Arduino RTR Balance Robot

Manual

**Shenzhen Yahboom Technology Co., Ltd**

Balance Robot Instructions

Package list:

Arduino robot car*1

18650 battery*3

Battery charger*1

USB cable*1

Manual*1

Installation of battery

1.Remove the top layer of the acrylic board.

2.Install three 18650 batteries into the battery box.

3.Install the top layer of acrylic board to the original position.

4.Insert the green terminal of the battery box into the green power seat of the expansion board to supply the balance car normally.
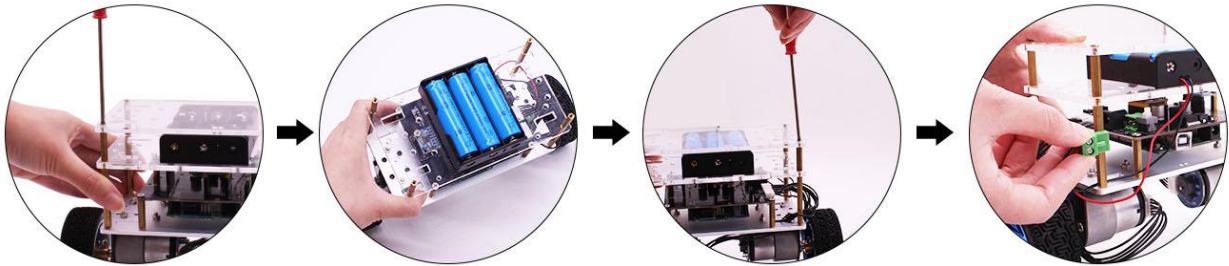
Starting procedure

1.Hold the car with one hand on the smooth ground and keep it 90 degrees vertical to the ground.

2.Turn on the power switch of the car with the other hand.

3.After holding for 3 to 5 seconds, release your hand and the car will be in balance.

Note:The car is not completely stationary when it is in equilibrium. It is balanced by

moving slightly backwards and forwards.
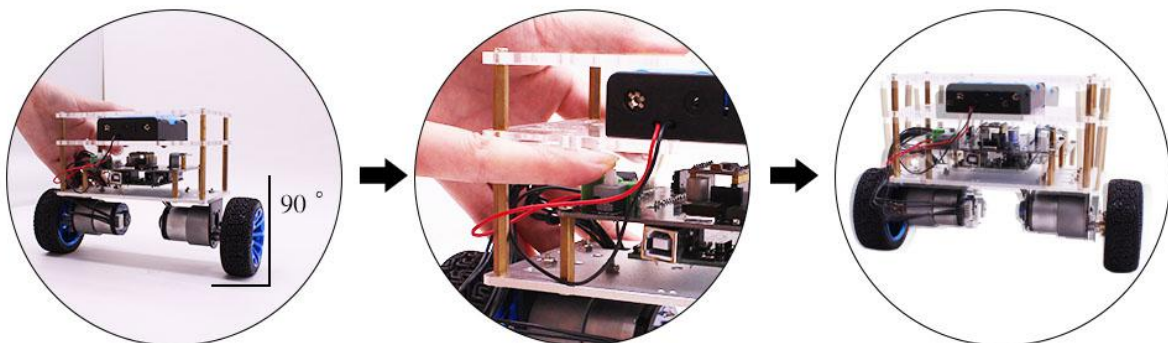
Bluetooth connection

Please download Bluetooth APK before connection:

https://drive.google.com/open?id=1bpfZ9l1w77DmDd2iGJJZJ3_OFBVmSxlv

Any more details, please contact: sales@yahboom.com

Bluetooth remote control operation:

1.Turn on the balance car to ensure that the HC-06 Bluetooth module is powered normally (the Bluetooth module indicator is flashing)

2.Mobile phone setting. Find HC-06 Bluetooth device(98:xx:xx:xx), click to enter the password 0000 or 1234 (currently only supports Android phones)
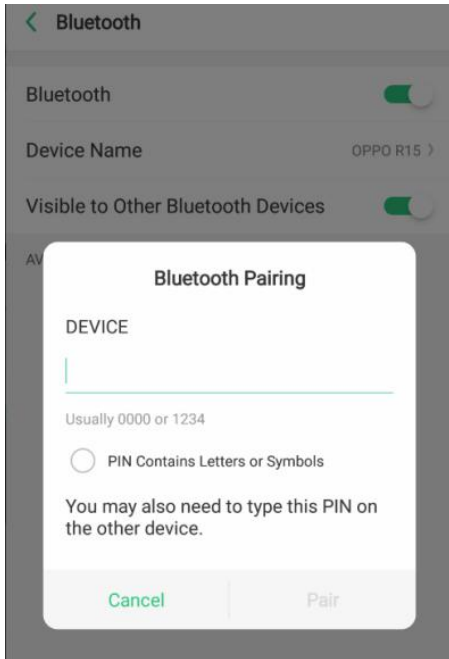
3.Open the mobile app to enter the APP interface, select the "Bluetooth scan", select the HC-06 Bluetooth module just connected with physical address (98:xx:xx:xx).Click the "connect" and wait for connection successful(At this time, the indicator of the Bluetooth module is always on), then you can start the control.

4. In the APP operation interface, there are buttons for forward, backward, left turn, right turn, etc., and various functions are finished by the remote control of the mobile phone. You can also switch between gravity mode and joystick mode to control the car. Click the "PID" option on the right to view the current PID parameters of the car. Click the "Wave "option on the right to view the current acceleration, gyroscope and voltage parameters of the car.

5. Click "Gravity "mode, and the car will enter the gravity control state.

6. Click "Rocker "mode, and the car will enter the rocker control state.

7. Click"PID" option on the right side of the APP interface to view the parameters of the current car PID.

8. Click "Wave" option on the right side of the APP interface and open the display option in the lower right corner.

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Check the corresponding option to view the current acceleration, gyroscope and voltage parameters of the car.

9. If you need to disconnect Bluetooth, click "disconnect" in the upper right corner of the APP interface.(after disconnecting, the Bluetooth module indicator light on the car will be flashing, and the mobile APP cannot control the car remotely.)

Attention

1.After the car is installed, the wiring operation must be made sure that the connection involving VCC, GND, POWER and other interfaces cannot be reversed, otherwise the short circuit will burn down the control board and chip.

2.Be sure to use the charging adapter supplied by the company or the same type (voltage and current) adapter and power supply battery (model: 18650, standard voltage: 3.7V) or a lithium battery pack with a total power supply voltage of 12.4V.

3.When not using the smart car, please turn off the power and pull out the green terminal block to avoid over-discharging the battery and cause the battery to be scrapped.

4.Be sure to start the car in strict accordance with the startup method we provided, otherwise the car will not be able to maintain balance.

5.If you need to upload the program by yourself, please make sure to unplug the jumper cap of the Bluetooth power supply port before uploading, because the Bluetooth module uses the serial port IO port RX<-0 and TX->1 together with the Arduino development board. After the program is uploaded, if you need to continue using the Bluetooth function, please connect this jumper cap.

6.If the car cannot be balanced after power-on, and the brightness of the module indicator is dimmed?

Solution: The car may be under-powered and charge the car according to the requirements of point 2.

7.Nothing happens after the car is powered on, but the indicator lights of each module are normally lit?

Solution: After completing the 5th operation, upload the complete program provided in our data.

More source code and tutorials, please check:

https://drive.google.com/open?id=1BWKafxjf-TjUGlnZgqVh6CdEiJzFdfdJ