EFT

EFT Flight Assistant APP
User Manual

Version4.0 EN

Contents

1 Instructions

1.1 Information

The Flight Assistant is the latest drone control and management App developed by EFT. To help users fully understand and use this product, this document provides a detailed introduction to the functions and operating instructions of the Flight Assistant App.

While every effort has been made to ensure the accuracy of this document, errors may still occur. If you find any mistakes or have suggestions for improvement, please contact EFT Technical Support.

For more product information, please visit the official EFT website www.effort-tech.com.

1.2 Disclaimer

Due to the specialized nature of the Flight Assistant App, please read this document carefully before use. By using this product, you are deemed to have fully read, understood, acknowledged, and accepted all terms and contents of this document.

This product is not compatible with all flight control systems. It is intended only for EFT Agriclture drones and delivery drone. Operating a drone with this product involves certain safety risks. This product is not suitable for individuals under the age of 18, persons with limited or no civil capacity as defined by law, or individuals with impaired mobility. Do not allow children to come into contact with this product. Extra caution must be taken when operating in environments where children are present. Operators must possess relevant professional knowledge and the required qualifications for drone operation.

Any product may experience accidents due to improper operation, environmental conditions, or other unforeseen factors during use. Users should fully understand and willingly assume all losses and risks arising from such incidents. EFT shall not be liable for any such accidents.

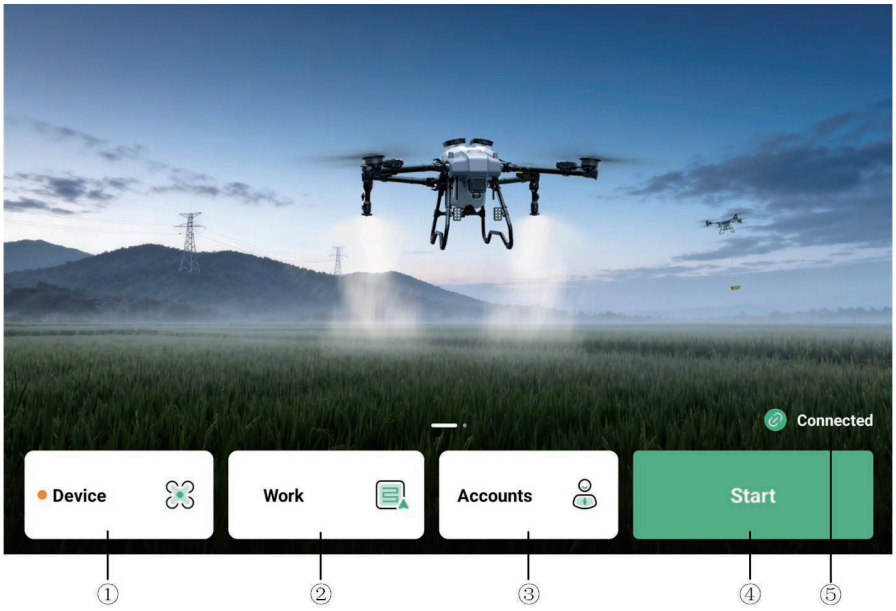
Under all circumstances, purchasers and users must comply with the laws, regulations, operating instructions, and safety requirements of the country or region where the product is used. EFT shall not bear any responsibility for consequences arising from violations of applicable laws or regulations by the purchaser or user.

EFT reserves the right to update and provide the final interpretation of this manual, and may, without prior notice, update, revise, or remove product information, including content on the official EFT website, social media platforms, e-commerce platforms, as well as user manuals, assembly manuals, software, firmware, and other related materials.

2 Overview

The Flight Assistant App is designed for agricultural operations, allowing real-time monitoring of spraying, spreading, lifting systems, and connected devices such as radar, pumps, and flow meters. It supports Auto Mode, Manual Mode, AB Mode, and Point-to-Point operations. Users can plan routes in the app, and the drone will start operations automatically.

2.1 APP Homepage



① Device

View device connection status, flight controller SN and firmware, and firmware updates for the flight controller, radar, and other devices. (Grey icons indicate unavailable functions.)

② Work

View fields, flight data, teams, and devices.

③ Accounts

View user info, flight and lifting records, logs (download FC and app logs), general settings, and account security.

④ Start

Tap to enter the operation page.

⑤ Connected

Shows connection status. If the remote controller is bound and the baud rate is 115200, the device connects automatically after power-on. If “Disconnected” is shown, bind the device in Device → Remote Controller.

2.2 APP Operation Page

① **Home**

Back to Homepage.

② **Connection/Flight Mode**

Display the drone status.

Tap to check alarms: If there is a alarm, tap to view the detail information and solve it accordingly before flying.

③ **Flight Time**

The time of each flight is recorded and recalculated when landing.

④ **Signal**

Communication status between the remote control and the drone.

⑤ **Battery Level**

Display the battery level (smart batteries show battery percentage, others show battery voltage).

⑥ **GPS/RTK Connection**

Display the positioning mode.

⑦ **Spray/Spread/Lift**

Automatically identify operating modes.

⑧ **Operation Mode**

Manual mode, AB mode and Auto mode are optional.

⑨ **Settings**

Set the parameters of drone and remote control.

⑩ **Location**

Locate the real-time positions of the remote control.

⑪ **Drone Position**

Directly locate the real-time position.

⑫ **Visible/Hide**

Click to show or hide the radar ball, aircraft and operation status parameter.

⑬ **Eraser**

Clear the flight trace.

⑭ **Area Data**

Real-time display of the current route area and the work area.

⑮ **Add Block**

Add the new block.

⑯ **Edit**

Plan flight routes of the block.

⑰ **Edit Parameters**

Set operating parameters.

⑱ **Start Work**

Tap to start work.

⑲ **Flight and Operations Real-time Data**

Speed: Drone real-time flight speed.

Dist: The real-time horizontal distance between the drone and the home point.

Height: If the altitude radar is turned on, displays the relative height of the drone and the object below.

If turned off, it displays the relative height of the drone and the take-off point .

Area: Display the real-time operating area of one single flight.

Drug（Spray）: Display the weight of pesticide sprayed during spraying.

Valve Size（Spread）: Display the real-time opening of the spreader valve during spreading.

Flow（Spray ）: Display real-time spraying flow.

Turntable Speed（Spread）: Display real-time spreader turntable speed.

Weight: Display the remaining weight in the spraying tank/spreading tank.

⑳ **Radar**

Detect and display vertical obstacles. Tap the icon to turn on or off the obstacle avoidance functions.

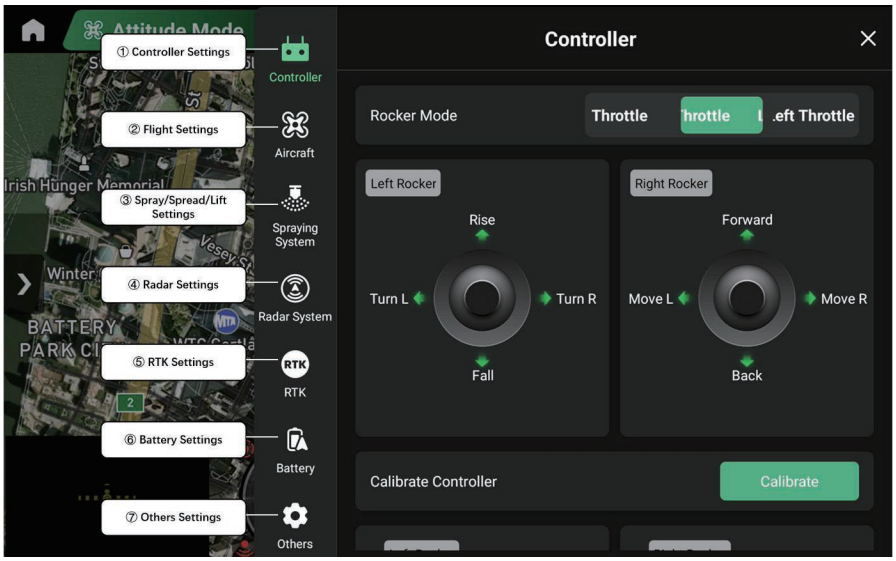
㉑ **Images**

Show the real-time camera view, can be switched to full-screen display.

㉒ **Block Parameters /Route Parameters/Working Parameters**

Tap to expand the list and set the speed,width or other parameters.

2.3 APP Settings



① **Controller**

Choose rocker mode, calibrate controller, set channels.

② **Flight**

Include flight parameters, Sensor Calibration, Arm Sensor、Smart Drug Breakpoint、Flight Safety Limit and Flight Simulator.

③ **Spray/Spread/Lift Settings**

Spray/spread/Lift system related settings, including switch, data and calibration.

④ **Radar Settings**

Include switch of obstacle radar, Terrain radar,Obstacle Dist,Obstacle Avoidance Action and Radar Sensitivity.

⑤ **RTK Settings**

Include RTK Network ,Station Custom and Status.

⑥ **Battery Settings**

Include Low power action, Alarm threshold value, and Battery information.

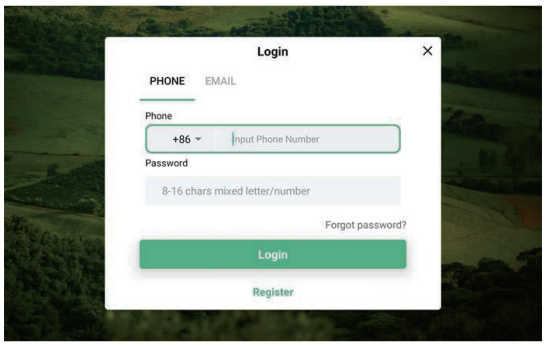
⑦ **Others**

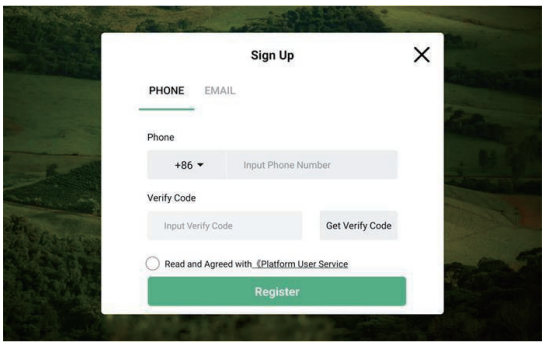
Includes Voice prompts, Device checks, Advanced settings, and Camera type selection.

3 Flight Debugging

3.1 Account Registration

- Step 1: Turn on the remote control first, then power on the drone;
- Step 2: Open Flight Assistant APP, click **Accounts**, register by filling in information as required (using phone or email to register). Or directly log in exist account.

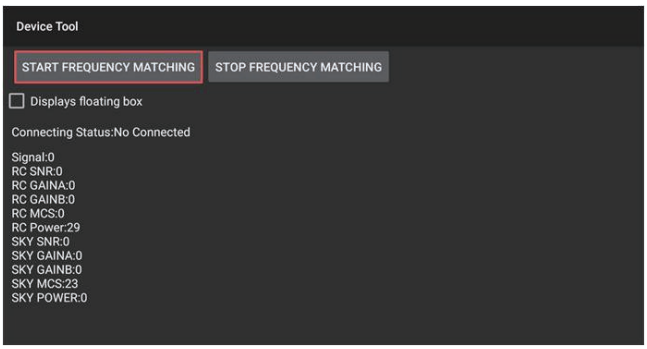


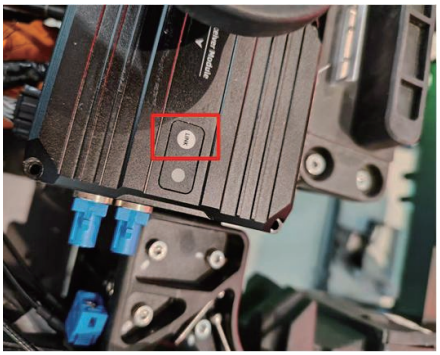


3.2 Connect the Remote Control to the Drone

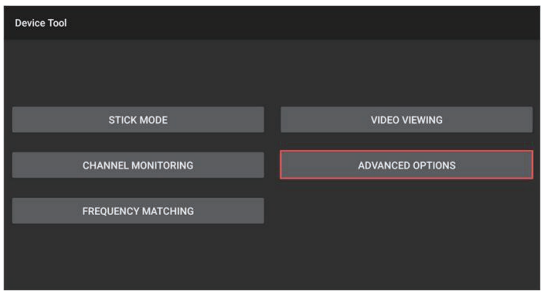
3.2.1 G20 Binding

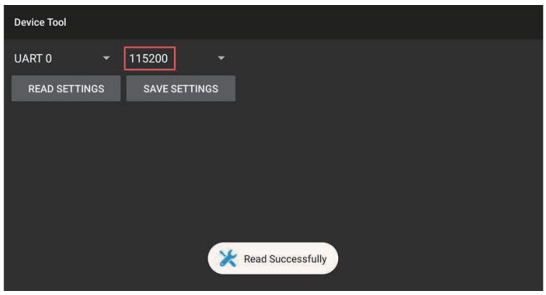
- Step1: Open the G20 Device Assistant APP and click **WIRELESS PARAMETER CONFIGURATION**. It will show Not Connected. Open the front drone cover,long press the receiver button on the front PDB until the indicator light flashes. Click **START FREQUENCY MATCHING**, after successfully matching, it will display **Connected.**



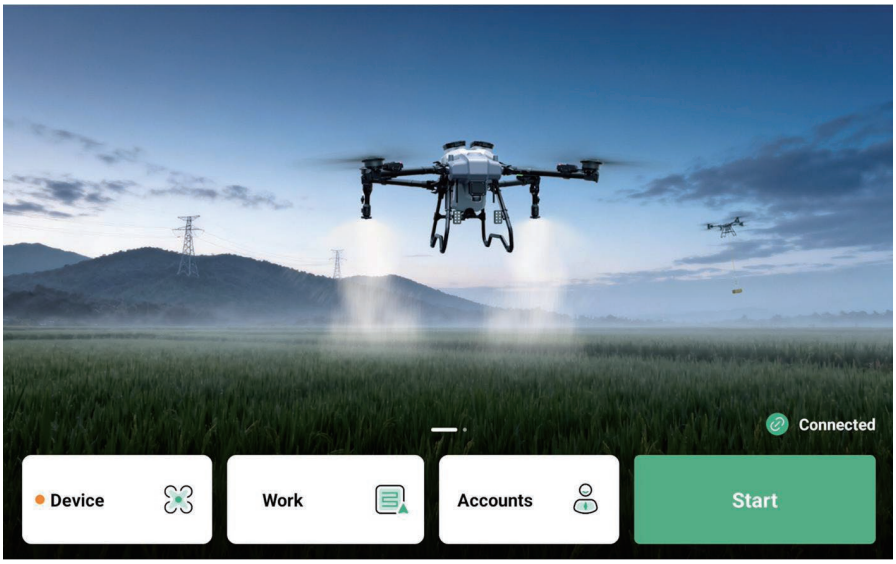


- Step2: Click **ADVANCED OPTIONS**, enter the password 999, click **BAUD RATE SETTING**, set the UART0 — 115200 ,UART1 — 115200, then click **SAVE SETTINGS**.



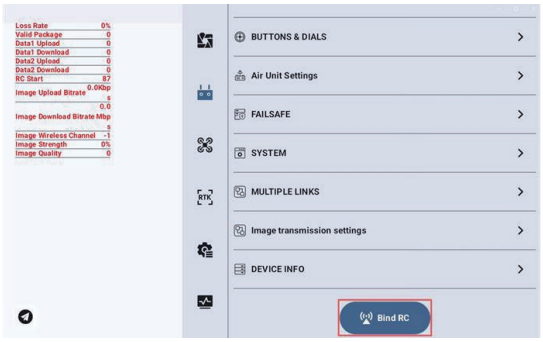


- Step3: Close G20 Device Assistant APP,open Flight Assistant APP. The **Connected** indicates the remote has been matched with the drone successfully.

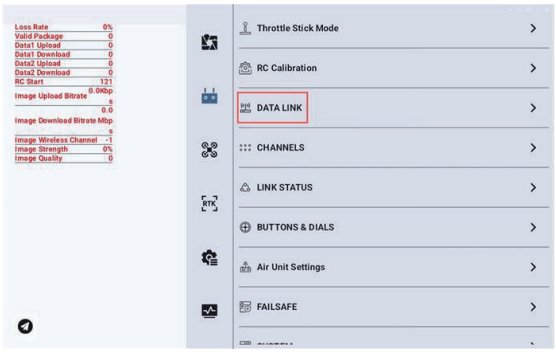


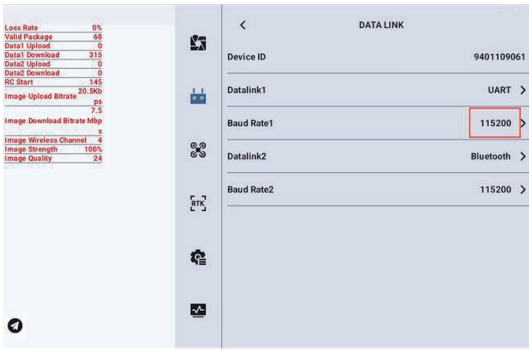
3.2.2 UNIRC7 Binding

- Step 1: Open the UniGCS app on the remote controller. Tap ••• and select . The pairing status will show Not Connected. Open the drone's front cover and long-press the Receiver Pairing button until the indicator starts flashing. Then, tap **Bind RC**. Once pairing is complete, the app will show Connected.

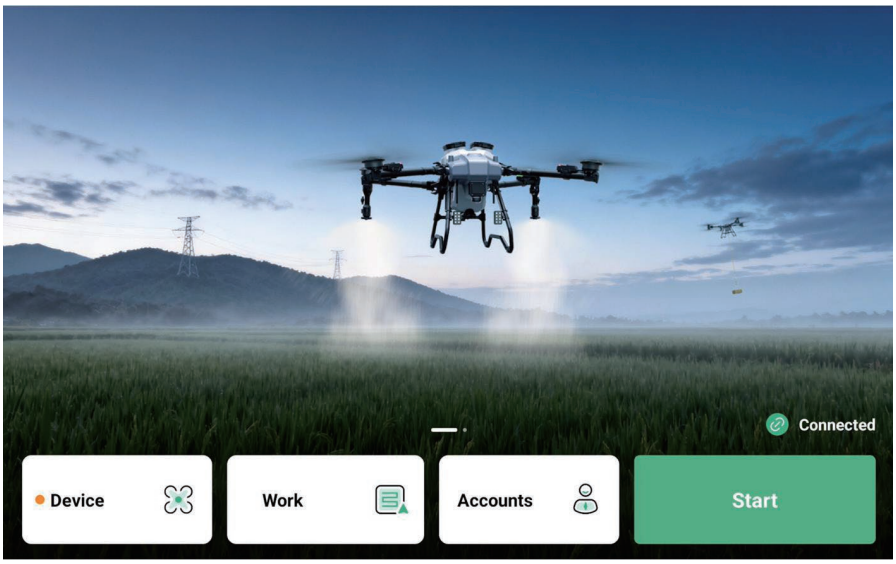


- Step 2: In UniGCS, tap , select **DATA LINK**, then tap **Baud Rate 1** and set it to 115200.





- Step 3: Close the UniGCS app and open the Flight Assistant app. When the bottom-right corner of the home page shows **Connected**, the remote controller is successfully connected to the drone.



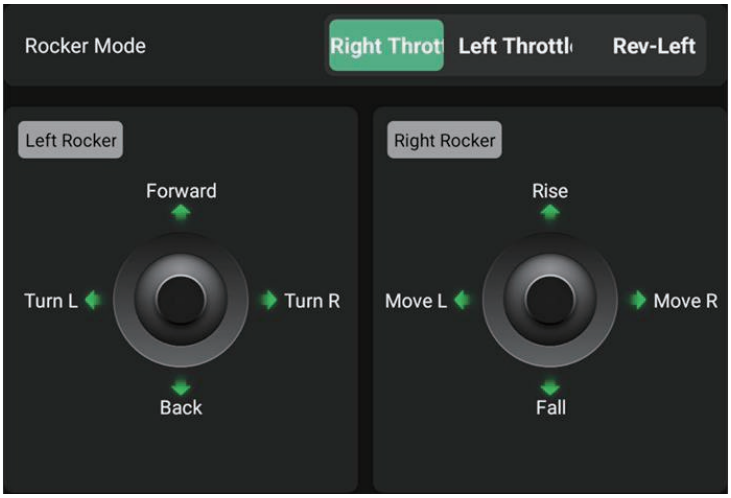
3.3 Software Debugging

The drone comes pre-configured with all necessary parameters. Only simple operations are required as follows.

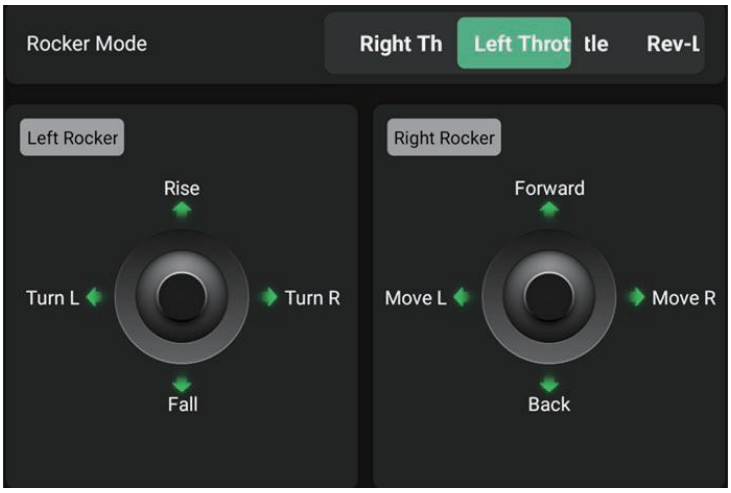
3.3.1 Rocker Mode

On the home screen, tap **Start-** , then go to Settings. Users can select the rocker mode as Right, left, or Rev-left Throttle according to their preference.

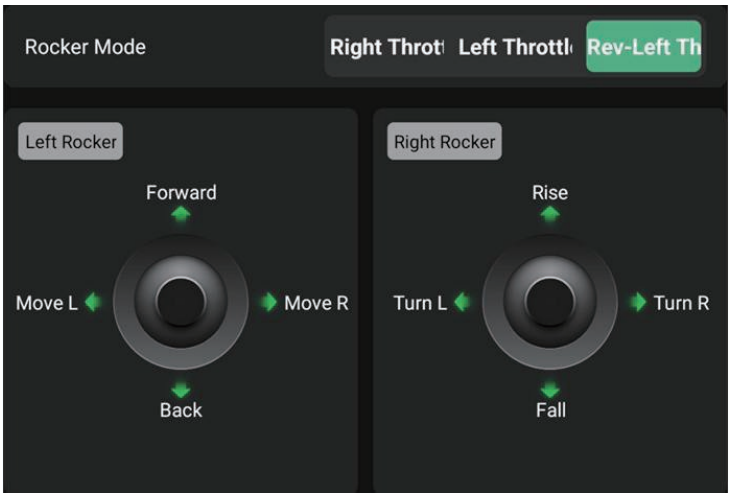
Right Throttle



Left Throttle



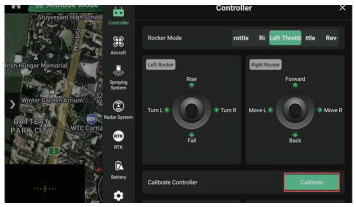
Rev-Left Throttle

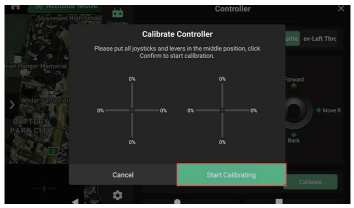


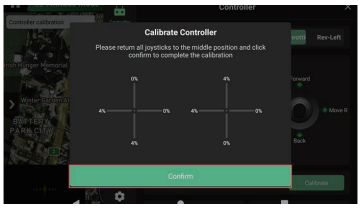
* This manual uses Left Throttle as an example.

3.3.2 Remote Controller Calibration

- Step1. On the home screen, tap **Start-** to go to Settings. Click **Calibrate** to enter the calibration page.
- Step2：Move the left and right joysticks to the full extent. Repeat this step twice.
- Step3：After completing all the above actions, click **Confirm**.

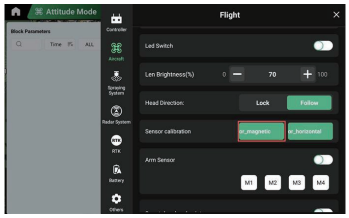


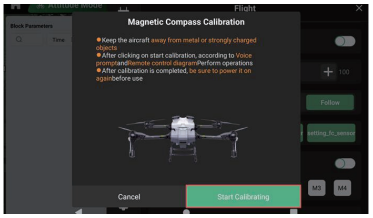


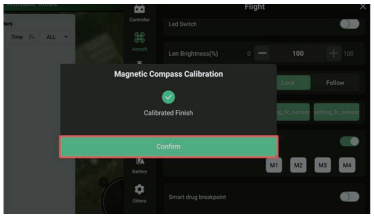


3.3.3 Magnetic Calibration

Enter **Settings-Flight -Sensor calibration-Magnetic calibration**; After lifting the drone,according to the prompts to complete the calibration then place the drone on the ground and **Confirm**. Please power off and then restart it for normal operation.



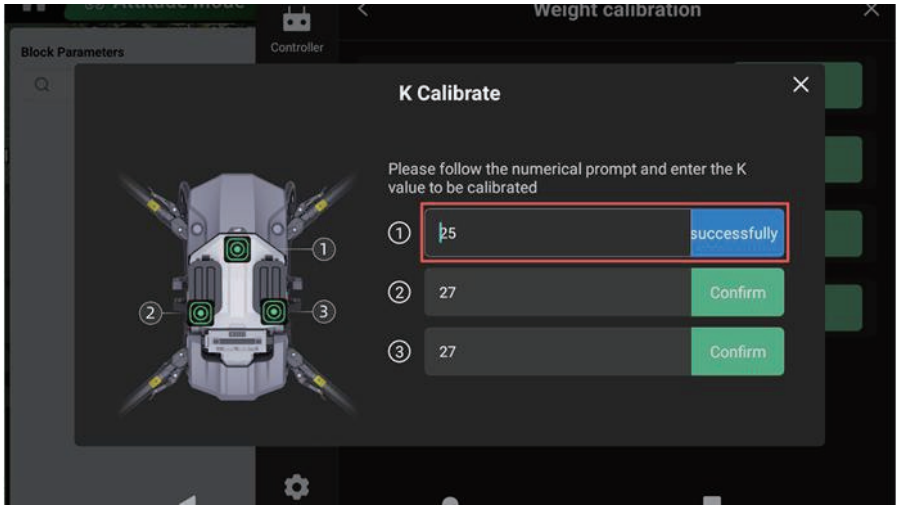




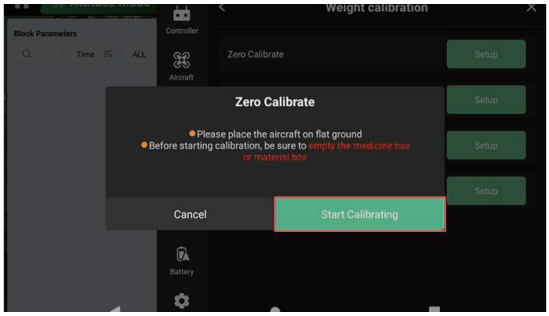
⚠ Do not calibrate in ferromagnetic areas , such as electric poles, walls with steel bars, etc.
Do not carry ferromagnetic materials, such as keys, mobile phones, etc. during calibration;
If the work site is more than 50 kilometers away from the calibration site, recalibration is required.
If RTK is enabled, no compass calibration is required.

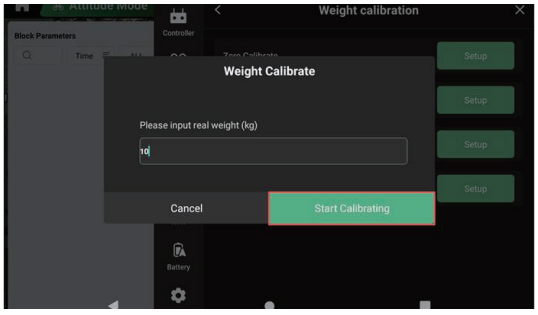
3.3.4 Weight Calibration

- Step1. In Flight Assistant APP, Settings -Spray Settings
- Step2. Click **Weight calibration-K Calibrate**,check if all the K values same as the numbers on the weighing module. If not, please modify it accordingly.



- Step3. After completing the K calibration, tap **Zero Calibration** and check if the weight in the app reads 0.
- Step4. Weigh more than 10kg materials and record the weight, pour them into the tank. Then tap **Weight Calibrate**, input the recorded weight. If the number on the app matches the input one, then the calibration is succeeded.





⚠ During the calibration, ensure no foreign objects on the tank and the tank tightly fits the weighing sensor without any gaps. And do not touch the tank.

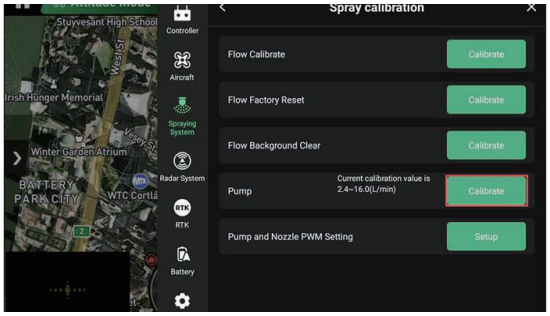
3.3.5 Pump Calibration

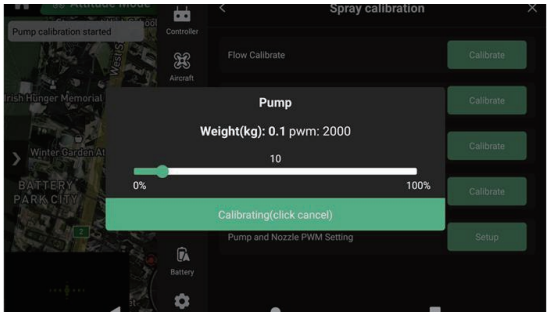
Before the first spraying operation, calibrate the water pump. The system will detect single or dual pumps automatically. Single-pump calibration is done once; dual pumps require separate calibration.

Single-Pump Calibration:

- Step1. Add at least 20 L of water to the tank. Turn on the pump to purge air, then turn it off.
- Step2. Tap  to go to Spraying System Settings and select the current nozzle mode (dual or four nozzles).
- Step3. Tap **Spray Calibration-Pump-Calibrate** and follow the prompts. Keep the tank filled with

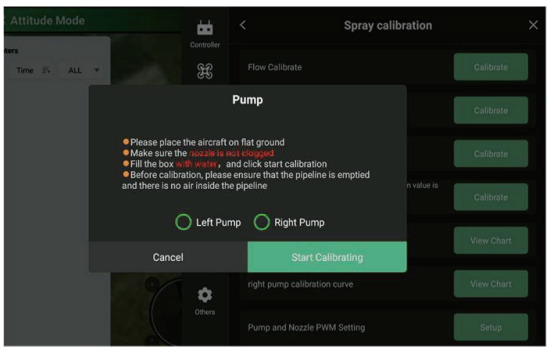
water until the nozzles stop and the pump stops. **Confirm** when the App shows calibration complete. Reopen the interface to check that the pump's max and min flow values are normal.

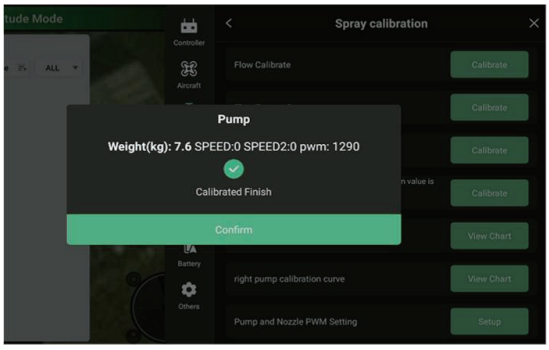




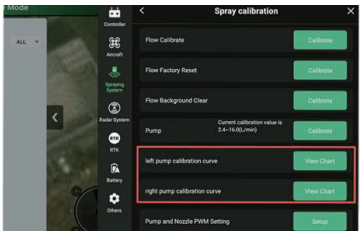
Dual-Pump Calibration:

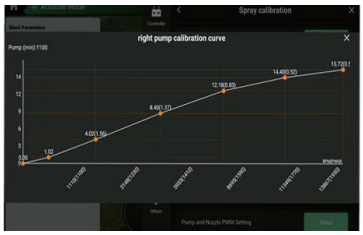
- Step1. Add at least 20 L of water to the tank. Turn on the pump to purge air, then turn it off.
- Step2. Tap  to go to Spraying System Settings and select the current nozzle mode (dual or four nozzles).
- Step3. Tap **Spray Calibration-Pump**, select **Left Pump** and tap **Start Calibrating**. After the left pump is calibrated, refill the tank to over 20 L, select **Right Pump**, and tap **Start Calibrating**. Keep the tank filled with water throughout the process. When the App shows calibration complete, tap **Confirm**. Close and reopen the Spraying System interface to ensure the pump's max and min flow values are normal.





After calibration, left and right pump curves are generated and can be viewed.



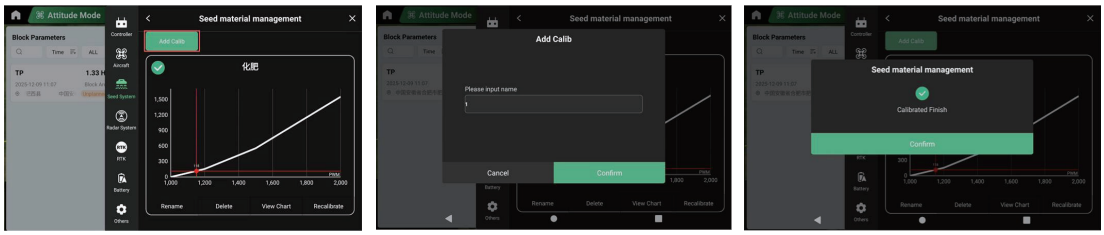


3.3.6 Spreader Calibration

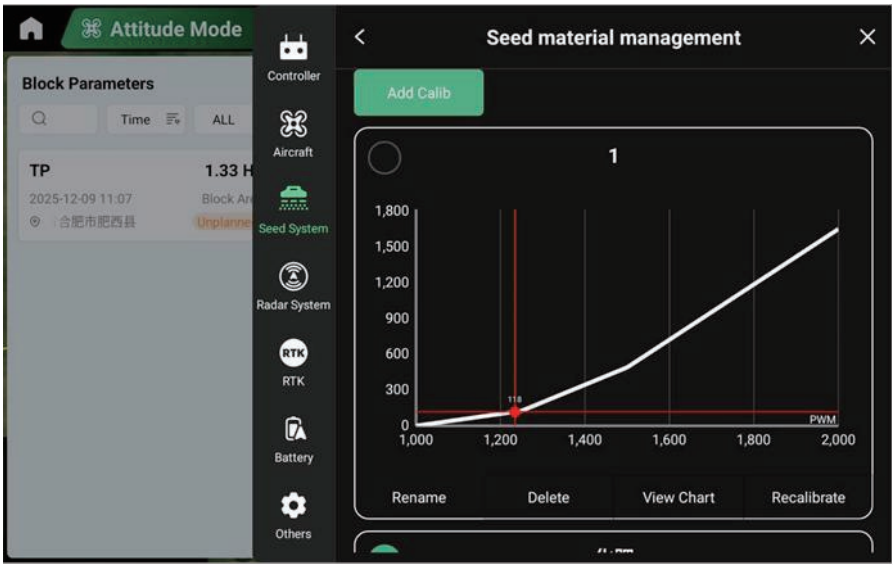
> ⚠ When switching to spreading mode, the app will detect and display it automatically.
> Do not plug or unplug wires while powered, and keep connectors dry.
> After switching modes, redo Zero Calibration and Weight Calibration.

Before automatic spreading, complete spreading calibration and select the correct template. Steps are as follows:

- Step1. Add more than 20kg of materials in the spread tank, then raise the drone, remove the spreader, and place a container under the spreader outlet to catch the discharge.
- Step2. Click setting button-**Seed System**-**Seed material management**-**Add Calib**, fill in the material name and click **Confirm**.
- Step3. The drone starts automatic calibration. After the calibration, App page will shows calibration completed. Click **Confirm**.

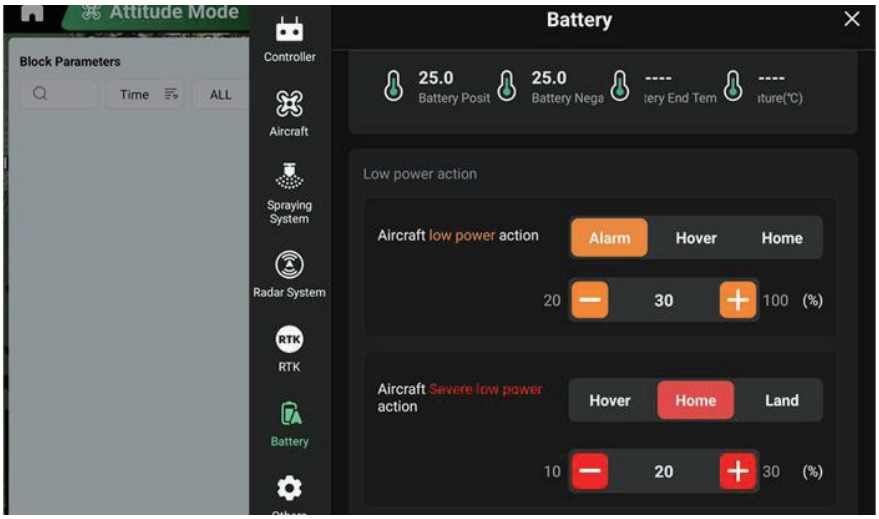


After calibration, a curve will be auto-generated. Before spread,just need chose proper curve according to the seed.

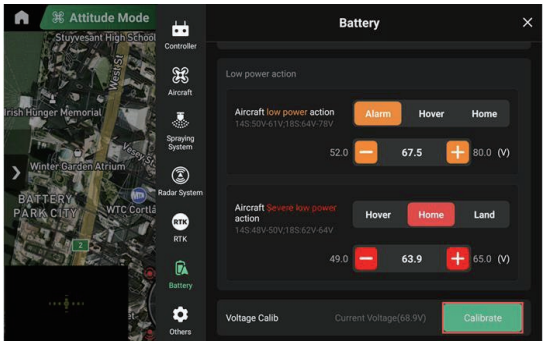


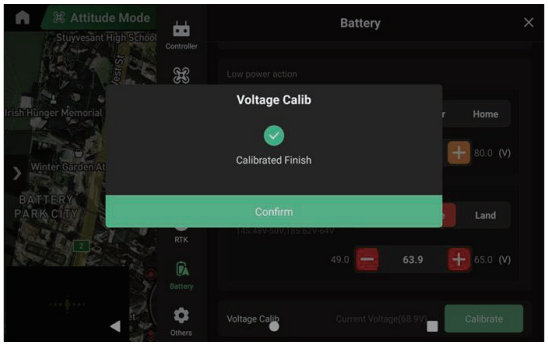
3.3.7 Low Power Settings

Tap to view and configure battery parameters. Recommended low power alert threshold: 30%, action: Warning. Recommended severe low power alert threshold: 20%, action: Home.



If the battery voltage does not match the app reading, disconnect the battery signal cable. Then tap Voltage Calibrate, enter the actual voltage, and tap Confirm to complete the calibration.



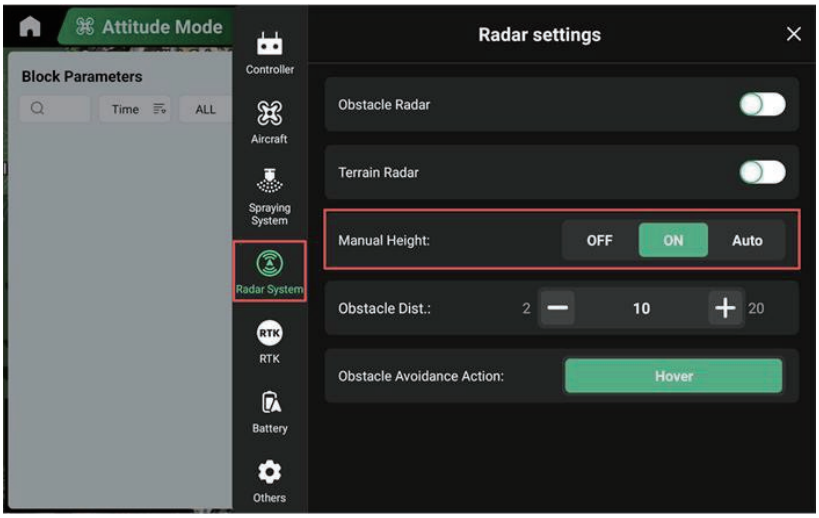


3.3.8 Radar Settings

Tap **Radar System** to enter radar settings, where you can configure the radar switch and function options.

The 3 options for **Manual Height** are:

- **Off:** The drone operates at the height set in the flight route; manual altitude control is disabled.
- **On:** You can control the drone's altitude at any time. When the joystick returns to the center, the drone maintains the current altitude.
- **Auto:** You can control the drone's altitude at any time. When the joystick returns to the center, the drone automatically returns to the route-set altitude.



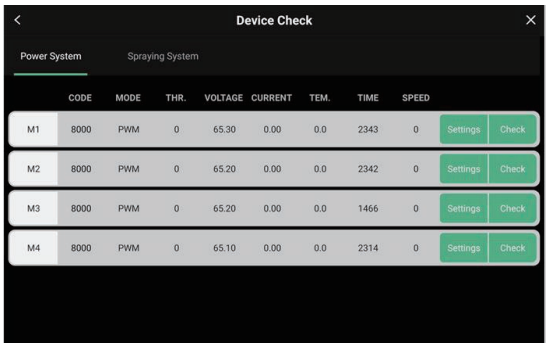
*This feature applies only when flying with terrain-following radar enabled.

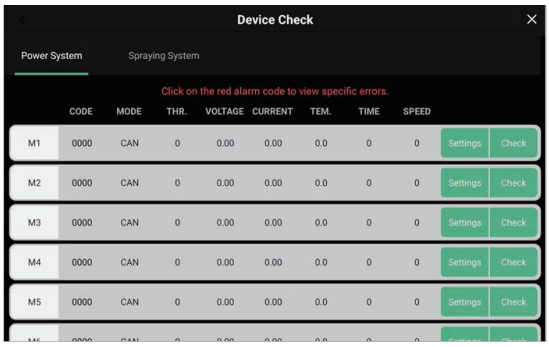
*Recommended obstacle avoidance distance: greater than 10 meters.

3.3.9 Others

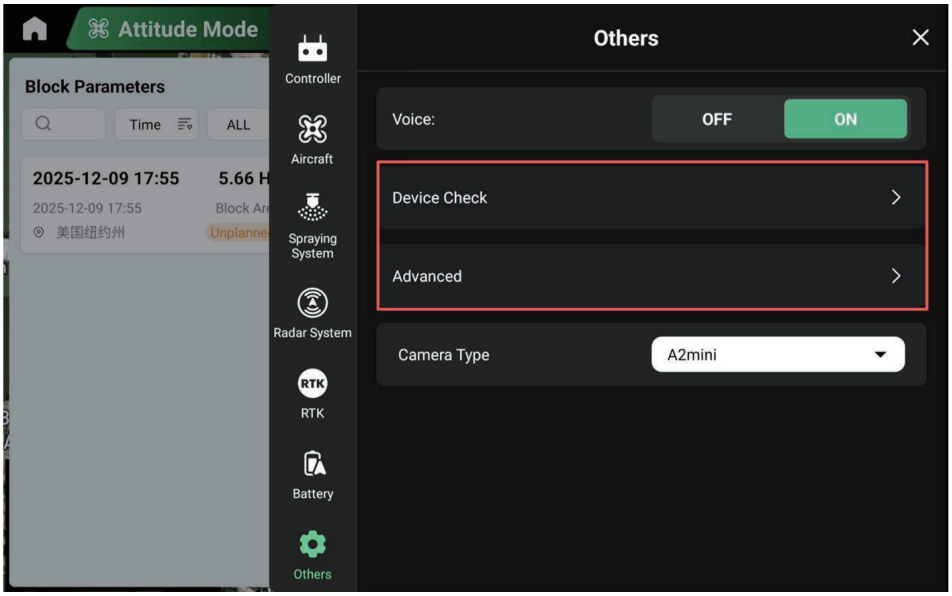
Tap to enter Other Settings. It is recommended to turn **Voice** on.

- **Device Check:** In the power system, tap each Check button individually. When checking with propellers attached, ensure the area around the drone is clear. For a quad: Looking from above, M1 and M3 arm motors rotate counterclockwise and use CCW propellers. M2 and M4 arm motors rotate clockwise and use CW propellers.For a quad + 8-motor configuration, the app automatically identifies and displays all 8 motors. From above, the top four motors are M1–M4, and the bottom four are M5–M8. M1, M3, M5, and M7 install CWW motors, M2、M4、M6 and M8 install CW motors. Propeller installation: M1, M3, M6, M8 install CCW propellers; M2, M4, M5, M7 install CW propellers.

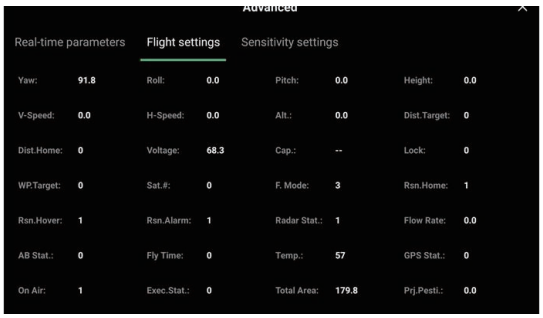


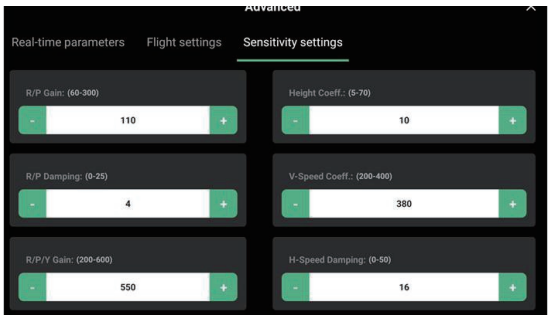


- **Advanced** (Manufacturer Account)：When logged in with a manufacturer account, the app settings page shows the drone's advanced parameters. Tap **Advanced** to view real-time parameters and configure flight parameters.



Advanced parameters are pre-configured. Do not modify them casually.





After the drone is assembled and debugging is complete, you can plan flight routes and start operations.

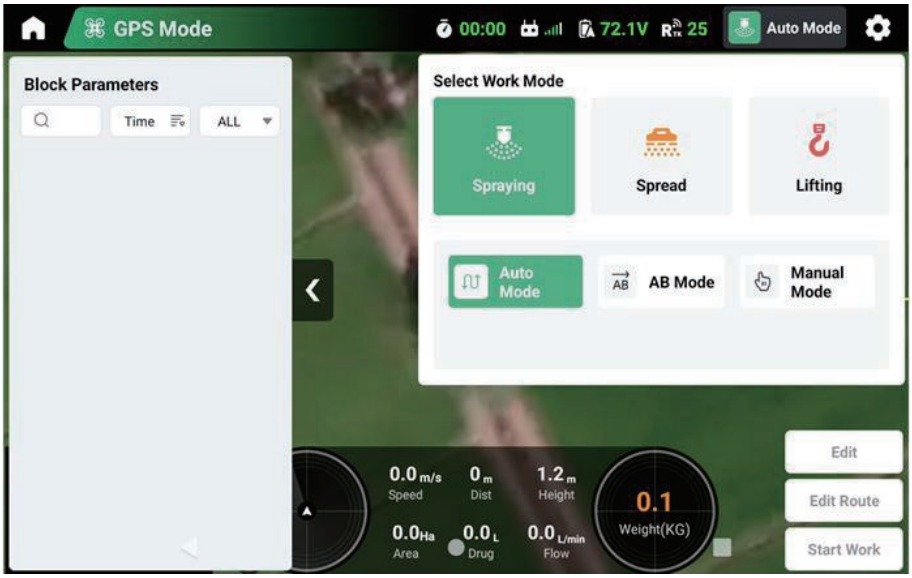
*For the first flight in Auto mode, if the remote controller reports a spray anomaly and the drone hovers, calibrate the pump according to the *Z Series Flow Meter and Pump Calibration Guide.*

4 Spray/Spread

In the Flight Assistant app, tap 

to select spraying, spreading, or lifting. If equipment is installed, the drone will switch automatically.

⚠ Without original equipment, all three modes can be switched manually.

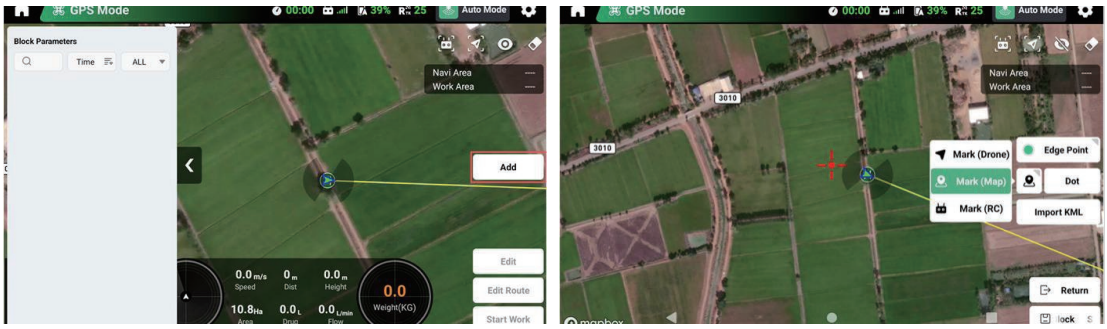


4.1 Auto Mode

4.1.1 Add Block

In Flight Assistant APP—**Start**— 

Auto Mode, tap **Add** to plan a new block. Tap  to choose Mark(Drone), Mark(Map) or Mark(RC).



- **Mark(Map): Suitable for terrain with regular plots and clear display on the map.**

Tap **Mark(Map)—Edge Point,** Find the specified plot on the map, move the cursor to the boundary of the

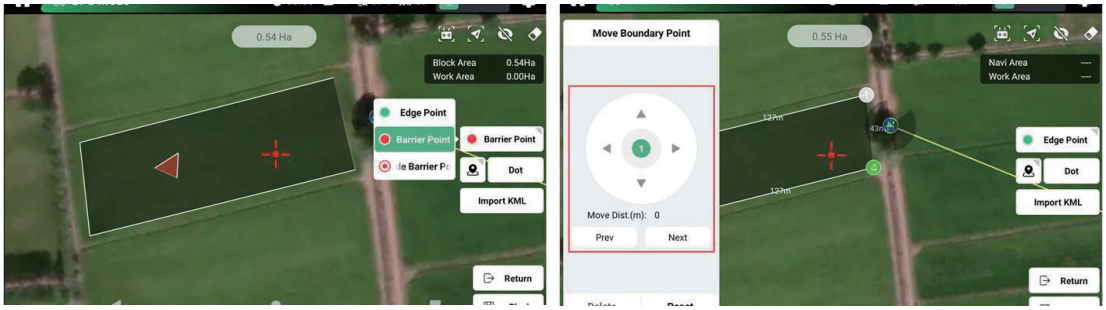
plot, tap **Dot** to set the **Edge Point** in turn to complete plot mapping . Then tap **Save Block**, fill in the relevant information as required to save it.

- **Mark(Drone): Suitable for terrain with regular plots but not clear on the map.**

After tapping **Mark(Drone)** , fly the drone to the desired plot edge, tap **Dot** to mark points around the plot, and tap **Save Block**. Then fill in the relevant information as required to save it.

- **Mark(RC): Suitable for irregular plots with obstacles.**

After tapping **Mark(RC)**, walk to the edge of the plot with the remote control, tap **Dot** to mark points around the plot, and tap **Save Block**. Then fill in the relevant information as required to save it.



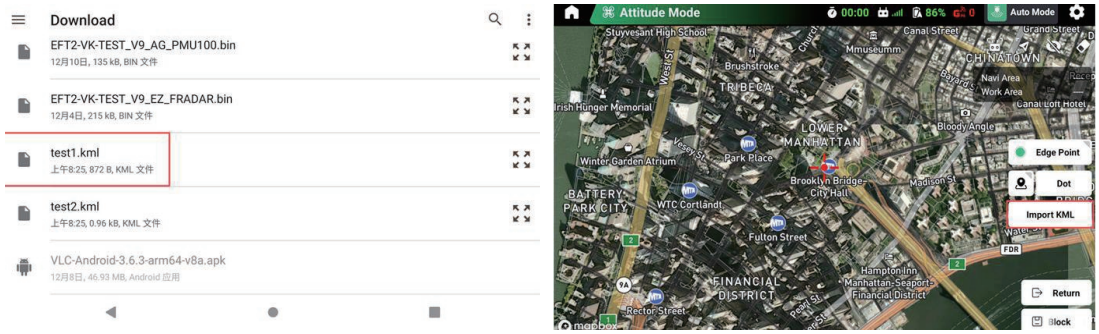
4.1.2 Obstacle Marking

- **Obstacle Point Marking: Suitable for fields with obstacles.**

Tap Edge **Point-Barrier Point** and mark obstacles on the map to create an obstacle area, or select **Circle Barrier** for automatic generation. Flight routes will automatically avoid these areas. Tap **Save** and enter the required information to save the block.

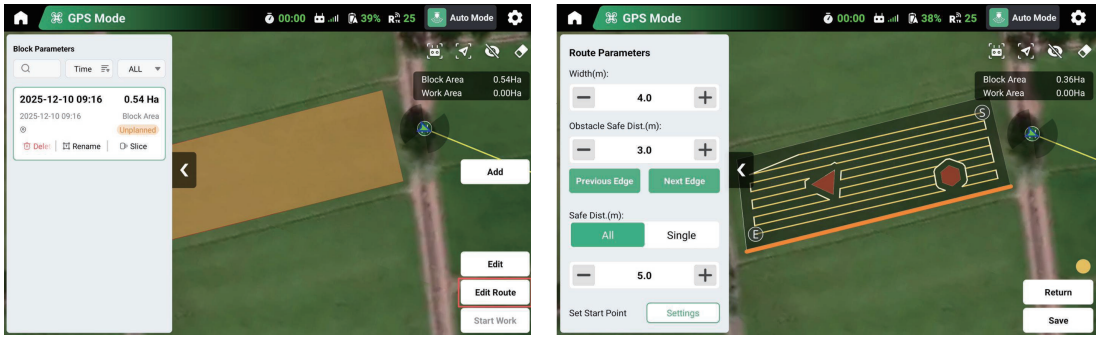
4.1.3 KML File Import

- **Import KML: Users can import KML files as needed, and the app will automatically generate the corresponding field.**
- Step 1: Download the prepared KML file to the **Download** folder on the remote controller.
- Step 2: On the **Add** page, select **Import KML**, then choose the KML file from the file directory.
- Step 3: The app will automatically generate the field. Users can directly edit the field or route.



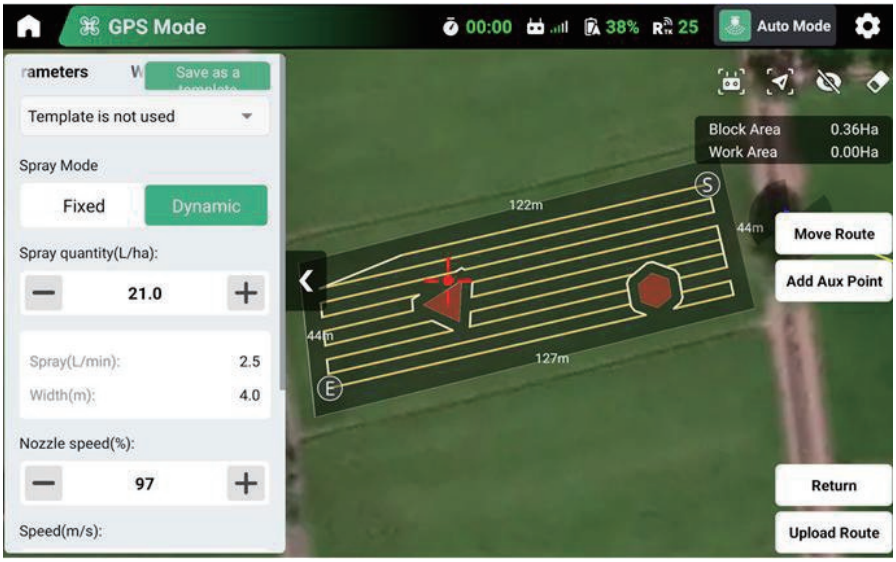
4.1.4 Route Parameters

- Step 1: Select the block from the parameter list. The options allow you to rename, split, or delete the block.
- Step 2: Tap **Edit** to modify the block. The operation steps are the same as those used in field planning.
- Step 3: Tap **Edit Route.** The system will automatically generate a flight route for the field. In the pop-up panel, you can set the route parameters. After completing the settings, tap **Save** to save the route and related parameters.



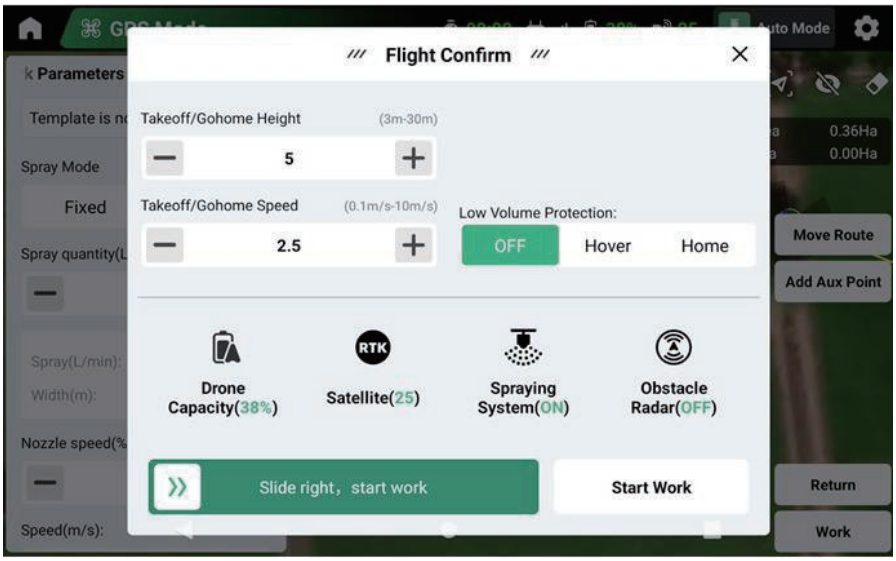
4.1.5 Work Parameters

After saving the route parameters, the **Work Parameters** list will pop up automatically. There are **Fixed** and **Dynamic** for spray mode,and you can set the **Spray quantity** and **Nozzle spreed**, or you can call saved template.



4.1.6 Start Work

After setting the work parameters, tap **Upload Route**, then tap **Work**, a pop-up window **Flight Confirm** will appear,then confirm the flight information. Then slide the indicator bar,the drone will automatically take off,or manually fly the drone to the area near the start point and then slide to start, then the drone will automatically fly to the start point (S) to work.

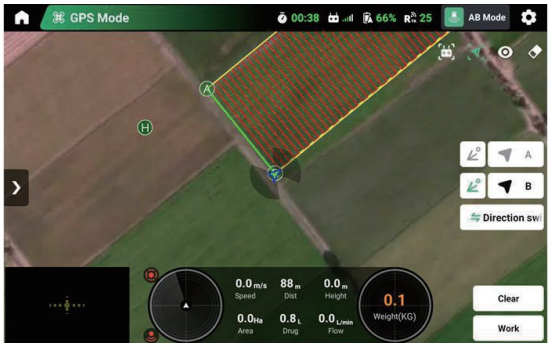


4.2 AB Mode

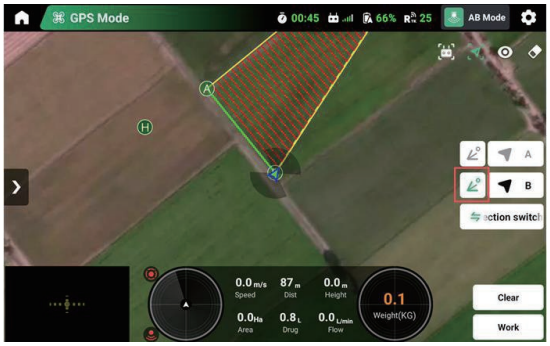
- Step1. In Flight Assistant APP, select **Spraying- AB Mode**; Select **Fixed** or **Dynamic** for Spray Mode.

- Step2. Set the parameters or save as template for next call.
- Step3. Fly the drone manually to the block starting point (with pesticide in tank), clicks A on the APP to mark point A.
- Step4. Then fly the drone to the other end of the plot (pump and nozzle will open automatically), then click B to mark point B.
- Step5. After marking A and B, the right flight route will be generated automatically . Click 

- to switch direction to left.
- Step6. After confirming the route, click **Work** and slide to start work. The drone will spray automatically along the routes.



- Step7. If the area is irregular, adjust the drone heading to change the working area. After setting the drone heading, tap  Note: Adjust the heading after recording point A or B.



 *** AB mode is suitable for large, regular fields without obstacles.**

4.3 Breakpoint Resume

If the drone operation is interrupted, the breakpoint (**Br**) is automatically recorded. To continue, Tap **Resume** in the APP and the drone will finish the remaining route. it is useful for refilling pesticide, battery replacement or obstacle avoidance. To end the operation, click **Finish** in the APP.

* During the operation, the following operations will record breakpoints (Br):

1) Tap Pause or End in the APP;

2) The drone returns home in any way.

3) The remote control has a stick action on the pitch stick or roll stick;

4) The drone makes an emergency stop to avoid obstacles;

5) The flight reaches limit or nears no-fly zone.

6) No materials in the tank;

7) Enter the level-2 low-battery protection setting;

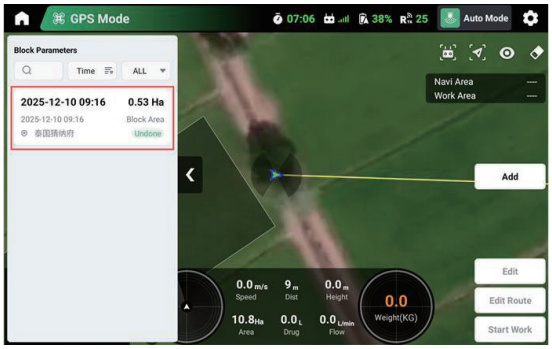
8) The remote control is disconnected from the drone;

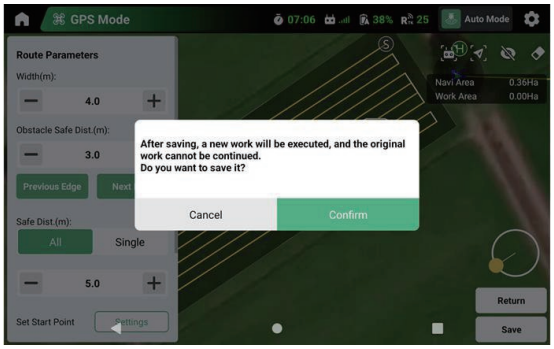
9) The spraying/spreading devices have an abnormality;

10) The drone has an alert broadcast during the operation.

4.3.1 Continue the operation

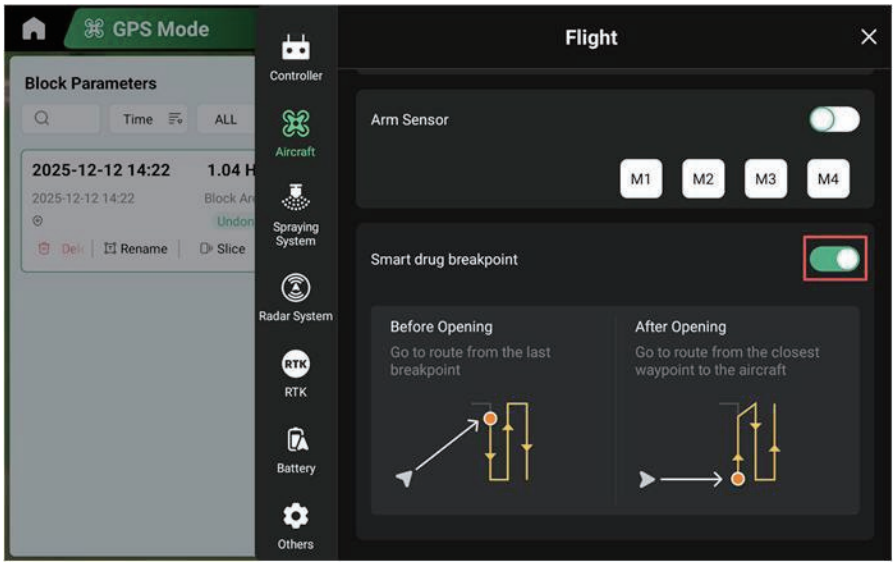
When a breakpoint is recorded during operation, if user exits the APP and operates again, first select the block, and the last record will be auto displayed. Click **Start** - **Upload Route** to continue from the breakpoint. If no need to continue, click **Edit Route** and select **Confirm** in the pop-up window to restart the operation.



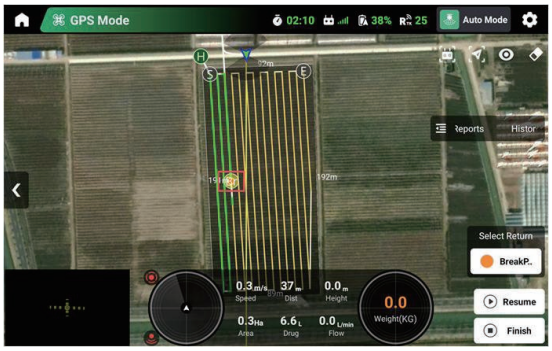


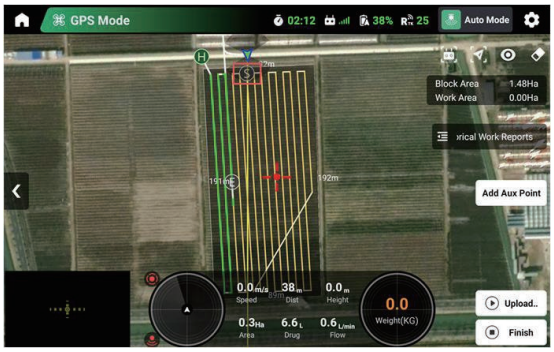
4.3.2 Smart drug Breakpoint

For large fields, if the drone needs to land mid-operation for a battery change or refill, a long distance to the breakpoint may waste power.Enable **Smart drug breakpoint** in the flight settings to avoid this.



Enable Smart drug breakpoint before uploading the route. After pausing and landing, the app will generate an S point closest to the takeoff point. the drone resumes from the nearest S point instead of the Br point.





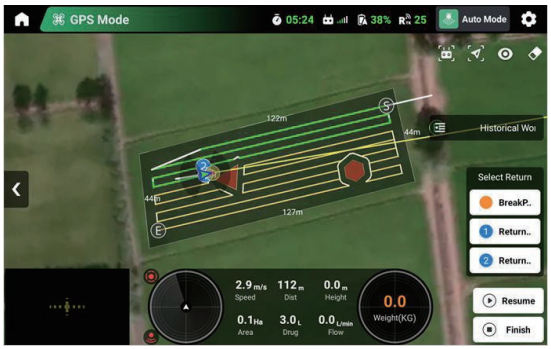
4.4 Manual Mode

- Step1. In Flight Assistant App, choose **Spraying-Manual Mode;**
- Step2. Tap to expand **Work Parameters**, Select **Fixed** or **Dynamic**, then set spraying parameters, or directly call the saved operation template.
- Step3. The user flies the drone to the operation area, and then turn on the water pump to control the drone to operate.

*This mode is suitable irregular areas or small plots.

4.5 Manual obstacle avoidance

During operation, if an abnormal obstacle appears, please manually control to avoid it using the remote.



In auto mode, if the drone encounters an obstacle, first tap Pause in the App, the drone will automatically switch to GPS mode and hover, then manually control it to bypass the obstacle, and the drone will enter the projection mode, and (Break Point)/(Return Point 1)/(Return Point 2) will be automatically displayed on the screen. Click Breakpoint, the drone will automatically operate from the breakpoint; click ReturnPoint1, the drone will automatically operate from the point 1. If many obstacles ahead,click ReturnPoint2, then route between Point 1 and 2 will automatically turn green (operation finished) , drone will operate from point 2.

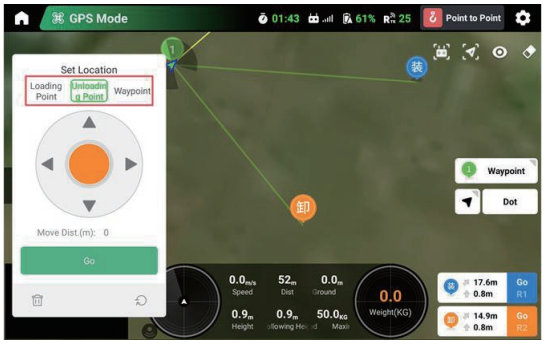
5 Lifting

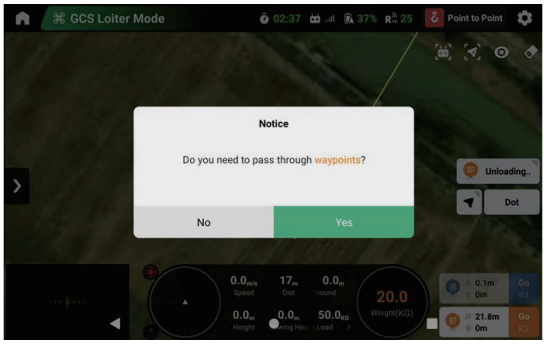
5.1 Point-to-Point Mode

Open the app and ensure the mode is **Lifting** 

.
Tap the **Loading Point icon** to choose the point type: Loading Point, Unloading Point, Waypoint, or Blank Point.
Point marking can be done via Drone, Map, or Remote Controller. Drone marking is recommended for lifting operations.

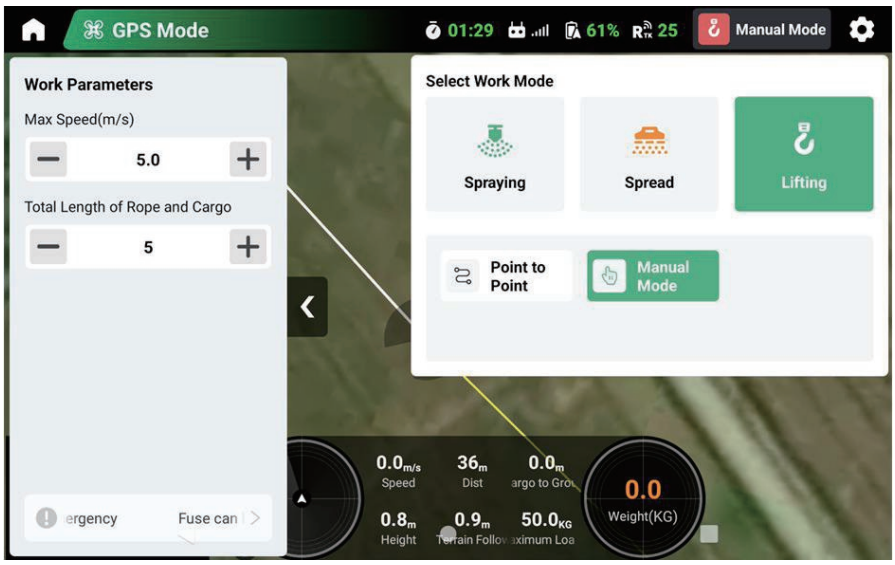
In Point-to-Point mode, you can mark Loading Point, Unloading Point, and Waypoint as needed. After marking, the bottom-right corner displays each point's altitude and the drone's horizontal distance to it. Selecting a point allows you to change its type, move it, or delete it. Tap **Go**: if waypoints exist, you can choose to go through it or go directly to the target. If no waypoints exist, the drone flies straight to the target. During flight, the drone automatically climbs or descends based on each point's altitude.





5.2 Manual Mode

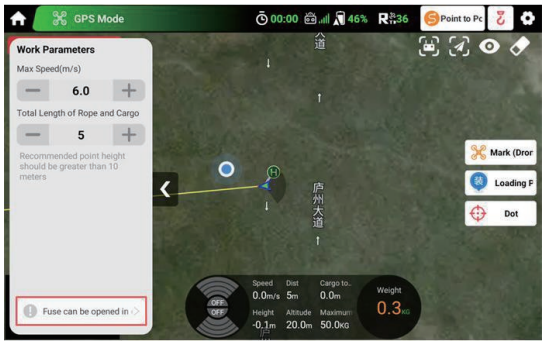
- Step 1. In the Operation page, select Lifting **Manual Mode**, and set the flight speed, rope length, and cargo length.
- Step 2. Use the joysticks to manually operate the drone and complete the lifting operation.

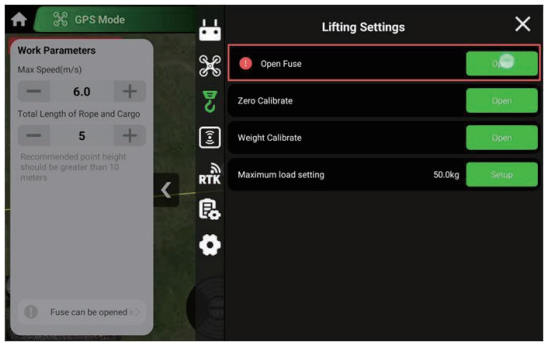


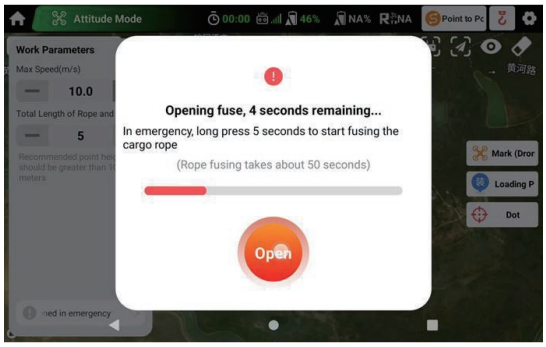
5.3 Emergency Fuse

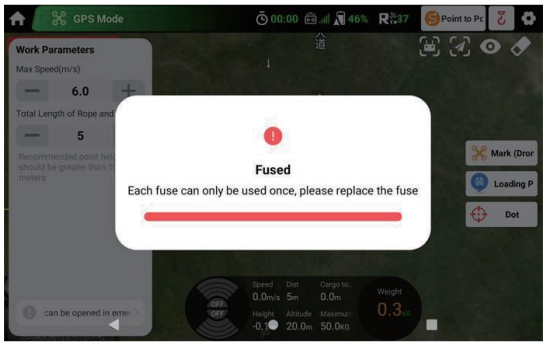
If the load gets stuck on trees or rocks and the drone cannot free itself, you can enable the **Fuse**. The fuse will cut off the rope and allowing the drone to escape.

The fuse can be activated from the bottom-left corner of the operation page or in the **Lifting Settings**.







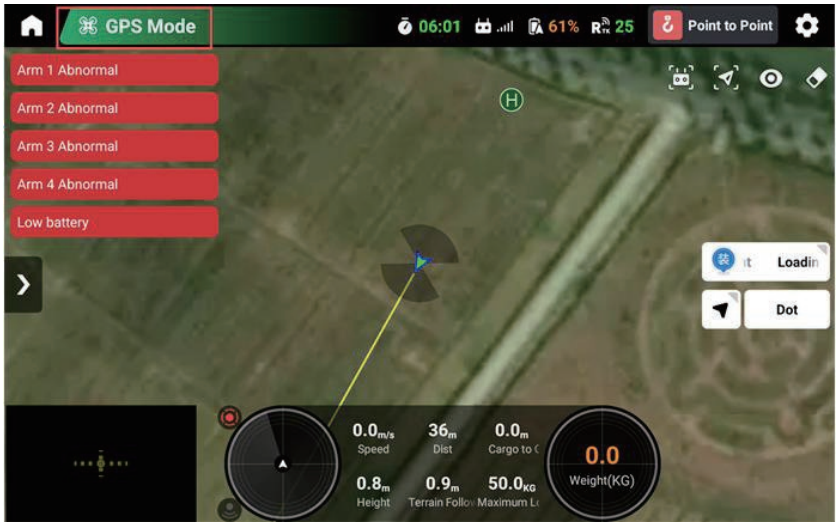


* The fuse is recommended for single use only and should be replaced promptly after activation.

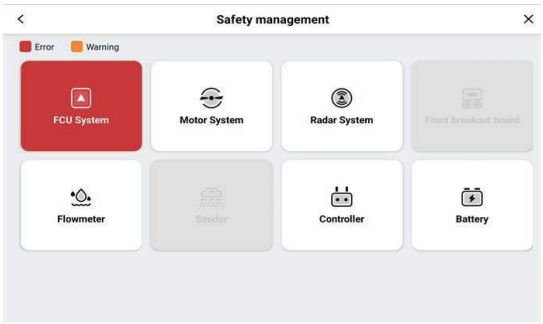
6 APP Main Functions

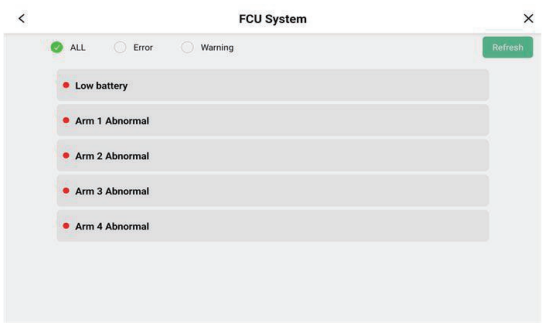
6.1 APP Alerts

If an abnormality occurs, an alert will pop up on the app. A red alert prevents the drone from unlocking, while a yellow alert requires timely inspection. Tap the Flight Mode to view alert details.



Alert types mainly include the flight control system, motor system, radar system, flow meter, remote controller, and battery. Alerts for the power distribution board and spreader are under development.

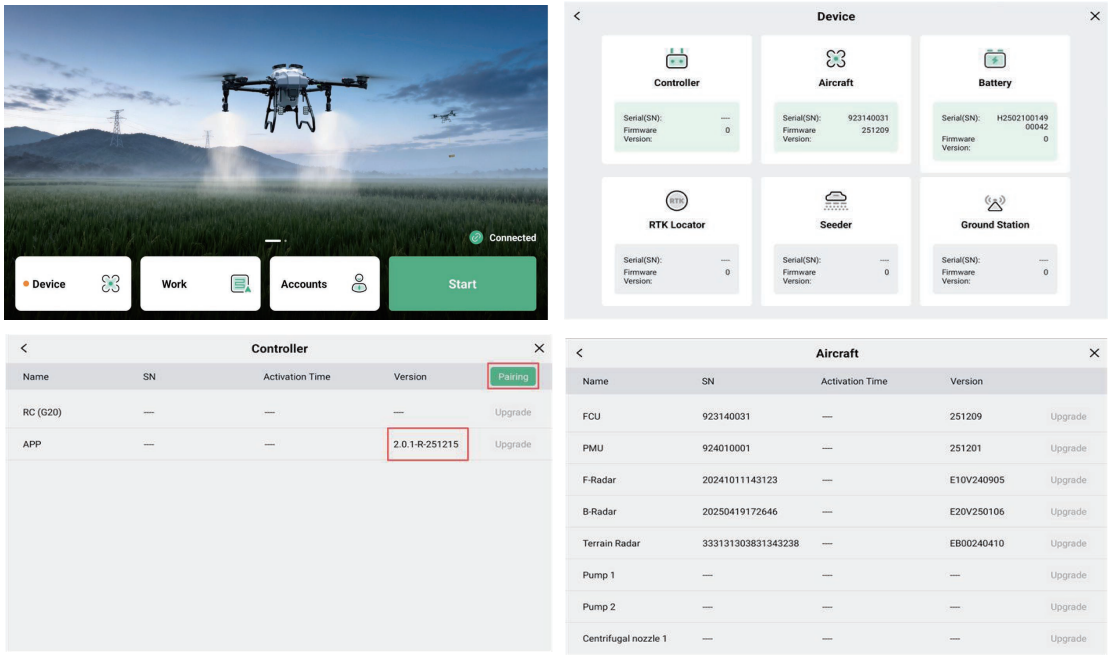




*** Flight control alerts include GPS and battery level warnings; motor system alerts include motor signal loss, throttle signal loss, and MOS short circuit; radar alerts mainly involve radar abnormalities; flow meter alerts include abnormal flow data.**

6.2 Device

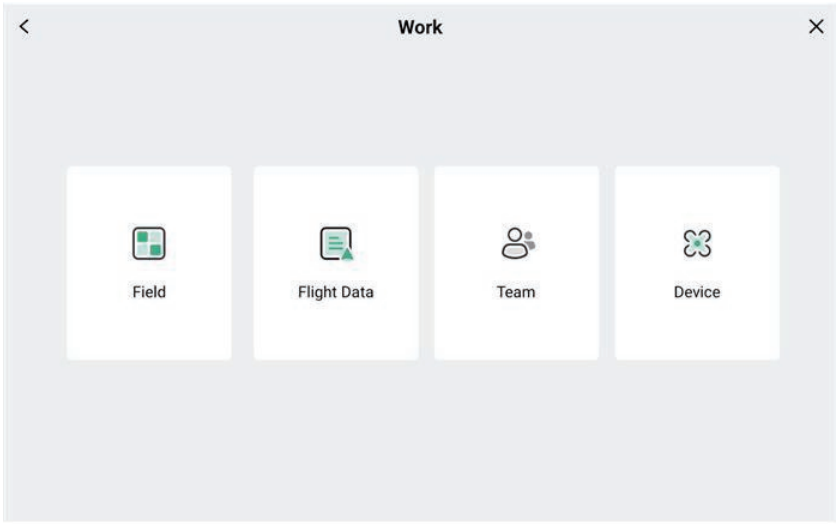
Tap **Device** on the App. You can view information about the remote **Controller** and Aircraft. Functions for the Battery, RTK Locator, Seeder, and Ground Station are under development.



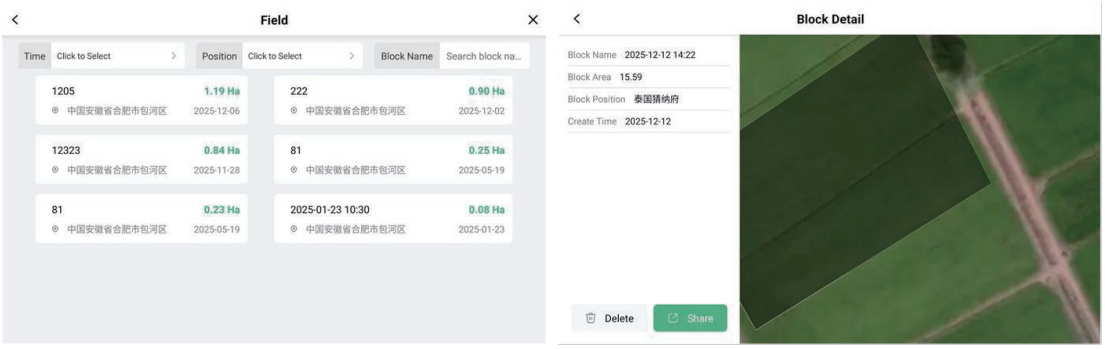
*** The Controller page mainly includes pairing and app version information.The Aircraft page allows you to view firmware versions of the flight controller, radar, nozzles, GPS, and other devices, and supports online upgrades.**

6.3 Work

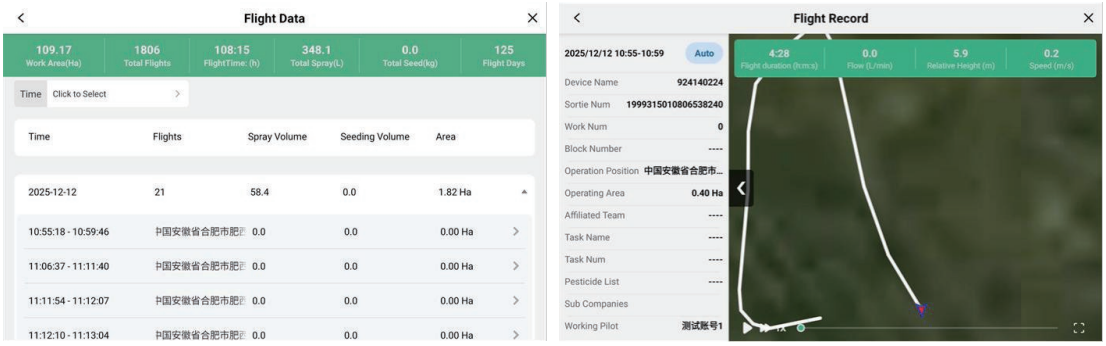
In the **Work** page, you can access Field, Flight Data, Device, and Team (under development).



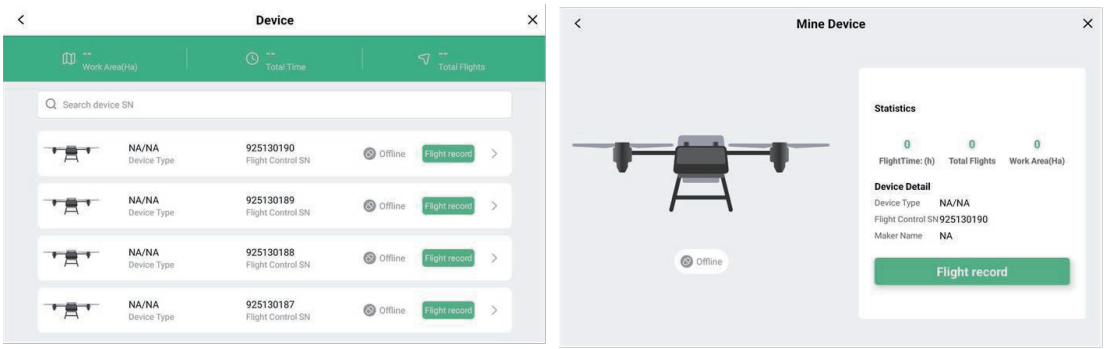
Tap **Field** to enter the field management page. Here you can view all blocks created under the account and share block detail with other user accounts.



Tap **Flight Data** to enter the flight data page. Here you can view all flight records under the account and select the time range you want to review. Flight records include Time, Flights, Spray Volume, Seed Volume, and Area. Tapping a specific mission allows you to view its flight trajectory.



Tap **Device** to view all drones under the account, including Flight Controller SN, Work Area, Total Time, and Total Flights.

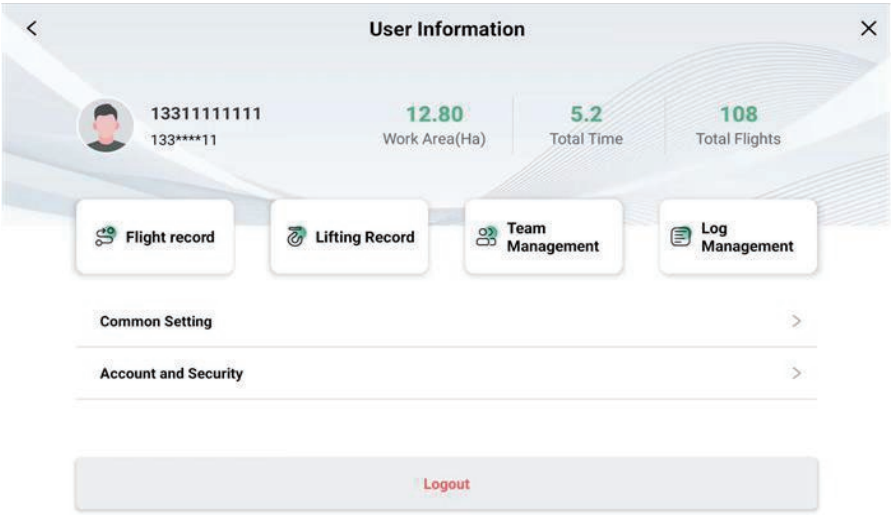


* You can quickly find a drone by entering its flight controller SN in the search bar.

6.4 Account

Tap **Account** to view Flight Records, Lifting Records, Team Management, and Log Management. Flight Records include all operations under spray/spread modes, while lifting records cover all operations under

lifting mode. Team management allows managing team member accounts, and log management lets you download app or flight controller logs.

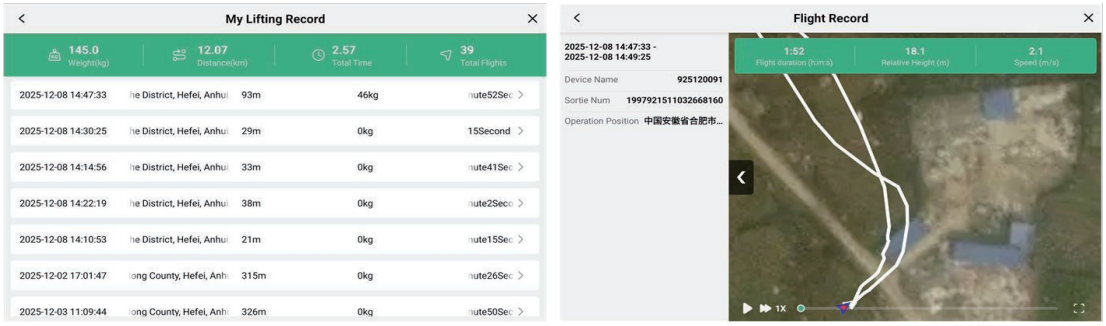


6.4.1 My Sorties

Tap **My sorties** to view all flights under the account. Tapping a Flight shows flow, duration, speed, Work area, and flight trajectory.

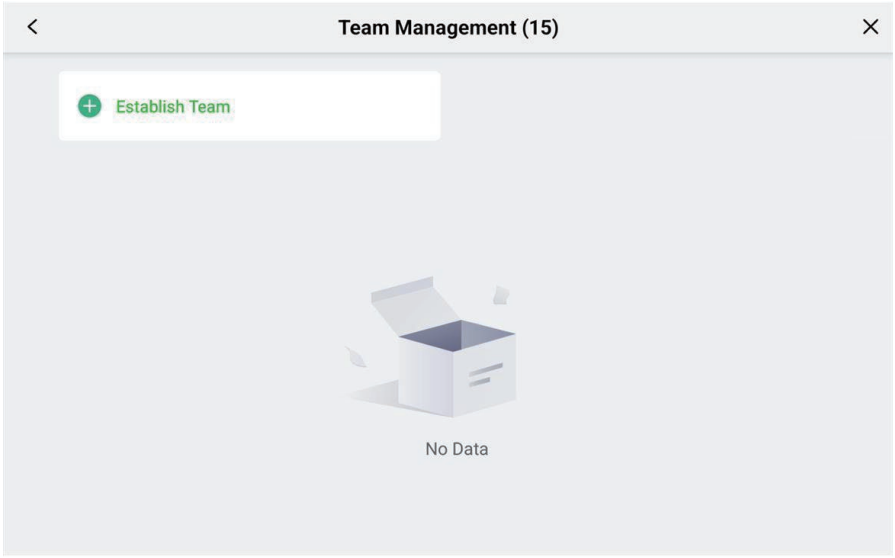
6.4.2 My Lifting Record

Tap **My Lifting Record** to view all lifting flights under the account, including Weight, Distance, Total Time, and Total Flights. Tapping details shows Flight Duration, Relative Height, Speed, and other operation information.



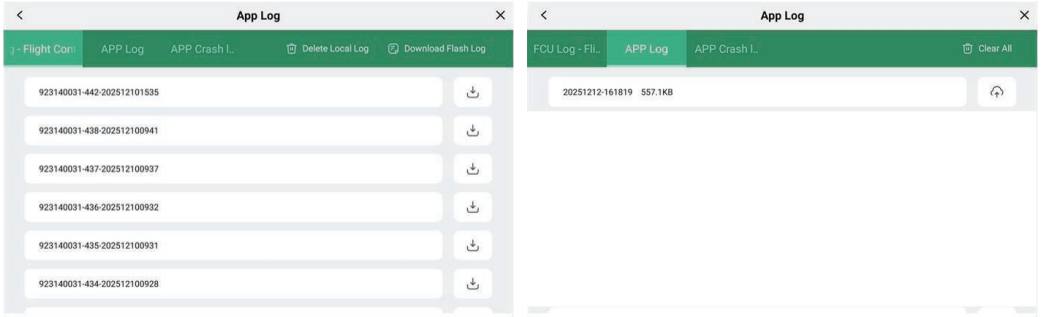
6.4.3 Team Management

Tap Team Management to create team members as needed and view information such as the number of members, tasks, and operation area.



6.4.4 Log Management

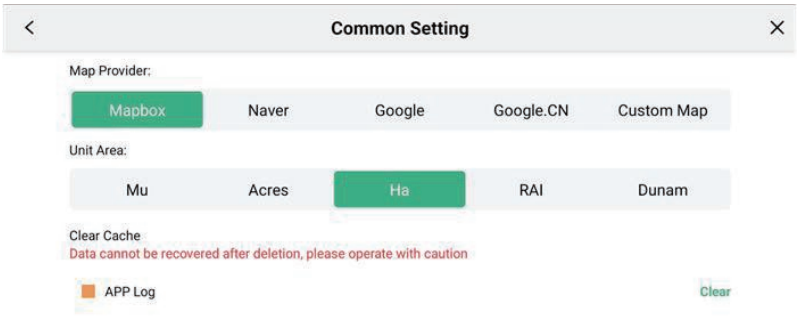
Tap Log Management to download flight controller logs, app logs, and app crash logs.



⚠ If abnormal flight behavior occurs or the app crashes or freezes, download the relevant logs and share them with EFT After-Sales Support for analysis.
When reading logs, ensure the drone is parked on open ground and the propellers are locked to avoid danger.

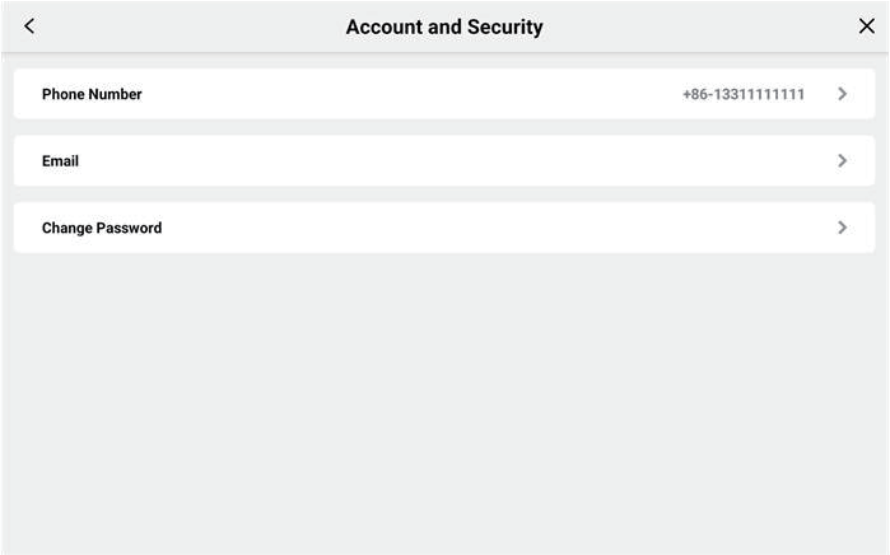
6.4.5 Common Setting

Tap **Common Setting** to select the map type and area units, and to clear app logs to free up cache.



6.4.6 Account and Security

Tap Account and Security to bind a phone number or email and to change the password.



⚠ Currently, changing the phone number or email is not supported. Accounts registered with a phone can bind an email, and accounts registered with an email can bind a phone. The password remains the same after binding.

Thank you for reading this manual.For any questions or suggestions,please contact official after-sales.

The manual is subject to update without prior notice.Please stay tuned to official website:www.effort-tech.com