

Omniduino Smart Robot

Manual



- ① Please read this manual carefully before use
- ② The company reserves the right of interpretation for this manual
- ③ Product appearance, please prevail in kind
- ④ Please keep the manual properly after reading



(iOS)



(Android)

Android users scan the following QR code by browser or search "YahboomRobot" in Play Store to download APP;
iOS users scan the following QR code by camera or search "YahboomRobot" in App Store to download APP.

Tutorial link

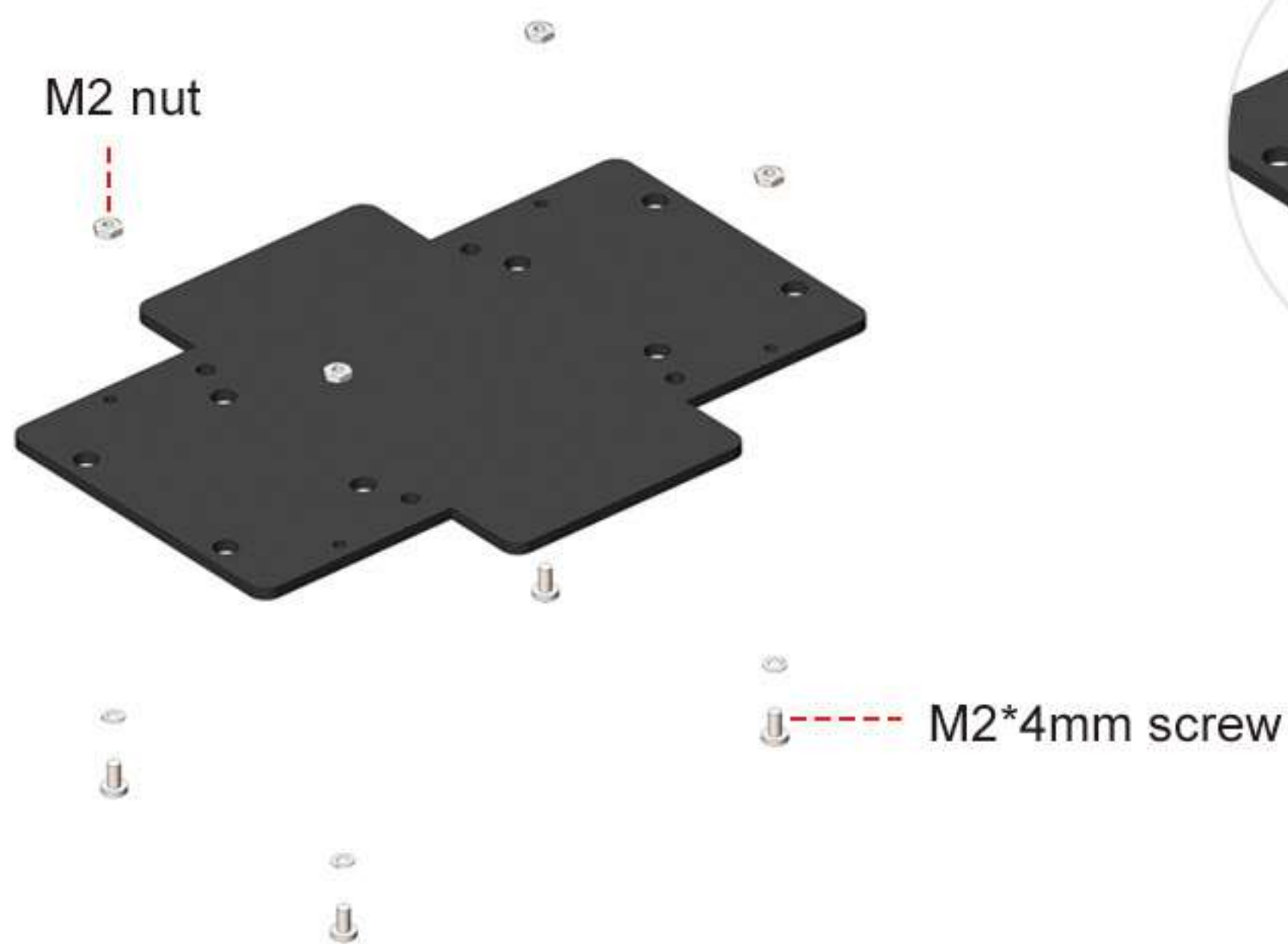
<http://www.yahboom.net/study/Omniduino>

Package list

	Control board*1		Upper acrylic board*1
	Lower acrylic board*1		Camera acrylic board*5
	Mecanum Wheel*4		Motor*4
	Motor support*4		Battery box*1
	Battery*2		Magic sticker*1
	wifi camera*1		Servo package*1
	8.4V charger*1		USB cable*1
	Copper column package*1		Screw package*1
	Rivet package*1		Screwdriver*1
	Motor coupling*4		Package*1

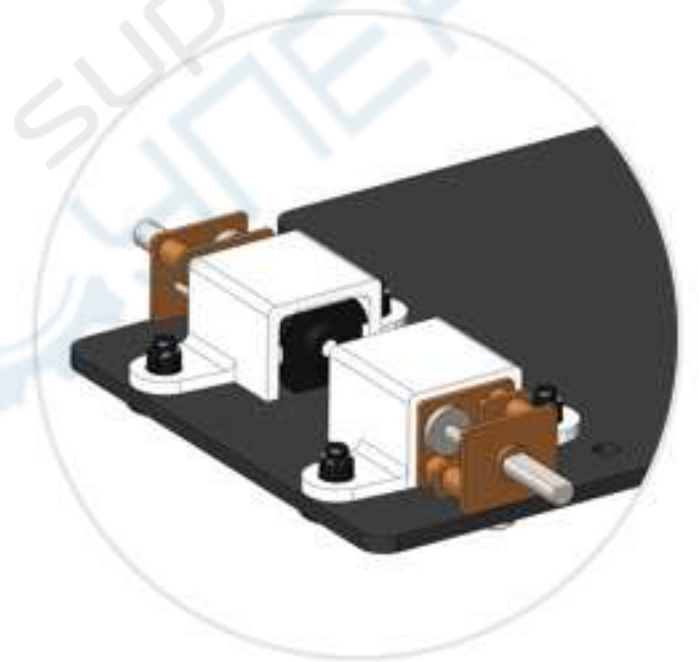
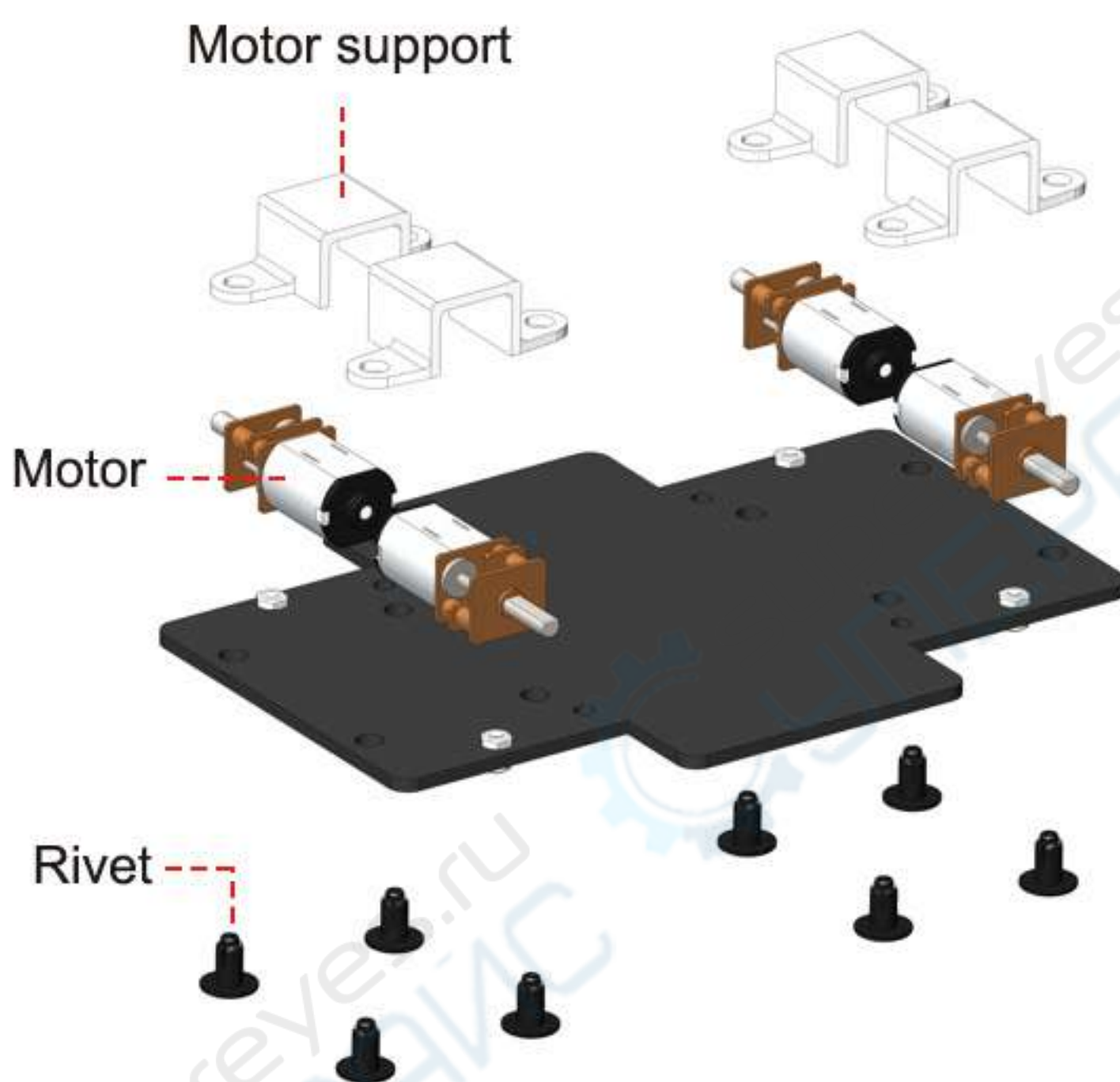
Installation steps

01. Installation of screw



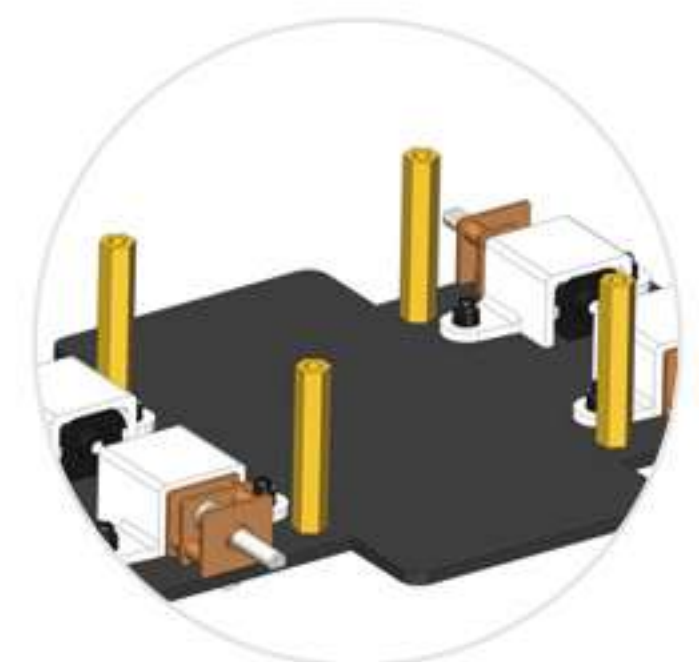
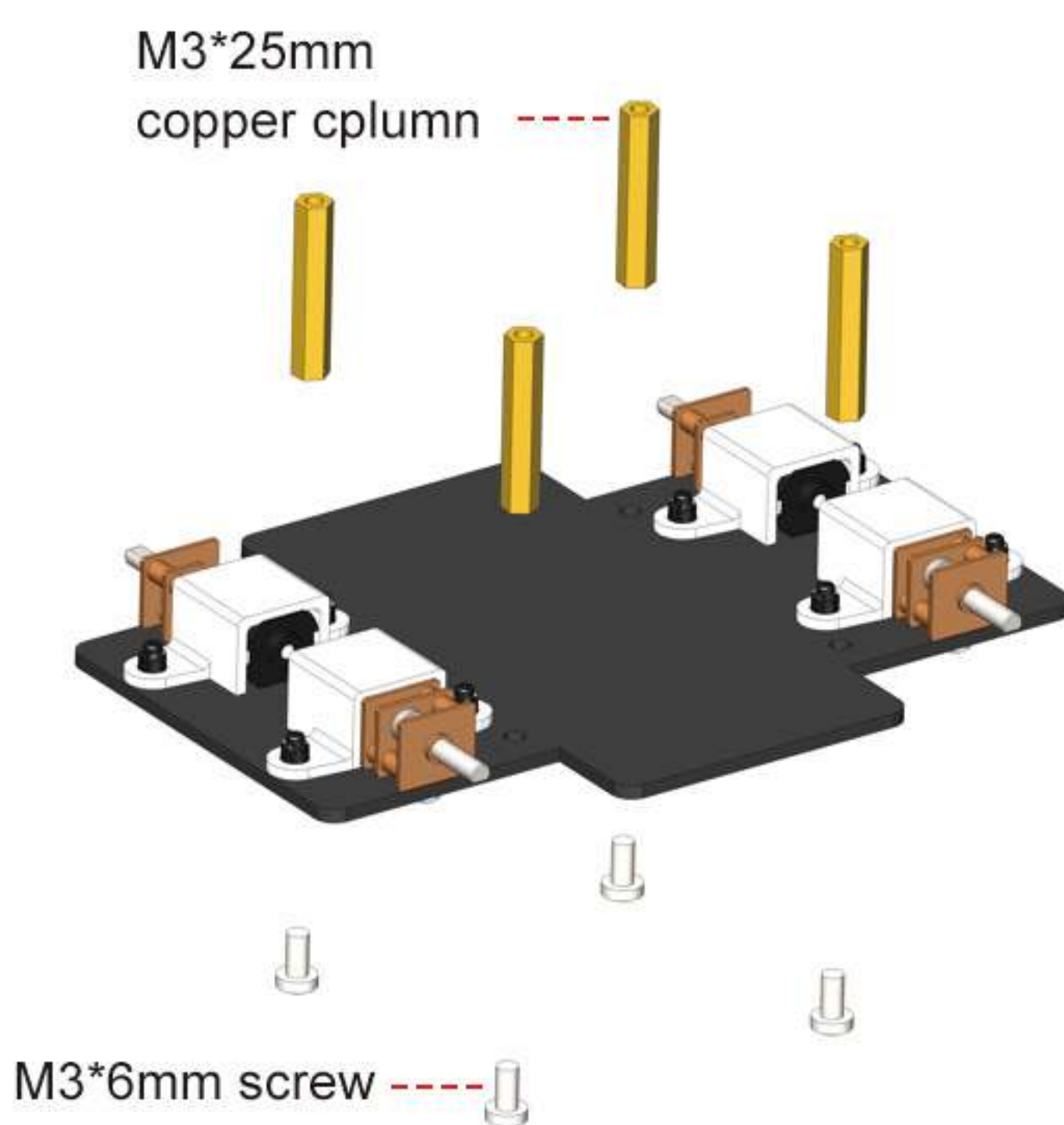
Picture

02. Installation of motor



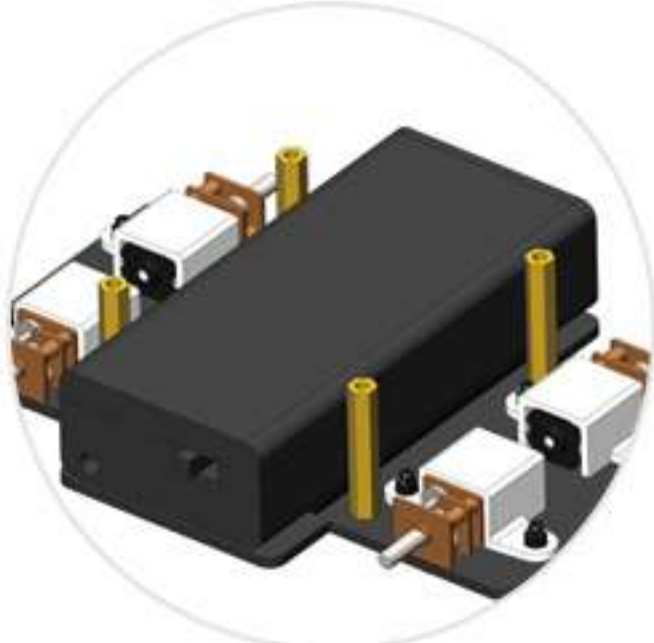
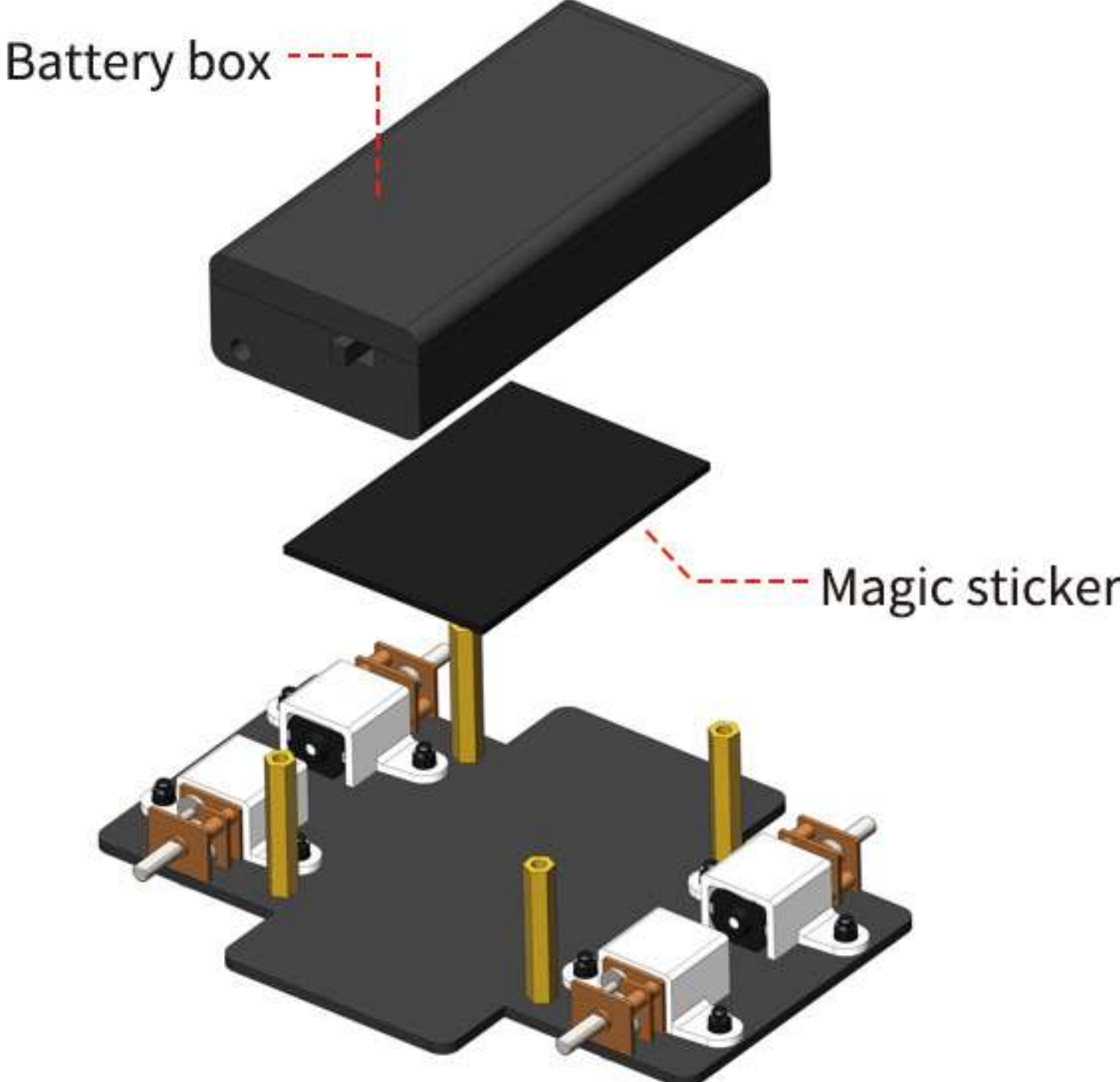
Picture

03. Installation of copper column



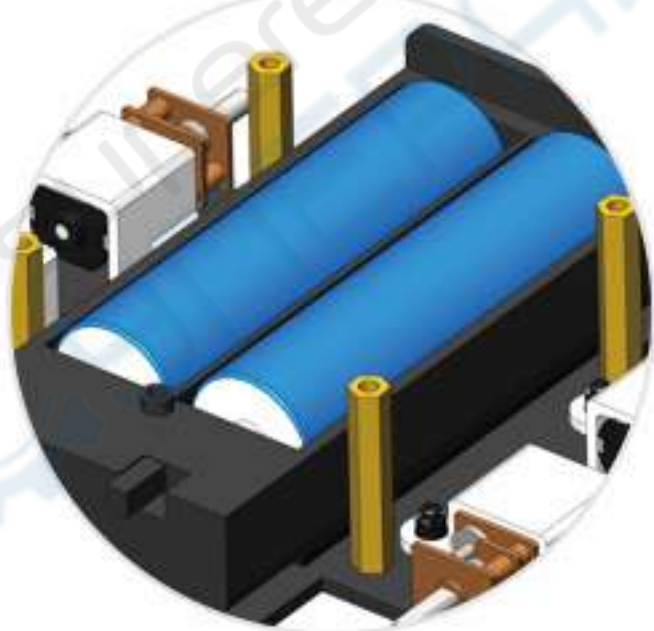
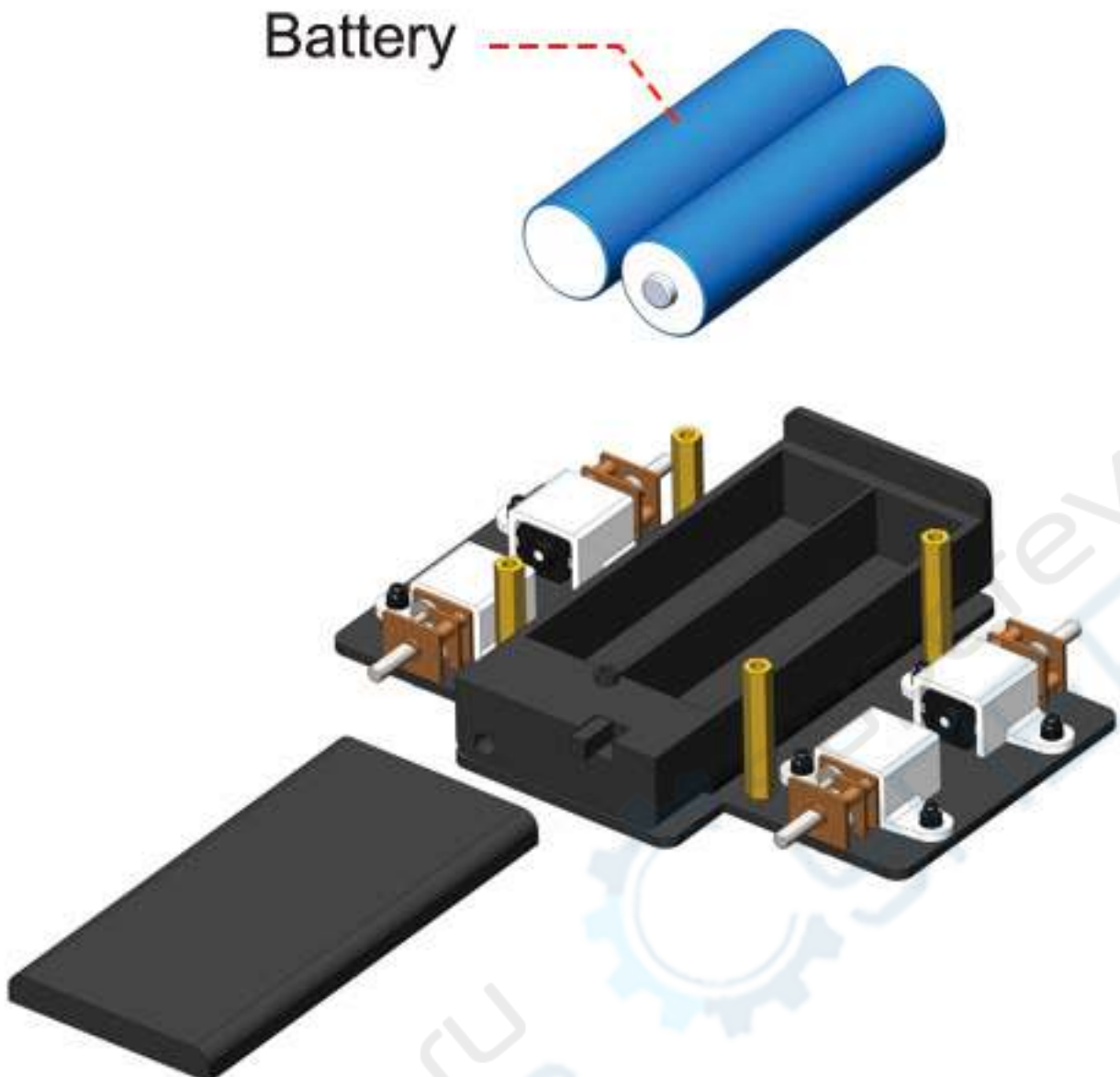
Picture

04. Installation of battery box



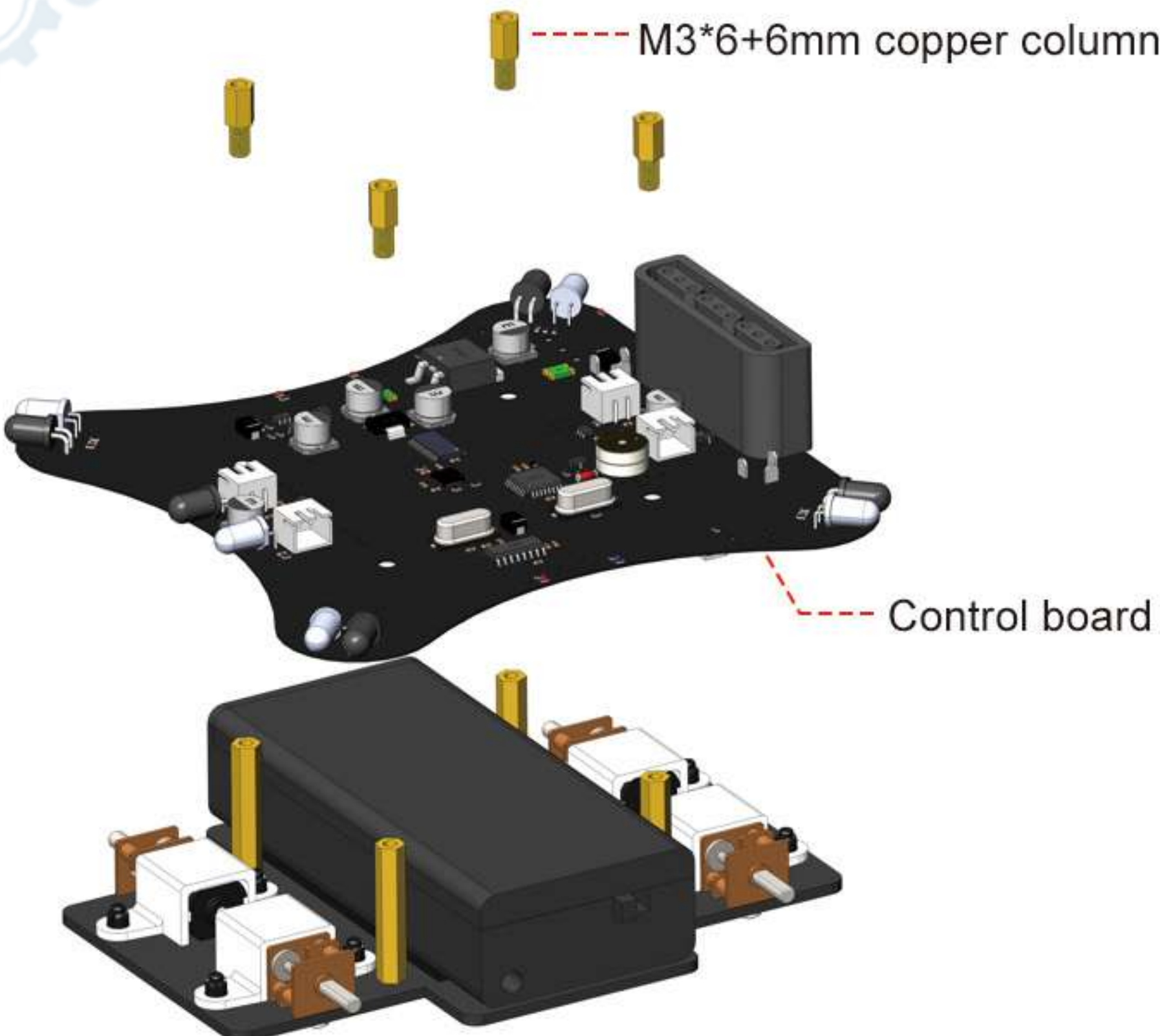
Picture

05. Installation of battery



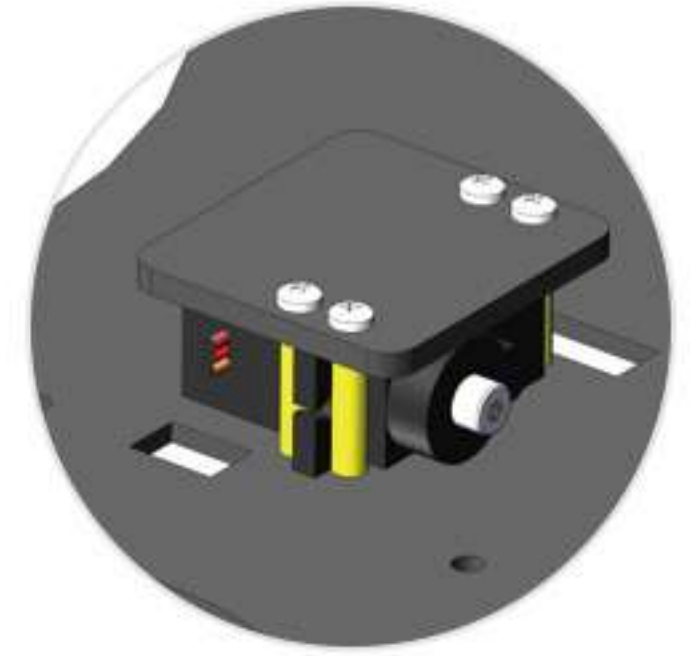
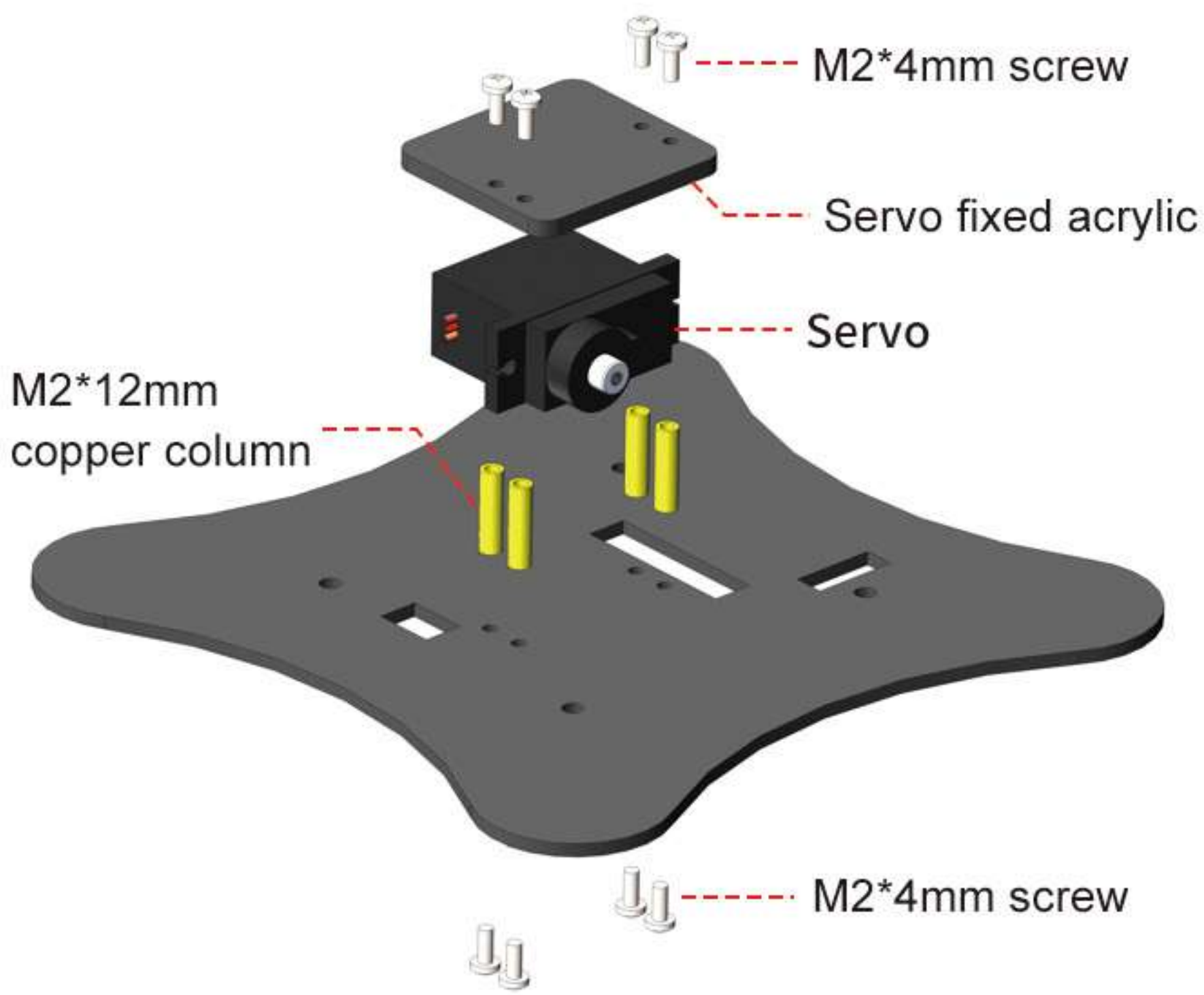
Picture

06. Installation of control board

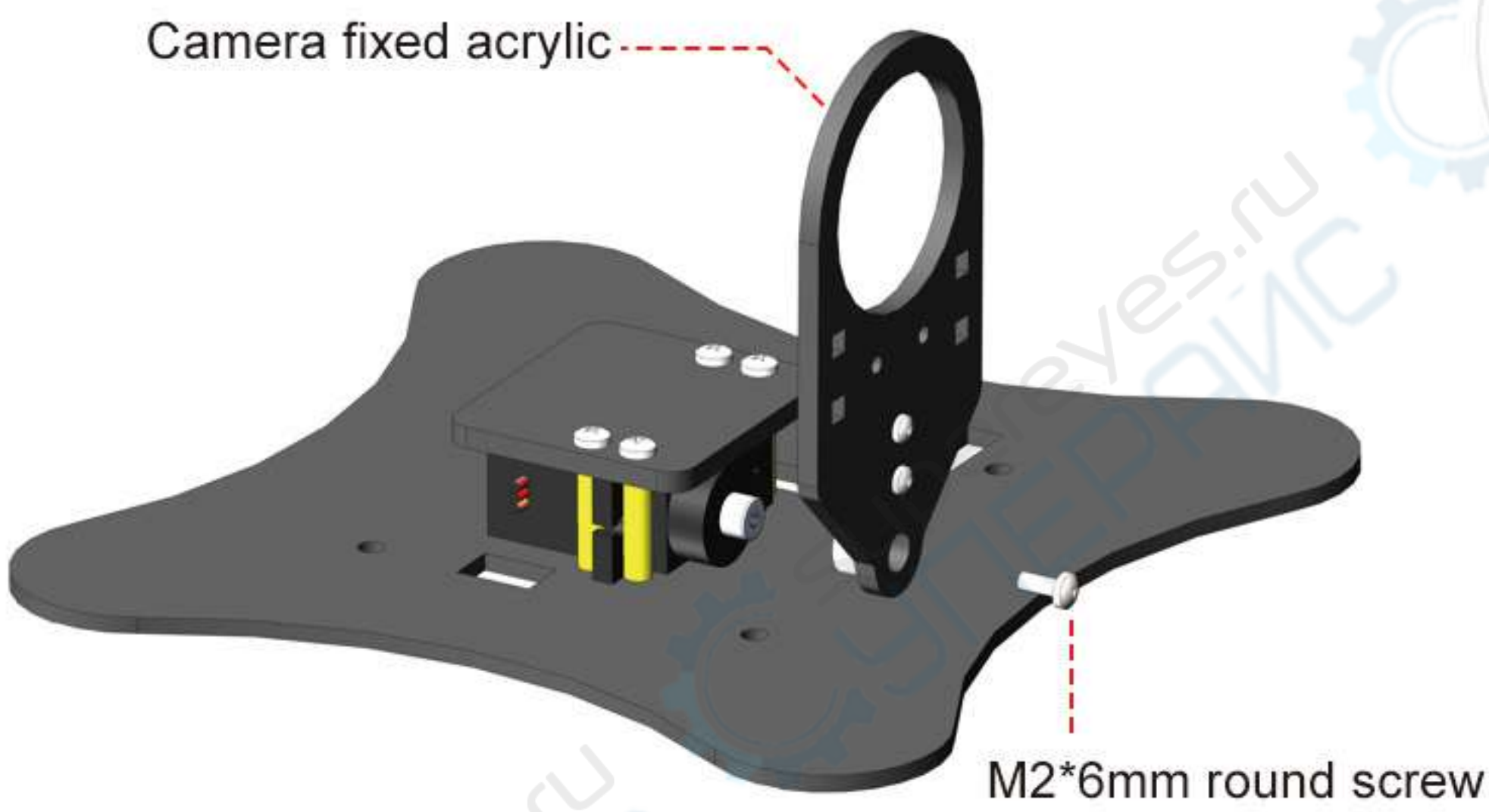


Picture

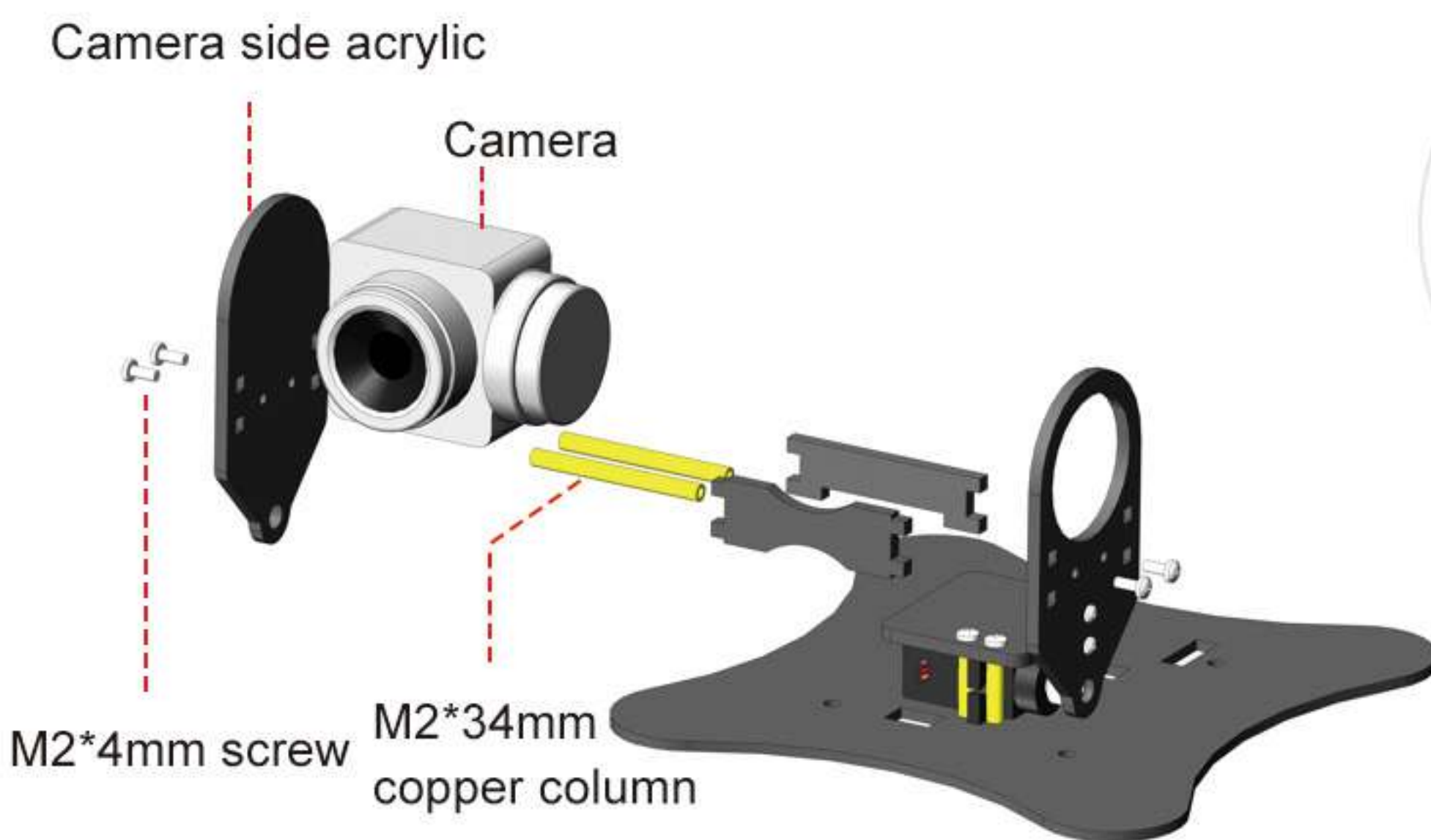
07. Installation of servo



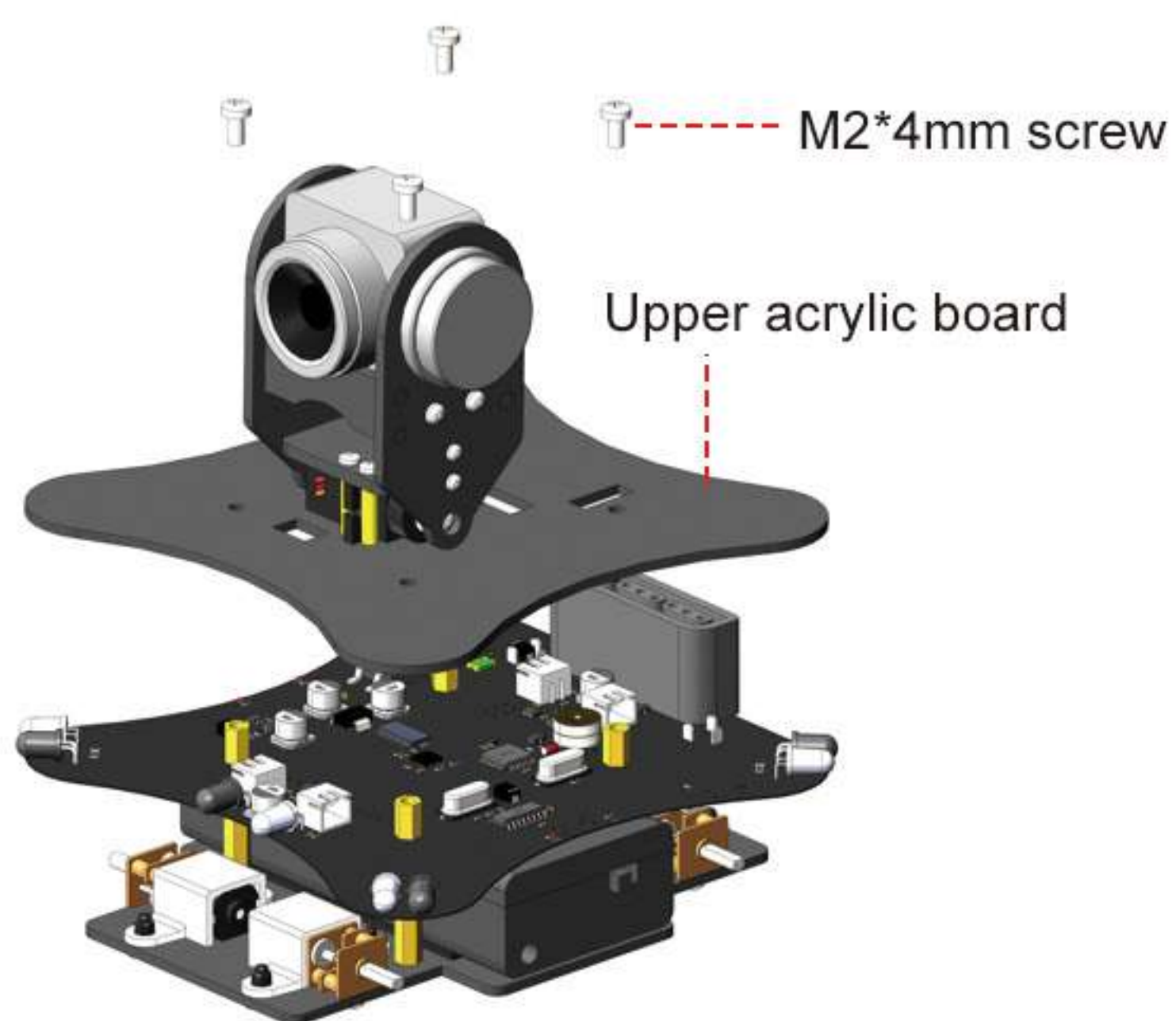
08. Installation of camera support



09. Installation of camera

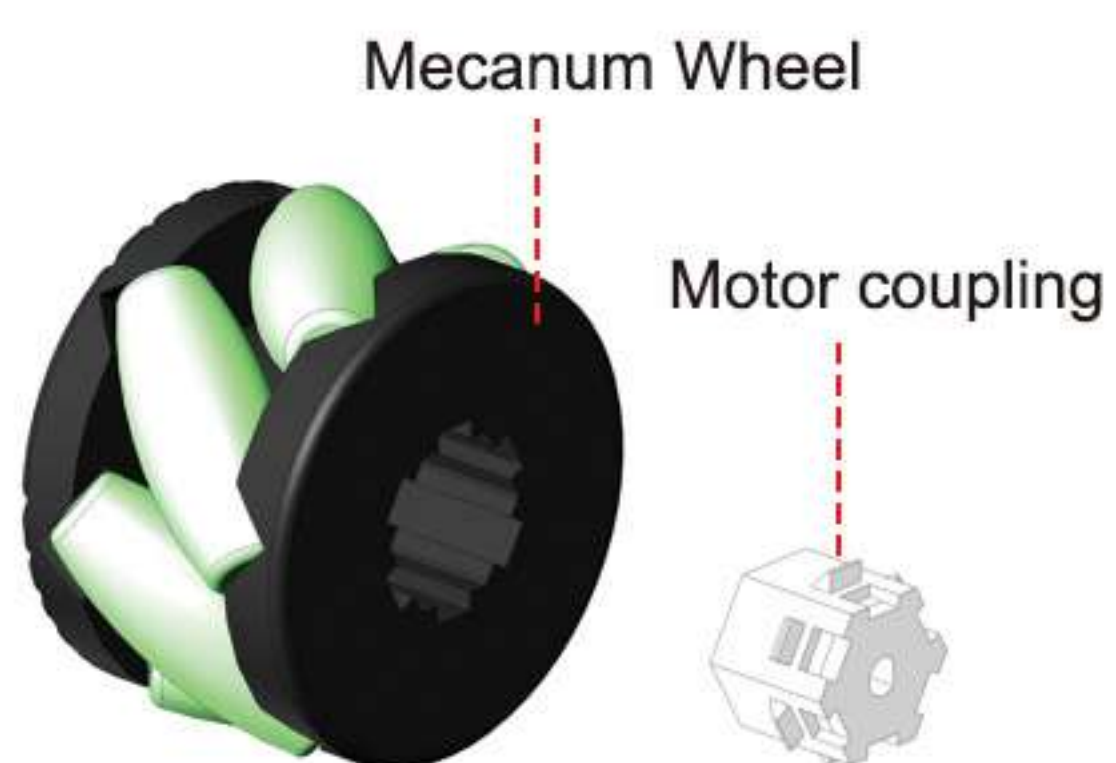


10. Installation of upper acrylic board



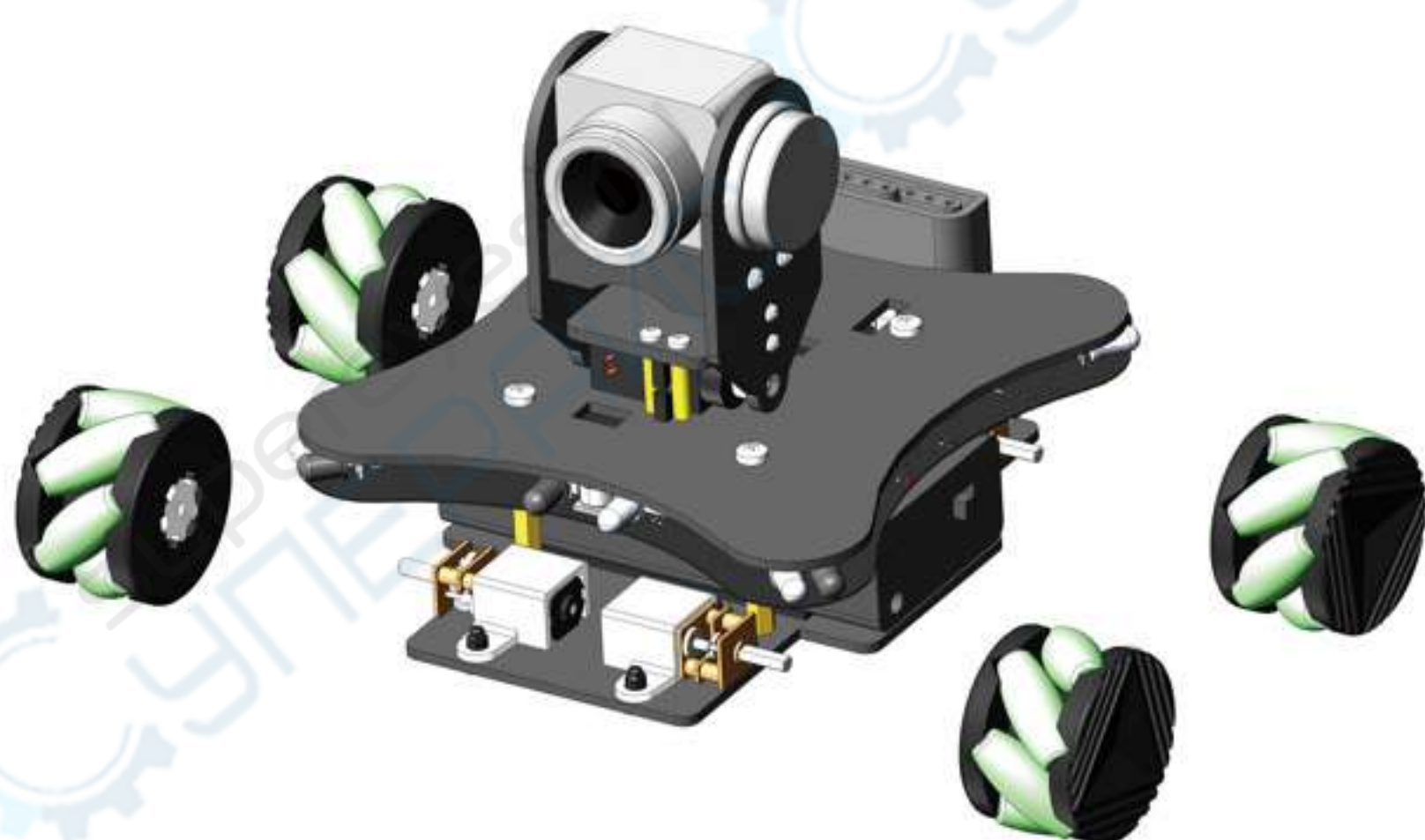
Picture

11. Installation of wheel and motor coupling



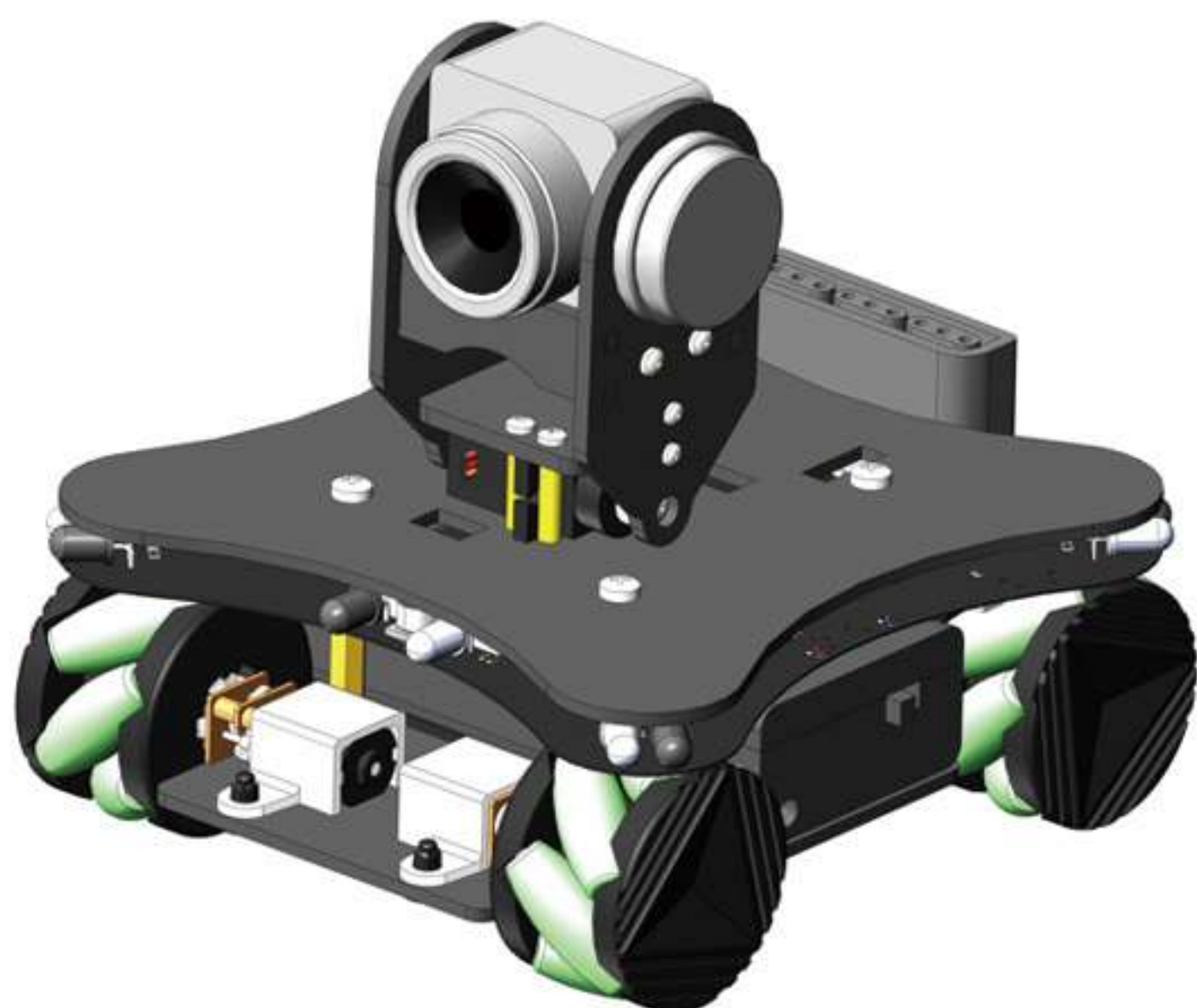
Picture

12. Installation of wheel

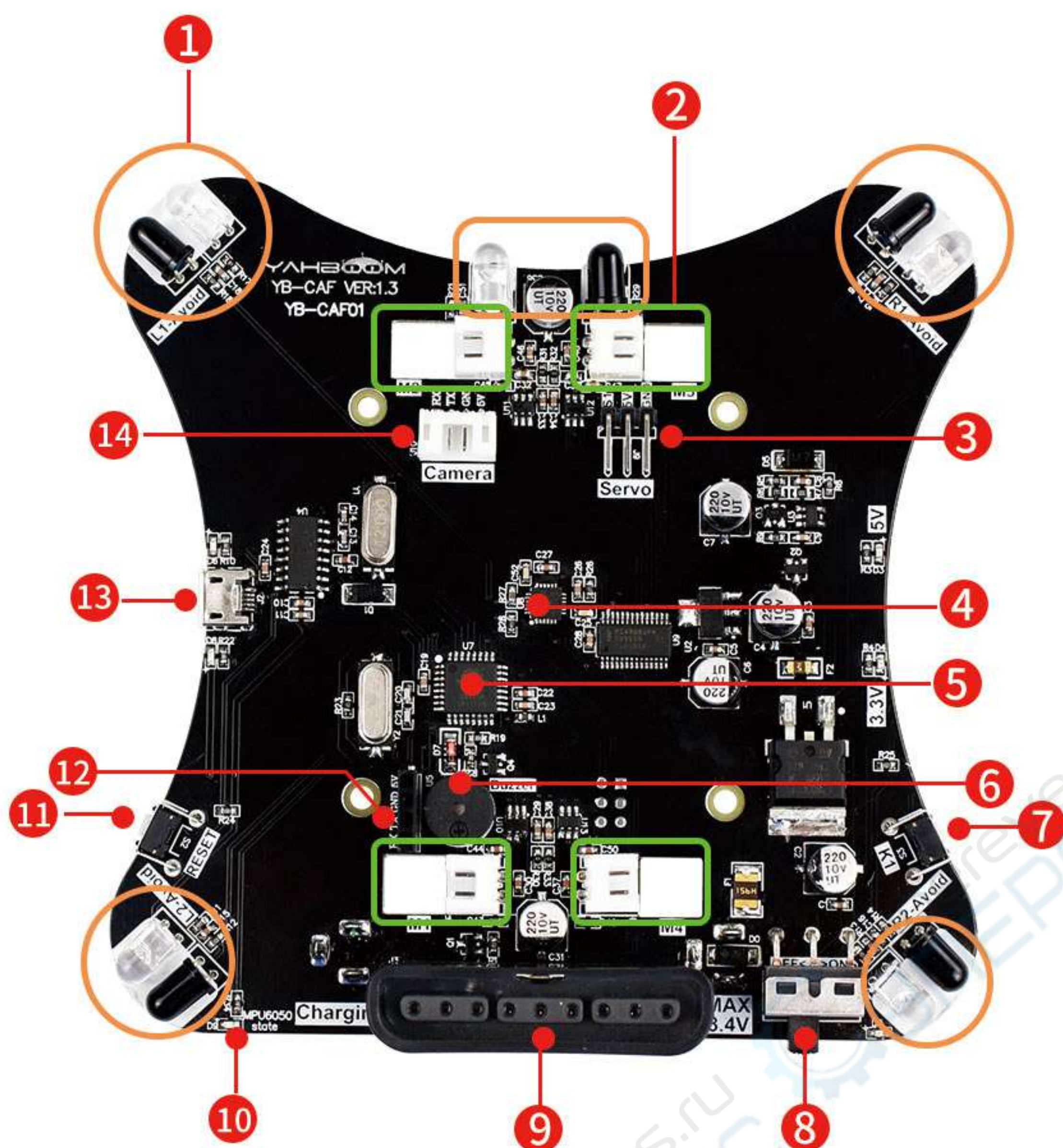


Picture

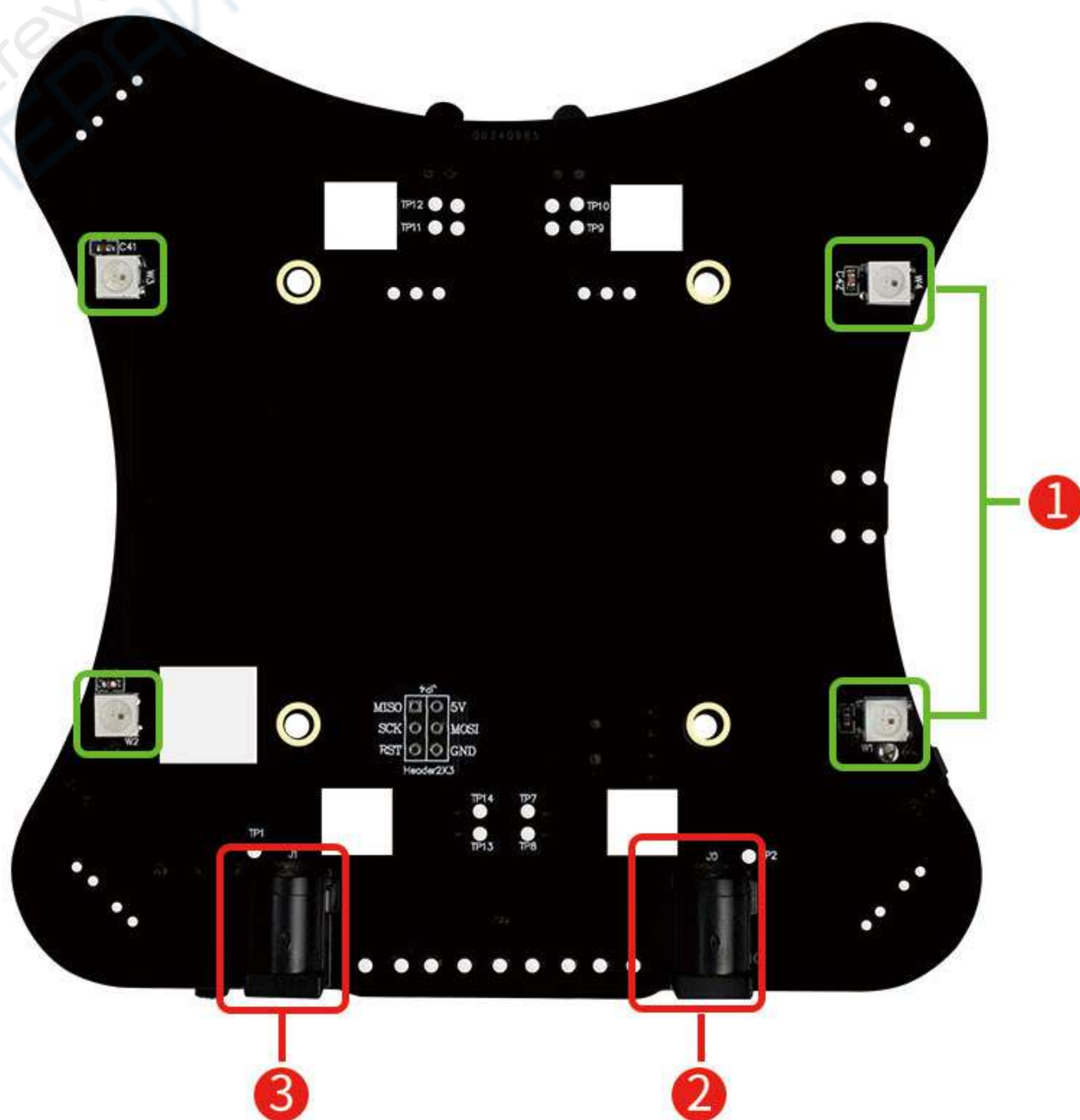
13. Finished



Function distribution



- | | | |
|---|---------------------------------|------------------------------------|
| 1 Infrared obstacle avoidance sensor | 2 Motor drive interface | 3 Servo interface |
| 4 MPU6050 | 5 Main chip | 6 Passive buzzer |
| 7 function button | 8 Power switch | 9 PS2 handle receiving base |
| 10 Custom LED light | 11 RESET button | 12 Serial interface |
| 13 MicroUSB interface | 14 WiFi camera interface | |



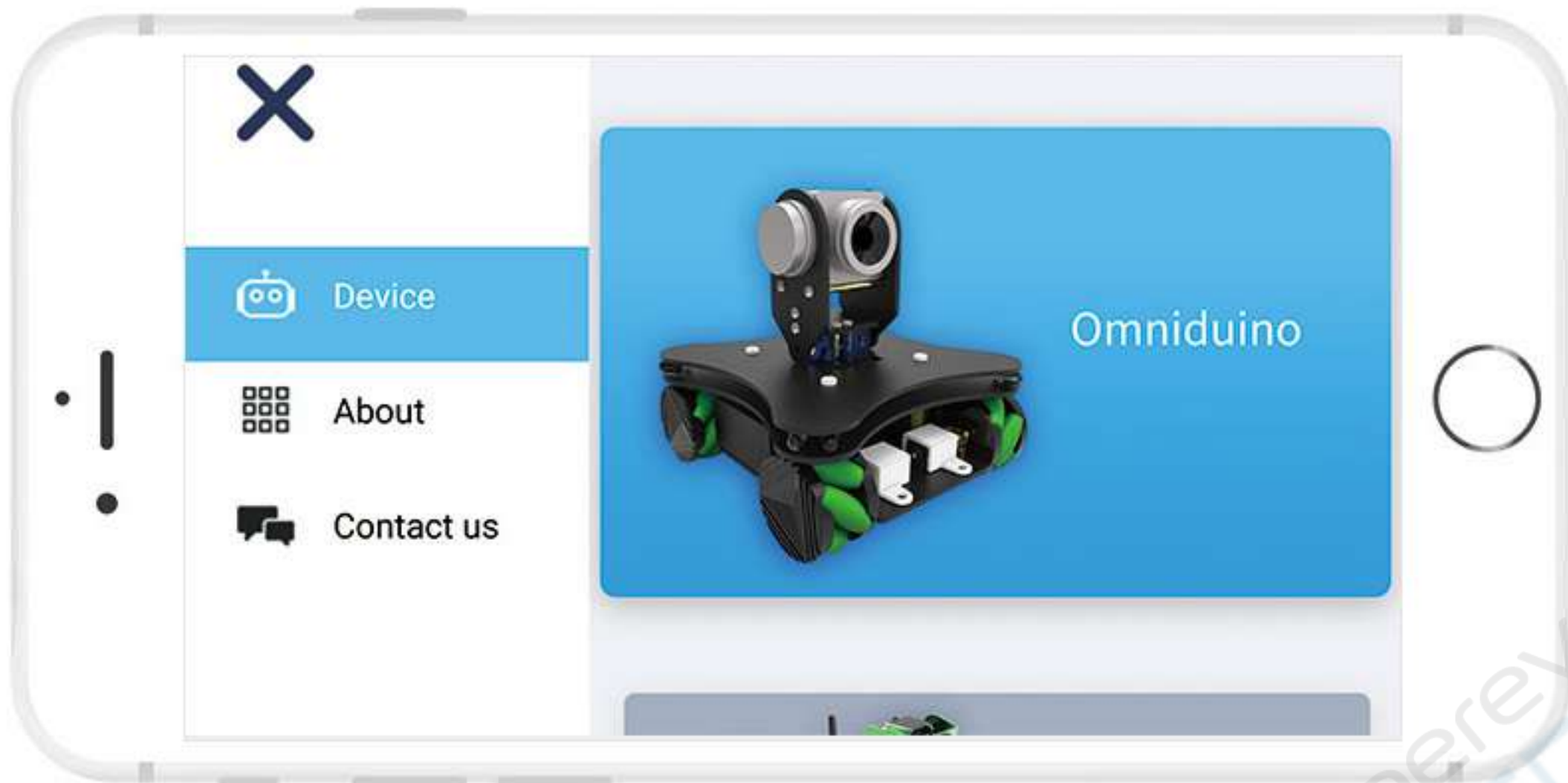
- | | | |
|--------------------|-------------------------|---------------------------------|
| 1 RGB light | 2 DC charge port | 3 Power supply interface |
|--------------------|-------------------------|---------------------------------|

APP control

Android users scan the front QR code by browser or search "YahboomRobot" in Play Store to download APP;

iOS users scan the front QR code by camera or search "YahboomRobot" in App Store to download APP.

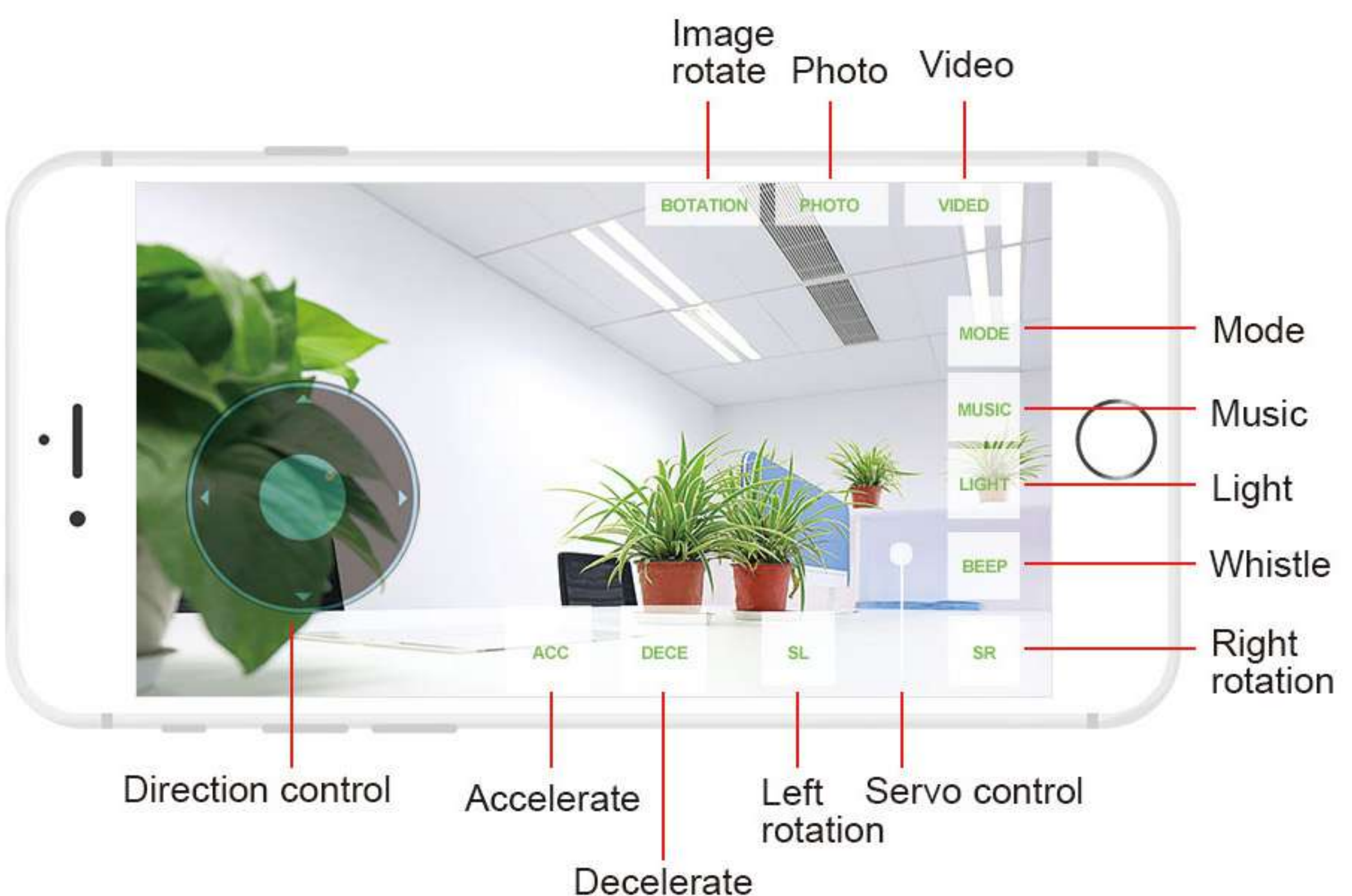
After the installation, open the APP and select the "Omniduino" device.



Click "Control"



Enter to control page



Direction control: Control Omniduino robot.

Accelerate, decelerate: Control the speed value of the robot.

Left rotation, right rotation: Control the car to rotate left and right.

Servo control: slide up and down to control the angle of the camera servo.

Whistle: Each time you press it, it will sound "Di".

Light: Control RGB light effects. There are four special effects: breathing lights, marquees, running lights, and colorful lights.

Music: Play the song through the buzzer, click play to start, slide to the bottom to have the option to turn off the music, or play a song will automatically stop.

Mode: The Omniduino car has three modes of operation: surround mode, obstacle avoidance mode and pan mode.

Image rotation: Rotate the image displayed by the camera by 90 degrees and rotate it 90 degrees with each click.

Photo: After the photo is taken successfully, it will prompt the path where the image is saved.

Video: Click to start recording, the button will change to stop recording, and click again to stop recording.

PS2 handle control(Option)



Power switch: Must be turned ON before use.

Select control mode: the default is green light (button control mode), press to switch to blue light (remote control mode). Only one of the two control methods can be selected.

Button control: corresponding to the car forward, backward, left pan, right pan function. (Not available when the blue light is on)

Direction control joystick: You can control the car to move in either direction. (not valid when green light)

Rotation control joystick: control the left turn to the left and the right hand to the right. (not valid when green light)

R1: Accelerate

R2: Decelerate

□: Left rotation (invalid when blue light)

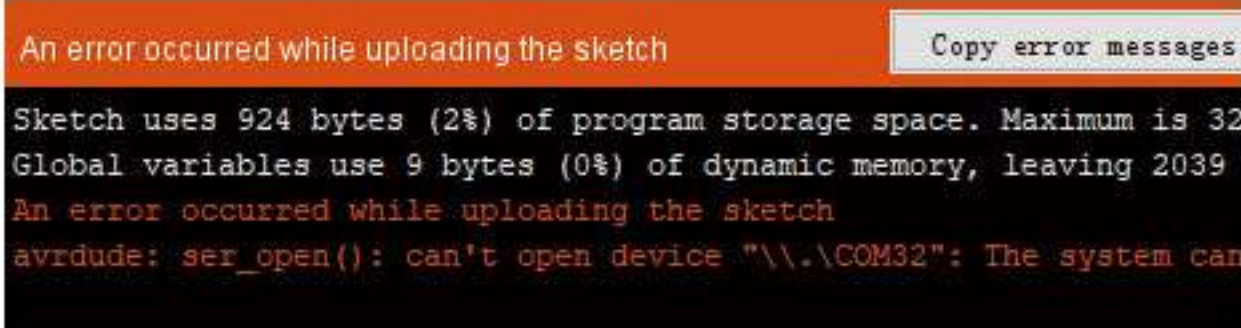
○: Right rotation (invalid when blue light)

△: Whistle

×: Adjust the brightness of the RGB light, press the × button to gradually lighten, the vibration intensity of the handle is getting stronger and stronger. At maximum brightness, press the × button again to light up from the darkest.

FAQ

1. The compilation passed normally, but the “can’t open device ”reminder was uploaded when uploading, and the upload could not be successful.



```
An error occurred while uploading the sketch
Sketch uses 924 bytes (2%) of program storage space. Maximum is 32
Global variables use 9 bytes (0%) of dynamic memory, leaving 2039
An error occurred while uploading the sketch
avrduide: ser_open(): can't open device '\\.\COM32': The system can't find the path specified.
```

A: The reason may be that the wrong serial port or serial port is occupied.

Solution: First, re-select the serial port to the tools->Port of arduinoIDE. If it is not enough, please open the device manager to see if there is a serial port with CH340 tag. If not, please restart the omniduino robot first, then re-plug the USB cable or replace a USB cable; if there is a serial port number, first close other serial assistant software to avoid serial port occupation.

2. What should I do when I compile or upload a program with “No such file or directory”?



```
Adafruit_PWMServoDriver.h: No such file or directory
CarRun:2:10: error: Adafruit_PWMServoDriver.h: No such file or directory
#include <Adafruit_PWMServoDriver.h>
.....
compilation terminated.
exit status 1
Adafruit_PWMServoDriver.h: No such file or directory
```

A: If there is a similar error, indicating that the library file is missing. Please copy the library files required by the Omniduino car to the library file directory compiled by Arduino IDE. Solution: please read the tutorial in the 【3. Development Environment Construction】 --- 【4. Add additional library files】

Tutorial Link: <http://www.yahboom.net/study/Omniduino>

3. After clicking the upload button, the upload is always displayed, but it can't be uploaded successfully for a long time. What is the reason?



```
Problem uploading to board. See http://www.arduino.cc/en/Guide/Troubleshooting#upload for suggestions.
avrduide: stk500_recv(): programmer is not responding
avrduide: stk500_getsync() attempt 4 of 10: not in sync: resp=0xec
avrduide: stk500_recv(): programmer is not responding
avrduide: stk500_getsync() attempt 5 of 10: not in sync: resp=0xec
avrduide: stk500_recv(): programmer is not responding
avrduide: stk500_getsync() attempt 6 of 10: not in sync: resp=0xec
avrduide: stk500_recv(): programmer is not responding
avrduide: stk500_getsync() attempt 7 of 10: not in sync: resp=0xec
avrduide: stk500_recv(): programmer is not responding
avrduide: stk500_getsync() attempt 8 of 10: not in sync: resp=0xec
avrduide: stk500_recv(): programmer is not responding
avrduide: stk500_getsync() attempt 9 of 10: not in sync: resp=0xec
avrduide: stk500_recv(): programmer is not responding
avrduide: stk500_getsync() attempt 10 of 10: not in sync: resp=0xec
Problem uploading to board. See http://www.arduino.cc/en/Guide/Troubleshooting#upload for suggestions.
```

A: Because the uploading program and the WIFI camera communication is realized through the serial port, when the serial port is occupied by the WIFI camera, and the program cannot be uploaded.

Solution:

- ① Unplug the USB cable, turn off the power of the car, wait for the D2 indicator to go out.
- ② Then, plug in the USB data cable. At this time, your mobile phone should not connect the WiFi signal of the car.
- ③ You can upload the program to the car according to the normal steps.

④After the program is successfully uploaded, unplug the USB data cable, open the power switch of the car. The corresponding experimental phenomenon will appear. (Tip: If you upload APP control program. After the program is successfully uploaded, unplug the USB data cable, open the power switch of the car. Mobile phone connect the car to the WIFI signal, and then open the APP to control.)



```
Error compiling for board Arduino/Genuino Uno. Copy error messages
libraries\Adafruit_PWM servoDriver\Adafruit_PWM servoDriver.cpp.o (symbol from plugin): (.text+0x0): multiple definition of `Adafruit_PWM servoDriver::Adafruit_PWM servoDriver()' sketch\Adafruit_PWM servoDriver.cpp.o (symbol from plugin):(.text+0x0): first defined here
```

4. There is no problem checking the code syntax, but the compilation is wrong, prompting "multiple definition"?

A: This question is a duplicate definition, meaning that arduinoIDE has detected two library files. Please check the program project directory, the build directory, and the libraries in the arduinoIDE installation directory for duplicate files. If you have one, just save one.

5. There is no WiFi signal when the car is turned on. What is the reason for restarting the app?

A: The car may have too low battery power, which is not enough to supply the car. Please try to connect the charger to the charger and try it.

6. Click to take a photo or video on the APP failed?

A: Open the APP's permission settings to allow access to the geographic location and read and write access to the memory card. Please refer to the manual of the mobile phone for specific operations.

7. No pictures and videos can be found after taking a photo/video.

A: After the video recording is successful, the file save location will pop up on the interface. Android phone can open the file manager, find the MediaStream folder in the local storage, pictures and videos are placed in this folder.

8. The power switch is turned on, but the car cannot be powered. The D2 indicator does not light and the robot cannot be charged when the power is plugged in.

A: The car has two power switches, one is the power switch that comes with the car motherboard, and the other is the switch of the battery box. Please confirm that both switches are on the ON side. Be sure to turn the switch on the battery box to the ON terminal when charging, otherwise it will not be charged.

Lithium-ion battery safety specification

1. When the D2 indicator is on and the D3 and D4 indicators are off, please charge the car.
2. The battery is charged directly, plug the charger directly into the charging interface of the expansion board.
3. Don't use the battery while charging to prevent the charger or battery from exploding.
4. Please charge the battery when the voltage of each battery is about 3.7V. Each battery voltage is about 4.2V after fully charged.
5. Unplug the battery when the device is not used for a long time and keep each battery voltage between 3.7V-3.9V. When storing the battery, do not mix it with metal objects. Do not remove the insulation film on the outside of the battery.
6. When the battery is charging, the charger indicator lights up red and full green light.

After charging is completed, the charger and power supply should be unplugged in time to avoid overcharging and damaging the battery. Someone needs to be present when charging.

7. Please use the official battery, power adapter and battery box provided by Yahboom.

8. Keep away from heat, fire, any liquid. Don't use it in wet or rain. Humid environment may cause the battery to ignite or even explode.

9. Don't use the battery when it is leaking, damaged, heated, deformed, discolored, smelly or any other abnormal phenomenon, and contact Yahboom or other agents in time.

10. Please use the battery at 0 ° C ~35 ° C environment. The battery will be damaged or the discharge performance will be extremely reduced at other temperatures.

11. Intentional puncture, short circuit, reverse connection, unauthorized welding, impact, crushing, and throwing of batteries are strictly prohibited. Do not use the battery in a strong static and magnetic field environment, otherwise the battery may leak fluid, catch fire or even explode.

12. It is strictly forbidden to modify the hardware circuit board without permission.

13. Do not allow children to replace batteries without adult supervision. Keep batteries out of the reach of children.

14. Do not mix new and old batteries or different types of batteries, especially dry batteries and rechargeable batteries.

15. If the charger smokes, the battery hot (the outer packaging will crack in severe cases) or the battery leaks: please disconnect the power strip or the main gate, then quickly pull out the charger, remove the battery and put it in an open area.

Solemnly declare: Users must read this specification carefully, especially the parameter indicators, precautions, etc., understand the use method and application range of the product. Any economic loss and safety accident caused by failure to comply with the above-mentioned lithium ion battery use specifications or operating errors shall be borne by the user.

Tutorial link

<http://www.yahboom.net/study/Omniduino>

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