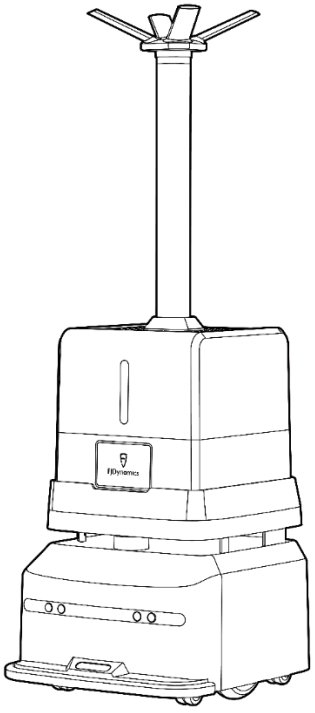
FJD Spray Disinfection Robot

User Manual

Model: FJDT02SP



1. Statement

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This manual is for instructions only, and statements made herein do not constitute a warranty of any kind.

2. Foreword

Thank you for choosing FJD Spray Disinfection Robot FJDT02SP. Please read this manual carefully before using your robot, and get to know and use it in steps according to the instructions in the manual.

3. Overview

This manual introduces the functional characteristics, installation and operation methods, and precautions in the use of FJD Spray Disinfection Robot FJDT02SP.

This manual includes the following content:

1. Safety Instructions

   This part introduces the operation requirements and precautions of the robot.

2. Application Scenarios of the Disinfection Robot

   This part describes the application scenario requirements and precautions of the robot in detail.

3. Robot Introduction

   This part briefly introduces the basic functional characteristics of the robot and details the structural information of the robot.

4. Operation Steps

   This part describes how to install and use the robot.

5. Annexes

   This part introduces important functions of the robot, such as charging, voice prompt, and emergency handling, as well as recommended types of disinfectant, description of hazardous

substances of the product, packing list, product maintenance, common faults and troubleshooting methods of the robot, and detailed technical parameters.

6. Table of Warranty Period of Main Components

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4. Safety Instructions

Requirements for the Operator

1. The operator must be trained and provided with specialized protective clothing.

Operating Environment

1. While using the robot, keep it away from people, plants, and animals for protection against disinfectant spray.

2. Only use the wheeled robot in indoor environments with flat grounds (smooth grounds, gradient < 10°, and obstacle height ≤ 1 cm); do not use it in outdoor environments, such as open balconies, or rugged grounds, such as stairs.

3. Do not use the robot at temperatures above 50°C or below 0°C or on wet or sticky grounds.

4. Before using the robot, put away wires and cables on the ground in the operating environment to prevent them from being dragged by the robot and remove any sharp objects, such as decoration waste, glass, and nails, on the ground to prevent damage to the robot chassis.

5. Do not use the robot in environments with combustible gases and other hazards.

Operation Requirements

1. No personnel is allowed in the area in which the robot is operating.



2. The entire robot disinfection process must be monitored by an operator to ensure timely manual intervention.

3. Manually control the robot with the spray disinfection function disabled in public areas if the robot is not executing a disinfection task.

4. Unauthorized replacement of any component is strictly prohibited. If replacement is necessary, do it with the approval and under the guidance of FJD.

Check Before Use

1. Ensure that the robot has more than 30% battery power and sufficient disinfectant.

2. Ensure that relevant parameters in the tablet terminal have been calibrated before automatic operation.

3. Ensure that the Wi-Fi and network communications are normal. In the event of any abnormality, fix it before using the robot.

4. Before starting the robot, check whether the safety devices, such as the sensors and emergency stop switch, are normal.

Battery and Charging

1. Do not use any third-party batteries, adapters, or charging piles.

2. Do not remove, repair, or retrofit the battery or charging pile without permission.

3. Do not wipe or clean the charging contacts of the charging pile with a wet cloth or wet hands.

4. Do not discard battery scraps casually. Instead, hand them to professional recycling agencies for disposal.

5. Do not place the charging pile near any heat source, such as heating radiators.

6. If the robot will not be used for a long time, empty the disinfectant tank, fully charge and power it off, and keep it in a cool, dry environment. To prevent battery damage, charge the robot at least once a month.

7. To charge the robot, pay attention to its power supply requirements. For the charging pile, the input voltage is 100–240 V AC and the output voltage/current is 54.6 V/5 A DC.

8. Touch of the circuit connector is strictly prohibited while the robot is being charged.

9. Directly rinsing the robot and charging pile with tap water is strictly prohibited, because it may cause moisture accumulation or water entry inside the device and serious irreparable faults.

Spray Disinfection Robot

1. To prevent damage to the device, only trained professionals are allowed to disassemble the disinfection device.

2. Do not clean the robot or add disinfectant when the robot is turned on.

3. Be careful not to splash disinfectant on other parts of the robot when adding it.

4. Before changing the disinfectant, clean the disinfectant tank with clean water to avoid chemical reactions between different disinfectants.

5. While operating, the robot must be kept at least 10 m away from people and animals for protection against disinfectant.

6. Stay away from the robot to prevent personal harm due to inhalation of disinfectant.

7. If the robot cannot be powered off remotely, wear protective clothing and goggles to avoid inhalation of disinfectant before going to the operating site to manually power off the robot.

8. The proper temperature range for robot operation is 0–50°C.

Temperatures out of the range will directly affect robot operation.

9. The disinfectant can be hydrogen peroxide or hypochlorous acid, and adding additives not applicable to this product into the disinfectant tank is strictly prohibited. Do not use aromatic oils.

Note: For details about the safety and use of the selected disinfectant, refer to the operation guide provided by the disinfectant manufacturer.

Others

1. Do not remove the housing of the robot by yourself to avoid affecting the warranty service.

2. Device damage resulting from force majeure (lightning strike, high voltage, collision, or the like) is not within the warranty scope.

3. Connect the device as instructed in the manual. Pull or plug cables gently by holding the end of the plug. Do not drag the cables by force to prevent cable breakage.

5. Application Scenarios of Disinfection Robot

	No.	Scenario Application Requirement	Precautions
Disinfection robot	1	The robot can only travel on flat ground without stairs.	The robot is designed to travel on flat ground, with a maximum gradient of 10° and a maximum obstacle height of 10 mm. It cannot travel up or down stairs. Ensure that the ground is flat.
	2	The width of the disinfection path must be 1 m or wider.	The robot is 0.5 m in width, and its ultrasonic sensor and LiDAR have a detection width of 0.8 m. If the path is narrower than 0.8 m, the robot may determine that there are obstacles ahead.
	3	Ensure that no people or animals are in the operation area.	1. The robot has an effective spray disinfection radius of 2 m. 2. Use the recommended disinfectants to avoid harms to animals and plants.

	4	The robot can detect surroundings within 40 m around it and disinfect an area of no larger than 10,000 ㎡ at a time.	1. From the start point, move the robot straight forward, backward, left, and right for no more than 40 m to create the map. For areas out of that range, create more maps. 2. The map must be created from the center. The robot can disinfect a maximum area of 10,000 ㎡ at a time. Create multiple maps if the disinfection area exceeds 10,000 ㎡.

6. Robot Introduction (Understanding of the Robot)

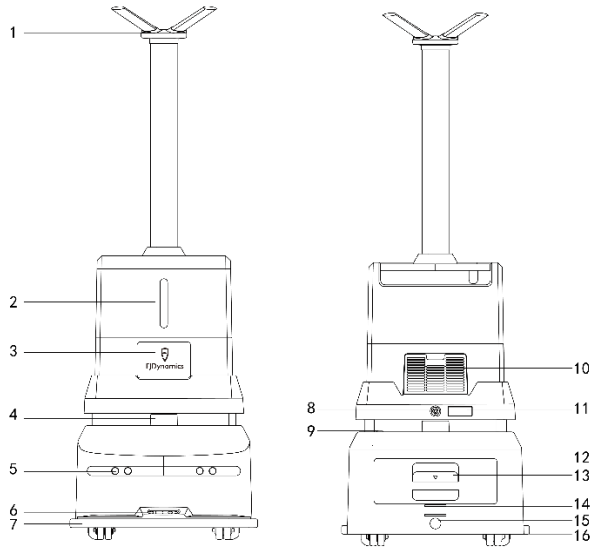
- The FJD Spray Disinfection Robot operates indoors, suitable for public indoor spaces such as hospitals, hotels, offices, supermarkets, restaurants, Internet cafes, and KTVs.

- With LiDAR and the all-around smart sensors, the FJD Spray Disinfection Robot is capable of automatic positioning, navigation, and obstacle avoidance. It can automatically travel indoors or be manually controlled via FJD’ s robot control app with a tablet.

- The FJD Spray Disinfection Robot’ s disinfection system is capable of disinfectant atomization.

7. Main Structure of the Robot

Figure 1 shows the main structure of the FJD Spray Disinfection Robot. Its chassis has two driving wheels and four driven wheels. With LiDAR, the robot realizes automatic positioning; and by integrating multiple sensors, such as the LiDAR, the ultrasonic sensor, the depth vision sensor, and the safety edge sensor, it can also avoid obstacles automatically.

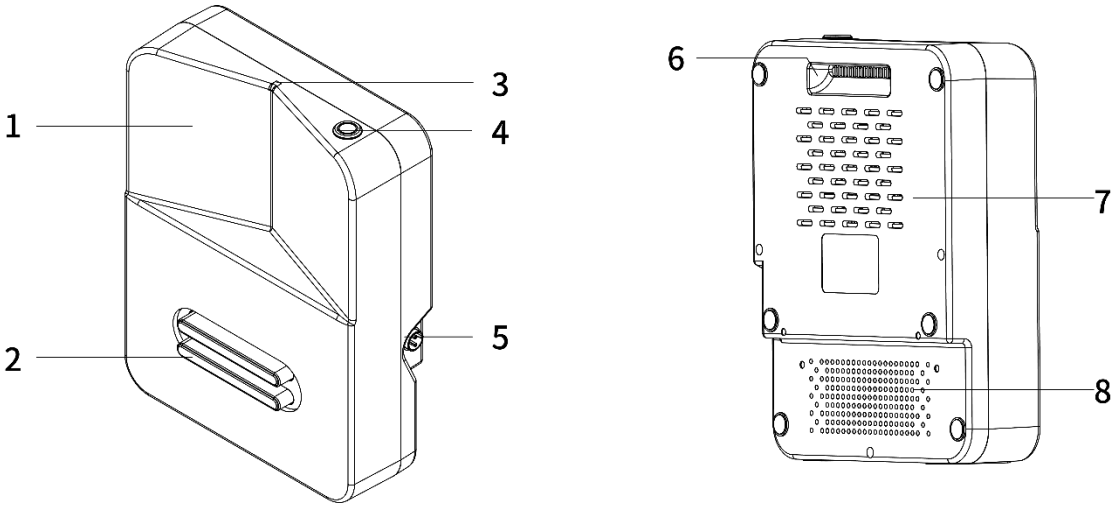


1	Spray nozzle	5	Ultrasonic sensor	9	Power switch	13	Battery compartment latch
2	Liquid level display	6	Depth vision sensor	10	Vent	14	Charging contact
3	FJ Dynamics logo	7	Anti-collision safety edge sensor	11	Wireless module box	15	Charging port
4	LiDAR	8	Emergency stop switch	12	Battery compartment cover	16	Wheel

Figure 1 Main structure of the FJD Spray Disinfection Robot

Figure 2 shows the structure of the charging pile. The robot is capable of finding, matching, and contacting the charging pile for automatic

recharging.



1	V-shaped scan area	3	Signal indicator	5	Charging port	7	Heat dissipation hole
2	Charging contact	4	Power switch	6	Handle	8	Heat dissipation hole

Figure 2 Structure of the charging pile

Figure 3 shows the appearance of the tablet remote controller. You can control the robot using the robot control app on the tablet remote controller.

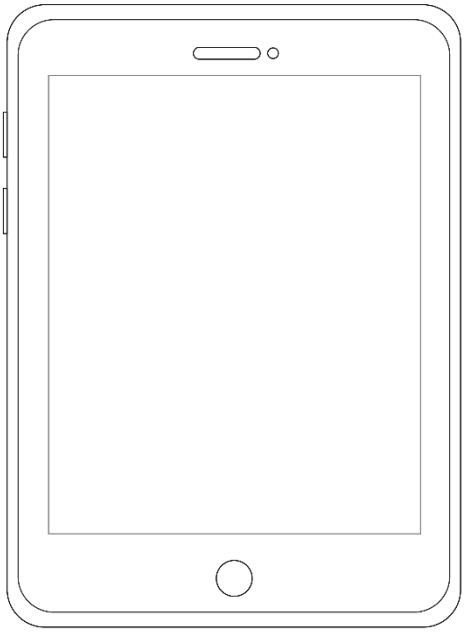


Figure 3 Tablet remote controller

8. Operation Steps (Use of the Robot)

Follow the steps below to use your robot.

Use the Charging Pile

1. Install the charging pile in an open area, with its back against the wall and no obstacles around it within 2 ㎡.

2. Use a 100–240 V AC power supply.

3. Press the power switch of the charging pile to turn on the charging pile.

4. Push the robot to the charging pile, and ensure that the charging contacts of the robot is in contact with those of the charging pile.

5. Pair the robot with the tablet remote controller, and tap **Return for Charging** in the robot control app to start charging.

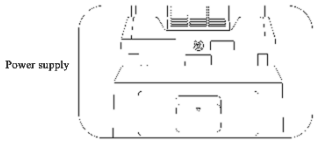
6. The status indicator of the charging pile is described as follows:

- The indicator is solid red when the charging is not started.
- The indicator blinks red and green after the charging starts, indicating that the charging is in progress.
- The indicator is solid green when the charging is completed and before the charging contacts are detached.
- The indicator turns from green to red when the robot leaves the charging pile and the charging contacts are detached.
- The indicator blinks red when there is a fault during charging.

Add Disinfectant

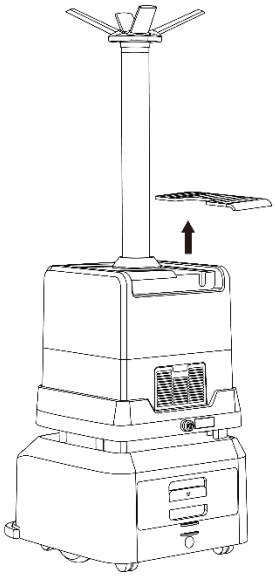
1. Wear protection gloves and goggles to prevent personal harm from disinfectant.

2. Power off the robot.

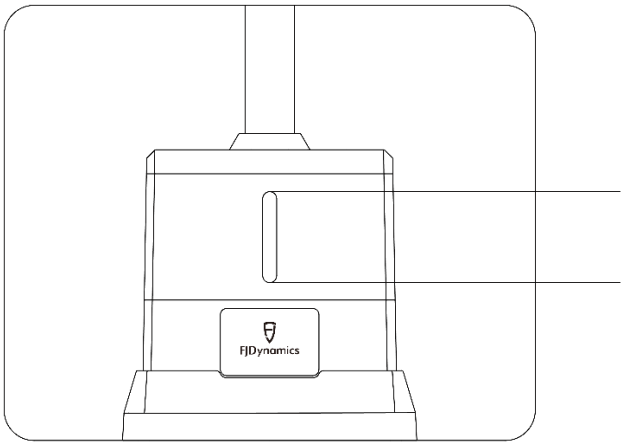


3. Prepare the disinfectant in the container.

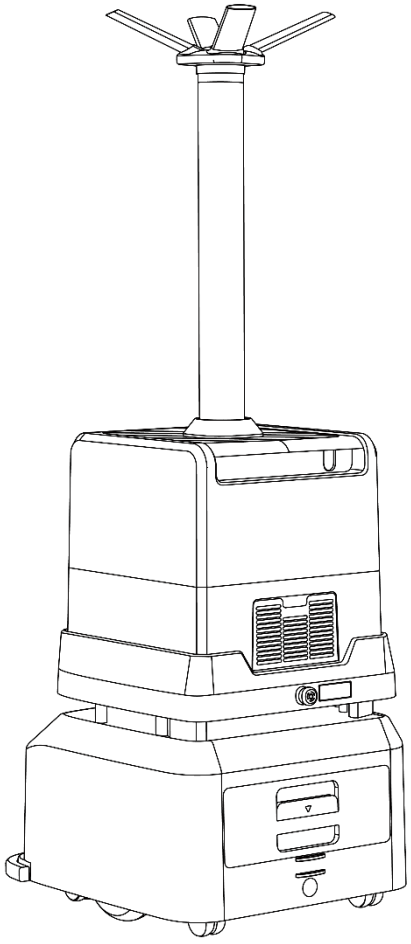
4. Remove the disinfectant tank cover by lifting the handle on the side.



5. Slowly pour the disinfectant into the disinfectant tank with a measuring cup. The maximum capacity of the disinfectant tank is 16 L. Ensure that the liquid level is between the maximum level and the minimum level, to prevent disinfectant overflow, which may cause short circuits of other devices.

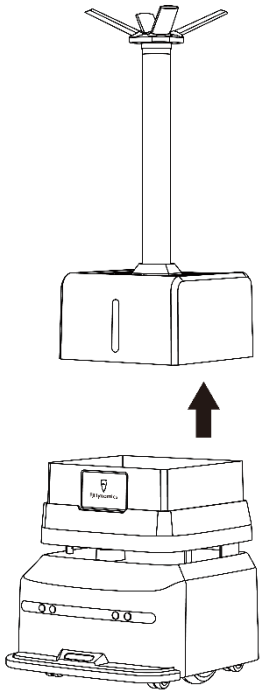


6. Put back the disinfectant tank cover. The disinfectant is successfully added.



Discharge Disinfectant

1. Remove the upper part of the robot, as shown in the figure below.

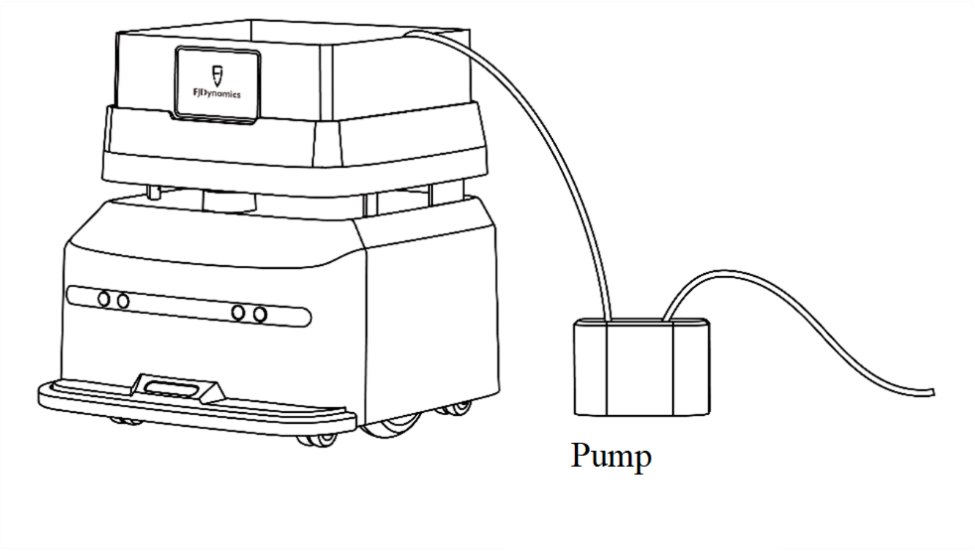


2. Press the bleeder valve on the upper part to discharge the disinfectant from the bleeder valve.

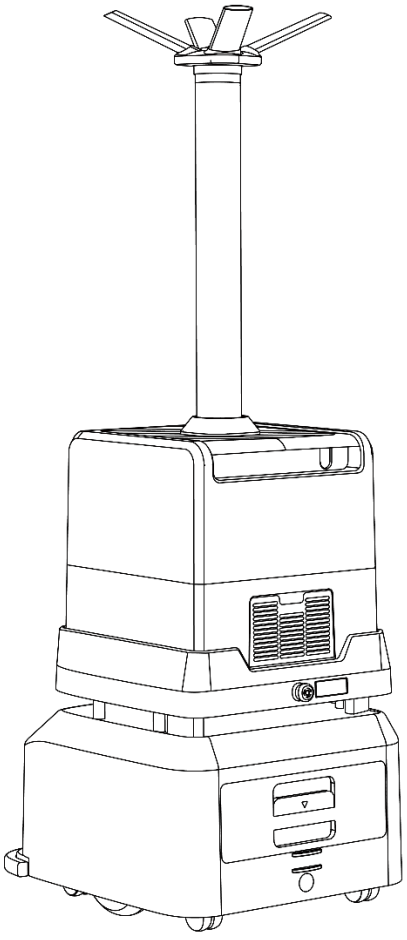




3. Use a pump to empty the disinfectant tank.



4. Install the upper part onto the lower part. Then, discharge of the disinfectant is completed.



App Guide

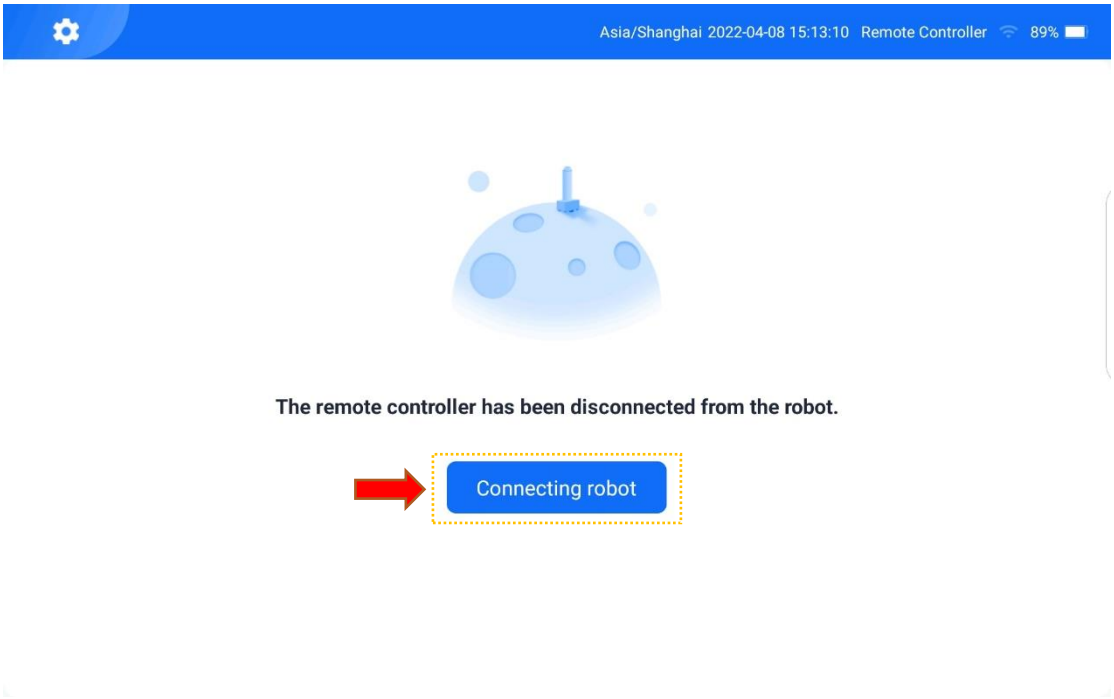
Check the following before starting a task:

- The starting position of the robot must be the charging pile.
- The battery level of the robot must be above 30%.
- There is sufficient disinfectant.
- There are no obstacles around the robot.

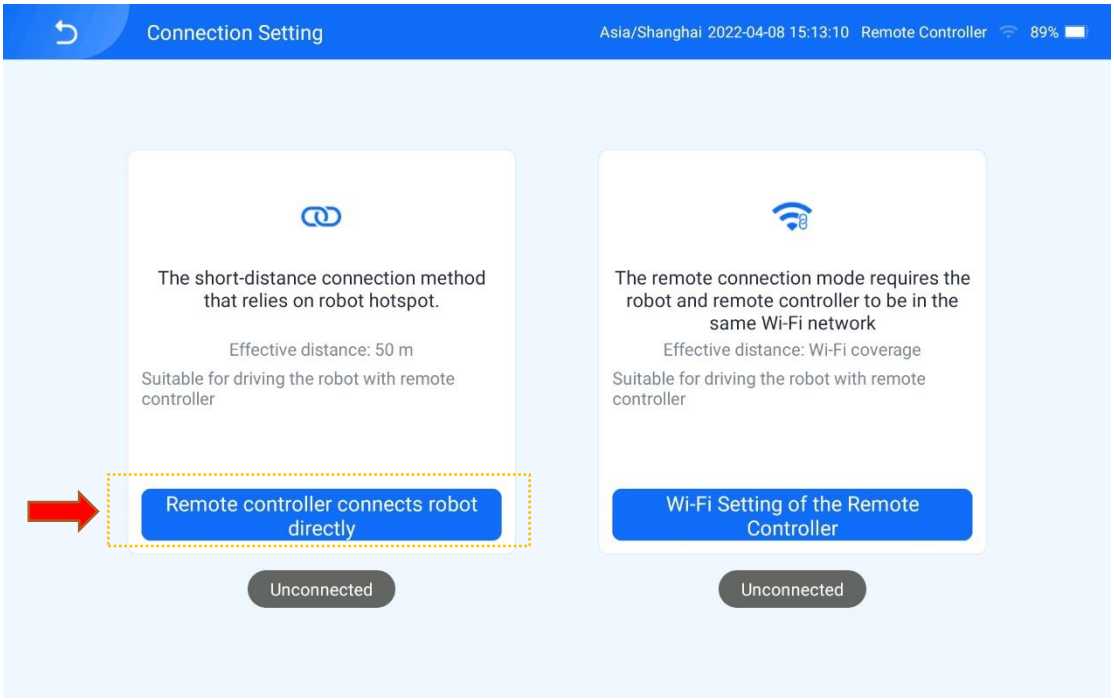
1. Pairing and Networking

To pair the robot with the tablet remote controller, perform the following operations:

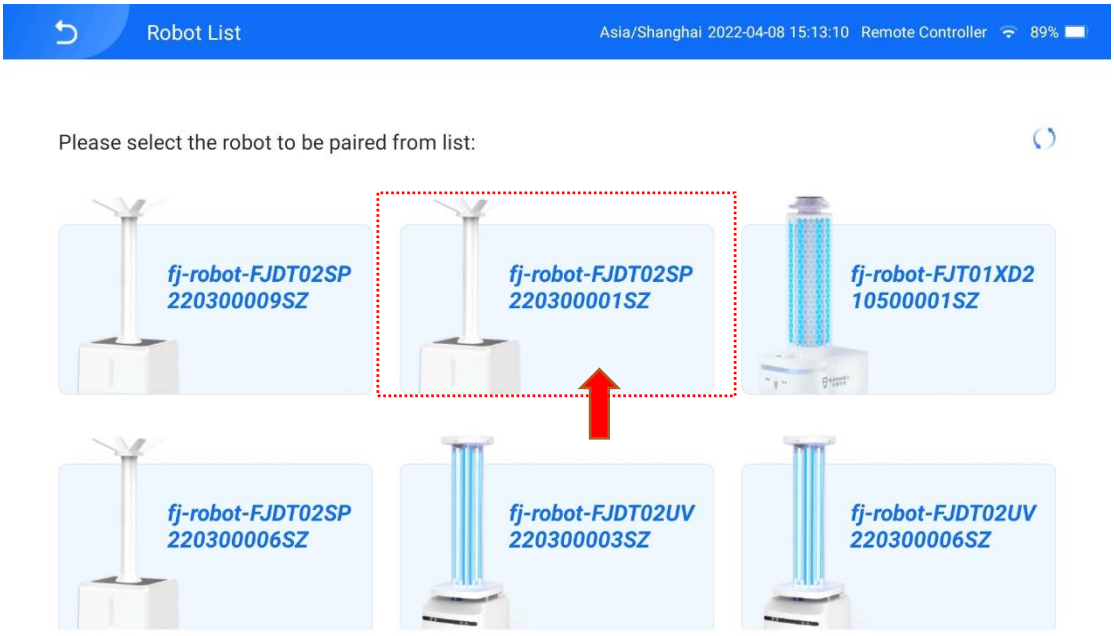
[1] Tap **Connect to Robot** on the home screen of the app to enter the connection settings screen.



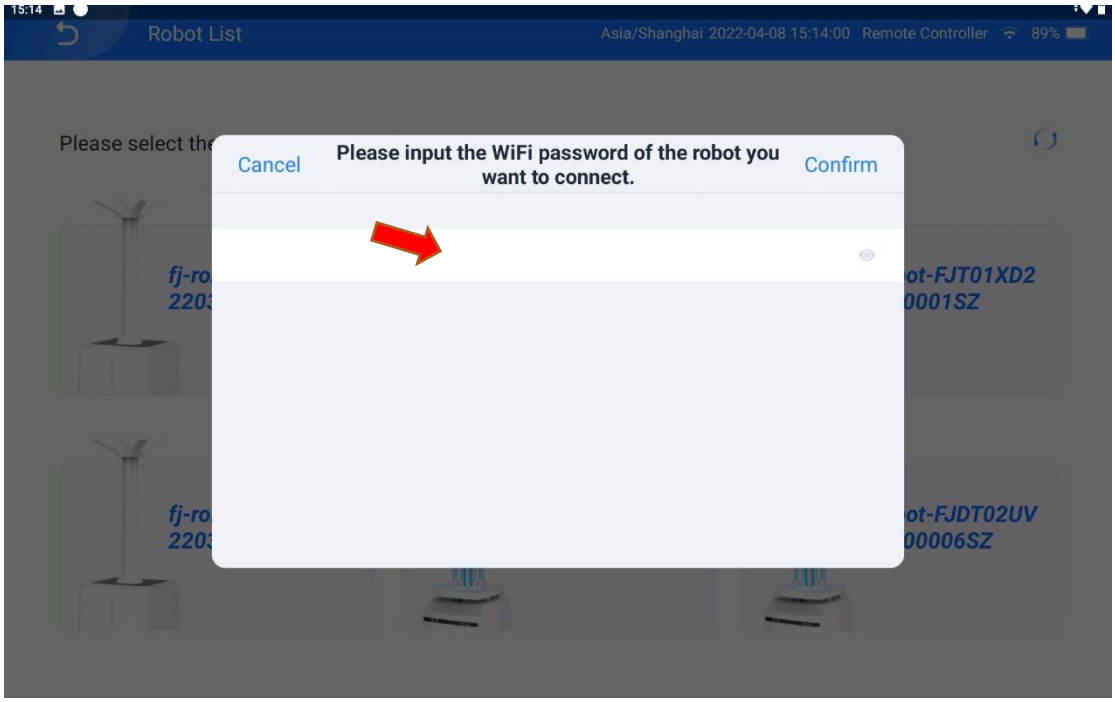
[2] Tap **Directly Connect to Robot** to enter the robot list screen.



[3] Select the robot to be paired. The password input box pops up.

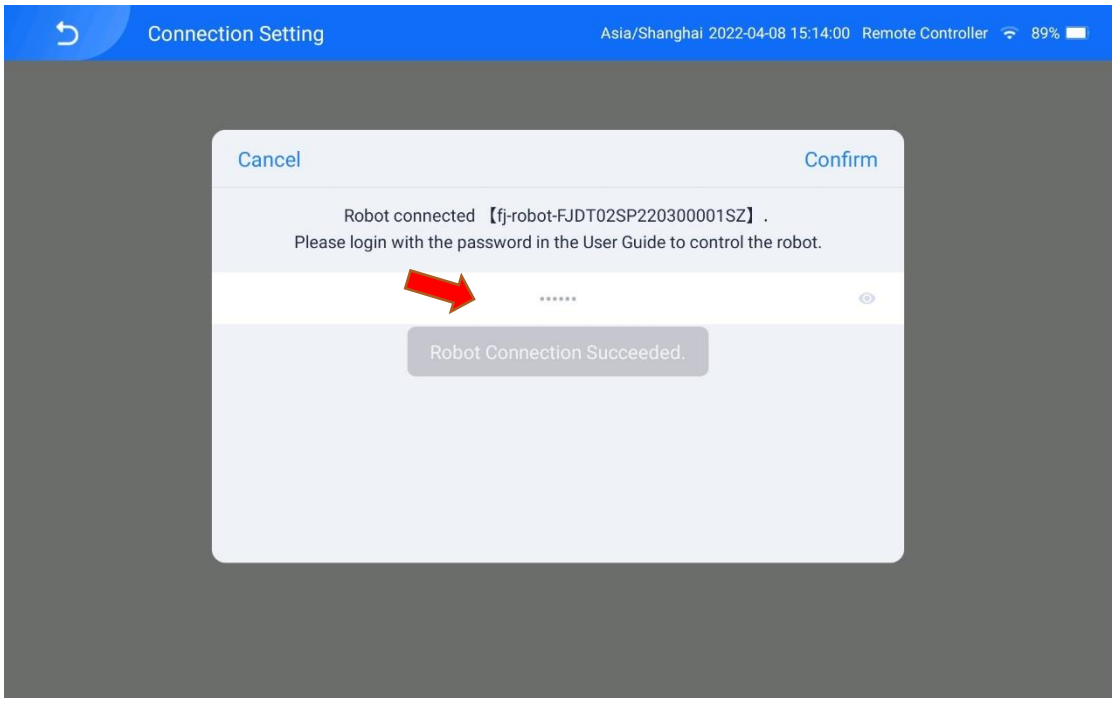


[4] Enter the robot pairing password and tap **OK**. The robot information box pops up, indicating that the robot is successfully paired with the tablet remote controller.

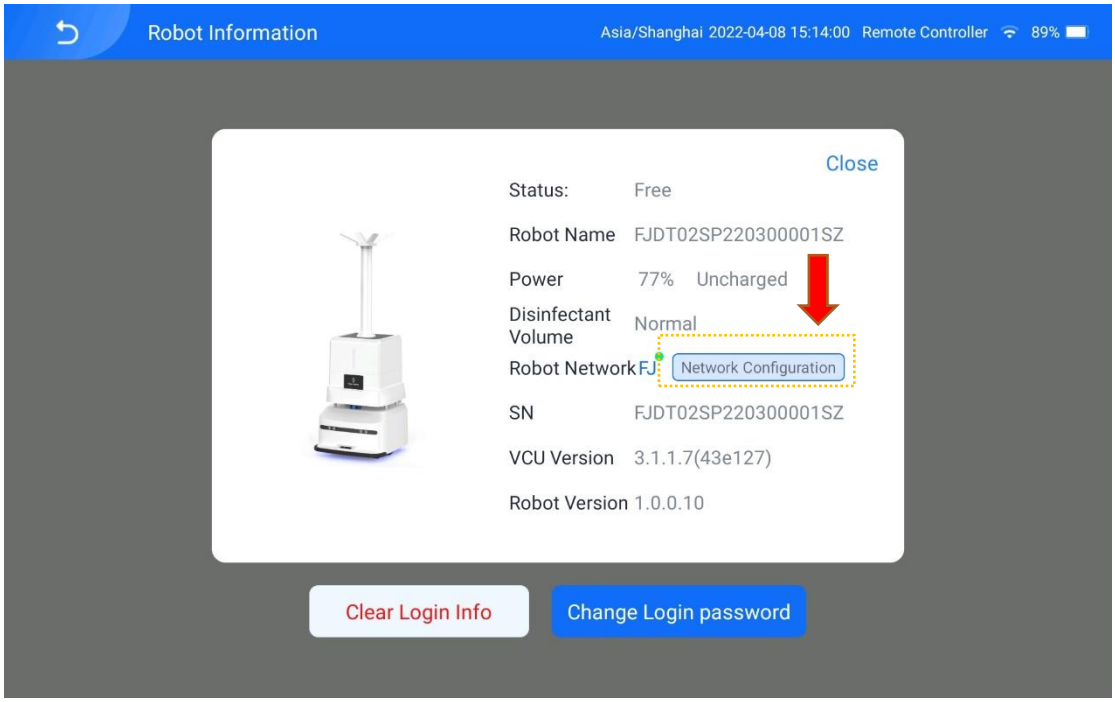


The default robot pairing password is **123456789**.

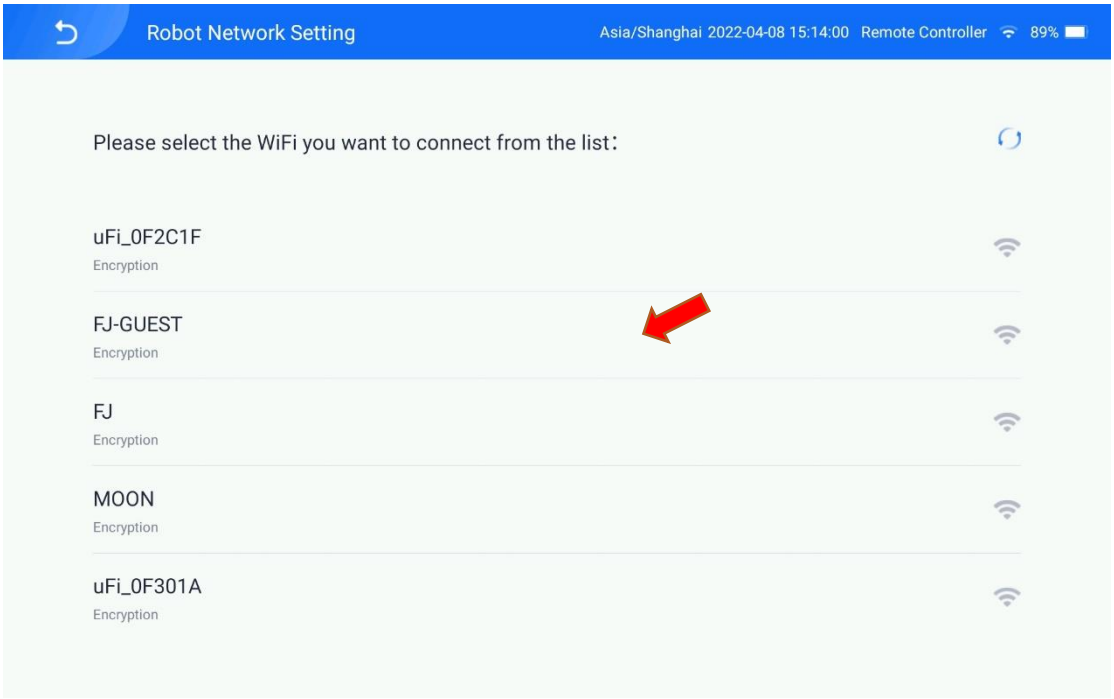
On the robot login screen displayed, enter the password for logging into the robot: **123456**.



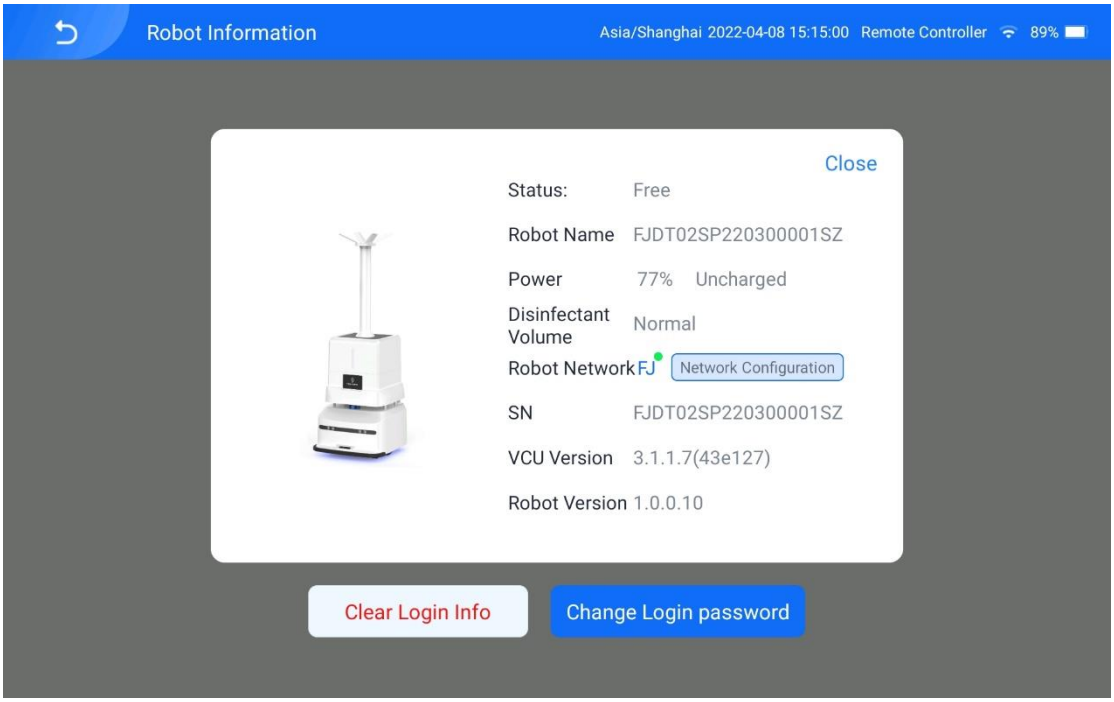
[5] Tap **Configure Network** on the **Robot Information** screen.



[6] Select the Wi-Fi that the robot needs to connect to.



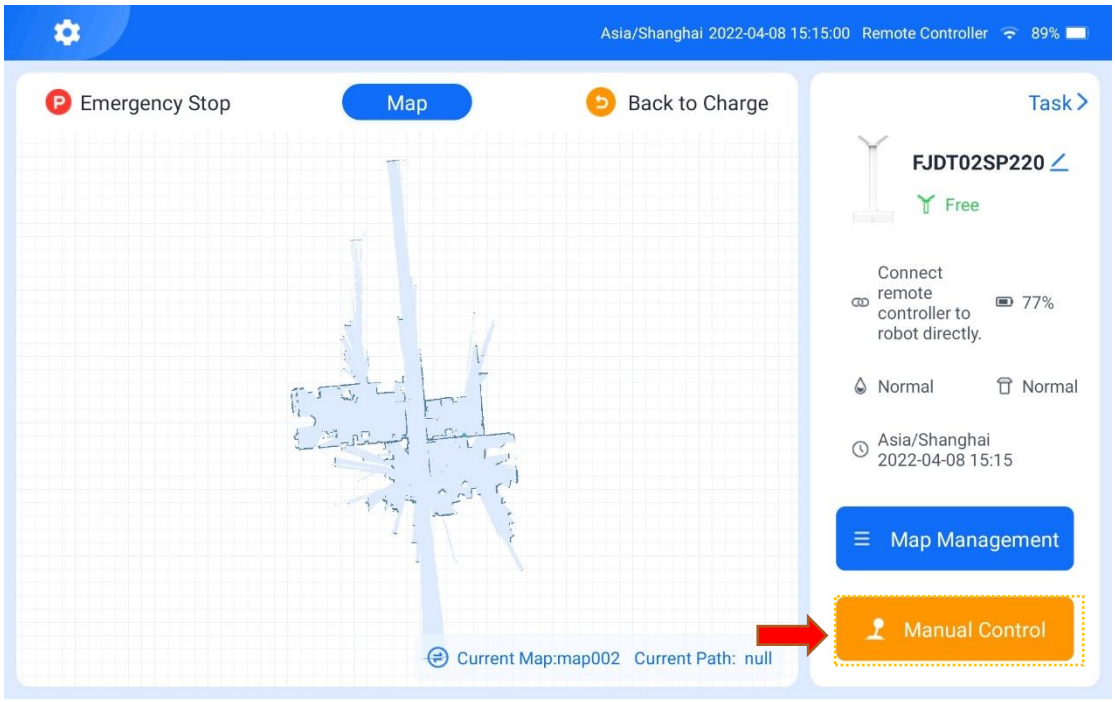
[7] Enter the Wi-Fi password and tap **Connect**. The robot network configuration is completed.

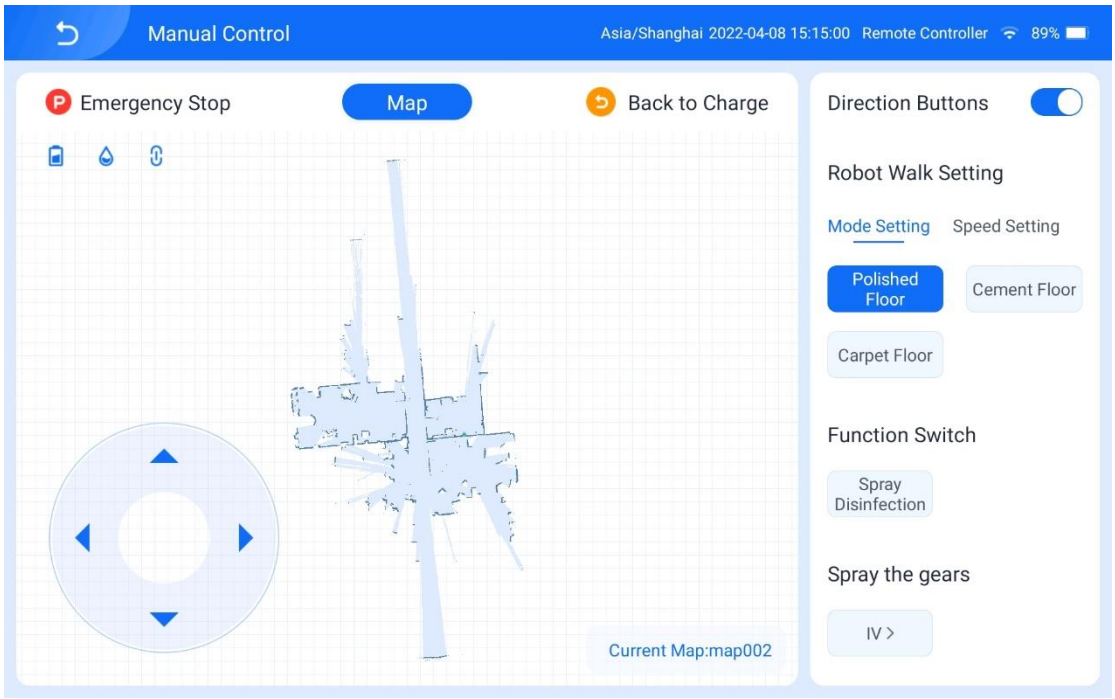


Enter the password of a local Wi-Fi to connect the tablet remote controller to the local Wi-Fi.

2. Mode Description

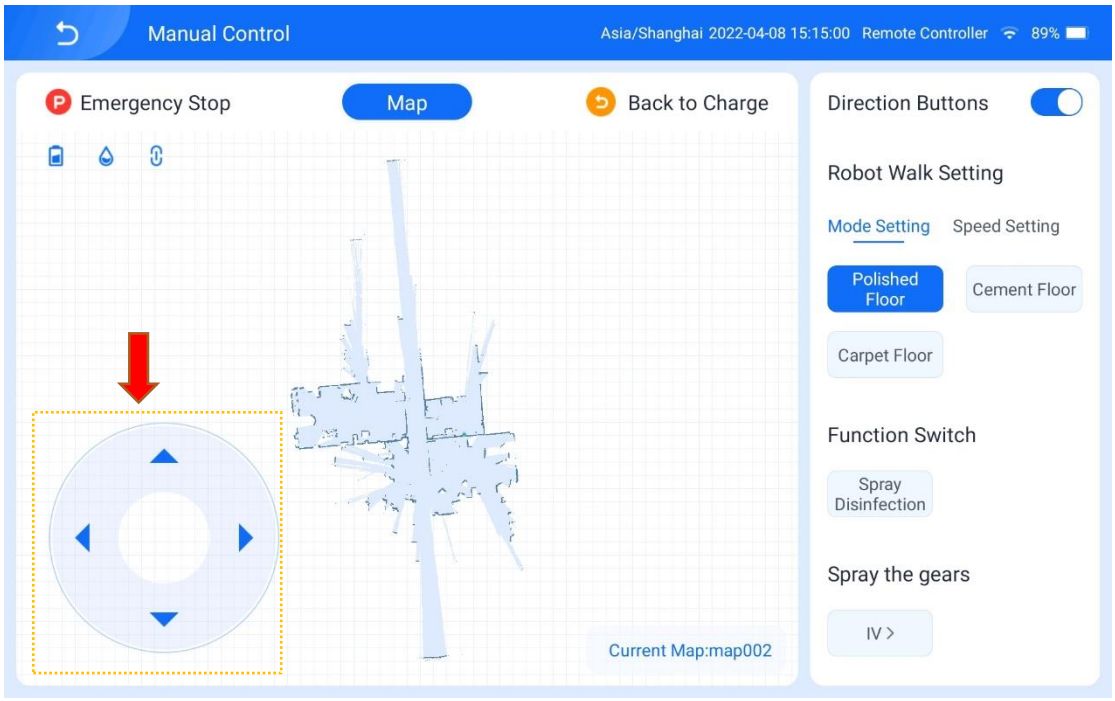
After the robot is successfully paired and connected to the network, it enters the auto mode by default. Tap **Manual Control** in the lower right corner of the app to switch to the manual mode, and tap ⮌ in the upper left corner of the app to switch back to the auto mode.





2.1 Manual Mode

In the manual mode, there are direction buttons in the lower left part of the map area of the tablet remote controller, which can be used to control the movement of the robot. The tablet remote controller can be used to set the travel mode of the robot, enable/disable the spray function, adjust the disinfection level, set the moving speed of the robot, pause the robot, or make the robot return immediately.



2.2 Auto Mode

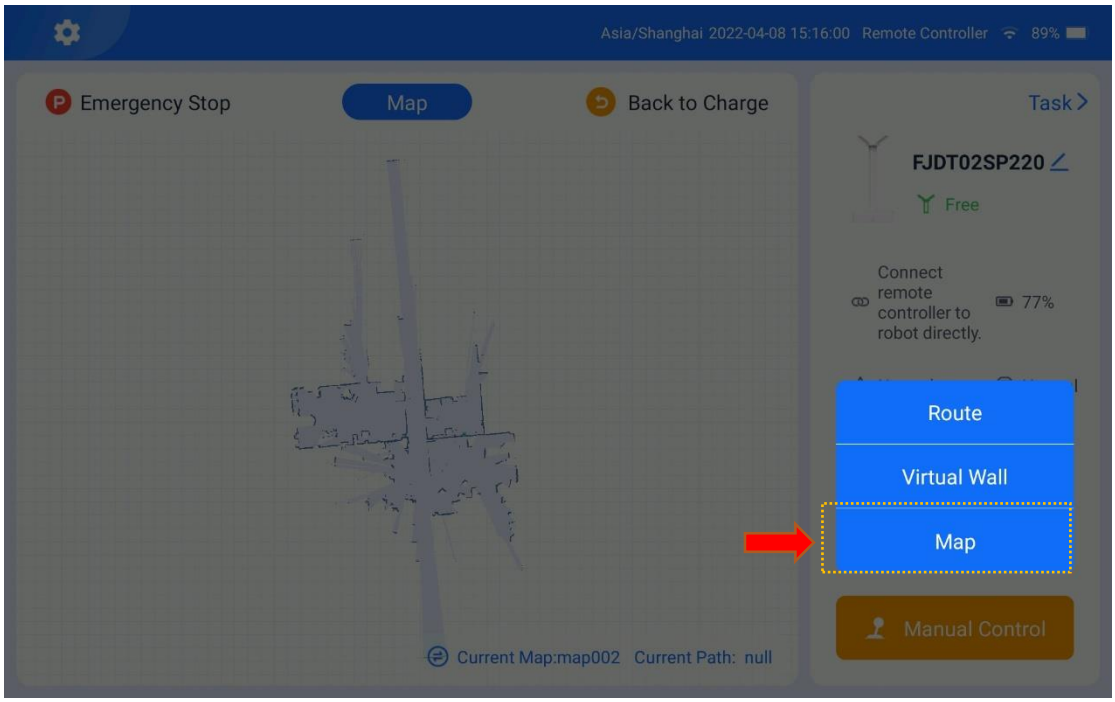
2.2.1 Create a Map

Step 1: Ensure that the starting position of the robot is the charging pile, that the battery level of the robot is above 30%, and that there are no obstacles in front of the robot.

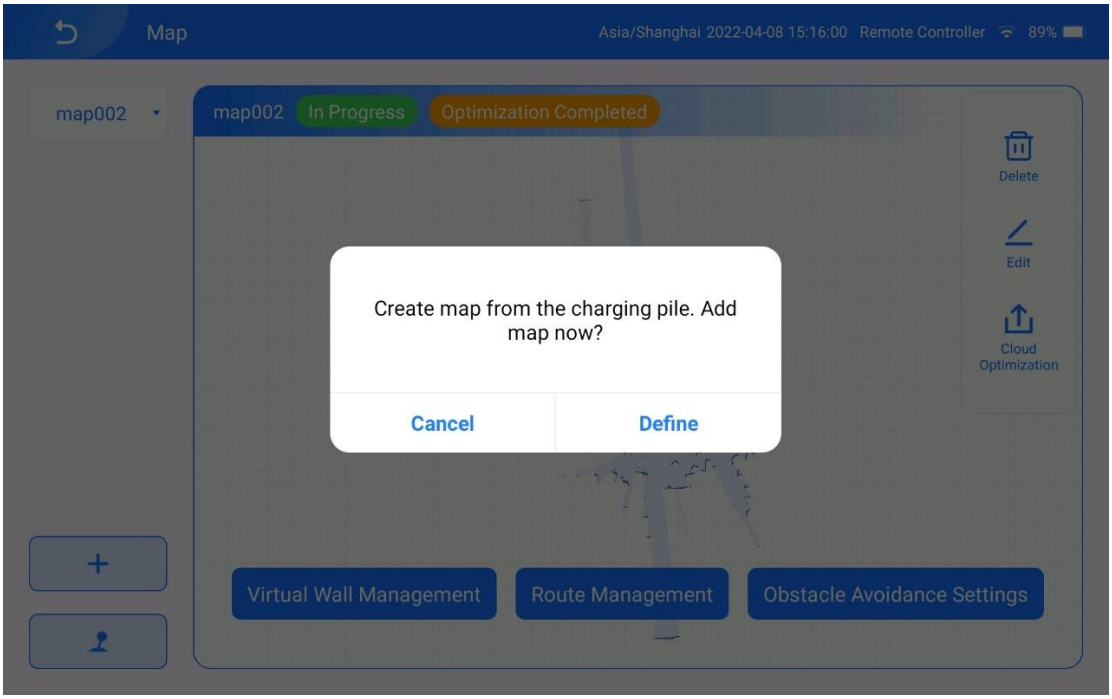
Step 2:

1. Perform the following operations to create a map:

[1] Tap **Map Management** in the lower right corner of the app screen to enter the map path screen.

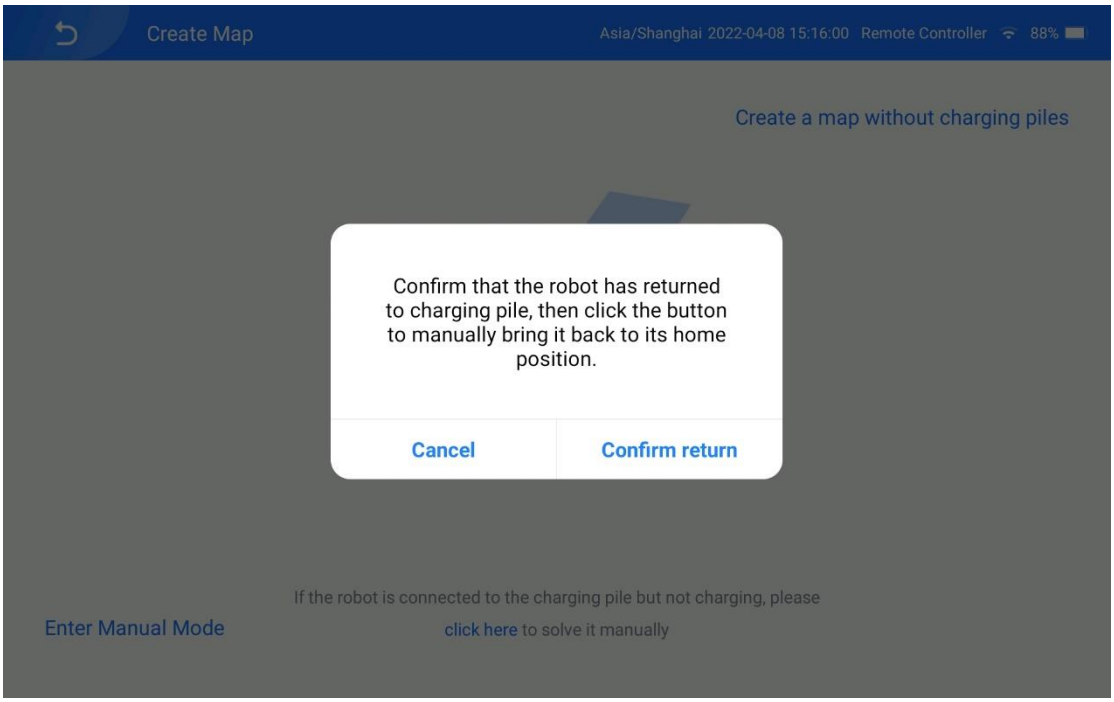


[2] Tap **Map** on the **Map Management** screen to enter the map creation screen. Tap the **+** button in the lower left corner. A message pops up, instructing you to create a map from the charging pile. Then, tap **OK**.

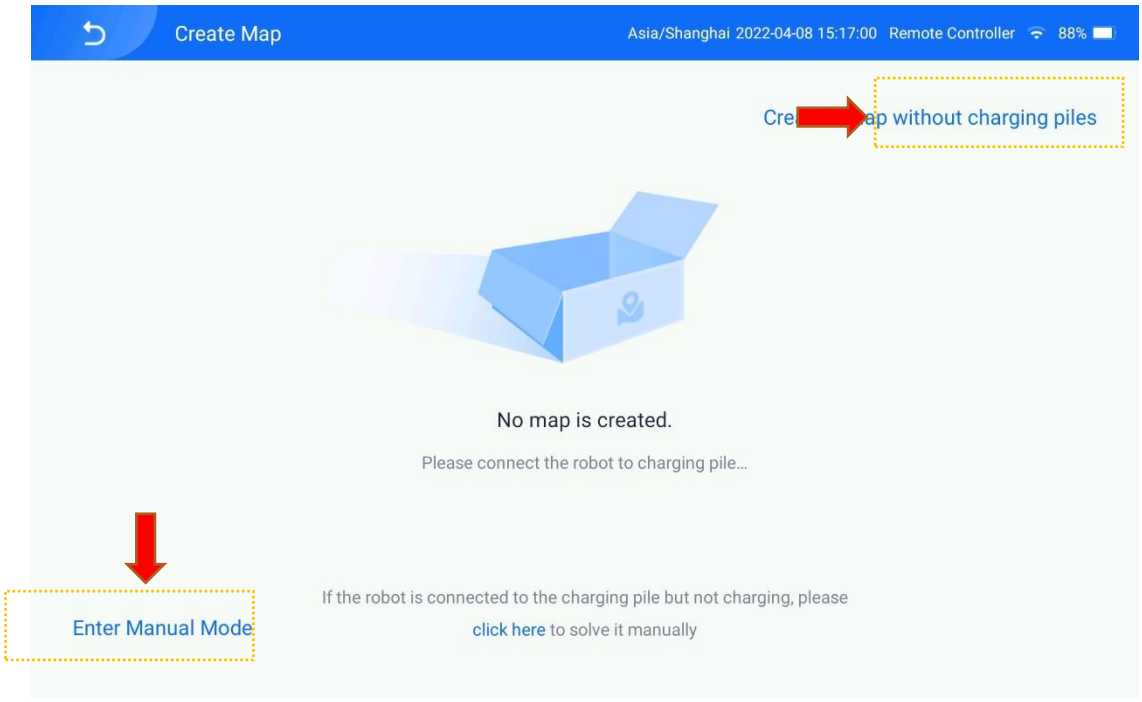


[3] Move the robot and connect it to the charging pile as prompted.

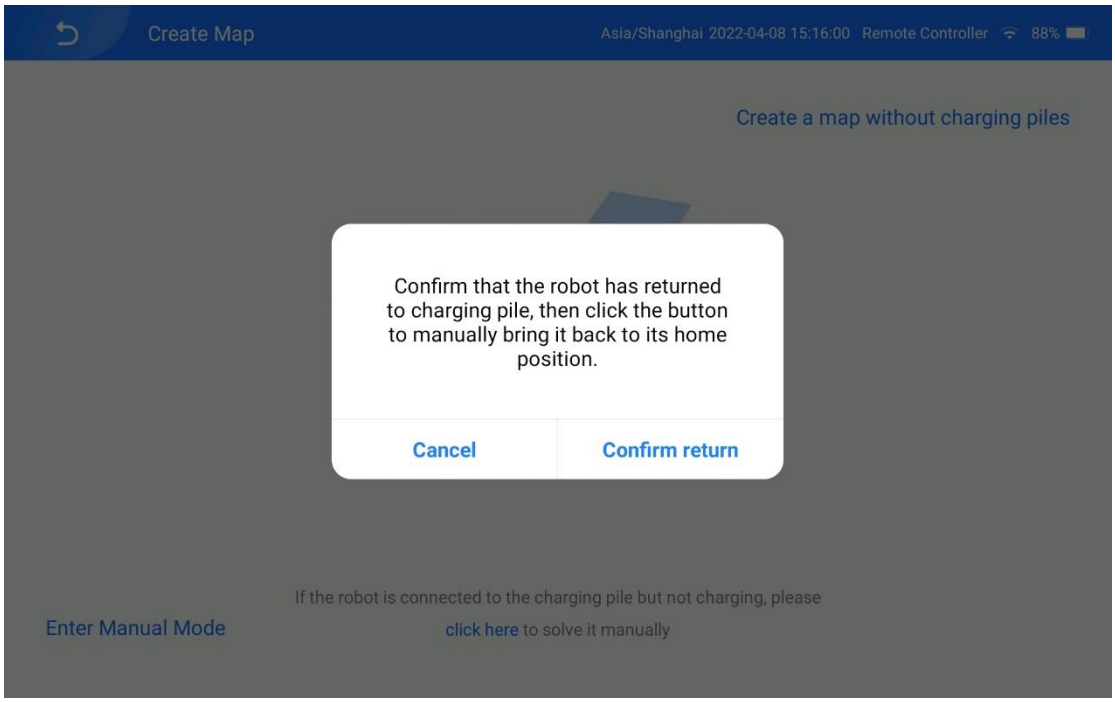
When creating a map with a charging pile, the system checks whether the robot is being charging if the robot is in the position of the charging pile. If the robot is being charged, the following message is displayed. Then, tap **OK**.



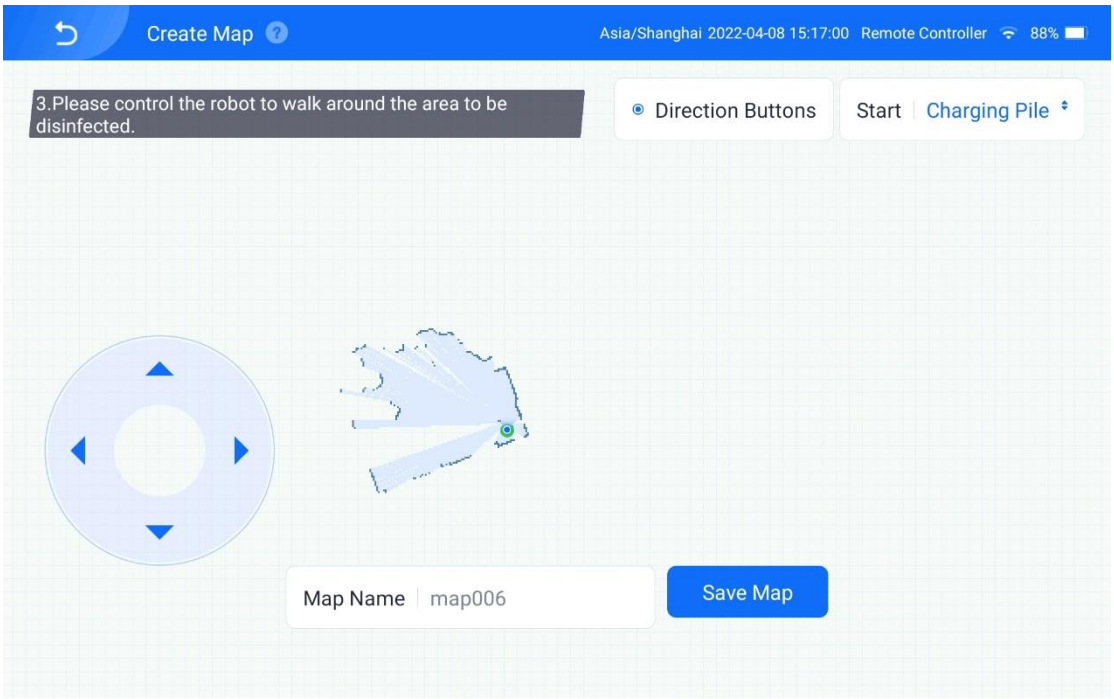
If the robot is not in the position of the charging pile, the following screen is displayed. Tap **Manual Mode** and remotely move the robot to the position of the charging pile for charging. Tap **OK** when the message above is displayed.



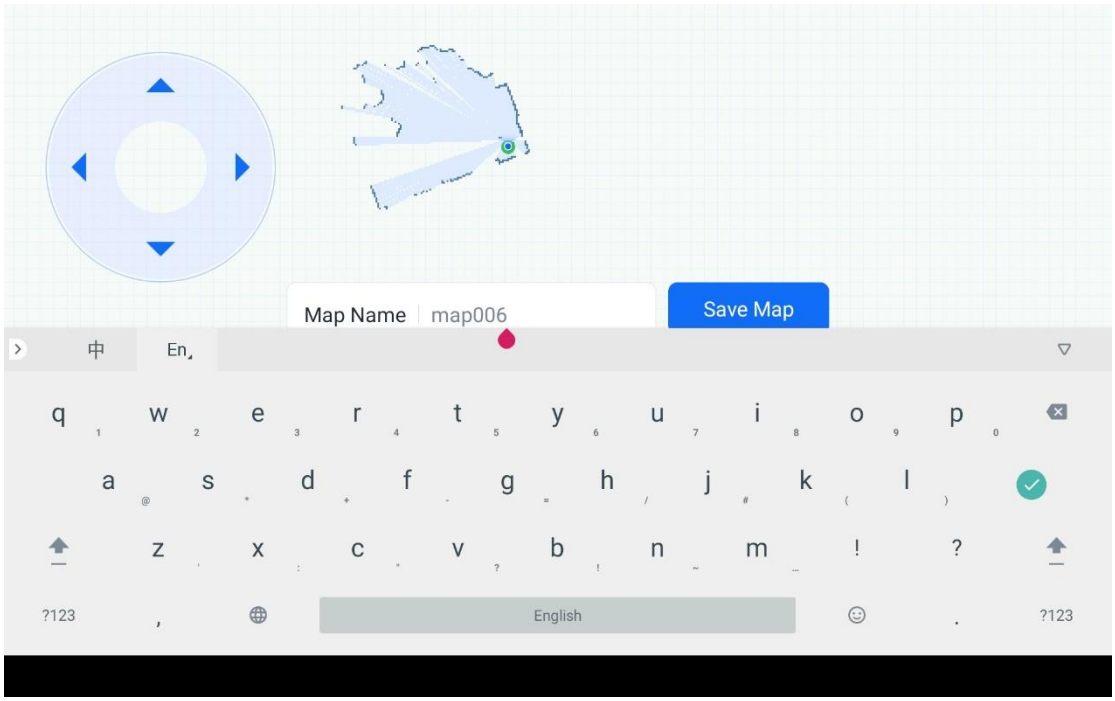
[4] Tap **OK**.

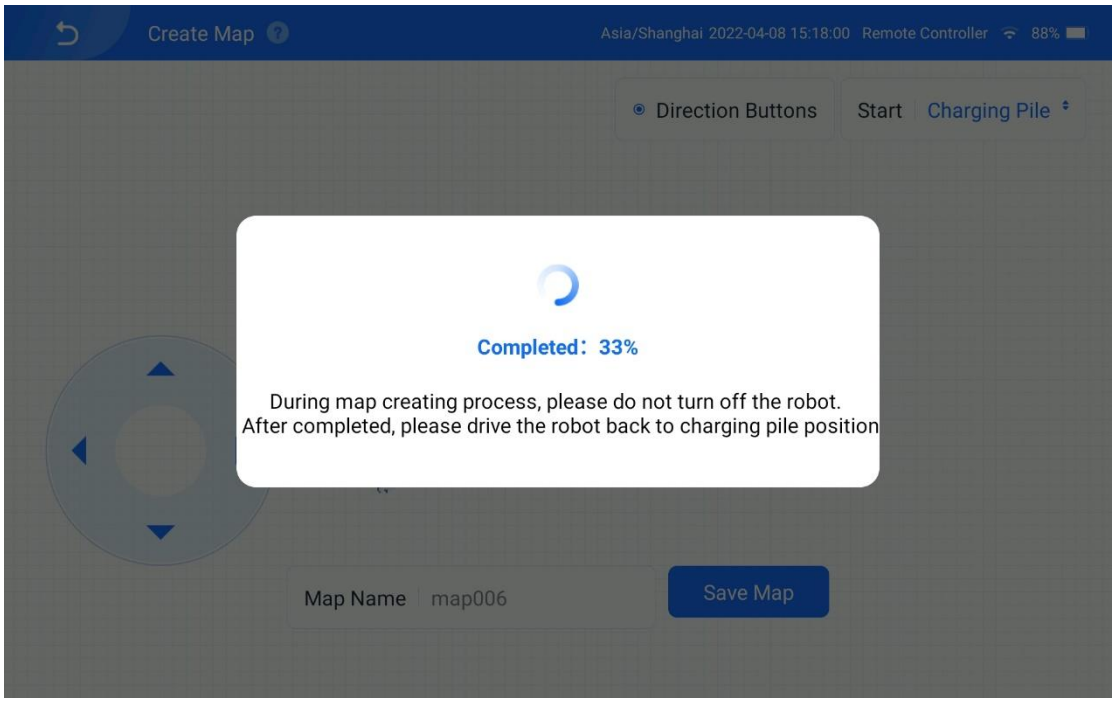


[5] When the battery level of the robot reaches above 30%, the map creation screen is displayed, and the robot automatically scans the environment using the LiDAR.

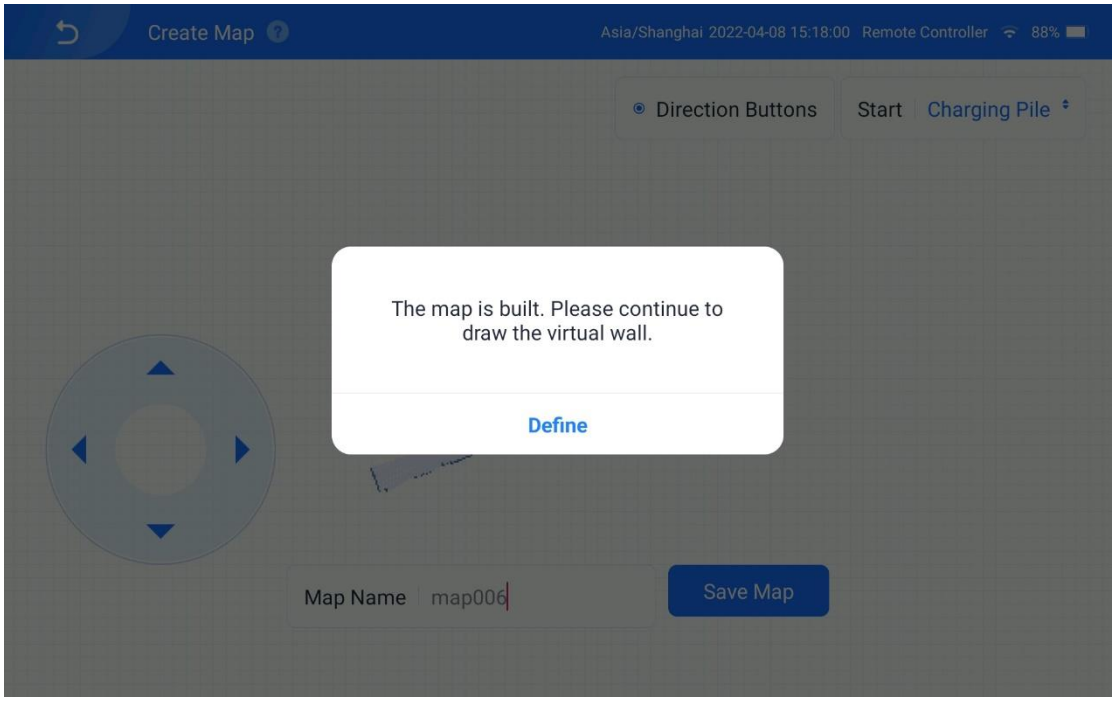


[6] Use the direction buttons on the left part of the screen to make the robot travel around the area to be disinfected and then return to the charging pile. Then, name the map and tap **Save Map**.



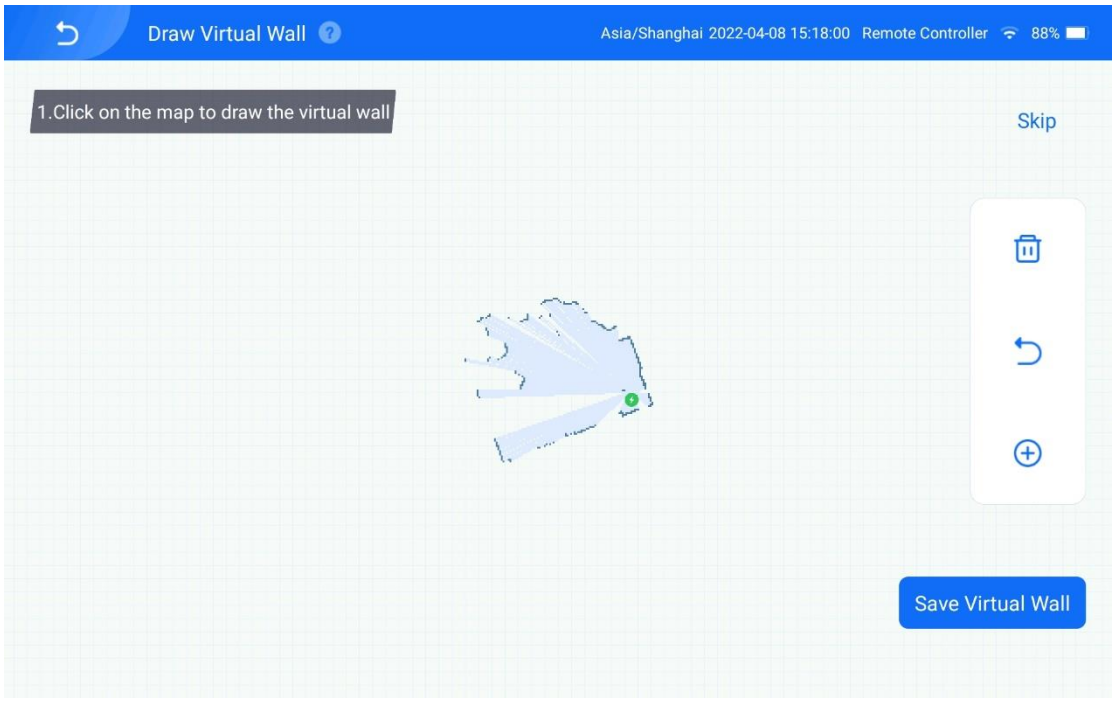


[7] After the map is created successfully, the message "Map created. Draw virtual walls if you need." is displayed. Then, tap **OK** to enter the virtual wall drawing screen.



2. Perform the following operations to create a virtual wall:

[1] Tap on the map to specify the start and end points of the virtual wall, tap **+** to draw a new virtual wall, tap ↰ to cancel the operation, or tap 🗑 to delete the virtual wall.

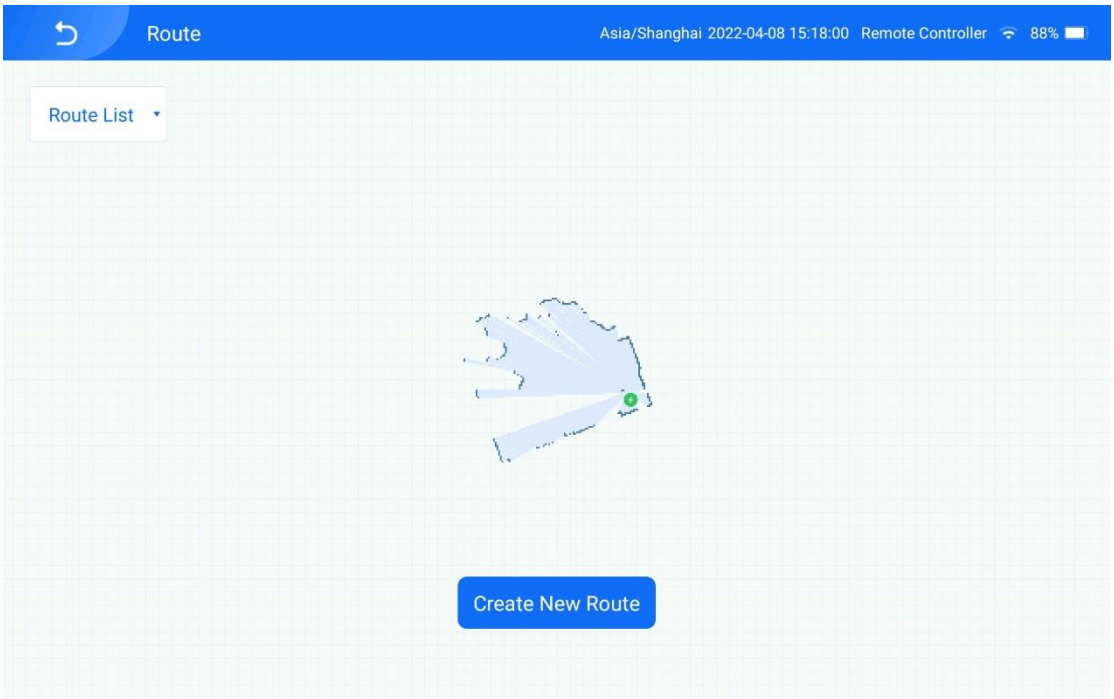


[2] Tap **Save** to save the virtual wall and go to the map management

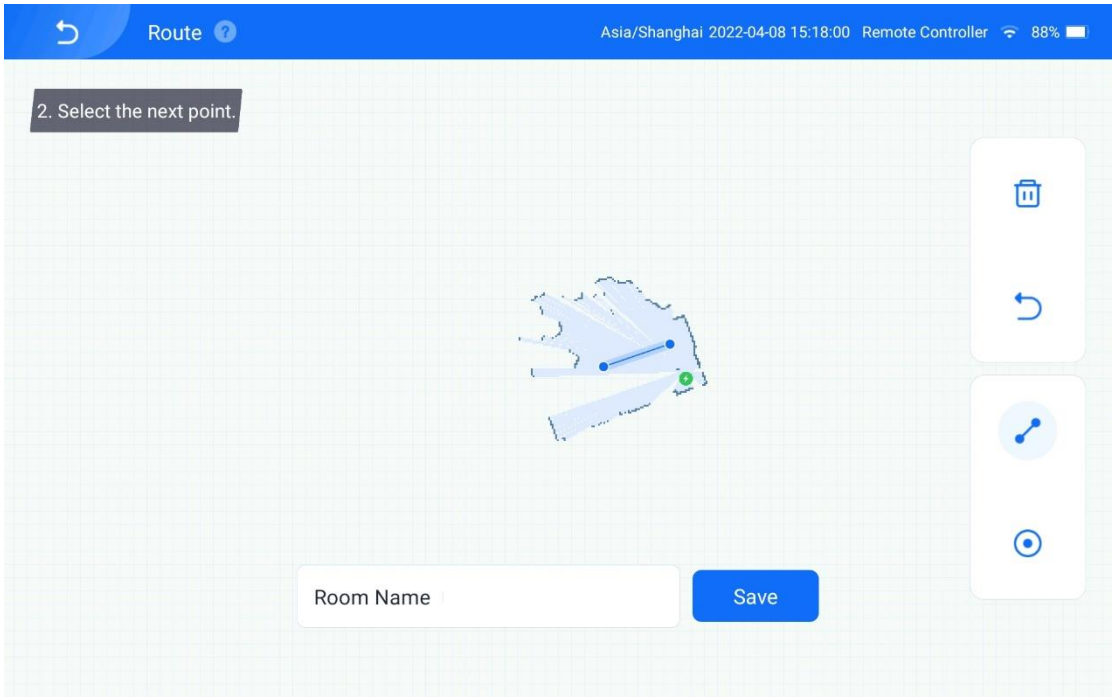
screen, or tap **Skip** to skip virtual wall creation.

3. Perform the following operations to create a new path:

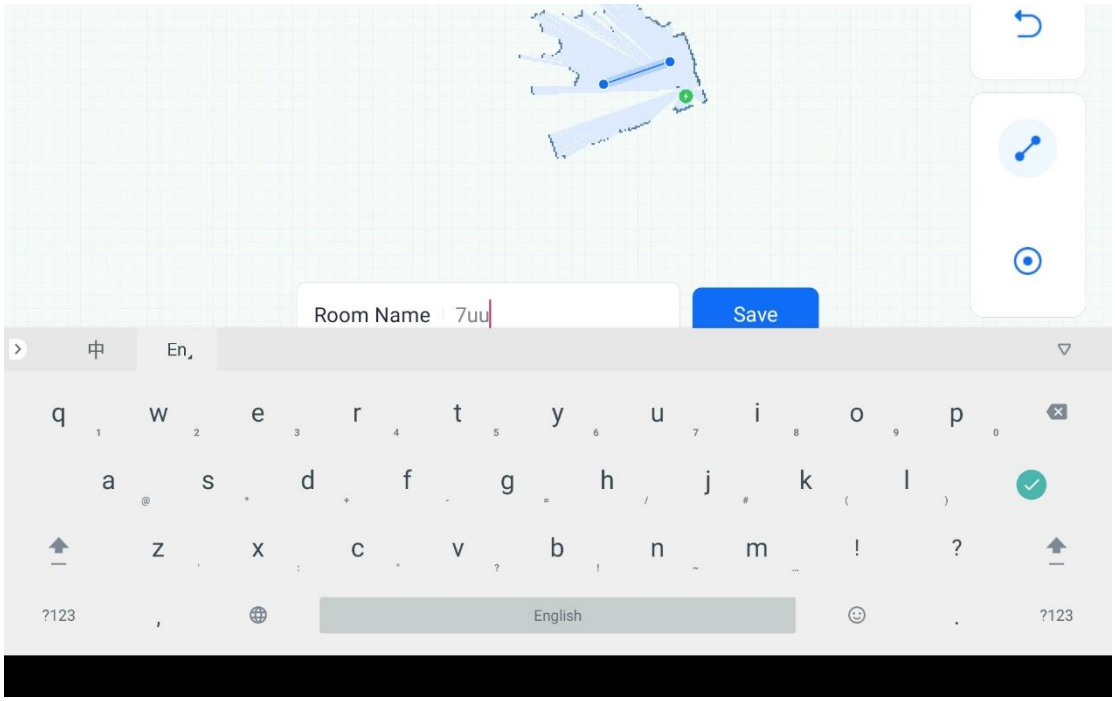
[1] Tap **Save** to enter the screen below.



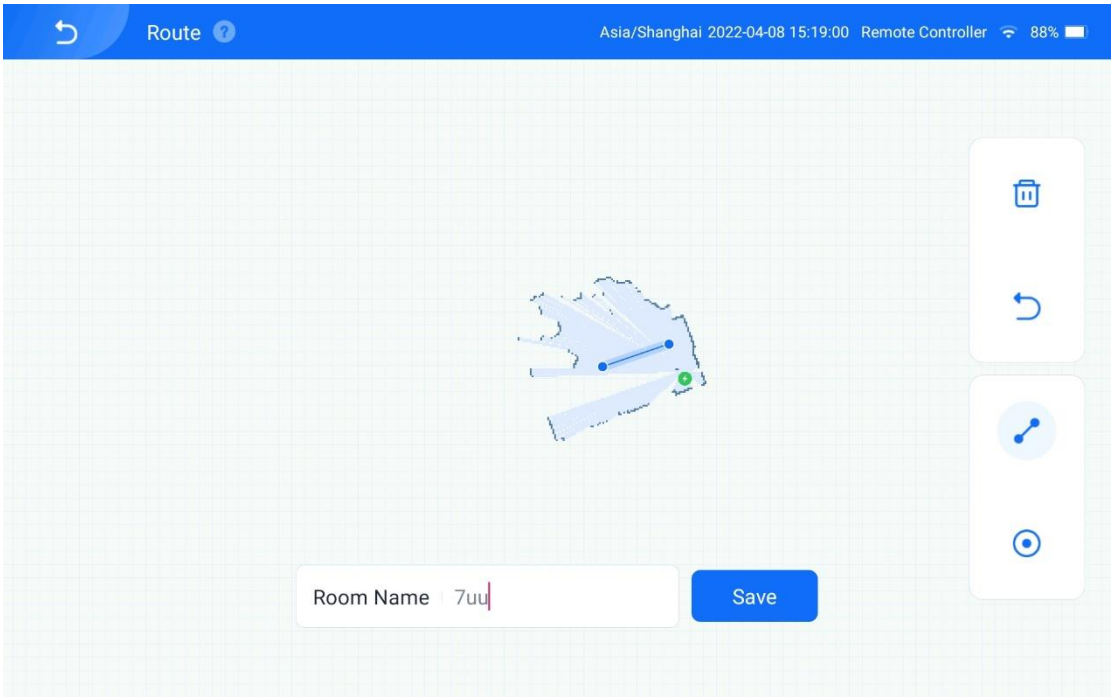
[2] Tap **Create Room Path** to enter the new path creation screen. Tap the node of the new path on the map: Tap ↰ to cancel the operation, tap 🗑 to delete the path, tap ⋰ to create a path, and tap ⊙ to select a fixed position. Tap ⋰ and select points on the map to create a line path, or tap ⊙ and select one or multiple points on the map to create a point path. Tap ↰ to undo your operation, or tap 🗑 to delete the path.



[3] Enter **a room path name** and tap **Save**. The path is created successfully. You can name the path with the room name.

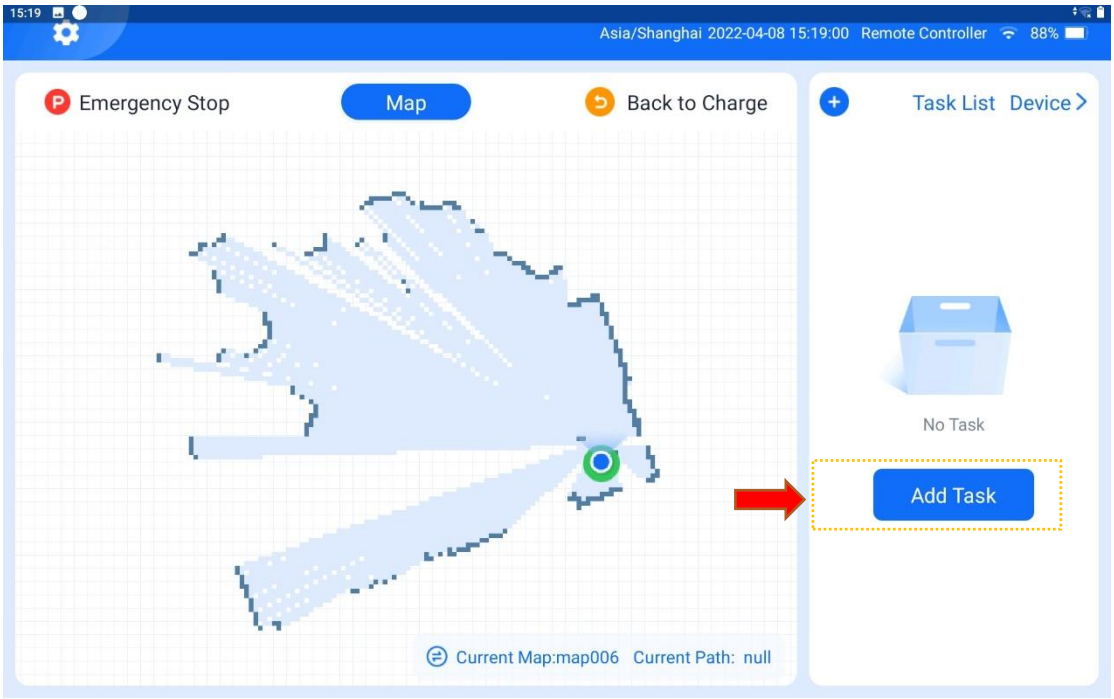


[4] The room path can be re-edited or deleted.



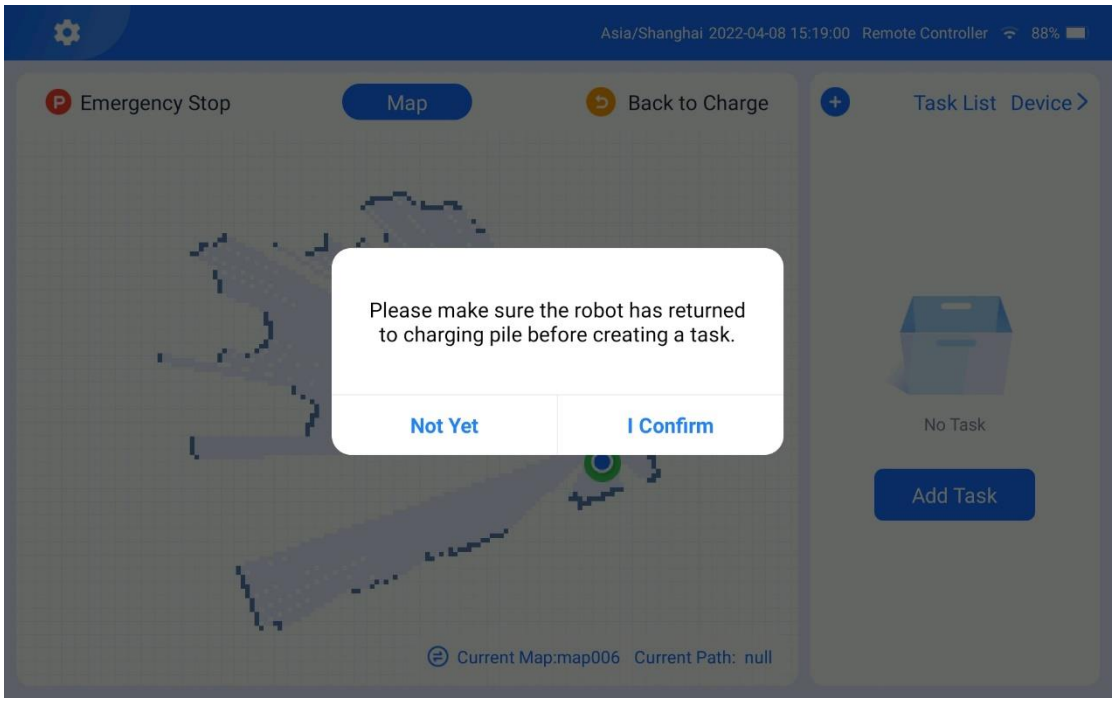
2.2.2 Add a Task

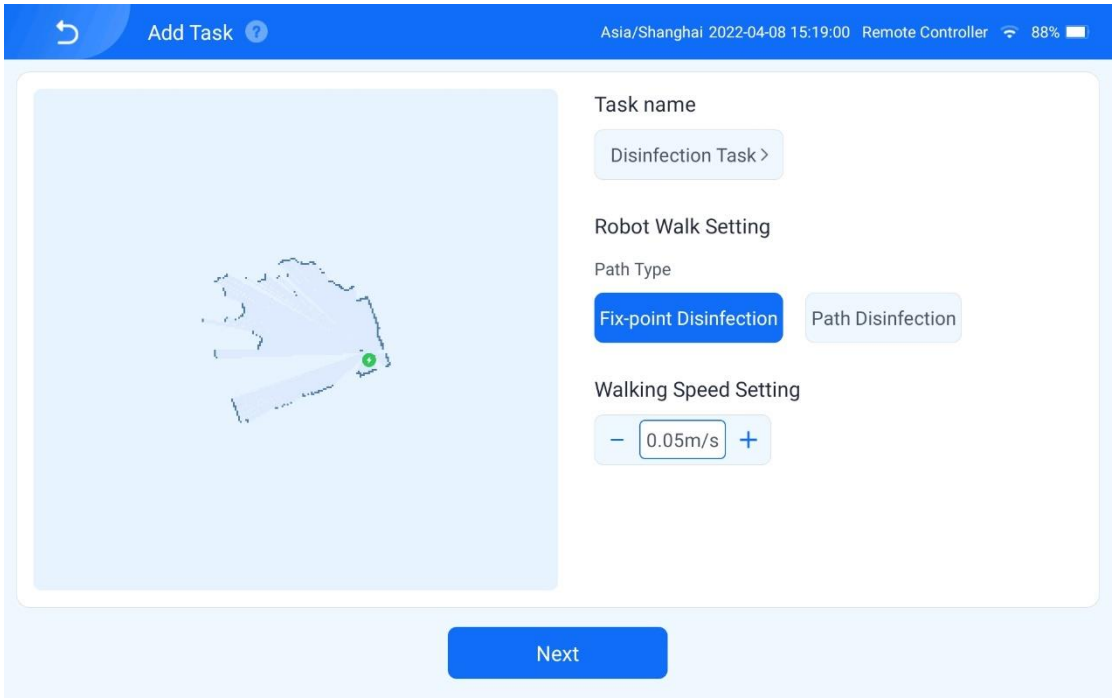
[1] Tap **Tasks** on the right sidebar of the app screen to enter the task list screen.



[2] Tap **Add Task** to enter the task settings procedure.

Before a task is created, a message pops up, telling you to ensure that the robot has returned to the charging pile. If the robot has returned to the charging pile, tap **Yes**.





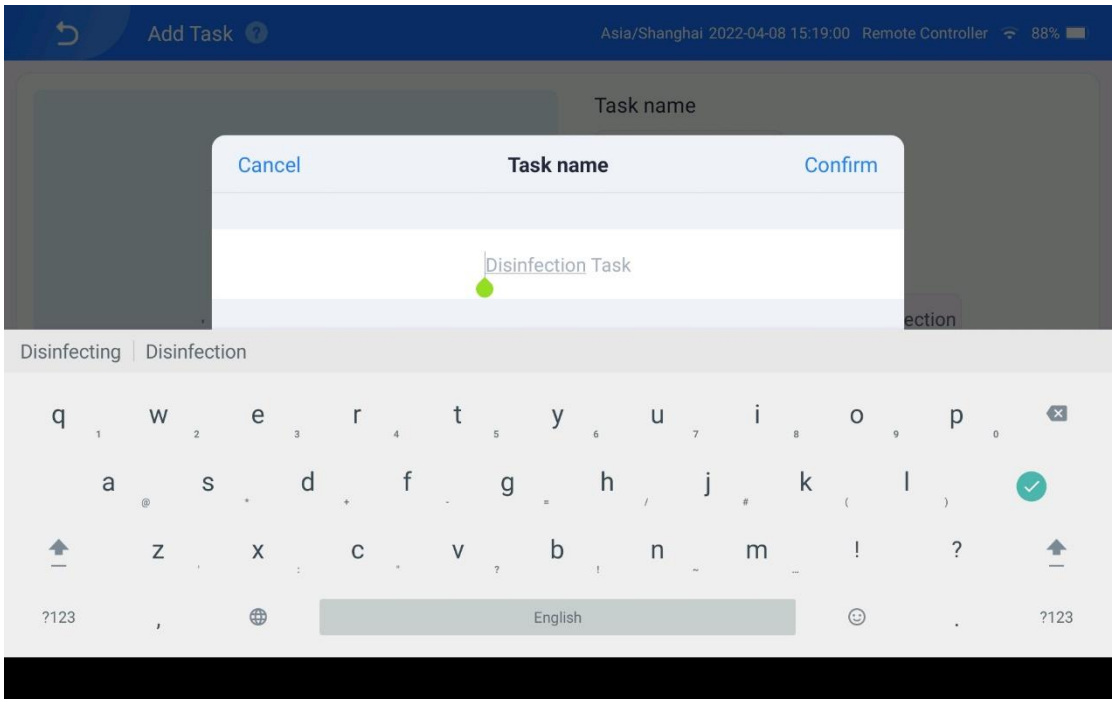
2.2.2.1 Set the Task Name and Select a Disinfection Path Type

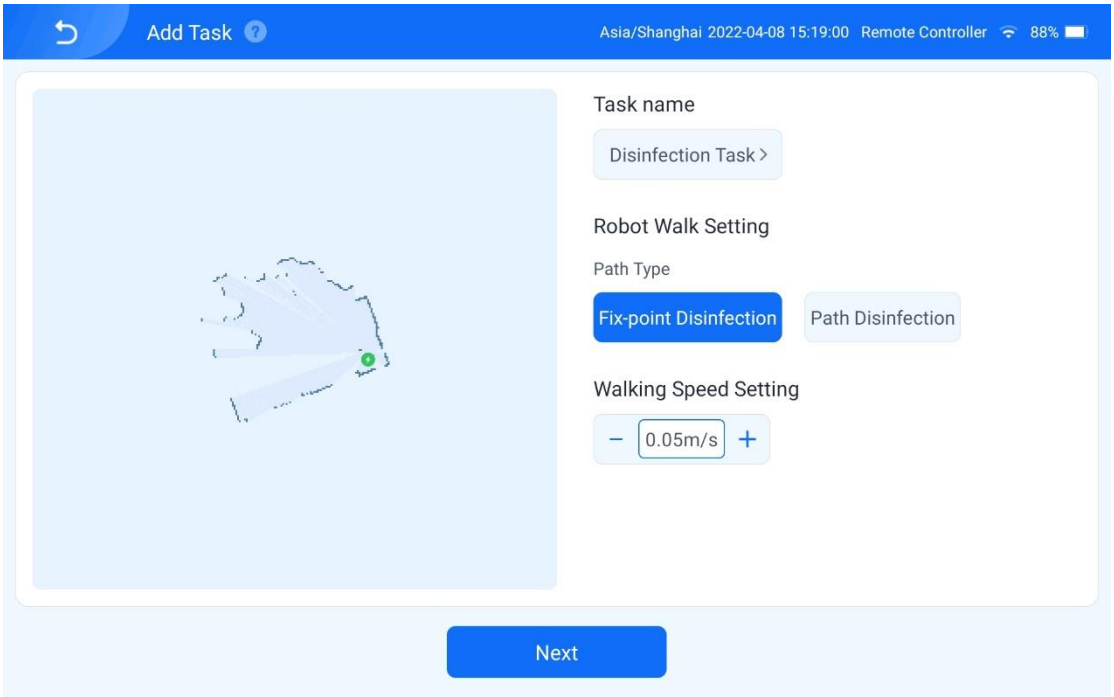
[3] Set the task name and select a disinfection path type from the

following:

Disinfect at fixed point: If this type is selected, you need to tap ⊙ and select one or multiple points on the map when creating the path. When executing the task, the robot stands still at the specified points and sprays disinfectant.

Disinfect along path: If this type is selected, you need to tap ⋰ and select multiple points on the map to form a line when creating the path. When executing the task, the robot executes disinfection while traveling along the line.

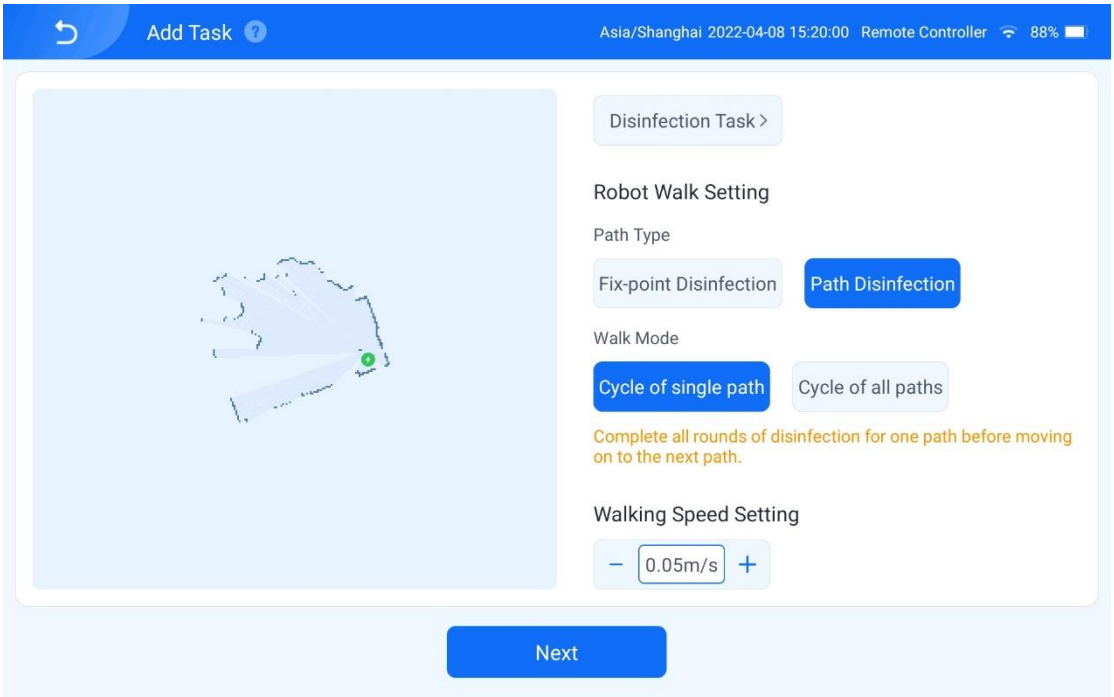




[4] If **Disinfect along path** is selected as the path type, you are prompted to select a travel mode:

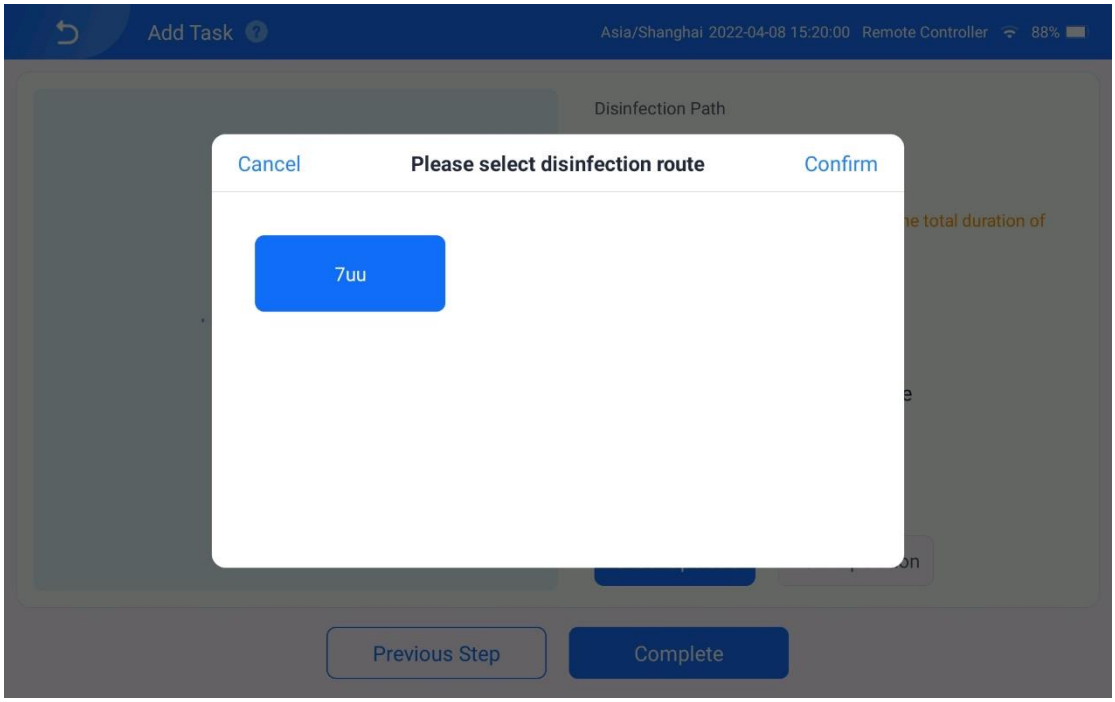
Single-path Repetition: Complete all rounds of disinfection for one path before moving on to the next path.

All-path repetition: Perform one round of disinfection for all paths and repeat until the task is completed.



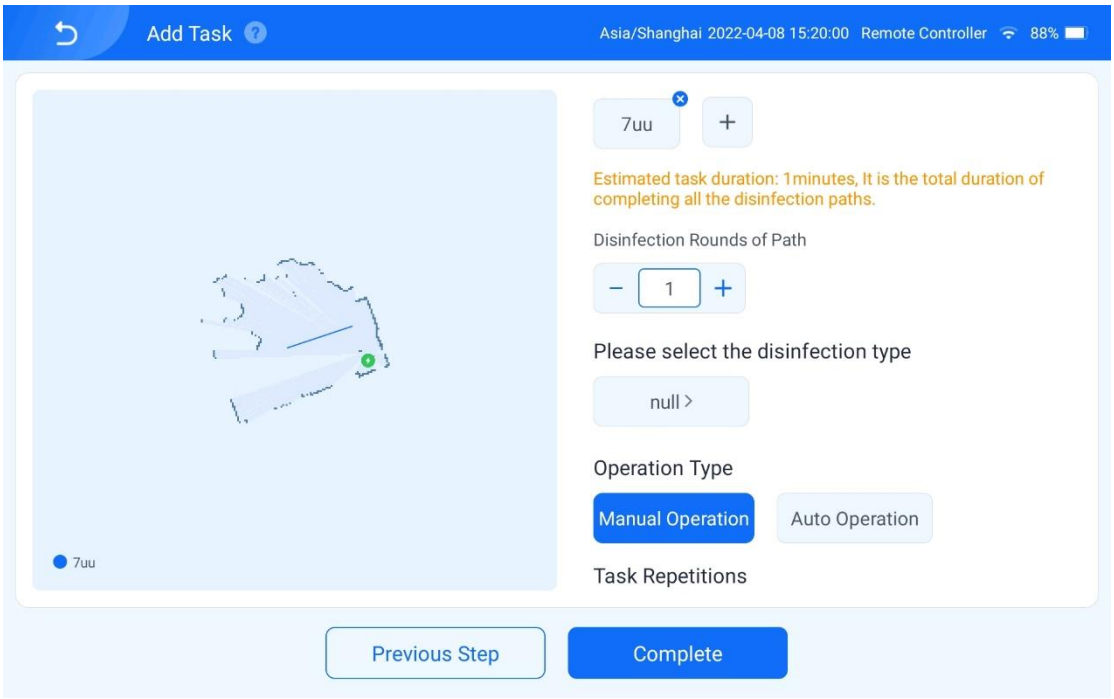
2.2.2.2 Select a Path

[5] Select a room path for disinfection.



2.2.2.3 Select Disinfection Rounds of Path

[6] Set the number of disinfection rounds of the path. The number cannot be smaller than 1.



2.2.2.4 Select a Disinfection Level

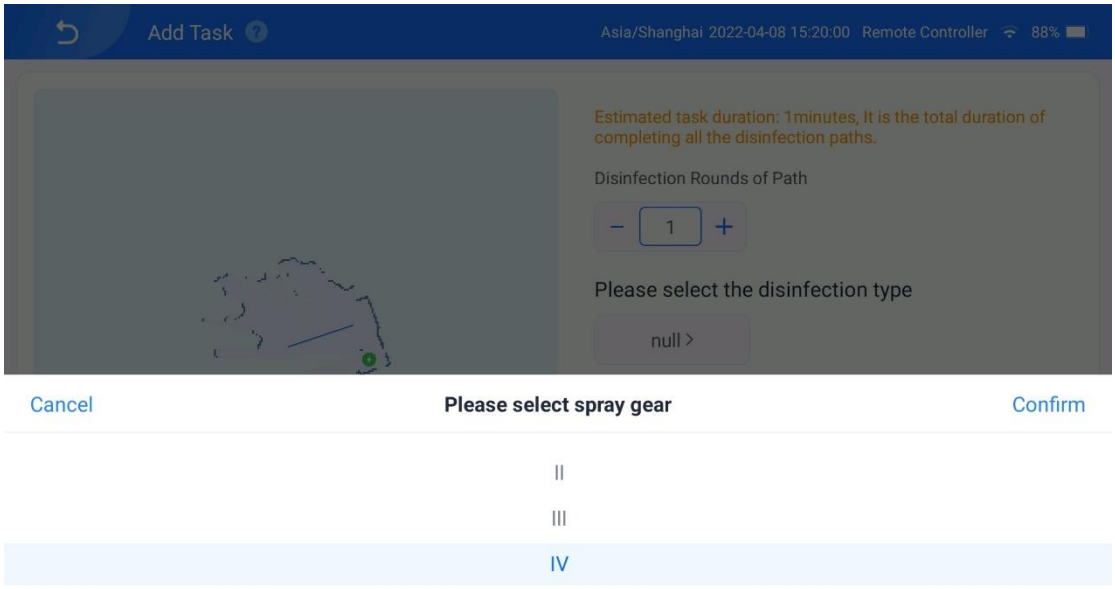
[7] Select a disinfection level from the following four:

Level 1: 0.5 L/h

Level 2: 1.0 L/h

Level 3: 1.5 L/h

Level 4: 2.0 L/h

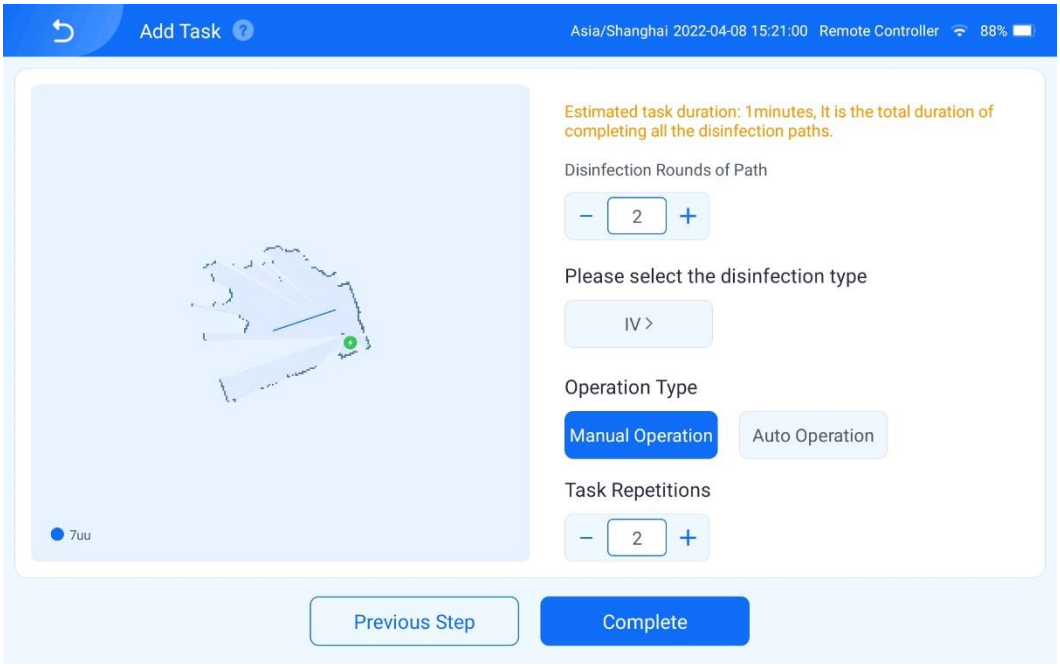


2.2.2.5 Select a Disinfection Start Mode

[8] Select a disinfection start mode from **Manual** and **Auto**.

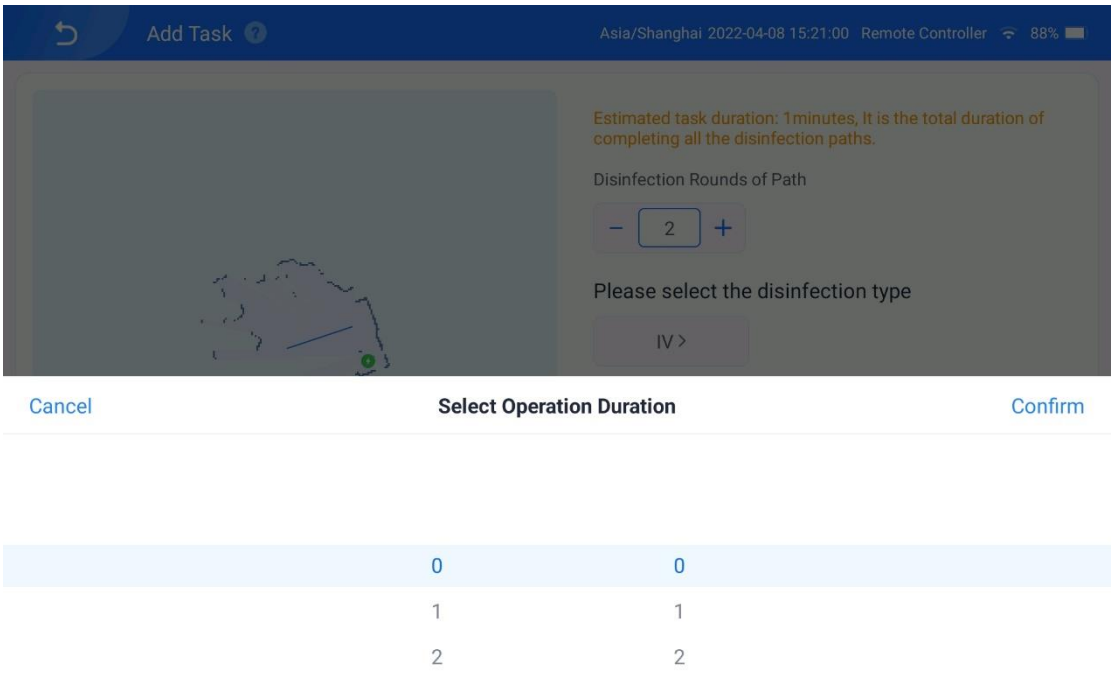
Manual: After the task is created, you need to manually tap the task to execute it.

Auto: After the task is created, the robot automatically executes the task as scheduled.



[9] Perform the following operations if you choose the auto mode:

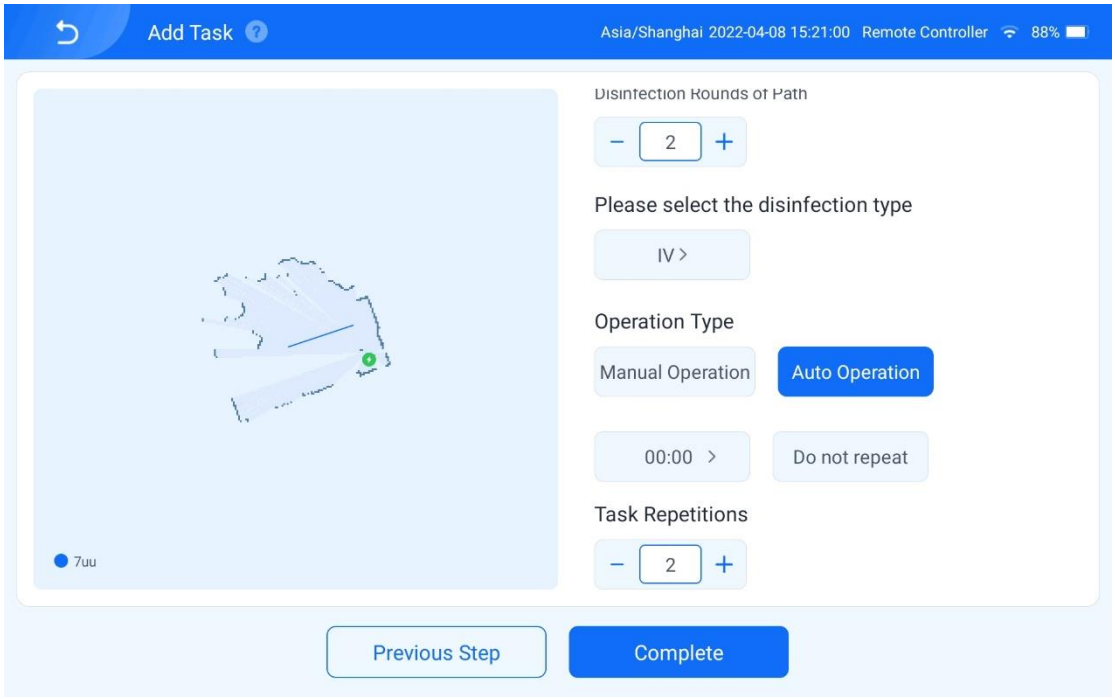
Select the execution time of disinfection:

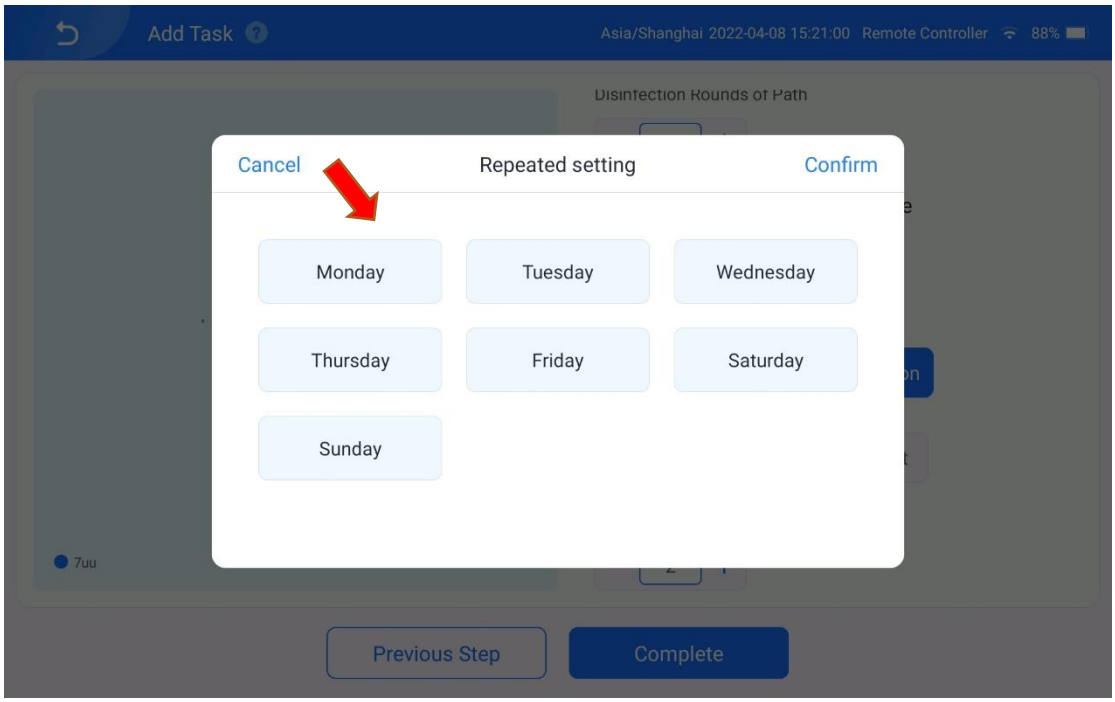


Tap **No repetition** to choose whether to repeat the task.

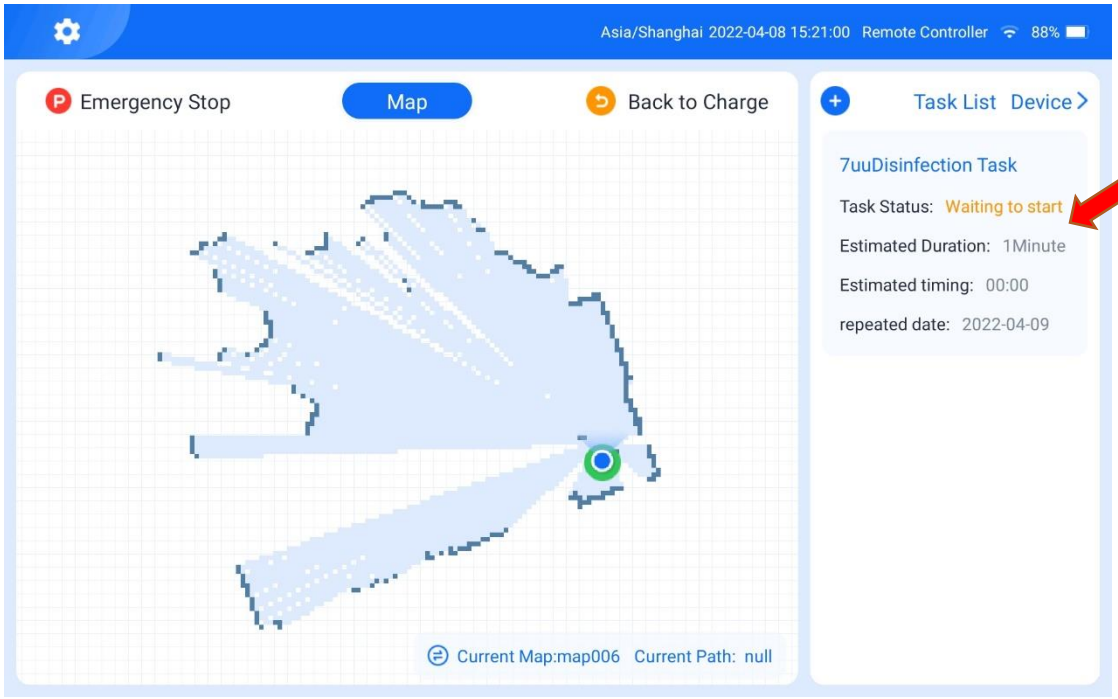
No Repetition: Execute this task at the scheduled time of the day.

Repeat: Execute this task on the selected days every week.

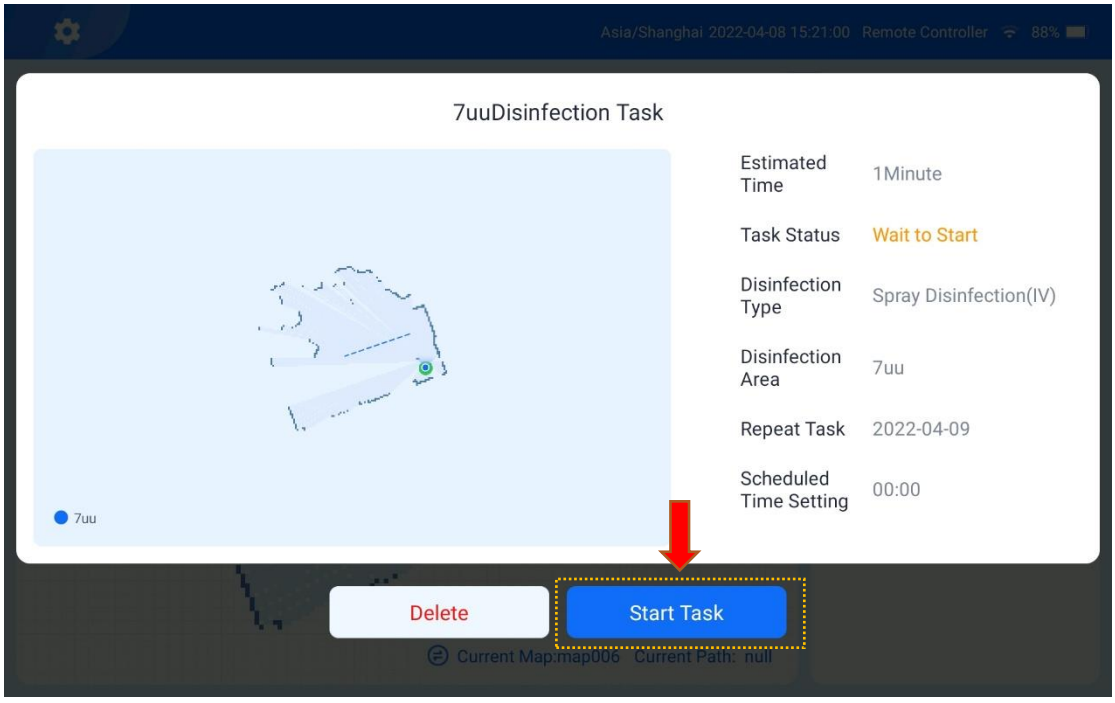


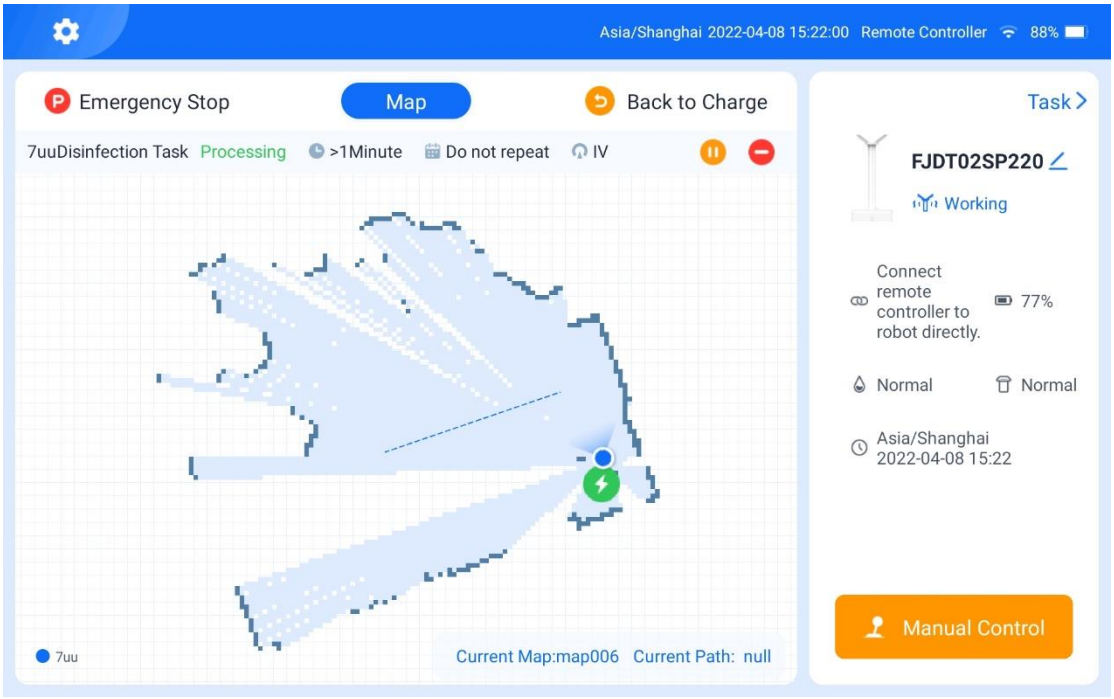


[10] After the task is added, tap **Done** to enter the task list screen:



[11] If the task is to be manually started, press and hold the task and tap **Start Task** on the displayed screen to execute the disinfection task.

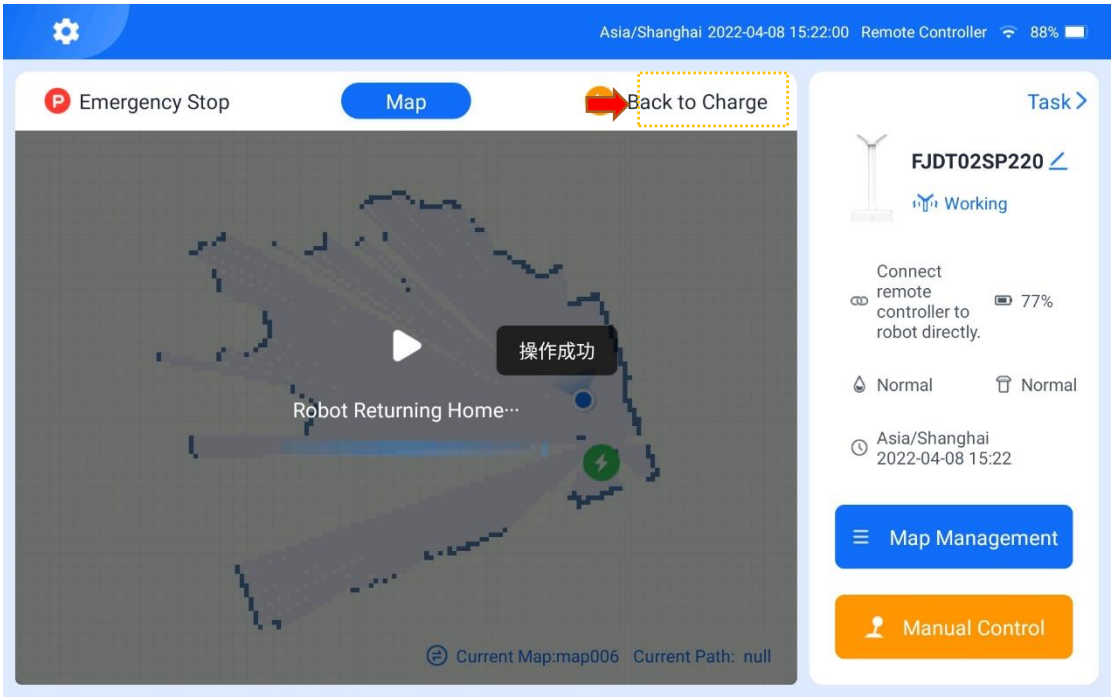




2.2.3 Return to the Charging Pile

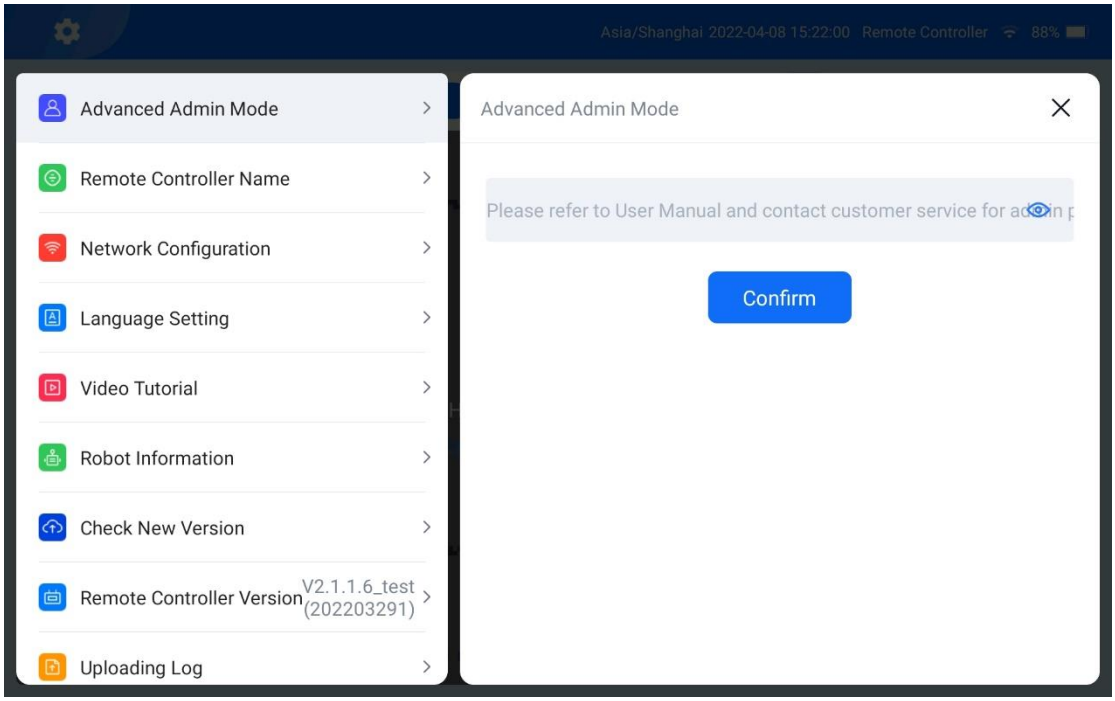
[1] After the disinfection task is completed, the robot automatically returns to the charging pile for charging. Alternatively, you can tap **Return for Charging** in the upper right corner of the map screen on the app to terminate the task and order the robot to return immediately.

[2] When the robot is returning or executing a task, tap **Pause** on the app screen to stop the robot and task, or tap **Continue** to resume the task.



3. System Settings

Tap the gear icon in the upper left corner of the app home screen, and view and edit the related information of the tablet remote controller and the robot system, such as **Advanced Admin Mode**, **Remote Controller Name**, **Network Settings**, **Language Settings**, **Video Tutorials**, **Robot Information**, **Check for Updates**, **Remote Controller Version**, and **Log Upload**.


Asia/Shanghai 2022-04-08 15:22:00 Remote Controller 88%
Advanced Admin Mode
Remote Controller Name
Network Configuration
Language Setting
Video Tutorial
Robot Information
Check New Version
Remote Controller Version V2.1.1.6_test (202203291)
Uploading Log
Advanced Admin Mode
Please refer to User Manual and contact customer service for ad
Confirm

9. Charging

1. Automatic Return to the Charging Pile

The FJD Spray Disinfection Robot automatically returns to the charging pile for charging (ensure that the charging pile is in a fixed position and is powered on) when either of the following two conditions is met:

- The battery level of the robot is below 20%.
- The robot has completed its task.

2. Manual Charging

1. Pair the robot with the tablet remote controller.

2. Push the robot to the position of the charging pile.

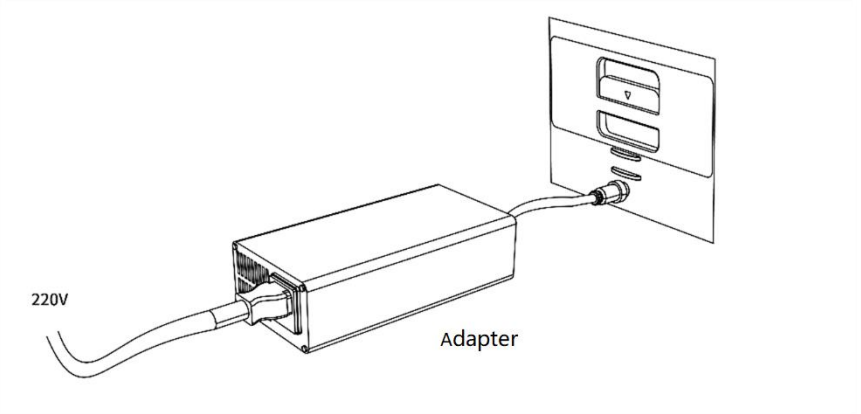
3. Align the back of the robot with the charging pile, and push the robot to the charging pile, so that the charging contacts on the back of the robot are in contact with those of the charging pile. Then, tap **Return for Charging** on the app. The indicator blinks red and green after the charging starts.

3. Charging with the Adapter

When the robot cannot be powered on due to a dead battery, you can charge the robot with the adapter of the charging pile as follows:

1. Turn off the power switch of the robot.

2. Connect the charging plug of the adapter to the manual charging port of the robot.

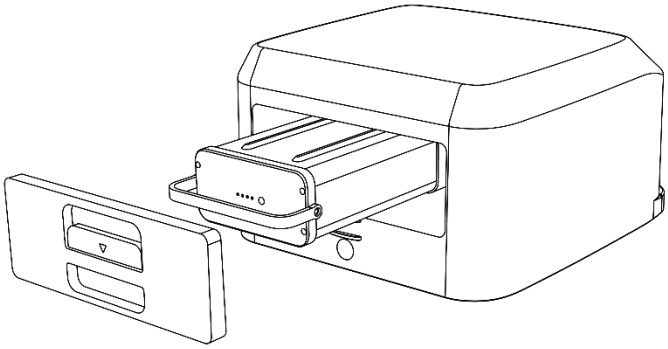


3. After the charging plug of the adapter is successfully connected to the manual charging port, the status indicator of the charger blinks red and green, indicating that charging is in progress.

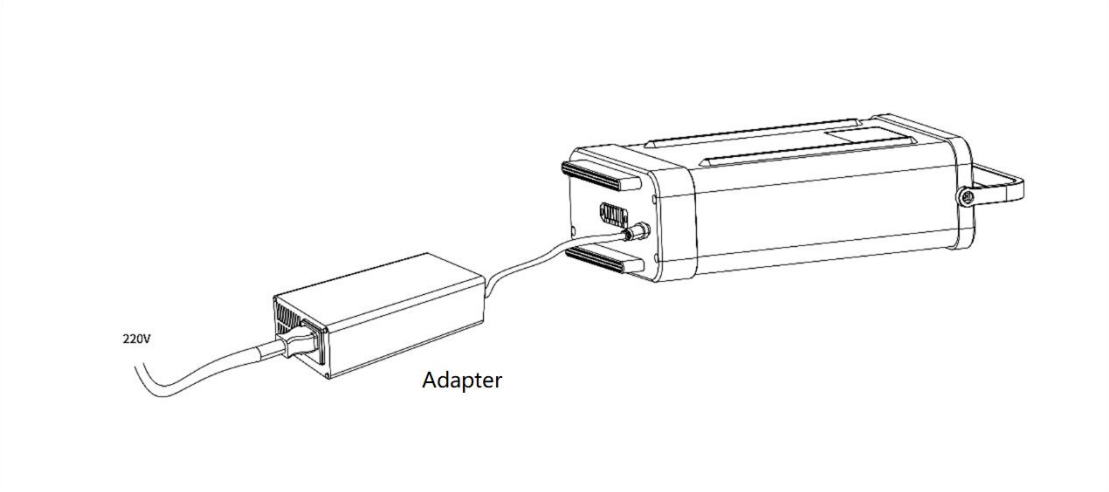
4. When the charging status indicator turns green, the charging is completed. Pull the adapter plug of the charging pile out of the manual charging port and put on the cover on the manual charging port.

4. Battery Charging

1. Remove the battery compartment cover of the robot, turn the latch to unlock the battery, and pull out the battery, as shown in the figure below.



2. Connect the charging plug of the adapter into the battery charging port.



3. After the charging plug of the adapter is successfully connected to the battery charging port, the status indicator of the charger blinks red and green, indicating that charging is in progress.

4. When the charging status indicator turns green, the charging is completed. Pull out the adapter plug of the charging pile, insert the battery into the robot, turn the latch to lock the battery, and put back the battery compartment cover.

10. Robot Status Indicator

1. When the robot is turned on, the indicator quickly blinks red, green, and blue until the robot is powered on, and its connection status is detected.

2. The indicator is solid green when the robot is only connected to the network.

3. The indicator quickly blinks blue when the robot is only connected to the tablet remote controller.

4. The indicator is solid blue when the robot is connected to the network and directly connected to the tablet remote controller.

5. The indicator quickly blinks green when the robot is paused.

6. The indicator quickly blinks red and green when the disinfectant is insufficient.

7. The indicator is solid red when the battery level is lower than 30% and quickly blinks red when the battery level is lower than 20%.

8. The indicator slowly blinks green when the robot is being upgraded.

9. The indicator slowly blinks green and blue during charging until the charging is completed.

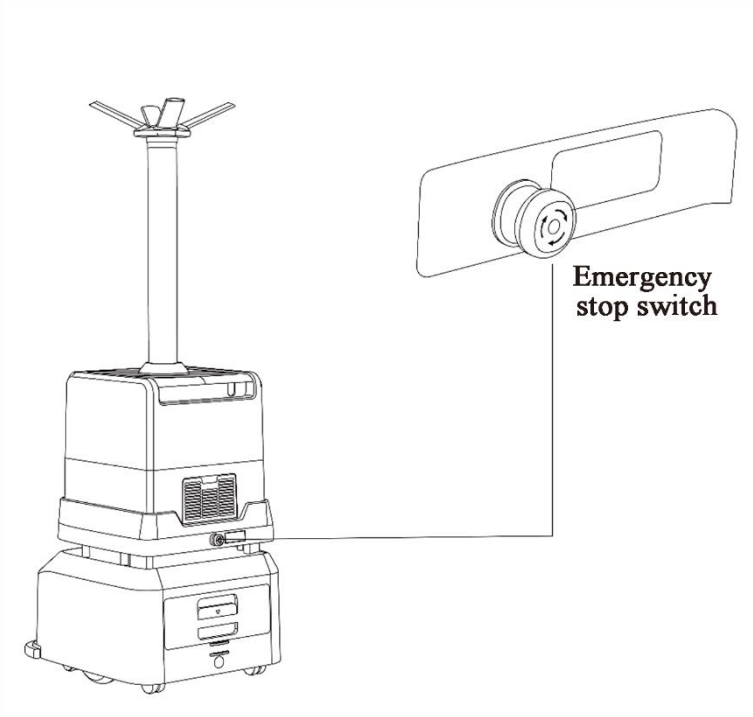
11. Voice Prompt Scenarios

No.	Scenario		Voice Prompt
1	Power-on	Sufficient power and disinfectant	Hello, I'm Sif. I have sufficient battery power and disinfectant. Glad to help.
2		Low power	Hello, I'm Sif. My battery is low. Please charge the battery as soon as possible.
3		Insufficient disinfectant	Hello, I'm Sif. My disinfectant level is low. Please refill the tank as soon as possible.
4		Insufficient power and disinfectant	Hello, I'm Sif. My battery and disinfectant level are low. Please charge the battery and refill the tank as soon as possible.
5	Operation	Before operation (spray)	I'm in position. Disinfectant spray will start in 20 seconds. Please leave.

6		10-second countdown before disinfection starts	Ten, nine, eight, seven, six, five, four, three, two, one. Disinfection starts.
7		During operation	Disinfection in progress. Please leave for your safety.
8		After operation	Disinfection completed. I will return for charging.
9	Travel	Encounter with people while travelling	Please make way for the disinfection. Thank you.
10	Charge	Charging	I'm connected to the power supply.
11		Charging completed	My battery is fully charged. I will end the charging myself.
12	Insufficient disinfectant		I'm running out of disinfectant. Please refill the tank immediately.
13	Leaving the charging pile		Leaving the charging pile, I am ready to work.
14	Low power		I'm running out of power and must return for charging.

12. Emergency Stop

In the case of an exception or emergency, you can stop the robot by pressing the emergency stop switch on the back of the robot. The position of the emergency stop switch is shown in the figure below.



13. Recommended Disinfectants

It is recommended to use 3% hydrogen peroxide or 150 mg/L hypochlorous acid as the disinfectant for the FJD Spray Disinfection Robot. Exercise caution when choosing to use other disinfectants as they cannot guarantee the disinfection effect and may cause damage to the robot.

It is recommended to disinfect a single room for approximately 10 minutes. After disinfection, wait for 30 minutes before entering the room.

14. Hazardous Substances

Hazardous Substance / Component Name	Lead and Its Compounds	Mercury and Its Compounds	Cadmium and Its Compounds	Hexavalent Chromium Compounds	PBB	PBDE	Remarks
Circuit board components	X	O	O	O	O	O	
Tablet remote controller	X	O	O	O	O	O	
Battery	X	O	O	O	O	O	
Wire harness	X	O	O	O	O	O	
Non-flame-retardant plastic and polymer parts	O	O	O	O	O	O	
Flame-retardant plastic and polymer parts	O	O	O	O	O	O	

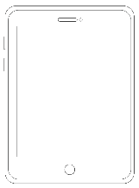
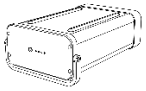
Metal parts	X	O	O	O	O	O	

This table is prepared in accordance with the SJ/T 11364 standard.

O: indicates that the content of the hazardous substance in all homogeneous materials of the component is below the limits specified in the GB/T 26572 standard.

X: indicates that the content of the hazardous substance in at least one homogeneous material of the component exceeds the limits specified in the GB/T 26572 standard.

15. Packing List

Tablet (remote controller)	
Robot chassis	
Robot upper structure	
Battery	
Charging pile	
Measuring cup	
Product quality certificate	
Warranty certificate	

Note: Some items may be packaged separately. Be careful not to lose any. For the installation and use of the product, refer to the instructions in this manual.

16. Product Maintenance

Maintenance of the Disinfectant Tank, Driving Wheels, and Driven Wheels

Check and clean the disinfectant tank at least once every two weeks. Wipe the robot with a clean cotton cloth. When the wheels are stuck or dirty, lift the robot for cleaning.

Sensor Maintenance

Check and clean the depth vision sensor and ultrasonic sensor at least once a week. If they are stained, clean the sensors immediately with a soft tissue or lens cleaning product to avoid affecting robot operation.

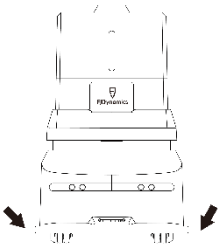
Robot Maintenance

Wipe the robot with a clean cotton cloth. Handle the robot with care, and do not put anything on the robot. If the robot is faulty, contact the customer service personnel. Do not disassemble the robot without authorization.

Regular Screw Check

Gently shake the robot components and check whether the components are loose and make abnormal noises. If yes, check the screws of related components. Anti-loosening measures have been taken for all the screws of the robot. For safety reasons, in the case of loose components, contact FJD after-sales service center regularly.





Robot Transportation

Transportation of the robot must comply with the requirements for road transportation with steel spring damping trucks in the GB/T 4857.23-2012 standard.

The robot is a valuable device. When manually transporting the robot, do strictly as follows: Hold the areas that the arrows point to, one person on each side, lift both sides at the same time to maintain balance, and keep the robot upright during transportation.

17. Common Faults and Troubleshooting

No.	Fault Symptom	Solution
1	Tablet control failure	The robot is not connected to the tablet remote controller. Ensure that they are successfully connected. The robot or the tablet remote controller is disconnected from the network. Ensure that the tablet remote controller and the robot are connected to the same network. The robot is blocked. Ensure that there are no obstacles in front of the robot. If the fault persists, contact the customer service personnel for processing.
2	No Wi-Fi signal	The local network cannot be connected to the Internet. Ensure that the local network can be connected to the Internet. Restart the robot and restart the tablet remote controller. If the fault persists, contact the customer service personnel for processing.
3	Failure to charge the robot	The robot is not successfully connected to the charging pile. Ensure that the charging contacts on the back of the robot are in contact with those of the charging pile. The charging pile is not connected to the power supply. Connect the charging pile to the power supply. Restart the charging pile and restart the robot. If the fault persists, contact the customer service personnel.
4	Failure to turn on the robot	Check whether the battery is in sleep mode, and press and hold the switch on the battery to activate the battery. Insufficient power. Charge the robot with the adapter. If the fault persists, contact the customer service personnel for processing.
5	Self-navigation failure	The robot is in the blind area of the map. Turn off the robot and push it to the vicinity of the charging pile to restart navigation. The vision module is covered. Ensure that the vision module is clean. The LiDAR is faulty. Check whether the LiDAR operates normally. The anti-collision safety edge sensor is faulty. Check whether the anti-collision safety edge sensor is squeezed. The robot is blocked. Ensure that there are no obstacles in

		front of the robot. The battery level of the robot is low. Ensure that the robot has sufficient power. If the fault persists, contact the customer service personnel for processing.
6	Light failure	The light is damaged. Manually turn on or off the light to check whether the light is damaged. If yes, contact the customer service personnel for replacement.
7	Disinfectant spray failure	Insufficient disinfectant. Add disinfectant. The disinfectant atomization component is damaged. Manually turn on or off the spray to check whether the disinfectant atomizer, pump, and fan are damaged. If yes, contact the customer service personnel for replacement.
8	Travel uncontrollable	Power off the robot immediately and contact the customer service personnel for processing.
9	Robot overturned	Power off the robot immediately and contact the customer service personnel for processing.
10	Atomizer nozzle aged	Contact the customer service personnel for replacement.
11	Failure to play voice prompts	The loudspeaker is turned off, or the volume is too low. Turn on the loudspeaker, or turn up the volume. If the fault persists, contact the customer service personnel for processing.

18. Main Hardware Specifications

No.	Device Name	Specifications
1	Tablet display terminal	Net weight: 0.7 kg Housing process: aluminum enclosure + plastic injection Chip: MediaTek Helio P22T Tab Memory: 4 GB + 64 GB Operating system: Android 10 Network: Wi-Fi Screen module: 10.3 inches, 1920 x 1200 pixels Speakers: dual channel Wi-Fi frequency: 2.4 GHz/5.8 GHz Languages: Chinese, English, Japanese, and Swedish OTA: supported Operating temperature: 0–50°C Battery capacity: 7 Ah Cell type: polymer Battery life: 10 h Charging time: 3.5 h Charger: 5 V/2 A
2	Spray Disinfection Robot	Dimensions: 543 mm x 497 mm x 1387 mm Materials: sheet metal parts + plastic enclosure Net weight: ≤ 66 kg IP rating: IP51 Navigation mode: SLAM Operating noise: ≤ 36 dB Travel speed: ≤ 1.2 m/s Obstacle-crossing height: 10 mm Gradeability: 10° Operating temperature: 0–50°C Battery life: 4 h Charging time: 3 h Battery capacity: 24 V/24 Ah Driving wheel size: 6.5 inches Wi-Fi coverage: 100 m Wi-Fi frequency: 2.4 GHz/5.8 GHz Rated power of the drive motor: 150 W Disinfection rate: ≥ 99.99% Disinfection speed: 240 ㎡/h Spray coverage radius: 2–3 m Disinfectant tank capacity: 16 L Spray particle size: ≤ 10 μm

		Spray rate: 0–2 L/h (adjustable)
3	Charging pile	Dimensions: 100 mm x 280 mm x 360 mm Material: plastic Net weight: ≤ 2.3 kg IP rating: IP51 Operating temperature: 0–50°C Adapter input: AC 100–240 V, 50/60 Hz Adapter output: DC 29.2 V/8 A Charging pile input: AC 100–240 V, 50/60 Hz Charging pile output: DC 29.2 V/8 A

19. Warranty Periods of Main Components

Component	Warranty Period
Tablet remote controller	12 months
Pump	6 months
Depth vision module	12 months
LiDAR	12 months
Development algorithm board	12 months
VCU board	12 months
Voice module board	12 months
Battery	12 months
Motor driver	12 months
Motor	12 months
In-line charger	12 months
Atomizer nozzle	12 months
Turbo fan	12 months
Atomization volume controller	12 months
DC-DC	12 months
Ultrasonic sensor	12 months
Liquid level sensor	12 months

FCC WARNING: This equipment may generate or use radio frequency energy. Changes or modifications to this equipment may cause harmful interference unless the modifications are expressly approved in the instruction manual. The user could lose the authority to operate this equipment if an unauthorized change or modification is made.
This device complies with part 15 of the FCC Rules. 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.

This equipment complies with RF radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20 centimeters between the radiator and your body

NOTE: 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.
- The rating information is located at the bottom of the unit.

CE

FJ Dynamics Co., Ltd. declares that this product is in compliance with the essential requirements and other relevant provisions of Directive 2014/53/EU.

Importers: XXXXXXX

Address: XXXXXXX

For the full RED DoC file, Please download it as follow web: http://XXXX.XXXX

WiFi 2.4G: 2412-2472MHz, Max output: <20 dBm

WiFi 5G: 5150-5250MHz, Max output: <23 dBm

WiFi 5G: 5725-5850MHz, Max output: <13.95 dBm

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