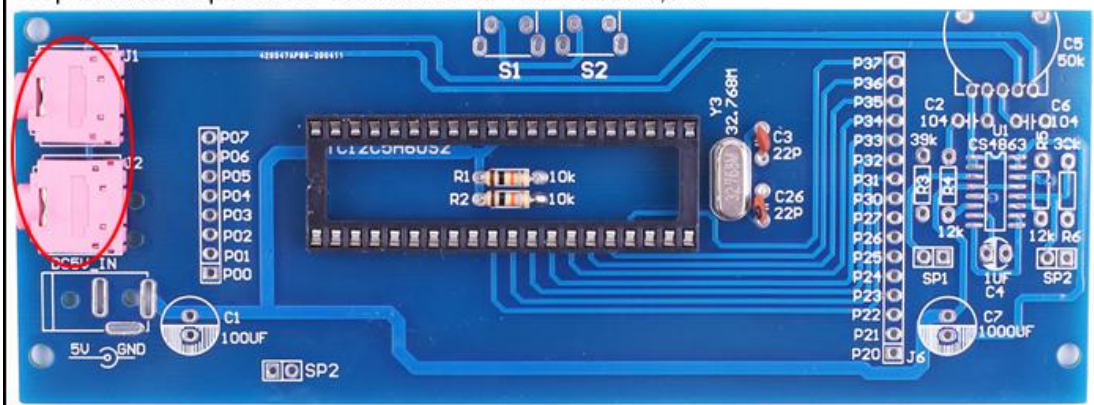
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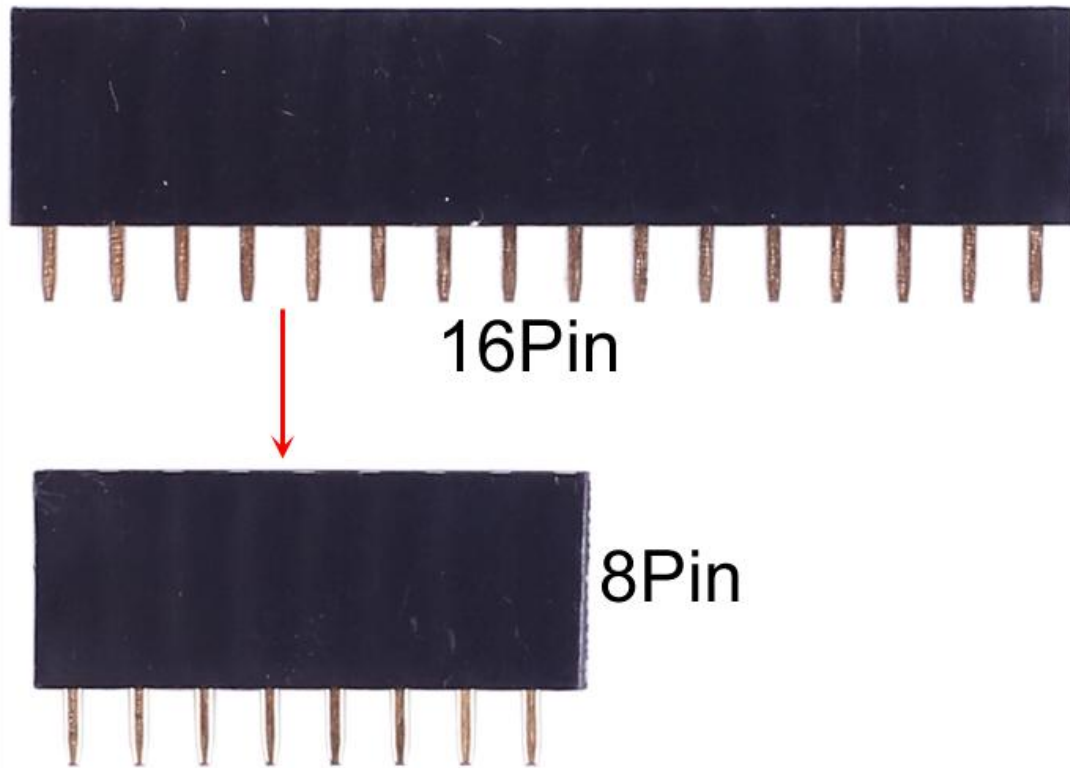
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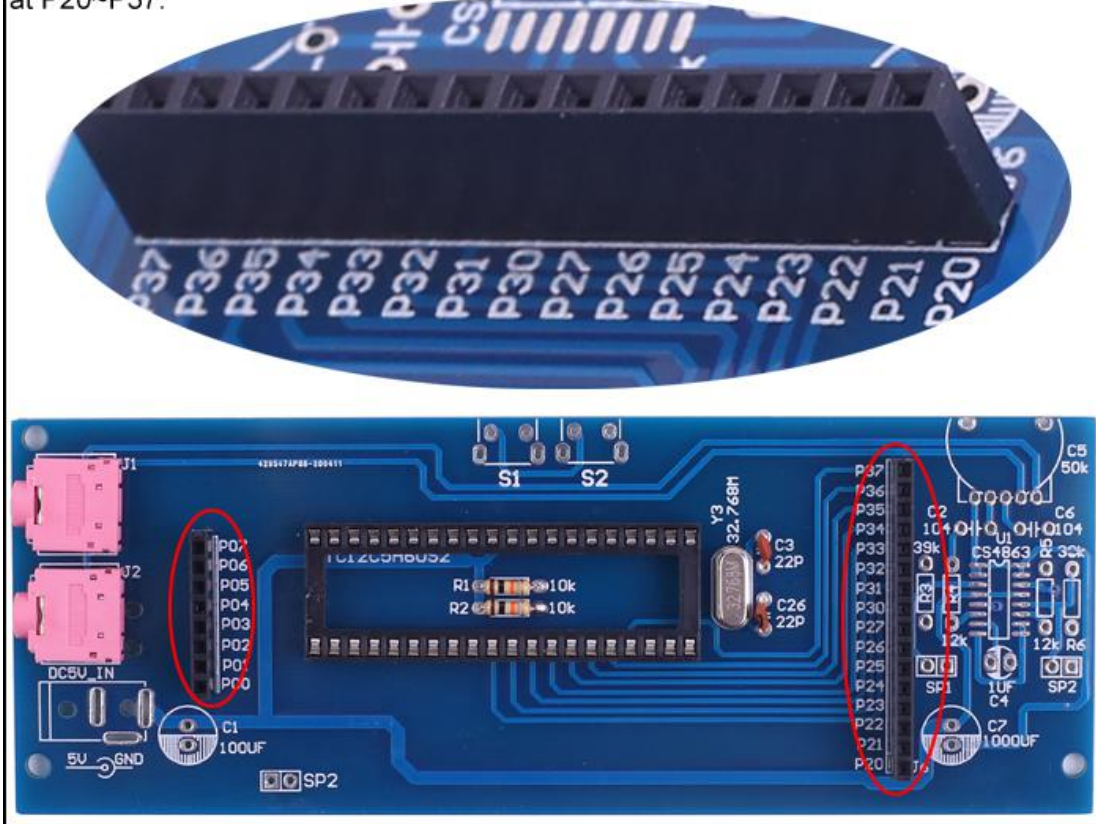
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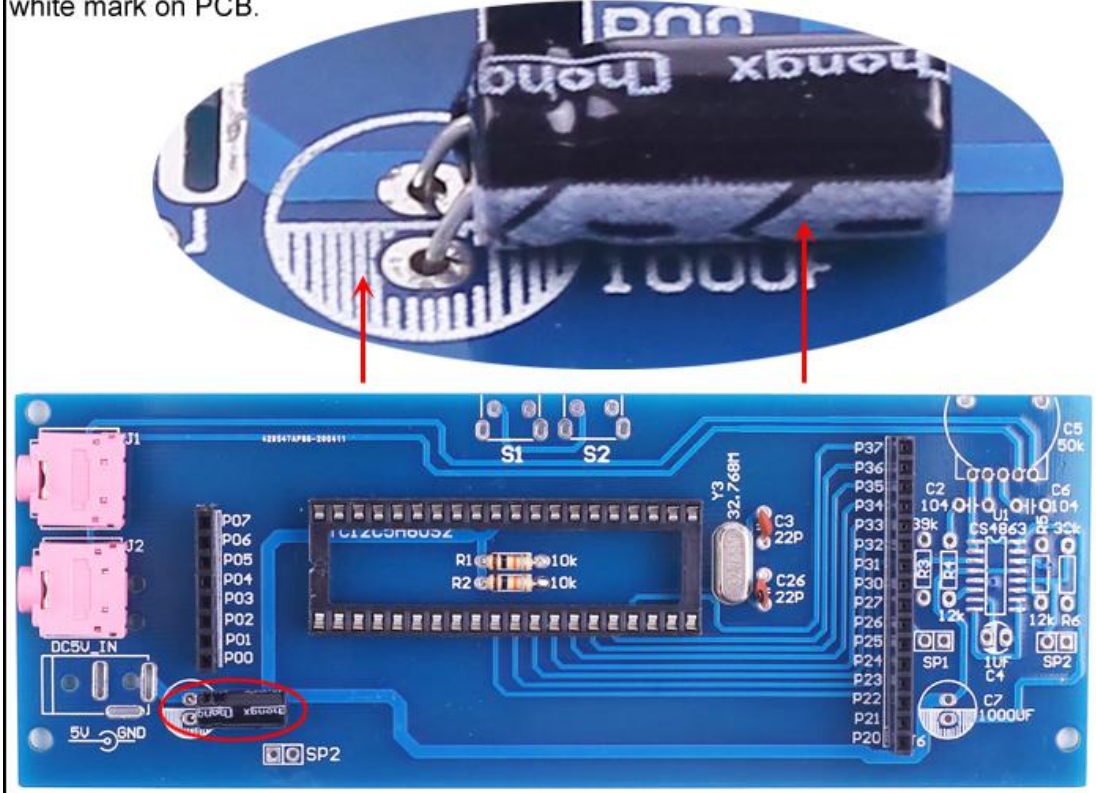
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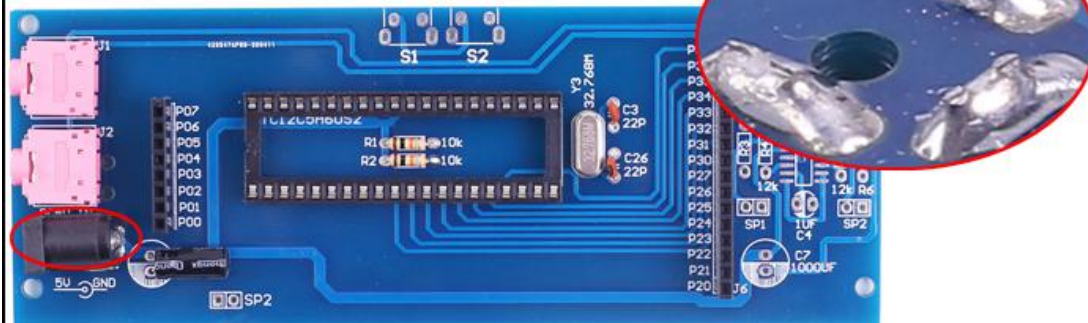
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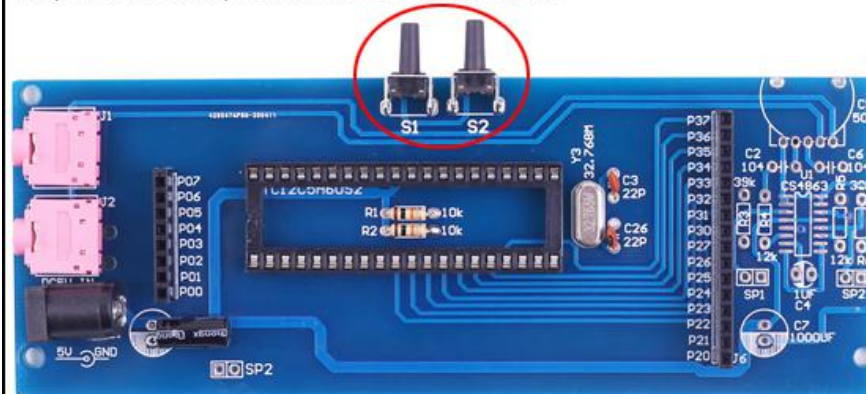
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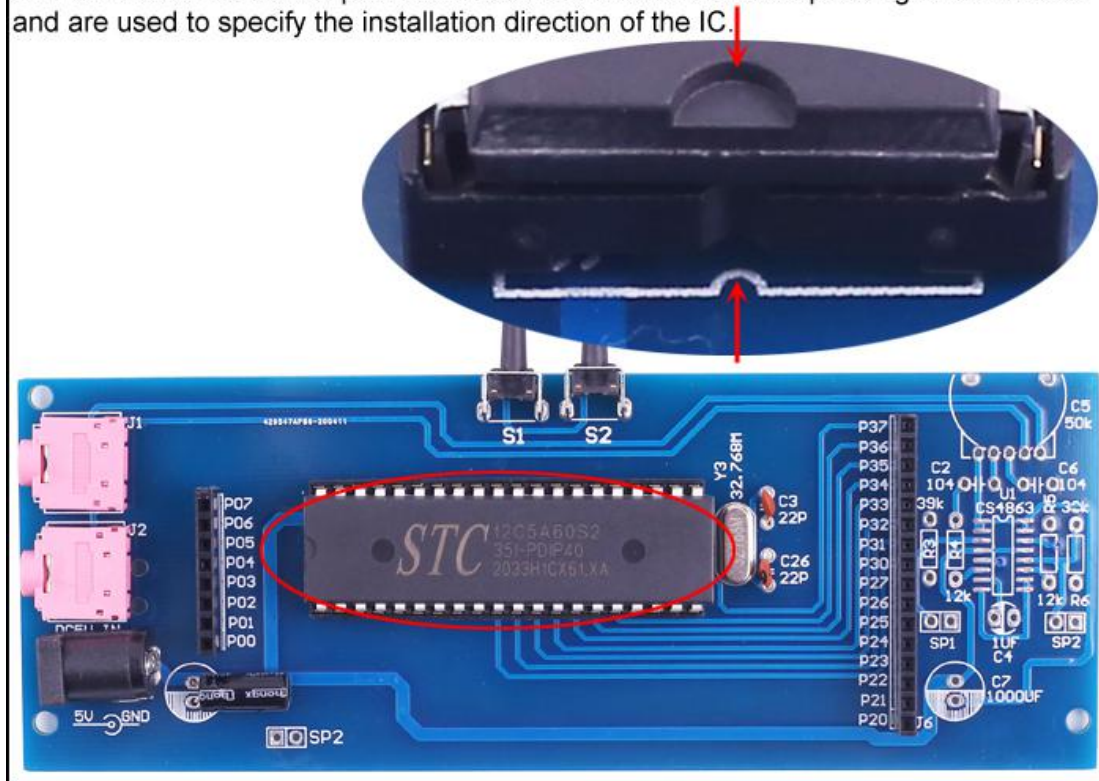
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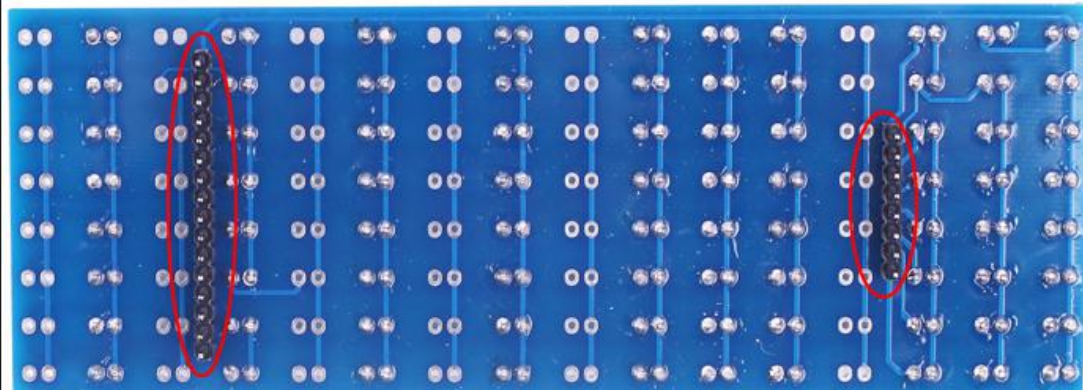


16Pin



8Pin

Step 13: Install 1pcs 8pin Male Pin and 1pcs 16Pin Male Pin on the back of LED PCB board.



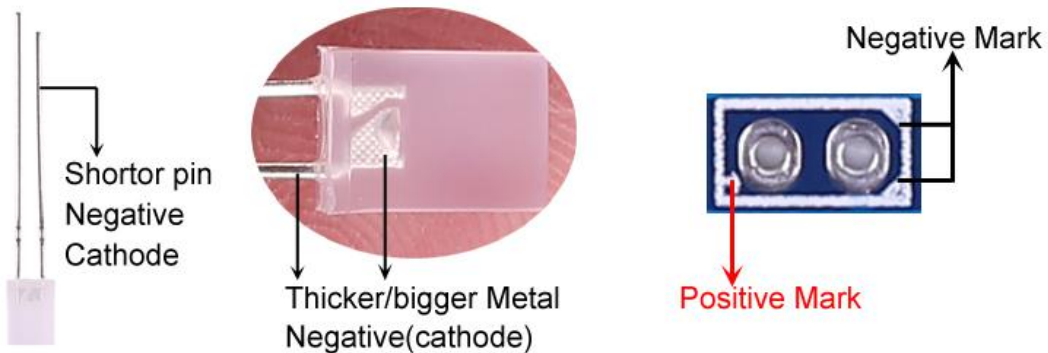
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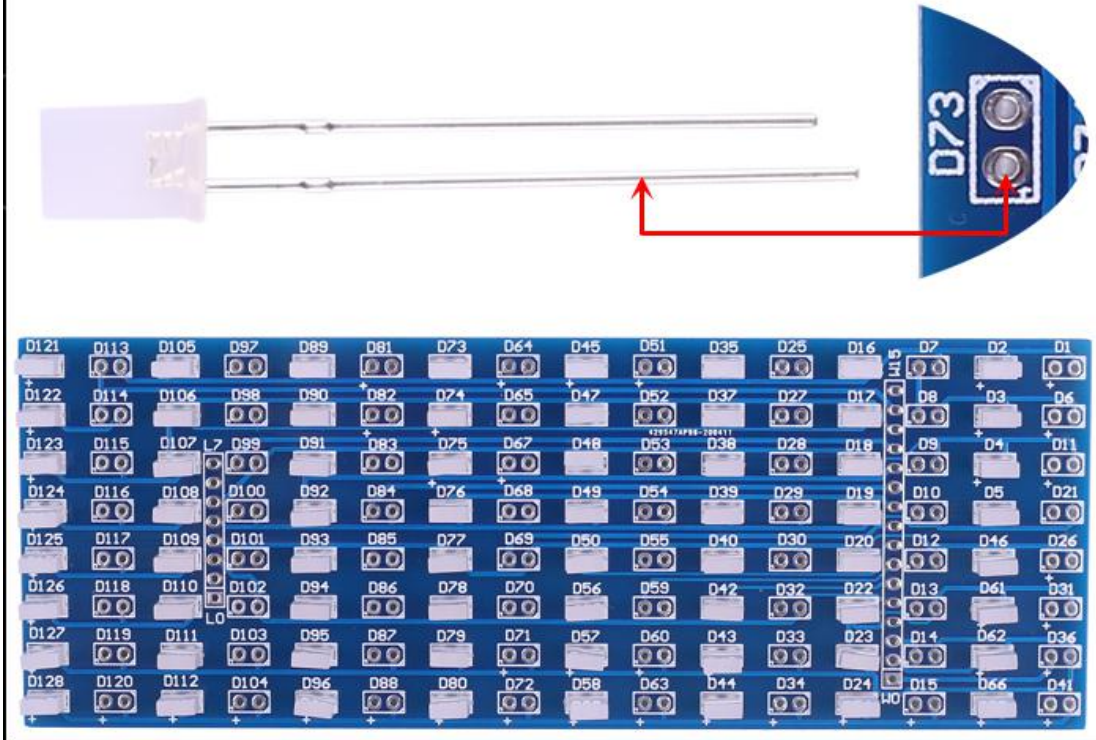
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(LED can not be powered directly from 3V for a short time:less then 0.5second)

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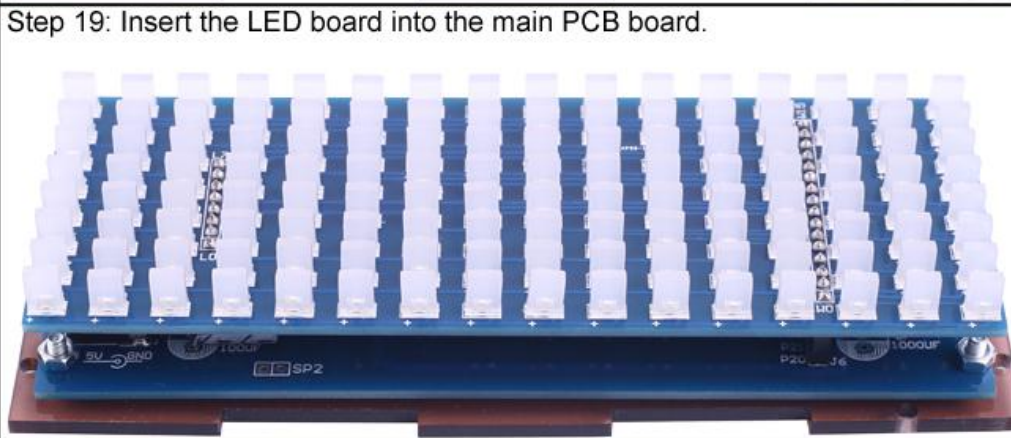
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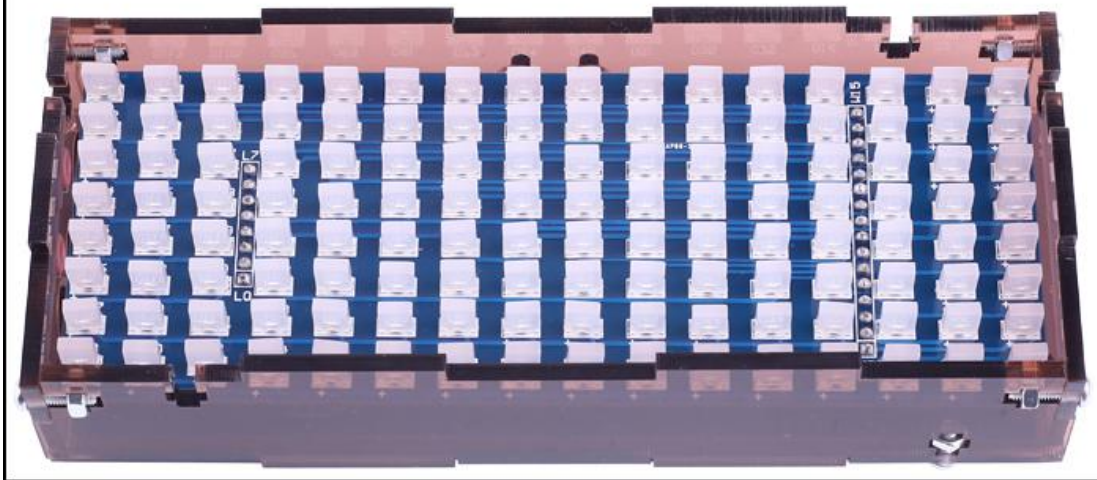
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