package list

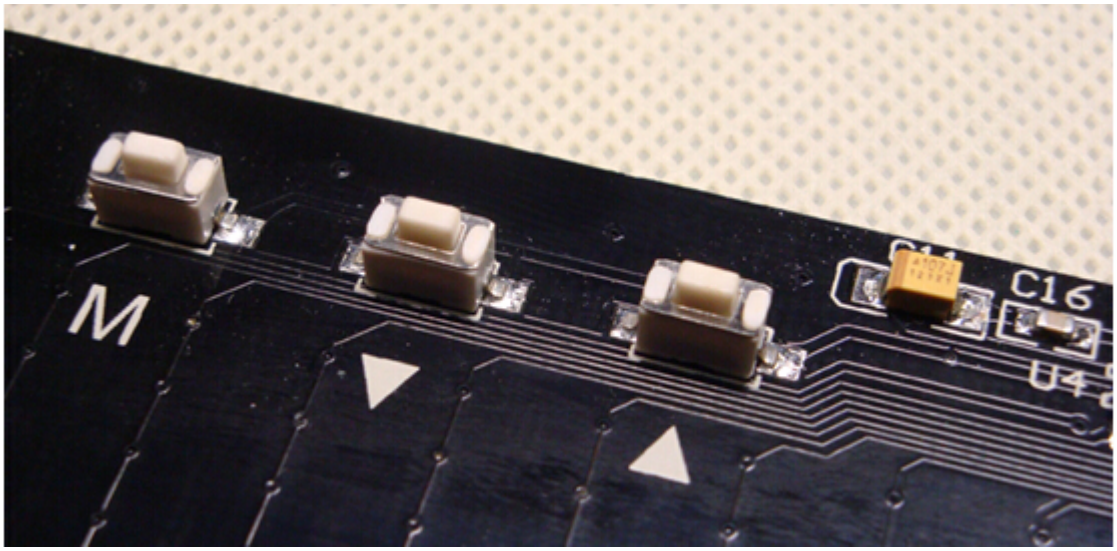
	PCB	number	name	Remark
1	U1	1	chip U1	Soldered
2	U2	1	chip U2	Soldered
3	U3	1	chip AT24C02	
4	U4 U5 U6 U7 U8	5	chip 74HC595	
5	U9 U10	2	chip ULN2003	
6	C11 C20 C8	3	Tantalum Capacitance 107	Note direction
7	C4 C5 C6 C7 C9 C10 C12 C13 C14 C15 C16 C17 C18 C19	14	0805 Capacitance 104	
8	C1 C2	2	0805 Capacitance 0.4u	
9	C3	1	0805 Capacitance 2.2u	
10	R3 R4 R6 R7R10 R11	6	0805 Resistance 10K	
11	R8 R9 R16	3	0805 Resistance 4.7K	
12	R5	1	0805 Resistance 2K	
13	R12 R13 R14	3	0805 Resistance 10ÿ	
14	Q2 Q3	2	3.3v Regulators 662K	
15	Q1	1	SMD S8050 J3Y	
16	R1	1	SMD 10K	
17	R2	1	SMD 200K	
18	R15	1	SMD potentiometer 1k	Soldered
19	M ▼ ▲	3	Button	
20	MIC	1	Electret microphone	Note direction
21	USB	1	USB	Soldered
22	Pads	4	Pads	
23	front UP 11-14	96	0805 LED Red	Note direction
24	front DOWN 1-10	240	0805 LED Blue	Note direction
25				

If you need more DIY kits, please seach the link:
http://www.banggood.com/Wholesale-Arduino-Compatible-Kits-and-DIY-Kits-c-3091.html

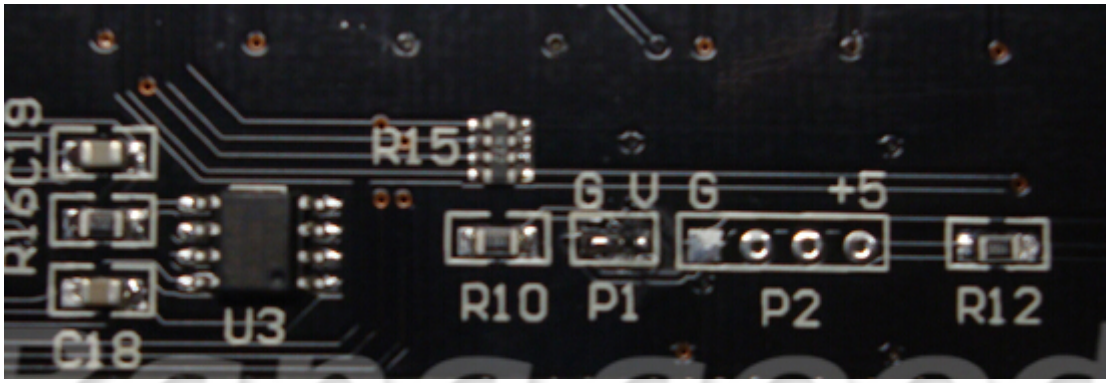
Welding sequence:
First of all welding the component on the back
(the back button and MIC final welding)

Precautions:

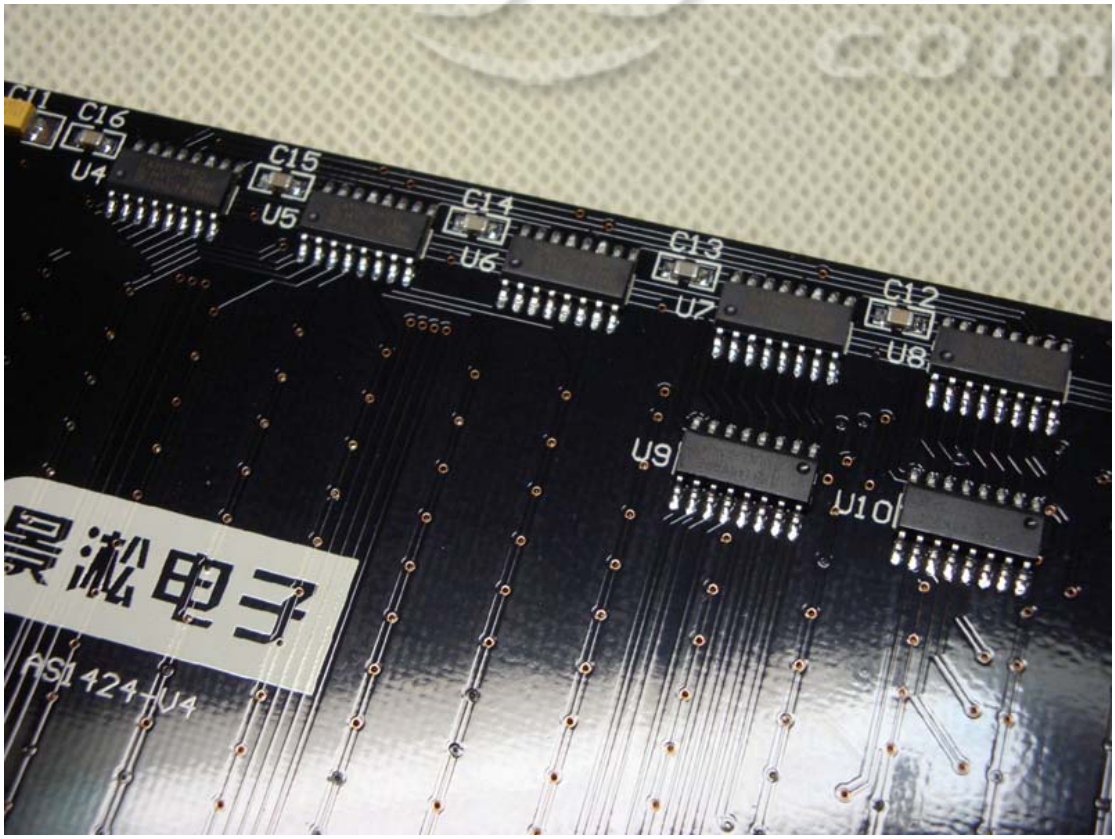
1. Note C11 C20 C8 tantalum capacitor positive and negative directions, the following figure:



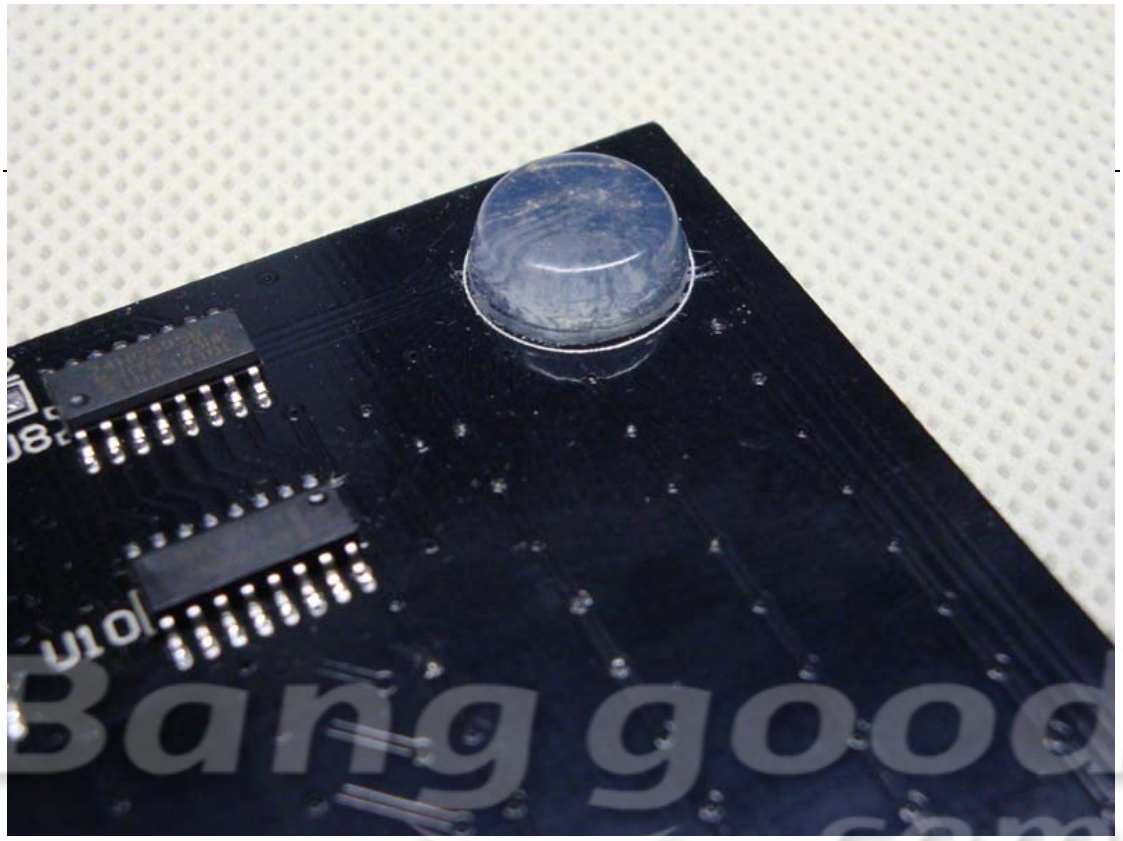
2. Note Q2, Q3 is the regulator, do not be confused with the transistor Q1
3. Do not confuse SMD potentiometer R1 10K with R2 200K
4. P1 in the figure below is the download settings port, marked G connected to the intermediate pad, has been set before delivery, please do not disconnect, because disconnect will cause the spectrum does not work, P2 is download port without soldering, the right side of R15 Resisters Packs is common ground



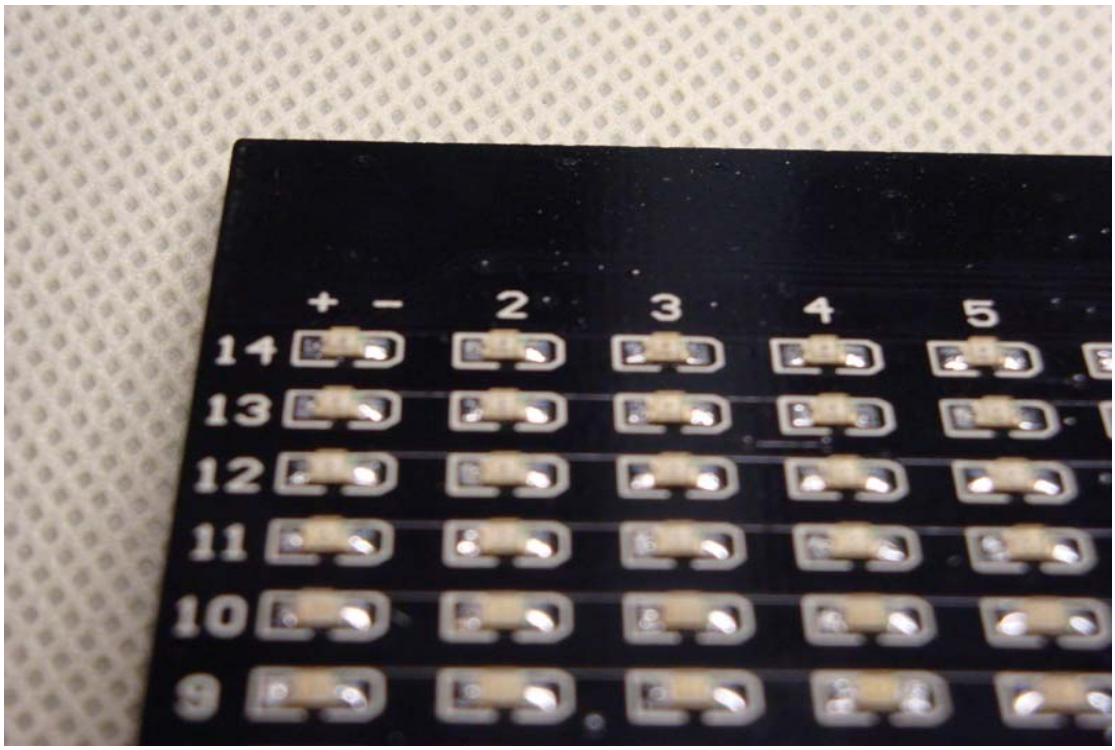
5. Note the direction of chip 74HC595 and ULN2003,24C02



After element welding, posted the four pads, so the front LED on the table will be very smooth (MIC and buttons final welding)



Welding front LED
See below and mark LED positive and negative, LED front side with a green dot is negative

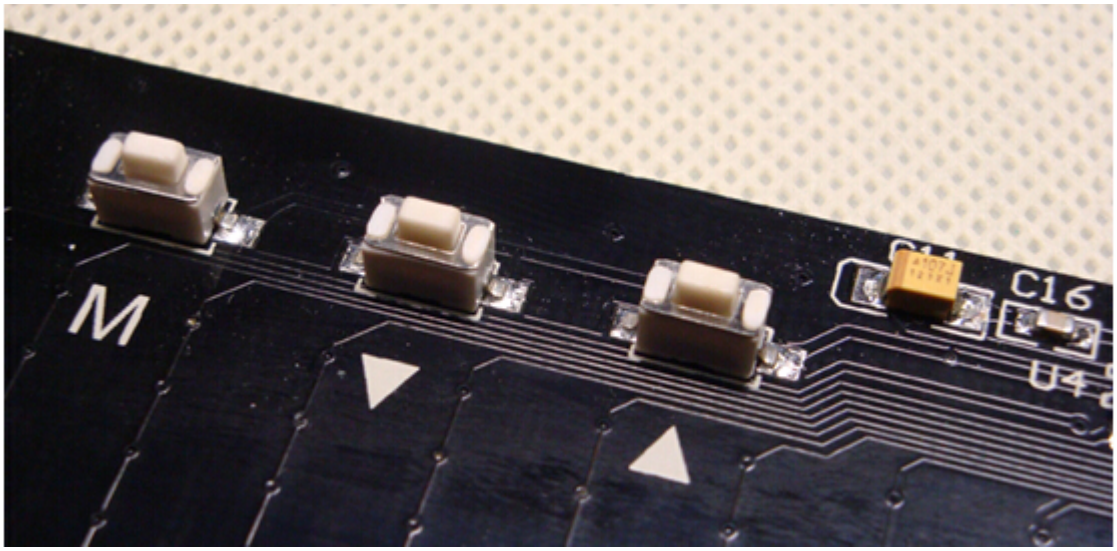


11-14 row is Red LED, 1-10 row is Blue LED

NOTE: After completion of welding, please carefully check whether there is face down bonding, lack of solder, and short circuit.

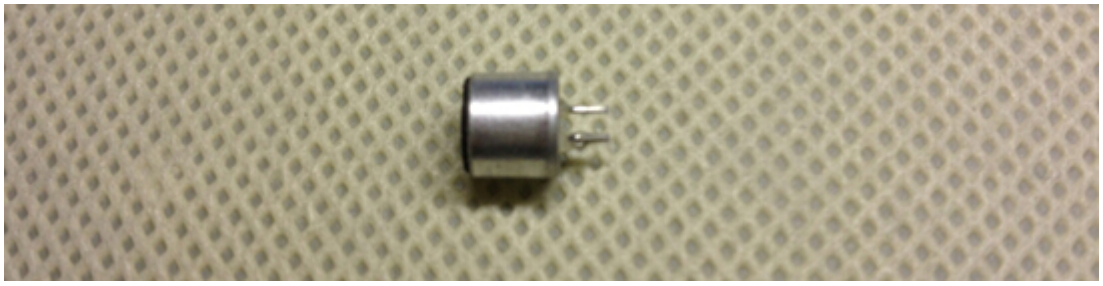
LED green dot should be in the same direction

After the front LED welding, soldering the back button

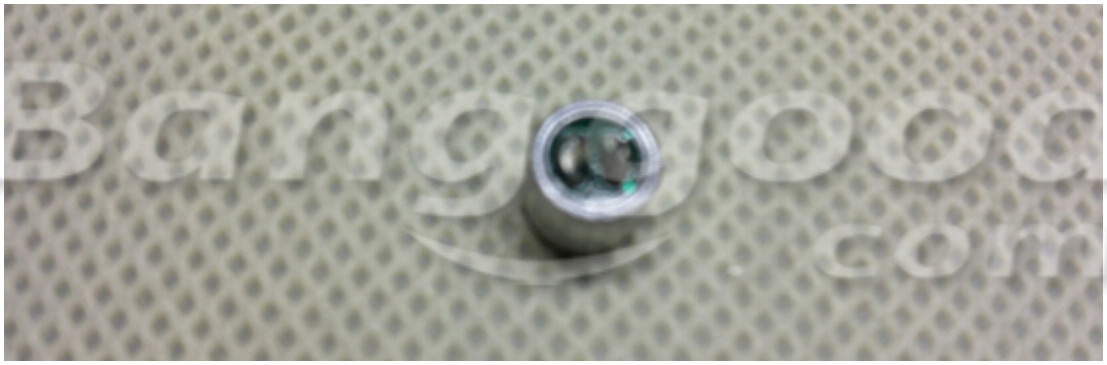


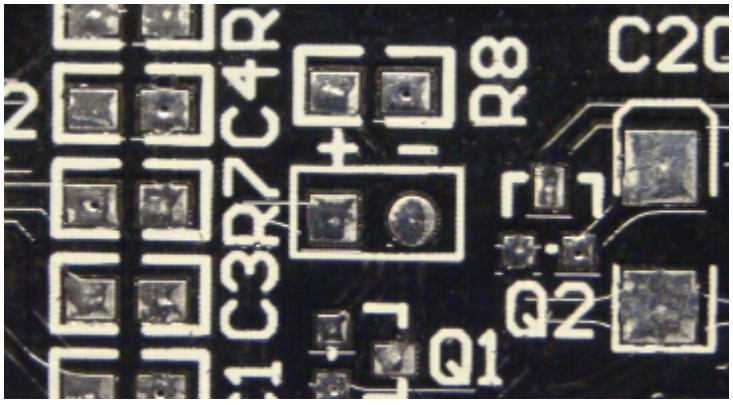
Welding MIC

1. Cut the MIC pin (as short as possible, just need enough to welded)

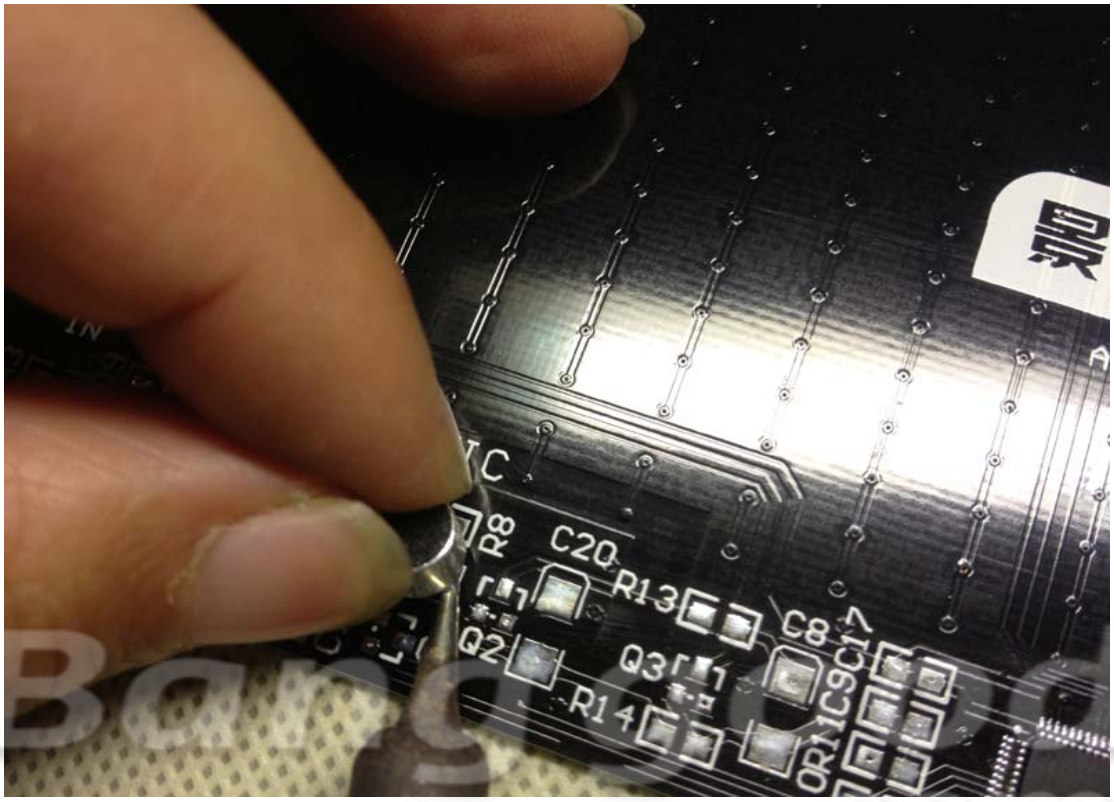


2. Note the polarity of MIC, coupled to the housing is the negative, as shown on the right is negative





MIC welding methods: first add tin in the negative, positive without tin, here need to use tip soldering iron after the MIC negative immobilized, then add tins to fixed positive, as shown below



After all welding components, carefully check the wrong welding and lack of solder!

Power test, plug the power cable into the computer USB port, the other side connect the spectrum miniUSB, at normal state, the spectrum will be lit the bottom row, according to the following method to test the spectrum and MIC collection

Special Note:
1. Circuit input test, press the middle button to get gain "L", the first power-default "H", in a high-gain situation will have a slight background noise (bottom left in the muted will slightly beat is normal phenomenon.
2. If set to "L" still beating, please check the MIC acquisition if open or not, then check the audio cable is a good contact.
3. Open the MIC acquisition, due to the very slight sound will be collected and amplified, so bottom noise is normal.
4. Use the MIC acquisition, please set the gain to long "H".

Sweep Music Test Description:
When testing, at the top of left side bass region may not be fully lit is normal phenomenon. Because in order to enhance the effect, the design of the bass was a little attenuation.

R1, R2 potentiometer function:
Input the adjustment potentiometer: for adjusting the size of the input signal, for example, the input signal is too strong can be attenuated or some device output too low noise can also adjust this potentiometer shielding.

Spectrum display range potentiometer:
Using for after adjust the spectrum AGC display the maximum amplitude, after setting, the automatic gain will be set based on this setting value as maximum value to limit automatic adjustment. (If you do not need AGC function, adjust to the end can turn OFF AGC)

Special Note:
SMD potentiometer R1 and R2 has been designed to an optimum value, generally do not need adjustment, just keep the potentiometer one the default location, do not mess adjust! If the adjustment mess, just set it back to the middle again.

AS1424 Operation:

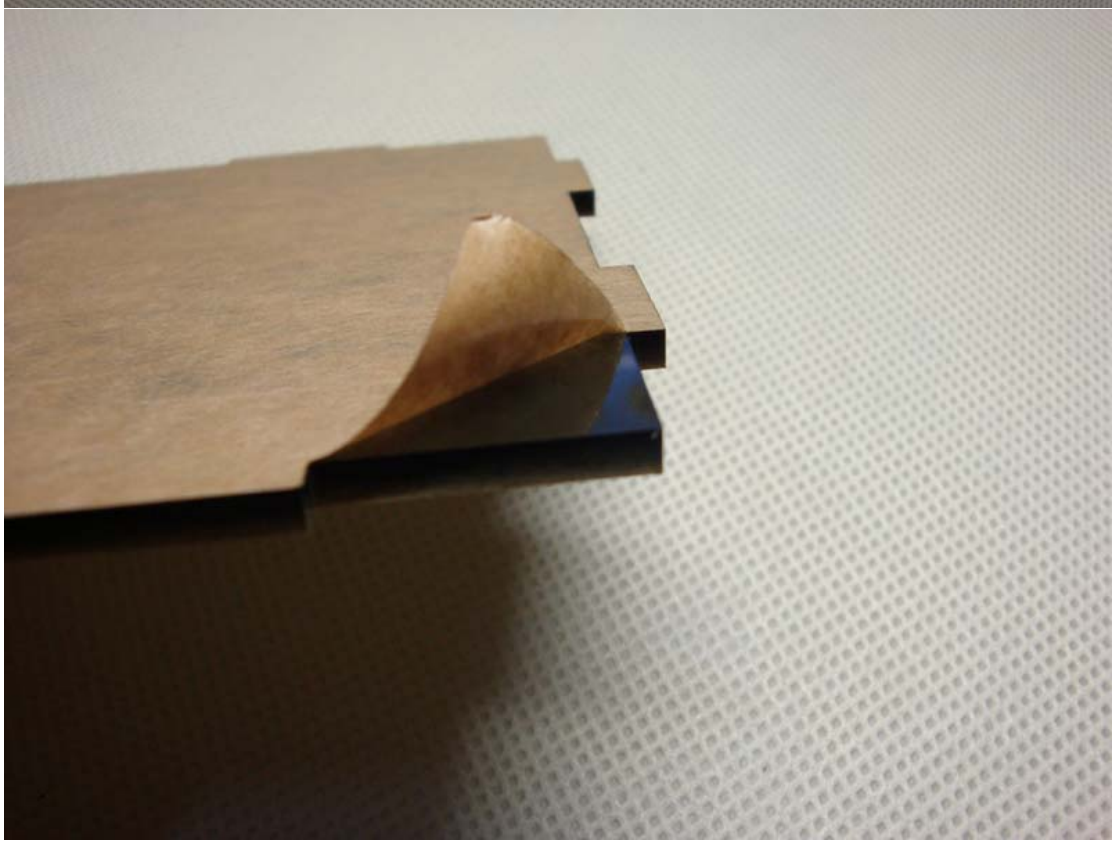
1. Key Operating Instructions

(Short press) M button ---- mode switch
(Short press) ▲ button ---- brightness plus
(Short press) ▼ button ---- brightness decrease(luminance value best recommendation 2-4, recommends no more than 4)
M (hold) + ▲ (short press) spectrum speed plus
M (hold) + ▼ (short press) spectrum speed decrease (3-4 optimum speed recommendations, the default value 3)
▲(Long press) LIN (circuit input) MIC switch
▼(Long press) L (low gain) H (high gain) Switch (LIN input selection L optimum, MIC input can select H to increase the sensitivity)
Note: The setting will be required to maintain 30 seconds to auto-save.

2. Circuit connection Description:

1) Power: DC 5V, using a common USB interface, all devices with USB interface can be powered, including computers, cell phone chargers, Power bank.
2) Audio terminal connected via an audio splitter, audio splitter other plug connect audio equipment. If MIC input, can do not need to connect the audio. If you are found sound noise, please check the audio connection, taps, etc. are good contact.

Description: When you install PCB, If the size is too large, please use a blade or a rasp slight grinding.



FAQ Remedy:

1. A row LED does not light
1) Check ULN2003 chip is lack of solder or not
2) This row has LED short circuit, use a multimeter to exclude

2. A row LED or a LED abnormal blink or not lit
1) This row has anti-welding or shorted circuit

3. A column LED is not lit
1) Check whether 74HC595 lack of solder.
2) This column has LED short circuit

4. After powered LED unresponsive
1) Please re-welding 74HC595, check whether lack of solder.
2) Please check the three tantalum capacitor voltage
C20 about 3.3V
C11 / C8 about 5V, if the voltage is wrong, check lack of solder or short circuit

Problem 1: After welding energized, all LED no response, not the bottom line of LED lights.
How to do: Power normal, and in the case of external components welding correct
(74HC595 welding correct), please check the exclusion R15, re-welding the main chip U1.
(As long as the bottom row of the spectrum LED work, the main chip is working properly, no need to change)

Problem 2.1: After power the bottom row LED lit, but connect to the audio spectrum is not beating.
Problem 2.2: Circuit input is normal, MIC input does not work or MIC input normal but circuit input is not working.
How to do: Power normal, and in the case of external components welding correct, re-welding AGC chip U2.

Note: U2 re-welding temperature should not exceed 300 degrees, since the U2 chip pads is small, errors operational will easily lead to the pad fall off , if U2 pad damaged can not be repaired.