

Electronic Windmill DIY Kit

I. Introduction

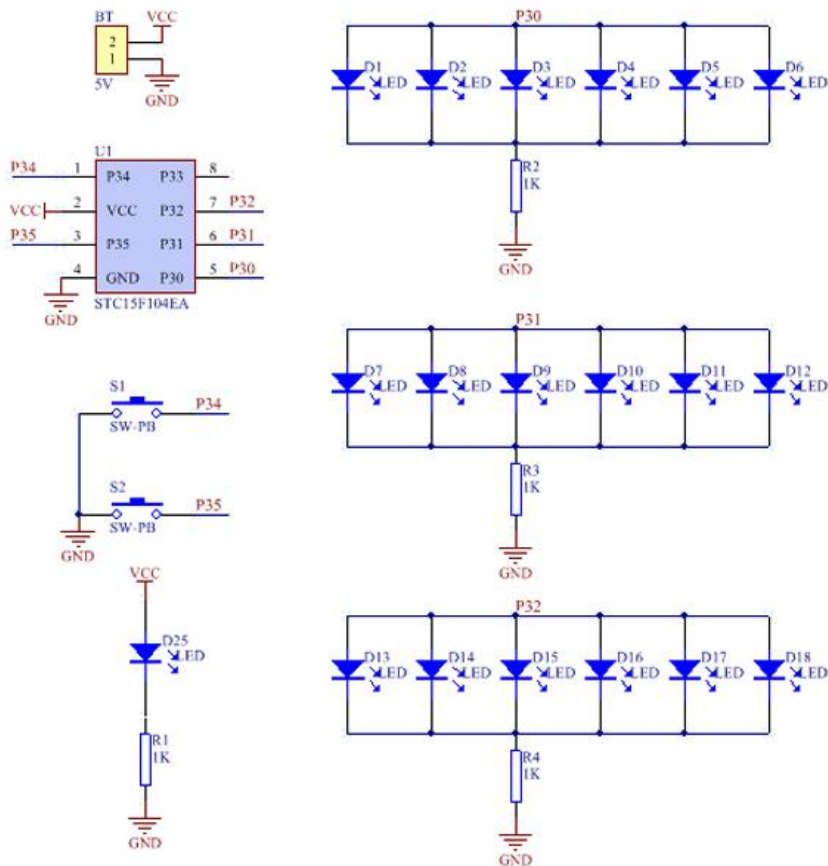
This is a DIY MCU design teaching Electronic windmills kit parts for soldering practice.

The circuit is based on MCU control. MCU control different vertical LED lighting, so as to achieve the effect of windmill rotation. The speed of the windmill can be changed by press the buttons.

II. Parameter

NO.	Parameter	Value
1	Operating voltage	DC 5V
2	Work efficiency	Adjustable speed
3	PCB board material	RF-4
4	Size	40mm*50mm

III. Schematic



IV. Component listing

NO.	Component Name	PCB Marker	Parameter	QTY
1	Red LED	D1-D19	3mm	19
2	Metal Film Resistor	R1-R4	1K	4
3	Button	S1,S2	6*6mm	2
4	STC15F104EA	U1	SOP-8	1
5	Male Pin	DC	2P	1
6	PCB		40*50mm	1

NOTE:Users can complete the installation by PCB silk screen and component listing

V. Function:

- 1>.Press left to increase fan speed.
- 2>.Press right to decrease fan speed.

VI. Installation Tips:

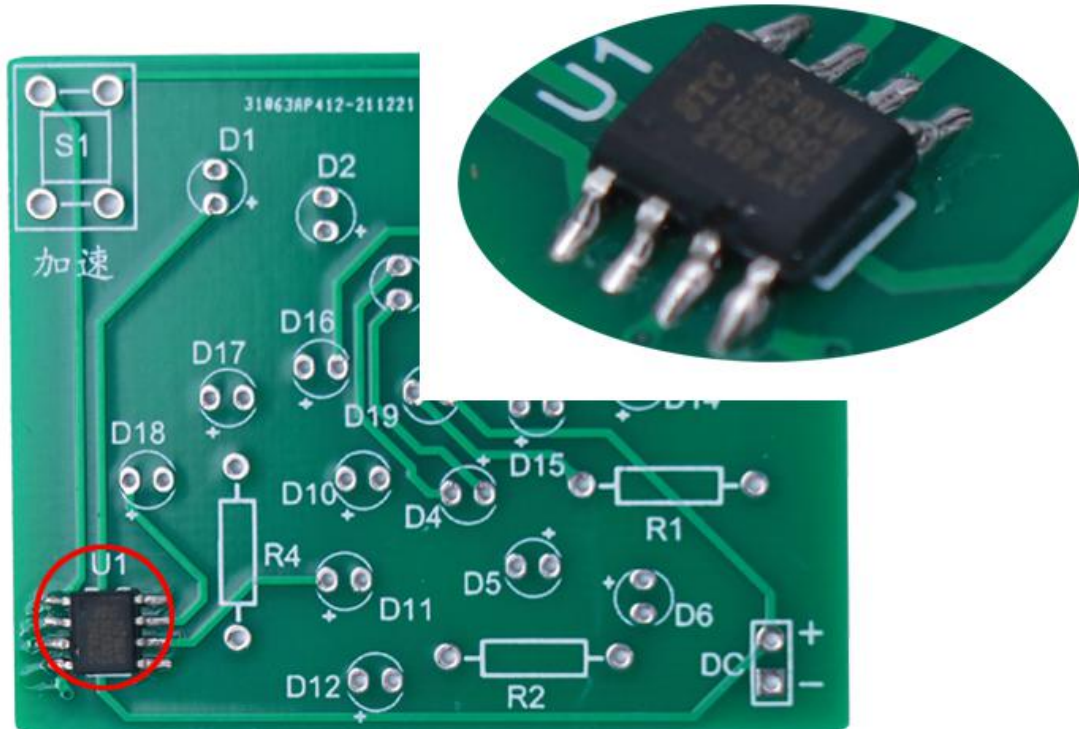
- 1>.User needs to prepare the welding tool at first.
- 2>.Please be patient until the installation is complete.
- 3>.The package is DIY kit.It need finish install by user.
- 4>.The soldering iron can't touch the components for a long time(3s), otherwise damage components.
- 5>.Pay attention to the positive 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.

VII. Installation Steps(Please be patient install!!!):

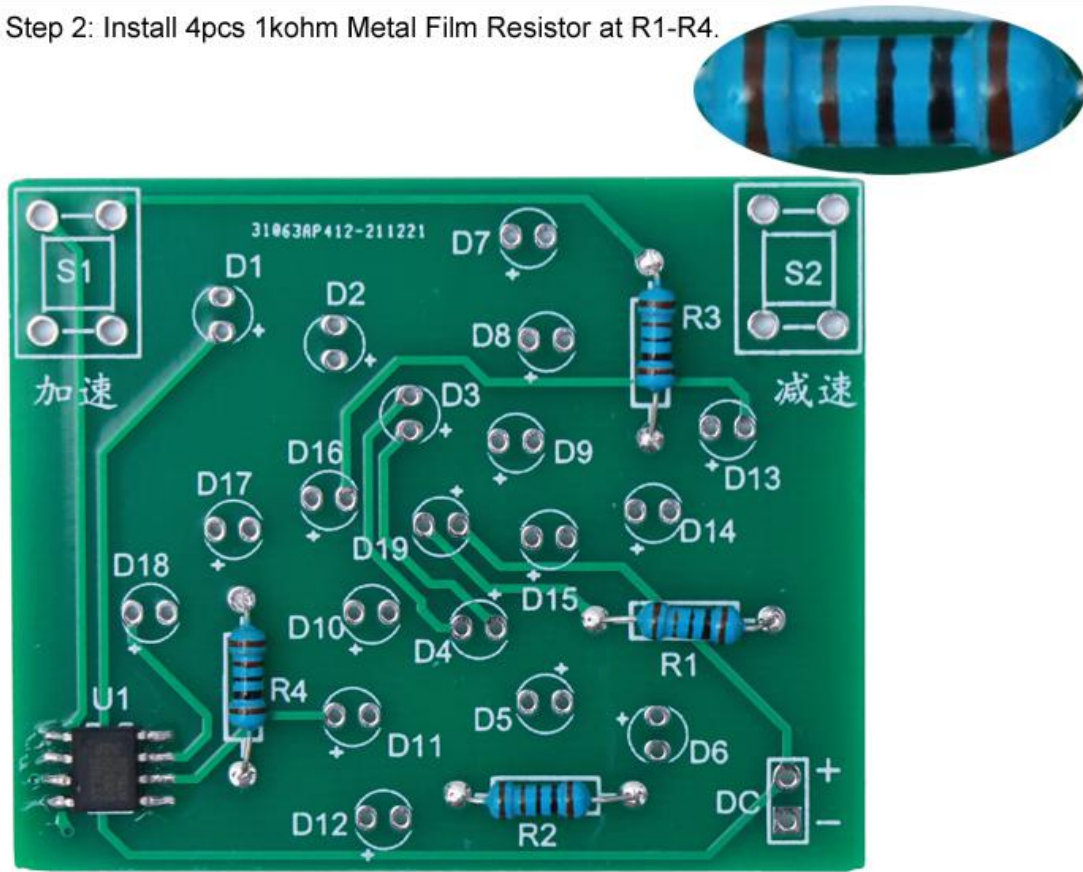
- 1>.Step 1: Install 1pcs SOP-8 STC15F104EA on U1.There is a mark on the upper left corner of the chip which corresponding to the PCB silk screen arc. They are used to determine the chip mounting orientation.
- 2>.Step 2: Install 4pcs 1kohm Metal Film Resistor at R1-R4.
- 3>.Step 3: Identify the LED installation direction. The longer pin connect to pad which has marked '+'
- 4>.Step 4: Install 19pcs 3mm Red LED at D1-D19.
- 5>.Step 5: Install 2pcs button on S1,S2.
- 6>.Step 6: Connect power pin by 2pin male pin.Users can also use other power sockets or directly connect the wires.
- 7>.Step 7: Connect 5V work voltage and then press buttons to adjust display effect.

VIII. Install shown steps:

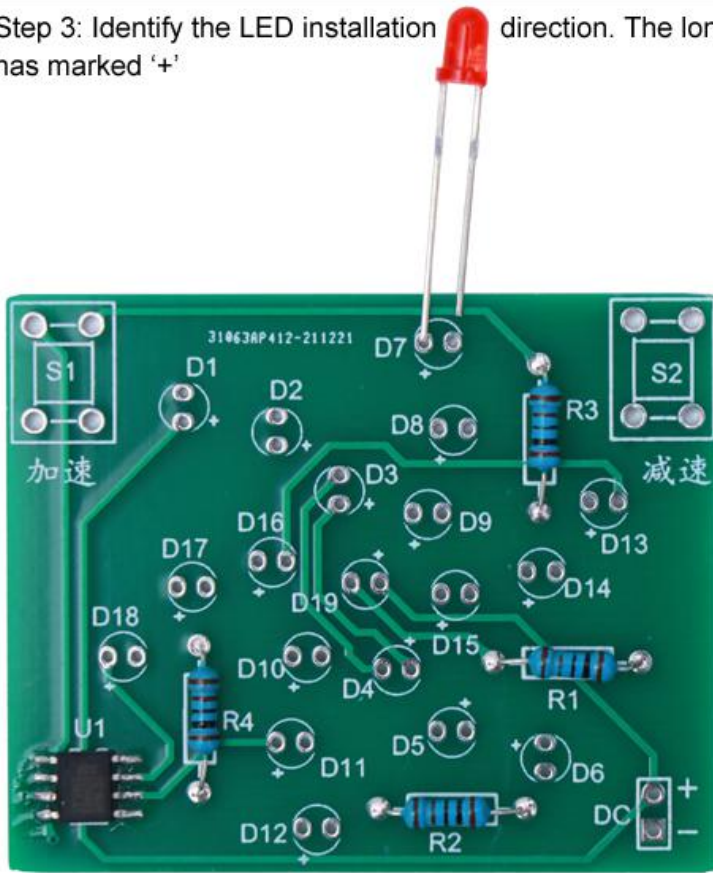
Step 1: Install 1pcs SOP-8 STC15F104EA on U1. There is a mark on the upper left corner of the chip which corresponding to the PCB silk screen arc. They are used to determine the chip mounting orientation.



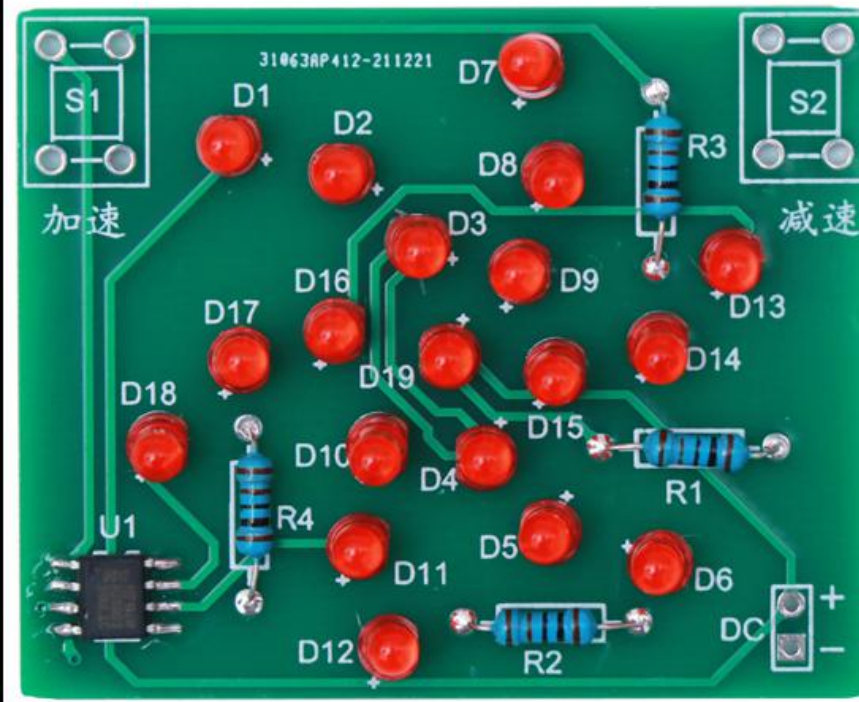
Step 2: Install 4pcs 1kohm Metal Film Resistor at R1-R4.



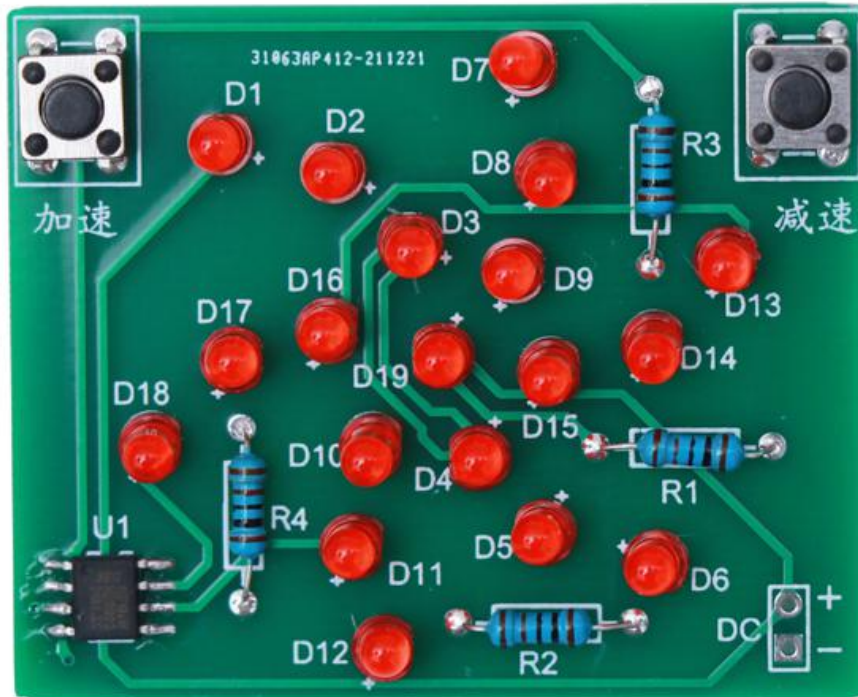
Step 3: Identify the LED installation direction. The longer pin connect to pad which has marked '+'



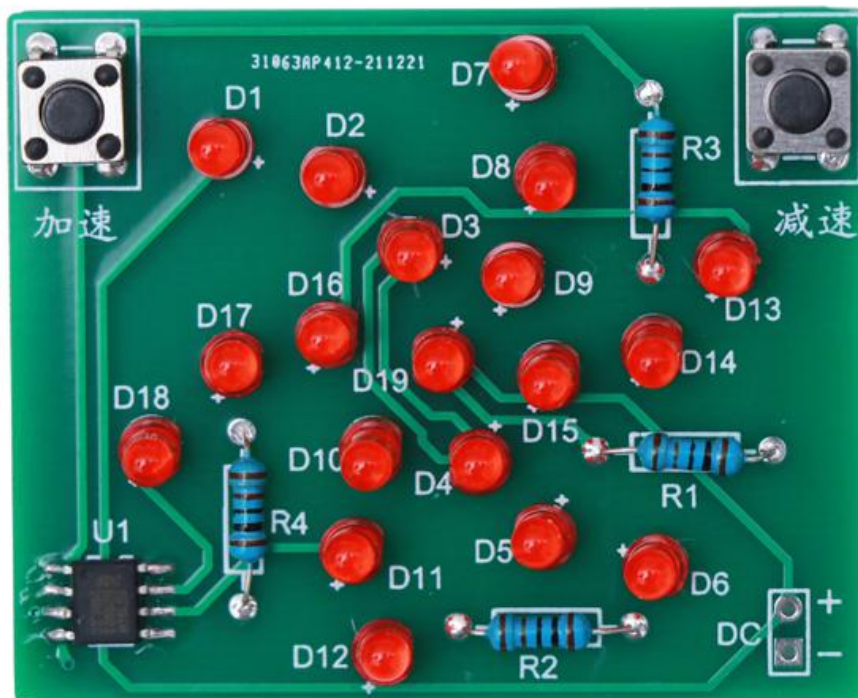
Step 4: Install 19pcs 3mm Red LED at D1-D19.



Step 5: Install 2pcs button on S1,S2.



Step 6: Connect power pin by 2pin male pin. Users can also use other power sockets or directly connect the wires.



Step 7: Connect 5V work voltage and then press buttons to adjust display effect.