INC ROBOTICS

THE WORLD's FIRST

MICRO FULFILLMENT CENTER LOGISTICS ROBOT

CARRYBOT

incrobotics.com

CONTENTS

CarryBot Features

Meet OrionStar CarryBot here

CarryBot Overview

CarryBot, launched by OrionStar Robotics, is the world's first logistics robot designed for Micro-Fulfillment Centers. Its versatile carrying attachments address various material transport needs, significantly boosting efficiency. CarryBot quickly adapts to changing environments using VSLAM+ technology, requiring no markers or facility modifications. Equipped with LiDAR, depth cameras, collision protection sensors, and emergency stop buttons, CarryBot ensures comprehensive safety, meeting MFCs' safety standards.

Versatile

Carrying Attachments

Flexible

Scene Adaptability

Safety

Multi-Layer Protection

Getting to Know CarryBot

Custom Fish-eye Camera

- Utilizes a Marker-Free Deployment approach to meet the deployment demands of large areas and high-ceiling environments.

14-inch 1080P Screen

- 14-inch large screen with high-definition resolution.

Solid & Stable Chassis

- High passability due to the quasi-circular chassis design.
- It fits various complicated ground environments, since adopting the Independent Suspension System.

CarryBot 1

Qualcomm Snapdragon Chip with 8-core

- World's first robot on Qualcomm platform with Snapdragon 845 chipset, scoring 265,000 on Antutu benchmark, making it one of the most powerful SOC chips in Android with industry-leading performance.

High Payload Delivery Needs

- It can effortlessly transport bulk goods, hefty components, and large inventory items. It's net payload up to 100kg.
- Flexible carrying attachments that adapt to a wide range of delivery tasks for various items.

Navigation Cameras and sensors

- Built-in 240° Lidar + 3D omnidirectional obstacle avoidance sensor achieves safer derliverys.
- RGBD*3 depth camera can detect small obstacles quickly and accurately.

Adapting Flexibly to the Delivery Tasks of Various Items.

CarryBot 1

CarryBot 2

CarryBot 3

Shelves shall prevail in kind

CarryBot 1 Key Specifications

Overall Size	650 mm x 525 mm x 1377 mm
Net Weight	48 Kg
Interactive Screen	14-inch, 1080 FHD
Typical Load	100kg
Marker-Free	V-SLAM
Microphone Array	6-Mic arrays, 360° sound source positioning, 5 m sound range
Hardware Platform	Qualcomm 8-core chip + industrial-grade MCU
Battery Life	9H (Tested with a 100kg load on marble floor)
Charging Time	4.5 H
Operation System	Android 9
Network Supports	4 G supports TDD-LTE, FDD-LTE WiFi supports 2.4 G/5 G
Navigation System	LiDAR*1 + Depth Vision Camera*3 + Fisheye Camera*2 + Infrared Camera*2 + Odometer + IMU*1

CarryBot 2 Key Specifications

Overall Size	650 mm x 525 mm x 1377 mm
Net Weight	58 Kg (CarryBot 2)
Interactive Screen	14-inch, 1080 FHD
Typical Load	30 kg per tray, 100 kg in total (including trays)
Marker-Free	V-SLAM
Microphone Array	6-Mic arrays, 360° sound source positioning, 5 m sound range
Hardware Platform	Qualcomm 8-core chip + industrial-grade MCU
Battery Life	9H (Tested with a 100kg load on marble floor)
Charging Time	4.5 H
Operation System	Android 9
Network Supports	4 G supports TDD-LTE, FDD-LTE WiFi supports 2.4 G/5 G
Navigation System	LiDAR*1 + Depth Vision Camera*3 + Fisheye Camera*2 + Infrared Camera*2 + Odometer + IMU*1

CarryBot 3 Key Specifications

Overall Size	Robot: 650 mm x 525 mm x 1377 mm Shelf: 405 mm x 825 mm x 937 mm
Net Weight	67 kg (robot 48kg + shelf 19 kg)
Interactive Screen	14-inch, 1080 FHD
Typical Load	100 kg (including shelf)
Marker-Free	V-SLAM
Microphone Array	6-Mic arrays, 360° sound source positioning, 5 m sound range
Hardware Platform	Qualcomm 8-core chip + industrial-grade MCU
Battery Life	9H (Tested with a 100kg load on marble floor)
Charging Time	4.5 H
Operation System	Android 9
Network Supports	4 G supports TDD-LTE, FDD-LTE WiFi supports 2.4 G/5 G
Navigation System	LiDAR*1 + Depth Vision Camera*3 + Fisheye Camera*2 + Infrared Camera*2 + Odometer + IMU*1

Product Functions

Getting to Know CarryBot

Versatile Carrying Attachments

- **The versatility of CarryBot attachments expands its application scope,** catering to various material handling needs**.**
- **This ensures smoother, more efficient, and seamless delivery.**
- **As a result,** productivity is boosted by 2-3 times.

CarryBot 1

Flexible Scene Adaptability

- **CarryBot utilizes VSLAM+ technology,** allowing it to quickly adapt to changes in production layouts without the need for tags or facility modifications.
- **It supports** multi-robot collaboration**, During peak periods or increased handling demands, CarryBot's numbers can be easily and swiftly increased.**

Multi-Layer Safety Protection

- **Equipped with multiple safety features, including LiDAR, depth cameras, collision protection sensors, and emergency stop buttons.**
- **These features enable the robot to** navigate precisely, quickly avoid obstacles, and rapidly stop operation in emergency situations.

High Payload Delivery Needs

- **CarryBot can effortlessly transport items within a micro-fulfillment center.**
- **These include small packages, daily goods, retail products, etc,.**
- **This eliminates the strain and safety risks associated with manual handling,** with a net payload capacity of up to 100kg.

The Versatile Carrying Attachments

The versatility of carrying attachments means that the CarryBot can be customized to the specific needs of any operation. Whether loose parts or packaged boxes, the robot can handle each delivery with precision and care.

Attachments are sold separately, please ask at the time of purchase.

Flexible Scene Adaptability

- Flexible Adaptability

  CarryBot utilizes advanced VSLAM+ technology, enabling it to quickly adapt to changes in production layouts without the need for markers or facility modifications.

  It supports multi-robot collaboration, During peak periods or increased handling demands, CarryBot's numbers can be easily and swiftly increased.

- Cost Reduction

  This significantly reduces both deployment labor costs and environmental modification expenses.

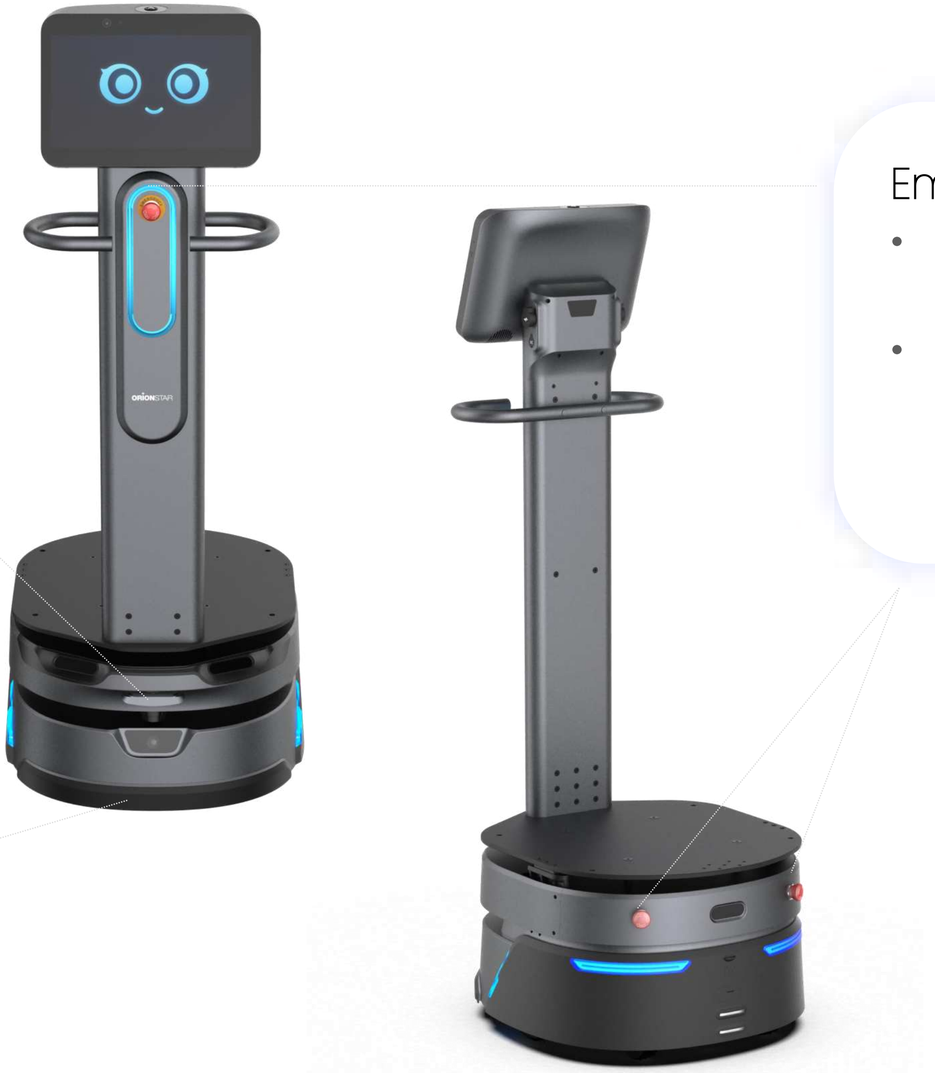
Multi-Layer Safety Protection

Navigation Sensors:

- Equipped with multiple navigation sensors, including LiDAR and three depth cameras.
- Ensures precise navigation and quick obstacle avoidance.

Collision protection bar:

- Equipped with contact-detecting sensors.
- Upon sensing a collision, it signals the control system to trigger an emergency stop, preventing further collisions.



Emergency stop buttons:

- Installed at the front and rear of the robot.
- Ensures that operators can quickly access them from any position around the robot.

Auto-Navigation and Precise Positioning

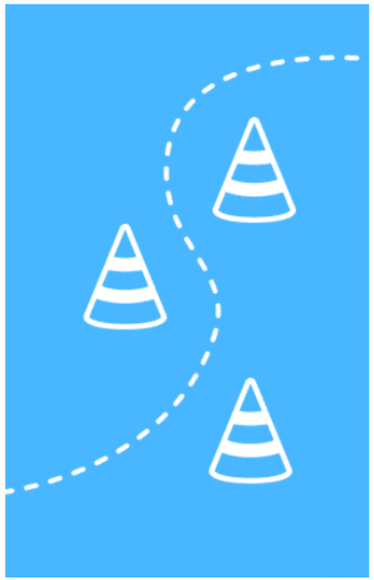
- Self-Navigation Technology

  CarryBot has state-of-the-art navigation technology that integrates laser-based Light Detection and Ranging (LIDAR) with sophisticated visual positioning systems.

- Precise Positioning and Quick Obstacle Aoidance

  It enables the robot to navigate complex environments autonomously, maneuver around obstacles with agility, and achieve pinpoint accuracy in positioning, ensuring delivery tasks are completed with increased safety and efficiency.

Intelligent Navigation



Obstacle Avoidance

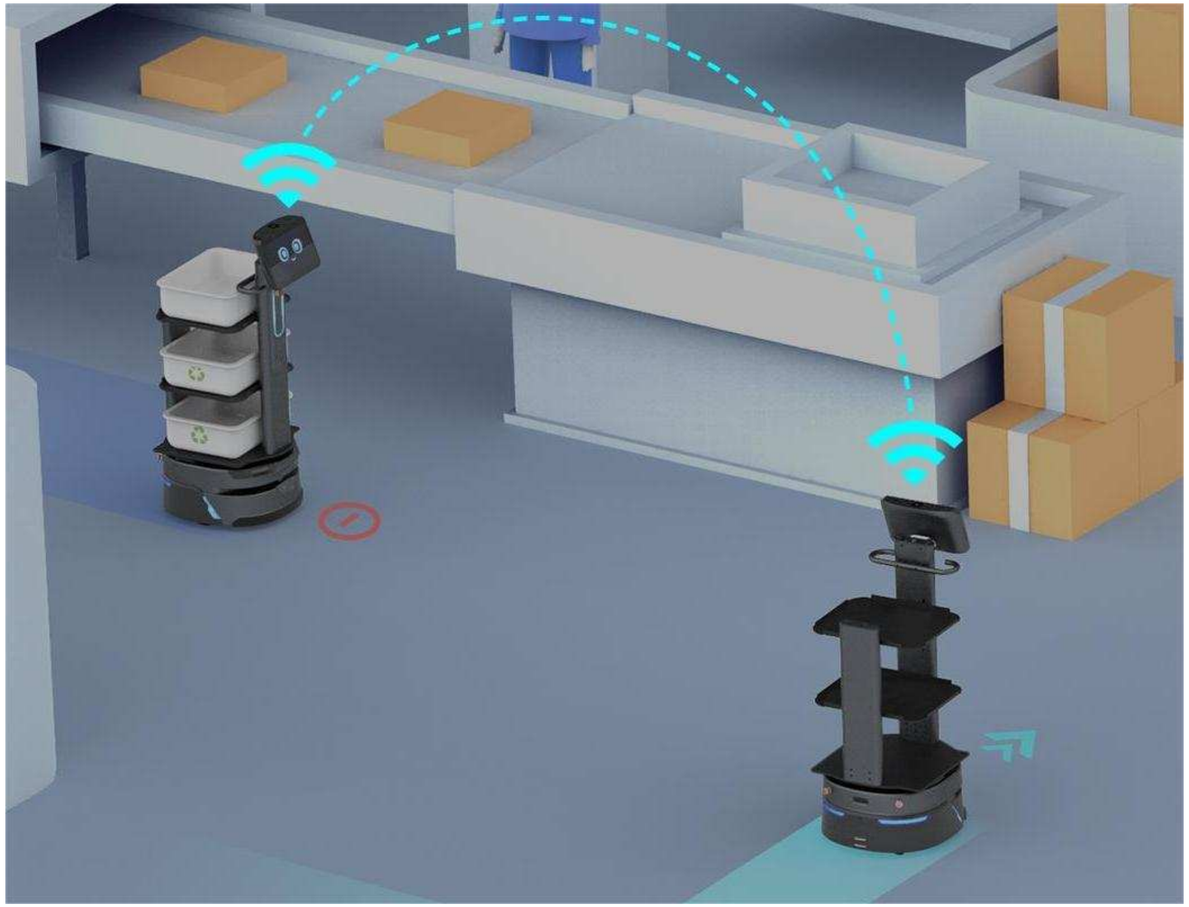
Multi-Robot Cooperation

- Intelligent Robot Path Planning

  When multiple CarryBots working in the same scenario meet at a fork in the road, they can autonomously avoid each other without human intervention by following the priority of the robot number and traveling intelligently.

- Improve Delivery Efficiency

  Multi-robot collaboration in Micro-Fulfillment Centers (MFCs) significantly enhances efficiency and flexibility



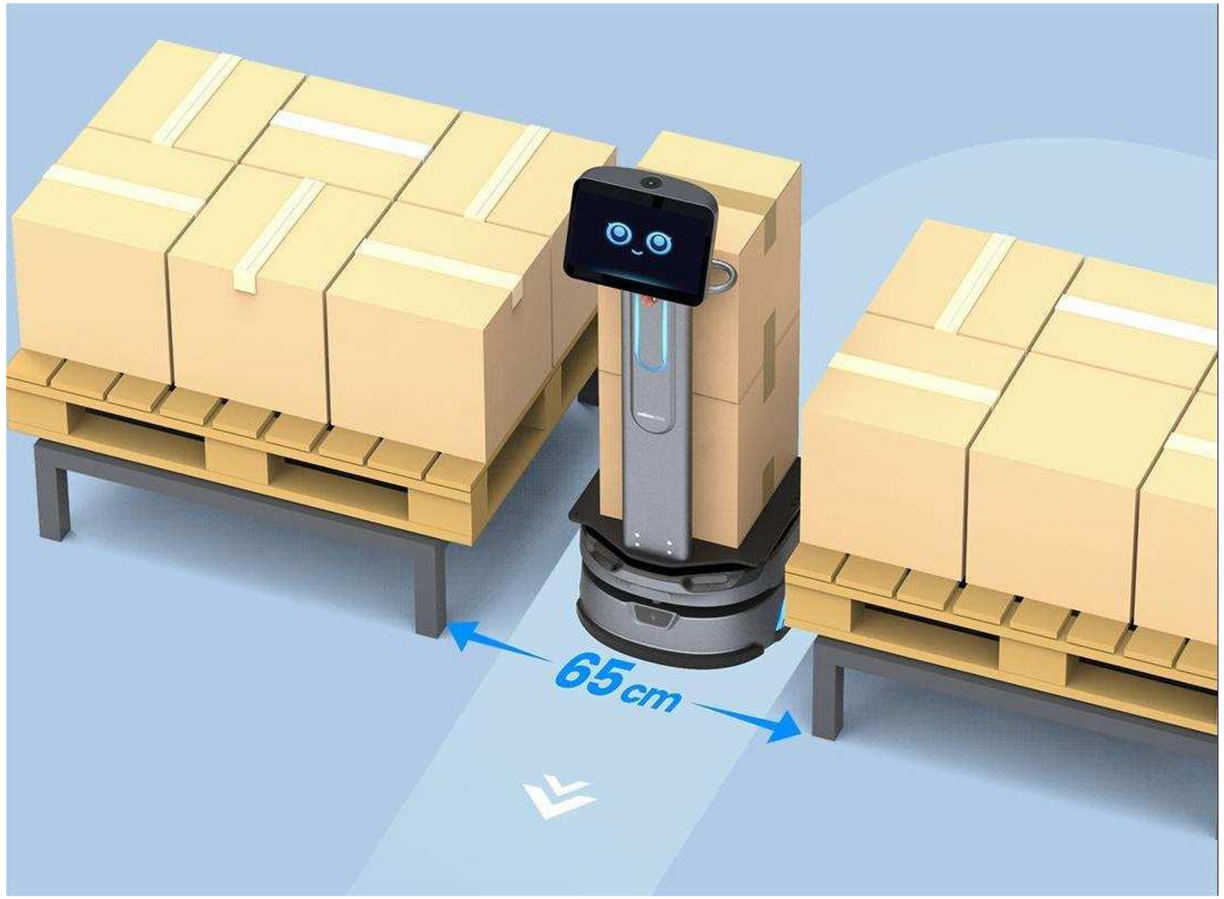
Flexible Passability

- 65cm Clearance Capability

  CarryBot navigates efficiently through a minimum clearance of 65 cm, making it an ideal solution for the constrained spaces often found in micro-fulfillment centers.

- Enhance Space Utilization

  This capability allows for optimal use of available space, enhancing the MFCs overall storage capacity and operational efficiency.



Advanced Chasis Design

- Advanced Chasis Design

  The high adaptability of CarryBot is achieved by adopting the Independent Suspension System.

  High passability due to the Quasi-circular Chassis design.

- Enhanced Environment Adaptability

  Effortlessly overcome 10 mm thresholds and 30 mm grooves to adapt to diverse ground conditions, reduce environmental modification costs, and improve work efficiency and safety.

Expansionary Battery, Powerful Endurance

Large Battery Capacity, Fast Recharge

- **Large battery capacity of 24.3Ah,** extended battery life up to 9 hours **(100 loads on marble floor).**
- **When power drops below 10%, it can** automatically return to the charger**.**
- **The robot can be** fully charged within 4.5 hours**, allowing it to quickly return to work.**

Industry-leading Secondary Development

• OPEN

50 server-side API interfaces, 23 client-side API interfaces **were opened.**

• EASY

Based on RobotOS, Android SDK made it as easy as mobile APP development.

• FAST

Exclusive plug-in based extra development technology, development cost is 1/10 of the industry standard.

Usage Scenarios

CarryBot - Application Cases

CarryBot is an optimal delivery solution for settings such as Micro Fulfillment Centers and Factories.

Micro Fulfillment Center

Factory

Warehouse

Supermarket

Point-to-Point Solution

Point-to-Point Delivery Solution **is mostly used for** automating material transfer between raw storage and production through autonomous point-to-point shuttling.

Introducing robots to shuttle between various fixed delivery points can effectively enhance factory efficiency.

Multi-Point Solution

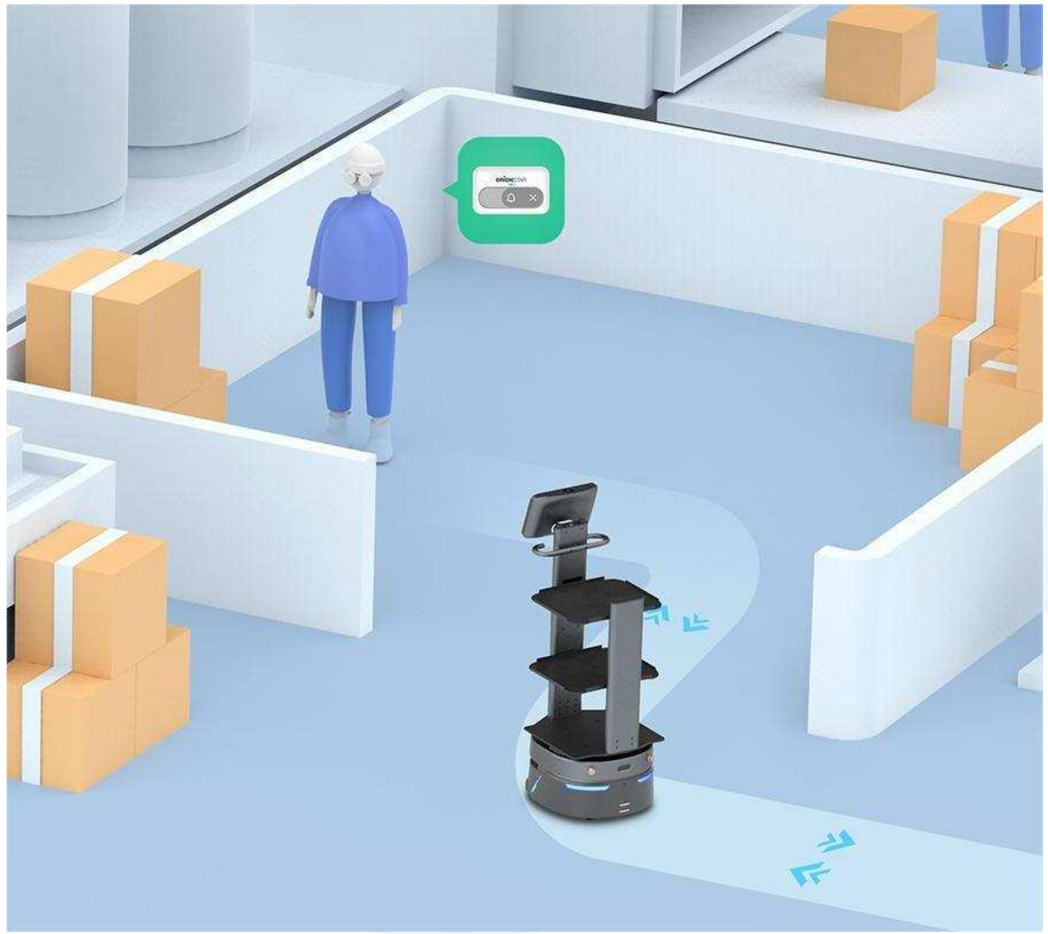
The Multi-Point Solution is used to address the multiple delivery points within a factory. By configuring stopping points, while also customizing the duration of each stop, robots can automatically navigate the production line.

Robots also used for collecting and transporting waste, enhancing cleanliness and safety.

Smart Summon Solution

The Smart Summon Solution is like a call bell for robots. Whenever assistance is needed, the robot will promptly go to the designated location.

This enables factory staff to summon robots in real-time to address the factory's temporary needs, thus enhancing delivery efficiency.



About Us

70,000+

Global Deployment Units

550,000,000+

Total Service Users

60+

Global Countries and Regions