

# AlphaBot2 robot building kit for Raspberry Pi 3 Model B (no Pi)

SKU 110060865



Description

#### **Note:** Raspberry Pi is NOT included.

This AlphaBot2 robot kit is designed to use with Raspberry Pi 3 Model B (not included). It features rich common robot functions including line tracking, obstacle avoiding, Bluetooth/infrared/WiFi remote control, video monitoring, etc.

Thanks to the highly integrated modular design, it is fairly easy to assemble by a snap, no soldering, no wiring. After a few minutes spent on hardware assembing, you're almost there, our open source demo codes is ready to help you get started fast.

#### **AlphaBot2 Features**

AlphaBot2 employs a 2-layer structure to provide excellent stability and compatibility.

#### AlphaBot2-Base, the lower base chassis:

- •5-ch infrared sensor, analog output, combined with PID algorithm, stable line tracking
- •Onboard modules like line tracking, obstacle avoiding, needs no messy wiring
- •TB6612FNG dual H-bridge motor driver, compared with L298P, it's more efficient, more compact, and less heating
- •N20 micro gear motor, with metal gears, low noise, high accuracy
- •Onboard RGB LEDs, true color lighting, pretty cool

#### AlphaBot2-Pi, the upper adapter board for controller:

- •LM2596 voltage regulator, provides the Pi with stable 5V power
- •TLC1543 AD acquisition chip, allows the Pi to use analog sensors
- •PCA9685 servo controller, make it more smoothly to rotate the pan head
- •CP2102 UART converter, easy for controlling the Pi via UART

## What's on the AlphaBot2-Base



- 1. AlphaBot2 control interface: for connecting sorts of controller adapter board
- 2. Ultrasonic module interface
- 3. Obstacle avoiding indicators
- 4.Omni-direction wheel
- 5.ST188: reflective infrared photoelectric sensor, for obstacle avoiding
- 6.ITR20001/T:reflective infrared photoelectric sensor, for line tracking
- 7. Potentiometer for adjusting obstacle avoiding range
- 8.**TB6612FNG** dual H-bridge motor driver
- 9.LM393 voltage comparator
- 10.N20 micro gear motor reduction rate 1:30, 6V/600RPM

11. Rubber wheels diameter 42mm, width 19mm

12.Power switch

- 13.Battery holder: supports 14500 batteries
- 14. WS2812B: true color RGB LEDs
- 15. Power indicator

## What's on the AlphaBot2-Pi



- 1. AlphaBot2 control interface: for connecting AlphaBot2-Base
- 2. Raspberry Pi interface: for connecting Raspberry Pi 3 Model B
- 3.Servo interface
- 4. USB TO UART: easy for controlling the Pi via UART
- 5.LM2596:5V voltage regulator
- 6.**TLC1543:**10-bit AD acquisition chip, allows the Pi to use analog sensors

7.PCA9685: servo controller, make it more smoothly to rotate the pan head

8. CP2102: USB TO UART converter

9.Joystick

10.IR receiver

11.Buzzer



Modular design, Easy installing without wiring







# Clever design, Proper layout, Stable structure



# Full functions, How to play, Up to you







### **Technical Details**

Dimensions	220mm x 165mm x 70mm
Weight	G.W 381g
Battery	Exclude

### Part List

AlphaBot2-Pi (adapter board)	1
AlphaBot2-Base (base chassis)	1
RPi Camera (B)	1
Micro SD Card 16GB	1

Power adapter US standard 5V/2.5A USB output	1
SG90 servo	2
2 DOF pan and tilt kit	1
IR remote controller	1
FC-20P cable 8cm	1
USB type A plug to micro B plug cable	1
15PIN FFC 25cm	1
AlphaBot2-Pi screws	1

Micro SD Card Reader	1
Screwdriver	1

Package Contents		Products				
ltem	Description	AlphaBot2- Ar Acc Pack	AlphaBot2- Ar	AlphaBot2- Pi Acc Pack	AlphaBot2- Pi	AlphaBot2- PiZero Acc Pack
AlphaBot2-Base	Motor driver, integrates sensors for obstacle avoiding, line tracking	4	V	4	V	V
AlphaBot2-Ar	Adapter board, for connecting Arduino	V	V			
AlphaBot2-Pi	Adapter board, for connecting RPi3 B			V	√	
AlphaBot2-PiZero	Adapter board, for connecting RPi Zero W					1
RPi3 B	Raspberry Pi 3 Model B				V	
UNO PLUS	Enhanced Arduino compatible board		N			
Dual-mode Bluetooth	Dual-mode Bluetooth module		1		-	
Ultrasonic sensor	Ultrasonic obstacle avoiding, ranging	1	V			V
IR remote controller	remotely control the robot	V	V	~	V	V
RPi Camera (B)	Raspberry Pi camera, adjustable focus			V	N	Ń
SG90	Servo, working with the pan head, controlling the rotation of the camera			4	V	V
Micro SD Card 16GB	16GB Miro SD Card, class 10			N	V	V
5V 2.5A Power Adapter	RPi3 B requires 2.5A or above power supply			*	Ń	Ń

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