

# User Manual

**J40**

Cleaning Robot



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# 1 Introduction

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## About this Manual

This manual provides detailed information about the product's components, functionalities, operating procedures, and technical specifications, aimed at helping users quickly understand the product and master the basic methods of use.




## Intended Audience

This document is primarily intended for the following professionals:

- Debugging, Testing, and Maintenance Engineers
- Technical Support Engineers
- End-users

## General Conventions

In this document, you may encounter the following symbols, which have the meanings as described:

Symbol	Meaning
	<p><b>Warning</b></p> <p>Texts starting with this symbol indicate potential hazards. Failure to follow the instructions may result in significant personal injury. To ensure the safety of the operating personnel, these instructions must be adhered to.</p>
	<p><b>Caution</b></p> <p>Texts beginning with this symbol denote potential risks. Non-compliance with the given operational steps could lead to mechanical damage.</p>
	<p><b>Note</b></p> <p>Texts starting with this symbol provide additional information to the main text. This includes emphasis and supplements to the main text or highlighting of important points.</p>

## Revision Record

No.	Version	Date
1	V1.0	October 8, 2023



# 2 Safety Information

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## 2.1 Environmental Requirements

- This product is designed for indoor use on hard, flat surfaces only. Suitable surfaces include marble, tile, PVC, epoxy flooring, wood floors, and short-pile carpets. It is not suitable for outdoor use, basements, long-pile carpets, or glass surfaces.
- Do not use the robot in environments where the temperature is below 0°C (32°F) or above 45°C (113°F).
- The robot can navigate slopes up to a maximum of 7.1°. Do not use it on surfaces steeper than this to avoid the risk of tipping over.
- The robot can overcome obstacles up to 20mm in height and cross gaps up to 30mm in width and 15mm in depth.
- Ensure a minimum clearance width of 75cm for the robot's path.
- It is not recommended to use the robot on heavily soiled surfaces. For light grease stains, the use of a designated cleaning agent is advised.
- In areas with stairs, steps, escalators, slopes, or drains, there is a risk of the robot falling. When mapping, add no-go zones or virtual walls. If possible, install physical barriers to facilitate the robot's navigation.
- Set no-go zones or virtual walls for hanging obstacles to prevent collisions in the robot's blind spots.

- Place the docking station on a flat surface against a wall or secured with connectors. Ensure an open space of approximately 1.8m x 1.5m in front of the station.
- The height of the waste outlet should not exceed 0.2m above the ground.

## 2.2 Usage Guidelines

- The robot requires creating a new map for its first use. Set up virtual walls and no-entry areas as per safety requirements.
- Black, highly reflective, transparent, or thin obstacles less than 3cm in diameter are hard to detect. Add stickers or other aids for better recognition.
- Do not pull the robot while it is running. To move the robot, first pause it by tapping its screen or pressing the pause button.
- Avoid pushing the robot in the opposite direction of its movement when it is powered on.
- Do not obstruct the robot's sensors and ensure they are kept clean.
- Avoid cleaning and maintaining the robot while it is powered on.
- Adjust the moving speed according to the on-site environment for safety.
- Do not block the robot's path suddenly during operation to prevent safety accidents.
- Use only the original charger for charging.
- When charging manually, it is advisable to press the emergency stop switch on the robot to prevent movement.

- Remove thin, ground-level objects like cords before use, as they may entangle the robot and are beyond its detection range.
- On slopes, ensure the robot is charged and set a safe charging threshold to avoid power loss or backward sliding risks.
- When powered off, place the robot on a flat surface to prevent sliding on slopes.
- After manually moving the robot, reposition it.
- If environmental changes cause positioning errors, follow the robot's interface guidance to help it recalibrate.
- If the robot is not in use for an extended period, keep the battery turned off.
- When removing or installing the wastewater filter box, ensure the suction pipe is properly detached or secured.
- The docking station should be placed in a designated location and not moved arbitrarily.
- If water and electrical modifications are required for the docking station, they should be carried out by professionals.
- Stop using the station immediately if there are anomalies in water supply or drainage.
- Ensure water pipe connections are tightened to prevent leaks.

# 3

## Product Overview

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### 3.1 Overview

The J40 is an all-in-one indoor cleaning robot that combines sweeping, washing, mopping, vacuuming, and dust pushing functionalities. It is designed for efficient and intelligent cleaning services, capable of automatic path planning, AI-driven active debris collection, and self-charging.

Its innovative four-in-one supply station is adaptable to various environments, meeting the indoor floor cleaning needs of offices, malls, subway stations, hotels, municipal buildings, commercial complexes, and hospitals. This product is compatible with a variety of hard surfaces including marble, PVC flooring, and short-pile carpets.

### 3.2 Product Features

#### 3.2.1 Sweeping Mode

This mode is suitable for cleaning solid waste on hard floors. It uses side brushes to gather debris towards the center, and the rolling brush then sweeps the debris into the dustbin. In this mode, the side brushes rotate and the rolling brush descends to the floor to start the sweeping operation. The dustbin should be emptied promptly after cleaning.

**Note**

Regularly check for tangled debris around the side and rolling brushes.

### 3.2.2 Mopping Mode

In this mode, the robot activates its roller mop. The water pump releases water to facilitate mopping. As the robot moves, the roller mop descends and rotates, scraping dirty water into the waste water transfer slot and pumping it into the wastewater tank.

### 3.2.3 Sweep-Wash Mode

This mode combines sweeping and washing functions. The sweeping function collects debris using rotating side and rolling brushes, while the washing function is achieved through the rolling brush and water pump. In wash mode, as the rolling brush descends and rotates, the water pump releases water, the drainer wiper lowers to the floor and the vacuum starts, allowing the robot to start washing.

### 3.2.4 Vacuum Mode

In this mode, the robot vacuums either hard floors or carpets. The side and rolling brushes rotate to sweep larger debris, while the vacuum mechanism descends to the floor to suck up fine dust as the robot moves.

### 3.2.5 Dust Push Mode

This mode activates the dust push function. The roller mop descends to the floor and starts rotating, with the default dust push range covering the entire effective area of the map.

### 3.2.6 Area-specific Cleaning

Using the HMI screen, users can select a cleaning mode after drawing a rectangular area on the map. The robot will then clean the designated area in the chosen mode (sweep, mop, sweep-wash, vacuum, or dust push).

### 3.2.7 Resume Cleaning after Interruption

If the robot detects low battery during a cleaning task, it will pause the task, autonomously return to the charging dock, and resume cleaning from where it left off once fully charged.

### 3.2.8 Automatic Mop Cleaning

During mopping tasks, the robot autonomously cleans the mop with fresh water and collects the dirty water into the wastewater tank.

### 3.2.9 Auto Resupply

When working, if the robot detects low battery, low fresh water, or full wastewater tank, it will activate the auto resupply function and immediately return to the charging dock. In manual mode, the homing function can be activated through the HMI screen.

### 3.2.10 Map Editing

The HMI screen allows for map editing, such as setting or deleting no-go zones, virtual walls, RGBD-camera-free zones, and ultrasonic-free zones.

### 3.2.11 Scheduled Tasks

After powering on, tasks can be scheduled in automatic mode via the HMI screen, including task name, map/area, cleaning mode, start time, and number of repetitions.

### 3.2.12 Cleaning Report

Upon completing a cleaning task, the robot automatically generates a cleaning report, which includes metrics like task name, cleaning duration, and efficiency.

### 3.2.13 OTA Updates

When the robot is powered on and connected to a network, the OTA update function can be initiated via the HMI screen to automatically upgrade to the latest software version.

# 4 Product Composition

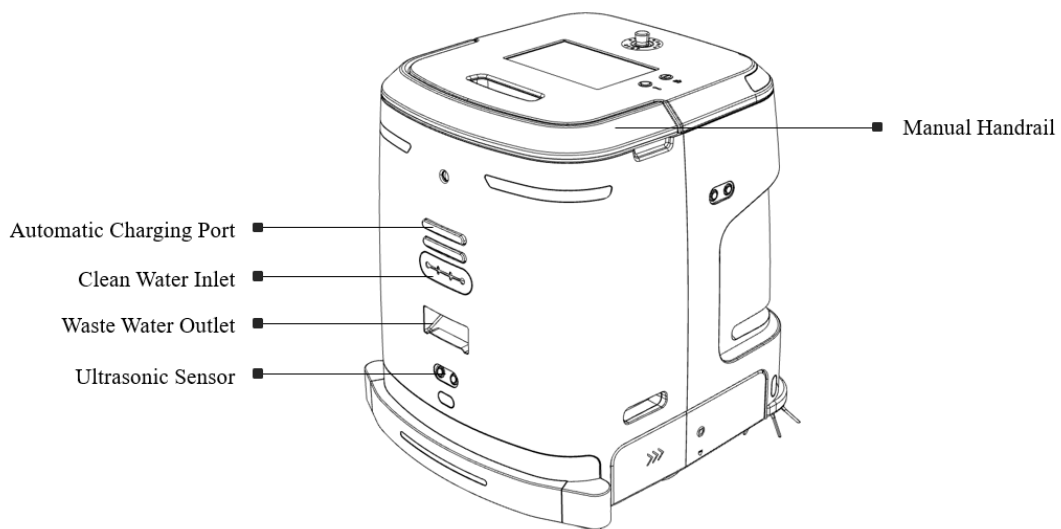
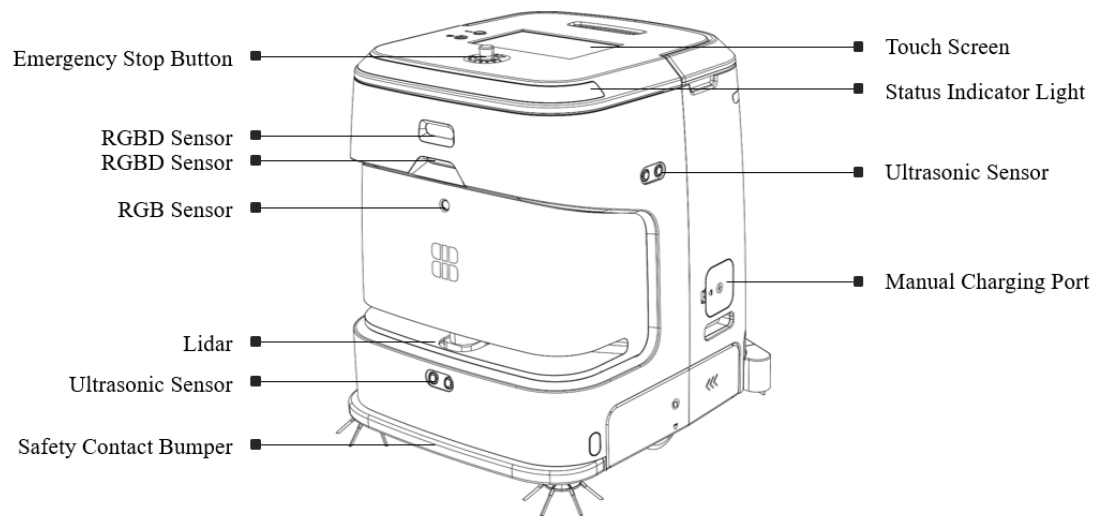
## 4.1 Packing List

No.	Name	Quantity	Unit
1	Robot	1	pcs
2	Charging Dock	1	set
3	J40 Water Pipe Connector Kit	1	set
4	User Manual	1	copy
5	Certificate of Conformity	1	copy
6	Warranty Card	1	pcs
7	Power Cord	1	pcs
8	Startup Keys	2	pcs

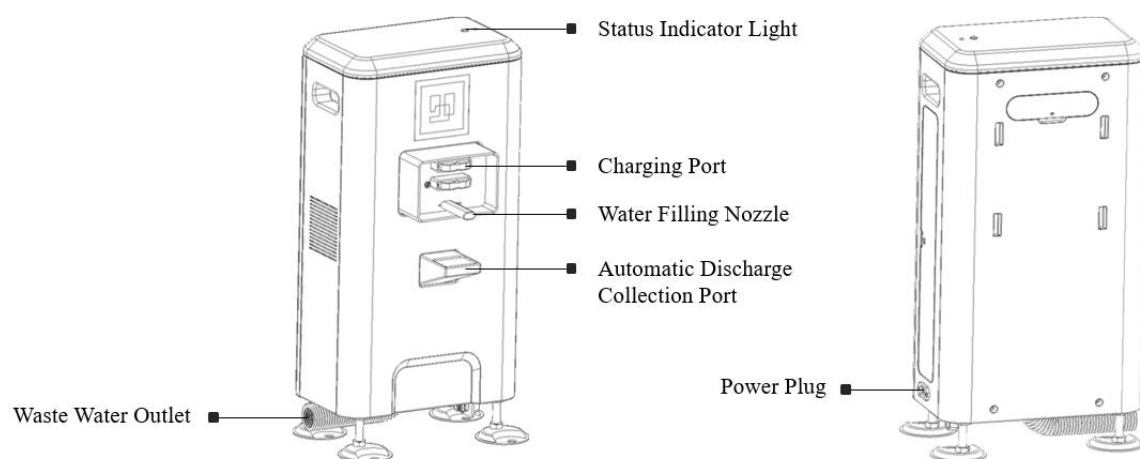
## 4.2 Robot Unit

The components of the robot unit are as shown in the diagram.





## 4.3 Docking Station

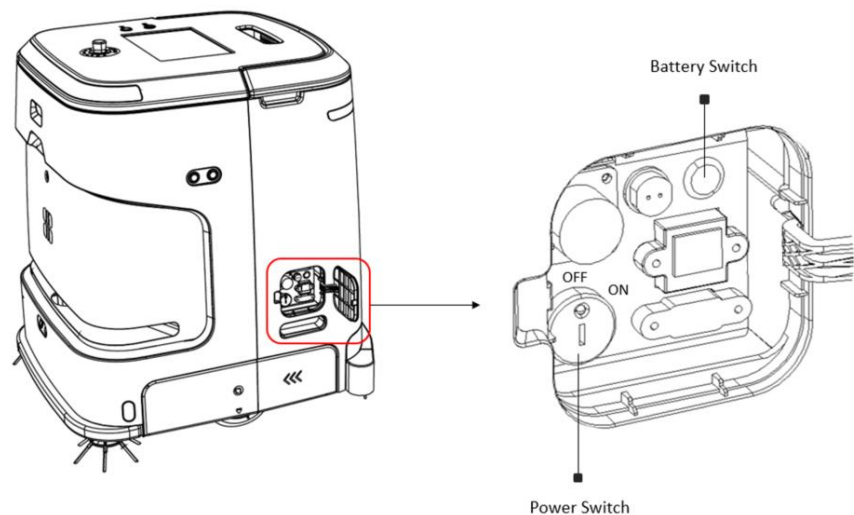


# 5 Tips to Use Our Product

## 5.1 Power On/Off

The power switch and battery switch are located under the right-side cover of the robot, as shown in the diagram.

- **Power On:** Ensure the battery switch is off, then rotate the startup key to the “ON” position; the robot will power on automatically.
- **Power Off:** Rotate the startup key to the “OFF” position; the robot will shut down automatically.
- **Battery Switch:** Press down the battery switch before using the robot; it locks in place when pressed, activating the battery.



**Note**

If the robot is not going to be used for an extended period, it is advisable to switch off the battery.

## 5.2 Emergency Stop

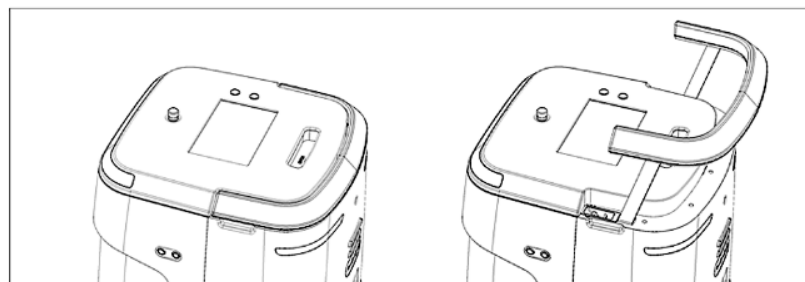
The emergency stop button is located on the top panel of the robot. In case of an emergency, press the button to immediately halt all movements and cleaning operations of the robot. To resume operations, twist open the emergency stop button.

**Note**

The emergency button is a supplementary safety measure and is not intended as a primary safety device.

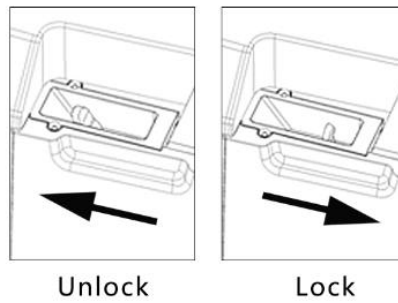
## 5.3 Using the Handle

The robot's handle can be manually extended for use. Once extended, lock it in place using the lock latch for ease of handling.



Handrail retracted

Handrail extended



## 5.4 Manual-Auto Switch Button

Press and hold the manual-auto switch button for 2 seconds to enter manual mode, where the robot only accepts manual commands and ignores automatic instructions. Press and hold the button again to switch back to automatic mode.

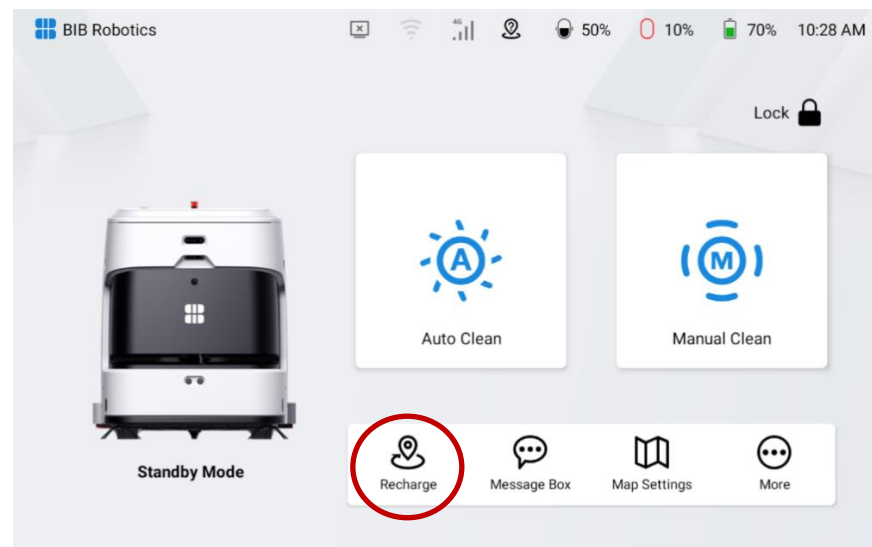
## 5.5 Charging the Product

### 5.5.1 Automatic Charging



The robot's charging dock uses contact-based automatic charging and supports the following scenarios:

- When the robot's battery is below 20%, it automatically returns to the charging dock, connects the charging dock via Bluetooth and then starts charging.
- The robot can be commanded to charge via the HMI interface: click the "Recharge" button on the HMI homepage, the robot will automatically move to the charging dock, connects the charging dock via Bluetooth and then starts charging.



## 5.5.2 Manual Charging

If the robot is low on battery and cannot charge automatically, open the manual charging cover on the docking station, take out the charging cable, and connect it to the robot's manual charging port.

## 5.6 Docking Station Installation and Deployment

### 5.6.1 Securing the Supply Station

The docking station should be installed on a flat surface, either against a wall or directly secured to the floor using floor anchors.

### 5.6.2 Wastewater Pipe Modification

The wastewater pipe on the docking station is a 50mm diameter expandable hose. It is recommended to install a wastewater drain within 25cm of the docking station. The drain should accommodate the manual wastewater hose and ensure continuous drainage into the building's main sewage system without leakage or seepage.

### 5.6.3 Water Supply Pipe Modification

The docking station can be supplied with tap water. The installation site should have a standard tap. The water pipe connection can use a 1/2 inch stop valve or a 1/2 inch external thread elbow, with a standard length of 2 meters from the water outlet to the docking station.



#### Note

If users have specific or unique requirements, these should be confirmed individually before shipment.



# 6

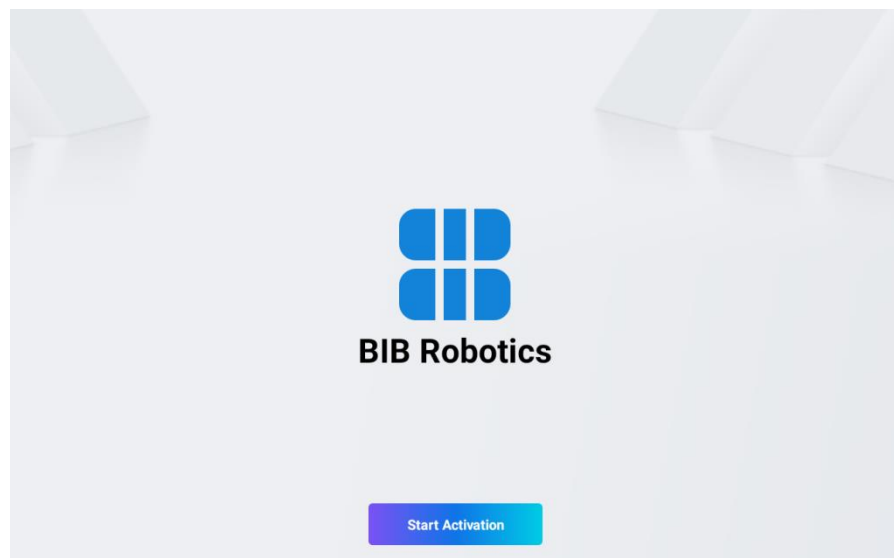
## How to use HMI

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### 6.1 How to activate interface

Step 1 Power on the robot, and the HMI enters the boot animation.

After the system loads, the activation process begins.



Step 2 Set the language and time zone.

### Language and Region settings (1/4)

Please select language

English (United Kingdom)	United Kingdom
English (United Kingdom)	United Kingdom
中文 (简体)	China
日本語	Japan

Please select area

Asia/Shanghai	China Standard Time
Africa/Abidjan	Greenwich Mean Time
Africa/Accra	Greenwich Mean Time
Africa/Addis_Ababa	East Africa Time
Africa/Algiers	Central European Standard Time

Next



#### Note

Currently, the available languages are Simplified Chinese, English, and Japanese.

Step 3 Choose either activation code activation or automatic activation.

Step 4 Network settings, with a preference for WIFI connectivity.

If WIFI is unavailable, select 4G connectivity.

### Activation Mode Settings (3/4)

Please connect to network [Refresh](#)

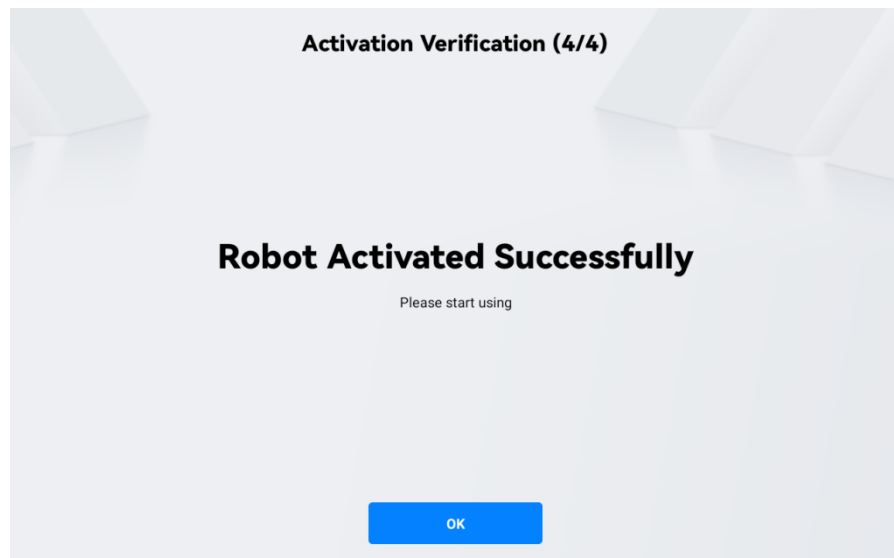
	GDYJH	Connected
	DCU-0822	
	SI-0343	
	TP-LINK_5C3C	
	N100-5G	

Previous Next

**Note**

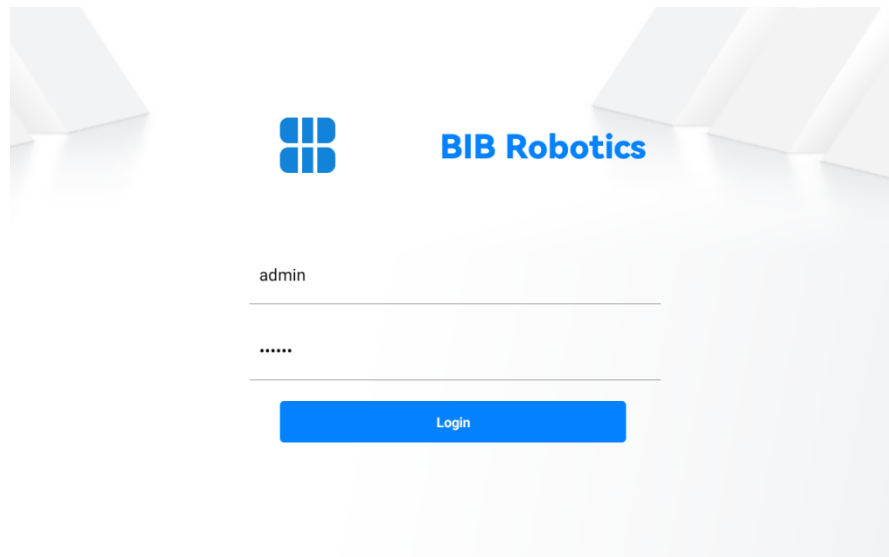
The module itself supports Bluetooth and WIFI full band, but the certified product only uses 2.4G Wi-Fi and Bluetooth, The module's Wi-Fi 5G function is described by software blocking.

Step 5: The robot obtains its activation status, which can be trial, official, or frozen. The trial page shows the trial period; once this ends, the robot enters a frozen state and needs to be restarted and reactivated.



## 6.2 Login Interface

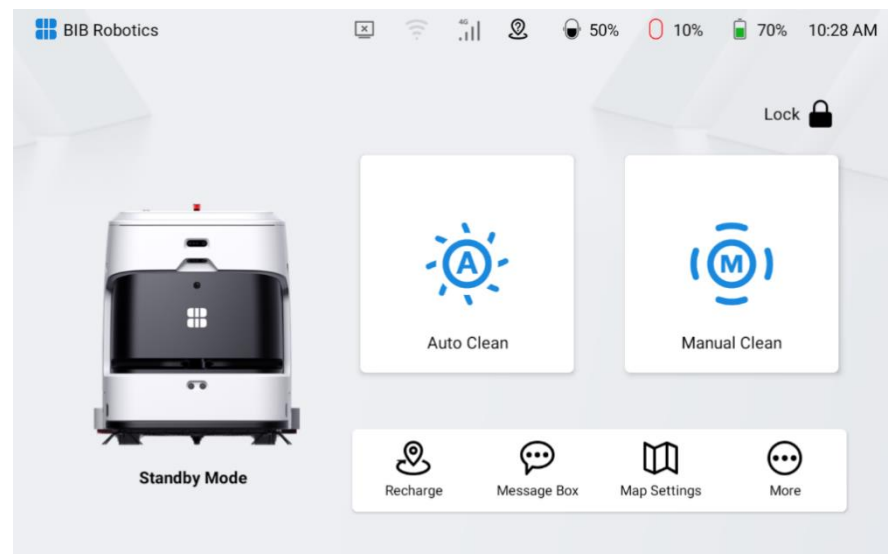
Enter your account and password to log into the device's homepage.



### 6.2.1 Homepage Interface

The homepage displays the device's basic status, such as network connection, positioning, wastewater level, clean water level, battery level, etc.

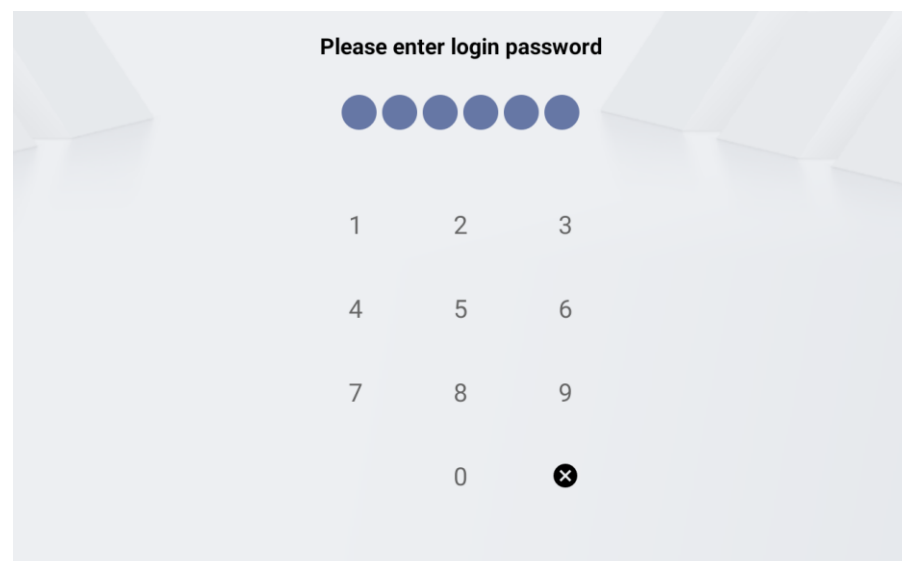
- **Automatic Cleaning:** Click to enter the automatic cleaning task page to create, delete, modify, view, and execute automatic cleaning tasks. Task copying and management are also available in this page.
- **Manual Cleaning:** Click to access the manual cleaning page for starting, setting, and using manual tasks.
- **Map Management:** Manage maps with options to add, delete, modify, or search.
- **More Functions:** Includes positioning initialization, task reports, quick movement, system settings, etc.



## 6.2.2 Lock Screen Interface

The lock screen is activated either by clicking the lock interface on the homepage or during automatic task execution.

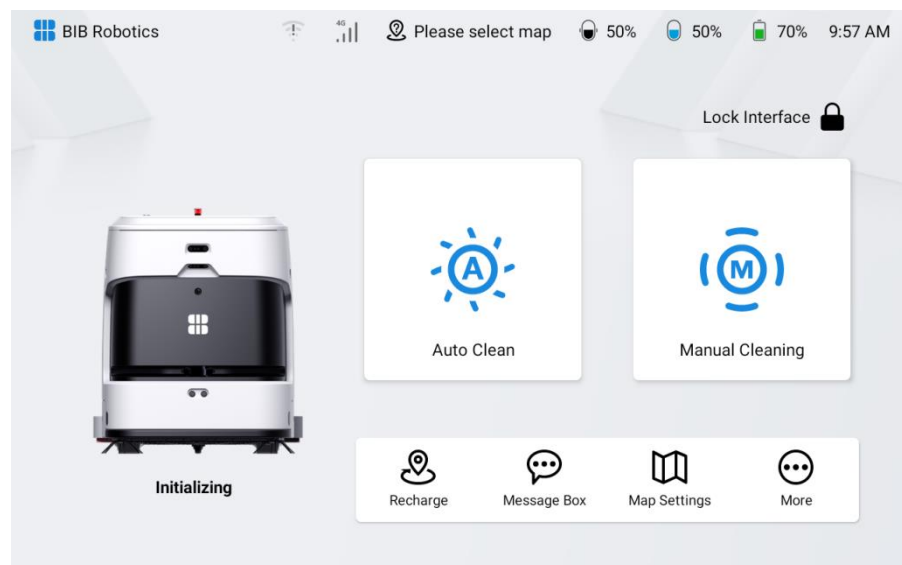
During a task, clicking to unlock will pause the task. If there is no activity for more than 15 seconds, the task will resume.



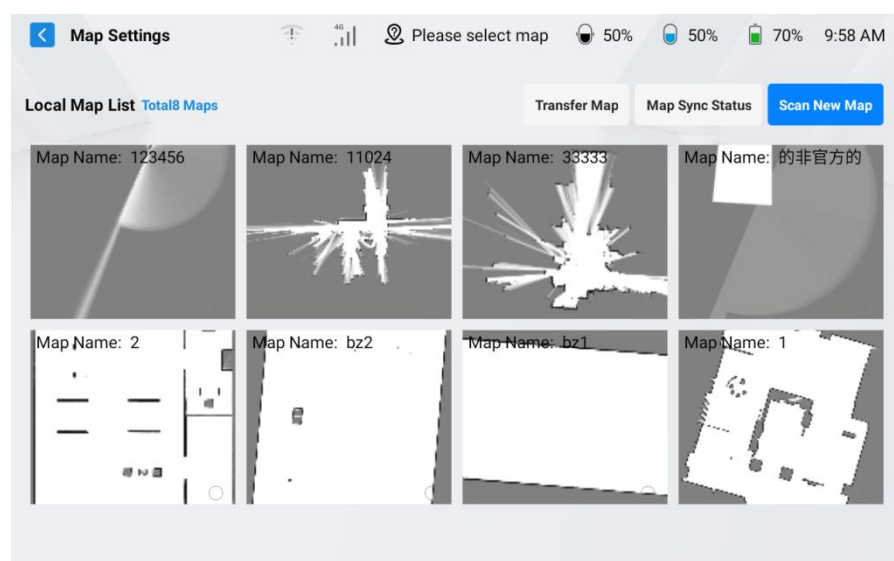
## 6.3 Map Management

### 6.3.1 Creating a Map

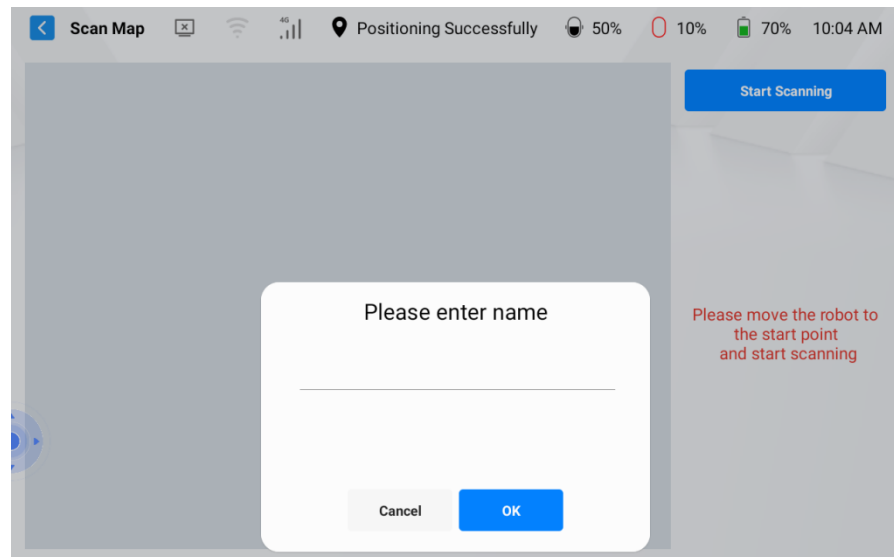
Step 1 Click 'Map Management' on the homepage to display a list of created maps.



Click on a map to view details, with options to edit, delete, extend, or switch maps.



Step 2 Click on “New Map Scanning” to create a map. Enter the map name and floor level.

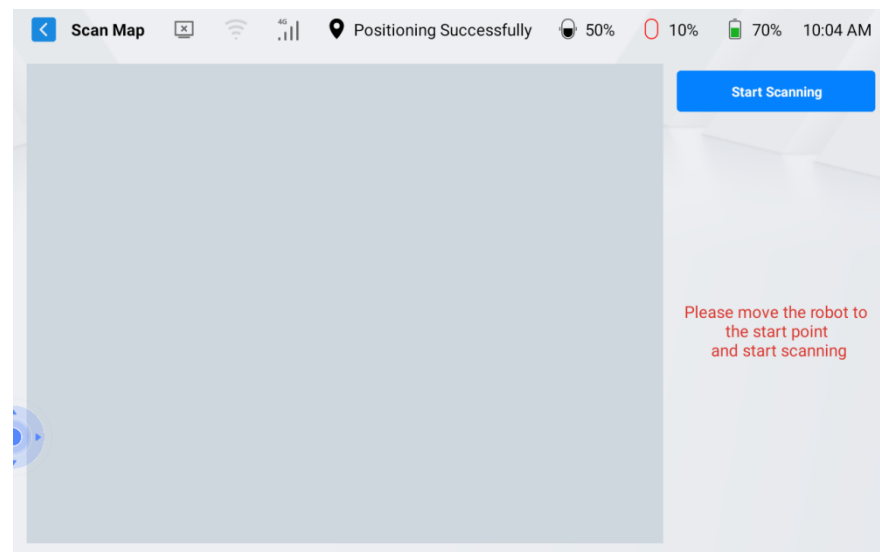


#### Note

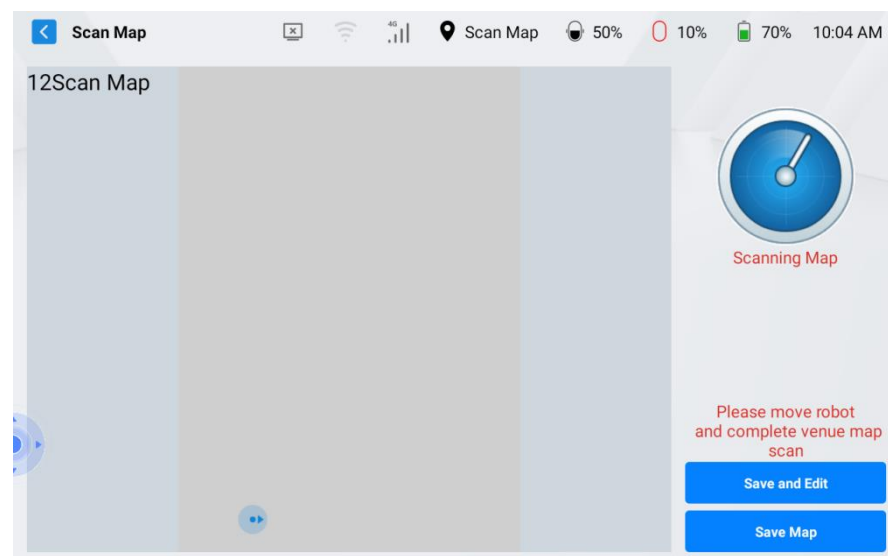


- The map name supports up to 25 characters and does not support special symbols.
- If the device's company supports elevators, select the floor information from the dropdown menu.

Step 3 Click “Start Scanning” to create a new map.

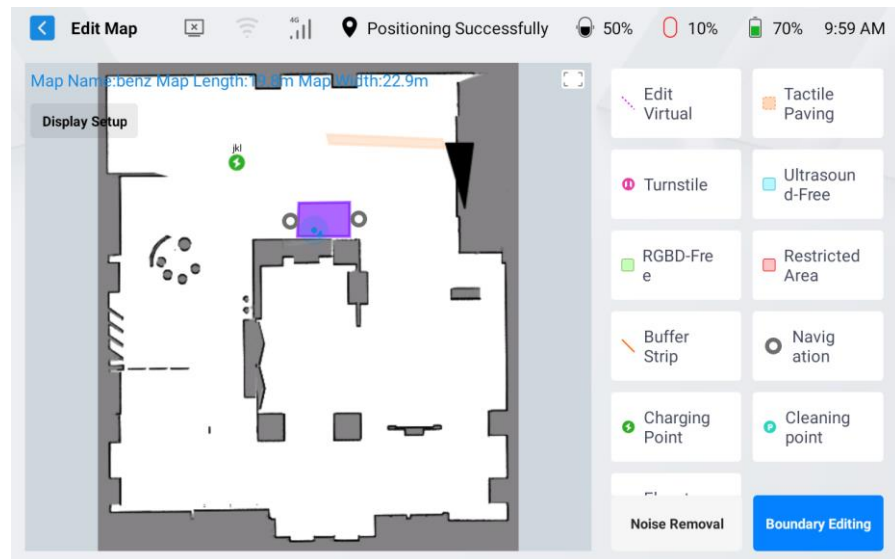


Step 4 Manually move the device to scan the mapping area. After completion, click save.



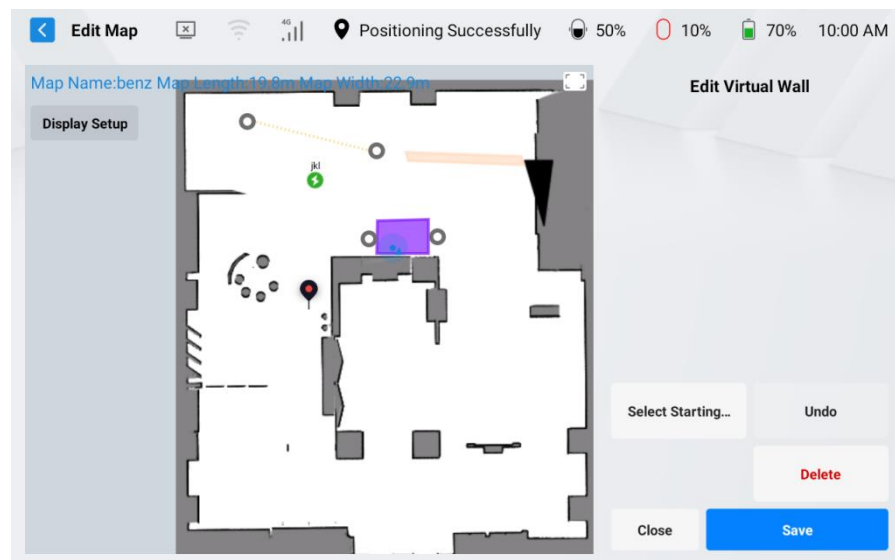
Step 5 After the scanning is completed, click 'Finish Scanning' and follow the guidelines to the map editing page. Here, you can perform original map editing (clearing noise and map patching) and map point editing.





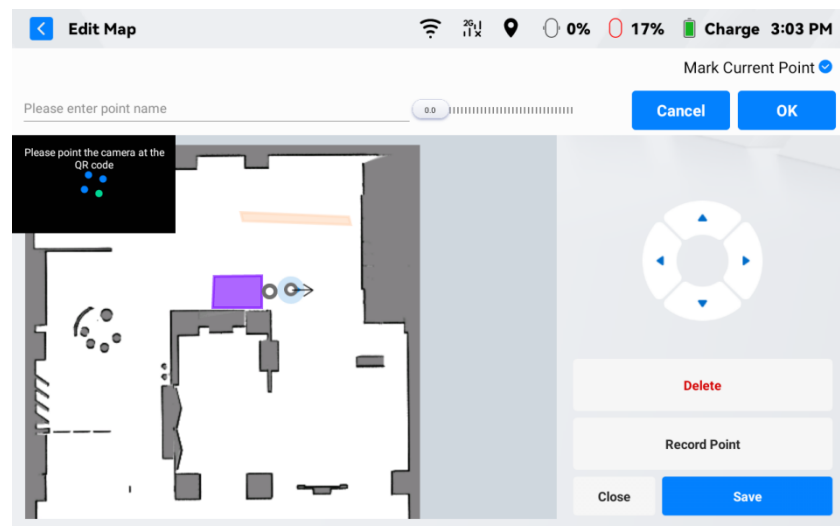
### 6.3.2 Editing Points

Map point editing varies based on accuracy requirements and includes both map drawing area methods and device demonstration methods.



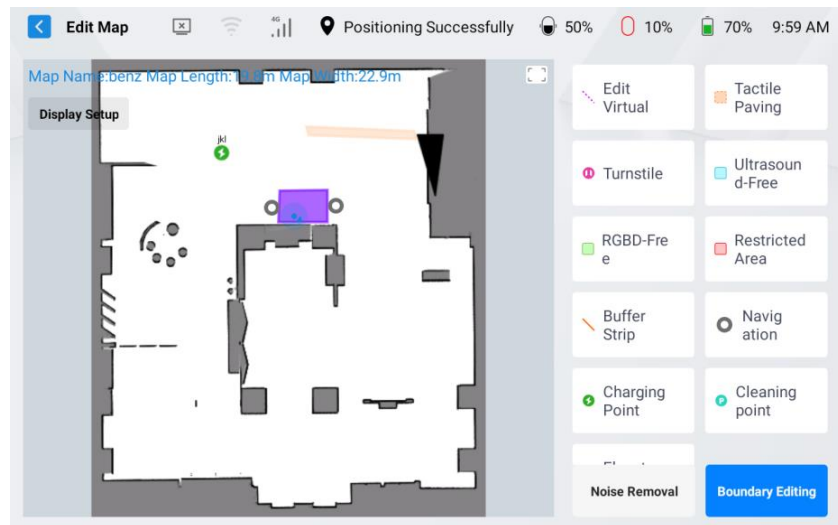
1. Drawing Area Method: Select points to define the required area for direct map operations.
  - No-Go Zones: Select an area to prohibit access.
  - Virtual Walls: Select a line segment to block access.

- RGBD-camera-free zone: Select an area to prohibit the use of the RGBD sensors.
- Ultrasonic-camera-free zone: Select an area to prohibit the use of the ultrasonic sensor.
- Buffer Zone: Select an area that allows passage but requires retracting cleaning mechanisms like the roller mop.



2. Device Teaching Method: Move the device to the location of the point to be recorded, with some features requiring orientation.
  - Supply Point: Single point, show device orientation, name the supply point (adding a supply point requires scanning a QR code).
  - Guide Path: Double points (start and end), need to adjust the guide path location.
  - Elevator: Elevator call point and elevator ride point, single point, show device orientation, select the elevator.

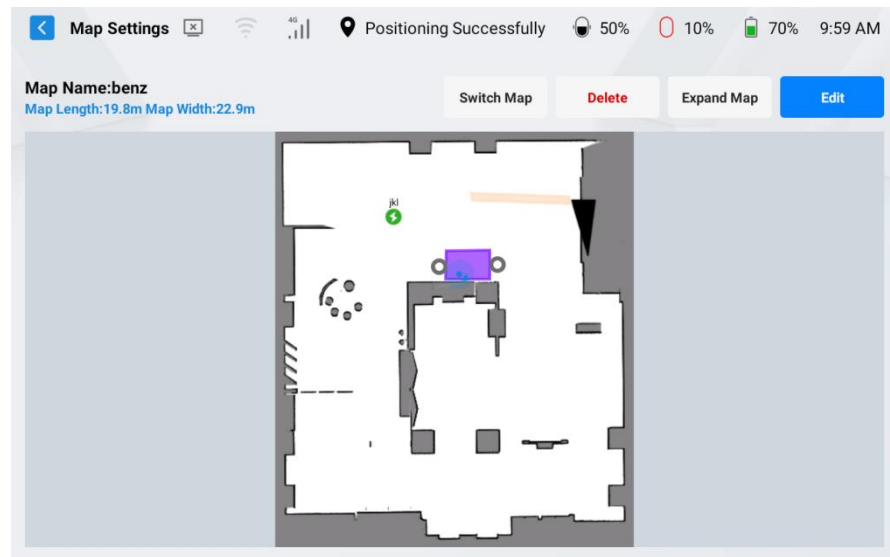
- Turnstile: Double points, select the turnstile.
- Ramp: Double points (start and end), set ramp ascent speed (currently unavailable).
- Navigation Point: Single point, show device orientation.



### 6.3.3 Modifying the Map

Click on a completed map to enter the map detail page, where you can modify and edit saved maps.

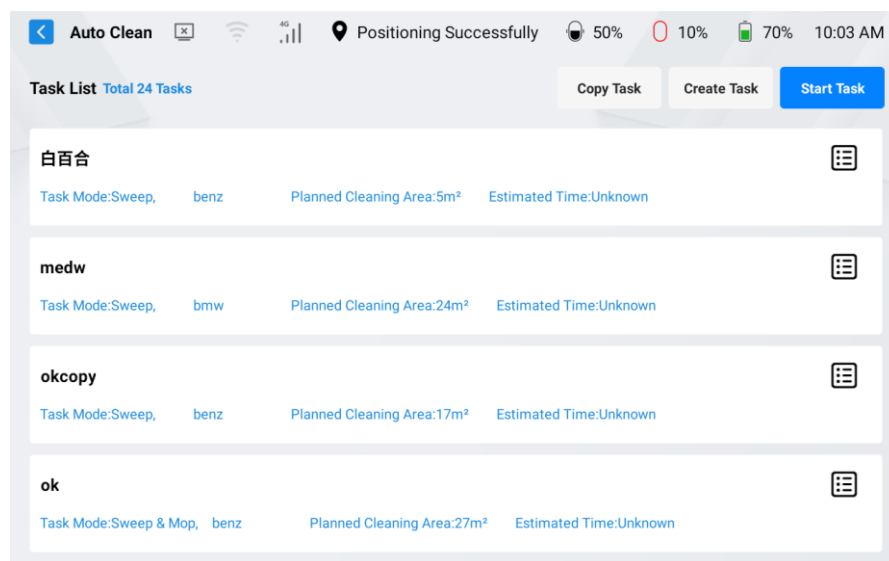
- Delete: Used to delete a saved map.
- Map Extension: Continue scanning to expand the area of an existing map, following the same process as creating a new map. Start within the saved map area and ensure the current positioning status is correct.
- Edit: Enter the map editing page to add, delete, modify, or view completed points.



## 6.4 Cleaning Functions

On the homepage, click “Automatic Cleaning” to enter the list of automatic cleaning tasks. The system displays created tasks.

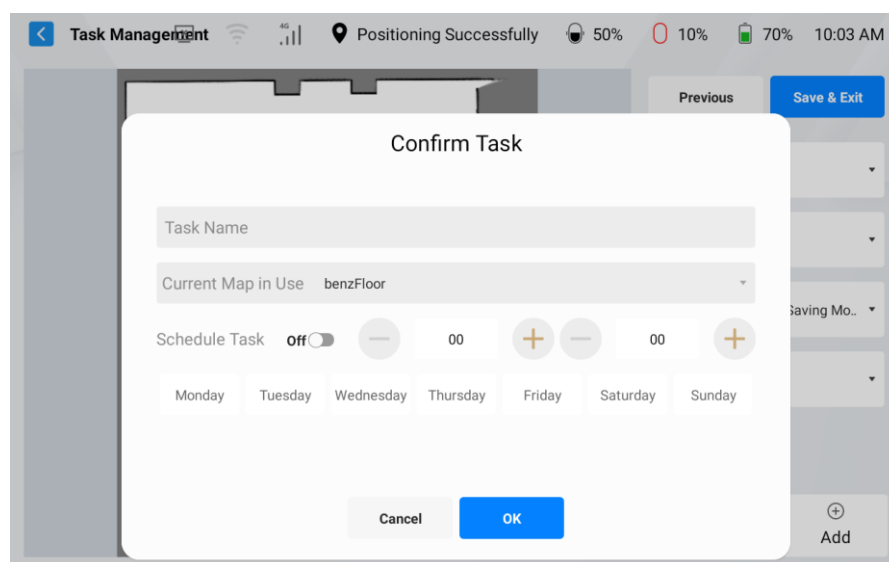
- **Create Task:** Click to start the process of creating a cleaning task.
- **Execute Task:** Select 1 to n tasks and execute them immediately in the chosen order.
- **Copy Task:** Select a task and click copy to create an identical new task.



## 6.4.1 Creating a Cleaning Task

Step 1 Click 'Create Task' to open a dialog box.

Enter the task name, select the required map, and set the scheduled task time (supports weekly cycles).



Step 2 After entering the information, click the confirm button to proceed to the next step.

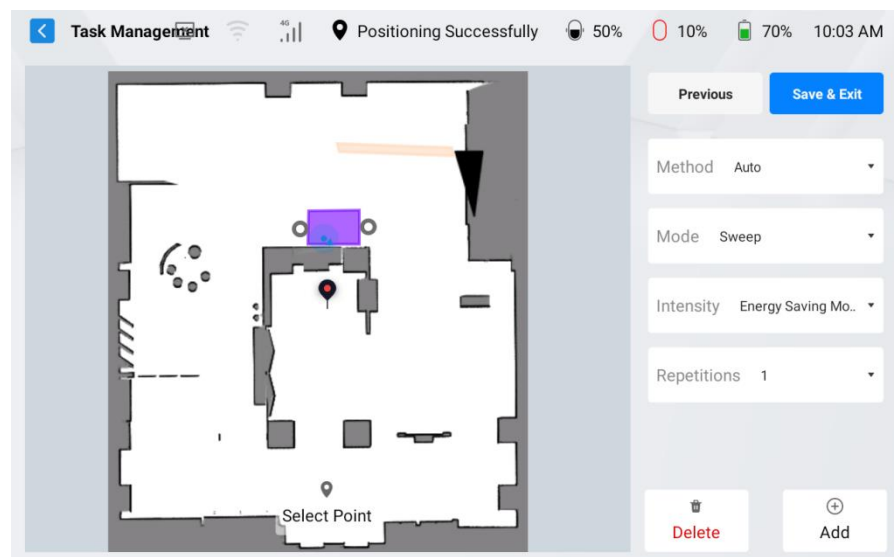
Step 3 Enter cleaning parameters.

- Modes: Choose from sweeping, vacuuming (with options for carpet or floor vacuuming), mopping (with options for water or no water), sweep-wash, or sweep-mop.
- Intensity: Options include energy-saving, standard, or strong.
- Repeat Count: Enter 1-99 times.
- Path Planning: Choose from automatic planning, automatic planning (along edges), manual drawing mode, or teaching mode.



#### Note

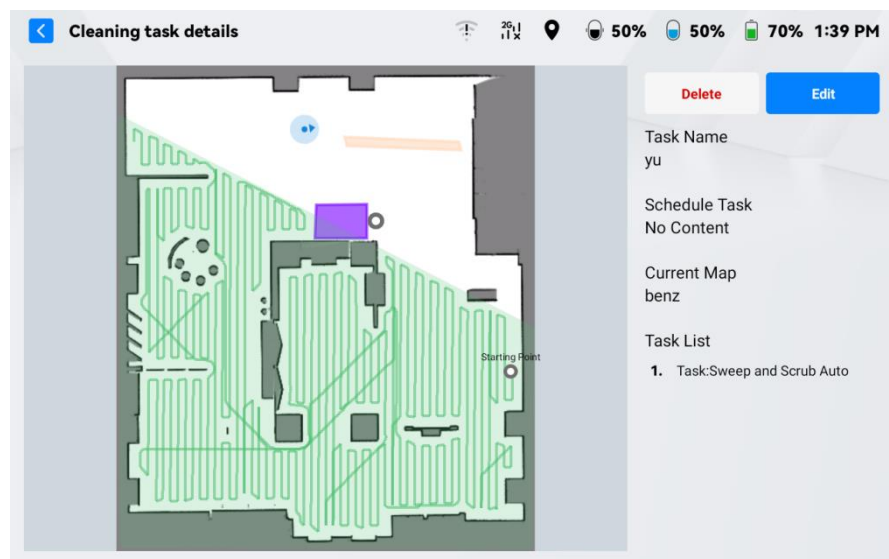
When selecting a planning method, the planning tools below adjust accordingly (automatic and manual point selection, teaching mode starts and ends).



Step 4 After completing the cleaning step settings for one area, click “Add” to set up the next area.

Step 5 Click finish to save the task and return to the task list page.

If the task cannot be saved, a popup will indicate the failure reason (such as the area being too small or large, or path generation failure). If successful, a success notification will appear.



#### Note

Click the details button in the task list to access the detail page, where tasks can be deleted or edited.

## 6.4.2 Executing a Task

There are two ways to trigger task execution: reaching the set task execution time and manually selecting a task to execute.

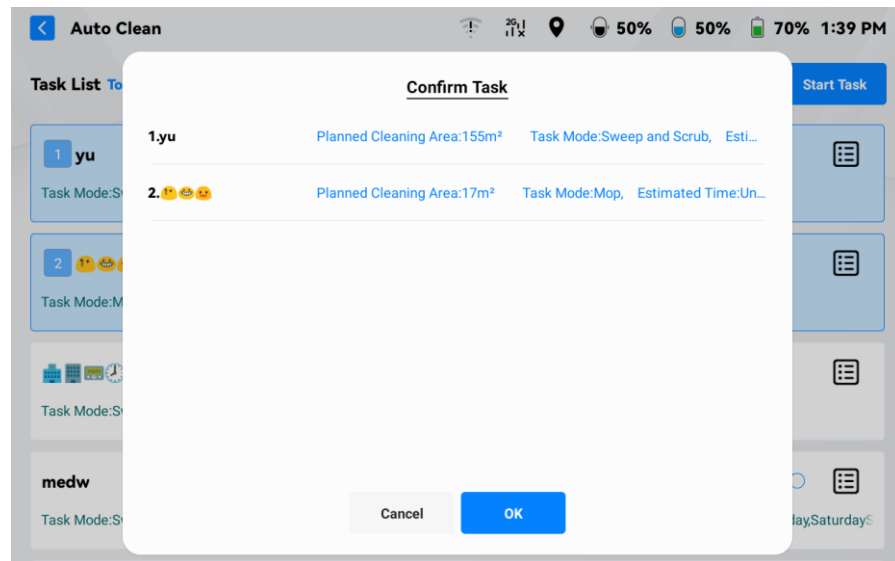
Step 1 Manually click “Execute Task”. The system will display task information and order.

Step 2 Click “Confirm” to enter the task execution page.



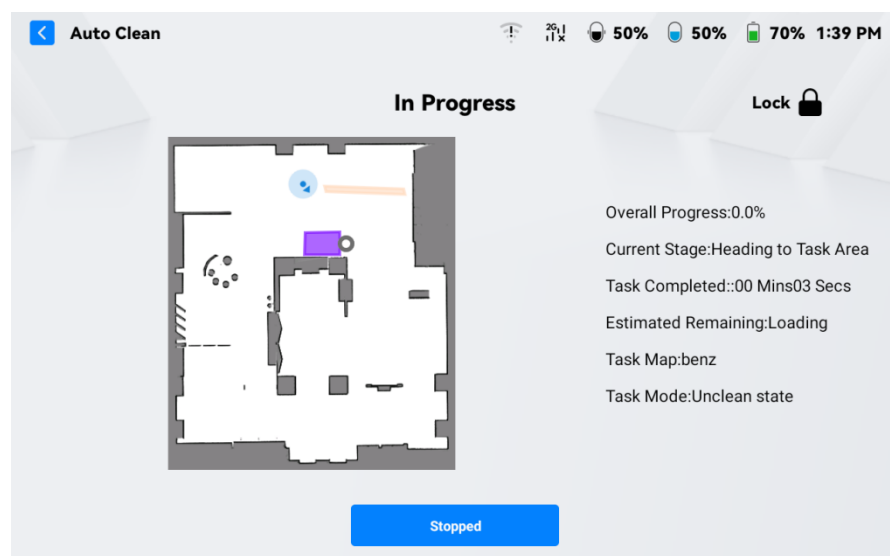
### Note

If the robot's battery is below 30%, the washing task cannot be initiated until it is recharged. Once the requirements are met, the washing task will start automatically.

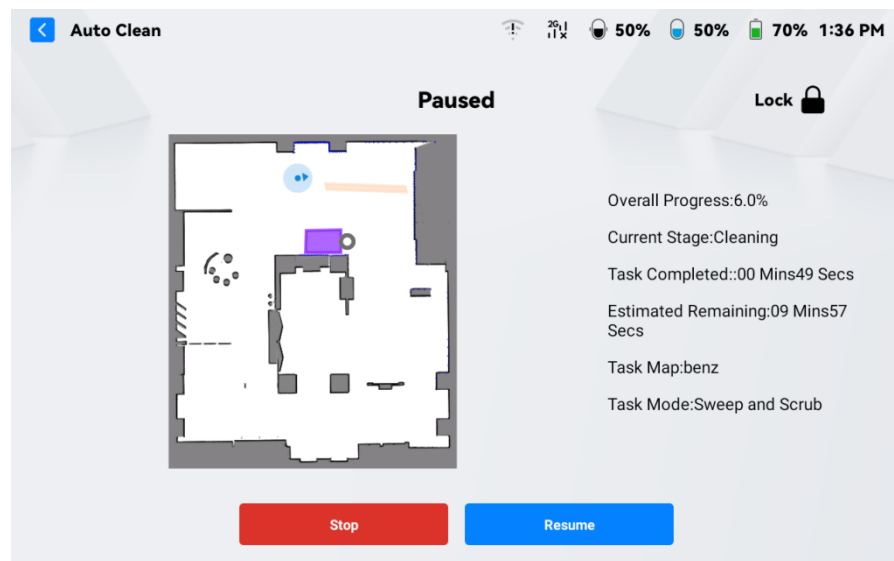


Step 3 During task execution, the interface shows the task information. You can pause the task.

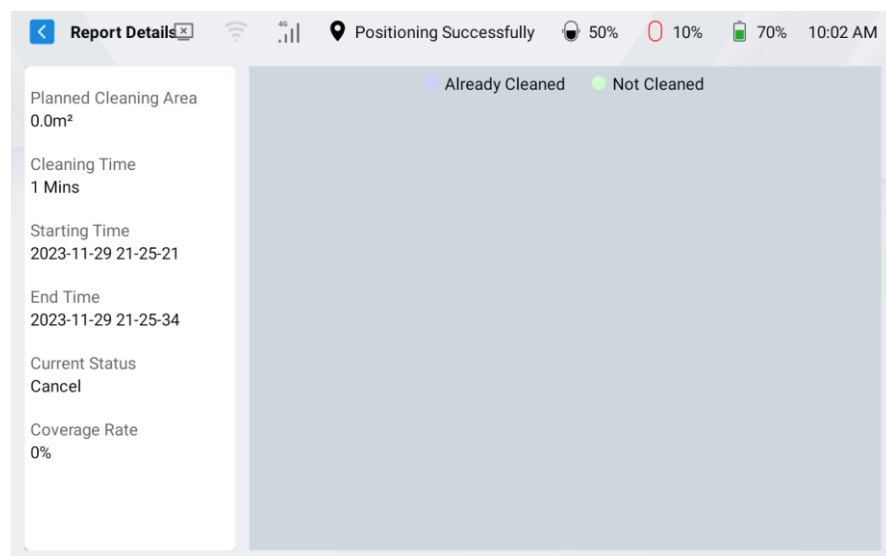
Click resume to continue or stop to end the task.





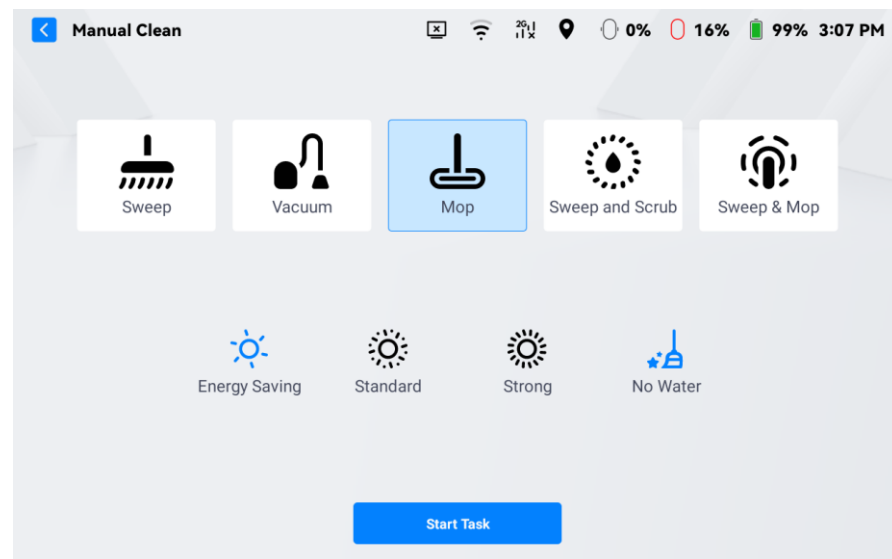


Step 4 Upon completion, a cleaning report can be generated for review.

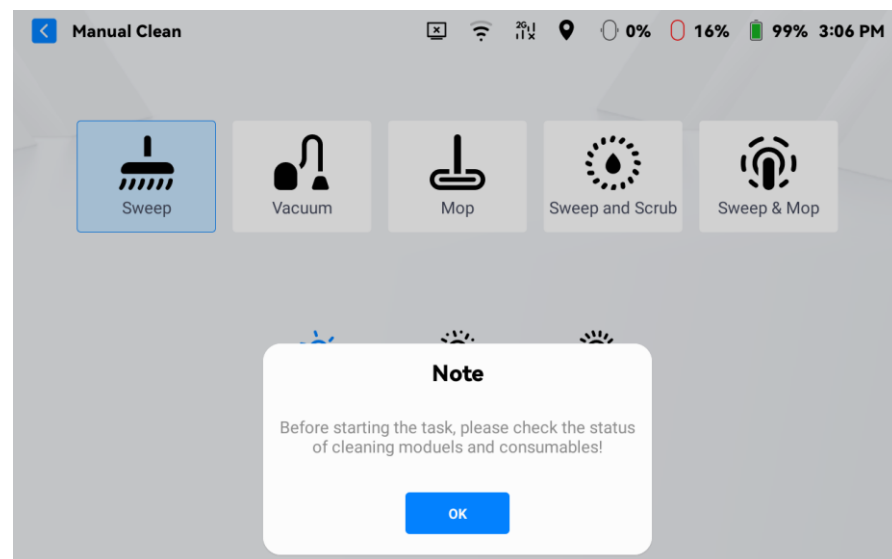


### 6.4.3 Manual Cleaning

Manual cleaning supports different intensity levels for each cleaning mode. Each mode offers energy-saving, standard, or strong intensity options. Vacuum mode additionally allows setting for floor or carpet vacuuming; mopping mode includes a dry (no water) option.



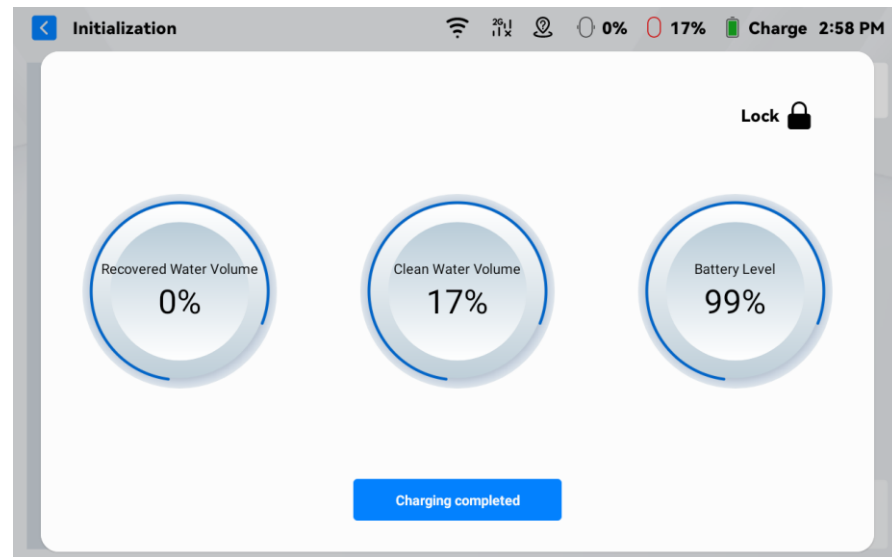
When starting a task, a popup will check the device and consumable status. After confirmation, the manual task will execute.



## 6.5 Additional Functions

### 6.5.1 Resupply Status

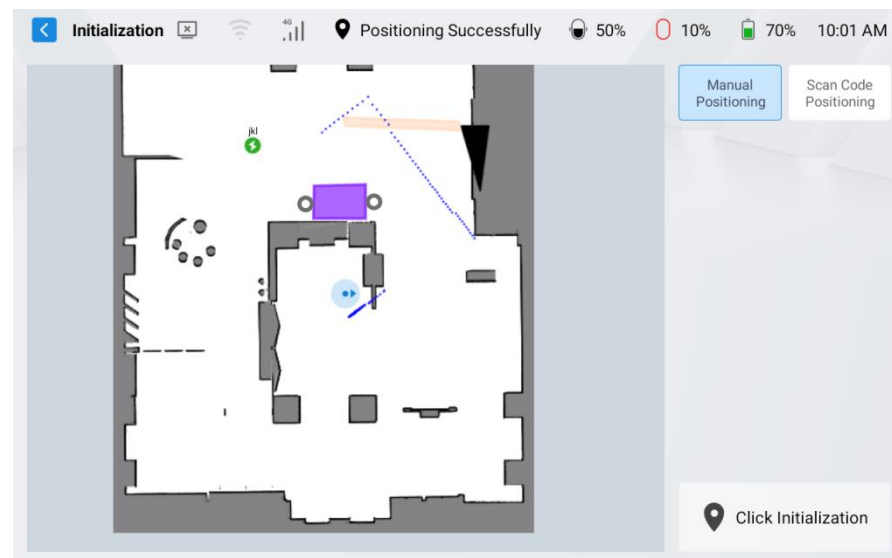
View the device's resupply status. You can manually end charging and return to the device page.



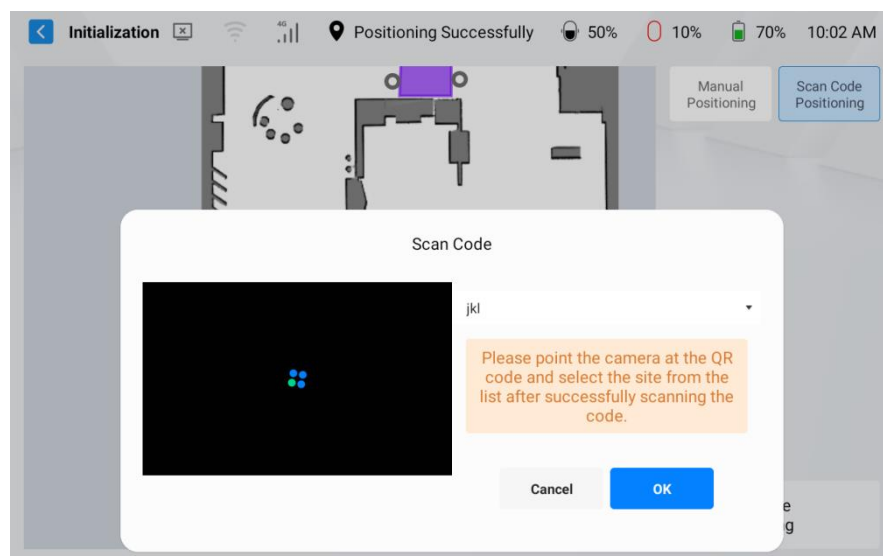
## 6.5.2 Initialization

Click “More > Initialization” to enter the positioning initialization interface. The system supports manual and QR code positioning.

1. Manual Positioning: Drag the map to confirm the position.

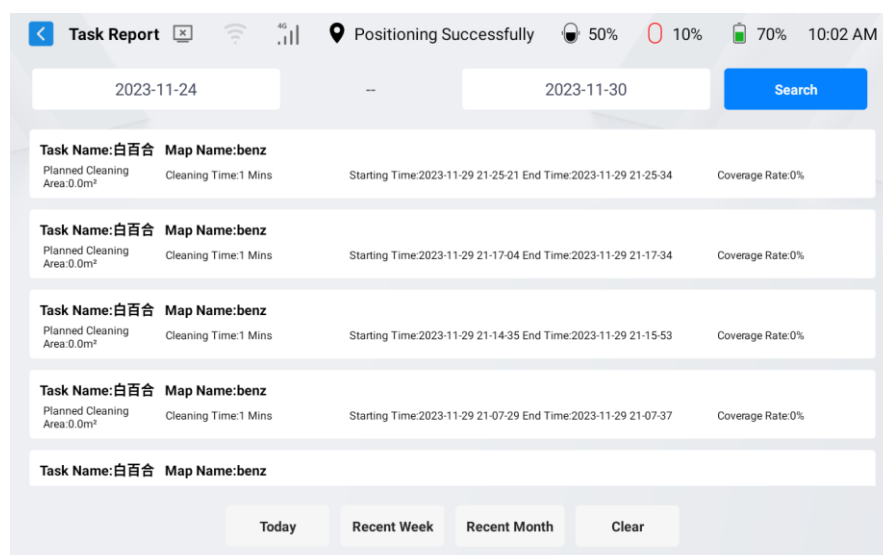


2. QR Code Positioning: Activate the camera and scan the QR code of the supply station to complete positioning.



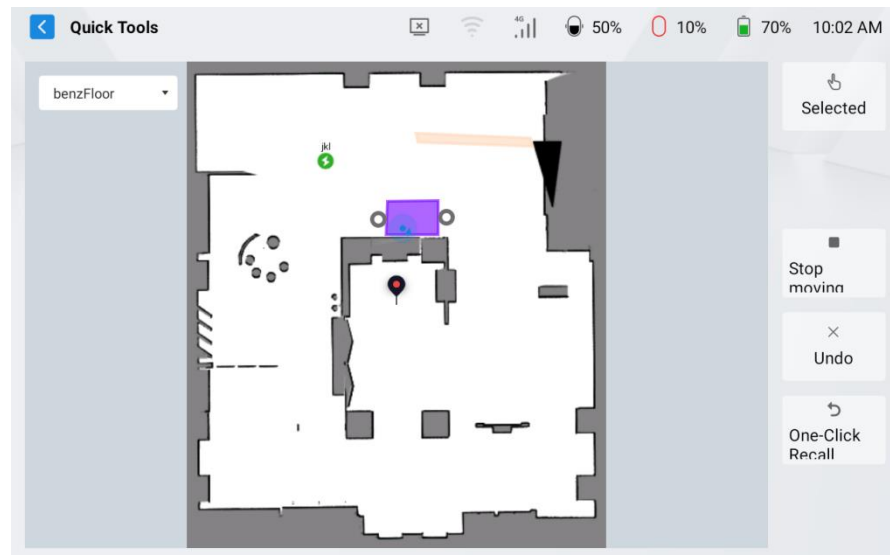
### 6.5.3 Task Reports

Click “More > Task Reports” to view a list of task reports. This shows an overview of tasks, and clicking on them provides access to detailed historical reports.



### 6.5.4 Quick Movement

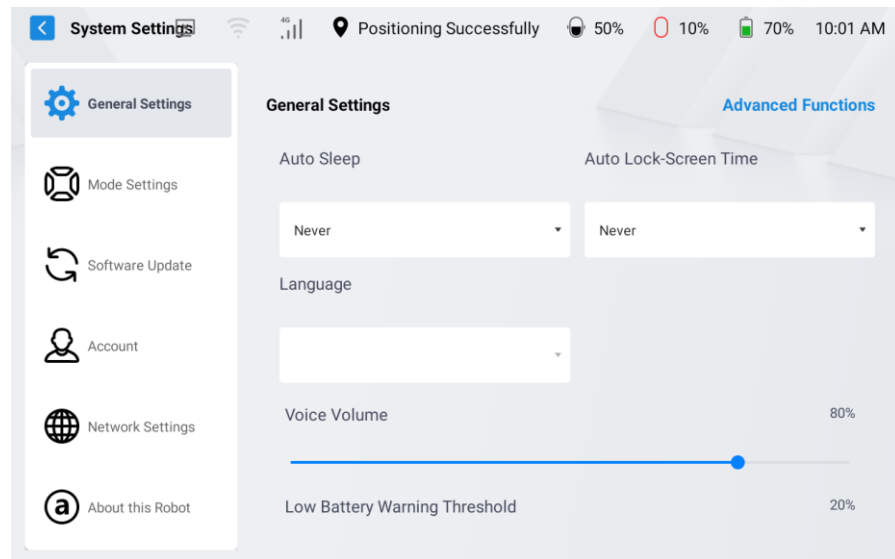
Select the desired destination on the map, choose the exact location, and confirm to start moving to the point.



### 6.5.5 System Settings

#### 1. Basic Settings

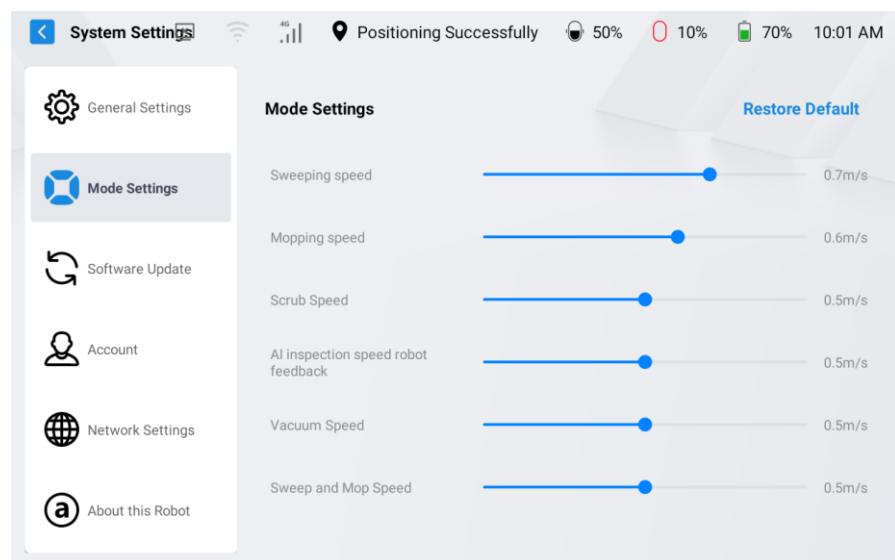
Include auto sleep, auto lock screen timing, language selection, language volume, and music settings.



## 2. Mode Settings

Adjust the robot's movement speed during operation based on the mode.

- Default maximum speed ranges from 0.2-1.2 m/s.
- Mode-specific adjustments ranges from 0.2-1.0 m/s.



### 3. Software Updates

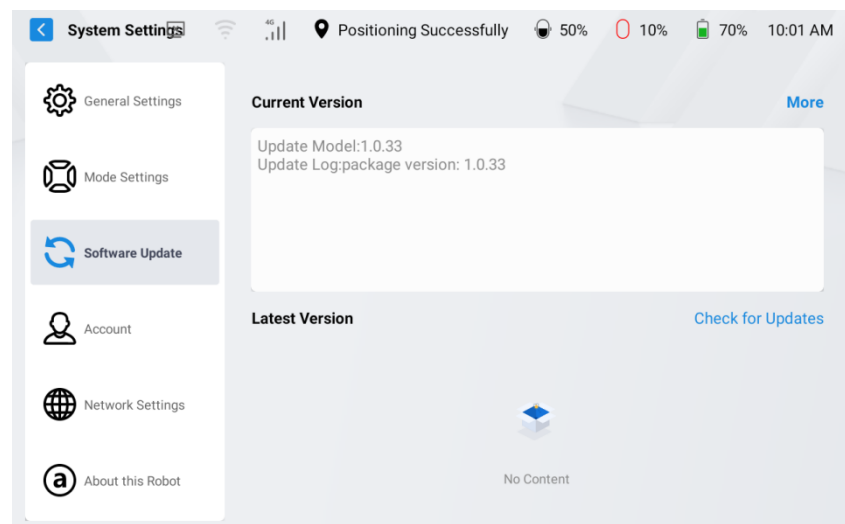
Support on-device software and charging dock OTA updates.



#### Note

Software package downloads require a WIFI connection; not supported in 4G mode.

- **Software Update:** Displays the current software version. Check for updates and, if available, display new version information for OTA update.



- **Charging Dock Update:** When connected via Bluetooth, a popup will show version update prompts.

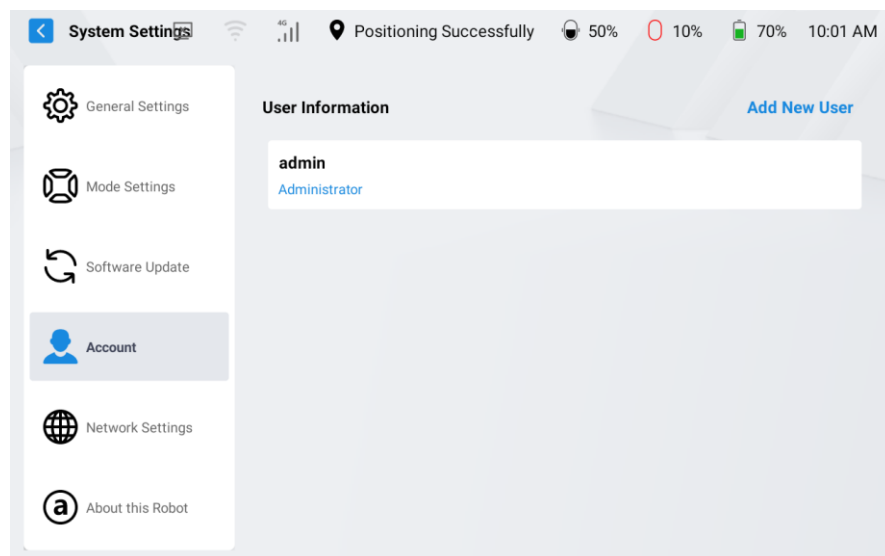
### 4. Account Management

Users can create, delete, modify, and view login accounts for the device. Click “Add New User” to enter user and password details and create a new user.



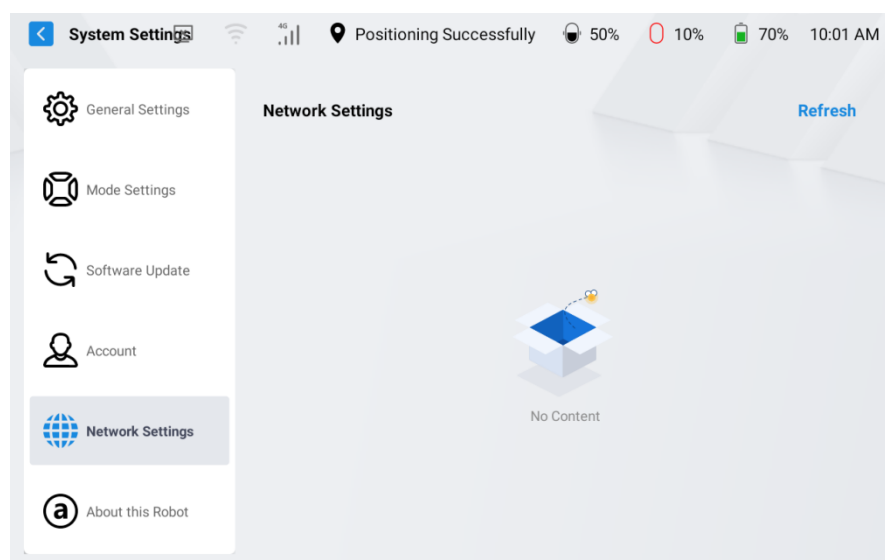
### Note

Administrator accounts cannot be deleted or modified.



## 5. Network Settings

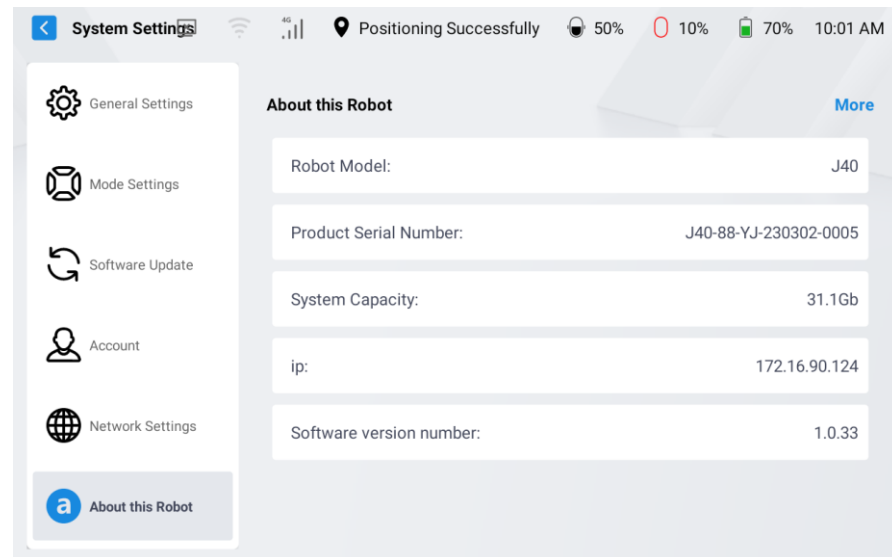
Display the current network list. Users select a network, enter the password to connect, and the top navigation bar shows the network status.





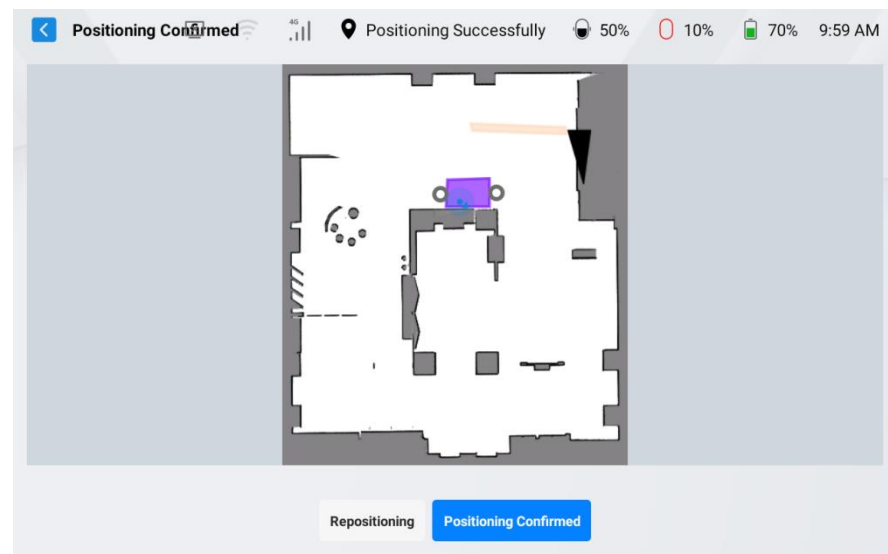
## 6. About This Device

View details like machine model, serial number, software version, hardware version, storage space, IP address, etc.



### 6.5.6 Boot Positioning

After a device shutdown and restart, the system needs to confirm location information. Once confirmed, it will automatically enter the homepage.



# 7 Routine Maintenance

## 7.1 Recommended Maintenance Schedule

NO.	Component Name	Cleaning Frequency	Problem description	Replacement Frequency
1	Dust box	Every day	broken	/
2	Dust box Filter	Every 3 days	broken	Every year
3	Side Brush	Every week	The brush is worn out and cannot effectively clean up.	Every 6 months
4	Roller Mop	Every day	The roller mop is worn out and the mopping effect is reduced.	Every 3 months
5	Roller Mop Filter Box	Every 3 days	broken	/
6	Roller Brush	Every 3 days	The brush is worn out and cannot effectively clean up.	Every 6 months
7	Trash Bin	Every	broken	/

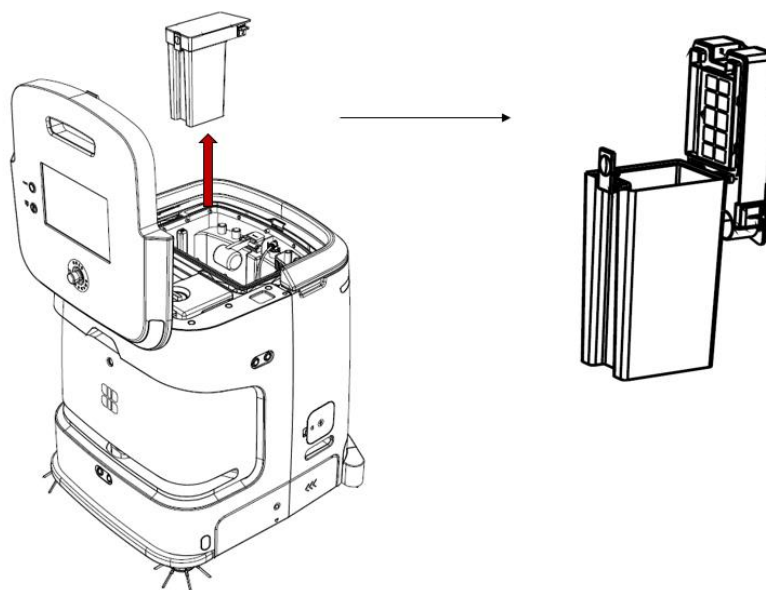
NO.	Component Name	Cleaning Frequency	Problem description	Replacement Frequency
		day		
8	Sensor	Every week	broken	/
9	Charging Stand Connectors	Every week	broken	/
10	Wastewater Tank	Every 3 days	broken	/
11	Wastewater Pipe	Every 3 days	broken	/
12	Squeegee Rubber	Every 3 days	The rubber is worn out.	Every 6 months
13	Suction Rubber(hard ground/carpet)	/	The rubber is worn out.	Every 6/12 months
14	Drive Wheels and Auxiliary Wheels	Every week	broken	/

## 7.2 Routine Maintenance

### 7.2.1 How to Clean the Dust Box and Filter

1. Remove the dust box from the wastewater tank.
2. Open the dust box and use a brush to remove dirt from the filter.
3. When emptying the dust box, gently tap to dislodge any debris.
4. Rinse the dust box with water.

5. After washing, ensure the dust box is thoroughly dried.
6. Reattach the filter to the dust box and then place the dust box back into the wastewater tank.



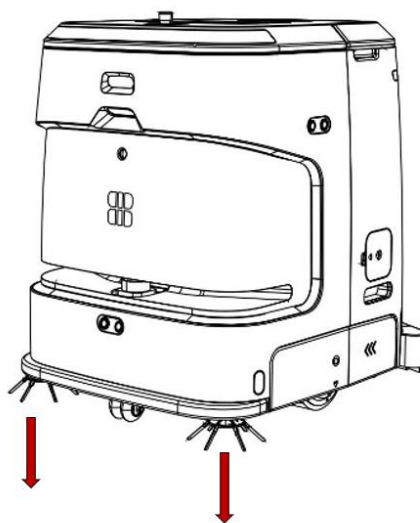
### 7.2.2 How to Clean the Side Brush

1. Carefully remove any trapped hair or debris from between the side brush bristles.
2. Use a cloth dampened with warm water to wipe away any dirt from the brush.



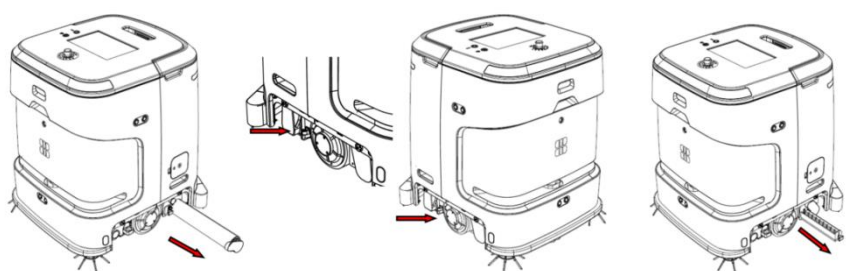
#### NOTE

Due to the tendency of hairs and threads to wrap around the side brush, regular cleaning is recommended.



### 7.2.3 How to Clean the Roller Mop and Filter Box

1. Detach the roller mop and its filter box from the bottom of the robot.
2. Wash with water and allow them to air dry before reinstalling them to their original positions.

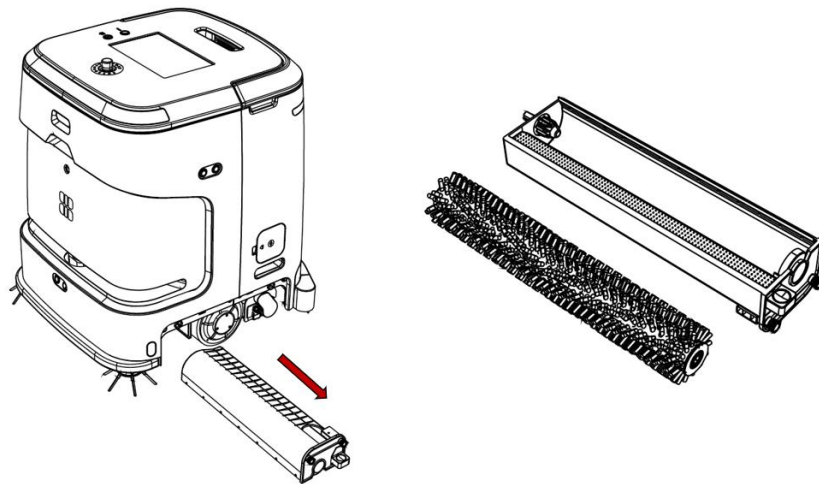


#### NOTE

To prevent mold growth, it's recommended to perform this maintenance every three days.

## 7.2.4 How to Clean the Roller Brush and Waste Bin

1. Remove the roller brush and waste bin from the bottom of the robot.
2. Rinse the roller brush with clean water and remove any tangled hairs and debris.
3. Empty the waste from the bin and rinse it with clean water.



## 7.2.5 How to Clean the Sensors and Charging Stand Connectors

1. For optimal performance, regularly clean the sensors and connectors on the charging stand.
2. Wipe both the sensors and connectors using a lint-free cloth.

# 8 Common Problems

## 8.1 Common Problems before cleaning

<b>01</b>	Robot does not power on.
<b>Potential Causes</b>	<ol style="list-style-type: none"><li>1. Battery switch/key switch is turned off.</li><li>2. Battery is depleted.</li></ol>
<b>Solutions</b>	<ol style="list-style-type: none"><li>1. Open the small cover on the side of the robot and press the battery button, then turn the key to the ON position.</li><li>2. Open the small cover on the side of the robot, connect the manual charging cable from the charging stand to the robot (Note: Please insert aligning with the red mark), and then turn the manual charging switch on the charging stand to ON.</li><li>3. If the above solutions don't resolve the issue, please contact our after-sales service personnel.</li></ol>

<b>02</b>	Robot doesn't move even when switched to manual mode while powered on.
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<b>Potential Causes</b>	The emergency stop button has been pressed.
<b>Solutions</b>	Turn the red emergency stop button clockwise to pop it up and release the operational functionality.

<b>03</b>	Robot fails to locate its position.
<b>Potential Causes</b>	<ol style="list-style-type: none"> <li>1. There's no map for the current floor.</li> <li>2. The robot's location doesn't match the current floor level.</li> <li>3. The robot's current location is too open, losing sight of position reference objects.</li> <li>4. The robot is in a tight corner, causing the laser radar's scanning range to be too narrow.</li> <li>5. The radar is obstructed.</li> </ol>
<b>Solutions</b>	<ol style="list-style-type: none"> <li>1. Scan the map of that location and manually identify the position or use a QR code to determine the position.</li> <li>2. Switch to the map of that floor level, and manually or via QR code, execute the position identification again.</li> <li>3. Move the robot to a location with clear reference objects within 30m.</li> <li>4. Move the robot out of the corner and ensure there's sufficient space (about 3m) in front.</li> <li>5. Check for obstructions or dirt in front of the laser radar.</li> </ol>



<b>04</b>	Failure in robot task creation.
<b>Potential Causes</b>	<ol style="list-style-type: none"> <li>1. Robot failed to determine its position.</li> <li>2. Impact due to the size or scene of the planned area.</li> <li>3. Poor map quality with noise present.</li> </ol>
<b>Solutions</b>	<ol style="list-style-type: none"> <li>1. Re-determine the robot's position.</li> <li>2. Plan cleaning tasks in a larger area.</li> <li>3. Rescan using the original map, or manually remove unnecessary noise via the map editing page, or create a new map.</li> </ol>

<b>05</b>	Robot stops and cannot execute automatic cleaning tasks.
<b>Potential Causes</b>	<ol style="list-style-type: none"> <li>1. Emergency stop button/manual button has been pressed.</li> <li>2. The robot's position has not been identified.</li> <li>3. The robot is too close to a wall or outside a wall (including virtual walls).</li> <li>4. The correct map hasn't been selected.</li> <li>5. The robot is in a malfunction state.</li> <li>6. The top cover isn't closed properly.</li> </ol>
<b>Solutions</b>	<ol style="list-style-type: none"> <li>1. Turn the red emergency stop button clockwise or press the manual button to pop it up.</li> <li>2. Execute the robot's position identification again.</li> </ol>

	<ol style="list-style-type: none"> <li>3. Move the robot within the cleaning area, ensuring it's at least 10cm away from the wall.</li> <li>4. Check the task map and switch to the corresponding map from the map management page, then re-identify the position.</li> <li>5. Check the robot's alarm state and verify in the message box if there are any malfunction alarms.</li> <li>6. Ensure the top cover is securely closed.</li> </ol>
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## 8.2 Common Problems During cleaning

<b>01</b>	Brush rotation issues in cleaning mode (Side brushes/Roller brushes).
<b>Potential Causes</b>	<ol style="list-style-type: none"> <li>1. Obstructions causing blockage in the side brushes or roller brushes.</li> <li>2. The side brushes/roller brushes are not correctly attached.</li> </ol>
<b>Solutions</b>	<ol style="list-style-type: none"> <li>1. Regularly clean the side brushes/roller brushes.</li> <li>2. Ensure the side brushes/roller brushes are properly attached.</li> </ol>

<b>02</b>	Low debris cleaning efficiency.
<b>Potential Causes</b>	<ol style="list-style-type: none"> <li>1. Obstructions causing blockage in the side brushes or roller brushes.</li> <li>2. The side brushes/roller brushes are not correctly</li> </ol>

	<p>attached.</p> <ol style="list-style-type: none"> <li>3. The dustbin is full.</li> <li>4. The side brushes/roller brushes have not been replaced for a long time.</li> </ol>
<b>Solutions</b>	<ol style="list-style-type: none"> <li>1. Regularly clean the side brushes/roller brushes.</li> <li>2. Ensure the side brushes/roller brushes are properly attached.</li> <li>3. Empty the dustbin periodically.</li> <li>4. Replace the side brushes/roller brushes on a regular basis.</li> </ol>

<b>03</b>	Roller mop doesn't rotate in mop cleaning mode.
<b>Potential Causes</b>	<ol style="list-style-type: none"> <li>1. The roller mop is not correctly attached.</li> <li>2. Obstructions causing blockage in the roller mop.</li> </ol>
<b>Solutions</b>	<ol style="list-style-type: none"> <li>1. Ensure the roller mop is properly attached.</li> <li>2. Regularly clean the roller mop.</li> </ol>

<b>04</b>	No water dispensing from the roller mop during mop cleaning.
<b>Potential Causes</b>	<ol style="list-style-type: none"> <li>1. The water tank is not properly installed.</li> <li>2. Water level in the tank is low.</li> <li>3. The water nozzle is blocked.</li> </ol>

<b>Solutions</b>	<ol style="list-style-type: none"> <li>1. Reattach the water tank, checking its status on the control panel to ensure it is properly installed.</li> <li>2. Refill the water tank as needed.</li> <li>3. Check and clean any blockage from the water nozzle.</li> </ol>
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<b>05</b>	Insufficient cleaning in suction mode.
<b>Potential Causes</b>	<ol style="list-style-type: none"> <li>1. The suction strength in suction mode has been set too low.</li> <li>2. The suction nozzle is blocked by large debris.</li> <li>3. The dustbin is not properly set, causing an air leak.</li> <li>4. The dustbin/trash container is full.</li> <li>5. The HEPA filter is clogged.</li> </ol>
<b>Solutions</b>	<ol style="list-style-type: none"> <li>1. Increase the suction strength via the task settings page.</li> <li>2. Regularly clean the suction nozzle.</li> <li>3. Open the wastewater tank and ensure that the dustbin is properly set.</li> <li>4. Clean the dustbin/trash container regularly.</li> <li>5. Regularly clean the HEPA filter.</li> </ol>

<b>06</b>	Insufficient cleaning in mopping mode.
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<b>Potential Causes</b>	<ol style="list-style-type: none"> <li>1. The mopping strength has been set too low.</li> <li>2. The floor is extremely dirty.</li> <li>3. The roller brush hasn't been cleaned for a long time.</li> <li>4. The wastewater tank isn't set correctly, causing suction leaks.</li> <li>5. The squeegee is blocked by debris.</li> <li>6. Wear on the squeegee's rubber seal has reduced its sealing capacity.</li> <li>7. The floor is uneven.</li> <li>8. Debris has adhered to the rubber.</li> </ol>
<b>Solutions</b>	<ol style="list-style-type: none"> <li>1. Increase the mopping strength via the task settings page.</li> <li>2. Set the robot to clean dirtier areas multiple times.</li> <li>3. Clean the roller brush regularly by hand or replace it with a new one.</li> <li>4. Properly attach and reset the wastewater tank.</li> <li>5. Check the squeegee for obstructions and clean it regularly.</li> <li>6. Replace the rubber seal of the squeegee.</li> <li>7. Operate the robot on as flat a surface as possible.</li> <li>8. Regularly check and clean the rubber.</li> </ol>

<b>07</b>	Insufficient wastewater suction.
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<b>Potential Causes</b>	<ol style="list-style-type: none"> <li>1. The mopping strength has been set too low.</li> <li>2. The floor is extremely dirty.</li> <li>3. The roller brush hasn't been cleaned for a long time.</li> <li>4. The wastewater tank isn't set correctly, causing suction leaks.</li> <li>5. The squeegee is blocked by debris.</li> <li>6. Wear on the squeegee's rubber seal has reduced its sealing capacity.</li> <li>7. The floor is uneven.</li> <li>8. Debris has adhered to the rubber.</li> </ol>
<b>Solutions</b>	<ol style="list-style-type: none"> <li>1. Increase the mopping strength via the task settings page.</li> <li>2. Set the robot to clean dirtier areas multiple times.</li> <li>3. Clean the roller brush regularly by hand or replace it with a new one.</li> <li>4. Properly attach and reset the wastewater tank.</li> <li>5. Check the squeegee for obstructions and clean it regularly.</li> <li>6. Replace the rubber seal of the squeegee.</li> <li>7. Operate the robot on as flat a surface as possible.</li> <li>8. Regularly check and clean the rubber.</li> </ol>

<b>08</b>	Robot collides with obstacles.
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<b>Potential Causes</b>	<ol style="list-style-type: none"> <li>1. The obstacle sensor is obstructed by debris.</li> <li>2. It's difficult to detect small or transparent obstacles.</li> <li>3. The obstacle is located in the sensor's blind spot.</li> </ol>
<b>Solutions</b>	<ol style="list-style-type: none"> <li>1. Clean each sensor regularly with a dry cloth.</li> <li>2. Set prohibited zones or virtual walls around obstacles like thin table legs or transparent glass.</li> <li>3. Set prohibited zones around always-open doors.</li> <li>4. Set prohibited zones around shelves, table corners, and wall edges.</li> </ol>

<b>09</b>	Robot suddenly stops.
<b>Potential Causes</b>	<ol style="list-style-type: none"> <li>1. The robot is trapped by an obstacle.</li> <li>2. The battery is low, and auto-charging is not set.</li> <li>3. Sensors are dirty.</li> <li>4. The navigable route is blocked, and the robot cannot escape.</li> <li>5. The freshwater tank is low, or the wastewater tank is full.</li> <li>6. The robot has lost its position information.</li> </ol>
<b>Solutions</b>	<ol style="list-style-type: none"> <li>1. Check if the robot is trapped by an obstacle or entangled by cords.</li> <li>2. Check the battery level and add charging points via the map editing page.</li> <li>3. Clean each sensor with a dry cloth.</li> <li>4. Ensure there is a minimum width of 75cm for the robot's passage and that there is enough space for it to maneuver.</li> <li>5. Refill the freshwater tank or empty the wastewater.</li> </ol>

	6. Reset the robot's position information.
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<b>10</b>	Robot cannot return to the charging station.
<b>Potential Causes</b>	<ol style="list-style-type: none"> <li>1. The charging station is not connected to the power source.</li> <li>2. The charging station has been moved.</li> <li>3. There is no charging point set on the map.</li> <li>4. The distance or direction of the arrow for the charging point on the map is incorrect.</li> <li>5. There's an obstacle in front of the charging station.</li> <li>6. The QR code on the charging station is obstructed.</li> <li>7. The robot's rear camera is obstructed.</li> <li>8. The connector of the charging station is blocked.</li> <li>9. The power/air switch is off.</li> </ol>
<b>Solutions</b>	<ol style="list-style-type: none"> <li>1. Ensure the charging station's power cable is securely connected.</li> <li>2. Return the charging station to its original position, or add a new charging point on the map.</li> <li>3. Add a charging point on the map.</li> <li>4. Set the charging point on the map to be at a distance of more than 1m but less than 1.5m in front of the charging station, with the arrow pointing towards the station.</li> <li>5. Check for obstacles in front of the charging station.</li> <li>6. Ensure the charging station's QR code is clearly visible.</li> <li>7. Regularly clean the robot's rear camera with a cloth.</li> <li>8. Turn off the power for both the robot and the charging station, then wipe the station's connector</li> </ol>



	<p>with a dry cloth.</p> <p>9. Ensure the power/air switch is turned on.</p>
<b>11</b>	Robot is properly connected to charging stand but fails to charge.
<b>Potential Causes</b>	<ol style="list-style-type: none"> <li>1. Foreign material is attached to the charging stand's connector.</li> <li>2. The air/power switch is not turned on.</li> </ol>
<b>Solutions</b>	<ol style="list-style-type: none"> <li>1. Turn off the robot, disconnect the charging stand's power, then wipe the connector with a dry cloth.</li> <li>2. Ensure the air/power switch is turned on.</li> </ol>

<b>12</b>	Robot cannot automatically refill water, with attached mobile water tank.
<b>Potential Causes</b>	<ol style="list-style-type: none"> <li>1. The refill stand is not connected to a power source.</li> <li>2. The mobile water tank is empty or the wastewater tank is full.</li> <li>3. The pipe of the refill stand is blocked.</li> <li>4. The freshwater tank/wastewater tank is not correctly installed.</li> <li>5. The refilling function is turned off.</li> <li>6. The filter of the wastewater tank on the robot's side is blocked.</li> <li>7. The water connector is not connected.</li> </ol>
<b>Solutions</b>	<ol style="list-style-type: none"> <li>1. Ensure the charging stand's power cable is securely connected.</li> <li>2. Regularly refill/clean the mobile water tank.</li> <li>3. Check the refill stand's pipe for obstructions.</li> <li>4. Ensure the freshwater tank/wastewater tank is correctly installed.</li> </ol>

	<ol style="list-style-type: none"> <li>5. Contact a technician to turn on the refilling function.</li> <li>6. Check the filter for blockages.</li> <li>7. Ensure the water connector is properly connected.</li> </ol>
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<b>13</b>	Robot cannot automatically refill water, without attached mobile water tank.
<b>Potential Causes</b>	<ol style="list-style-type: none"> <li>1. The refill stand is not connected to a power source.</li> <li>2. The pipe of the refill stand is blocked.</li> <li>3. The freshwater tank/wastewater tank is not correctly installed.</li> <li>4. The refilling function is turned off.</li> <li>5. The filter of the wastewater tank on the robot's side is blocked.</li> <li>6. The water connector is not connected.</li> </ol>
<b>Solutions</b>	<ol style="list-style-type: none"> <li>1. Ensure the charging stand's power cable is securely connected.</li> <li>2. Check the refill stand's pipe for obstructions.</li> <li>3. Ensure the freshwater tank/wastewater tank is correctly installed.</li> <li>4. Contact a technician to turn on the refilling function.</li> <li>5. Check the filter for blockages.</li> <li>6. Ensure the water connector is properly connected.</li> </ol>

# A

## Product Specifications

No.	Feature	Specification
1	Size of the main unit	640mm*598mm*700mm
2	Size of the workstation	330mm*230mm*650.5mm
3	Weight of the main unit	85kg
4	Weight of the workstation	18.5kg
5	Trash bin capacity	0.4L
6	Dust box capacity	1L
7	Clean water tank capacity	8L
8	Wastewater tank capacity	8L
9	Obstacle crossing height	20mm
10	Crossing capability	Width 30mm, Depth 15mm

No.	Feature	Specification
11	Cleaning Modes	Integrated sweeping, washing, vacuuming, mopping, and dust pushing
12	Mapping Capability	40000 m <sup>2</sup>
13	Fan Suction Power	11kPa
14	Cliff Detection	Infrared & Visual
15	Climbing Angle	Gradient 12.5% (7.1°)
16	Edge Distance	0cm (Straight edge) 5-10cm (Curved edge) Note: Distance from the side brush to the edge
17	Maximum Operating Speed	1.0m/s
18	Operating Noise Levels	<ul style="list-style-type: none"> <li>● Washing, Vacuuming ≤75dB</li> <li>● Other Modes ≤70dB</li> </ul>
19	Communication	4G, Wi-Fi, Bluetooth*
20	Battery Type	DC24V, 42Ah Lithium Iron Phosphate Battery
21	Battery Life	3-8h
22	Operating Voltage	DC 23V-29.2V
23	Charging Time	2.5h

No.	Feature	Specification
24	Charging Voltage	DC 29.2V
25	Charging Current	21A
26	Power Adapter	Input AC90-260V、50/60Hz
27	Repeat Positioning Accuracy	50mm
28	Operating Altitude	2000m
29	Minimum Passage Width	75cm
30	HMI Screen Size	10.1in
31	Design Lifespan	5 years
32	Braking Distance	20cm@0.7m/s
33	Water Refill Time	6min
34	Wastewater Disposal Time	10min
35	IP Rating	IP24
36	Fire Protection Rating	V-0
37	Storage Humidity	≤95%
38	Storage Temperature	-20°C to 55°C; below 0°C, ensure no water inside the robot

No.	Feature	Specification
39	Operating Humidity	≤95%
40	Operating Temperature	0°C-45°C
41	Antenna Specification	<p>Manufacturer Name: Shanghai Wei Rui Electronic Technology Co., Ltd</p> <p>Address: No.1158 Jiuting Central Road, Jiuting Town, Songjiang District, Shanghai</p> <p>Size:163mm*20mm</p> <p>Antenna type: Dipole Antenn</p> <p>Antenna gain:3 dBi</p>
*	The module itself supports Bluetooth and WIFI full band, but the certified product only uses 2.4G Wi-Fi and Bluetooth, The module's Wi-Fi 5G function is described by software blocking	

	Product Name	J40 Cleaning Robot
	Model	J40
	Positioning	Indoor medium-small commercial cleaning robot
	Navigation and Mapping	Laser Radar, SLAM
	Collision Protection	Safety bumper + Single-line laser radar + Ultrasonic + Vision
Cleaning Efficiency	Sweeping	1200 m <sup>2</sup> /h@0.7m/s
	Mopping	720 m <sup>2</sup> /h@0.7m/s
	Washing	700 m <sup>2</sup> /h@0.7m/s
	Vacuuming	400 m <sup>2</sup> /h@0.7m/s
	Dust Pushing	720 m <sup>2</sup> /h@0.7m/s

## Warning

This device complies with Part 15 of the FCC Rules.

1.Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

2.This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to

radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

3. The manufacturer is not responsible for any radio or TV interference caused by unauthorized modifications to this equipment. Such modifications could void the user's authority to operate the equipment.

4. Install and operate radiators at least 20 cm away from the human body in compliance with the FCC's radiation exposure limits for uncontrolled environments