Measuring ruler 0 1CM 2 3 4 5 6 7 8 9 10

HS-A08 Ultrasonic radar

Learning kit assembly instructions

This product must be used with U+ Program Card with U+ Program Card to support Arduino IDE, Mixly, ArduBlock, Scratch and other programming software

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

Ultrasonic radar is an intelligent kit composed of ultrasonic module, laser spotlight module, TFT display, servo, passive buzzer and other accessories.

This kit can realize ultrasonic ranging, ultrasonic sensing, real-time data display, intelligent alarm and other functions.

You can also modify the sample program through programming software such as Arduino IDE, Mixly or write your own new program to control the ultrasonic radar.

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.

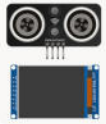
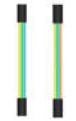
If you want to easily assemble the kit, you need to read the assembly manual carefully, assemble step by step

Security warnings ⚠

1. This product is a teaching and experimental product, please do not use its function as a daily necessities, there will be instability.
2. When you do not use this product, please turn off the power switch on the battery box and remove the battery, and keep the battery properly.

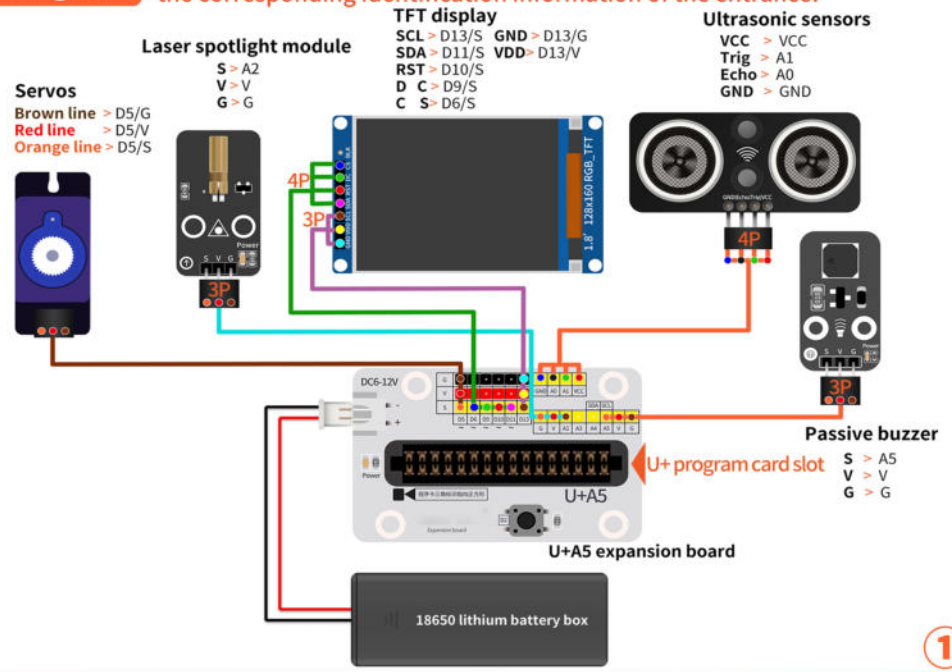
Bill of Materials

Self-provided materials are not the materials in this product kit, need to be equipped by yourself

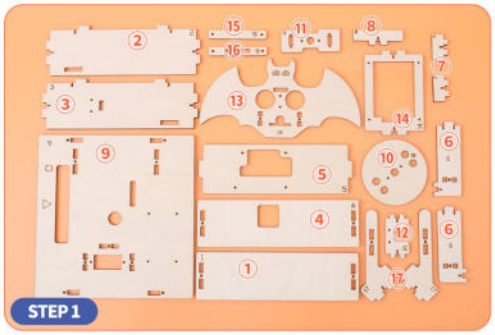
	name		Image		name		Image		name		Image
1	micro usb (Owned)	1		2	18650 lithium battery (Owned)	2		3	U+program card (Owned)	1	
4	18650 Lithium battery case	1		5	Key caps + Cable ties	1 1		6	9G servo + Servo disc	1 1	
7	ultrasonic module + TFT display screen	1 1		8	10mm screw + 7mm screw + 4mm screw	6 24 12		9	3PDuPont Line (20cm) + 4PDuPont Line (20cm)	3 2	
10	Body Structural plates	1		11	U+A5 Expansion board	1		12	laser Spotlight module + Passive buzzer	1 1	

Wiring diagram

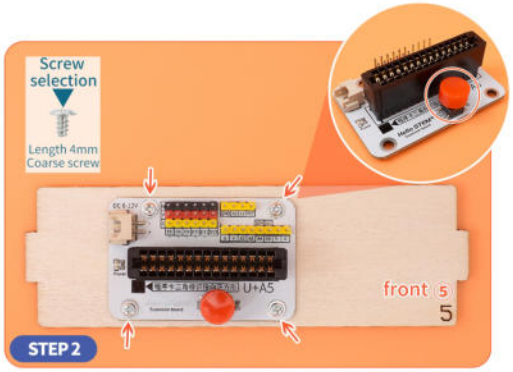
DuPont line color random distribution, line connection please refer to the corresponding identification information of the entrance!



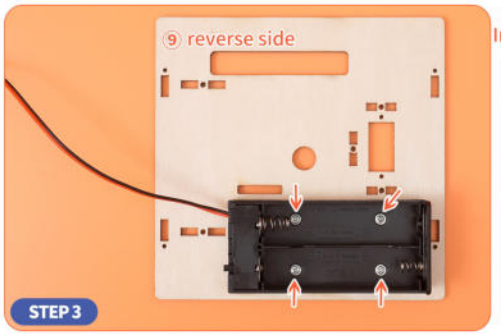
Start assembling



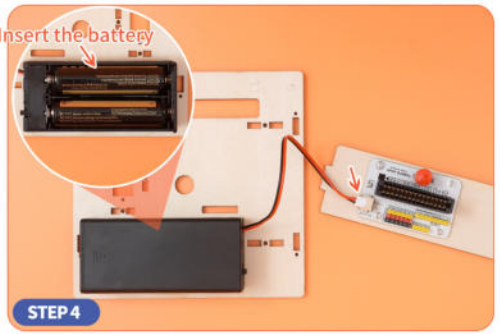
- Prepare all accessories and wood materials, and carefully check the number on the materials when assembling the wood materials.**Note: The planks have numbers on the front side and those without numbers on the reverse.**



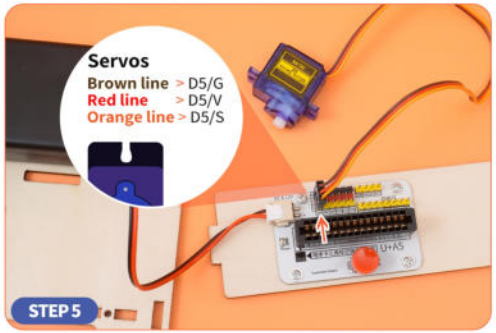
- First install the red key cap on the U+A5 expansion board, and then use the 4mm rough screw to install the U+A5 expansion board on the front of the (5) board.



- Use 4mm rough screws to mount the battery box on the reverse side of plate (9).

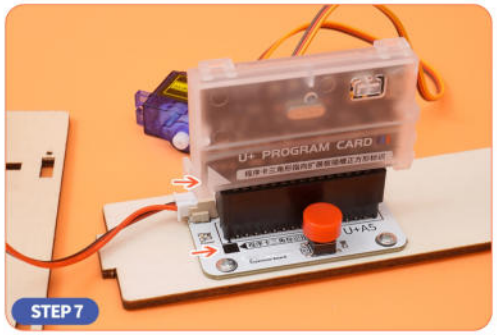


- First put two 18650 lithium batteries into the battery box, then cover the battery box cover, and finally refer to [circuit wiring diagram] to plug the battery box wire terminals into the power interface on the U+A5 expansion board.

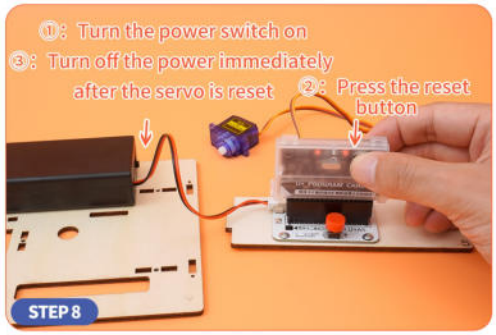


- Refer to [Circuit Wiring Diagram] to plug the servo wire terminal into the D5 interface on the U+A5 expansion board.**Please check the port order before inserting it, as incorrect insertion may burn the board.**

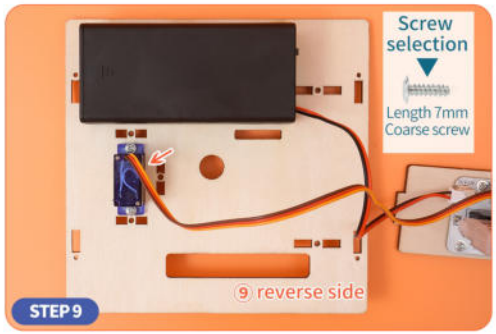
- Use the Mixly software to upload the first sample program of the kit to the U+ program card.



- Insert the program card into the card slot on the U+A5 expansion board.Note: The program card triangle logo points to the expansion board square identification.

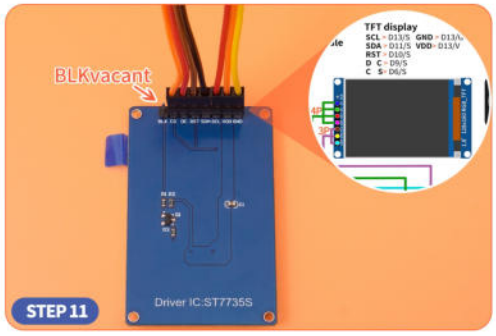


- (1): Turn on the power switch first.
(2): Press the reset button on the program card.
(3): Turn off the power immediately after the servo is reset.Note: Do not let the servo turn after it is reset. Otherwise, the position will be deviated after the rear is assembled.

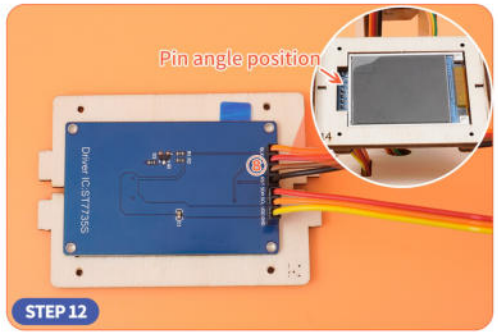


- Use 7mm rough screws to mount the servo on the reverse side of board (9).

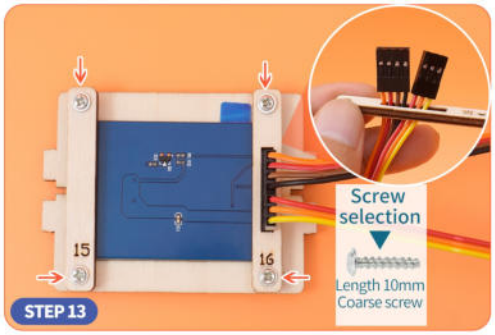
- Install plates (7) and (8) on the front of board (9) with 7mm rough screws.



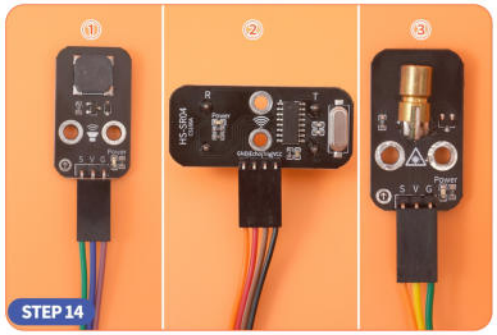
- Refer to [Circuit Wiring Diagram] Plug a 3P DuPont cable into the GND, VDD, SCL interface on the TFT display, and then plug a 4P DuPont cable into the SDA, RST, DC, CSinterface on the TFT display. BLK is vacant and unplugged.



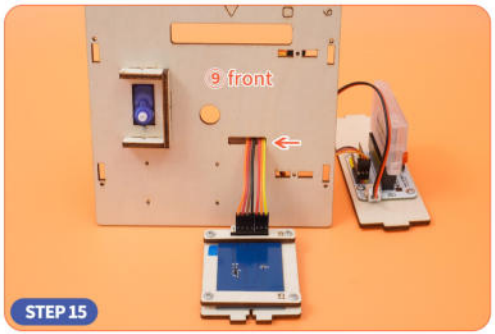
- Snap the TFT display into the hole in board (14).



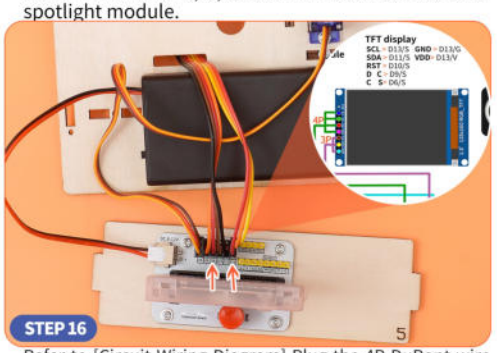
- First, pass the DuPont line of the TFT display through the hole of the (16) board, and then install the (15) and (16) boards on the (14) board with 10mm rough screws.



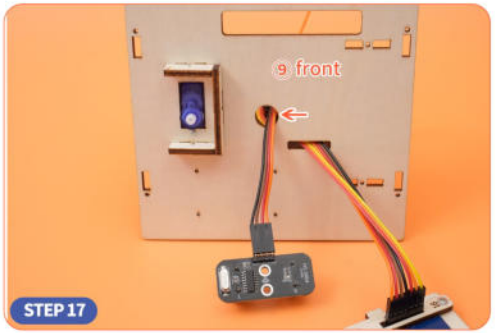
- (1): Plug a 3P DuPont wire terminal into the S, V, G interface on the passive buzzer. (2): Plug a 4P DuPont wire terminal into the GND, Echo, Trig, VCC on the ultrasonic module. (3): Plug a 3P DuPont wire terminal into the S, V, and G interfaces on the laser spotlight module.



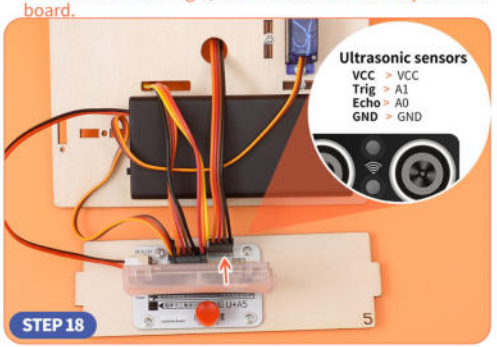
- Pass the DuPont cable of the TFT display through the hole in plate (9).



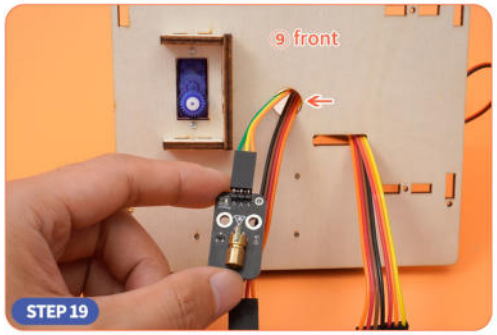
- Refer to [Circuit Wiring Diagram] Plug the 4P DuPont wire terminal of the TFT display screen into the D6, D9, D10, D11 interface on the expansion board, and then plug the 3P DuPont line terminal of the TFT display screen into the D13 interface on the expansion board.Please check the port order before inserting it, as incorrect insertion may burn the board.



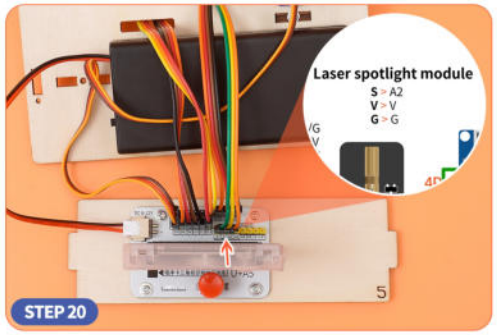
- Pass the DuPont wire of the ultrasonic module through the wire hole of plate (9).



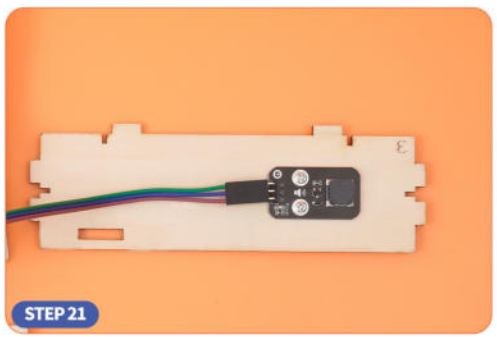
- Refer to [Circuit Wiring Diagram] and plug the DuPont cable of the ultrasonic module into the GND, A0, A1, and VCC interfaces on the expansion board.Please check the port order before inserting it, as incorrect insertion may burn the board.



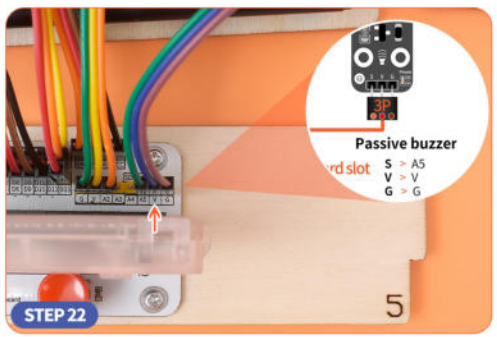
- Pass the DuPont line of the laser spotlight module through the line hole of plate (9).



- Refer to [Circuit Wiring Diagram] Plug the DuPont wire terminal of the laser spotlight module into the G, V, A2 interface on the expansion board.Please check the port order before inserting it, as incorrect insertion may burn the board.

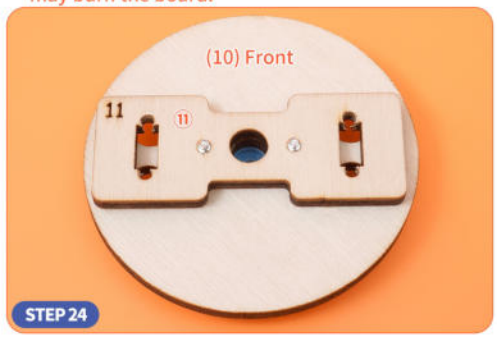


- Use 4mm coarse screws to mount the passive buzzer on the reverse side of board (3).



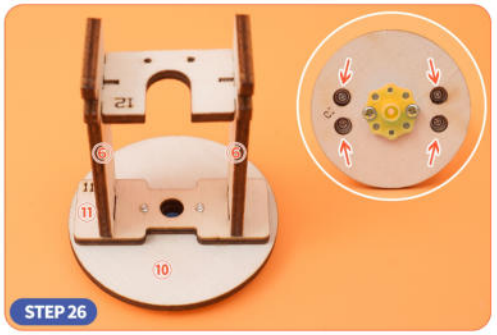
- Refer to [Circuit Wiring Diagram] Plug the passive buzzer DuPont wire terminals into the A5, V, and G interfaces on the expansion board.Please check the port order before inserting it, as incorrect insertion may burn the board.

- Use 10mm coarse screws to install the servo disc on the reverse side of the (10) board, and the screws can be screwed halfway.

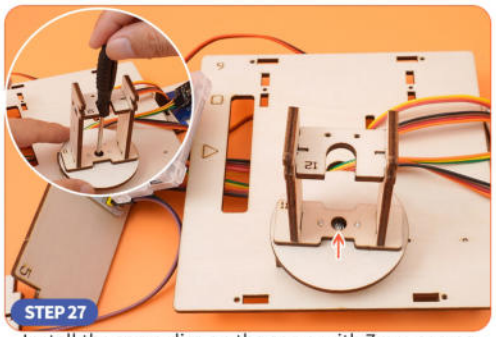


- Install plate (11) on the front of board (10) with screws that install the servo disc.

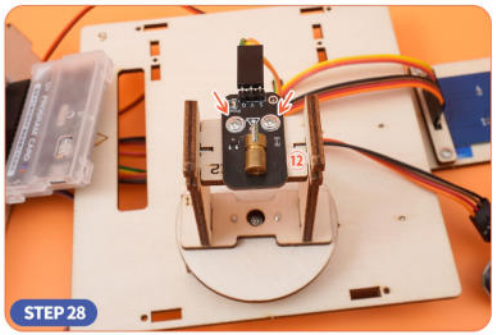
- Use 7mm rough screws to install two (6) plates on each side of the (12) plate.



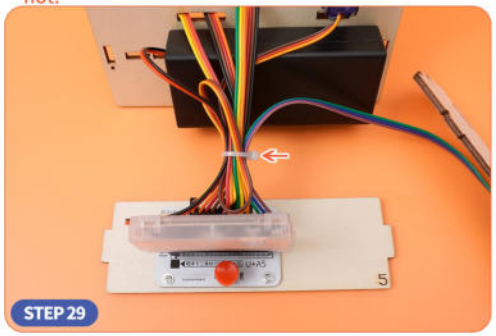
- Install two (6) plates on (10) and (11) boards with 7mm rough screws.



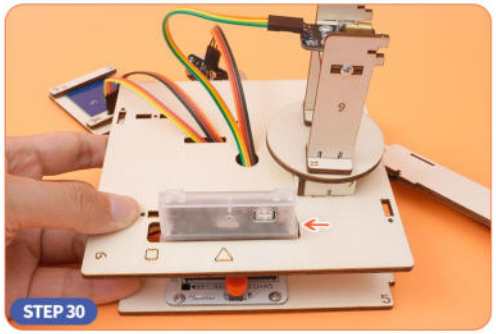
- Install the servo disc on the servo with 7mm coarse screws.Note: Be sure to install the servo disc (arm) when the power is off, and do not have mechanical resistance (such as screwing, breaking, pulling) when the servo is powered on.), the resistance is greater than the servo torque will burn the servo hot.



- Install the laser spotlight module on board (12) with 4mm coarse screws.



- Tie all the wires and Dupont wires with cable ties, and trim off the excess cable ties with scissors.Note: Handle carefully when using scissors to avoid injury.

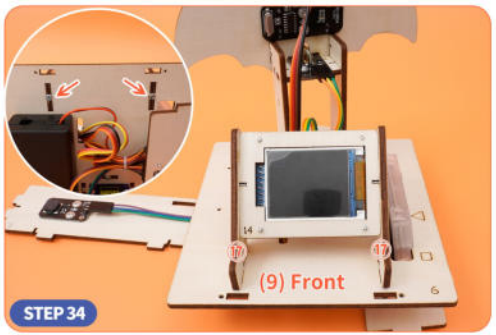


- Thread the program card through the groove of board (9).

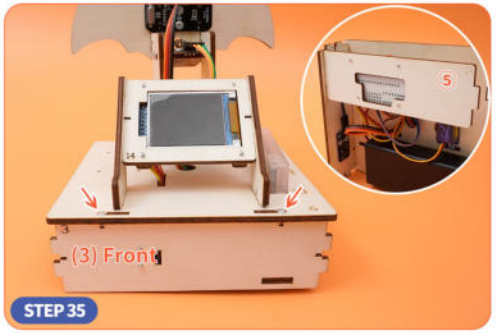
- Use 4mm rough screws to mount the ultrasonic module on the back of board (13).

- Install the (13) plate on two (6) plates with 7mm rough screws.

- Install two (17) plates on either side of the (14) plate with 7mm rough screws.



- Install two (17) plates on the front of (9) plates with 7mm rough grain screws.



- Use 7mm rough screws to mount plate (3) on the reverse side of board (9), and then snap plate (5) into the hole of board (3).

- Install plate (2) on the reverse side of plate (9) with 7mm rough screws.