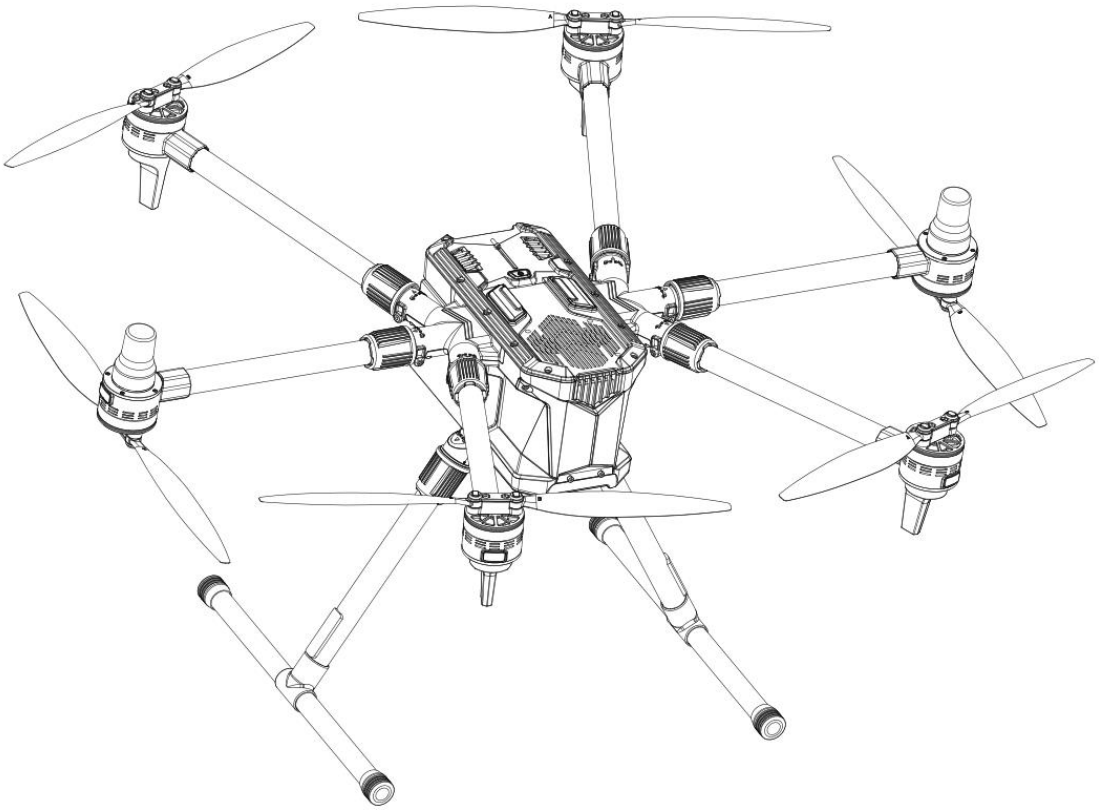


H850

User Manual

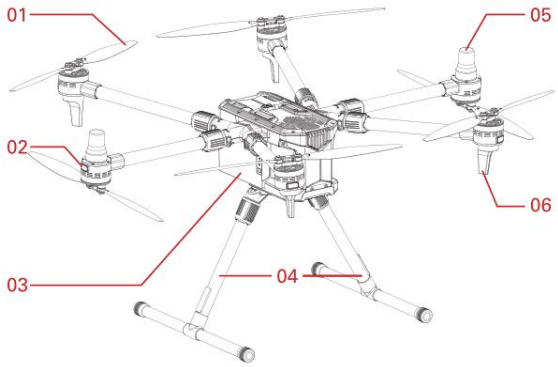
YUNEEC

catalogue

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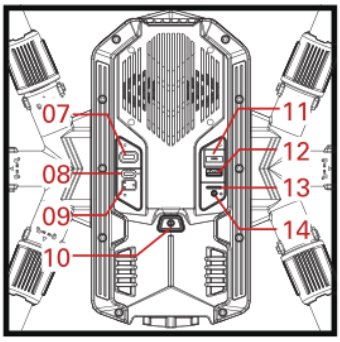
Overview

H850 Drone

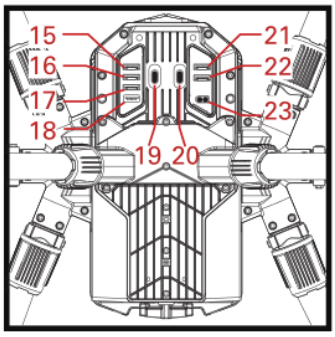


01 Propeller
02 LED Status Indicator
03 Battery Chamber
04 Landing Gear
05 RTK Antennas
06 OFDM Antennas
07 Debug/Custom Type-C USB Port
08 Gimbal/Custom Type-C USB Port
09 Binding Button and LED Indicator
10 Power Button
11 GMAC Port
12 Type-A USB 3.0 Port
13 Micro SD Slot
14 AUX out Port
15 PWM & GPIO Port
16 UART Port
17 GMAC Port
18 Type-A USB 3.0 Port
19 Gimbal/Custom Type-C USB Port
20 Gimbal/Custom Type-C USB Port
21 PWM & GPIO Port
22 PWM & UART Port
23 XT30 Power Output Port (19.8V-26.4V)

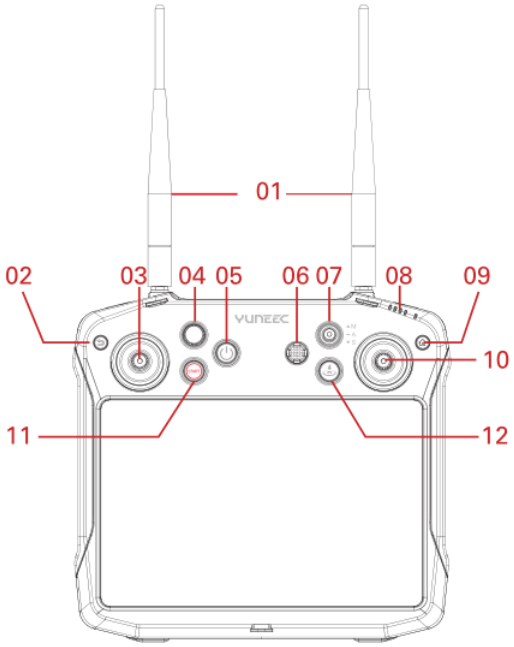
Top view

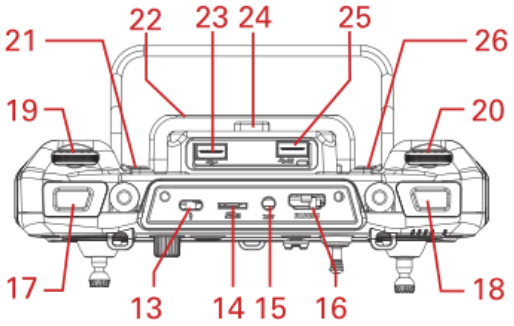


Bottom view



T-One Transmitter



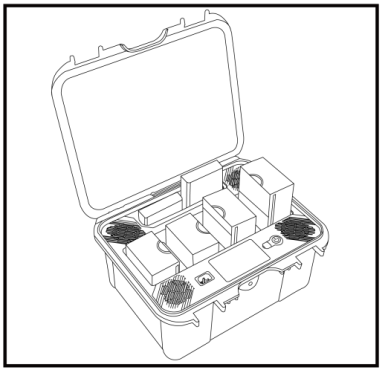


01 Antennas
02 Previous Button
03 Left Control Stick
04 Customizable Knob
05 Power Button
06 5D Button
07 Flight Mode Switch
08 Battery Level LEDs
09 Home Page Button
10 Right Control Stick
11 Motor Start/Stop Button
12 Return to Launch Button
13 Type C USB Charging Port
14 Micro SD Card Slot
15 Headphone Port
16 HDMI Port
17 Video Record Button
18 Shutter Button
19 Gimbal Tilt Control Knob
20 Gimbal Pan Control Knob
21 Hot Key/Gimbal Back to Center (Double click)
22 Battery
23 USB 2.0 Port
24 Battery Release Button
25 USB 3.0 Port
26 Customizable Button

Charging the Batteries

Charging the Drone Battery

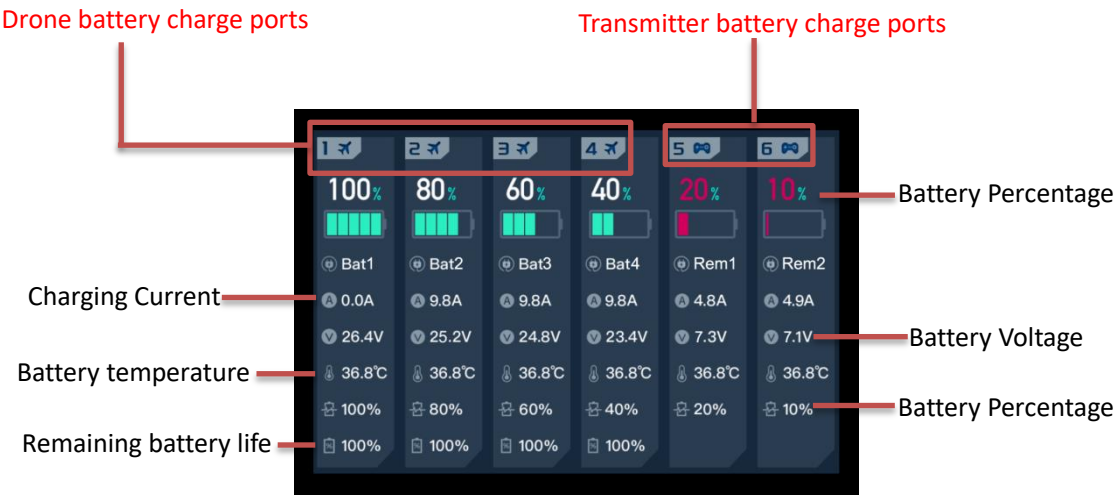
Connect the Charge box to a 100-240V AC outlet. Then press the power button to switch on the charger.



Plug the drone or transmitter battery into the charger port as illustrated.

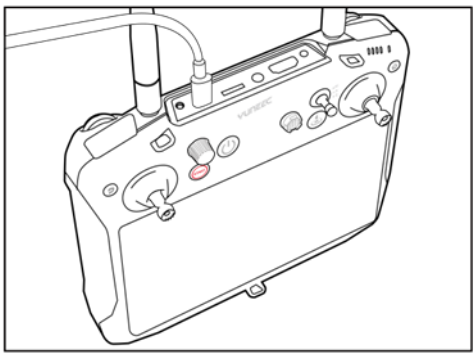
The batteries will charge automatically.

Charge Box Screen Overview



Charging the T-One Battery via USB

The T-One battery can be charged using the Type C USB cable. Insert the connector into the Type C USB Charging Port, as shown below.

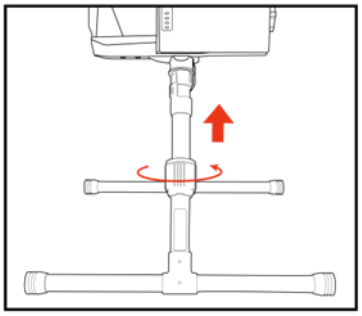


To check the charge status when the transmitter is shut down, please short press the power button on the T-One transmitter. The Battery Icon will be shown on the screen. Or operator the remaining power can be roughly estimated by the LED indicator on the transmitter.

Notice: The batteries are consumable materials and have to be replaced after they shown weakness.

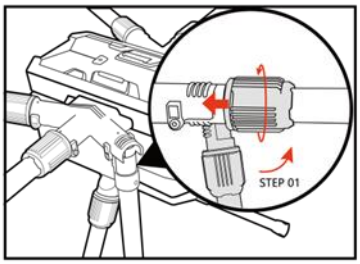
Assembly

Assembling the Landing Gear



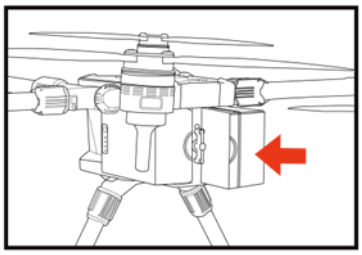
Insert the landing gear leg tube into the mount.
Secure the landing gear leg by fasten the nut.
Install another landing gear leg using the same method.

Assembling the Motor Arms



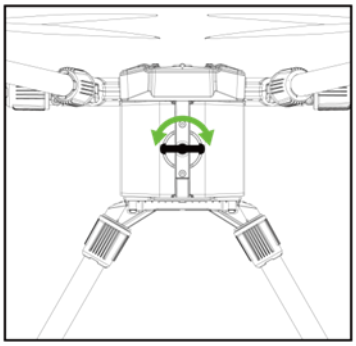
Unfold the motor arms upward and secure them using the nut.

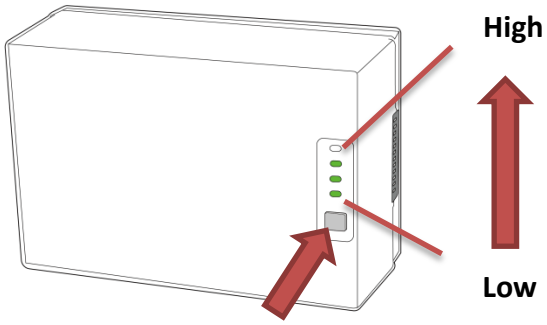
Installing the Flight Batteries



Select 2pcs of fully charged Flight Battery and insert the batteries into the Drone.
Then lock the batteries to secure.

TIPS: Short click the button on the battery to roughly estimate the power level.





Payload Introduction

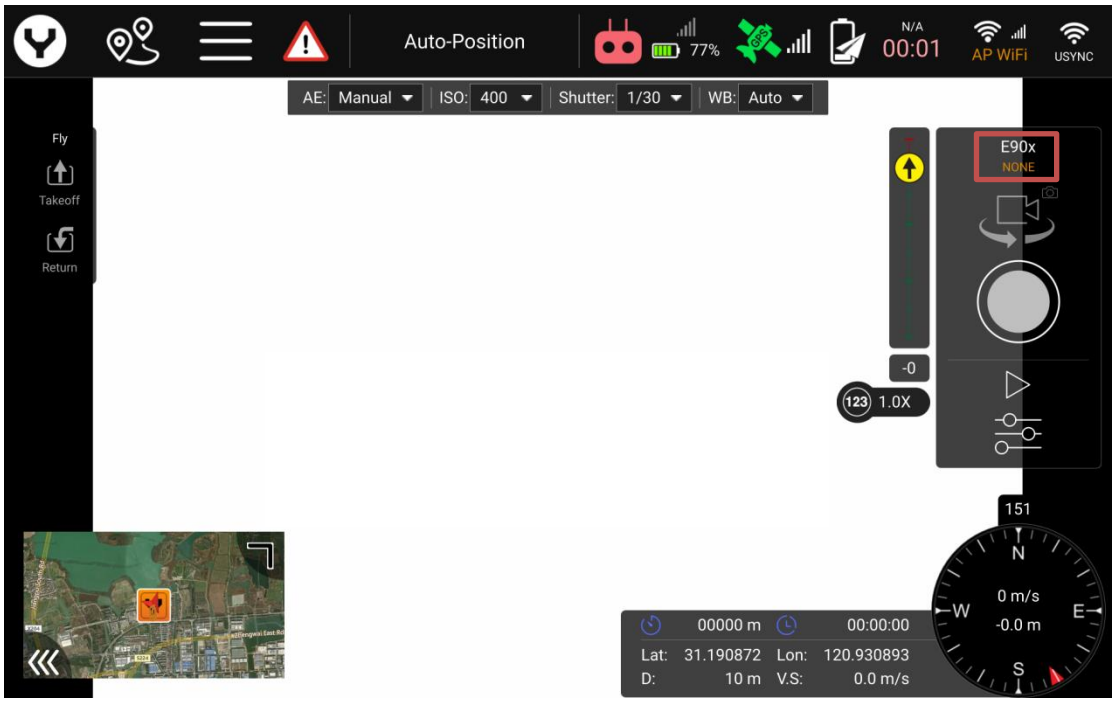
Various payload types can be attached to the H850 drone for different purposes. The following chapter will introduce some typical payloads of choice.

Camera

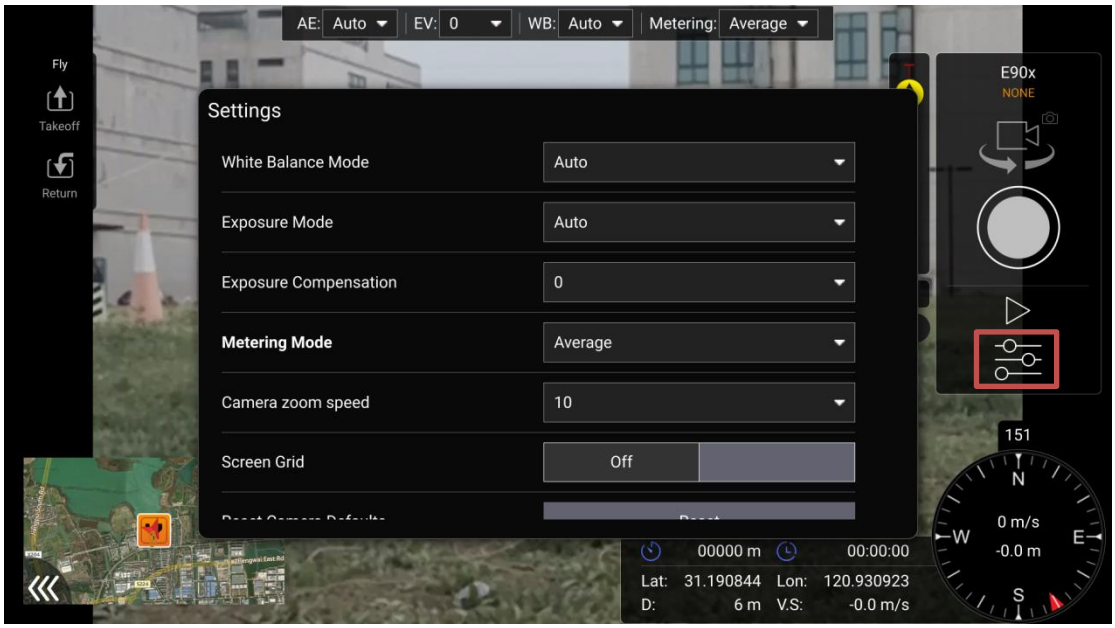
E90X

Yuneec's E90X camera is a one-inch CMOS sensor to capture high-quality images with 4k 10 bit in-camera colour processing. Images may be captured in JPEG or DNG format, or simultaneous capture of both formats. Video may be recorded in UHD, 2K, or HD resolutions at a variety of frame rates.

When the Gimbal was connected successfully the gimbal type will be shown correctly on the screen.



Tap the Camera Setting Button to set more photographic parameters.

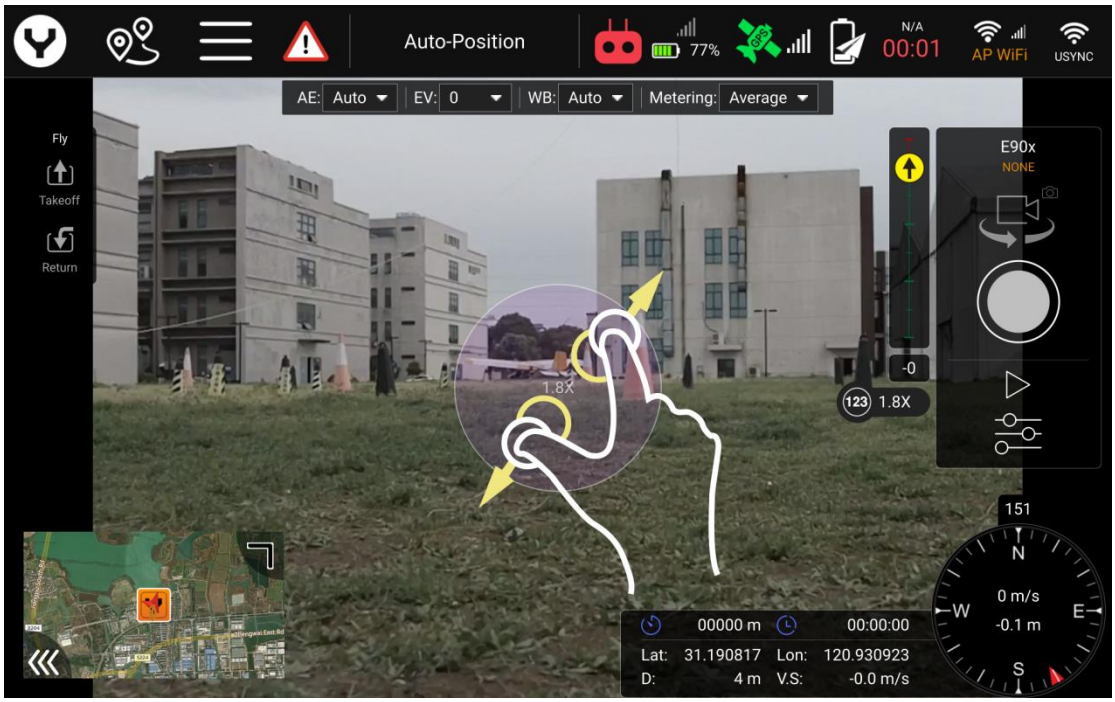


Notice: For a more detailed introduction please refer to the corresponding Gimbal Operator Manual.

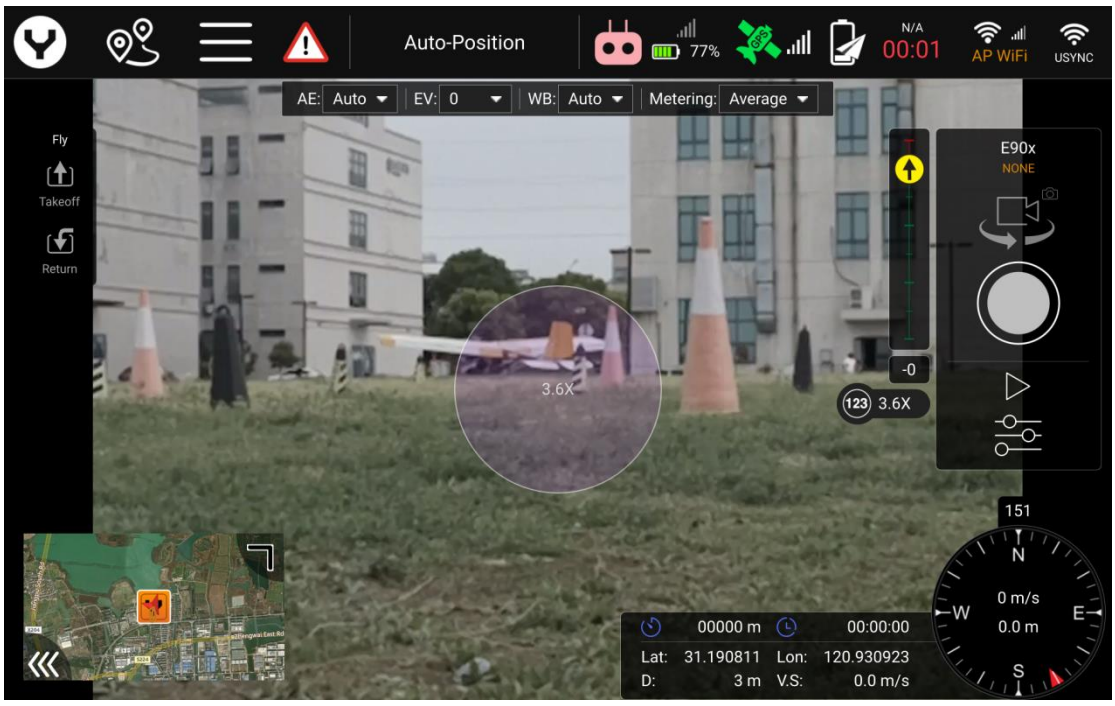
Digital Zoom function for E90x

Yuneec camera E90x is capable of digital zoom. A digital zoom is an ideal tool for many types of inspection, or getting a closer view of objects further than the camera is able to originally see. Digital zoom and optical zoom differ, as optical zoom uses the placement of lenses to generate a closer image whereas digital zoom enlarges pixels.

When using digital zoom, some loss of fine detail is normal and expected.



Pinch the screen to zoom, just as with any other mobile device. Depending on distance, there may be a small amount of latency in seeing the image zoom.



Thermal imaging camera

ETx/E10Tx/E10Tvx/E20Tvx

These series are an innovative combination of 3-axis gimbals and thermal imaging cameras. While the thermal imaging camera selectively measures the temperature in the image, enabling it to display relative temperature differences, the low-light RGB camera has a 20 times higher sensitivity than the human eye. It can still take excellent shots even in low light conditions. Both images are streamed live on the remote control at the same time; and can be viewed separately as a picture-in-picture or as an overlay.

When the gimbal is connected successfully, its type will be shown correctly on the screen; also tap the Camera Setting Button to set more photographic parameters both for thermal imaging and visible light camera.

Notice: Please refer to the corresponding Gimbal Operator Manual for a more detailed introduction Operator.

Variable-focus camera

E30Zx

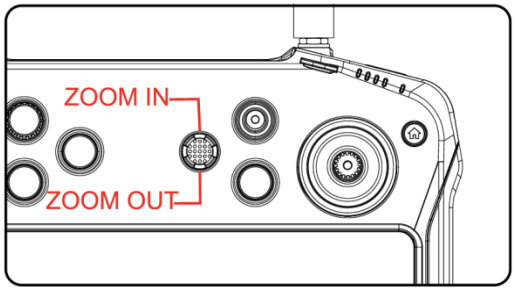
The E30Zx is a powerful 30x zoom drone camera and makes it easy to zoom in on distant objects to gain increased details. The compact camera housing contains a 1/2.8" CMOS sensor, which provides high-quality and stabilised recordings even in low light conditions. In addition to the 30x optical zoom, the camera offers a 6x digital zoom for flexible application options such as inspection, search and rescue operations, monitoring, people search, and much more.

As same as the E90x gimbal, when the Gimbal is connected successfully, the gimbal type will be shown correctly on the screen; also tap the Camera Setting Button to set more photographic parameters.

Zoom function for E30Zx

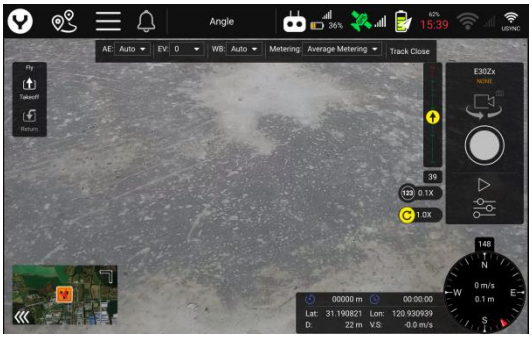
Zoom in

Push the 5D button ahead to increase the optical zoom. When increasing to 30X optical zoom, if push the 5D button again, the camera begins to increase digital zoom. The digital zoom can increase to 6X at the most.



Zoom out

Pull the 5D button backwards to decrease the optical zoom. When decreasing to 1X digital zoom, if pull the 5D button again, the camera begins to decrease the optical zoom.



One Key to 1x Image

Tap the [1.0X] on the screen so you can return the camera to 1X zoom.

Notice: For a more detailed introduction please refer to the corresponding Gimbal Operator Manual.

Other payloads

Yuneec has several different camera/payload devices for use on the H850.
Get more information on www.yuneec.com.

SD CARD SELECTION

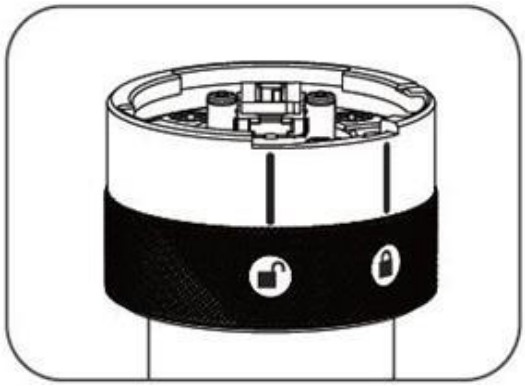
Yuneec recommends using a SDXC Class 10 UHS-3 micro SD card for recording 4k video. Using the UHS-3 card allows the camera buffer to record to the micro SD card faster resulting in fewer buffers overrun.

Attaching / Detaching the gimbals

Attaching

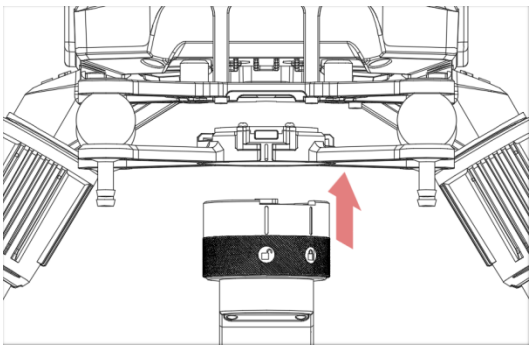
Step 1

Find the Unlocked Mark etched on the Gimbal Yaw Motor and align the Mark Line with the front of the damping plate.



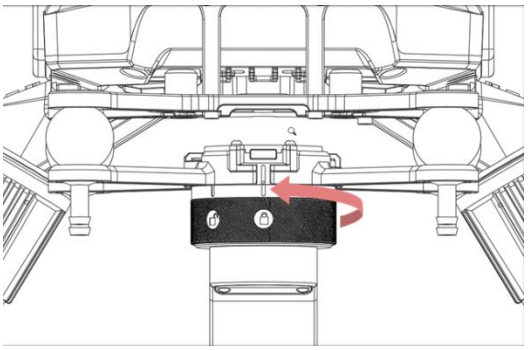
Step 2

Insert the Gimbal Yaw Motor into the damping plate and rotate it counterclockwise until the Mark Line of the Locked Mark aligns with the front of the damping plate to secure the gimbal.



Step 3

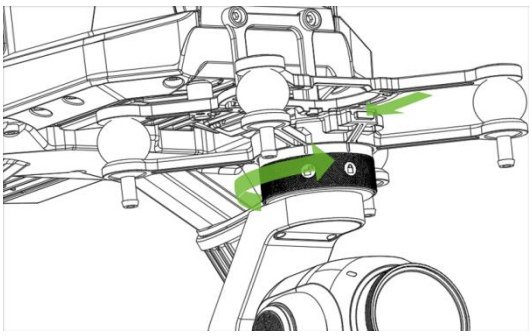
Remove the lens protector



Detaching

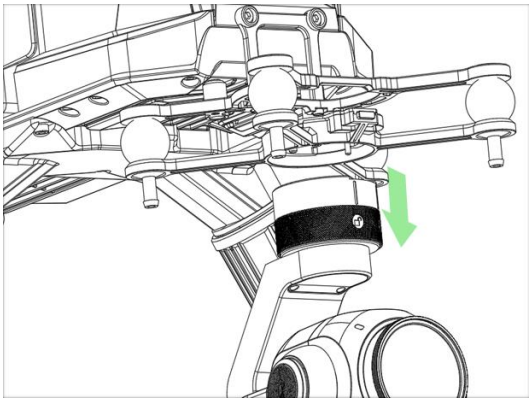
Step 1

Hold the gimbal release button and rotate the Gimbal Yaw Motor clockwise until the Mark Line of the Unlocked Mark aligns with the front of the damping plate.



Step 2

Pull the gimbal out from the damping plate.



Notice: The X-connector series gimbal needn't bind separately. If the re-binding is needed please refer to the corresponding section in the OFDM Module binding chapter.

Per-Flight Preparation

Power ON/OFF

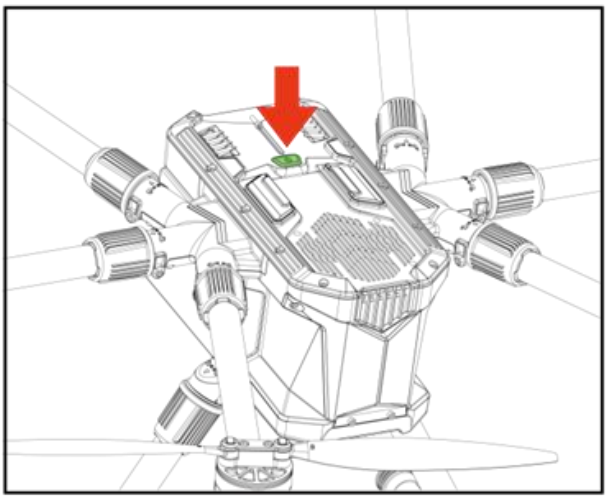
NOTICE: Please make sure all firmware is the latest version. Firmware can be updated via the OTA update function, and the operator manual can be downloaded from the website: www.yuneec.com. The quick start guide does not replace the operator manual.

Press and hold the Power Button on the T-One to power On/Off.

Press and hold the Power button on H850 to power On/Off.

Notice: Always Power on the T-One before powering on the UAS.





Calibrating the Compass

In the following situations recalibrating the Compass is suggested for flight safety:

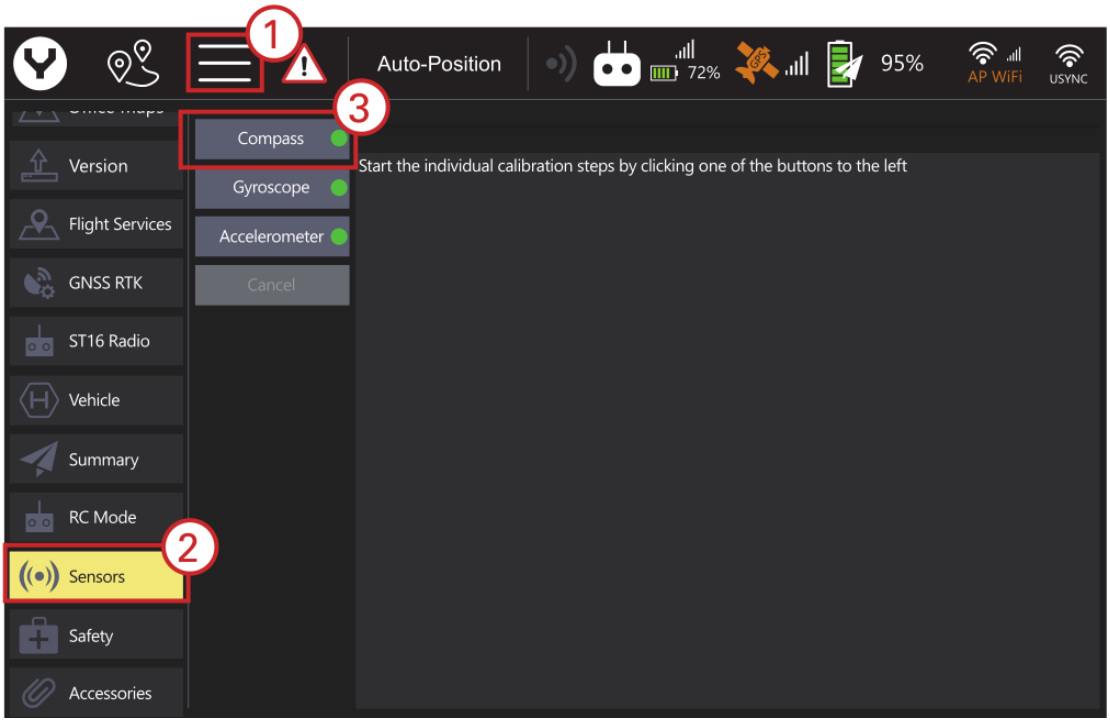
1. Before the first flight when you take the drone out of the box;
2. When feeling the drone is drifting after a long-distance flight;
3. The drone alarm advises a compass warning.
4. There are metal materials beside the drone during storage and transport.

Calibrate steps

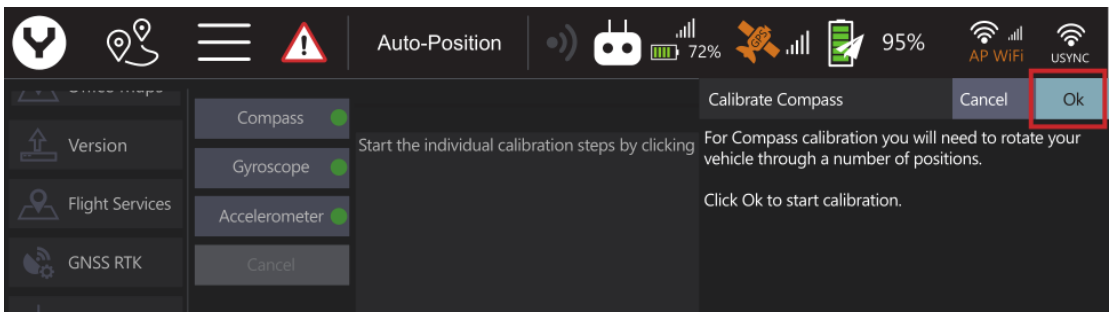
Notice: Do not calibrate the compass in parking garages, close to a building or near roads with a metal core. For optimum performance, only calibrate the drone in open spaces, far away from power lines and other metal structures or concrete buildings

Be sure to perform the compass calibration procedure at least 11 feet away from the nearest cell phone or other electronic devices to ensure proper calibration.

Step 1: After the drone and T-One Transmitter are connected, place the drone on a horizontal and stable surface, tap the setting icon, then tap the compass under the Sensors Item.



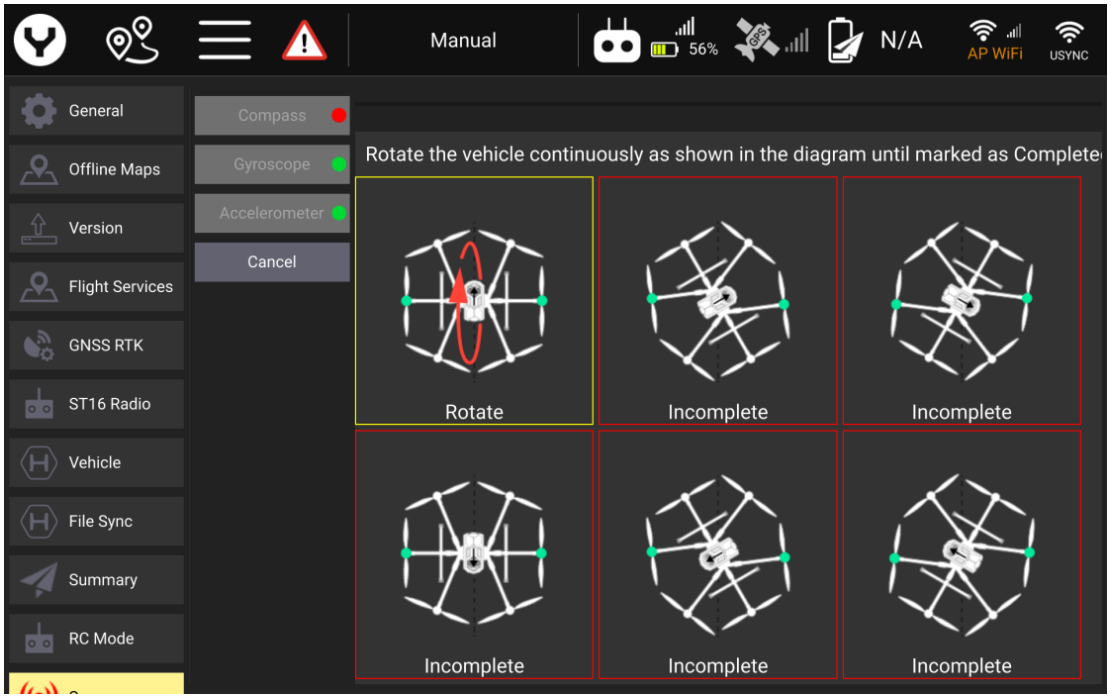
Step 2: Tap the OK button to start to calibrate



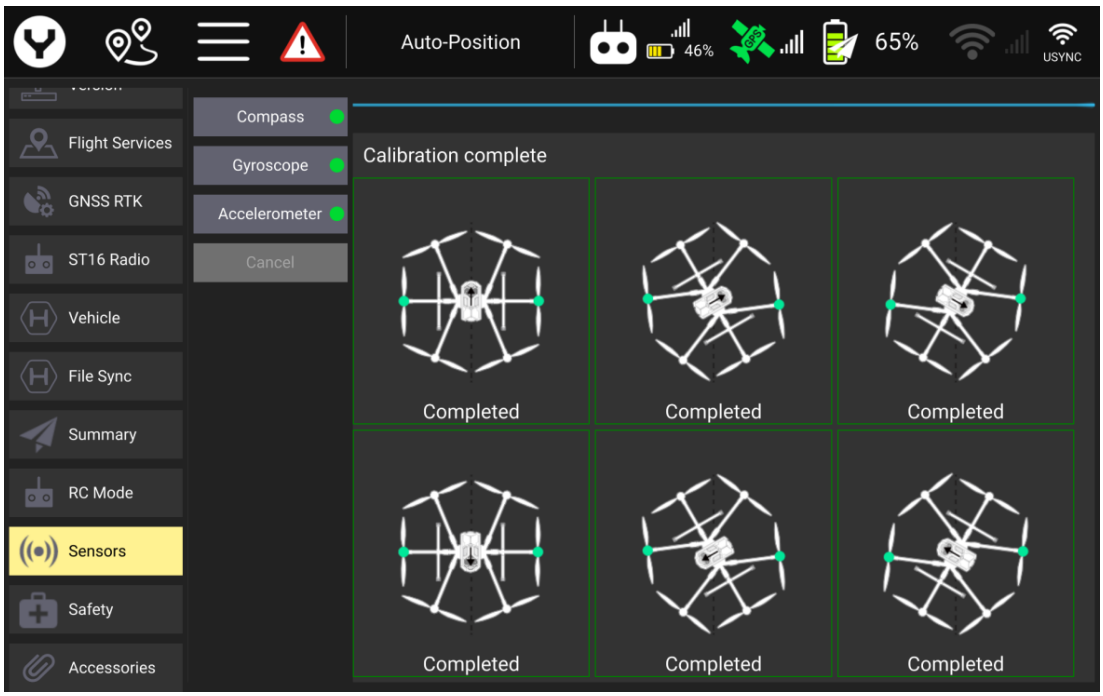
Step 3: Calibrating

Follow the onscreen display and instructions. During Compass calibration, the H850 will need to rotate along the specific axis which is shown by the LED of each Motor Arm, until a tone is heard to change to the next axis. Repeat this procedure for all six positions. A yellow box with a red arrow indicates the rotation axis, which is calibrating. A green box indicates a completed calibration.

During Calibration

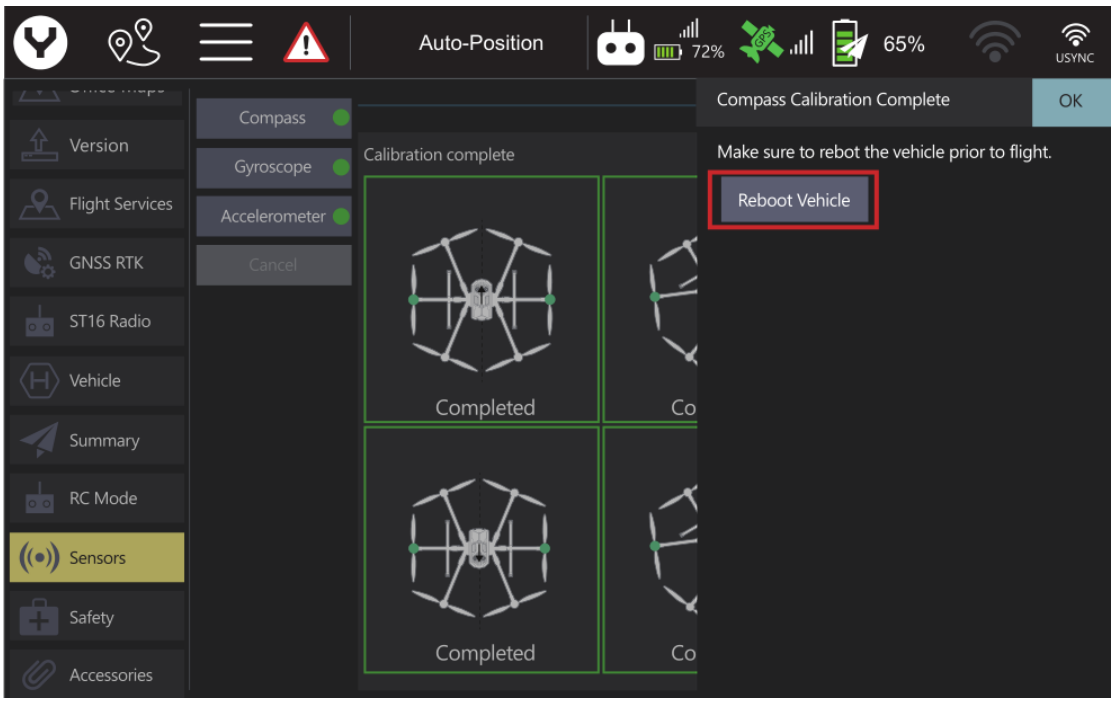


Calibration Finished for all Axis



Step 4: Reboot the drone

After all axis have been calibrated, tap the **Reboot Vehicle** button on the popped-up dialog box to activate the calibration.



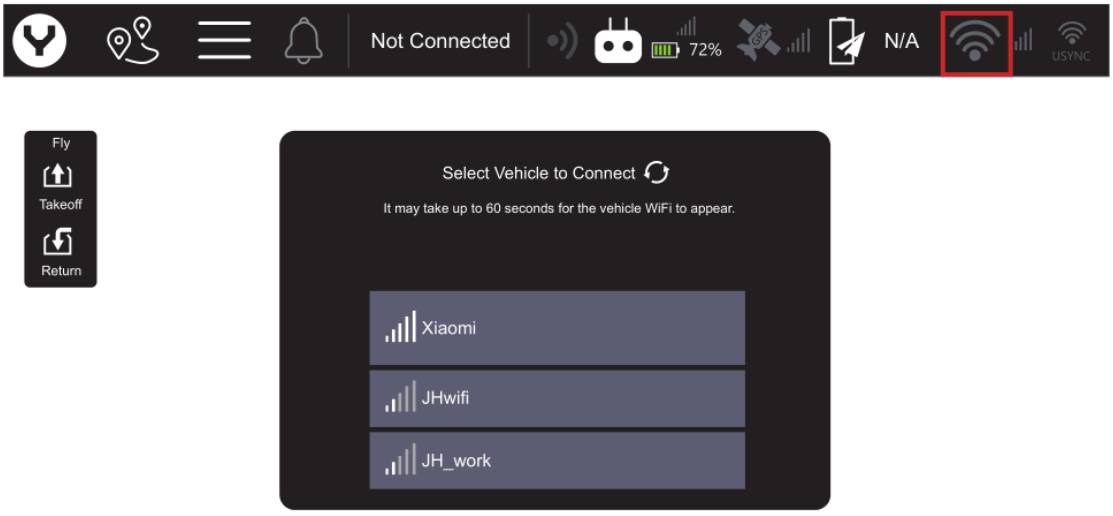
CORS Network Binding:

The Network CORS and RTK GPS have been disabled by the default setting. The H850 Drone will be positioned and navigated by using the single GPS technology.

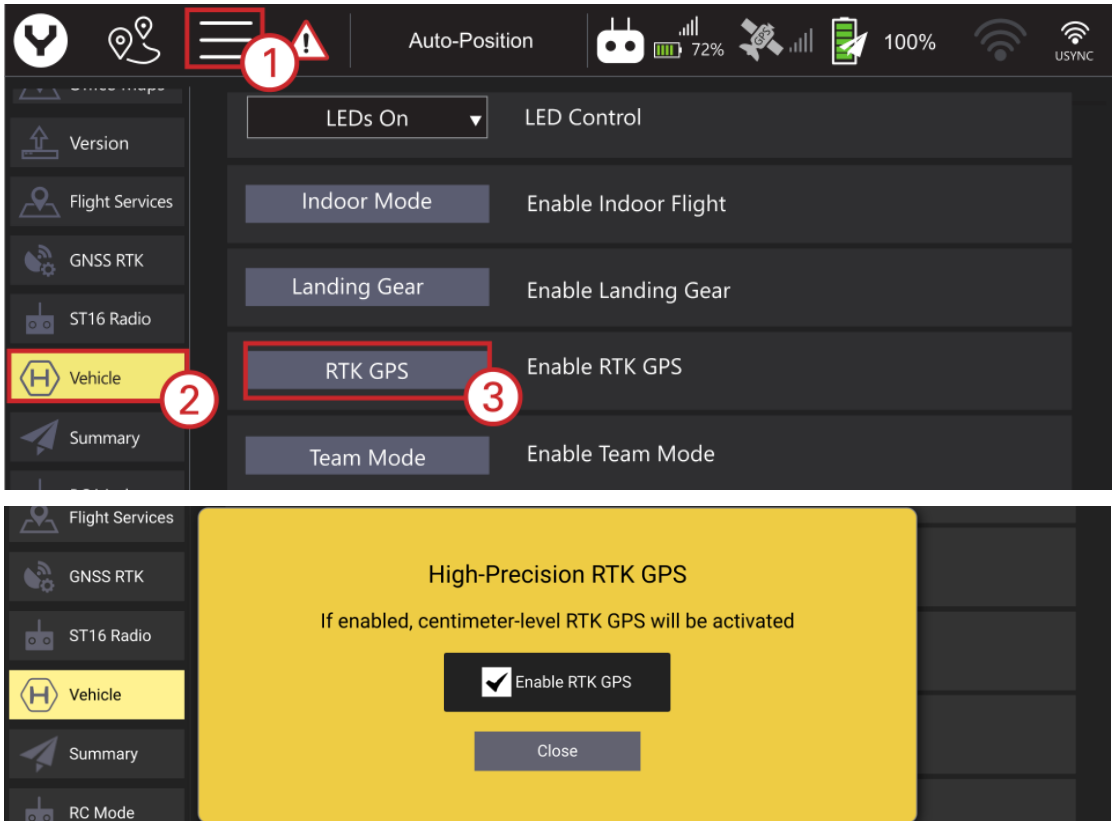
The RTCM Source was set to disable by default under the GNSS RTK item.

The operator can connect the drone with the Network CORS as per the following steps to get a higher positioning accuracy.

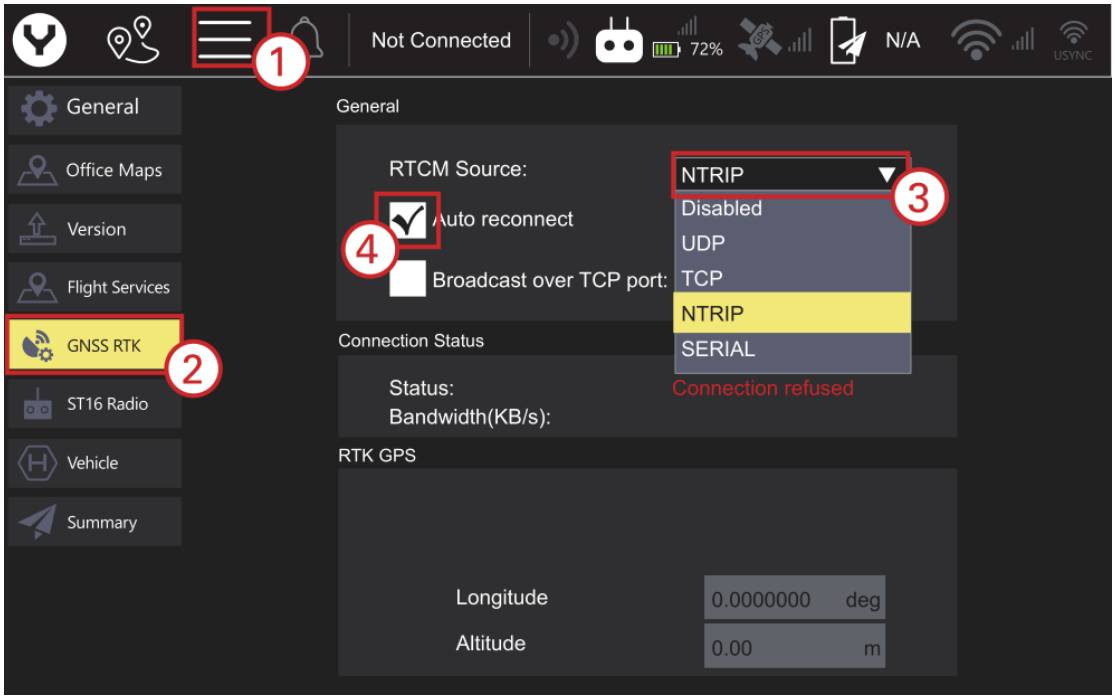
Step 1: After the T-One Transmitter and drone are bound, tap the Wi-Fi icon and select a Hotspot to make the T-One Transmitter connect to the internet.



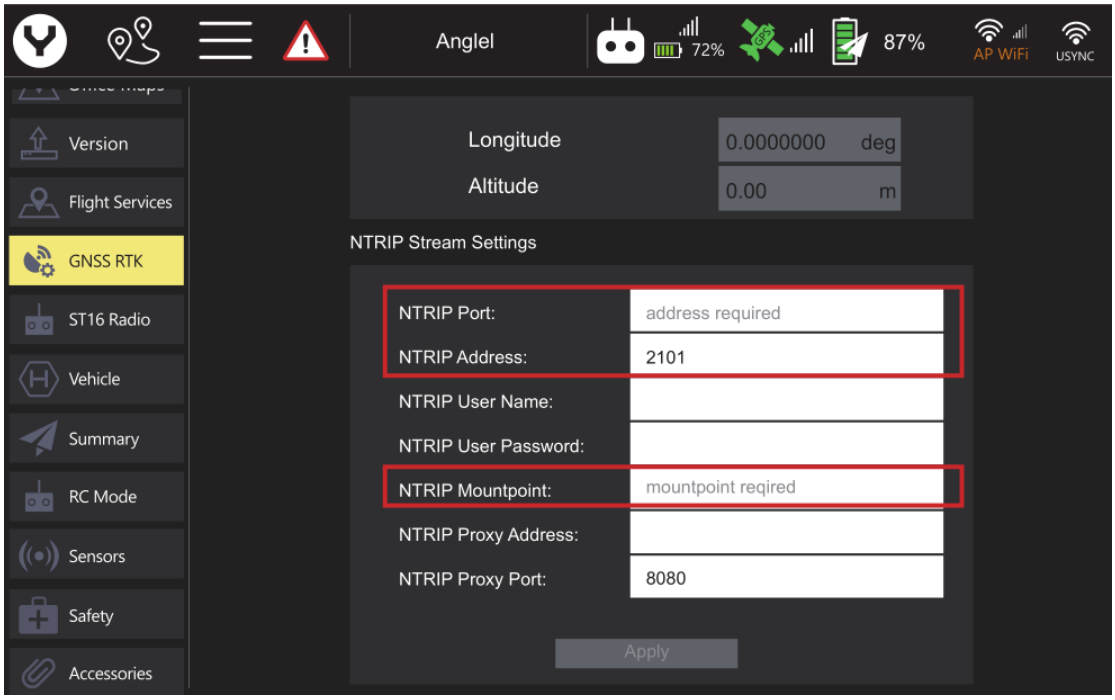
Step 2: Tap the **Settings** icon, then tap **Vehicle**. Select the RTK GPS and tick the **Enable RTK GPS** box, then restart the drone.



Step 3: Tap the **Settings** icon then tap **GNSS RTK**. Select **NTRIP** as the **RTCM** source, then tick **Auto Reconnect**.



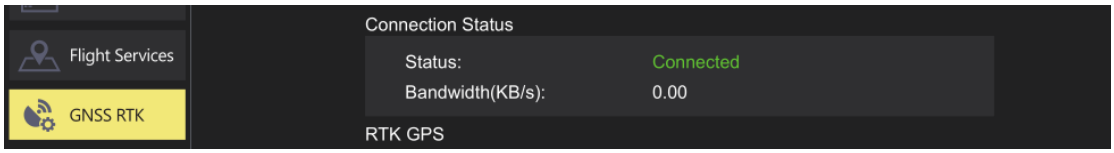
Step 4: Fill the following **NTRIP Stream Settings** parameters according to your CORS Network.



Notice: You must fill out the Required Tagging Form.

Step 5: Tap Apply button to finish the connection process.

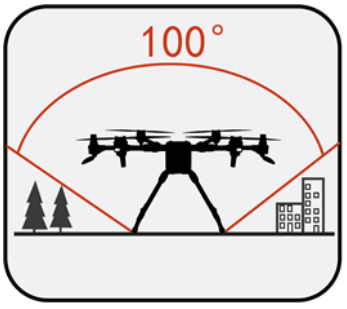
Notice: When connected to the CORS Network has been successful, the Connection Status display will display a green “Connected”.



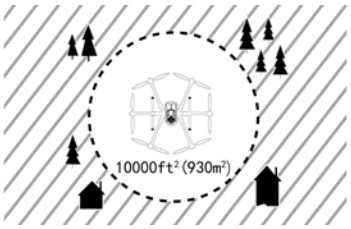
Notice: Do not enable the RTK GPS when the RTCM Source is unavailable.

Environment Requirements

Always operate the Drone in open areas (approximately 10000 square feet/930 square meters or more) that are free of people, vehicles, trees and other obstructions. Never fly near or above crowds, airports or buildings.

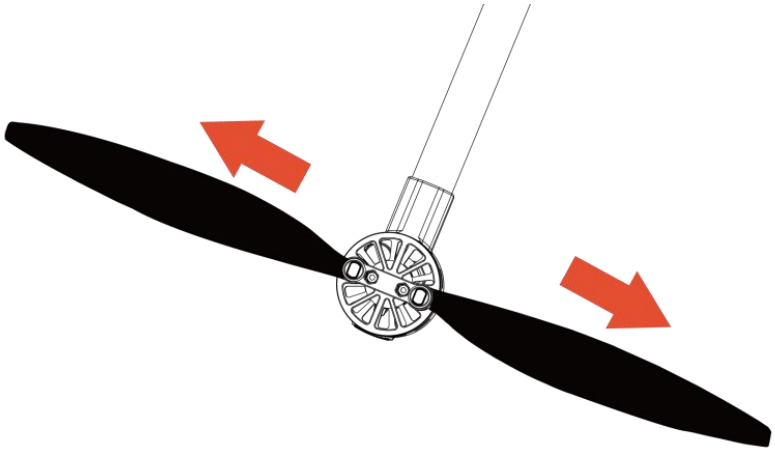


Never attempt to operate the drone near tall buildings/obstructions that do not offer a clear view of the sky (minimum clearance of 100°).

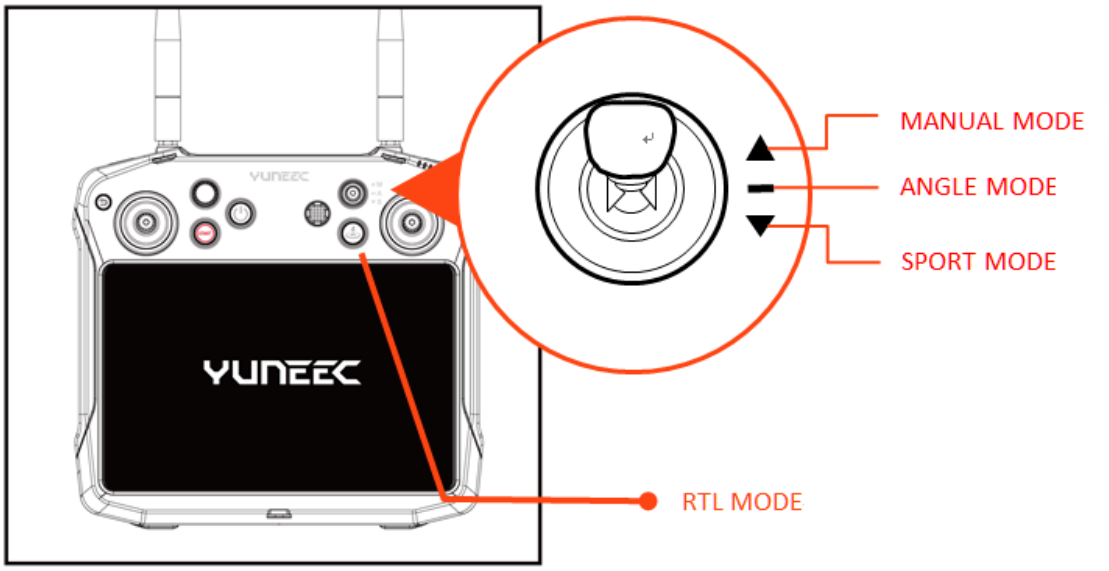


Take OFF

Unfold the propellers manually before starting the motors.

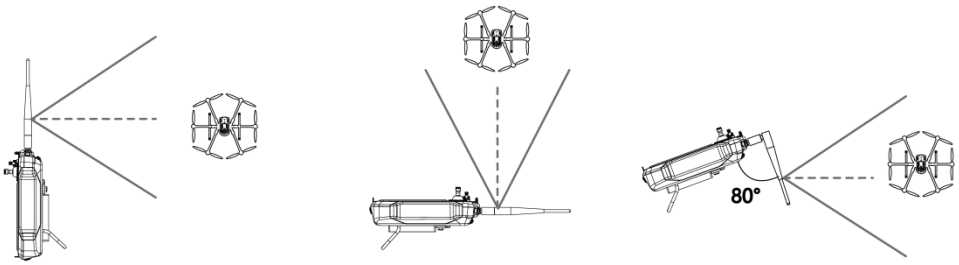


The drone has 4 different basic flight modes. We suggest placing the flight switch in the middle position to use the Angle mode to take off.



Optimal Transmission Range

The signal between the drone and the T-One Transmitter is most reliable when the antennas are positioned in relation to the drone below.

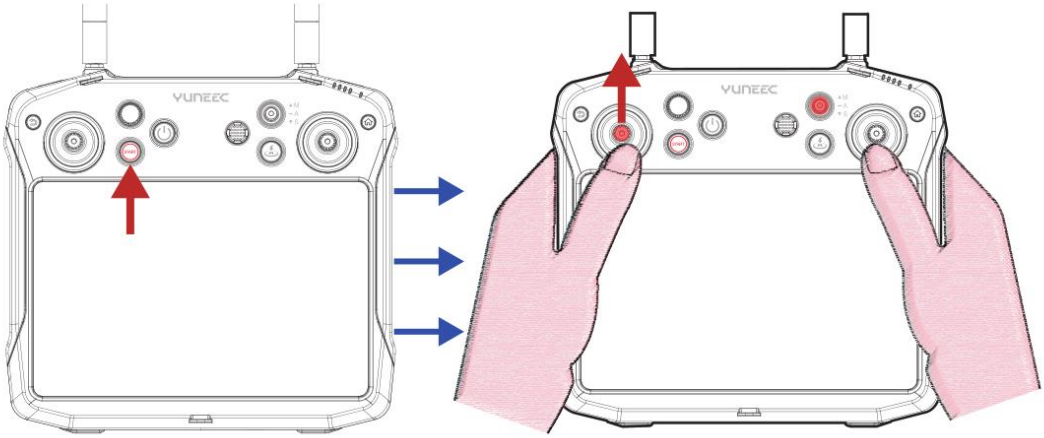


Ensure that the drone is flying within the optimal transmission range.

Take Off OPTION 1:

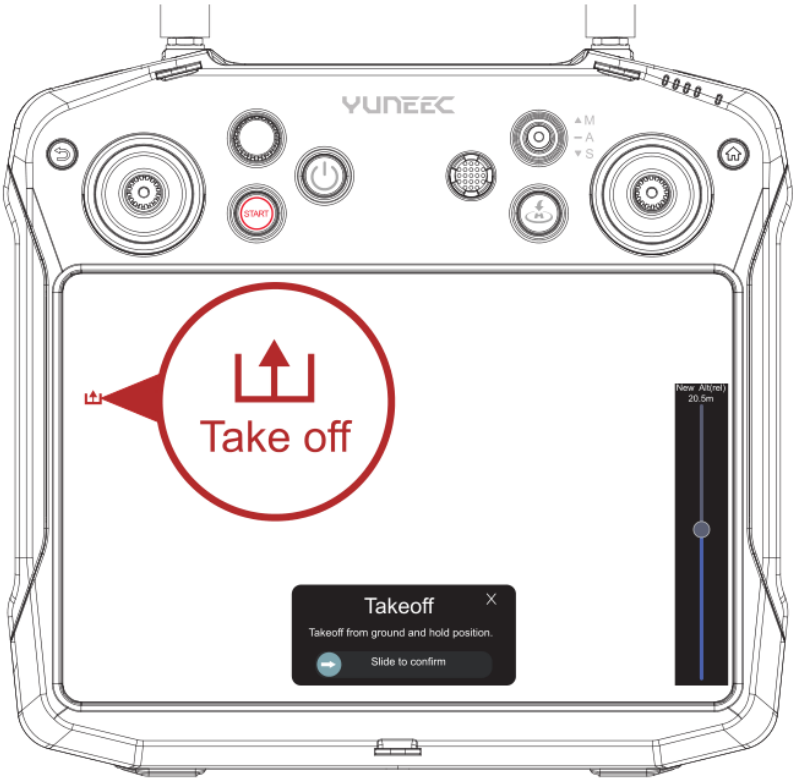
After the drone was positioned by GPS we can start the motors by pressing and holding the motor start/stop button on the T-One Transmitter and release it when the motors start.

Slowly raise the left-hand stick to take off (Mode 2 Shown).



Take Off OPTION 2:

Tap the Take Off icon and set the takeoff altitude, then slide on the screen to take off. There is also a Landing soft key beneath the takeoff soft key that may be used for Auto-Landing.

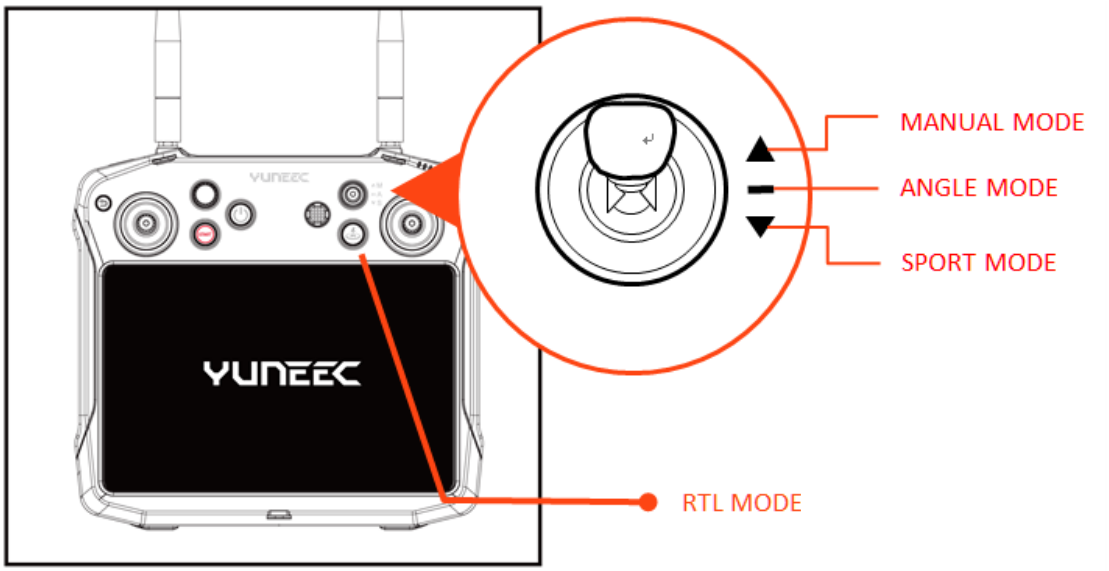


Control the drone

Basic Flight Control

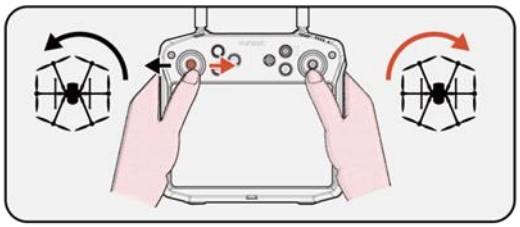
Outdoor flight

Flight Mode Switch Overview



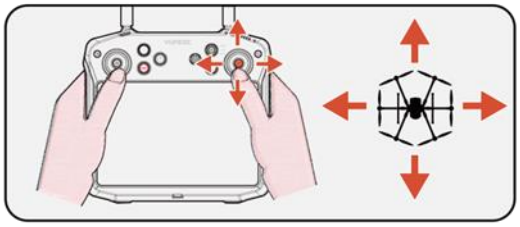
ANGLE MODE

When in Angle Mode and GPS is available, the H850 will respond according to the T-One Transmitter.



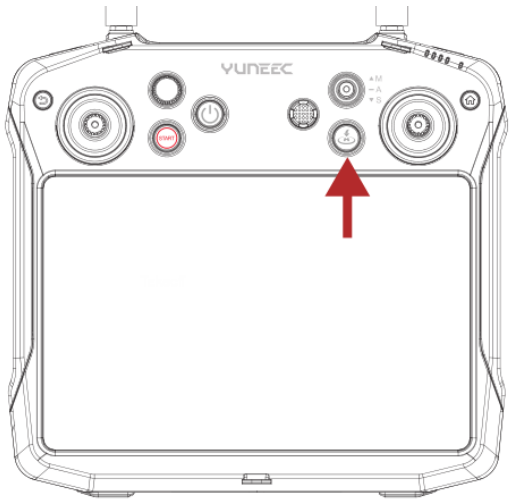
SPORT MODE

In sport mode, the drone responses are optimised for agility and speed, making it more responsive to joystick movements.



RTL MODE

The Return to launch (RTL) function brings the drone back to the last recorded Home Point and lands automatically. To enter the RTL MODE please press and hold the RTL Button on the T-One Transmitter after the drone takes off.



MANUAL MODE

When in Manual Mode, GPS will be deactivated.

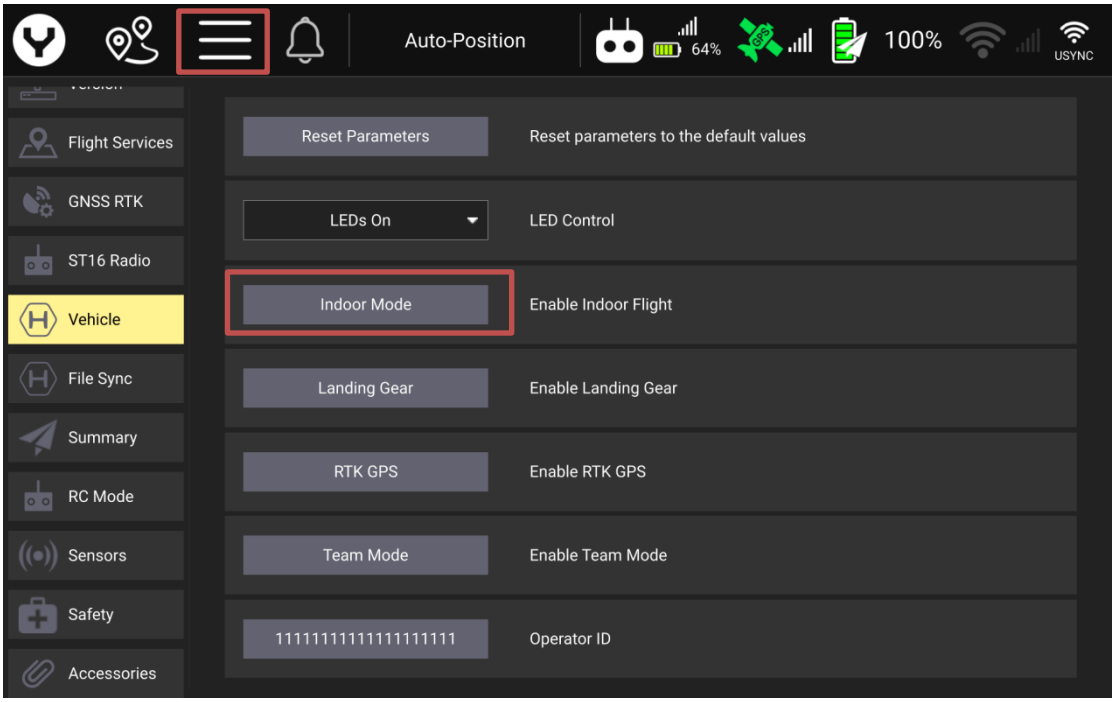
The aircraft will only use its barometer to control the altitude positioning.

Tips: Manual mode is not recommended for first-time pilots. Without GPS, the aircraft will drift in slight winds and not maintain its position.

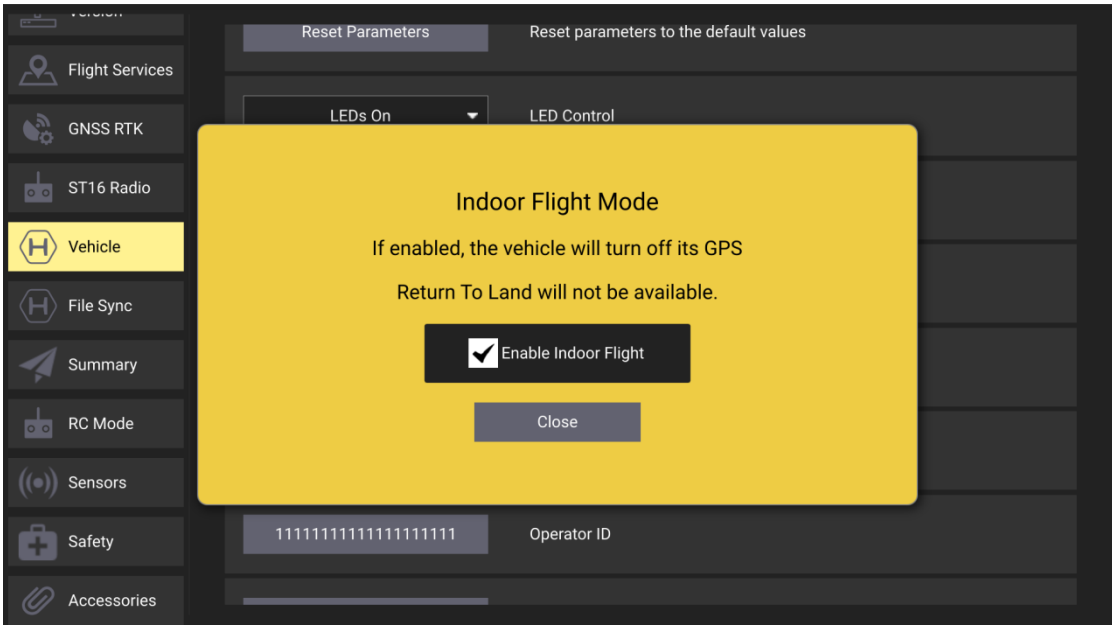
Indoor flight

When flying the drone without a GPS signal, please switch to the indoor flight mode first then start the motors

Step 1: After the drone and transmitter are connected tap the system setting button, then select the Vehicle item, and tap the Indoor Mode button.



Step2: Tick the Enable Indoor Flight



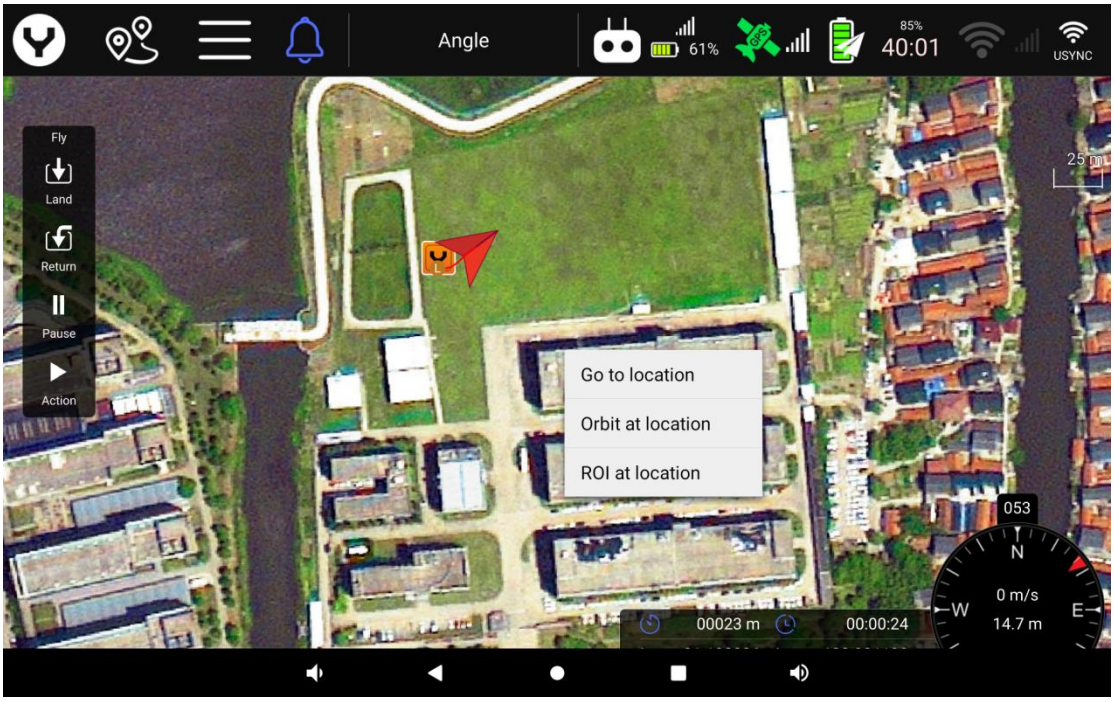
Step 3: Push the Flight Mode Selection Switch to the Manual Flight Mode then press and hold the START/STOP button for about 3 seconds to start the motors.

Notice: Please switch back to outdoor flight mode after each indoor flight; otherwise, the drone won't get a GPS lock when flying outdoor next time.

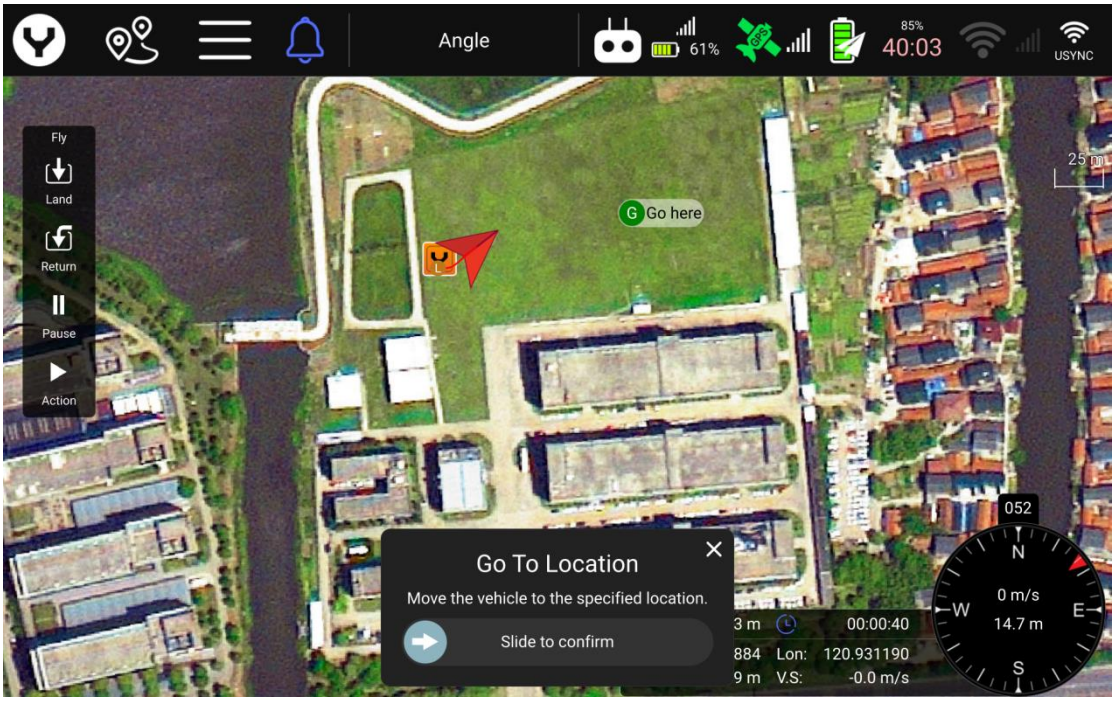
Go to Location flight

After the drone has taken off with GPS Lock, the operator can command the drone to fly to a specific point on the map by directly tapping the map.

Click the “Go to location” then the tapped point will be marked on the map as the “Go here” point.



Slide the slider; the drone will fly to the Go here point on a straight flight line.



After arrival, the drone will stay hovering at the Go here point.

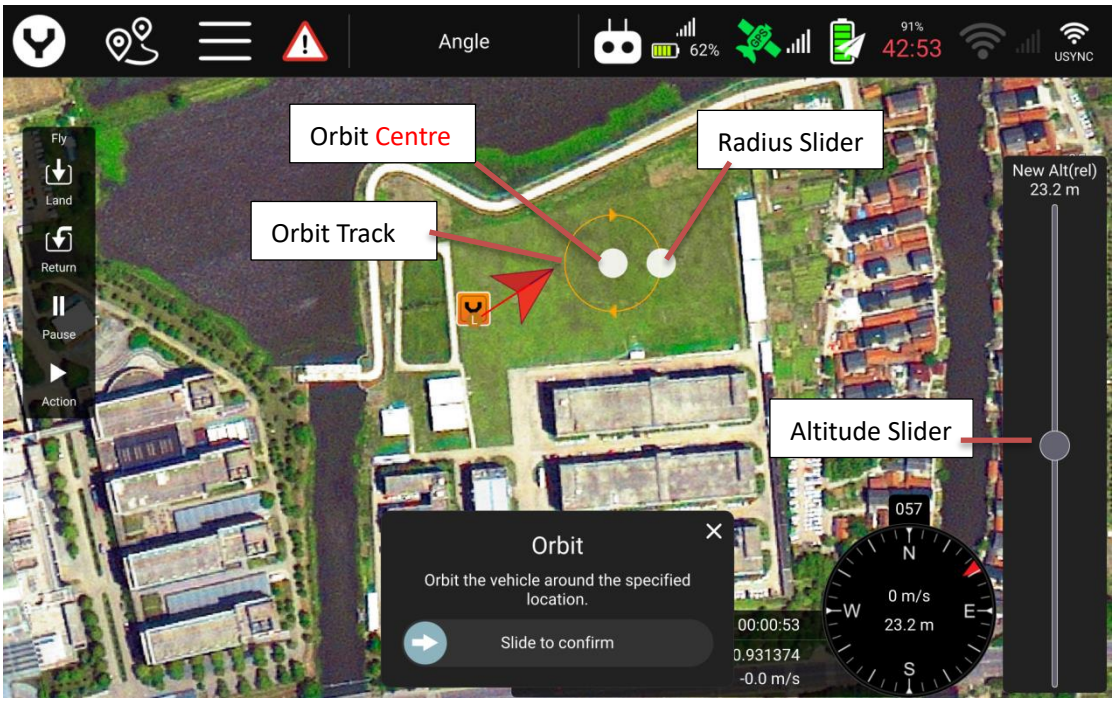
Notice: The users can stop the Go to Location Mission by pushing or pulling any joystick in any direction.

Orbit Flight

After the drone was taken off with GPS Lock the operator can command the drone to fly to orbit a specific point on the map by tapping the map directly.

Tap the “Orbit at location” then the tapped point will be marked on the map as the orbit centre point.

Orbit Flight Setting interface overview:

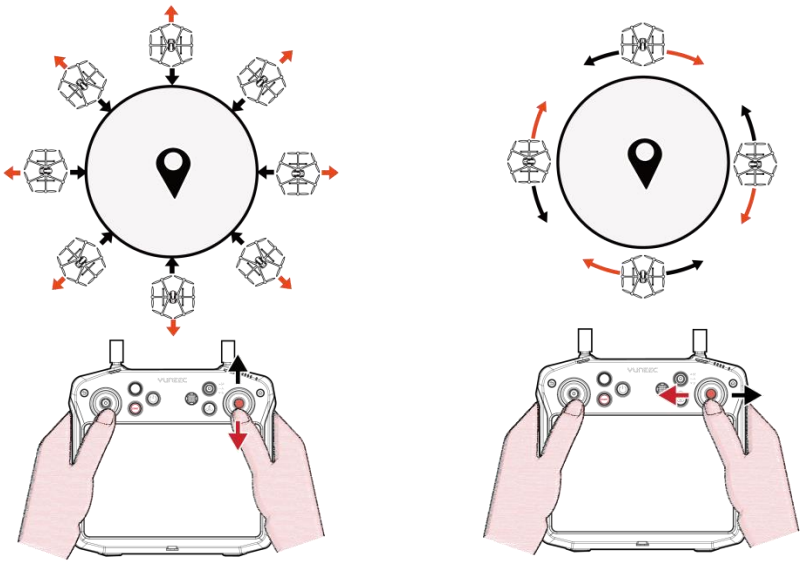


The operator can adjust the initial orbit centre and radius by dragging the white dot of the orbit centre point and the radius slider.

After the altitude is confirmed, slide the slider on the bottom to start.

Adjust the orbit speed, radius and altitude

After the orbit flight is started, operator can adjust the radius by using the elevator/pitch joystick; meanwhile, the orbit speed can be adjusted by the aileron/roll joystick when orbiting.



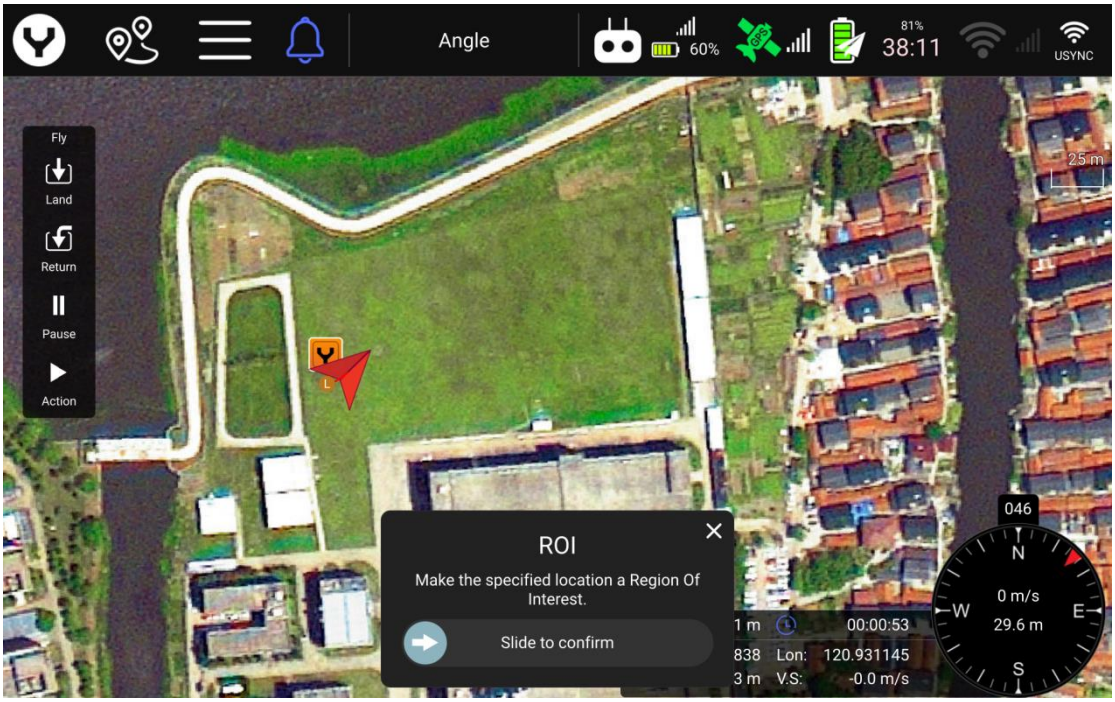
Mode 2 shown

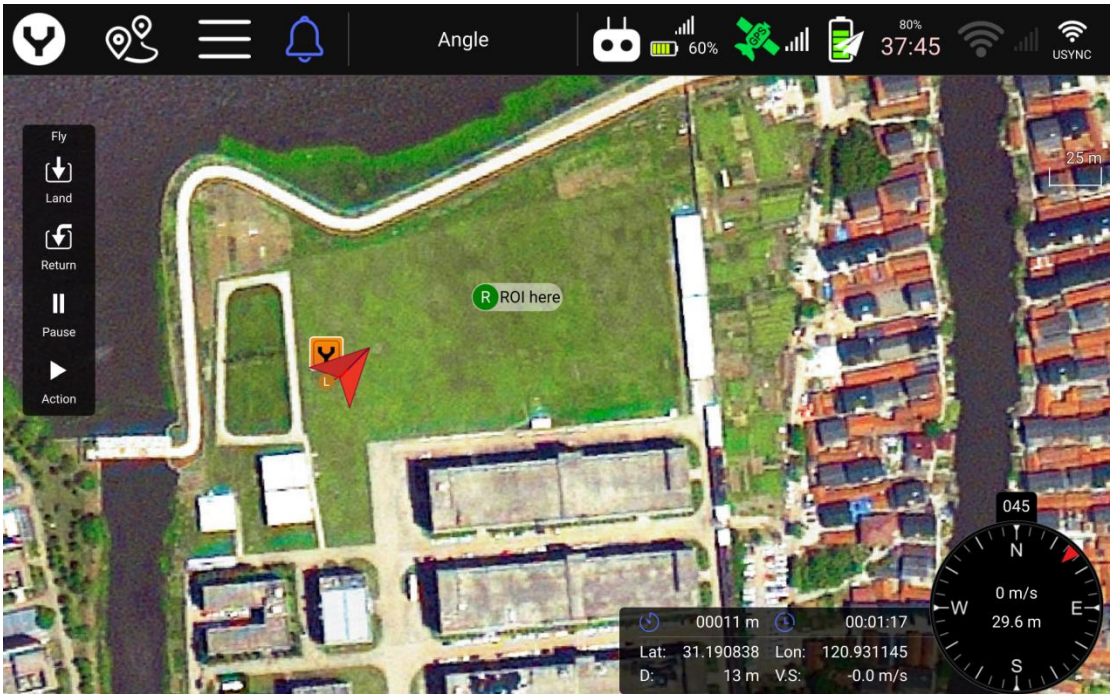
Top adjust the altitude, operators can use the throttle/altitude joystick.

ROI Flight

After the drone has taken off with GPS Lock, operator can command the gimbal towards a specific point of interest on the map by directly tapping the map.

Select the “ROI at location”, then slide to confirm the tapped point will be marked on the map as the ROI point.

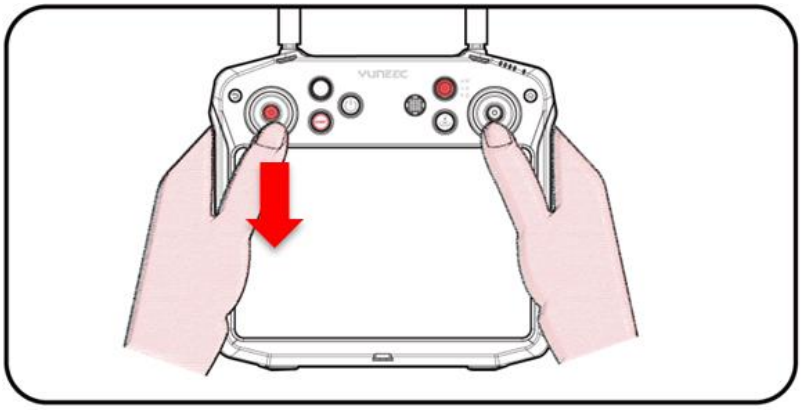




After the ROI point is set, the gimbal will turn its pan direction to look at the ROI point.

Landing

Slowly lower the throttle/altitude joystick below the centre position, H850 will descend slowly and land. After the drone lands, the motors will stop after 2 seconds without any operation.



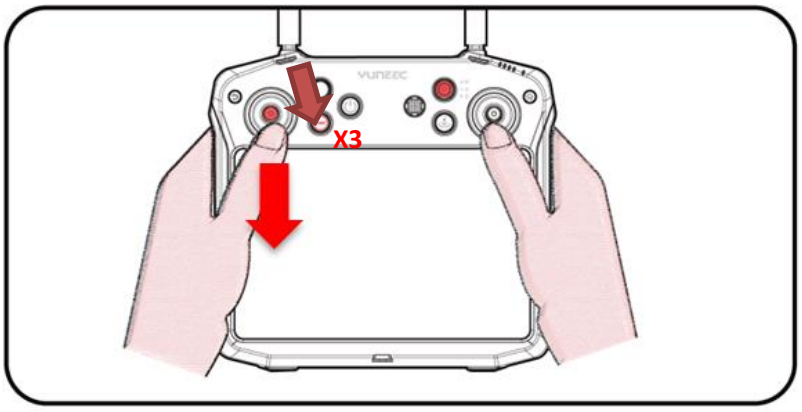
Mode 2 Shown

Emergency Motor Stop

The operator can force stop the motors by the following operation in the emergency situation such as the blades could hit the people and cause serious injury. Or the drone flies away under the loss control conditions caused by a faulty sensor.

To "force stop" the motors, pull the throttle joystick to the bottom, then press the Motor Start/Stop Button 3 times rapidly.

Warning: The motors will stop even if the drone is flying using the Force stop command.



Mode 2 Shown

Notice: If the motors were force stopped, to start the motors again, the operator must first reboot the drone.

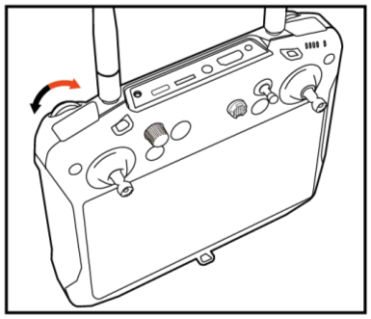
Gimbal Control

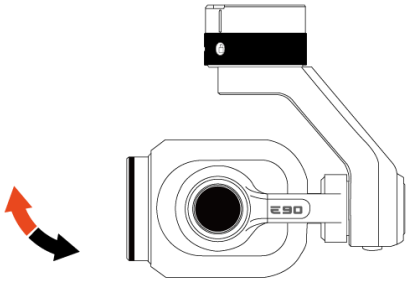
GIMBAL CAMERA TILT CONTROL

The operator can control the tilt of the gimbal by using the Tilt Control Knob.

Rotate the knob to the left to tilt down the gimbal, and rotate the knob to the right to tilt up the gimbal.

Keep the knob at the centre point to hold the tilt angle of the gimbal.



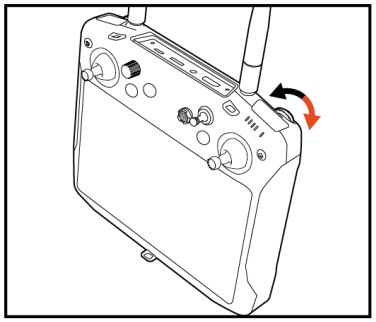


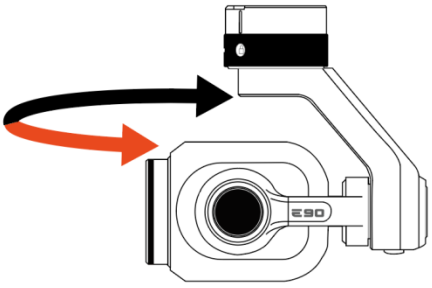
GIMBAL CAMERA PAN CONTROL

The operator can control the Pan of the gimbal by using the Pan Control Knob

Rotate the knob to the left to pan left the gimbal, and rotate the knob to the right to pan right the gimbal.

Keep the knob at the centre point to hold the pan direction of the gimbal.



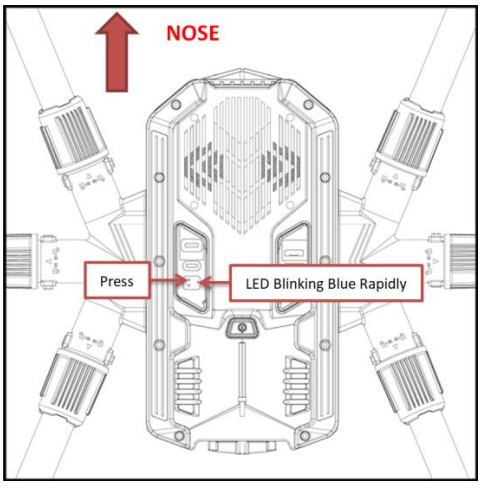


Re-Bind

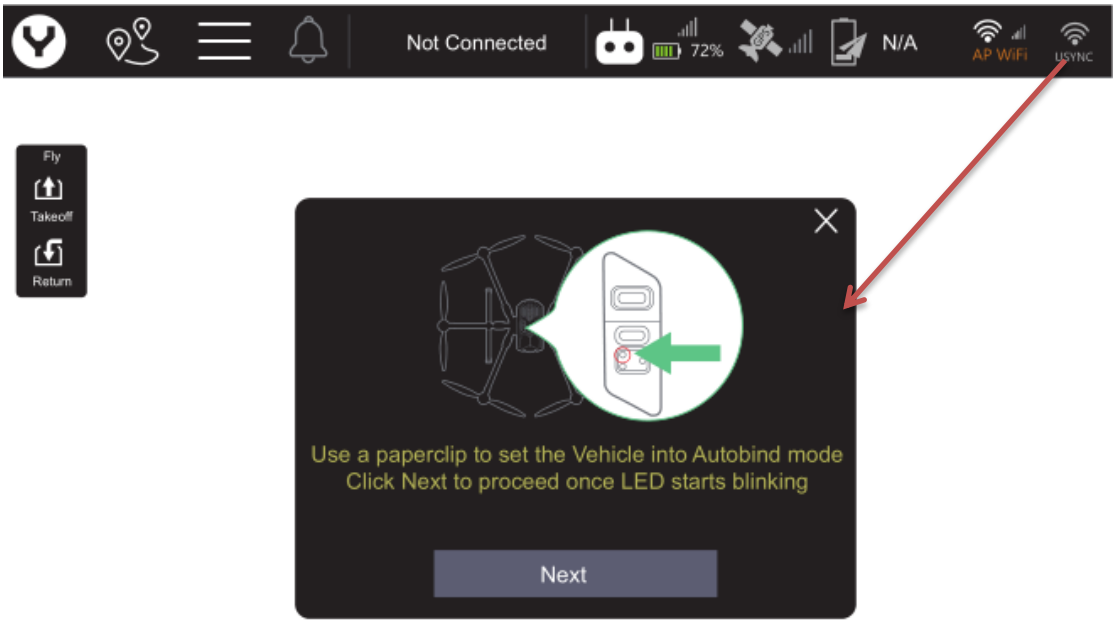
The drone and T-One Transmitter are already bound before being shipped from the factory. It is unnecessary to bind them again. The pilot can follow the steps below if rebinding is needed.

Step 1: Power on the H850 Drone. Wait a few seconds for all systems to boot up.

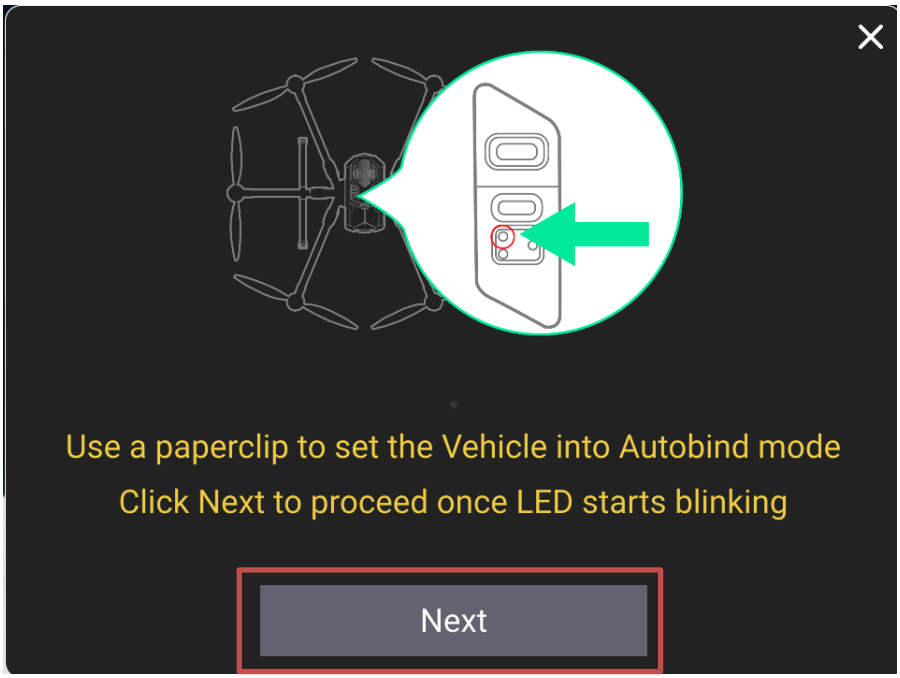
Step 2: After initialisation completes, use a paperclip or similar item to push the bind button inside the hole as the picture shows. Release the button when the blue LED blinks quickly.



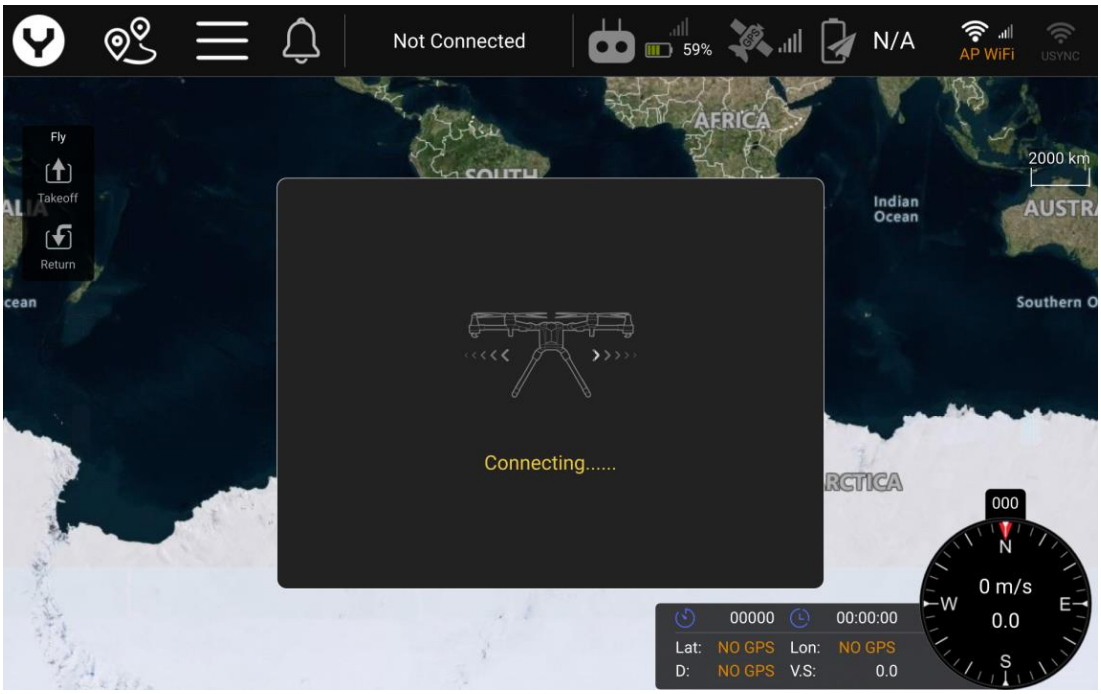
Step 3: Power on the T-One Transmitter and tap the USYNC Button to bind.



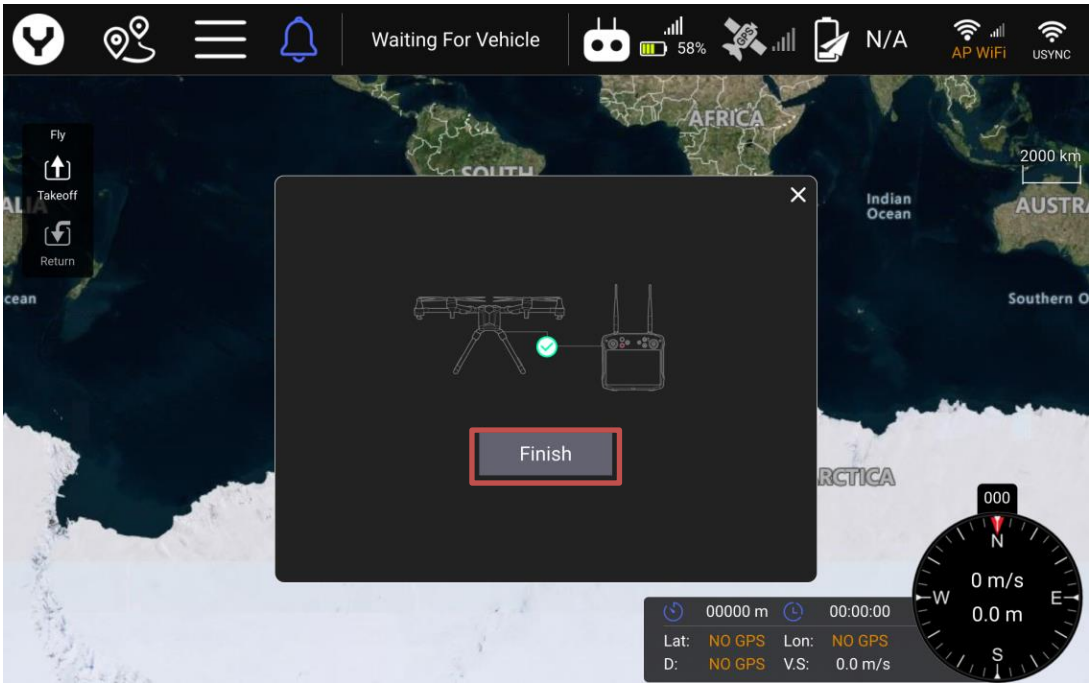
Step 4: Tap the Next button to start the binding process.



Step 5: Connecting.



Step 6: Tap the “Finish” button to finish the binding process.

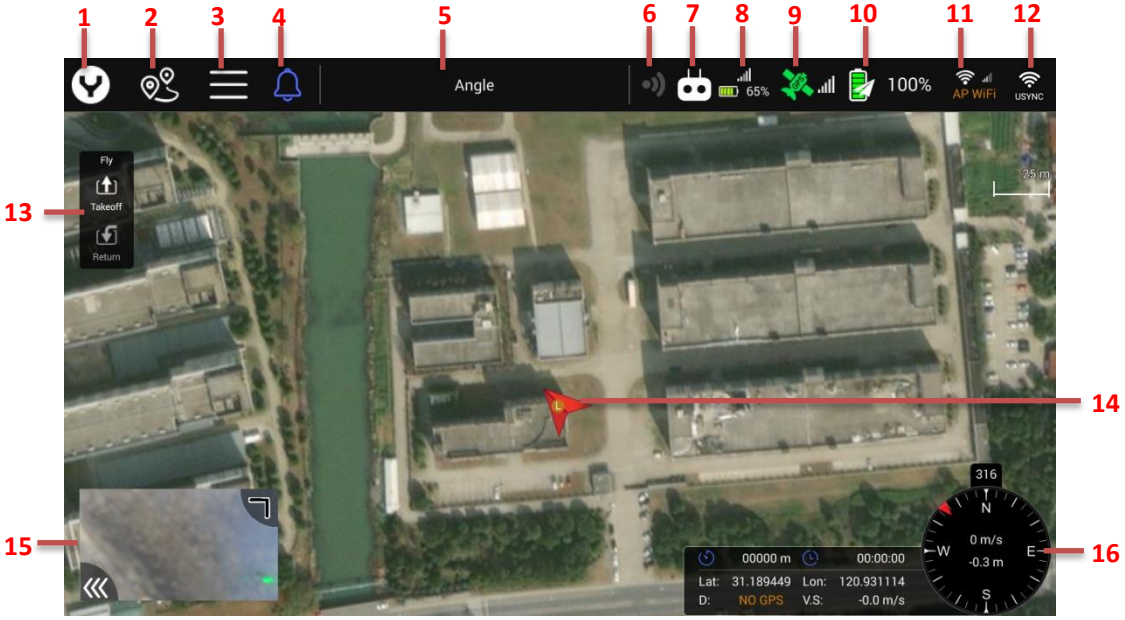


Data Pilot APP

DataPilot ™ is an economical and efficient task planning software tailored for industry operators, which is preinstalled in the smart transmitter for all the YUNEEC commercial drones.

Main Interface Overview

Full-Screen Map Interface



01 Main Interface Button

Return to the main interface from any other interface by tapping this button.

02 Mission Route Setting Button

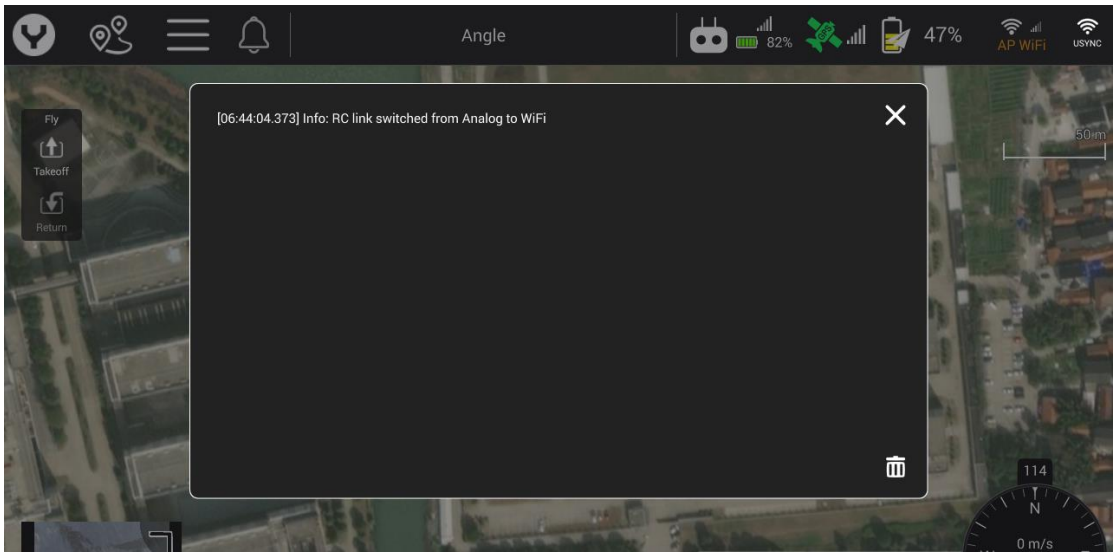
Tap this button to enter the Mission Editing Interface.

03 Settings button

Tap this button to open the extended menu to view and adjust the parameters of other settings.

04 Warning Message button

After the Warning Message is released by the drone, the bell icon will change to the Exclamation mark . To view the Warning Message, please tap the Exclamation mark, then the Warning Message Window will like pop open as shown below. Tap the close button to close the Warning Message Window. Tap the Trash can icon to clean the Warning Messages.

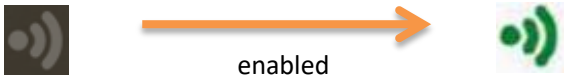


05 Flight Modes Indicator

Display the current Flight Mode of the drone.

06 Obstacle Avoidance Indicator

After the Obstacle Avoidance is switched on, this icon will turn green to remind the operator this function is enabled.



Note: For the drones without the Obstacle Avoidance function, this indicator will be hidden.

07 Communication status indicator

This indicator shows 3 different communication statuses, as in the picture shown below:

Gray: The drone doesn't connect to the transmitter.

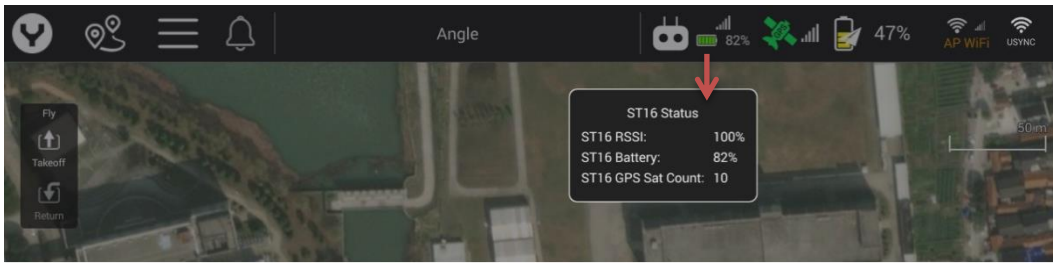
Red Flashing: The receiver is already connected to the drone, and the DataPilot ™ 2.0 App is attempting to establish the communication with the Autopilot in the drone.

White: The communication between the DataPilot ™ 2.0 App with the Autopilot was established.

08 Transmitter Battery & RSSI

This icon displays the Remaining Battery Power and acts as the RSSI (Received Signal Strength Indication) of the transmitter.

Tap this icon to display more information of the transmitter status.

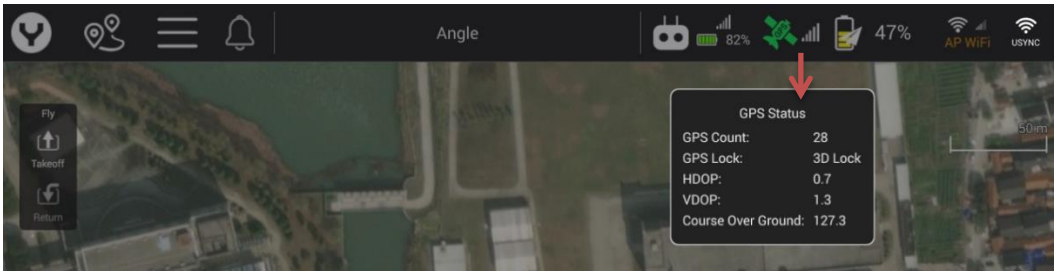


To close the dialog box, just tap other areas on the screen.

09 Drone GPS indicator

This icon displays the Drone GPS status. When the icon turns green it means the drone has an ideal positioning accuracy for flight.

Tap this icon to display more information of the drone GPS status.

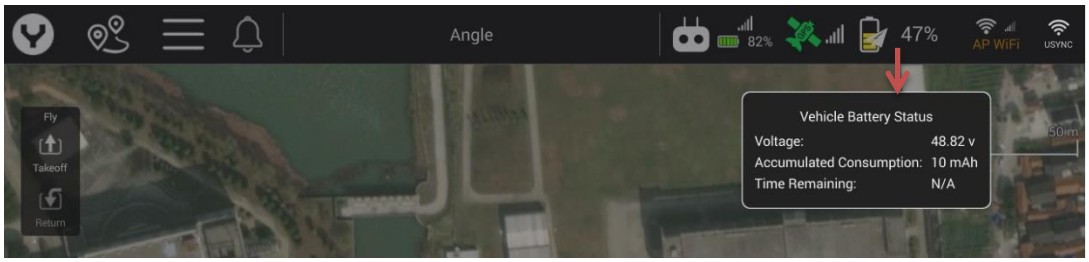


To close the dialog box, just tap other areas on the screen.

10 Drone Battery indicator

This icon displays the Remaining Power and percentage of the drone flight battery.

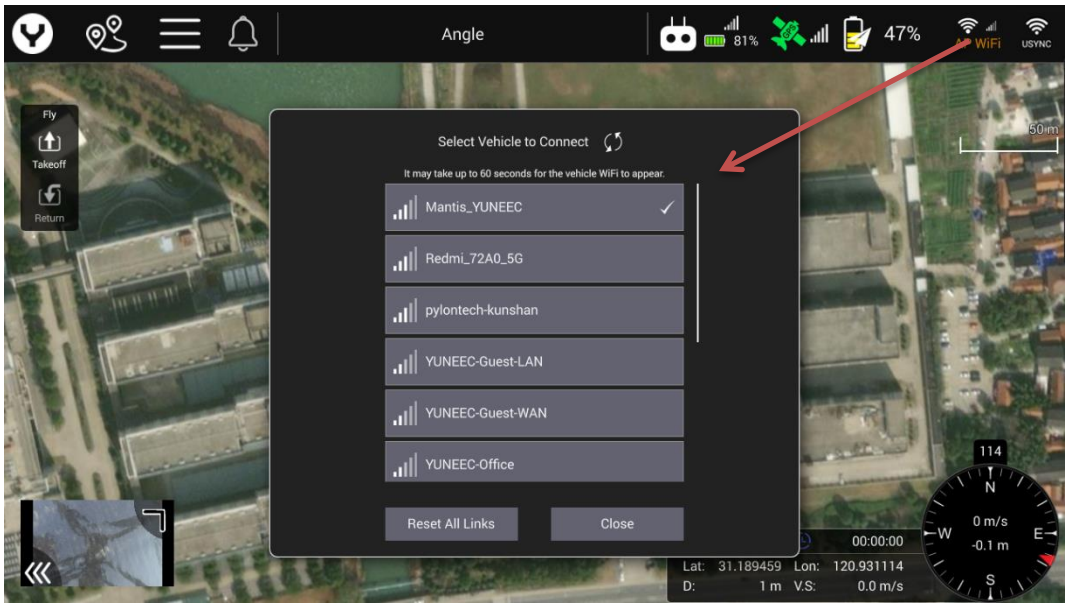
Tap this icon to display more information of the drone battery status.



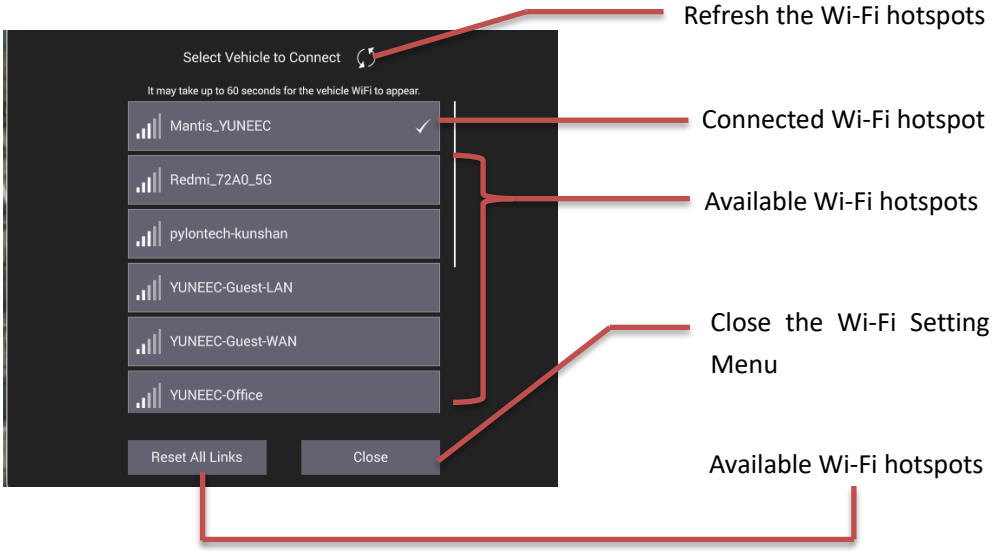
To close the dialog box, just tap other areas on the screen.

11 Wi-Fi RSSI & Setting button

This icon displays the Wi-Fi RSSI. The users can also open the Wi-Fi Setting Menu by tapping this icon.



The operator can select, refresh, connect or reset the available Wi-Fi hotspot under the Wi-Fi Setting Menu.



The operator can select the Wi-Fi hotspot wanted by tapping the SSID in the available Wi-Fi hotspot list, and then enter the passwords to connect.

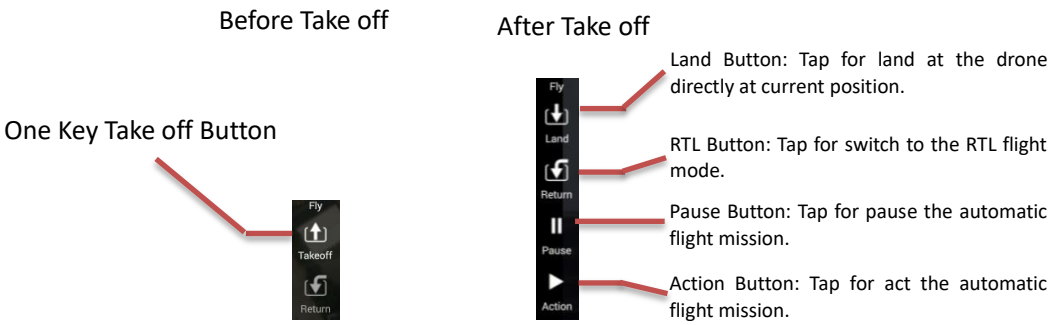
Once the Internet is connected, the operator can download the electronic map, get the Network CORS source or action other operations.

12 OFDM RSSI & Setting button

This Icon displays the OFDM RSSI. The operator can also open the OFDM Menu by tapping this icon for binding or unbinding.

13 Flight quick control panel

The operator can send the control command by using this panel. After the drone took off the panel will add 2 items as the screenshot below:



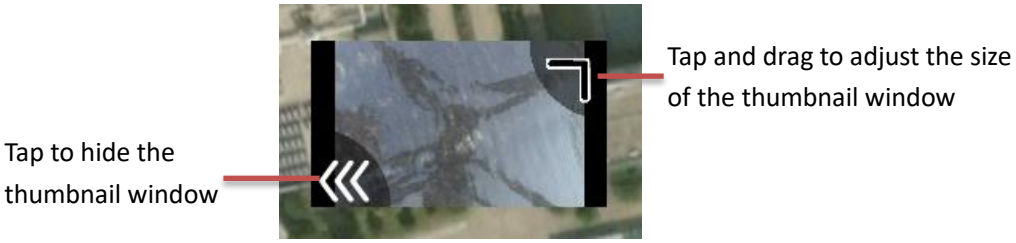
14 Drone

Indicate the drone position and course. The L point means the Launch point of the drone.

15 Map /Video Switch

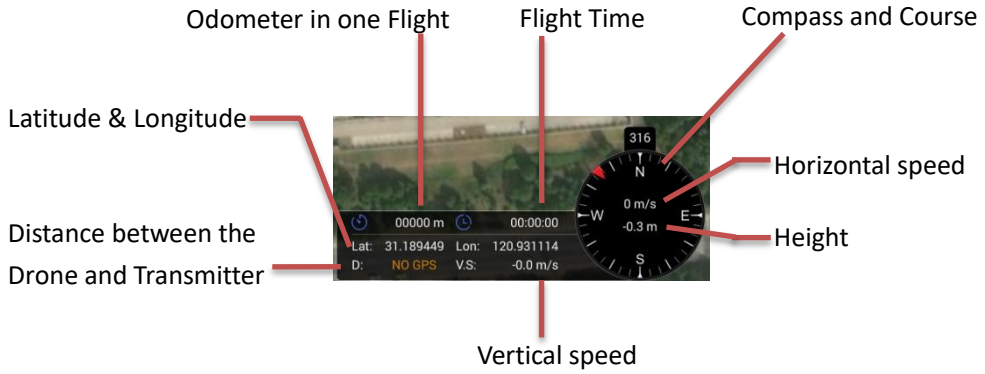
Display the thumbnail window of the map or Video link feedback. Tap to view the full-screen map or Video interface.

The operator can tap the hide icon to hide the thumbnail window, or drag the icon to adjust the size of the window.

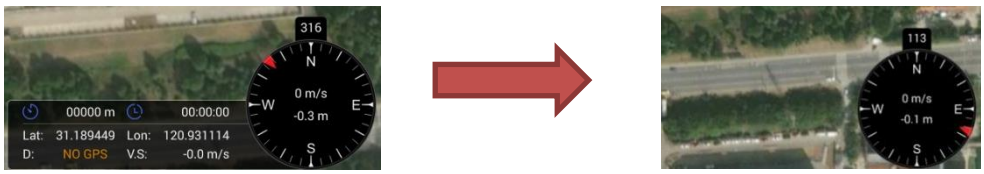


16 Flight Data Panel

Indicate the flight data



The operator can hide the panel left to the compass by single tapping the compass dial.



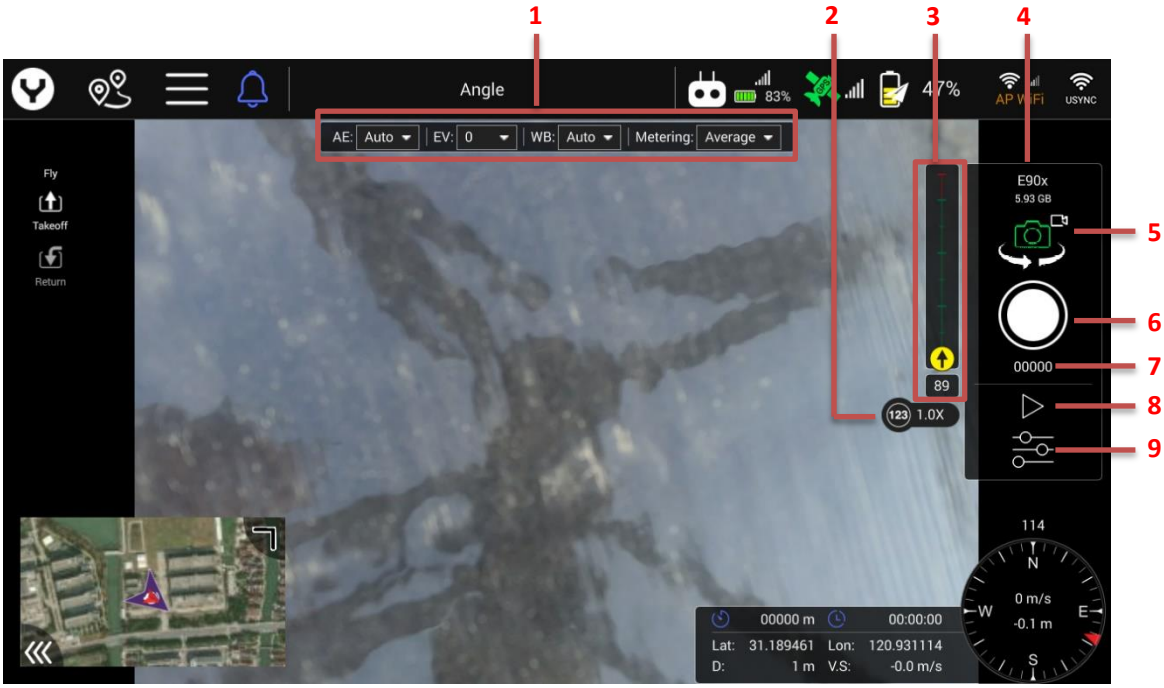
The Compass also can be switched to the gyroscopic horizon dial by tapping the dial in quick succession.



The Height and Horizontal Speed data will also be moved to the panel left to the dial.

Video Link Interface

After The Main Screen has been switched to the Video Link feedback interface, the operator will get the screen shown below:



1Camera quick access menu

The operator can adjust the camera parameter quickly by using this menu. Such as exposure mode, white balance, etc.

Note: According to different camera types and parameter setting this menu could change.

2 Zoom Icon

This icon displays the zoom ratio of the camera

Note: According to different camera types this icon could change.

3 Gimbal attitude display

The Position of the Yellow dot  in the gimbal tilt indicator bar shows the gimbal tilt attitude.

The red marks in the bar show the gimbal is tilted up meanwhile the green marks show the gimbal is tilted down. For further accuracy, we can read the gimbal tilt angle in the rectangle under the Vertical bar.

There is also a black arrow in the Yellow dot which shows which direction of the gimbal lens is pointing to. When the arrow is straight up it shows the gimbal lens is pointing to the front of the drone.

4 Camera Type and SD card remaining capacity

Display the camera type and SD card remaining capacity.

5 Photo/Video Mode Switch

Switch the Camera mode between the Photo mode with the Video recording mode. Just tap the icon to switch the Camera work mode.



Camera in video mode



Camera in Photo mode

6 Shutter/Record button

In the Video Recording mode, the icon is a red dot. Tap it to start recording the video and tap again to stop recording.

In the Single Photo mode, the icon is a white dot. Tap it to capture a photo

In the Time Lapse Photo mode, the icon is a white dot with a time interval shown at the centre. Tap it to start the time interval shooting and tap again to stop.

If the SD card is full or the camera without an SD card the icon is a gray dot that means you cannot record anything.

Five different statuses of the Shutter or Start/Stop recording soft button



Tap to start Recording video



Tap to Record one photo



Tap to start time interval shooting



Tap to stop the Video recording or time interval shooting



No SD card or SD Card full

7 Counter in photo mode/ Timer in video mode

In the photo mode, the counter shows how many photos you have recorded within a single power on time. Once you have powered off the drone, the counter number will be reset.

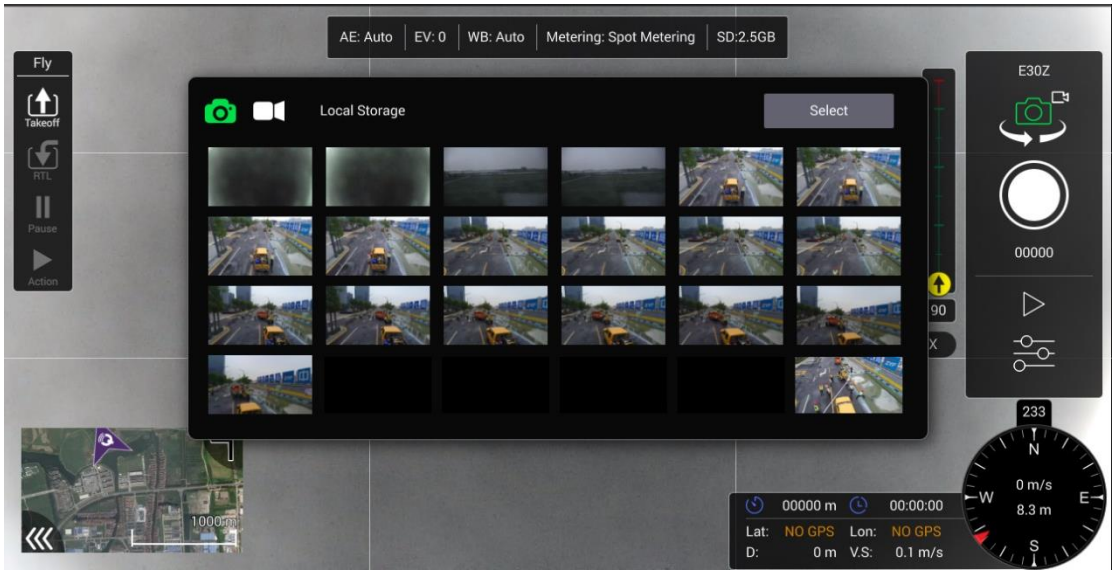
In the video mode, the timer shows the time you have recorded in each single video shoot.

8 Gallery

The main function of Gallery preview enables operators to check the pictures and videos taken on the remote control, without pulling out the SD card in the camera. It offers the ability to check the quality of its own aerial photos without landing, so that operator can quickly reshoot the unsatisfactory photos or videos, greatly improving the efficiency of taking aerial photos.

The photos or videos also can be deleted in the gallery function to save the storage capacity of the Remote Controller.

Note: When deleting in the Gallery, the device will only delete the file in the Remote Controller, you won't delete them in the Micro SD card inserted in the Gimbal Camera.



9 Camera Setting Button

Tap this button to open the camera menu for further settings.

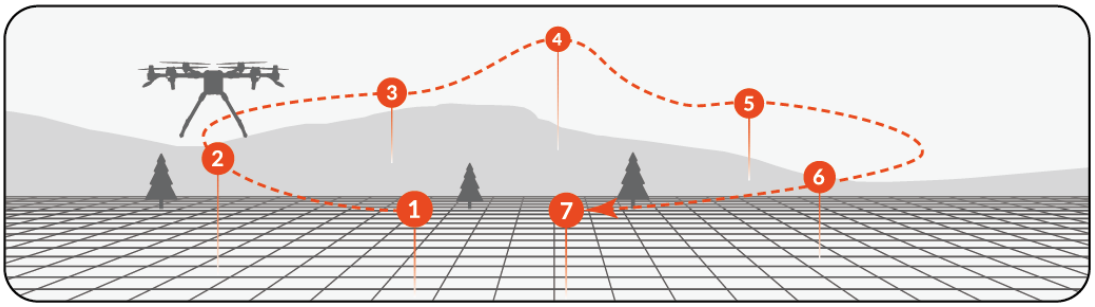
Note: According to different camera types the camera setting menu could be different. Please refer to the corresponding chapter of the gimbal manual for the camera setting menu instruction in detail.

Mission flight mode

To enter Mission planning mode, tap the Mission Route Setting icon[ ] on the top of the DataPilot™ home screen. The PLAN window will open, allowing the operator to create Waypoint and Survey missions, sync missions between desktop, T-One, and the drone, store/recall missions, and Center a mission around a particular point on the T-One screen.

Waypoint

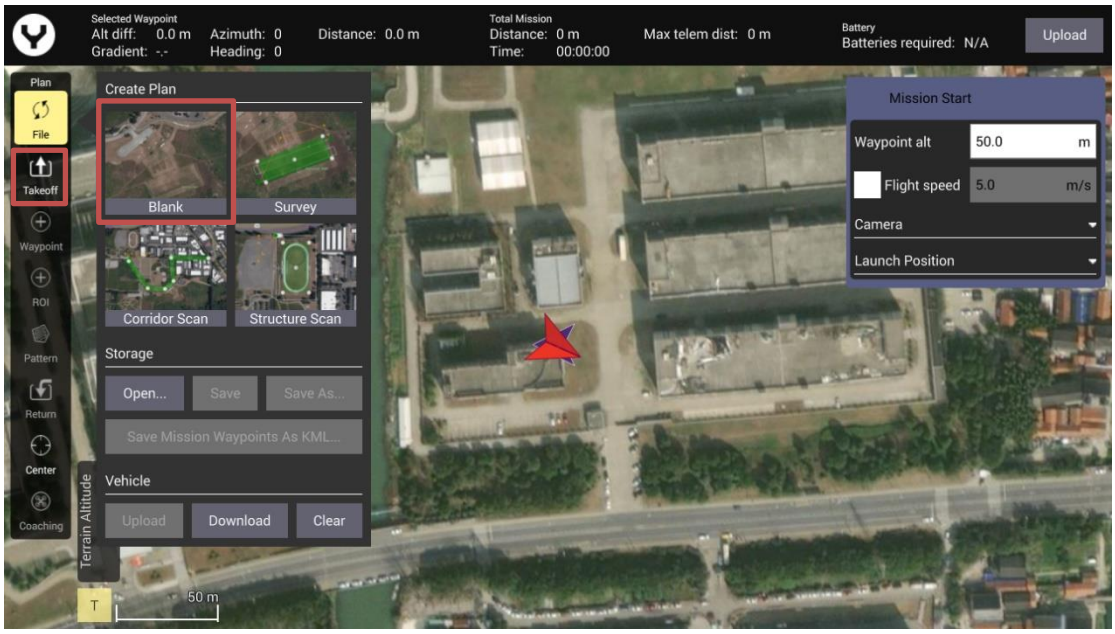
A waypoint defines a specific location and behavior at a specific point in time, allowing for intelligent auto-functions during flight. Waypoint flight is ideal for capturing oblique images, perimeter monitoring, and many other uses.



Add Waypoints

If the operator needs to plan a fight mission in a new area, connect the transmitter to the internet via a Wi-Fi hotspot to download maps.

After entered the Mission planning mode, select a Blank plan and tap the Takeoff icon on the left side of the screen. If the Transmitter doesn't connected to the drone or the drone doesn't have GPS lock the operator needs to tap on the map to set the takeoff point position manually.



Once the Takeoff point has been set, the waypoint can be added. Tap the Waypoint icon first then tap on the map directly to set the waypoint position.

After the waypoints were added they will be shown on the screen as the picture below.

Waypoint User Interface Overview



1Selected Waypoint Parameters

Display the parameters of the selected waypoint.

2Mission Summary

Display the summary of the entire flight mission added to this map.

3Selected Waypoint

When a waypoint was selected, it will be marked colour in “Green”.

4Ahead Direction Indicator

This white arrow shows the forward direction of the drone along the flight route.

5Insert Button

Tap to insert a waypoint before the selected one on the flight route.

6Other Waypoint

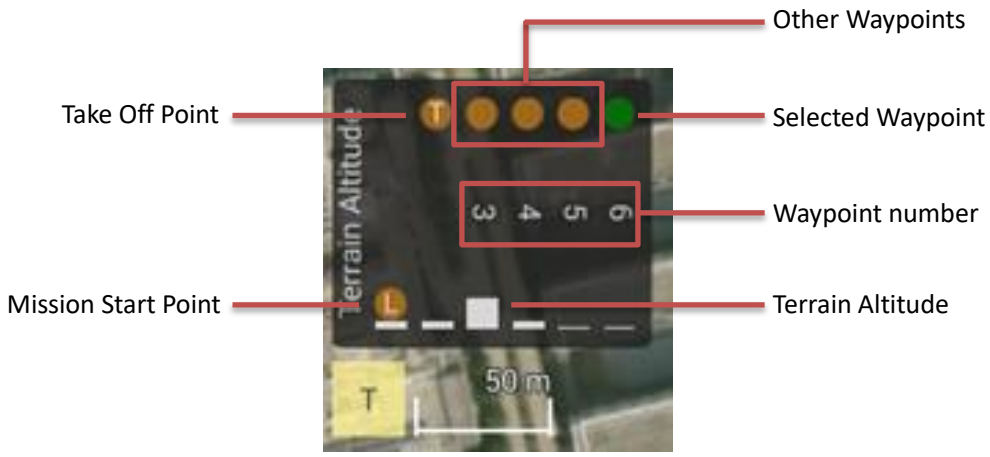
Other unselected waypoints on the flight route.

7Flight Route

The Flight Route of this Mission

8Terrain Altitude Indicator

This window displays the Terrain Altitude and Waypoint Altitude for mission planning.

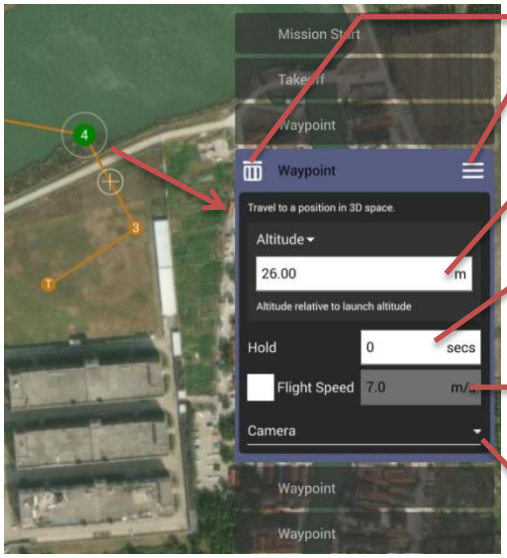


9Waypoint Setting Panel

This panel is the setting panel for each waypoint to adjust the waypoint parameters in detail.

Adjust the waypoint parameters

Once a waypoint was set and selected, the screen will pop up the ‘Waypoint point Setting Panel’ on the right side. In this panel, almost every parameter of a waypoint can be set freely, such as Altitude, Flight speed, Hold Time, etc. Even the direction of the gimbal and the cameras behaviors are also included.



Delete this waypoint

Position Edit Menu

Waypoint Altitude Setting

The operator can type in the number directly for altitude setting.

Hold Time setting

For setting the hover time on this waypoint

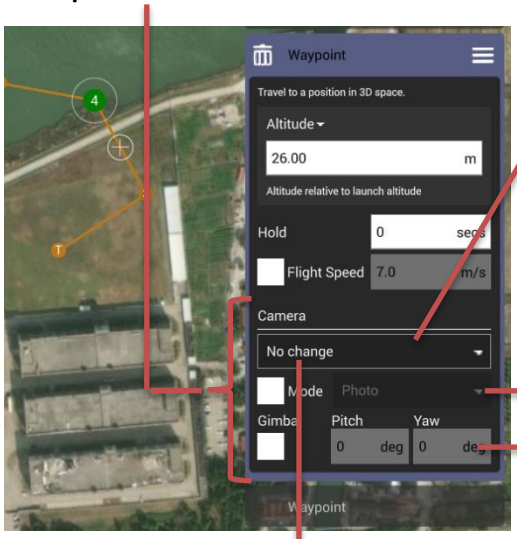
Flight Speed Setting

Tick the Box before the "Flight Speed" then type in the speed you want for this waypoint.

Camera and Gimbal Setting menu button

Tap this button to open the Camera and Gimbal Setting for the selected waypoint.

After the Camera and gimbal setting menu was open



Camera Behavior Setting Menu

Tap to open the Drop-down menu for Camera behavior setting for the selected waypoint.

Camera Mode Setting Menu

Tick the Box before the "Mode" then tap to open the Drop-down menu for Camera mode setting for the selected waypoint.

Gimbal Attitude Setting

Tick the Box under the "Gimbal" then type in the Pitch and Yaw data to set the gimbal attitude for the selected waypoint.

Camera Behavior Setting Menu Instructions

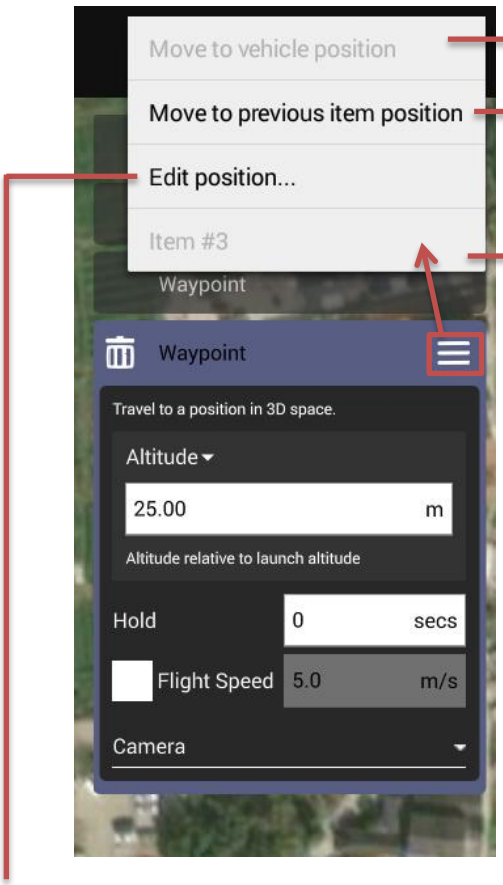
No Change – Camera maintains its current mode/settings.
Take Photo – Captures a photo at the current position.
Take Photos (Time) – Captures photos over a set time interval.
Take Photos (Distance) – Captures photos over a set distance travelled.
Stop Taking Photos – Stops the camera from taking photos.
Start Recording Video – Begins video recording.
Stop Recording Video – Stops video recording.

Gimbal Attitude Setting Instructions

Gimbal - Adjust the camera pitch and yaw at the currently selected Waypoint. To adjust pitch, select a value between 0 (flat to the ground) and 90 (straight down).
To adjust the yaw select a value between -180(left of the airframe centerline) and 180(right of the airframe centerline).

Position Edit Menu

There is a Position Edit Menu for each waypoint. To open this menu, please tap the setting icon at the upper right corner of the Waypoint Setting Panel for the selected waypoint.

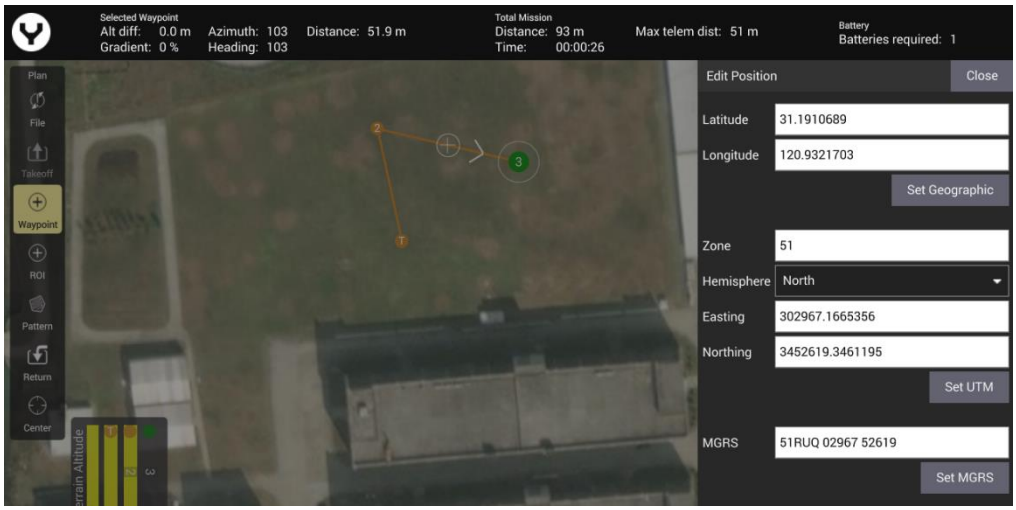


When the drone was positioned by GPS and Connected with the Transmitter. The operator can tap the "Move to vehicle position" to make the waypoint coincide with the drone.

Tap the "Move to previous item position" to make the selected waypoint coincide with the previous one.

Item Number (Can't be changed)

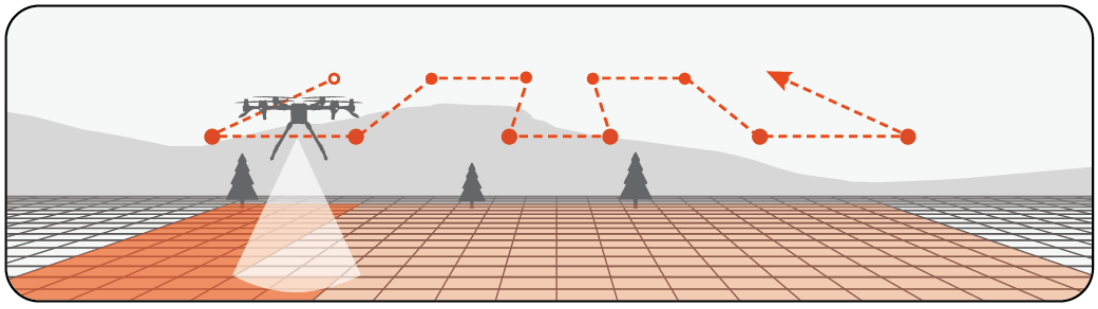
Tap the "Edit position" button to open the coordinate input menu as shown below to adjust the waypoint position precisely.



After all the waypoints have been checked, please upload the fight mission to the drone, and then start it.

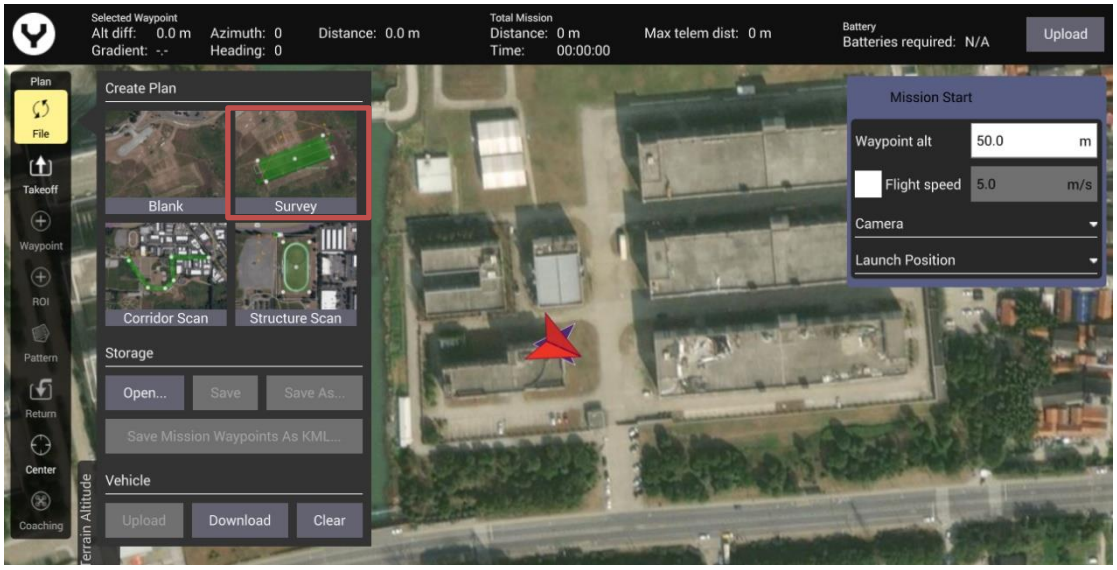
Pattern

Pattern is designed for mapping and 3D scanning of ground-based objects.

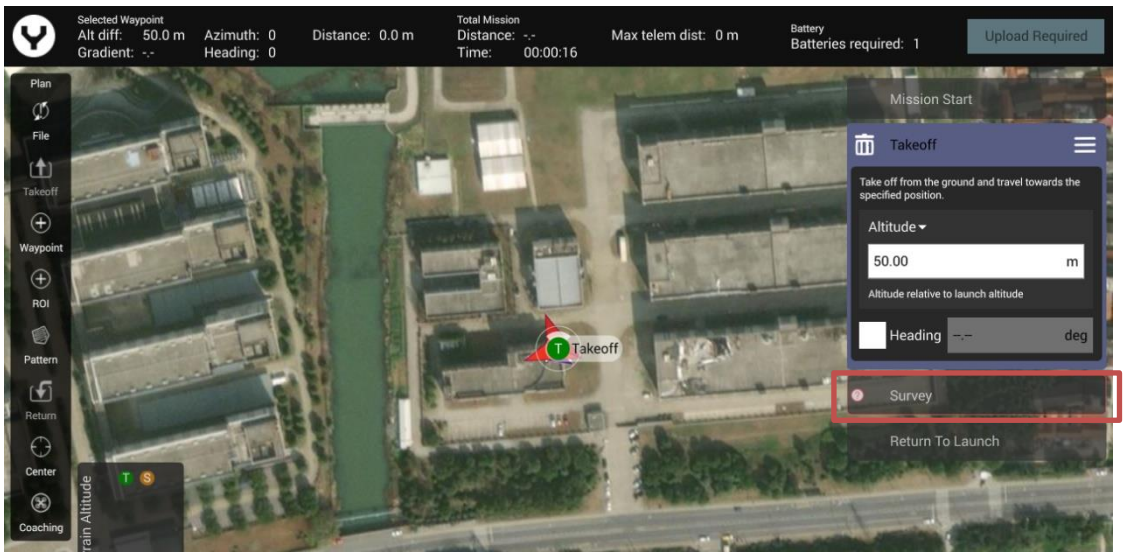


Survey Mode

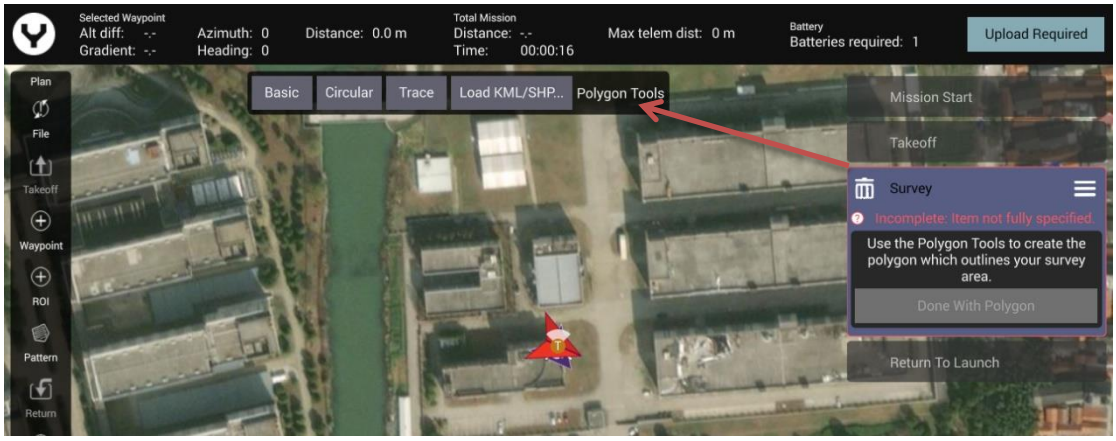
Survey mode allows the Pilot to quickly place a survey grid over a desired area. To select a survey grid mission, tap the Survey button after tapping the Mission Route Setting icon.



Then tap the Survey button on the right side of the screen to finish the further settings.



There are 3 preset templates to choose for editing the survey area.



Basic preset template overview



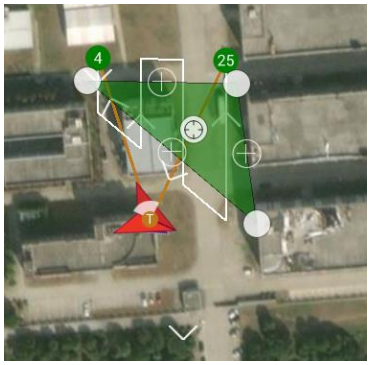
Tap the “Basic” button, the App will generate a rectangle survey area.
Tap and hold the Centre dot to drag the survey area on the map.
Tap and hold the white vertices then drag them to adjust the shape of the survey area.
Tap ‘+’ dot allows the Pilot to add more white vertices to the edge of the survey grid for a better fit.

Circular preset template overview



Tap the “Circular” button, the App will generate a circular survey area.
Tap and hold the Centre dot to drag the survey area on the map.
Tap the white dot on the edge of the Circle to adjust the radius of the survey area.

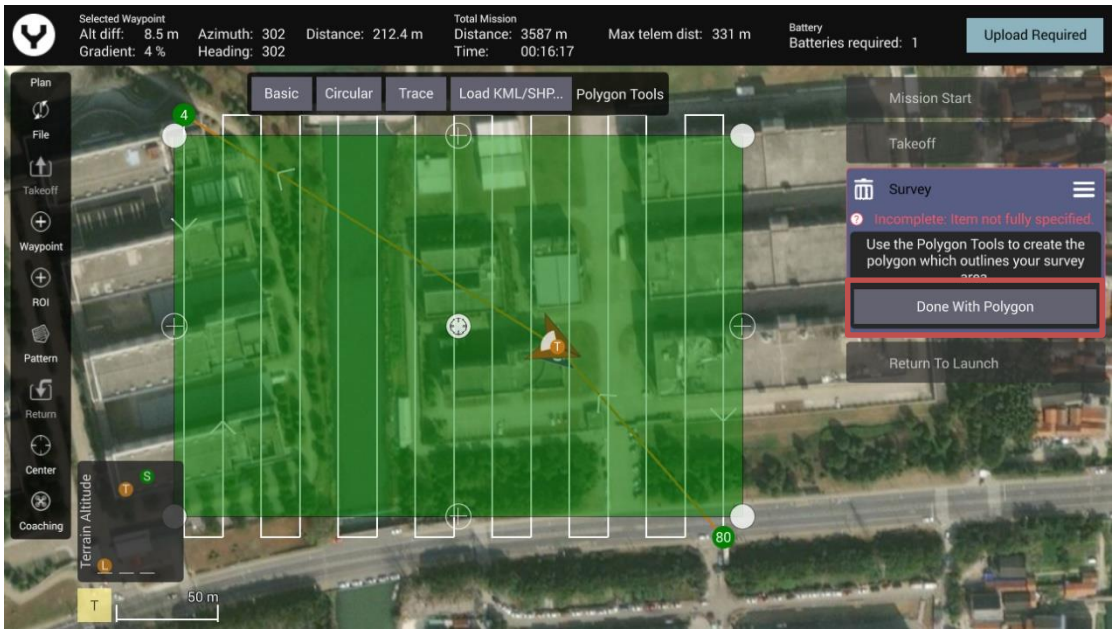
Trace preset template overview



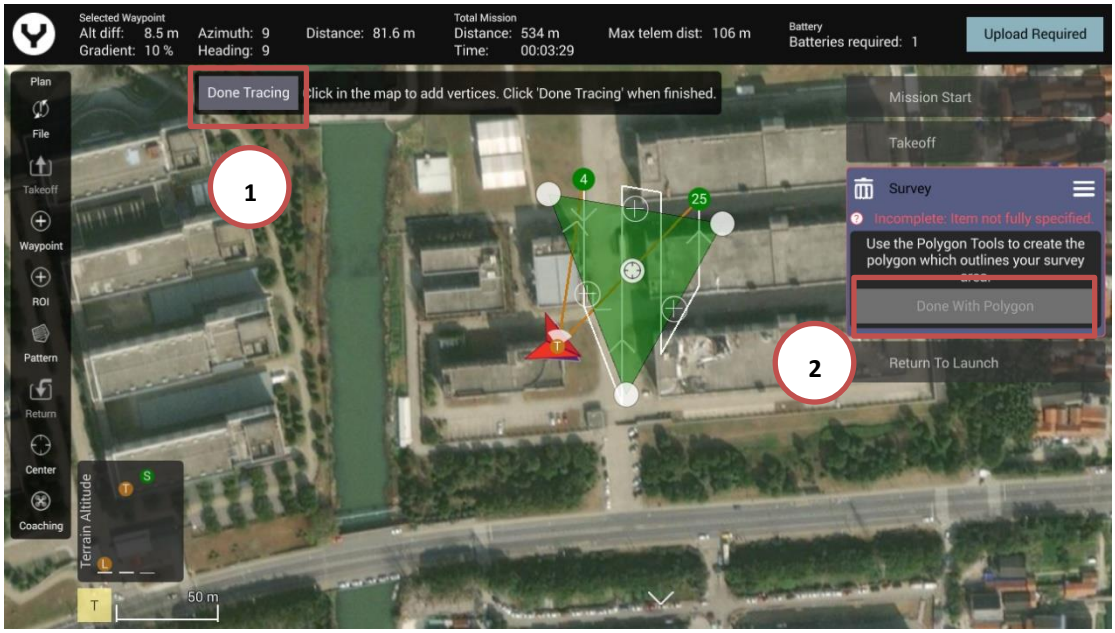
Tap the “Trace” button, then tap on the screen to set the vertex of your survey area. Once you have no less than 3 vertices. A triangular survey area will be generated automatically. The operator can add more vertices to get a better fit.
Tap and hold the Centre dot to drag the survey area on the map.
Tap and hold the white vertices then drag them to adjust the shape of the survey area.
Tap ‘+’ dot allows the Pilot to add more white vertices to the edge of the survey grid for a better fit.

The white line in the green survey area means the flight route when surveying.

After the green template covered the survey area you want on the map, please tap the “Done with Polygon” button and then tap the “Done Adjusting” button for the further settings.



Notice: For the Trace template, please tap the “Done Tracing” First, and then tap the “Done with Polygon” and other buttons.



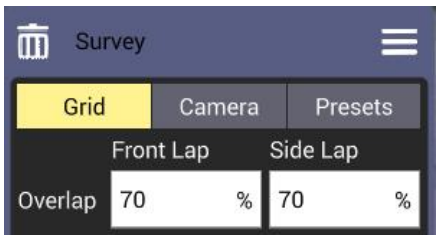
Adjust the Survey parameters

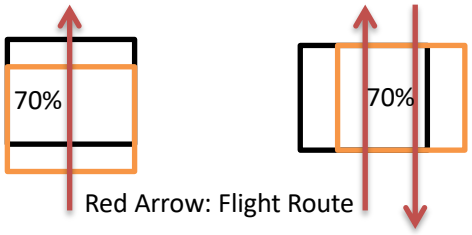
After the Survey area has been confirmed the operator can adjust the survey parameters. Click the “Grid” tap under the selected survey mission to adjust the flight route.

Overlap

Front Overlap – Creates images with a percentage of each image overlapping to the front of the image.

Side Overlap – Creates images with a percentage of each image overlapping to the side of the image.





Front Lap for 2 photos

Side Lap for 2 photos

Altitude or Ground Res

Altitude – Sets the survey grid altitude. This is not changeable mid-flight. Use the Waypoint tool when variable altitudes are required.

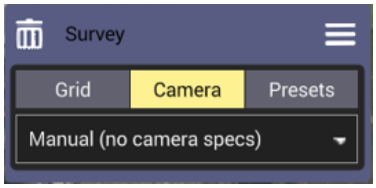
Ground Res – Sets the ground resolution in inches/pixel, which will automatically calculate and set the survey altitude.

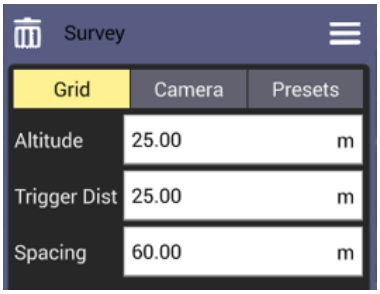


Select one and type in the parameters directly.

Note: A higher ground resolution requires a lower flight altitude. If unsure about ground resolution altitude, enter desired ground resolution then view the corresponding altitude in the altitude setting (greyed out), and vice versa.

Notice: When the "Manual (no camera specs)" was selected under the camera item, the Overlap will be replaced by the Trigger Dist and Spacing setting form and the Ground Res will be hidden.

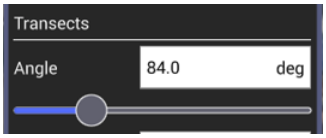




Angle

Angle –Drag the slider or type in the parameter to adjust the angle of the survey grid lines.









Turnaround dist

– Sets the distance outside the survey for the drone to turnaround.

Type in the parameters directly to adjust the distance





Rotate Entry Point Button

-The DataPilot App will offer more than one solution to lead the drone to enter and exit the survey area, the operator can change the enter and exit point by tapping the “Rotate Entry Point” button according to the actual conditions.



For example, the entry point was No.4 waypoint and the exit point was No.130 waypoint by default. After tapping the “Rotate Entry Point” button, the entry and exit point are changed.



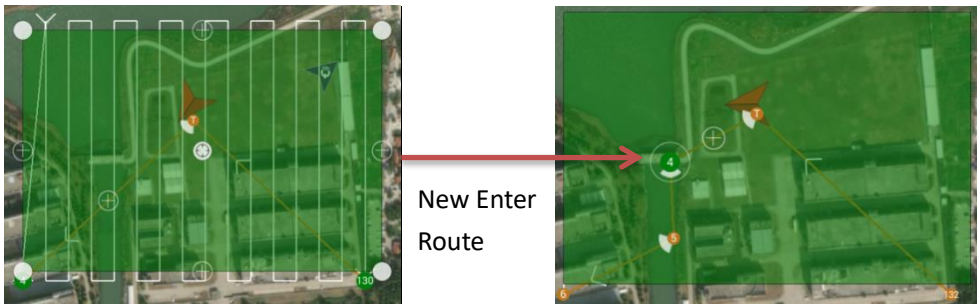
Enter Point

Exit Point



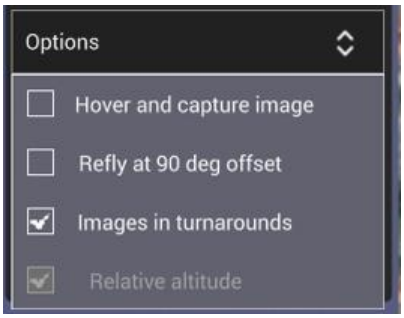
Exit Point

The operator can also tap the ‘+’ dot on the enter flight route for editing a more complex entering flight route.



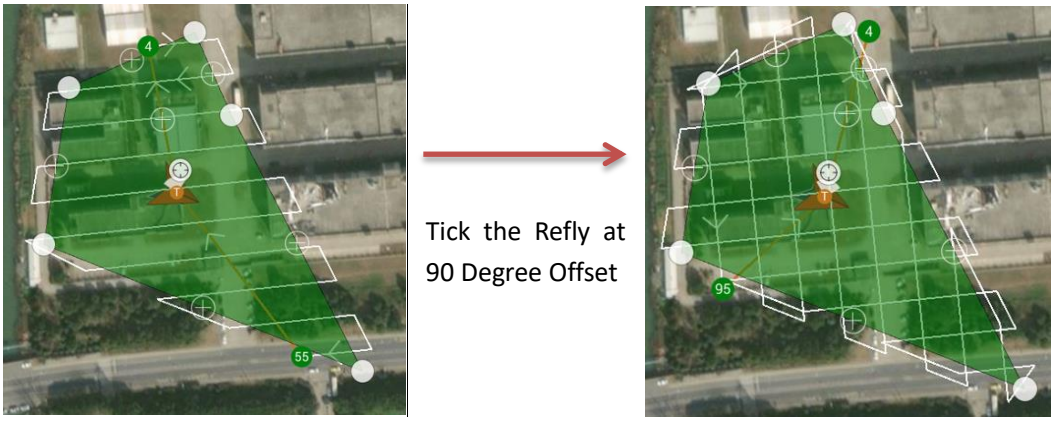
Options

Taps the Options to open the Drop-down menu

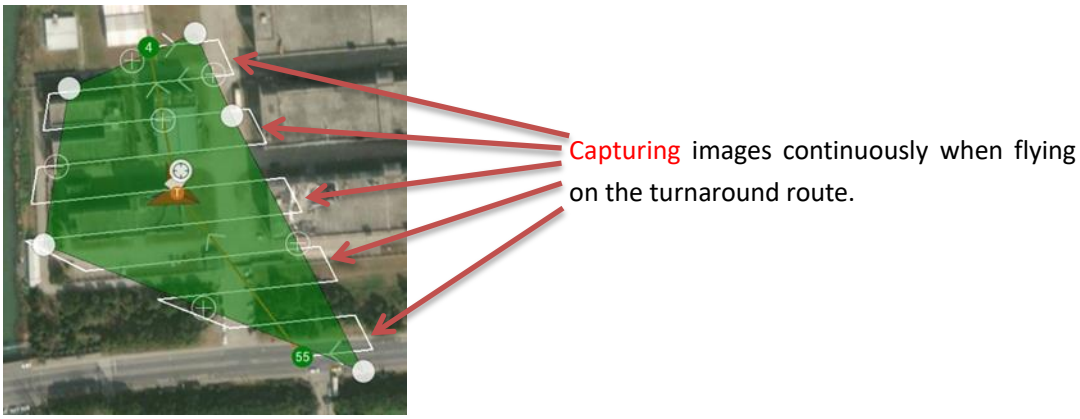


Hover and capture image – After this Item is ticked the drone will stop and hover and then capture the image at each capture point for better image quality.

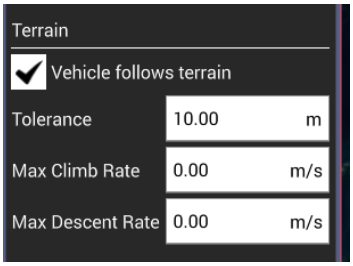
Refly at 90 Degree Offset – Overlays a secondary survey grid 90 degrees from the first survey (also known as cross-hatch). This feature is useful for extremely high quality maps, and for early morning or late afternoon flights where long shadows may provide deep contrasts.



Images in turnarounds – After this Item was ticked the drone will continue capturing the images when flying on the turnaround route.



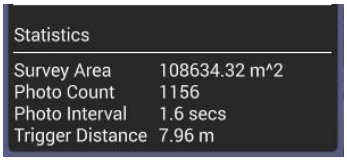
Terrain



Tap the Terrain button and tick the Vehicle follows terrain to make the drone fly closer to the ground for capturing more pictures or fill the holes in the following inner process working flow.

The operator can type in the parameters directly in the text box for setting.

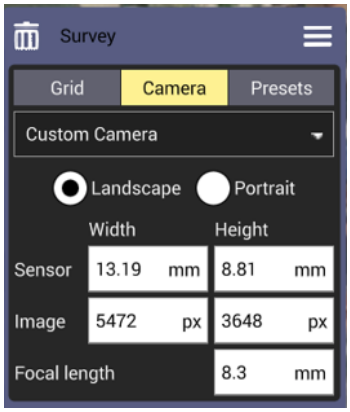
Statistics



Display the key parameters of this survey mission.

Select the Camera

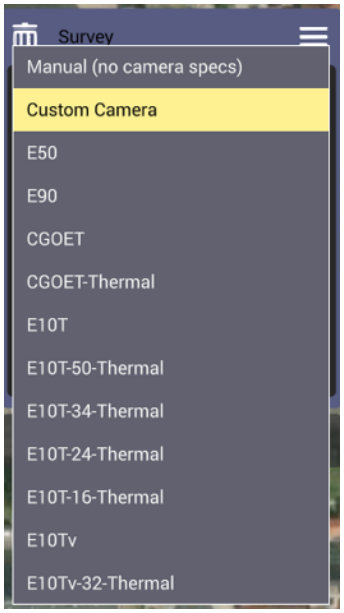
Different cameras have different sensor size and Lens parameters. Selecting the correct camera type is very important to get a correct flight route and achieve a correct survey result.



Tap the Camera button beside the Gird button to select the camera type or set the camera parameters.

The user can set the parameters manually when the Custom Camera was selected.

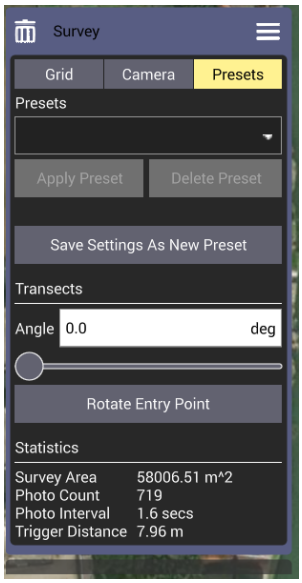
Type the parameters directly to finish the setting operation.



The DataPilot App also has preset the camera select list. The operators can easily select the gimbal cameras purchased.

After the camera type was selected the operator does not need to individually set the camera parameters. The app will calculate the flight route and photo taking interval automatically.

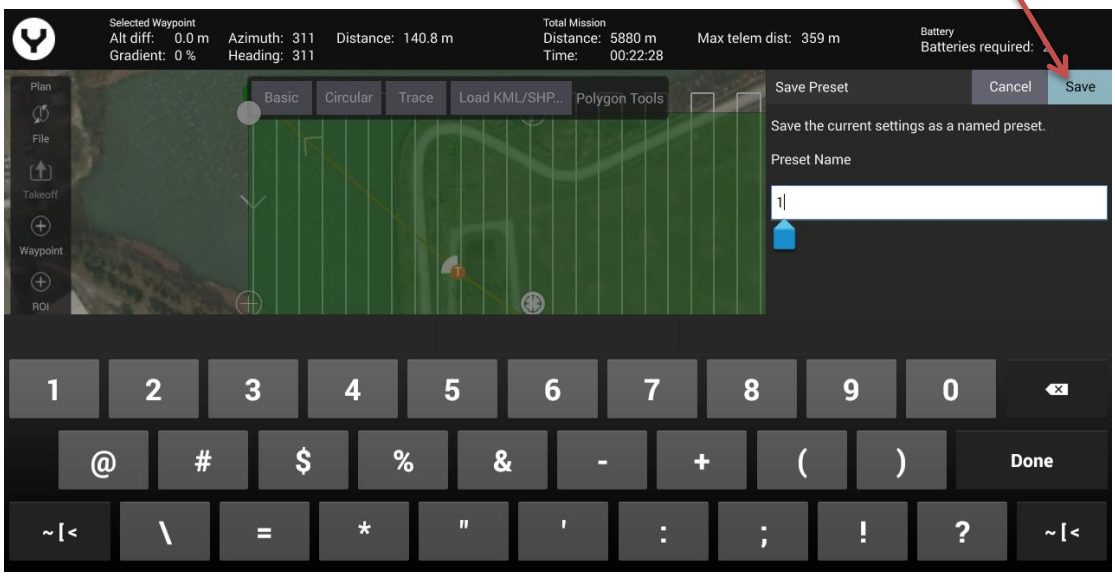
Save reload and delete the survey data

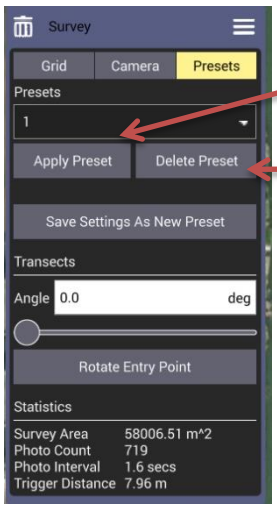


Tap the Presets button to save the setting parameters under the Grid and Camera Items.

Tap the “Save Settings As New Preset” button to create a new save.

Type the name and tap the “Save” button to finish.





After the file name was selected tap the “Apply Preset” button to load the parameters.

Tap the “Delete Preset” button to delete the useless preset files.

Tap the trash can icon beside the Survey to delete the whole survey mission.

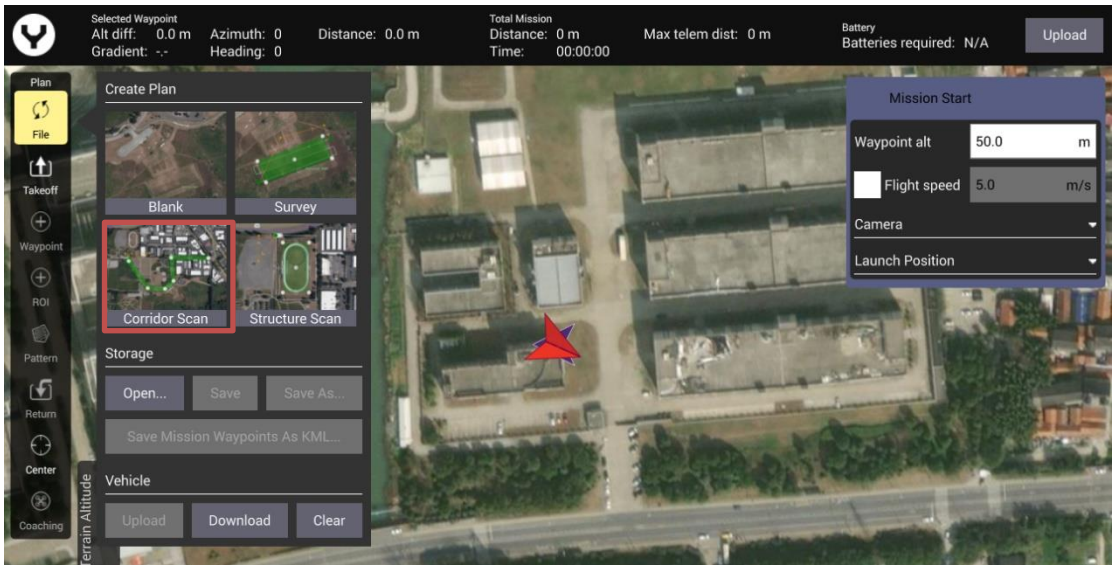
CORRIDOR SCANS

Roadways, power lines, train tracks, footpaths, and other narrow winding areas may be set up as “corridor scans.” Corridor scans enable the drone to fly long pathways with overlap for these sorts of missions.



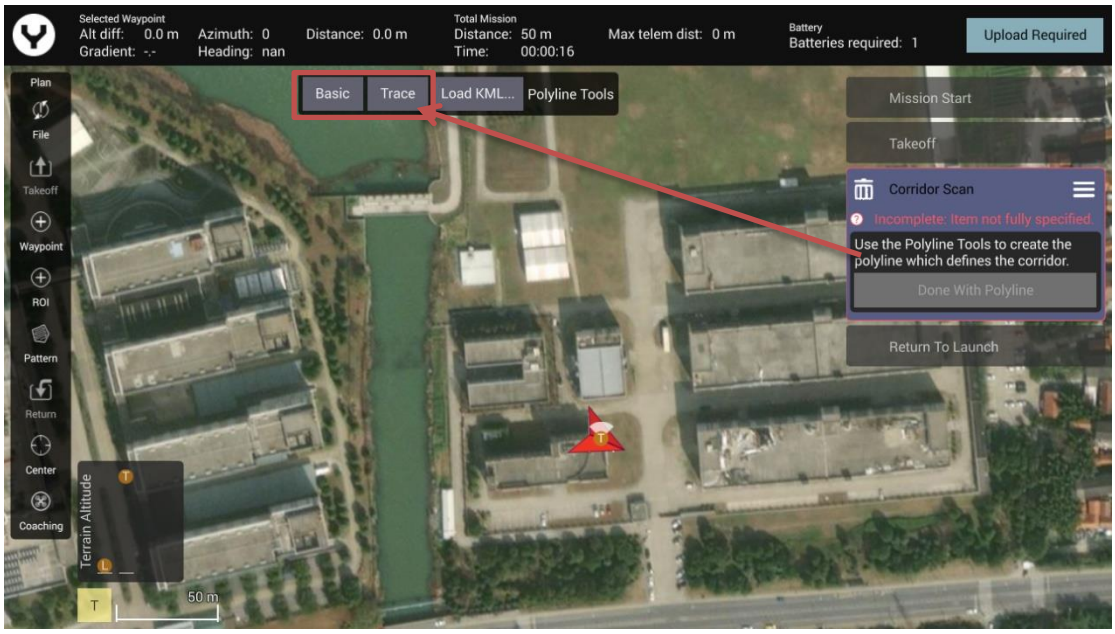
This is an example of a corridor scan

To create the CORRIDOR SCAN, tap the Corridor Scan button after tapping the Mission Route Setting icon.



If the transmitter is already connected with the drone and the drone GPS position was established, the takeoff point will be set above the drone location, otherwise place the takeoff point at the position you need then tap the “Done Adjusting” button to finish setting. Then the app will switch to the Corridor scan setting panel automatically.

There are 2 preset templates to choose for editing the Corridor Scan area.



Basic preset template overview



Tap the “Basic” button, the App will generate a corridor scan area with 2 vertices.

Tap and hold the vertices dot to drag the corridor scan area on the map.

Tap ‘+’ dot allows additional vertices to be created/inserted in the pathway, allowing for numerous angles to follow the road.

Trace preset template overview



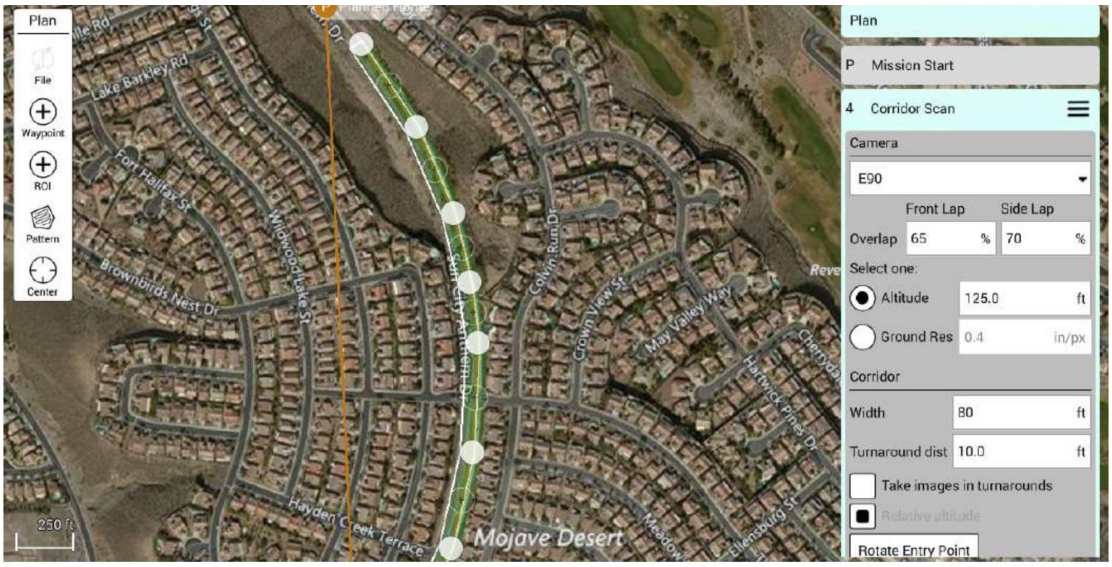
Tap the “Trace” button, then tap on the screen to set the vertex of your corridor scan area. Once you have no less than 2 vertices. A corridor scan area will be generated automatically. The operator can add more vertices by tapping on the screen directly to allowing for numerous angles to follow the road.

Tap and hold the vertices dot to drag the corridor scan area on the map.

Tap ‘+’ dot allows additional vertices to be created/inserted in the pathway, allowing for numerous angles to follow the road.

Click the “Done Tracing” button to finish the shape settings of the Trace template.

After the green template covered the corridor scan area you want on the map, please tap the “Done with Polygon” button for the further settings.

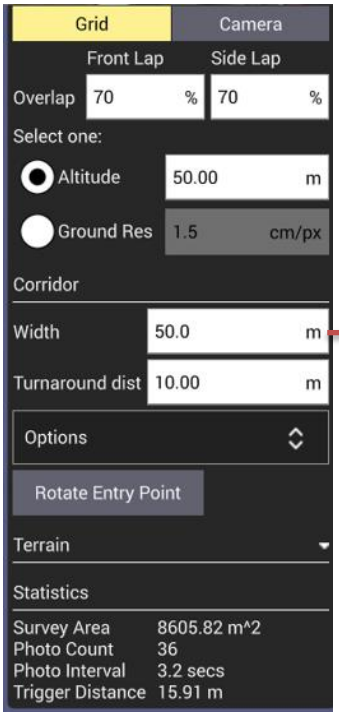


In this image, seven vertices have been inserted, allowing the Drone to follow the curvature of the roadway

Notice: Be similar to the Survey mode the CORRIDOR SCAN Setting Panel is shown on the right side. Through this panel, the operator can set all the CORRIDOR SCAN parameters. Drag the panel up and down to view more items.

Adjust the Corridor Scan parameters

After the Corridor Scan area has been confirmed the operator can adjust the scan parameters. Click the "Grid" tap under the selected Corridor Scan mission to adjust the flight route.



The most functions in the Corridor Scan Setting Panel are the same as what in the Survey function.

But the Corridor Scan Setting Panel still has a function that the Survey doesn't. That is Width Setting.

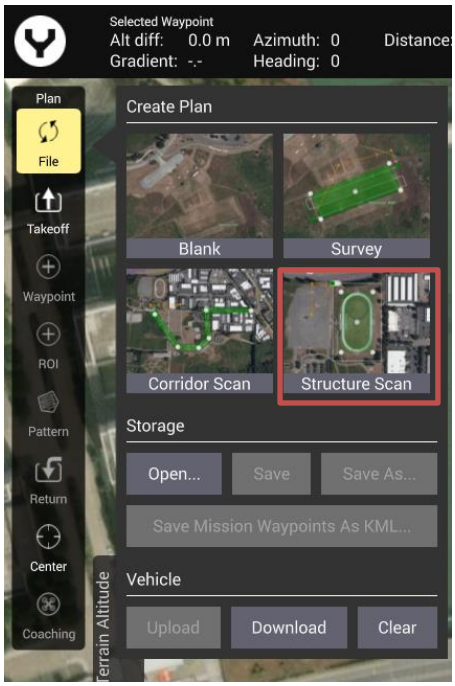
Type the width parameter directly in the text box to adjust the width of the corridor.



Select the Camera

As the same as the Survey mode, selecting the correct camera is especially important to achieve a correct result.

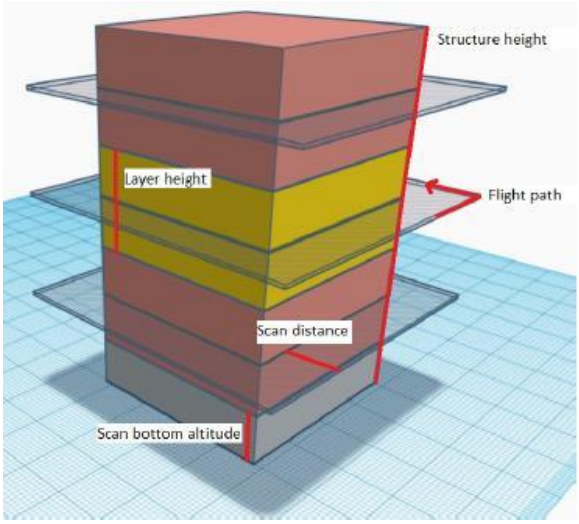
STRUCTURE SCANS



A Structure Scan allows the operator to create a grid Flight pattern that captures images over *vertical surfaces* (e.g. walls) around a structure with an arbitrary polygonal (or circular) ground footprint. Structure Scans may be combined with nadir/survey flights to better serve architects, engineers, and construction companies looking to create accurate 3D models, or output. las files for products such as Revit or Autodesk workflows.

Structure scans may also be used for virtually any vertical scan element, and may be combined with other automated flight profiles.

The concepts of the STRUCTURE SCANS Function ->

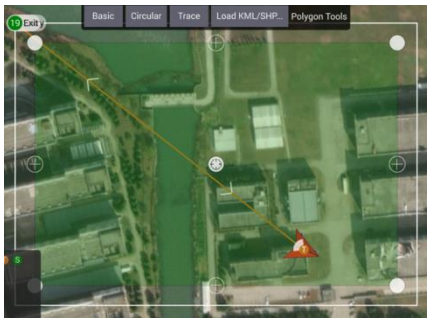


Structure Scans may be inserted into a mission using the Structure scan button after tapping the Mission Route Setting icon.
Using the map function, zoom to the geographic area to be scanned, and centre it on the screen for best access.

Be similar to the Survey mode, there are 3 preset templates to choose from for editing the Structure Scan area after tapping the Structure Scan button and the takeoff point was set.



Basic preset template overview



A green overlay will appear with four corners.

Tap and hold the Center dot to drag the survey area on the map.

Tap and hold the white vertices then drag them to adjust the shape of the structure scan area.

Tap ‘+’ dot allows the Pilot to add more white vertices to the edge of the structure scan area for a better fit.

Circular preset template overview



Tap the “Circular” button, the App will generate a circular structure scan area.

Tap and hold the Center dot to drag the structure scan area on the map.

Tap the white dot on the edge of the Circle to adjust the radius of the structure scan.

Trace preset template overview



Tap the “Trace” button, then tap on the screen to set the vertex of your structure scan area. Once you have no less than 3 vertices. A triangular structure scan area will be generated automatically. The operator can add more vertices to get a better fit.

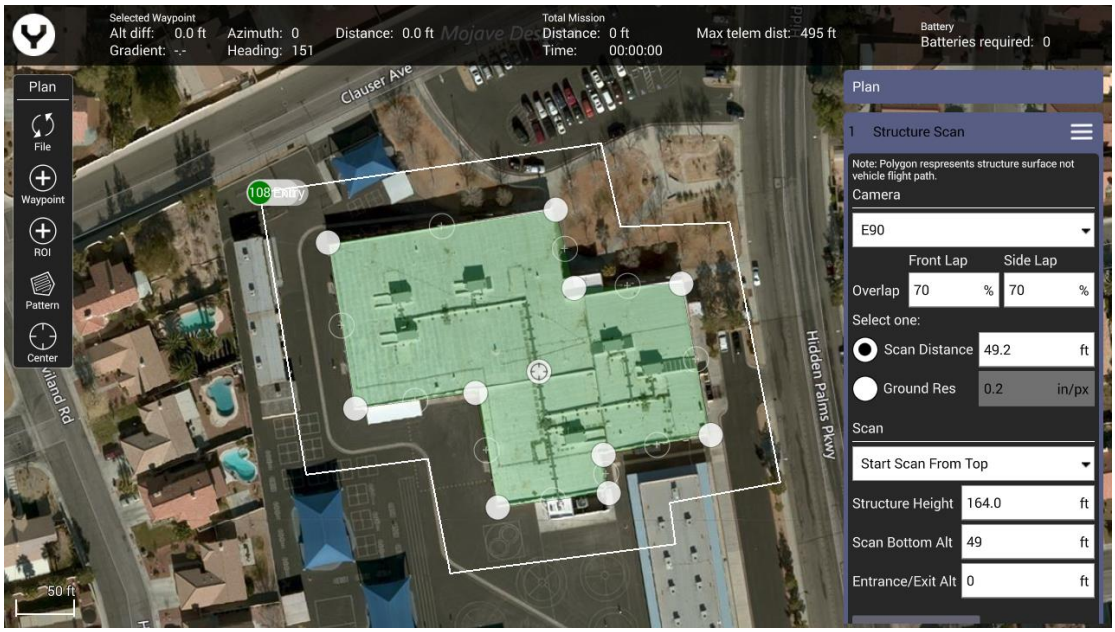
Tap and hold the Centre dot to drag the structure scan area on the map.

Tap and hold the white vertices then drag them to adjust the shape of the structure scan area.

Tap ‘+’ dot allows the Pilot to add more white vertices to the edge of the survey grid for a better fit.

For the Trace template tap the “Done Tracing” button first, others please tap the “Done With Polygon” button directly to start the further settings.

A green overlay will appear with four corners. The region shown in green must be modified so that it surrounds the structure.

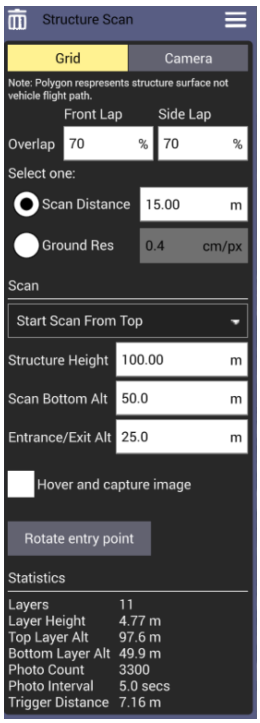


• Drag the opaque vertices on the map to the edge of the structure.

• If the structure footprint is more than a simple square, click the semi-transparent circles between the vertices to create a new vertex. This allows for complex shapes such as the one seen above.

Adjust the Structure Scan parameters

After the Structure Scan area has been confirmed the operator can adjust the scan parameters. Click the “Grid” tap under the selected Structure Scan mission to adjust the flight route.



The operator can adjust the Structure Scan parameters according to actual needs and the concepts of the STRUCTURE SCANS Function introduced above in the Structure Scan setting panel.

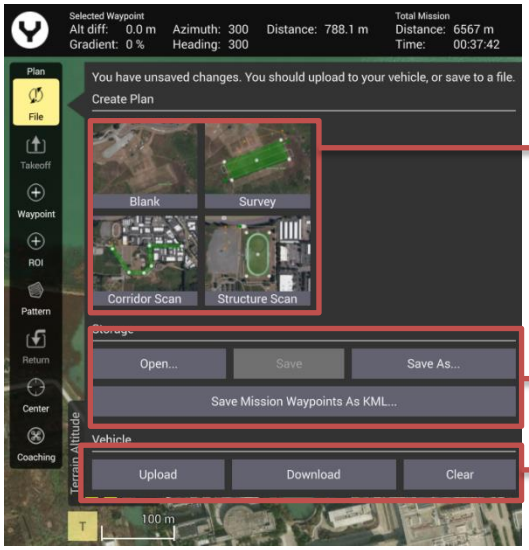
Select the Camera

Click the “Camera” tap under the selected Structure Scan mission to enter into the camera settings.

Same as the Survey mode, selecting a correct camera is extremely important to achieve a correct result.

Other functions of the Plan Panel

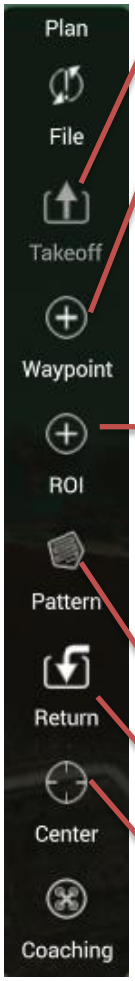
After entering into the Mission planning mode by tapping the Mission Route Setting icon, the File button will be activated automatically. Beside the Waypoint other Patterns mission can be created by tapping directly on the pop up create plan window, the operator can also save the created flight plan or open an existing plan.



Select a flight plan type to create.

Open or save the created flight plan as .plan or .KML file.

Upload the flight plan to the drone.
And Download or Clear the flight plan stored in the drone.



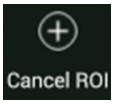
Tap to add a Takeoff point on the map. Normally when the drone GPS position is established, the takeoff point will coincide with the drone. Otherwise the operator needs to add the takeoff point manually. This function is mostly used in planning a waypoint flight plan. The Patten flight plan such as survey etc. will create a takeoff point automatically.

Add the waypoint on the map.

Add the region of interest point on the map. Tap the ROI button then tap on the map directly to add the ROI point and set the altitude. Then the waypoints which are added after the ROI point will point their gimbal camera towards the ROI point.



The same as the waypoint function the operator can set the altitude, delete or edit the position by going through the menu of sub menus of the ROI Setting panel. The flight routes marked with green colour indicate which the ROI function is active.

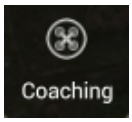


Once a ROI point was set the Cancel ROI button will instead the ROI button, click to deactivate the ROI function on the flight route, but not delete directly.

Insert new Pattern flight plan on the map.

Tap to add a Return to launch command after all the flight mission was finished.

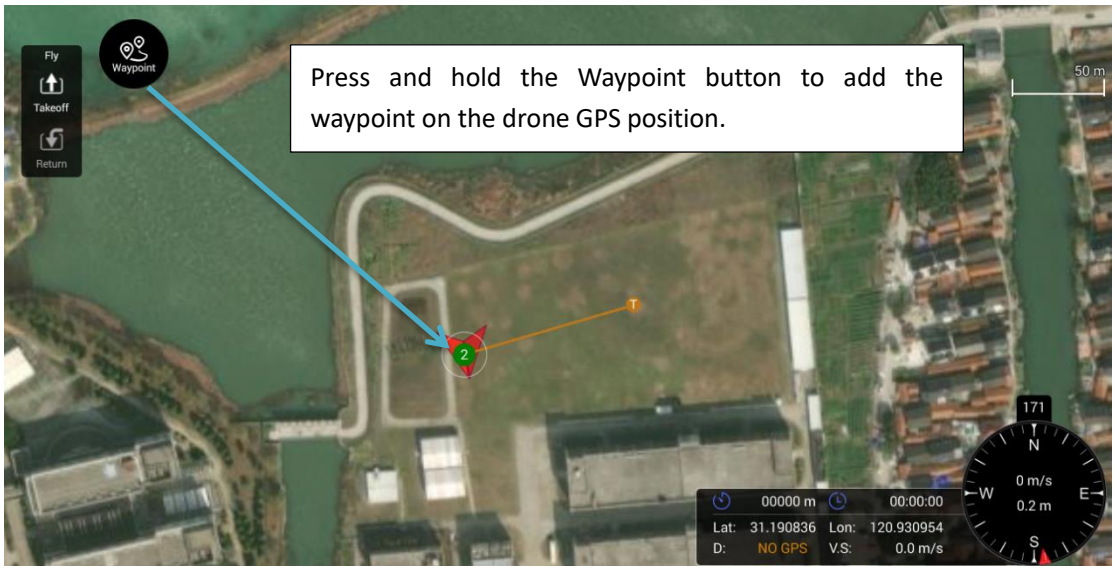
Tap the Center button to open the sub menu to select the centre point located on the screen.



After the drone and transmitter are connected the Coaching button will displayed on the plan setting panel.

The coaching function will allow the Datapilot 2.0 App to capture the drone current GPS position as a new waypoint.

Tap the takeoff button to add a takeoff point for the Blank flight plan, and then tap the Coaching button, the operator can add a waypoint by long pressing the waypoint button.

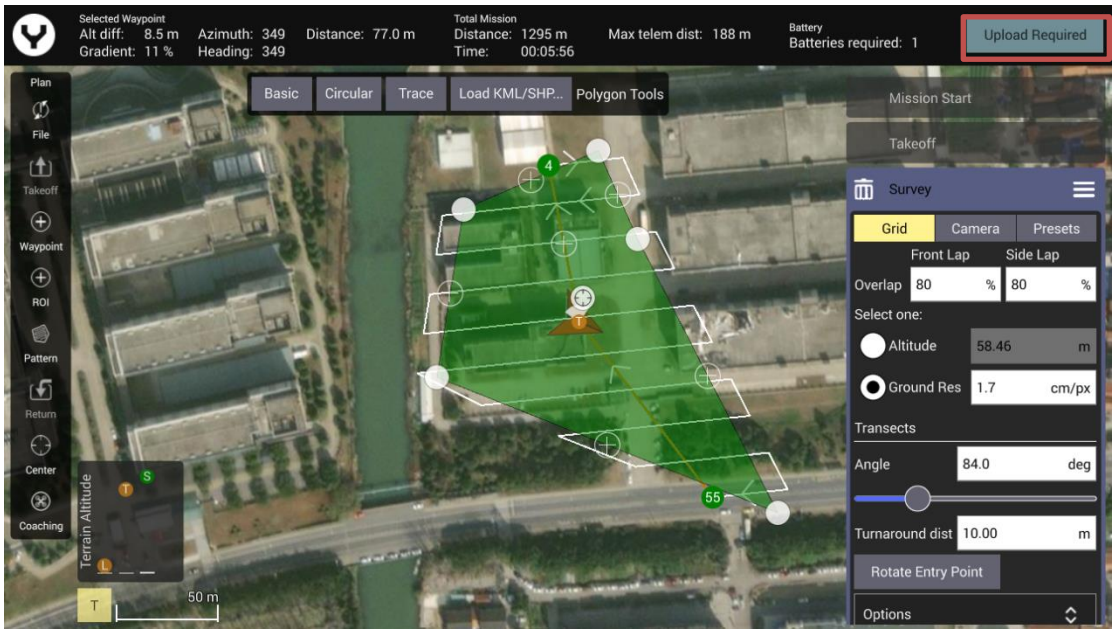


After all the waypoints have been captured tap the Mission Route Setting Button and upload the waypoints data to the drone.

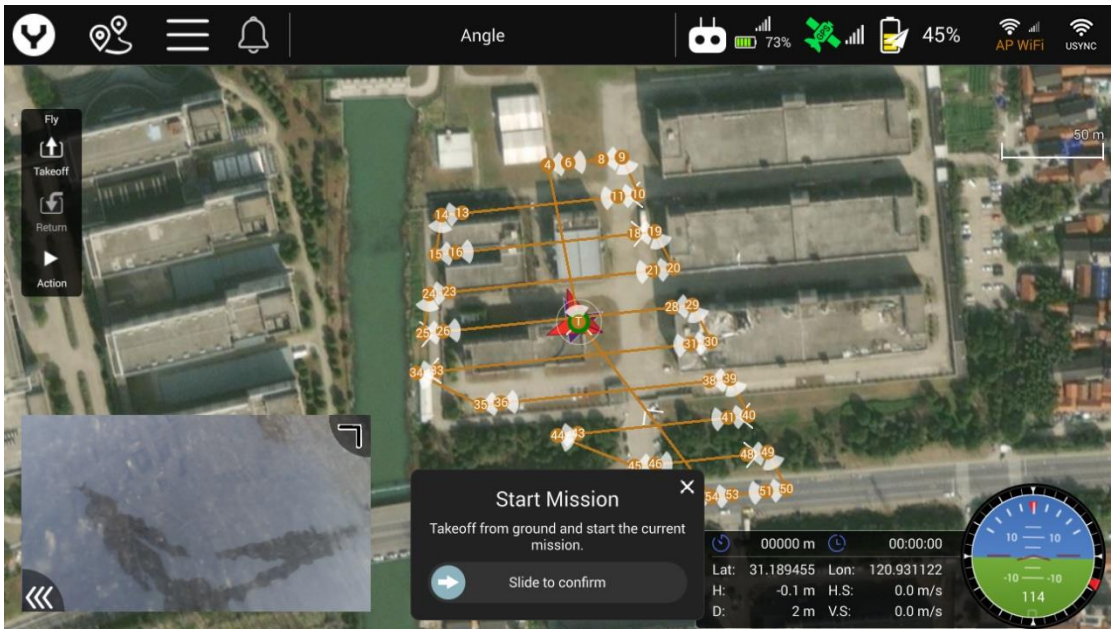
Execute the flight mission

No matter what kind of flight plan was created, to execute the operator needs to upload the plan to the drone first.

After the flight plan was confirmed and the drone is connected, tap the “Upload Required” or “Upload” to upload the mission to the drone.



Tap the Main Interface Button to switch back from Mission planning interface.



Slide the slider to confirm and the drone will execute the flight mission automatically.

Operations in mission flight mode

Pause the flight mission

The operator can pause the flight mission by the following 3 method:

1. Switch the flight mode by using the flight mode switch.
2. Tap the Pause button then slide to confirm.



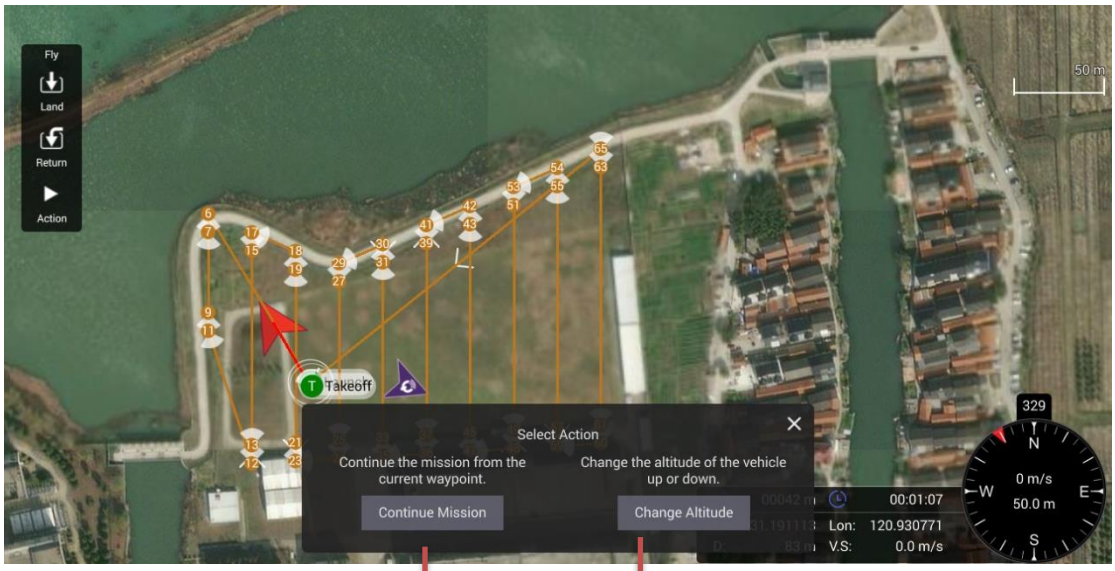
3. The operator can move the joysticks to any direction to pause the flight mission immediately especially in emergency cases, such as the drone could hit an obstacle.

Continue the flight mission

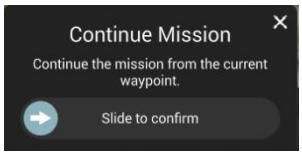
1. Slide the slider to continue the mission directly.



2. Tap the Action button then select continue or set the new altitude.



Tap the “Continue Mission” button then slide to confirm to continue the mission.

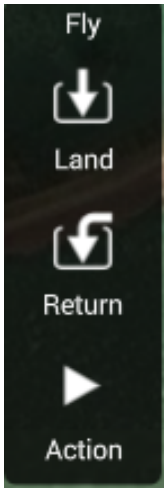




Set the new altitude then slide to confirm.

Then Tap the “Continue Mission” button under the Select Action sub menu to continue.

Land or Return in mission flight



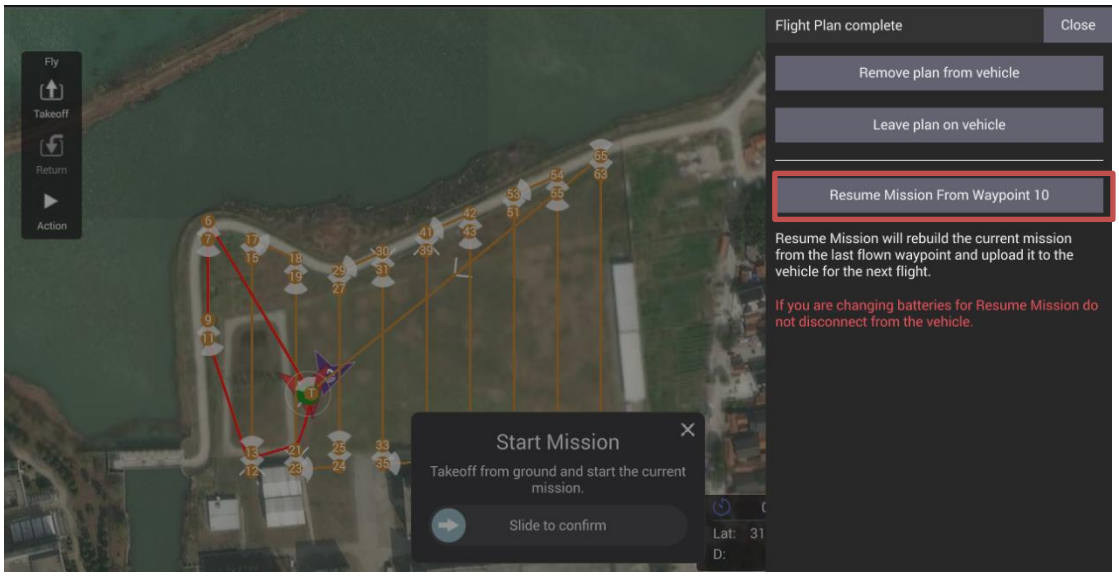
Tap the Land button and slide to confirm then the drone lands at the current position.

Tap the Return button and slide to confirm then the drone returns to the launch point.

Breakpoint continuation

Sometimes surveying a huge area, the drone can't finish the job in 1 flight. The breakpoint continuation function allows the operator to change the drone battery and continue the unfinished mission.

When the drone has landed with the mission unfinished, the dialog box will pop up as in the picture shown.



Tap the "Resume Mission From Waypoint XX" button the mission will be updated. It will delete the flight route already finished.

Notice: It would take a few minutes to update, if there are a large number of waypoints in the mission, please be patient, do not power off the drone and transmitter before the mission has been refreshed.

Then the operator can power the drone off and change the battery.
After the drone and the transmitter are connected again, the unfinished flight mission will be loaded automatically, and the operator only needs to slide to confirm to continue.

After the drone and the transmitter connected again:



Setting Interface

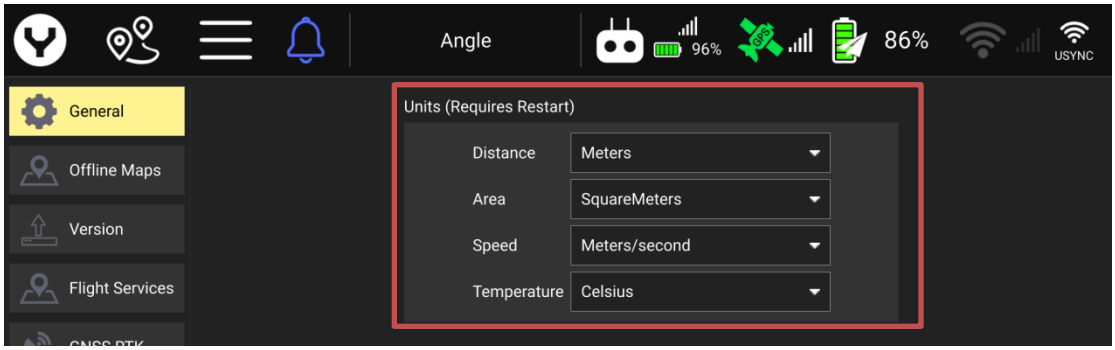
Tap the settings button to open the extended menu to view and adjust the parameters of other settings. We suggest entering this interface after the drone and transmitter are connected to view all the items in this interface.

Notice: Due to the DataPilot 2.0 App is a cross platform flight control application, beside the H850, there are many items in the setting interface that are designed for other types of drone such as H520E and Q820, please ignore the items which are not introduce in this manual. They may be not compatible or the H850 drone doesn't have this function.

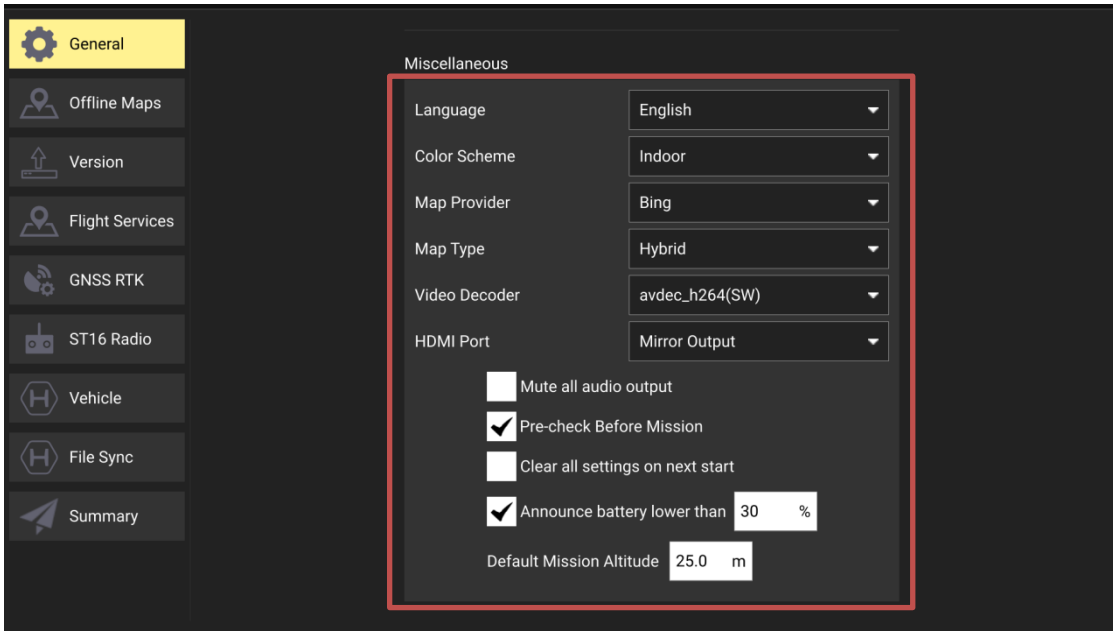
Introduction of common functions in setting interface

1. General

Units: Operator can make selections according to their own requirements in the drop-down menu.

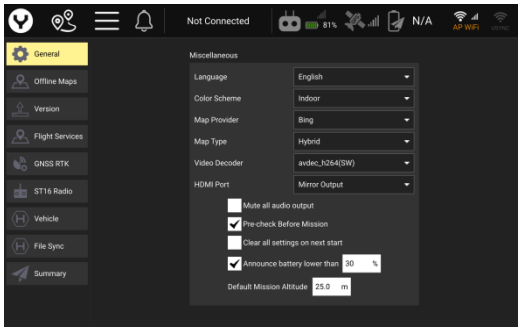


Miscellaneous

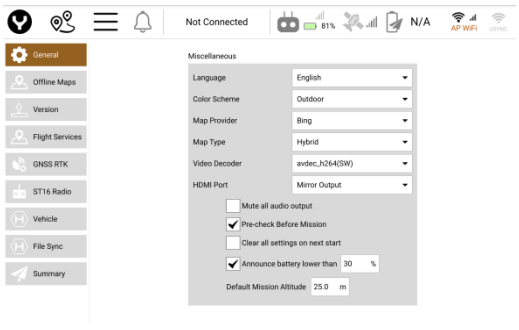


Language- Operator can make selections according to their own requirements in the drop-down menu.

Colour Scheme-The DataPilot 2.0 supports 2 different colour schemes. Indoor scheme will provide a dark interface meanwhile the outdoor has a bright interface.



Indoor



Outdoor

Map Provider and Map Type-The operator can change the map provider and type according to their network speed or requirements.

Default Mission Altitude-Set the default waypoint alt when entering the flight mission plan interface.

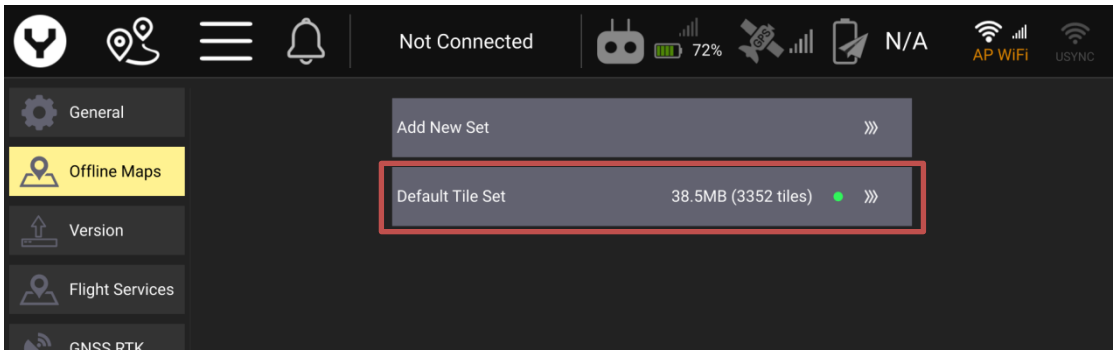


Other settings in General Items-We suggest keeping them as the default setting.

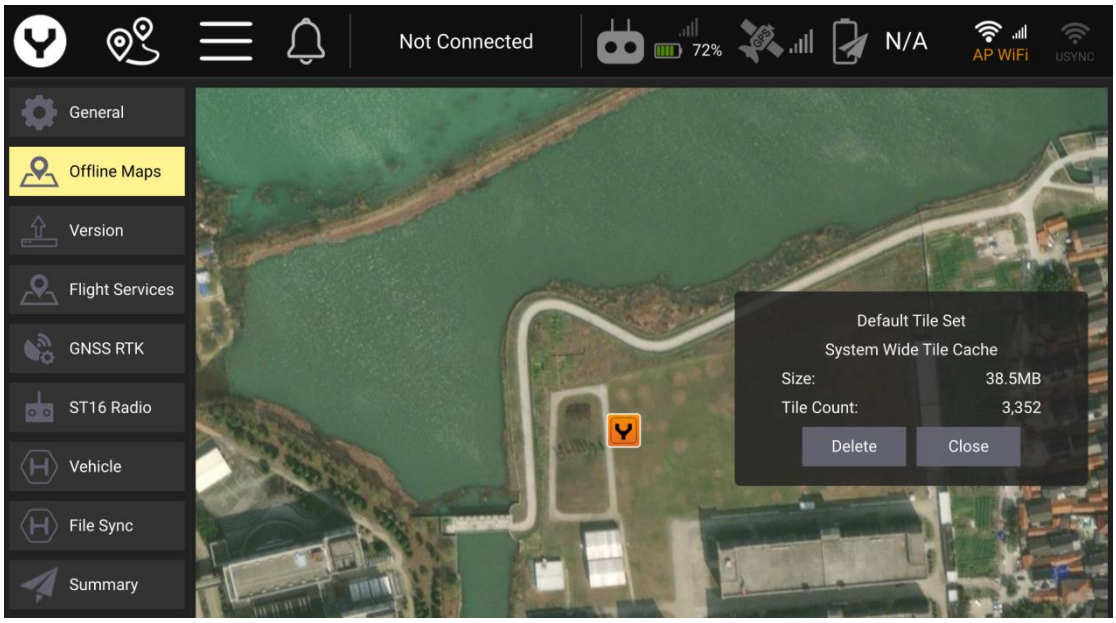
2. Offline Maps

The Offline Maps allows the Datapilot 2.0 App store the map tile in the cache in the transmitter for working in the field without the internet.

After the transmitter is connected with the internet the map will be downloaded automatically according to the drone or the transmitter GPS position. The first downloaded map will be set as the default tile.

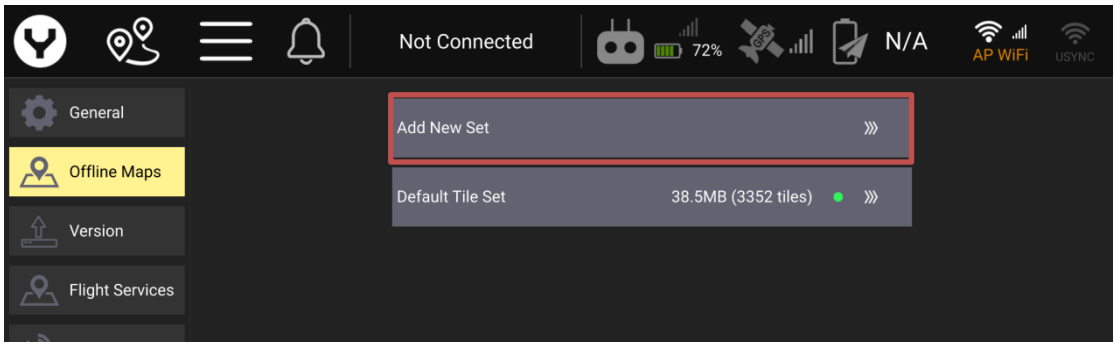


The operator can delete the default tile by tap the “Default Tile Set” button and then tap the “Delete “button.



Tap the “Close” button to return.

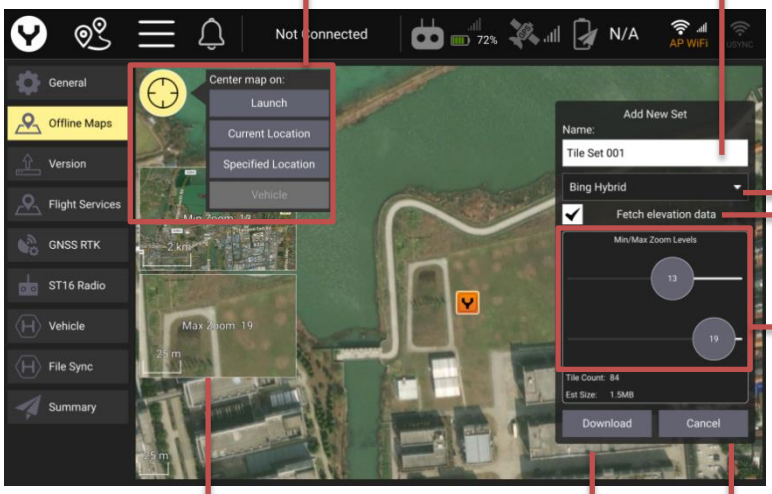
The operator can also add a new tile set manually beside the default tile set, tap “Add New Set” button to edit.



New set edit interface Introduction

Map centre setting button
The operator can tap this button and select the centre position on the sub menu.

New Tile Set Name Edit Box
The operator can edit the name of the new tile set in this box.



Map type select
The operator can select the Map provider and type in the drop-down menu.

Tick to fetch the elevation data on the map.

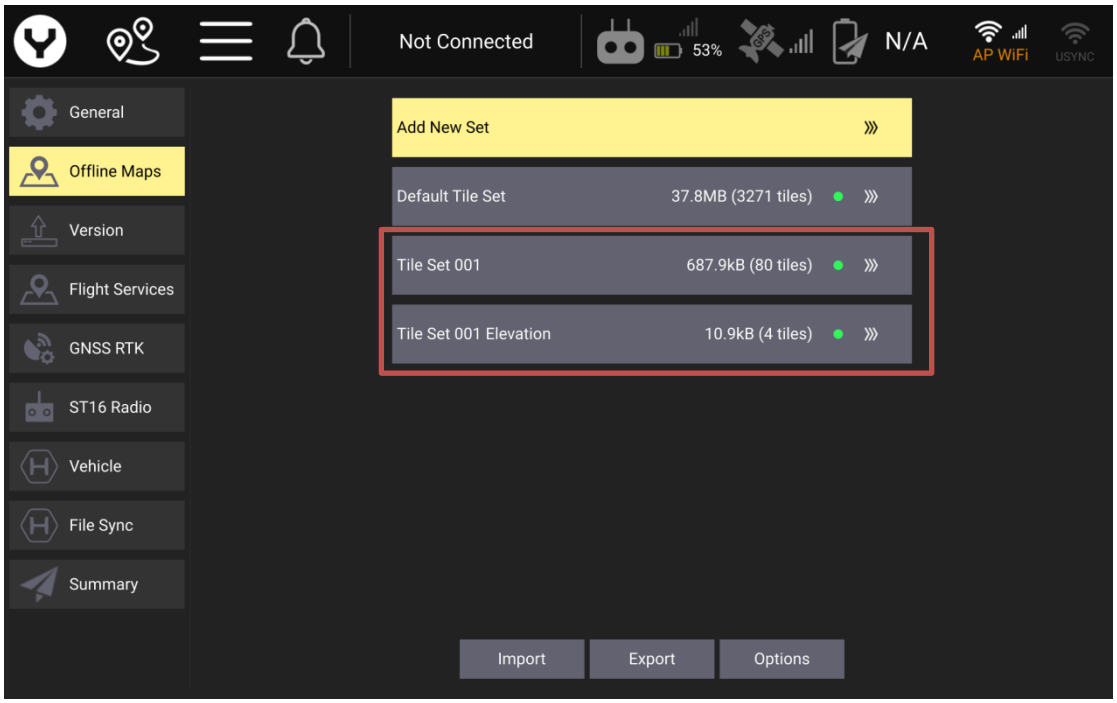
Slide to adjust the Min/Max Zoom level.

Tap the Cancel to return.

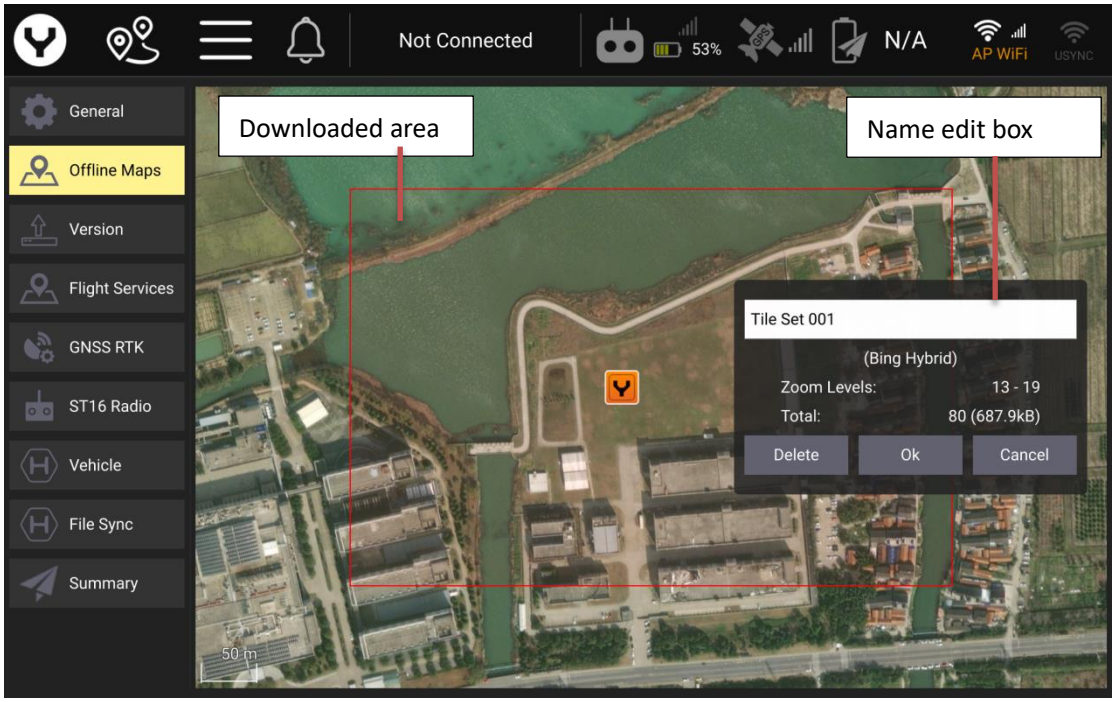
The Min/Max Zoom level effect preview

Tap Download button to save the new set.

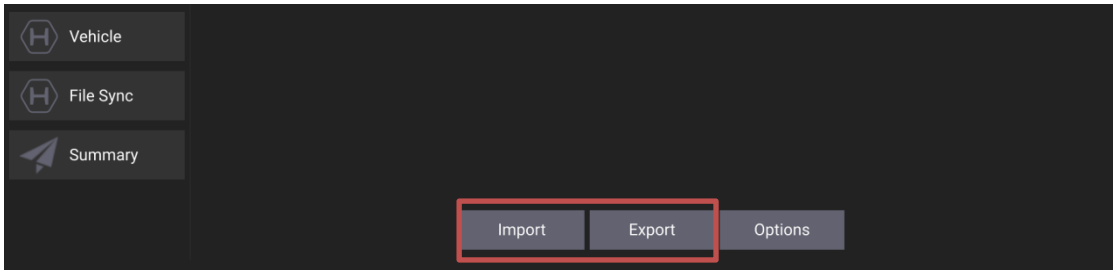
After clicking the Download button the new tile set will be downloaded and saved in the Offline Maps menu.



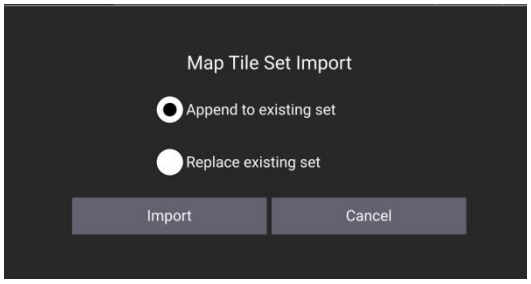
Similar to the Default Tile Set the new added tile set can be reviewed by tapping the name and can be deleted by tapping the Delete button.
The difference is the new added tile set can be renamed and tap the “OK” button to confirm.



The downloaded map tile set can be imported and exported between devices.

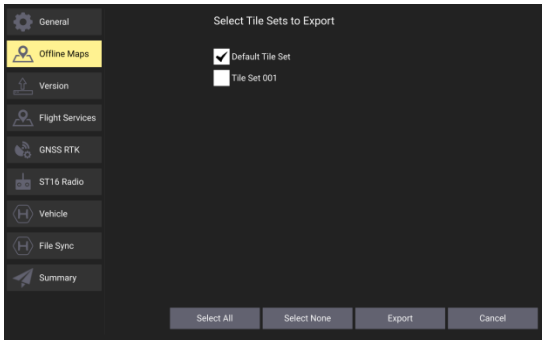


Import



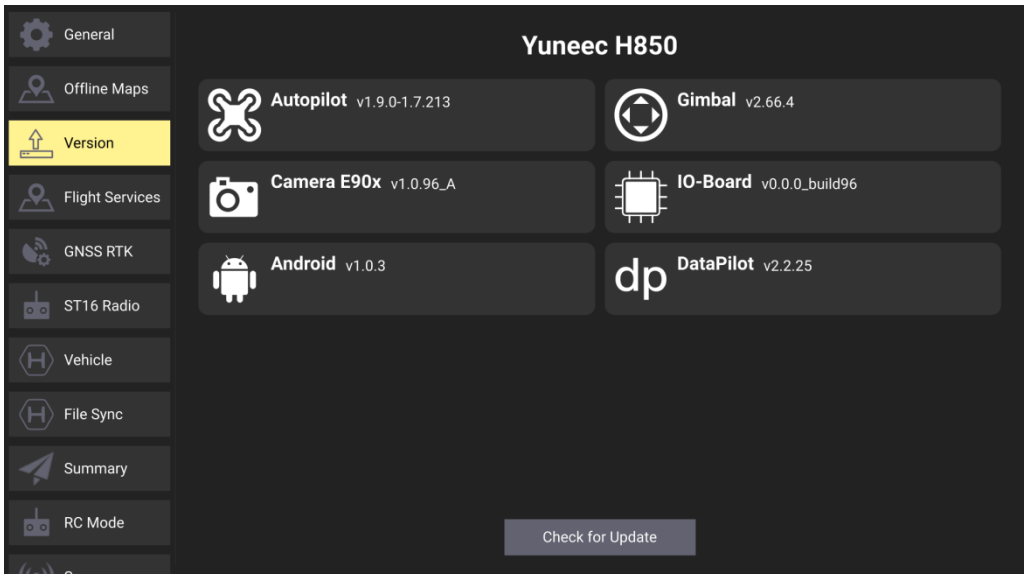
After tapping the Import button, select an import method then tap the Import button on the popped up dialog box, and select the file to import.

Export



After tapping the Import button on the Offline Maps main interface, tick the tile set wanted and tap the Export button then assign the name and save path on the popped up dialog box, finally tap the Ok button to export.

3. Version



The operator can check the Version of each module or system of the drone.
If the transmitter is already connected to the internet the users can tap the “Check for Update” button to keep the firmware up-to-date.
Once the later version was detected, the update process can be started.

4. GNSS RTK

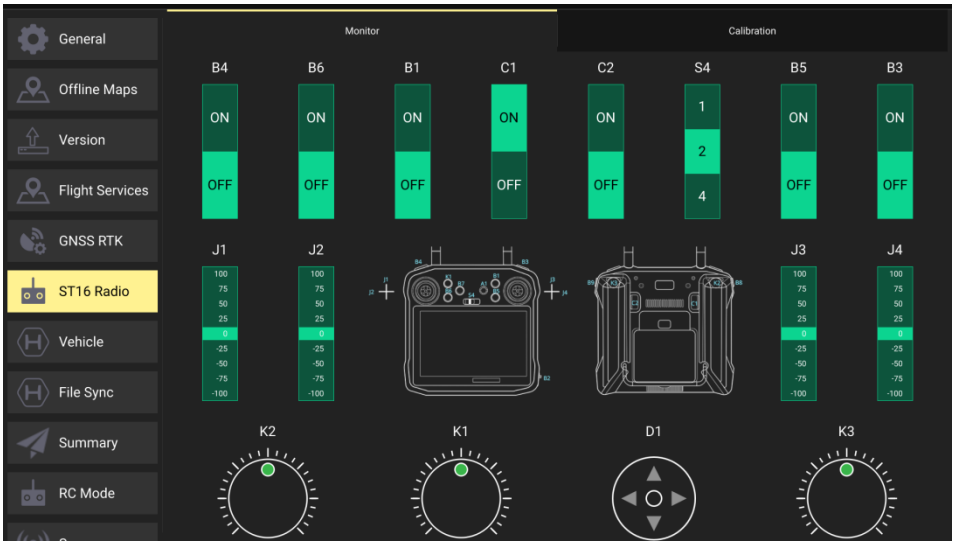
In the sub-menu under the GNSS RTK item, the operator can enter parameters to connect the drone system to the CORS source. Please refer to the corresponding chapter in the quick start Guide and this user manual mentioned above.

5. T-One Radio

There are 2 functions under this Item the Monitor function was the default interface when tapping the T-One Radio button on the screen.

Monitor

Move the Joysticks, Knobs, and Sliders or press the buttons to check the controller hardware input.

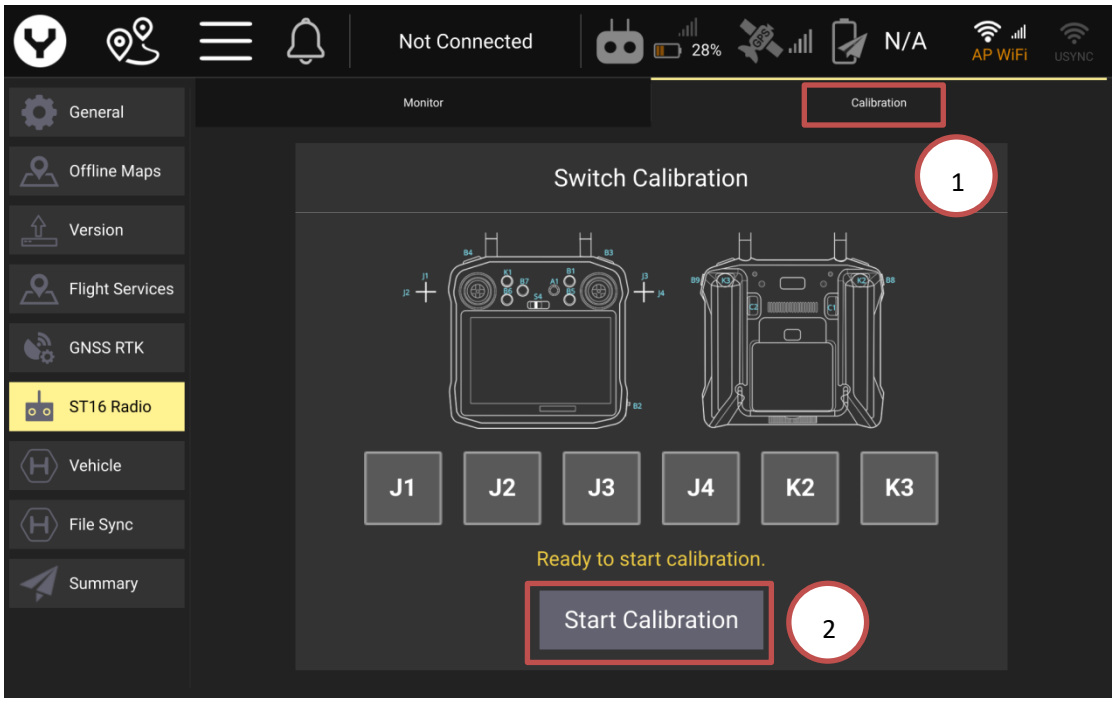


Calibration

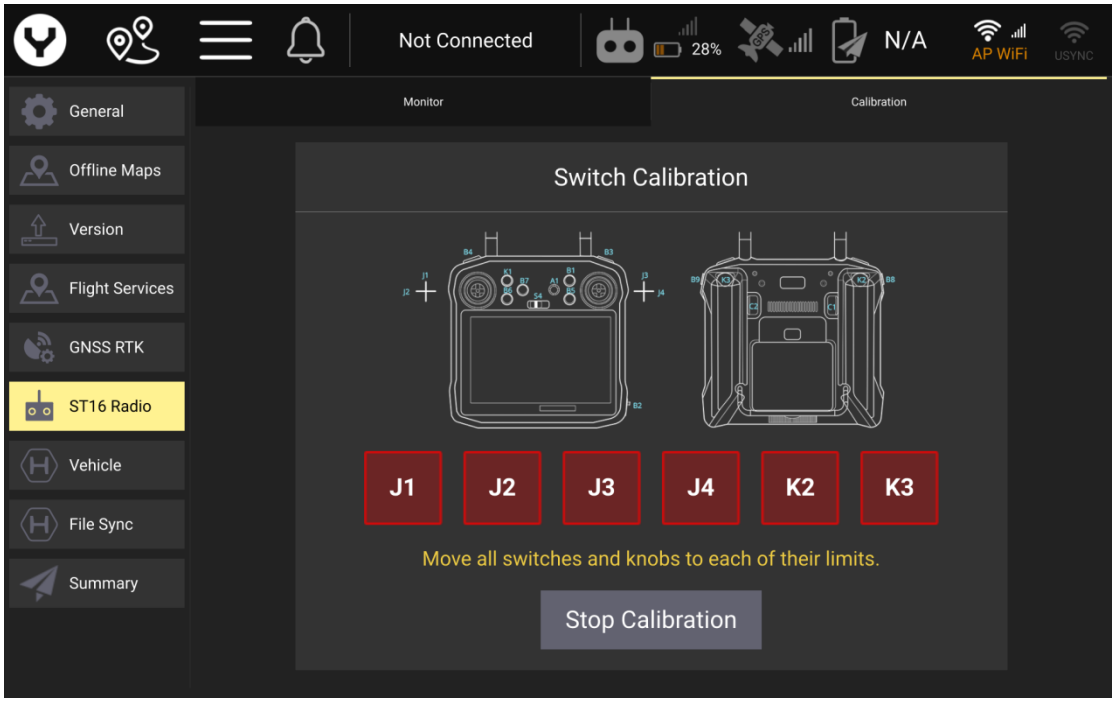
Another function in the T-One Radio item is the Calibration.

To calibrate the Joysticks and knobs please power off the drone to disconnect the drone and transmitter.

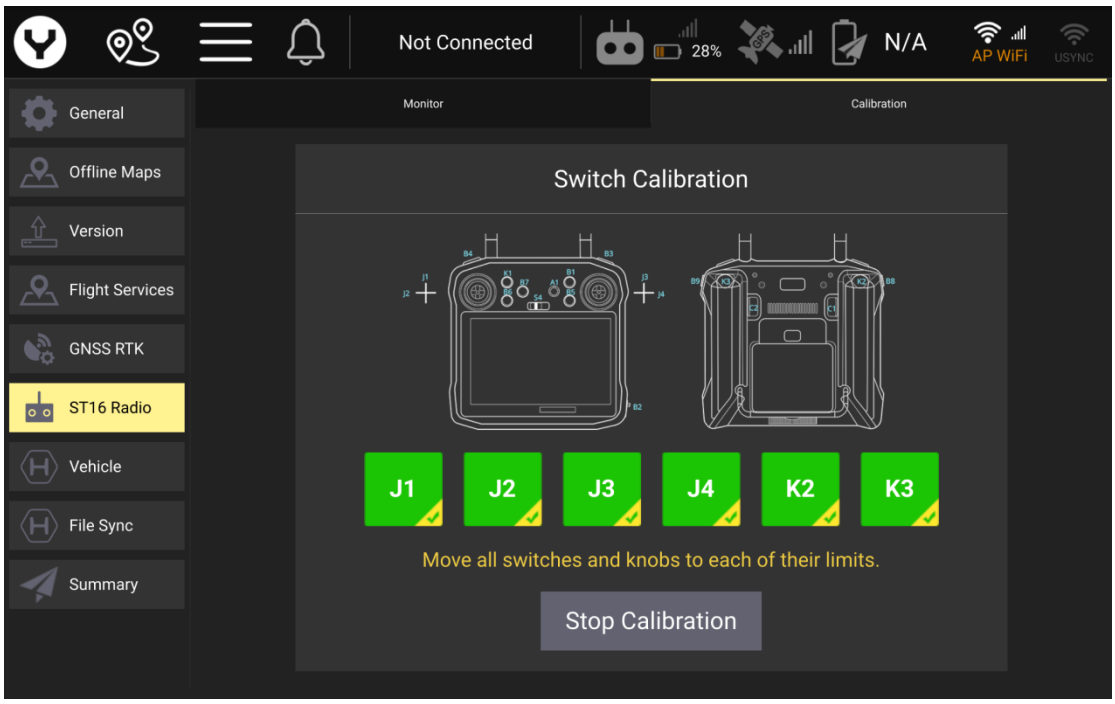
Then switch to the calibration function by tap the calibration button, and tap the Start Calibration button.



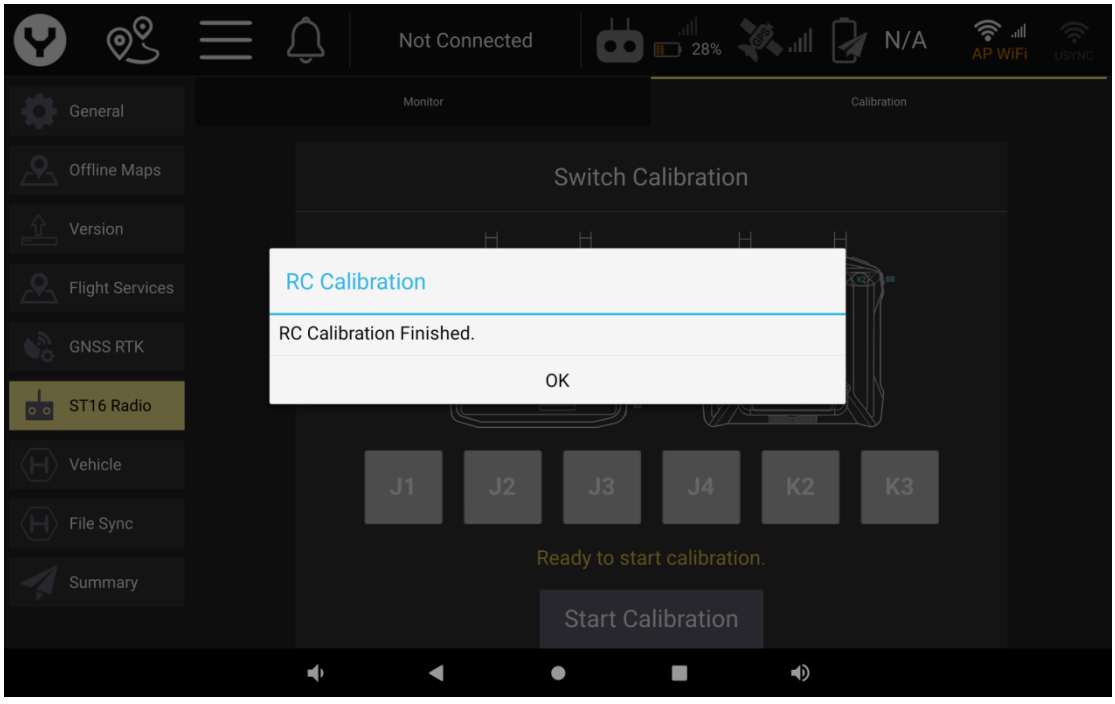
Follow the guidelines of the transmitter to move all joysticks and knobs to their limits.



The joysticks and knobs which passed the Calibration will be marked green.
After all of them have passed release your hands from the joysticks and knobs to keep them at the centre position, then tap the Stop Calibration button.



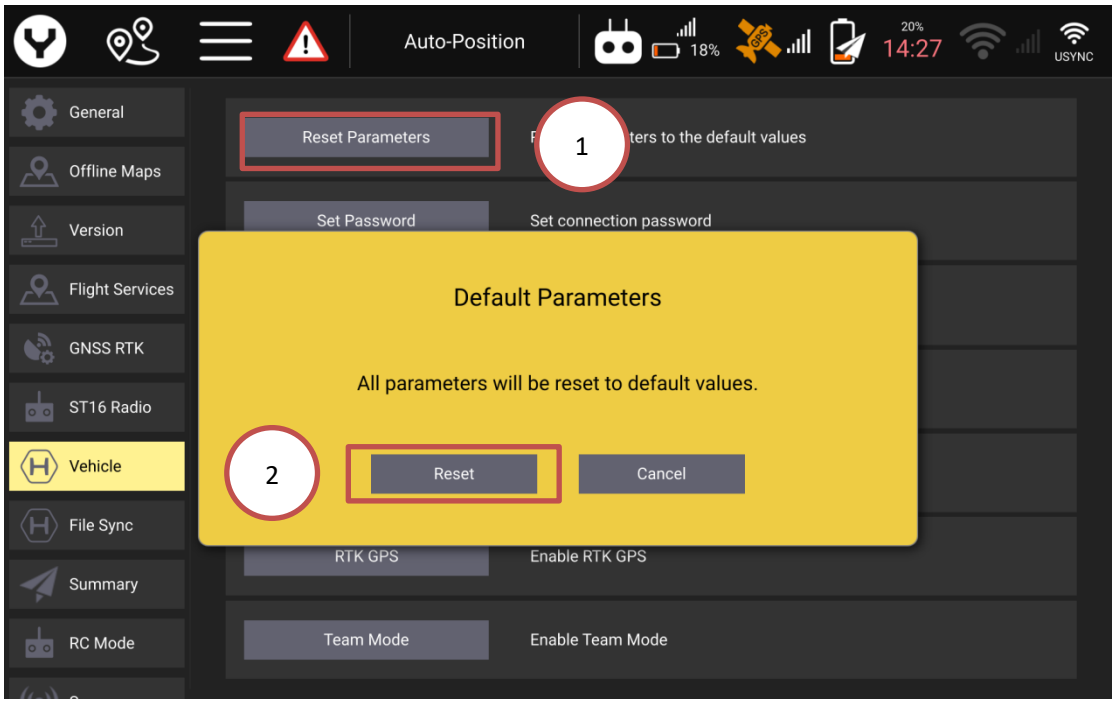
Tap OK button to finish the calibration



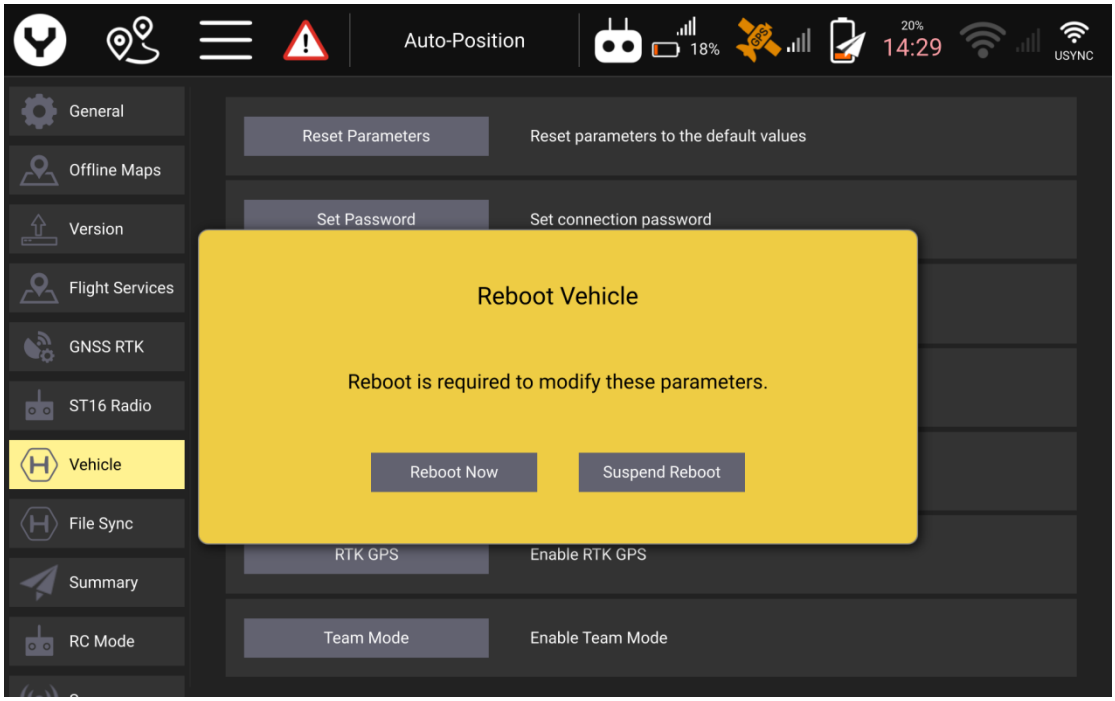
6. Vehicle

The operator can reset parameters, control the motor LEDs, enable the indoor mode, enable the RTK GPS and check the vehicle info under this item.

Reset parameter button



Tap the “Reset Parameters” button first then tap the “Reset” button.

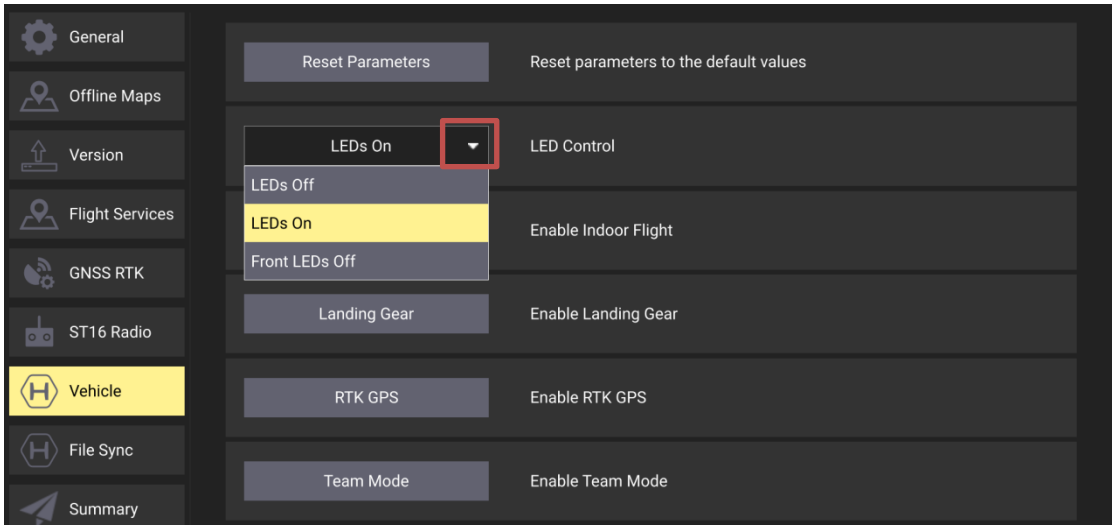


Tap the “Reboot Now” button to reboot the drone then the reset will take effect.

LED Control

In the cases of taking the aerial photography at night the motor LED can influence the colour effect of the photos. The operator can control the motor LED according to the following introduction.

Tap the white arrow to open the drop-down menu then select the needed LED setting, the LEDs On is the default setting.



LEDs Off- Switch off all the motor LEDs.

LEDs On- Switch on all the motor LEDs.

Front LEDs Off – Only switch off the LEDs on the front motor arms.

Indoor Mode button

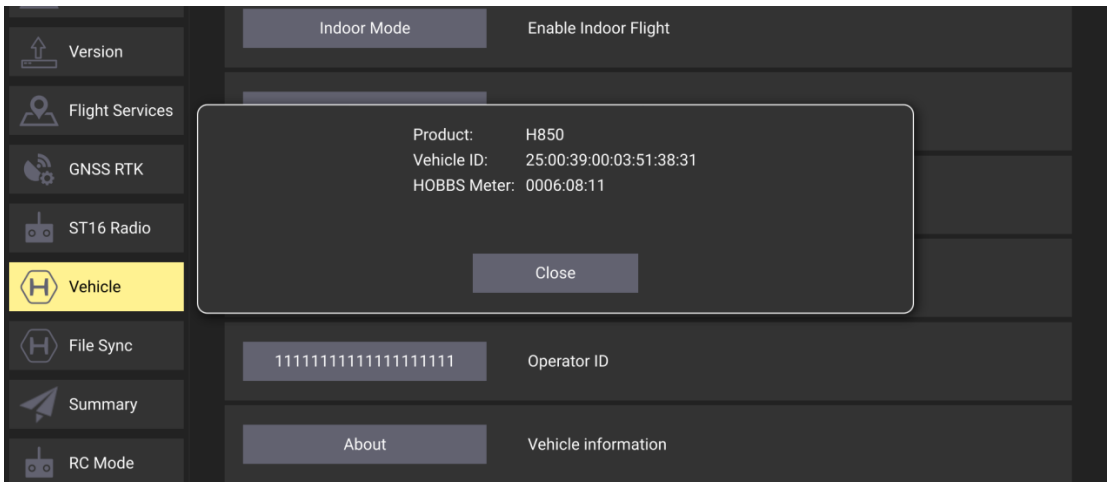
To disable the GPS totally for starting the motor without GPS position, please refer to the corresponding chapter introduced above for more details.

RTK GPS button

Tap this button to enable or disable the High-Precision RTK GPS, please refer to the corresponding chapter introduced above for more details.

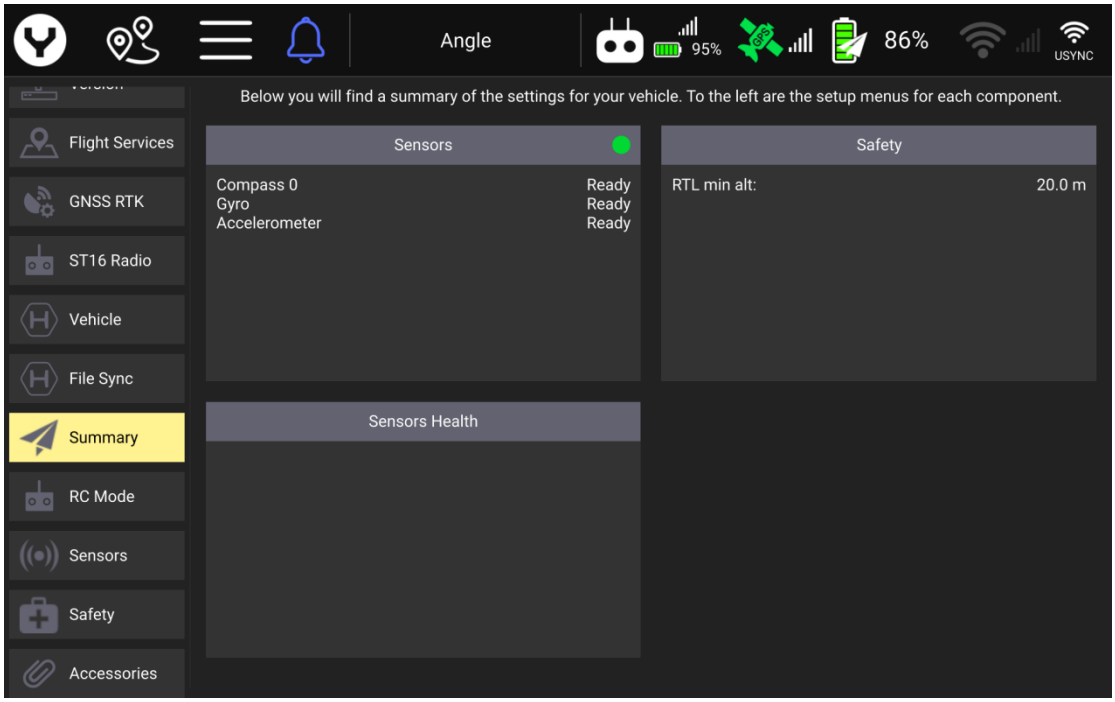
About button

Tap this button to check the Product type, Vehicle ID and HOBBS Meter.



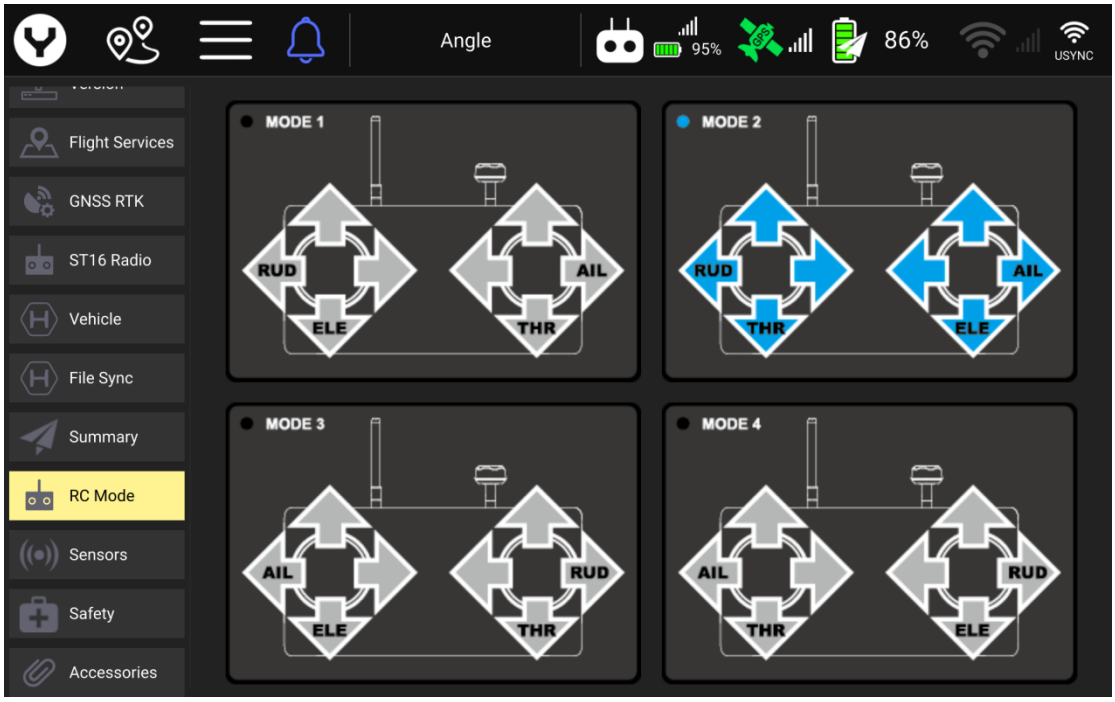
7. Summary

This item displays the summary of the settings for the vehicle.



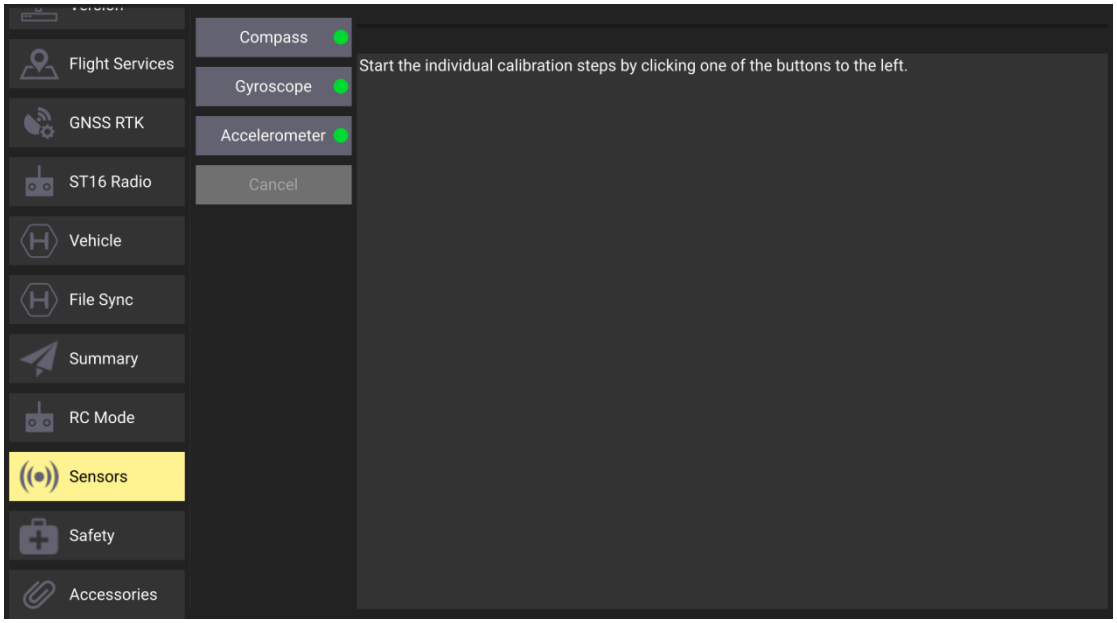
8. RC Mode

Tap to select the Joysticks mode you wish to use.



9. Sensors

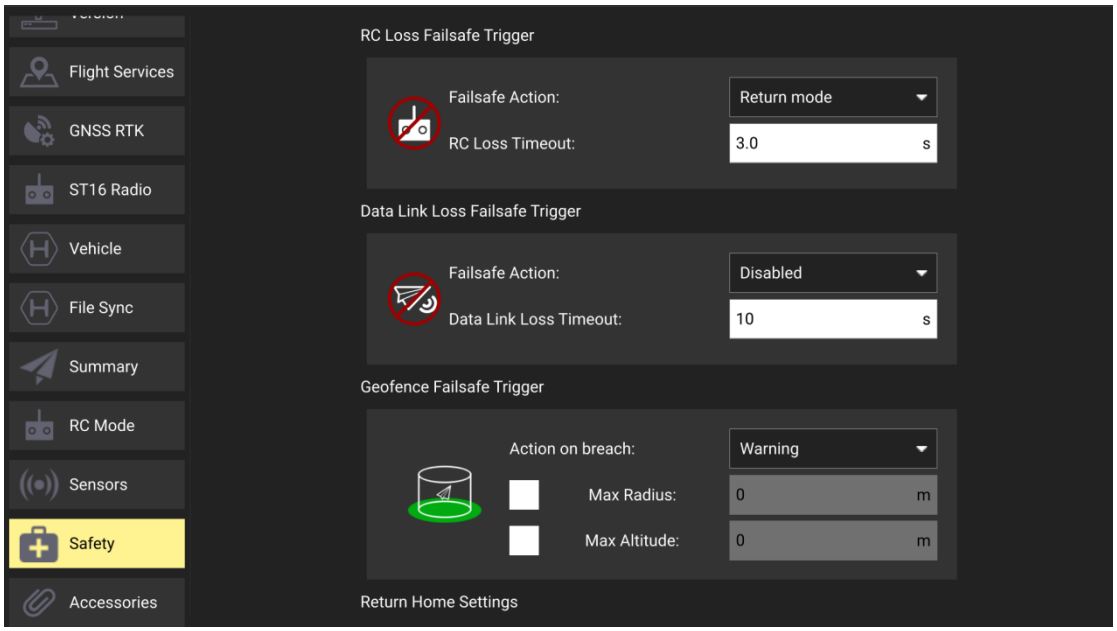
The operator can check the sensors status and also start the compass calibration in this interface, normally it will display a green dot beside each sensor. If the dot turns red the corresponding sensor needs to be calibrated again.



The operator can calibrate the compass by themselves, for the Gyroscope and Accelerometer we suggest to calibrate with the assistance of the nearest YUNEEC Service centre to ensure the best result.

10. Safety

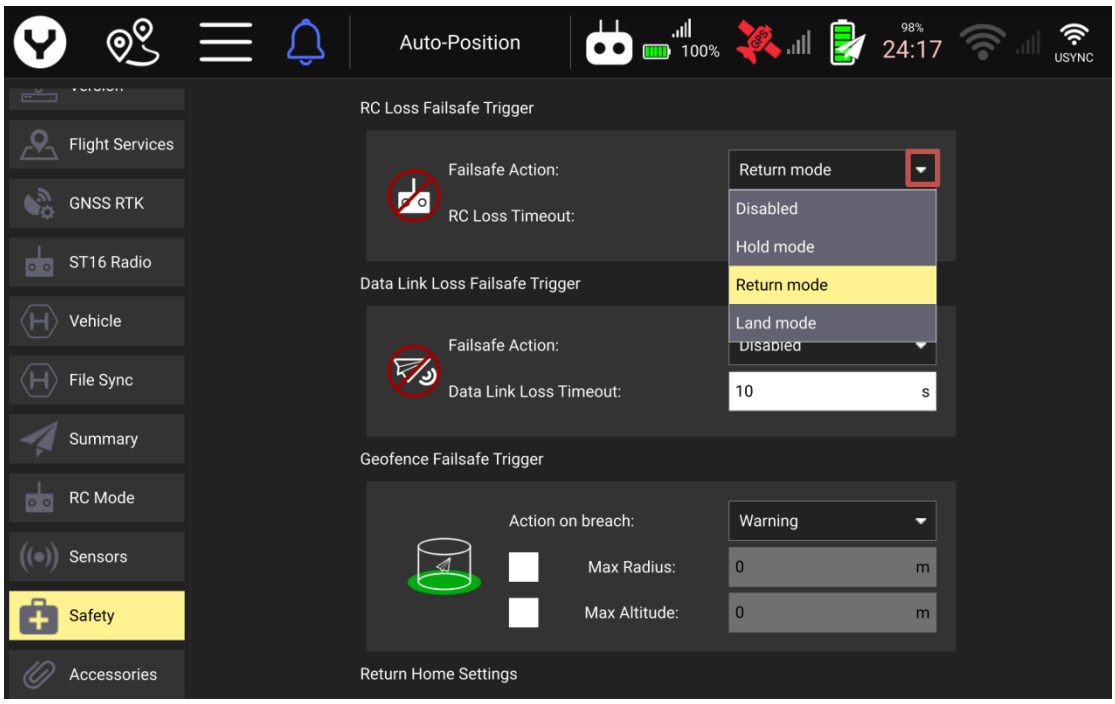
The operator can change the drone fail safe behavior and geo-fence via this interface.



RC Loss Failsafe Trigger and Data Link Loss Failsafe Trigger

This 2 item section allows the operator to edit the drone behavior after the RC or Data Link Loss. For the H850 drone please retain the “Disable” selection for the Data Link Loss Failsafe Trigger. Only editing the RC Loss Failsafe Trigger is enough.

Tap the white arrow to open the drop-down menu then select a Failsafe behavior.



Disabled- The drone will maintain the last flight mode before the RC Loss.

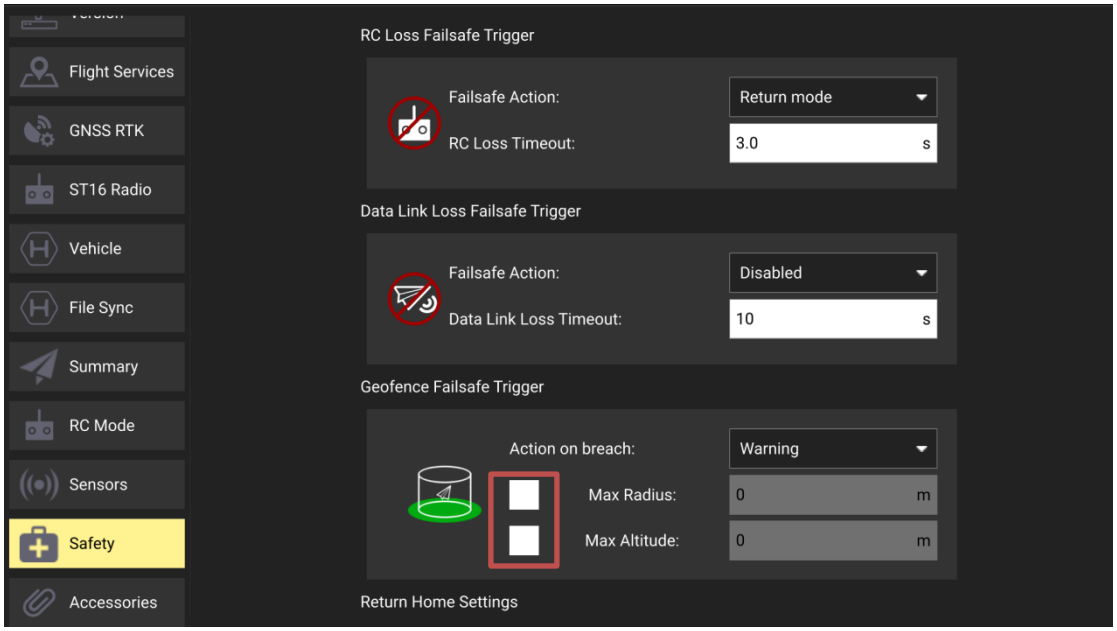
Hold mode- The drone will keep hovering after the RC Loss happens.

Return mode-The drone will trigger the RTL mode after RC Loss.

Land mode-The drone will land directly at its current position after RC Loss.

Geofence Failsafe Trigger

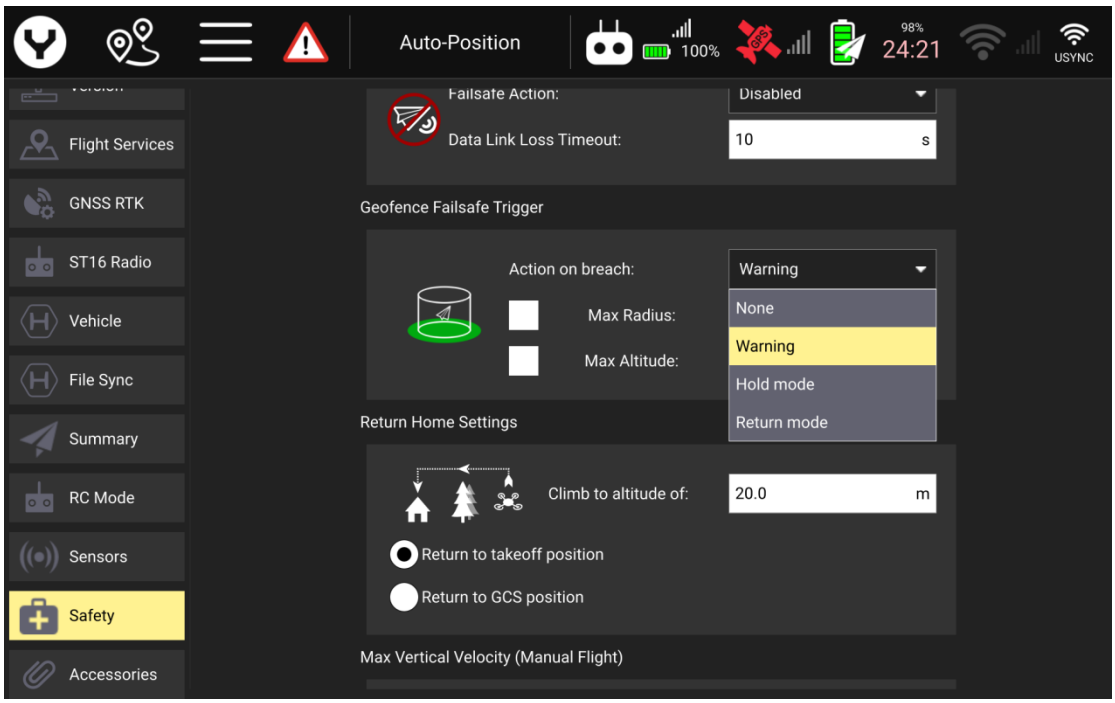
The operator can set the Radius and Altitude of the Geo-fence also the drone behavior after reaching the edge of the geo-fence.



Tick the box before the Max Radius and Max Altitude to enable the Geo-fence range.

The operator can type in the parameters directly to edit the Geo-fence after the boxes were ticked.

Tap the white arrow to open the drop-down menu then select an Action on the breach.



None - Although the Max Radius and Max Altitude are already set the “None” selection will still deactivate the geo-fence, and the drone will not react after it reaches the edge of the geo fence.

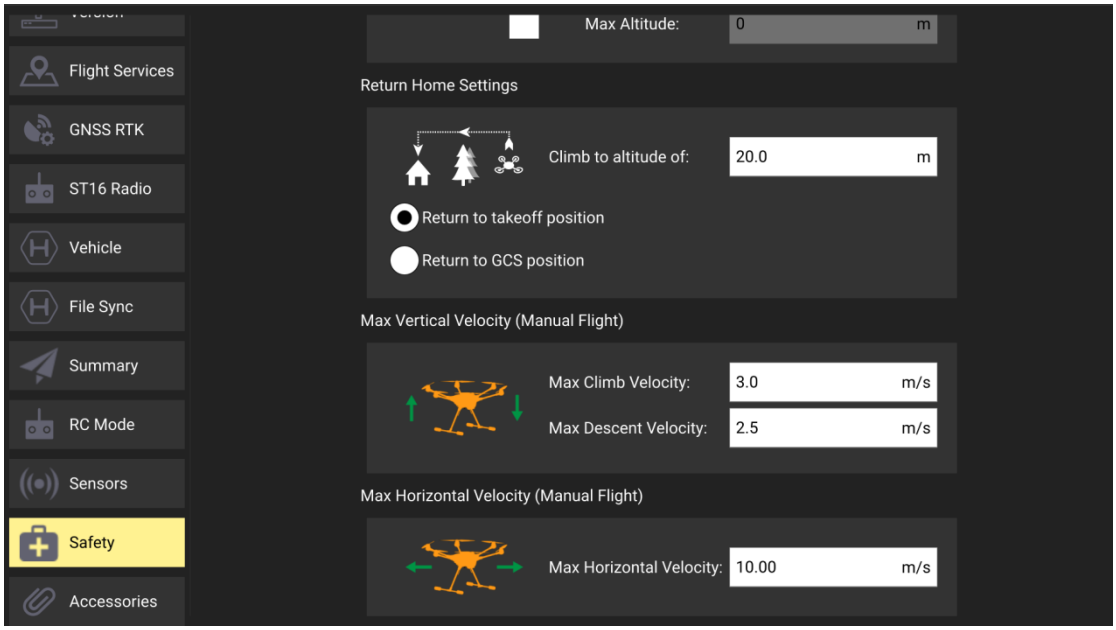
Warning- The transmitter will trigger the continuous warnings when the drone reaches or flies out of the geo-fence.



Hold mode- The drone will keep hovering after it reaches the edge of the geo-fence, the operator needs to switch the drone to RTL mode to control and return the drone to home.

Return mode- The drone will switch to the RTL mode automatically after reaching the edge of the geo fence.

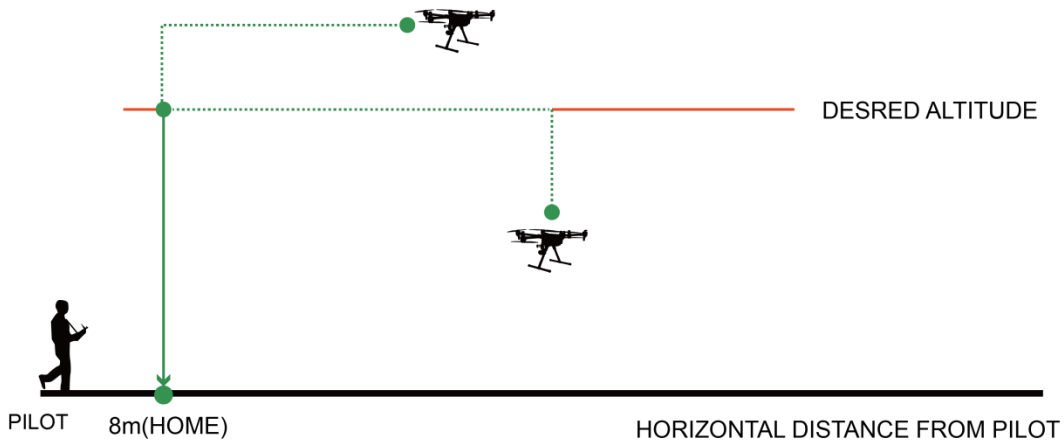
Return Home Settings



Climb to the altitude of-Tap the box then type in the altitude to set a new altitude. The 20m is the default setting.

When the drone is below the altitude set after the operator enables the RTL mode the drone will climb to the RTL altitude first then flying back to the return point.

If the drone is flying higher than the RTL altitude, after the RTL enabled the drone will keep the current altitude and flying back.



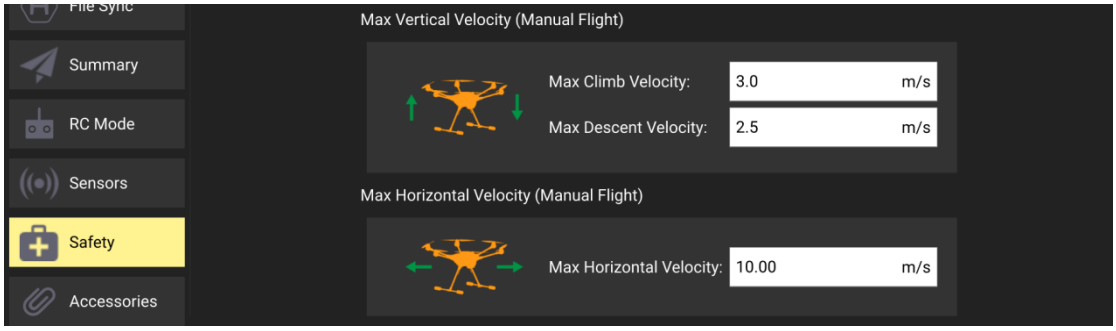
Return point setting

Tap the select dot directly to choose the return point.

If the takeoff position was selected the drone will finally land on the takeoff point in RTL mode.

If the Return to GCS position was selected the drone will land around the transmitter GPS position when the RTL mode is active.

Max Vertical and Horizontal Velocity setting



Tap the boxes for each item then type in the parameters to set the max climb, descent and horizontal velocity.

Notice: We do not suggest the operator to change these parameters for flight safety.

Team mode

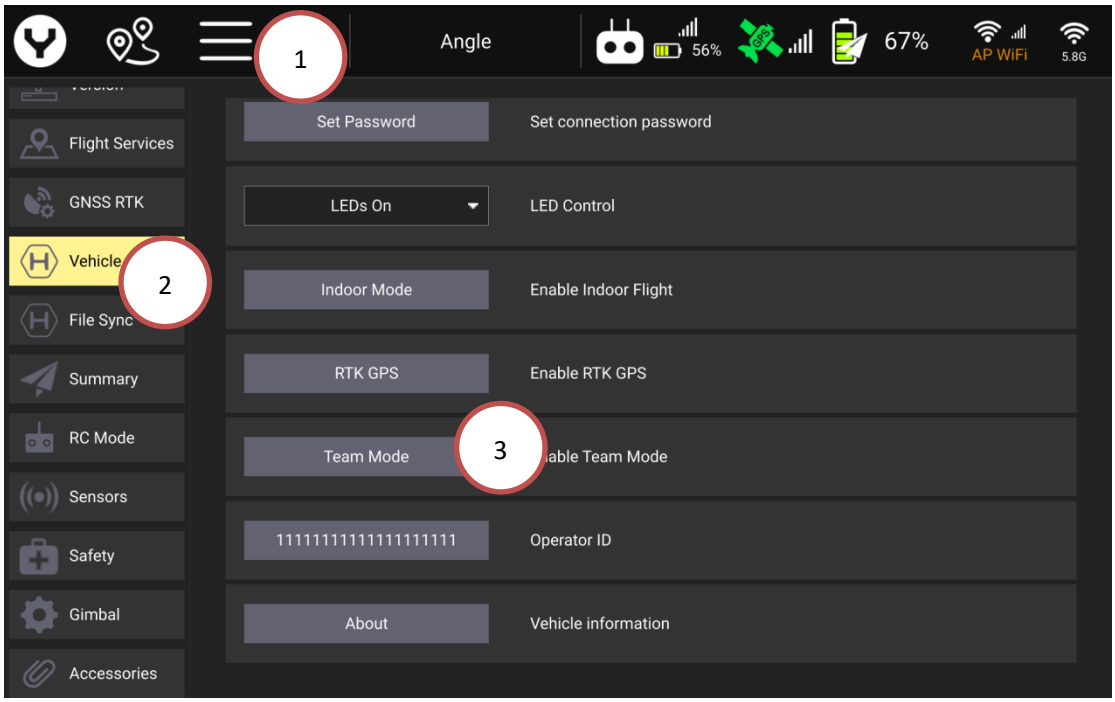
Team mode bind

Step1: Power on the controller and drone waiting for the communication established.



Step2: Power on a new controller waits until it finishes boot up.

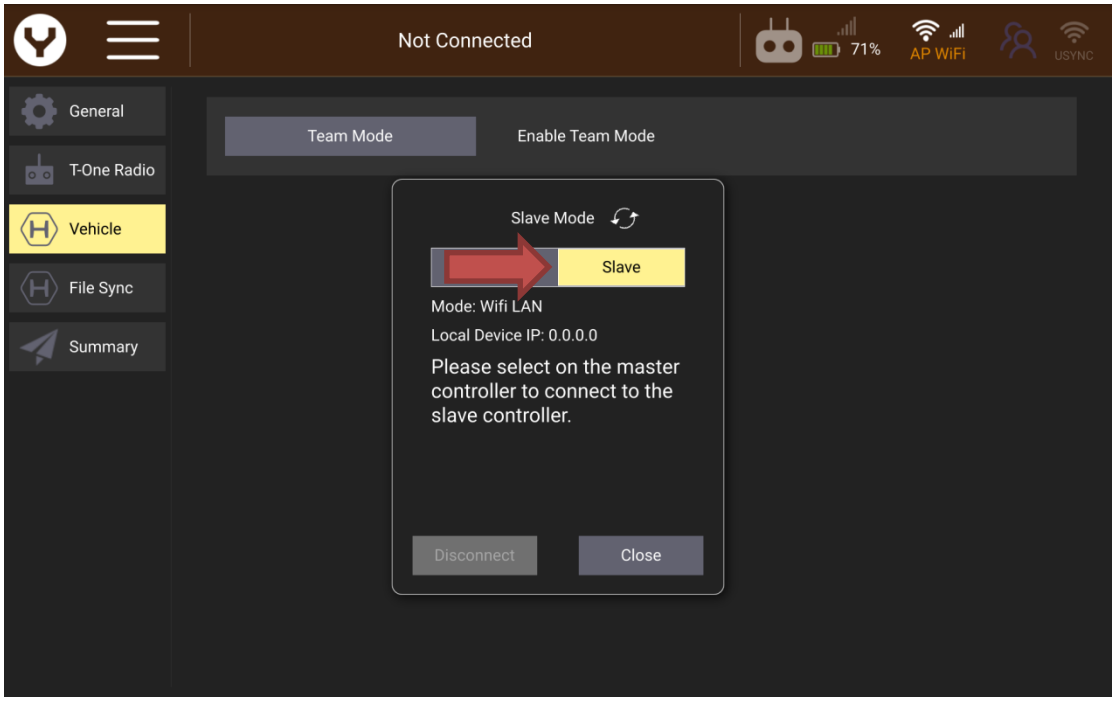
Step3: Click the Settings button and select the Vehicle item, then tap the Team mode on both master and slave remote screen



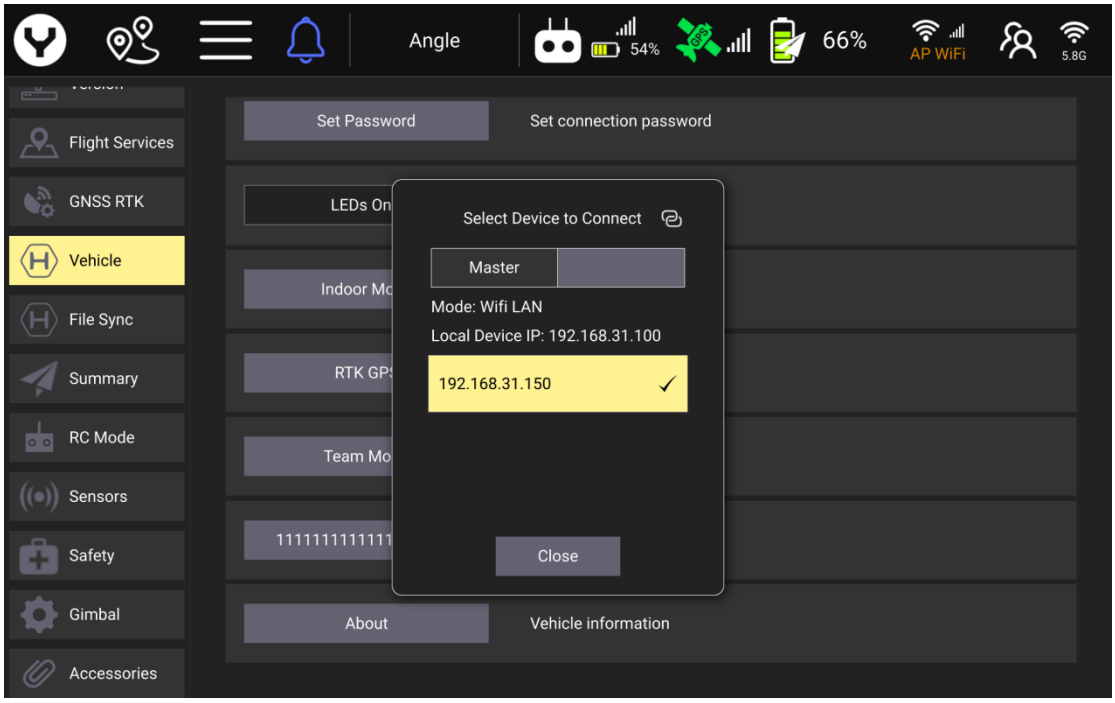
Step4: Select Wifi LAN as connect mode for both controller.



Step5: Slide the switch from the Master to the Slave, on the slave remote screen.



Step6: After the Slave remote has been transformed. The available slave device IP address will be shown on the Master remote screen. Tap the wanted Slave device IP address to bind

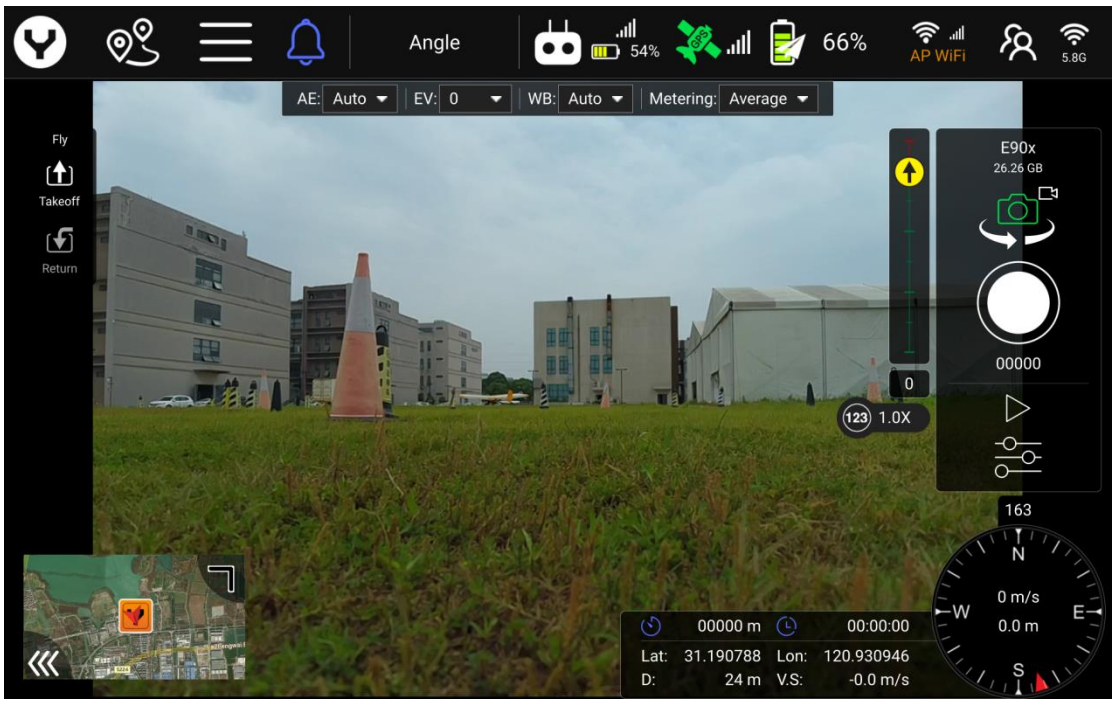


Tap the Main Interface Button to back.

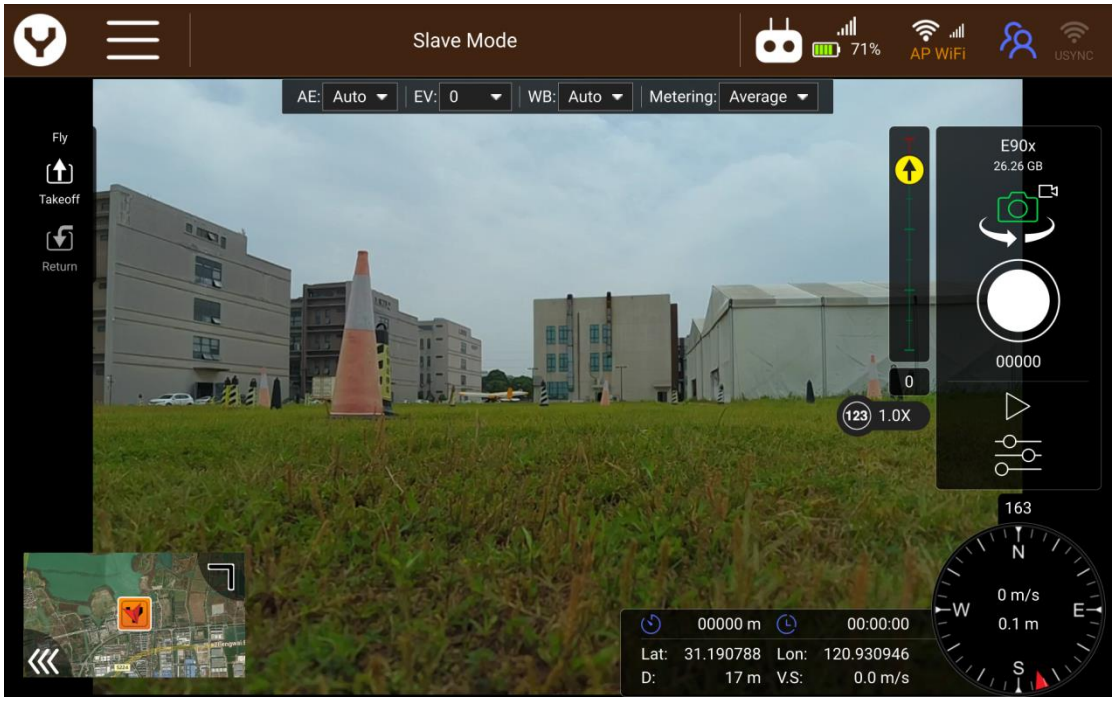
After the team mode bind finished the users can control the drone via the Master Remote and the gimbal camera can be controlled by the Slave Remote.

Bind finished

Master Remote interface



Slave Remote interface

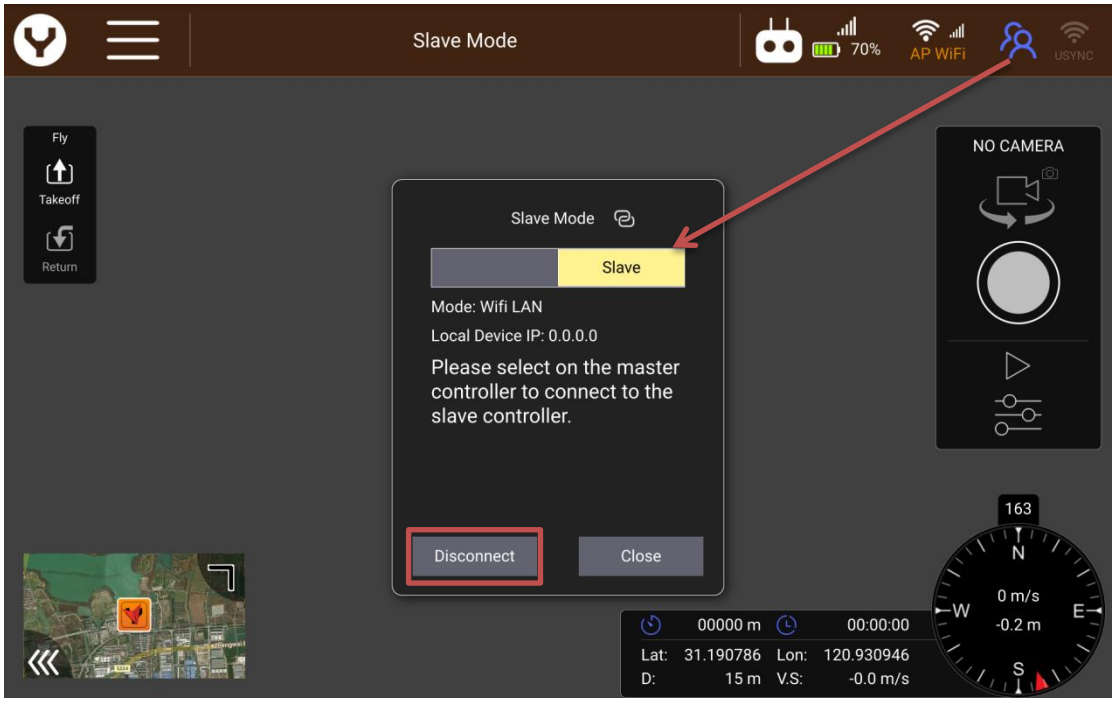


Quit the Team Mode

For the Master Remote: Click the Settings button and select the Vehicle item, then tap the Team mode. Switch to “Disable” selection to quit.



For the Slave Remote: Tap the Team Mod Icon and tap the Disconnect button under the Team Management Menu to quit the Team mod.



Attachment

Specification

T-One Transmitter

Weight	1.2kg
Size	210×195×75mm
Operating System	Android
Flight Control Software	DataPilot 2.0 App
Operating Frequency	2.400 - 2.4835 GHz 5.725 – 5.850 GHz
Transmission Protocol	2.4GHz & 5GHz
Transmission Power (EIRP)	2.4 GHz : CE<18dBm FCC <29dBm 5 GHz : CE<12dBm FCC <22dBm
Max Transmitting Distance (unobstructed, free of interference)	CE: 8km FCC: 10km
Video Output Ports	HDMI
OSD Supported	Yes
Built-in Screen Size	7”
Video Link Resolution	720P
Operating Temperature	-20℃-50℃ -4° F -122° F
Battery	7.4V 10000mAh 74Wh Li-ion
USB Charger	Power Input: 100~240V AC 50/60Hz 1.3A Max Power: 45W

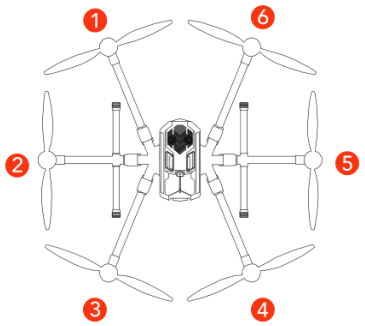
C-Box Charger

Weight	5.5kg
Size:	382×313.4×202.5mm
Power Input:	Low Voltage : 90～160V AC 47—63Hz High Voltage : 160～264V AC 47—63Hz
Constant voltage output mode:	Drone battery: 26.4 ±0.1V DC T-One battery: 8.4 ±0.1V DC
Constant current output mode Low Voltage Input	Drone battery: 8.0±0.3A T-One battery: 4.0±0.3A
Constant current output mode High Voltage Input	Drone battery: 10±0.3A T-One battery: 4.5±0.3A
Max Charging Power Low Voltage Input	Drone battery: 912W T-One battery: 68W
Max Charging Power High Voltage Input	Drone battery: 1130W T-One battery: 76W
Working temperature:	10—+40℃
Storage temperature:	-20—+80℃

Drone

Type	**H850 Hexcopter**
Weight	5800g (Without Camera)
Size	Unfolded :910×910×470(mm) Folded: 440×365×470（mm）
Diagonal Size	850mm
Max Angular Velocity	120°/s
Max Ascend Speed	3m/s
Max Descent Speed	2.5m/s
Max Horizontal Speed	10m/s Manual & Angle Mode 20m/s Sport Mode
Max tolerable wind speed	15m/s
Max Pitch and Roll Angles	24° Manual & Angle Mode 30° Sport Mode
Max Flight Height	500m
Max Takeoff Sea Level	5000m
Max Flight Time	60min(Without payload) 25min(With Max Payload)
The propeller diameter	440mm
The Motor Type	BL5008 Electrical, Brushless, 120g
Motor Diameter	55.6mm
The Motor KV Value	347
Battery	LiHv 6s 12800mAh X2
Charger	H850 Charge Box (C-Box)
Recharge Time	1.5 hours
Position System	GPS+GLONASS +BeiDou+Galileo
Hovering Accuracy(Single)	Horizon:±0.5m Vertical:±0.5m
RTK(RMS) Accuracy	1cm +1ppm(H); 1.5cm+1ppm(V)
Operating Temperature	-20℃-50℃ -4° F -122° F
Payload	X Connector Series Gimbals
Classification of the UA	3
Max Take off mass	8800g
Max Payload mass	3000g
Remote Controller	T-One Transmitter
Sound Power Level	95dB

· Initialization Failed：All LEDs
· Binding Completed：All LEDs
· Compass/Accelerometer/Gyro Calibration：All LEDs
· Other Status all refer to the 2 rear LEDs（LED 3#/4#）



STATUS	2 5	1 6	3 4
Initiate Compass Calibration	2 5 3 6 4 1 5 2 6 3 1 4		
Accelerometer/ Gyro Calibration Completed			
During Inialization			
Calibration Failed			
The Aircraft is in Manual Mode			
The Aircraft is in Angle Mode (without GPS lock)			
The Aircraft is in Angle Mode (with GPS lock)			
The Aircraft is in RTL Mode			
The Aircraft is in SPORT Mode			
The Aircraft is in Task Mode			
First/Second Level Low Voltage Battery Warning			
Compass Alarming			

Disclaimer

Yuneec International (China) Co., Ltd shall not be held liable for any damage, injury or for use of the product in violation of legal regulations, especially in the following circumstances:

Damage and/or injury as well violation of legal regulations resulting from a failure to comply with the operating instructions or the instructions at www.yuneec.com, product information, user manual and other legally binding information;

Damage and/or injury as well violation of legal regulations, brought about by the influence of alcohol, drugs, medication or other narcotics which may impact the concentration of the user;

The same applies to illnesses affecting the concentration of the operator (dizziness, tiredness, nausea etc.) or other factors compromising mental and physical capabilities.

Intentionally caused damage, injury or violation of legal regulations;

Any request for compensation caused by an accident resulting from the use of the product;

Malfunction of the product caused by retrofitting or replacement with components which did not come from Yuneec;

Damage and/or injury caused by the use of replica parts (non-original parts);

Damage and/or injury as well as violation of legal regulations caused by incorrect operation or misjudgment;

Damage and/or injury caused by damaged spare parts or not using original Yuneec spare parts;

Damage and/or injury caused by unauthorized change settings and/or parameters;

Damage and/or injury caused by modifying and/or adding parts;

Damage and/or injury as well as violation of legal regulations caused by ignoring the low voltage battery warning;

Damage and/or injury caused by knowingly and negligibly flying with a damaged model or one which is unfit to fly, e.g. due to dirt, water penetration, coarse particles, oil or a model which has not been correctly or completely assembled or if the main components exhibit visible damage, defects or missing parts;

Damage and/or injury as well as violation of legal regulations caused by use of the product in a no-fly zone, e.g. next to an airfield, above a motorway or a natural conservation area;

Damage and/or injury as well as violation of legal regulations caused by operating the model in a magnetic field (e.g. high voltage lines, electricity/ transformer stations, radio towers, mobile phone masts etc.), a strong wireless signal environment, no-fly zones, poor visibility and in the event of vision impairments or other impacts on the pilot which are left unchecked etc. ;

Damage and/or injury brought about through a violation of the legal regulations for operating the model, in unsuitable weather conditions, e.g. rain, wind, snow, hail, storms, hurricanes etc. ;

Damage and/or injury as well as violation of legal regulations caused by force majeure, e.g. collision, fire, explosion, flooding, tsunami, landslide, avalanche, earthquake or other forces of nature;

Damage and/or injury as well as violation of legal regulations caused by the illegal or immoral use of the model, e.g. capturing videos or recording data which infringes upon/harms the privacy of other people;

Damage and/or injury as well as violation of legal regulations caused by incorrect use of the batteries, protection systems, chargers or aircraft;

Consequential damage caused by the incorrect operation of any kind of system components and accessory parts, especially memory cards, whereby image or video material from the camera can

become defect;
Any non-compliance with legal obligations, personal injury, material damage and environmental damage caused by use and a failure to comply with the local laws and regulations;
Damage and/or injury as well as violation of legal regulations caused by hazardous use without sufficient practical experience;
Damage and/or injury as well as violation of legal regulations caused by flying in legally defined no-fly zones.
Further losses which do not fall within the scope of use are defined by Yuneec as improper.
This product is designed for both professional use and personal private use. The national and international laws and regulations in force at the time of taking off must be adhered to.

Battery Warnings and Usage Guidelines

WARNING: Lithium-ion (Li-ion) batteries are significantly more volatile than alkaline, NiCd or NiMH batteries. All instructions and warnings must be followed exactly to prevent property damage and/or serious injury as the mishandling of Li-ion batteries can result in fire. By handling, charging or using the included Li-ion battery you assume all risks associated with Li-ion batteries. If you do not agree with these conditions please return the complete product in new, unused condition to the place of purchase immediately.
You must always charge the Li-ion battery in a safe, well-ventilated area away from flammable materials.
Never charge the Li-ion battery unattended at any time. When charging the battery, you must always remain in constant observation to monitor the charging process and react immediately to any potential problems that may occur.
After flying/discharging the Li-ion battery you must allow it to cool to ambient/room temperature before recharging.
To charge the Li-ion battery you must use only the included charger or a suitably compatible Li-ion battery charger. Failure to do so may result in a fire causing property damage and/or serious injury.
If at any time the Li-ion battery begins to balloon or swell, discontinue charging or discharging immediately.
Quickly and safely disconnect the battery, then place it in a safe, open area away from flammable materials to observe it for at least 15 minutes. Continuing to charge or discharge a battery that has begun to balloon or swell can result in a fire. A battery that has ballooned or swollen even a small amount must be removed from service completely.
Do not over-discharge the Li-ion battery. Discharging the battery too low can cause damage to the battery resulting in reduced power, flight duration or failure of the battery entirely. Li-ion cells should not be discharged to below 3.0V each under load.
Store the Li-ion battery at room temperature and in a dry area for best results.
When charging, transporting or temporarily storing the Li-ion battery the temperature range should be from approximately 40–120 ° F (5–49 ° C). Do not store the battery or aircraft in a hot garage, car or in direct sunlight. If stored in a hot garage or car the battery can be damaged or even catch fire.
Never leave batteries, chargers and power supplies unattended during use.
Never attempt to charge low voltage, ballooned/swollen, damaged or wet batteries.

Never allow children less than 14 years of age to charge batteries.
Never charge a battery if any of the wire leads have been damaged or shorted.
Never attempt to disassemble the battery, charger or power supply.
Never drop batteries, chargers or power supplies.
Always inspect the battery, charger and power supply before charging.
Always ensure correct polarity before connecting batteries, chargers and power supplies.
Always disconnect the battery after charging.
Always terminate all processes if the battery, charger or power supply malfunctions.

General Safety Precautions and Warnings

WARNING: Failure to use this product in the intended manner as described in the quick start guide and instruction manual can result in damage to the product, property and/or cause serious injury.
A Radio Controlled (RC) multirotor aircraft, APV platform, drone, etc. is not a toy! If misused it can cause serious bodily harm and damage to property.
WARNING: As the operator of this product you are solely and wholly responsible for operating it in a manner that does not endanger yourself and others or result in damage to the product or the property of others.
Keep your hands, face and other parts of your body away from the spinning propellers/rotor blades and other moving parts at all times. Keep items that could impact or become entangled away from the propellers/rotor blades including debris, parts, tools, loose clothing, etc.
Always operate your aircraft in open areas that are free from people, vehicles and other obstructions.
Never fly near or above crowds, airports or buildings.
To ensure proper operation and safe flight performance never attempt to operate your aircraft nearby buildings or other obstructions that do not offer a clear view of the sky and can restrict GPS reception.
Do not attempt to operate your aircraft in areas with potential magnetic and/or radio interference including areas nearby broadcast towers, power transmission stations, high voltage power lines, etc.
Always keep a safe distance in all directions around your aircraft to avoid collisions and/or injury.
This aircraft is controlled by a radio signal subject to interference from many sources outside your control.
Interference can cause momentary loss of control.
To ensure proper and safe operation of the automatic landing function in Return Home Mode you must start the motors with the aircraft in an open space and achieve a proper GPS lock.
Do not attempt to operate your aircraft with any worn and/or damaged components, parts, etc. including, but not limited to, damaged propellers/rotor blades, old batteries, etc.
Never operate your aircraft in poor or severe weather conditions including heavy winds, precipitation, lightning, etc.
Always begin to operate your aircraft with a fully charged battery. Always land as soon as possible after the first level low voltage battery warning or land immediately after the second level low voltage battery warning.
Always operate your aircraft when the voltage of the battery in the transmitter/personal ground

station is in a safe range (as indicated by the LED status indicator light of the transmitter/personal ground station).
Always keep the aircraft in a clear line of sight and under control, and keep the transmitter/personal ground station powered on while the aircraft is powered on.
Always move the throttle control stick down fully and turn off the power in the event the propellers/ rotor blades come into contact with any objects.
Always allow components and parts to cool after use before touching them and flying again.
Always remove batteries after use and store/transport them per the corresponding guidelines.
Avoid water exposure to all electronic components, parts, etc. not specifically designed and protected for use in water. Moisture causes damage to electronic components and parts.
Never place any portion of the aircraft or any related accessories, components or parts in your mouth as doing so could cause serious injury or even death.
Always keep chemicals, small parts and electronic components out of the reach of children.
To ensure safe fly, it is recommended to install the propeller protectors when operating the aircraft indoors or in nearby crowds.
Carefully follow the instructions and warnings included with this aircraft and any related accessories, components or parts (including, but not limited to, chargers, rechargeable batteries, etc.).

FCC Statement

This equipment has been tested and found to comply with the limits for Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.
However, there is no guarantee that interference will not occur in a particular installation.
If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
• Reorient or relocate the receiving antenna.
• Increase the separation between the equipment and receiver.
• Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.
• Consult the dealer or an experienced radio/TV technician for help.
This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions:
This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

RF Exposure Warning

This equipment must be installed and operated in accordance with provided instructions and the antenna(s) used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter. End-users and installers must be provided with antenna installation instructions and transmitter operating conditions for satisfying RF exposure compliance.

IC Radiation Exposure Statement for Canada

This device complies with Industry Canada license-exempt RSS standard (s).Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device. Leprésentappareilestconforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitationestautorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareildoit accepter tout brouillageradioélectriquesubi, mêmesi le brouillageest susceptible d'encompromettre le fonctionnement.

This equipment complies with IC RSS-102 radiation exposure limit set forth for an uncontrolled environment. Cetéquipementrespecte les limitesd'exposition aux rayonnements IC définies pour un environnement non contrôlé.

CE WARNING STATEMENT

This device meets the EU requirements on the limitation of the general public to electromagnetic fields by way of health protection.

EU Operation Frequency (The Maximum Transmitted Power)

T-One Transmitter:

2.4G: 2400-2438.5MHz (18dBm);

5G: 5725-5850MHz (12dBm);

2.4G Wi-Fi: 2400-2438.5MHz (18dBm)；

5G Wi-Fi: 5725-5850MHz (12dBm);

H850:

2.4G: 2400-2438.5MHz (18dBm);

5G: 5725-5850MHz (12dBm).

EU COMPLIANCE STATEMENT

Hereby, Yuneec International (China) Co., Ltd. declares that this device is in compliance with the essential requirements and other relevant provisions of the RED Directive 2014/53/EU.

The full text of the EU Declaration of Conformity is available at the following internet address：www.yuneec.com please visit the address above and enter into the corresponding product page.

H850

Yuneec Support

www.yuneec.com

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