



By Yahboom

**Yahboom ROS Transbot Robot with Lidar Depth camera support Python programming  
MoveIt 3D mapping for Raspberry Pi 4B**



4.85/5.0 | 13 reviews



Transbot is a crawler educational robot developed based on the ROS(robot operating system). It uses Python 3 as the programming language. And comes with high-performance hardware configurations such as Raspberry Pi 4B board, lidar, high-definition camera/depth camera, etc., which can realize robot motion control, remote communication, mapping navigation, following, avoiding, autopilot, robotic arm MoveIt simulation, multi-robot queue, multi-robot navigation and so on. We will provide many ROS courses and teaching video to help user get started with ROS easily.

### **Features:**

**Intimate design and service:** The chassis has been assembled before shipment. The TF card comes with Transbot dedicated system files. Only need to assemble the Raspberry Pi, camera and other parts, and you can quickly enjoy it. Professional technical support and after-sales service.

### **Stable hardware configuration realizes interesting functions:**

Based on lidar: Obstacle avoidance, following, 2D mapping navigation, multi-robot navigation, etc.

Based on depth camera: 3D mapping, point cloud image processing, KCF target visual following, etc.

Based on a HD camera: High-brightness searchlight, 2 DOF PTZ flexible rotation.

**ROS operating system:** Based on the ROS robot operating system, we cleverly use Rviz, MoveIt, and Qt toolboxes to realize the joint control of the robot arm MoveIt simulation and the real machine.

**Cross-platform interconnection control:** It support a variety of different control methods, AI-enabled APP, FPV real-view visual handle remote control, JupyterLab online programming, and robot operating system control.

**Detailed video courses:** We provide 64-hours video tutorials and detailed documents. Whether you are a beginner or an experienced ROS player, you can easily use Transbot robot.

# TRANSBOT ROS Educational Robot

Lidar scanning avoiding / Depth camera visual recognition /  
3D mapping navigation



## Massive video courses

- ◇ 64 original video tutorials

## APP control

- ◇ Control APP (iOS/Android)
- ◇ Map Navigation APP (Android)

## Top hardware configuration

- ◇ Raspberry Pi 4B board
- ◇ SLAM A1 Lidar
- ◇ Astra Pro depth camera

## Funny function

- ◇ 3D/2D mapping navigation
- ◇ Visual SLAM image processing
- ◇ Path planning/APP mapping navigation



This product is the **Raspberry Pi 4B** version Transbot,  
if you need the **JETSON NANO** version Transbot, [please click here](#)

# What is Transbot?

Transbot is a crawler intelligent robot based on the ROS robot operating system. It is equipped with high-performance hardware configurations such as Raspberry Pi 4B, Lidar, HD camera/depth camera, etc., which can realize robot motion control, remote control communication, mapping navigation, Follow obstacle avoidance, autonomous driving, robot MoveIt simulation and other applications. A lot of ROS courses and teaching video will be provided, which will help you easily get started with ROS.

 **ROS**

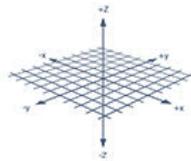
ROS operating system



Lidar scan map

**AI**

Artificial intelligence



3D real-world map navigation



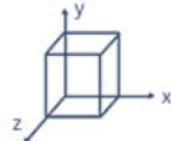
Raspberry Pi 4B



Visual recognition target tracking



Path planning automatic navigation



3D analysis of depth images



OpenCV image processing



Multi-color visual tracking



Mobile APP mapping navigation



Python/C++ programming



MoveIt simulation



Indoor navigation dynamic avoiding



Cross-platform interconnection control



Real person video manipulation

**PID**

Built-in PID controller



Massive video tutorials



Detail tutorials



Technical support

# ROS robot model selection suggestions

The difference of ROS robot models in our store mainly lies in the difference of structure and shape. Users can choose models according to the use environment and learning direction. At present, **Ackerman steering chassis** and **Mecanum wheel chassis** are popular choices. Ackerman is the standard structure of modern cars, and Mecanum wheel is the standard choice of omnidirectional mobile. If you want to explore the field of automatic driving in the future, Ackerman chassis structure is recommended. All of the following models can be equipped with depth cameras and multiple lidars, all of which meet the requirements of mapping navigation, depth learning, 3D vision, robot formation and other directions. Each vehicle model provides corresponding video tutorials, which can meet the requirements of zero basic introduction and improvement.

 <p>ROSMaster X1</p>	<a href="#">Click to buy</a>	Chassis	Pendulous suspension(M)	Tire	Non-slip rubber wheel	Motor	520 Motor *4
		Motor reduction ratio	1:30	Robotic arm	No	Voice interaction	Yes
		Lidar	SLAM A1/ YDLIDAR X3	Camera	Astra Pro depth camera	Level	ROS basic learning
 <p>ROSMaster R2</p>	<a href="#">Click to buy</a>	Chassis	Ackerman steering	Tire	Racing rubber wheel	Motor	520 Motor *4 Metal servo *1
		Motor reduction ratio	1:19	Robotic arm	No	Voice interaction	Yes
		Lidar	SLAM A1/ YDLIDAR 4ROS	Camera	Astra Pro depth camera	Level	Autopilot/ Competition
 <p>ROSMaster X3</p>	<a href="#">Click to buy</a>	Chassis	Pendulous suspension(M)	Tire	Mecanum wheel(M)	Motor	520 Motor *4
		Motor reduction ratio	1:30	Robotic arm	No	Voice interaction	Yes
		Lidar	SLAM A1/ SLAM S2L	Camera	Astra Pro depth camera	Level	Omnidirectional movement/ROS deep development
 <p>ROSMaster X3 PLUS</p>	<a href="#">Click to buy</a>	Chassis	Pendulous suspension(L)	Tire	Mecanum wheel(L)	Motor	520 Motor *4
		Motor reduction ratio	1:56	Robotic arm	6DOF	Voice interaction	Yes
		Lidar	YDLIDAR 4ROS	Camera	Astra Pro depth camera	Level	University research/Mobile capture
 <p>TRANSBOT</p>		Chassis	Crawler	Tire	Nylon track	Motor	520 Motor *2
		Motor reduction ratio	1:56	Robotic arm	3DOF	Voice interaction	No
		Lidar	SLAM A1	Camera	Astra Pro depth camera	Level	Mobile grabbing/With off-road ability

# Based on Raspberry Pi 4B board

## Powerful AI computing power

Raspberry Pi 4B with powerful AI computing power and supports users to expand more complex functions.

### CPU

64-bit 1.5GHz Quad-core  
(28nm process)

### GPU

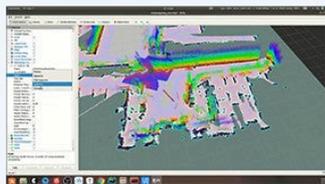
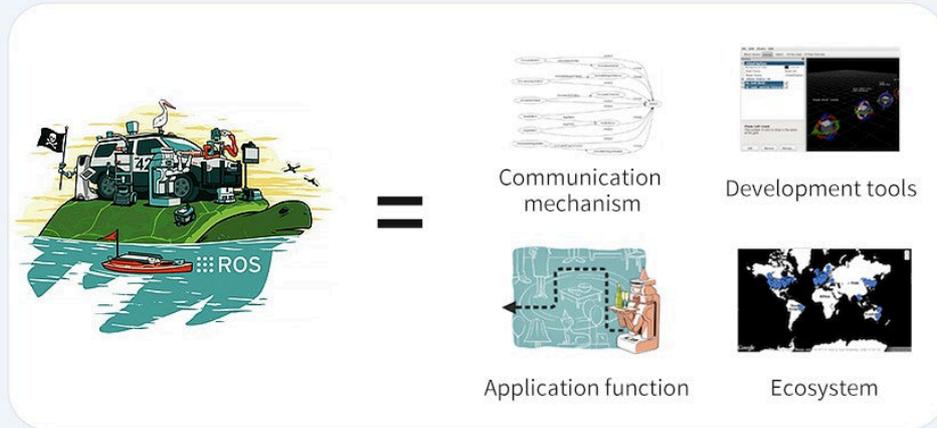
Broadcom VideoCore VI  
@ 500MHz

4GB / 8GB memory versions are officially recommended,  
and 2GB / 1GB memory versions are not recommended.

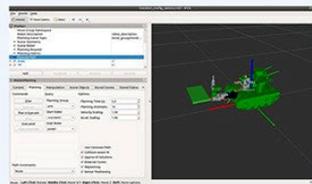


# Based on ROS robot operating system

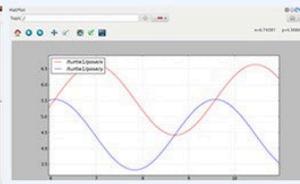
ROS (Robot Operating System) is an open source operating system suitable for robots, and it is mainstream robot development framework in the world. It makes robot development become easier by providing complete solutions from drivers to algorithms to development tools.



3D visualization tool--Rviz



Robotic arm motion planning--MoveIt



QtTool box--rqt\_plot/  
rqt\_graph

## Option description



### HD camera

The high-definition camera platform can realize rotation of up, down, left and right, and equipped with high-power LED spotlights. color tracking and automatic driving can be realized easily.

VS



### Astra Pro Plus depth camera

The depth camera platform supports left and right rotation and up and down manual adjustment, which can not only realize all the AI visual functions, but also realize advanced functions such as depth image data processing and 3D mapping navigation.



### 3DOF Robotic arm

Any configuration can be equipped with a robotic arm, which can realize flexible grasping of objects and MoveIt simulation control robotic arm.



### 7-inch HD touch screen

Any configuration can be equipped with a this touch screen. The LCD screen is a convenient configuration, which is convenient for users to debug ROS robots.



### Raspberry Pi 4B development board

Raspberry Pi 4B board is the main control of the robot operation, which is indispensable. Users who have this board can not choose it. (it is recommended to use raspberry Pi 4B 8GB, with sufficient memory and high cost performance. 4GB/2GB / 1GB memory version is not recommended)

# Transbot Function List

1. WEB view ROS camera image ◆
2. RGB visual tracking and Lidar avoiding ◆
3. rtabmap 3D visual mapping \*
4. rtabmap 3D visual navigation \*
5. Deep vision KCF follow \*
6. AR tag pose estimation ◆
7. AR special effects visualization ◆
8. Color tracking ◆
9. Object following ◆
10. QR code creation ◆
11. QR code recognition ◆
12. Visual tracking autopilot ◆
13. Bone detection\*
14. Finger follow\*
15. Camera calibration\*

PS: "\*" means exclusive function of Depth Camera



1. Lidar scanning and mapping ★
2. Gmapping mapping algorithm
3. Hector mapping algorithm
4. Karto mapping algorithm
5. Cartographer mapping algorithm
6. RRT exploration and mapping
7. Lidar fixed-point navigation ★
8. Lidar multi-point navigation
9. TEB and DWA path planning
10. Lidar obstacle avoidance ◆
11. Lidar guards ◆
12. Lidar follow ◆
13. Robot patrol and avoid obstacles ◆
14. ROS APP navigation ★
15. ROS APP mapping ★
16. Multi smart robot car navigation **NEW**



1. Read the angle status of the robotic arm ◆
2. Robotic arm gripping and transport ◆
3. APP/handle control robotic arm ◆
4. MoveIt robotic arm simulation

PS: The above functions need to be equipped with a robotic arm

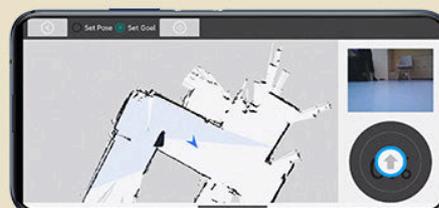


1. One-click download by serial port
2. Motor over-current protection
3. Six-axis attitude sensor
4. Battery voltage detection
5. Voltage alarm

1. VNC remote control
2. Data type conversion
3. APP gravity sensor control ◆
4. ROS image transmission and control
5. IMU and mileage data release
6. OpenCV application and tutorial
7. Handle control
8. Set static IP/open hotspot mode
9. Multi-machine communication configuration
10. SSH remote control
11. Keyboard node control
12. rqt real-time control PID
13. Linear velocity and angular velocity calibration
14. Robot ROS serial communication
15. jupyter lab remote control
16. Multi smart robot car synchronous control **NEW**
17. Many smart robot car lined up to perform **NEW**



The above functions with "◆" can be remotely controlled in YahboomRobot APP



The above functions with "★" can be remotely controlled in the ROS Robot APP

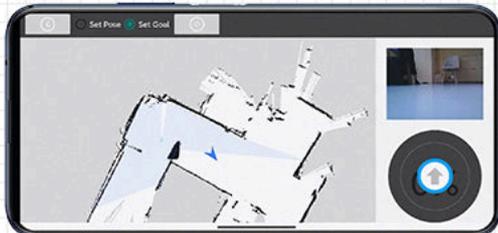
# Cross-platform interconnection control

01



YahboomRobot Control APP (iOS+Android)

02



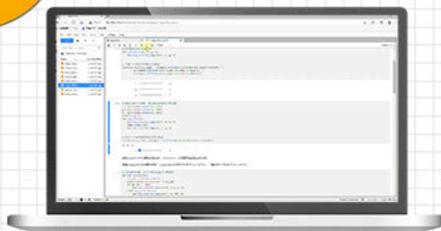
ROS Robot Mapping  
Navigation APP (Android)

03



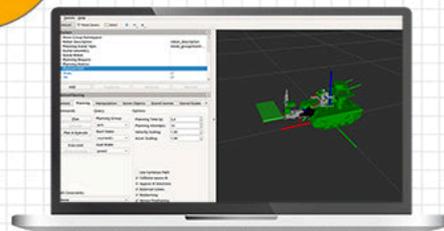
Handle control  
(standard configuration for any version)

04



Jupyter Lab webpage  
online programming control

05



ROS system control

# YahboomRobot APP

Built-in AI gameplay, quickly experience the funny of Transbot remote control.



APP control interface



Autopilot interface



Lidar interface



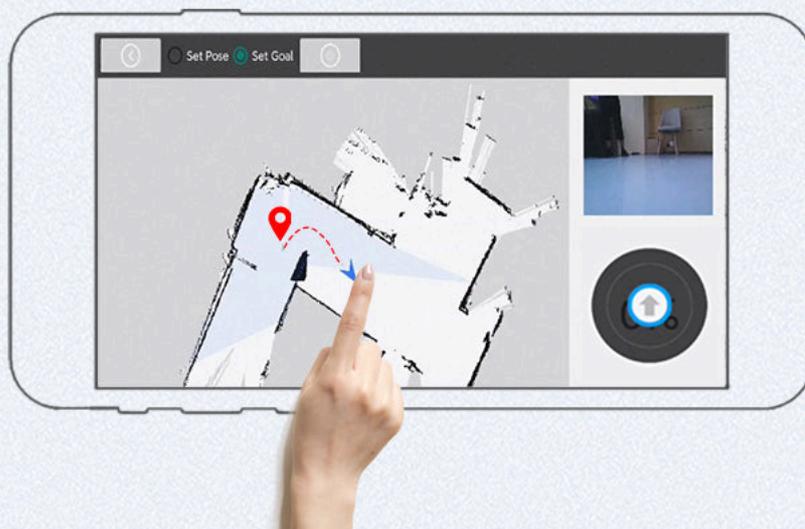
AR reality augmented interface



Intelligent patrol interface

# ROS Robot Mapping Navigation APP

Transbot can realize functions such as map creation, navigation, and image viewing through APP.



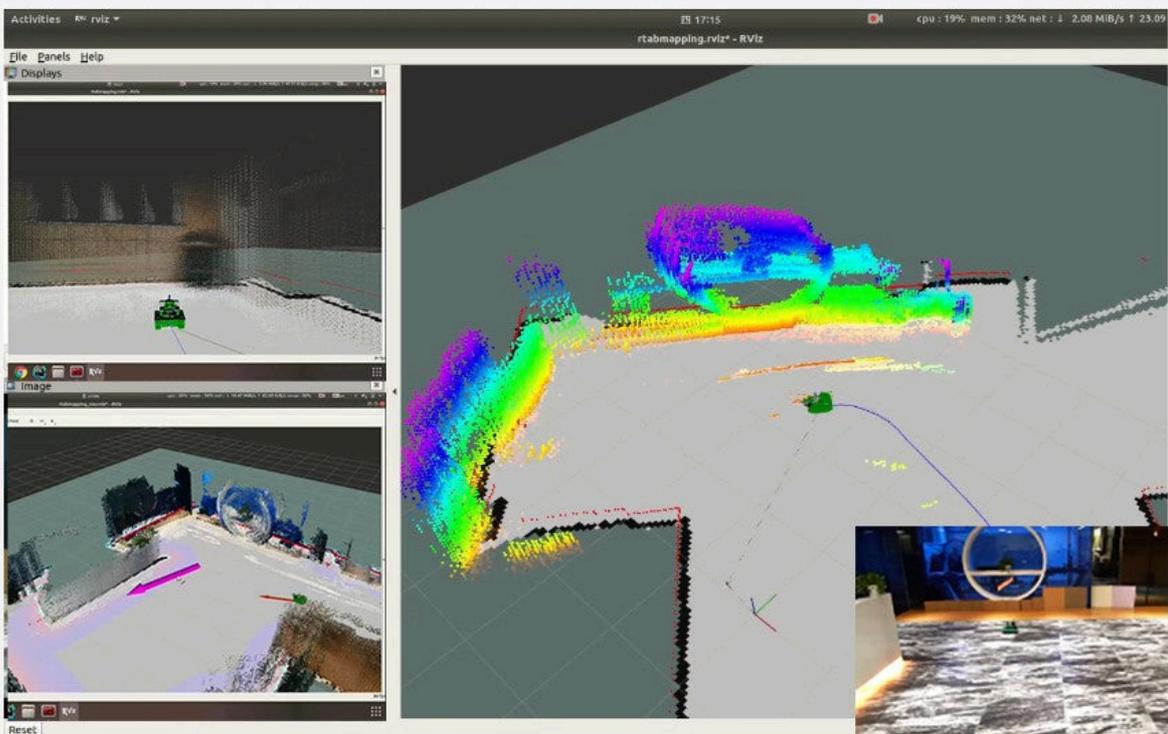
# Introduction to key functions

## P1 RTAB-VSLAM 3D visual mapping and navigation



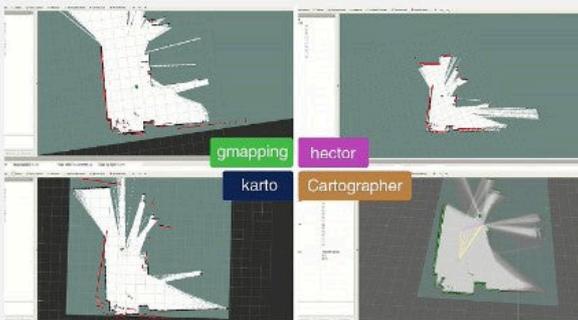
Depth camera exclusive function

Support 3D mapping navigation technology (rtab) containing pure vision and visual radar fusion. Transbot robot can navigate and avoid obstacles in the 3D map, and supports global relocation.

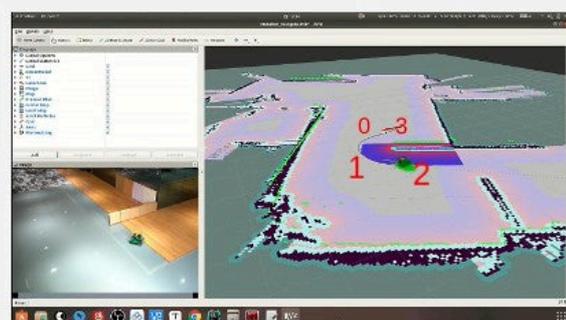


## P2 Lidar mapping and navigation

Support gmapping, hector, karto, cartographer and other algorithms to create maps. Support path planning, single-point and multi-point autonomous navigation.



Four algorithms for mapping

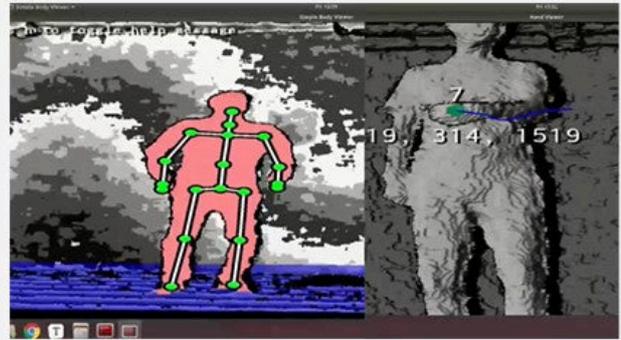
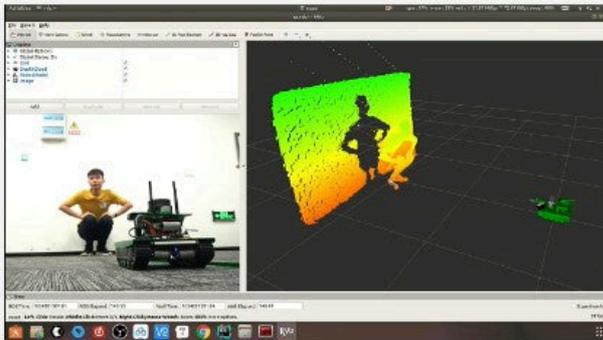


Autonomous navigation for path planning

### P3 Depth image data Point cloud image

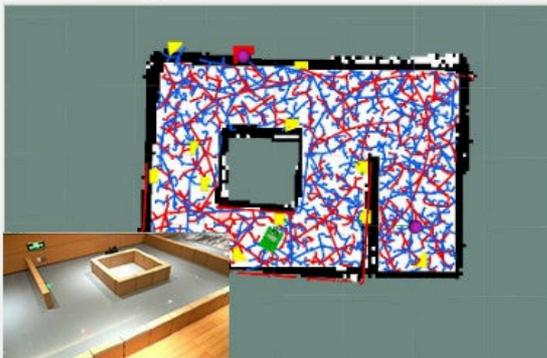


Quickly obtain image data such as camera depth map, color map, and skeleton through the corresponding API.



### P4 RRT autonomous exploration and mapping

No need to control the robot manually, and the RRT algorithm is used to autonomously complete the exploration and construction of maps, save the map, and return to the starting point.



### P5 KCF goal follow



Based on the image related KCF filter algorithm, any follow target in the image can be selected.

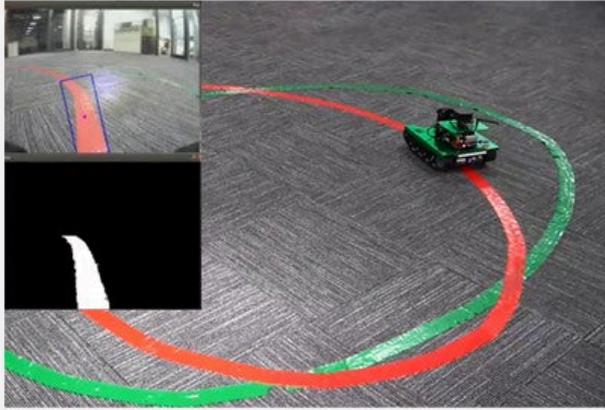


### P6 Autopilot

Support custom color selection, the robot can automatically recognize the color and drive forward.

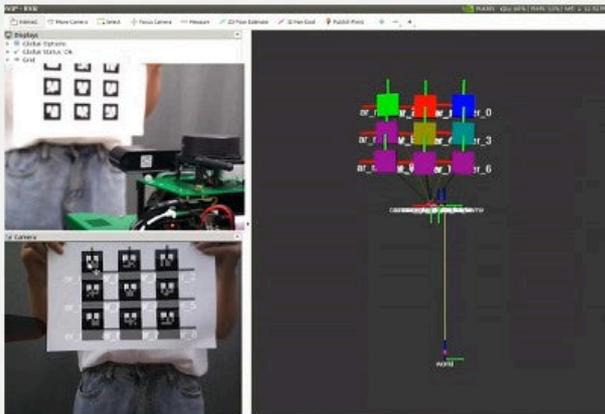
### P7 Color recognition/tracking

Select the color through the screen and let robot track the target color.



### P8 AR tag recognition

Support 2D code label dynamic tracking detection, 2D code posture position coordinate acquisition, support multiple 2D code recognition at the same time.



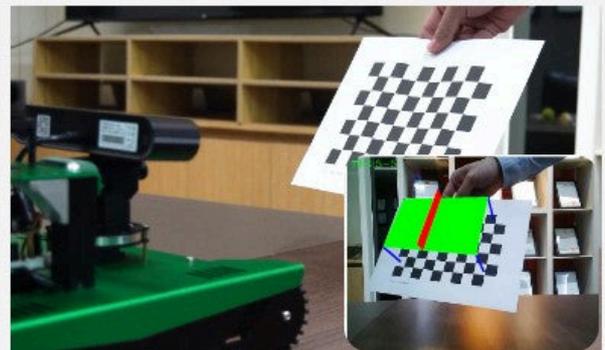
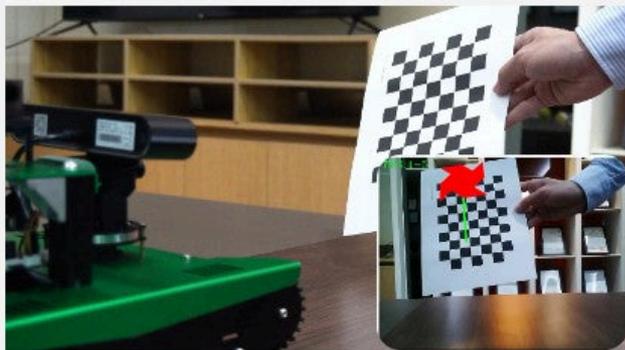
### P9 Visual image beautification

Through OpenCV, the video image is converted to achieve the effect of image beautification.



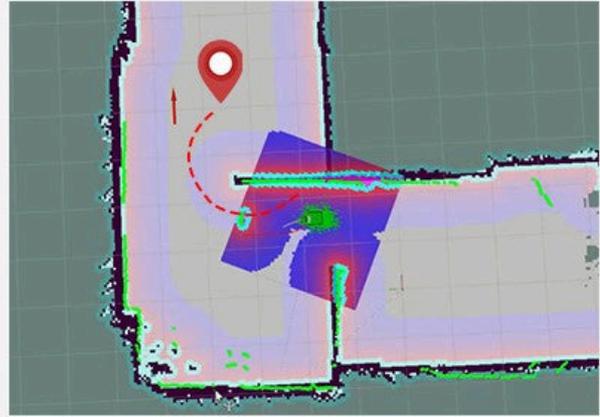
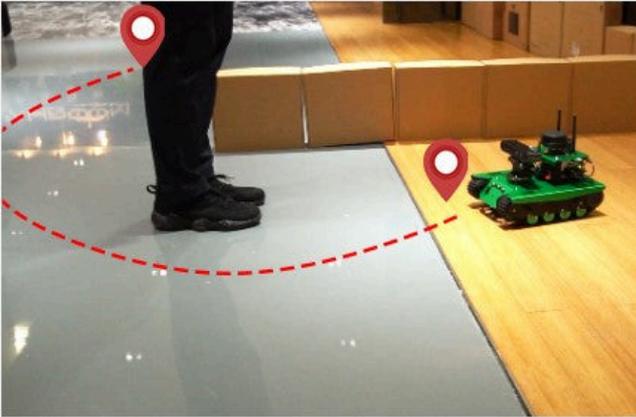
### P10 AR reality augmentation

Select the corresponding graphics through the APP, and let the graphics appear on the checkerboard paper through AR enhancement technology.



## P11 Lidar obstacle avoidance

Lidar detects the surrounding environment in real time and plans a path to avoid obstacles.



## P12 Lidar tracking

Lidar scans and detects the environment, and selects targets that are close to follow to move.



## P13 Lidar guard

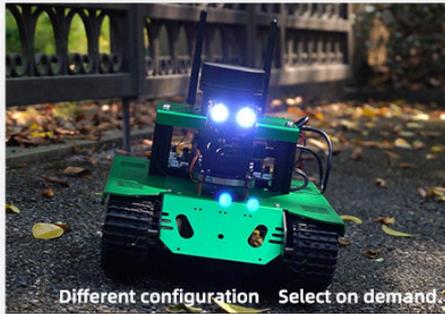
Targets that are closer to the radar will be locked, and the front of the robot car will always face this target.



### P14 Searchlight



Equipped with high brightness spotlights, the lights rotate with the 2DOF platform.



Different configuration Select on demand.

### P15 Colorful taillights

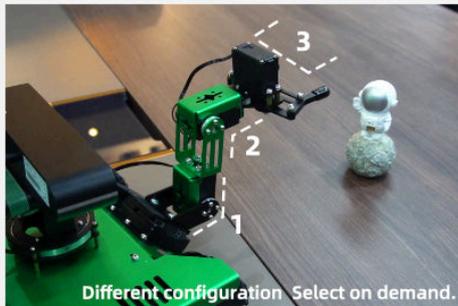
Light bar at the rear of the robot car can achieve various magical lighting effects.



### P16 3 DOF robotic arm



3 DOF robotic arm allows the car to realize grasp objects.



Different configuration Select on demand.

### P17 Electric rotating platform

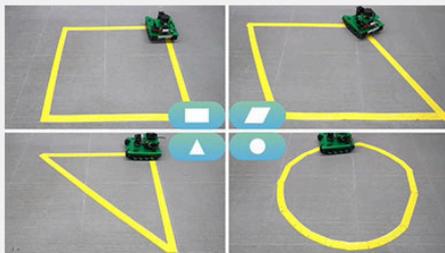
The depth camera supports electric left and right rotation and manual adjust up and down. The HD camera supports electric rotation up, down, left and right.



Different configuration Select on demand.

### P18 Intelligent patrol

Select the route through the mobile APP, and the car will patrol according to the route.



### P19 Strong obstacle crossing ability

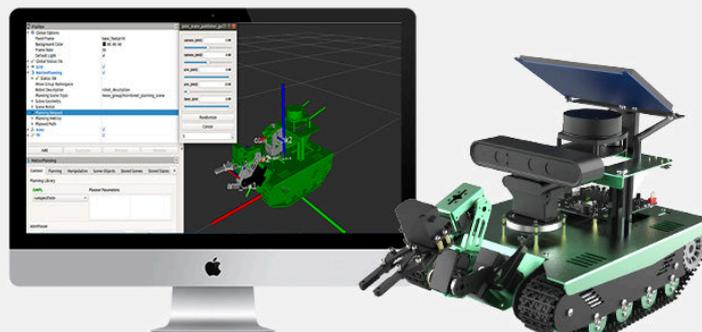
The large-size tracked chassis allows Transbot to have better obstacle clearance capabilities.



### P20 Movelt robotic arm simulation control



After Transbot is equipped with a robotic arm, the Movelt provided by the ROS system can be used for motion simulation control. Movelt is a ROS software package specially developed for mobile operating platforms, inheriting achievements in the fields of motion planning, three-dimensional perception, kinematics, motion control and navigation.



## P21 Lidar multi robotic cars navigation

It can control more than two robotic cars to navigate and locate in the same map. In the process of navigation, if there are obstacles within the detection range, the robot can replan the route for obstacle avoidance.



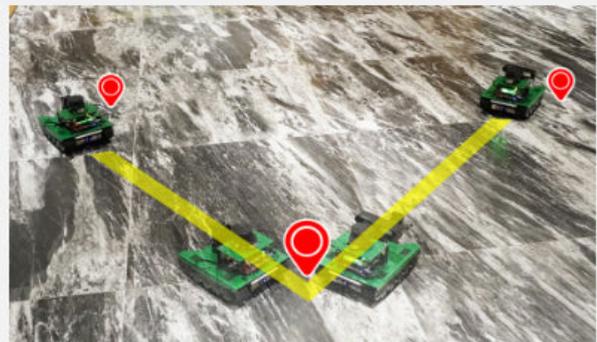
## P22 Multi robot car synchronous control

The mode key of the handle can be used to select the vehicle to control separately or control multiple robot car to complete the action synchronously.

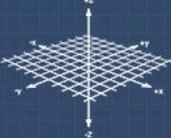


## P23 Multi robot car queue performance

Use the handle to control the robot movement, record the movement route, and then drive synchronously according to the recorded route to complete the multi vehicle queue performance.



# What can you learn from Transbot?

 <b>ROS</b> ROS robot operating system	 RTAB 3D mapping navigation	 pointcloudlibrary PCL 3D point cloud	 SLAM mapping navigation
 Machine vision applications	 Python programming	 Open Source CV	 MoveIt

## Massive learning materials

Tutorial link: <http://www.yahboom.net/study/Transbot-Pi>





# Transbot course catalog display

Open source, 64 video tutorials, help users get started easily with ROS learning.

Transbot usage guide			
Introduction of Transbot	1.Transbot version introduction	ROS Lidar (SLAM) course	1.Radar basics
	2.Transbot manual		2.Radar avoiding
Assembly and precautions	1.Precautions for use and battery safety		3.Radar guard
	2.Assembly precautions		4.Radar follow
	3.Assembly steps		5.Patrol game
First Trial	1.Camera WiFi network configuration		6.Radar mapping
	2.APP remote control tutorial		7.Navigation and avoiding
	3.USB wireless handle control		8.APP mapping and navigation
	4.USB handle + APP control		9.RTAB-Map 3D mapping navigation
Transbot tutorials			ROS robotic arm MoveIt control course
Hardware control course	1.About expansion board	2.Random move	
	2.Close APP control process	3.Robotic arm avoiding	
	3.Install Transbot driver library	Multi ROS robot car controller <b>NEW</b>	1.Multi robot car synchronous control
	4.Control buzzer and button		2.Multi robot car navigation
	5.Adjust LED brightness		3.Multi robot car queue performance
	6.Control PWM servo	Transbot annex	
	7.Control bus servo	1.QR code recognition file	
	8.RGB bar control	2.Checkerboard calibration file	
	9.Control motor	System image and firmware	
	10.Control robot movement	1.On board MCU firmware	
ROS Basic course	1.Introduction of ROS	2.Yahbom image file	
	2.Introduction of project files	Software development tools	
	3.Commands and tools	1.Writing tutorial	
	4.Multi-machine communication	2.Secondary writing tutorial	
	5.Static IP and WiFi hotspot	ROS function package and source code	
ROS+OpenCV visual course	1.Opencv application	1.ROS function package and source code	
	2.Augmented Reality	Communication protocol and Python driver library	
	3.ARTag	1.Python driver library	
	4.ROS+Opencv basic course	2.Protocol file	
	5.ROS+OpenCV application	Others	
	6.Data conversion and point cloud	1.40Pin cable pin distribution diagram	
ROS robot course	1.PID algorithm control	2.LED module information	
	2.Basic communication	3.OLED display information	
	3.Keyboard control	4.On-board MCU information	
	4.Handle remote control	5.Motor and motor drive related information	
	5.State estimation	6.Robotic arm bus servo information	
	6.Data calibration	7.Lidar information	
	7.URDF model	8.Six-axis attitude sensor information	
	8.MoveIt tutorial	9.Camera information	
ROS simple camera course	1.Camera calibration	10.Hardware interface reference manual	
	2.Color tracking		
	3.Object tracking		
	4.Autopilot		
ROS depth camera course	1.Astra camera calibration		
	2.Astra color tracking		
	3.Astra object tracking		
	4.Astra autopilot		

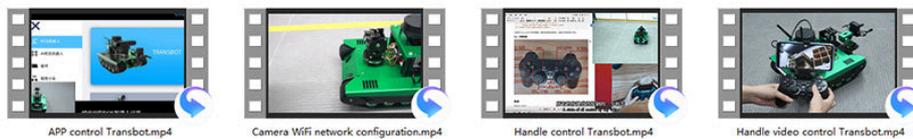
# Detailed Chinese and English video tutorials

Yahboom original 64 video tutorial, with Chinese and English subtitles, which is convenient for all users to quickly learn ROS robot.

## 1.Assembly steps



## 2.First Trial



## 3.Hardware control course



## 4.ROS Basic course



## 5.ROS+OpenCV visual course



## 6.ROS robot control course



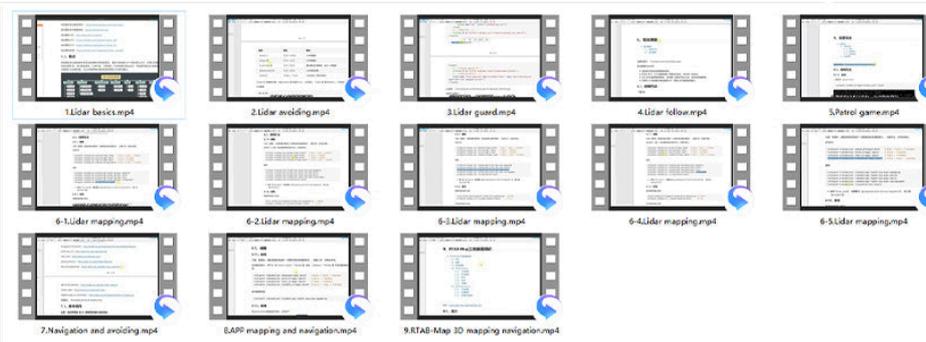
## 7.ROS simple camera course



## 8.ROS depth camera course



## 9.ROS Lidar (SLAM) course



## 10.ROS robotic arm MoveIt control course

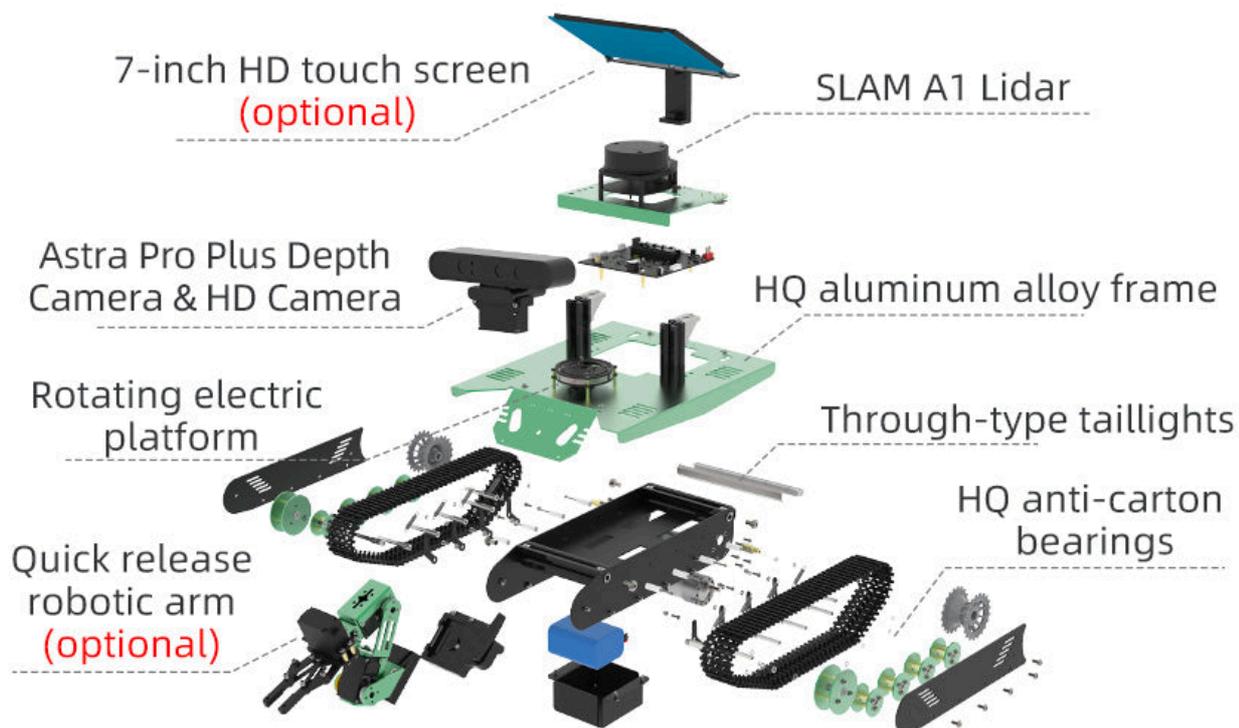


If you want to watch the video tutorial, you can search for "Yahboom" on Youtube.

# Unique structure

## Easy to assembly

In order to ensure quality and reduce the difficulty of installation, the body of the body has been assembled before shipment. Users only need to install the core accessories.



The overall structure of this product has applied for a utility model patent, patent number: 202122169981.0



### 3 DOF robotic arm

Bus servo can read the servo angles in real time, and can control the robotic arm through MoveIt simulation.



### Astra Pro Plus depth camera

Realizes 3D point cloud map, depth map, KCF tracking and other functions, combined with lidar can complete RTAB 3D map navigation.



### SLAM A1 Lidar

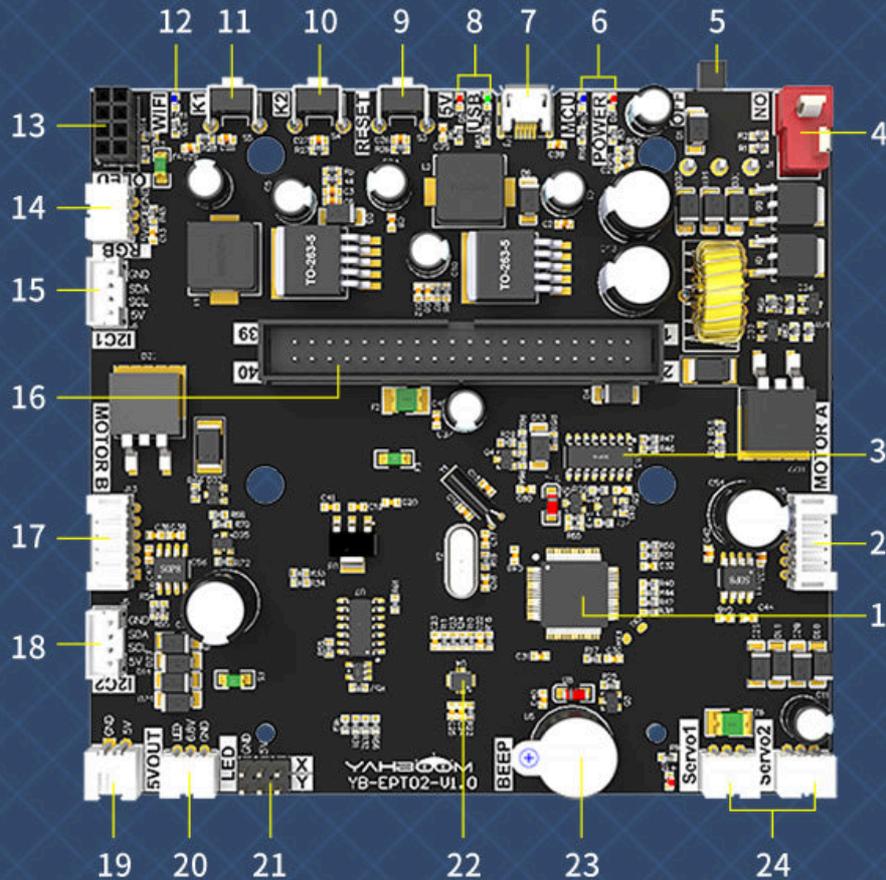
Indoor 2D plane scanning and mapping, single-point and multi-point navigation, avoiding and follow functions.



### 7-inch HD touch screen

Convenient to debug ROS robot.

# Expansion board function distribution



1/On board MCU

2/Motor interface A

3/Serial communication chip

4/DC 12V power supply chip

5/Power switch

6/MCU indicator

7/Micro USB interface

8/5V indicator

9/RESET button

10/Buton K2

11/Buton K1

12/WiFi indicator

13/OLED interface

14/Colorful light bar interface

15/I2C interface 1

16/Flat wire female socket

17/Motor interface B

18/I2C interface 2

19/DC 5V power input

20/LED searchlight interface

21/PWM servo interface

22/Six-axis attitude sensor

23/Active buzzer

24/Robotic arm interface

<p><b>Recommended configuration 1</b></p> <p>Recommended reason: equipped with HD camera searchlight pan tilt, learning lidar mapping navigation.</p>		 +  <p>Frame</p> <p>HD camera</p>
<p><b>Recommended configuration 2</b></p> <p>Recommended reason: joint calibration of depth camera and lidar, 3D visual navigation</p>		 +  <p>Frame</p> <p>Depth camera</p>
<p><b>Recommended configuration 3</b></p> <p>Recommended reason: Experience the MoveIt simulation control manipulator.</p>		 +  +  <p>Frame</p> <p>HD camera</p> <p>Robotic arm</p>
<p><b>Recommended configuration 4</b></p> <p>Recommended reason: Easy to debug ROS robot.</p>		 +  +  <p>Frame</p> <p>Depth camera</p> <p>Robotic arm</p>
<p><b>Recommended configuration 5</b></p> <p>Recommended reason: Full configuration, users can debug the robot anytime and anywhere.</p>		 +  +  +  <p>Frame</p> <p>Depth camera</p> <p>Robotic arm</p> <p>7inch screen</p>
<p><b>Recommended configuration 6</b></p> <p>Recommended reason: Top-level configuration, users can have a high-definition camera and a depth camera, which can be replaced at any time as needed.</p>		 +  +  +  +  <p>Frame</p> <p>HD camera</p> <p>Depth camera</p> <p>Robotic arm</p> <p>7inch screen</p>

# Standard black customized aviation aluminum box



**Aluminum box size:** 41.5cm\*28cm\*28cm

**Product weight:** 6.0kg ~ 7.2kg (the weight will vary according to different configurations)



Any version Transbots are shipped in black customized aviation aluminum box.



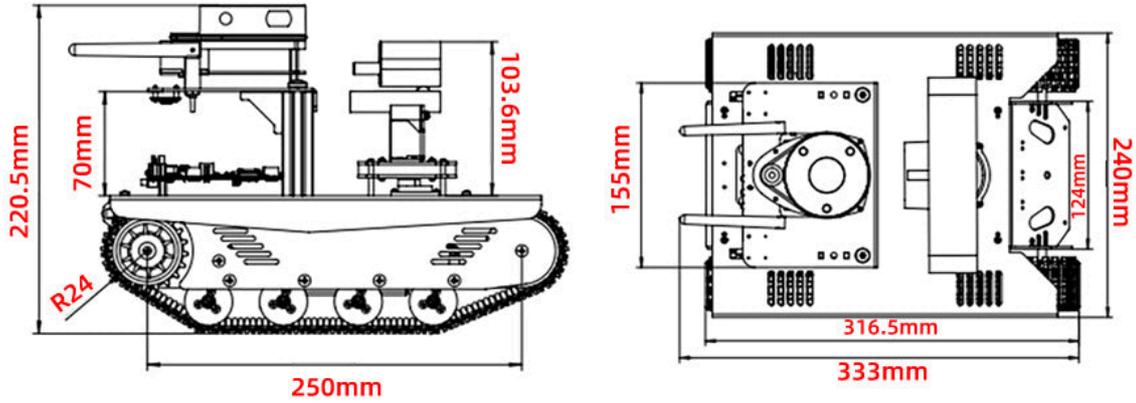
All accessories are brand new and original.



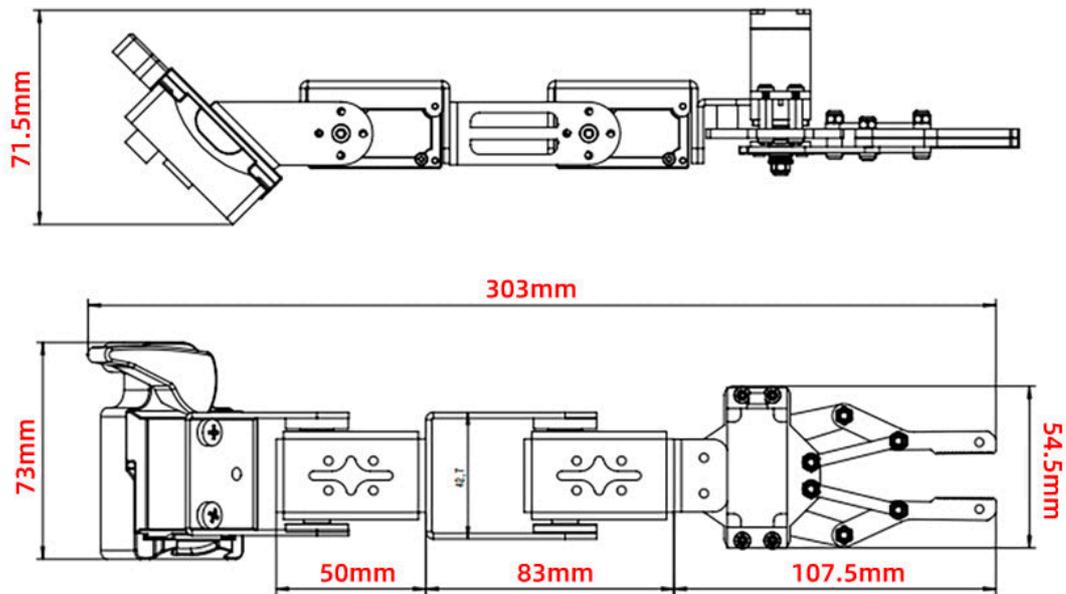
After the vehicle is installed, you can also use this aluminum box for storage, and the aluminum box has enough space for the entire vehicle to be stored.

# Product specifications

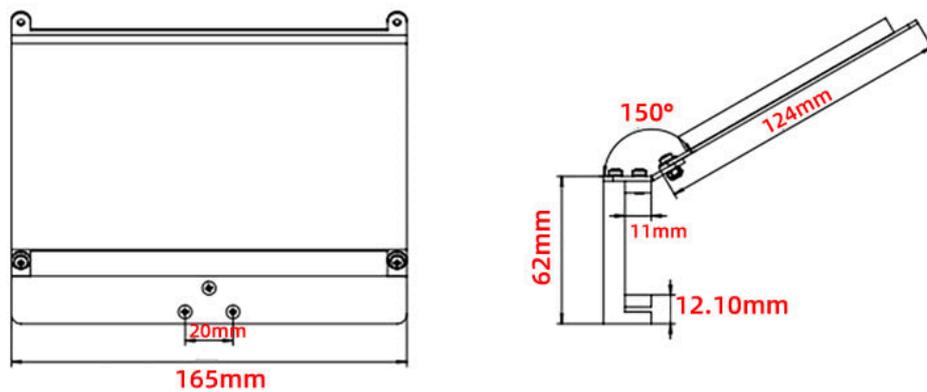
## 1、Transbot size parameters



## 2、Robotic arm size parameters



## 3、7-inch display screen size parameters



## 4... Product specifications

Transbot ROS robot product parameters			
Microprocessor	Broadcom 8CM2711 64-bit 1.5GHz quad-core +VideoCore VIS00MHz		
AI computing power	200GFLOPs	Operating system	Ubuntu 18.04 LTS + ROS_Melodic
Programming language	Python	Motor scheme	520 metal motor with encoder *2
Enter	HD camera (Astra Pro Plus depth camera), SLAM A1 M8 lidar, PS2 wireless handle, six-axis attitude sensor, motor speed measuring codewheel	Output	RGB colorful taillights. buzzer, 520 motor interface*2, bus servo interface, servo pan/tilt, LED searchlight. OLED display
PTZ servo solution	Metal 9G steering gear	Power scheme	12.6V 4400mah 2C lithium battery pack
Battery life	2 hours	power interface	T-shaped power supply interface, DC4.0*1.7 charaina interface
Remote control	Mobile APP, PC computer, PS2 wireless controller	Wayof communication	WiFi network (LAN/AP)
Safety protection	overcurrent protection	Body material	Anodized aluminum alloy

Astra Pro Plus depth camera product parameters			
3D technology	ORBECR monocular structured light	Range	0.6-8m
Precision	1m: ±3mm	Field of View <FOV)	H 58A <sup>0</sup> xV 45.8°
Resolution	640 x480@30fps 320x240@30fps 160x 120@30fps	Frame rate	1920*1080@30fps 1280*720@30fps 640*480@30fps
Advanced Processina Chio	MX6000	Close protection	support
RGB field of view	H66.73° V40.19° @1920*1080 H66.99° V40.37° @1280*720 H60.60° V46.81° @640*480	UVC(RGB)	support
Supported operating system	Android / Linux / Windows	Data interface	USB2.0
Size	164.85* 48.25* 40	Microphone	nvo-channel stereo
Power consumption	<2.SW	Safety	Class 1 laser
Operating temoerature	10°( -40°(		

HD camera product parameters			
Image format	YUV/MJPG	Image pixel	2MP (1080)
Data Format	320*240/640*480/ 1280*720/1920*1080	Lens	F2.8mm
Field of view	80°~120° (Depends on video resolution)	Frame rate	30fps~120fps (Depends on video resolution)
Sleep current	< 10 mA	Working current	< 200 mA
Interface method	USB 2.0	Operating Voltage	DC 5V
Storage temperature	-20°C to +60°C	Operating temperature	0°C to +65 °C (The working temperature increases with the increase of the frame rate. The high temperature of the camera chip is normal when the frame rate is used))

YB-PO9M metal servo (electric rotating platform)			
Servo	YB-P09M	Maximum angle	180°
Voltage	4.8-6V	Torque	1.5kgf.cm 4.8V/1.8kgf.cm 6V
Reaction speed	0.12sec/60°4.8V/0.10sec/60° 6V	Servo type	Digital servo
Gear	Metal gear	Weight	14g

Serial bus servo parameters (Robotic arm)			
Servo YB-S06 (mechanical claw 6KG)		Servo YB-SD15M (robotic arm 15kg)	
Maximum angle	90°	Maximum angle	300°±15°
Voltage	4.8V-6V	Voltage	6.0-7.4V
Torque	8kgf.cm 6V	Torque	15kgf.cm 7.4V
Reaction speed	0.20sec/60° 6V	Reaction speed	0.30sec/60° 7.4V
Servo type	Serial bus servo	Servo type	Serial bus servo
Gear	Plastic gear	Gear	Metal gear
Weight	52±1g	Weight	50±1g
Working dead zone	5μs	Working dead zone	5μs
Characteristic	Locked rotor 5s power-off protection, lifting weight 5kgf.cm clutch protection	Characteristic	Locked for 3 seconds to enter the protection, and receive a new signal to release

520 encoder motor parameters (robot power motor)			
Rated voltage	12V	Rated power	≤4W
Motor type	Permanent magnet with brush	Locked-rotor current	4A
Locked-rotor torque	8.3kgf.cm	Rated current	0.3A
Rated torque	6.5kgf.cm	Reduction ratio	1:56
Speed before deceleration	12000	Speed after deceleration	205±10rpm
Output shaft	6mm diameter D-type eccentric shaft	Encoder type	Hall encoder
Number of lines	11	Supply voltage	3.3-5V
Interface Type	PH2.0		

Power battery pack parameters			
Capacity	4400mAh	Rated discharge current	8.8A (2C)
Size	68*55*37mm	Maximum discharge current	10A
Weight	300g	Plug	T-plug discharge+4017 female
Charger	12.6V 800mA	Protect	Over current, over charge, over discharge, short circuit protection

# Shipping List

## Packing list (basic configuration)

 Frame	 Lidar fixed plate	 Raspberry Pi 4B <b>Optional</b>	 Raspberry Pi accessory kit	 Expansion board
 USB wireless handle	 Handle mobile phone holder	 Charger	 Several cables	 micro USB data cable
 Cable tie	 Screwdriver	 Mechanical code & checkerboard paper	 Card reader + TF card	 transbot manual
 Parts package	 OLED screen	 Battery pack	 Battery case	 Packing box + anti-collision sponge
<b>SLAM A1 Lidar pack</b>	 SLAM A1 Lidar	 micro USB data cable	 No.6 package	

## HD camera pack

 HD camera + searchlight	 HD camera bracket <b>(assembly)</b>	 Several cables	 No.5 package
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## Astra Pro Plus depth camera pack

 Astra Pro Plus depth camera	 Depth camera support <b>(assembly)</b>	 Depth camera fixed bracket	 No.4 package
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## 3DOF robotic arm accessory kit

 3DOF robotic arm	 Quick release buckle	 Quick release buckle fixing plate	 No.7 package
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Tutorial link

[Yahboom Raspberry Pi Transbot Robot](#)

## Questions & Answers

Have a Question?

[Ask a Question](#)

**Q Hello, I am interested in this product. Is it possible to control the robot from a PC via an existing WLAN? In other words, to see the camera and drive it?**

**A** Hello friend,

Thanks for your message.

It does not support real-time control and viewing of the images captured by the camera on the PC, but it supports real-time control and viewing of the images captured by the camera through a mobile APP.

**Q I bought the Yahboom ROS Transbot Robot with Lidar Depth camera support Python programming MoveIt 3D mapping for Raspberry Pi, if in the future I want to switch to Jetson NANO 4GB(B01/SUB) version, can I do it? if so what do i need to buy, and do? Regards and thanks**

**A** Hello friend,

If you want to use Jetson NANO version. You just need purchase, Jetson NANO board, U disk(With Transbot system file), Jetson nano installation package.

If you need, contact me by E-mail: [market@yahboom.com](mailto:market@yahboom.com)

I will draft an order and send it to you.

**Q I bought it, but I have an error with the astra camera launching , also the frame rate is very low ( 1 fps), is there a method to modify this?**

**A** Hello friend,

Sorry for late reply. Could you send your question to this E-mail:[support@yahboom.com](mailto:support@yahboom.com)

Our Technical Support will reply you ASAP.

**Q Can this recognize other things ( not faces). For example, a date bunch?**

**A** Hello friend,

Thanks for your message.

This is a programmable product, and we currently only provide routines to recognize a person's face.

If you need to identify a group of people, you can do that by modifying the code.

**Q If I formatted the memory by wrong, how could I restore the files again? Can I get another memory card?**

**A** Hi friend,

Could you contact our technical support is via email or WhatsApp. He will provide professional services to help you solve the problem ASAP.

E-mail: [support@yahboom.com](mailto:support@yahboom.com) WhatsApp: +86 18682378128