Electronic Hourglass DIY Kit

1. Introduction

The suite adopts 1.6mm double layer PCB, and the circuit consists of 57 pieces warm white LED. Under the control of MCU program, it displays analog hourglass image. The micro switch can adjust the speed of hourglass, the bright LED quantity at the same time is 28, and it can be used as decoration of small night light. 0.5W power consumption.

2.Parameter

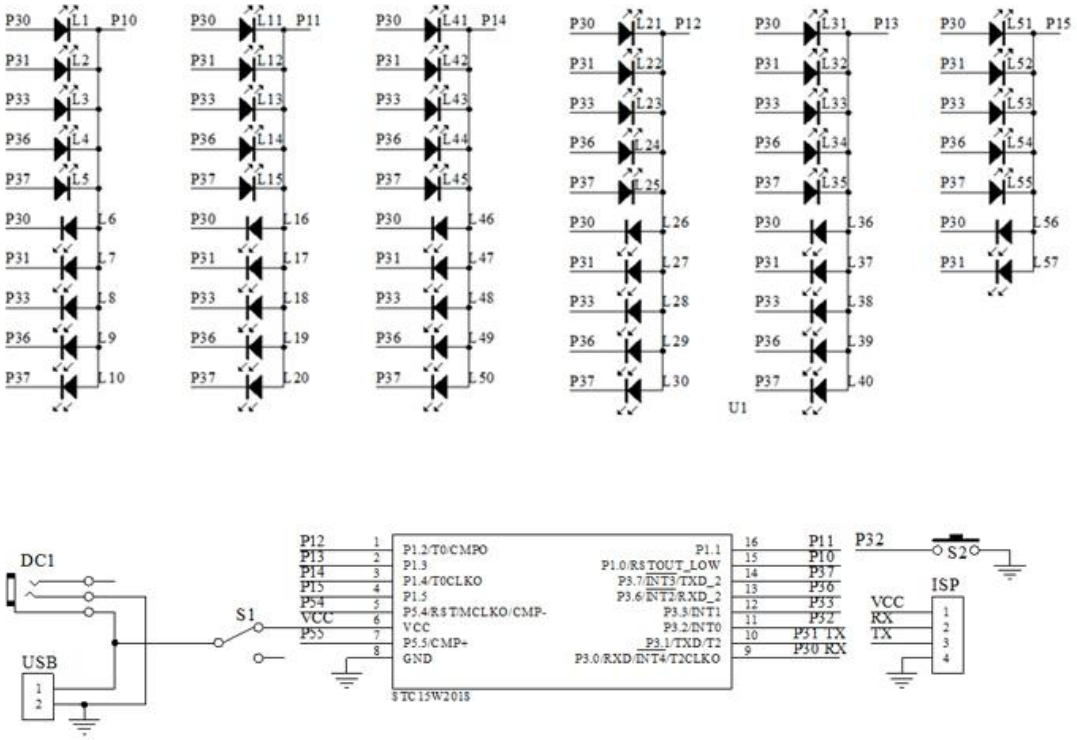
1>.Board Size：84*40mm

2>.Power Supply Voltage：5V

3.Principle explanation

The circuit consists of 57 3mm white hair blue LED composition of the hourglass pattern.In the control of the microcontroller, showing the effect of simulated hourglass.S1 is power switch,USB(Do not include in kits) and DC1(3mm power socket) are all power input interface,you can use any of them.ISP is the program download interface.Controller is SC15W201S with code(NOTE:Do not update the code inside arbitrarily,the internal code is not shared).If user can write code,user can update code by ISP interface.Switch S2 can control the speed of hourglass.

4.Schematic

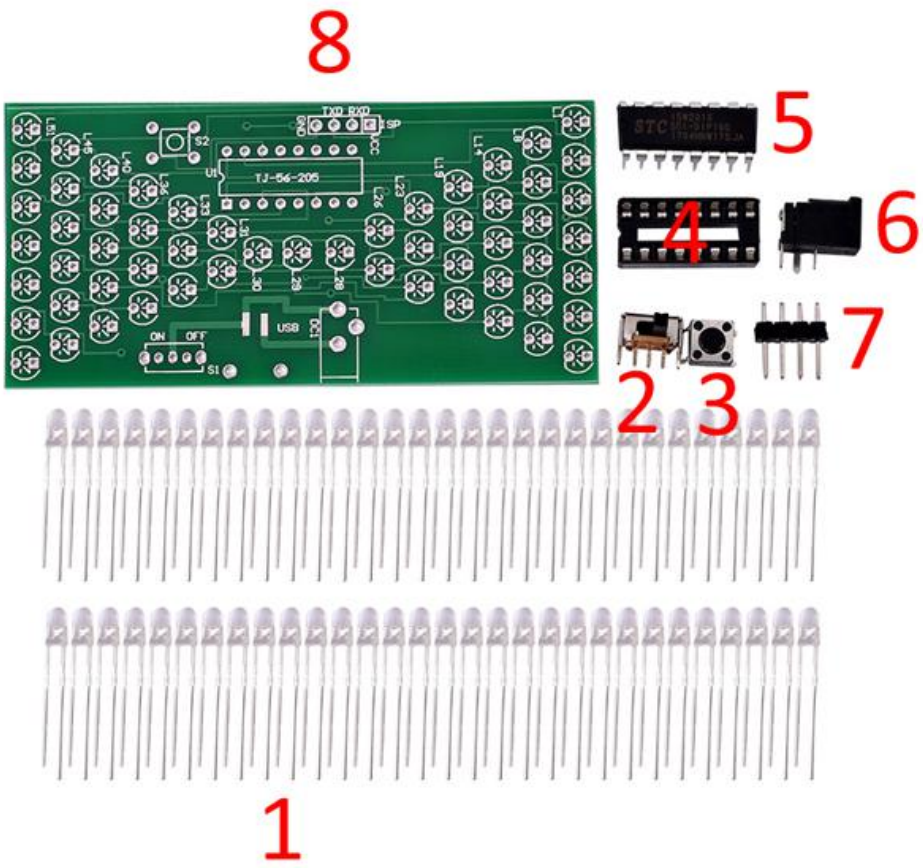


5.Component listing

NO.	Component Name	PCB Marker	Parameter	Quantity	Remarks
1	White LED	L1-L57	3mm	57	
2	Toggle Switches	S1	3Pin	1	
3	Button	S2	6*6*2mm	1	
4	IC Socket	U1	DIP-16	1	
5	STC15W201S	U1	DIP-16	1	Install on IC socket
6	Power Socket	DC1		1	
7	Male Pin	ISP	4P	1	
8	PCB		84*40mm	1	

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

6. Component Description



1>.57pcs 3mm white LED

2>.1pcs Toggle Switches

3>.1pcs Button

4>.1pcs DIP-16 IC Socket

5>.1pcs DIP-16 STC15W201S

6>.1pcs Power Socket

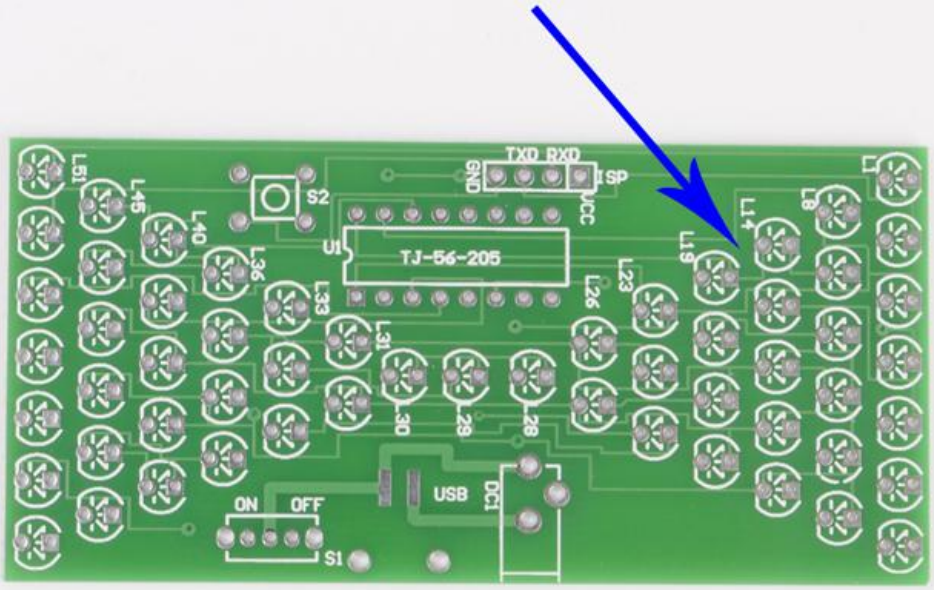
7>.1pcs 4P Male Pin

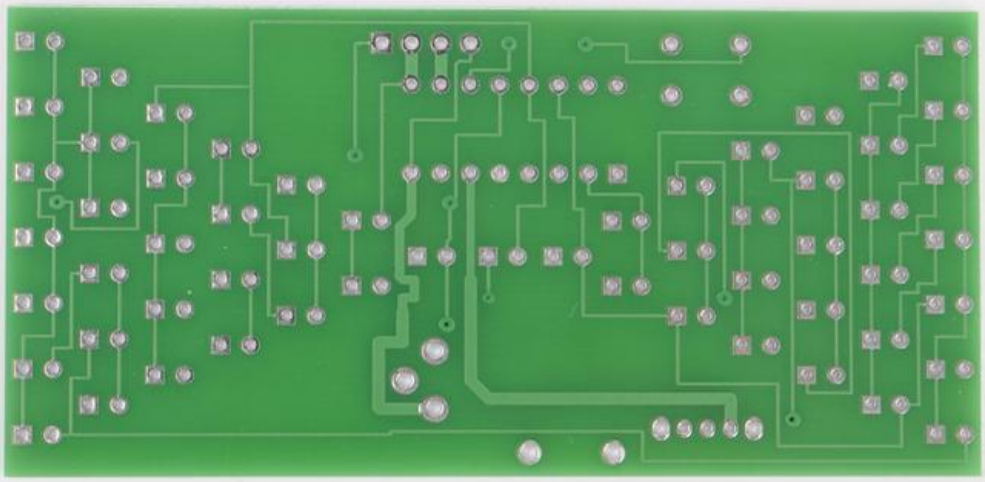
8>.1pcs PCB

7.Installation Steps

All LED’s negative on the right!!

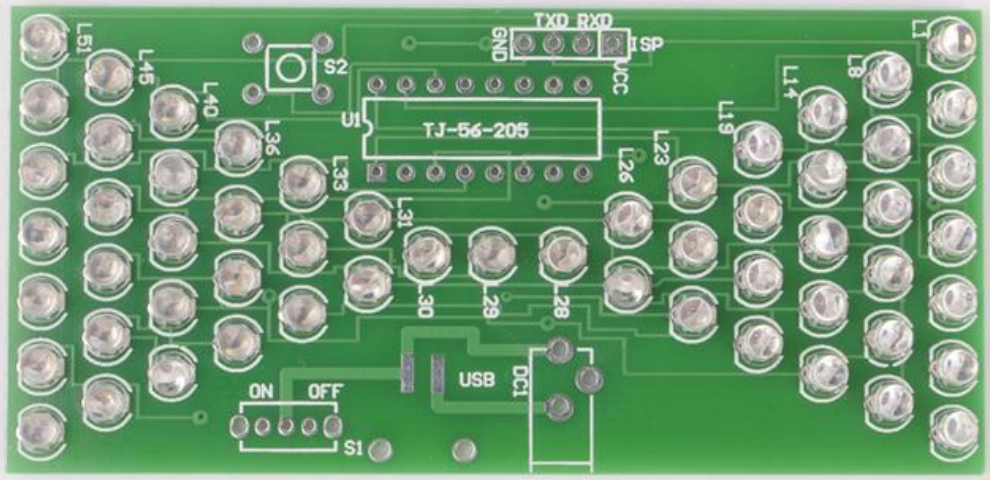
All LEDs are installed in the same direction





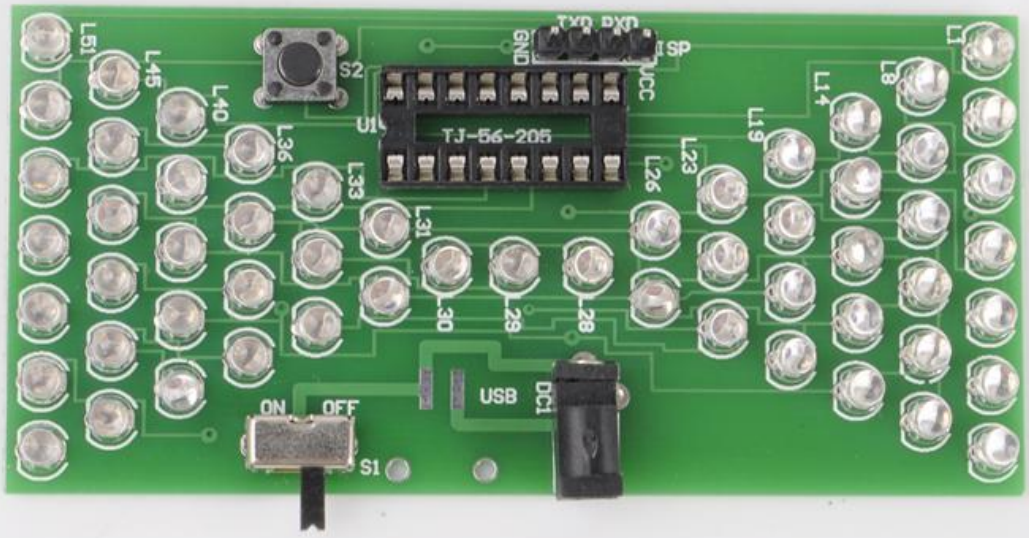
Step 1

Install 57pcs LEDs

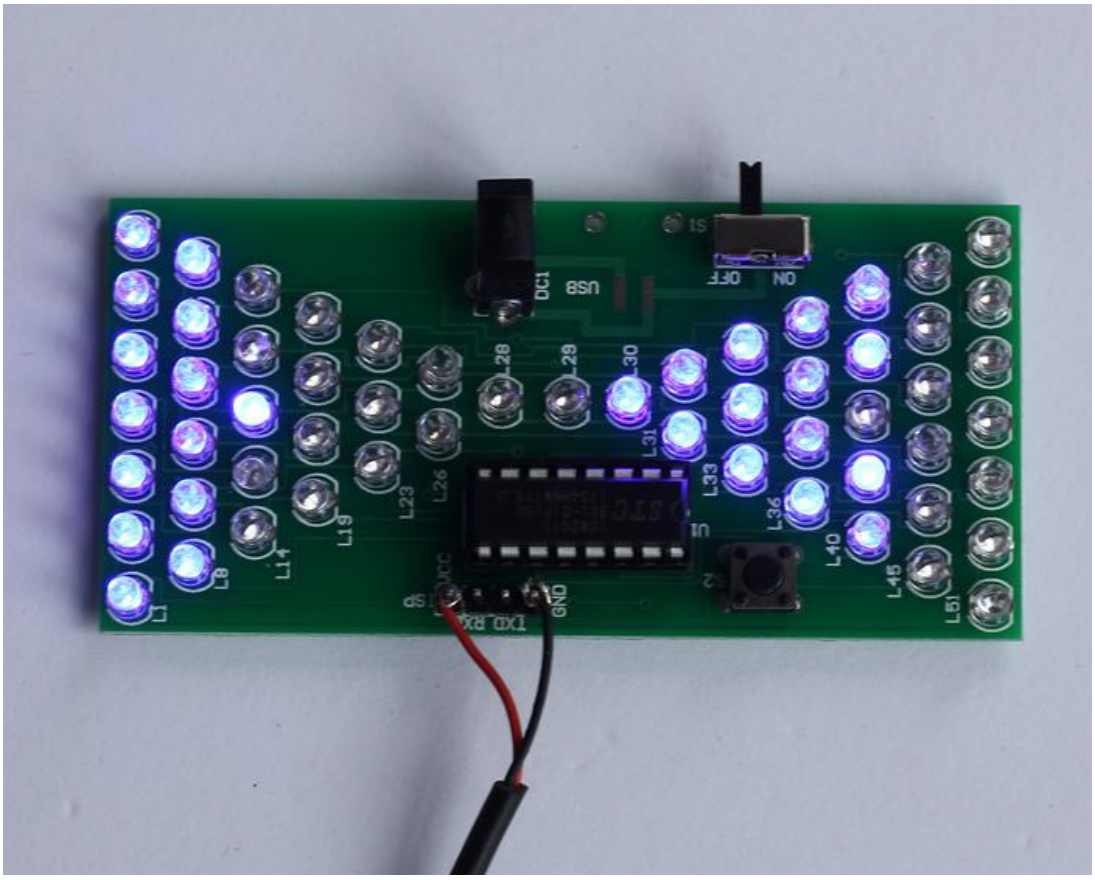


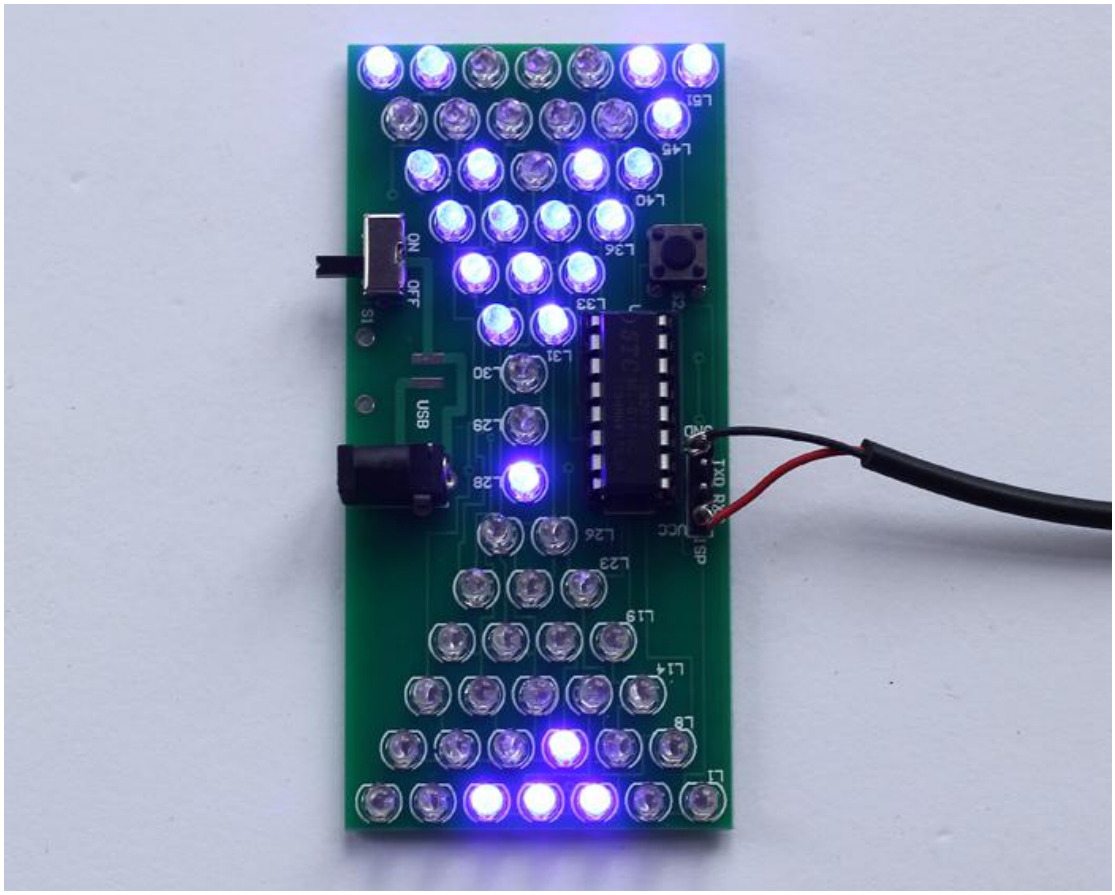
Step 2

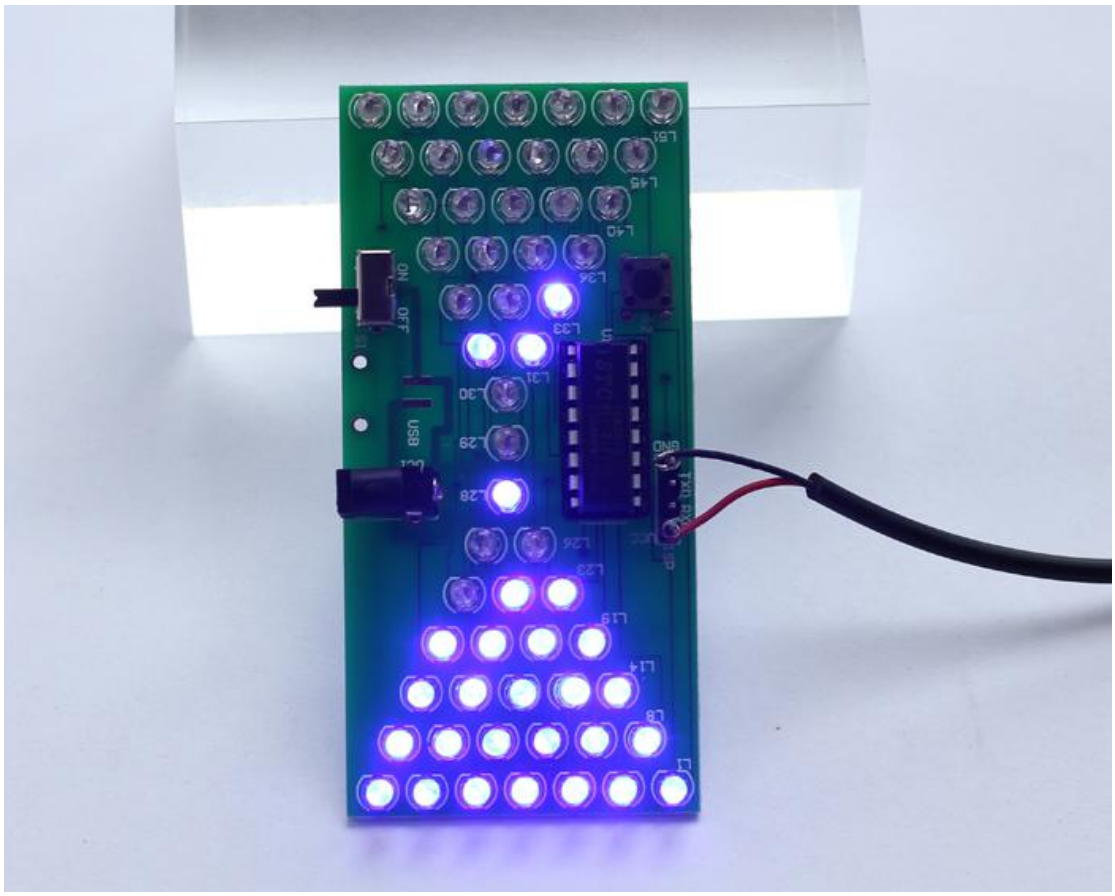
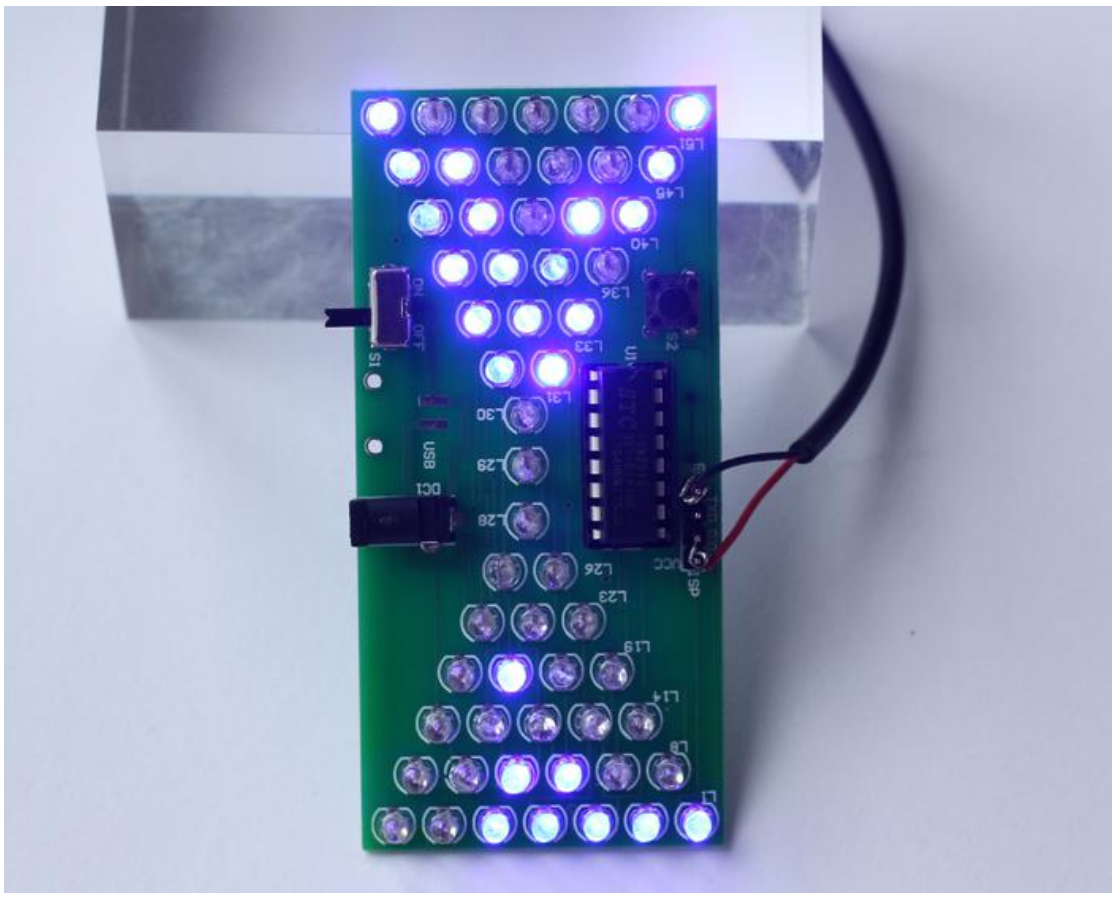
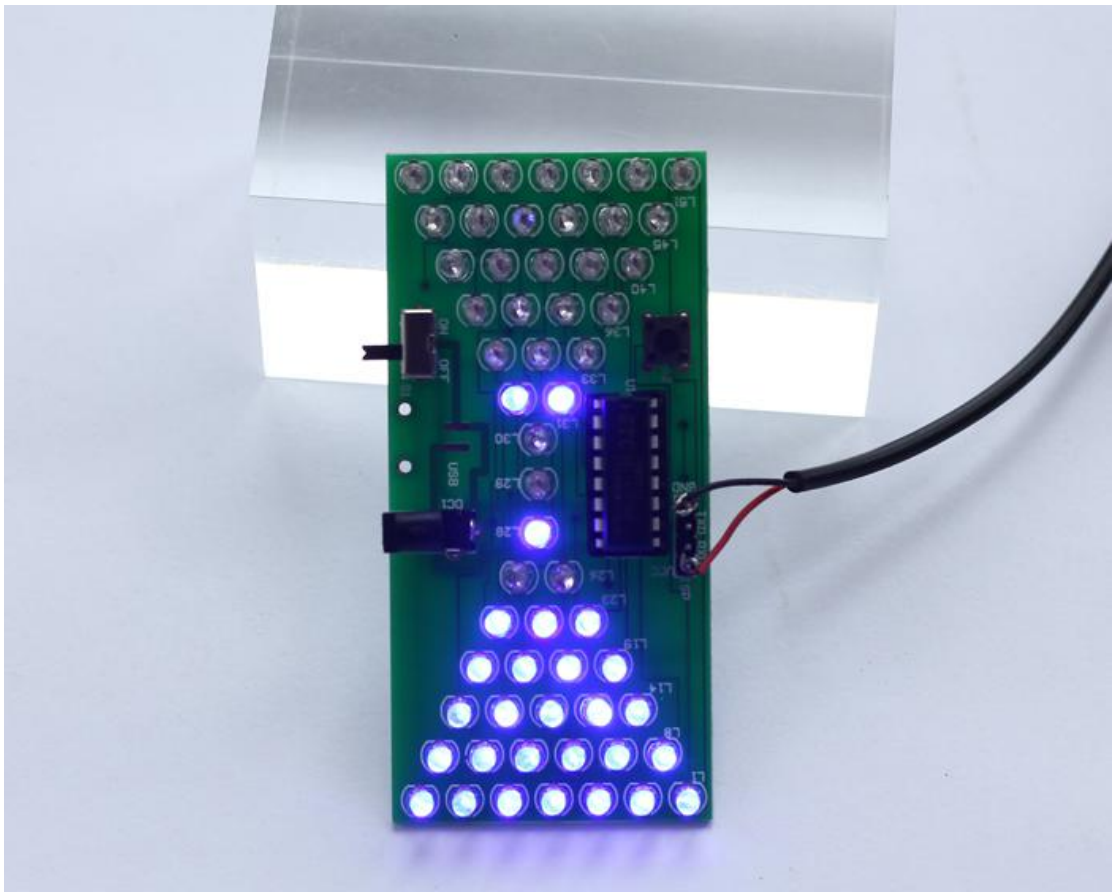
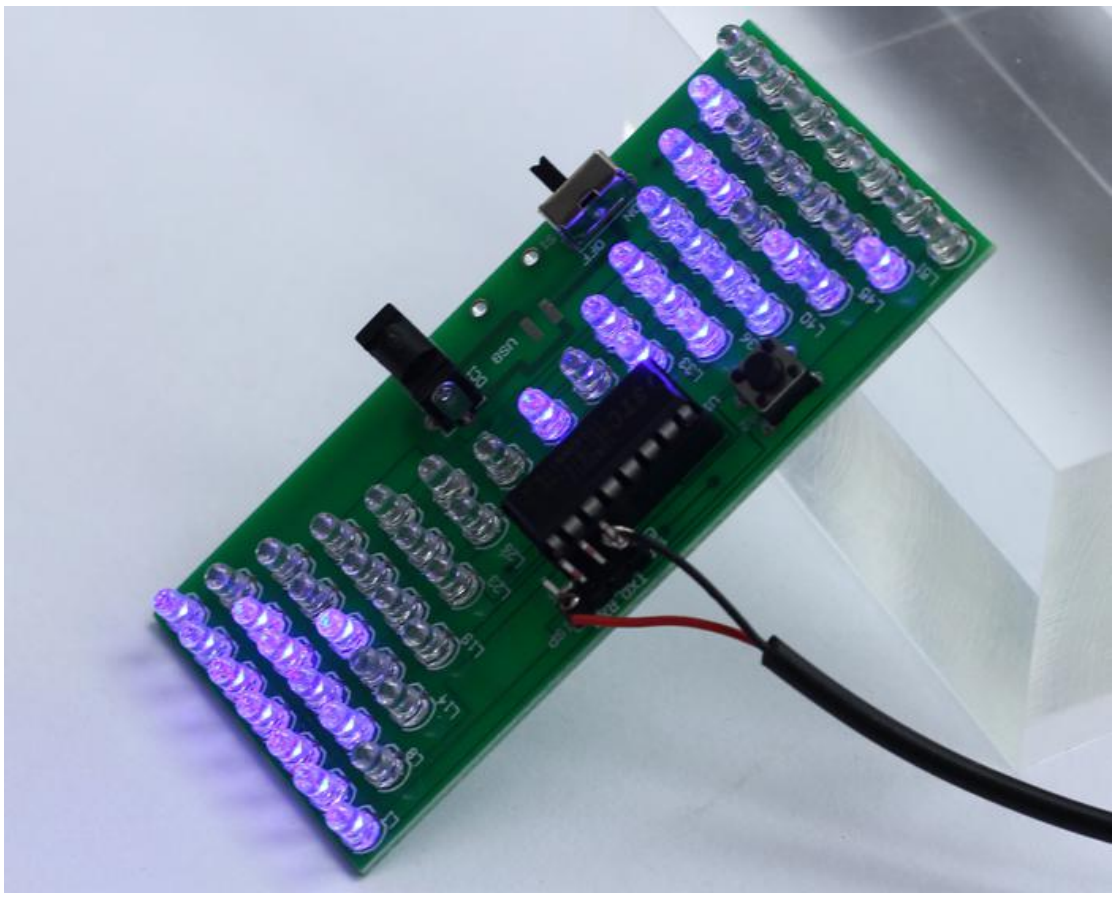
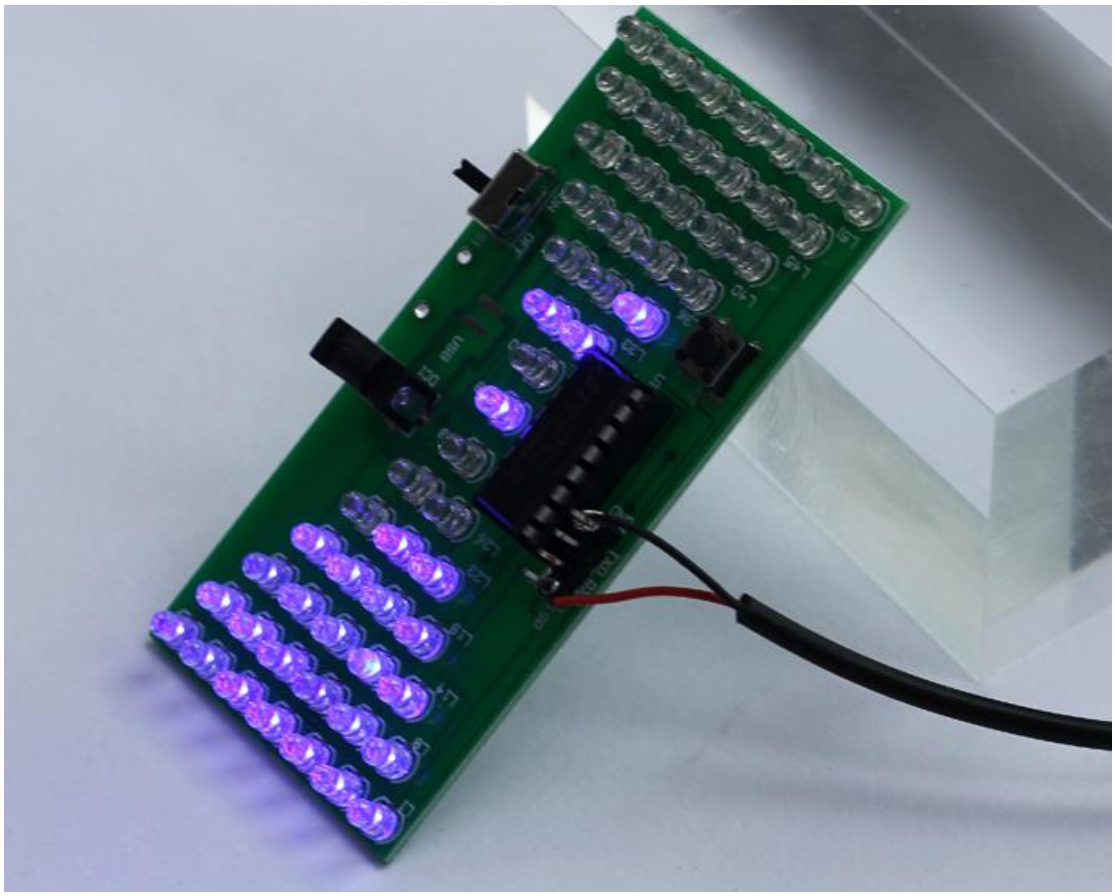
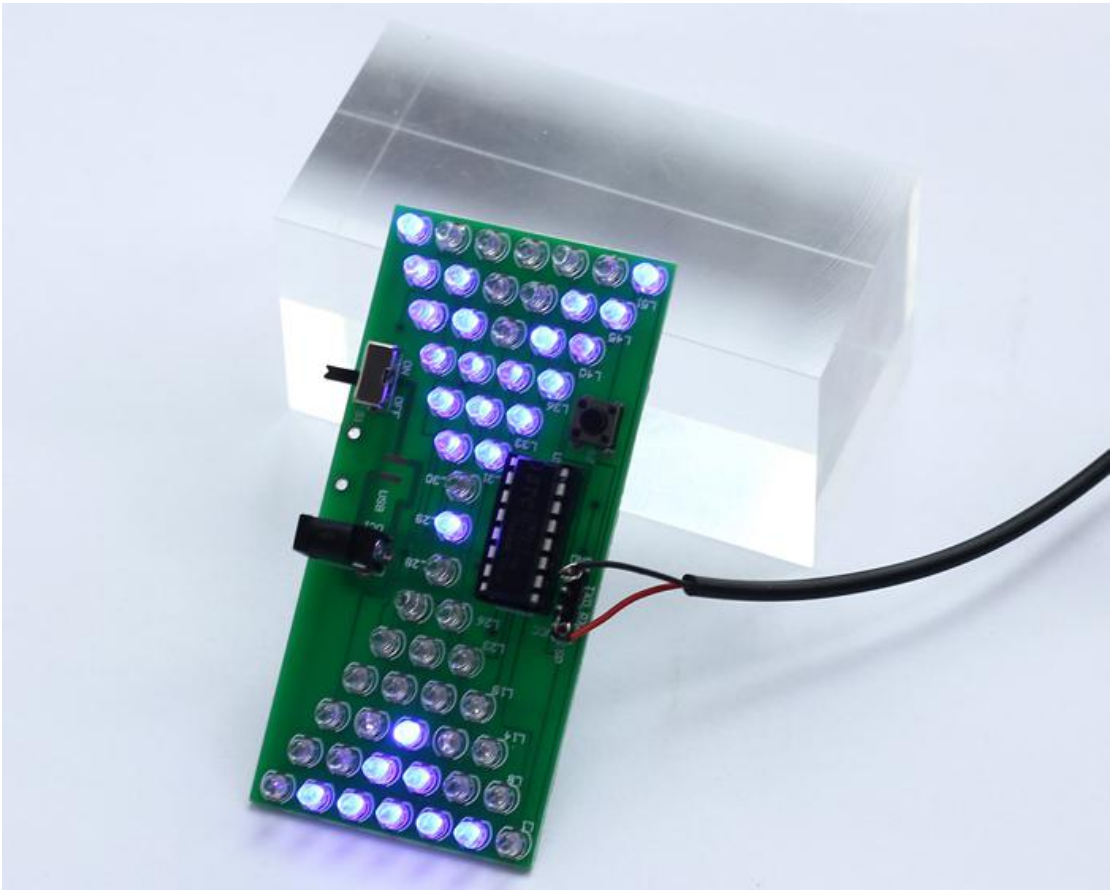
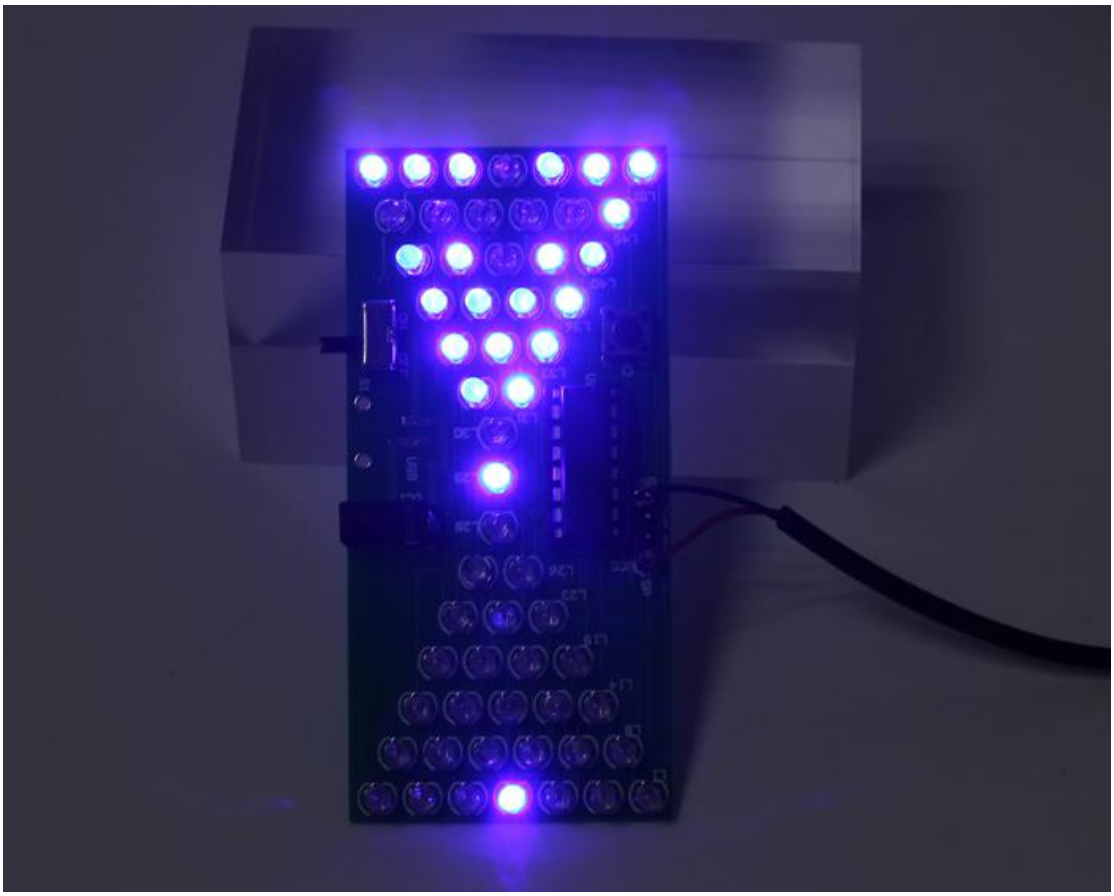
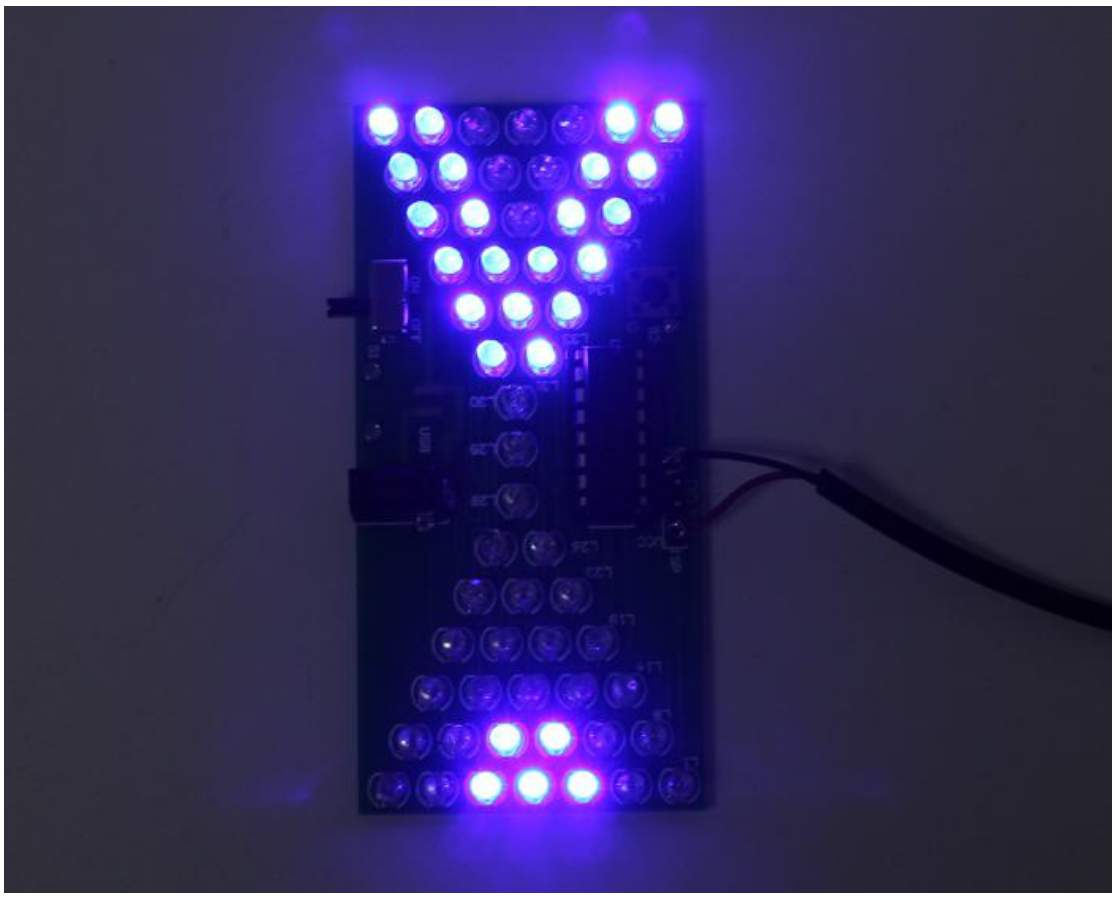
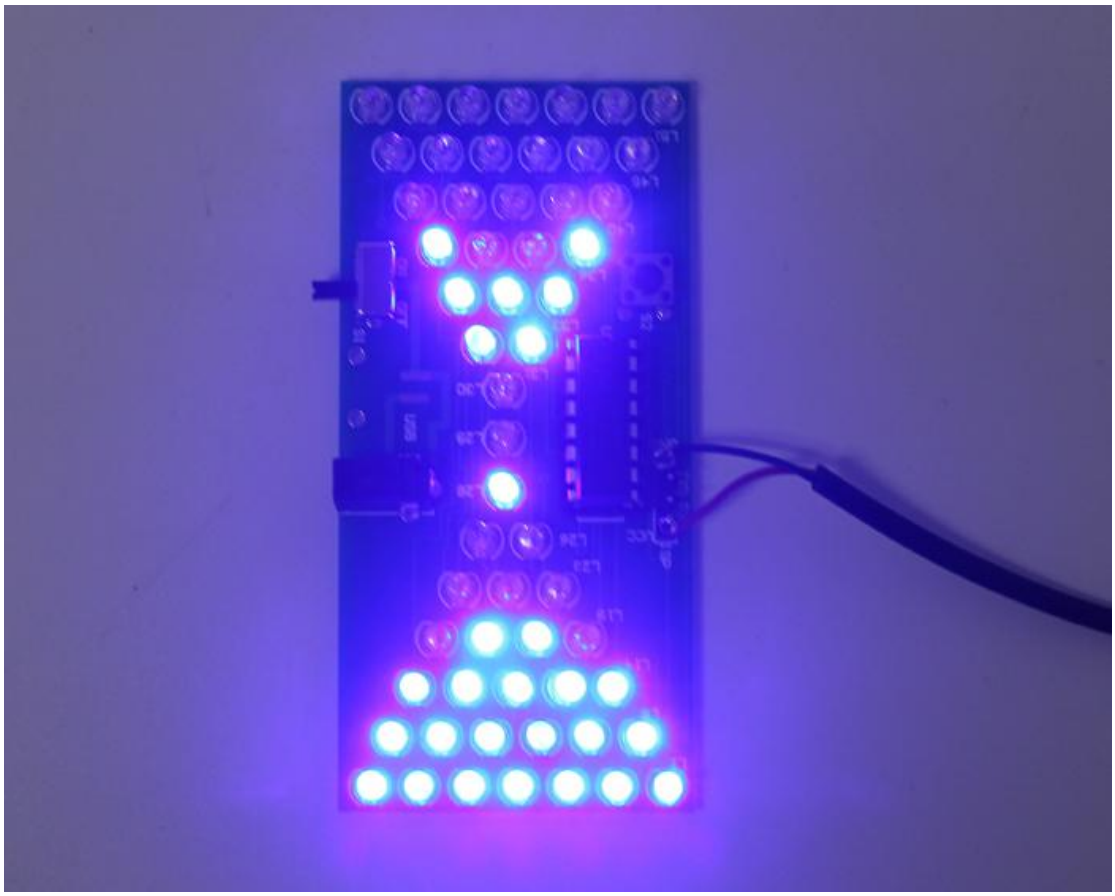
Install ic socket,2pcs switch,power socket,
4P male pin



8.Effect demonstration




ON
OFF
USB
TXD
RXD
VCC
GND


ON
OFF
USB
GND