

DIY Touch 3x3x4 Color LED Light Cube Kit

Please carefully read the production process before you start soldering!

Overall two parts soldering, one is soldering board ,the other is LED soldering, we first Soldering Board.

The following is a description element soldering position:

U1: STC15F204EA (notice the black dot on the board **corresponding to the micro-controller's dot**)

C1 and C2: 104 capacitance

C3: 220uF capacitor

R1- R18: 1K (102)

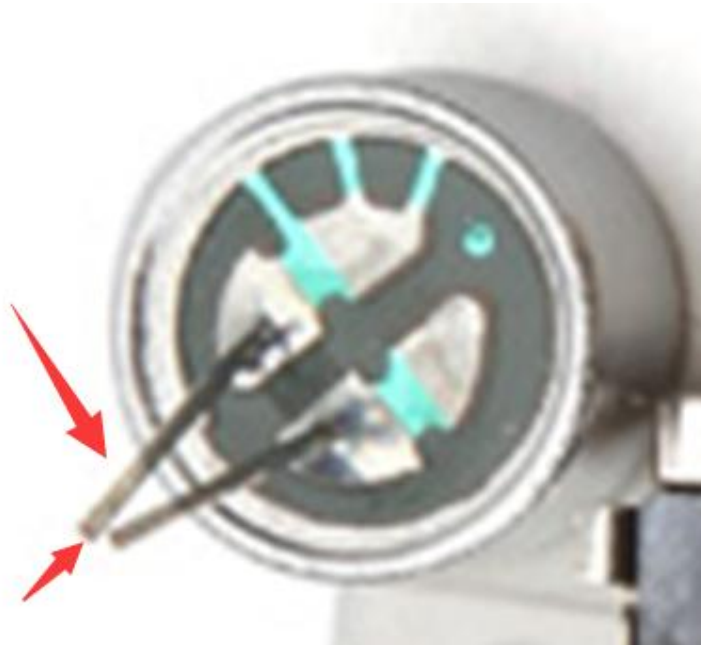
R19 and R21: 10K (103)

R20: 2K (202)

R22 and R23: 1M (105)

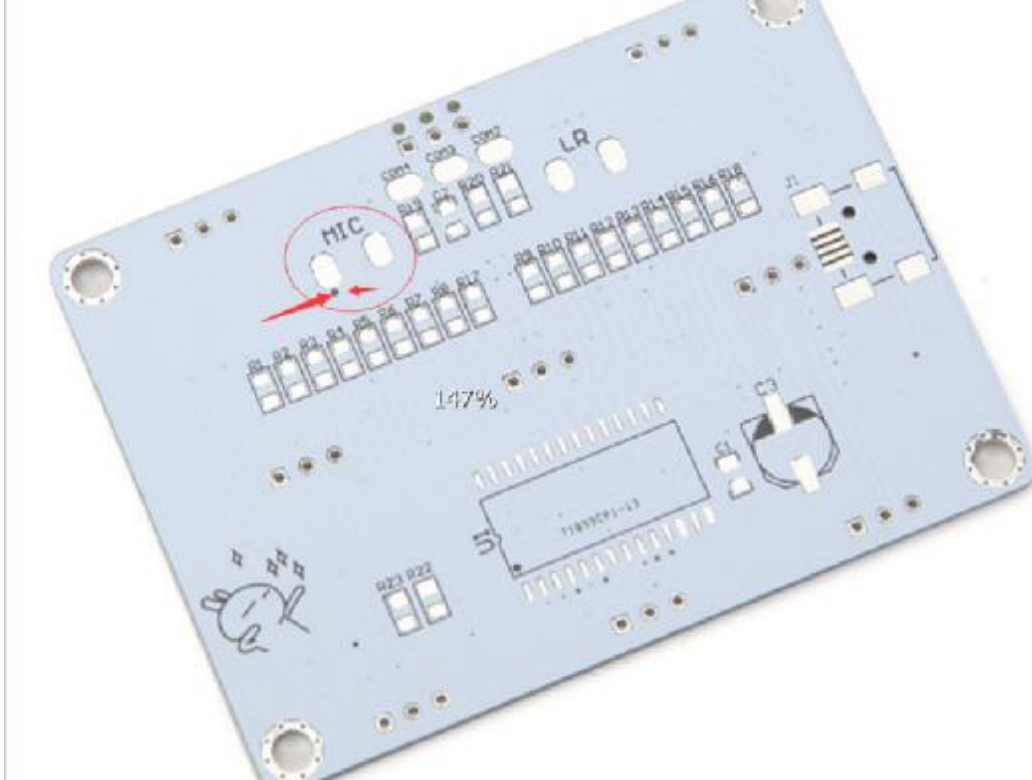
LR: photoresistor (no positive and negative points)

MIC: electret microphone (with positive and negative points) **PS: Check the next picture:**



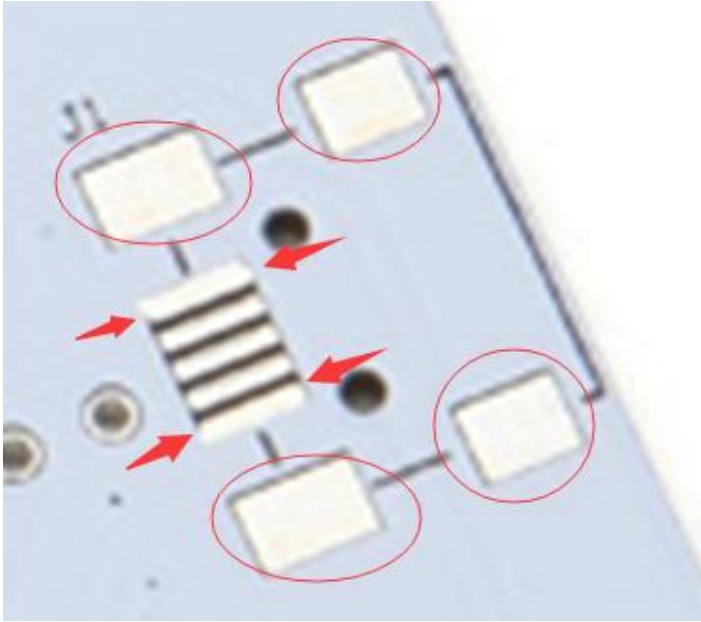
This is the negative points

Corresponding to the board black dot, **Check the next picture:**

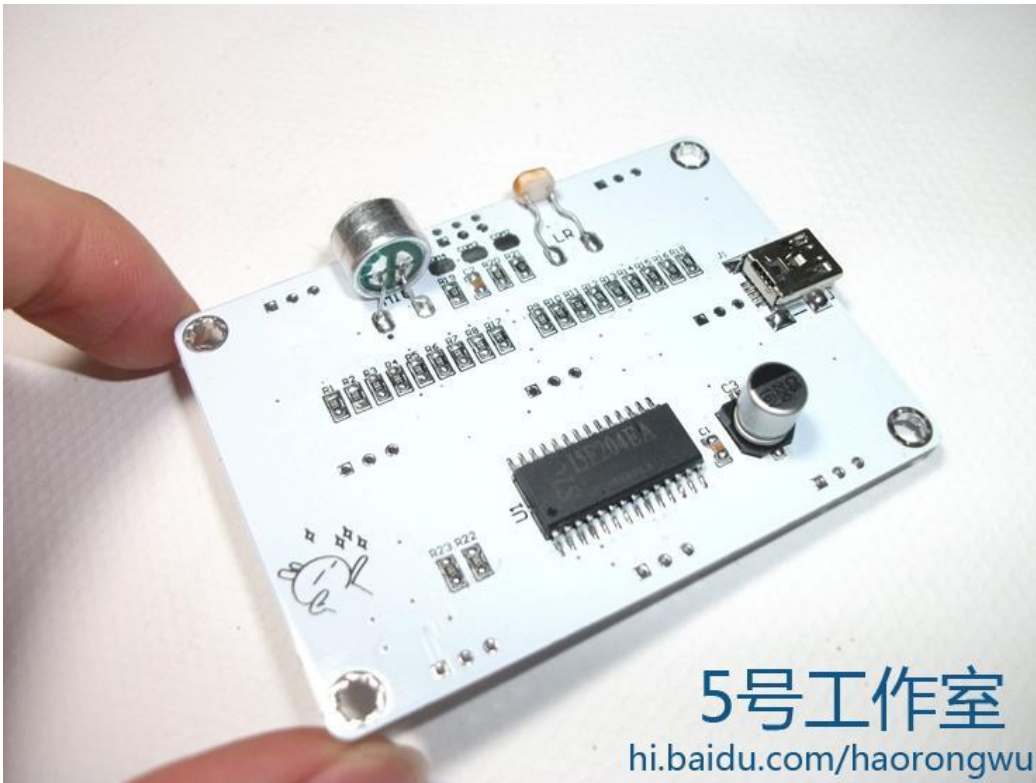


The negative points Corresponding to the black dot

**J1: mini USB socket (This socket is powered use, no data transmission effect, so only four fixed foot Soldering,CHECK NEXT picture:
You just need to soldering the red Mark ,the middle of three you don't need to soldering(PS: IMPORTANT, IMPORTANT,IMPORTANT)**



The following is a diagram of the soldering is completed:



Please carefully CHECK whether it have Pseudo Soldering or Short circuit, in order to avoid a short circuit or Pseudo Soldering cause damage to the device after power up!!!!!!!!!!

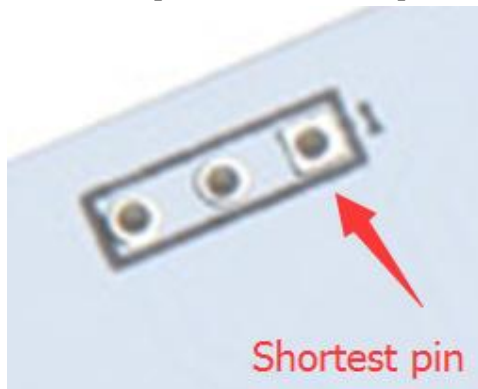
Keep on!!!!

Let's start Soldering LED, first of all pay attention to two points:

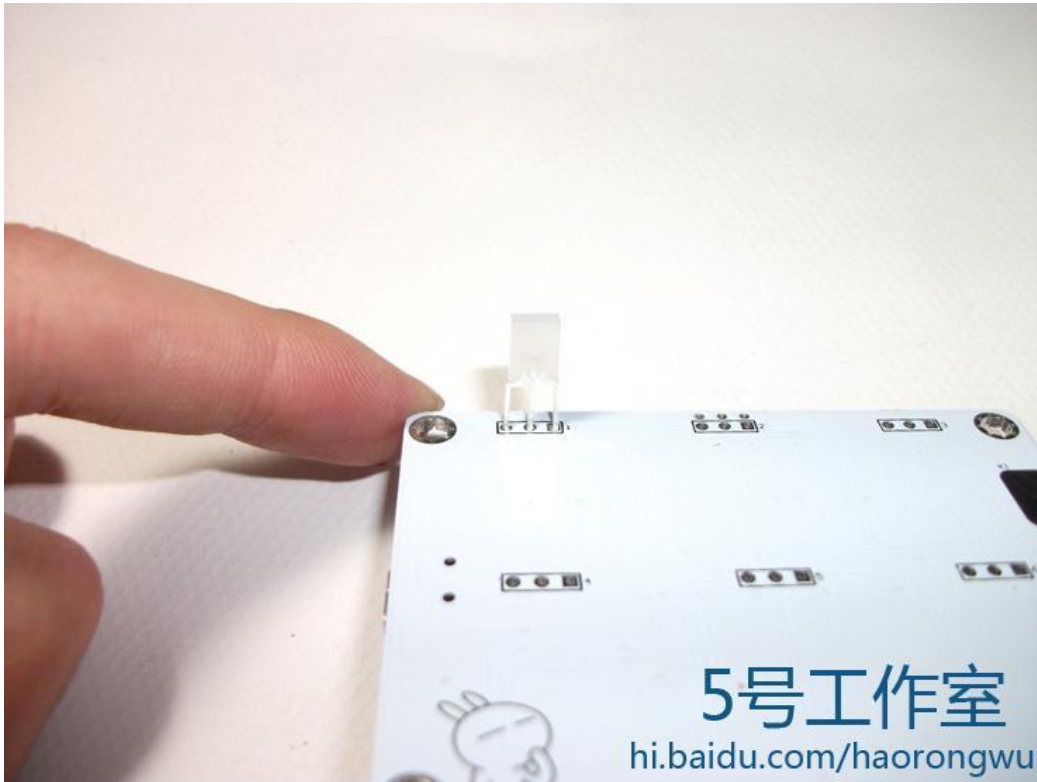
1: First use a multimeter to check whether the LED are intact, temperature can not be too high, generally use electric soldering iron 20W on it, it is best to use soldering station, because LED is afraid of static electricity, especially the green and Blue lights.

2: When the soldering iron contacting LED pin, **preferably not more than 3 seconds**, if no confidence in their own soldering technology, it is best to practice before you start soldering, so you can avoid LED appears "dead light" phenomenon, or replace bad light will be very troublesome.

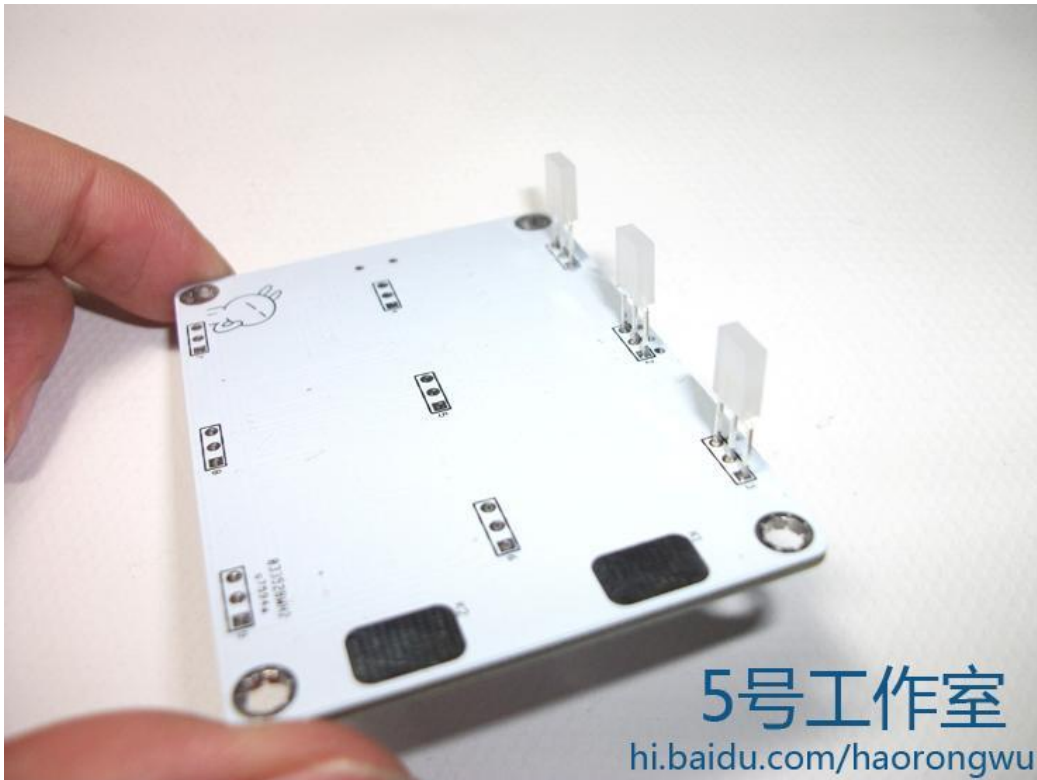
The shortest pin of the LED corresponding to the square hole on the board,



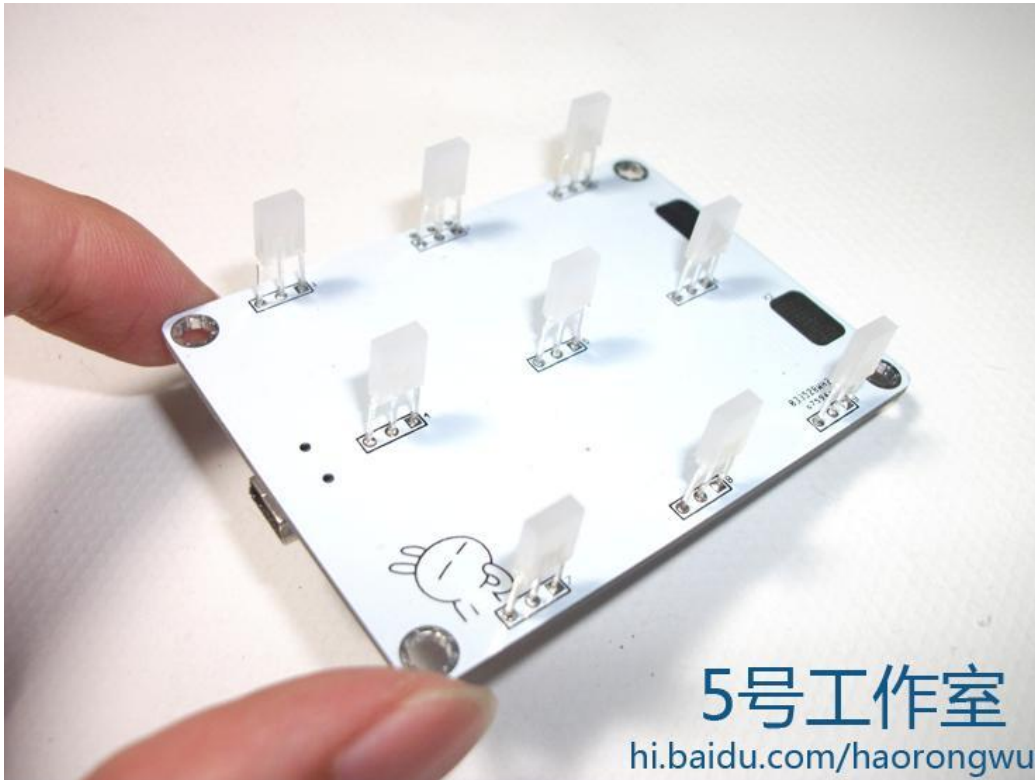
Before soldering, the LED leftmost and rightmost pin to bend a little bit, so you can use the Card slots to fixed the LED, **Try to make it perpendicular to the board**



And so on, each row and each column as much as possible so that it is perpendicular to the board, each solder a LED, all with eyes to see LED whether all in a horizontal line (horizontal and vertical should look at whether the levels)

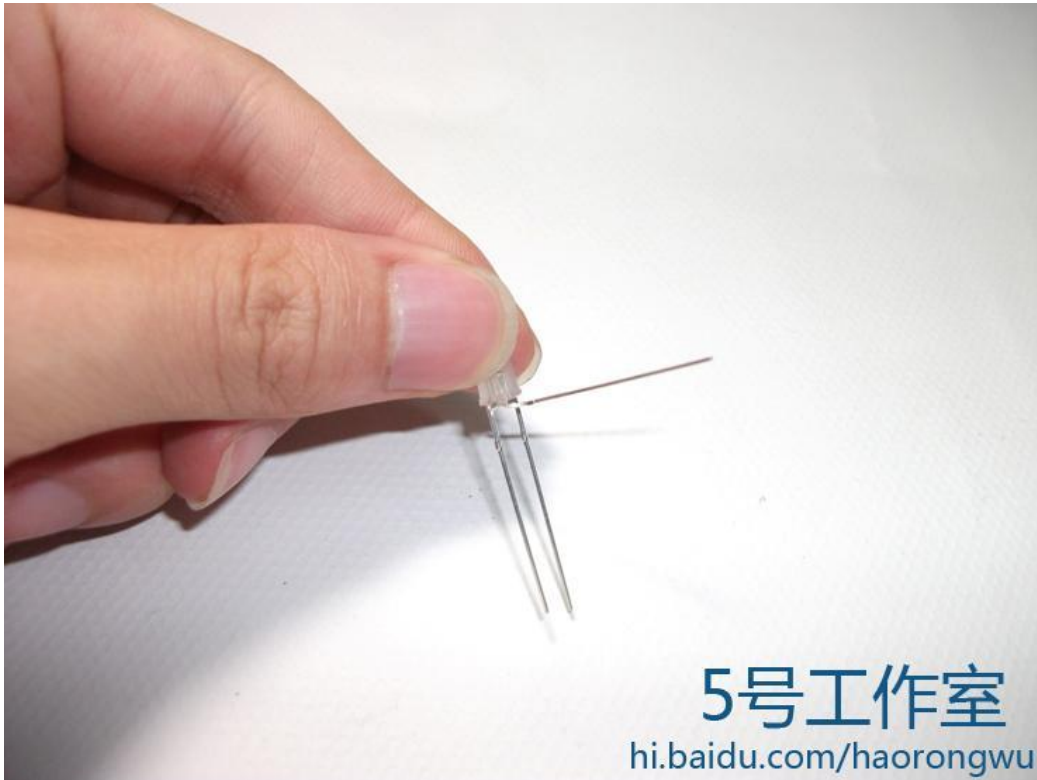


After Soldering LED effect as follows



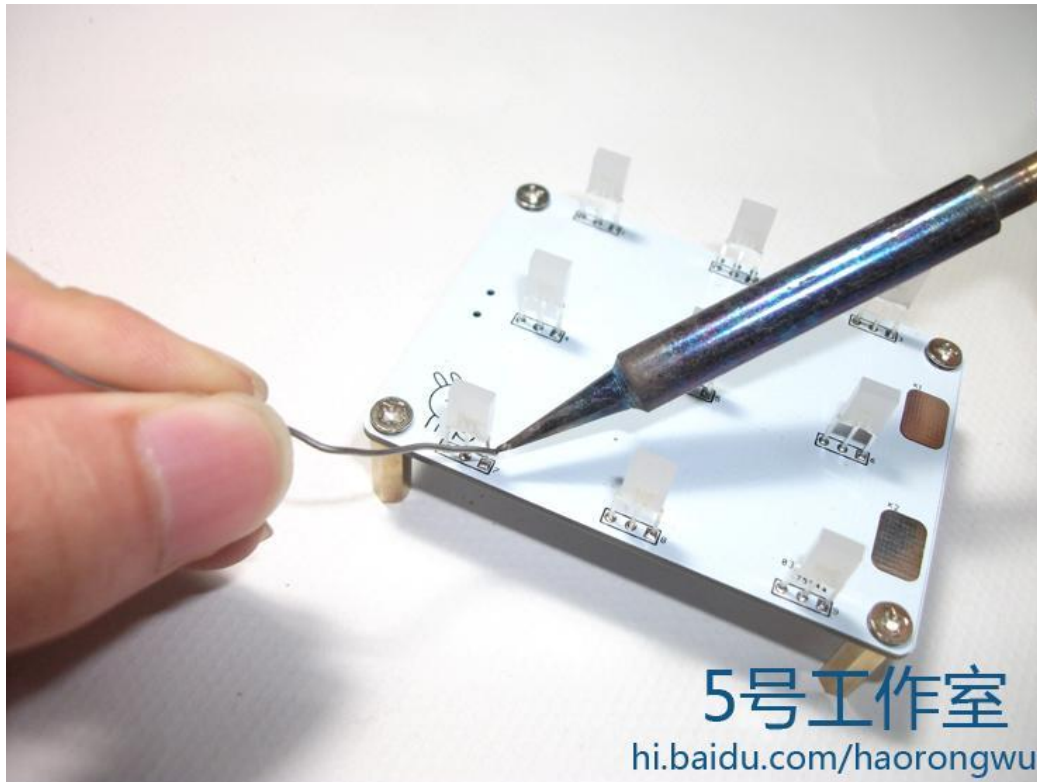
In this case, the bottom of the LED soldered finished, you can test whether the LED will be lit, whether there have dead lights, or key effective. If the LED is not lit, with a multimeter to check whether the device is **Pseudo Soldering or Short circuit** case, whether there is 5V voltage measured between 12 feet and 14 MCU pin. Determine underlying all LED are normal, the 4 copper pillars installed, we can start to do the above LEDs soldering.

Before soldering, LED should break it into a shape,

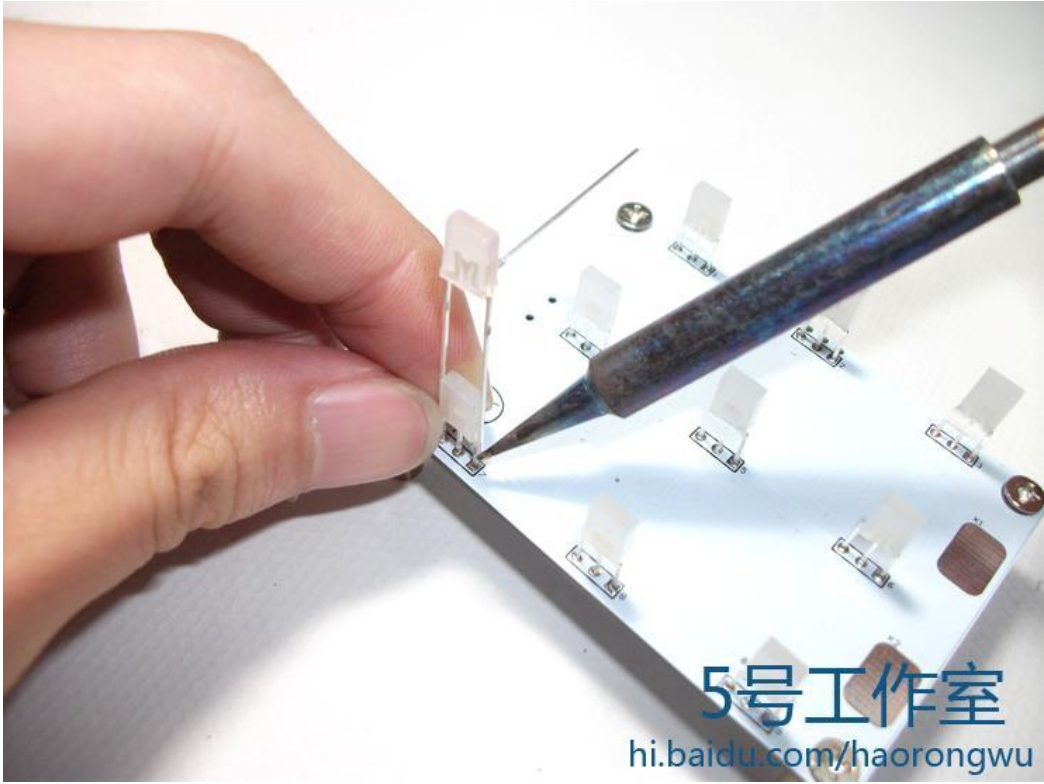


Please note that the middle pin breaking direction do not get reversed, LED three Pins length is not the same, Because the principle of Soldering is Short pin with Short pin soldering together, long pin with Long pin soldering together. All the pins should be connected together, On Each layer in the middle of pin

As shown below, the LED above the first pin on a number of tin

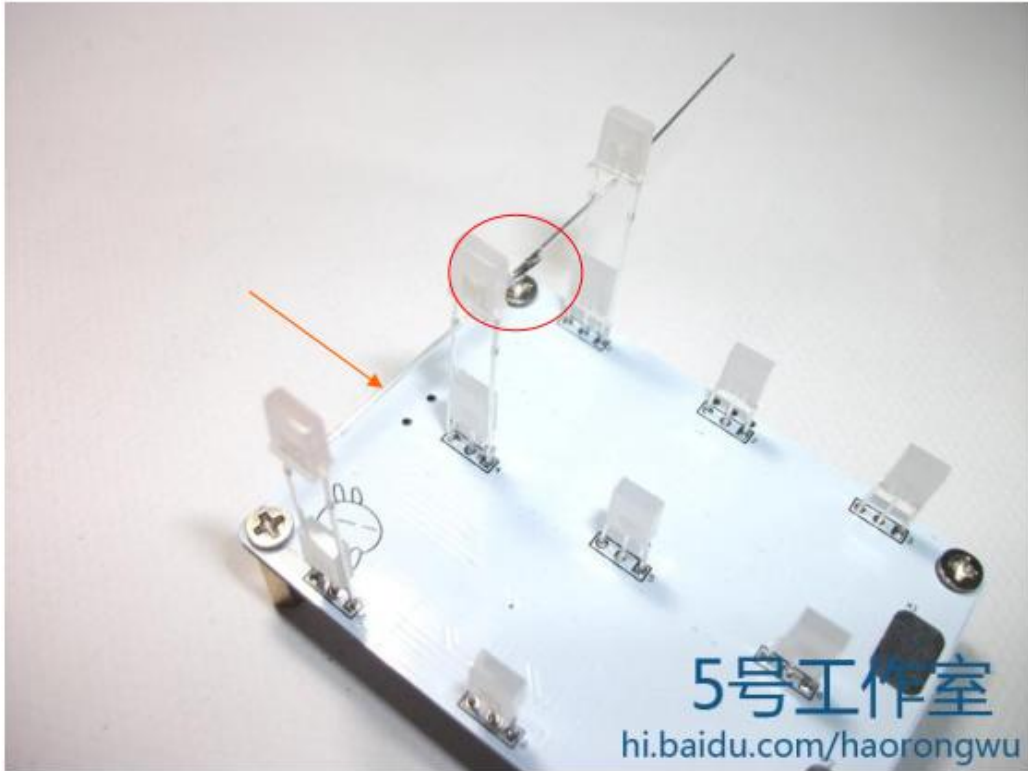


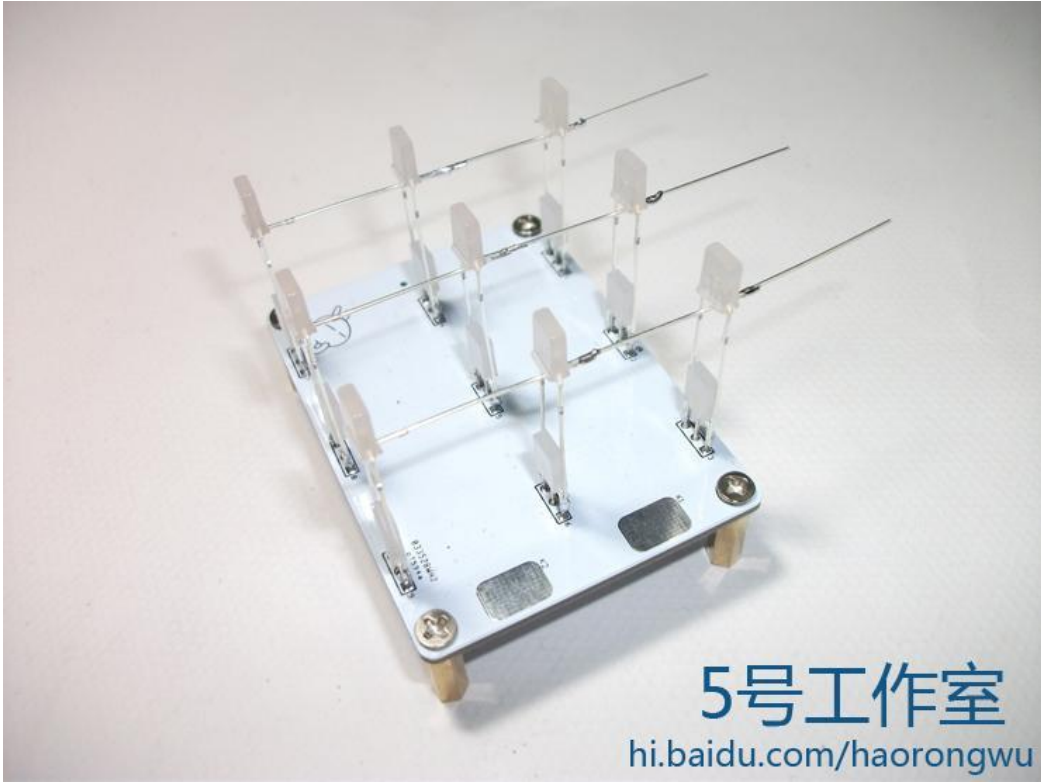
Then, as shown below, the hand holding the LED fixed, a prominent local LED pin above (that is, a card, a card that we as a standard, so it height will be consistent with each solder layer LED), and melting the solder fixed pin, after cooling add solder pin fixed on the other side, LED pin is as shown in the middle Flanagan as breaking off inside, LED shortest pin on the right.



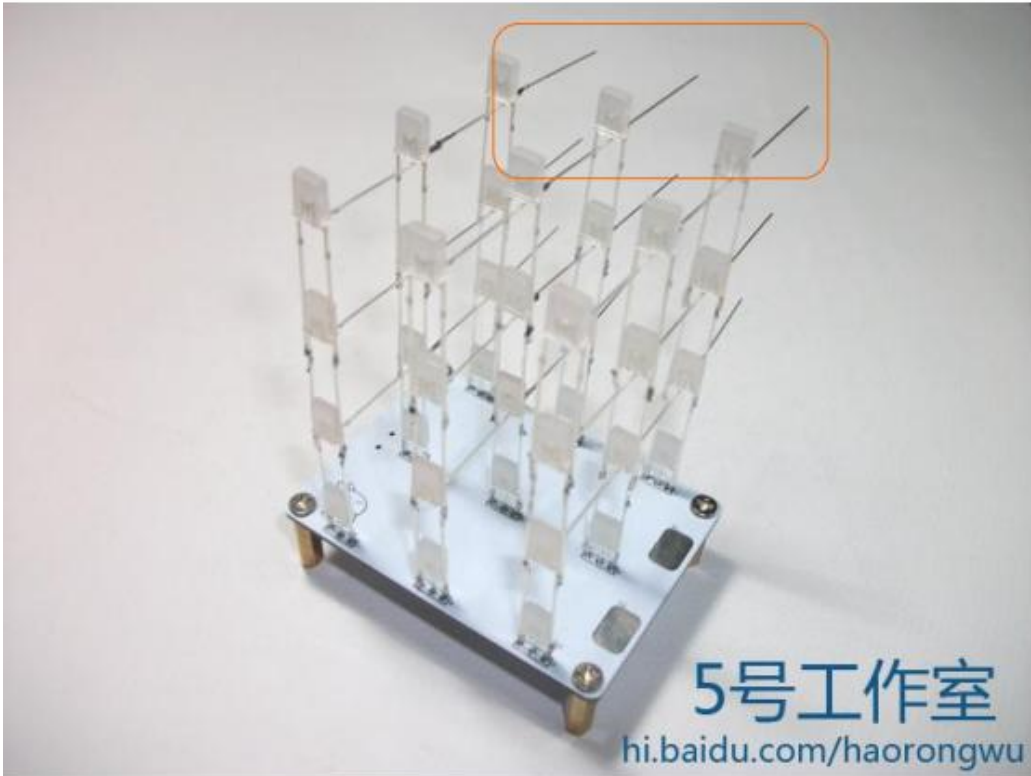
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As shown in red circle, in the middle of the LED at the first bend on some of the tin, when the tin to be careful not to touch the LED colloidal iron. Then the orange arrow pointing to pin this one on lap welding tin before that place (note not to touch the other common LED two pins!) so that you can be fixed well, and so on, common outermost LED that is fixed in this way, after the completion of the following figure

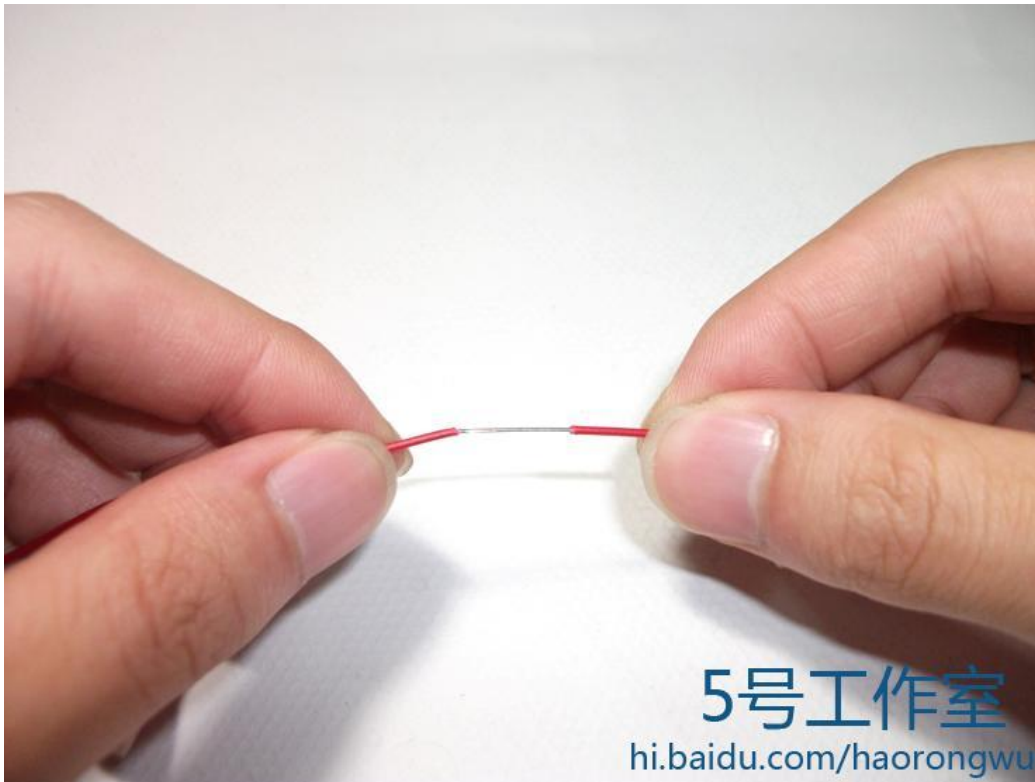




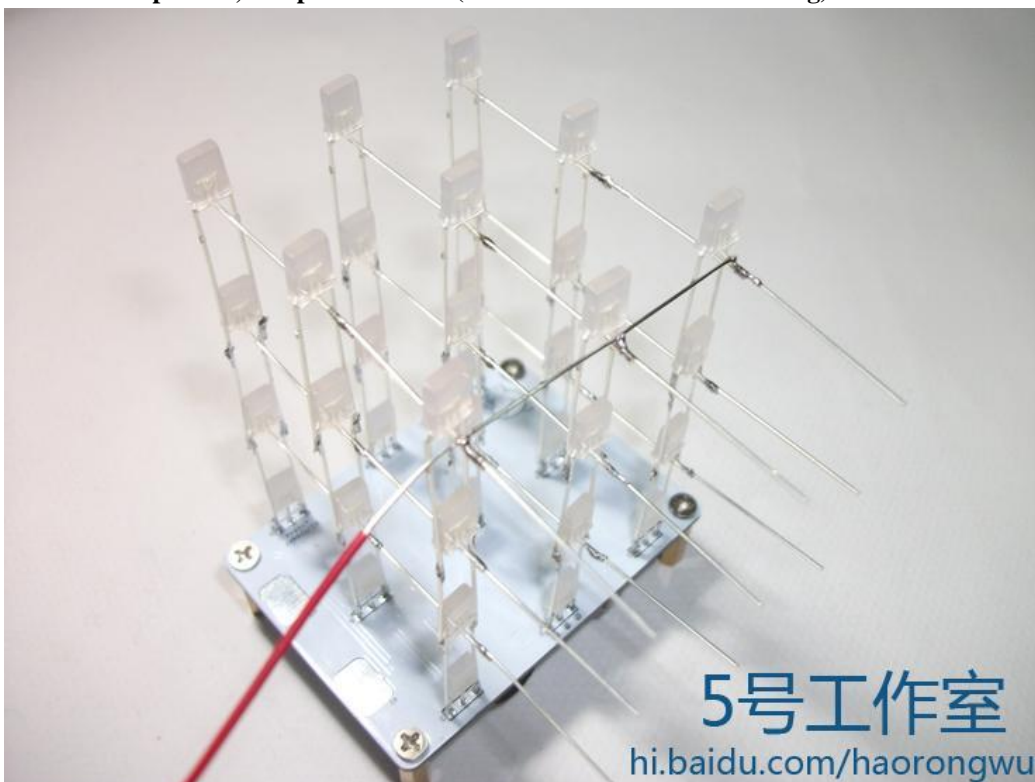
In this case the extra pins to not cut off (such as those inside the orange box)



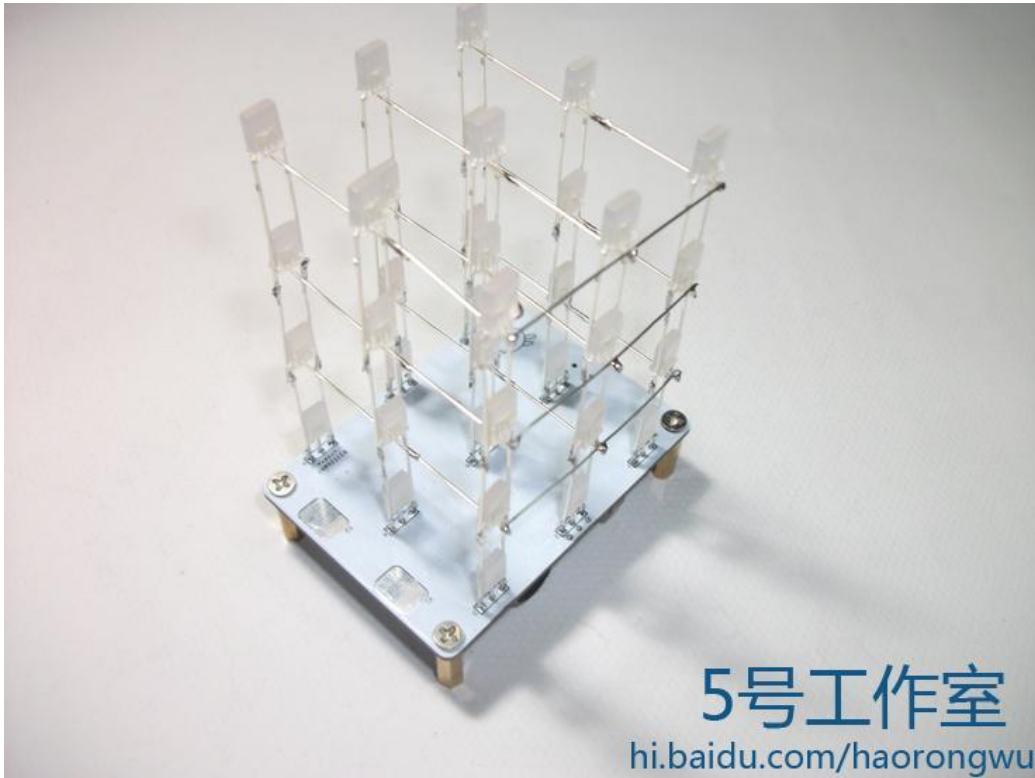
Now poke the wire red skin, we want to remove the inside of the silver wire



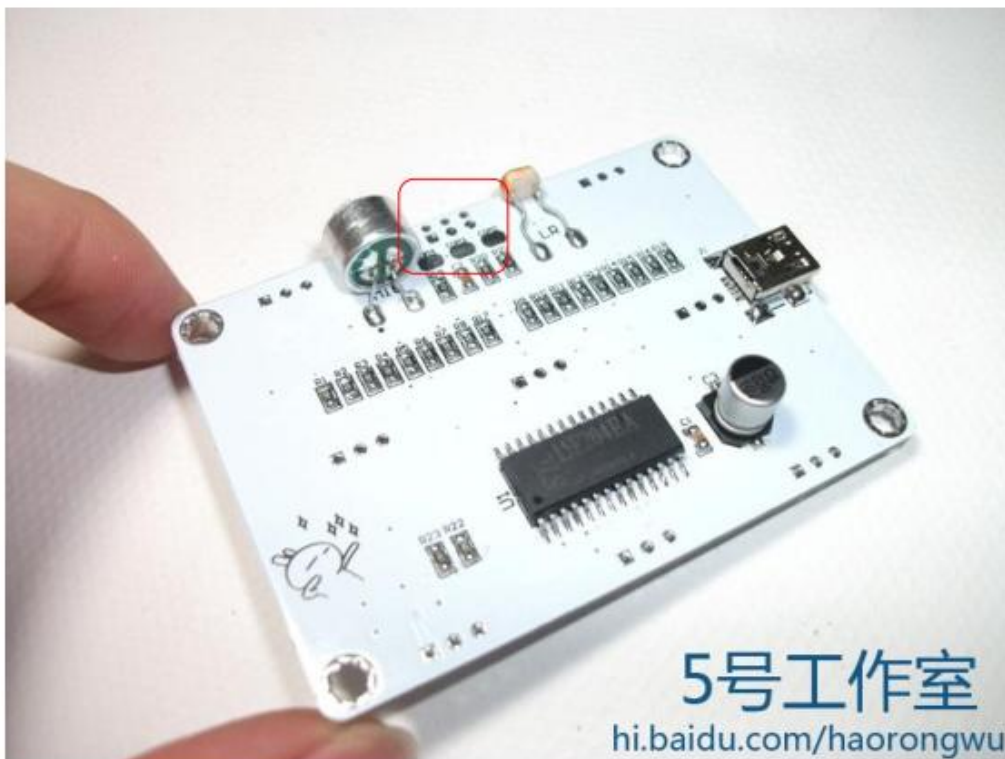
This time with a silver wire to even more out of the public side up, as far as possible by which all together, so that you look good, as shown in the following figure, the other layers are the same process, except the bottom (bottom do not need to soldering)



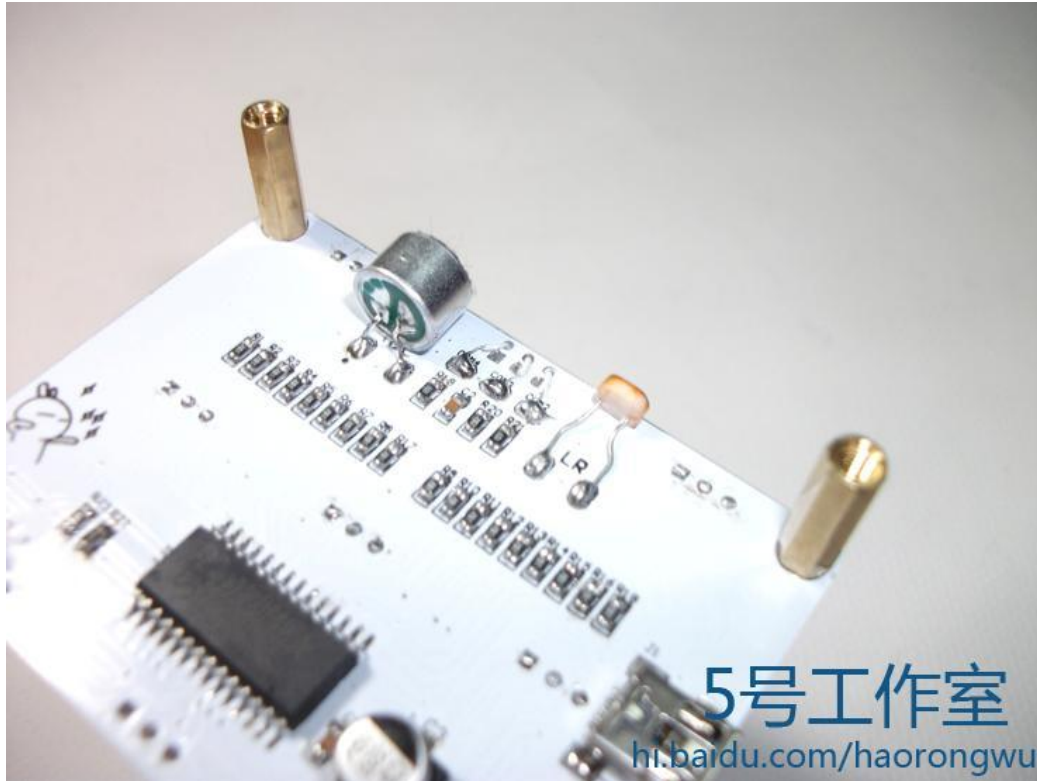
After all connected with silver wire, then cut all the extra pins, as shown below after the completion



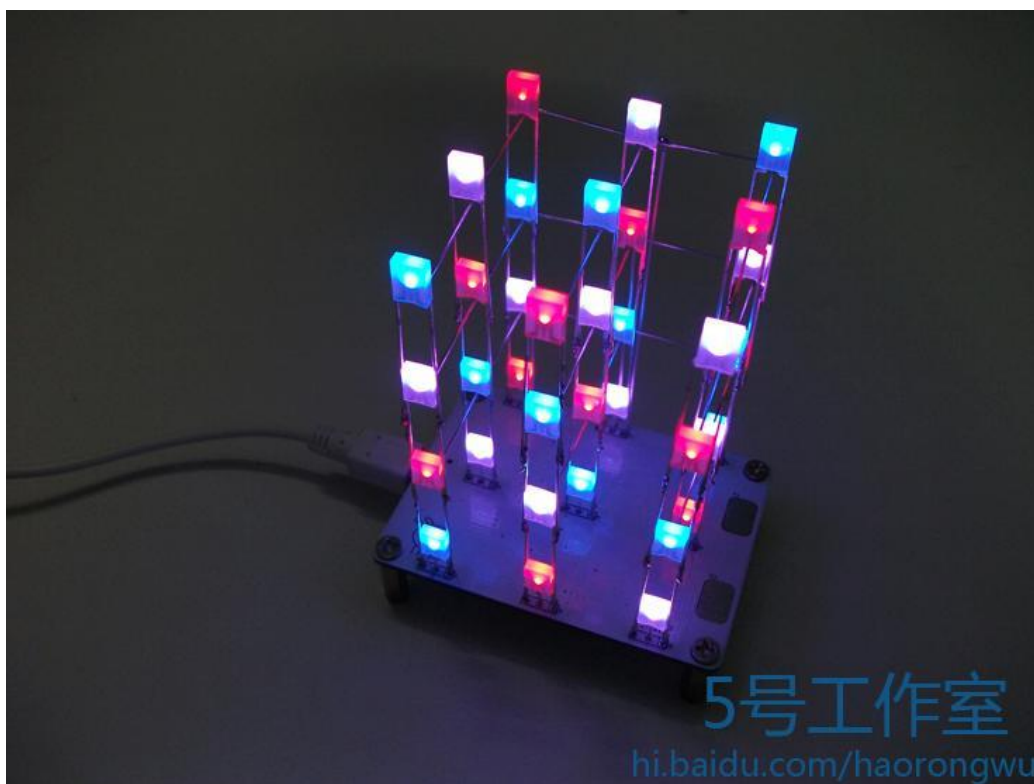
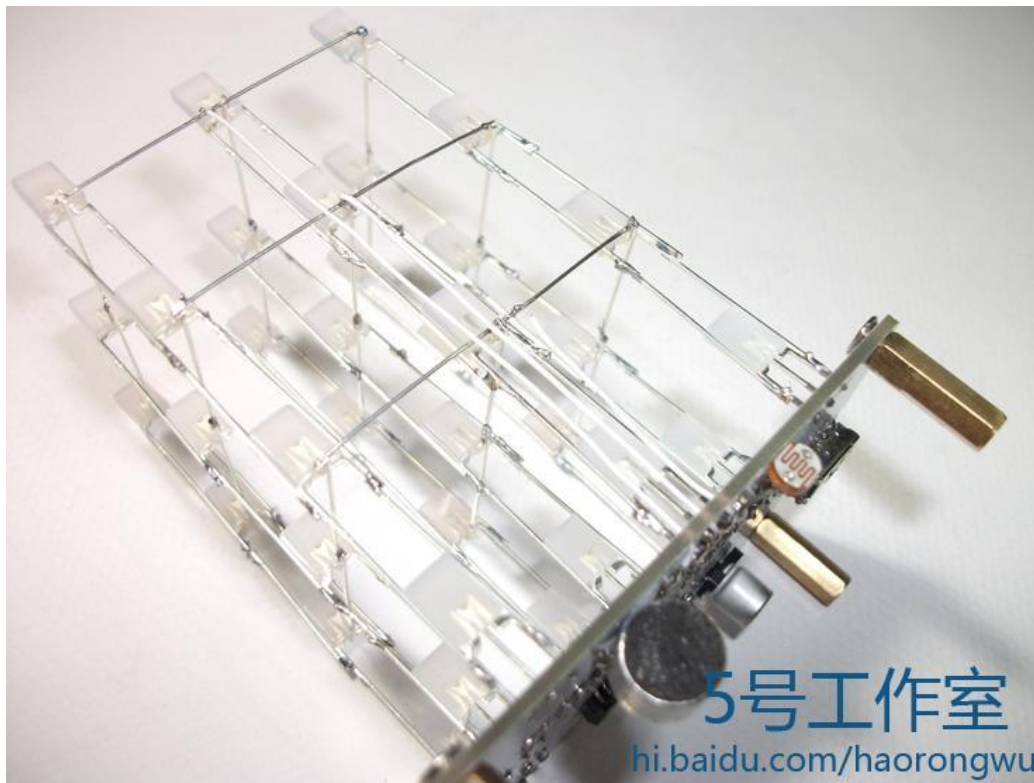
Did you see that? You'll find three pad marked with com2, com3, com4 well as three holes (red box)



We use white wire welding in these pads welded to the common terminal of each layer and then pull the wire through the hole (that is just where the silver wire)



com4 received the 4th floor, com3 received Layer 3, com2 receiving layer 2



Description of function keys:

K1: Press once, LED will change for each different tricks

K2: The first press is automatic playback mode, and the second is the voice effect, and the third is the effect of light control (turn off the lights or hand block photoresistor LED will have color effect)