HS-A12 telegraph (Morse Code)
Learning kit assembly instructions

Product Introduction

Telegraph [Morse Code] is a smart kit composed of LCD display, key switch module, Bluetooth module, LED light, active buzzer and other accessories.

This kit allows an analog telegraph to enter a Morse code, which can be sent to the kit via a computer and Bluetooth APP, which is then converted into a Morse code.

You can also control this suite by modifying the sample program or writing a new program yourself through programming software such as Arduino IDE, Mixly, etc.

This product must be paired with a U+ program card
(U+ PROGRAM CARD) USE
U+ Program card Support Arduino IDE,
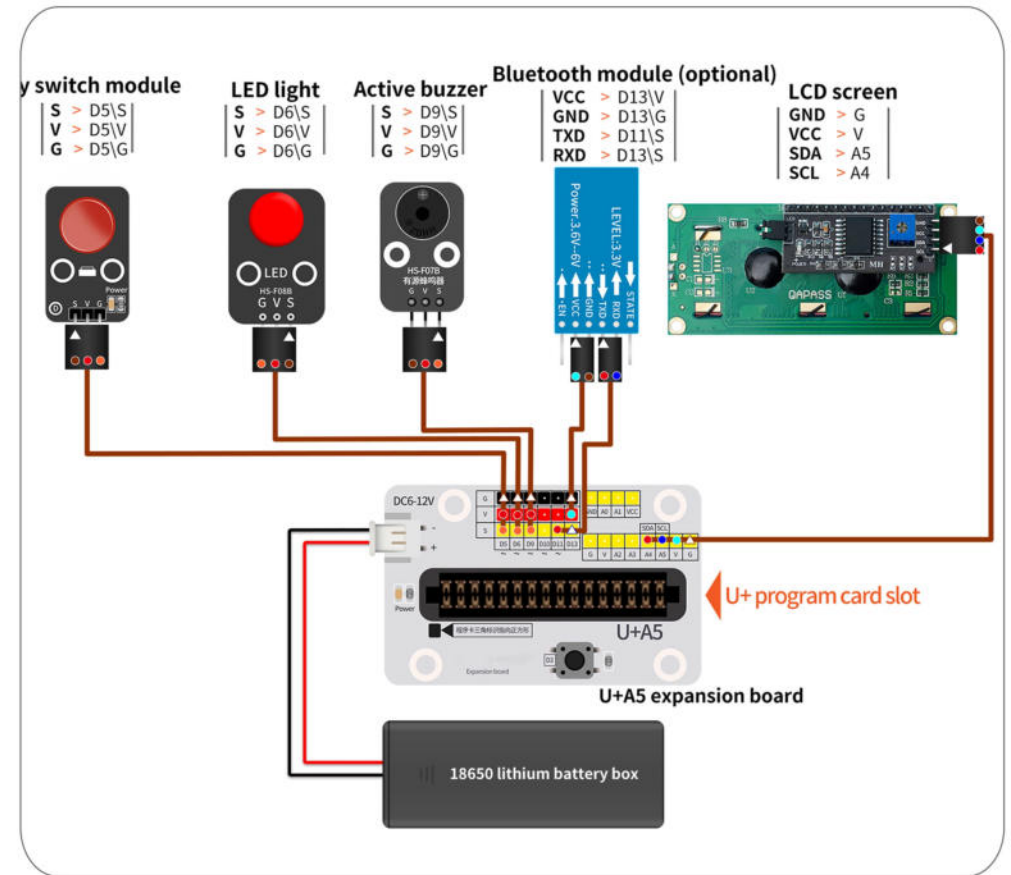Programming software such as Mixly,
Ardublock, Scratch, etc

Preparation of tools and assembly considerations

Self-equipped assembly tools: 3mm diameter Phillips screwdriver, scissors.
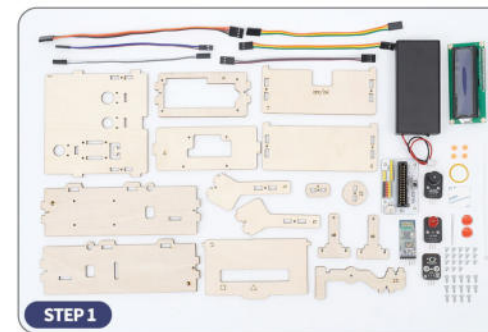
Self-provided debugging tools: 1 computer with Windows 7, 8, 10, 11 operating system, 1 U+ program card, 1 data cable, 1 pair of 18650 lithium battery.

If you want to easily assemble the kit, you need to read the assembly manual carefully, assemble step by step, please contact the customer service.

Warning: Persons under the age of 14 must be under the guidance of a professional teacher or knowledge-able adult!
The assembly and debugging of the product require the use of relevant tools, please take safety precautions when assembling to avoid injury!
This product is a teaching and experimental product, please do not use its function as a daily necessities, there will be instability!
When you are not using this product, please turn off the power switch on the battery compartment and remove the battery, keep the battery safe!

key switch module
S	> D5\S
V	> D5\V
G	> D5\G

LED light
S	> D6\S
V	> D6\V
G	> D6\G

Active buzzer
S	> D9\S
V	> D9\V
G	> D9\G

Bluetooth module (optional)
VCC	> D13\V
GND	> D13\G
TXD	> D11\S
RXD	> D13\S

LCD screen
GND	> G
VCC	> V
SDA	> A5
SCL	> A4

U+ program card slot

U+A5 expansion board

18650 lithium battery box

● Circuit connection reference diagram

STEP 1

● Prepare all accessories and wood materials. Please check the numbers on the materials carefully when assembling the wood materials. There are letters on the board for the front, and no numbers for the back.

STEP 2

Install the red key cap

The triangle sign points to S

● Plug a 3P Dupont cable (15cm) port into the key switch module interface, and install the red key cap on the key switch module.

① Back

STEP 3

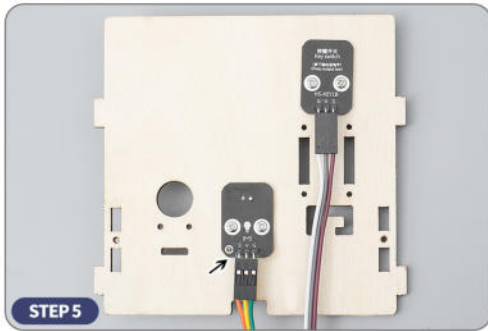● Install the key switch module on the back of panel 1 with 4mm coarse grain screws.

The triangle sign points to S

STEP 4

● Plug a 3P Dupont cable (15cm) port into the LED light interface.

Active buzzer

STEP 5

● Install the LED light on the back of panel 1 with 4mm coarse grain screws.

The triangle sign points to S

STEP 6

● Plug a 3P DuPont cable (15cm) port into the active buzzer connector.

STEP 7

● Install the active buzzer on the back of panel 1 with 4mm coarse thread screws.

STEP 8
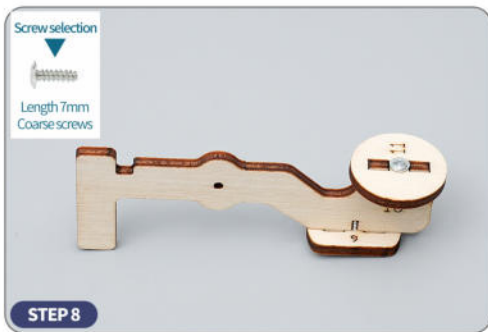
● Install the ⑨ or ⑪ plate on the ⑩ plate with 7mm coarse grain screws.

STEP 9

● Insert No. 8 plate from the back of No. 1 plate, and then fix it from the front of No. 1 plate with 7mm coarse grain screws.

STEP 10

● Put the rubber band (diameter 15mm) on the No.1 plate.

STEP 11

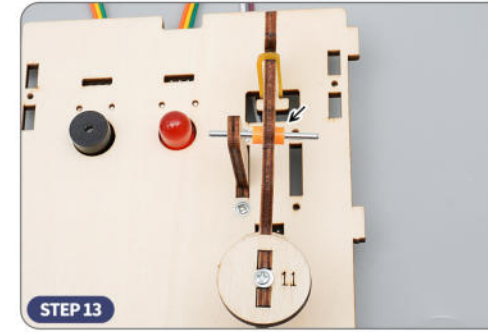● Install an orange retaining ring on the 3cm shaft.

STEP 12

● First put the rubber band on the ⑩ plate, then put the 3cm shaft through the round hole of the ⑧ plate, and finally put the 3cm shaft through the round hole of the ⑩ plate.
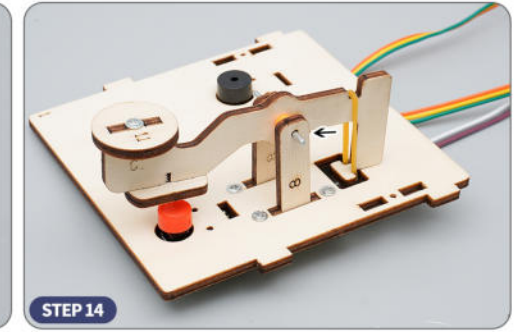
STEP 13

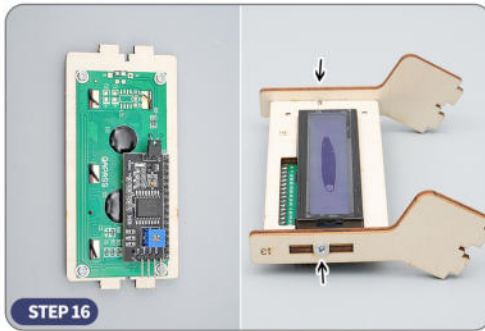● Install an orange retaining ring on the 3cm shaft.

STEP 14

● First, the ⑧ plate is threaded out from the back of the No. 1 plate, and then fixed from the front of the No. 1 plate with 7mm coarse grain screws, and finally the 3cm shaft is passed through the round hole of the No. 8 plate.
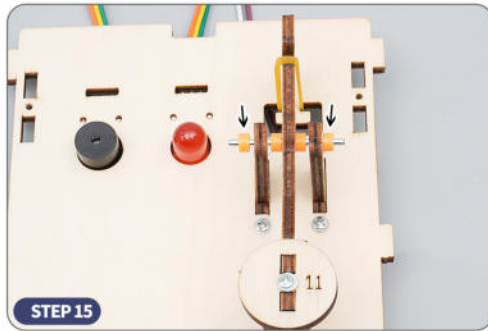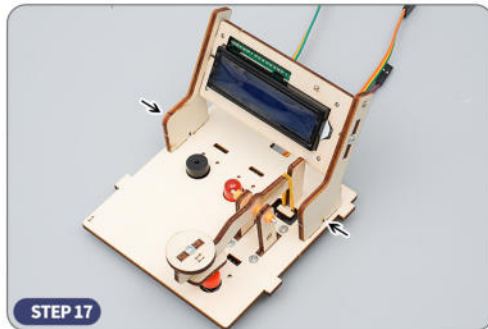
STEP 15

● Install two orange retaining rings on both sides of the 3cm shaft.

STEP 16

● The LCD screen is mounted on the school board using 4mm coarse grain screws, then the two school boards are mounted on the school board using 7mm coarse grain screws.

STEP 17

● Install the two plates on the front of plate 1, and then secure them from the back of plate 1 with 7mm coarse grain screws.
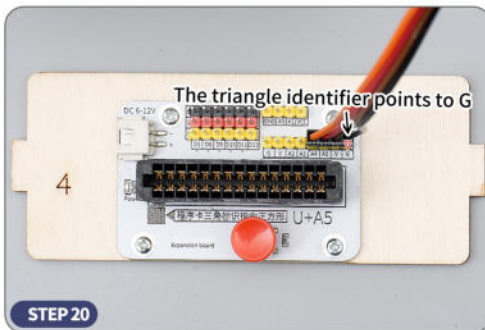

Install the red key cap
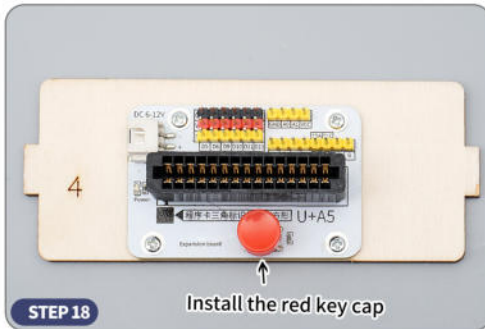
STEP 18

● Install the U+A5 expansion board on the No. 4 board with 4mm coarse grain screws, and then install the red key cap on the expansion board.


The triangular sign points to SCL

STEP 19

● Plug a 4P Dupont cable (20cm) port into the LCD interface.

The triangle identifier points to G

STEP 20

● Refer to the Circuit wiring diagram to plug the other port of the 4P DuPont cable on the LCD LCD screen into the A4, A5, V, and G interfaces on the expansion board. Note: Please check the port line sequence before inserting, the wrong line sequence may burn the circuit board.**Note: Please check the port line sequence before inserting, the wrong line sequence may burn the circuit board.**
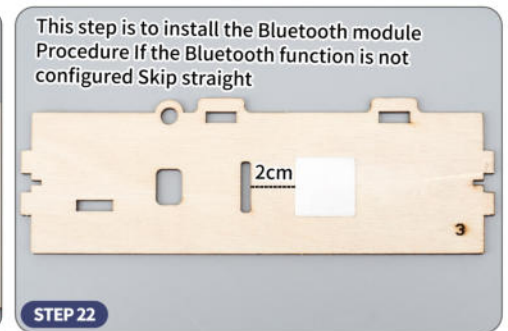
[5]
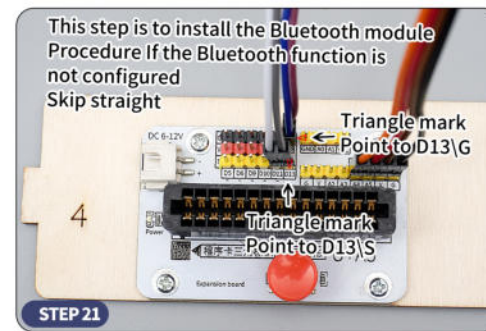
This step is to install the Bluetooth module Procedure If the Bluetooth function is not configured Skip straight

Triangle mark Point to D13\G

Triangle mark Point to D13\S

STEP 21

● Connect the two 2P Dupont (15cm) ports to the D11 and D13 ports on the expansion board by referring to the Circuit Wiring Diagram.**Note: Please check the port line sequence before inserting, the wrong line sequence may burn the circuit board.**
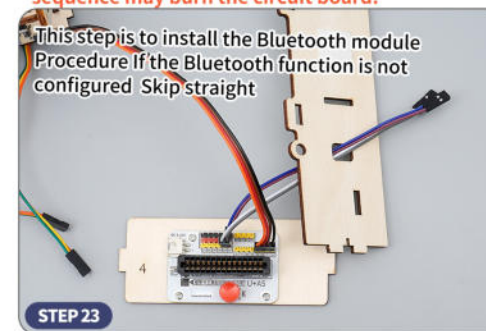
This step is to install the Bluetooth module Procedure If the Bluetooth function is not configured Skip straight
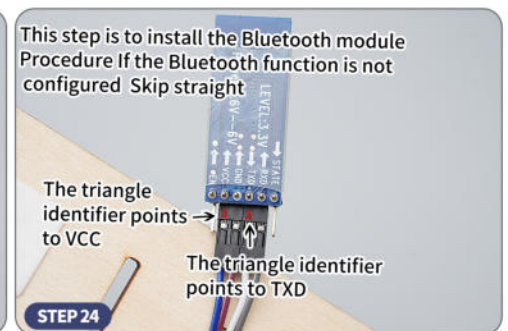

2cm

STEP 22

● Put 2X2CM double-sided tape on board No. 3.

This step is to install the Bluetooth module Procedure If the Bluetooth function is not configured Skip straight

STEP 23

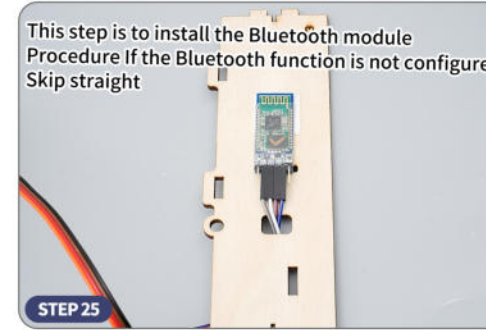● Thread two 2P dupont wires through the wire holes of plate 3.

This step is to install the Bluetooth module Procedure If the Bluetooth function is not configured Skip straight

The triangle identifier points to VCC
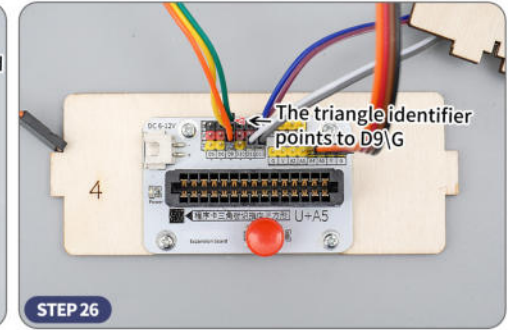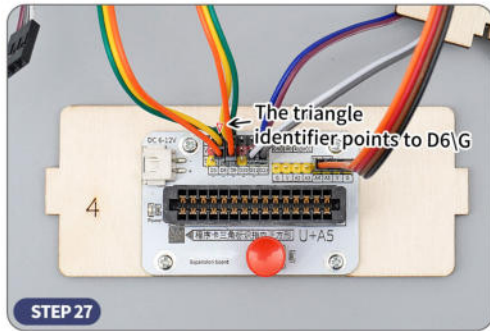
The triangle identifier points to TXD

STEP 24

● Refer to [Circuit wiring diagram] to plug the other port of the two 2P Dupont cables into the Bluetooth module interface.**Note: Please check the port line sequence before inserting, the wrong line**

This step is to install the Bluetooth module Procedure If the Bluetooth function is not configured Skip straight

STEP 25

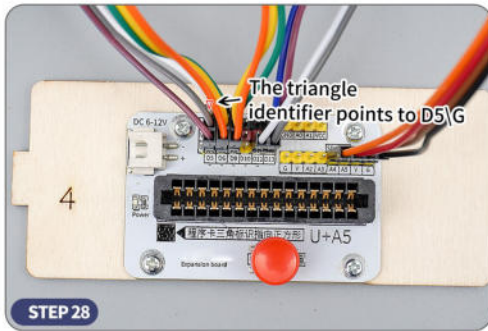● Attach the Bluetooth module to the double-sided tape.
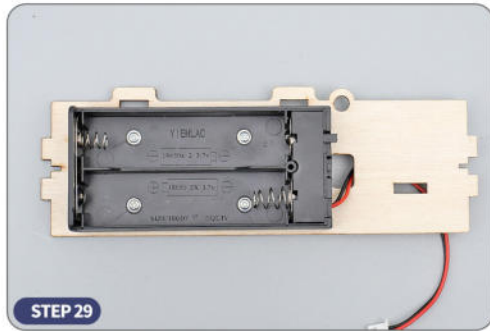

The triangle identifier points to D9\G

STEP 26

● Refer to the Circuit wiring Diagram to plug the other port of the active buzzer Dupont cable into the D9 port on the expansion board.**Note: Please check the port line sequence before inserting, the wrong line sequence may burn the circuit board.**
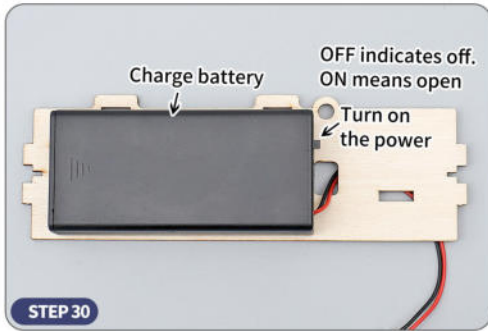
[6]

STEP 27

- Refer to [Circuit wiring diagram] to plug the other port of the dupont cable of the LED light into the D6 port of the expansion board.**Note: Please check the port line sequence before inserting, the wrong line sequence may burn the circuit board.**
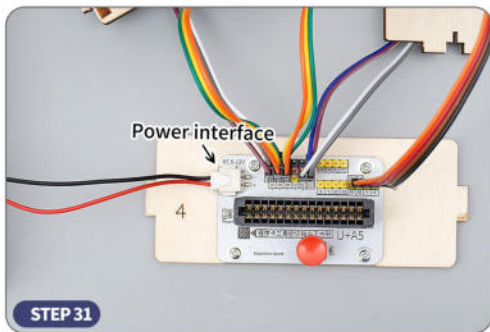

The triangle identifier points to D6\G

STEP 28

- Refer to [Circuit Wiring Diagram] to plug the other port of the dupont cable of the key switch module into the D5 port on the expansion board.**Note: Please check the port line sequence before inserting, the wrong line sequence may burn the circuit board.**

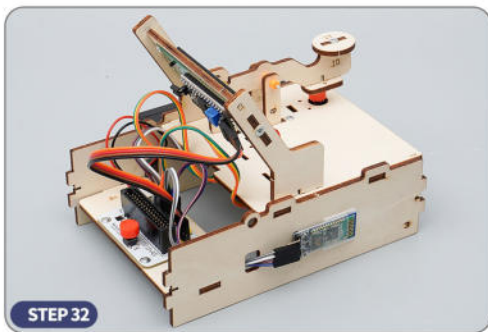The triangle identifier points to D5\G

STEP 29

- Install the battery box on the front of No. 2 plate with 4mm coarse grain screws, and then pass the battery box wire through the wire hole of No. 2 plate.
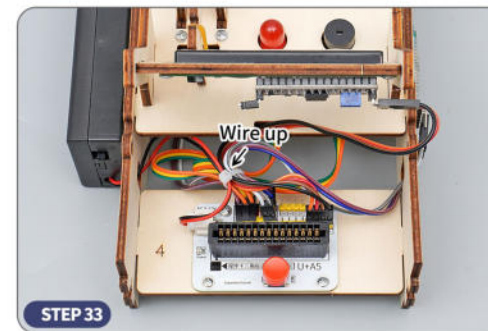
STEP 30

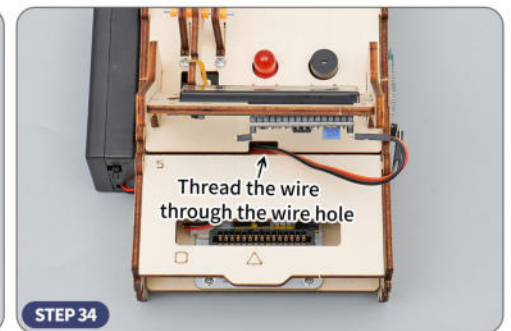- First put the battery in the battery box, then put the cover on the battery box, and finally turn on the power switch.

Charge battery

OFF indicates off. ON means open

Turn on the power

STEP 31

- Connect the battery box cable port to the power port on the expansion board by referring to the Circuit Wiring Diagram.
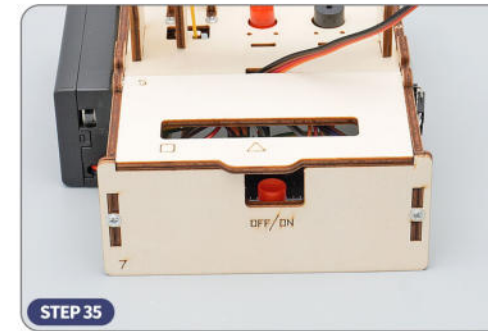
Power interface

STEP 32

- Install plates ① and ④ on plates ② and ③.

STEP 33

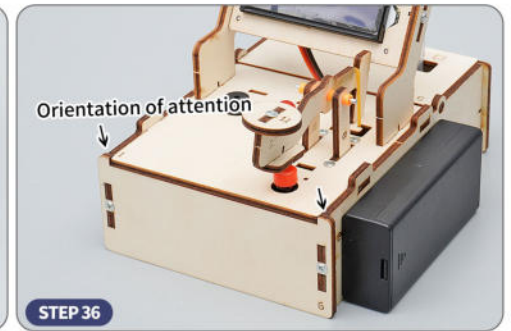- Tie all the wires with cable ties first, then trim off any excess with scissors.**Note: Be careful when using scissors to avoid injury!**

Wire up

STEP 34

- Install No. 5 plates on No. 2 and No. 3 plates.
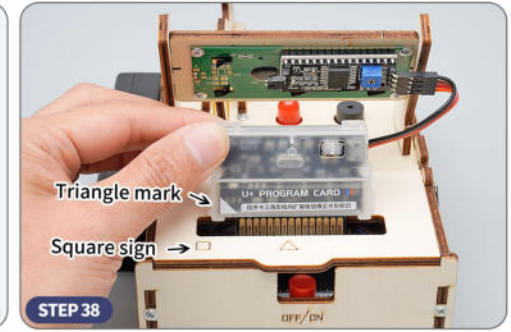
Thread the wire through the wire hole

STEP 35

- Install No. 7 plate on No. 2 and No. 3 plate with 7mm coarse grain screws.

STEP 36

- Install the ⑥ plate on the ② and ③ plates with 7mm coarse grain screws.

Orientation of attention

STEP 37

- Upload sample programs for the suite to the U+ program card using Mixly Mixly software.

STEP 38

- Insert the downloaded program card into the card slot of the expansion board.

Triangle mark

Square sign

STEP 27

The triangle identifier points to D6\G

DC 6-12V

4

U+A5

Expansion board

- Refer to [Circuit wiring diagram] to plug the other port of the dupont cable of the LED light into the D6 port of the expansion board.**Note: Please check the port line sequence before inserting, the wrong line sequence may burn the circuit board.**

STEP 28

The triangle identifier points to D5\G

DC 6-12V

4

U+A5

Power

Expansion board

- Refer to [Circuit Wiring Diagram] to plug the other port of the dupont cable of the key switch module into the D5 port on the expansion board.**Note: Please check the port line sequence before inserting, the wrong line sequence may burn the circuit board.**

STEP 29

- Install the battery box on the front of No. 2 plate with 4mm coarse grain screws, and then pass the battery box wire through the wire hole of No. 2 plate.

STEP 30

Charge battery

OFF indicates off. ON means open

Turn on the power

- First put the battery in the battery box, then put the cover on the battery box, and finally turn on the power switch.

STEP 31

Power interface

DC6-12V

4

U+A5

Expansion board

- Connect the battery box cable port to the power port on the expansion board by referring to the Circuit Wiring Diagram.

STEP 32

- Install plates ① and ④ on plates ② and ③.

STEP 33

Wire up

4

- Tie all the wires with cable ties first, then trim off any excess with scissors.**Note: Be careful when using scissors to avoid injury!**

STEP 34

Thread the wire through the wire hole

- Install No. 5 plates on No. 2 and No. 3 plates.

STEP 35

OFF/ON

7

- Install No. 7 plate on No. 2 and No. 3 plate with 7mm coarse grain screws.
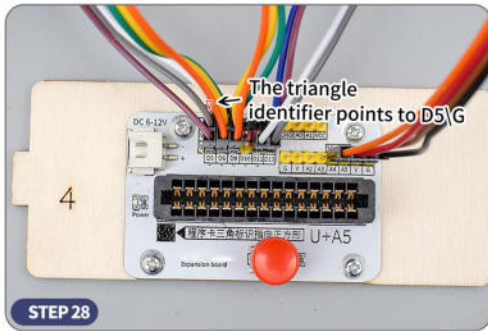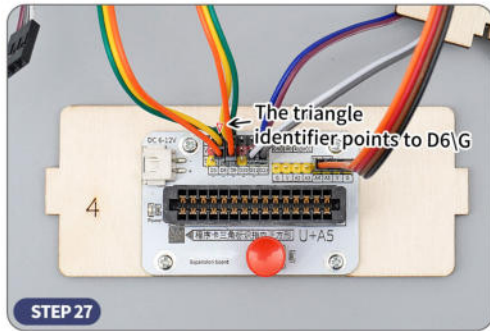

STEP 36

Orientation of attention

6

- Install the ⑥ plate on the ② and ③ plates with 7mm coarse grain screws.

STEP 37

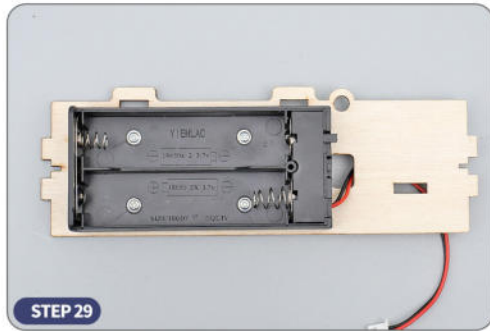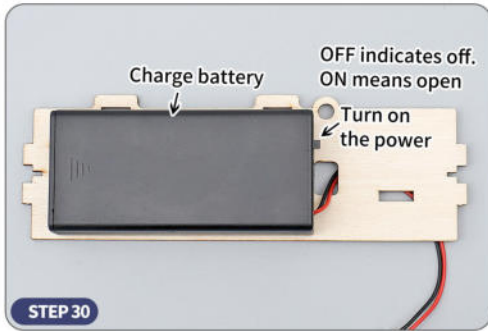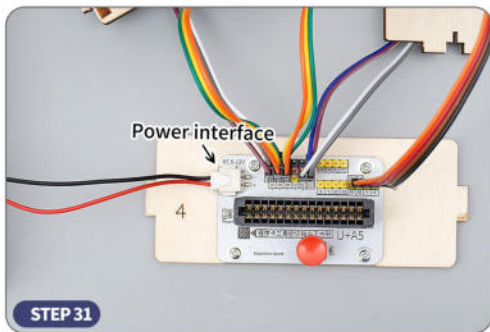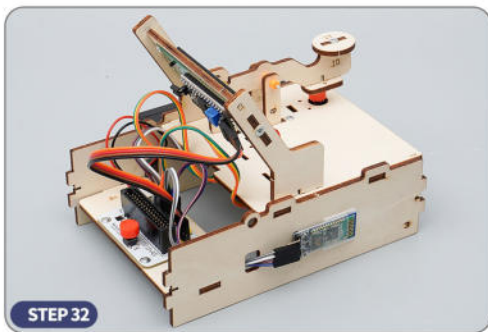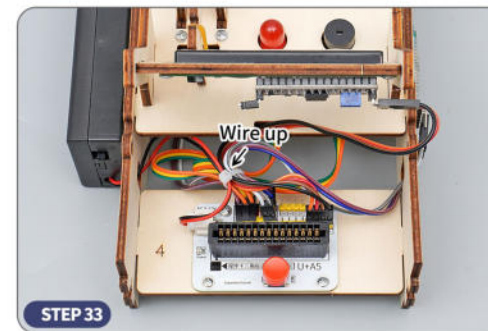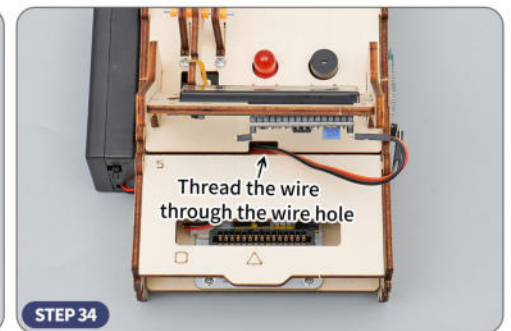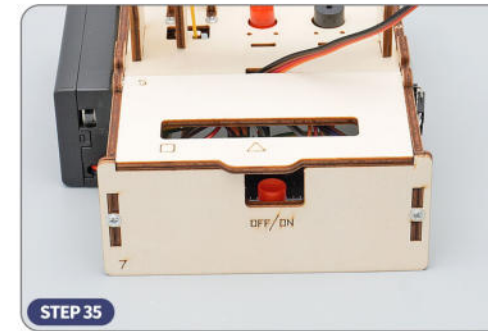- Upload sample programs for the suite to the U+ program card using Mixly Mixly software.

STEP 38

Triangle mark

U+ PROGRAM CARD

Square sign

OFF/ON

- Insert the downloaded program card into the card slot of the expansion board.

STEP 39

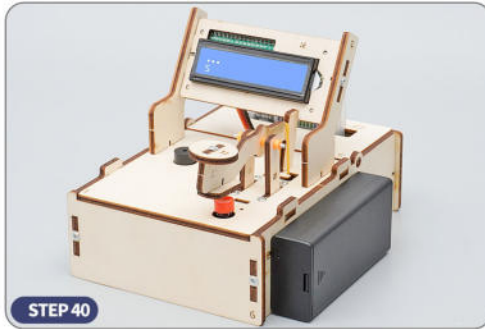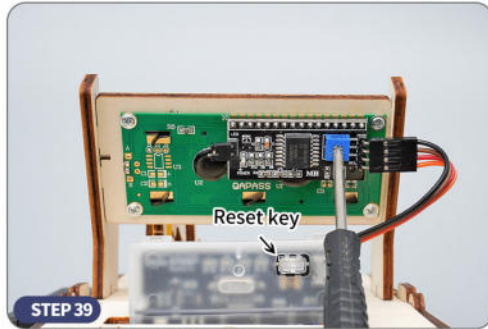● [Debug display] If there is no number on the display, rotate the knob to the right until the number is just displayed on the display. If the box shading appears, rotate the knob to the left until the box disappears. If there is no response to the left and right rotation, press the reset button to restart.

Reset key

STEP 40

● [Display Morse Code program] Wait for the display to light up, enter different signal codes through the key, tap the key for (·), long press for three seconds for (-), the display will automatically translate English letters, only one translation at a time.
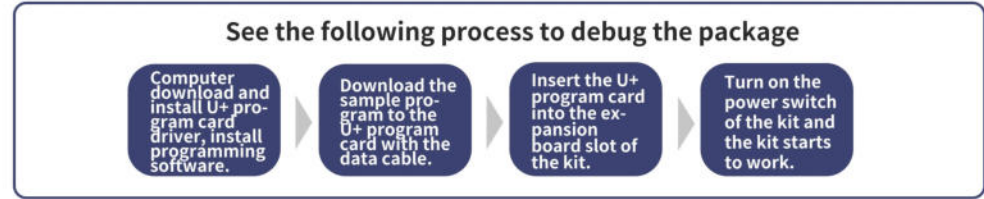

STEP 41
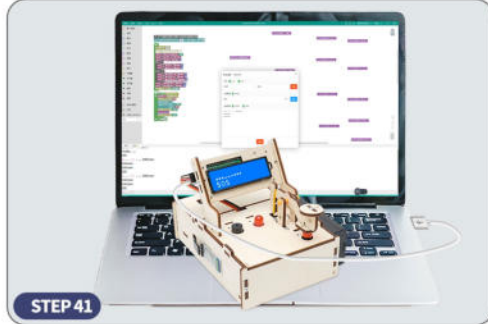
● [Computer Serial dialog box sending program] Connect the kit to the computer, send English letters or words through the serial dialog box of Mixly software, and the telegraph will be converted into Morse code in real time.

STEP 42

● [Bluetooth dialog box sending program] Connect Bluetooth through the mobile APP, and then send English letters or words in the APP dialog window, and the telegraph will be converted into Morse code in real time.

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

1.carefully check the whole kit is not installed wrong accessories, if there are wrong accessories, will lead to the whole kit can not run normally.

2.carefully refer to the circuit wiring diagram to check whether the wire connection is correct, wrong wire connection will lead to circuit short circuit, burn electronic components, serious will 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. If they are in contact, please check whether any accessories are not installed, resulting in no isolation between the circuit board and other metals.

4. Please check the power supply type and battery type of this kit. Incorrect use of power supply or battery may cause fire, explosion and other dangerous situations.

5.if you do not understand the problem, please contact the official service website online customer service or find relevant professionals for consultation during working hours from Monday to Saturday 9:00-18:00, do not operate blindly, otherwise it will be dangerous.

See the following process to debug the package

Computer download and install U+ program card driver, install programming software. ▷ Download the sample program to the U+ program card with the data cable. ▷ Insert the U+ program card into the expansion board slot of the kit. ▷ Turn on the power switch of the kit and the kit starts to work.

Debugging process you may encounter the following problems, refer to the following tips to see if you can troubleshoot!

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 a short circuit. Please refer to [STEP38] to insert the card.

The secret code table