Z SERIES

APP User Manual

(2.0Version)

Explore industry Limited

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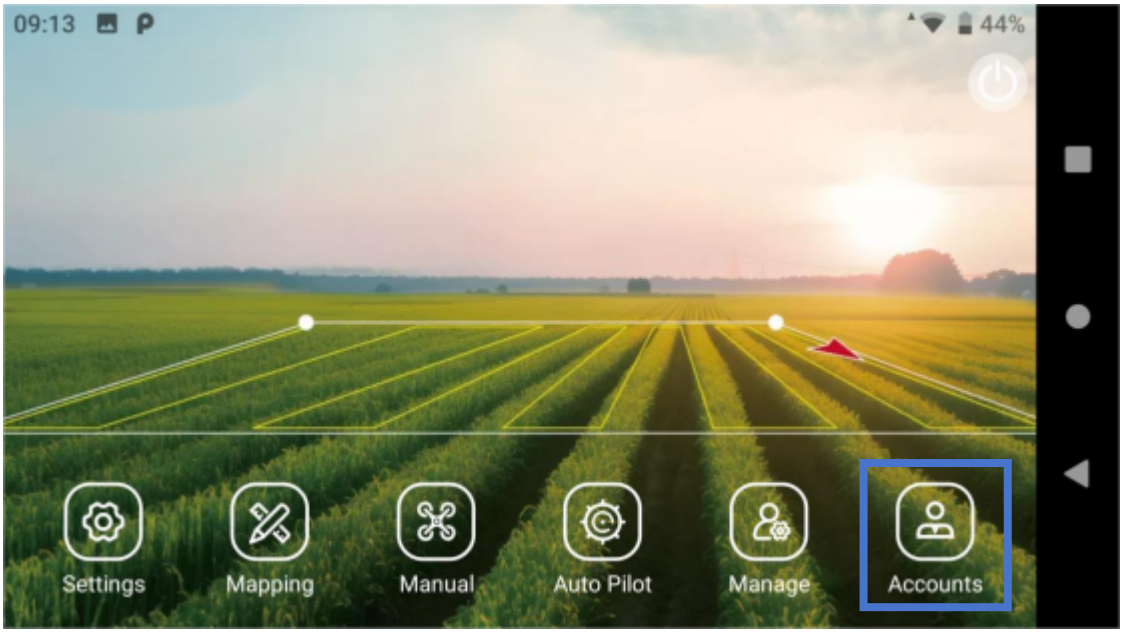
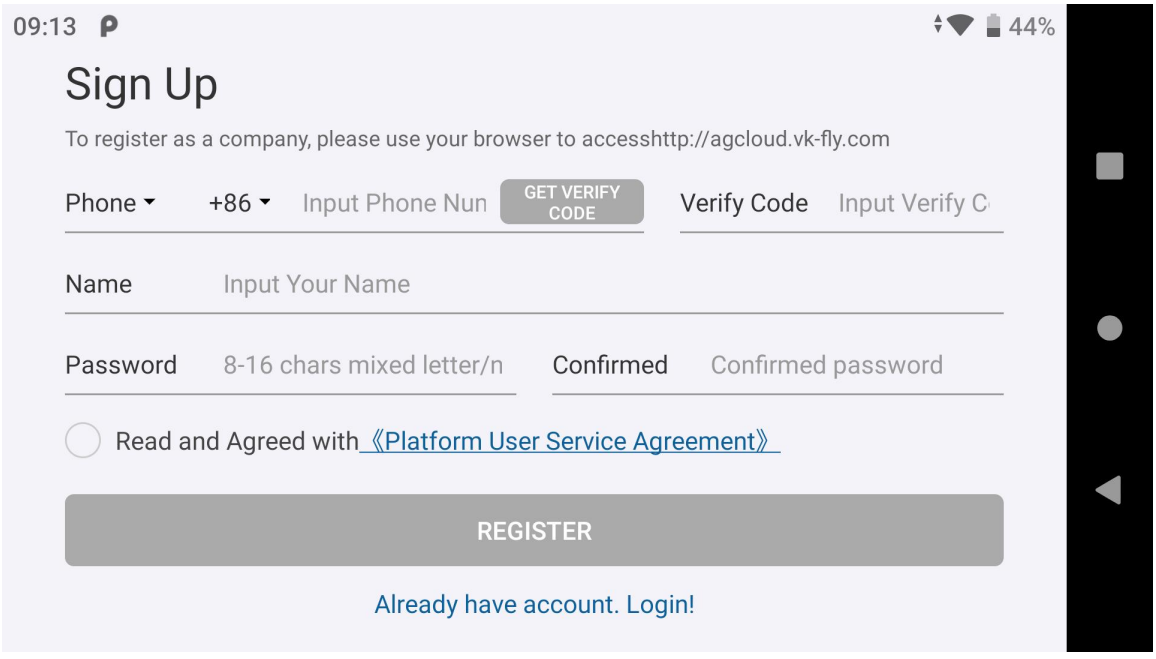
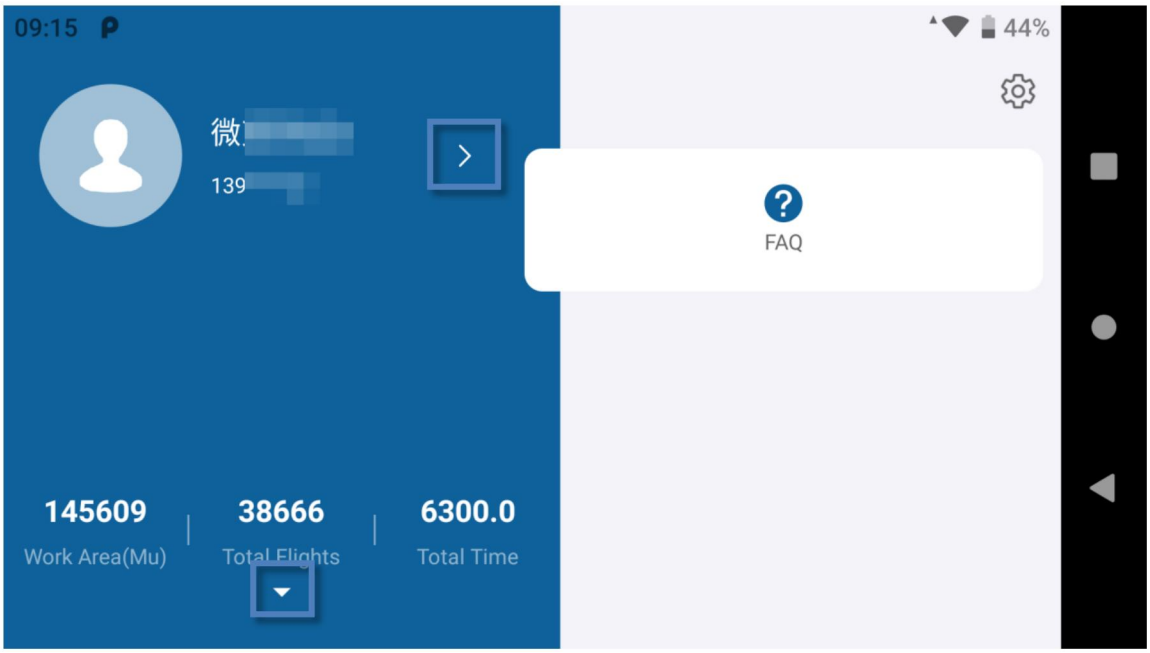
Account Registration

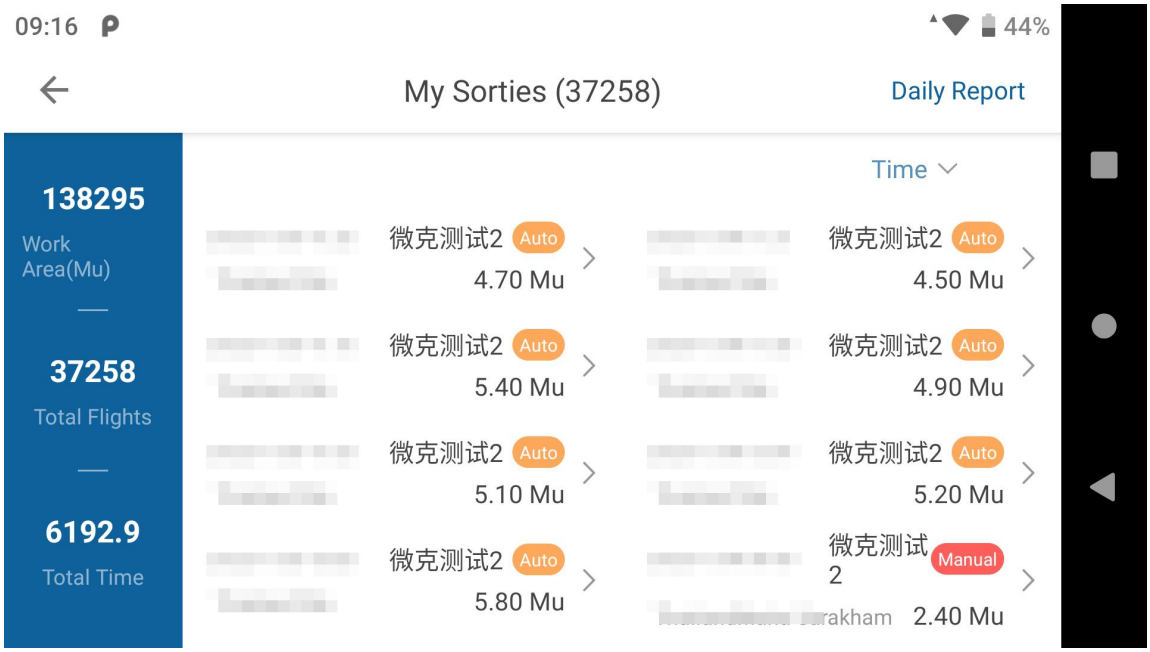
1. Open the ‘**VK Agriculture**’ APP, Tap **Accounts** ,and fill in the information as required. and it will be automatically activated after registration.





2. Tap ‘>’ to view account information, APP version information, etc. Tap ‘▼’ to view the operation records. Tap and hold the screen can select several records to display on the map.

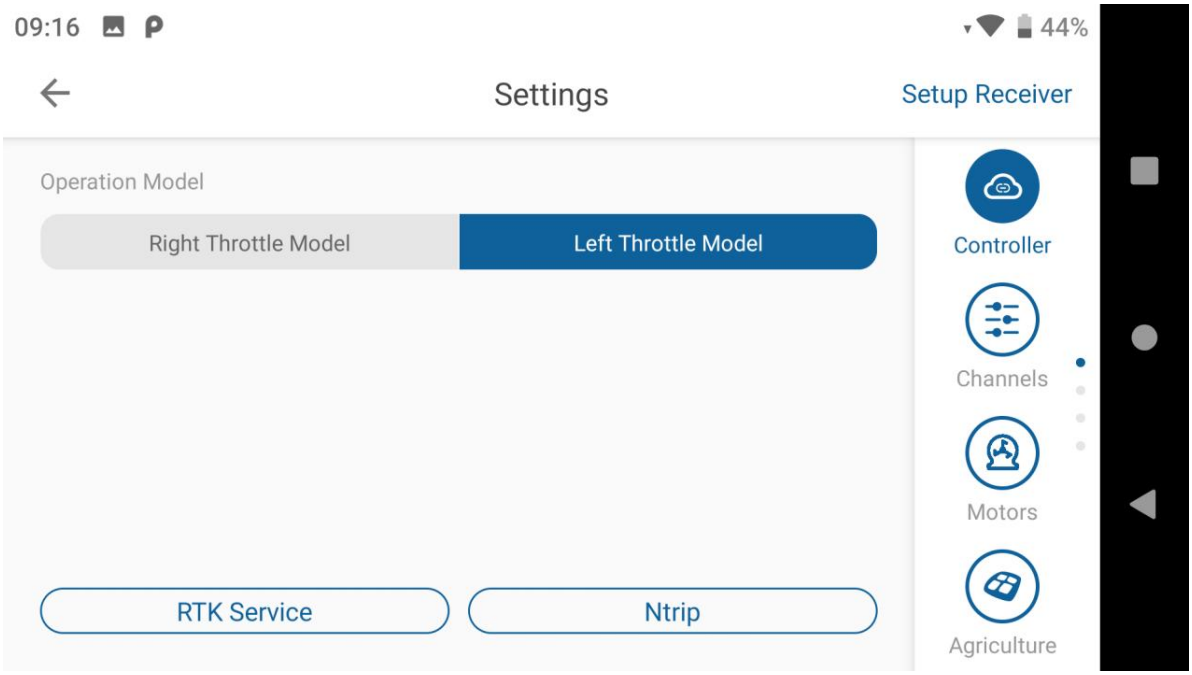




Setup and Inspection

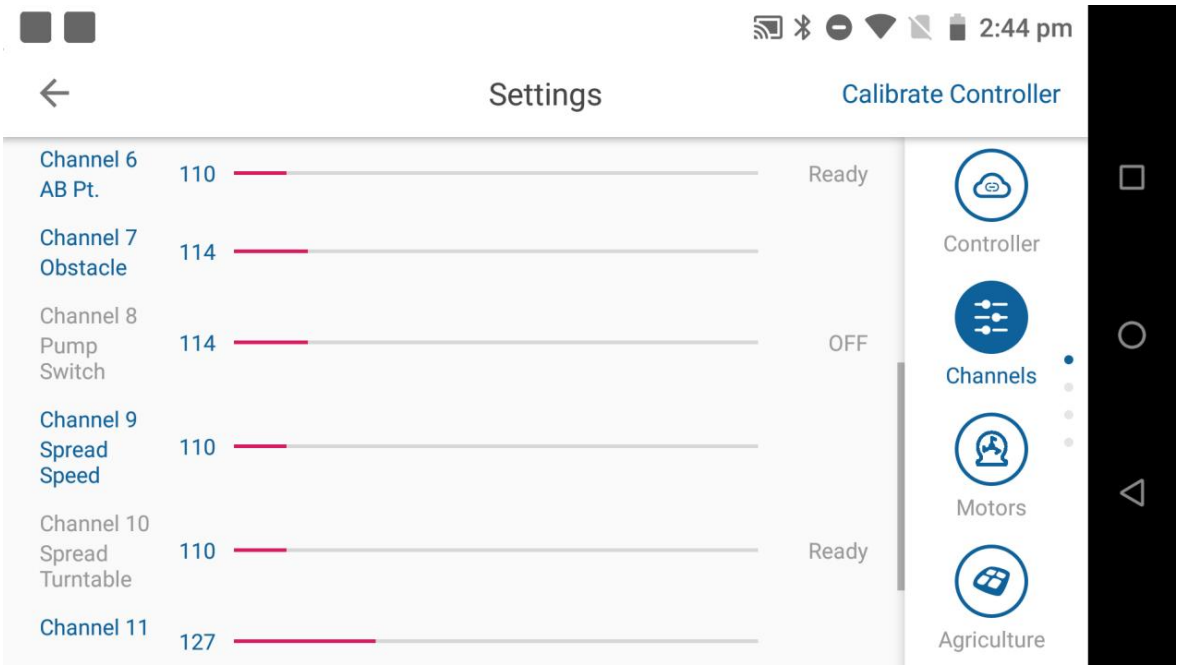
Remote Control Settings

Enter **Settings**, first select **Controller** operating mode, and ‘**Left Throttle Model**’ is recommended. Tap ‘**RTK service**’, enter Ntrip account (If the drone is equipped with RTK module).



Channel Inspection

Tap **Channels** . The channel actions have been preset. (Tap and hold 'Channels' to modify the channel action for special needs)



Remote Control Calibration

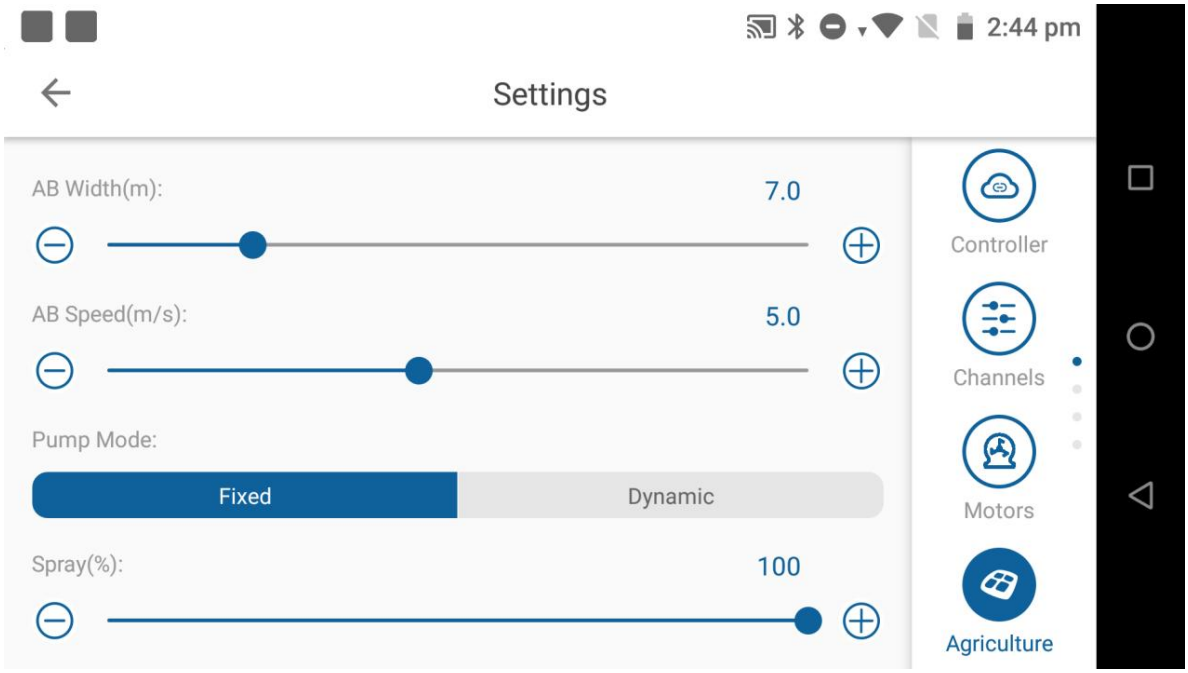
Tap ‘**Calibrate Controller**’ in the upper right corner, calibrate the both control sticks up, down, left and right in sequence, and confirm that each control stick and button can be used normally.

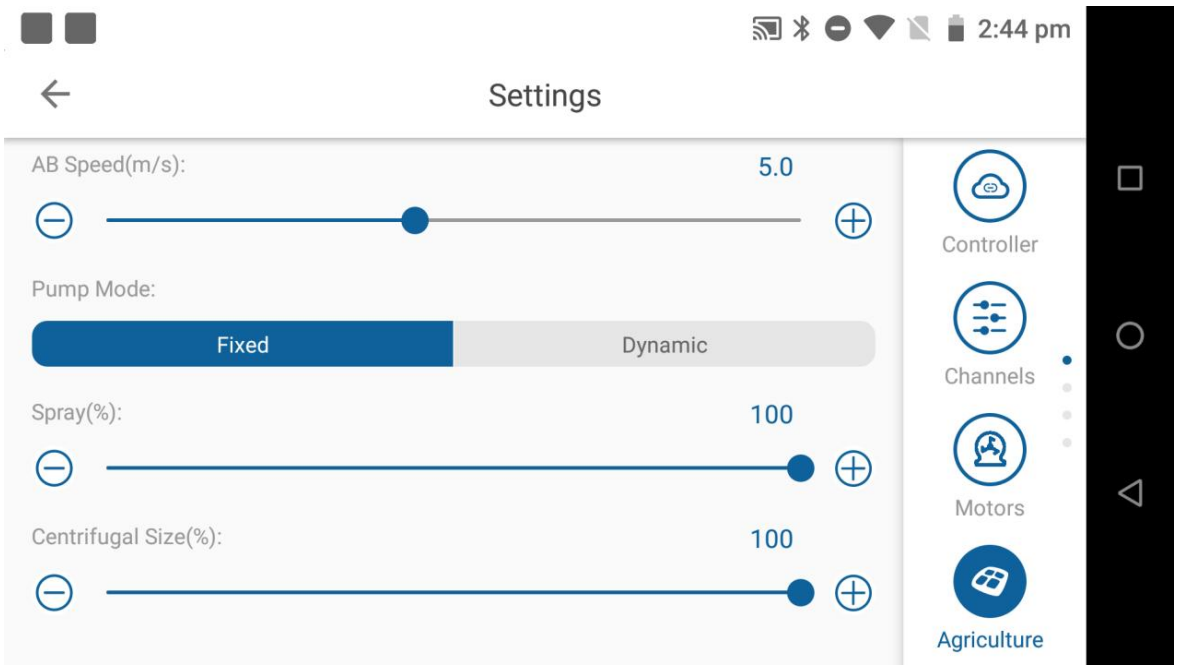
Motor Inspection

Tap **Motors** and Check each motor from M1 to M4 to ensure that all motors can rotate normally and in the correct direction.

Spray settings

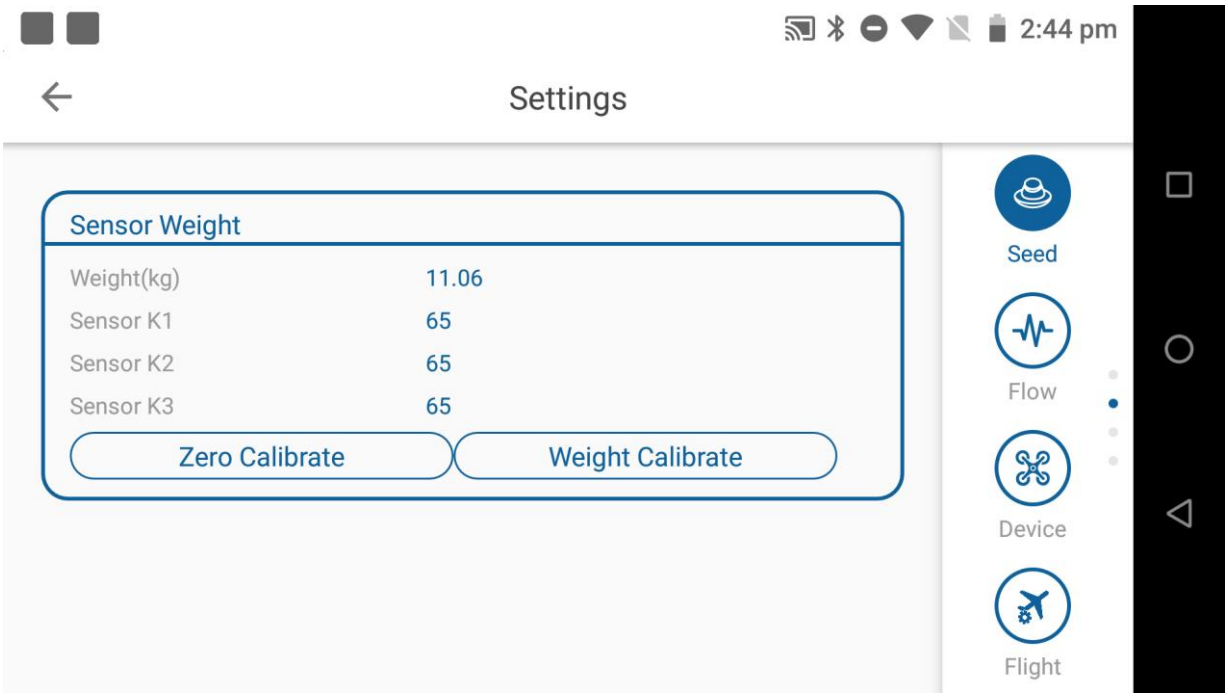
Tap **Agriculture** , the user can adjust the AB Width, AB Speed, Pump Mode, Spray and Centrifugal Size.





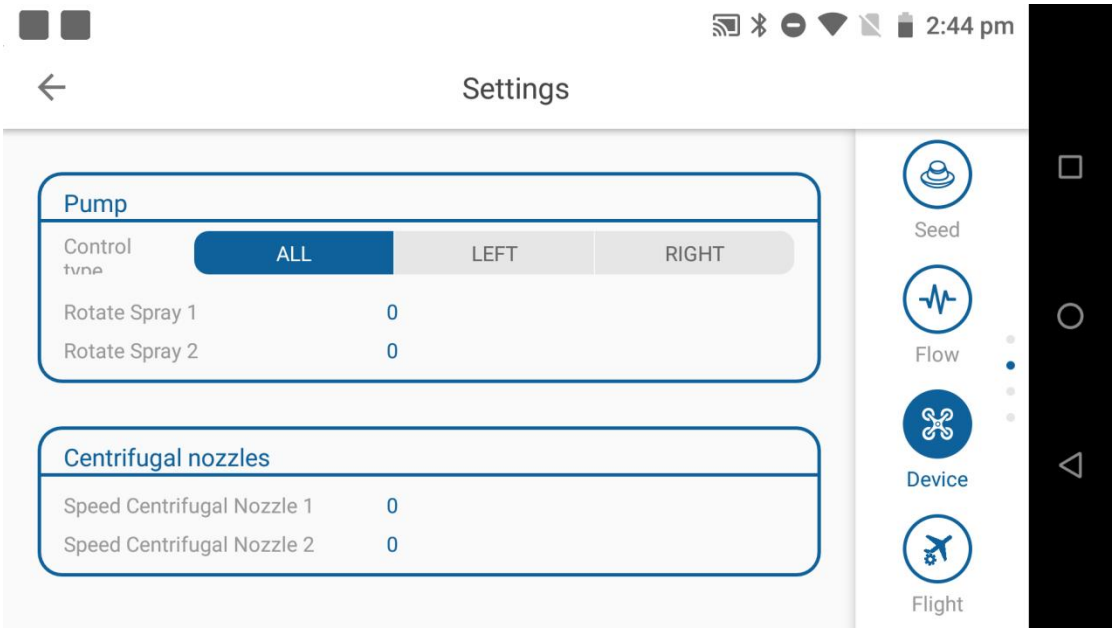
Seed Settings

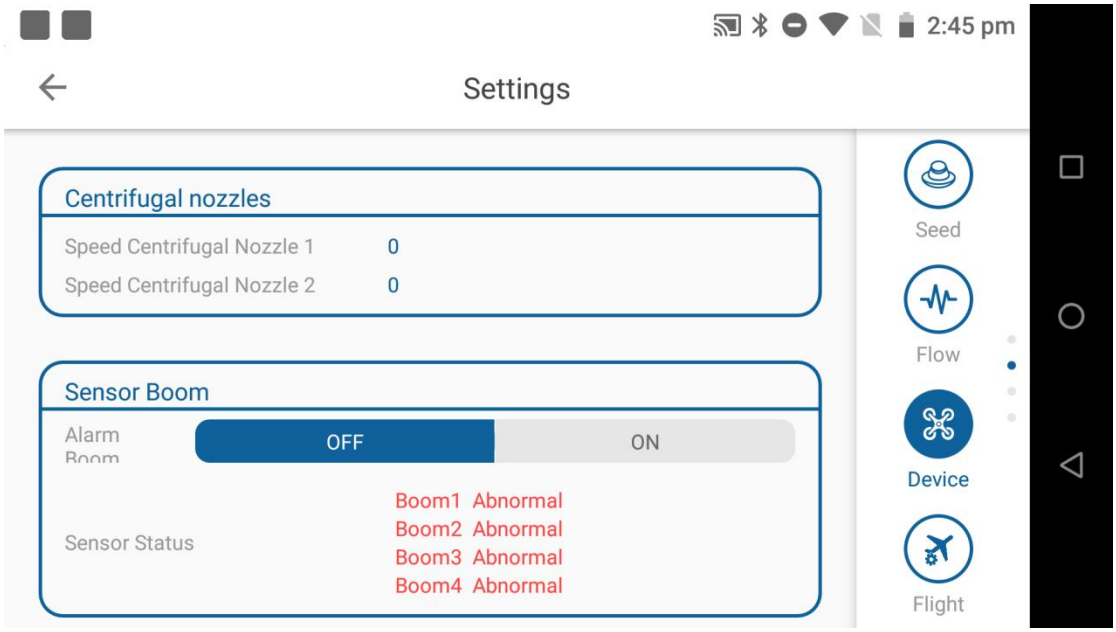
Tap Seed to set the related spreading parameters here, if the spreader is connected.



Equipment Information

In the Device, the status information about water pumps, centrifugal nozzles, and sensors etc. will be presented , and see if they are normal.





Flow meter Calibration

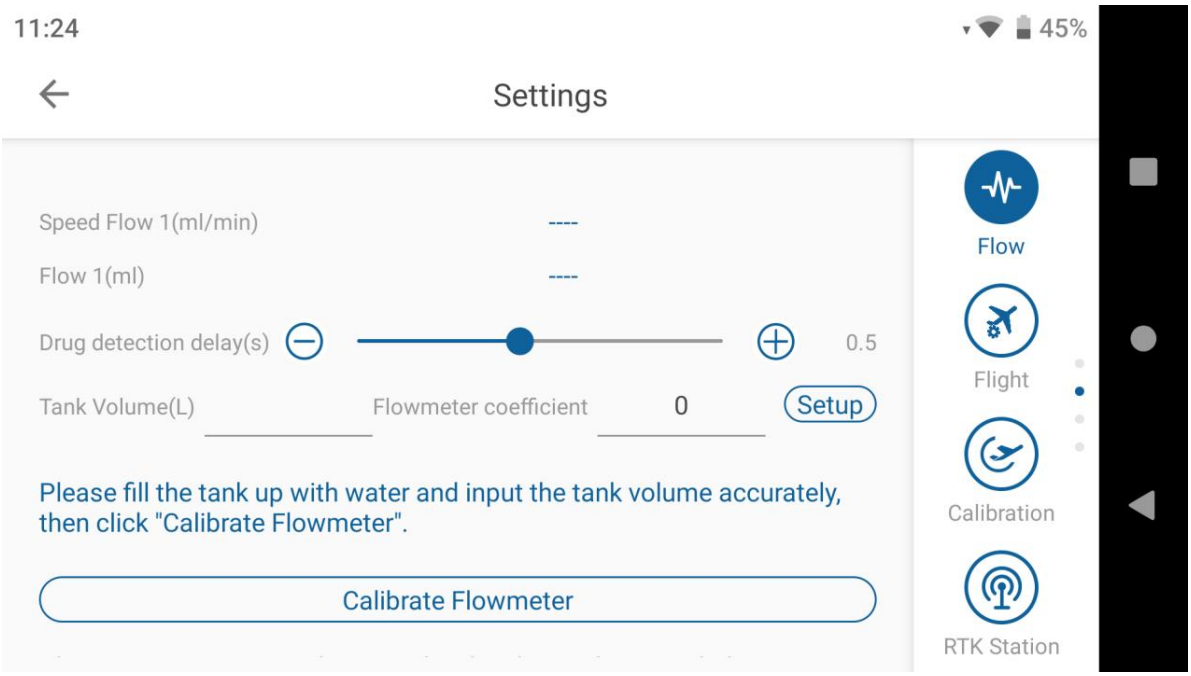
The flow meter has been calibrated. If it is not accurate, please refer to the following steps to recalibrate.

Step1：Pour about 15L of water to tank;，then press A to start the water pump to drain the air from the water pipe, and stop immediately after the water comes out.

Step2： Prepare two empty pails, weigh and record them, and place the two pails under the two centrifugal nozzles

Step3： tap ‘Calibrate Flowmeter’. The water pump will automatically spray water until the tank is empty.

Step4：Precisely measure the weight of the water in pail one by one , Enter the weight respectively in No1. and No2. (Facing the tail ,the left is No. 1 right is No2.). Tap Confirm to show that the calibration is successful, and then tap End Calibrate.



Flight Settings

All the flight related parameters have been preset, including: Takeoff Height, Landing Height, Alarm Volt. LV1, Protection LV1, Alarm Volt. LV2, Protection LV2, Manual Direction, Manual Height, Radar Sensitivity,Max Speed, Obstacle Avoidance Action, Obstacle Dist, Fence Height, Fence Radius, Low Volume Protection, RC Protection, GS Protection, Done Act, Turn Type, Head Direction.

Flight Calibration

Tap **Calibrate** to do Mag.Calib .Lift the aircraft and rotate it until the remote controller tips for ‘**vertical plane calibration**’. Lift the aircraft vertically and continue to rotate until heard ‘**calibration is completed**’. Put down the aircraft, turn off the battery and then power on again to finish the calibration.

Ntrip Settings

If the purchased product with RTK and is located outside of China, First of all ,apply for a Ntrip account from local RTK service provider. Then tap ‘**RTK Station**’ to connect the RTK.

Aircraft

The parameters have been preset, tap **Drone Type** >Series Z , and adjust the Pump Max and Min flow and centrifugal nozzle.

Other Settings

Tap **Others** to set the Map Provider, Voice, Video, Unit Area etc.

Advanced Settings

It’s recommended to keep the default settings. If the aircraft is unstable or abnormal, please contact your supplier to apply for after-sales technical service and change advanced settings under professional guidance.

Manage

Manage: Device, Team, Field, Work, Statistics. Before flight, It's necessary to create a team or join the team in ‘Manual’.

Device

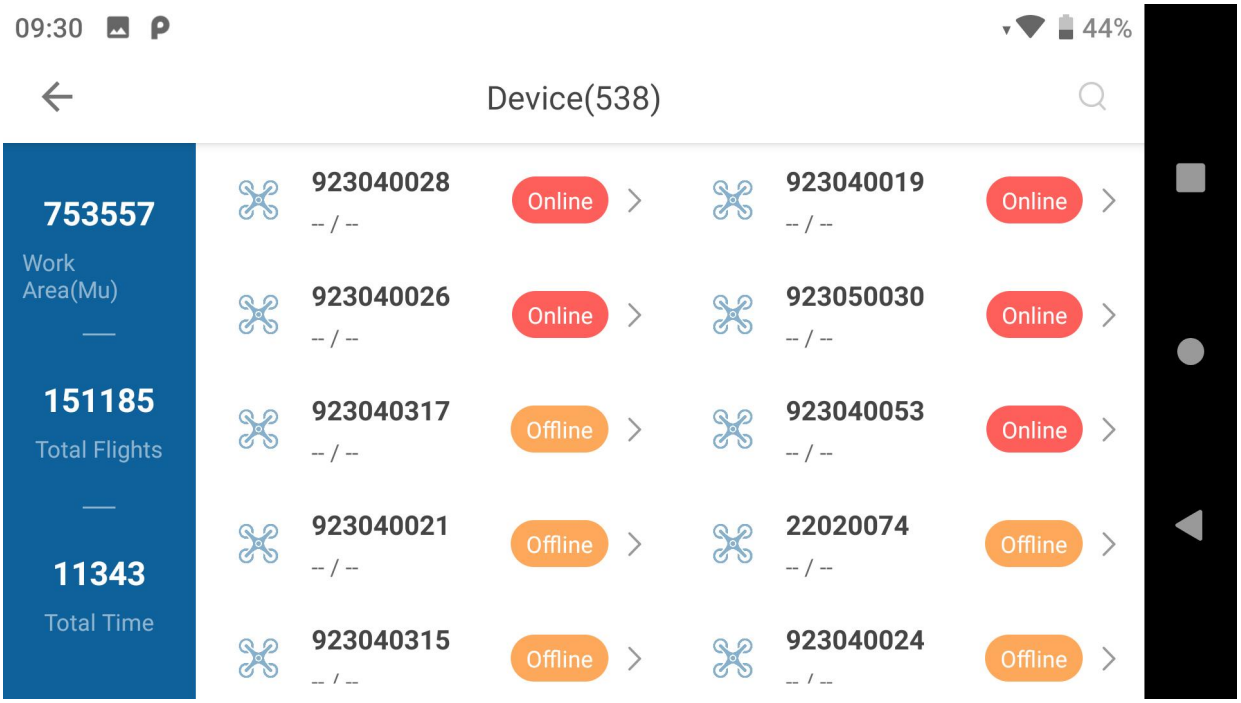
Tap **Device** to see the Drone status and operation data under this account. This is the sum of all operation data since registration

Drone status:

Offline: Drone is not powered on;

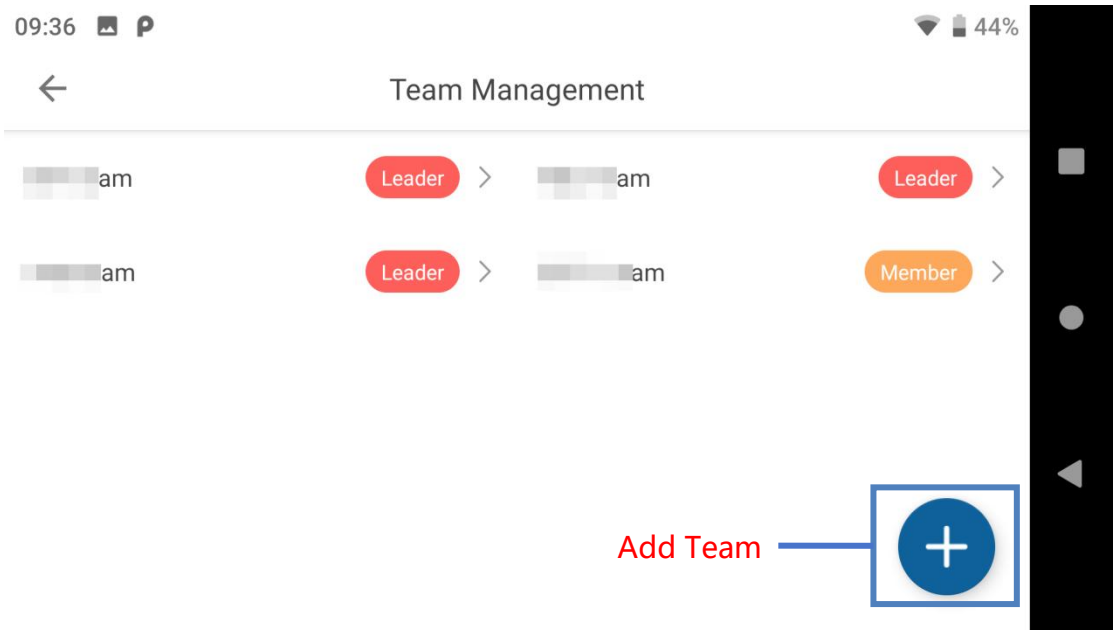
Online: Drone is powered on

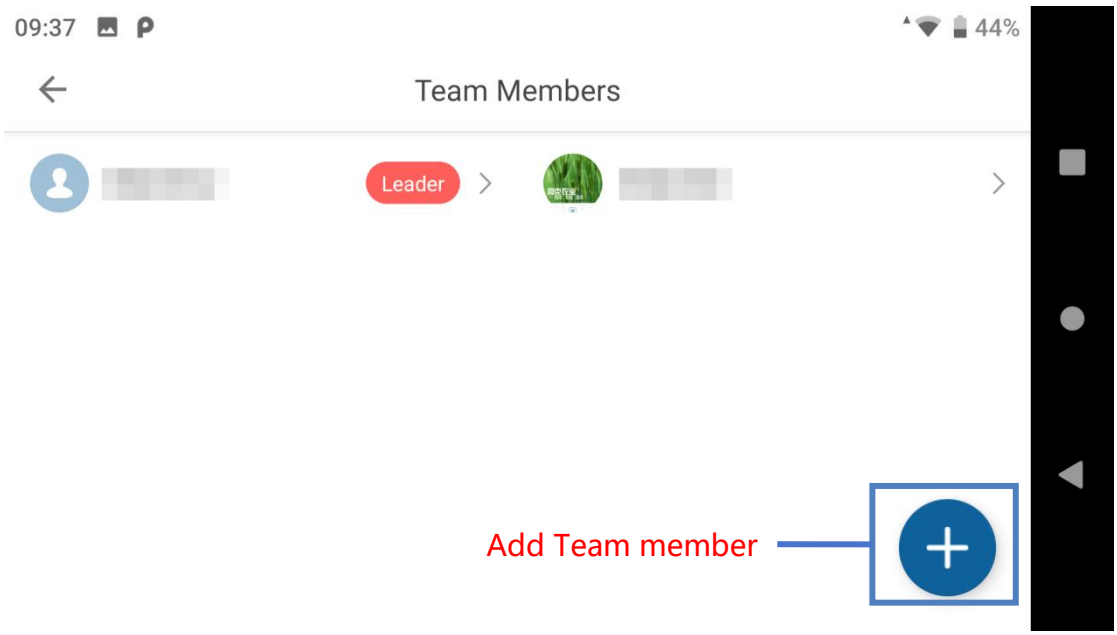
Locked: The UAV is locked by the manufacturer / operator.

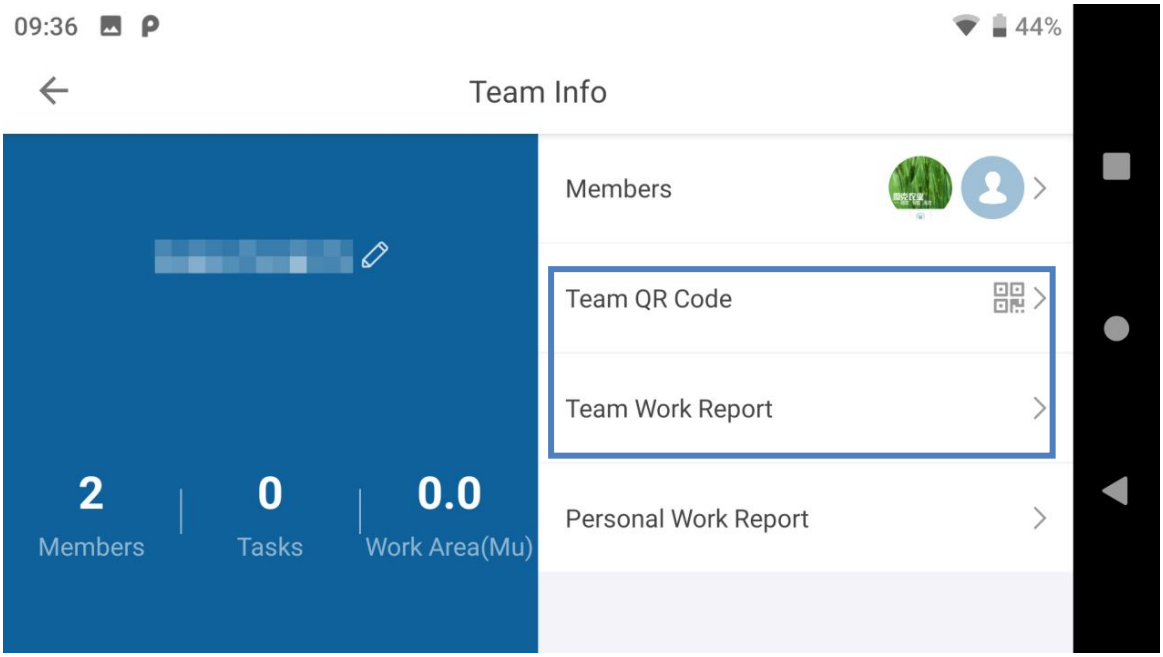


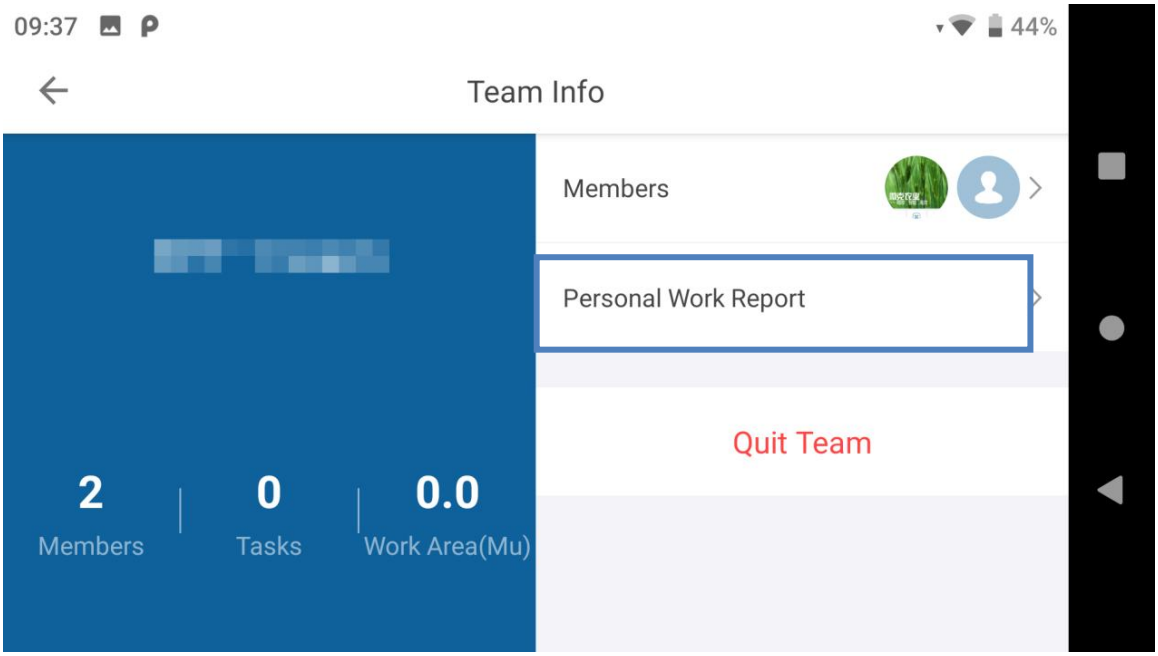
Team

Add a team or add players. The team leader can check all records . Team members can only view personal flight records.



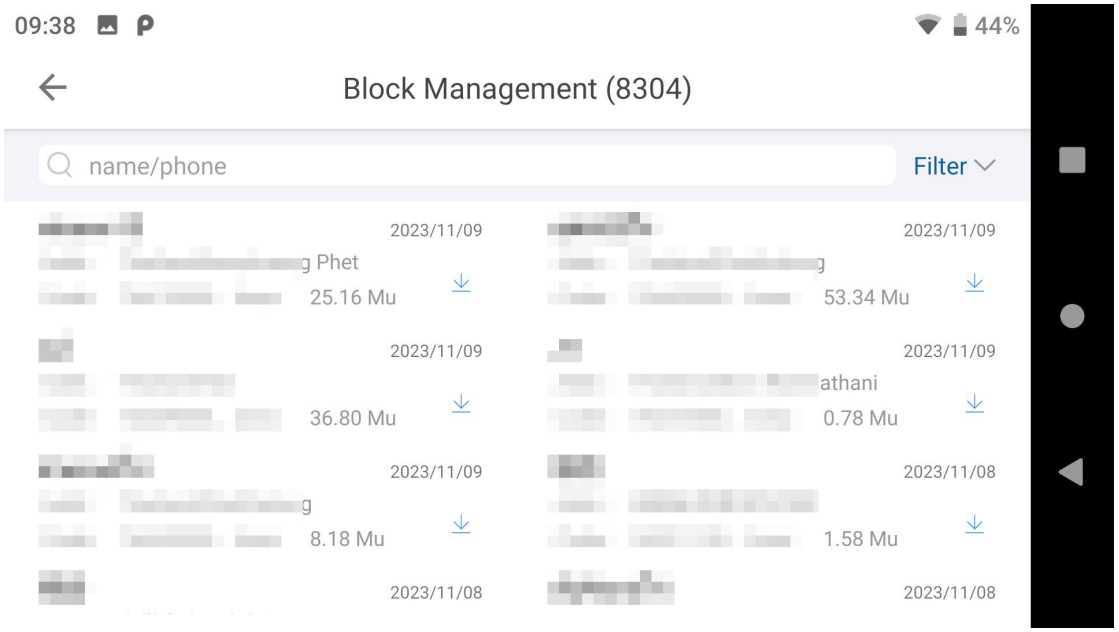


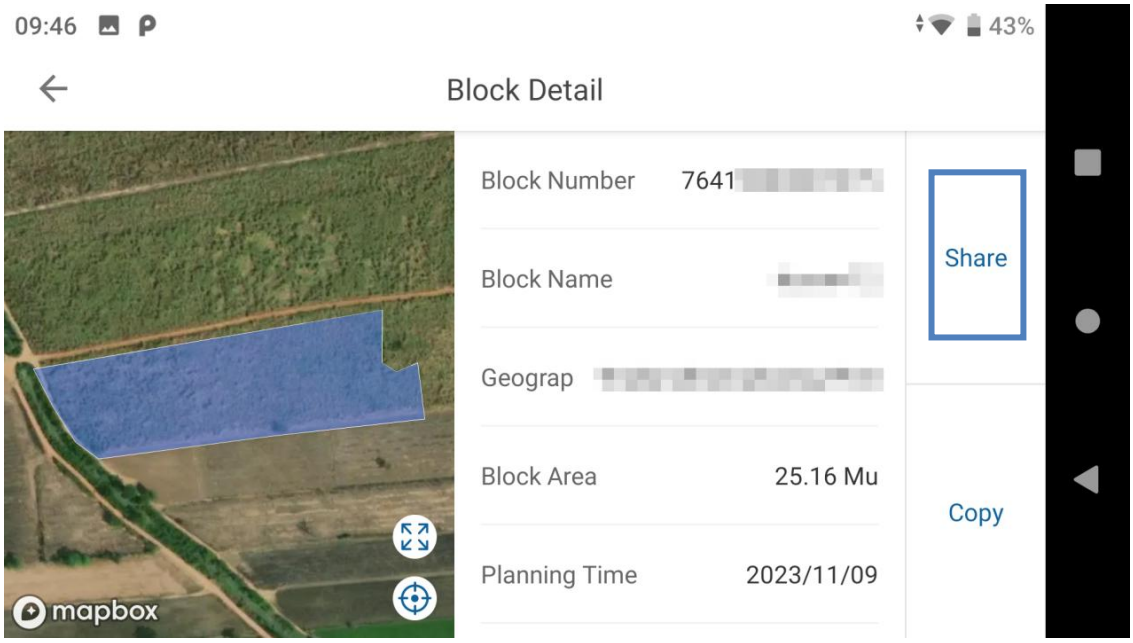

09:36
44%
Team Info
Members
Team QR Code
Team Work Report
Personal Work Report
2
Members
0
Tasks
0.0
Work Area(Mu)


09:37
44%
Team Info
Members
Personal Work Report
Quit Team
2
Members
0
Tasks
0.0
Work Area(Mu)

Field

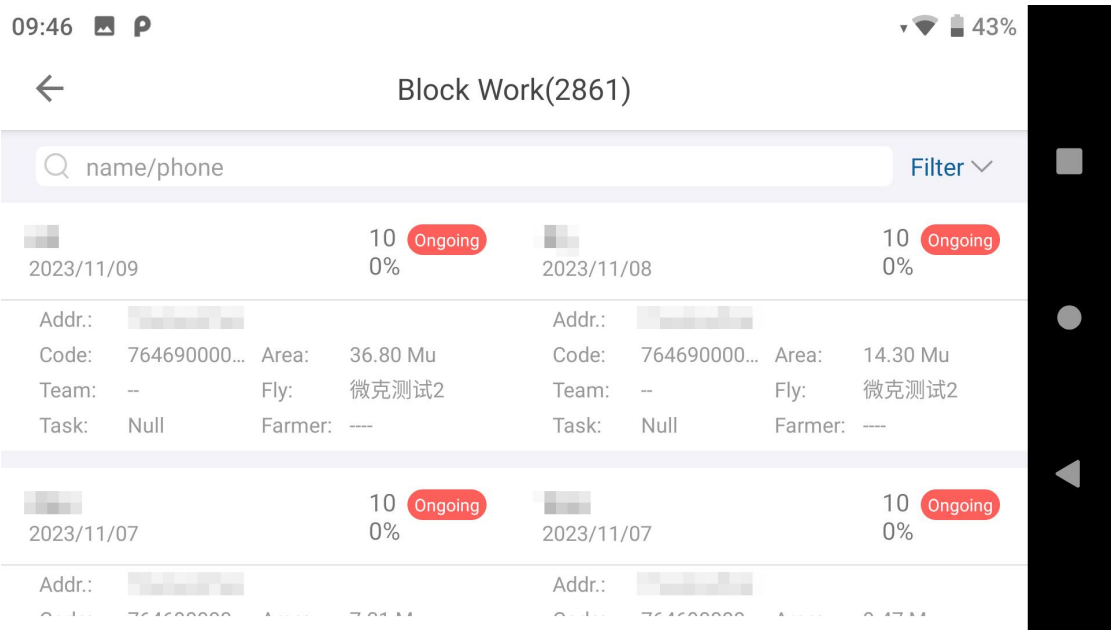
The manufacturer account can view the detailed Block informations of all authorized drones, and can also share the Block information to another account .





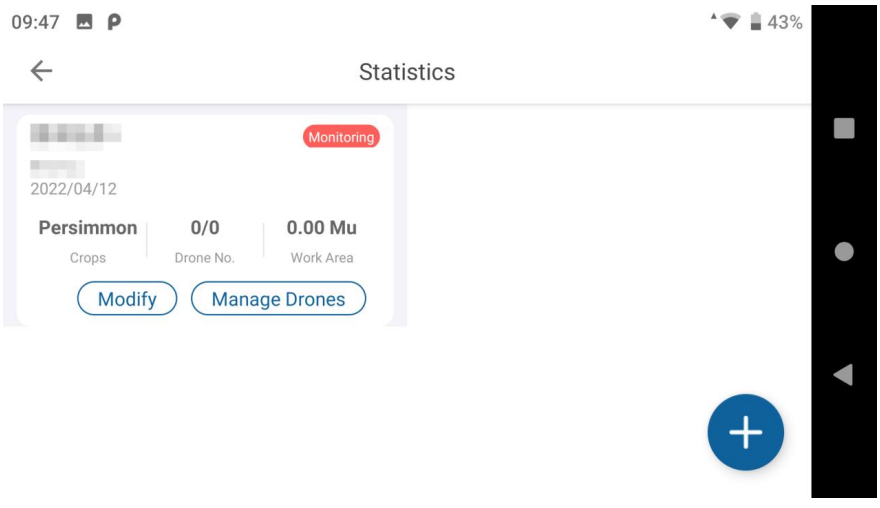
Work

Tap Work to view the status of all Block Work. Tap one of blocks to check the detailed operation information.



Statistics

The flight tasks created here can be opened to government supervision which is help users to apply for subsidies.



Pre-flight Test

1. Before take off, follow the prompts on the remote control, move the left lever to the middle position, confirm that the remote control is in GPS mode, move the right lever backward, and ensure that the AB switch lever is in the N/A position.

2. In spray mode, tap the C and D buttons (The switch button is user-definable) to turn on the water pump and nozzles respectively to check if they are working properly.

Press and hold both joysticks downward and outward at the same time to unlock the drone. After motors start ,push the left throttle stick up to start flying.

Pump
Nozzle
EFT
A
B
C
D
90%
0.2m/s
9m
RH33
1:38
0.0L
93
Pump: 0
GPS Mode
Video1
Go Home
Land
AB Angle
mapbox

EFT

Unlocking

Mapping

Before spraying, it is necessary to map the boundaries of the field and set obstacle information . It supports 5 mapping methods: Mobile Phone/Drone/RTK Station / Locator /Map. (Drone/RTK Station/Locator can set points by RTK device .)

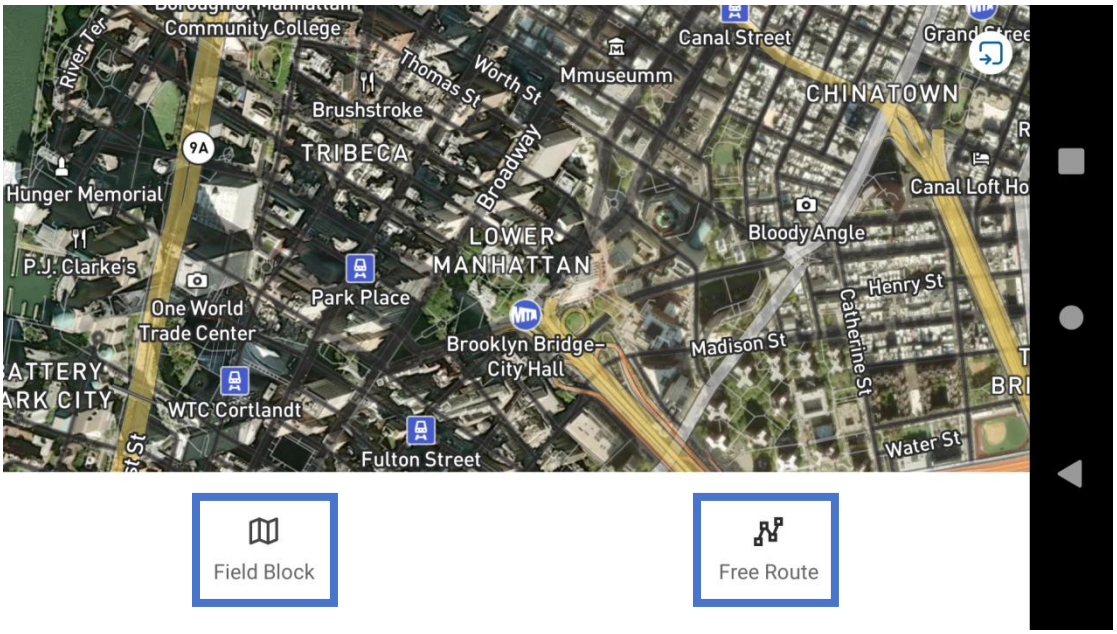
Select the type of mapping

First, power on the aircraft and turn on the remote control .Tap **Mapping** , and select **Field Block** or **Free Route**

Field Block : Map the boundary of the plot for the whole large field , and then plan the spraying route within the plot .

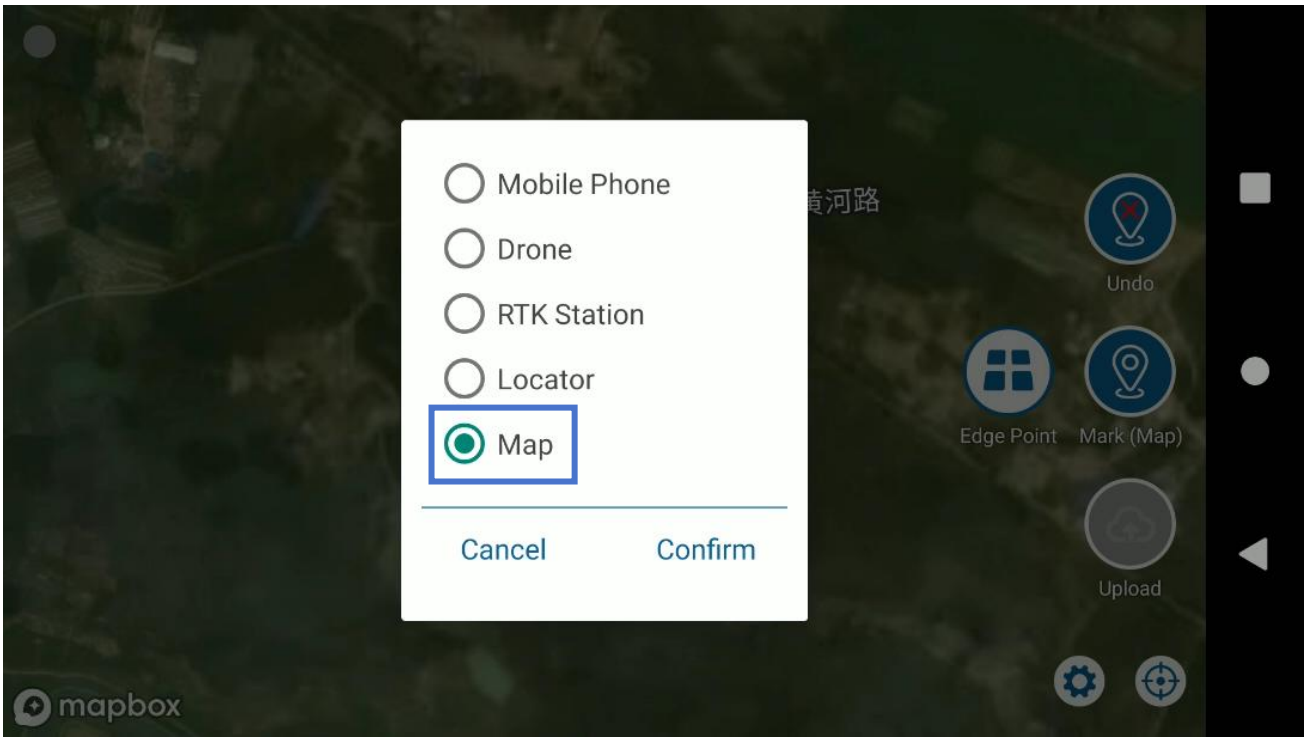
Free Route : For irregular field, such as spraying irregular orchard, Spraying routes can be planned according to the fruit trees rows.

Here we take map mapping and Locator mapping as a example.



Map mapping

a. Tap on the **Settings** and select **Map**

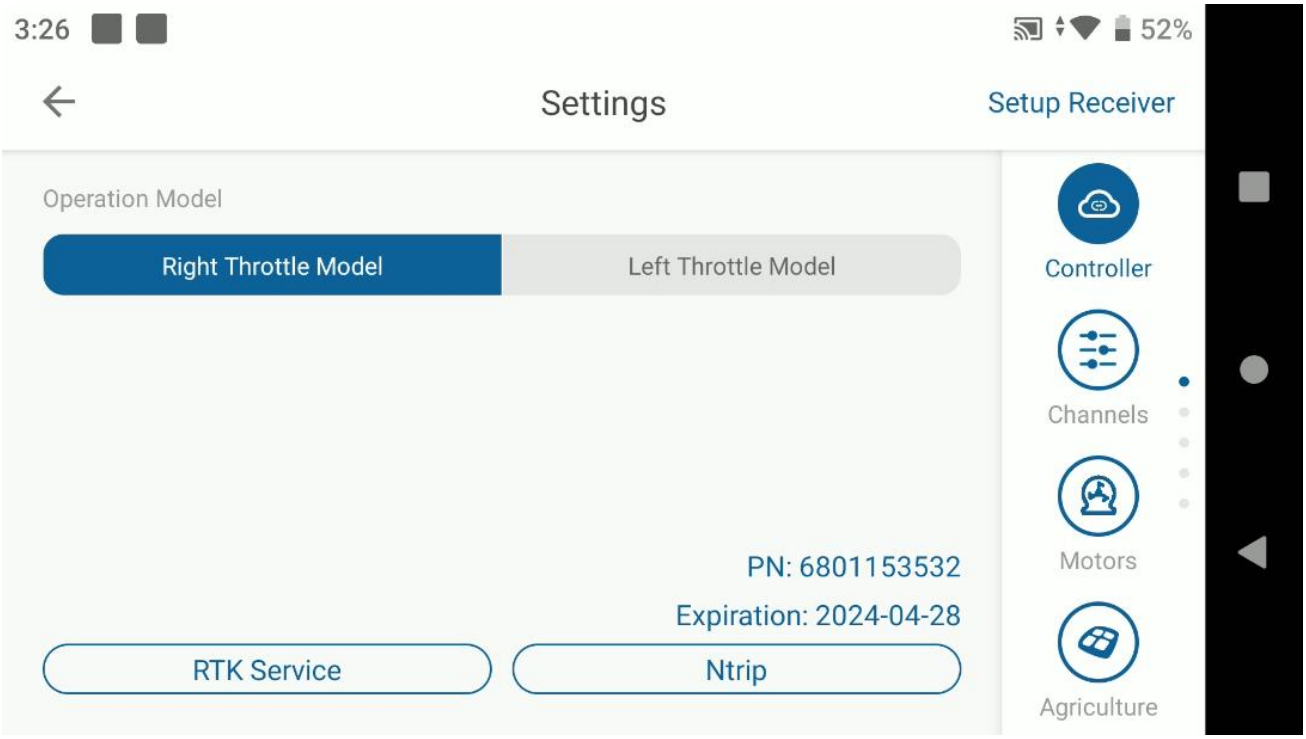


b. Move the Dot to the boundary of the plot, tap **Mark(Map)** to set the Edge points in sequence. If set the wrong dot,tap **Undo** to remove.

c. After the plot is circled, tap **Upload** and fill in the block name and other informations then confirm it .

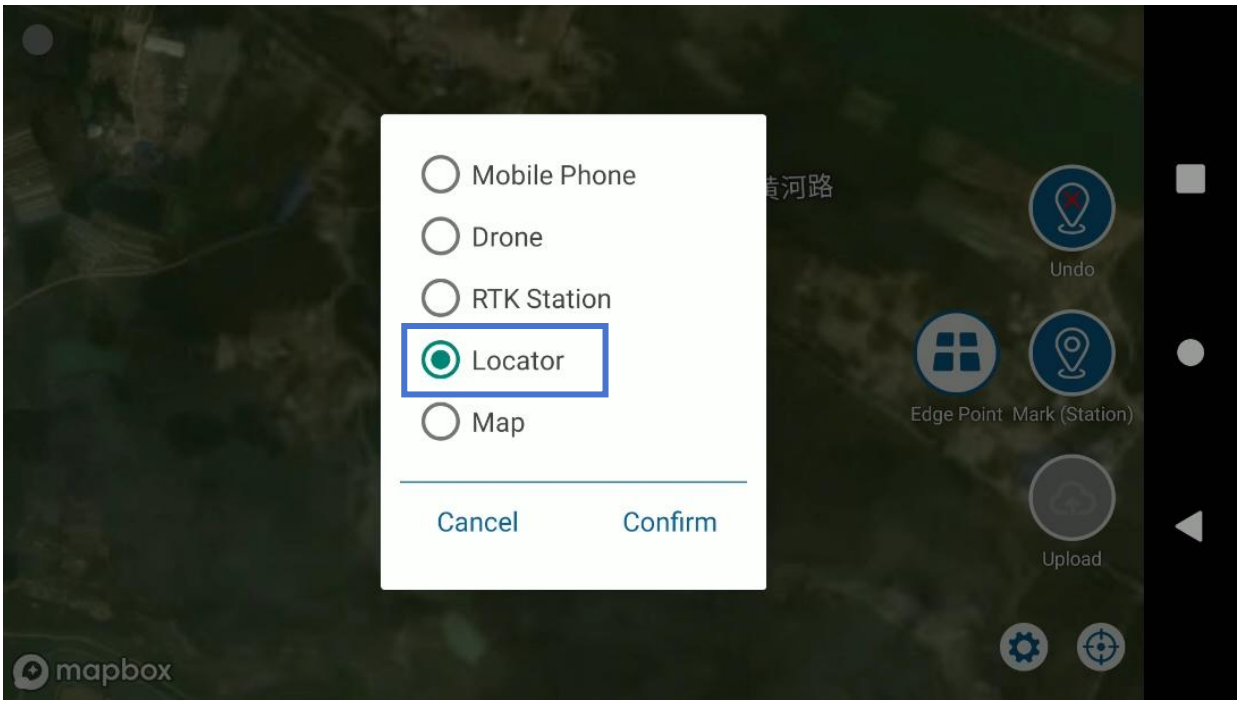
Locator mapping

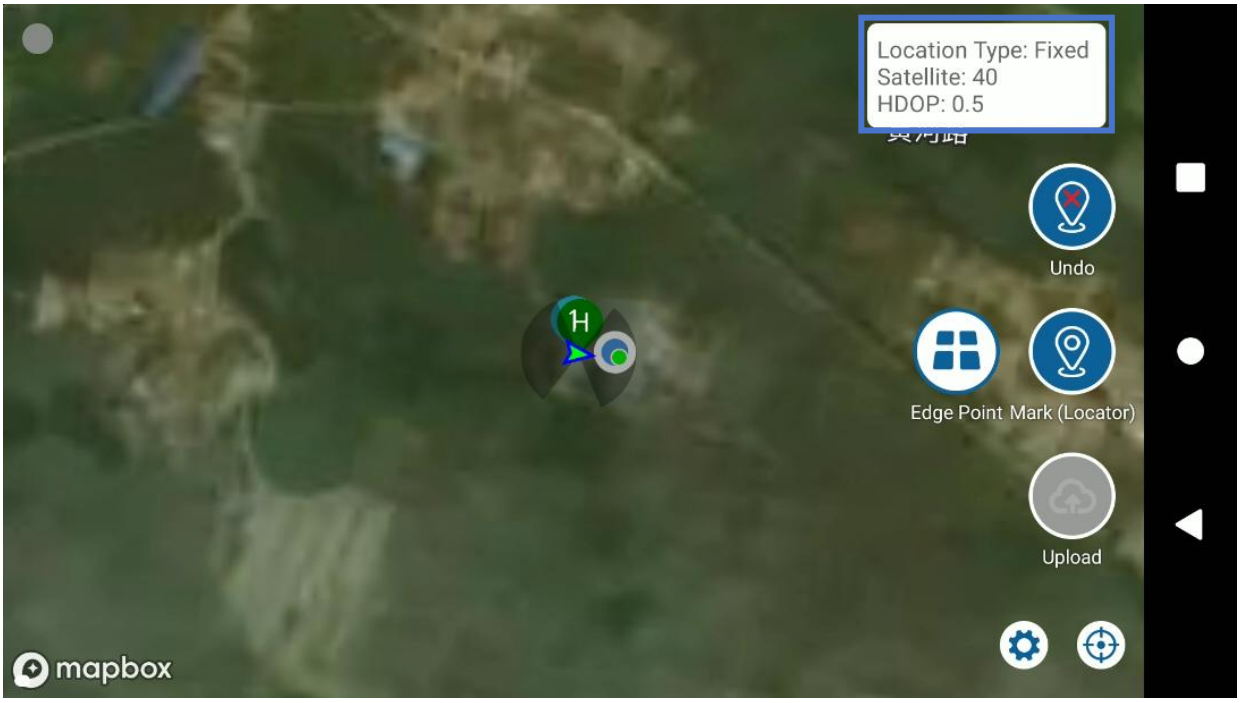
a. Open the APP, tap ‘**Settings——Controller —— RTK service**’ , and ensure that the drone has RTK .



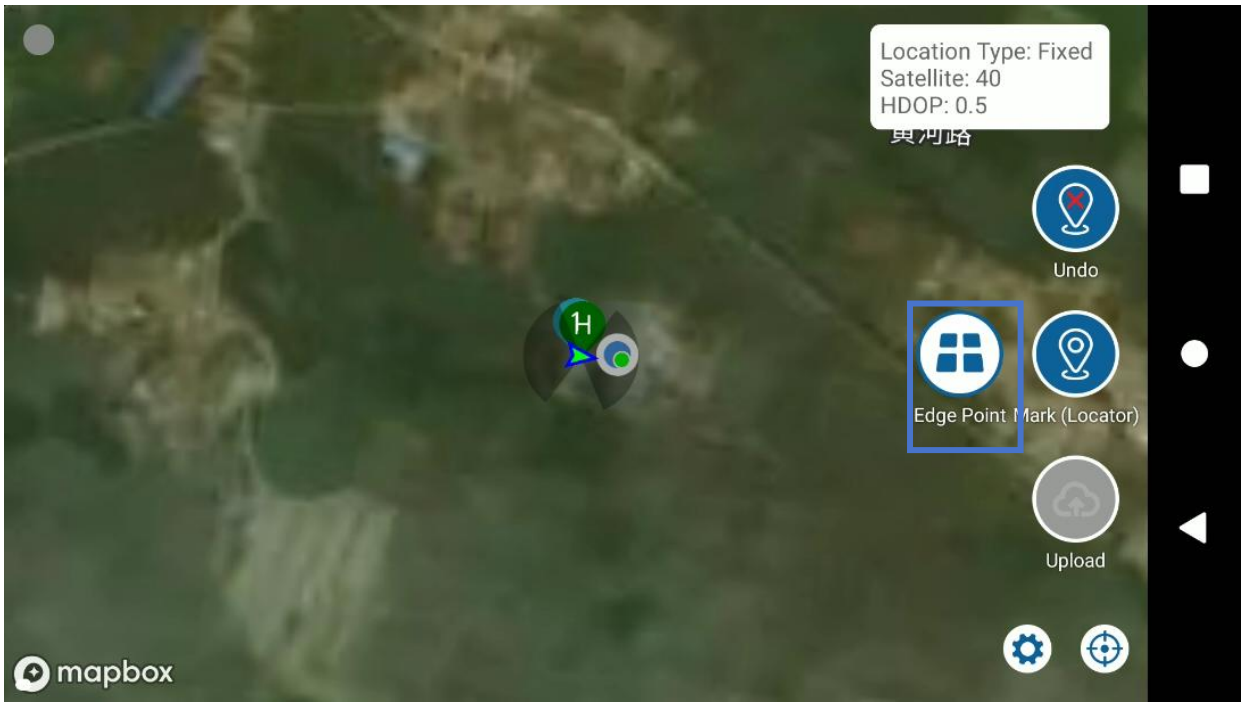
b. Back Home page ,tap **Mapping** , and tap **Field Block** or **Free Route .**

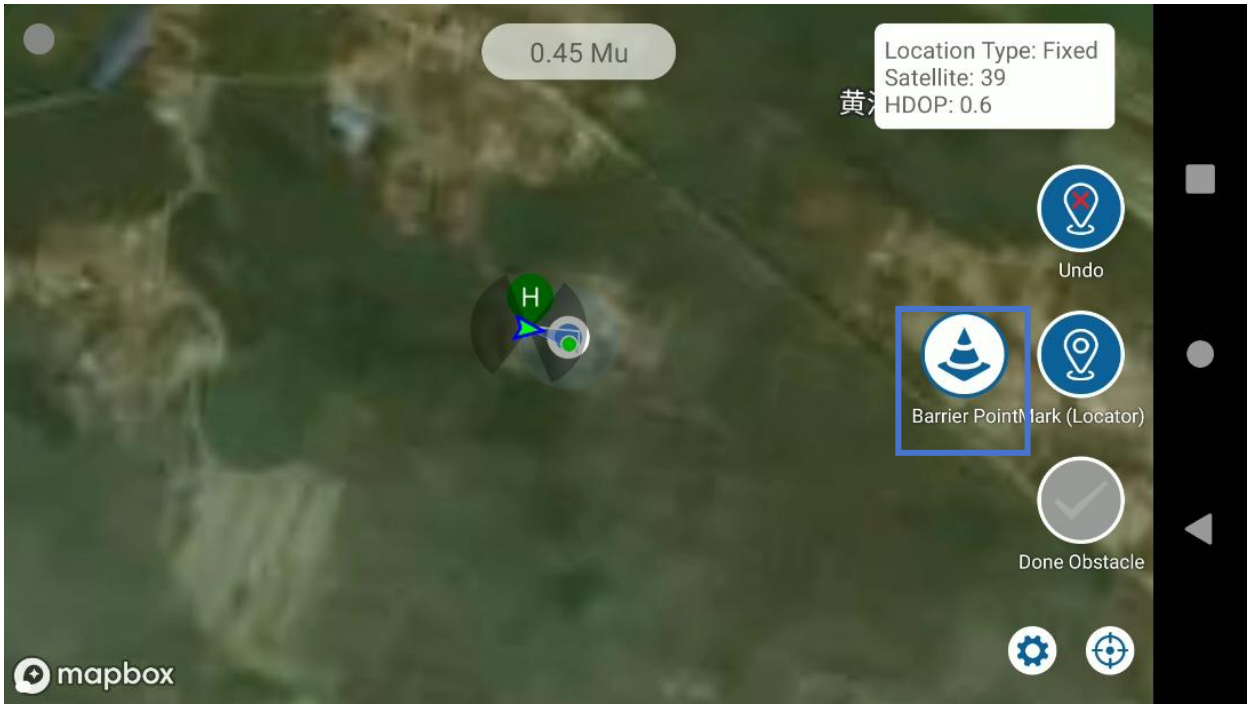
c. Tap on the **Settings** and select ‘**Locator**’. Then open the RTK Locator and connect the right RTK device. If successfully connected, the screen will display the location information of the Locator.



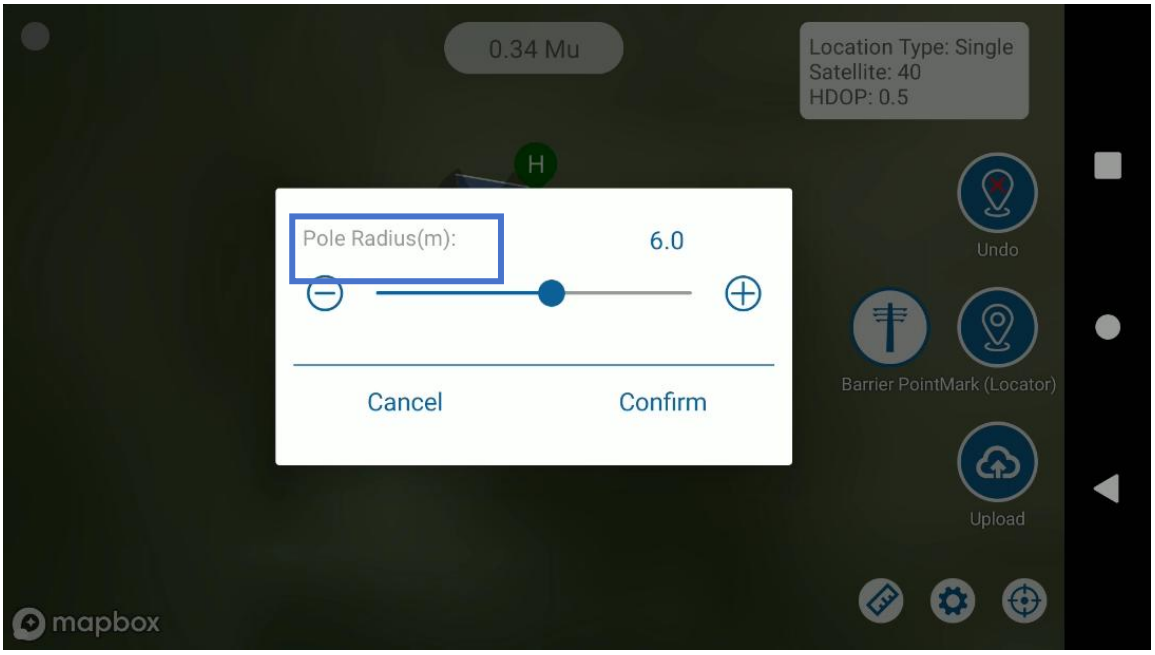


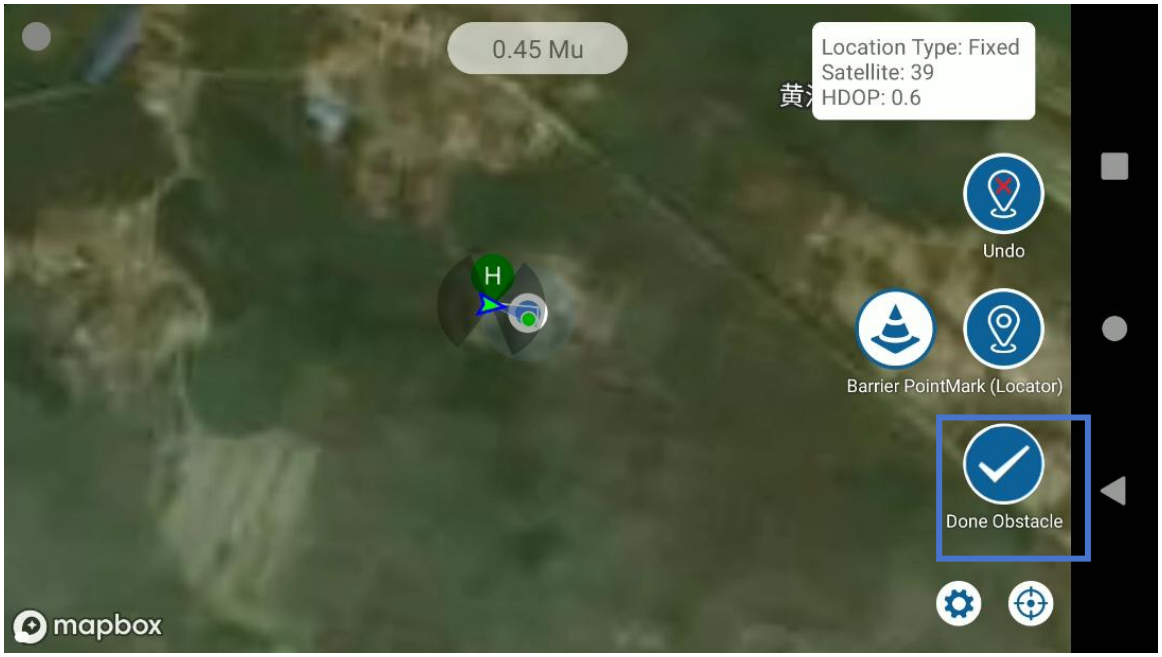
d. Hold the dotting device and walk to the boundary of the plot to set dots. If there are obstacles, tap **Edge Point** to switch to **Barrier Point** and set obstacle dots .



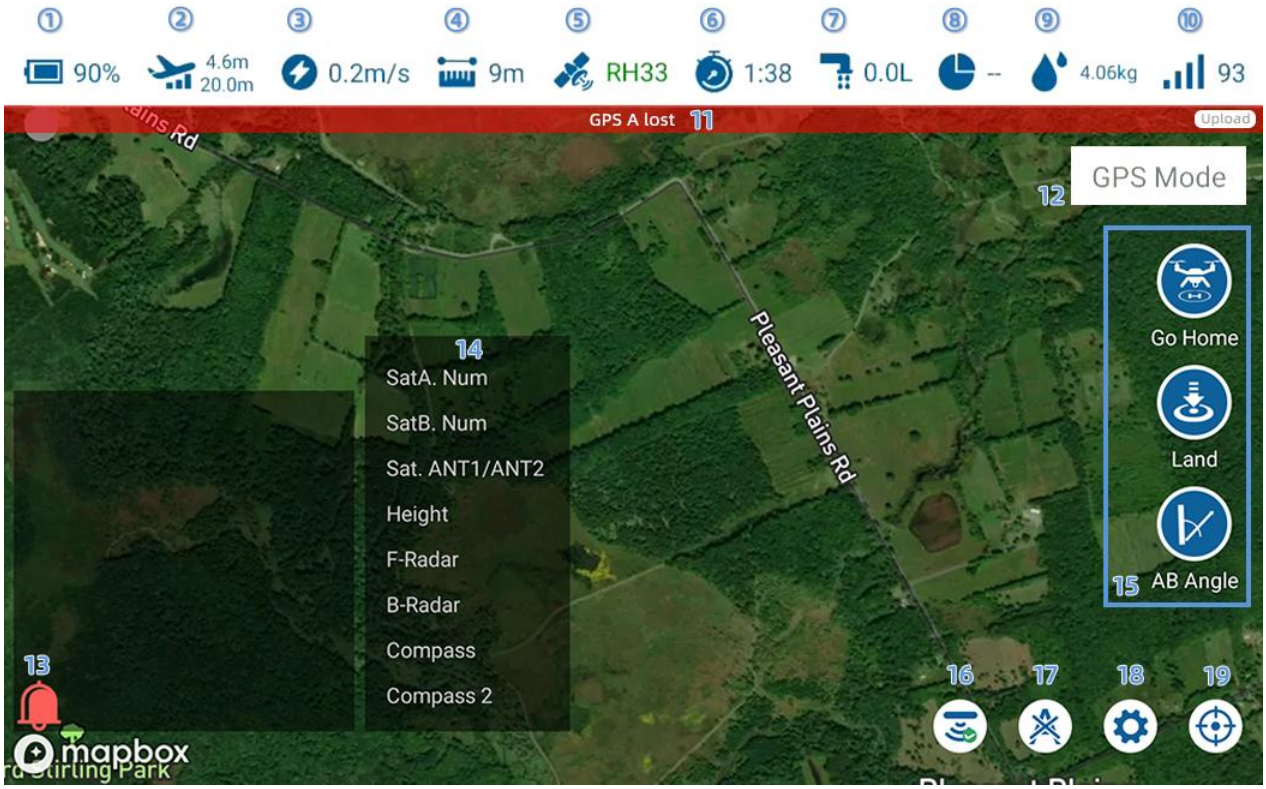


e. Obstacle dots can be set as polygon or circle. and tap the icon to adjust the margins Then **Done Obstacle** to save it.





Operation View



① Battery power, tap on the battery icon will appear in the details .

② Aircraft height from ground and altitude

③ Flight speed, Horizontal speed

④ Distance from the HOME point

⑤ GPS , tap the GPS icon to display the satellite / radar information

⑥ Flight time, time will reset after power off

⑦ Flow rate，flow rate of pump in L / min

⑧ Sprayed acres, current sprayed acres / total acres

⑨ Already sprayed dosages

⑩ Signal status of remote control and aircraft

⑪ Alarm information

⑫ Flight mode, display the current flight mode

⑬ Basic information about aircraft

⑭ Notifications about RTK , GPS , Radars etc.

⑮ Flight command ,Go Home , Land , AB Angle

⑯ Radar obstacle avoidance

⑰ Delete AB point

⑱ Settings the parameters

⑲ To the center

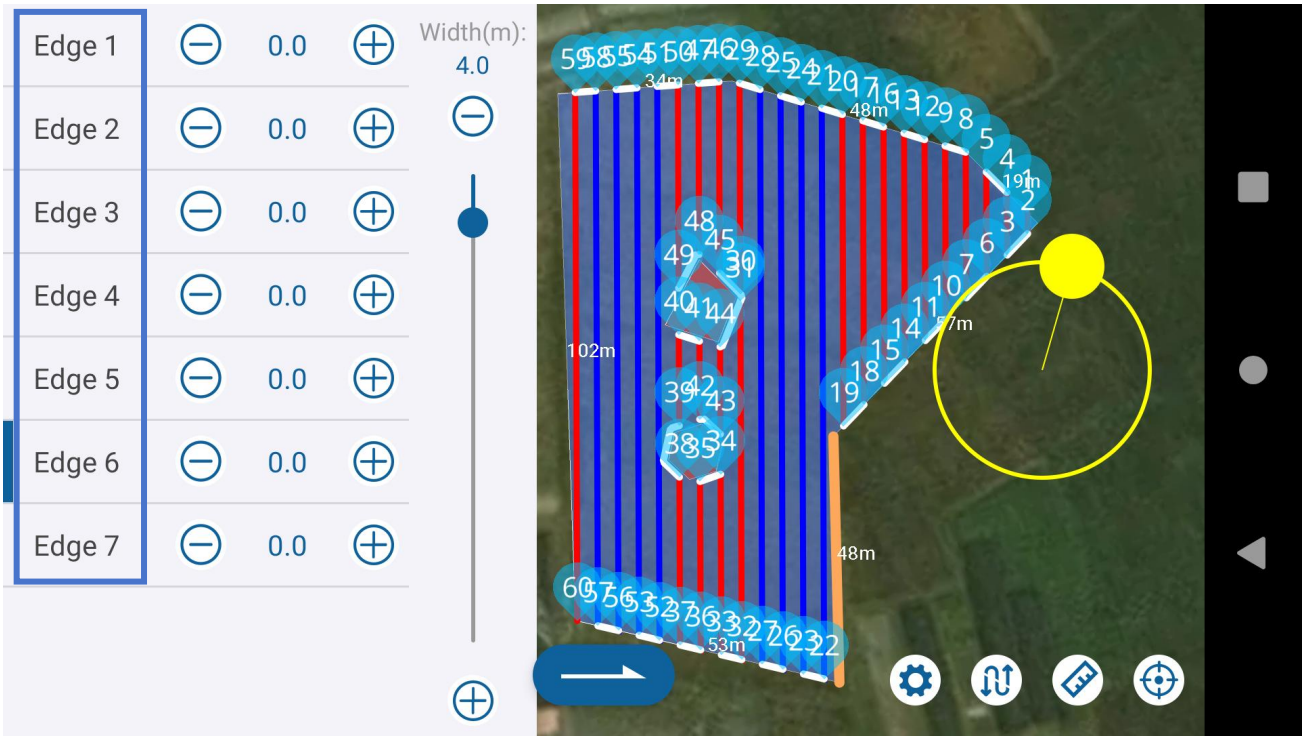
Auto Pilot

Before Autonomous spraying, plot mapping and route planning need to be completed.

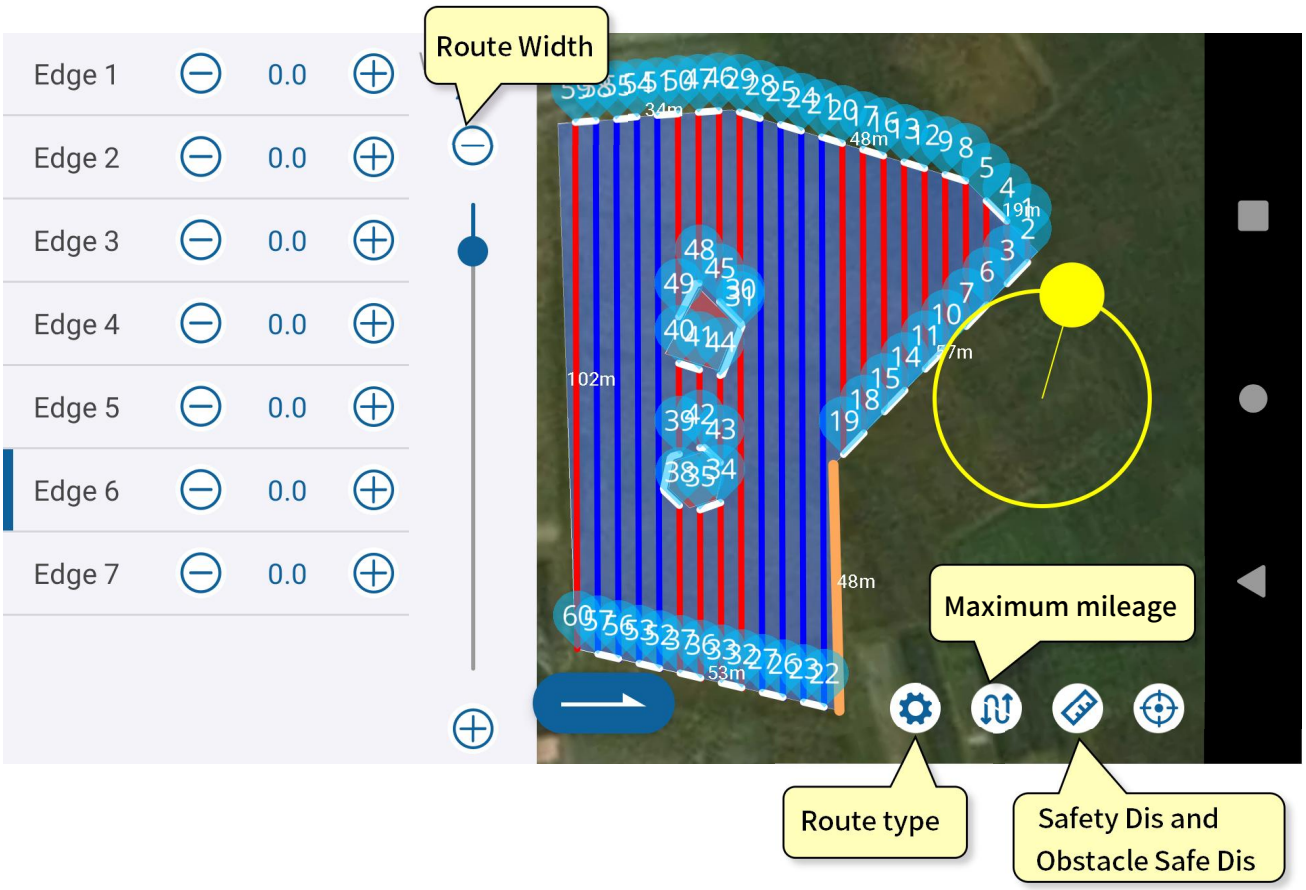
Planning Flight Route

a. Tap **Auto Pilot** ,there is a list of all mapped plots . Select the plot to be sprayed,then tap the button to plan the flight route .

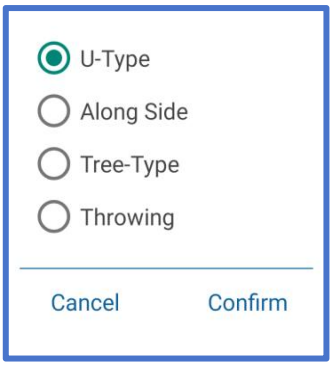
b .Tap the **Edge** to adjust the route direction ,and adjust the safety distance of each route by - or +.



c . Tap one of the plot corner on the map to set the starting point. The Route Width, Route type, Maximum mileage, Safety Dis and Obstacle safe Dis accordingly.



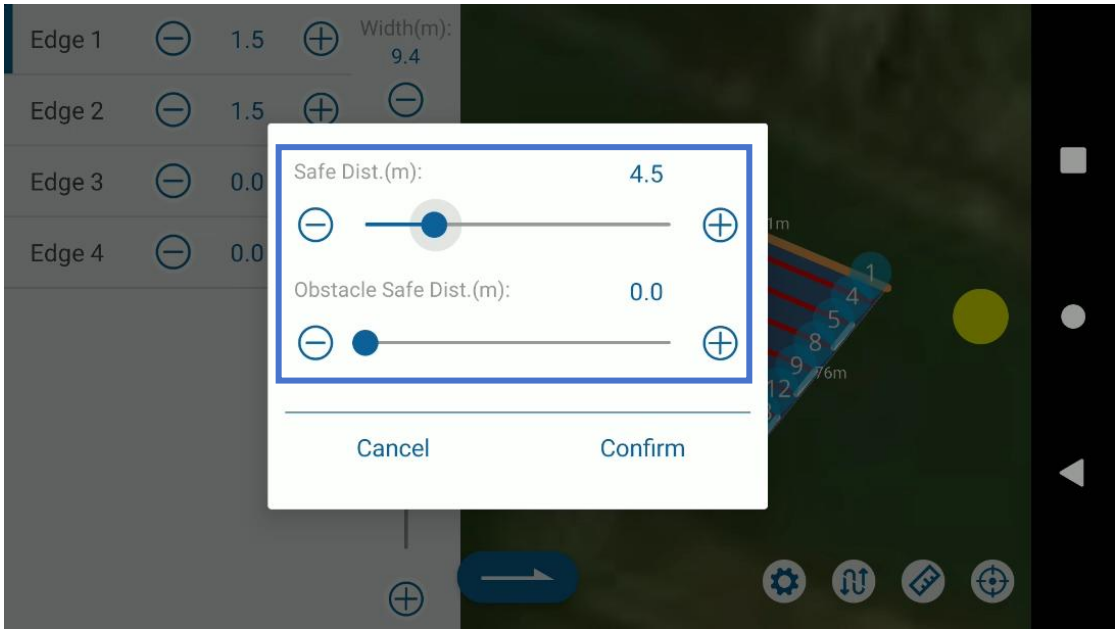
d. Tap , choose the Route type as U-Type /Along side /Tree-Type/Throwing. You can also adjust the route angle through the ring on the map.



U-Type: A continuous U-shaped route on the plot.
Along Side: A route around the edge of the plot.
Tree-Type: For fruit tree operations, the aircraft can set dot both end of each row ,then plan the flight route accoring to the tree rows.
Throwing: Trow points can be planned at regular intervals.

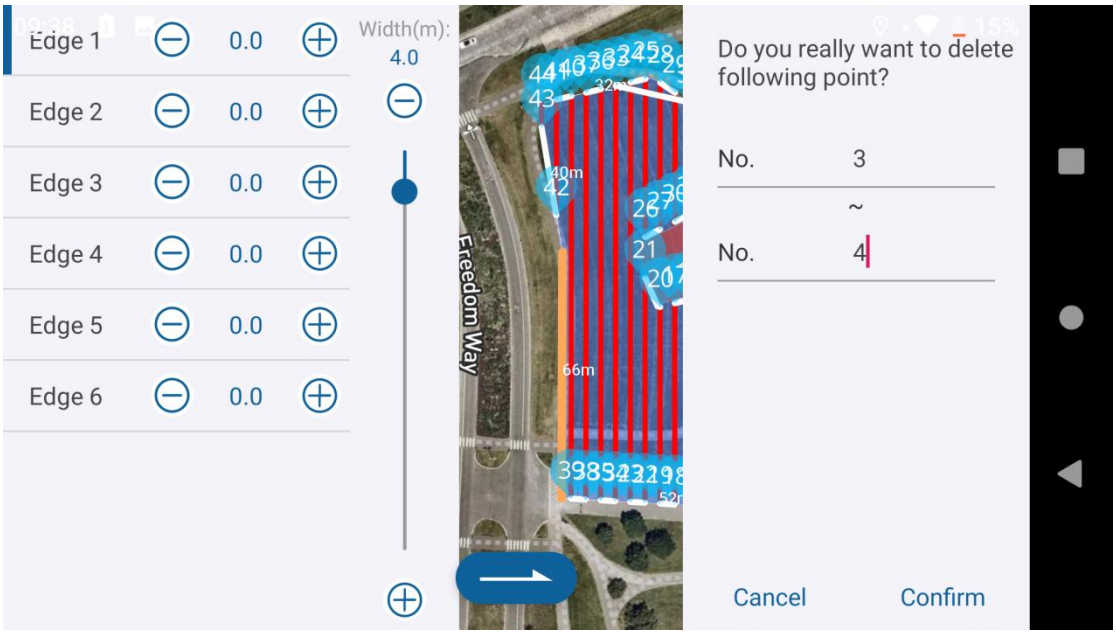
e. Tap the icon to set the Max flight mileage for a single flight. After the setting , it will automatically identify the shortest distance to the starting point as the end point . The drone will hover or return , and it will also start the next route from a nearest point after taking off. Reasonable setting of this function can save battery power. If the smart mileage is set to 0, the this function is turned off.

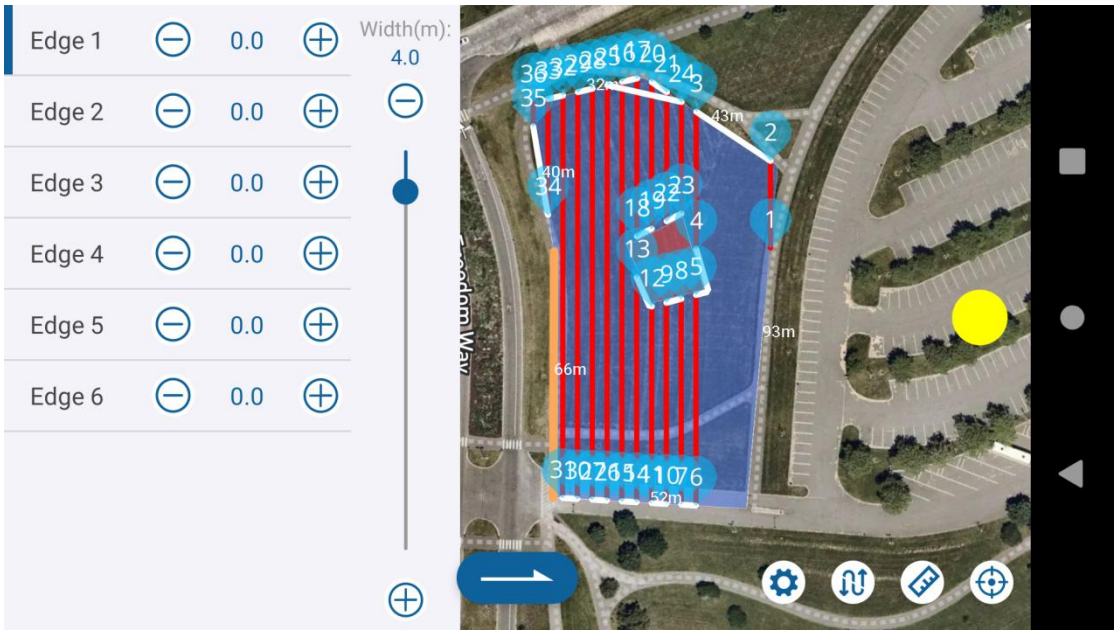
f. Tap icon to set the safe distance and obstacle safe distance.



Delete some flight routes

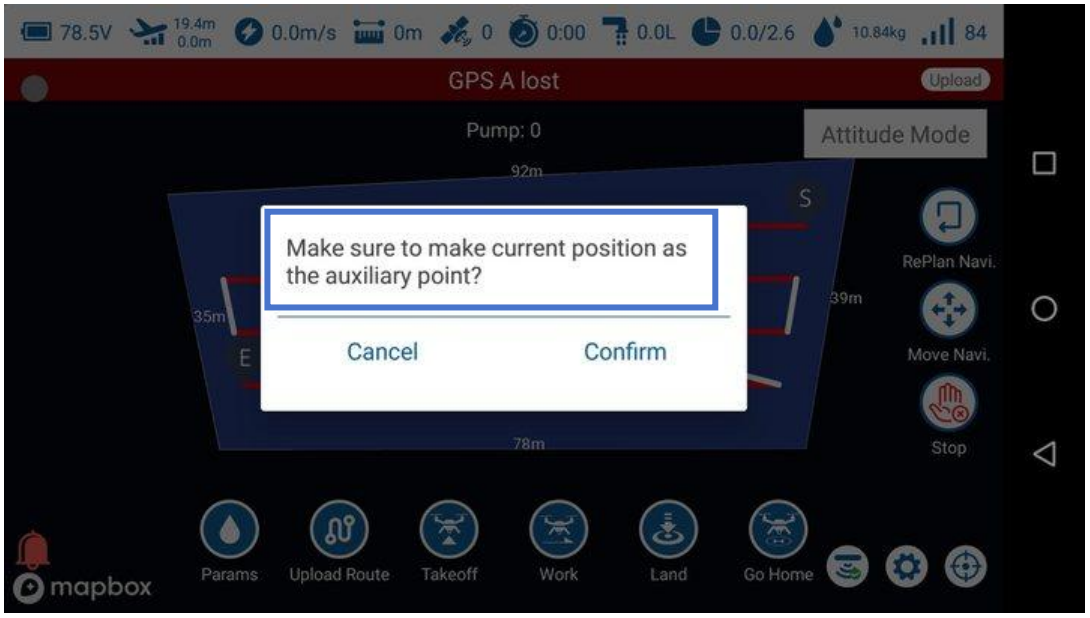
If there are some routes that do not need to be sprayed, tap the point which need to be removed, write the point number, and then confirm to delete some routes.





Set auxiliary points

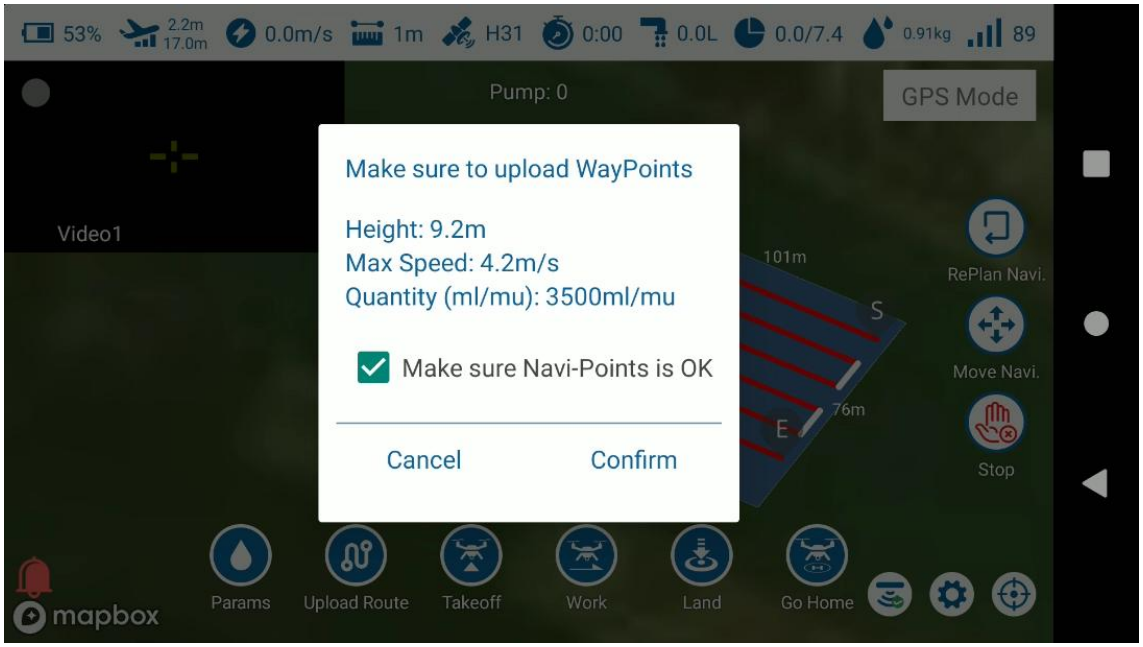
If there are obstacles between the take-off point and the starting point, or between the take-off point and the Home point, an auxiliary point can be set on the map. Press and hold the map screen for 1 second. A prompt will appear, tap Confirm to add successfully. Re-upload the route to delete it.



Start spraying autonomously

After the route planning is completed, tap to enter the operation interface and set the spraying parameters.

Tap **Params** to set Hight , Speed and Quantity, tap **Upload Route** and Make sure Navi-points is ok , Then tap **Takeoff** and After flying up, tap **Work** to start spraying automatically.

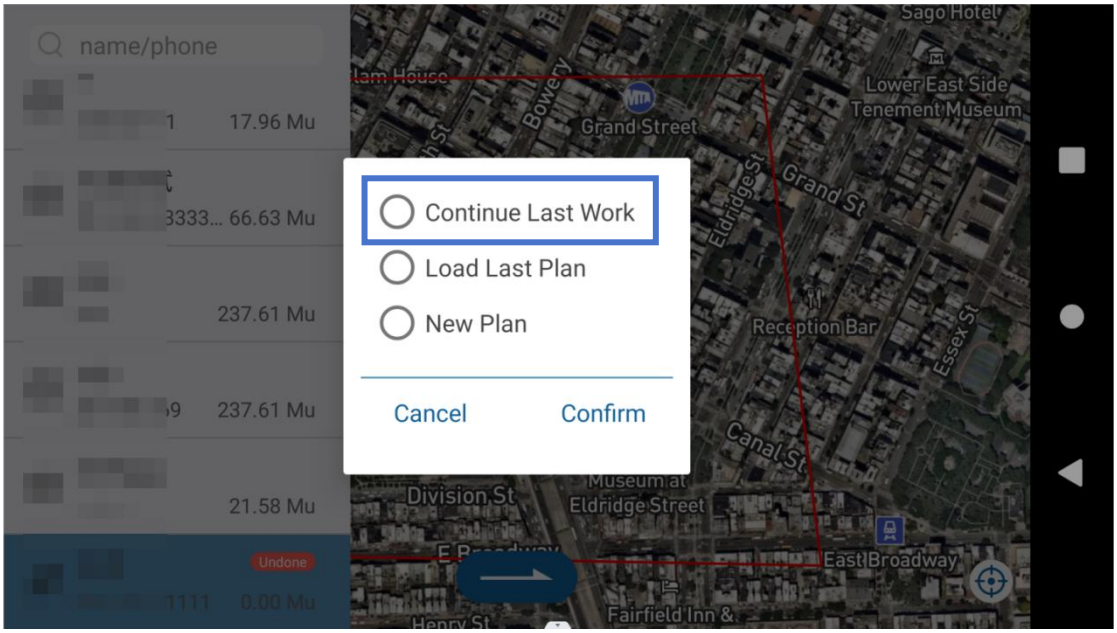


: If the drone cut-off position is far away the take-off point, you can tap RePlan Navi to re-plan the starting point. After the route is rearranged, please upload the route again and then start a new flight.

: Moving the whole spraying route to adjust the deviation of route arrangement.

: Interrupt flight and stop spraying

a. **After replacing the battery or adding medicine liquid during the drone operation, there is no need to re-upload the route. Only need to switch on the radar , tap Take-Off, Work and the aircraft will automatically fly to the last breakpoint to continue the operation.**
b. **It supports the right-angle turn and the U-type turn.**
c. **Supports real-time adjustment of throttle/flight direction during flight, and supports manual operation to avoid obstacles.**
d. **The spray quantity can be set by fixed pump output or follow the flight speed to meet medicinal dosage per hectare**
e. **If continue the unfinished plot , just select the specified plot and tap Continue Last Work.**



AB Point Mode

AB mode supports automatic radar obstacle avoidance and manual flight obstacle avoidance. The AB route length or flight direction and flight altitude can be adjusted during flight.

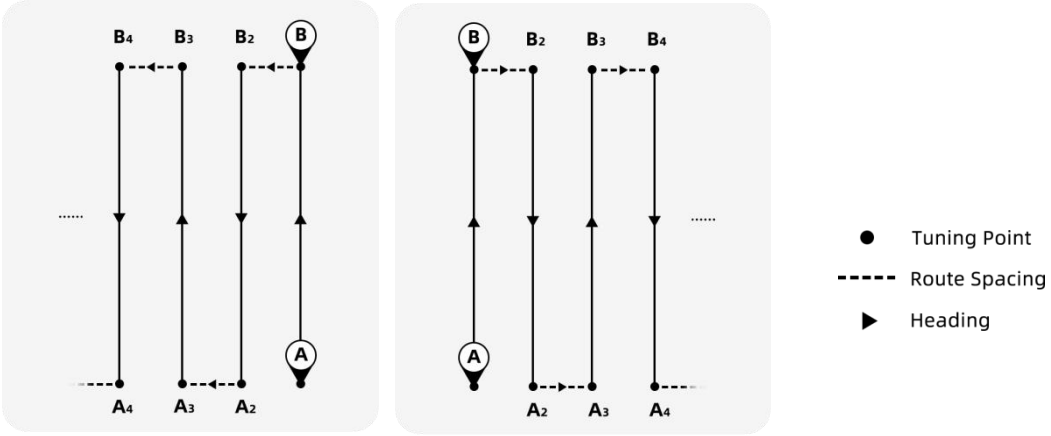
Operation Steps

a . Take off manually and fly to the starting point. In GPS mode, move the right lever to the middle position to set point A . After point A is successfully recorded, the screen will show the information.

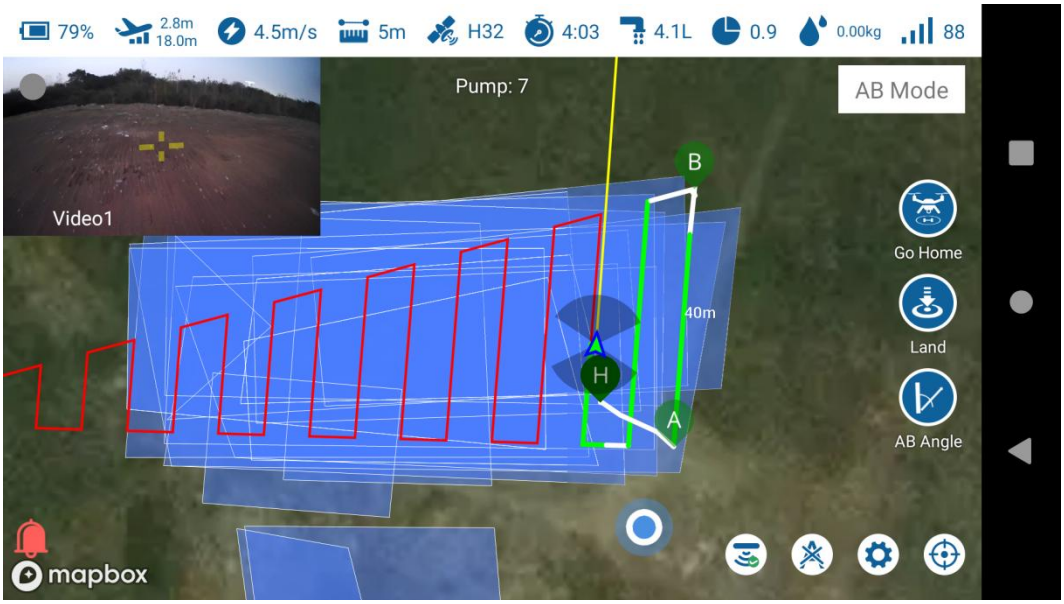
(If it is already in A position, please move the lever and then back to the middle position to set point A.)

b . Fly to point B, and the water pump will automatically turn on after setting A point . when reach point A point B, move the right lever toward front of the remote control to set point B. After the setting is successful, the LED light will flash purple twice.

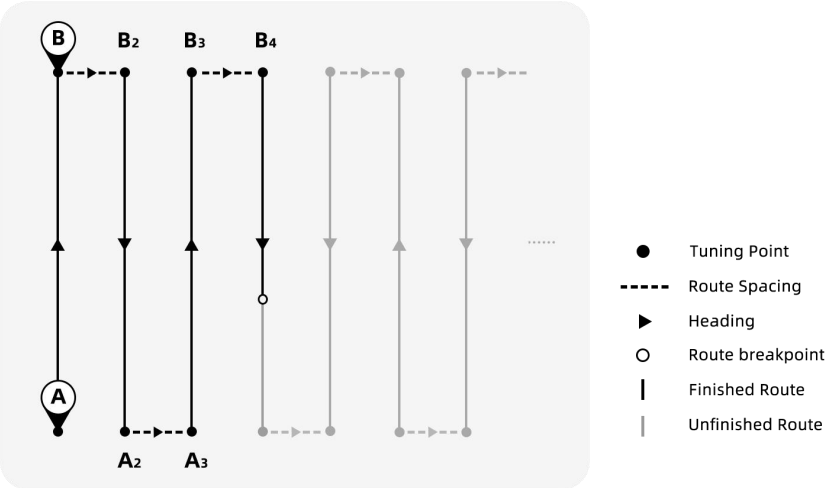
c . Switch the left lever to AB mode (toward the front of the remote control), move the right joystick to the right or left (according to the location of the plot), and the drone will start operating automatically.



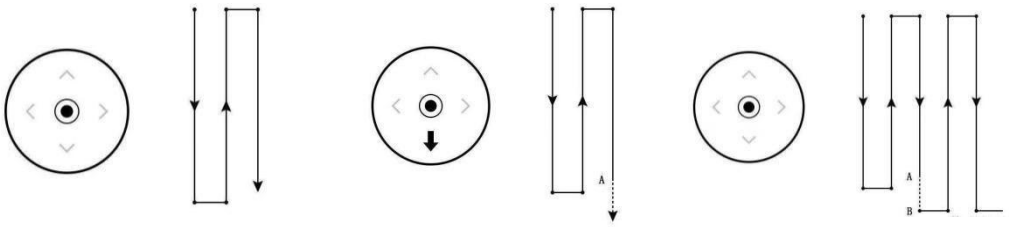
Adjust AB angle : After setting point A, rotate the drone head to align with the target direction. Tap the AB Angle button to record the angle of point A. Record point B in same way after setting point B.



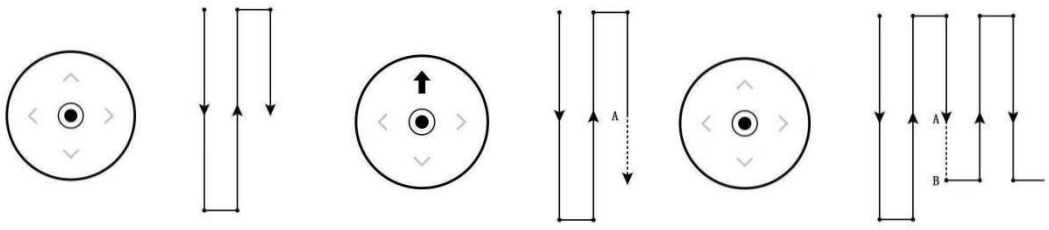
Interrupt/ Continue AB route: Switch the flight mode of the left lever to interrupt the operation at AB mode. If you want to return to the breakpoint, after takeoff in GPS mode, switch to AB mode again, and the drone will automatically return to the breakpoint to continue work .



Lengthen or shorten AB Route: Shorten the AB route, Fly from point B to point A, when approaching target point, keep pulling the right joystick downward. After the route is shortened, return the joystick to the center. Lengthen the AB route, you can push the right joystick upward when approaching target point. After the aircraft arrive at the target point, then return the joystick to the center.

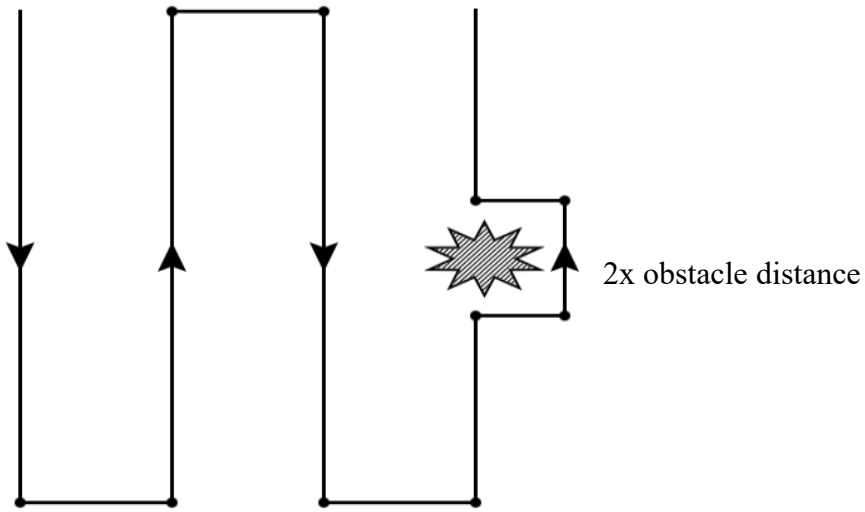


Extend point AB

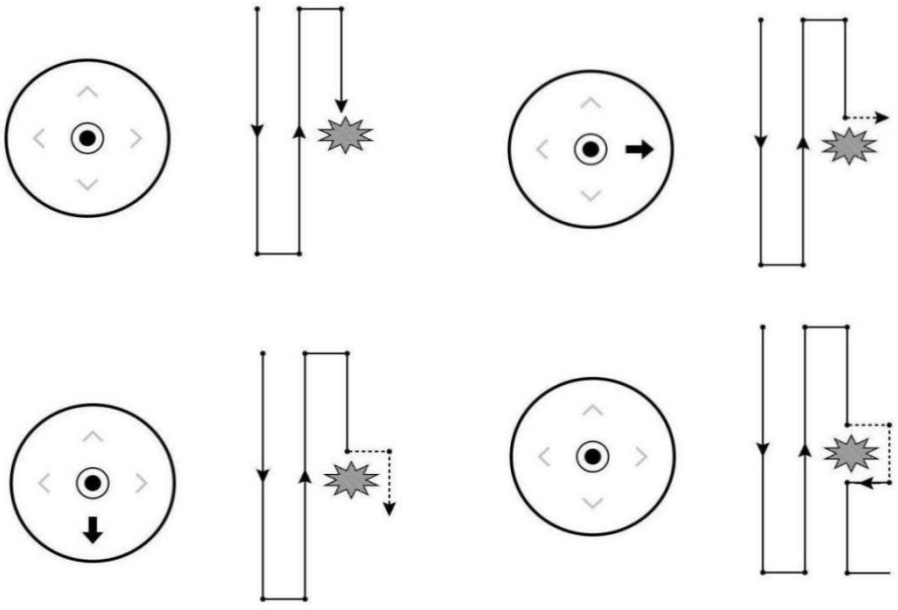


Shorten point AB

Obstacle avoidance: In AB mode, the drone will automatically avoid obstacles according to the preset (If the drone is equipped with radar), or manually control the drone to avoid obstacles through the Joystick



Auto obstacle avoidance



Manual obstacle avoidance

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2. This product is not a toy. There are certain risks when using it. And it is not suitable for the following groups: under 18 years of age, citizens restricted by law, people without civil capacity or disabled.

3. Before using, please make sure that you have fully understood the characteristics and functions of the product, and ensure that you have the technical ability for the operation or have a professional team, and can take the failures risk to caused by improper installation and debugging.

4. To protect your rights, please strictly follow the official Explpre tutorials . We do not accept any return or exchange due to subjective factors, such as subjectively determined that it is not easy to use, don't know how to use, and the performance does not meet the expected, which are non-product quality problems. All damages and risks from personal reasons during assembly and operation shall be borned by the users, we do not assume any related liability

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