

HS-B16 RGB intelligent table lamp learning kit assembly instructions



This product must be used with (U+ PROGRAM CARD)
U+ PROGRAM CARD SUPPORT ARDUINO IDE,
PROGRAMMING SOFTWARE SUCH AS MIXLY,
ARDBLOCK, SCRATCH, ETC



Warning: Persons under the age of 14 must be under the guidance of a professional teacher or knowledgeable adult!
The assembly and debugging of the product require the use of relevant tools, please take safety precautions when assembling to avoid injury!

Product Introduction

RGB intelligent desk lamp is a smart kit composed of infrared receiver module, RGB-LED ring light and other accessories.

This kit provides three example programs, respectively, key control RGB light ring, infrared remote control RGB light ring, key and infrared remote control simultaneously control RGB light ring and other functions. You can also use Arduino IDE, Mixly and other programming software to modify the sample program or write

Preparation of tools and assembly precautions

Self-assembled tools: 3 mm diameter Phillips screwdriver, scissors.

Self-provided debugging tools: 1 computer with Windows 7, 8, 10, 11 operating system, 1 U+ program card, 1 data cable, 1 pair of 18650 lithium battery.

To assemble the kit easily, you need to read the assembly instructions carefully and assemble it according to the steps.

Safety warning

1. this product is a teaching experiment supplies, do not use its function as a daily routine supplies, there will be instability.
2. when you do not use this product, please turn off the power switch on the battery

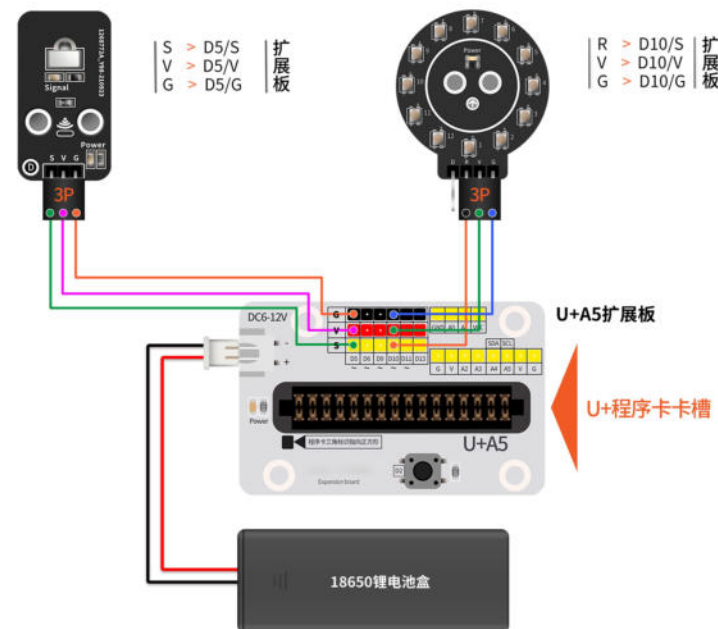
List of experimental materials

Self provided materials are not included in this product kit and must be provided by oneself

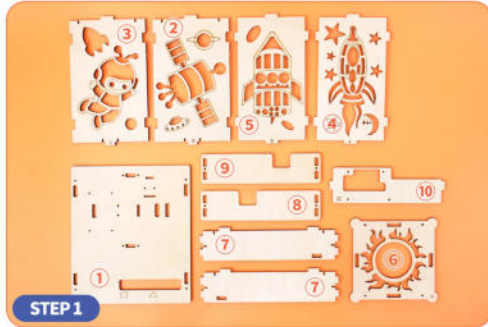
| | name | picture | name | picture | name | picture |
|----|---------------------------|---------|--|------------------|---|-----------------|
| 1 | microusb (self-provide) | 1根 | 18650 Pointed lithium battery (self-provide) | 2个 | U+program card (self-provide) | 1张 |
| 4 | Remote control unit | 1个 | Button press cap + 4mm screw + 7mm screw | 1个 12颗 16颗 | Double-sided tape + Light-transmitting film + Cable tie | 20片 5片 1条 |
| 7 | infrared Receiving module | 1个 | RGB-LED Ring light | 1个 | 18650 Lithium battery box | 1个 |
| 10 | Main structural plate | 1套 | U+A5 expansion board | 1块 | 3P Dupont wire (15cm) | 2条 |

Circuit wiring diagram

DuPont line colors are randomly distributed, please refer to the identification information corresponding to the access port for line connection!



Start assembly



STEP 1

- Prepare all accessories and wood materials. Please check the numbers on the materials carefully when assembling the wood materials. (The board has several faces on the front, and no numbers on the back)



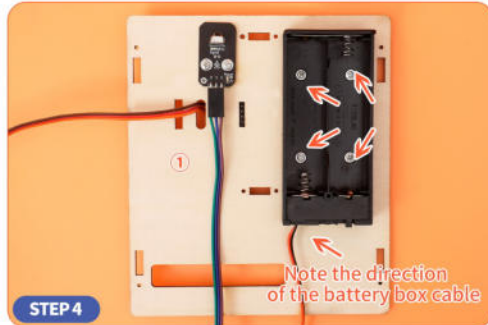
STEP 2

- Refer to the figure above, plug the two 3P Dupont cable ports respectively into the [S, V, G] ports of the infrared receiving module and the [R, V, G] ports of the RGB-LED ring light.



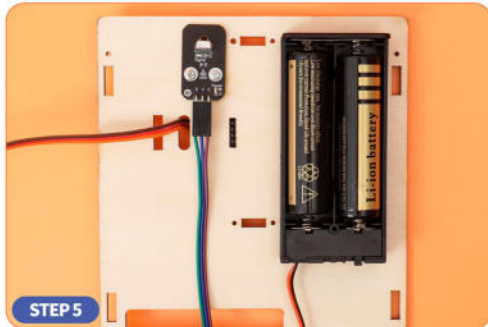
STEP 3

- Referring to the figure above, first pass the RGB-LED ring light dupont wire through the line hole of the No. 1 board, then install the RGB-LED ring light on the front of the No. 1 board, and fix it with 4mm coarse grain screws, and then install the infrared receiver module on the back of the No. 1 board, and fix it with 4mm coarse grain screws.



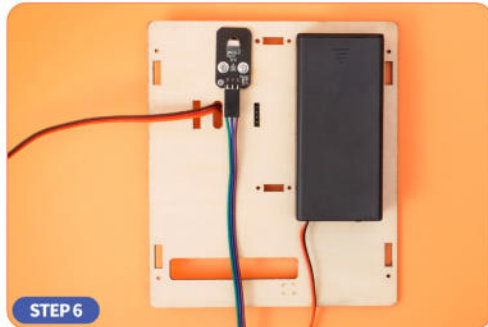
STEP 4

- Refer to the figure above, install the battery box on the back of the No. 1 plate and fix it with 4mm coarse grain screws. (Note the orientation of the battery box wire)



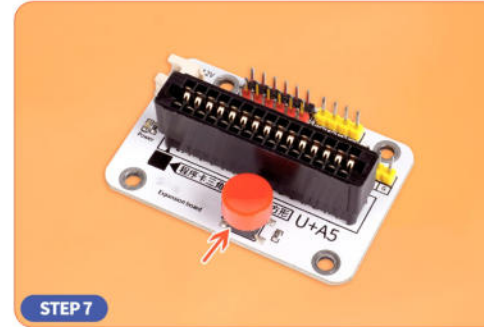
STEP 5

- Put the 18650 battery into the battery box as shown above.



STEP 6

- Install the battery case cover as shown in the picture above.



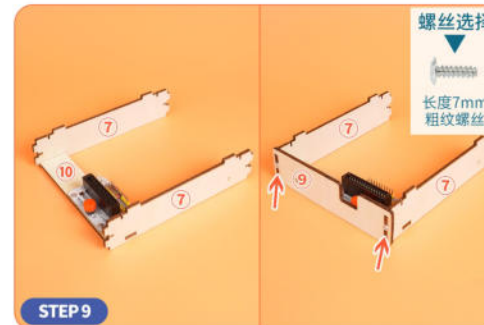
STEP 7

- Install the red button cap on the U+A5 expansion board.



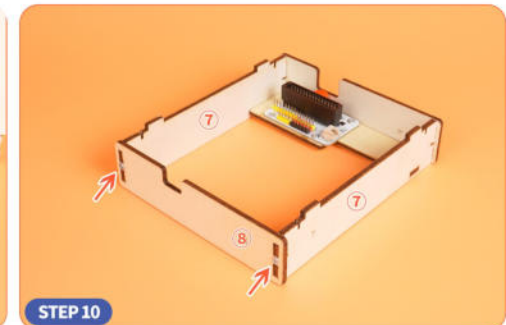
STEP 8

- Refer to the figure above, install the U+A5 expansion plate on the back of the ⑩ plate and fix it with 4mm coarse grain screws. (Note installation orientation)



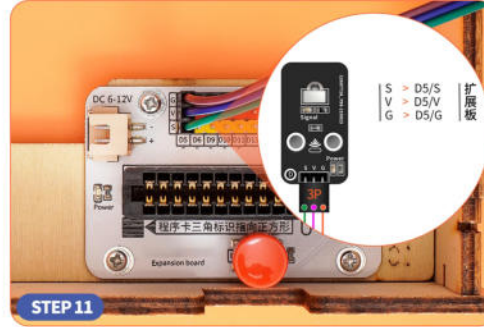
STEP 9

- Refer to the figure above, first of all, the two number plates face outward, respectively inserted into the two ends of the ⑩ plate, and then the ⑨ plate is installed on the two number plates, and fixed with 7mm coarse grain screws. (Note installation orientation)



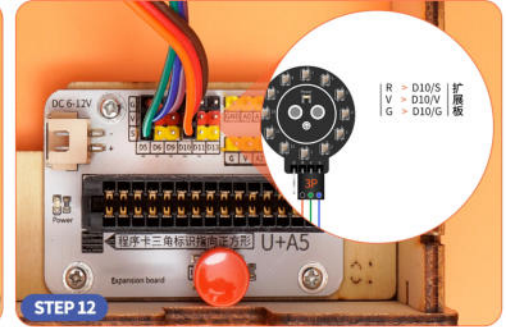
STEP 10

- Refer to the figure above to 8 plate number face out, installed on the other end of two 7 plates, and fixed with 7mm coarse grain screws. (Note installation orientation)



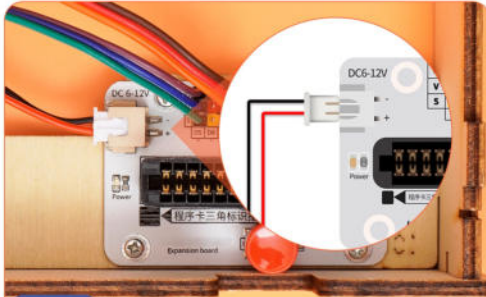
STEP 11

- Plug the wire port of the infrared receiving module into the [D5] interface on the expansion board by referring to the [Circuit wiring diagram]. (Please check the port line sequence before inserting, the wrong line sequence insertion may burn the circuit board)



STEP 12

- Plug the RGB-LED ring light wire port into the [D10] interface on the expansion board by referring to the [Circuit wiring diagram]. (Please check the port line sequence before inserting, the wrong line sequence insertion may burn the circuit board)



STEP 13

- Insert the battery box cable port into the [DC 6-12V] power port on the expansion board by referring to the [Circuit Wiring Diagram].



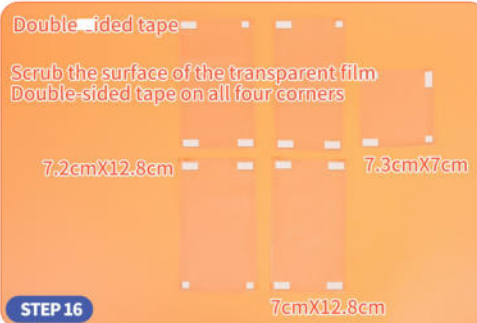
STEP 14

- Refer to the figure above, turn the No. 1 plate to face up, align the two No. 7 plates, and secure them with 7mm coarse grain screws. (Note that ① the expansion plate socket of No. 1 board is aligned with the expansion plate installation)



STEP 15

- Refer to the figure above, comb all the wires on the expansion board and secure them with cable ties. Then trim off the excess cable ties with scissors. (Note: Pay attention to safety when using scissors to avoid injury)



STEP 16

- Refer to the picture above, trim the transparent film into two pieces of 7.2cmX12.8cm, two pieces of 7cmX12.8cm and one piece of 7.3cmX7cm, and then glue the double-sided adhesive to the four corners of the matted surface of the transparent film. (Refer to STEP 17 to avoid the double-sided tape on the board.)



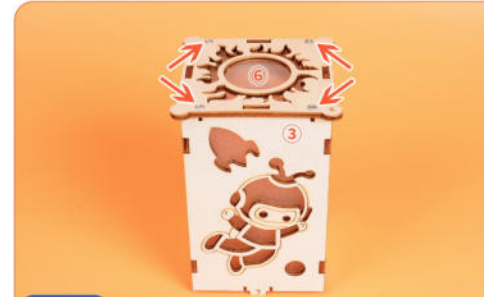
STEP 17

- Refer to the figure above, stick the light transmission film on the back of the ②, ③, ④, ⑤ and ⑥ plates respectively. (Note that the double-sided tape should avoid the holes in the image of the board)



STEP 18

- Refer to the figure above, put the front of the ④ and ⑤ plates into the ③ plates, and then put the front of the ② plates into the ④ and ⑤ plates.



STEP 19

- Refer to the figure above, the front of the ⑥ plate is aligned outwards on the ②, ③, ④, and ⑤ plates, and fixed with 7mm coarse grain screws.



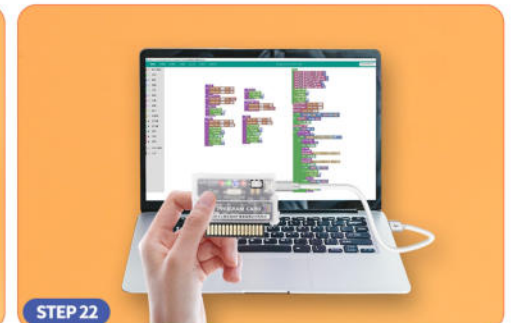
STEP 20

- Refer to the figure above, install the side of the lamp tube No. 3 assembled in STEP 19 towards the expansion plate jack of No. 1 board, and fix it on the back of No. 1 board with 7mm coarse grain screws.



STEP 21

- Refer to the picture above, turn on the power supply, the power switch is on the side with the wire.



STEP 22

- Select the corresponding development board (Arduino AVR or Arduino UNO) with Mixly software and set the COM port, open the corresponding sample program, and upload the sample program of the suite to the U+ program card.



STEP 23

- Insert the program card into the card slot on the expansion board as shown in the picture above. Note the insertion direction of the program card. The triangle identifier of the program card points to the square identifier of the slot on the expansion board.



STEP 24

- The red button on the U+A5 expansion board controls the color switch of the smart lamp.

You may encounter the following problems during debugging, refer to the tips below to see if you can troubleshoot!

RGB smart desk lamp can not work properly after installation, the following problems may occur.



1. Check whether the wiring is loose or wrong, please refer to the circuit wiring diagram.
2. Check whether the battery has insufficient power, it is recommended to replace the new battery.
3. Check whether the dupont wires of the sensor and expansion board are connected correctly, please refer to the circuit wiring diagram.
4. Check whether the U+ PROGRAM CARD has downloaded the program.
5. Check whether the U+ PROGRAM CARD is inserted backwards, which will cause



By remote control
Control desk lamp



STEP 25

- Function 1: Key control RGB light ring
Press the Red Hat button on the expansion board to switch the color of the RGB light ring.
- Function 2: Infrared remote control RGB light ring
Use the infrared remote control to control the color of the RGB light ring.



By remote control
Control desk lamp



STEP 26

- Function 3: Key and infrared remote control at the same time to control the RGB lamp ring, for specific operation, please see the corresponding program on Mixly software, you can also modify the code of the example program to change the execution result of the RGB smart desk lamp, you can also rewrite the program to control the RGB smart desk lamp.

After the assembly is completed, you also need to check whether the installation is correct to avoid danger during debugging!



1. Carefully check whether the whole kit has the wrong accessories, if there are wrong accessories, it will cause the whole kit to not operate normally.
2. Carefully refer to the circuit wiring diagram to check whether the wire connection is correct, the wrong wire connection will lead to a short circuit in the circuit, burn electronic components, and seriously lead to fire, explosion and other dangerous situations.
3. Carefully check whether the pins at the bottom of the circuit board accessories are in contact with other metals, and if there is contact, please check whether the accessories are not installed, resulting in the circuit board and other metals are not isolated.
4. Please check the power supply type and battery model used in this kit, the wrong use of the power supply or battery will cause fire, explosion and other dangerous situations.
5. If you encounter problems that you do not understand, please contact the online customer service

Refer to the following procedure to debug and experiment with the kit

Download and install the U+ program card driver and install the programming software.

Download the sample program to the U+ program card

Insert the program card into the U+ program card slot of the kit.

Turn on the kit power switch and the kit starts working.