AlphaBot2 robot building kit for Arduino

SKU 110060864

Description

This AlphaBot2 robot kit is designed to use with an Arduino compatible board UNO PLUS. It features rich common robot functions including line tracking, obstacle avoiding, ultrasonic ranging, infrared remote control, Bluetooth communication, 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.

UNO PLUS Features

UNO PLUS is a development board compatible with the Arduino UNO R3, an improved & enhanced alternative solution for Arduino UNO R3.

UNO PLUS Vs UNO R3 ：

	UNO PLUS	UNO R3	Remarks
Operating voltage	5V/3.3V	5V	Dual voltage level to support more shields
Reset	Lateral	Vertical	Lateral button is easier to use when connecting with shield
Bootloader switch	Yes	None	The board can be configured to run program immediately when power-up by the switch
USB connector	Micro USB	USB Type B	Micro connector is more commonly used, and shields won't be blocked anymore while connecting
DC jack	Low profile	Normal height	Shields won't be blocked anymore while connecting
Power output header	Yes	None	Providing 5V/3.3V power output OR common-grounding with other boards
3.3V power output	800mA Max	150mA Max	UNO PLUS features higher driving capability
Oscillator	Crystal oscillator	Ceramic resonator	Crystal oscillator is suit for applications where accurate clock reference is required
ADC channel	8	6	CFG used as ADC6 by configuration, and ADC7 from the Reserved PIN
Connecting with prototype breadboard	Supported	Not supported	Solder pads is provided for DIY interfaces to connecting with prototype breadboard
USB driver	Compatible with all main systems	Doesn't compatible with WIN7/WIN8 Express Edition	Driver will never failed to install thanks to the onboard FT232
Firmware fixing	Supported	Not supported	Firmware can be fixed by using the onboard FT232, no extra programmer is needed

AlphaBot2 Features

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

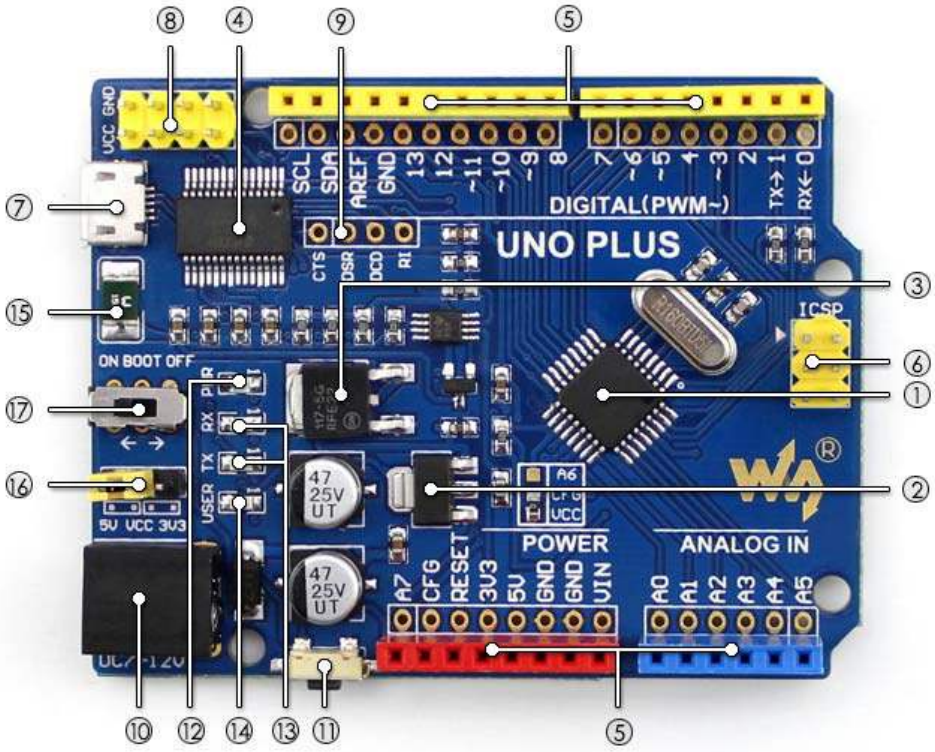
AlphaBot2-Base, the lower base chassis:

•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-Ar, the upper adapter board for controller:

•Onboard Arduino interface, into which Arduino controller can be directly plugged
•0.96inch 128x64 yellow/blue dual color OLED
•TLC1543 AD acquisition chip
•PC8574 I/O expander, avoid I/O shortage
•Xbee connector, for connecting dual-mode Bluetooth module

What's on the UNO PLUS



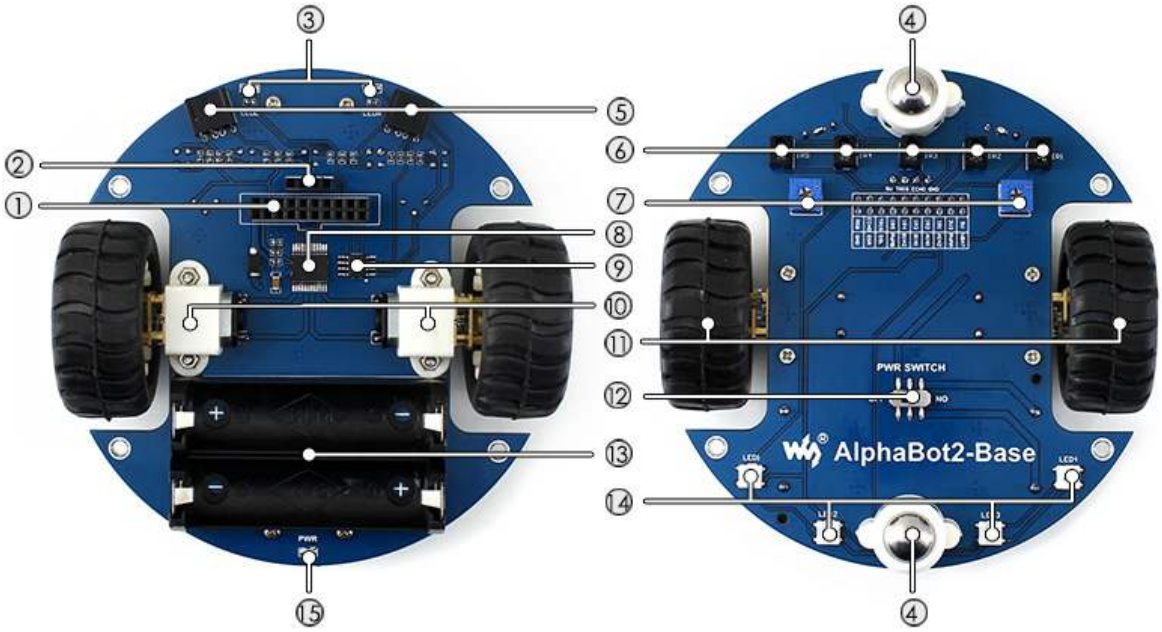
1.**ATMEGA328P-AU**
2.**AMS1117-3.3 :** 3.3V voltage regulator
3.**NCP1117ST50T3G :** 5V voltage regulator
4.**FT232RL :** USB to UART convertor
5.**Arduino interface**
•compatible with standard Arduino interface with two additional analog inputs A6 (config the CFG), A7
•solder pads provided, supports prototype breadboard
6.**ICSP interface**
7.**MICRO USB connector** : for uploading program OR serial port debugging
8.**Power output header :** 3.3V OR 5V, voltage level configured by the onboard power configuration switch, used as power output OR common-grounding with other boards
9.**FT232 pins :** for burning Bootloader into the microcontroller
10.**DC input :** 7V ~ 12V

11.**Reset button**
12.**Power indicator**
13.**Serial port Rx/Tx indicator**
14.**User LED**
15.**Power configuration switch :** for configuring the operating voltage
16.**Bootloader selection switch**

•turn ON : the board will reset when power-up OR other USB devices were detected connecting to the PC

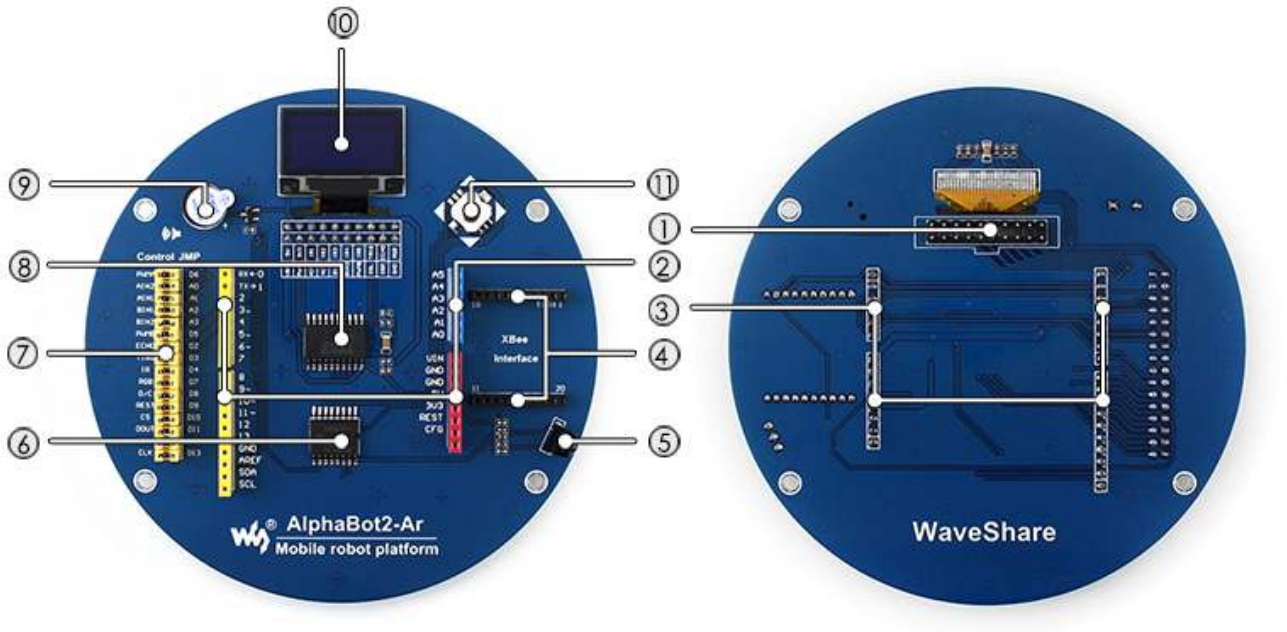
•turn OFF : the onboard program runs immediately when power-up, and the board will not reset when other USB devices were detected connecting to the PC

What's on the AlphaBot2-Base



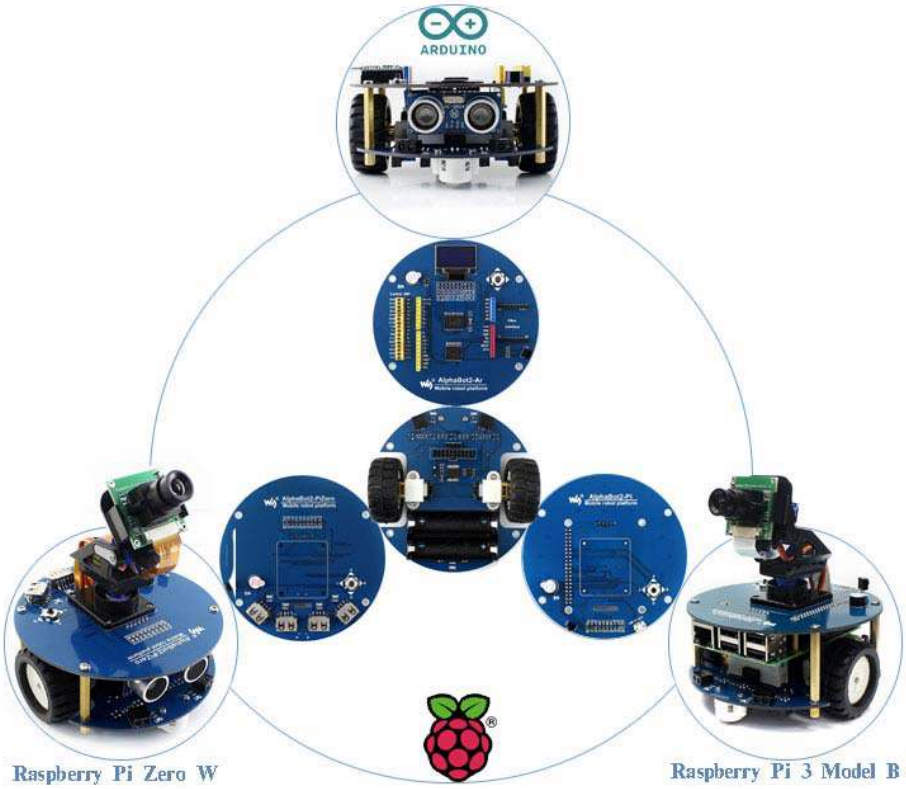
1.**AlphaBot2 control interface:** for connecting sorts of controller adapter board
2.**Ultrasonic module interface**
3.**Obstacle avoiding indicators**
4.**Omni-direction wheel**
5.**ST188:**reflective infrared photoelectric sensor, for obstacle avoiding
6.**ITR20001/T:** reflective infrared photoelectric 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-Ar



1.**AlphaBot2 control interface:** for connecting AlphaBot2-Base
2.**Arduino expansion header:** for connecting Arduino shields
3.**Arduino interface:** for connecting Arduino compatible controller
4.**Xbee connector:** for connecting dual-mode Bluetooth module, remotely control the robot via Bluetooth
5.**IR receiver**
6.**PC8574:** I/O expander, SPI interface
7.**Arduino peripheral jumpers**
8.**TLC1543:** 10-bit AD acquisition chip
9.**Buzzer**
10.**0.96inch OLED** SSD1306 driver, 128x64 resolution
11.**Joystick**

Base board + Adapter board
Compatible with multi controller boards



Modular design, Easy installing without wiring

Infrared/Bluetooth remote control

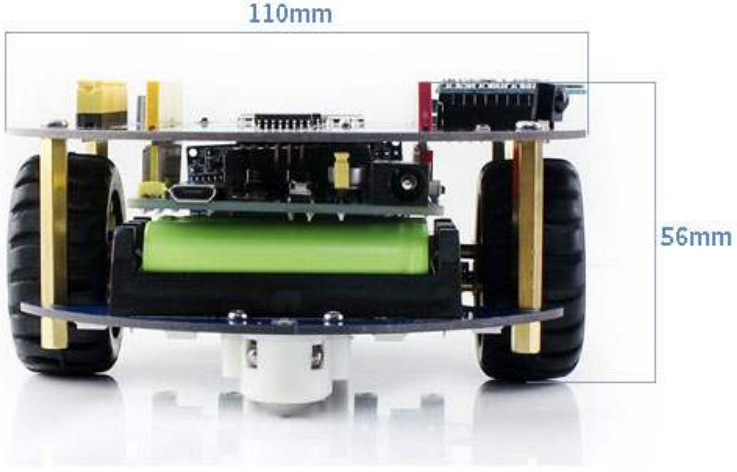
Easily take control of your robot

Ultrasonic sensing

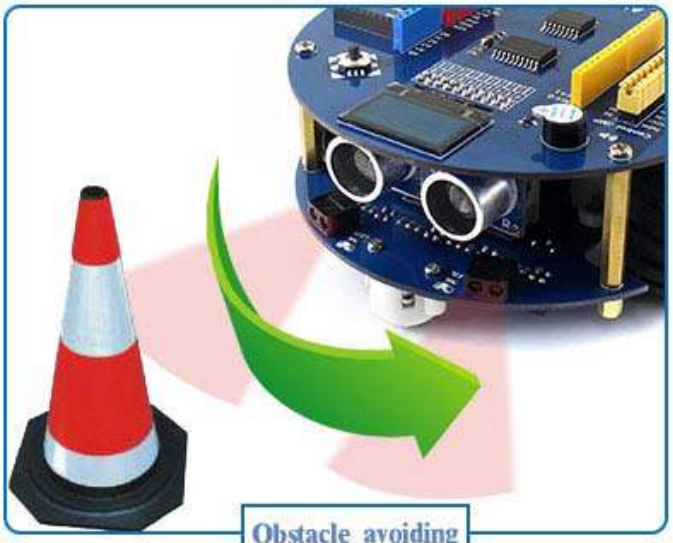
Ultrasonic ranging

Ultrasonic obstacle avoiding

Clever design, Proper layout, Stable structure



Full functions, How to play, Up to you



Obstacle avoiding

Auto obstacle avoiding

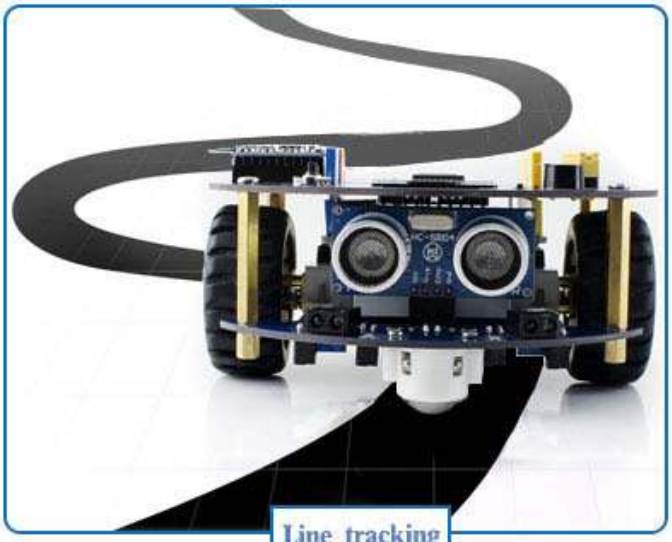
Infrared obstacle avoiding

Easily get out of obstacles in the way

Auto line tracking

5-ch detector, high sensitivity

PID algorithm, stable tracking



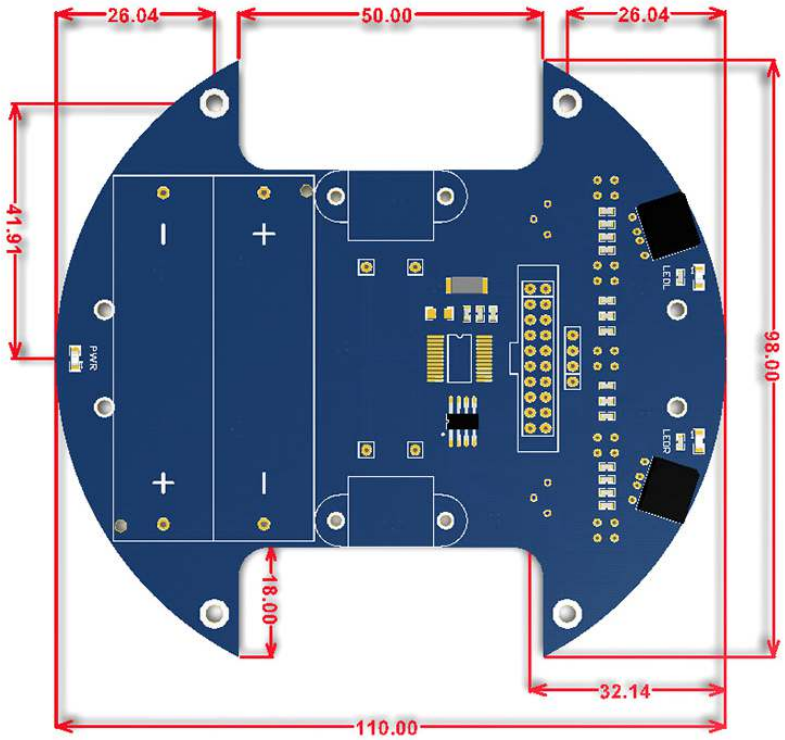
Line tracking

Technical Details

Dimensions	220mm x 165mm x 70mm
Weight	G.W 309g
Battery	Exclude

Part List

AlphaBot2-Ar (adapter board)	1
AlphaBot2-Base (base chassis)	1
Ultrasonic sensor	1
IR remote controller	1
FC-20P cable 8cm	1
USB type A plug to micro B plug cable	1
AlphaBot2-Ar screws	1
Screwdriver x1	1
UNO PLUS	1
Dual-mode Bluetooth	1



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

https://www.seeedstudio.com/AlphaBot2-robot-building-kit-for-Arduino-p-2938.html 12-14-17