AQUILA 3F

USER MANUAL

V.4



ARGOSDYNE

Disclaimer and Warning

Disclaimer (for Drone User Manual C2/C3 Class)

Disclaimer:
This user manual is provided for informational purposes only. While every effort has been made to ensure the accuracy and completeness of the information at the time of publication, the manufacturer assumes no liability for any errors, omissions, or discrepancies. Specifications and features are subject to change without prior notice.

The safe and lawful operation of the drone is the sole responsibility of the user. The manufacturer shall not be held responsible for any injury, property damage, loss, or legal consequences arising from improper operation, misuse, failure to follow instructions, or violation of applicable regulations.

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Users must ensure compliance with all local, regional, and international aviation laws and regulations when operating this drone. Failure to do so may result in penalties, restrictions, or confiscation by relevant authorities.

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Product Information

This Section describes the features of the product, guide the preparation of the Drone before flight, and lists the components of the Drone and remote controller.

Introduction of Drone Model

Introduction

AQUILA3F is a small quad-rotor, high-precision aerial survey drone with IPX3 waterproofing. Upgrade your next mapping mission with the AQUILA3F - the most compact and accurate low altitude mapping solution.

Based on the new H7 flight control system, it is compatible with PX4 and ArduPilot dual-system open source architecture.A new dual RTK module is integrated directly into the AQUILA3F, providing real-time, centimeter-level positioning data for improved absolute accuracy on image metadata. As the same time, It has stronger anti-magnetic interference ability and precise positioning ability. In addition to optimized flight safety and precise data collection. Fit the AQUILA3F to any workflow, with the ability to connect this positioning system to the NTRIP (Network Transport of RTCM via Internet Protocol) using a 4G dongle or WiFi hotspot.

Users can also create customized solutions through the newly added Phalanx G1 expansion board module and customized auxiliary equipment according to business characteristics, so that AQUILA2 can be closely integrated with the operation scene.

Preparing the Drone

1. Installing the Landing Gears

Install the landing gears,tighten the latch clockwise,and make sure it's tight.





2. Mounting the Gimbal and Camera



1. Align the white and red dots and insert the gimbal.
2. Rolate the gimbal lock to the locked position.

After installation, make sure that the gimbal lock is locked in place.
Make sure to press down the Gimbal Detachment button when rotating the gimbal lock to remove the gimbal and camera. The gimbal lock should be fully rolated when removing the gimbal for next installation.

* The camera is a separate option, and the price is addedaccording to the camera type

3. Battery Installation

Slide battery into the battery compartment according to the arrow's direction as shown below.

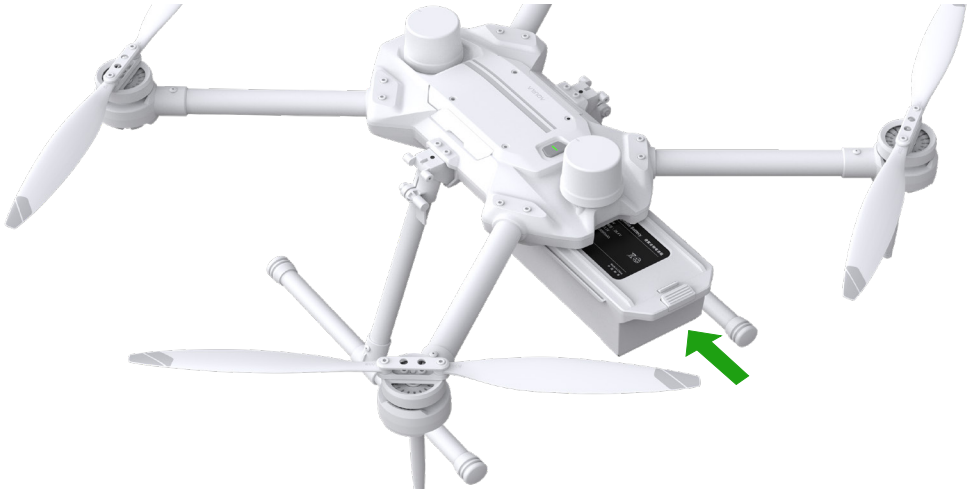
1.Make sure to check the battery's orientation and connection position before installation.

2.After inserting the battery, press it twice with your hand to ensure the locking mechanism is fully engaged.

3.Double-check that the battery cannot be removed by hand.

4.A loosely or improperly secured battery may detach during flight.

Failure to follow these steps properly may seriously affect the flight safety of the drone.



Make sure to use included batteries, Do not use any other type of batteries.
(Install the battery with the power OFF.)

4. Turning on the Drone

Turn on/off :

Short press the power button on the Drone once to turn on the battery; long press for 2seconds to turn off the battery. The indicator light is always on after turning on the power.



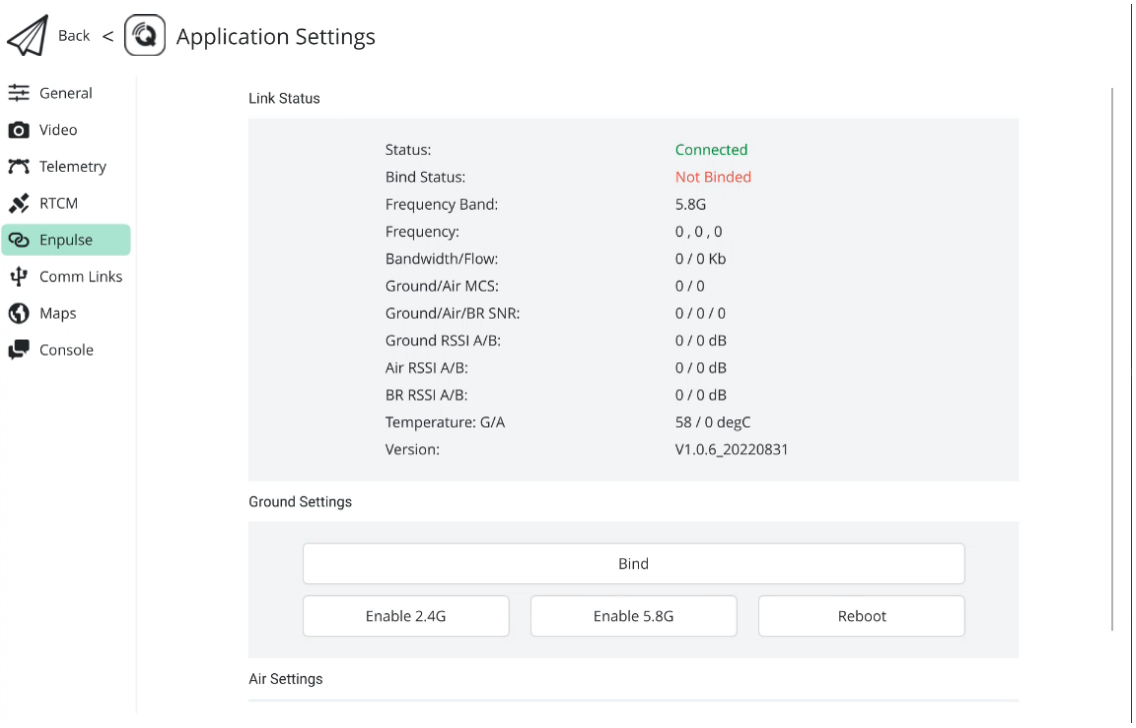


Binding the Remote Controller

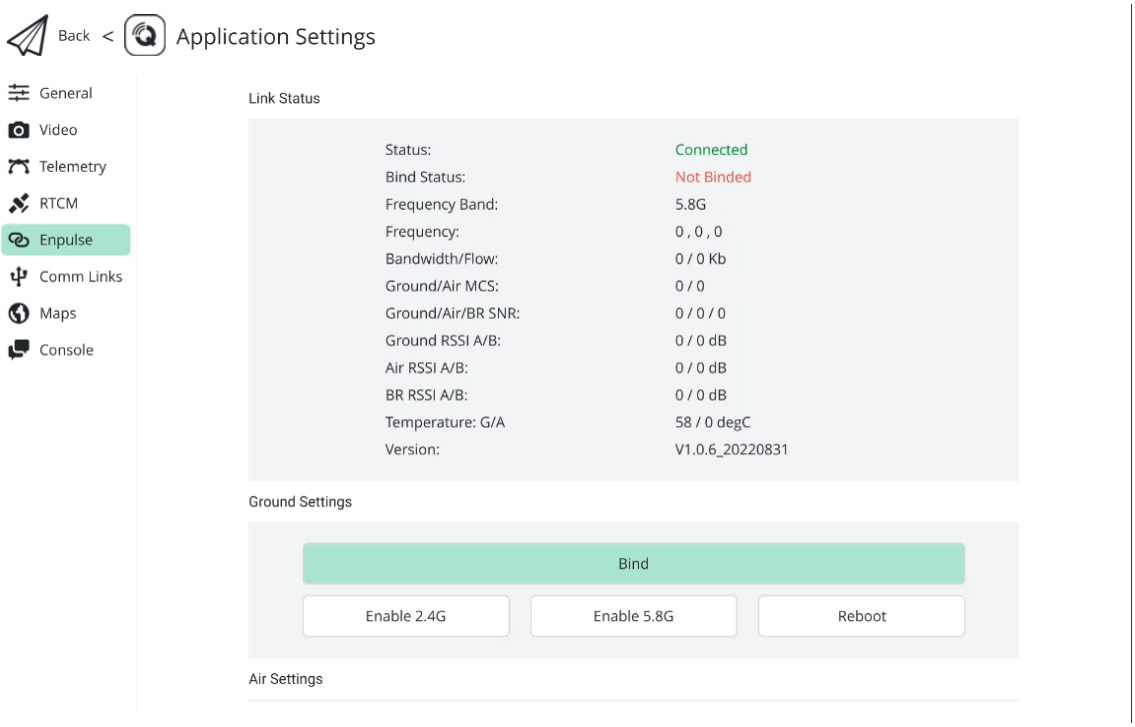
1. After powering on the drone, press the power button quickly 6 times within 3 seconds. When you hear a notification sound, the drone is ready to connect.



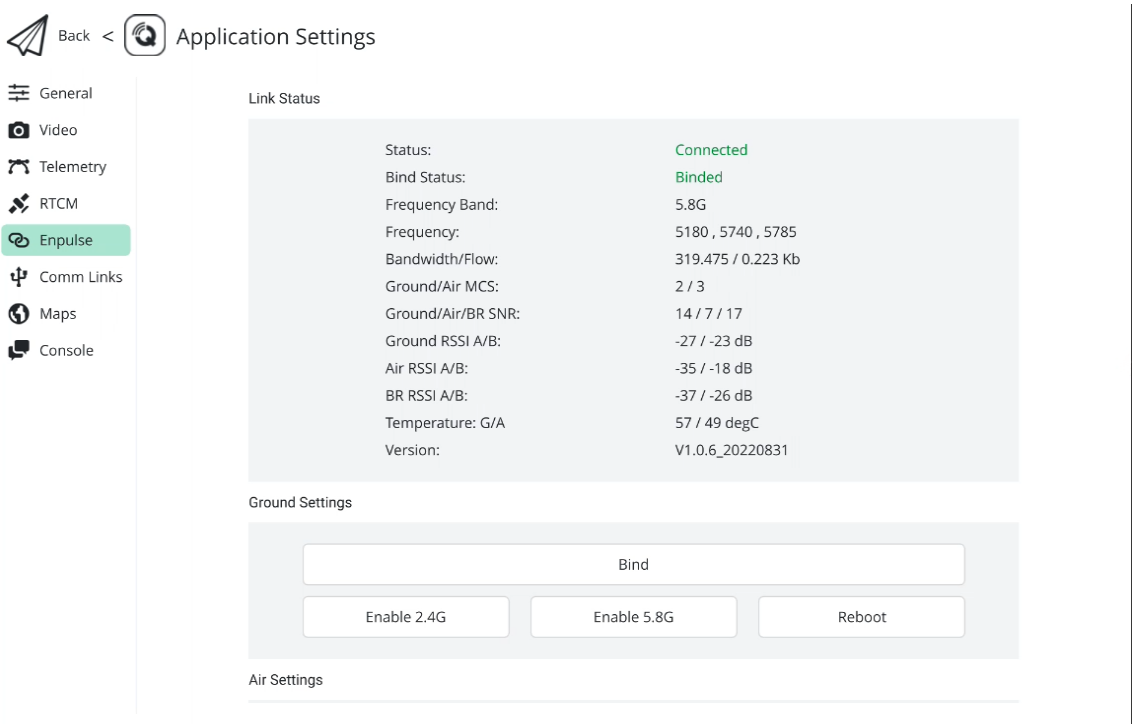
2. On the main screen, slide down from the top to open the status screen, then tap 'App Settings' on the left. In the submenu, click on the 'Enpulse' menu. The Link Status screen will be displayed.



3. Press the 'Bind' button.



4. Once the connection between the remote controller and the drone is established, the transmitter indicator on the remote controller will briefly light up and then turn off. In the Link Status screen, 'Bind Status' will change to 'Connected.' The remote controller will then be able to receive data from the drone.



※ When connecting the controller to the drone, ensure that the controller is within 0.5 meters of the drone.

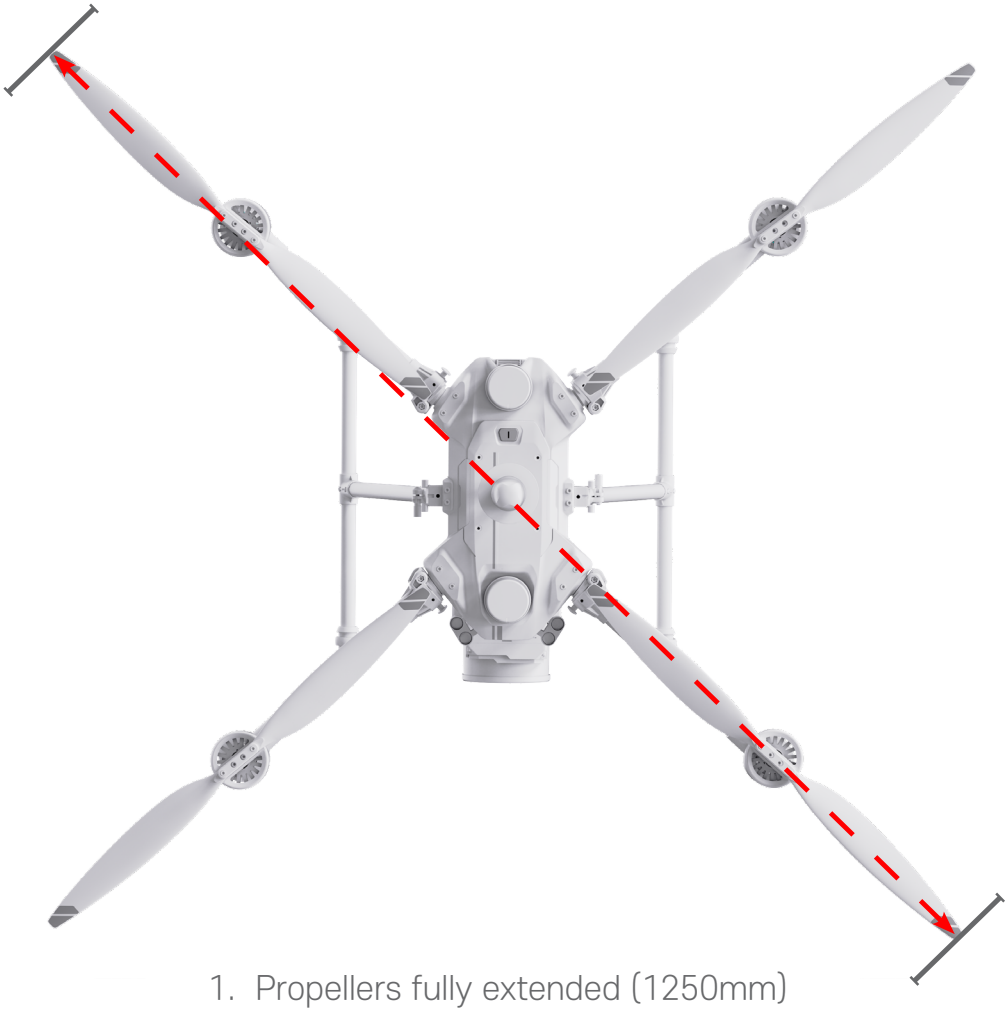
※ If the controller is on but not used for 5 minutes, a warning sound will be triggered. You can cancel the warning by moving the control sticks or pressing any button.

※ Fully charge the controller's battery before each flight. A low battery warning will sound if the battery level is low.

※ To maintain battery life, fully charge the battery at least once a month.

※ When storing the battery for an extended period, maintain a charge level of 30-50% to prevent it from fully discharging.

Drone Overview



1. Propellers fully extended (1250mm)

Drone Overview



1.Propellers
2.RTK Modules
3.Frame Arms
4.Gimbal Detachment Button
5.Gimbal and Camera
6.Power Button
7.Motors
8.Landing Gears

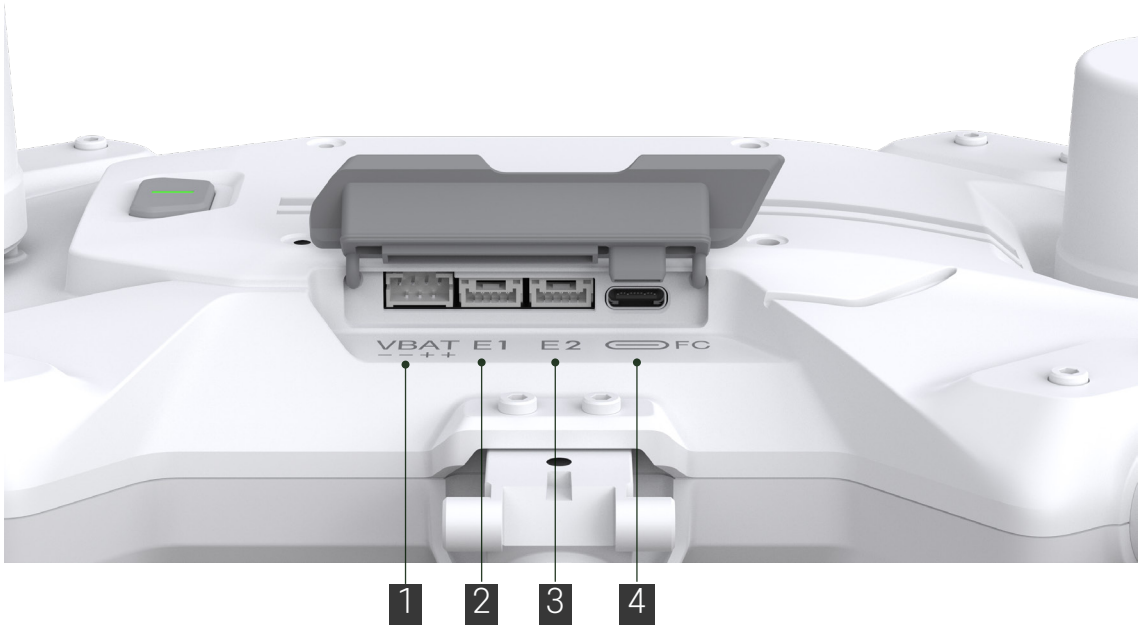


1.Binding Trigger Port
2.Battery Locker
3.Transmission Antennas
4.Flight Battery
5.Expansion Port
6.Landing Gear Latch

Expansion I/O Ports



1.Expansion Board USB-C Port (Debug Port)
2.Serial Interface D1
3.Serial Interface D2 (Debug Port)
4.Serial Interface D3 (Debug Port)



1.External Output Power Port (21V-26V)(Debug Port)
2.Ethernet Port E1(Debug Port)
3.Ethernet Port E2 (Debug Port)
4.FC USB-C Port (Debug Port)

Drone

This section introduces the Drone components,features and functions.

Preparing the Aircraft

The AQUILA includes a flight controller,a communication system,a positioning system and an Flight Battery. This section describes the functions of these components.

Flight Modes

The AQUILA uses a ARGOSDYNE dedicated flight controller,which provides the flight modes below:

Position Mode :

The Drone utilizes the GNSS/RTK module to automatically stabilize itself. When the GNSS signal is strong, the Drone uses GNSS for positioning. When RTK module is enabled and the differential data transmission is good, it provides centimeter-level positioning.

Altitude Mode :

GNSS not used for positioning and Drone can only maintain altitude using the barometer. It enters Altitude mode only when there is weak GNSS signal or when the compass experiences interference .

Altitude Mode Warning

The Drone will fly in Position Mode by default.It enters Altitude mode only when there is weak GNSS signal or when the compass experiences interference .

In Altitude Mode,the Drone cannot position or outo-brake in this mode and easily affected by its surroundings, which may result in horizontal shifting, User need to use the remote contoller to posituon the Drone.

Maneuvering the Drone in Altitude Mode can be difficult. Avoid flying in areas where GNSS signal is weak, or in confined spaces. The Drone will otherwise be forced to enter Altitude mode , leading to potential flight risks, please land it in a safe place as soon as possible.

RTL Mode (Return To Launch)

In RTL Mode , the Drone will automatically fly back to the point and land.

Mission Mode

In Mission Mode, the Drone will perform the mission automatically.

SLOW MODE Function

Slow Mode is a safety function required by EASA regulations. When activated, the system limits the maximum operating speed to predefined value, 3m/s. This ensures safer operation in environments where full performance may present a risk, such as during maintenance, testing, or operation in confined areas.



Drone Status Indicators

The AQUILA has Front LEDs and Drone Status Indicators.
The positions of these LEDs are shown in the figure below:



The Front LEDs show the orientation of the Drone. The Front LEDs glow solid green when the Drone is turned on to indicate the front (or nose) of the Drone. The Drone Status Indicators communicate the system status of the flight controller. Refer to the table below for more information about the Drone Status Indicators.

Drone Status Indicator Description
Normal:

Altitude Mode : Fast Blue 1.5sec flashing
Position Mode : Fast Red 1.5sec flashing
RTL Mode : Fast Yellow 1.5sec flashing
Mission Mode : Fast Purple 1.5sec flashing

Return to Launch (RTL)

The Return to Launch (RTL) function brings the Drone back to the last recorded Home Point when there is a strong GNSS signal. There are three types of RTL: Smart RTL, Low Battery RTL, and Failsafe RTL.

RTL:

Use the RTL button on the remote controller when GNSS is available to initiate RTL(Long press for 2s).After booting up, the Drone status indicator will be a yellow LED blinking continuously. In the process of RTL, press the RTL button again to terminate the procedure and full contro of Drone.

Low Battery RTL:

When the flight battery power is too low, there is not enough power to return home. At this time, the user should land the Drone as soon as possible.In order to prevent unnecessary danger due to insufficient battery power, the Drone will intelligently determine whether the current battery power is sufficient based on the flight position information.

When the battery level drops to 21%, if the Drone's current position is greater than 500 meters from the take-off point, the Drone will automatically return to home (if the Drone's current position is less than 500 meters away from the take-off point, the Drone will automatically return to home at 16% battery level). During the return home process, the user can cancel the return home mode by switching the mode switch. If the user cancels the low-voltage return to home reminder and continues to fly, when the battery level drops to 5%, the Drone will make a forced landing at its current position, which may cause the Drone to be lost or crashed.

Battery Level	Explanation	Drone Indicator Light	Flight Status
23%	Low battery warning	It flashes rapidly in red.	It continues to fly while maintaining the current flight mode.
21%	If the distance from the current location to the launch point is 500 meters or less, there is sufficient power to return to the launch point.		The drone returns to the launch point and lands automatically during RTL. While RTL is in progress, the pilot can cancel it.
16%	If the distance from the current location to the launch point is 500 meters or less, there is enough power to return to the launch point.		The drone returns to the launch point and lands automatically during RTL. While RTL is in progress, the pilot can cancel it.
5%	The drone must be landed immediately.		The drone slowly descends to land at its current location before stopping the motor operation.

Failsafe RTL:

Failsafe RTL is automatically activated if the remote controller and the Drone are disconnected over 5 seconds. The Drone will return in a straight line to the takeoff point and land. When the remote controller is connected to the Drone during return to home , the Drone will continue to return home,But users can cancel RTL by switching the mode switch.

RTL Procedure:

1. Home Point is recorded automatically.
2. RTL is executed.
3. Home point is confirmed and the Drone adjusts its orientation.
4. When less than 30m from the Home Point, the Drone will fly to the Home Point at the currunt altitude. If more than 30m from the Home Point and below the pre-set RTL altitude, the Drone will ascend to the pre-set RTL altitude before flying to the Home Point. The Drone will fly directly to the Home Point if it is above the pre-set RTL altitude.
5. The Drone will return to the Home Point, and Landing.

Warnings:

In the settings menu, you should set the RTL altitude and ensure that there are no hazardous buildings or objects in the flight area.

During RTL, while the drone will automatically land upon return, it is recommended that the pilot manually reduce the drone's speed as it approaches the landing point.

This helps to ensure a smoother landing, as the drone may bounce upon touchdown due to rebound effects. Reducing the landing speed contributes to a more stable and controlled landing.

Safety precautions for RTL:

Set the return altitude in the settings menu to ensure that there are no dangerous objects in the Drone's flight area before the RTL mode is activated.

In the RTLmode, the Drone will land automatically, and the Drone can also manually assist the landing of the AQUILA sRTK. Once the Drone is close to the ground, the user should reduce the manual control to prevent the Drone from tipping over. Under normal circumstances, the Drone will automatically turn off the motors when landing, but the user should be prepared to slow down manually.

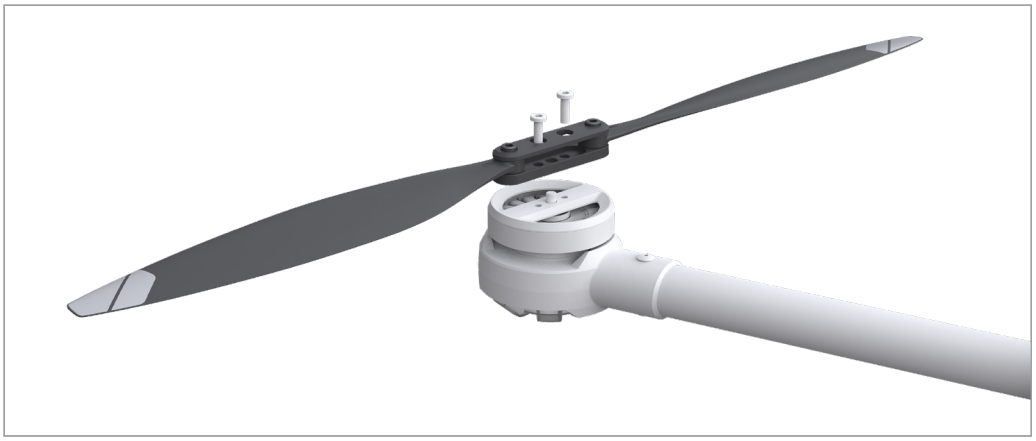
Propellers

Propellers Usage Guide

Only use ARGOSDYNE approved propellers. Do not mix propeller types.
Ensure to check that the propellers and motors are installed firmly and correctly before each flight.
Ensure that all propellers are in good condition before each flight. Do not use aged, chipped, or broken propellers.
To avoid injury, stand clear of and do not touch propellers or motors when they are spinnning.

Replaceing the Propellers

In order to replace the propellers, use the H2.5 hex key with ball-end.



Propeller blades are sharp, please handle with care.

Maximum Propeller Speed and Noise Level

UAS Class	C3
Sound Power Level	93.1 dB
Maximum Propeller Speed	4200 RPM

Flight Battery

The flight battery is specially designed for AQUILA. It uses a brand-new high-performance battery. Please be sure to fully charge the battery before using it for the first time. Must use the special charger provided by ARGOSDYNE for charging.

Capacity :	12000mAh
Voltage :	26.4V
Battery Type :	Lipo 6S1P
Energy :	277wh

Please read carefully and strictly abide by the requirements of ARGOSDYNE in this manual, disclaimer, and battery surface before using the battery. The user shall bear the consequences caused by failure to use it as required.

Warnings:

1. The Flight Battery is asignificantyl reduced when flying in low temperature environments (temperatures below 5°C).
2. Ensure that the battery is fully charged and the cell voltage is at 4.4V before each flight.
3. Enter the flight as soon as Aviator Dedicated App displays the "Low Battery Level Warning" in low temperature environments.
4. You will still be able to control the Drone's movement when this warning is
5. triggered.
   In extremely cold weather, the battery tempereture may not be high enough even
6. after warming up. In this cases, insulate the battery as required.
   In ensure optimal performance of the battery, keep the battery temperature above
7. 16°C.
   In low temperature environments, it will take a longger time for the batteries to warm up. It is recommended to keep the battery warm before use to reduce the warm-up time.

Charger

Checking the Battery Level

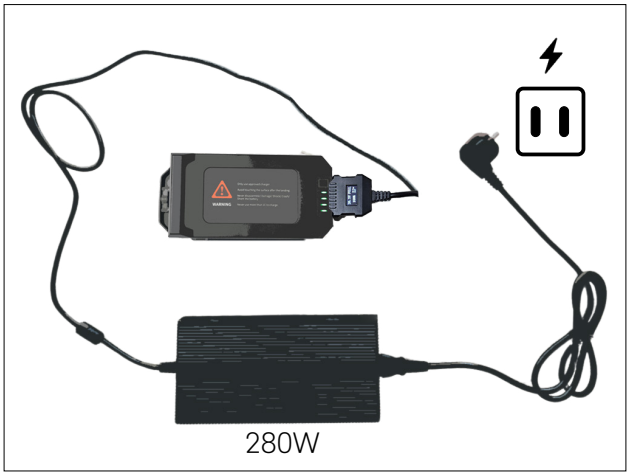
Press the power button once to check the battery level.source.



LED1	LED2	LED3	LED4	Battery Level
●	●	●	●	88%-100%
●	●	●		63%-75%
●	●			38%-50%
●				0%-25%

How to Charge

1. Use the AC power cord to connect the power interface of the charger to an AC power source.
2. Connect the battery.
3. start charging.



Do not frequently charge in a low temperature environment, as the charging time will become longer and the battery life may be impaired.

Battery use and storage precautions

Battery Safety Precautions

- The drone utilizes a LiPo-Hv, 12000mAh battery.
- The full charge voltage of the battery is 26.4V.
- When the battery is loaded with mission equipment up to the maximum allowable weight, flight time is based on 20 minutes per flight. After 100 charge/discharge cycles, the battery may not perform at its original capacity.
- Never use damaged or expired batteries.
- Check that the battery terminals and connectors are free from foreign substances such as dust, moisture, or metal fragments.
- The presence of foreign substances may cause poor contact or lead to a fire.
- Ensure the drone is completely powered OFF before installing or removing the battery.
- Connecting the battery while the power is ON may cause circuit damage or malfunction.

Battery Storage Precautions

- Prolonged exposure of the battery to liquid (rain, moisture) can lead to chemical breakdown, potentially causing the battery to catch fire or explode.
- Store the battery in a cool, dry place away from direct sunlight. If storing for more than 3months, maintain a temperature between 22-28°C (71-82°F).
- Do not store the battery in environments with strong static electricity or electronic devices.
- Avoid placing heavy objects on top of the battery.
- For long-term storage, fully charge and discharge the battery once every 3 months.
- When storing the battery in the case, be careful not to apply pressure to the battery.
- When storing the battery for a long period of time, keep the battery level at 30-50%.

Battery Charger Safety Precautions

- When using a separately purchased battery charger, ensure it is set to the appropriate Profile and channel settings for the LiPo-Hv 6S 12000mAh battery specification. Depending on the charger model, it may also be capable of charging batteries used in the controller.
- Once you correctly match the cable connectors between the charger and the battery, you can proceed with the charging process.
- The usage instructions may vary depending on the charger product and model. Please refer to the separate manual provided with the purchased product for specific guidelines.

Safe Flight Operations

This section describes flight restrictions and safe flight practices.

Flight Enviroment Requirements

1. Do not ues the Drone in bad weather such as where wind speeds exceed 15m/s.
2. When flying in open areas , tall and largr metal structures may affect the accuracy of the on board compsaa and GNSS system. Make sure to operate the Drone by following the prompts in the app.
3. Avoid obstacles, crowds, high voltage power lines, trees, and bodies of water.
4. MInimize interference by avoiding arears with elevated levels of electromagnetism, including base stations and radio transmission towers.
5. Drone and battery performance are subject to rnvironmental factors such as air density and temperature. Be very careful when flying at high altitudes, as battery and Drone performance may be affected.

Prohibition attachment of Additional Payload.

Attaching additional payloads beyond those specified in the manual may increase the drone's response time and battery power consumption, which can shorten the flight time. This can degrade the drone's durability, affect its performance, and pose a risk to flight safety. Therefore, only the specified payloads should be used. Attaching unauthorized payloads may significantly impact flight safety.

Operating Temperature Range and Recommended Temperature

This drone is designed to operate normally within the temperature range of -10° C to 50° C. However, the recommended temperature range is 0° C to 40° C. When flown within this range, the drone's performance is optimized, and the battery efficiency and equipment lifespan are maximized.

Exceeding the recommended temperature range may result in decreased battery performance, leading to a significant reduction in battery life and negatively affecting overall flight performance. Extreme temperature conditions can also cause potential damage to the equipment and seriously impact flight stability. Therefore, flying within the 0° C to 40° C range is the safest and most efficient.

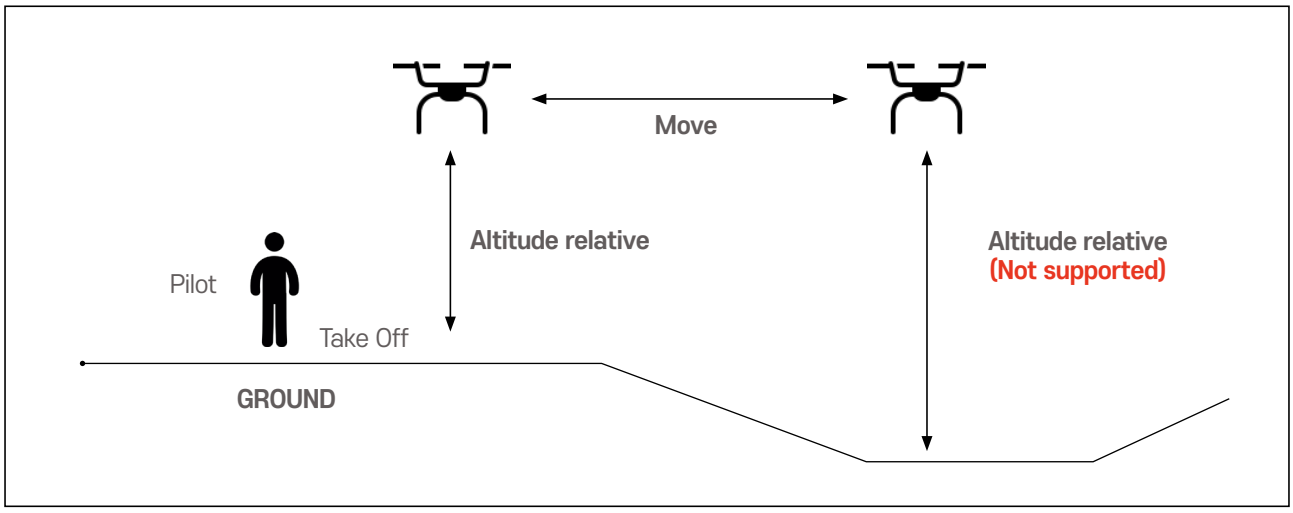
If the battery has been stored at 0° C for an extended period, the battery performance may be reduced. In this case, please warm up the battery in a 25° C environment before attaching it to the drone. This will help optimize the battery performance and prevent unnecessary risks during flight.

Before, during, and after flight, please ensure that the environmental temperature is within the range of 0° C to 40° C, and avoid attempting to fly in conditions outside of this range.

Altitude Measurement Method (AltitudeRelative)

This drone uses Altitude Relative instead of AGL (Above Ground Level) for altitude measurement. Altitude Relative calculates the altitude based on the relative height between the drone and the ground, measuring in real-time the difference in elevation. This method ensures that the drone maintains an accurate altitude regardless of external environmental conditions or terrain changes.

Thus, the drone's altitude is set according to the Altitude Relative value, allowing it to maintain a consistent altitude during flight.



Safe Drone Operation

To prevent serious injury and property damage, please follow these rules:

1. Do not operate the drone under the influence of alcohol or drugs, or if you are tired, dizzy, or otherwise unfit to fly.
2. For safety reasons, the minimum distance between the drone and the operator must be at least 10 meters.
3. After landing, be sure to turn off both the drone and the controller.
4. Do not drop, launch, or project dangerous objects onto people, animals, or buildings.
5. Do not use a drone that has crashed or is damaged.
6. Train adequately and create an emergency plan to prepare for unexpected situations.
7. Do not fly recklessly; plan your flights carefully.
8. When using the camera, respect others' privacy and comply with relevant laws and regulations.
9. Do not use this product for purposes other than its intended specific use.
10. Do not use the drone for illegal activities such as spying, military operations, or unauthorized surveillance.
11. Do not infringe on others' rights, including defamation, harassment, or privacy violations.
12. Do not trespass on others' private property.
    By following these rules, you can use your drone safely and responsibly.
13. The UA does not have failure or degraded modes function.

Flight Restrictions

GEO (Geospatial Environment Online) System

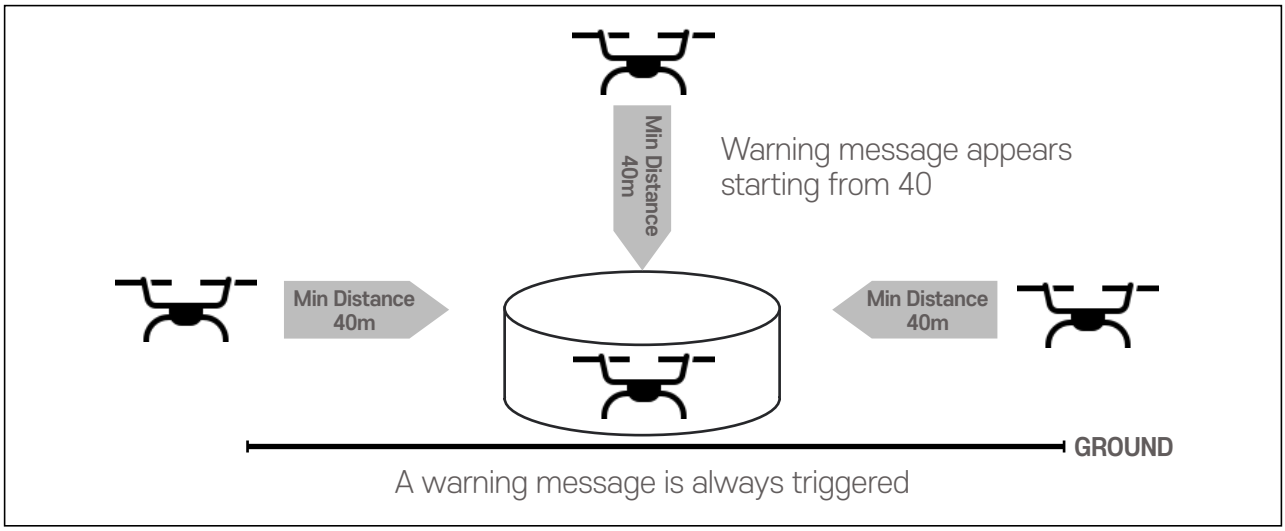
It's important to note that the GEO system may not fully comply with local laws and regulations. Therefore, users are responsible for their own flight safety and must consult local authorities about relevant legal and regulatory requirements before requesting to unlock a restricted area for flight.

In summary, the GEO system provides flight restriction information, but users must take responsibility for ensuring their flights are safe and legally compliant by conducting the necessary checks and preparations beforehand.

GEO Awareness

UGZ Entry Warning and Return Action

A warning message will be triggered when the drone approaches within 40 meters of the UGZ (Restricted Zone). Upon receiving this warning, the operator must immediately initiate a return action to safely bring the drone back. If the warning message appears, issue the return command immediately and ensure the drone does not enter the UGZ area. For safe flight, always take action before getting too close to the restricted zone when receiving the warning.



UGZ information can be uploaded from the website and displayed on the map

1. Caution
   To ensure that the GEO Awareness feature operates correctly, it is essential to check and prepare for the conditions listed below in advance. If any of these conditions are not met, the functionality may not work as intended.

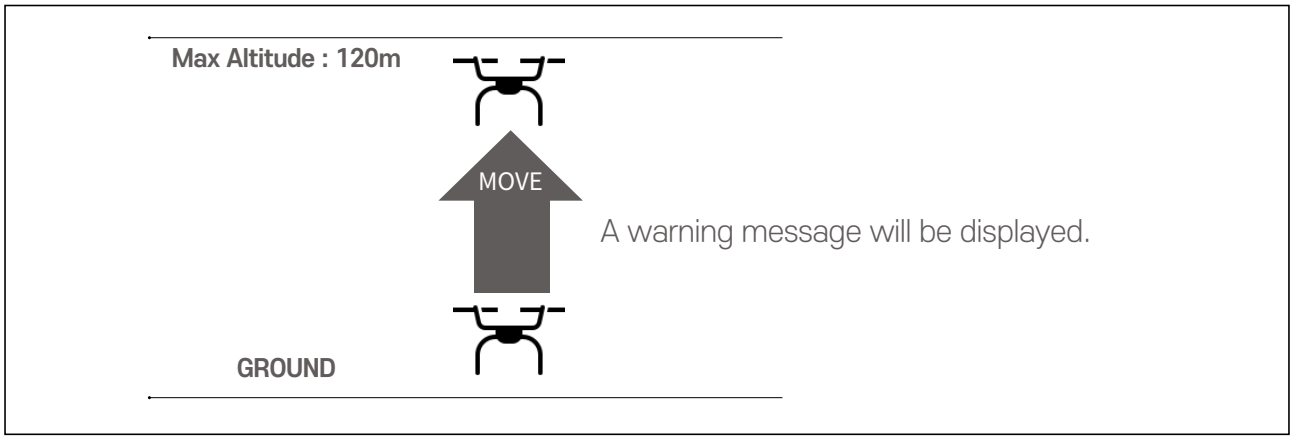
2. Consequences of Violations
   If the UAV exceeds the UGZ, it may violate FAA or other aviation regulatory authorities' regulations and be subject to enforcement actions by the relevant authorities.

- Unstable Internet Connection: If the GEO Awareness feature relies on internet-based location data requests, an unstable network connection may degrade its performance or cause it to stop functioning entirely. In such cases, the map should be reloaded and prepared again.
- Incorrect Settings: GEO Awareness may fail to function if it's not enabled or if it's misconfigured. For instance, if the location service is disabled on the device.
- Battery Issues: A low battery or the device’s power management system may return the aircraft to base during GEO Awareness operation.
- Location Data Update Delays: Delays in collecting and transmitting location data can cause GEO Awareness to not reflect real-time changes, leading to the feature not functioning as expected.
- Latency: High network latency during location data collection and transmission can lead to slow responses from the GEO Awareness feature.
- Battery Issue : If the battery is insufficient, the UAV may fail to return safely within the UGZ (Unauthorized Geofence Zone) and could exit the restricted area.
- This highlights the importance of considering sufficient reserve battery time when planning the flight.
- Attitude Control Issues : If the UAV's attitude control is insufficient due to wind effects, the flight path may extend beyond the UGZ.

Geo Zone Maximum Altitude Limit

In the Geo Zone, the set altitude cannot exceed 120m. If the set altitude exceeds 120m, a warning message will be displayed when the drone reaches the specified altitude. This message alerts the user that the drone has exceeded the set altitude limit and cannot increase the altitude further.

Therefore, it is important to ensure that the set altitude does not exceed 120m.

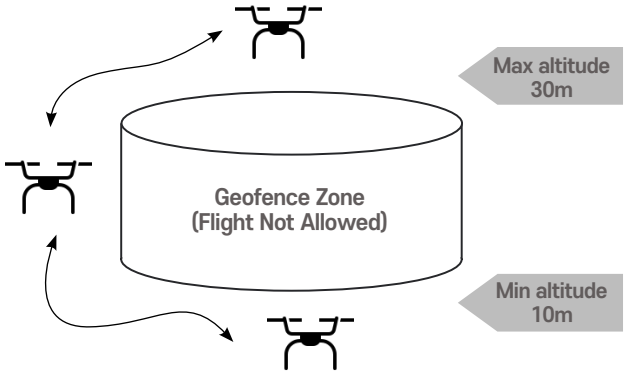


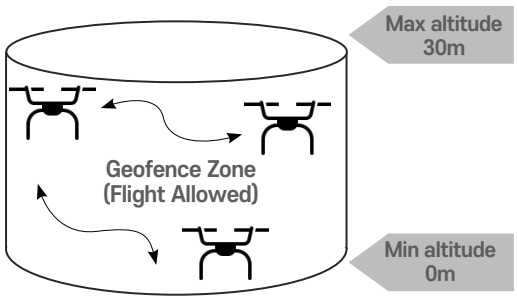
Geo Fence Explanation

A Geo Fence is a system that sets a virtual boundary to restrict the drone's flight area. This feature ensures that the drone stays within a designated geographic zone, increasing flight safety and preventing unintended flights.

Setting a Geo Fence limits the drone's flight range. If the drone exceeds this range, a warning message will be displayed, or, depending on the configuration, the drone may automatically stop flying or return to the starting point.

When setting a Geo Fence, it is important to carefully consider the geographical characteristics of the intended flight area and ensure that the flight zone is a safe area.





Geofence Alert and Return-to-Launch (RTL) Behavior

Before entering a designated Geofence Zone, an alert message is displayed to the operator. If the drone continues toward the Geofence Zone, it will automatically initiate a Return-to-Launch (RTL) procedure.

During the RTL process, the system will continuously generate an alert message, and the drone will vibrate until it successfully returns to the designated home location.





Flight Limits

For safety reasons, flight limits are enabled by default to help users operate this drone safely. Users can set limits on flight height and distance. When GNSS (Global Navigation Satellite System) is available, altitude limits, distance limits, and GEO zones work together to manage flight safety. If GNSS is unavailable, only altitude can be limited.

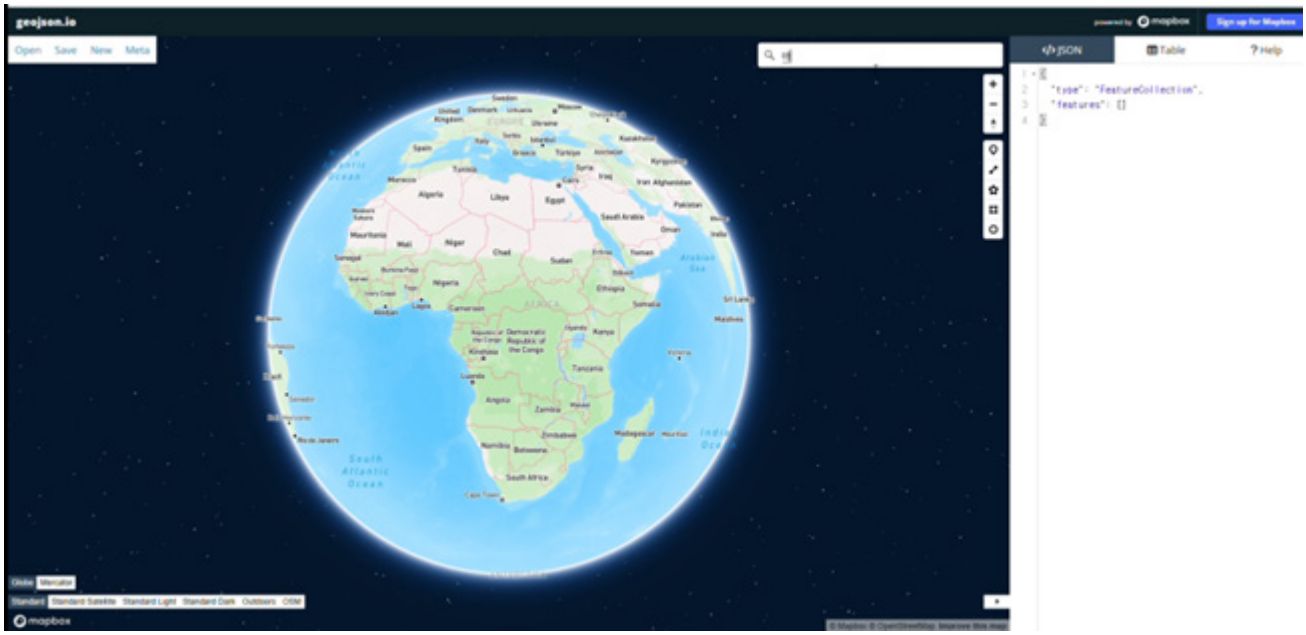
Flight Altitude and Distance Limits

Max altitude restricts the drone's flight height, while max distance restricts the drone's flight radius around the Home Point. These limits can be adjusted in the Aviator Dedicated App to enhance flight safety.

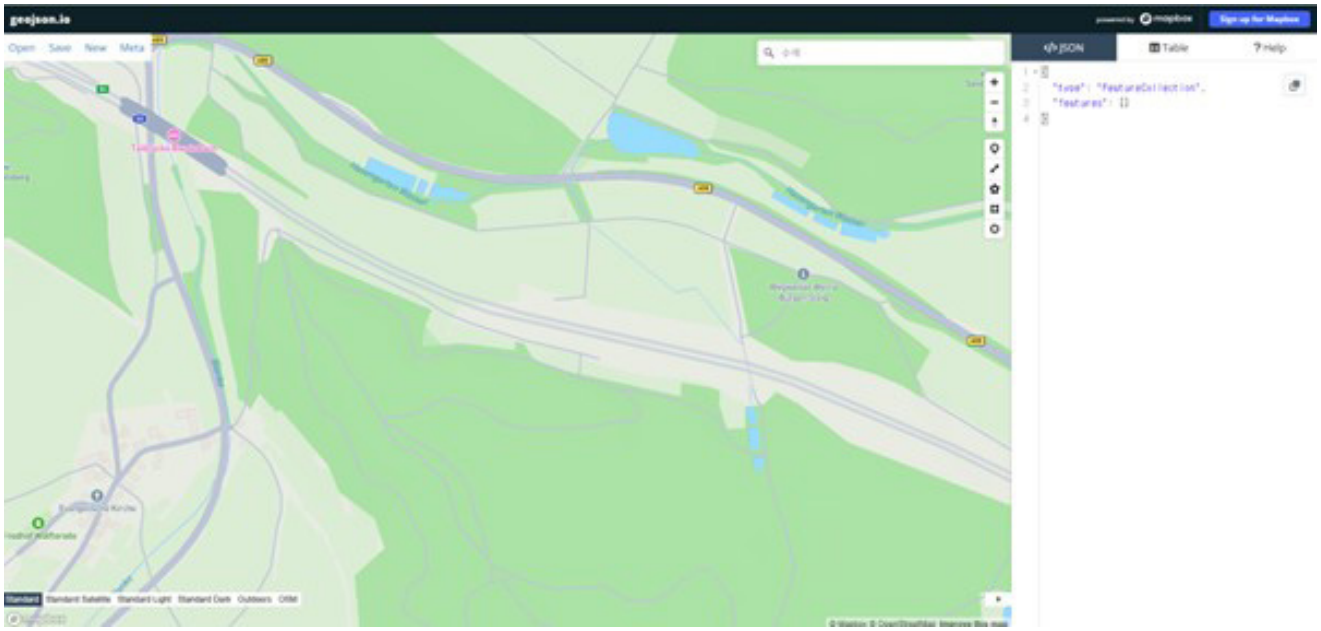
GeoZones

How to **geojson.io** to create **GeoZones.**

1. Go to the website **geojson.io**

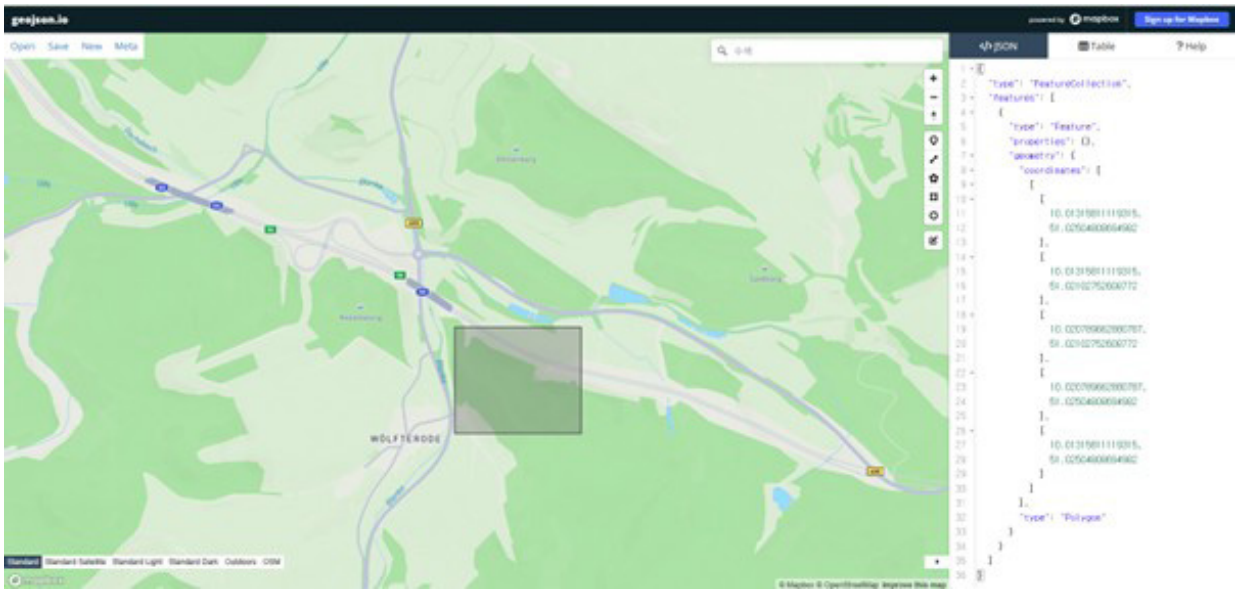


2. Navigate to your desired location.

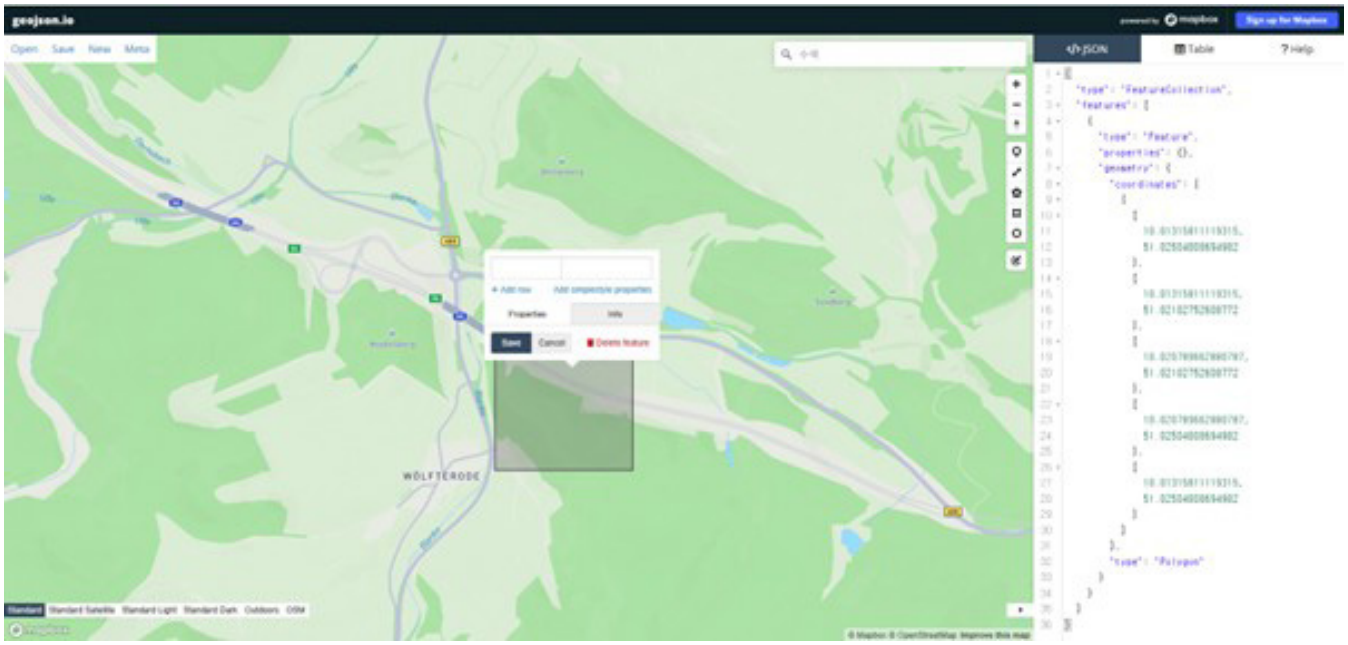


3. Define the area to be used as the GeoZone using the icon below.





4. Check that the location coordinates are displayed in JSON format in the window on the right.
   Click the defined area to add property values to the GeoJSON data.

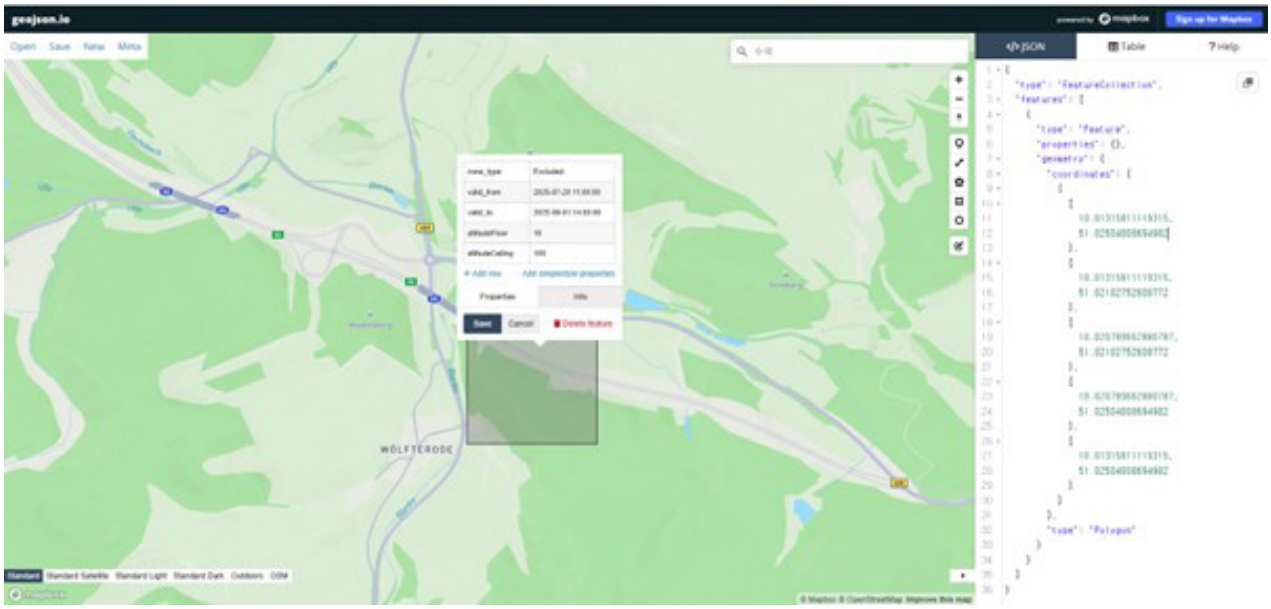


5. Check that the location coordinates are displayed in JSON format in the window on the right.
   Click the defined area to add property values to the GeoJSON data.

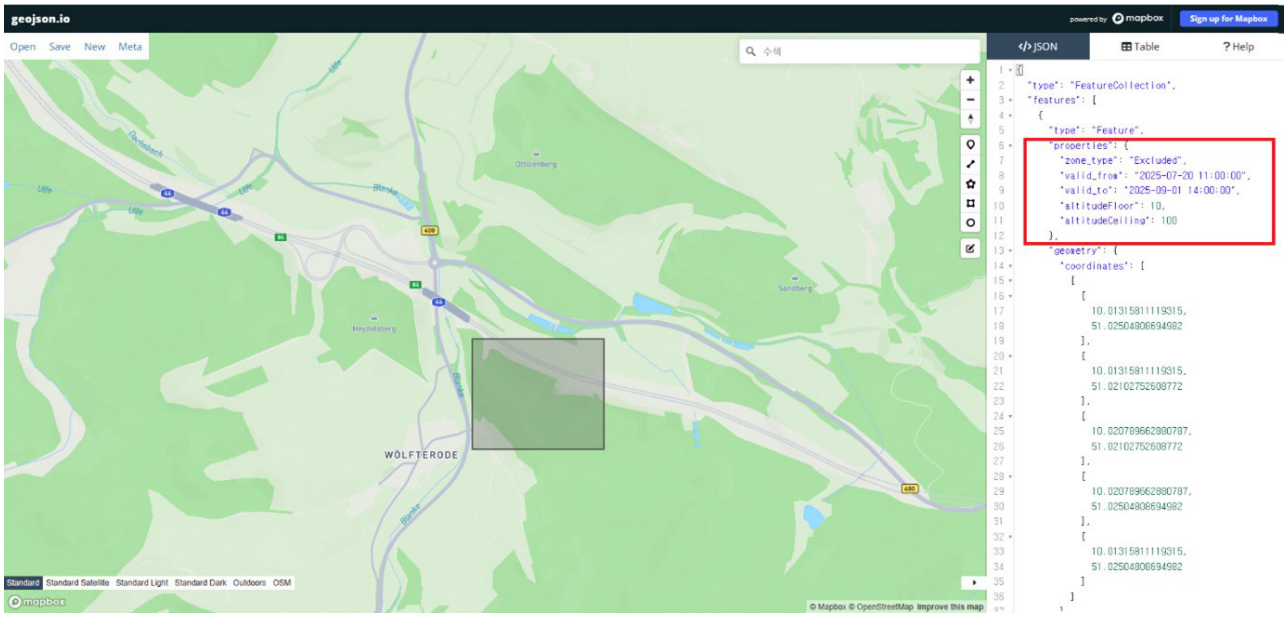
The commonly used properties are as follows:

- **zone_type**: You can use either "Included" or "Excluded" to specify the type of the GeoZone.
- **valid_from**: Specifies the start time when the GeoZone becomes valid.
- **valid_to**: Specifies the end time when the GeoZone is no longer valid.
- **altitudeFloor**: Sets the minimum altitude (in meters) for the GeoZone.
- **altitudeCeiling**: Sets the maximum altitude (in meters) for the GeoZone

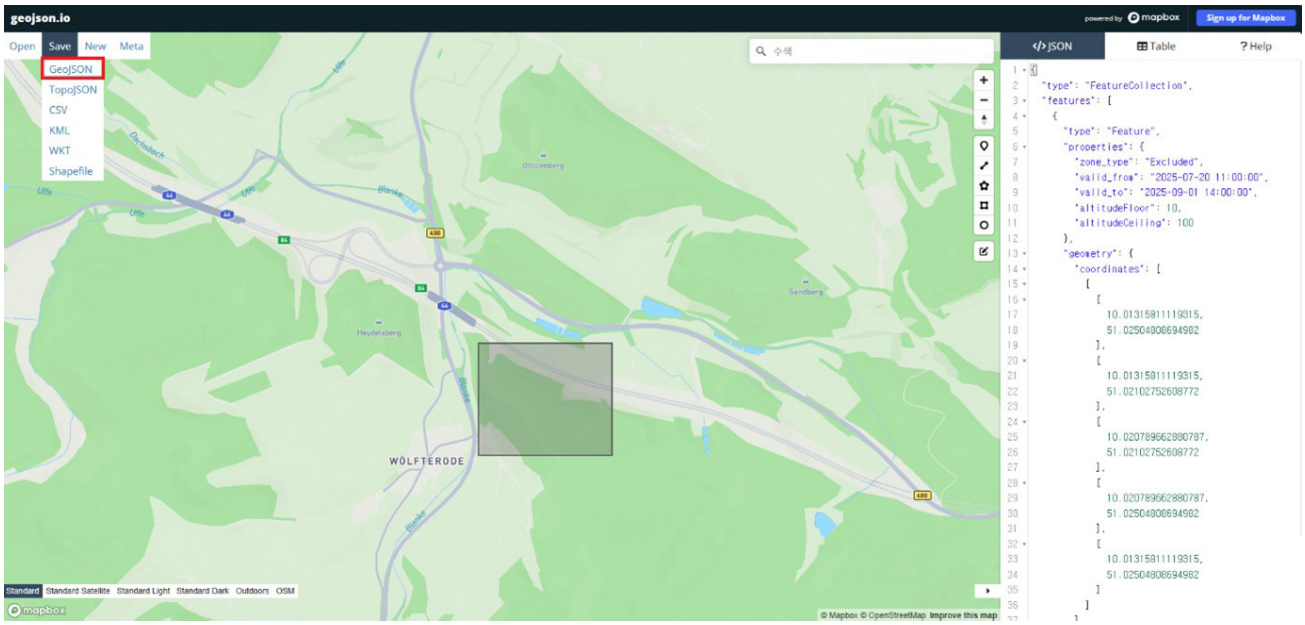
Click "**+Add row**" as many times as needed to create rows for each property you want to add.



6. Check that the property values have been added in the JSON data shown in the right-side window.



7. Use the “**Save**” menu to save the generated GeoJSON file



8. Save the GeoJSON file to a USB memory device, then connect it to the Smart Controller using the USB OTG port for use.

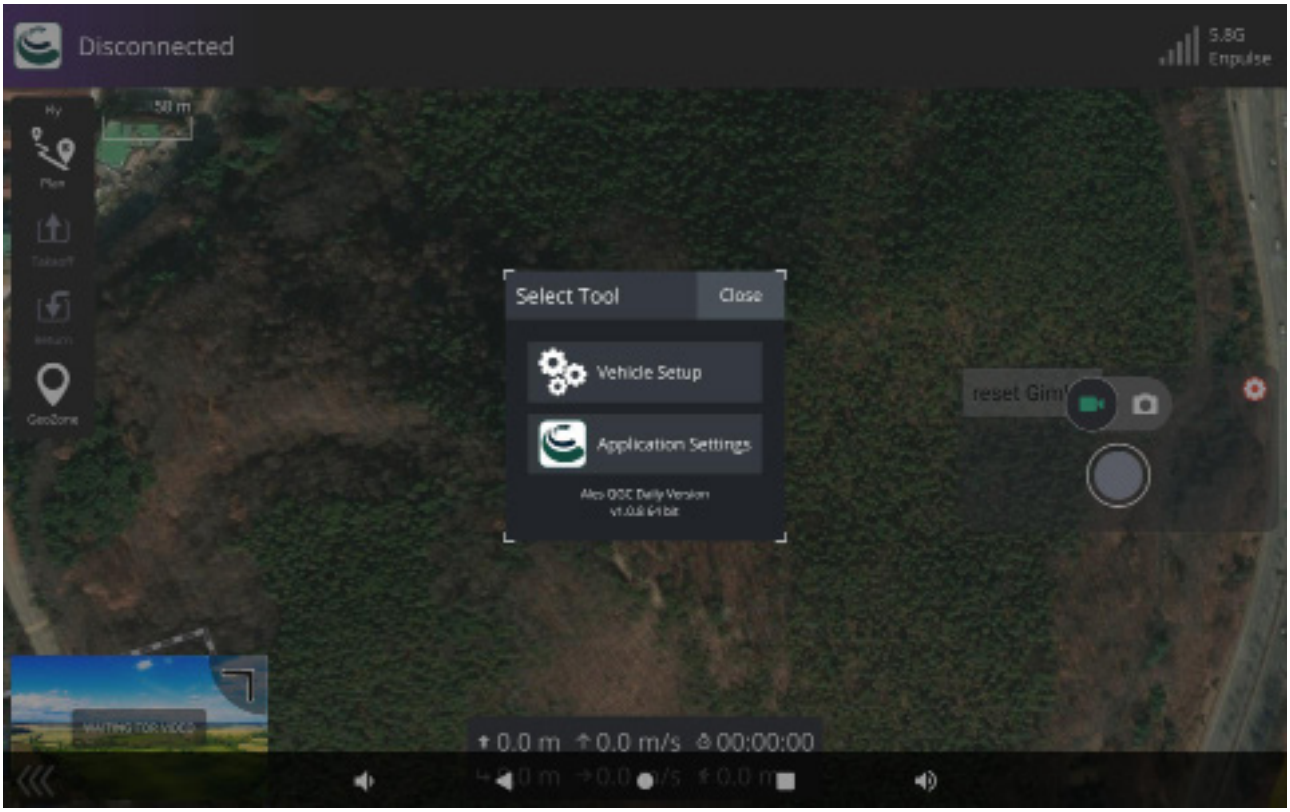
How to use the stored GeoZones data

How to read a **GeoJSON** file from a **USB memory device**

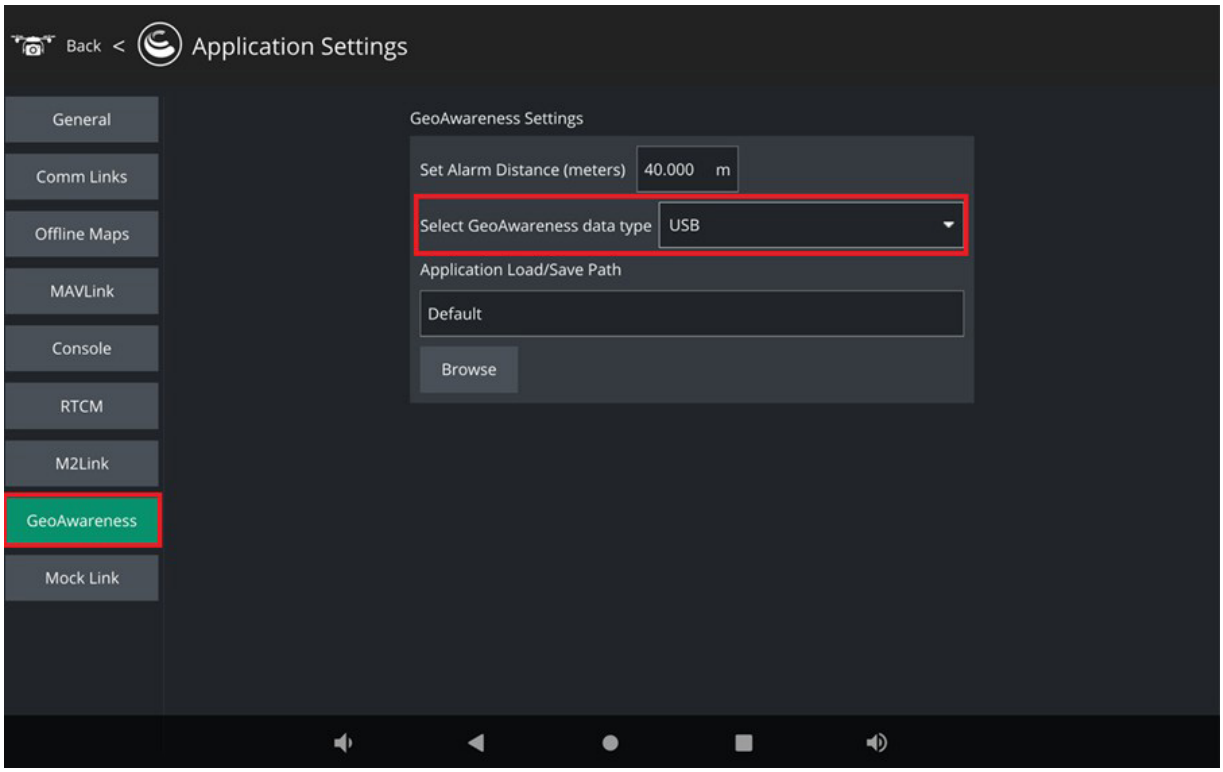
1. Connect the USB memory device to the Smart Controller's USB OTG port as shown in the picture below



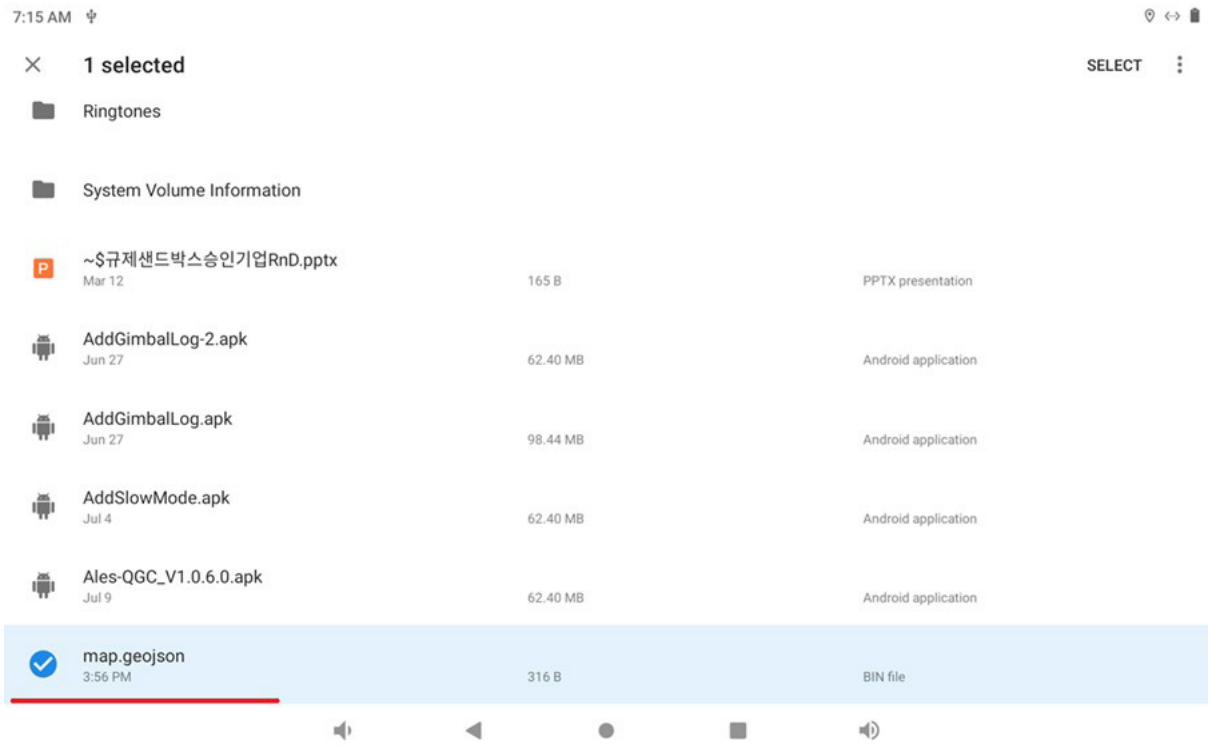
2. Enter the Application Settings menu.



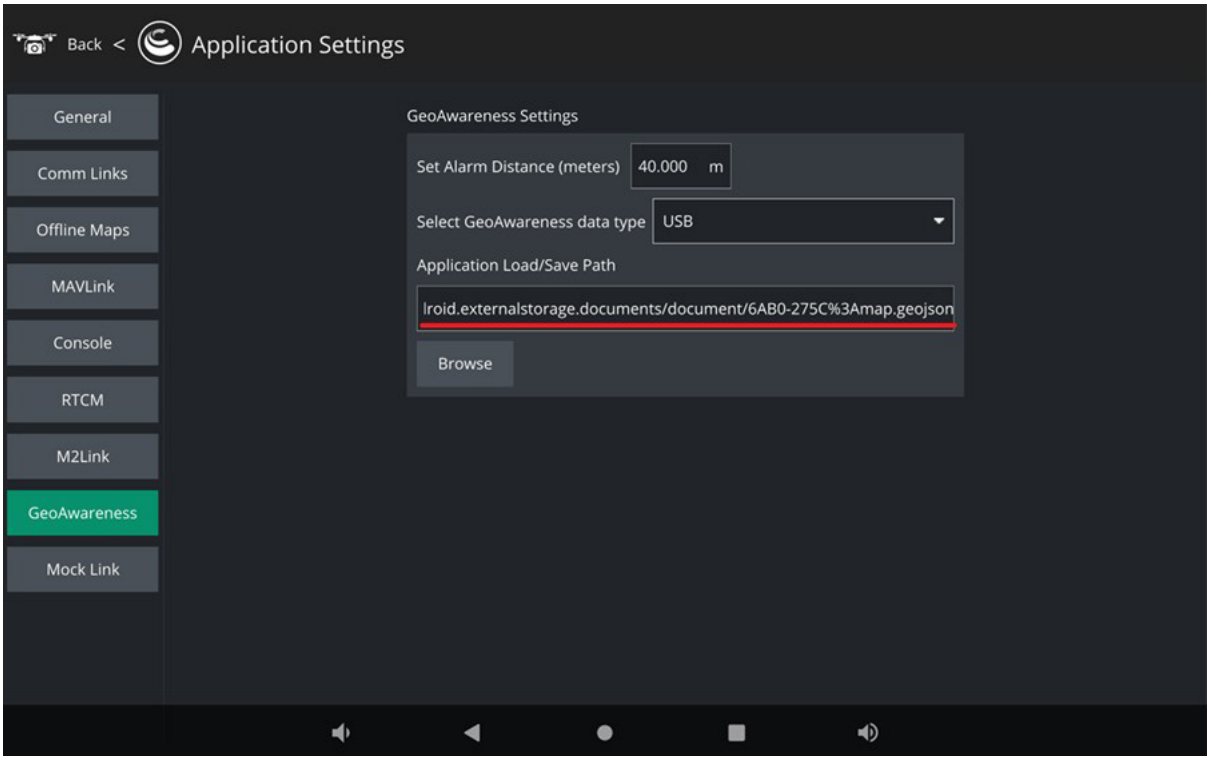
3. After entering the Application Settings menu, select the GeoAwareness menu. Then, set the "**GeoAwareness data type**" to USB.



4. Use the "Browse" menu to select the GeoJSON file from the USB memory.



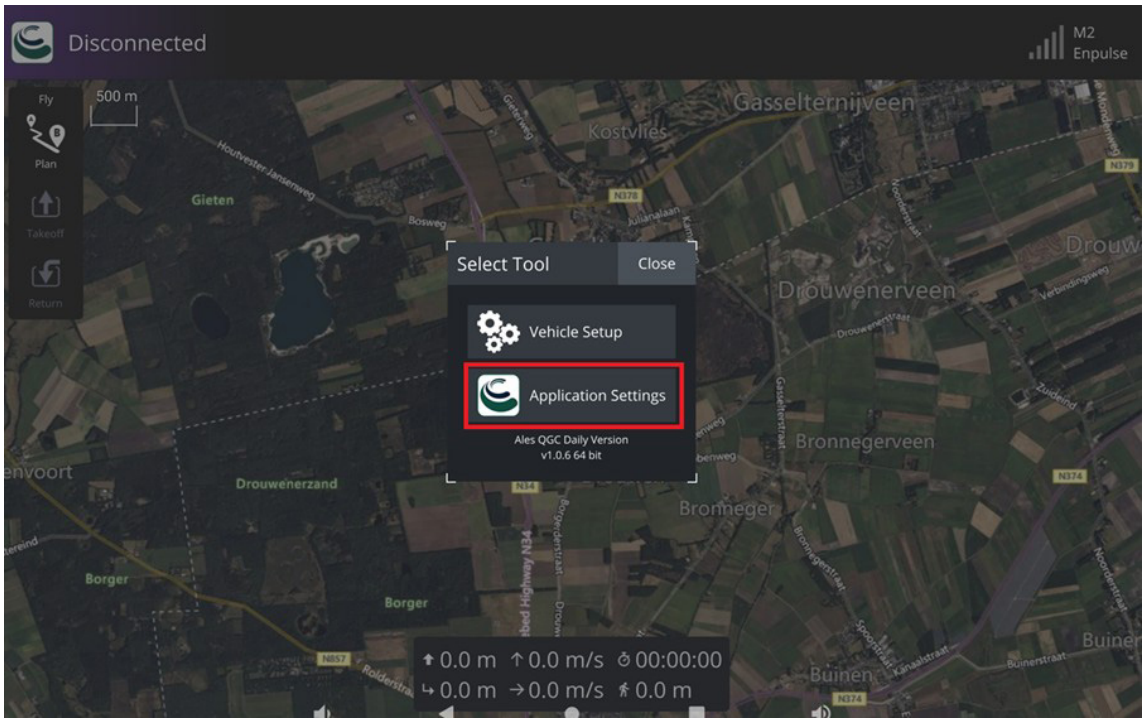
5. Check that the selected file is displayed in the menu window.



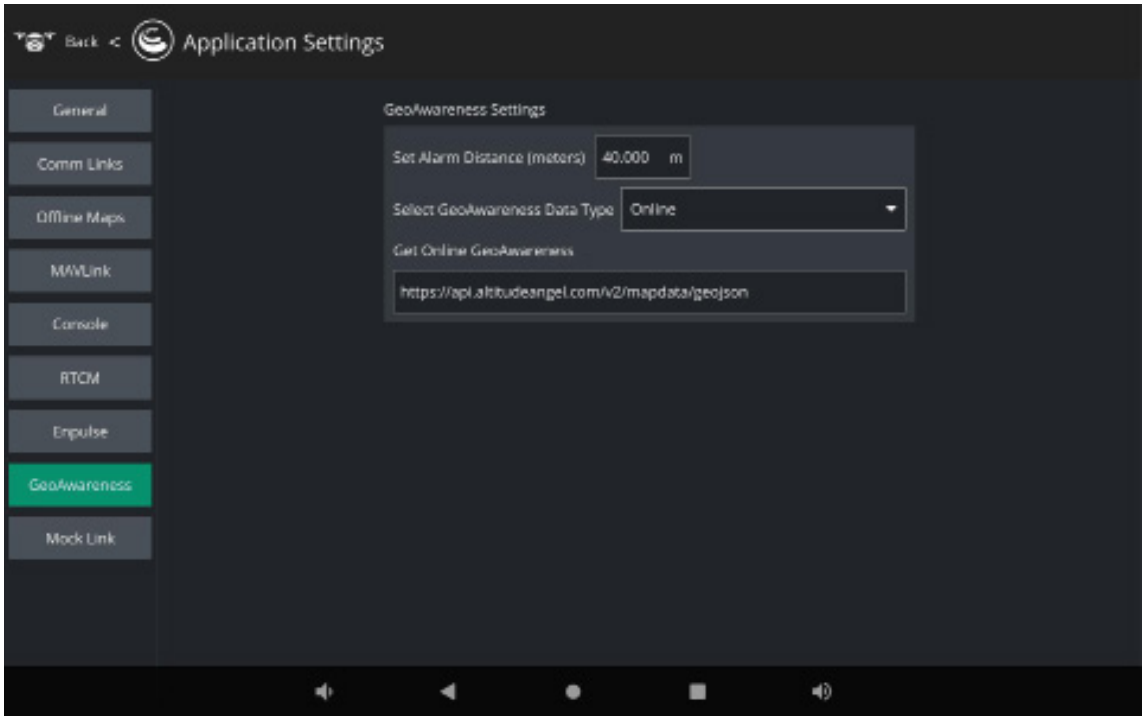
how to use GeoZones data from Internet Services

How to use the internet service for **GeoJSON** data.

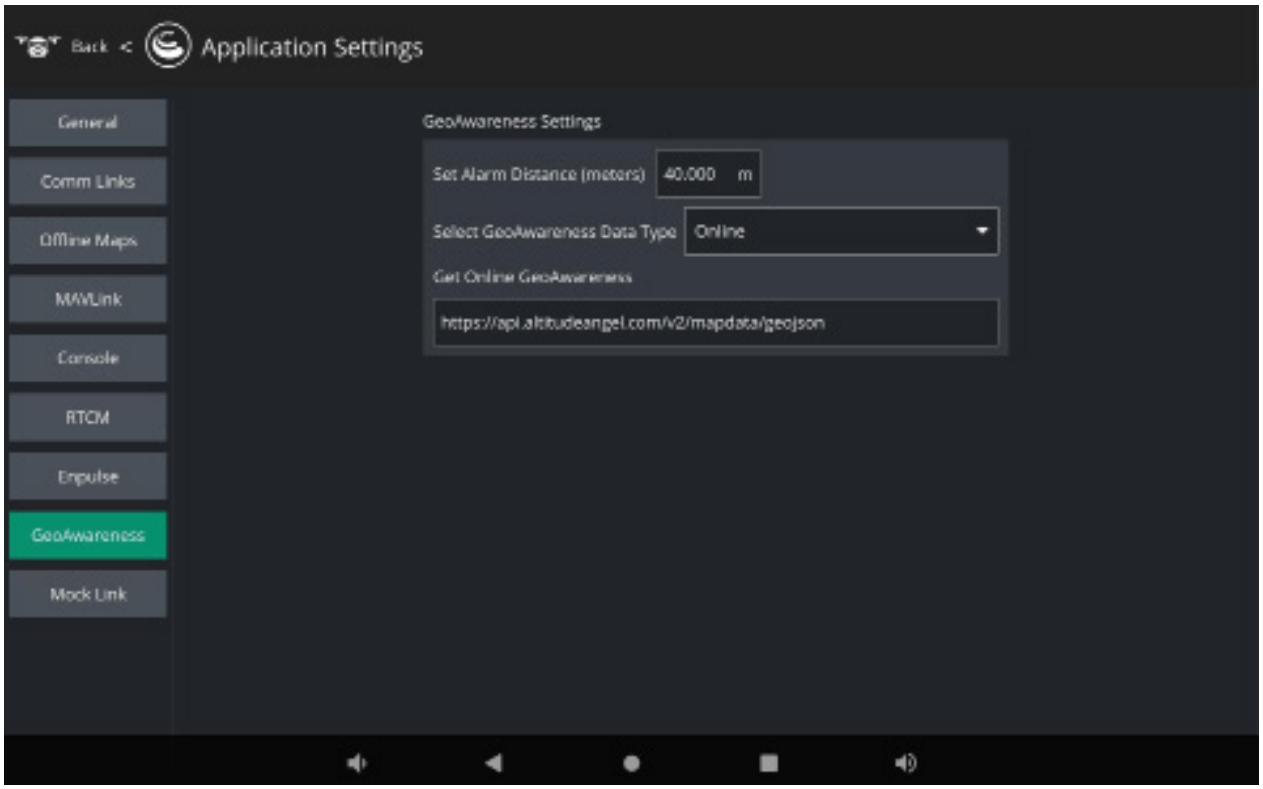
1. Go to the Application Settings menu.



2. After entering the Application Settings menu, select the GeoAwareness menu. Then, set the "**GeoAwareness data type**" to Online.



3. The currently supported internet service is **altitudeangel.com**, and to use this service, you must enter a valid license key.



4. There are two ways to enter the License Key: manually typing it in or loading it from a text file. Similar to the GeoJSON file, you can use the Browse menu to select the License Key file stored on the USB memory and load it automatically.

Website for GEO Zones

Check the flight safety zone
https://skyvector.com/

Preflight Checklist

1. Remote controller, Flight Battery, and display device are fully charged.
2. Landing gears are mounted firmly ,and batteries are locked firmly.
3. All the devices' firmware is up-to-date.
4. Ensure that a microSD card has been inserted.
5. The Camera and Gimbal work normally after the power is turned on.
6. Motors can start and are functioning normally.
7. The Aviator Dedicated App is successfully connected to the Drone.
8. Do not face the battery connector downwards to the ground to avoid getting dust or water into the battery connecter.
9. Make sure that the gimbal dampener is without obvious wear and tear, and the gimbal anti-drop has been fastened.

Flight Procedure

1. Perform the basic flight test before flight as follows:
2. Turn on the remote controller and then turn on the drone.
3. Launch the dedicated app to connect to the drone and go to the camera view.
4. Wait until the drone status indicator flashes red and green alternately.
5. Start the drone using the remote controller and slowly pull up on the left stick to take off the drone.
6. Slowly pull down on the left stick of the remote controller to land the drone on a flat surface.
7. Turn off the drone and then turn off the remote controller.

Pilot Compliance

1. The operator of a lightweight drone (drone) must comply with the regulations established by local Ministry of Land, Infrastructure and Transport to prevent harm to people or property caused by the drone.
2. Visibility: Flying is prohibited in conditions where visibility is impaired by fog, rain, etc., making safe flight difficult or where visual line of sight cannot be maintained.
3. Controlled Airspace: Prohibited within a 9.3 km radius of an airport.
4. Air Traffic Routes: Prohibited in airspace where flight paths are established (above 120 meters altitude).
5. Populated Areas: Prohibited over densely populated areas or places where people gather, where there is a risk of injury if the drone falls.
6. Dropping Objects: Dropping or releasing objects during flight is prohibited.
7. Alcohol: Flying under the influence of alcohol is prohibited.

Altitude Limit Change

You can adjust the altitude in the parameter settings.
Steps to change the altitude:

1. Open the Aviator app and slide down from the top of the screen to open the status Screen.
2. Tap the Version/bit box more than 6 times to activate 'Advanced Mode'
3. 'Select 'Aircraft Settings'
4. Tap on 'Safety'
5. In the 'Geofence Failsafe Trigger' section, the 'Max Altitude' value is limited to the maximum altitude.
6. After making the changes, restart both the drone and the app.

Precautions for External Lighting

- Avoid interference between the remote controller and other wireless equipment. If there is any interference, land the aircraft as soon as possible
- The user must adjust the display brightness correctly when using the monitor in direct sunlight during flight operation.
- In the event of an unexpected operation, release the control stick or press the flight pause button.

Risk and Warnings

If the aircraft detects any hazards after powering on, a warning message will appear in the Aviator Dedicated app. Please pay attention to the following situations:

1. Insufficient battery level
2. Poor GPS signal
3. Weak connection between the remote controller and the aircraft
4. Interference with the compass or IMU requiring calibration
5. Follow the on-screen instructions when a message appears

- Not for children under 16
- Not fly under alcohol, drugs, sickness, or tiredness.

Flight Safety

Drone Night Flight Precautions

1. Pre-Flight Check: Before flying at night, ensure that the drone's lighting system is functioning correctly. The front LED of the drone will be displayed in green to assist with drone identification.
2. Flight Path: Night flights limit visibility, so it is important to plan the flight path carefully and ensure the operator can visually identify the drone.
3. Flight Speed: Due to limited visual recognition at night, keep the flight speed slow and be cautious of obstacles.
4. Environmental Conditions: Before flying at night, check the weather conditions. Avoid flying in case of strong winds or forecasted rain.

Daytime Flight Precautions in Fog and Fine Dust

1. Fog: In foggy conditions, visibility is limited, so consider the drone's flight path and speed accordingly. Since fog can suddenly form due to temperature differences during the day, it is important to check the weather conditions before flight.
2. Fine Dust: In environments with high levels of fine dust, the drone’s sensors and cameras may be affected by dust accumulation. Avoid flying in areas with high fine dust levels or minimize flight time when necessary.

No Flight in Adverse Weather Conditions

The drone should not be flown in adverse weather conditions such as rain, snow, fog, or hail. These weather conditions can significantly reduce the drone's performance and pose a risk to flight stability. Additionally, poor visibility caused by these conditions can make it difficult for the remote pilot to operate the drone, and flight paths may become unpredictable.
Therefore, do not attempt to fly in rain, snow, fog, or hail. Flight should only proceed once these weather conditions have improved. Operating the drone under such conditions compromises its safety, and flight should be avoided to ensure safe operation

Return to Home (RTH) Procedure in Case of Communication Loss

If communication between the drone and the remote controller is interrupted due to interference, the drone will automatically activate the "Return to Home (RTH)" function and return to the takeoff point or a designated return location. This function operates as a fail-safe mechanism to ensure safe operation, allowing the drone to return stably in the event of a communication failure.
It also displays a warning message to the operator when communication is lost.
In this case, to command the return, press and hold the RTL button for 3 seconds.

Return to Home (RTH) Procedure in Case of Low Battery

If the drone's battery level drops below the preset threshold, it will automatically activate the "Return to Home (RTH)" function and return to the takeoff point or a designated return location. This function operates as a fail-safe mechanism to prevent flight interruption due to battery depletion and ensure a safe return.
It also displays a warning message to the operator when the battery is low.
In this case, to command the return, press and hold the RTL button for 3 seconds.

SLOW MODE Function

The SLOW MODE is a feature that reduces the drone's flight speed, enabling safer and more stable flight. This mode is especially useful when controlling the drone in narrow spaces or complex environments, allowing the operator to make more precise maneuvers. When SLOW MODE is activated, the drone's flight speed is limited to 3m/s, and its response to the controller's input becomes slower. This feature enhances flight stability and helps prevent mistakes or collisions.

MOTM Statement

1. ARGOSDYNE AL-300FM is a quadcopter drone
2. The AL-300FM adheres to a Maximum Takeoff Mass (MTOM) of 4.63 kg
3. Users must comply with the C3 requirements for maximum takeoff mass
4. Except for the payloads defined below, no additional payloads should be added to the drone
5. You must use the provided battery and must not use non-qualified batteries
6. Do not modify the drone arbitrarily

List of Items Including Qualified Accessories

ITEM / Model	Weight	Q'ty	Note
Drone (UA) / model : AL-300FM	1.65kg	1	Without Battery
payload Min ~ Max (Camera)*	95g ~ 1.68kg	1	
Battery / ILP612HV	1.3kg	1	
Propellers / AL-300FM Propellers**	41.6g	1	
Parachute	250g	1	

* Payload List

Manufacture & Model

1. Yellowscan : Surveyor Ultra Standard , Surveyor Ultra OEM , Mapper+ OEM
2. Nurlmch : Rhythm3 (R3) , Rhythm2L (R2L)
3. SHARE : EasyMapper-C61 (6100X)

** The weight of a single propeller is approximately 17.5g

** r(mm) : 250.05

"r" is the radius in mm between the axis of rotation and the tip of the propeller blade.

List of Spare and Replacement Parts

ITEM / Model	Weight	Q'ty	Note
Battery / ILP612HV	1.3kg	1	
Propellers / AL-200F Propellers	41.6g	1	

C3 (under 4.6 kg)

Subcategory	A3
Operational restrictions	◦ Must not overfly uninvolved people. ◦ Maintain a horizontal distance of 150m from uninvolved people and urban areas. ◦ Maintain flight altitude below 120m above ground level.
Drone Operator Registration	Yes
Remote Pilot Compertence	◦ Read carefully the user manual ◦ Obtain a 'Proof of completion for online training' for A1/A3 'Open' Subcategory by: ■ Completing the online training ■ Passing the online theoretical exam
Remote Pilot Minimum age	16*

* You must understand and comply with local laws and regulations of the respective country before operating the drone.

DRI (Direct Remote Identification)

How to Transmit DRI and Upload the Operator Registration Number

1. Download the "DroneTag" app.
2. Register an account in the app.
3. Turn on the drone and the app.
4. In the app, register a new device (Bluetooth)
5. Register the UAS Operator ID.
6. After registration, check the status.
7. You can view drone information such as battery status, GNSS, and more.
8. DRI-Transmission Protocol: Bluetooth 4.0 Legacy + 5.0 Long Range

* Flight paths and flight information can be checked using the "Drone Scanner" app

Remote Controller

This section explains the functions of the AVIATOR controller, as well as the features and configuration methods for the drone and camera.

Remote Controller

The "AVIATOR" controller allows for camera tilt adjustment and control of photo and video functions, with a communication range of up to 3 km (External interference and undisturbed conditions). It features a built-in 7-inch high-brightness display with 1000 cd/m² and a resolution of 1920x1800 pixels. Supporting both 2.4GHz and 5.8GHz frequencies, it runs on an Android system equipped with various features, including Bluetooth and GNSS. In addition to Wi-Fi connectivity, the controller is also compatible with other mobile devices for more flexible usage. The built-in 12,000mAh 76Wh battery provides up to 4 hours and 30 minutes of operation time. The controller can reach its maximum transmission range (FCC) at an altitude of approximately 120 meters in an area free from electromagnetic interference.

Operation

Power On/Off

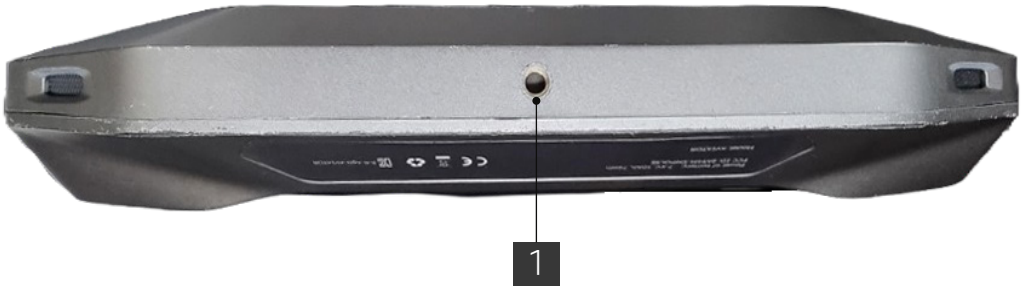
Press the power button once will display the current battery level
Press and hold the power button to turn on the controller
To power off the controller, press and hold the power button until the shutdown button appears on the screen, then tap it to turn off the device



Controller Diagram



1. Antenna
2.Left Control Stick
3.Emergency Motor Stop
4.Return-to-Home (RTL) Button
5. Power Button
6.Remaining Battery Capacity
7.Touch Screen
8.Right Control Stick
9. Custom Button1
10. Custom Button 2
11. Custom Button 3

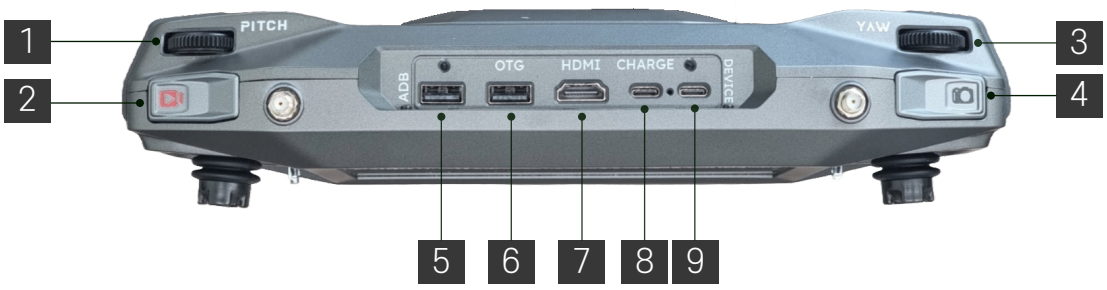


1. Tripod Mounting Screw Hole (1/4")



1. Custom Button C2

2. Custom Button C1



1.Gimbal Pitch Axis Control Dial
2. Video Recording Button
3. Gimbal Yaw Axis Control Dial
4. Photo Capture Button
5. USB Port (Debug)
6. USB Port (Mouse)
7. HDMI Port
8. USB-C Charging Port
9. External Data Port

Charging the Battery

Use a USB-C cable to connect the charger to the USB-C port of the remote controller. The battery can be fully charged in approximately 2 hours with a maximum charging power of 36W (12V/3A).



Controlling the Gimbal and Camera

1. Gimbal Pitch Control Dial

Pitch controls the tilt of the gimbal.

2. Video Recording Button

Pressing it starts or stops video recording

3. Gimbal Yaw Control Dial

Yaw controls the tilt of the gimbal.

4. Photo Capture Button

Pressing it captures a photo



Controlling the Remote Contoller

Instructions on how to control the drone's direction using the remote controller.

The remote controller can be set to either Mode 1 or Mode 2



Mode1



Mode2

The remote controller is set to Mode 2 by default.

This manual explains how to control the remote controller using Mode 2 as an example.

RTL Button

Press and hold the RTL (Return to Launch) button to initiate RTL, which will return the drone to the last recorded home point. To cancel RTL, press the button again.



Custom Button

Includes FN 1, FN 2, FN 3, and C1, C2 buttons. To customize the button functions, please configure them in the app





Operation and Control of the Gimbal

Use the left and right dials to operate the gimbal.



The left dial controls the gimbal's pitch axis.

Turning the dial to the right moves the gimbal upward.

Turning the dial to the left moves the gimbal downward.

When the dial is stationary, the camera remains in its current position



The right dial controls the gimbal's yaw axis.

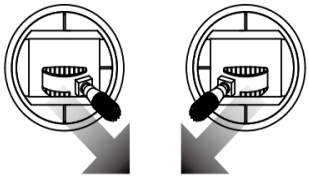
Turning the dial to the right controls the gimbal in a clockwise direction.

Turning the dial to the left moves the gimbal counterclockwise.

When the dial is stationary, the camera remains in its current position.

Motor Start

To start the motor, operate the sticks on the remote controller as shown in the diagram below.



Motor Stop

Immediately after landing, pull the left stick downward as shown in the diagram. The motor will stop after 2-3 seconds.



Kill switch - Emergency Stop

Press and hold the **Return button** and **FN1 button** simultaneously for more than 5 seconds to perform an emergency stop of the drone.



Remote Controller Alert

The remote controller vibrates or emits a notification sound twice to indicate an error or warning. Pay attention to any notifications that appear on the screen. To disable alerts, slide down from the top of the screen and select 'Do Not Disturb' or 'Mute.'

The remote controller emits an alert during Return to Launch (RTL) mode, which cannot be canceled. It also sounds an alert when the battery level is low (between 6% and 10%)

The low battery warning that occurs when the battery level drops below 5% cannot be canceled

Optimal Transmission Zone

The signal between the drone and the remote controller is most stable when the antennas are positioned with respect to the drone. For optimal transmission range, ensure the antennas are facing the drone and that the angle between the antennas and the rear of the remote controller is 180° or 270°

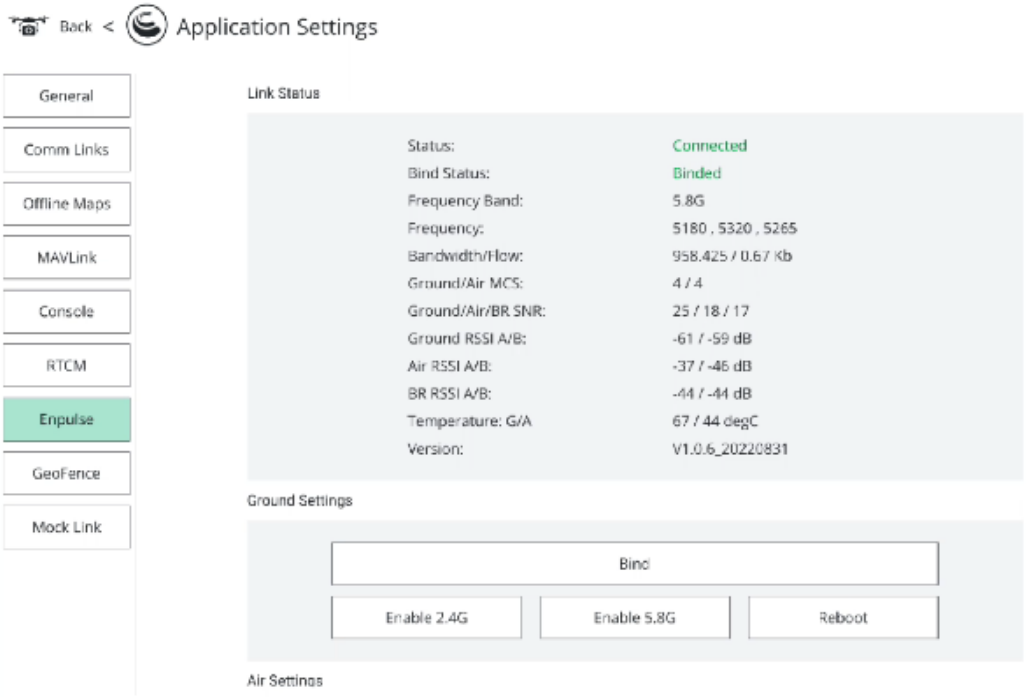
※ To avoid signal interference, do not operate other wireless devices on the same frequency as the remote controller

Binding the Remote Controller

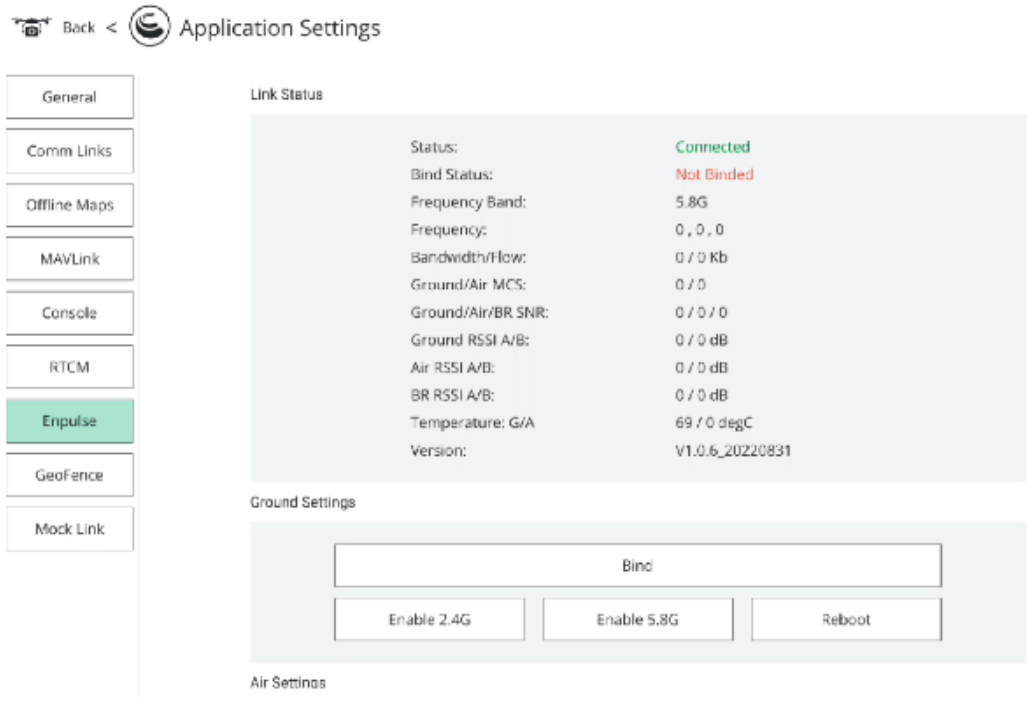
1. After powering on the drone, press the power button quickly 6 times within 3 seconds. When you hear a notification sound, the drone is ready to connect.



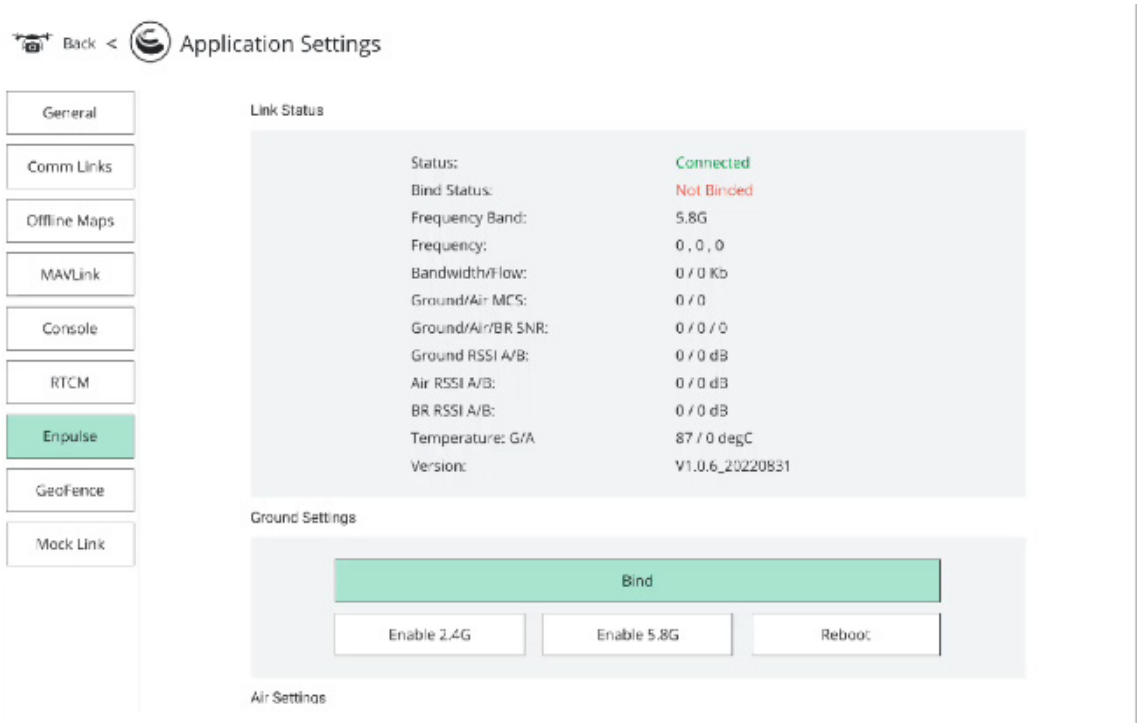
2. On the main screen, slide down from the top to open the status screen, then tap 'App Settings' on the left. In the submenu, click on the 'Enpulse' menu. The Link Status screen will be displayed.



3. Press the 'Bind' button.



4. Once the connection between the remote controller and the drone is established, the transmitter indicator on the remote controller will briefly light up and then turn off. In the Link Status screen, 'Bind Status' will change to 'Connected.' The remote controller will then be able to receive data from the drone.



※ When connecting the controller to the drone, ensure that the controller is within 0.5 meters of the drone.

※ If the controller is on but not used for 5 minutes, a warning sound will be triggered. You can cancel the warning by moving the control sticks or pressing any button.

※ Fully charge the controller's battery before each flight. A low battery warning will sound if the battery level is low.

※ To maintain battery life, fully charge the battery at least once a month.

※ When storing the battery for an extended period, maintain a charge level of 30-50% to prevent it from fully discharging.

Touchscreen Operation

Main Screen (Home)



The top of the touchscreen displays the controller's time, Wi-Fi signal, and battery level.

Certain apps, such as the dedicated app, Gallery, Files, and Internet, come pre-installed by default.

The settings include configurations for network, display, sound, and Bluetooth.

Screen Gestures

Sliding up from the bottom of the screen will bring up the menu bar.

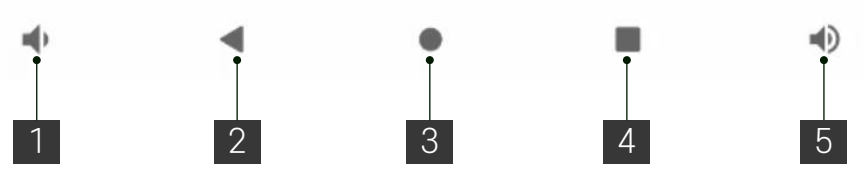
In the menu bar, you can use the volume up/down, previous, home, recently used apps, and capture functions.

In the dedicated app, sliding down from the top of the screen will open the status bar. The status bar displays information such as time, Wi-Fi signal, and remote control battery level.

Opening Quick Settings: In the dedicated app, sliding down twice from the top of the screen will open Quick Settings. When not in the dedicated app, sliding down once from the top of the screen will open Quick Settings.

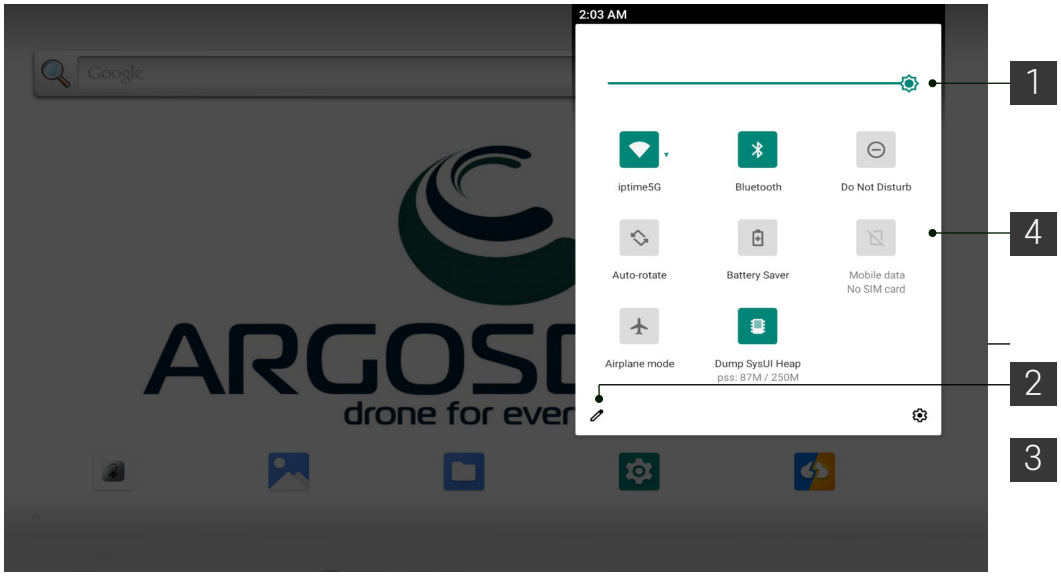
Menu Bar

Main Screen (Home)



1. Volume Down
2. Previous
3. Home
4. Recently Used Apps
5. Volume Up

Quick Settings



1. Adjust Screen Brightness
   You can adjust the screen brightness.

2. Edit
   You can add or remove desired functions in Shortcuts

3. Settings
   Moves to the settings screen.

4. Shortcuts

1) Wifi
Tap to enable or disable Wi-Fi. To enter settings and connect to or add a Wi-Fi network, press and hold

2) Bluetooth
Tap to enable or disable Bluetooth. To enter settings and connect to nearby devices, press and hold.

3) Do not disturb
Press to activate Do Not Disturb mode. In this mode, system prompts are disabled.

4) Auto-rotate
Press to enable or disable auto-rotation. The screen will automatically rotate to match the orientation of the controller.

5) Battery Saver
Press to enable or disable power saving mode. It conserves energy by limiting background app activity, automatic synchronization, location services, screen brightness, and more.

6) Mobile Data
By default, it is not usable as there is no SIM card inserted.

7)Airplane Mode
Press to activate Airplane Mode. This will disable Wi-Fi, Bluetooth, and mobile data.

Aviator Dedicated app

This section introduces the main functions of the Aviator Dedicated app.

Aviator Dedicated App

Manual flight integrates various specialized functions, making operation simple and efficient. Path flight allows you to set a route through the flight planning feature, enabling the drone to operate autonomously, thereby streamlining workflows and enhancing operational efficiency

Manual Flight

Camera Display

The following description uses the Rhythm gimbal and camera as an example. The camera view may vary when using different gimbals and cameras.



1. Main Menu

Swipe down to select Aircraft Settings or App Settings

2. Aircraft Status

Displays the current status of the aircraft. Swipe down to check the status of each sensor.

3. Flight Mode

Displays the current flight mode.

Swipe down to switch between flight modes (Altitude/Position/Return/Slow)..

4.FC Log Display

5. GNSS Status

Displays the strength of the GNSS signal. If the aircraft's RTK function is enabled, "RTK" will be displayed.

Swipe down to view GPS count, GPS lock status, EPH, and EPV.

6. Battery Status

Displays the remaining battery level.

Swipe down to view the current battery voltage and total power consumption.

7. Operating Frequency

Displays the communication frequency band and signal strength.

8. Wide-Angle Camera View

Displays the wide-angle camera view

9. Map

Tap to view the map. For more details, refer to the "Flight Map View" section.

10. Camera Parameter Settings

Press to access photo and video settings. For more details, refer to the "Camera Parameter Settings Menu" section.

11. Reset Button for Gym Ball Position

12. Shutter/Record Mode Toggle Button

13. Shutter/Record Button

Press to take a photo or start/stop recording.

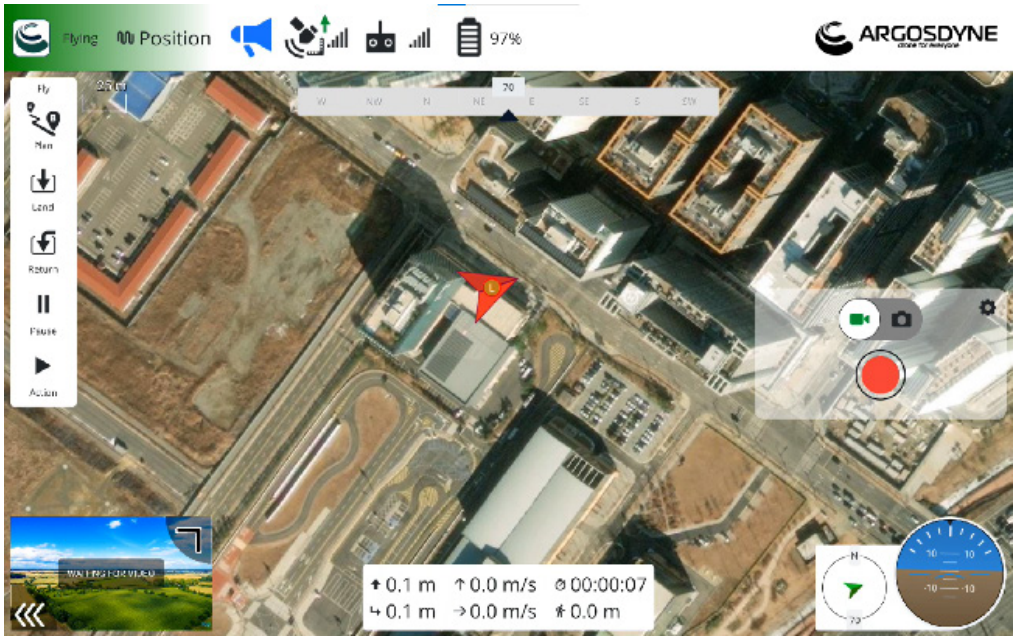
14. Main Flight Display/Navigation Display

Shows the current total flight time, total flight distance, flight speed, ascent rate, descent rate, altitude, and the relative distance between the aircraft and the remote controller.

Flight Map View

Tap the map icon in the lower left corner of the main screen to quickly switch to the map interface.

Note: To use the map feature effectively, make sure to connect to the network in advance to cache the map data.



1.Plan
Used to plan the aircraft's autonomous missions and upload them to the aircraft. Once the mission is planned and transferred to the aircraft, switch to Fly View to execute the mission.

2.Check List
Check the pre-flight checklist and other safety settings.

3. Arm / Emergency Stop
Select the option to start the aircraft or stop the propellers in an emergency.

4.Land
Land the aircraft at its current location at any time during the flight.

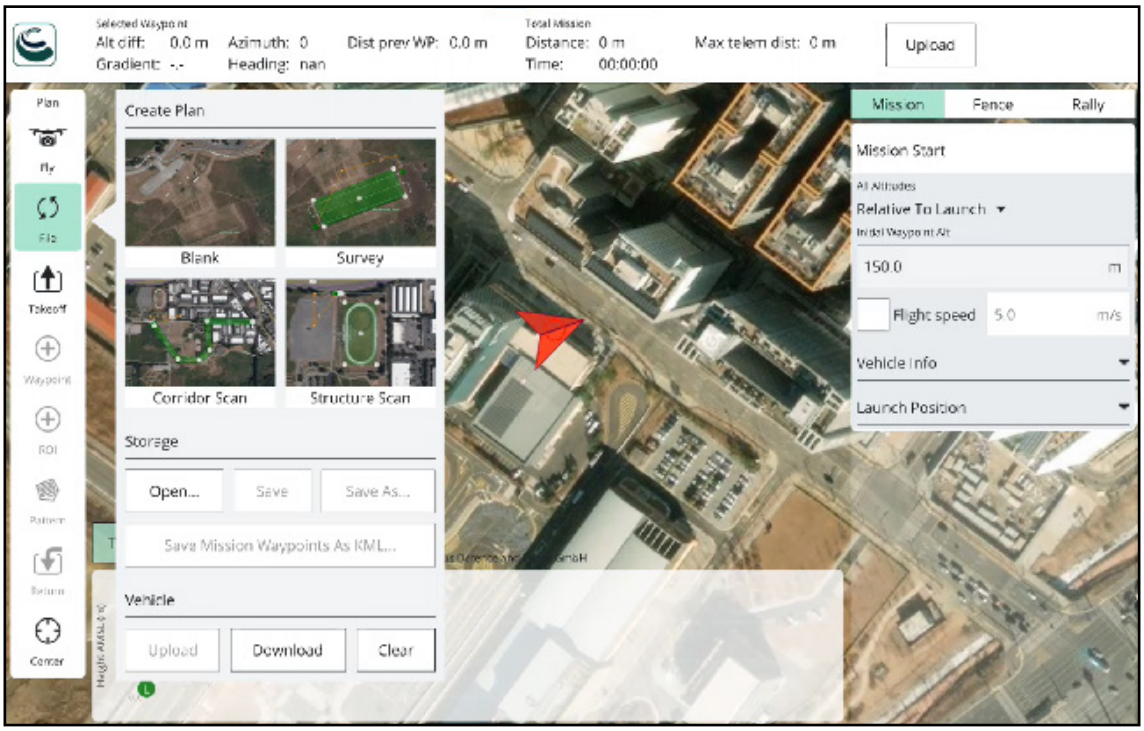
5.Return
Return the aircraft to the home position at any time during the flight.

6.Pause / Action
Pause or execute most operations (takeoff, landing, return, mission, waypoint navigation, etc.).

7.Camer View
Displays the camera view.

Mission Flight

Designed for automatic flight, scanning, mapping, surveying, and other stable flight modes, this feature is used for high-precision image acquisition and post-processing preparation..



1.File

The file tool is used to transfer missions between the ground station and the vehicle, as well as to save and restore files.

The file tool provides the following functions.

- Upload (Send to Drone): Transfer files to the drone.
- Download (Load from Drone): Retrieve files from the drone.
- Save/Load Files (including KML files): Save to or load from files, including KML files.
- Clear All: Remove all mission waypoints from the plan view and the drone.

2.Take off

To set the mission takeoff point, press here.



3.Waypoint

Click the Add Waypoint tool to activate it. While active, clicking on the map will add a new mission waypoint at the clicked location. The tool remains active until deselected. After adding a waypoint, you can select and drag it to change its location.

Each waypoint in a mission can include specific instructions such as taking a photo or starting video recording, setting the zoom level, adjusting the gimbal's pitch and yaw angles, and specifying flight speed and altitude.



4.ROI

Tap to add an ROI (Region of Interest) point. During the mission flight, the front of the drone (or nose) will always face the ROI point.

5.Pattern

The Pattern tool simplifies the creation of missions for flying complex shapes by providing a comprehensive solution for all surveying, mapping, or inspection needs. It includes options such as Survey, Corridor Scan, and Structure Scan.



Survey

Using Survey, you can create a grid flight pattern over a polygonal area. You can specify the shape of the polygon, the angle of the grid, and other properties, as well as configure camera settings suitable for generating geo-tagged images.

Corridor Scan

Using Corridor Scan, you can generate a flight pattern that follows a polyline. This is suitable for applications such as road surveying.

Structure Scan

Using Structure Scan, you can create a grid flight pattern that captures images over the vertical surfaces (e.g., walls) of a structure with any polygonal (or circular) ground area. Structure Scan is typically used for visual inspections or creating 3D models of structures.

6.Return 

To set up automatic return to the takeoff point after mission completion, press "Return."

7.Center 

Pressing "Center" will move the map to the center. You can center the map on the mission, all items, launch site, drone, current location, or a specified location. (As shown in the right image, you can enter detailed coordinates and find the target point when selected.)

8.Plan Toolbar

Based on the previous waypoint, you can view status information for the currently selected waypoint and statistics for the entire mission (e.g., horizontal distance and mission time).

The "Max telem dist" refers to the distance between the Planning Home and the farthest waypoint.

When connected to the drone, an upload button will appear, allowing you to upload the plan to the drone using this button.



9.Mission Command List

Mission commands for the current mission are listed on the right side of the view. At the top, there is a set of options to switch between mission, geofence, and rally point editing. You can select individual mission items within the list to edit their values

Mission Start：

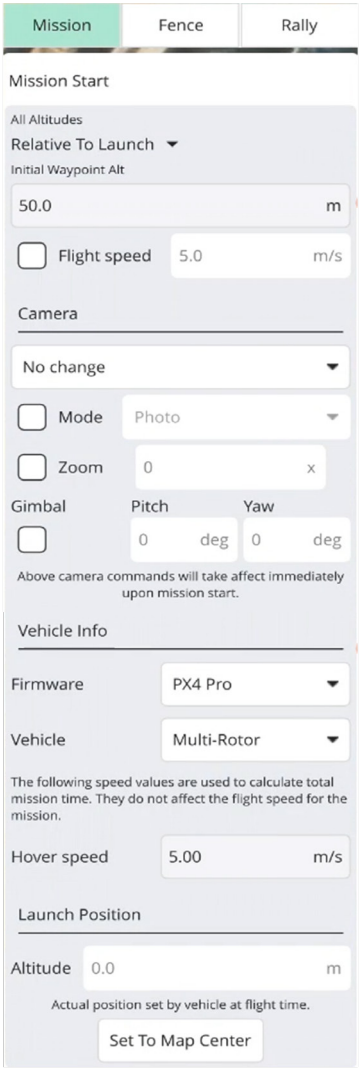
The system displays the Mission Start board as the first item in the mission command list. It can be used to set default preferences that affect the start or end of the mission.

Fence：

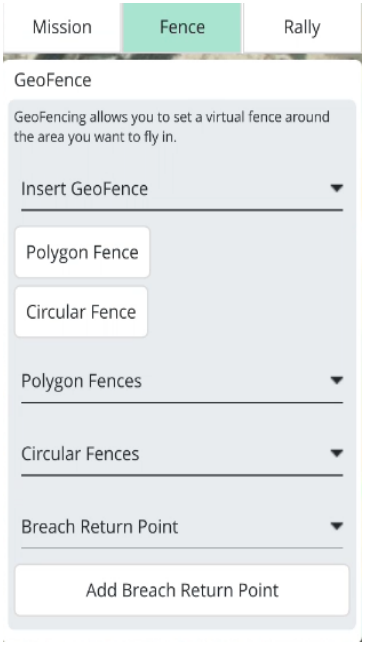
GeoFences allow you to create virtual areas where the drone can or cannot fly. You can also configure actions to be taken if the drone flies outside the allowed areas.

Rally：

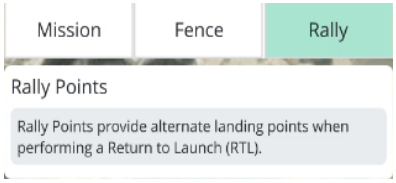
Rally points are alternative landing or loitering locations. They are typically used to provide a safer or more convenient destination (e.g., closer) than the home position during Return/RTL mode.



Mission



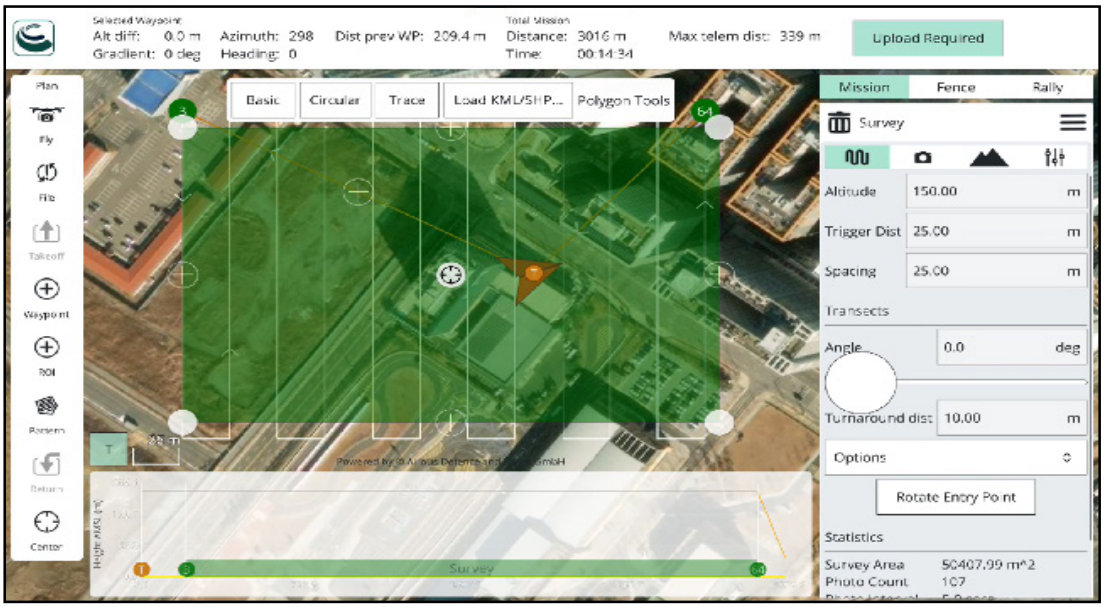
Fence



Rally

A. Survey:

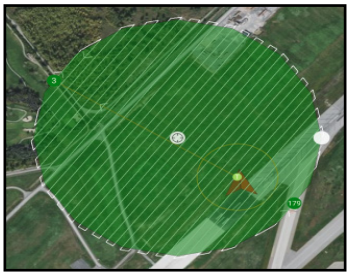
In the Planning tool, select the Pattern tool, and then choose Survey.



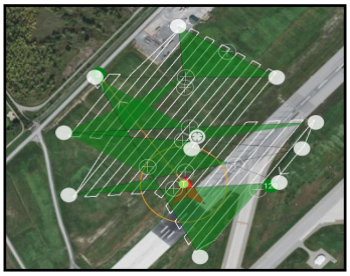
For different operational environments, Survey offers three graphical options: Basic, Circular, and Track. You can also choose to import KML files.



Basic



Circular



Trace

The survey grid will be added to the map, and the survey item will be included in the mission list (on the right).

To change the polygon shape, drag the vertices on the map.

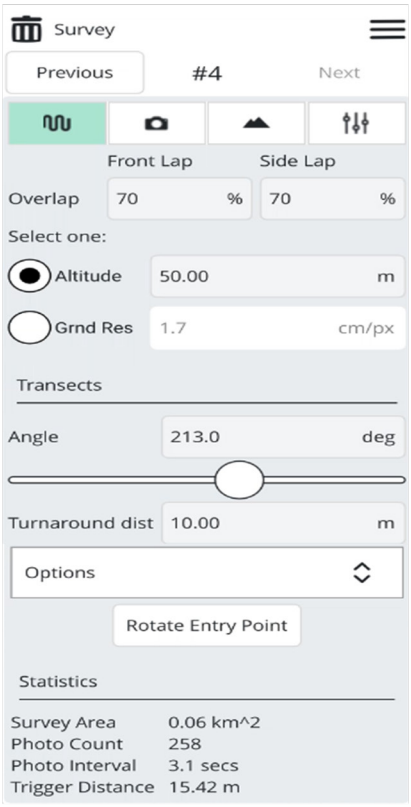
To create a new vertex, tap the (+) symbol between existing vertices. You can then drag and drop the new vertex to its desired location.

Front Lap/Side Lap:
Overlaps between each image capture. You can configure it separately for flying along grid lines or across grid lines.

Altitude:
Survey altitude (ground resolution is calculated/displayed for this altitude)

Ground Res:
Ground resolution of each image (calculations and display of the altitude required to achieve this resolution)

Transects:
The transects section is used for grid settings independent of the camera used. Configurable options include:
Angle : The angle of the grid lines relative to north.



Turnaround dist
Sets the distance at which the drone will perform a turn or reversal along the flight path..

Rotate Entry Point
Sets the distance at which the drone will perform a turn or reversal when entering the mission flight path.

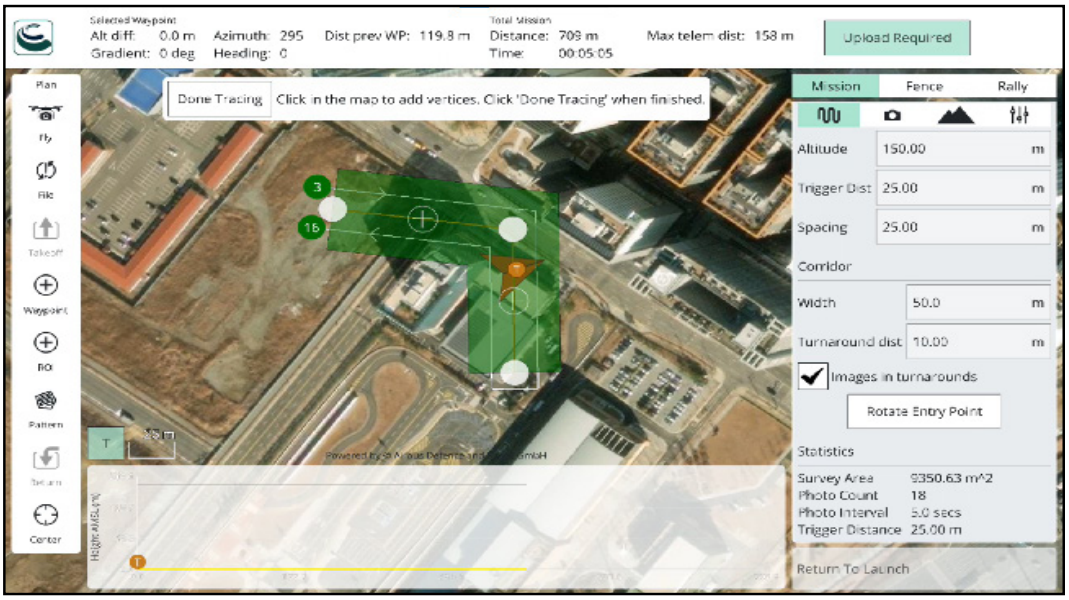
Statistics:
Displays the statistical data measured by the aircraft, including (Surveyed area, Number of photos,
Capture interval, Trigger distance

Terrain:
By default, the aircraft follows the survey path at a fixed altitude during flight. Enabling terrain-following allows the aircraft to maintain a consistent height relative to the ground.

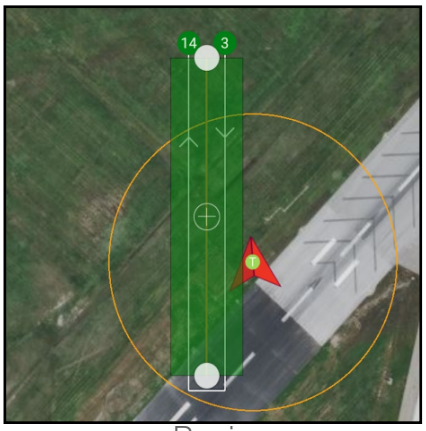
Camera:
The camera trigger operations vary depending on the camera/camera settings. You can select from existing cameras, choose a custom camera, or manually enter settings.

B. Corridor Scan

In the Planning tool, select the Pattern tool and then choose Corridor Scan.



In Corridor Scan, you can choose either Basic or Trace graphics, or import a KML file.



Basic



Trace

Add the Corridor to the map and the Corridor Scan item to the mission list on the right. Drag the ends of the Corridor on the map to set the start and end positions of the scan.

Click the (+) symbol in the middle of the line to create a new vertex. You can then drag this new vertex to adjust its position along the desired Corridor path.

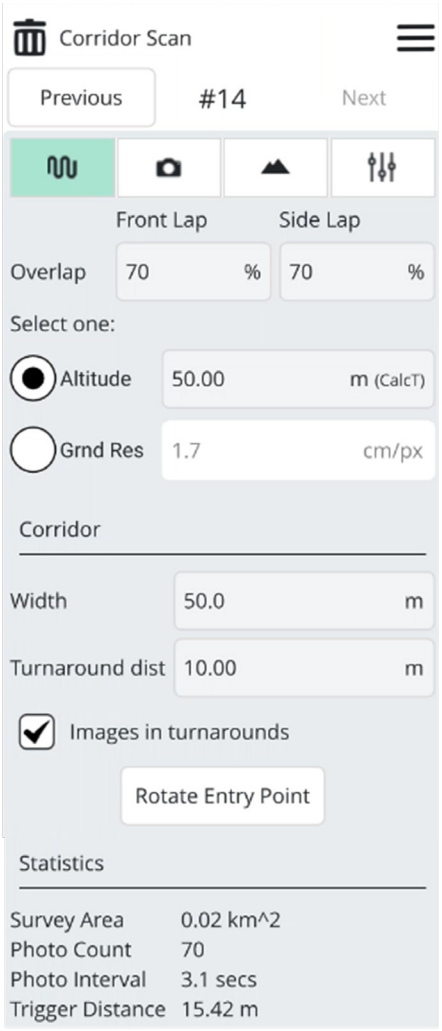
Further configuration of the Corridor Scan can be done in the associated mission item (in the mission item list on the right side of the plan view).

Front Lap/Side Lap:
Overlap between each image capture. It can be configured separately for flying along grid lines or across grid lines.

Altitude:
Survey altitude (ground resolution is calculated and displayed for this altitude)

Ground Res:
Ground resolution of each image (calculation and display of the altitude needed to achieve this resolution)

Width:
Sets the scan width around the polyline defining the path.



Turnaround dist:
Additional distance added outside the survey area for the aircraft to complete a turn.
Option: Select this to use image capture as the turnaround point.

Images in Turnarounds:
Select this option to capture images during turns.

Rotate Entry Point
Sets the distance at which the drone will perform a turn or reversal when following the mission flight path.

Statistics:
Displays the statistical data measured by the aircraft, including (Surveyed area, Number of photos, Capture interval, Trigger distance

Terrain:
By default, the aircraft follows the survey path at a fixed altitude during flight. Enabling terrain-following allows the aircraft to maintain a consistent height relative to the ground.

Camera:
Camera trigger operations vary depending on the camera and its settings. You can select from existing cameras, choose a custom camera, or manually enter the settings.

C. Structure Scan

Traditional inspection methods can be slow, costly, and potentially hazardous, even with skilled technicians involved. Using drones addresses these challenges by providing high-quality data collection while enhancing safety. By safely launching drones from the ground, structures can be inspected more quickly and securely.

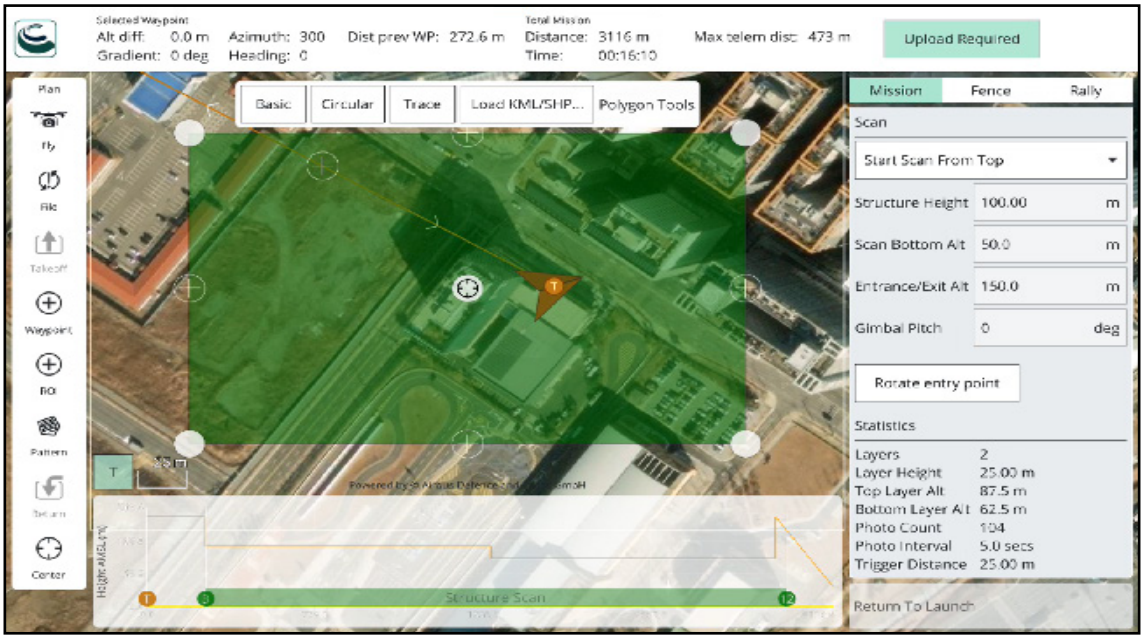
Cautions:

Ensure to verify the radius of the structure and the safe flying radius to avoid interference with the flight path while the drone navigates around the structure. Additionally, check for any potential obstacles that the drone might encounter.

Data Quality Requirements:

Coverage: Capture more than 90% of the structure.
Overlap: Ensure over 70% overlap between images.
Image Quality: Images should be in focus and free of blurriness.
Workflow: Maintain an efficient and repeatable workflow.

In the planning tool, select the Pattern Tool and then choose Structure Scan.



In Structure Scan, you can choose from Basic, Circular, or Trace graphics, or import a KML file.



Basic Circular Trace

This will create a simple rectangular structure scan on the map.
The green-highlighted area should be adjusted to enclose the structure.

You can also change the shape to a circular footprint by clicking on the central "vertex" (marked in white) and selecting Circle from the popup menu.

The remaining configuration is handled using the Structure Scan editor on the right side of the view. First, choose whether to perform a manual scan, a scan using a specific camera, or a scan using a custom camera definition.

Front Lap:
Images overlap from top to bottom (reducing layer height and increasing the number of layers)

Side Lap:
Images overlap from the side.
(Increasing the number of images in each lap/layer scan will require more images)

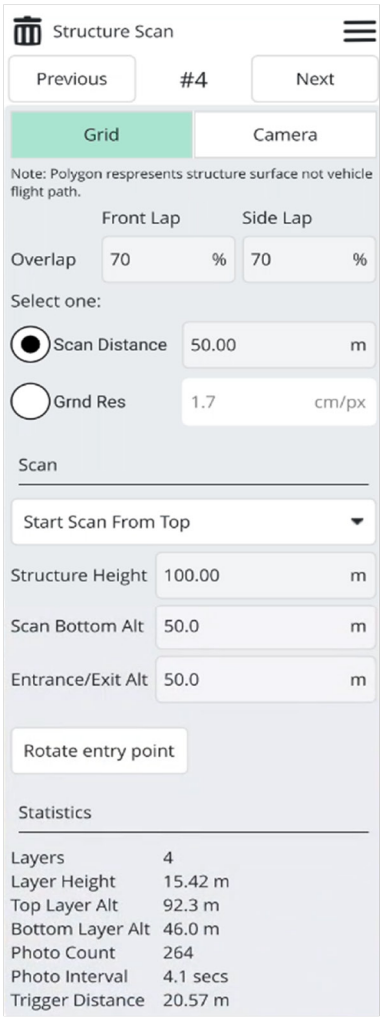
Scan distance:
Distance from the flight path structure

Ground Res:
Required image resolution/surface sample quality

Start scan from top/bottom:
Defines the starting direction for scanning the drawing layers.

Structure Height:
The height of the object being scanned.

Scan Bottom Alt:
Use this setting to avoid obstacles around the bottom of the structure. It adjusts the bottom of the structure above the ground, setting it as the altitude for the first scan (the height of the lowest layer in the scan statistics is displayed as Bottom Layer Alt)



Entrance/Exit Alt:
Use this setting to avoid obstacles between the final/next waypoint and the structure being scanned. The aircraft will move to the entrance/exit point at this altitude, then descend to the initial layer to begin the scan. After completing the scan, the aircraft will ascend to this altitude and proceed to the next waypoint.

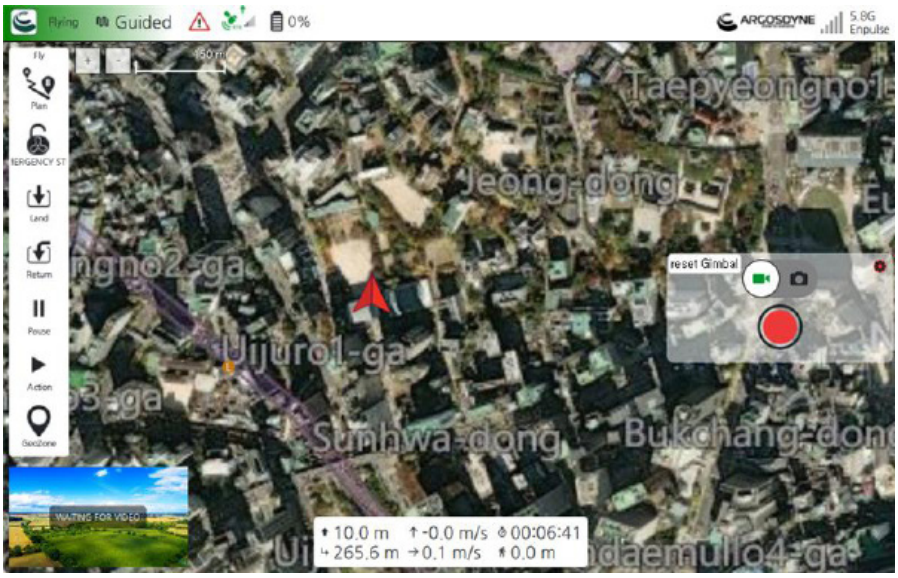
Rotate entry point:
Moves the start/end point to the next vertex/position on the flight path.

Statistics:
The statistics section displays: Number of layers, Layer height, Top layer altitude Bottom layer altitude, Photo count, Capture interval ,Trigger distance

Emergency Stop

The Emergency Stop function immediately halts the motors and stops the drone's operation in the event of an urgent situation. To activate it while the drone is in flight, press the "Emergency Stop" button on the left menu bar.

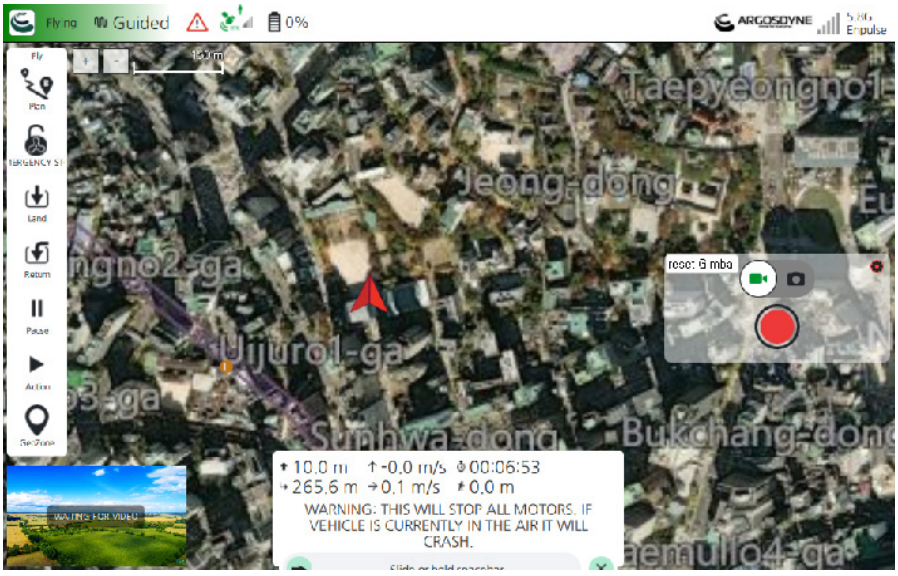
※ The button will not be active if the drone has not yet taken off.



Motor Stop

Pressing the "Emergency Stop" button will activate a slide feature along with a notification at the bottom of the screen. Slide it to the right to stop all motors.

※ This function should only be used in emergency situations, and you must ensure the safety of the surrounding environment before initiating the emergency stop.



RTK Function

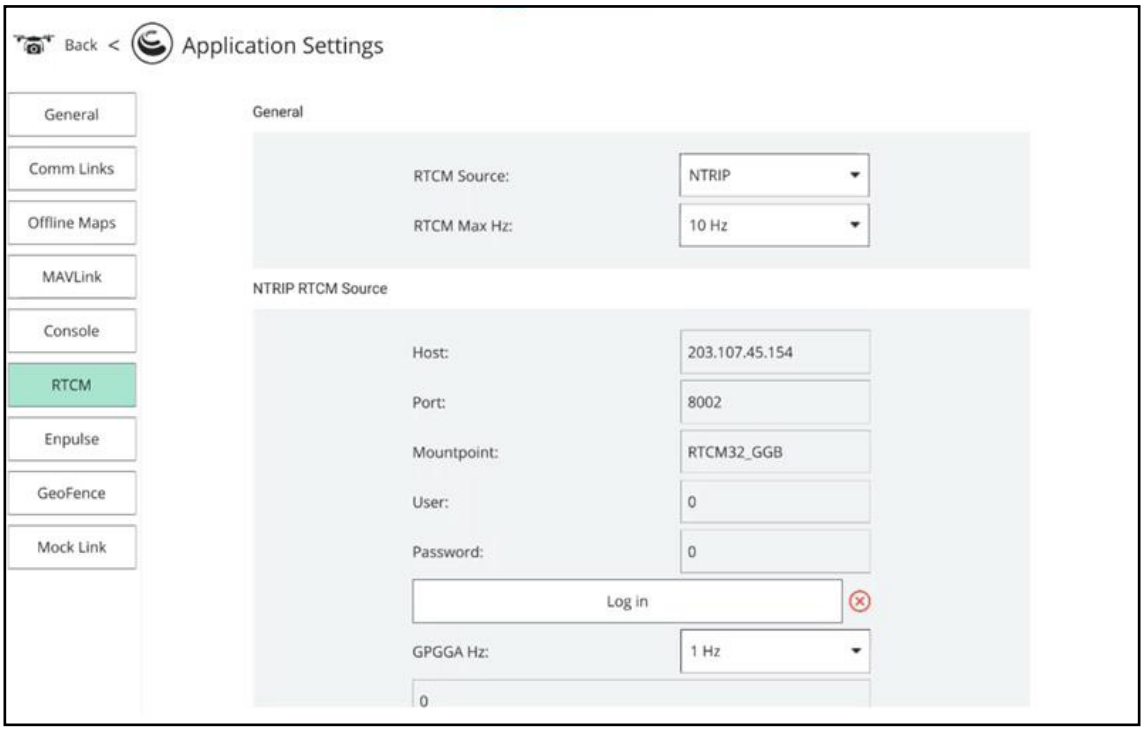
When the drone is equipped with RTK (Real-Time Kinematic) functionality, it can achieve more stable flight performance. RTK minimizes the impact of external magnetic fields and provides more accurate positional information, enabling precise attitude control. To use RTK, you need an external GNSS Mobile Station or an internet-based RTK service.

Activating/Deactivating RTK

Before use, ensure that the "NTRIP RTCM Source" is logged in and that the RTK service (Mobile Service or Custom Network RTK Service) is correctly configured. Settings can be adjusted in the "RTCM" view menu.

Custom Network RTK Setup

To use Custom Network RTK, you need to install a SIM card in the remote controller to connect via LTE or use an app to connect via Wi-Fi for internet access. Custom Network RTK can serve as an alternative to an RTK base station. Set up a Custom Network RTK account to receive differential GPS data.



1. Ensure the remote controller is connected to the drone.
   Check that the app is connected to the internet.

2. In the RTCM interface menu, select "NTRIP" as the RTCM source.
   Enter the required details: Host, Port, Mount Point, User, and Password.
   Click the "Set" button.

3. Wait until the connection to the NTRIP server is established.
   On the app's main page, if the drone's position status displays "FIX," it means that differential data has been received from the mobile station, and the drone is ready for flight in RTK mode.

Video Transmission Technology

The video transmission technology used is capable of transmitting video data, control signals, and other information simultaneously. It supports transmission speeds up to 4K video and has an end-to-end delay of less than 200 milliseconds, making it suitable for transmitting sensitive control signals.

The technology supports video compression using H.264/H.265 and includes AES encryption for secure transmission. It also incorporates an adaptive retransmission mechanism that enhances performance in terms of efficiency and delay by retransmitting data more effectively in case of errors. Additionally, the system automatically selects the channel with the least interference when interference is detected on the currently used channel.

The module continuously monitors the interference status of all available channels in real time. If the current operating channel experiences interference, the module automatically switches to the channel with the least interference, ensuring continuous and stable communication.

Flight Record

Flight data is automatically recorded in the aircraft's internal storage. After connecting the aircraft to a computer via the USB port, you can export this data using the app.

Sensor Calibration

In the sensor settings section, you can configure and calibrate the vehicle's compass, gyroscope, accelerometer, and other sensors (available sensors may vary depending on the drone type).

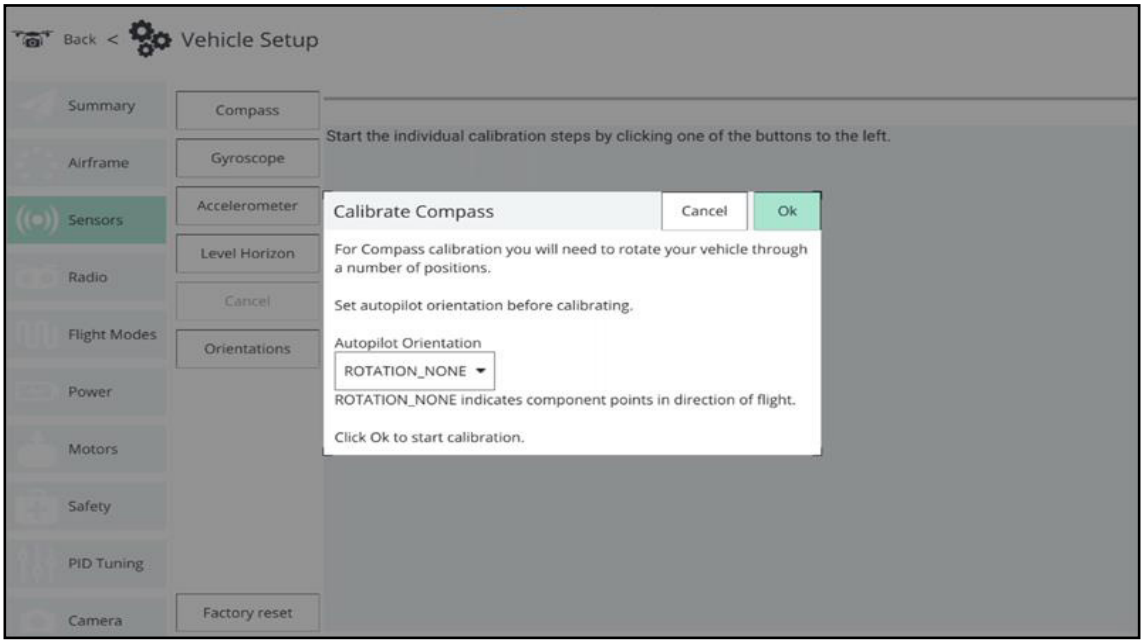
Available sensors are displayed as a list of buttons next to the sidebar. Sensors highlighted in green have already been calibrated, while those in red require calibration before flight. Sensors without illumination can be set to not require calibration, as this is the default setting.

Click on each sensor's button to initiate the calibration sequence.

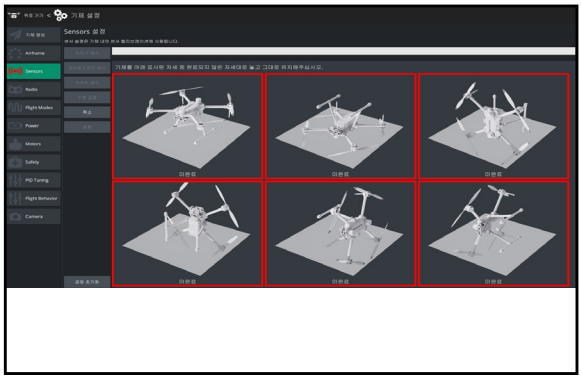
Compass :

This process guides you to position the drone in various specified orientations and rotate it around designated axes.

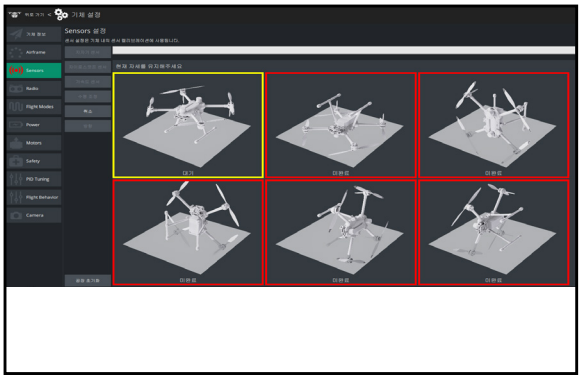
The calibration steps are as follows:
1. Click the compass sensor button and then click "Confirm" to start the calibration process.



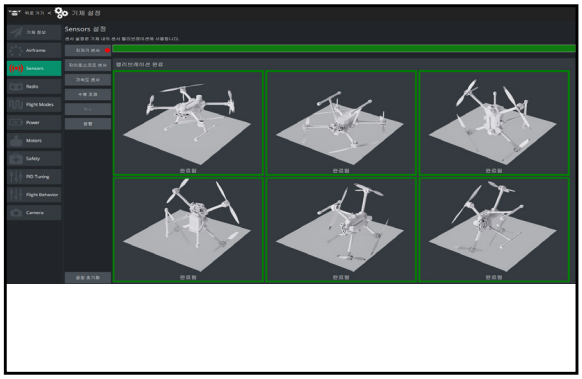
2. Place the drone in one of the directions indicated in red (incomplete) and hold it there. When prompted (the direction image turns yellow), rotate the drone along the specified axis or in both directions. Once calibration is complete for that direction, the corresponding image on the screen will turn green.



1



2



3

3. Repeat the calibration process for all drone orientations. When the drone is rotated through all positions, the Aviator Dedicated App will display "Calibration Complete" (all direction images will turn green). You can then proceed to calibrate the other sensors.

If calibration fails, move the drone away from metal objects and try the calibration again. Note: If all LED lights flash rapidly in red, it indicates a failure in geomagnetic calibration, and you should repeat the calibration process. If calibration continues to fail, try selecting a different calibration location.

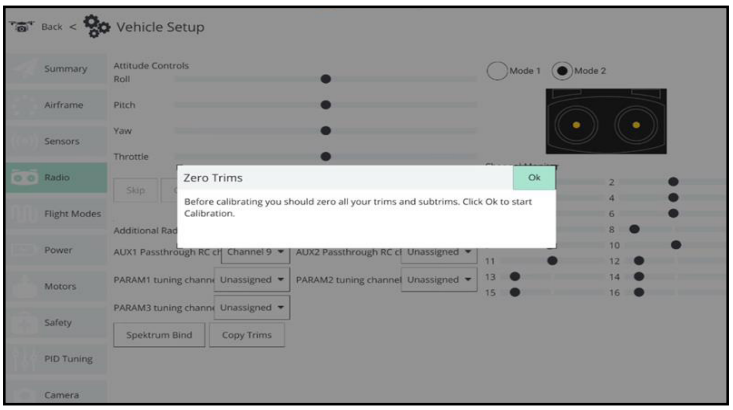
Important: Avoid calibrating near strong magnetic fields or large metal objects. Also, do not perform calibration while carrying ferromagnetic materials.

Radio Calibration

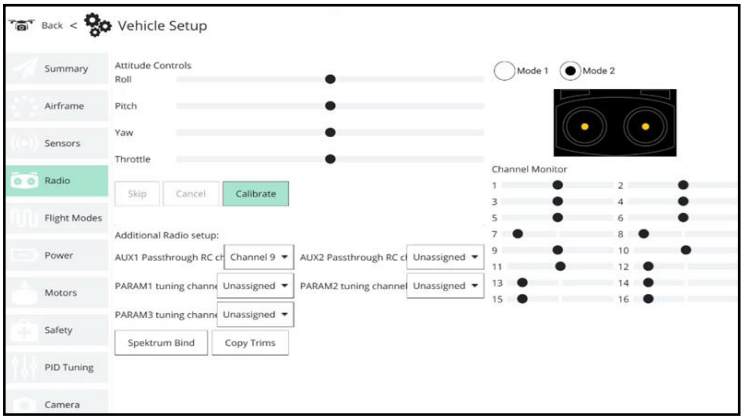
To calibrate the radio, you need to move the sticks according to the specific pattern displayed in the transmitter diagram at the top right of the screen. Simply follow the instructions to complete the calibration.

To calibrate the radio:

1. Select the gear icon (drone settings) from the top toolbar, then choose "Radio" from the sidebar.
2. Turn on the RC transmitter.
3. Press "Confirm" to start the calibration process.



4.Set the transmitter mode radio button to match your transmitter configuration. The app will display the correct stick positions to follow during calibration.



5. Move the sticks to the positions indicated by the text and transmitter image. Once the sticks are in place, press "Next." Repeat this process for all positions.

6. When prompted, move all other switches and dials through their full range. (You can observe the movement of switches and dials on the channel monitor.) Press "Next" to save the settings.

App Additional Settings

These are the basic configuration settings for the application. They are used to specify:

Fly View:

Use Preflight Checklist:
Enable the use of the preflight checklist available in the fly toolbar.

Enforce Preflight Checklist:
Activate the preflight checklist before each flight.

Keep Map Centered on Vehicle:
Automatically center the selected drone on the map.

Show Telemetry Log Replay Status Bar:
Display a status bar for replaying flight data.

Virtual Joystick:
Use a virtual joystick (available only with PX4).

Use Vertical Instrument Panel:
Align the instrument panel vertically instead of horizontally (default setting).

Show Additional Heading Indicators on Compass:
Add extra indicators on the compass:

Blue Arrow: Ground course
White House: Direction to return home
Green Line: Direction to the next waypoint
Lock Compass Nose-Up:
Select this option to keep the compass oriented nose-up (default is to rotate the compass indicator with the drone).

Guided Minimum Altitude:
Set the minimum value for the operational altitude slider.

Guided Maximum Altitude:

Set the maximum value for the operational altitude slider.

Go To Location Max Distance:

Define the maximum distance for moving to a location from the current drone position (in Guided mode).

Plan View:

Set the default altitude used for the mission start panel, which is applied to the first waypoint.

General

Specifies the main configuration settings for the app, including:
Language, Color theme, Team mode, Stream GCS location, Mute all audio output
Save application data to SD card, Reset all settings on next start, UI scaling

Unit

Defines the display units used in the application.

Video

Ground station video player settings, including:
FPV source, RTMP server, Other video settings

Telemetry

Includes additional settings for configuring the ground station and MAVLink link.

RTCM

RTK differential data transmission. For specific usage details, refer to the 'RTK Function' section.

Enpulse

Connects the aircraft and controller. For detailed binding methods, refer to the "Controller Connection" section.

Common Links

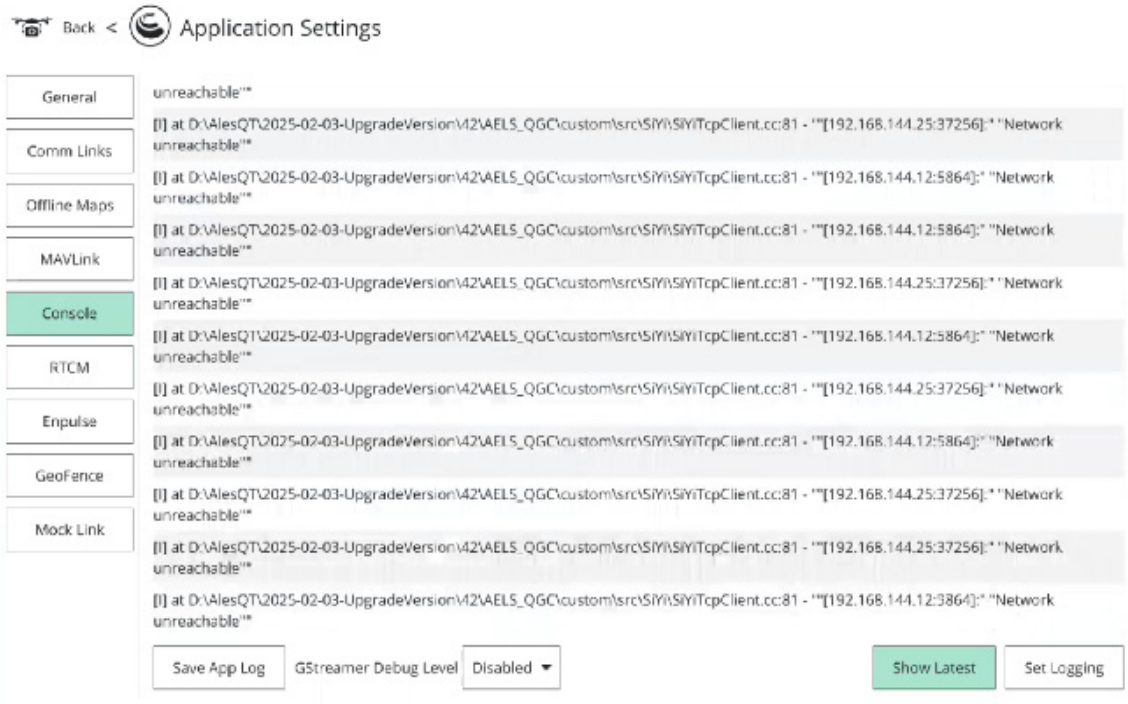
Add new links for connecting to unofficial MAVLink devices.

Offline Maps

Cache map tiles for offline use. You can create different offline sets for various locations.

Console

The console can be a useful tool for diagnosing issues with the app.



Click the Logging Settings button to enable or disable the logging information being displayed.

Payload



Sony ILX-LR1

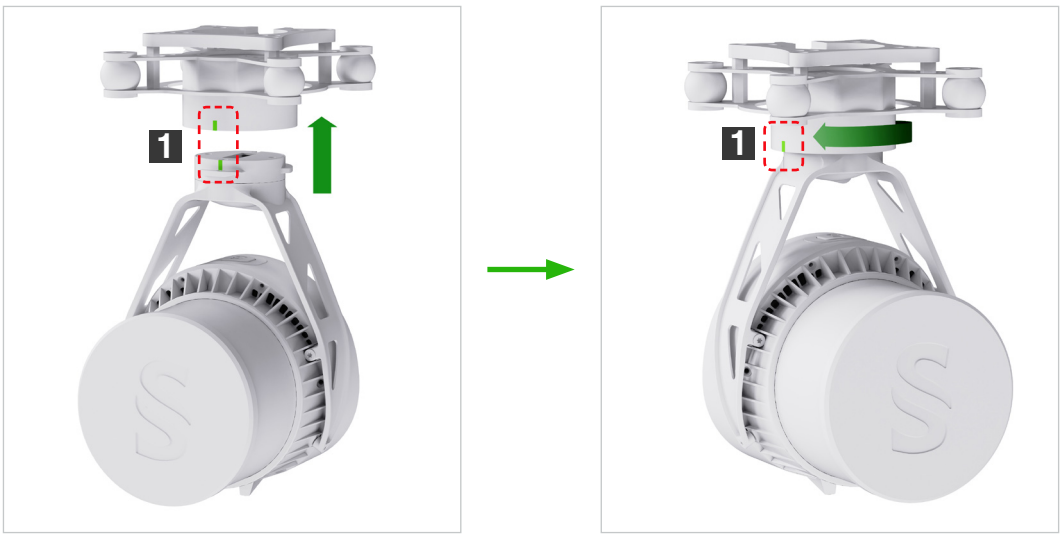
YellowScan Surveryor Ultra OEM

YellowScan Mapper OEM

Payload

Payload ready

1. Gimbal and LiDAR Mounting



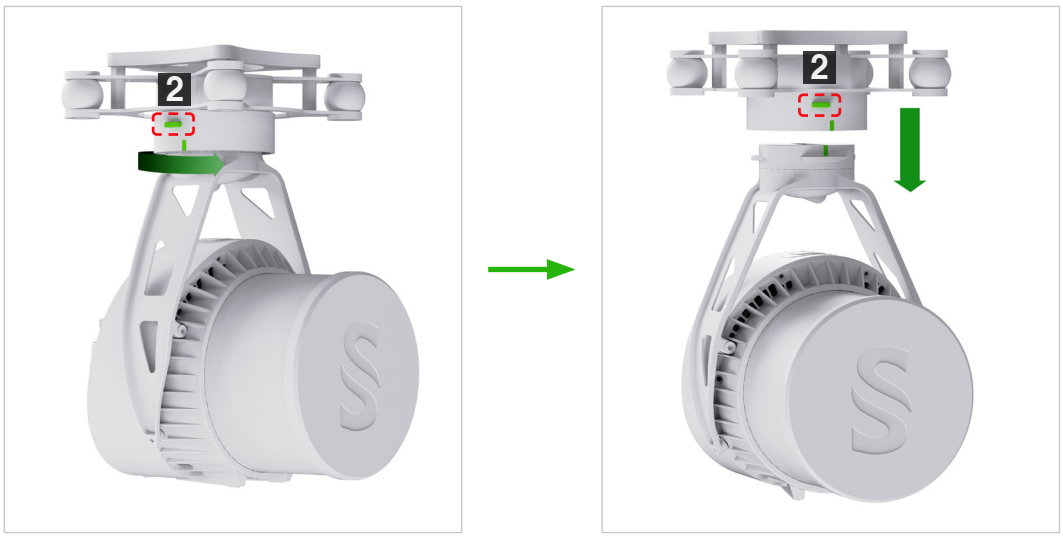
(YellowScan Mapper OEM / YellowScan Surveryor Ultra OEM / Sony ILX-LR1)

1. Align the white dots (①) and insert the gimbal.
2. Turn the gimbal lock mechanism to the locked position (left).

After installation, ensure that the gimbal lock is securely in place.
When removing the gimbal and camera, press the gimbal release button while turning the gimbal lock mechanism. When separating the gimbal for the next installation, ensure that the gimbal lock mechanism is fully turned.

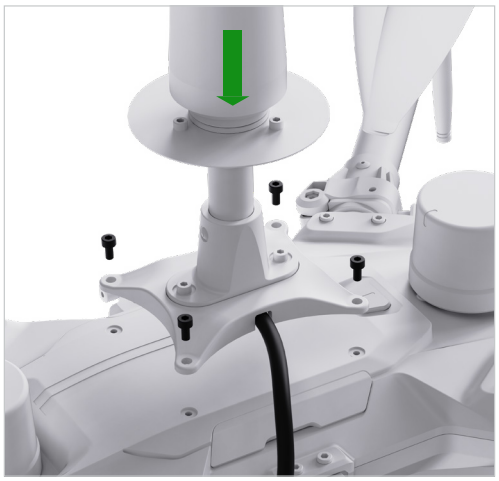
* The rotation direction may vary depending on the camera being mounted.

2. Separating the gimbal and LiDAR



1. While holding down the gimbal separation button (②), rotate the gimbal connection point in the direction shown in the figure above (right) to separate the gimbal.
2. When the white dots on the white+ align, separate the LiDAR.
3. Rotate the gimbal connection point to lock it in place and store it.

3. Antenna and LiDAR connection



① Antenna installation

(YellowScan Mapper OEM

YellowScan Surveryor Ultra OEM)



② Connect the antenna cable



External output power port

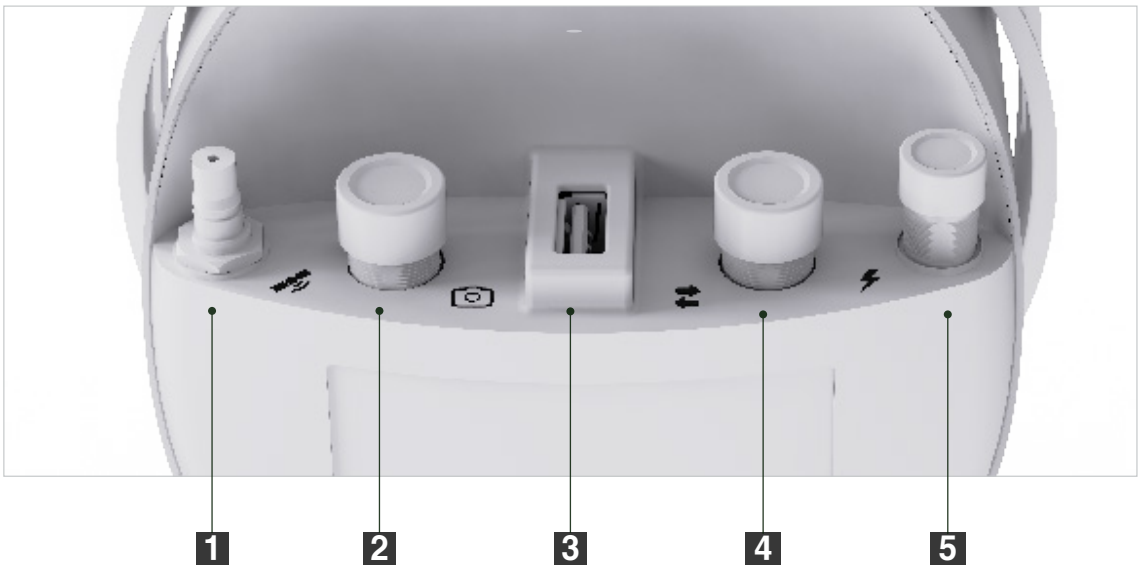
(21V-26V)



<Power connection>



<Power connection>



1. GNSS Antenna 2. Camera port 3.USB flash drive 4. Com port 5. Power

Drone
Trouble Shooting Manual

Download the Aviator Dedicated App

Download Aviator Dedicated App (Consumer Drones Series)
This is the version that is downloaded and used on the AVIATOR controller.

https://argosdyne.com/eng/Download_Software

General Safety Guidelines

1. General Safety Guidelines

- Always inspect the battery and propellers before operating the drone.
  - Check the attachment status of the CW and CCW propellers.
- Do not fly indoors.
- Always comply with no-fly zones and regulations.
- Check for potential hazards (power lines, trees, buildings, people, etc.) in the surrounding
- environment before the flight.
  - Maintain a safe distance of at least 20 meters from the drone.
- Check the battery level before the flight.
  - If the battery is swollen, replace it with a new one.
- Make sure the drone is on a flat surface.
- Check if the drone's GPS signal has been acquired. (GPS: 26-32)
  - GPS reception may vary depending on the local environment.
  - The drone flies stably when at least 25 GPS signals are received.
  - Perform basic flight tests at low altitude to ensure there are no issues with flight.
  - Check if the drone drifts by maintaining a hovering state.
  - Check if there is excessive noise from the motors."

2. Common Problems and Solutions

① The drone or controller does not turn on.

- Cause:
  1. Battery is not connected, battery is discharged, check the power button.
- Solution:
  1. Fully charge the battery.
  2. If the battery is not charging, replace it as it may be discharged.
  3. Ensure the battery is properly connected.
  4. Check if the green light turns on when the power switch is pressed.

---

② The drone and controller are not connecting.

- Cause:
  1. Check the frequency status of the connection between the drone and the controller, check for radio interference.
- Solution:
  1. Ensure the drone and controller are set to the same connection frequency.
  2. Verify that the communication frequency between the controller and drone is not experiencing interference.

---

③ The drone is not flying stably.

- Cause:
  1. Check the calibration of the drone and controller
- Solution:
  1. Perform calibration for the compass, accelerometer, and remote controller.
  2. Check if the communication frequency between the controller and drone is in an interference zone.
  3. Verify that the location is not a GPS shadow area.
  4. Check if the propellers are cracked or damaged.

④ GPS Signal Reception Issues

- Cause:
  1. Signal interference, GPS signal block due to weather (KP index).
- Solution:
  1. Move to an open area and search for GPS signals again.
  2. Check the condition of the drone's GPS antenna.
  3. Wait until sufficient GPS signals are acquired.

---

⑤ Camera Operation Issues

- Cause:
  1. Poor communication environment and camera operation settings error.
- Solution:
  1. Check the communication environment: Ensure the location is open and free from shadow areas or external signal interference.
  2. Verify if the camera streaming address is properly set.
  3. Check if the camera's internal SD card is properly inserted.
  4. Ensure that the correct SD card with proper specifications (capacity) is used for the camera.

---

⑥ The drone only moves in one direction.

- Cause:
  1. Controller calibration issue, motor operation status.

- Solution:
  1. Calibrate both the drone and controller.
  2. Check the trim values for each key on the controller.
  3. Check and replace the RPM and balance of each motor's propeller.
  4. Check for debris in each motor and clean them regularly.

⑦ The drone suddenly crashes or stops functioning.

- Cause:
  1. Flight in an area with insufficient GPS signal, resulting in unstable position tracking.
  2. Continuing to fly after ignoring battery warnings.
- Solution:
  1. Fly in an area with good GPS reception.
  2. Check the battery warning and land in a safe location if the battery is low.
  3. Ensure that the latest firmware is installed.
  4. Download the flight log of the drone to identify the cause of the crash.

---

⑧ The battery is not charging.

- Cause:
  1. Faulty charger contact, battery failure.
- Solution:
  1. Verify that the charger provided by ArgosDine is used.
  2. Check if the charger settings match the battery's specifications.
  - Verify the battery type, number of cells, charging current, and charging voltage.

If the above checks do not resolve the issue, please refer to ARGOSDYNE customer support for assistance.

Transportation & Storage Guidelines

Battery Transportation & Storage Guidelines

1. Transportation

- Drone batteries must be stored in a secure case during transportation to prevent external impacts.
- To prevent fires or short circuits, the terminals of the battery should be covered or insulated.
- Batteries should be transported in compliance with airline regulations, and lithium batteries may have special transport regulations.
- Always follow the safety regulations set by the airline or transport company when transporting the battery.

2. Storage

- Batteries should be stored in a cool, dry place, away from direct sunlight, high temperatures, and humidity.
- For long-term storage, maintain the battery charge level between 40% and 60%, avoiding full discharge or overcharging.
- Do not store batteries near open flames or in areas with high heat.

Drone Storage and Transportation

1. Storage Instructions

- The drone should be stored in a cool, dry place, away from direct sunlight, and should not be stored in environments with extreme high or low temperatures for extended periods.
- Remove the battery from the drone and store it in a temperature range of 0° C to 40° C.
- Ensure the battery is fully charged before each flight

2. Transportation Instructions

- When transporting the drone, store it in a safe case to protect it from shock and vibration.
- The drone's wings and propellers should be properly protected to avoid any damage during transport.
- Always remove the battery during transport and use protective covers on the battery terminals to prevent short circuits.
- Ensure the drone is securely fixed during transportation to prevent any movement or damage.

Maintenance

1. Propeller Maintenance

- Inspection: Before and after each flight, thoroughly check the propellers for damage, cracks, dents, or any irregularities.
- Cleaning: Clean the propellers with a soft cloth and water, removing any debris if present.
- Replacement: If the propeller is significantly damaged or worn, replace it immediately. Always replace with the same model and follow the manufacturer's recommendations.

2. Battery Maintenance

Charging : Maintain the battery at the recommended charge level, avoiding overcharging or complete discharge.

Inspection : Regularly inspect the battery for damage, swelling, leaks, or other abnormalities. If any issues are found, discontinue use and have the battery checked by a professional.

Charge/Discharge Cycle Check : After every 100 charge/discharge cycles, check the battery's condition. If any swelling is detected, replace the battery immediately and discontinue use.

Storage : For long-term storage, keep the battery charge between 40% and 60%, and store it in a cool, dry place.

Appendix

Specifications

Drone	AQUILA3F
Dimensions	583.6*582.4*325mm
Diagonal Wheelbase	1,250mm (propellers fully extended)
Max Dimensions	503.4mm (Parachute included)
Diagonal Wheelbase	745mm
Weight	Approx. 1.65 kg (without batteries)
	Approx. 2.95 kg (with one ILP6HVbattery)
Max Payload	1.68kg
Operating Frequency(ENPULSE)	2.4000 - 2.4835 GHz; 5.725-5.850 GHz
Operating Frequency(ENPULSE M2)	5.725-5.850 GHz
Operating Frequency(JAPAN)	2.4000 - 2.4835 GHz
Transmitter Power	29.5 dBm（FCC）；18.5dBm（CE） 18.5 dBm（SRRC）；18.5dBm（MIC）
Hovering Accuracy	Vertical： ± 0.5 m (GPS enabled) ± 0.1 m (RTK enabled)
	Horizontal： ± 0.5 m (GPS enabled) ± 0.1 m (RTK enabled)
RTK Positioning Accuracy	1cm + 1ppm (Horizontal)
	1.5cm + 1ppm (Vertical)
Max Pitch Angle	30°
Max Ascent Speed	5m/s
Max Descent Speed (vertical)	4m/s
Max Speed	12m/s
Service Ceiling Above Sea Level	4000m
Max Wind Resistance	15m/s
Max Flight Time	40min (with 1680g load)
GNSS	GPS+GLONASS+BeiDou+Galileo
Operating Temperature	-10° C to 50° C (14° F to 122° F)
IP Rating	IP53
Flight Altitude Capability	1,500m
Regulatory Altitude Limit	120m above ground level
	(due to regulatory restrictions) (May vary by region.)

Propeller

UAS Class	C3	
Sound Power Level	93.1 dB	
Maximum Propeller Speed	4200 RPM	

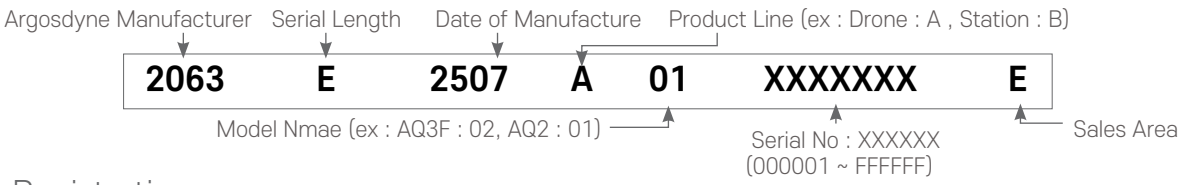
Controller	AVIATOR
Operating Frequency(ENPULSE)	2.4000 - 2.4835 GHZ; 5.725-5.850 GHz
Operating Frequency(ENPULSE M2)	5.725-5.850 GHz
Operating Frequency(JAPAN)	2.4000 - 2.4835 GHZ
Maximum Transmission Range	3km (External interference and undisturbed conditions)
Size	284x150x63mm
Weight	1100g
Operating System	Android10
Built-in Battery	7.4V 10,000mAh
Battery Life	4.5h
Touch Screen	7 inch 1080P 1000nit
External Output Port	2*USB、1*HDMI、2*USB-C
Operating Temperature	0° C to 40° C (32° F to 104° F)
Wireless LAN	WIFI(2.4G(802.11.n), 5G(802.11.n,ac)
INPUT	AC 100-240V ~ 50-60Hz /1.2A
OUTPUT	12V DC 3A (36W)

Flight Battery(Smart)	ILP612HV
Capacity	12000mAh
Voltage	23.1V (Max 26.4V)
Battery Type	Lipo 6S1P
Energy	277wh
Weight	1.3kg
Operating Temperature	0° C to 40° C (-32° F to 104° F)

EU/EASA Compliance Statement

Information Notice: Applicable Limitations and Obligations

- Manufacturer: ARGOSDYNE Ltd,. Co
- Model: **AQUILA3 / AL-300FM**
- Class: **C3**
- Maximum Take-Off Mass (MTOM): **4.63Kg**
- Serial Number : **2603EXXXXA01XXXXXXE**



1. Registration
   - Before flying, you must register as a drone operator with your country's aviation authority.
   - After registration, you will get a unique number.
   - This number must be:
     - Put on the drone (label/sticker).
     - Entered into the drone's remote ID system so authorities can identify your drone while flying.
2. Flight Category
   - This drone is in the Open Category, Subcategory A2.
   - Please refer to the specific subcategory (A2) for detailed operational limitations and requirements
3. Pilot Training
   - The person flying must have finished the required training and hold a pilot competency certificate for this category.
4. Flight Rules (Limitations)
   - Do not fly over crowds or people who are not involved with your operation.
   - Always keep at least [X meters] distance from people not involved.
   - Do not fly in restricted or controlled airspace (like near airports) unless you have special approval.
   - Always check and follow local no-fly zones and airspace rules.
5. Privacy and Data Protection
   - Respect people's privacy.
   - Do not record or take photos of individuals without their consent.
   - Follow your country's data protection laws when using cameras or sensors.

6. Insurance
- Depending on the drone's weight and operational category, third-party liability insurance may be required.
- The rules are different in each country. Please check with your country's aviation authority.

7. Maintenance and Repairs
- Always check the drone before flying (battery, propellers, body, camera, etc.).
- Follow the manufacturer's instructions for maintenance.
- If something goes wrong, use the user manual or contact an authorized service center.

8. Emergency Situations
- If there is an emergency (for example: drone loses control, battery failure, GPS problem), follow the emergency steps in the user manual.
- Make sure every pilot who flies this drone knows these emergency steps.
- 9. Accident Reporting
- If the drone causes an incident or accident, you must inform your country's aviation authority.
- This is required by EU rules (EU 2019/947).

10. Contact Information

ARGOSDYNE Customer Support Center

Manufacturer : ARGOSDYNE Co., Ltd.
Postal address:
#815, Baegot M Plus Knowledge Industry Center, 59-47 Seoul National University Road, Siheung-si, Gyeonggi-do, Republic of Korea, 15012

Tel +82 70-5102-1388
Email info@argosdyne.com
Web. www.argosdyne.com

National Aviation Authority: Luftfahrt-Bundesamt (LBA)
Postal address: Hermann-Blenk-Straße 26, 38108 Braunschweig, Germany
gerstungen.de
Tel: +49 531 2355-0
Email: poststelle@lba.de
Fax number: +49 531 2355-9099

Remote Pilot Responsibilities

1. The pilot must:

- Have the right license/certificate for the type of drone operation (unless it's a very small drone under the special exceptions: UAS referred to in EU drone regulations:

a) UAS with a maximum take-off mass (MTOM) < 250 g,
- flying at a maximum speed < 19 m/s,
- if equipped with a sensor (e.g., a camera), operated in compliance with privacy and data protection laws.

(b) Privately built UAS (homemade or self-assembled) with a mass < 250 g.

(c) UAS classified as Class C0 under EU Delegated Regulation 2019/945.

- Check official maps/zones to see where you are allowed or not allowed to fly.
- Look around the area: check for obstacles (trees, wires, buildings) and for people nearby (unless it's a very small drone in the easiest category).
- Check the drone's condition: make sure it works properly, and that the remote ID system (if required) is working.
- Check the weight: if you add a camera or other equipment, make sure the total weight does not go over the drone's approved limit.

2. While Flying

The pilot must:

- Not fly under alcohol, drugs, sickness, or tiredness.
- Always keep the drone in sight-Visual Line of Sight (VLOS)
  - don't let it fly too far away or behind obstacles.
  - Watch the sky to avoid hitting airplanes. Stop the flight immediately if there is danger to aircraft, people, animals, property, or the environment.
- Respect no-fly zones shown by authorities(Article 15)
- Stay in control of the drone, except if the signal is lost or the drone is made for free flight.
- Follow the drone's manual for all safety limits and instructions.
- Follow your company's/operator's rules if there are any.

3. In Emergencies

Do not fly near fire, accident sites, or other emergency operations unless the emergency services allow it.

4. Help from an Observer

The pilot can have a helper (called an "observer") standing nearby.
This person watches the drone with their eyes (no tools or screens) and helps the pilot notice dangers and fly safely.

Responsibilities of the UAS Operator

(The operator = the company or person who owns and manages the drone, not the pilot)

1. Operating Rules
- Make clear safety procedures that match the type of flight and the level of risk.

2. Radio Use
- Make sure the drone's communication system uses radio frequencies correctly, without causing interference to others.

3. Assigning a Pilot
- For every flight, you must name one remote pilot who is in charge of flying the drone.

4. Pilot and Staff Knowledge

The pilot and support staff must:
- Know the drone's user manual.
- Have the correct training/certificates for the category of the flight.
- If not the pilot (e.g. assistants), on-the-job training is enough.
- Know the operator's safety procedures.
- Have access to maps/information about no-fly zones and restricted areas.

5. Geo-Awareness System
- Keep the drone's geo-awareness system (maps of no-fly zones) updated with the latest information before flying.

6. Compliance for Classed Drones (C1–C5)
- If the drone is in class C1 to C5:

-The drone must come with an EU Declaration of Conformity (official safety certificate).
-The drone must have a class label sticker affixed on it.

7. Informing People (A2 and A3 flights)
- If flying under A2 or A3 rules:

- Everyone in the flight area must know the risks.
- They must agree to be there during the operation.

UAS Operations Subcategory A2 (Simple Guide)

1. Where and How to Fly

- Do not fly over people who are not part of your operation.
- Keep at least 30 meters away from other people.
- If your drone has a slow mode (low speed), you may fly closer as close as 5 meters – but only if:
  - The weather is safe
  - The drone is working well.
  - The flying area is safe and separated from people.

---

2. Pilot Requirements

- The pilot must:

- Know the drone's user manual.
- Have an A2 pilot certificate from the aviation authority of the country.

How to get the certificate:

1. Take an online training course and pass an online exam (as required by EU drone regulations).
2. Do self-practice flying in open areas under A3 rules (far from people).
3. Confirm you completed the practice and pass a second exam (about 30 multiple-choice questions).

The second exam will test knowledge about:

- Weather.
- Drone flight performance (how the drone behaves in different conditions).
- Safety steps to reduce risks to people on the ground.

---

3. Drone Requirements

- The drone must be a Class C2 drone (as defined by EU rules).
- It must have:

- Remote ID system (shows drone info to authorities).
- Geo-awareness system (knows no-fly zones and restricted areas).
- Both systems must be working and updated.

UAS Operations Subcategory A3 (Simple Guide)

1. Where to Fly

- Fly only in areas where there are no people nearby.
- Choose a location where you can be sure no one will be in danger during your flight.

2. Keep Safe Distance

- Stay at least 150 meters away from houses, shops, factories, parks, or any busy areas.

3. Pilot Requirements

- The pilot must:

- Finish an online training course.
- Pass the online theory test (basic knowledge exam).

4. Drone Requirements

Your drone must be one of these:

- Homemade/Privately built drone: Maximum take-off weight (MTOM) (including payload) under 25 kg.
- Drone meeting Article 20(b) rules (special EU regulation for older drones).
- Class C2 drone: Must follow Part 3 EU safety standards and have Remote ID and geo-awareness system.
- Class C3 drone: Must follow Part 4 EU safety standards and have Remote ID and geo-awareness system.
- Class C4 drone: Complies with Part 5 of the Annex to Delegated Regulation (EU) 2019/945.

Software Version Management

1. Check Software Version: The software (SW) version of the drone should be regularly checked and kept up to date. Software updates may include performance enhancements and bug fixes.
2. Update Procedure: The latest software version can be found on the manufacturer's website, and the software should be updated following the provided procedures for safe updating.
3. Refer to the Website: Information regarding software versions and updates can be found on the official website of the drone manufacturer. To check for the latest version and related information, please refer to [Manufacturer's Website Link.

CE

CE RF Radiation Exposure Statement:
Caution This equipment complies with European RF radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20 centimeters between the radiator and your body.
This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

CE DoC link:
www.argosdyne.com/eng/Download_Cert

EASA
European Union Aviation Safety Agency

3

This drone is an aircraft.
Aviation law applies.

As a drone pilot, you are responsible for flying your drone safely.

Warnings! **“Read the operating instructions before flying.”**

Before flying, as a drone pilot, you must

- make sure the drone owner is registered at his or her national authority (unless already registered)
- make sure the owner registration number is displayed on the drone and uploaded onto the remote identification system
- read and follow the manufacturer’s instructions
- complete the mandatory online training and pass the test

https://www.easa.europa.eu/en/document-library/general-publications/drones-information-notices

Check how to register, train and where you are allowed to fly:

www.easa.europa.eu/drones/NAA

!
Offences are punishable by law.

3

DO



Make sure you are adequately insured



Check for no-fly zones and any limitations in the area where you want to fly



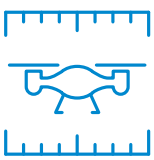
Keep the drone in sight at all times



Maintain a safe distance between the drone and people, animals and other aircraft and of at least a distance of 150m from residential, commercial, industrial and recreational areas

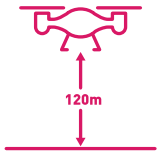


Inform your national aviation authority immediately if your drone is involved in an accident that results in a serious or fatal injury to a person, or that affects a manned aircraft



Operate your drone within the limits defined in the manufacturer's instructions

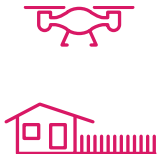
DO NOT



Do not fly higher than 120m from the ground



Do not fly near aircraft & in the proximity of airports, helipads or where an emergency response effort is ongoing



Do not infringe other people's privacy.



Do not record intentionally or publish photographs, videos or audio recordings of people without their permission



Do not use the drone to carry dangerous goods or to drop material



Do not modify your drone. Only software uploads recommended by the drone manufacturer are allowed


ARGOSDYNE