

# FED-201 Audio Spectrum Indicator DIY Kit

## 1.Introduction:

FED-201 is a Audio Spectrum Indicator DIY Kit. It can display in Red/Green/Blue according to the input audio signal from microphone.It can be used to display the intensity of audio.The number of LED displayed changes according to the intensity of the audio

## 2.Feature:

- 1>.40pcs highlight LED
- 2>.Perfect simple circuit
- 3>.Automatic flashing
- 4>.DIY hand soldering
- 5>.Adjustable sensitivity

## 3.Parameter:

- 1>.Product Name:FED-201 Audio Spectrum Indicator DIY Kit
- 2>.Product Number:FED-201
- 3>.Work Voltage:DC 3V-12V
- 4>.Work Current:120mA
- 5>.Power Type:3.5mm Power Socket
- 6>.Work Module:Switch Control
- 7>.Color:Red+Green+Blue LED
- 8>.Work Temperature:-40℃~85℃
- 9>.Work Humidity:5%~85%RH
- 10>.Size(Installed):142\*22\*30mm

## 4.Component Listing:

NO.	Component Name	PCB Marker	Parameter	QTY
1	Metal Film Resistor	R1,R2	1Kohm	2
2	Metal Film Resistor	R4,R5	3Kohm	2
3	Metal Film Resistor	R6-R8	10Kohm	3
4	Metal Film Resistor	R9,R10	100Kohm	2
5	Metal Film Resistor	R11	1Mohm	1
6	Ceramic Capacitor	C3-C7	0.1uF 104	5
7	Electrolytic Capacitor	C8,C9	2.2uF	2
8	Electrolytic Capacitor	C1,C2	100uF	2
9	1N4148 Diode	D0	DO-35	1
10	S8050 Transistor	Q1,Q2	TO-92	2

11	LM3914 Driver IC	U1,U2	DIP-18	2
12	IC Socket	U1,U2	DIP-18	2
13	Microphone	MIC	9*7mm	1
14	3.5mm Audio Socket	JK1	5Pin	1
15	Power Supply Socket	CN0	DC3.5*1.3mm	1
16	Potentiometer	VR1	100Kohm	1
17	Toggle Switch	SW1	SS12D07	1
18	Female Socket 1*6Pin	CN1-CN4,CN*	2.54mm	5
19	Male Pin 1*6Pin	CN1'-CN4',CN*'	2.54mm	5
20	Red LED	D1,D4,D7,D10,D13,D16,D19	5mm	14
21	Green LED	D2,D5,D8,D11,D14,D17,D20	5mm	14
22	Blue LED	D3,D6,D9,D12,D15,D18	5mm	12
23	USB to 3.5mm Power Cable		70cm	1
24	Audio Cable		50cm	1
25	PCB FED-201MAIN	PB00121	140*20*1.6mm	1
26	PCB FED-201LED	PB00122	127*20*1.6mm	1

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

## 5.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

## 6.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>.Please wear anti-static gloves or anti-static wristbands when installing electronic components.

## 7.Installation Steps(Please be patient install!!!):

1>.Step 1: Install 1pcs DO-35 1N4148 Diode at D0.The black mark is negative pole.

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

3>.Step 3: Install 2pcs 3Kohm Metal Film Resistor at R4,R5.

4>.Step 4: Install 3pcs 10Kohm Metal Film Resistor at R6-R8.

5>.Step 5: Install 2pcs 100Kohm Metal Film Resistor at R9,R10.

6>.Step 6: Install 1pcs 1Mohm Metal Film Resistor at R11.

7>.Step 7: Install 5pcs 0.1uF 104 Ceramic Capacitor at C3-C7.

8>.Step 8: Install 1pcs DIP-18 IC Socket at U1,U2.There is a mark on one end of the IC Socket and there is a mark 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 Socket.

9>.Step 9: Install 1pcs DC3.5\*1.3mm Power Supply Socket at CN0.

10>.Step 10: Fix the power socket with the extra pins of the resistor.

11>.Step 11: Install 1pcs 5Pin 3.5mm Audio Socket at JK1

12>.Step 12: Install 2pcs TO-92 S8050 Transistor at Q1,Q2.

13>.Step 13: Install 2pcs 100uF Electrolytic Capacitor at C8,C9.Pay attention to distinguish between positive and negative.The Longer pin is positive pole.The longer pin is inserted into the rectangular pad.

14>.Step 14: Install 2pcs 2.2uF Electrolytic Capacitor at C1,C2.Pay attention to distinguish between positive and negative.The Longer pin is positive pole.The longer pin is inserted into the rectangular pad.

15>.Step 15: Install 1pcs 9\*7mm Microphone at MIC1.The marked pin is negative pole.

16>.Step 16: Install 5pcs 2.54mm Female Socket 1\*6Pin at CN1-CN4,CN\*.

17>.Step 17: Install 1pcs DIP-18 LM3914 Driver IC at U1,U2.There is a mark on one end of the IC and there is a mark 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.

18>.Step 18: Install 1pcs SS12D07 Toggle Switch at SW1.

19>.Step 19: Install 1pcs 100Kohm Potentiometer at VR1.

20>.Step 20: The longer pin is inserted into the rectangular pad(positive pole).

The shorter pins are inserted into the oval pads.

21>.Step 21: Install 14pcs 5mm Red LED at D1,D4,D7,D10,D13,D16,D19 and D1',D4',D7',D10',D13',D16',D19'.

22>.Step 22: Install 14pcs 5mm Green LED a D2,D5,D8,D11,D14,D17,D20 and D2',D5',D8',D11',D14',D17',D20'.

23>.Step 23: Install 12pcs 5mm Blue LED a D3,D6,D9,D12,D15,D18 and D3',D6',D9',D12',D15',D18'.

24>.Step 24: Install 5pcs 2.54mm Male Pin 1\*6Pin at CN1-CN4,CN\*.

25>.Step 25: Assemble 2pcs PCB.

26>.Step 26: Connect to power supply and enjoy the effect.

## 8.Install shown steps:

Step 1: Install 1pcs DO-35 1N4148 Diode at D0.The black mark is negative pole.



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



Step 3: Install 2pcs 3Kohm Metal Film Resistor at R4,R5.





Step 4: Install 3pcs 10Kohm Metal Film Resistor at R6-R8.



Step 5: Install 2pcs 100Kohm Metal Film Resistor at R9,R10.



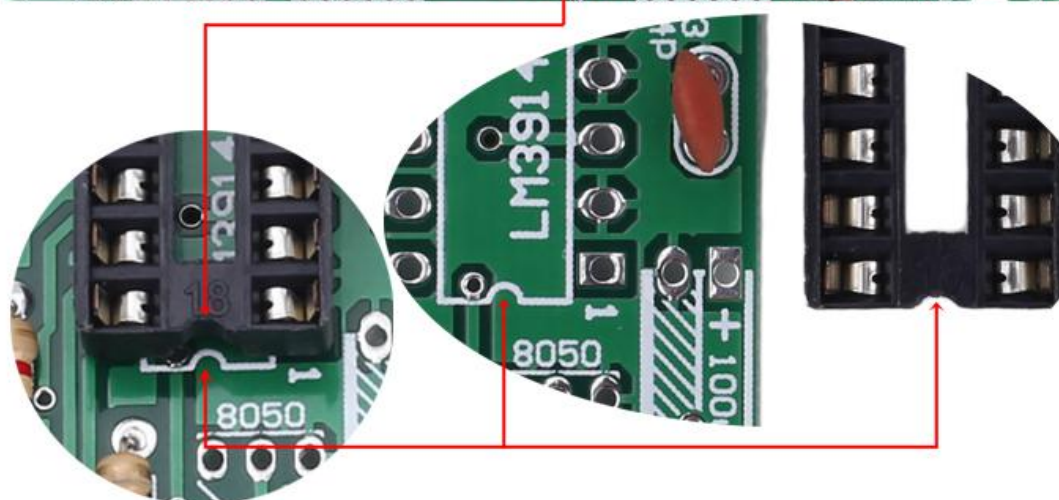
Step 6: Install 1pcs 1Mohm Metal Film Resistor at R11.



Step 7: Install 5pcs 0.1uF 104 Ceramic Capacitor at C3-C7.

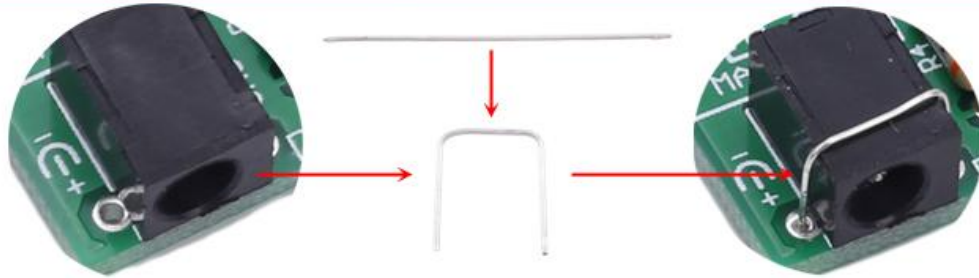


Step 8: Install 1pcs DIP-18 IC Socket at U1,U2. There is a mark on one end of the IC Socket and there is a mark on PCB where the IC can place on. These two marks are corresponding to each other and are used to specify the installation direction of the IC Socket.





Step 9: Install 1pcs DC3.5\*1.3mm Power Supply Socket at CN0.



Step 10: Fix the power socket with the extra pins of the resistor.



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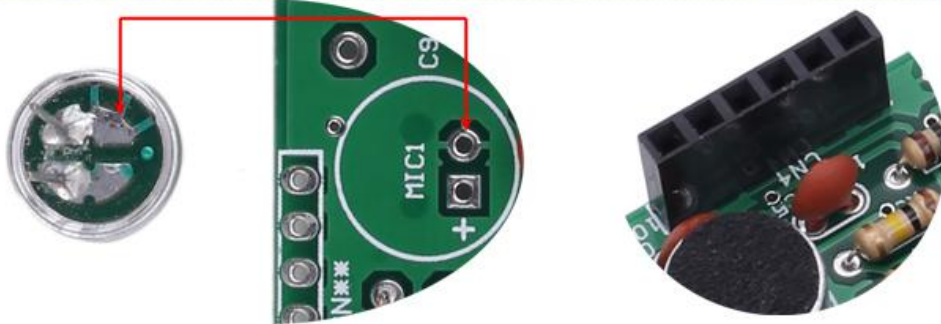


Step 14: Install 2pcs 2.2uF Electrolytic Capacitor at C1,C2





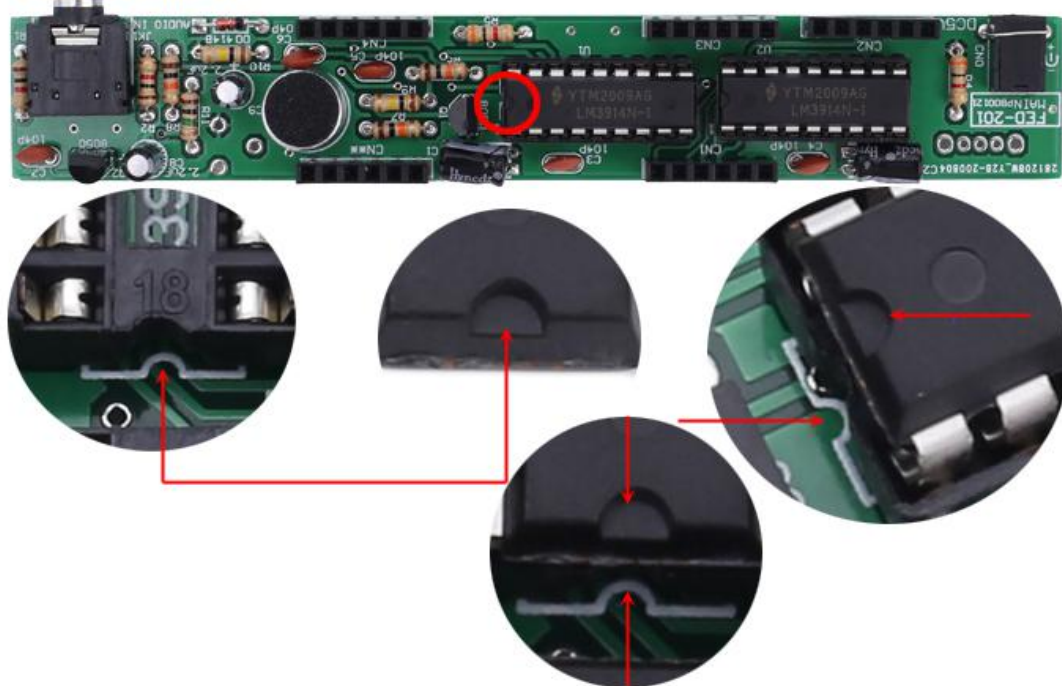
Step 15: Install 1pcs 9\*7mm Microphone at MIC1. The marked pin is negative pole.



Step 16: Install 5pcs 2.54mm Female Socket 1\*6Pin at CN1-CN4, CN\*.

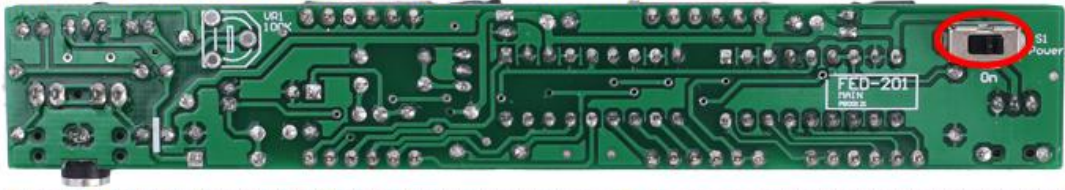


Step 17: Install 1pcs DIP-18 LM3914 Driver IC at U1,U2. There is a mark on one end of the IC and there is a mark on PCB where the IC can place on. These two marks are corresponding to each other and are used to specify the installation direction of the IC.





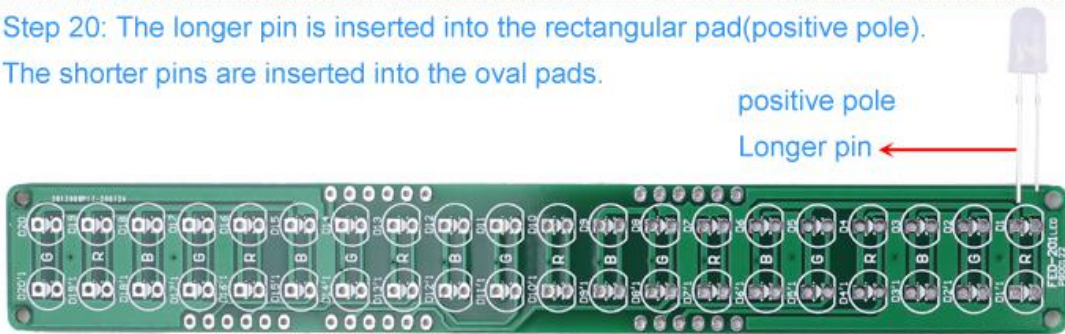
Step 18: Install 1pcs SS12D07 Toggle Switch at SW1.



Step 19: Install 1pcs 100Kohm Potentiometer at VR1.



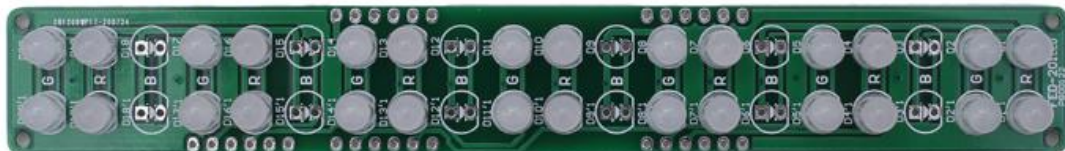
Step 20: The longer pin is inserted into the rectangular pad(positive pole).  
The shorter pins are inserted into the oval pads.



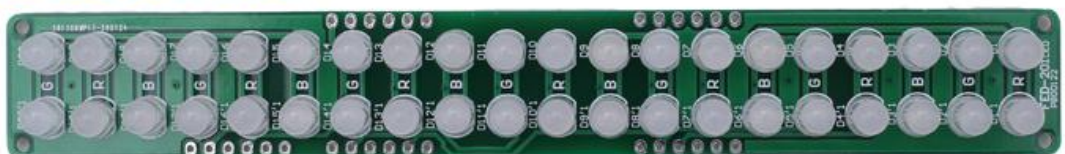
Step 21: Install 14pcs 5mm Red LED at D1,D4,D7,D10,D13,D16,D19 and D1',D4',D7',D10',D13',D16',D19'.



Step 22: Install 14pcs 5mm Green LED a D2,D5,D8,D11,D14,D17,D20 and D2',D5',D8',D11',D14',D17',D20'.

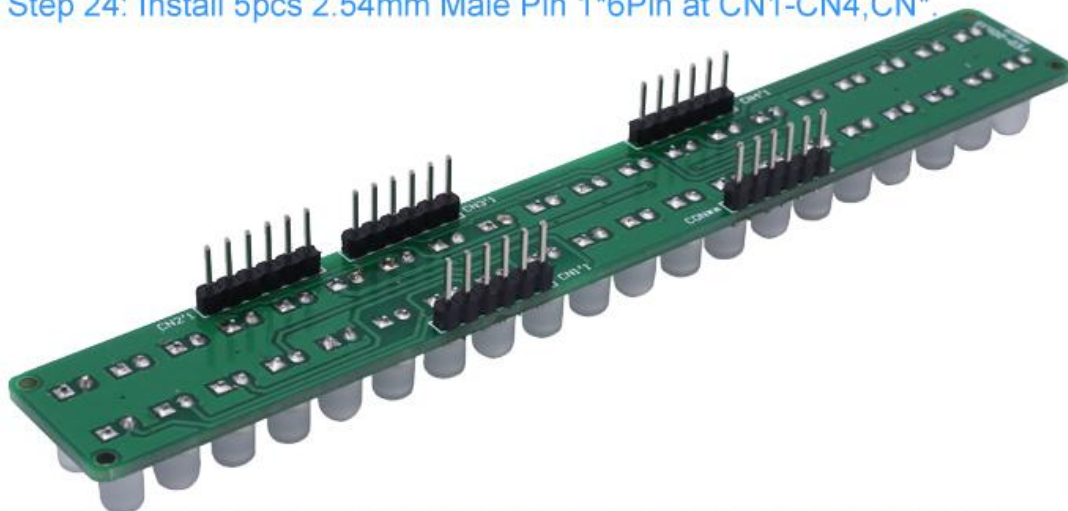


Step 23: Install 12pcs 5mm Blue LED a D3,D6,D9,D12,D15,D18 and D3',D6',D9',D12',D15',D18'.

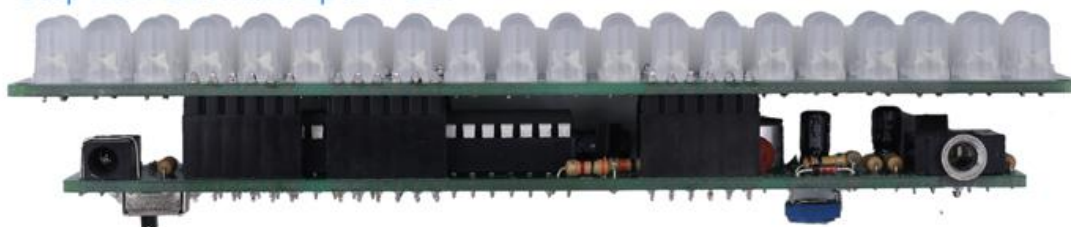




Step 24: Install 5pcs 2.54mm Male Pin 1\*6Pin at CN1-CN4,CN\*.



Step 25: Assemble 2pcs PCB.



Step 26: Connect to power supply and enjoy the effect.

