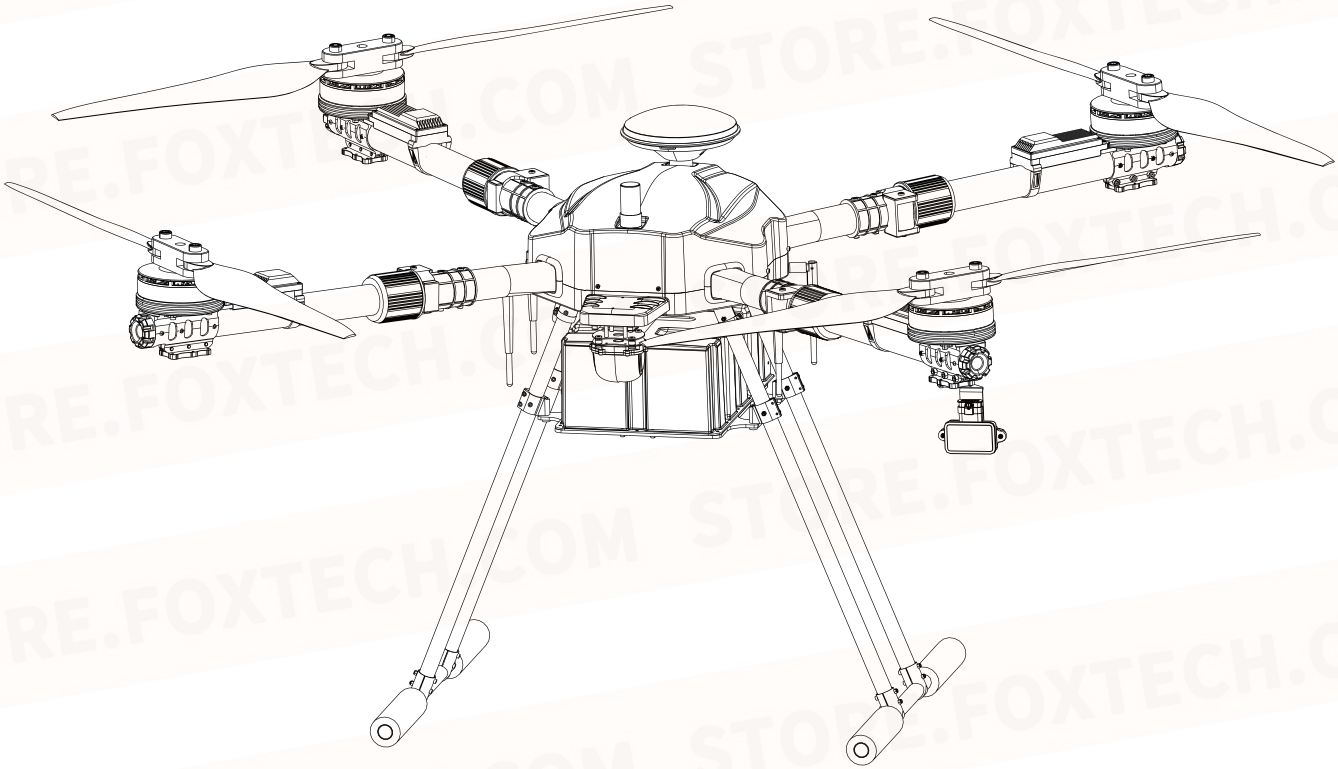
N100 Industrial UAV Instruction Manual



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Warnings and Disclaimers

● This product is not a toy and is not suitable for use by persons under the age of 18. Keep this product out of the reach of children. Before using this product, please read this document carefully, as this statement has an important impact on the safe use of the product and your legal rights and interests.
● Users must read the operation manual carefully before using this product; otherwise, it may cause property damage, safety accidents, and personal safety hazards.

Disclaimer

Use of this product constitutes your understanding, acknowledgment and acceptance of all terms herein. You agree to be responsible for your actions and their consequences, use the product only for legitimate purposes, and comply with these terms and any relevant policies/guidelines of the seller.

The seller shall not be liable for direct or indirect personal injury or property damage resulting from non-compliance with these safety guidelines. Users must follow these and other applicable safety instructions.

The seller disclaims liability for personal injury or property damage caused directly or indirectly by the following during product use:

a. User fails to use the product as required in this manual;
b. User operates the aircraft under the influence of alcohol, drugs, fatigue, or other poor physical/mental conditions;
c. User intentionally or deliberately operates the aircraft to cause harm;
d. User modifies the product with non-seller accessories (including but not limited to modification or replacement of water pumps, water pipes), resulting in malfunction;
e. Harm caused by user's operational errors or incorrect subjective judgments;
f. Harm caused by abnormal operation of the aircraft due to natural wear, circuit aging, etc.;
g. Harm caused by user continuing to operate the aircraft while knowing it is in abnormal working condition;
h. User operates the aircraft in severe weather conditions such as typhoons, hailstorms, or heavy fog;
i. User flies in magnetic interference areas, radio interference zones, or government-restricted airspace;
j. User operates the aircraft under poor visibility or with obstructed line of sight;
k. Infringement caused by data, images, or other materials obtained through operating this product;
l. Other losses not within the seller's liability scope;
m. Operators of this product must hold a medium-sized UAV operator license issued by local government ;
n. Purchase third-party liability insurance when using this product;
o. As shown in the right figure, in louver scenarios with unevenness exceeding 30cm, do not use "Fixed-point Obstacle Avoidance" mode or automatic route.

Laws, Regulations and Flight Restrictions

To avoid injuries and losses that may result from illegal acts, please strictly comply with the following:
- It is prohibited to modify the aircraft in any way or use it for purposes other than its intended use, and it is prohibited to use the aircraft to carry any illegal or dangerous items;
- Flying near manned aircraft is prohibited; land immediately when necessary;
- Using the aircraft in densely populated areas is prohibited;
- Ensure that the aircraft's flight will not affect large manned aircraft on the route, and always remain vigilant to avoid other aircraft;
- It is prohibited to operate the aircraft to enter no-fly zones stipulated by law. No-fly zones include: airports, border lines, and major cities;
- Flying in airspace exceeding the specified altitude is prohibited;
- Modifications and any military use are prohibited;
- Ensure the aircraft is flown within your visual line of sight; if necessary, arrange an observer to assist you in monitoring the aircraft's position;
- Ensure you understand the category of the flight activity (e.g., recreational, official, or commercial), and be sure to obtain the relevant permits issued by the competent authorities before flying. If needed, consult local legal professionals for detailed definitions of flight activity categories. (Note that in some countries or regions, using aircraft for any form of commercial activity is prohibited.)

Flight Safety Summary

Flight Environment

a. When using the aircraft, observe the surrounding environment and ensure safety before conducting operations;
b. Flight operations must be conducted in areas below 4,500 meters above sea level; if flying at altitudes above 2,000 meters, high-altitude dedicated propellers must be replaced;
c. Operating temperature shall be maintained between -10°C and 40°C, and operating humidity between 0% and 90% (when the temperature is below 10°C, the battery must be insulated and preheated before flight);
d. Do not fly in severe weather conditions, such as strong winds (wind speed of 8 m/s or higher), heavy rain (12-hour rainfall of 25 mm or more), snow, or hazy weather;
e. During normal operations, strictly comply with local laws and regulations;
f. To prevent interference between the remote controller and other wireless devices, ensure that other wireless devices operating on the same frequency band are turned off before using the aircraft's remote controller;
g. Flying near electromagnetic interference sources is prohibited (including but not limited to: high-voltage wires, high-voltage power stations, mobile phone base stations, and TV/radio broadcast towers, etc.). Excessive interference may cause the aircraft to malfunction.
h. When using the water pump remote control, ensure that the water pump is powered on. If there are obstacles, the straight-line distance between the remote control and the water pump should be controlled within 80 meters; if there are no obstacles, the distance between the remote control and the water pump should be controlled within 150 meters.

Packaging List

N100 Aircraft	1	Vertical Automatic Spraying and Cleaning Device	1
Remote Controller	1	Horizontal Automatic Spraying and Cleaning Device	1
Battery Charger	1	Water Pump (including water inlet pipe)	1
Battery	1	Water Pipe Storage Rack (including 100-meter water pipe)	1
RTK Base Station	1	Flushing Nozzle + Foam Nozzle	5
100L/500L Water Bag	1 each	Tool Bag	1
Pod	1	Radar	1
Aviation Case	1	RTK Base Station Tripod	1

Storage and Transportation

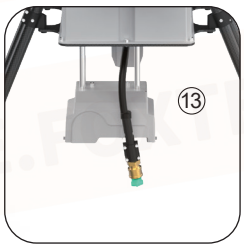
a. If any abnormality occurs during flight, please inspect the aircraft promptly after landing.
b. During transportation, take care to protect the propellers from collisions, and replace any deformed or damaged propellers in a timely manner.
c. Ensure that all components of the system are protected during transportation.
d. Store all components of the system in a dry environment with appropriate temperature.
e. If the battery is not used for a long time, it should not be stored at full charge. The storage voltage should be 3.8-3.85V per cell. For a single-cell battery, if it is not used for three months, it is necessary to recharge it in a timely manner!Insert the battery into the charger for regular maintenance, and press and hold the maintenance button to start maintenance.

Warranty Period

主要部件	保修期/月
Flight Platform	12
Flight Control System	12
Power System	12
Remote Controller	12
Battery	12 months or < 200 cycles
Charger	12
Propeller	No Warranty
RTK Base Station	12
Cleaning Device	6
Water Pump	No Warranty for Wearing Parts in 12 Months

Getting to know aircraft

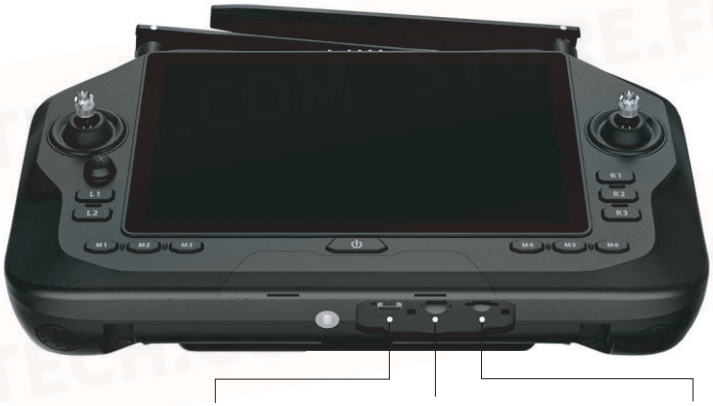


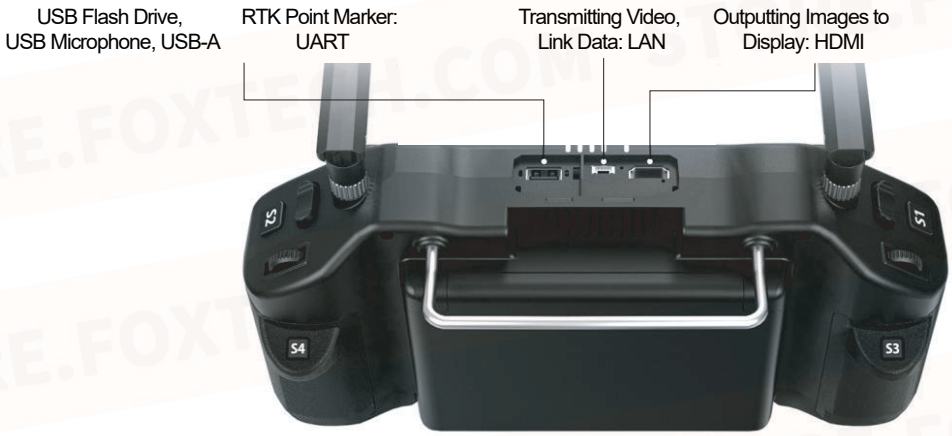


1. Propeller
2. Motor
3. Electronic Speed Controller (ESC)
4. Arm (Airframe Arm)
5. Radar
6. RTK Antenna
7. RTK Antenna
8. Gimbal Pod
9. Battery Compartment
10. Horizontal Automatic Spraying and Cleaning Device
11. Nozzle
12. Landing Gear
13. Vertical Automatic Spraying and Cleaning Device

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Understanding the Remote Controller





Button/Switch Types and Channel Definitions

Channel Number	Physical Channel Type	Default Physical Switch	Remarks
1	Aileron stick (Mode 2)	J1	
2	Elevator stick (Mode 2)	J2	
3	Throttle stick (Mode 2)	J3	
4	Rudder stick (Mode 2)	J4	
5	Left three-position switch	SA	Flight mode
6	Right three-position switch	SB	
7	Left top button	S1	
8	Right top button	S2	
9	Left back button	S3	
10	Right back button	S4	
11	Mode Button 1	M1	
12	Mode Button 2	M2	
13	Mode Button 3	M3	
14	Mode Button 4	M4	
15	Mode Button 5	M5	
16	Mode Button 6	M6	
—	Small joystick left/ right translation	J5	
—	Small joystick up/ down translation	J6	

—	Left Function Button 1	L1	
—	Left Function Button 2	L2	
—	Right Function Button 1	R1	
—	Right Function Button 2	R2	
—	Right Function Button 3	R3	
—		RSSI	
—	Left dial	LD	Rocking mechanism
—	Right dial	RD	Gimbal tilt

Installation and Placement of Ground-End Standard Omnidirectional Antennas

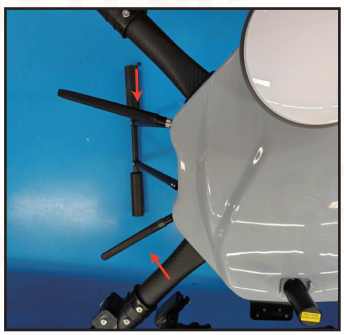
1. The SMA connector of the antenna must be tightened.
2. The antenna should be placed vertically upward relative to the ground-end operation panel, with the flat surface of the antenna always facing the aircraft. Antennas must not be stacked or crossed. Please refer to the following diagram:









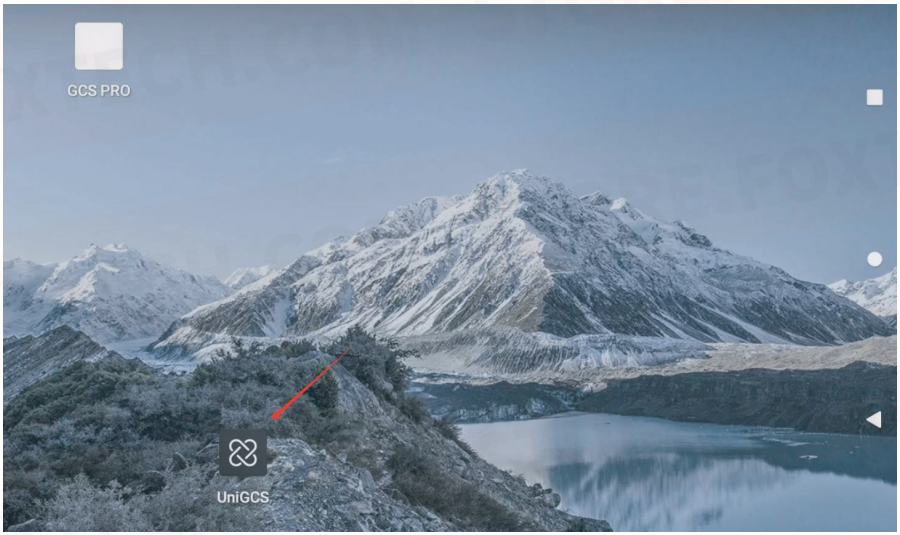


The placement angle of the antenna on the aircraft



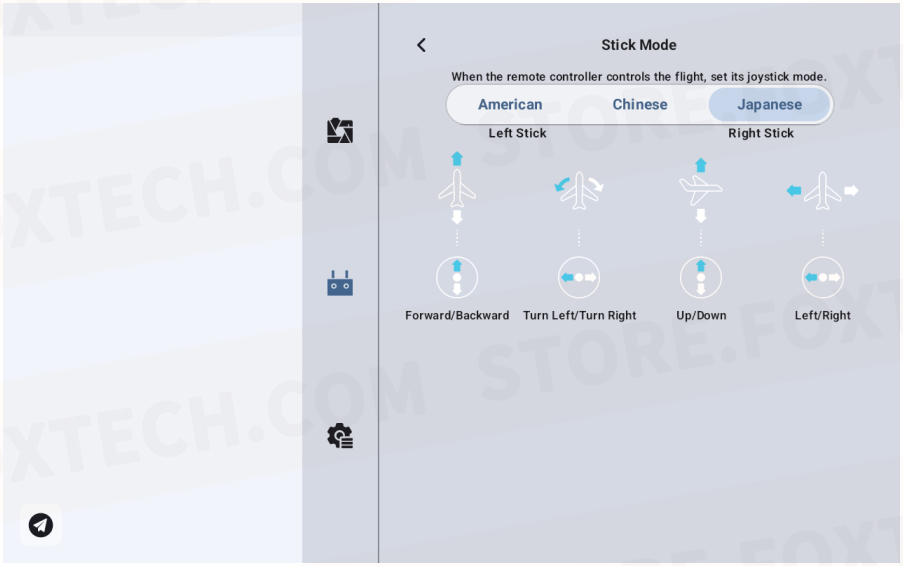
The placement angle of the antenna on the aircraft

Remote control settings



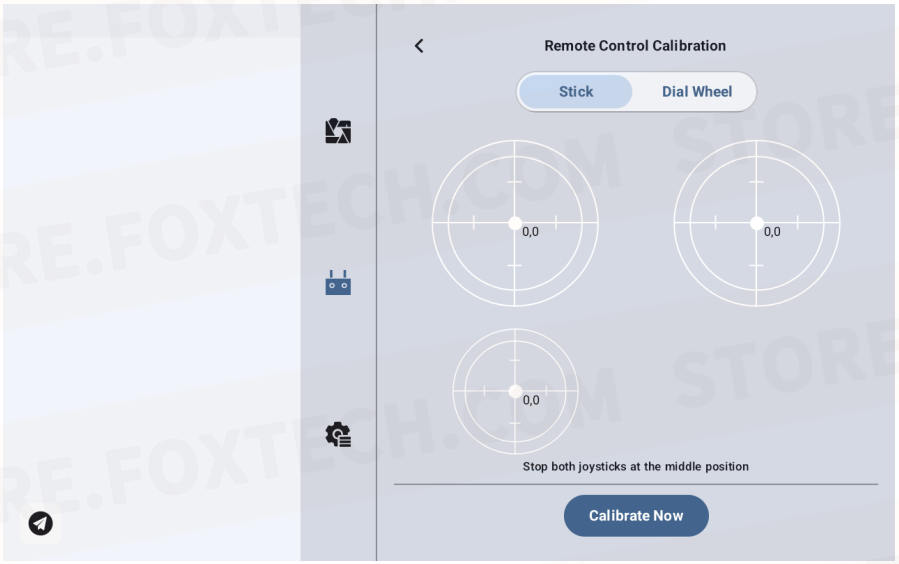
Stick mode

Remote control supports users in switching between "Mode 1", "Mode 2" and "Chinese mode".



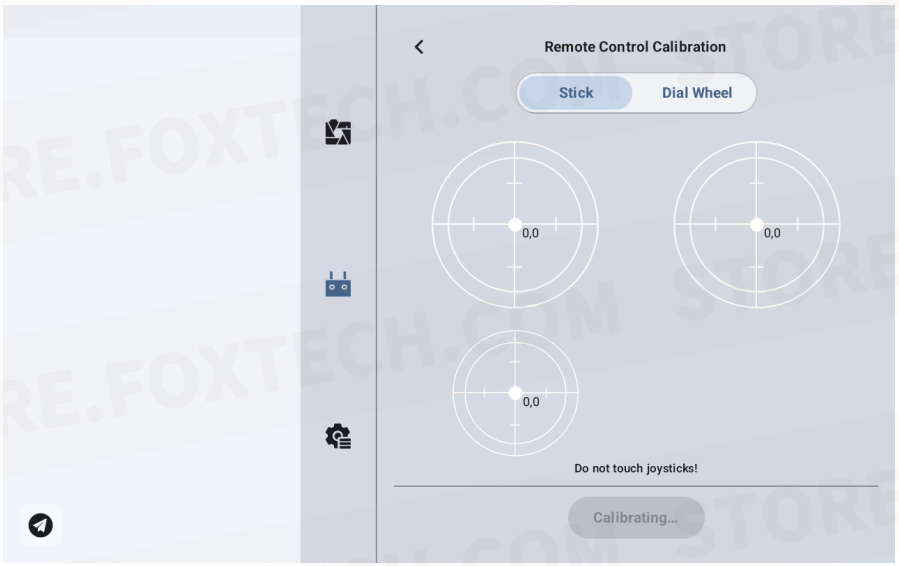
Remote control calibration

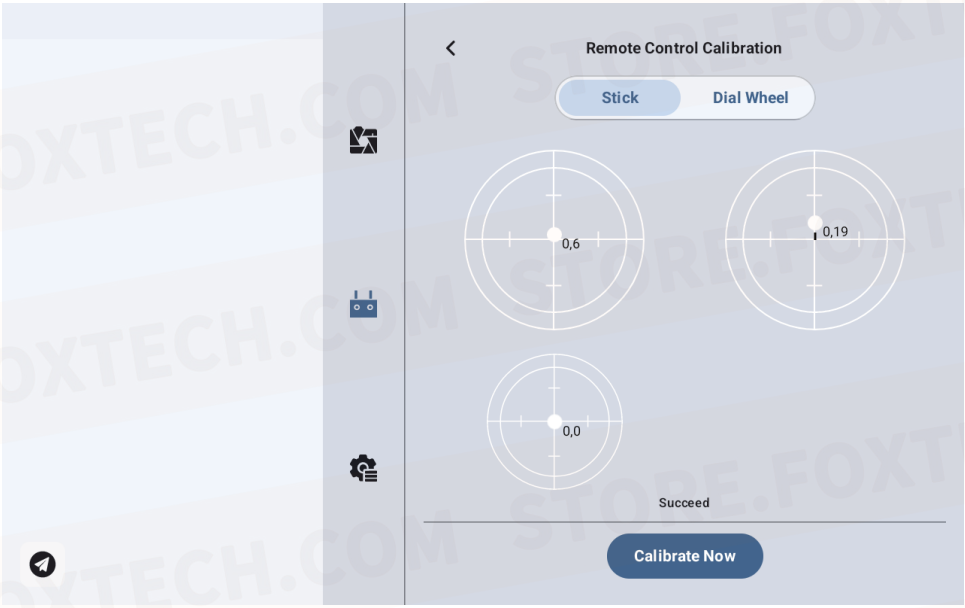
The remote control calibration function helps users calibrate the neutral position and maximum limit of the joysticks and dials on the handheld ground station. Regular calibration of the joysticks is beneficial for maintaining the accuracy of joystick channel output.



Joystick calibration steps

1. Before performing joystick calibration, ensure that the left and right joysticks of the handheld ground station are naturally stationary without any displacement caused by external forces.
2. In the "Joystick Calibration" menu, click "Start Calibration" to enter the following interface:





Up: 0, 100

Down: 0, -100

Left: -100, 0

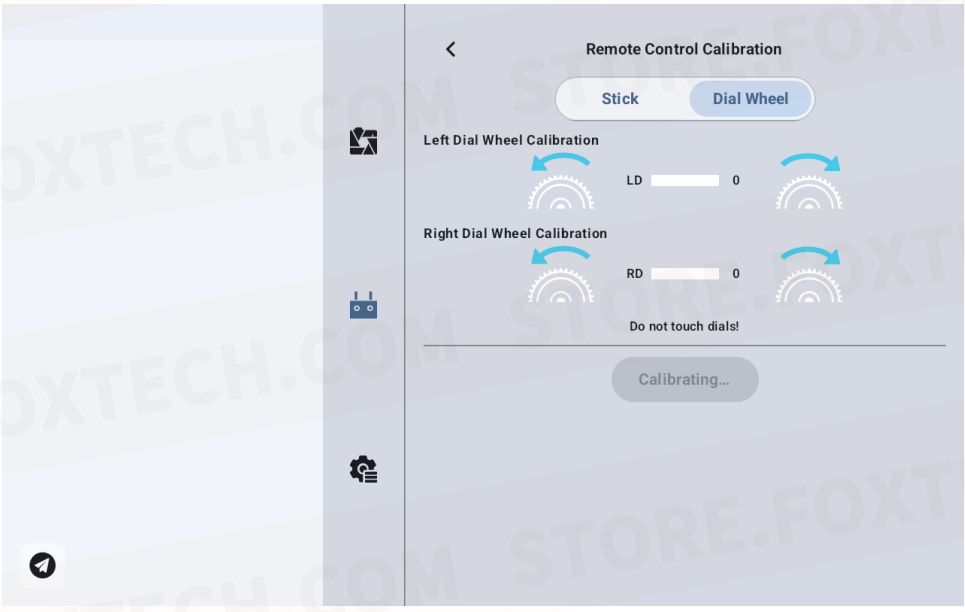
Right: 100, 0

Then click "Complete Calibration".
5. The "Joystick Calibration" menu will indicate successful calibration.

When the joystick fails to return to the midpoint (channel output value is not 0) in its natural resting state, or fails to output the maximum or minimum values (-100, 100) when pushed to the extreme positions, joystick calibration should be performed immediately.

Dial calibration steps

1. Before calibrating the dials, ensure that the left and right dials on the handheld ground station are in their natural resting positions without any displacement caused by external forces.
2. In the "Dial Calibration" menu, click "Start Calibration" to enter the following interface:

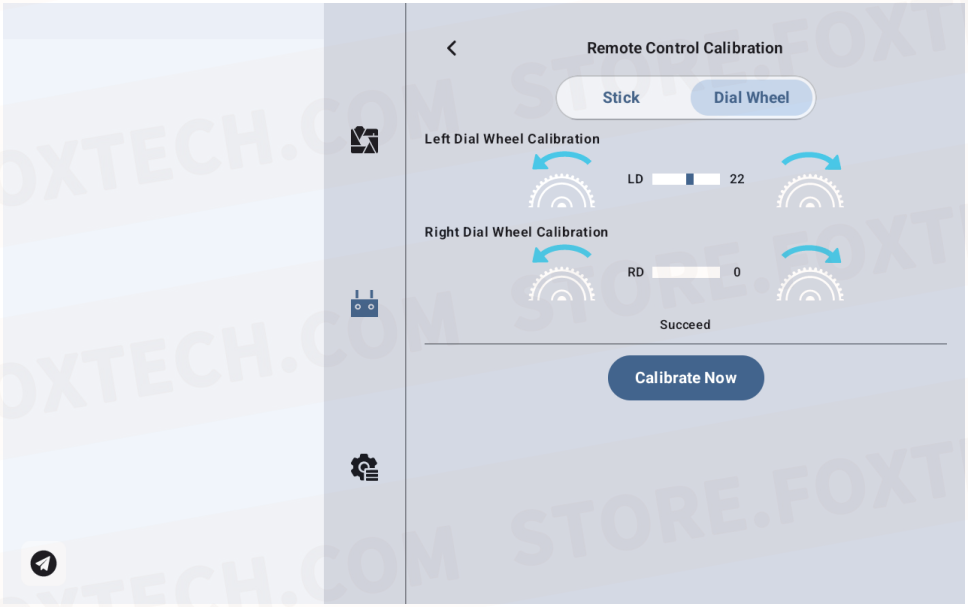


3. As per the instructions, if the dial is naturally stationary but the dial channel output value is not 0, it indicates that the dial's neutral point has shifted. At this time, do not touch the dial and wait for the neutral point calibration to complete.
4. When the prompt shown below appears, it indicates that the neutral point calibration is complete. Next, calibrate the maximum limits.
According to the interface instructions, push each dial to the maximum limit in each direction in sequence.

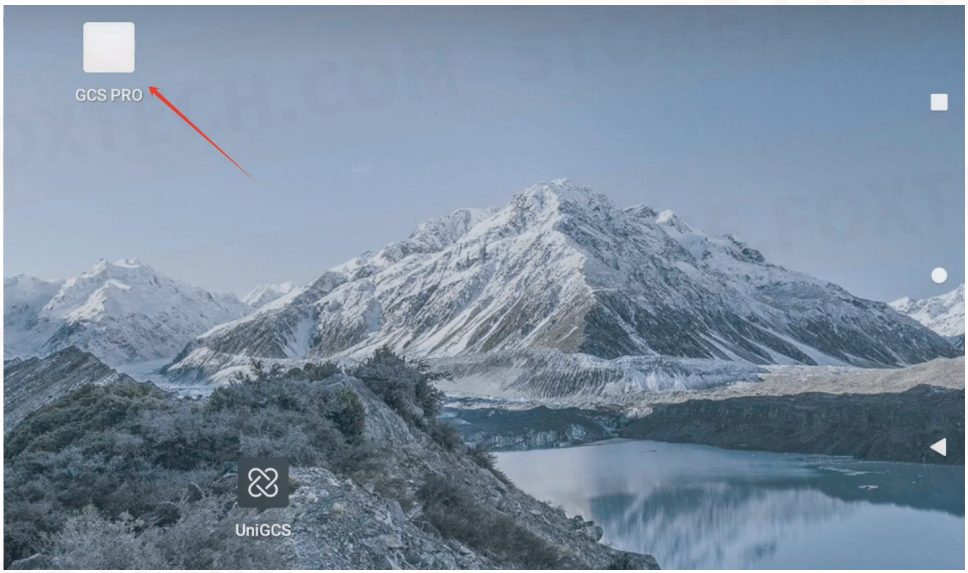
Left: -100

Right: 100

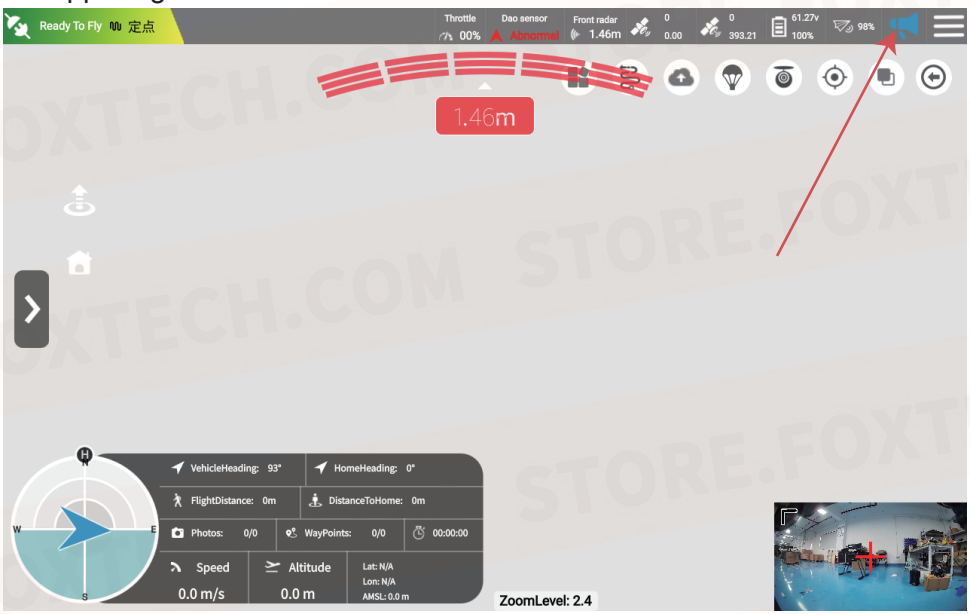
5. The "Dial Calibration" menu returns to the initial interface, and the calibration is complete.



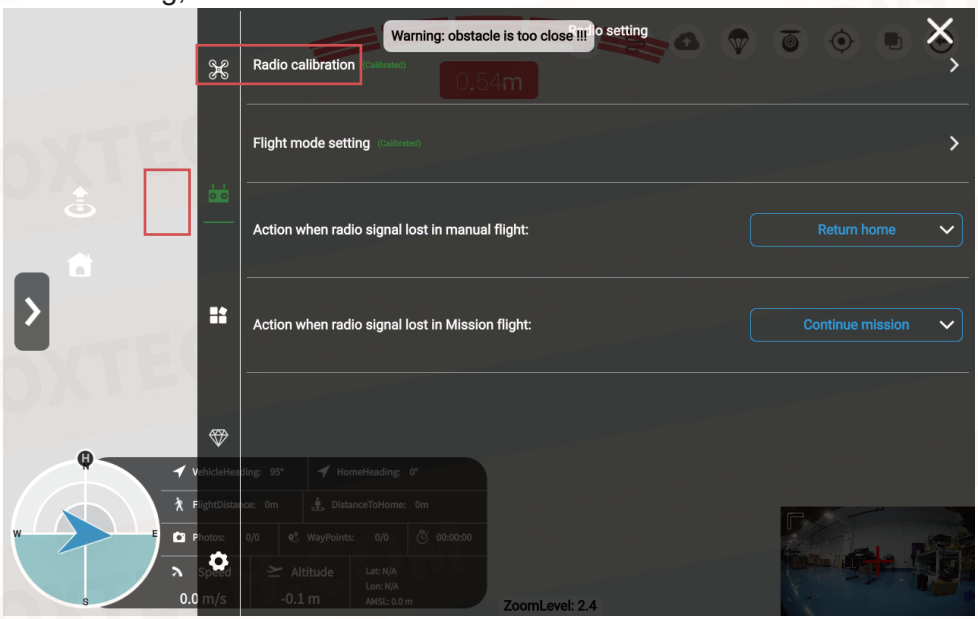
Enter the Ground Station to perform ground station remote control calibration.



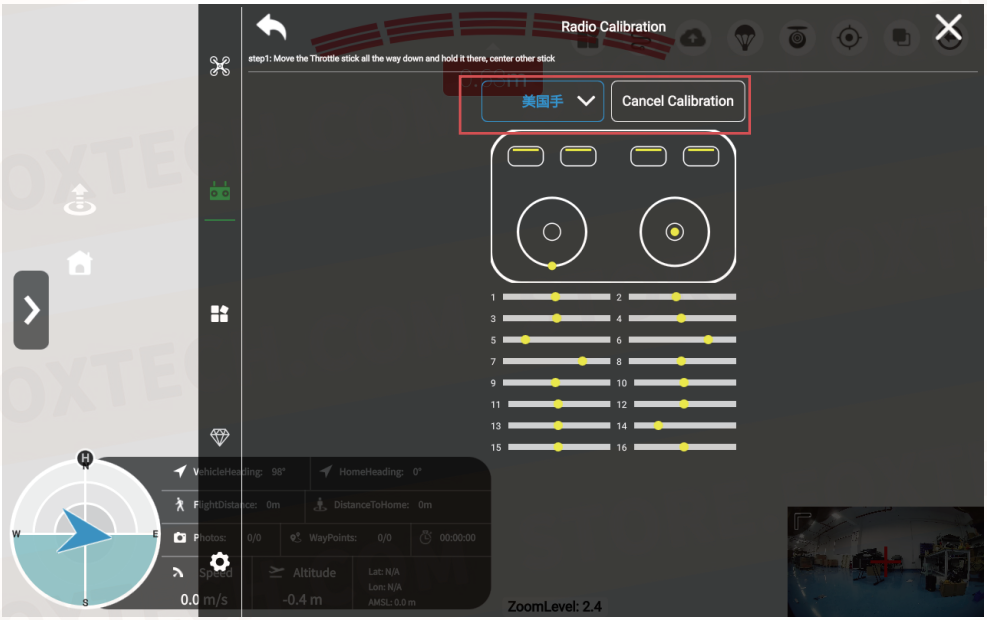
Open the ground station app, connect to the aircraft, then click the menu directory in the upper right corner.



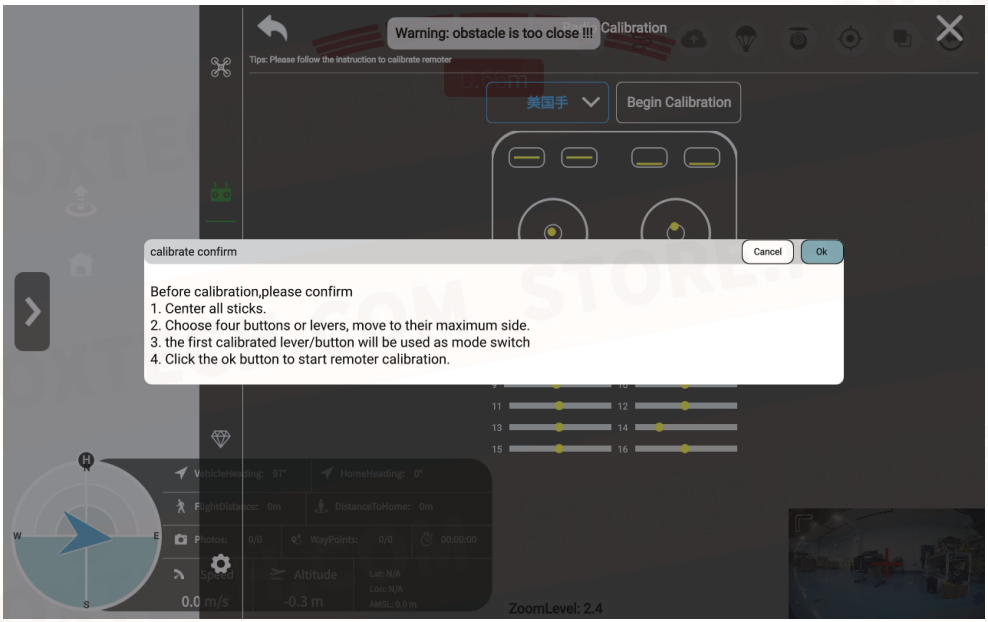
After entering, select "Remote Control" and then choose "Remote Control Calibration".



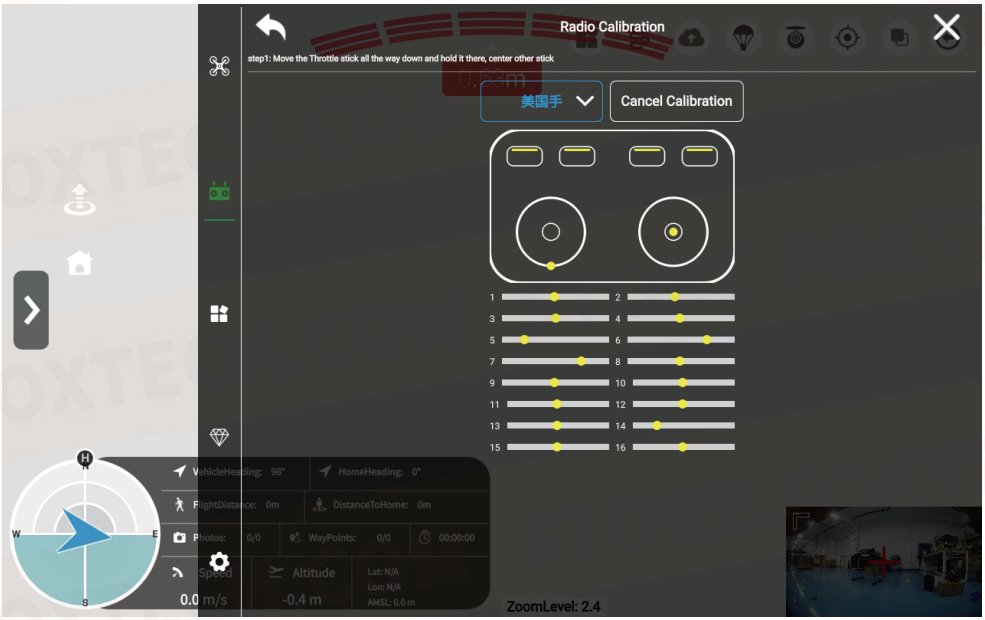
Select according to your hand grip preference. After confirmation, click "Start Calibration".
Note: This must be consistent with the hand grip setting in UniGCS.

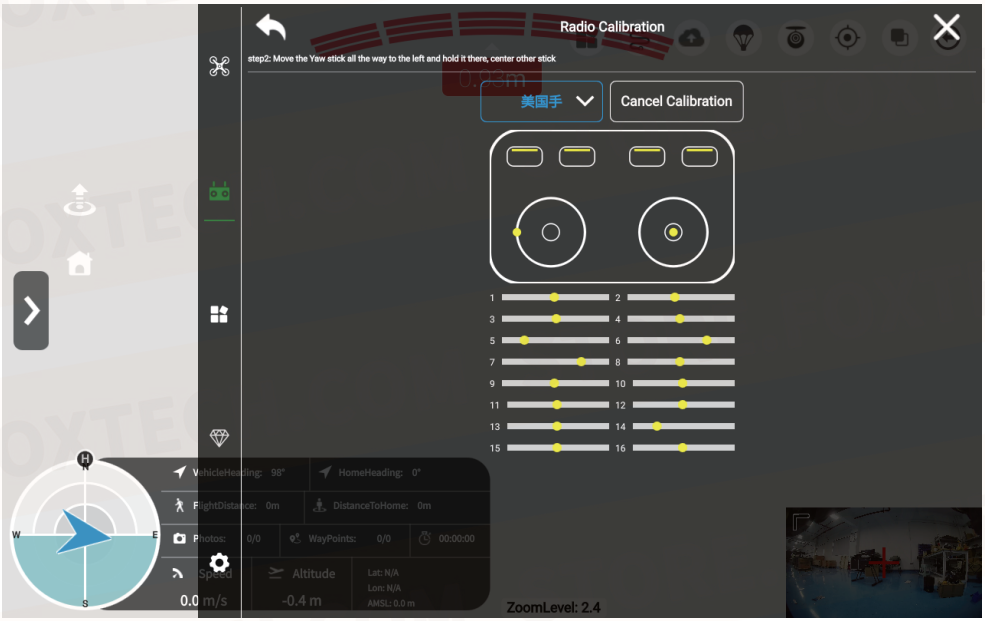


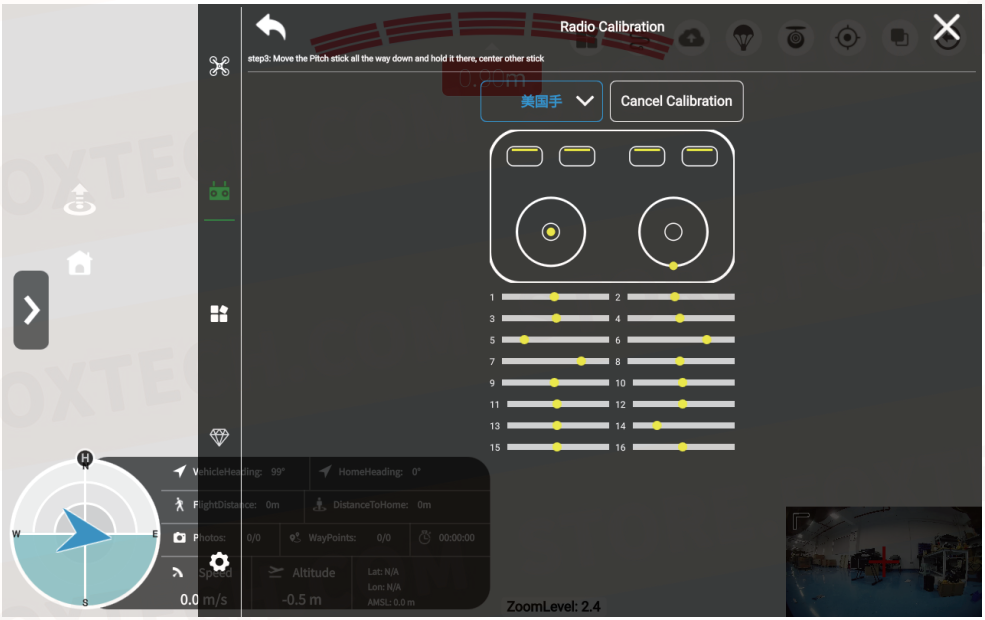
Follow the prompts to set the levers and buttons. Note: The 3-position switches on both the left and right sides must be flipped to the topmost position before clicking "Confirm".

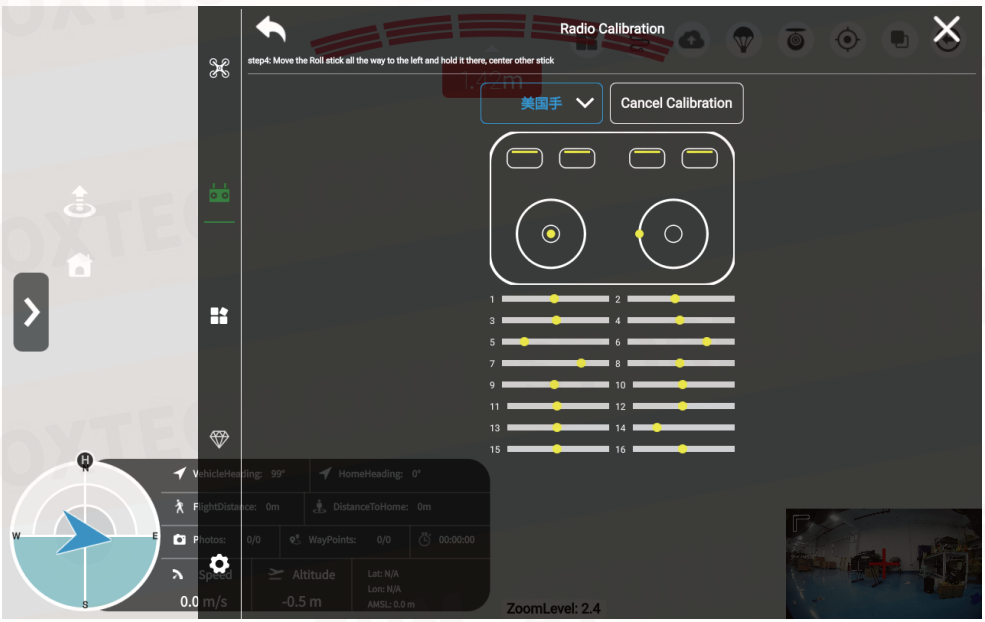


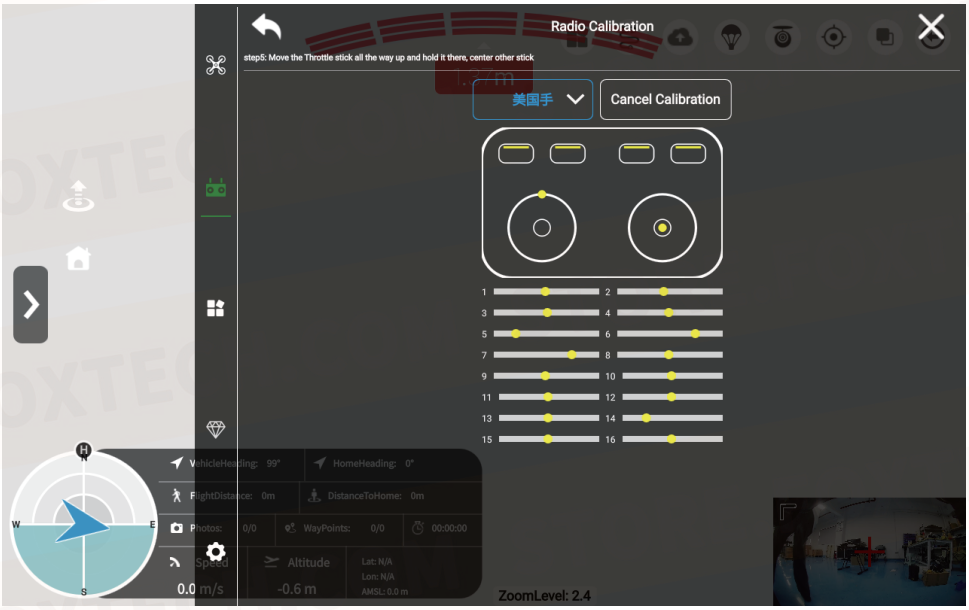
Follow the prompts to calibrate the remote control levers and switches.

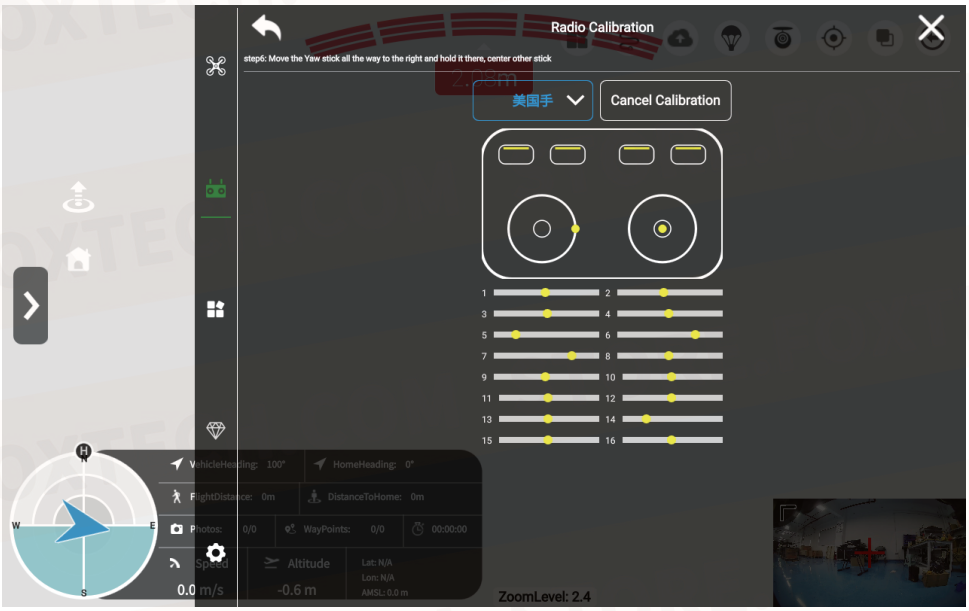

Radio Calibration
step1: Move the Throttle stick all the way down and hold it there, center other stick
美国手
Cancel Calibration
1 2
3 4
5 6
7 8
9 10
11 12
13 14
15 16
VehicleHeading: 98°
HomeHeading: 0°
FlightDistance: 0m
DistanceToHome: 0m
Photos: 0/0
WayPoints: 0/0
00:00:00
Speed
Altitude
Lat: N/A
Lon: N/A
AMSL: 0.0 m
0.0 m/s
-0.4 m
ZoomLevel: 2.4

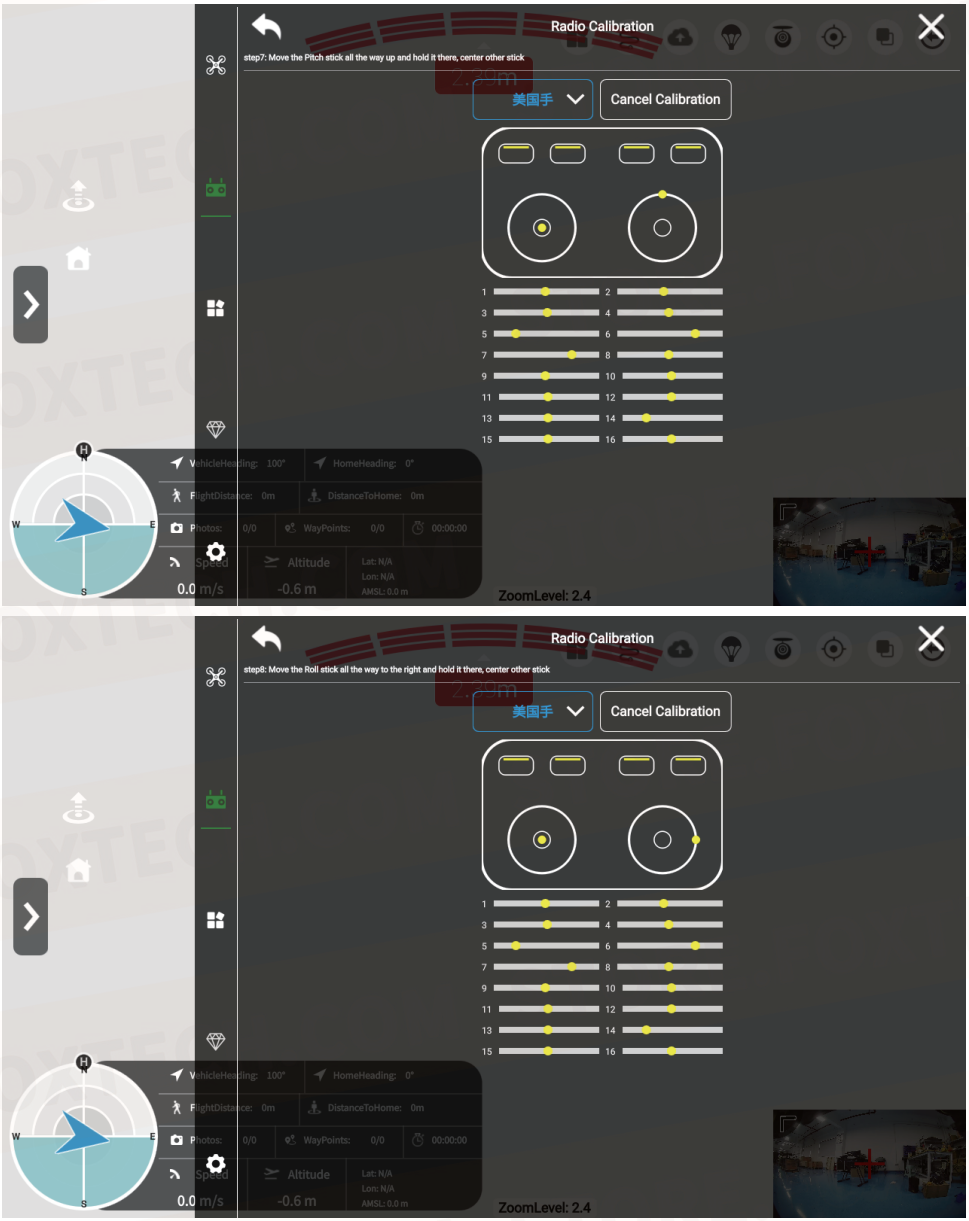

Radio Calibration
step2: Move the Yaw stick all the way to the left and hold it there, center other stick
美国手
Cancel Calibration
1 2
3 4
5 6
7 8
9 10
11 12
13 14
15 16
VehicleHeading: 98°
HomeHeading: 0°
FlightDistance: 0m
DistanceToHome: 0m
Photos: 0/0
WayPoints: 0/0
00:00:00
Speed
Altitude
Lat: N/A
Lon: N/A
AMSL: 0.0 m
0.0 m/s
-0.4 m
ZoomLevel: 2.4


Radio Calibration
step3: Move the Pitch stick all the way down and hold it there, center other stick
美国手
Cancel Calibration
1 2
3 4
5 6
7 8
9 10
11 12
13 14
15 16
HomeHeading: 0°
DistanceToHome: 0m
WayPoints: 0/0
00:00:00
Altitude
-0.5 m
Lat: N/A
Lon: N/A
AMSL: 0.0 m
0.0 m/s
ZoomLevel: 2.4

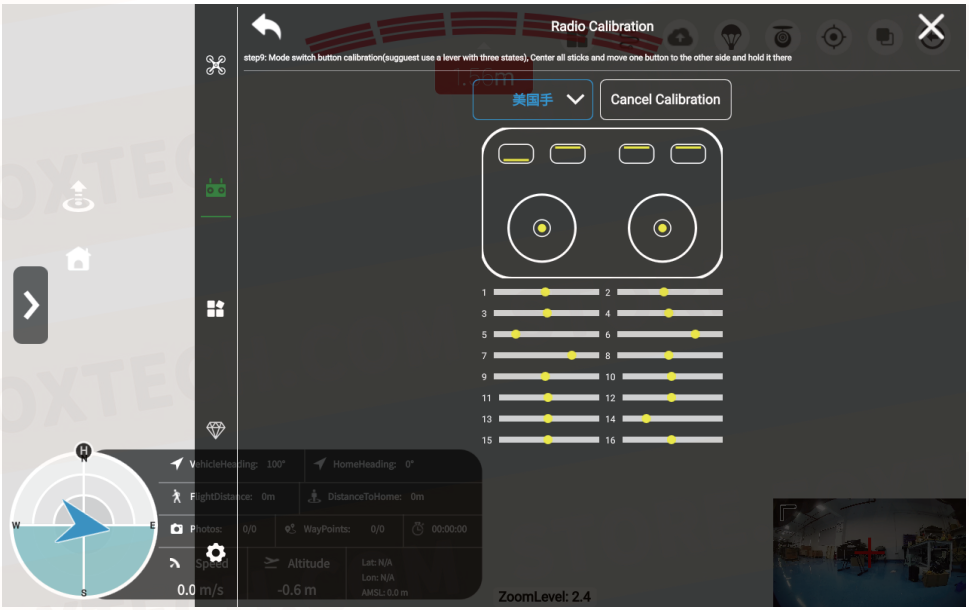

Radio Calibration
step4: Move the Roll stick all the way to the left and hold it there, center other stick
美国手
Cancel Calibration
1 2
3 4
5 6
7 8
9 10
11 12
13 14
15 16
HomeHeading: 0°
DistanceToHome: 0m
WayPoints: 0/0
00:00:00
Altitude
-0.5 m
Lat: N/A
Lon: N/A
AMSL: 0.0 m
0.0 m/s
ZoomLevel: 2.4


Radio Calibration
step5: Move the Throttle stick all the way up and hold it there, center other stick
美国手
Cancel Calibration
1 2
3 4
5 6
7 8
9 10
11 12
13 14
15 16
VehicleHeading: 99°
HomeHeading: 0°
FlightDistance: 0m
DistanceToHome: 0m
Photos: 0/0
WayPoints: 0/0
00:00:00
Speed
Altitude
0.0 m/s
-0.6 m
Lat: N/A
Lon: N/A
AMSL: 0.0 m
ZoomLevel: 2.4

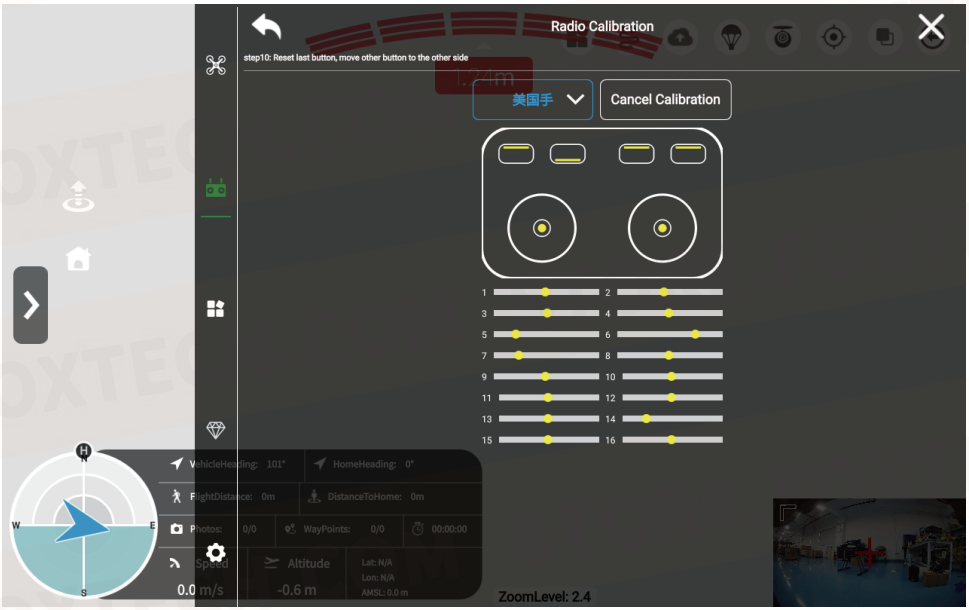

Radio Calibration
step6: Move the Yaw stick all the way to the right and hold it there, center other stick
美国手
Cancel Calibration
1 2
3 4
5 6
7 8
9 10
11 12
13 14
15 16
VehicleHeading: 100°
HomeHeading: 0°
FlightDistance: 0m
DistanceToHome: 0m
Photos: 0/0
WayPoints: 0/0
00:00:00
Speed
Altitude
0.0 m/s
-0.6 m
Lat: N/A
Lon: N/A
AMSL: 0.0 m
ZoomLevel: 2.4



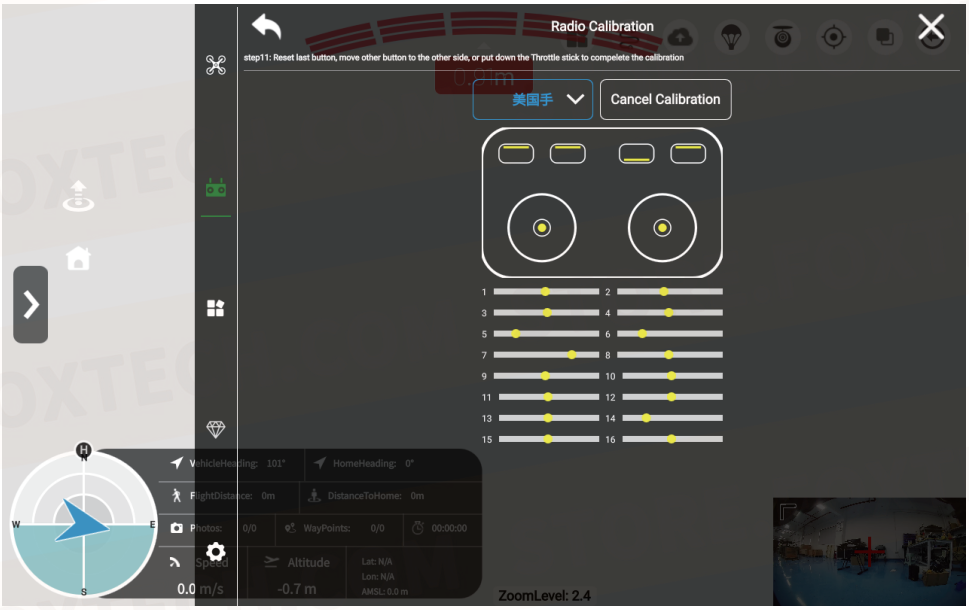
Toggle the left 3-position switch to the bottommost position.



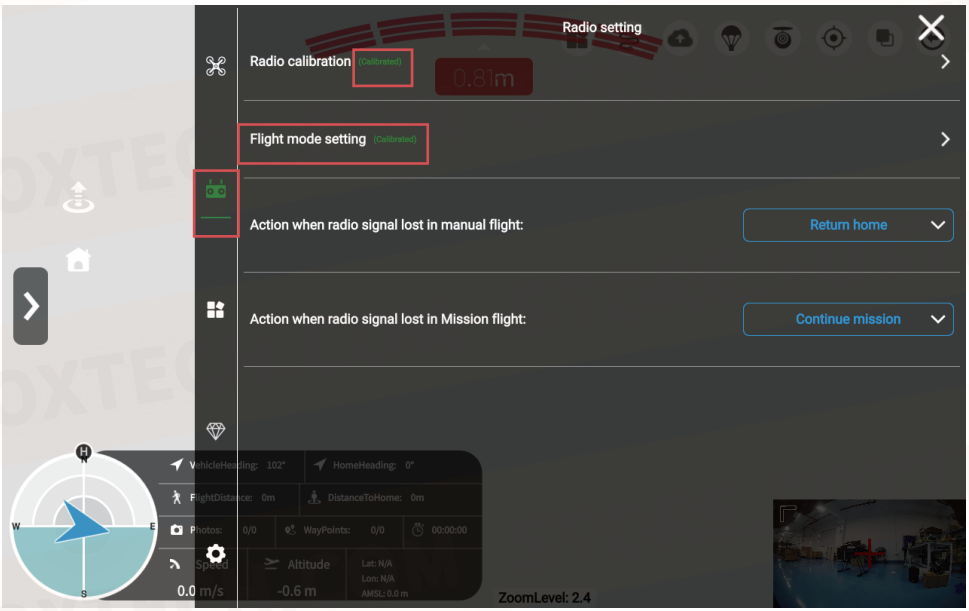
Toggle the left 3-position switch to the topmost position and the right 3-position switch to the bottommost position.



Toggle the right 3-position switch to the topmost position, and pull the throttle to the lowest position to complete the calibration.



After calibration, return to the remote control settings interface. Confirm the calibration status is "Calibrated" and check that channel mapping is correct in flight mode settings.



Note: The remote controls are all calibrated before leaving the factory. Do not calibrate them unless necessary.

Default function key settings of the remote control at factory

1. The 3-position toggle at the remote's upper left is the default flight mode switch: down for altitude-hold, middle for position-hold, up for position-hold with obstacle avoidance.
2. The upper left dial of the remote is by default for the vertical swing mechanism's motor: long left turn to turn off swing, long right turn to turn on; dial rotation duration controls swing speed.
3. The upper right dial of the remote is the default gimbal tilt control: left to tilt down, right to tilt up.
4.The 3-speed toggle switch at the top right corner of the remote control is set to the water spray switch by default. Flipping the toggle up turns on the water spray, and flipping it down turns off the water spray.



LED Indicator Light Signals

Flight Control System Status	Flash sequence	Description
System initialization check and self-test		
Normal		Breathing Light-Blue Light Flash into Flight Mode
The system is not registered or the USB power supply is insufficient		Breathing Light-Blue Light Flash
Flight control system fault		The blue light is always on
Flight Mode		
Not unlocked-ground (GPS not positioned)		Breathing light-green light flashing slowly
Not unlocked-Ground (GPS located)		Breathing light-blue-green alternating slow flashing
Unlocked-Fixed Height Mode (Attitude Mode)		Frequency light-yellow double flash
Unlock-Fixed point mode (GPS mode)		Frequency light-blue double flash
Exception mode		
Low voltage alarm or abnormal warning		The red light is always on.
GPS signal status display (GPS module required)		
Search signal (GPS light always on)		The blue light is always on
Positioning success (GPS light flashes)		Frequency light-blue light single flash
Calibration		
Accelerometer calibration (six-sided calibration)		The blue lights on each side gradually turn on, and enter the flight mode after completion.
Compass calibration (horizontal and vertical rotation)		The blue light gradually becomes bright, and enter the flight mode after completion.
Gyroscope calibration (standing still)		Breathing light-blue and green lights flash alternately, enter the flight mode after completion
Firmware update (internal LED light works, external LED light red light is always on)		
Successfully updated		Frequency light-blue light single flash
Update Error		Frequency light-red light single flash

How to Import and InstallApplications

Import and Install via TF Card

Save the application installation files to a TF card, insert the TF card into the TF card slot at the bottom of the handheld ground station, copy the installation files to the Android system’ s storage, then use the Android file manager to locate and install the copied files

Import and Install via USB Drive

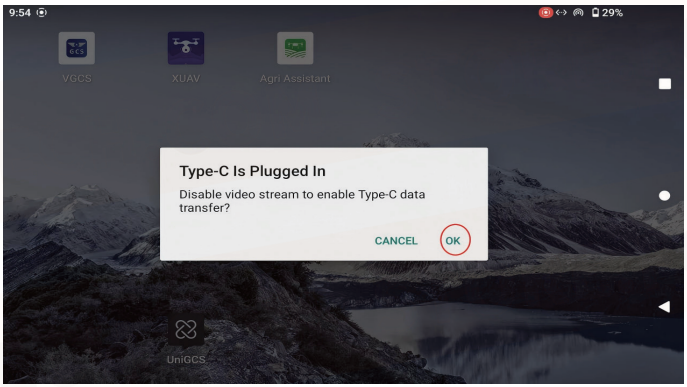
Save the application installation files to a USB drive, insert the USB drive into the USB-A port at the top of the handheld ground station, copy the installation files to the Android system’ s storage, then use the Android file manager to locate and install the copied files.

Import and Install via Type-C File Transfer

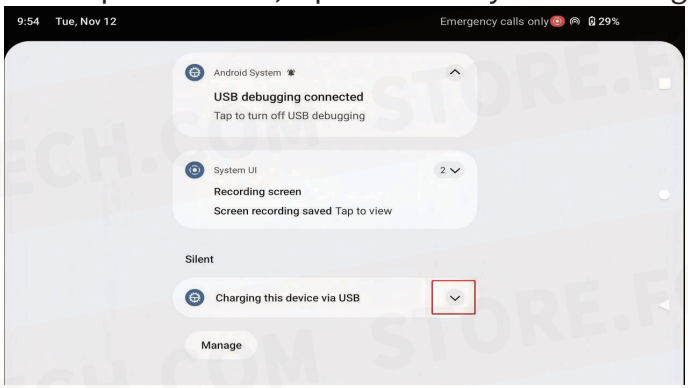
The ground station can connect directly to a Windows computer through the Type-C port using the file transfer function.

Steps

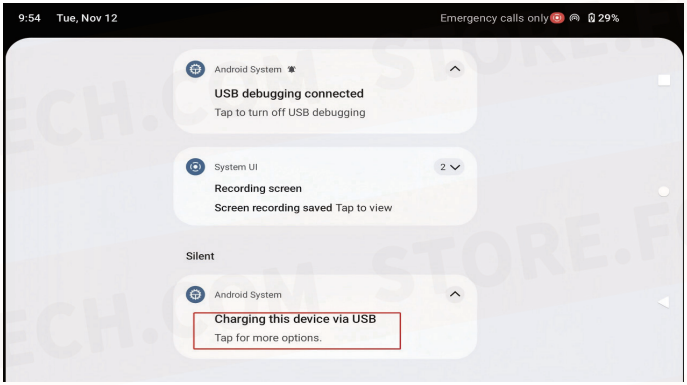
1. Connect the ground station to the Windows computer via the Type-C port.
2. Click “OK” to “Close video display and enable Type-C file transfer.”



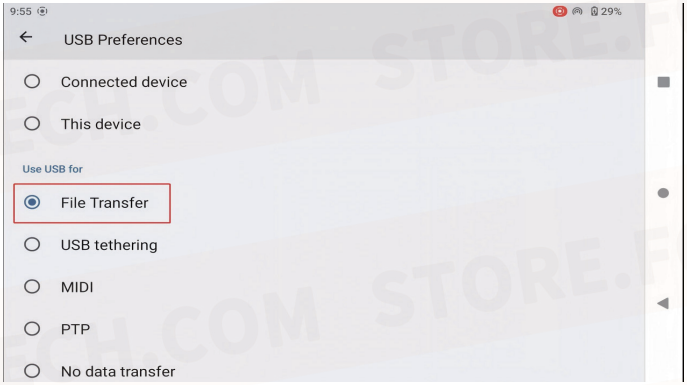
3. In the Android system’ s dropdown menu, tap “Android system · Charging this device via USB.”



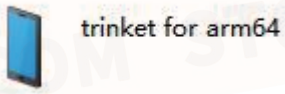
4. Then tap “Charging this device via USB, tap for more options.”



5. Select “File Transfer.”



6. At this point, the ground station will be recognized by the Windows computer as a storage device.



Please streamline the Android system of your handheld ground station and avoid installing excessive irrelevant apps, so as not to interfere with normal operations.

Both the ground unit and the air unit support connection to the Parameter Tuning Assistant for firmware updates. Prior to performing a firmware update, it is necessary to prepare the following tools, firmware, and software:

- Parameter Tuning Assistant
- Ground Unit Firmware
- Air Unit Firmware

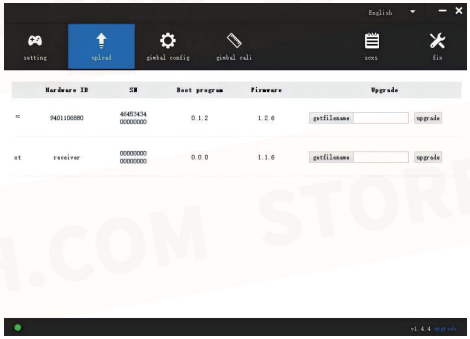
Firmware upgrade steps:

1. Install the "TuningAssistant" on your Windows device.

2. After installation, connect the USB port of the Windows device to the upgrade port at the bottom of the ground station.

Note: Please do not click on any pop-up prompts on the screen after the connection is conplected.

3. Open the "Tuning Assistant," switch to the "Upload" menu to check the current firmware versions and corresponding Boot program versions of the ground station and sky station.



4. If the firmware is not the latest, click "Select File" under the "Remote Controller" menu to import the latest ground station firmware, then click "Upgrade." Wait for the upgrade process to reach 100% completion.

5. Disconnect the ground station from the Windows device. Use the fast charging data cable and USB adapter to connect the sky station to the Windows device. Then repeat the above steps to upgrade the sky station firmware.

Note:

After connecting the ground unit to the computer, if no upgradeable module information appears on the upgrade page, please check whether the green indicator light in the lower left corner of the Tuning Assistant is lit. If it is not lit, inspect the connection between the device and the computer.

If the green indicator light in the lower left corner is lit, but no upgradeable module information appears on the upgrade page, please follow the steps below to check the settings in the UniGCS:

1.Ensure that the TuningAssistant is the latest version. The latest version can be downloaded from the official website's download page.

2.Navigate to the Remote Control Settings page- Data Link Settings, and ensure that the connection methods for Data Link 1 and Data Link 2 are not set to "Upgrade" mode.

3. Then, go to the Remote Control Settings page- System Settings, and make sure the Remote Control SDK connection method is not set to "Upgrade" mode.

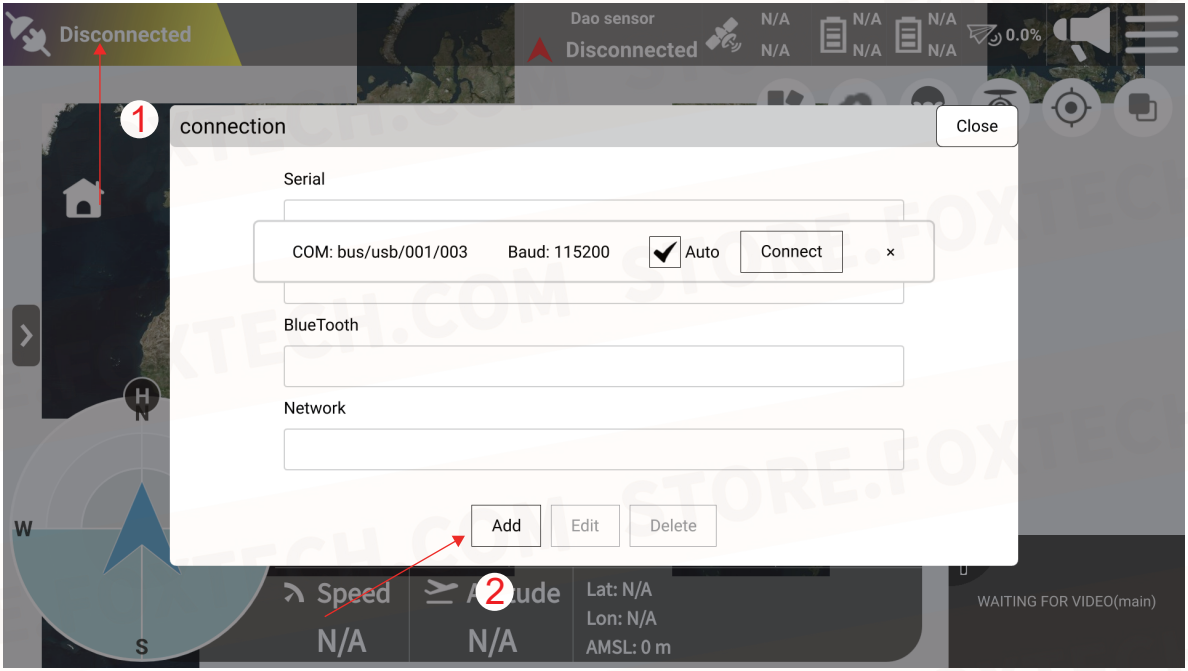
Bluetooth RTK base station connection

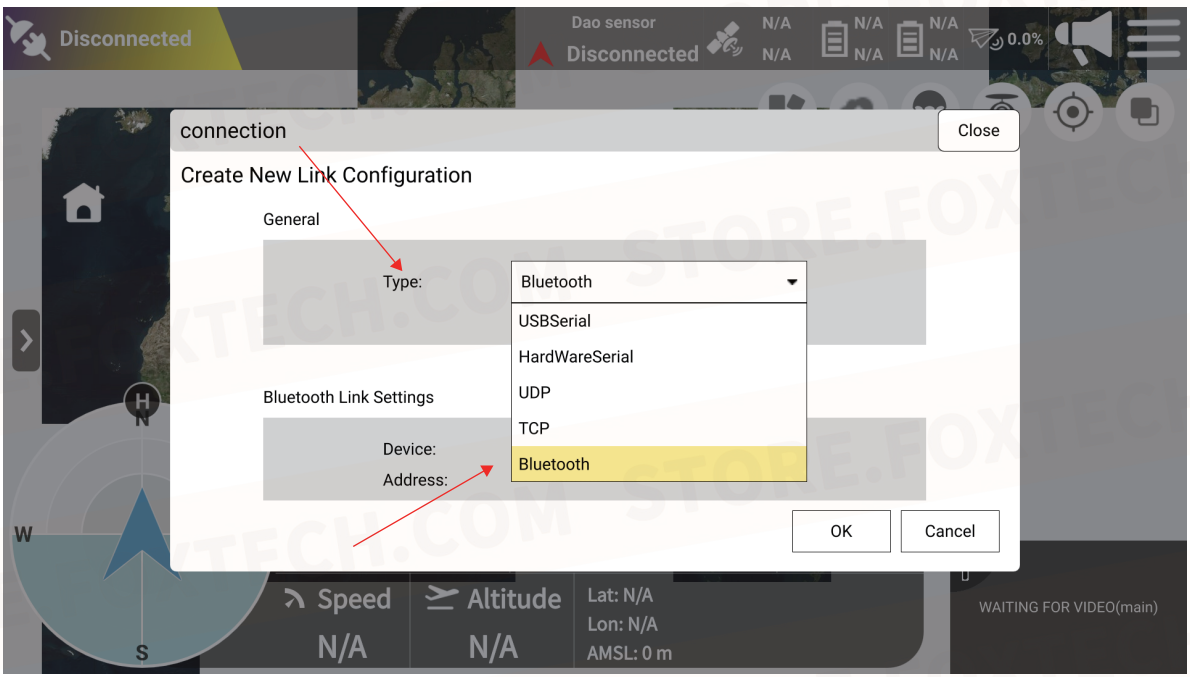
Assemble the RTK base station (never power on without the antenna, or the module will burn). Fix it at a high, unobstructed, interference-free spot, then long-press the power button to turn on (do not move it afterward).
Go to Communication Connection > New, select Bluetooth, check RTK Base Station Link, scan and choose X**** Confirm, click Connect, enter default password 1234 when prompted. The satellite icon will turn green.

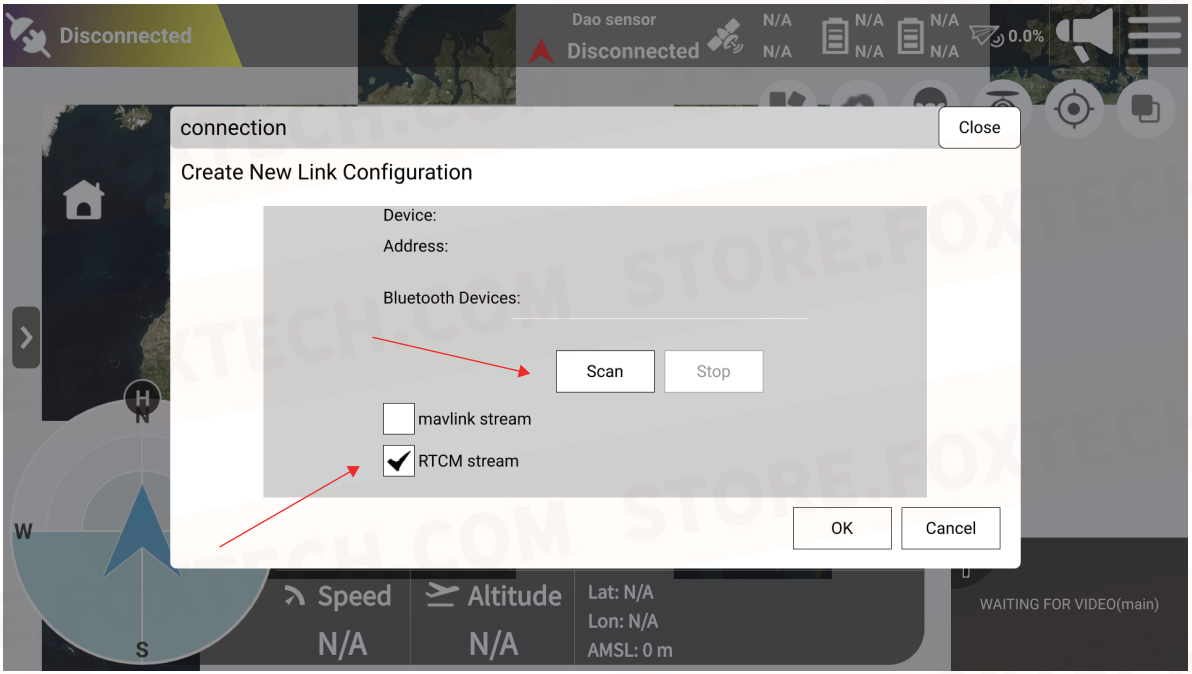
The RTK base station must be within 15 meters of the operator's remote control.

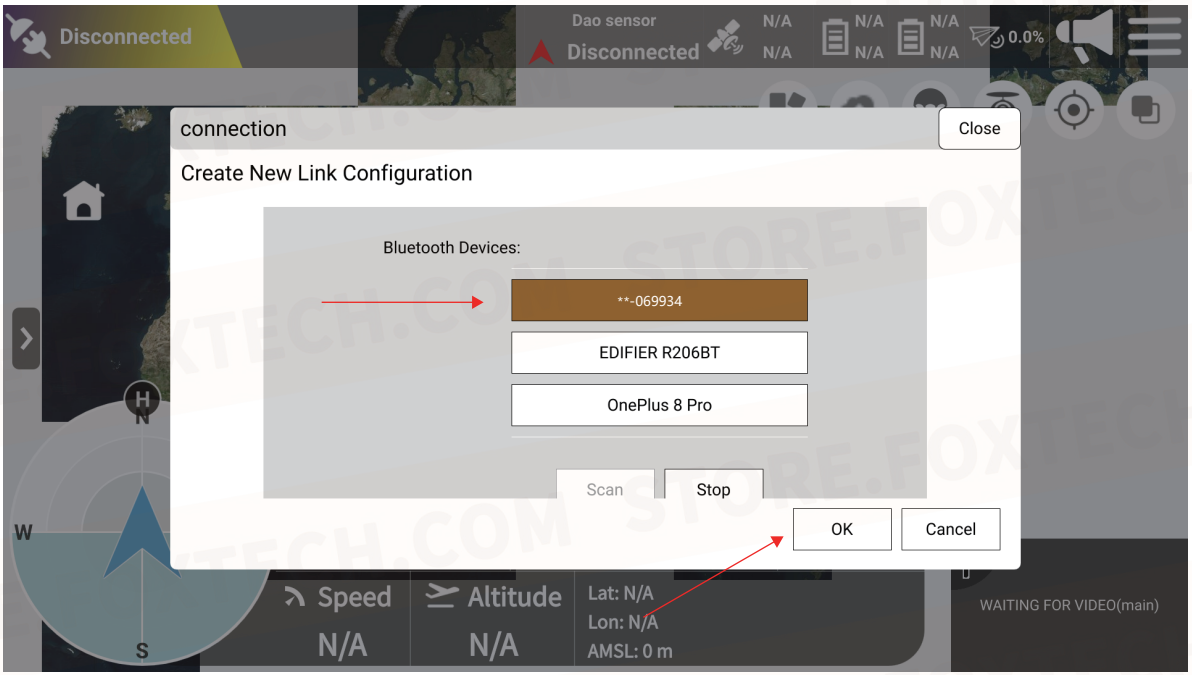
① Power On/Off Operation
Power On: Press and hold the power button for more than 3 seconds; the BATA battery indicator light turns on to confirm power-on.
Power Off: Press and hold the power button for more than 3 seconds; the BATA battery indicator light turns off to confirm power-off.
② Power Indicator Status
GGreen Light Steady On: Battery Level 100%-25%
Green Light Flashing: Battery Level 25%-0%
③Charging
Charging: CHG Red Light Steady On
Fully Charged: CHG Green Light Steady On

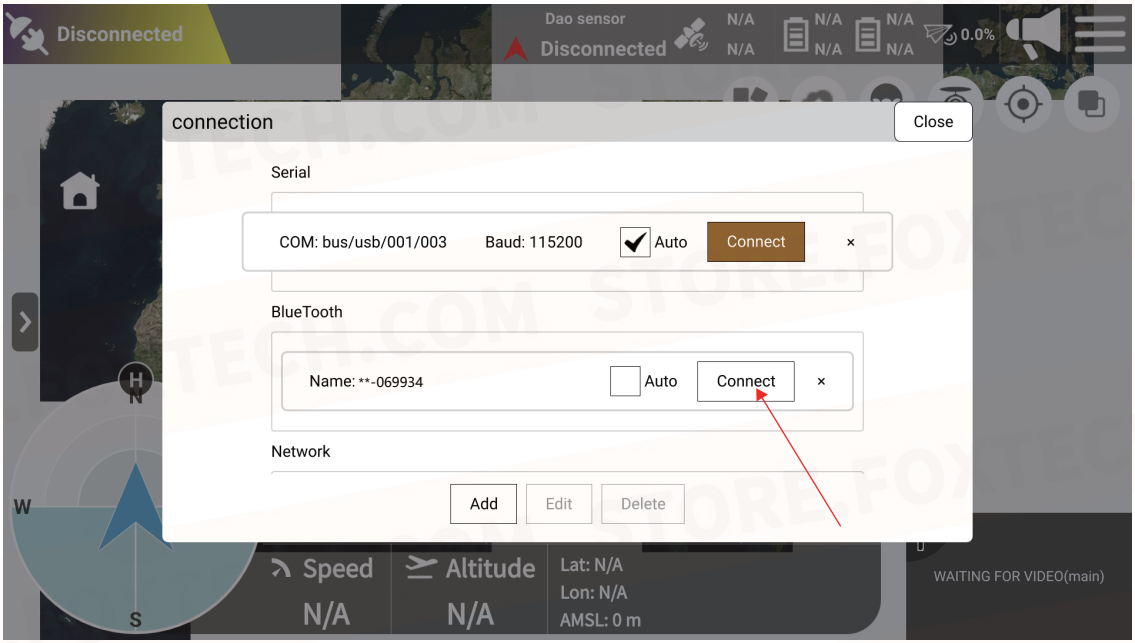



Disconnected
Dao sensor
Disconnected
N/A
N/A
N/A
N/A
N/A
N/A
0.0%
1
connection
Close
Serial
COM: bus/usb/001/003
Baud: 115200
Auto
Connect
BlueTooth
Network
Add
Edit
Delete
2
Speed
N/A
Altitude
N/A
Lat: N/A
Lon: N/A
AMSL: 0 m
WAITING FOR VIDEO(main)
H
N
W
S

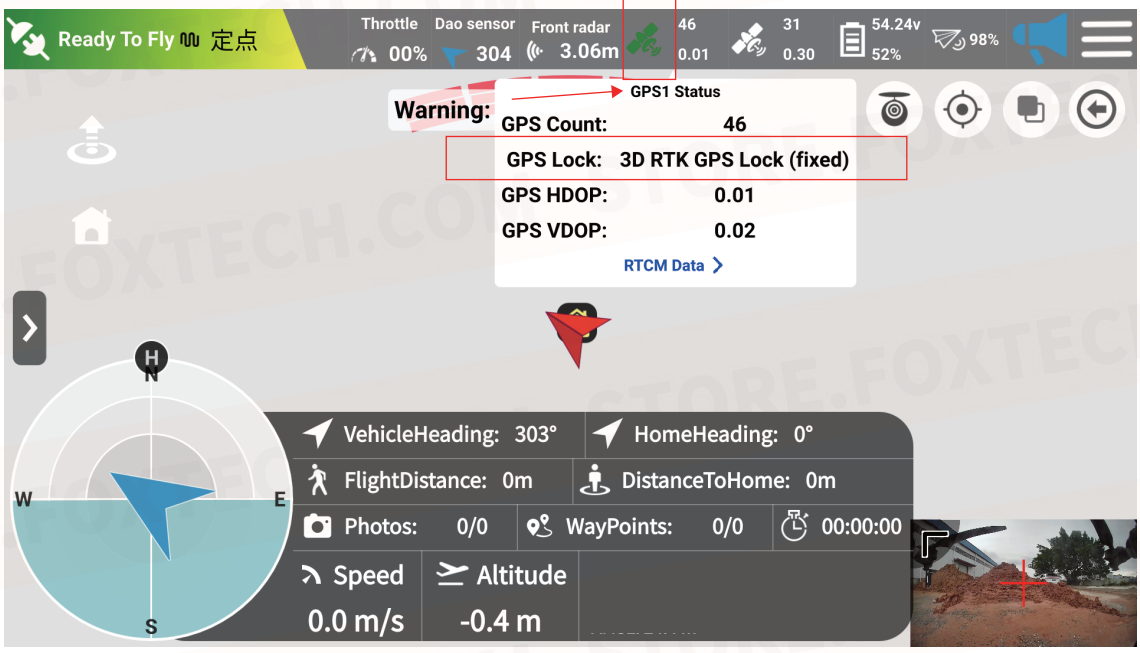

Disconnected
Dao sensor
Disconnected
N/A
N/A
N/A
N/A
N/A
N/A
0.0%
connection
Close
Create New Link Configuration
General
Type:
Bluetooth
USBSerial
HardWareSerial
UDP
TCP
Bluetooth
Bluetooth Link Settings
Device:
Address:
OK
Cancel
Speed
N/A
Altitude
N/A
Lat: N/A
Lon: N/A
AMSL: 0 m
WAITING FOR VIDEO(main)
H
N
W
S

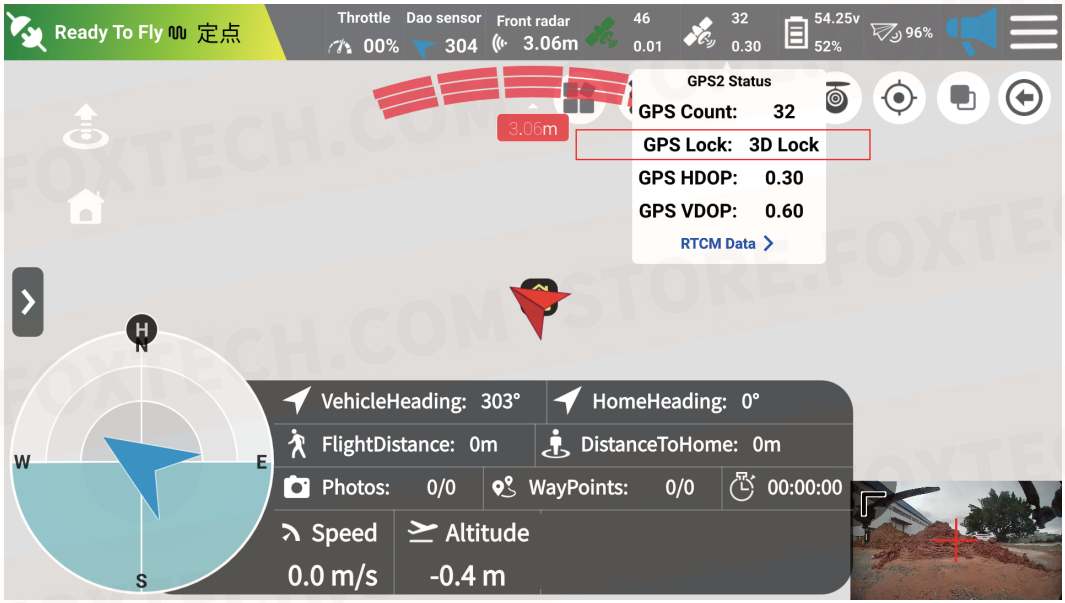

Disconnected
Dao sensor
Disconnected
N/A
N/A
N/A
N/A
N/A
N/A
0.0%
connection
Close
Create New Link Configuration
Device:
Address:
Bluetooth Devices:
Scan
Stop
mavlink stream
RTCM stream
OK
Cancel
W
S
Speed
N/A
Altitude
N/A
Lat: N/A
Lon: N/A
AMSL: 0 m
WAITING FOR VIDEO(main)


Disconnected
Dao sensor
Disconnected
N/A
N/A
N/A
N/A
N/A
N/A
0.0%
connection
Close
Create New Link Configuration
Bluetooth Devices:
**-069934
EDIFIER R206BT
OnePlus 8 Pro
Scan
Stop
OK
Cancel
W
S
Speed
N/A
Altitude
N/A
Lat: N/A
Lon: N/A
AMSL: 0 m
WAITING FOR VIDEO(main)

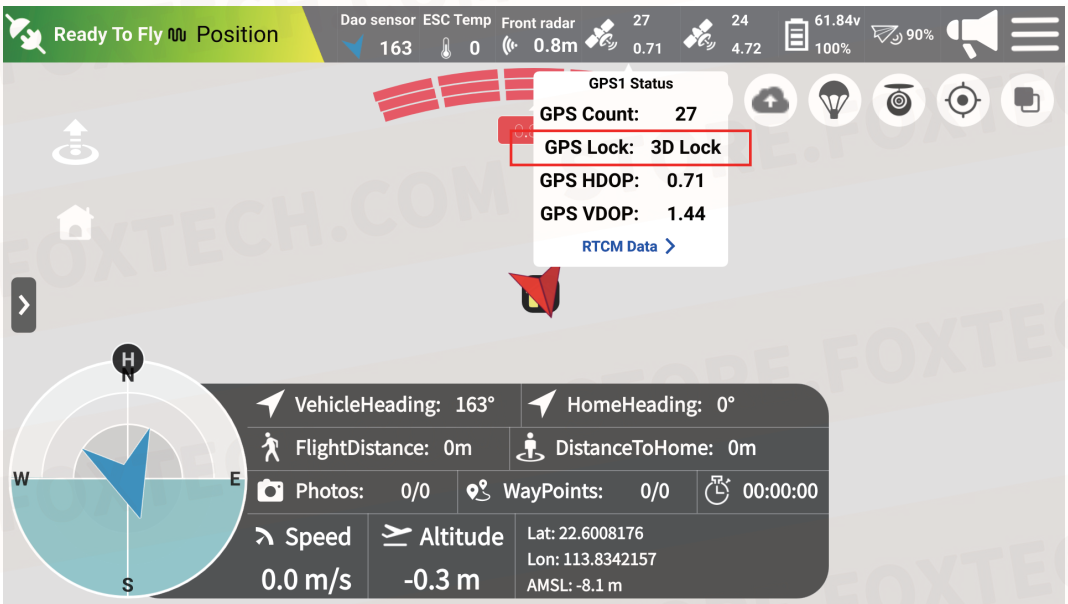


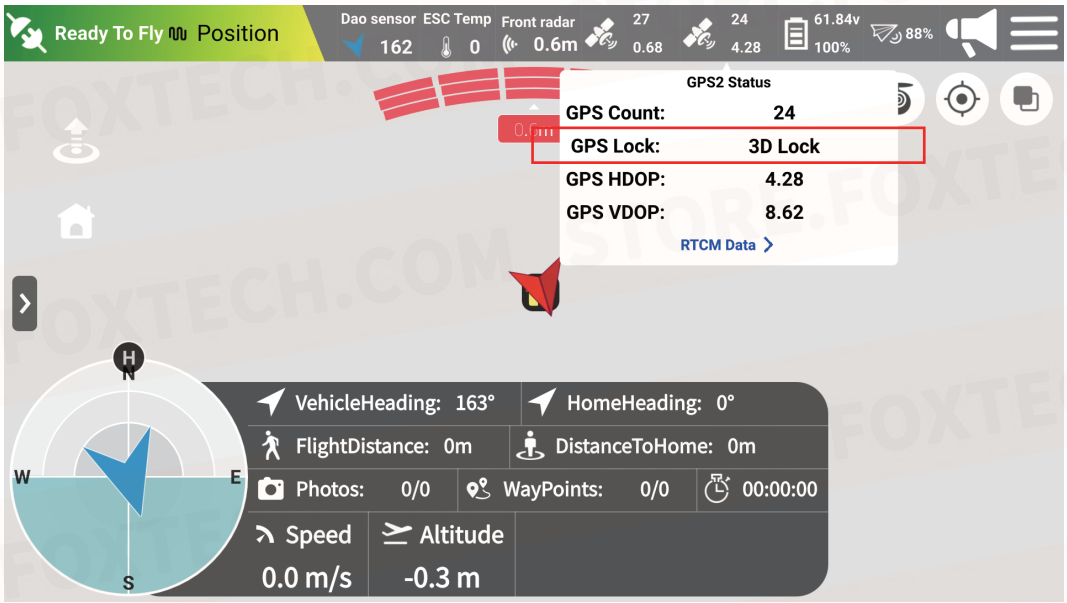
After RTK connection is successful, the GPS1 satellite icon will turn green, and the icon color will remain unchanged if the connection is not successful! The GPS1 positioning status is fixed solution, the horizontal and vertical accuracy is less than 0.05, and the GPS2 positioning status is 3D positioning, the horizontal and vertical accuracy is less than 0.03 meters to unlock the aircraft.





If RTK is not connected, the GPS1 icon is white and displays 3D positioning. GPS2 displays 3D positioning. The GPS2 horizontal and vertical accuracy must be stable before it can be unlocked. Otherwise, the aircraft may drift. If the GPS2 vertical and horizontal accuracy is greater than 5 meters, the aircraft will drift after unlocking. Please add the RTK module to fly.





Note: Unlocking is prohibited if the direction finding sensor is not connected.

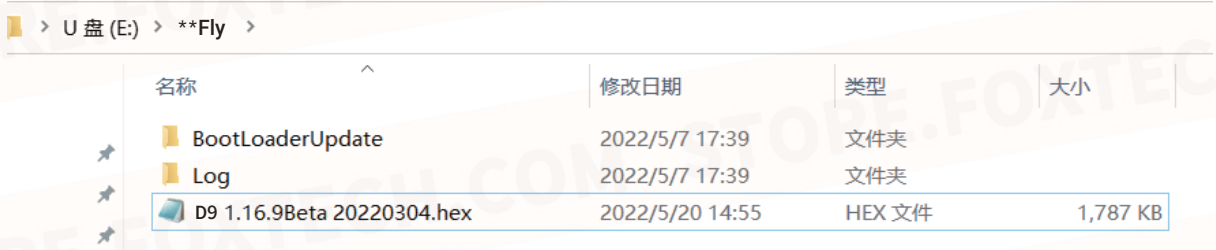
Firmware update

⚠ Flight controller firmware and BootLoader firmware are different; do not confuse them.

⚠ Do not power off during firmware update.

Update flight controller firmware via SD card (recommended)

·- Connect the flight controller to the computer via USB; a USB drive (its SD card) will appear. Put the .hex firmware file into the "**FLY" folder, restart the controller, and wait for the update (about 12 seconds, blue light flashes rapidly). A red light means an error. The file deletes automatically afterward to prevent repeats.



·If the firmware cannot be updated via the SD card, please use the method in the next section.

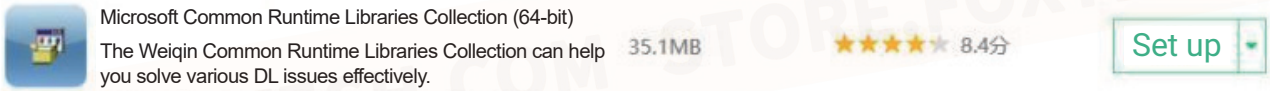
Update flight controller firmware via USB

- Download the **FLY ground station zip (includes DFU Driver zip). Extract and install the matching version (Win10 uses Win8.1).

- Open the **FLY tuning ground station: Configuration – Firmware Update – Browse – select .hex file.- Plug in the flight controller USB within 10 seconds; wait for burning to finish.

- If burning fails, install the Microsoft common runtime libraries package below.

⚠ Note: Power off the flight controller first. Connect it to the computer via USB within 10 seconds after selecting the firmware in the ground station.

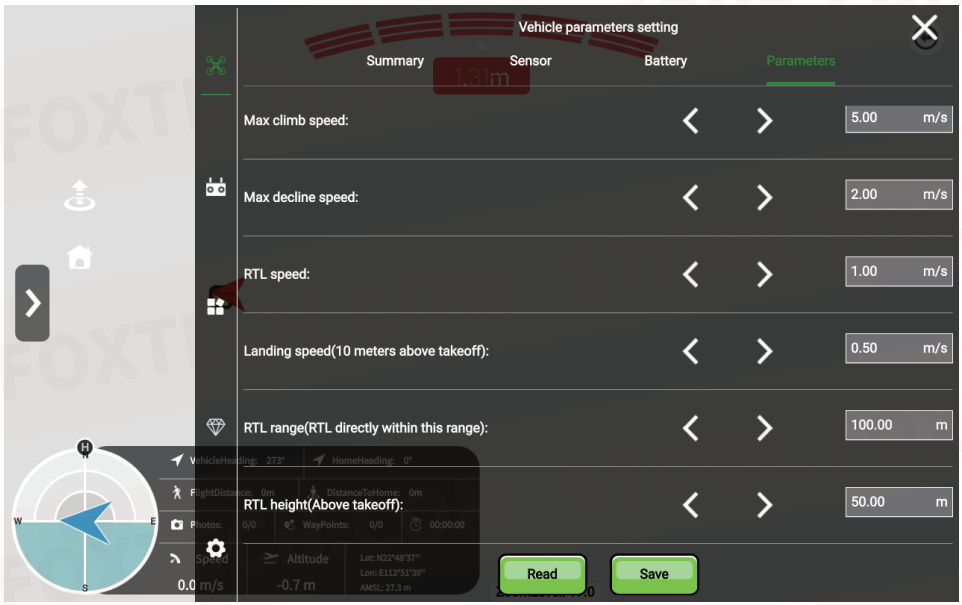


BootLoader firmware update

- Connect the flight controller to the computer via USB; a USB drive will appear. Open the "JCFLY" folder, put the BootLoader firmware into "BootLoaderUpdate", then reboot the controller. Update takes ~12s (blue light flashes rapidly); red light means error. The file deletes automatically afterward to prevent repeats.

Automatic return-to-home strategy

Set max return speed 1m/s, landing speed 0.5m/s, return distance 100m, return height 50m.
In this state, the aircraft will fly to the vicinity of the takeoff point at the current altitude and a speed of 1 m/s, then descend at a speed of 0.5 m/s. This provides sufficient reaction time for personnel to take emergency response measures.
Note: All return-to-home operations will be executed following this logic, as shown in the figure below.

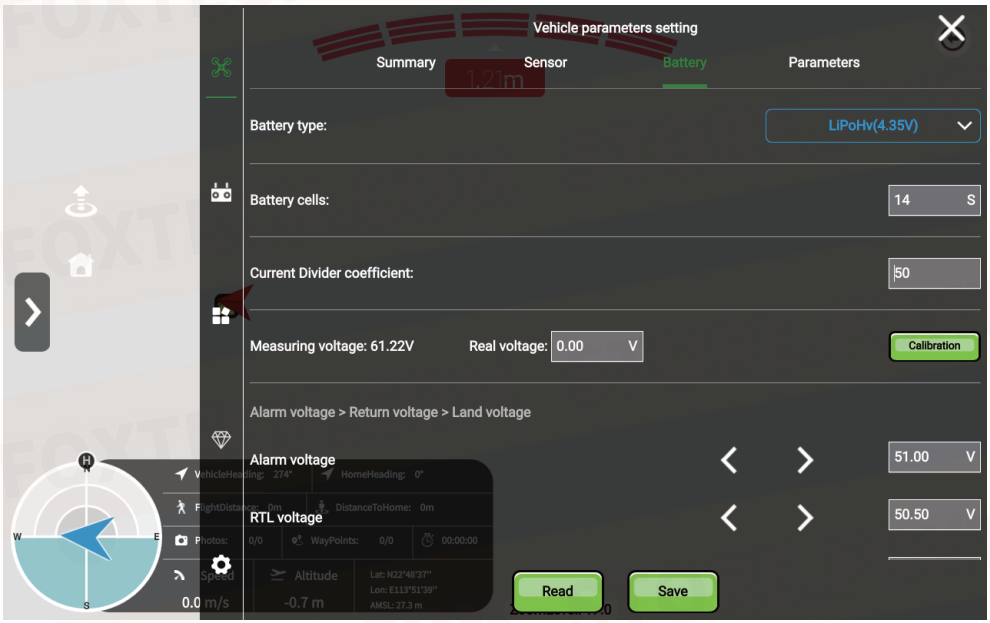


One-click automatic return-to-home

- When the one-click return-to-home button is set and pressed, the drone starts automatic return. The return process can be interrupted by moving any joystick. If the one-click return is set to "press", it will resume automatically within 3 seconds if no joystick is moved after interruption. If set to "toggle", interrupting with joystick movement will cancel the return, and you need to toggle the one-click return button again to resume.

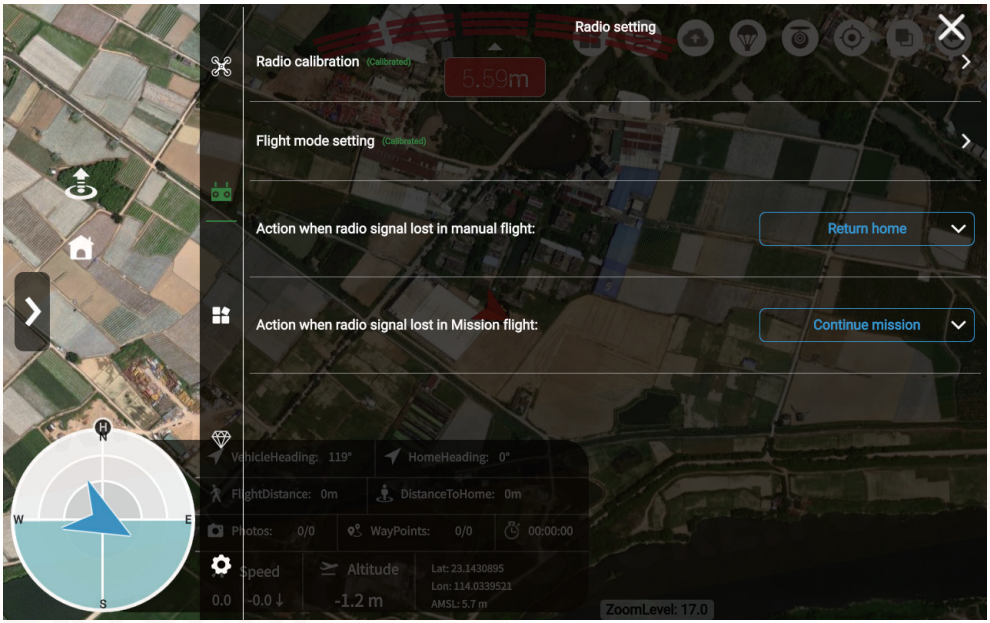
Low battery automatic return or landing

- Set the parameters [Return Voltage] and [Landing Voltage], unit: volt.
- When the drone detects that the battery voltage is lower than [Return Voltage], the drone will automatically return.
- When the drone detects that the battery voltage is lower than [Landing Voltage], the drone will automatically land.
- If the values set for the above two parameters are the same, landing will take priority.
- After calibration, set the alarm voltage to 51V, return voltage to 50V, and forced landing voltage to 49.5V.



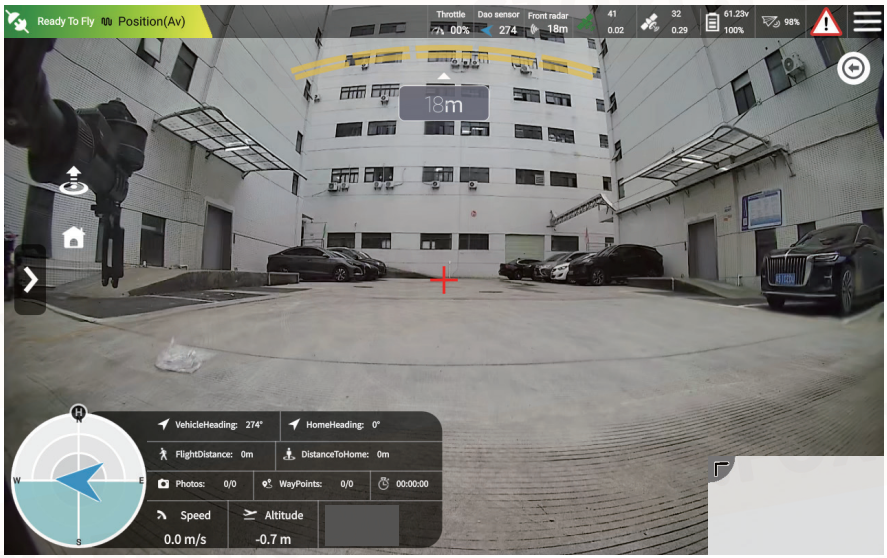
Automatic return home when out of control

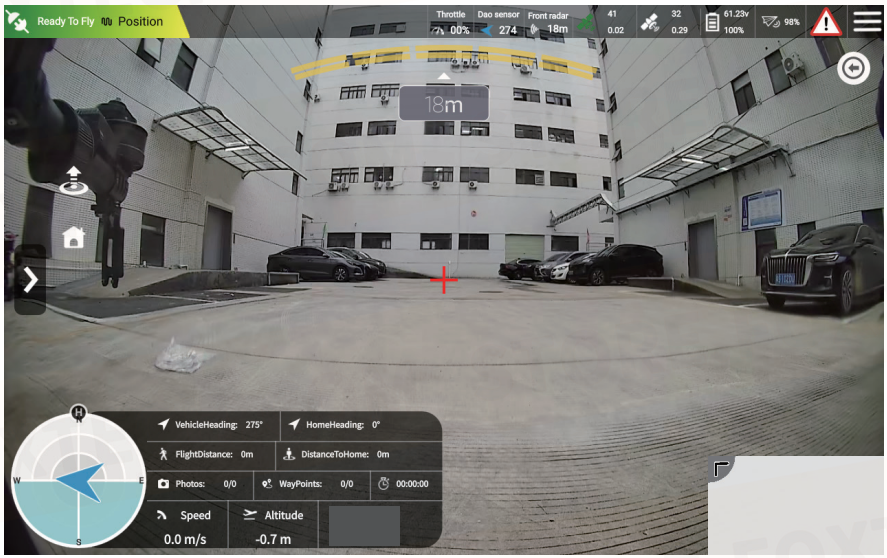
- If the drone is not in mission mode, it will automatically return home when the remote controller loses connection during flight. This function is not supported when using a PPM receiver (because the PPM receiver still has output after the remote control loses connection). If the remote controller reconnects during the return flight, the drone will continue returning home, and you can manually operate the control sticks to take over control.
- If the remote controller loses connection during a mission, the drone will continue to execute the mission (positioning is required). After completing the mission or when the battery level is lower than the [Return Voltage], the drone will automatically return home.
- If there is no positioning and the remote control loses connection, the drone will automatically land.

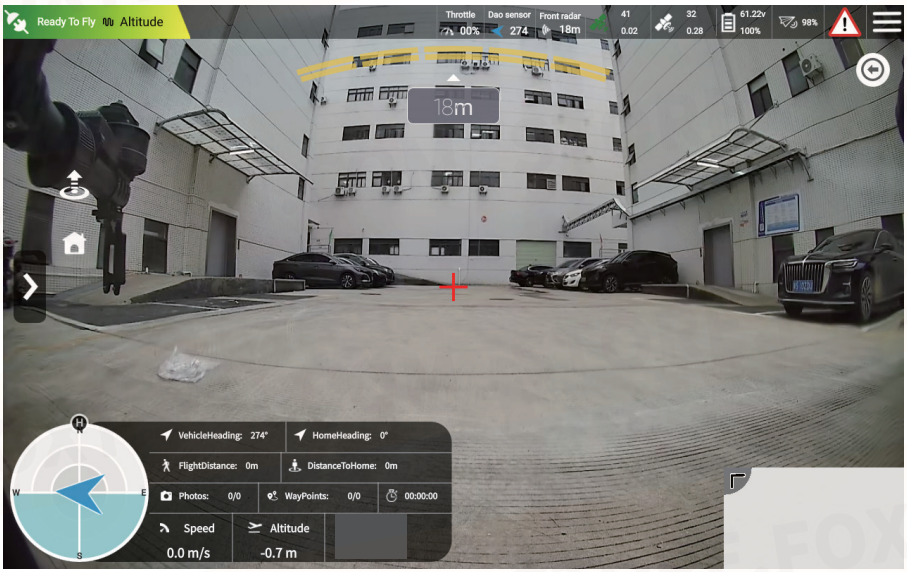


Flight mode

The three-position toggle switch at the upper left corner of the remote controller is the mode switch. The top position is the (fixed-point obstacle avoidance) mode, the middle position is the (fixed-point mode), and the bottom position is the (altitude-hold mode). (Altitude-hold mode is the attitude mode. In attitude mode, GPS does not work, and the hover function is not available.) The obstacle avoidance mode only takes effect in the fixed-point obstacle avoidance scenario; it does not work in the other two modes at all!







How to Use Fixed-Point Obstacle Avoidance Mode:

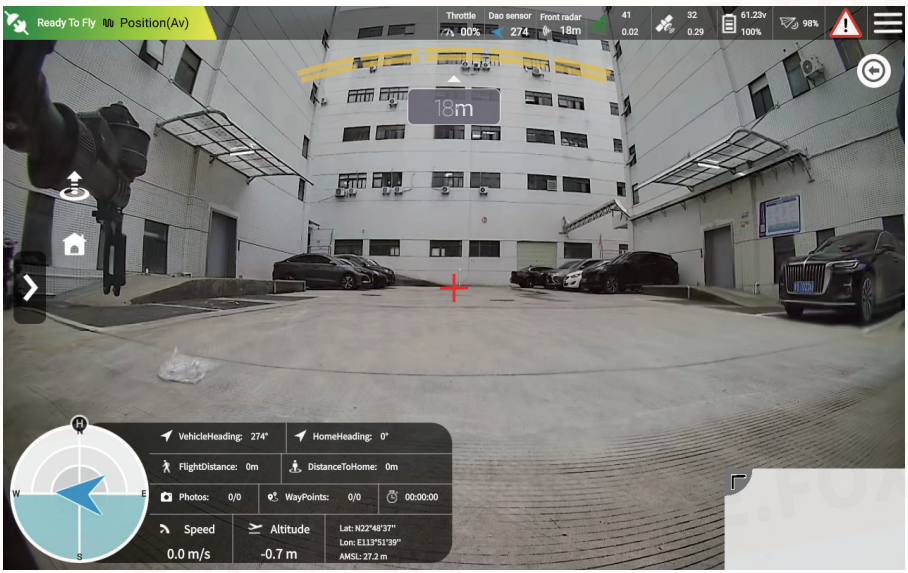
1.When facing a wall, the aircraft will decelerate once when it is 7 meters away from the wall. Within 7 meters, no matter how the control stick is manipulated, the aircraft will approach the wall at a fixed speed and will only come to a complete stop when it reaches the set obstacle avoidance distance.

2.Pull the pitch stick sharply backward, and the aircraft will automatically exit the obstacle avoidance mode and switch to the position-hold mode. To re-enter fixed-point obstacle avoidance, you need to switch the mode manually again.

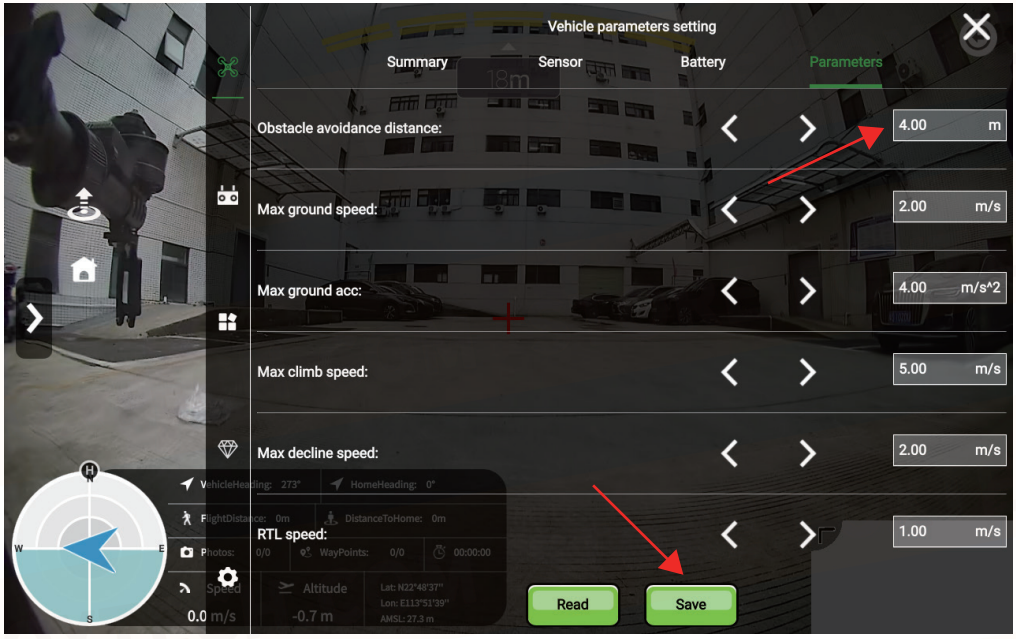
3.It is strictly prohibited to switch to the fixed-point obstacle avoidance mode when the aircraft is taking off or landing. The radar is a wall-avoidance radar; when the aircraft enters the obstacle avoidance distance, it will automatically move backward. This prevents the aircraft from moving backward and colliding with people or objects if there are obstacles within the obstacle avoidance distance during takeoff or landing.

4.For instructions on how to set the obstacle avoidance distance, refer to the figure below (changes cannot be made while the aircraft is in the air; adjustments are only allowed when it is on the ground).

Note: All aircraft leave the factory with this return-to-home logic as the default setting. If adjustments to this return-to-home logic are required for operations in special environments, you may make the adjustments yourself or contact our after-sales service for assistance with the adjustments.



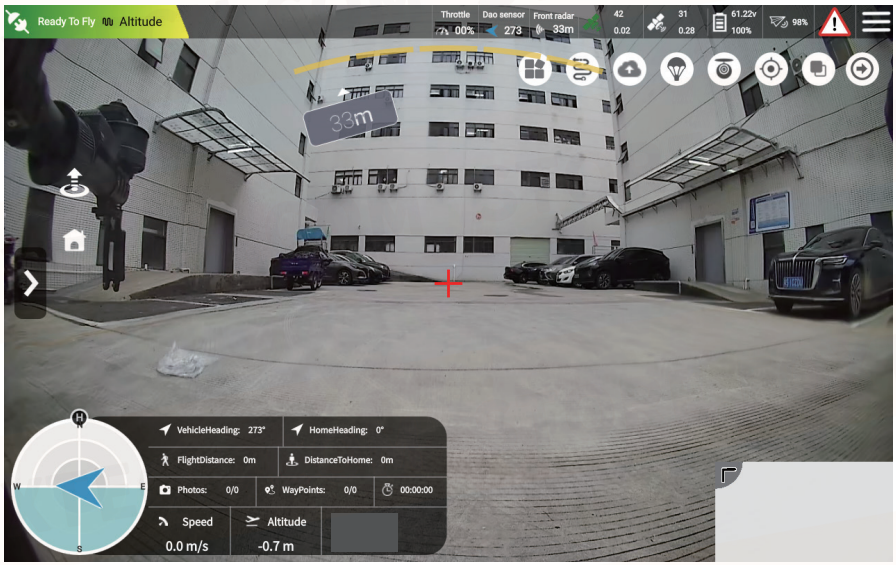




1. Click the top-right corner to enter settings.
2. Aircraft Settings - select Other Parameters - set obstacle avoidance distance.

Vertical route mode

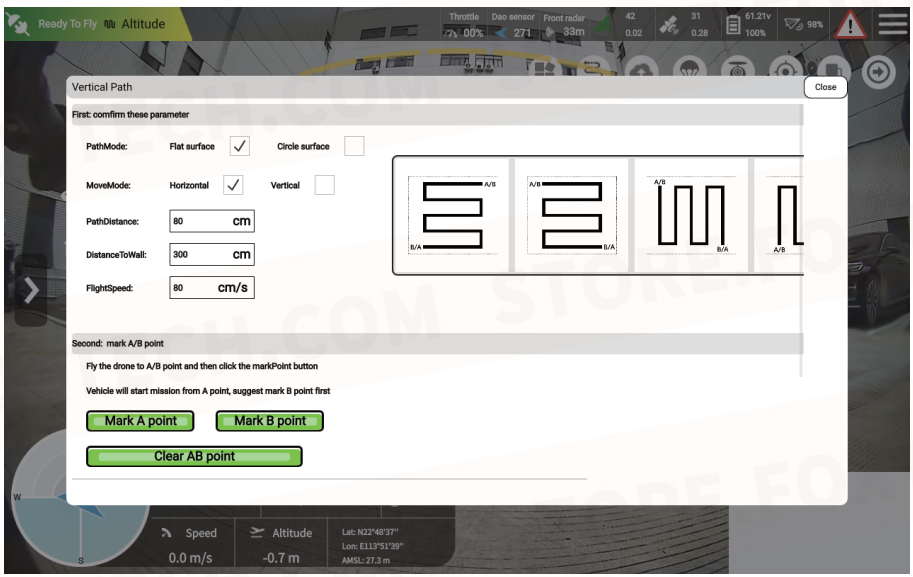
1. After takeoff, click the route icon as shown in the figure.



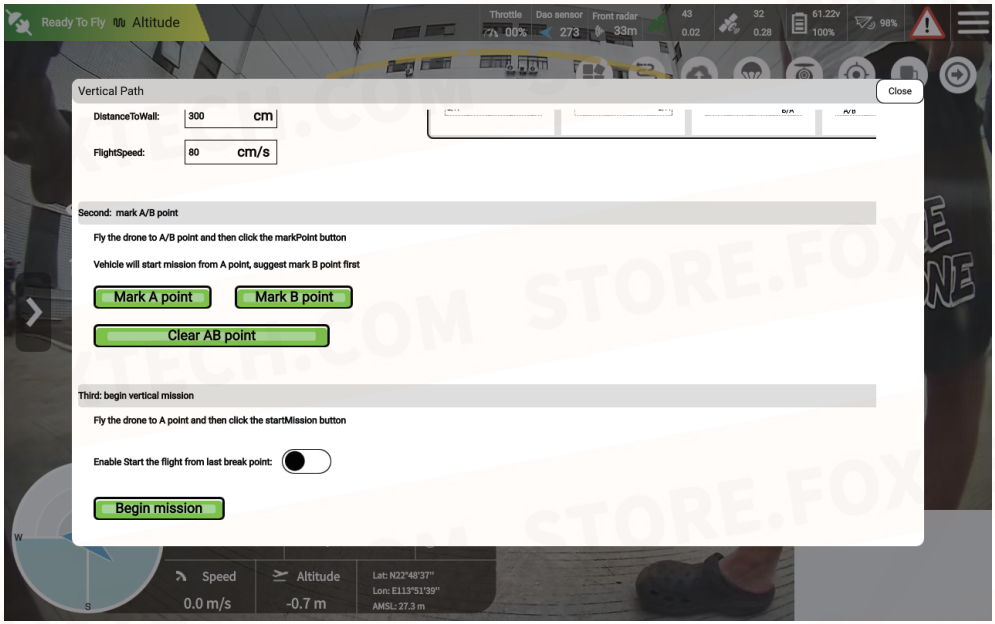
2. The aircraft can choose horizontal cleaning (Note: Please become familiar with the aircraft before using the horizontal route mode; the (circling mode) is not recommended for now).

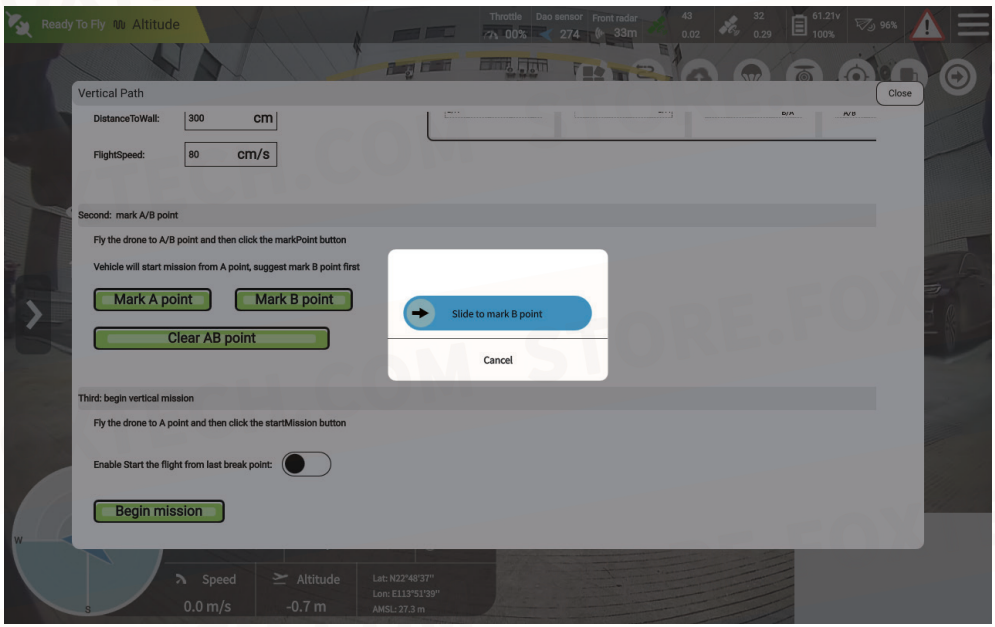
3. Horizontal mode is for vertical scenarios such as high-rise buildings and oil storage tanks;

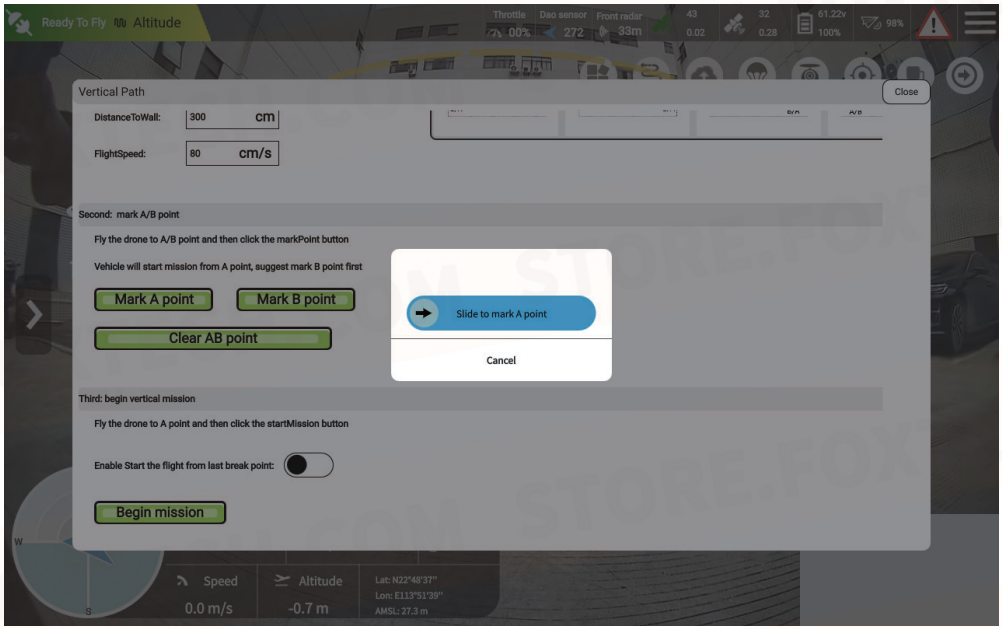
4. Route spacing, distance to the wall, and flight speed are all adjustable in real time, with the unit being centimeter. Please confirm that the modified values are correct! Click "Close" to make the settings take effect.

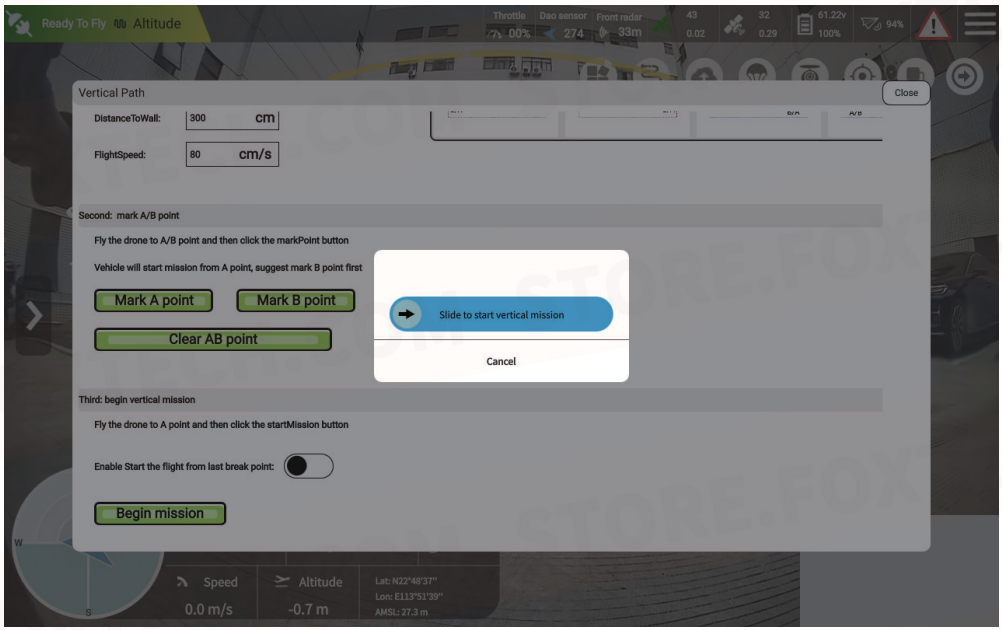


5. First, fly the aircraft to point B, tap the slider button to confirm, then mark point A. The aircraft will fly from point A to point B. After marking both points A and B, click to start the vertical route and slide to take off. During the flight, please turn on the "Breakpoint Resume" switch. In case of battery replacement or abnormal conditions of the aircraft, after re-taking off, click to start the route to resume from the breakpoint. If you need to restart the route, please turn off the "Breakpoint Resume" switch to prevent the aircraft from flying to the breakpoint.



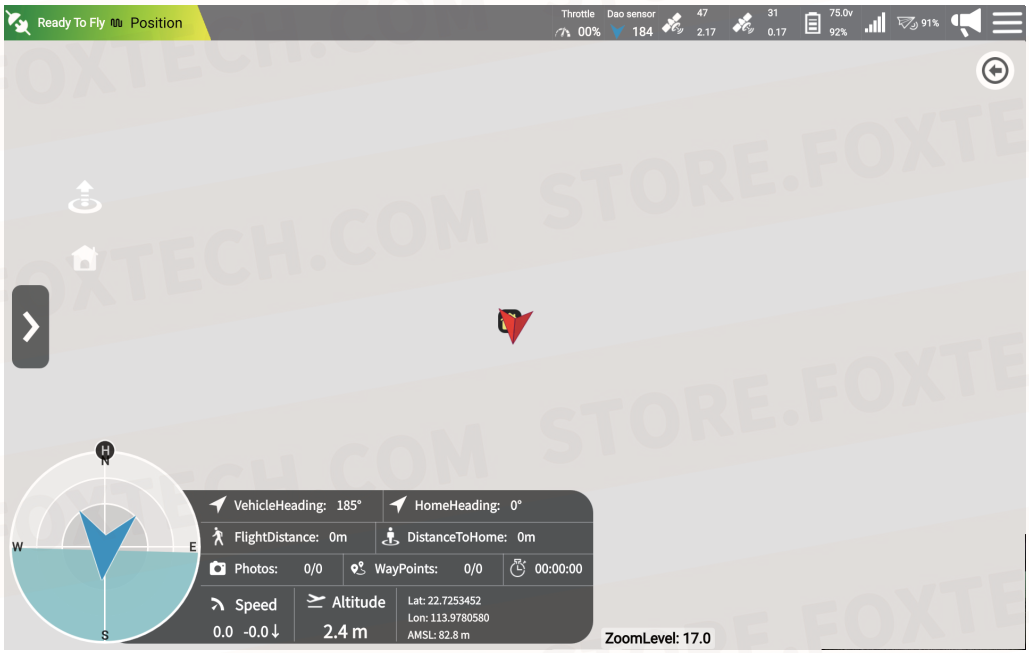



Ready To Fly
Altitude
Throttle
Dao sensor
Front radar
Vertical Path
Close
DistanceToWall:
300
cm
FlightSpeed:
80
cm/s
Second: mark A/B point
Fly the drone to A/B point and then click the markPoint button
Vehicle will start mission from A point, suggest mark B point first
Mark A point
Mark B point
Clear AB point
Slide to mark A point
Cancel
Third: begin vertical mission
Fly the drone to A point and then click the startMission button
Enable Start the flight from last break point:
Begin mission
Speed
0.0 m/s
Altitude
-0.7 m

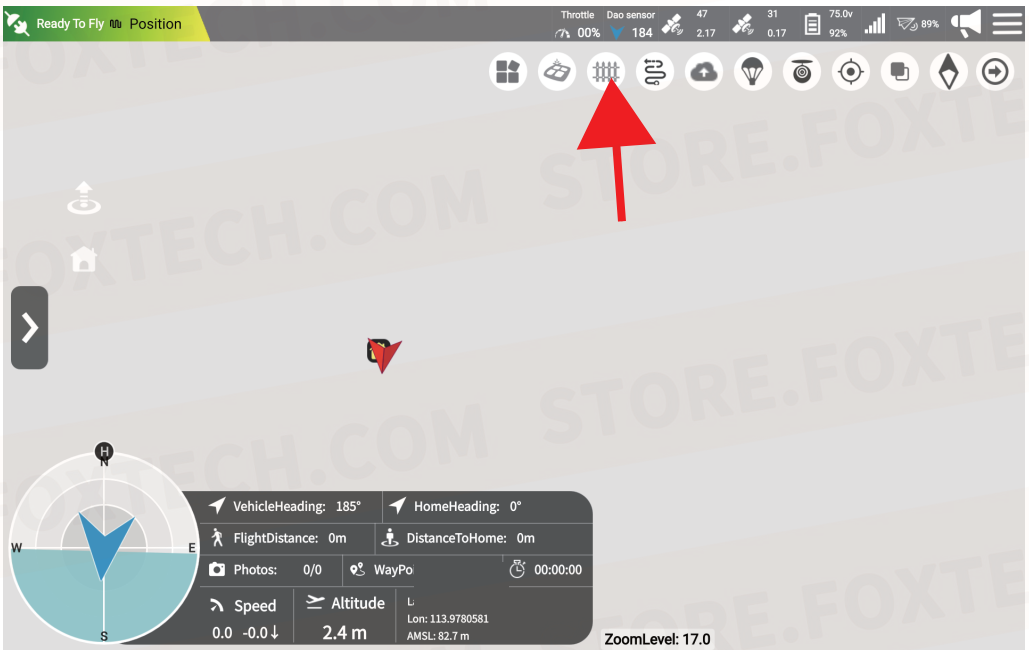

Ready To Fly
Altitude
Throttle
Dao sensor
Front radar
Vertical Path
Close
DistanceToWall:
300
cm
FlightSpeed:
80
cm/s
Second: mark A/B point
Fly the drone to A/B point and then click the markPoint button
Vehicle will start mission from A point, suggest mark B point first
Mark A point
Mark B point
Clear AB point
Slide to start vertical mission
Cancel
Third: begin vertical mission
Fly the drone to A point and then click the startMission button
Enable Start the flight from last break point:
Begin mission
Speed
0.0 m/s
Altitude
-0.7 m

Electronic Fence Setting Process

1.Click the shortcut in the upper right corner to open the taskbar.



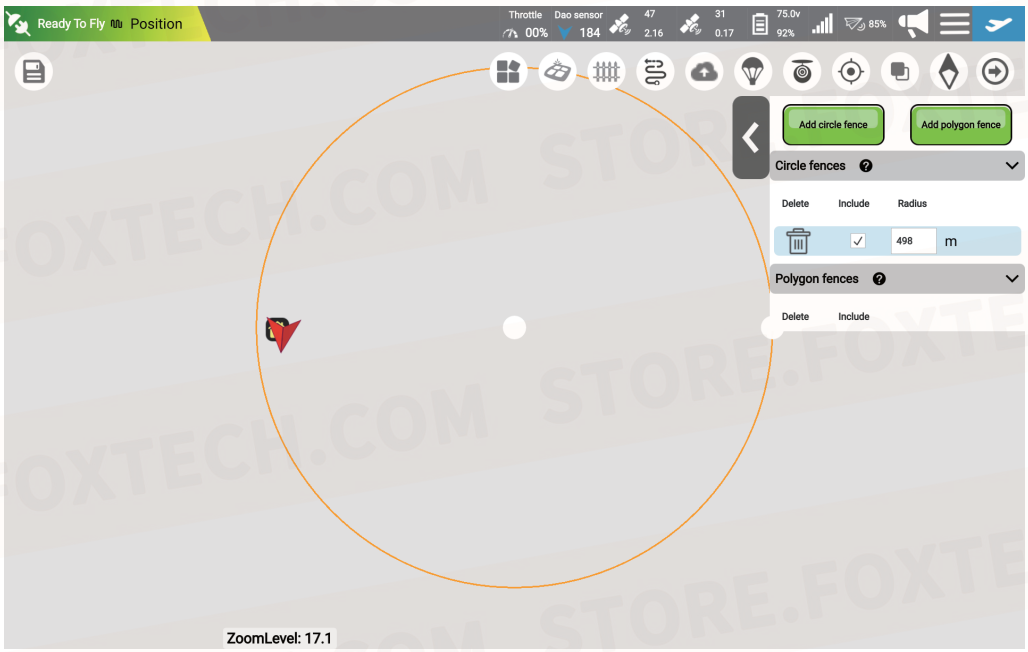
2.Click the electronic fence function module in the taskbar.



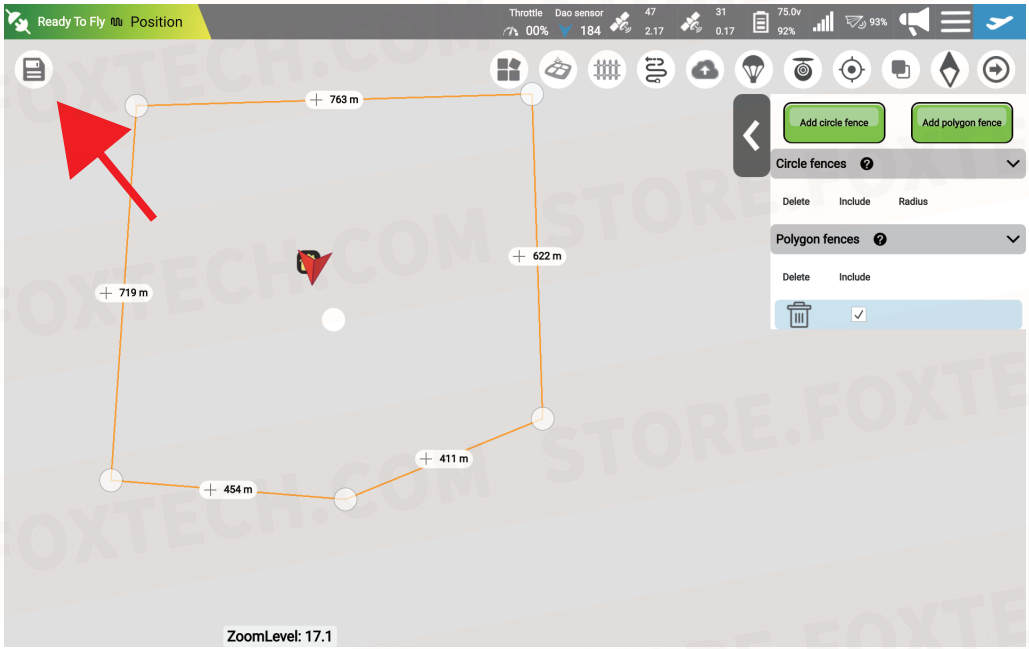
3.Click the position on the screen where you want to set the electronic fence.



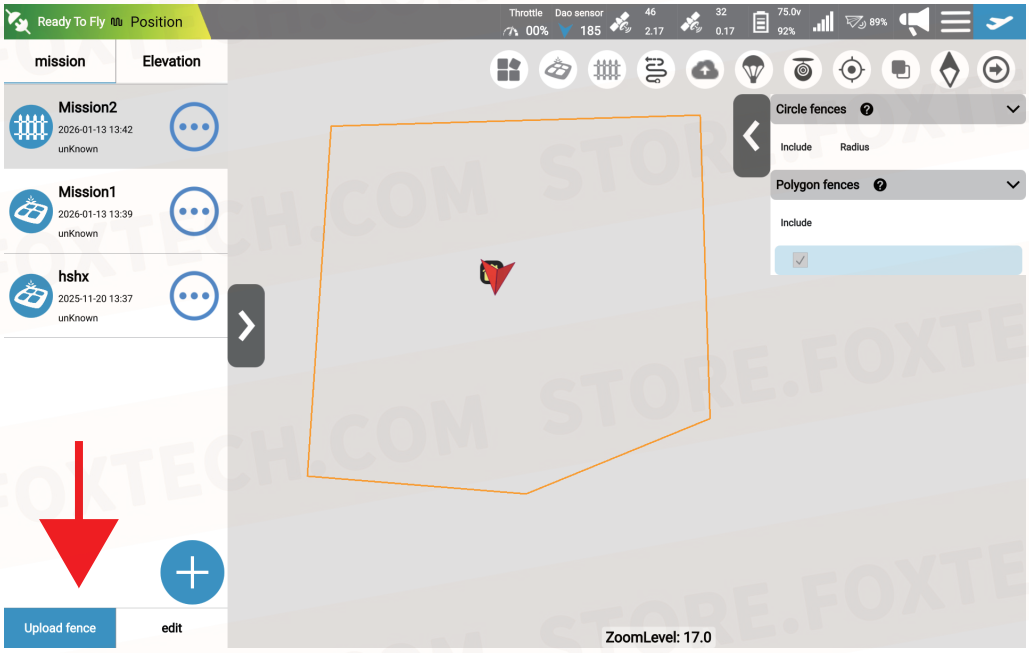
4.After the position is selected, an electronic fence setting pop-up window will appear on the right side of the screen, allowing you to choose to add a circular or polygonal electronic fence.



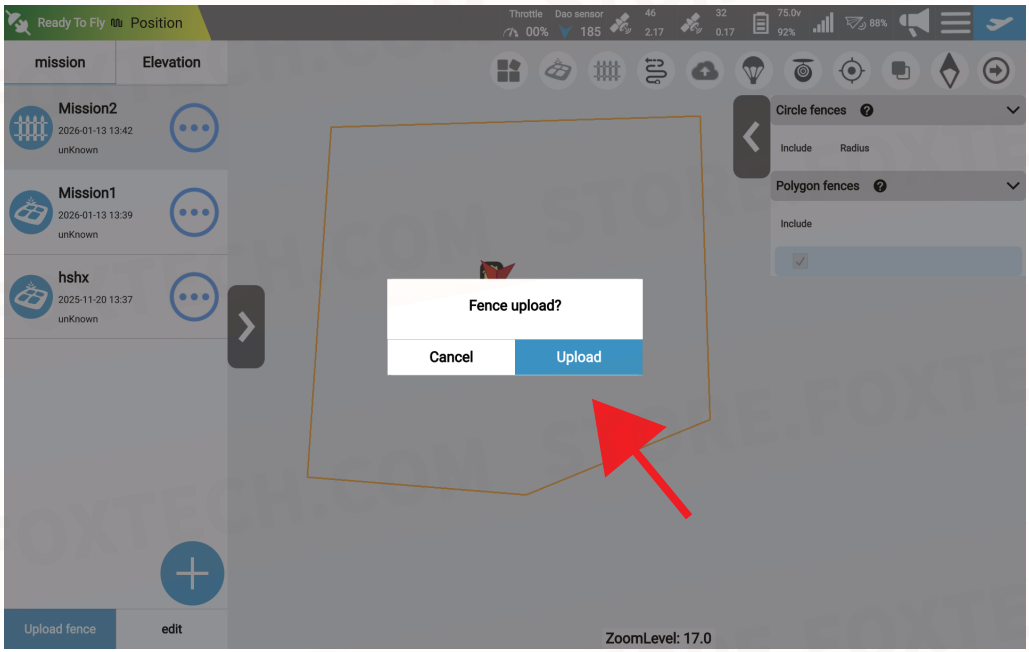
5.After the electronic fence is added, click the icon in the upper left corner to open the taskbar.



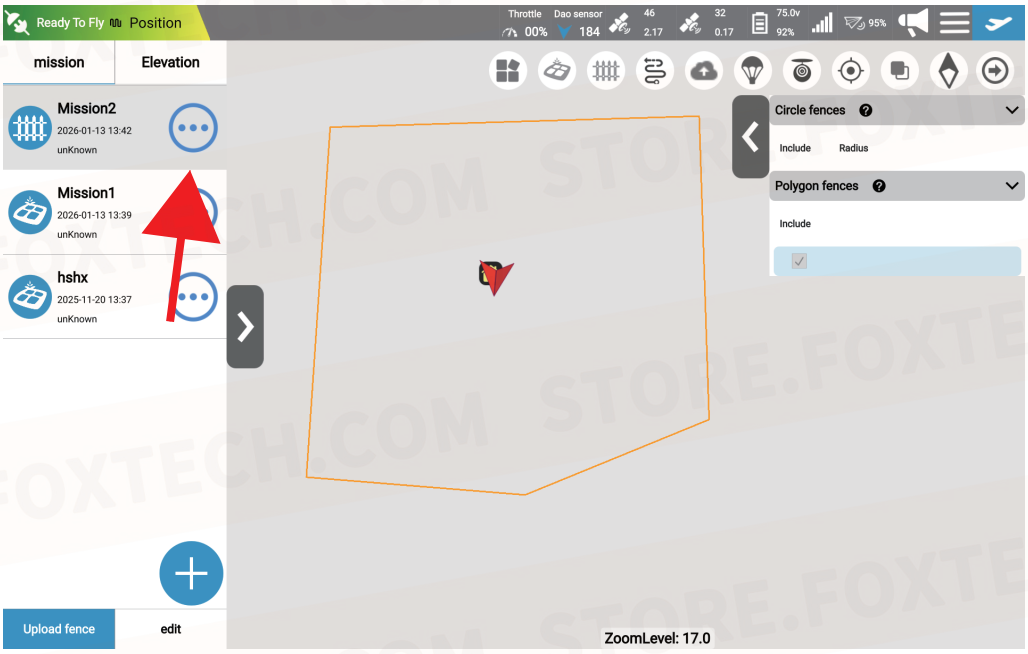
6.The set electronic fence will be displayed on the taskbar, and then click Upload Fence.



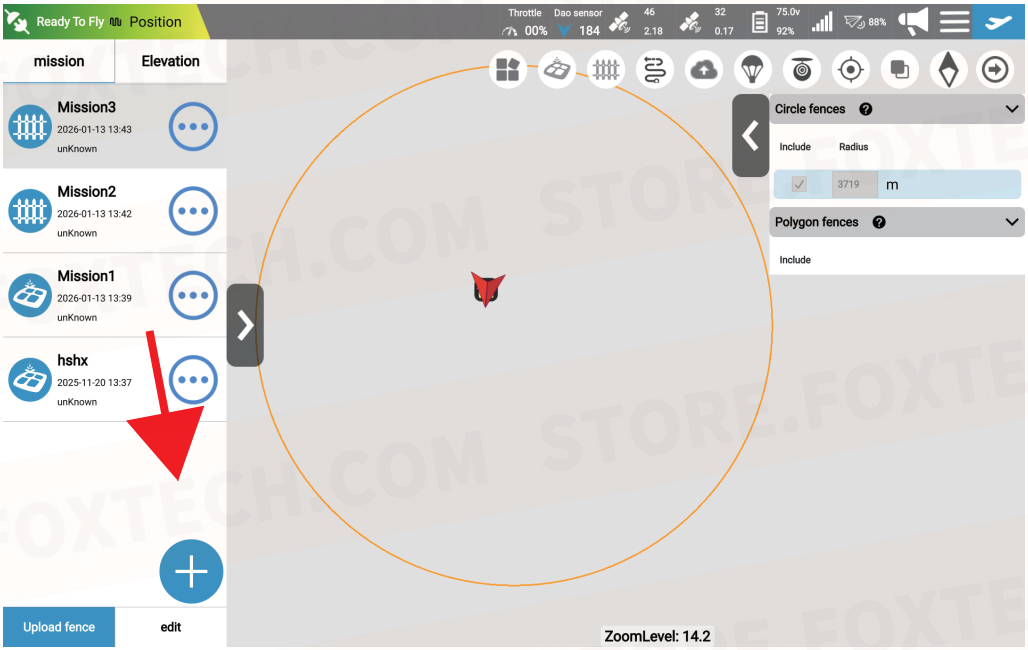
7.Click Confirm to upload the electronic fence.



8.Click to hide the taskbar, and you can choose to add, save, or delete the current task.



9、Click the plus sign to select the option of saving or deleting the fence command.

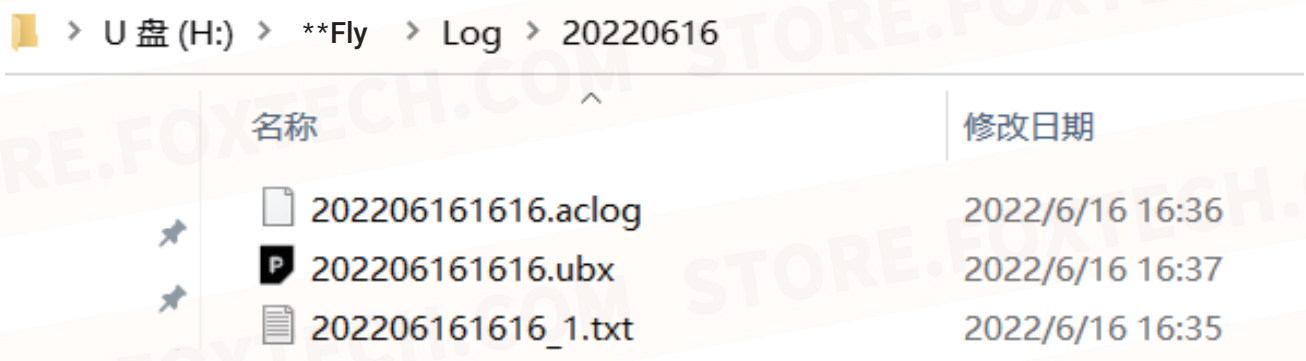


Power-off/breakpoint resume flight

- During task execution, if the task is interrupted due to reasons such as automatic return due to low battery or manual return, the aircraft will store the current waypoint information, and set this waypoint as the first task when powered on next time.
- If you operate the control sticks to intervene the drone during mission mode, the drone will exit mission mode and automatically record the longitude and latitude of the breakpoint. When re-entering mission mode, the aircraft will continue to execute the task from the breakpoint.

POS recording and PPK function

- POS recording will automatically use the POS information with the highest precision for recording.
- The POS format is compatible with DJI Phantom 4 RTK format, with the suffix .txt. The PPK recording file has the suffix .ubx. UBX files and POS files can be exported using the USB flash drive function.



202206161616_1.txt - 记事本

文件(F) 编辑(E) 格式(O) 查看(V) 帮助(H)

1	375994.500344	[2214]	0,N	0,E	0,V	23.04233285,Lat	113.38806551,Lon	44.061,Ellh	0.014000,	0.014000,	0.018000,	50,Q
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Safety settings

Protection Settings

Return-to-Home: A key safety measure. The aircraft autonomously returns to the home position from its current location and hovers to wait.

Remote Controller Loss-of-Control Protection: Despite advanced flight control, remote operation remains irreplaceable for safety. A comprehensive protection strategy is designed, with actions configurable via ground station software. Note that the "continue mission" option for remote loss-of-control protection only applies to "fully autonomous mode"; it is enabled by default and cannot be disabled in manual modes (altitude hold, position hold).

Data Link Protection: Critical for beyond-visual-line-of-sight (BVLOS) operations in industrial applications. Users can set it to disabled, return-to-home, or continue mission as needed. In manual mode, remote controller protection is activated by default. For BVLOS autonomous operations, set remote protection to "continue mission" and configure data link protection accordingly.

Low Voltage/Power Protection: Voltage protection with correctable values – users can calibrate flight controller-measured voltage via ground station if there's a discrepancy. For smart batteries, set single-cell voltage and tiered alarm power levels. Voltage and capacity protection work in parallel to ensure safety.

⚠ The default return position is the unlock position, i.e., the home position.

⚠ When the aircraft returns home, if it cannot receive the remote controller signal, it will perform an in-place landing.

Flight restrictions

Electronic Fence

The "cylindrical" electronic fence can be set to enabled, partially enabled, or disabled via the ground station. The parameter restrictions for the cylindrical area are as follows:

- Area restriction activation: When not enabled, there are no height or radius limits; when enabled, the set values shall prevail.
- Protection type: Height / Radius / Height + Radius.
- Protection action: Optional as hover or notification only, default is hover.
- Maximum height: The height limit for the restricted area. When reaching the protection height, the aircraft can no longer be controlled to climb further but can descend.
- Maximum radius: The radius of the circle centered at the position where the aircraft was unlocked with positioning.

☼ When the aircraft triggers the maximum flight radius, it will enter a hover. You can regain remote control by pulling down the throttle to descend more than 1 meter or switching the flight mode.

Precautions

a. Familiarize yourself with the flight environment and keep away from obstacles, crowds, etc. during flight;
b. Do not fly when you are in poor mental state;
c. Never fly after drinking alcohol or taking psychotropic drugs to avoid accidents caused by human factors;
d. Flying is prohibited in thunderstorms or strong winds to prevent damage to electronic equipment and flight risks;
e. It is recommended to wear sunglasses when flying manually in strong light;
f. Keep away from high-temperature heat sources to avoid damaging electronic components;
g. Beginners should fly under the guidance of experienced pilots;
h. Prepare necessary tools before flight, such as wrenches, screwdrivers, spare propellers, binoculars, walkie-talkies, sunglasses, medical first-aid kits, etc.;
i. Never take off or fly overloaded, so as not to damage the aircraft structure and cause flight risks;
j. Keep away from high-speed rotating propellers and never get close to them with your body;
k. Before flight, check whether all equipment of the aircraft is working normally. If key equipment is not working properly, do not force flight to avoid accidents;
l. When cleaning vertical surfaces, the aircraft should maintain a safe distance of more than 2.5 meters from the wall;
m. Warning lines must be set up during operation, and no non-staff are allowed to enter the warning area;
n. Operators must wear safety helmets;
o. Ensure that the RTK is in a fixed solution state before flying.

N100 Noise Test Results

Observation point	Hover	Flight1m/s
Ground observation point (directly below)	91.4dB(A)	95.7dB(A)
Side observation point (contour plane)	91.7dB(A)	94.1dB(A)

⚠The measurement environment is asphalt ground.

Prepare the aircraft

Deploy the arms



Deploy the arms in sequence



Tighten the arm rotating shaft clockwise



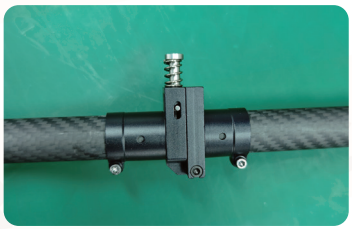
Ensure all four arms are fully deployed and tightened, then unfold all propellers.

Horizontal Nozzle Installation Process

Press the fixing pin, align and connect the components, then release the fixing pin.



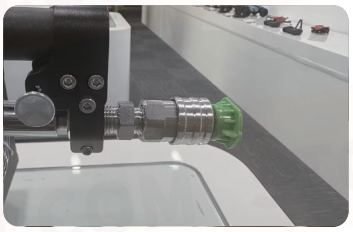




Assemble the fixed part at the tail of the spray pipe into the card slot at the bottom of the battery compartment, insert the fixing pin into the slot, and then install the spray head to be used.

Notes: This spray pipe device is only compatible with this flight platform. It is suitable for 100-meter water hoses and has a rated water pressure of 15 MPa. Exceeding the rated water pressure may easily cause failure of the water spray on-off function.

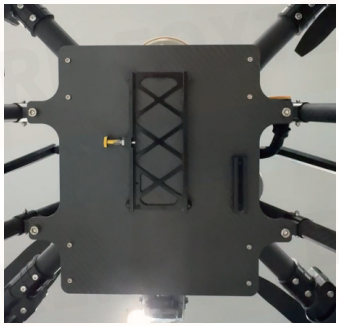




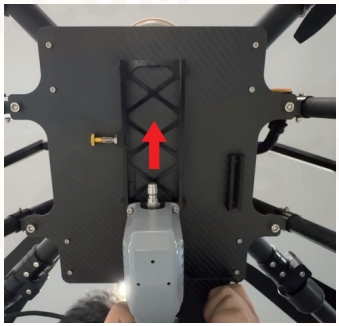
Insert the fixing pin into the slot.

Swing Nozzle Installation Process

Install the battery compartment with the vertical swing nozzle device on the landing gear and secure it with screws.



Pull out the fixing pin



Install the swing nozzle along the slide rail

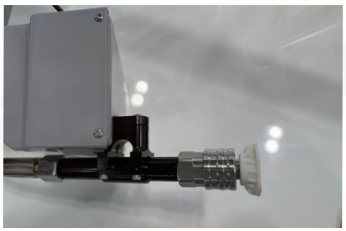


Insert the fixing pin into the slot

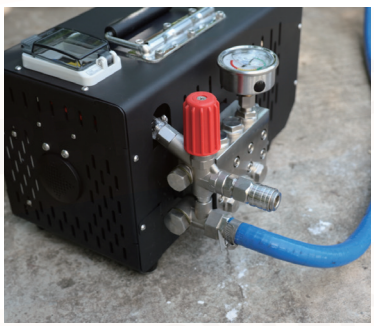
Connect the power cord of the swing motor and install the spray nozzle to be used.







Connection Process of Water Pump and Aircraft



Connect the water pump's water inlet to the suction pipe and fasten it securely with a hose clamp.



Connect the water pipe's inlet to the quick-connect fitting on the water pump's outlet.

Note: Before connecting the water pipe, turn on the water pump to expel the air from the inlet pipe, and then connect the water pipe.



Connect the water outlet of the pipe to the quick-connect port of the aircraft's water spraying device.

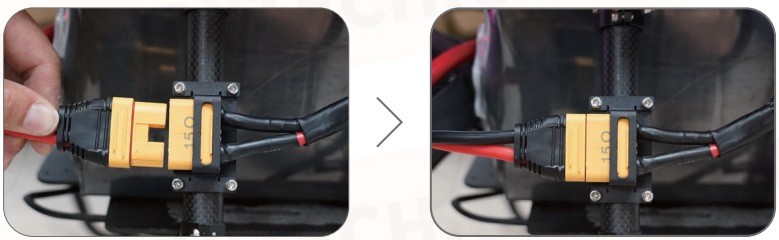
Matters for Using the Water Pump

a. The oil plug installed on the pump is designed for convenient transportation. Before use, it must be replaced with the operating oil plug included in the spare parts package.(Engine oil needs to be added by yourself for the overseas version.)
b. The oil model used for the pump is 4-stroke motorcycle oil SAE 15W/40.
c. For a new pump, after 20 hours of use, the pump crankcase must be cleaned. The specific method is as follows: Remove the oil drain screw to drain all the oil in the crankcase. After reinstalling the oil drain screw, add clean kerosene into the crankcase, with the oil amount slightly exceeding the center line of the oil sight glass. Let the pump run idle for 10-15 seconds, turn off the equipment, drain the kerosene completely, and then inject new oil.
d. There is a red mark on the oil sight glass of the crankcase. The injection amount of new oil should be exactly at the red mark on the oil sight glass. Check the oil level in the crankcase before each startup. If the oil is below the red mark, add oil until it slightly exceeds the red mark.
e. When the cumulative usage reaches 100 hours, replace the oil in the same way, and then replace the oil every 100 hours thereafter. This is very important for extending the service life of the pump.
f. If the water pump has difficulty drawing water, remove the water pipe at the water outlet of the pump, start the pump and let it run until the air is discharged, then reconnect the water pipe.
g. The water pump needs to use a 16A socket. A normal household socket with excessive current will cause a trip.
h.Only non-corrosive, particle-free cleaning agents with a viscosity not exceeding 45 mm/s may be used. Do not use cleaning agents containing chlorides or any bleaching agents, nor acidic or corrosive disinfectants—such substances will cause irreversible damage to the machine. The use of flammable or corrosive liquids such as alcohol, gasoline, or salt as cleaning media is strictly prohibited.
i.The machine must be supplied with a continuous water flow during operation.Running the machine without water will cause damage to it.

Note: Do not run the water pump dry without water. Ensure that the pipeline is connected to the water tank or pool before each start-up.
If the pump runs but fails to discharge water during the first use, it is recommended to remove the water pipe from the outlet first, then turn on the pump and run it for 10 seconds until water discharges normally, and then reconnect the outlet pipe. (Air evacuation)

Connect the battery

Match the power ports and align the "+" terminals for port connection.



How to Use the Charger

Press and hold the "Power" button to turn on the device.



Key Functions

a. Press and hold the "Start/Pause" button to control the charger's charging and pausing functions.
b. The "Current" button can adjust the charging current. (41A is recommended)
c. The "Channel" button can display the wire voltage information of each channel.
d. The "Mode" button can switch between charging mode and storage mode.



Charging

a. First insert the balance cable, then the power cable, and press and hold the "On/Pause" button to start charging.
b. If the battery will not be used for a long time, you can use the storage mode to discharge it until it meets the safe storage conditions before storing it for an extended period. However, the voltage needs to be re-stored every three months. When the battery is needed urgently, you must press the pause button first before unplugging the battery for use.



Flight

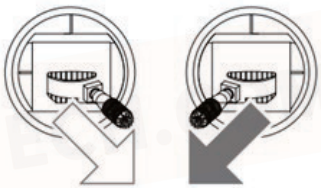
Pre-flight Inspection

a. Ensure that the remote controller and the aircraft battery have sufficient power, and that the aircraft battery is properly installed and locked.
b. Ensure that the propellers are firmly installed without damage or deformation, the motors and propellers are clean and free of foreign objects, the propellers and arms are fully unfolded, and the arm sleeves are screwed tightly.
c. Ensure that the remote controller antenna is unfolded.
d. Place the aircraft in an outdoor flat and open area, making sure there are no obstacles, buildings, trees, etc. around. The pilot should stand 5 meters away from the aircraft and face the tail of the aircraft.
e. Enter the handheld ground station flight interface and check the relevant parameters of the aircraft according to the "Pre-flight Check" list.
f. If multiple aircraft are operating at the same time, divide the airspace for flight to avoid mid-air collisions and serious safety accidents.

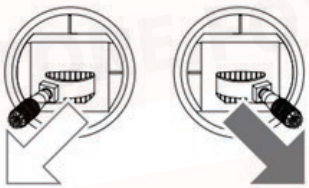
Power On and Unlock

Start the motor

For American or Japanese hand configuration, unlock with an inward-eight gesture; for Chinese hand configuration, unlock with an outward-eight gesture. Once the motor starts rotating, release the joystick immediately.



American hand and Japanese hand



Chinese hand

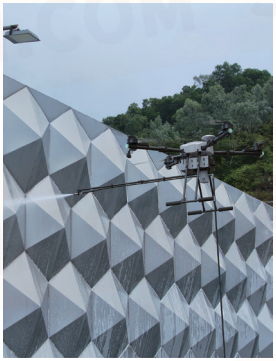
Stop the motor

After the motor starts rotating, the way to stop it is as follows:
After the aircraft lands, push the throttle lever to the lowest position and hold it for 8 seconds, then the motor will stop.



Introduction to Application - suitable Scenarios of N100





wall surface



Urban glass

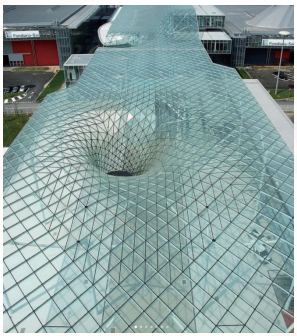


Wind power tower





Venue buildings



Sunlight glass roof



Photovoltaic panel

Precautions for Cleaning Safety Inspection

1. Before using the vertical route, confirm that the cleaned wall surface is in an environment where the unevenness (height difference) does not exceed 30 centimeters.
2. Confirm the safety of the cleaning surface environment: there are no trees or other facilities blocking the flight area, and there is no possibility of water pipes getting stuck in the gaps of photovoltaic panels.
3. Confirm the safety of the ground environment: check whether the ground is suitable for takeoff and landing, whether there are vehicles parked within a 10-meter range, whether the ground is easily damaged, and whether the cleaning liquid will affect the surrounding environment.
4. Confirm whether there are large magnetic field interference sources nearby.
5. If any of the above situations that may affect safe flight are found, they should be eliminated immediately.

Technical Parameters

Aircraft Parameters	
Water Spray Flow Rate	15 L/min
Water Pipe Length	100 m
Maximum Flight Radius	15 km
Distance Between Nozzle and Cleaning Object	2-3 m (Adjust the distance according to the operating environment)
Battery	14S 41000mAh
Nozzle Length	1710 mm
Maximum Horizontal Flight Speed	15 m / s
Altitude Hold Mode Speed	15 m / s
Position Hold Mode Speed	2 m / s
Position Obstacle Avoidance Mode Speed	5 m / s
Operating Temperature	-10 °C - 40 °C
Operating Humidity	0-90%
Maximum Withstandable Wind Speed	12 m/s
Rated Water Pressure	15MPa
Maximum Water Pressure	20 MPa(Instantaneous)
Light Cleaning	1000 m^2/h
Deep Cleaning	500 m^2/h
Charging Time Required	40 min
Empty Weight	13 kg（Excluding Battery）21.5 kg（Including Battery）
Weight of Horizontal Automatic Spraying Device	1.75 kg
Weight of Vertical Automatic Spraying Device	1.7 5kg
Maximum Takeoff Weight	≤24.9 kg
Maximum Wheelbase	1440 mm
Overall Dimensions	1945 mm*1945 mm*730 mm(Arms Deployed, Propellers Unfolded)
Overall Dimensions	1150 mm*1150 mm*730 mm(Arms Deployed, Propellers Folded)
Folded Dimensions	700 mm*650 mm*730 mm
Hovering Accuracy	Vertical Direction ±0.1 m Horizontal Direction ±0.1 m
RTK/GNSS Operating Frequency Band	GPS: L1C/A L2C L5 L2P(Y); GLONASS:L1OF L2OF Beidou:B1I B2I B3I B1C B2a B2b; Galileo: E1B/C E5b E1 E5a E6; QZSS: L1C/A L1S L2C; SBAS: L1C/A L1 L2 L5 L6;

Smart Remote Controller	
Operating Frequency	2.4 G and 5.8 G
Remote Control Distance	3-40 km
Flight Time	8 h

Display Device	7-inch 1080P HD large screen with 1600-nit high-brightness display
Weight	1.44 kg
Battery Capacity and Type	13400 mAh
Dimensions	274 x 190 x 100 mm
Operating Ambient Temperature	-20 ℃ 至 +55 ℃
Waterproof Rating	IP54

Gimbal

Pixel	2 Megapixels, 1/2.7-inch Sony CMOS
Lens	Horizontal 160°
Controllable Pitch Rotation Range	Between 90° and +25°
Waterproof Rating	IP65

Power System - Motor

Stator Dimensions	100x15 mm
Motor KV Rating	100 KV
Motor Power	1300 W

Power System - Propeller

Diameter	36 inches
Number of Rotors	4 Propellers
Recommended Battery	14S LiPo

Flight Battery

Model	41000 mAh-14S Semi-solid-state Battery
Weight	8.5 kg
Capacity	41000 mah
Voltage	62.3 V

Charger

Overall Dimensions	300*180*215 mm
Overall Weight	6 kg
Input Voltage	100V- 240V
Output Voltage	6-14 s
Rated Power	AC110V:Max 1200W AC220V: Max 3200W
Protection Function	Input Protection: Overcurrent; Output Protection: Overvoltage, Undervoltage, Short Circuit, Overheating, Reverse Polarity
Operating Ambient Temperature	0-40 ℃