

YUHESEN



Product Catalog

Modular Mobile Robot Platform
www.yuhesen.com

COMPANY PROFILE



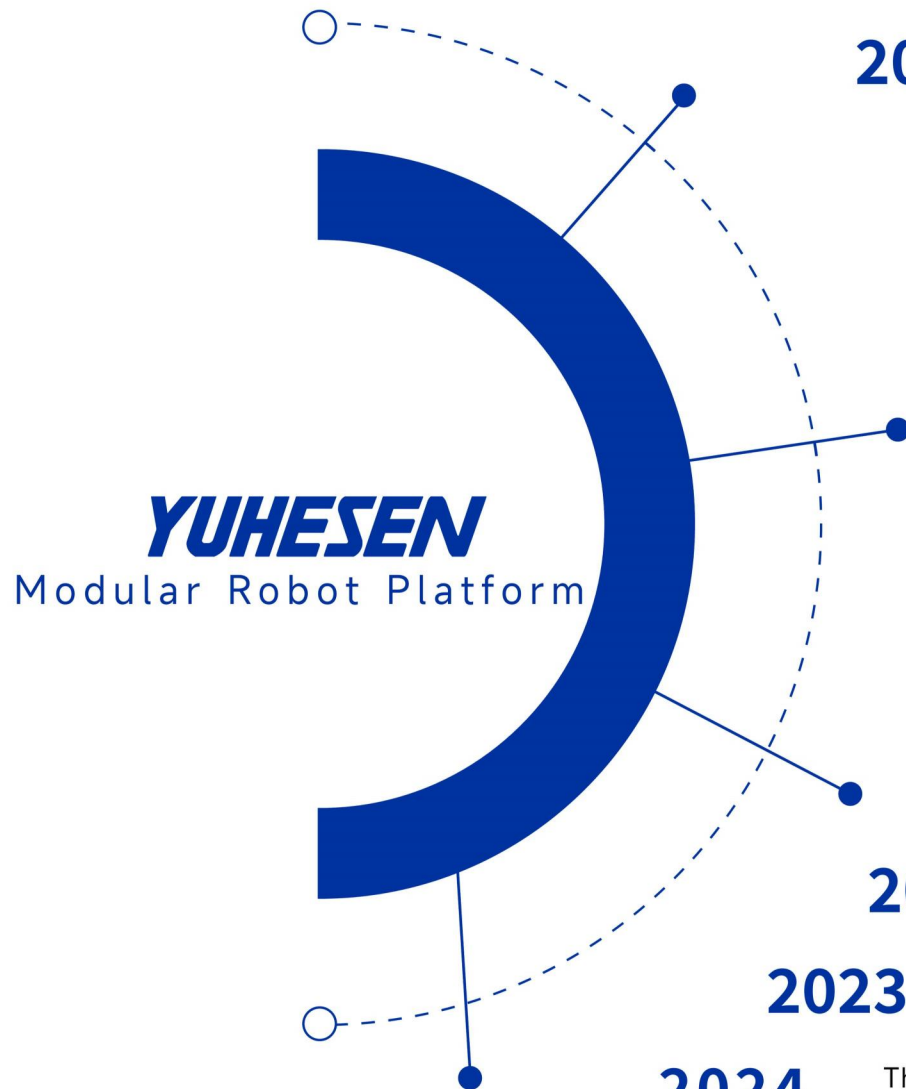
Established in 2013, Yuhesen Technology is dedicated to advancing the mobile robotics industry through modular, general-purpose mobile robot technology. The company provides a diverse portfolio of modular mobile robot chassis for both indoor and outdoor environments, complemented by integrated autonomous navigation solutions. These offerings empower research experts and industry partners to accelerate innovation and development in mobile robotics across cutting-edge disciplines and application areas, including artificial intelligence, autonomous driving, mechanical control, robotics, and vehicle engineering. Furthermore, serving as fundamental building blocks, Yuhesen Technology's solutions enable industrial partners in sectors such as logistics, security, energy, agriculture, and construction to drive transformation and upgrades within their respective value chains.

The founding and R&D teams are from well-known domestic scientific research institutions such as AVIC and Harbin Institute of Technology, dedicated to solving difficulties in transportation and harsh working environments and promoting easier human life and work through independent research and development of advanced mobile robot technology.

The company's R&D capabilities cover multidisciplinary technologies such as outdoor mobile robot line control chassis structure, motion control, autonomous positioning, intelligent navigation SLAM, multi-sensor fusion, and robot decision planning. With over 13 years of technical accumulation in outdoor mobile robot scenarios, the company has a full-chain comprehensive ability in research and development, engineering, production, marketing, sales, and after-sales, with a research and development and technical team of 70 people.



R&D HISTORY



2013

YUHESEN Technology was founded with the initial goal of using mobile robot technology to help users live and work more easily.

2014

The first 80kg tracked mobile robot chassis is unveiled.

2015

The first 300kg payload front steering and rear-wheel drive Ackermann mobile robot chassis was unveiled.

2016

The first 80kg payload four-wheel steering and four-wheel drive mobile robot chassis was unveiled.

2017

Completed chassis matrix: Ackermann steering, differential steering, omnidirectional and tracked chassis.

2018

Upgraded version of wheel hub motor omnidirectional moving mobile robot chassis was unveiled.

2019

Launched the first Explosion-proof inspection robot chassis.

2020

The FR, DT, TK series UGV and open-source self-driving navigation system were released.

2021

Upgrading the performance of FR, FW, DT, TK and FB series chassis.

2022

The MK series chassis was released. Open-source ROS and Autoware autonomous navigation kits were launched.

2023

The FW lightweight version and DT desktop version mobile robot chassis were released.

2024

The FB-FW-IIC explosion-proof mobile robot platform was launched. FW-max and FW-max-pro heavy-duty robot chassis were launched.

2025

Launched NV-magic navigation kit and FR-mini chassis.

2026-FUTURE

We will provide more [stable](#) and [reliable](#) mobile robot solutions together with our partners to help people work easily.

● 2016-2025

Explore robotics applications with industrial pioneers and be honored as a national high-tech enterprise.

The FIRST in domestic

- 4WDWS inspection robot at substation;
- 30m Underwater operation robot;
- Firefighting Robot;
- Intelligent law enforcement defense robot;
- Underground pipeline operation robot with a range of 2km;
- Intelligent data collection robot at mining area;
- Outdoor last-mile delivery robot;
- Inspection robot for hazardous chemical scenarios;
- Ultra-lightweight reconnaissance and EOD robot;

● 2026

By leveraging robotics technologies developed and applied across multiple industries, focusing on modular mobile robot platforms, and enabling full-matrix series applications of outdoor mobile robot platforms, the company has expanded its enterprise partnerships beyond 4,000.

● Future

We will develop more excellencies together with partners.

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SOLUTIONS

Research and Educational
Robotics Platform

HONORS & QUALIFICATIONS



More than 20 honors and awards

National high-tech enterprise.

ISO9001/CE Certificate.

Specialized and New Enterprise in Shenzhen City

YUHESEN has received numerous government honors from 2013 to 2026, leveraging its technological advantages.



/CORE PATENTS



10+

Invention patents



50+

Utility patents



30+

Design patents



100+

Software copyrights



COOPERATIVE CLIENT



SELECTION GUIDE

Applicable sites	Indoor and outdoor smooth ground conditions (marble pavement, granite pavement, epoxy floor)		Indoor and outdoor multiple-scene complex road conditions (asphalt roads, grass, gravel roads, epoxy flooring, obstacle traversal, slope climbing)					
Drive Form	Differential Steering		Front Ackermann Steering and Rear Motor Drive					
Model No.	DT-mini	DT-mid	FR-mini	MK-mini	MK-mid	FR-mid	FR-max	FR-mega
Picture								
Dimensions	600*500*200mm	920*750*350mm	615*405*190mm	900*600*310mm	920*740*350mm	1320*785*490mm	1600*820*520mm	1880*1025*585mm
Payload	10kg	50kg	20kg	50kg	80kg	100kg	300kg	600kg
Max Speed (Full loads)	3km/h	5.4km/h	6.5km/h	9.7km/h	9.7km/h	8km/h	23km/h	10km/h
Mileage (Standard)	10km	10km	40km	60km	35km	45km	65km	95km
Removeable Battery	—	•	•	•	•	•	•	—
Battery Capacity	24V/10AH	48V/18AH	24V/10AH	48V/20AH	48V/18AH	48V/20AH	48V/40AH	72V/81AH
Battery Upgrade	—	—	24V/20AH	48V/40AH	—	48V/40AH	48V/70AH	—
IP Rating								

Applicable sites	Indoor and outdoor multiple-scene complex road conditions (asphalt roads, grass, gravel roads, epoxy flooring, obstacle traversal, slope climbing)						Outdoor Off-road conditions
Drive Form	Four Wheels Motor Drive and Swerve Steering(Omnidirectional Moving)						Tracked Drive
Model No.	FW-mini	FW-mini-pro	FW-mid	FW-mid-pro	FW-max	FW-max-pro	TK-mid
Picture							
Dimensions	565*380*255mm	565*380*255mm	725*515*440mm	725*515*440mm	940*558*395mm	940*558*395mm	1070*700*345mm
Payload	30kg	40kg	50kg	80kg	150kg	250kg	80kg
Max Speed (Full loads)	3.6km/h	5.4km/h	5.4km/h	5.4km/h	5.4km/h	7.2km/h	4.2km/h
Mileage (Standard)	40km	40km	40km	40km	50km	40km	10km
Removeable Battery	•	•	•	•	•	•	•
Battery Capacity	24V/20AH	24V/20AH	48V/20AH	48V/20AH	48V/40AH	48V/40AH	48V/40AH
Battery Upgrade	—	—	48V/40AH	48V/40AH	48V/70AH	48V/70AH	48V/70AH
IP Rating							

Applicable sites	Indoor and outdoor multiple-scene complex road conditions	
Applicable industries	Arsenal, weapon and ammunition depots, petroleum, chemical plants, ports and docks, oil storage depots, refineries	
Applicable Roles	Modular task operations, Hazardous operations, Data collection, Logistics operations, and various other robotic applications	
Model No.	FD-150B	
Drive Form	Four Wheels Motor Drive and Swerve Steering(Omnidirectional Moving)	
Application Scenarios	In hazardous chemical environments, both indoors and outdoors.	
Navigation Accuracy	±5cm	
Payload	120kg	
Weight	240kg	
Navigation & Localization Approach	Free Points Navigation Path Following Path Drawing Navigation	
Interaction	APP Control	
Secondary Development	API Interface	
IP Rating	IP65	
Runtime	4-8h	
Functions	Supports payloads and operational modules installation	

Applicable Sites	Indoor and outdoor semi-closed area(max mapping area 70,000~10,000m ²)		
Positioning Accuracy	±10cm	±10cm	±5cm
Applicable Field	Application-oriented research (across fields) and foundational technology research (in-depth)		
Model No.	OS-lite/lite2	OS-mate/mate2	NV-magic
Navigation Kit	Indoor ROS1/ROS2 Open Source 2D LiDAR SLAM Navigation Kit	Outdoor ROS1/ROS2 Open Source 3D LiDAR SLAM Navigation Kit	3D LiDAR SLAM Navigation Kit for Industrial Applications
Picture			
Mapping	•	•	•
Path Planning	•	•	•
Obstacle Avoidance	•	•	•
Positioning	•	•	•
Sensor Configuration	2D LiDAR+IMU+Ultrasonic+camera	3D LiDAR+Ultrasonic+IMU+camera	3D LiDAR+Ultrasonic+IMU+camera
Camera Recognition	•	•	•
Status Surveillance	•	•	•
Secondary Development	•	•	•
Open Source Code	•	•	•
Code Editing	•	•	•
APP	—	—	•
API Interface	—	—	•

Applicable Sites	Indoor and outdoor scientific research and teaching scenarios	
Model No.	OS-saturn	FW-vunes
Navigation Kit	Apollo Intelligent Connected Self-driving Kit (Not applicable to oversea regions)	Open Source Kit for Health-care Research
Picture		
Mapping	•	•
Path Planning	•	•
Obstacle Avoidance	•	•
Positioning	•	•
Sensor Configuration	3D LiDAR+Ultrasonic+GPS+IMU+camera+ Millimeter Wave+odom	vision+LiDAR+Ultrasonic+IMU+camera+odom
Camera Recognition	•	•
Status Surveillance	•	•
Secondary Development	•	•
Open Source Code	•	•
Code Editing	•	•
APP	—	—
API Interface	—	—

DT-mini

Differential Steering Mobile Robot Platform

- Open-Source Mobile Robot Function Design
- Robot Teaching, Autonomous Driving Learning
- Cutting-edge Research Exploration and Application Development Platform Optional



-Modular Structure Mobile Robot Function Design



-Lightweight Integrated Body Design



-Modular Rapid Expansion Development Platform

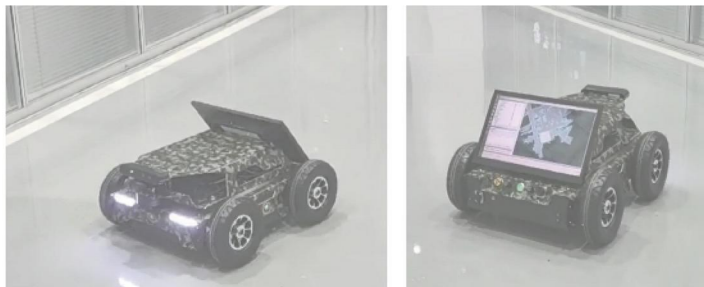


-Comprehensive Automotive-Grade Safety Assurance Design

• Application Field

Robot teaching, robotics and automotive technology research, ROS robot research education, electric vehicle autonomous driving education, and other new engineering education applications.

• Customer Case



Open Source ROS Educational Robot

• Product Parameter

Size	600*500*200mm	Power Supply	12V/10A
Weight	20kg	Braking Method	Motor braking
Drive Form	Differential steering, motor drive	Parking Method	Motor parking
Material	AL5052	Payload	10kg
Ground Clearance	57mm	Max Speed	3km/h
Wheelbase	360mm	Mileage	10km(empty load)/ 6km(full loads)
Wheel Track	448mm	Wading Depth	40mm
Tire Diameter	200mm	Climbing Capacity	30°(empty load)/ 10°(full loads)
Motor	100W*2 DC motor	Span Width	160mm(empty load)/ 120mm(full loads)
Battery	24V/10AH	Obstacle Surmounting	60mm(empty load)/ 50mm(full loads)
Charging Time	2-3h	IP Rating	IP22
Charging Method	24V/5A charging adapter	Communication	CAN2.0B
Optional Configuration	Open Source ROS Navigation Kit		

DT-mid

Differential Steering Mobile Robot Platform

- High precision all terrain 4WD design
- Modular platform for industrial application development



-  -Millimeter-Level chassis control accuracy
-  -Dual wishbone independent suspension
-  -All terrain 4WD design
-  -Modular Design with Multimodal Integration
-  -Comprehensive Automotive-Grade Safety Assurance Design

• Application field

Applicable across diverse industries such as energy, construction, agriculture, and manufacturing for scenarios like confined space inspection, performing integrated/modular operations, indoor/outdoor transportation, robotics education, and technological research in robotics.

• Customer Case



Robot for Construction Application

• Product Parameter

Size	920*750*350mm	Power Supply	48V/10A 24V/15A 12V/15A
Weight	70kg	Braking Method	Motor braking
Drive Form	Differential steering, motor drive	Parking Method	Electromagnetic power-off parking
Suspension	Independent suspension	Payload	50kg
Ground Clearance	150mm	Max Speed	5.4km/h
Wheelbase/Wheel Track	600mm/600mm	Mileage	10km(empty load)/ 6km(full loads)
Tire Diameter	324mm	Climbing Capacity	30°(empty load)/ 30°(full loads)
Motor	400W*4 Servo motor	Span Width	300mm(empty load)/ 250mm(full loads)
Battery	48V/20AH	Obstacle Surmounting	160mm(empty load)/ 150mm(full loads)
Charging Time	2-3h	IP Rating	IP42
Charging Method	48V/10 charging adapter	Working Temperature	-20C~50°C

Optional Configuration Open Source ROS Navigation Kit/NV Magic LiDAR SLAM Navigation Kit

MK-mini

Ackermann Steering Mobile Robot Platform

- Modular Mounting
- Intelligent Robot Platform
for Industry Application
Development



- Millimeter-Level chassis control accuracy
- Rapid Secondary Development
- Lightweight Integrated Body Design
- 4 wheels Independent Suspension

• Application Field

Scenarios including inspection, payload operation, indoor/ outdoor transportation, robot teaching, and robotic technology research in multiple industries such as energy, construction, agriculture, and industrial applications.

• Customer Case



Patrol Robot



Patrol Robot at Power Grid Plant

• Product Parameter

Size	900*600*310mm	Power Supply	48V/10A 24V/15A 12V/15A
Weight	55kg	Braking Method	Motor braking
Drive Form	Ackermann steering, Dual rear hub motor drive	Parking Method	Motor parking
Suspension	Independent suspension	Payload	50kg
Ground Clearance	93mm	Max Speed	9.7km/h
Wheelbase/Wheel Track	600mm/518mm	Mileage	60km(empty load)/ 40km(full loads)
Tire Diameter	240mm	Climbing Capacity	20°(empty load)/ 10°(full loads)
Turning Radius	1.5m	Span Width	160mm(empty load)/ 140mm(full loads)
Battery	48V/20Ah	Obstacle Surmounting	50mm(empty load)/ 50mm(full loads)
Charging Time	≤3h	IP Rating	IP44
Charging Method	48V/10A charging adapter	Working Temperature	-20°C~50°C
Optional Configuration	Open Source ROS Navigation Kit/NV Magic LiDAR SLAM Navigation Kit/ Apollo Self-driving Kit		

MK-mid

Ackermann Steering Mobile Robot Platform

- Modular Mounting
- Intelligent Robot Platform for Industry Application Development



-Millimeter-Level chassis control accuracy



-Rapid Secondary Development



-Modular Design with Multimodal Integration



-4 wheels Independent Suspension

• Application Field

Scenarios including inspection, payload operation, indoor/outdoor transportation, robot teaching, and robotic technology research in multiple industries such as energy, logistics, construction, agriculture, and industrial applications.

• Customer Case



Versatile Agricultural Robot



Air-Ground Collaborative Robot for Research

• Product Parameter

Size	920*740*350mm	Power Supply	48V/10A 24V/15A 12V/15A
Weight	71kg	Braking Method	Motor braking
Drive Form	Ackermann steering, Dual rear motor drive	Parking Method	Electromagnetic power off parking
Suspension	Independent suspension	Payload	80kg
Ground Clearance	150mm	Max Speed	9.7km/h
Wheelbase/Wheel Track	600mm/600mm	Mileage	35kme(empty load)/25km(full loads)
Tire Diameter	324mm	Climbing Capacity	20°(empty load)/10°(full loads)
Turning Radius	1.6m	Span Width	230mm(empty load)/180mm(full loads)
Battery	48V/20Ah	Obstacle Surmounting	90mm(empty load)/50mm(full loads)
Charging Time	2-3h	IP Rating	IP42
Charging Method	48V/10A charging adapter/station	Working Temperature	-20C~50°C
Optional Configuration	Open Source ROS Navigation Kit/NV Magic LiDAR SLAM Navigation Kit Autaware/Apollo Self-driving Kit		

FR-mini

Ackermann Steering Mobile Robot Platform

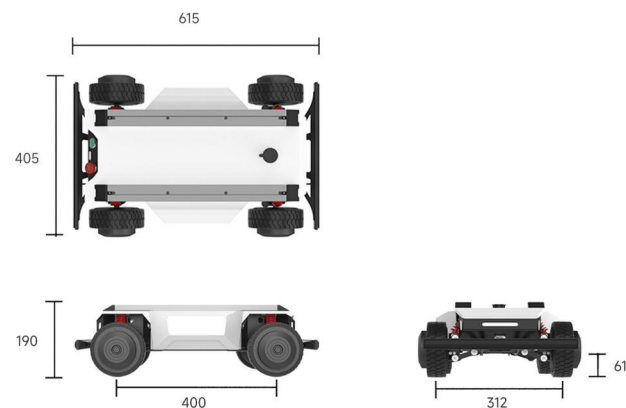
- Modular Mounting
- Intelligent Robot Platform for Industry Application Development



- Millimeter-Level chassis control accuracy
- Rapid Secondary Development
- Modular Design with Multimodal Integration
- 4 wheels Independent Suspension

• Application Field

Applications such as intelligent connected vehicle autonomous driving education, robot teaching, and research in the fields of robotics and automotive technology, as well as new engineering education applications like ROS robot research and education.



• Product Parameter

Size	615*405*190mm	Power Supply	BAT24V/10A 12V/10A
Weight	18kg	Braking Method	Motor braking
Drive Form	Front Ackermann steering	Parking Method	Motor parking
Suspension	Independent suspension	Payload	20kg
Ground Clearance	63mm	Max Speed	6.5km/h
Wheel Track	400mm/312mm	Mileage	40km(empty load)/17km(full loads)(10Ah) 80km(empty load)/35km(full loads)(20Ah)
Tire Diameter	140mm	Climbing Capacity	30°(empty load)/ 10°(full loads)
Motor	100W*2	Span Width	100mm(empty load)/ 90mm(full loads)
Battery	24V/10AH	Obstacle Surmounting	40mm(empty load)/ 30mm(full loads)
Charging Time	2-3h	IP Rating	IP22
Charging Method	24V/10A charging adapter	Working Temperature	-20°C~50°C
Optional Configuration	Open Source ROS Navigation Kit/NV Magic LiDAR SLAM Navigation Kit/ Charging Station		

FR-mid

Ackermann Steering Mobile Robot Platform

-Versatile UGV

- Autonomous Driving and Robotics Application Development Platform



-Millimeter-level intelligent response delivering control-by-wire precision.

-Connected Platform for Rapid Application Development

-Comprehensive automotive-grade security design

-Modular Robotic Control and Maintenance System.

• Application Field

Scenarios including inspection, payload operation, indoor/outdoor transportation, robot teaching, and robotic technology research in multiple industries such as energy, logistics, construction, agriculture, and industrial applications.

• Customer Case



Industrial Field Patrol Robot



Industrial Field Delivery Robot

• Product Parameter

Size	1320*785*490mm	Power Supply	48V/10A 24V/15A 12V/15A
Weight	125kg	Braking Method	Motor braking
Drive Form	Front Ackermann steering, rear motor drive	Parking Method	Electromagnetic power off parking
Suspension	Non-independent Suspension	Payload	100kg
Ground Clearance	115mm	Max Speed	8km/h
Wheelbase	600mm	Mileage	45km(empty load)/30km(full loads)(20Ah)
Wheel Track	665mm	Wading Depth	80mm
Tire Diameter	420mm	Climbing Capacity	20°(empty load)/10°(full loads)
Minimum Turning Radius	1.7m	Span Width	270mm(empty load)/200mm(full loads)
Battery	48V/20AH(Standard) 48V/40AH(Optional)	Obstacle Surmounting	90mm(empty load)/60mm(full loads)
Charging Time	2-3h	IP Rating	IP44
Charging Method	48V/10A charging adapter	Communication	CAN2.0B
Optional Configuration	Open Source ROS Navigation Kit/NV Magic LiDAR SLAM Navigation Kit/Apollo Self-driving Kit/Charging Station		

FR-max

Ackermann Steering Mobile Robot Platform

-Versatile UGV

- Vehicle-grade Comprehensive Safety Design
- Versatile Industrial Application Development Platform



-  -Automotive-grade robot platform
-  -300KG Loading Capacity
-  -Electronic Hydraulic Disc Brake System
-  -Comprehensive automotive-grade security design

• Application Field

Logistics, energy, construction, agriculture, and industrial sectors, among others, are industries where long-term inspections, heavy-load operations, heavy-load transportation, teaching of new energy vehicles, and research on autonomous driving in the automotive field are commonly applied.

• Product Parameter

Size	1600*820*520mm	Power Supply	48V/20A 24V/15A 12V/15A
Weight	156kg	Braking Method	EHB+Motor braking
Drive Form	Front Ackermann steering and rear motor drive	Parking Method	EHB+Electromagnetic power off parking
Suspension	Non-independent Suspension	Payload	300kg
Ground Clearance	110mm	Max Speed	23km/h
Wheelbase	850mm	Mileage	65km(empty load)/30km(full loads)(40Ah) 120km(empty load)/55km(full loads)(70Ah)
Wheel Track	665mm	Wading Depth	100mm
Tire Diameter	420mm	Climbing Capacity	20°(empty load)/ 10°(full loads)
Minimum Turning Radius	2.1m	Span Width	290mm(empty load)/ 200mm(full loads)
Battery	48V/40AH(Standard) 48V/70AH(Optional)	Obstacle Surmounting	110mm(empty load)/ 60mm(full loads)
Charging Time	≤4h	IP Rating	IP44
Charging Method	48V/10A charging adapter	Communication	CAN2.0B
Optional Configuration	Open Source ROS Navigation Kit/NV Magic LiDAR SLAM Navigation Kit/ Apollo Self-driving Kit/Charging Station		

Customer Case



Harbour Patrol Robot



Community Delivery Robot

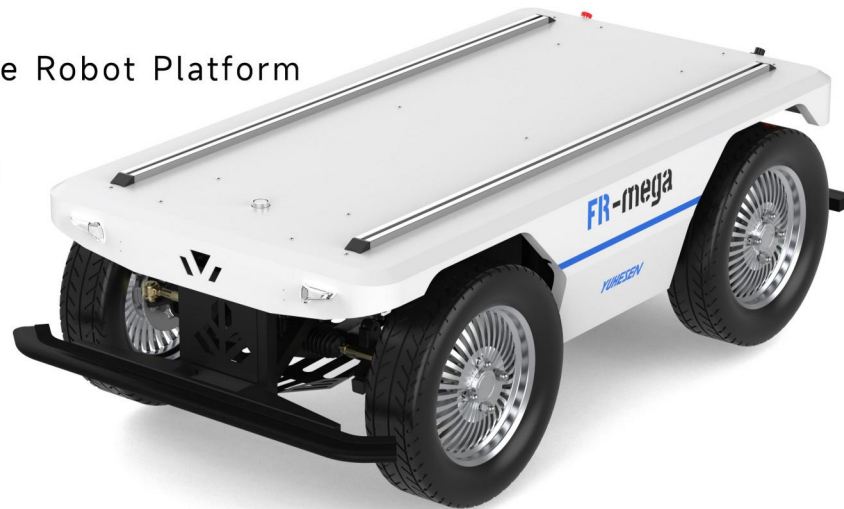
FR-mega

Ackermann Steering Mobile Robot Platform

-Versatile UGV

-Vehicle-grade Comprehensive
Safety Design

-Versatile Industrial
Application Development
Platform



- Automotive-grade robot platform
- 600KG Loading Capacity
- Electronic Hydraulic Disc Brake System
- Comprehensive automotive-grade security design

• Application Field

Logistics, energy, construction, agriculture, and industrial sectors, among others, are industries where long-term inspections, heavy-load operations, heavy-load transportation, teaching of new energy vehicles, and research on autonomous driving in the automotive field are commonly applied.

• Customer Case



Road Inspection Robot



Factory Transfer Robot

• Product Parameter

Size	1880*1025*585mm	Power Supply	72V/20A 24V/15A 12V/15A
Weight	300kg	Braking Method	EHB+Motor braking
Drive Form	Front Ackermann steering and rear motor drive	Parking Method	EHB+Electromagnetic power off parking
Suspension	Non-independent Suspension	Payload	600kg
Ground Clearance	125mm	Max Speed	10km/h
Wheelbase	1050mm	Mileage	95km(empty load)/ 75km(full loads)(81Ah)
Wheel Track	825mm	Wading Depth	125mm
Tire Diameter	508mm	Climbing Capacity	30°(empty load)/ 10°(full loads)
Minimum Turning Radius	2.6m	Span Width	300mm(empty load)/ 300mm(full loads)
Battery	72V/81AH	Obstacle Surmounting	140mm(empty load)/ 100mm(full loads)
Charging Time	≤4.5h	IP Rating	IP44
Charging Method	72V/20A charging adapter	Communication	CAN2.0B
Optional Configuration	Open Source ROS Navigation Kit/NV Magic LiDAR SLAM Navigation Kit/ Apollo Self-driving Kit/Charging Station		

FW-mini

Omnidirectional Mobile Robot Platform

- Modular Light-weight Design
- Industry application development platform



-  -Real-time response system with omnidirectional multi-motion models
-  -Light-weight Integrated Structure Design
-  -Comprehensive automotive-grade security design
-  -Long-time Running Mileage

• Application Field

Lightweight inspections, payload operations, indoor/outdoor transportation, robot teaching, and robotics technology research are common scenarios in multiple industries such as energy, construction, agriculture, and industrial applications.

• Customer Case



Road Patrol Robot



Industrial Data Collection Robot

• Product Parameter

Size	565*380*255mm	Power Supply	24V/10A 12V/15A
Weight	30kg	Braking Method	Motor braking
Drive Form	Swerve Steering and Motor Drive	Parking Method	Motor parking & kinematic parking pose
Suspension	N/A	Payload	30kg
Ground Clearance	50mm(suspension)/70mm(chassis)	Max Speed	3.6km/h
Wheelbase	360mm	Mileage	50mm
Wheel Track	280mm	Wading Depth	40km(empty load)/20km(full loads)
Tire Diameter	5.5-inch/140mm	Climbing Capacity	30°(empty load)/10°(full loads)
Motor	100W*4 wheel hub motor	Span Width	110mm(empty load)/100mm(full loads)
Battery	24V/20AH	Obstacle Surmounting	40mm(empty load)/40mm(full loads)
Charging Time	2-3h	IP Rating	IP44
Charging Method	24V/10A charging adapter	Communication	CAN2.0B
Optional Configuration	Open Source ROS Navigation Kit/NV Magic LiDAR SLAM Navigation Kit/Charging Station		

FW-mini pro

Omnidirectional Mobile Robot Platform

- Modular Light-weight Design
- Industry application development platform for small, portable omnidirectional robots



-  -Real-time response system with omnidirectional multi-motion models
-  -Light-weight Integrated Structure Design
-  -Comprehensive automotive-grade security design
-  -Long-time Running Mileage

• Application Field

Lightweight inspections, payload operations, indoor/outdoor transportation, robot teaching, and robotics technology research are common scenarios in multiple industries such as energy, construction, agriculture, and industrial applications.

• Customer Case



Community Patrol Robot



Power Grid Plant Inspection Robot

• Product Parameter

Size	565*380*255mm	Power Supply	24V/10A 12V/15A
Weight	30kg	Braking Method	Motor braking
Drive Form	Swerve Steering and Motor Drive	Parking Method	Motor parking & kinematic parking pose
Suspension	Independent suspension	Payload	40kg
Ground Clearance	50mm(suspension)/70mm(chassis)	Max Speed	5.4km/h
Wheelbase	360mm	Mileage	40km(empty load)/20km(full loads)
Wheel Track	280mm	Wading Depth	50mm
Tire Diameter	5.5-inch/140mm	Climbing Capacity	30°(empty load)/10°(full loads)
Motor	100W*4 wheel hub motor	Span Width	110mm(empty load)/100mm(full loads)
Battery	24V/20AH	Obstacle Surmounting	40mm(empty load)/40mm(full loads)
Charging Time	2-3h	IP Rating	IP44
Charging Method	24V/10A charging adapter/station	Communication	CAN2.0B
Optional Configuration	Open Source ROS Navigation Kit/ NV Magic LiDAR SLAM Navigation Kit	Working Temperature	-20°C~50°C

FW-mid

Omnidirectional Mobile Robot Platform

- Modvular Integrated Design
- Industry application development platform for omnidirectional robots



-  -Omnidirectional Multi-motions Models
-  -Modular Development
-  -Comprehensive automotive-grade security design
-  -Quick Removeable Battery

• Application Field

Lightweight inspections, payload operations, indoor/outdoor transportation, robot teaching, and robotics technology research are common scenarios in multiple industries such as energy, construction, agriculture, and industrial applications.

• Customer Case



Agriculture Fruits Harvest Robot



Patrol Robot in Power Grid System

• Product Parameter

Size	725*515*440mm	Power Supply	48V/10A 24V/15A 12V/15A
Weight	70kg	Braking Method	Motor braking
Drive Form	Swerve Steering and Motors Drive	Parking Method	Motor parking & kinematic parking pose
Suspension	Independent Suspension	Payload	50kg
Ground Clearance	90mm(suspension)/120mm(chassis)	Max Speed	5.4km/h
Wheelbase	400mm	Mileage	40km(empty load)/30km(full loads)
Wheel Track	420mm	Wading Depth	100mm
Tire Diameter	240mm	Climbing Capacity	20°(empty load)/15°(full loads)
Motor	350W*4 wheel hub motor	Span Width	160mm(empty load)/120mm(full loads)
Battery	48V/20AH	Obstacle Surmounting	60mm(empty load)/40mm(full loads)
Charging Time	2-3h	IP Rating	IP33
Charging Method	48V/10A charging adapter	Communication	CAN2.0B
Optional Configuration	Open Source ROS Navigation Kit/NV Magic LiDAR SLAM Navigation Kit/Charging Station		

FW-mid pro

Omnidirectional Mobile Robot Platform

- Modular Integrated Design
- Modular & Expandable Omnidirectional Robot for Industry Applications



-  -Omnidirectional Multi-motions Models Real-time System
-  -Modular Development System
-  -Comprehensive automotive-grade security design
-  -Quick Removeable Battery

• Application Field

nspections, payload operations, indoor/outdoor transportation, robot teaching, and robotics technology research are common scenarios in multiple industries such as energy, construction, agriculture, and industrial applications.

• Customer Case



Industry Furnace Inspection Robot



Industrial Leak Detection Robot

• Product Parameter

Size	725*515*440mm	Power Supply	48V/10A 24V/15A 12V/15A
Weight	70kg	Braking Method	Motor braking
Drive Form	Swerve Steering and Motors Drive	Parking Method	Motor parking & kinematic parking pose
Suspension	Independent Suspension	Payload	80kg
Ground Clearance	90mm(suspension)/120mm(chassis)	Max Speed	5.4km/h
Wheelbase	400mm	Mileage	40km(empty load)/30km(full loads)
Wheel Track	420mm	Wading Depth	100mm
Tire Diameter	240mm	Climbing Capacity	20°(empty load)/15°(full loads)
Motor	350W*4 wheel hub motor	Span Width	160mm(empty load)/120mm(full loads)
Battery	48V/20AH	Obstacle Surmounting	60mm(empty load)/40mm(full loads)
Charging Time	2-3h	IP Rating	IP33
Charging Method	48V/10A charging adapter	Communication	CAN2.0B
Optional Configuration	Open Source ROS Navigation Kit/NV Magic LiDAR SLAM Navigation Kit/Charging Station		

FW-max

Omnidirectional Mobile Robot Platform

- Industrial Application Development Platform for Heavy-Load Omnidirectional Robot

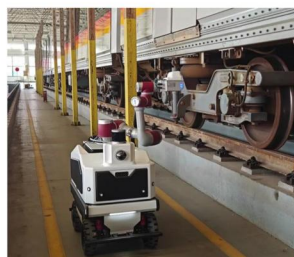


-  -Omnidirectional Multi-motions Models Real-time System
-  -Electromagnetic power off parking with multiple safty features
-  -Comprehensive automotive-grade security design
-  -Quick Removeable Battery
-  -Heavy-duty body design

• Application Field

Inspections, payload operations, indoor/outdoor heavy-duty transportation, robot teaching, and robotics technology research are common scenarios in multiple industries such as energy, construction, agriculture, and industrial applications.

• Customer Case



Metro Inspection Robot



Camera Robot

• Product Parameter

Size	940*558*395mm	Power Supply	48V/10A 24V/15A 12V/15A
Weight	120kg	Braking Method	Motor braking
Drive Form	Swerve Steering and Motors Drive	Parking Method	Motor parking & Electromagnetic power off parking
Suspension	Independent Suspension	Payload	150kg
Ground Clearance	53mm(suspension)/120mm(chassis)	Max Speed	5.4km/h
Wheelbase	600mm	Mileage	50km(empty load)/40km(full loads)
Wheel Track	450mm	Wading Depth	50mm
Tire Diameter	250mm	Climbing Capacity	20°(empty load)/10°(full loads)
Motor	600W*2	Span Width	150mm(empty load)/120mm(full loads)
Battery	48V/40AH	Obstacle Surmounting	60mm(empty load)/40mm(full loads)
Charging Time	4-5h	IP Rating	IP44
Charging Method	48V/10A charging adapter	Communication	CAN2.0B
Optional Configuration	Open Source ROS Navigation Kit/NV Magic LiDAR SLAM Navigation Kit/Charging Station		

FW-max pro

Omnidirectional

Mobile Robot Platform

- Industrial Application Development
- Platform for Heavy-Load
- Omnidirectional Robot



-  -Omnidirectional Multi-motions Models Real-time System
-  -Electromagnetic power off parking with multiple safety features
-  -Comprehensive automotive-grade security design
-  -Quick Removeable Battery
-  -Heavy-duty body design

• Application Field

Inspections, payload operations, indoor/outdoor heavy-duty transportation, robot teaching, and robotics technology research are common scenarios in multiple industries such as energy, construction, agriculture, and industrial applications.

• Customer Case



Wall Coating Robot



Renovation Robot

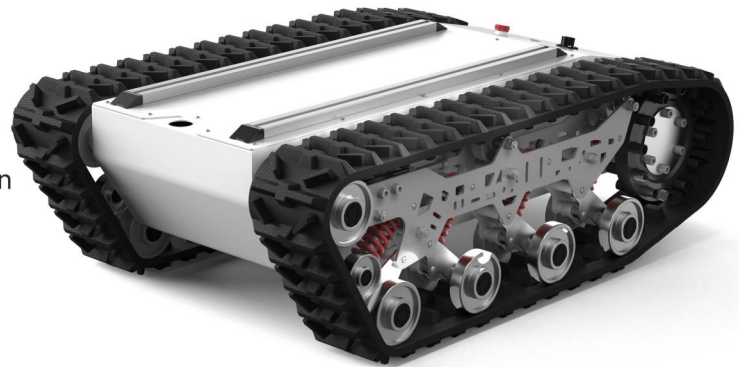
• Product Parameter

Size	940*558*395mm	Power Supply	48V/10A 24V/15A 12V/15A
Weight	130kg	Braking Method	Motor braking
Drive Form	Swerve Steering and Motors Drive	Parking Method	Motor parking & Electromagnetic power off parking
Suspension	Independent Suspension	Payload	250kg
Ground Clearance	53mm(suspension)/120mm(chassis)	Max Speed	7.2km/h
Wheelbase	600mm	Mileage	40km(empty load)/30km(full loads)
Wheel Track	450mm	Wading Depth	50mm
Tire Diameter	250mm	Climbing Capacity	20°(empty load)/10°(full loads)
Motor	600W*4	Span Width	200mm(empty load)/120mm(full loads)
Battery	48V/40AH	Obstacle Surmounting	110mm(empty load)/50mm(full loads)
Charging Time	4-5h	IP Rating	IP44
Charging Method	48V/10A charging adapter	Communication	CAN2.0B
Optional Configuration	Open Source ROS Navigation Kit/NV Magic LiDAR SLAM Navigation Kit/Charging Station		

TK-mid

Tracked Differential Mobile Robot Platform

- All Terrain High Precision Design
- Industrial all scenarios application development platform for tracked robot



-All terrain high precision kinematic structure design



-Christie Independent Suspension



-Modular Development System



-Comprehensive automotive-grade security design

• Application Field

Complex scene inspections, composite payload operations, indoor/outdoor transportation, robot application teaching, and robotics technology research are common scenarios in multiple industries such as agriculture, municipal services, and military applications.

• Customer Case



Agriculture Fruits Harvest Robot



Agriculture Operating Application Robot

• Product Parameter

Size	1070*700*345mm	Braking Method	Motor braking
Weight	140kg	Parking Method	Motor parking
Drive Form	Differential Steering and Motor Drive	Communication	CAN 2.0B
Suspension	Christie suspension Independent shock absorbers*8	Payload	80kg
Material	Q235	Max Speed	4.2km/h
Ground Clearance	103mm	Mileage	30km(empty load)/ 20km(full loads)(40Ah)
Wheelbase	570mm	Wading Depth	100mm
Tire Diameter	224mm	Climbing Capacity	30°(empty load)/ 15°(full loads)
Motor	1000W*2 DC brushless motor	Span Width	480mm(empty load)/ 250mm(full loads)
Battery	48V/40AH (Standard) 48V/70AH (Optional)	Obstacle Surmounting	200mm(empty load)/ 150mm(full loads)
Charging Time	48V/10A charging adapter	IP Rating	IP64
Charging Method	48V/10A 24V/15A 12V/15A	Operating Temperature	-20°C~50°C
Optional Configuration	Open Source ROS Navigation Kit/NV Magic LiDAR SLAM Navigation Kit/Charging Station		

FB-FW-IIC

Ex d IIC T6 Gb Elexplosion Proof 4T4D Mobile Robot Platform

- Design of IIC-class explosion-proof four-wheel drive motion structure
- Omnidirectional robot application development platform suitable for Elexplosion Proof scenarios



-  -EX IIC Explosion-proof Structure Design.
-  -Modular Development System
-  -Comprehensive automotive-grade security design
-  -Real-time response system with omnidirectional multi-motion models

• Application Field

Hazardous and Special Scenarios: Professional and Reliable Data Collection and Composite Operation Robot Platform for Flammable Gas and Dust Environments, Petrochemical Plants, Gas Stations, Hydrogenation Stations, Ammunition Depots, and Hazardous Chemical Ports. It possesses functions such as mapping, localization, autonomous navigation, path planning, and obstacle avoidance to meet the requirements of explosive hazardous environments.

• Customer Case



Robot for Data Acquisition and Operations in Hazardous Chemical and Specialized Energy Environments.

• Product Parameter

Size	1112*726*990mm	Power Supply	48V/10A 24V/15A 12V/15A
Weight	240kg	Braking Method	Motor braking
Drive Form	Swerve Steering and Motors Drive	Parking Method	Motor parking & Electromagnetic power off parking
Suspension	Independent Suspension	Payload	150kg
Ground Clearance	47mm(suspension)/ 85mm(chassis)	Max Speed	7.2km/h
Wheelbase	630mm	Mileage	45km(empty load)/ 35km(full loads)
Wheel Track	510mm	Wading Depth	45mm
Tire Diameter	250mm	Climbing Capacity	20°(empty load)/ 10°(full loads)
Motor	600W*4	Span Width	180mm(empty load)/ 150mm(full loads)
Battery	48V/50AH	Obstacle Surmounting	70mm(empty load)/ 50mm(full loads)
Charging Time	≤3h	IP Rating	IP65
Charging Method	48V/20A charging adapter	Communication	CAN2.0B
Optional Configuration	NV Magic LiDAR SLAM Navigation Kit/Robot Arm/Gas Sensor		

OS-lite/OS-lite2

ROS1/ROS2 2D LiDAR SLAM Open Source Navigation EDU Kit

-Convenient development and learning platform for autonomous navigation research and education in the fields of automotive and robotics.

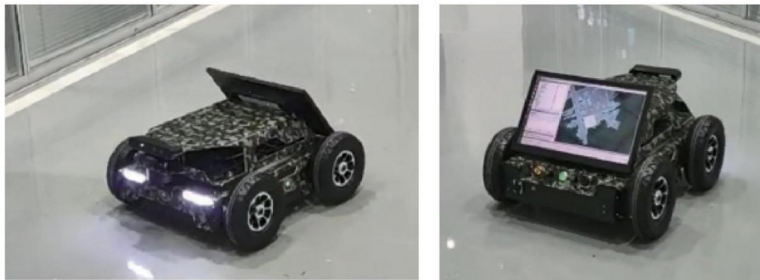


-  -High Accuracy Self-driving Motion Plan Teaching.
-  -Multi-layers teaching and research in application, from industrial application to professional learning.
-  -Robot Configuration Teaching.
-  -Modular Development and Design Teaching for Intelligent Driving Onboard Quick-release Modules.
-  -Graphical mapping, localization, path planning, and autonomous obstacle avoidance development and teaching.

• Application Field

Intelligent Connected Vehicle Autonomous Driving, Mobile Robot Component & Sensor Functional Training, and Algorithm Education Platform, supporting full open-source code for multi-level application, research, and teaching, from industry applications to professional learning.

• Customer Case



Open-source ROS robot for research and educational scenarios.

• Product Parameter

Navigation Config.	Industrial Computer, 2D LiDAR, Router, Display Monitor(optional), Depth Camera, IMU
Function	Based on ROS, control the movement of mobile robot chassis, enabling hardware assembly, decomposition training, and learning of autonomous driving. It includes learning features such as recording and tracking paths, obstacle detection, free navigation, track following navigation, and vehicle-road coordination for the use and learning of autonomous driving functions.
Computing Unit	Intel i5-8145U/2.1GHz
LIDAR	2D LiDAR
Cameras	640×480@30fps
Fusion Sensor	LiDAR, IMU, cameras
Available Chassis	FR series/FW series/MK series/DT series
Pre-installed OS	Linux/ROS1/ROS2
Navigation Accuracy	Indoor repeat positioning accuracy $\pm 10\text{cm}$

OS-mate/OS-mate 2

ROS1/ROS2 3D LIDAR

Open Source Navigation R&D KIT

Convenient Development and Learning
Platform for Multi-Scenario Research and
Education in the Field of Vehicles and
Robots.



-High Accuracy Industry-grade Self-driving Development and Teaching.



-Multi-layers teaching and research in application, from industrial applications to professional learning.



-Robot Motion Configuration Teaching.



-Teaching and Instruction on Quick-release Modular Payload Module Design & Development.



-Teaching on the Development of Autonomous Navigation Logic & Control with Multi-sensor Fusion for Industry Applications.

• Application Field

AI-driven industrial applications and mobile robotics research & teaching across diverse sectors, including automotive, energy, agriculture, and construction.

• Customer Case



Open-source Swarm Planning Robot



Open-source ROS robot

• Product Parameter

Navigation Config.	Embedded Computer, 3D LiDAR, Router, Display Monitor(optional), Inertial Navigation, Depth Camera, IMU
Function	Based on ROS, control the movement of a mobile robot chassis, enabling learning of indoor/outdoor three-dimensional point cloud map construction, autonomous driving functionalities such as map waypoint recording, obstacle avoidance, stopping for obstacles, free navigation, and path following.
Computing Unit	Intel i5-8265U/1.6GHz
LiDAR	16 Channels LiDAR
Cameras	640×480@30fps
Fusion Sensor	LiDAR, IMU, camera
Available chassis	FR Series/MK Series/FW Series/DT Series/TK Series
Pre-installed OS	Linux/ROS1/ROS2
Navigation Accuracy	Indoor & outdoor repeat positioning accuracy $\pm 10\text{cm}$

NV-magic

High-precision Low-speed Level 4 Commercial Autonomous Driving Kit.

Integrated Development and Application
Platform for Commercialization of Industry
Energy, Construction, and Agriculture
Scenarios.



-  -High-precision Dynamic Path Planning.
-  -Modular Expansion Development Platform.
-  -Modular Rapid Map Construction for Mobile Applications.
-  -API Interface Protocol.

• Application Field

Commercial Applications and Research Education of Mobile Robots in Artificial Intelligence Industry Scenarios such as Automotive, Energy, Agriculture, and Construction.

• Customer Case



Commercial Autonomous
Delivery Robot



Intelligent Connected Educational Robot

• Product Parameter

Navigation Config.	Embedded Computer, 3D LiDAR, Router, Display Monitor, Depth Camera, Ultrasonic Radar, IMU
Function	Graphical interactive APP supporting various robot functionalities such as viewing, controlling, mapping, navigation, and parameter configuration. The app also showcases the capability to construct maps exceeding 300,000 m ² .
Computing Unit	Intel i5-8500
LiDAR	48 Channels LiDAR
Cameras	640×480@30fps
Ultrasonic Radar	Vehicle-grade Ultrasonic Radar
Fusion Sensor	LiDAR, IMU, camera, Ultrasonic Radar
Available Chassis	FR series/MK series/FW series/DT series/TK series
Pre-installed OS	Linux/ROS1
Positioning Accuracy	Indoor & outdoor repeating positioning accuracy ±10cm

OS-saturn

Apollo 3.0/7.0 Self-driving

Open Source EDU Kit

- Vehicle-grade chassis and Apollo open-source code.
- Efficient Development and Learning Platform for Research and Education in the Field of New Energy Vehicle Autonomous Driving.



- Millisecond-level Response Wire-Controlled Chassis and Teaching of Autonomous Driving Sensor Installation and Disassembly.
- Modular Development and Design Teaching for Intelligent Driving Onboard Quick-release Modules.
- Graphical mapping, localization, path planning, and autonomous obstacle avoidance development and teaching.
- Teaching on Autonomous Driving Safety Logic and Training Testing through Sensor Fusion.
- Teaching on the Application of Fully Open-source Autonomous Driving Code.
- High Accuracy Self-driving Motion Plan Teaching.
- Teaching Multi-level Application Research and Education from Industry Applications to Professional Learning.

• Application Field

Intelligent connected vehicle autonomous driving and mobile robot component & sensor functional training and algorithm education platform, with full open-source code support for multi-level application, research, and teaching, from industry applications to professional learning.

• Customer Case



Automotive Engineering Education Intelligent Connected Vehicle Training Robot

• Product Parameter

Navigation Config.	Embedded Computer, 3D LIDAR, Router, Display Monitor, Depth Camera, Millimeterwave Radar, IMU, Ultrasonic Radar, RTK, IMU
Function	Based on Apollo, control the movement of a mobile robot chassis, enabling hardware assembly decomposition training, and the use and learning of autonomous driving functionalities such as three-dimensional point cloud map construction, map waypoint recording and tracking, stopping for obstacles, path following navigation, and vehicle-road collaboration functions.
Computing Unit	NVIDIA AGX/Intel i9
LIDAR	16 Channels LiDAR
Cameras	1280*720
Ultrasonic Radar	Vehicle-grade Ultrasonic Radar
Millimeterwave Radar	250m Detecting Range
Fusion Sensor	LiDAR, IMU, camera, Ultrasonic Radar, Millimeterwave Radar
Available Chassis	FR-mid/FR-max/MK-mid/MK-mini/FR-mega
Pre-installed OS	Linux/apollo 3.0/apollo 7.0

FW-venus

Open-source Navigation Kit for Healthcare Application Exploration

AI-driven Development and Application Platform for Commercialization of Medical Personal, Elder Care, and Senior Living.



-  -Smart Human-Robot Interaction
-  -End-to-end Autonomous Driving
-  -Modular Rapid Development and Expansion for Mobile Applications
-  -API Interface Protocol.

• Application Field

Commercial Applications and Mobile Robot Research & Teaching in AI-driven Industry Scenarios such as Medical, Personal, Elder Care, Senior Living.

• Product Parameter

Navigation Config.	Embedded Computer, 3D LiDAR, Router, Display Monitor, Depth Camera, Ultrasonic Radar, IMU
Function	Features autonomous interaction and advanced development capabilities. Supports the development of smart home service robots, smart rehabilitation robots for disabled individuals, and application robots for the visually impaired.
Computing Unit	Intel i5-8500
LiDAR	48 Channels LiDAR
Cameras	640X480@30fps
Ultrasonic Radar	Vehicle-grade Ultrasonic Radar
Fusion Sensor	LiDAR, IMU, camera, Ultrasonic Radar
Available Chassis	FW-max/FW-max pro
Pre-installed OS	Linux/ROS1
Positioning Accuracy	Indoor & outdoor repeat positioning accuracy $\pm 10\text{cm}$



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