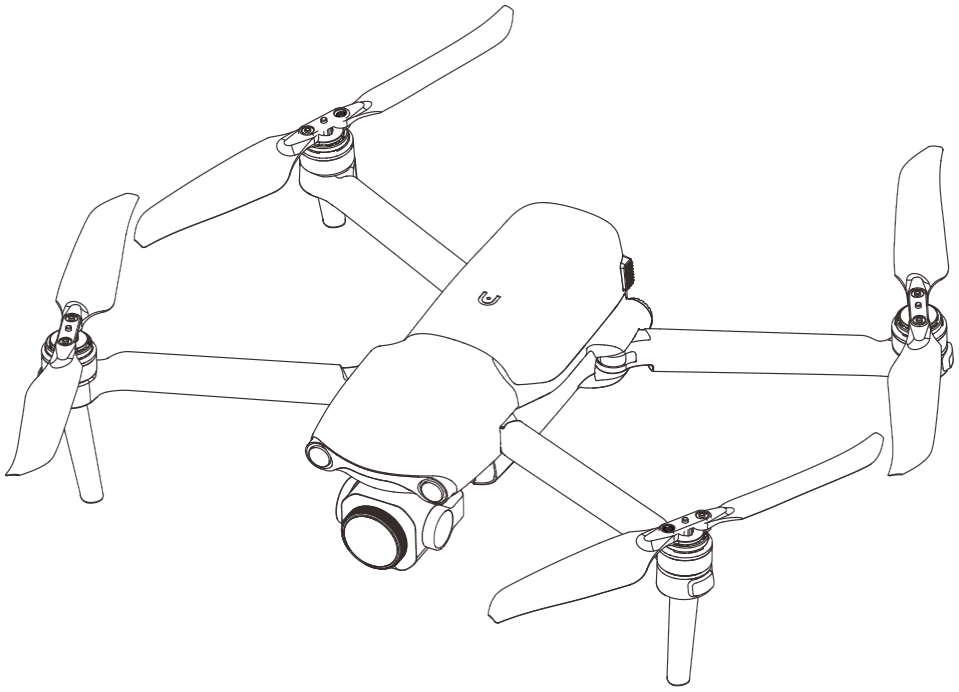
EVO Lite Enterprise Series

Multi-rotor Drone

User Manual

V1.0.5 2025.07



AUTEL ROBOTICS

EU Declaration of Conformity

The product complies with EU Declaration of Conformity. For details, please refer to EVO Lite Enterprise Series multi-rotor drone DoC.

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Trademark Information

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Reading Assistance

- This manual is an electronic PDF document that supports high-resolution printing.
- If you are using a PDF reader such as Adobe Reader or Microsoft Edge to read this manual, press Ctrl+F on Windows or Command + F on Mac to search for keywords.
- View the content structure in the table of contents and click on titles to navigate to the respective pages.

Thank you for purchasing and using the EVO Lite Enterprise Series multi-rotor drone from Autel Robotics. Relevant user documents for this product are provided in electronic form along with the product, and download links are provided in this manual. Before using this product, please carefully read the operation steps and precautions in this manual, so that you can quickly understand the characteristics and usage methods of this product, so as to ensure safe use of the product.

	• The final interpretation right of this document and all related documents of this product belongs to Autel Robotics. • This document is subject to update without notice.

Legend

The following symbols are used in this manual to draw the user's attention to important safety and operating information. Please be sure to follow the notes or requirements under each symbol, otherwise, it may affect the safety features of the product or cause personal injury.

Symbol	Definition
	Warning: Alerts to a potentially hazardous situation.
	Important: Reminds the user to pay attention to a point.

	Remarks: Supplementary information.
	Tips: Quick tips to get the best possible experience.

Term and Acronym

To facilitate reading, the following table displays terms and acronyms that may be used in the manual:

- Autel Robotics: Autel Robotics Co., Ltd.
- Aircraft: EVO Lite Enterprise Series Multi-rotor Drone, including EVO Lite 6K Enterprise and EVO Lite 640T Enterprise.
- Battery: MDXM_6175_1113 Smart Battery
- Remote Controller (RC): Autel Smart Controller SE V2
- Flight Application: Autel Enterprise Application (Installed on the Remote Controller before leaving the factory)
- UAS: Unmanned Aircraft System
- UAV: Unmanned Aerial Vehicle
- C2: Command and Control
- Remote Identification System:
  - In EU, it is referred to as Direct Remote Identification.
  - In other countries or regions except EU, it is referred to as Remote ID.
- DRI: Direct Remote Identification
- UGZ: UAS Geographical Zones
- IMU: Inertia Measurement Unit

Read Before Your First Flight

To ensure safe use of the EVO Lite Enterprise Series multi-rotor drone, Autel Robotics provides you with the following documents and relevant tutorial videos. Please scan the QR codes in this manual or use the provided links to access them.

1. “Packing List”: A list of everything that should be included in the packing box.
2. “Disclaimer and Safety Operation Guidelines”: Instructions on how to operate the product safely.
3. “Battery Safety Operation Guidelines”: Basic knowledge and safe handling of smart batteries.
4. “Quick Start Guide”: Basic knowledge of operating the product.
5. “User Manual”: A guide for you to master the operation method of the product proficiently.
6. “Maintenance Manual”: Instructions on how to maintain the aircraft and its accessories.

We recommend that you first check the completeness of the items in the packing box according to the “Packing List”, then read the “Disclaimer and Safety Operation Guidelines” carefully, and then watch the tutorial videos and read the "Quick Start Guide" to get a basic understanding of how to use the product.

Before your first flight, please read the "Battery Safety Operation Guidelines" and "User Manual" carefully to get a more detailed understanding of how to use the product.

Getting Tutorial videos, User Documents, and Relevant Software

You can scan the QR codes below or visit the following links to access tutorial videos and user documents or download relevant software for the EVO Lite Enterprise Series multi-rotor drone:
To watch tutorial videos, please visit:
https://www.autelrobotics.com/videos/evo-lite-enterprise-series/

To download resources, please visit:
https://manuals.autelrobotics.com/?dir=/EVO%20Lite%20Enterprise%20Series/Aircraft/.

Manual Guide

This manual contains 7 main chapters and 3 appendices. You can refer to the corresponding chapters for the desired information.

Chapter	Chapter Overview
Product Overview	This chapter introduces the main functions of the EVO Lite Enterprise Series multi-rotor drone.
Flight Safety	This chapter introduces the flight environment, wireless communication requirements, and important flight safety features of the aircraft.
Aircraft	This chapter introduces the functions and usage of various components of the EVO Lite Enterprise Series multi-rotor drone.
Remote Controller	This chapter introduces the functions of the RC, including how to use the controller to operate the aircraft.
Smart Battery	This chapter introduces how to use, store, and maintain the smart battery of the aircraft.
Flight Application	This chapter introduces the interfaces and functions of the flight Application.

Update and Maintenance	This chapter introduces how to perform firmware updates and routine maintenance for the aircraft.
Appendix A	This chapter provides technical specifications for the EVO Lite Enterprise Series multi-rotor drone and its accessories.
Appendix B	EU Declaration of Conformity for EVO Lite Enterprise Series multi-rotor drone.
Appendix C	EU Drone Pilot Information Notices.

Disclaimer

To ensure the safe and successful operation of this product, please read and fully understand all user documents listed above and strictly follow the operating instructions and steps described in this manual. Store the aircraft and its accessories out of the reach of children and pets. If you do not abide by the Safety Operation Guidelines, Autel Robotics shall not be responsible for any product damage or personal and property loss during use, and shall not provide any warranty service. Never modify the product using any incompatible component or in any way that does not conform to the official instructions of Autel Robotics. Please make sure that the operations you perform do not endanger the personal or property safety of yourself or those around you. By starting to use this product, you agree that you have read and accepted all terms related to this product. You undertake to be responsible for your own actions and all consequences arising therefrom. You undertake to use this product only for legitimate purposes and agree to these terms and any relevant policies or guidelines that Autel Robotics may establish.

Important

- When unboxing the product for the first time, carefully check the aircraft and other accessories included in the packing box according to the “Packing List”.
- The content of this manual will be updated from time to time based on the function updates of the product. Please be aware that Autel Robotics will not be responsible for any product damage or personal and property loss caused by usage of outdated user documentation. Every time before product update, please ensure the user documentation is the latest version.
- Please be aware that in the absence of flight logs from the flight application, Autel Robotics may not be able to analyze the causes of product damage or accidents and provide after-sales service.

Warning

- Using the aircraft involves certain safety risks. Do not allow minors to operate the aircraft.
- Do not use this product in places that children tend to stay.
- Before using this product, please obtain corresponding flight certificate according to the laws and regulations in the corresponding countries or regions in advance.
- Only users who have mastered the usage method can be allowed to conduct operations and daily maintenance on the aircraft and its relevant accessories.

End Use Statement

This product may be subject to export control laws in China, U.S, EU or other countries, which can only be authorized for civil (not military) use in sale, export or domestic transfer. Users need to confirm the product will not be used in the following situations, otherwise he or she will assume all losses caused by usage in such situations and legal responsibility on their own:

1. any military end use;
2. used for nuclear weapons, biological or chemical weapons or missiles that carry those weapons;
3. export or re-export or transfer it to any entity or person sanctioned by China, U.S, EU or any other government with jurisdiction;
4. export, re-export or transfer it to Cuba, Iran, North Korea, Syria, Crimea, Sevastopol and other areas under embargo;
5. any device or equipment that supports monitoring purpose.

Warranty Policy

Autel Robotics guarantees users who purchase products through its official authorized channels that:

- Under normal use, the Autel Robotics products you purchase will be free from material and workmanship defects during the warranty period.
- If you can provide a valid purchase receipt, the warranty period of this product is calculated from the midnight of the next day after you receive the product.
- If you cannot provide a valid purchase receipt, the warranty start date will be postponed by 90 days from the date of manufacture indicated by the product's serial number or as defined by Autel Robotics.

Tips
• For the after-sales policy of the product, please visit: https://www.autelrobotics.com/service/policy/.

After-Sales Support

If you have any questions or concerns about our products, please contact Autel Robotics customer support:
Hotline: (844) MY AUTEL or (844) 692-88 35

Maintenance Service

If your equipment needs to be inspected or repaired, please contact Autel Robotics through the following methods:

- Email after-sale@autelrobotics.com or support@autelrobotics.com.
- Call Autel Robotics customer support at (844) MY AUTEL or (844) 692-88 35.
- Contact dealers authorized by Autel Robotics.

Important
• All data stored on the product may be erased during the repair process. To avoid data loss, please back up important files in your aircraft before the product is under warranty.

Data Security

Click the link below to access the User Data Security Protection Statement or submit vulnerabilities:
https://www.autelrobotics.com/data-security/

Company Information

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Autel Robotics Co., Ltd.
Address:
601,701,801,901, Block B1, Nanshan iPark, No. 1001 Xueyuan Avenue, Nanshan District, Shenzhen, Guangdong, 518055, China
Official Website:
www.autelrobotics.com

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Chapter 1 Product Overview

1.1 Introduction

The EVO Lite Enterprise Series multi-rotor drone (hereafter referred to as the aircraft) is a lightweight aircraft, integrated with a Visual Perception System for three directional obstacle avoidance capability. With an excellent power management system, the aircraft can reach a flight time of up to 40 minutes. Also, it utilizes a three-axis stabilized gimbal, allowing you to view observed videos and data in real time through the Autel Enterprise Application.
The EVO Lite Enterprise Series multi-rotor drone adopts a foldable design and can hold its propellers for easy storage and transportation.
The EVO Lite Enterprise Series multi-rotor drone is equipped with auxiliary light and ultrasonic sensor at the bottom to improve visual positioning performance in weak light conditions, thus enhancing flight safety during landing.
The Autel Smart Controller SE V2 (hereafter referred to as the remote controller) adopts the Autel SkyLink Image Transmission solution, has strong anti-interference capabilities, and can achieve stable transmission of HD videos to the display screen of the RC. The RC is equipped with multiple function buttons, enabling quick aircraft control and camera operation.
The remote controller features a 6.0-inch 1440×720 high-brightness touchscreen with a maximum brightness of 800 nits. It adopts a customized Android system and offers functions such as satellite-based positioning, Wi-Fi, and Bluetooth. Moreover, it supports the PD30 fast charging protocol, allowing it to operate up to 2.5 hours on a full charge.

Tips

- The Visual Perception System has limitations in usage environments and regions. Please read the "Disclaimer and Safety Operation Guidelines" to learn about relevant safety precautions.
- The flight time of the aircraft is measured in a laboratory environment (The aircraft flies at a constant speed of 10 meters per second in a light breeze environment) and is for reference only. The actual flight time may vary depending on factors such as environmental conditions and flight mode.
- Please note that the EVO Lite Enterprise Series multi-rotor drone includes two models: the EVO Lite 6K Enterprise aircraft and the EVO Lite 640T Enterprise aircraft. They only differ in gimbal cameras. The EVO Lite Enterprise aircraft is equipped with a 6K optical gimbal camera, and the EVO Lite 640T Enterprise aircraft is equipped with an infrared thermal imaging dual-camera gimbal system.

Warning

- If multiple aircraft are flying in an area at the same time, please keep an appropriate air distance to avoid any accidents.

1.2 What's In the Case

The EVO Lite Enterprise Series multi-rotor drone is available in basic and plus combos. The basic combo adopts paper case (with EPE pearl cotton for buffering) for packaging and transportation and the plus combo adopts rugged case (built-in shock proof material) for packaging and transportation. Two packages differ in the items included. The detail within the case is as follows:

Important

- Upon receiving the product, please inspect the case in its integrity and confirm that its outer packaging is intact, with no signs of unpacking. Meanwhile, save the unboxing video for potential logistics damage claims.
- After daily use, please put the aircraft and other items in the case and store the case in a dry and cool environment. When moving, please do not drop or bump the case.

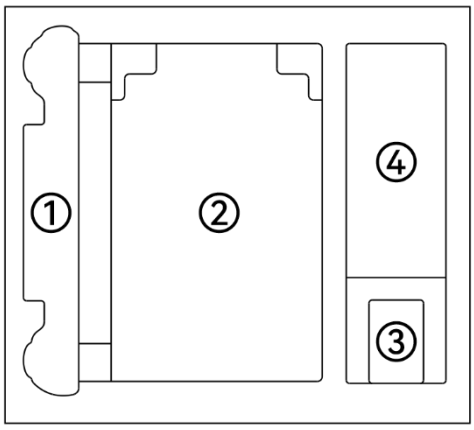


Fig 1-1 Inside the case (basic combo)

Table 1-1 Inside-the-Case description (basic combo)

No.	Item	No	Item
1	Autel Smart Controller SE V2	2	Aircraft
3	Battery Charger	4	Battery Charger AC cable USB-A to USB-C cable User manual

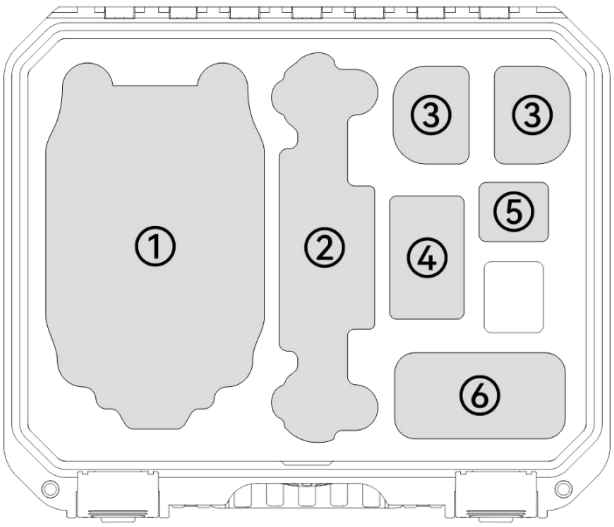


Fig 1-2 Inside the case (plus combo)

Table 1-2 Inside-the-Case description (plus combo)

No.	Item	No	Item
1	Aircraft	2	Autel Smart Controller SE V2
3	Spare Battery	4	Battery Charger
5	Spare Propeller	6	Battery Charger AC cable USB-A to USB-C cable User manual

1.3 Product Acceptance Checklist

After unboxing the product, please check whether the actual items match the items described in the following packing list and carefully inspect the appearance of the aircraft and all accessories. If anything missing or damage is found, please contact Autel Robotics After-Sales Support or authorized dealers promptly.

Important
● Please refer to actual purchase list. The following packing lists are only for reference.

Table 1-3 Basic Combo Packing List

No.	Item	Model/Specification	Quantity	Note
1	EVO Lite Enterprise Series multi-rotor drone	MDXM	1	Includes 1 battery, 1x 32GB microSD card, propellers, gimbal camera,

				and gimbal protective cover.
2	Autel Smart Controller SE V2	EF6-2	1	Includes 2 sticks and 2 antennas.
3	Battery Charger	AQ661-12755000D	1	Includes AC cable.
4	USB-A to USB-C Cable		1	Used with a power adapter to charge the RC.
5	User Manual		2	
6	Product Certification		1	

Table 1-4 Plus Combo Packing List

No.	Item	Model/Specification	Quantity	Note
1	EVO Lite Enterprise Series multi-rotor drone	MDXM	1	Includes 1 battery, 1x 32GB microSD card, propellers, gimbal camera, and gimbal protective cover.
2	Autel Smart Controller SE V2	EF6-2	1	Includes 2 sticks and 2 antennas.
3	Battery Charger	AQ661-12755000D	1	Includes AC cable.
4	USB-A to USB-C Cable		1	Used with a power adapter to charge the RC.
5	Spare Battery	MDXM_6175_1113	2	
6	Spare Propellers	8530	2	CW×2 and CCW×2
7	User Manual		1	
8	Product Certification		1	
9	Industrial Case		1	

1.4 UAS Introduction

Before first flight, please perform a comprehensive inspection of the UAS to ensure that all components meet the following requirements. A complete UAS consists of two parts: the aircraft and the RC. The relevant requirements and explanations are as follows:

■ Aircraft Components And Payload

Please be noted that a complete aircraft includes the aircraft body, gimbal camera, propellers, and the battery. Any damage or missing of these components may result in a malfunction.

Table 1-5 EVO Lite Enterprise Series multi-rotor drone Component List

Item	Product Info	Manufacturer	Note
EVO Lite 6K Enterprise multi-rotor drone	Max. weight: 866 g Max. Dimension: 433×516×95mm **Basic Combo:** US EAN: 6924991132912 UPC: 889520212915 EU EAN: 6924991132790 UPC: 889520212793 **Plus Combo:** US EAN: 6924991135753 UPC: 889520215756 EU EAN: 6924991135777 UPC: 889520215770	Autel Robotics	Includes propellers, battery, and a 6K gimbal. The firmware version is V1.0.3.57 or later.
EVO Lite 640T Enterprise multi-rotor drone	Max. weight: 866 g Max. Dimension: 433×516×95mm **Basic Combo:** US EAN: 6924991133094 UPC: 889520213097 EU EAN: 6924991132783 UPC: 889520212786 **Plus Combo:** US EAN: 6924991135760 UPC: 889520215763 EU EAN: 6924991135784 UPC: 889520215787	Autel Robotics	Includes propellers, battery, and a 640T gimbal. The firmware version is V1.0.3.57 or later.
Smart Battery MDXM_6175_1113	Max. weight: 309 g EAN: 6924991102939 UPC: 889520012676	Autel Robotics	Included or Retailed

CW/CCW Propeller	Max. weight: 7.5 g Max. Dimension: 8.5 inches EAN: 6924991102533 UPC: 889520012270	Autel Robotics	Included or Retailed

Tips

- All the above components have passed Autel Robotics safety and compatibility tests, users can purchase and use accordingly.

■ Remote Controller Components & The App

A complete RC includes the controller body (equipped with functional buttons), joysticks, and an antenna. Any damage or missing of these components may result in a malfunction. The Autel Enterprise, serving as the flight application software that controls the aircraft, should be maintained to ensure comprehensive control over the UAS.

Table 1-6 RC Components List

Item	Product Info	Operating System	Manufacturer	Note
RC	Max Dimension: 226.3×215.4×31 mm Max. weight: 607 g	Android 6.0.1	Autel Robotics	Includes 2 command sticks and an antenna.

Table 1-7 Firmware and Software version explanation

No.	Item	Release Version	Note	Release Date
1	Image Transmission	V1.0.3.57	/	2024 Q3
2	Sticks	V10.0.1.9	/	2024 Q3
3	OS	V1.0.3.59	Based on Android 6.0.1	2024 Q3
4	Autel Enterprise	V1.4.220	Flight Application	2024 Q3

Tips

- The above information is for reference only. Both the RC and the aircraft have been upgraded to the latest versions before shipment. Users can use accordingly.
- When the RC and the aircraft are matched in frequency and the RC is connected to the internet, the flight application will automatically check for firmware updates. More instructions, please refer to "7.1 UAS Components Updates" in Chapter 7.

- When there's any prompt for updates, please follow the instructions to update accordingly to address any issues and to enjoy the new features. Users also have the option to temporarily pause updates; however, this won't affect the existing functions.

Table 1-8 List of Pre-installed Apps on the Remote Controller

No.	Pre-installed App	Software Version	Note
1	Autel Enterprise	V1.4.220	Flight Application
2	My File	0.1.5	System Basic Application
3	Gallery	1.1.40030	System Basic Application
4	Chrome	80.03987.162	System Basic Application
5	Settings	6.0.1	System Basic Application

Chapter 2 Flight Safety

After the first unboxing, please scan the QR code in the Quick Start Guide to obtain the latest version of the manual. Please read and understand the entire manual carefully to ensure the safe and correct use of the aircraft.
Before engaging in actual outdoor flights, it is essential to undergo relevant basic flight training (such as watching instructional videos, receiving guidance from professionals, etc.) to familiarize oneself with the functions and characteristics of the aircraft and RC.
Prior to flight, please familiarize yourself with all local laws and regulations concerning civilian unmanned aerial vehicles. Choose an appropriate flight environment, set a reasonable flight altitude, and conduct legal flights in accordance with relevant flight requirements and restrictions. Using the aircraft in unsuitable flight environments may pose legal risks.
Before flight, be sure to read the "Disclaimer and Safety Operation Guidelines" to understand relevant safety precautions.

2.1 Legal Use Notice

Upon the initial unboxing, please adhere to the legal requirements of the country or region where you are currently located and complete the real-name registration of the aircraft.

2.1.1 China’s Mainland

- According to the requirements of the Civil Aviation Administration of China's "Management Regulations for the Real-Name Registration of Civil Unmanned Aerial Vehicles," owners of civilian drones must register their real names on the "Comprehensive Management Platform for Civil Unmanned Aerial Vehicles" (https://uom.caac.gov.cn) after purchase and affix the QR code registration mark on the aircraft. Failure to register with real names and affix the registration mark may result in penalties imposed by regulatory authorities.
- The EVO Lite Enterprise Series multi-rotor drone is a light unmanned aircraft, and the operation of this product by individuals under the age of 16 is prohibited by Autel Robotics. Users under the age of 16 must use this aircraft under the supervision of a professional adult.
- It is recommended to read the "Interim Regulations on the Management of Unmanned Aerial Vehicle Flights" for more detailed regulatory requirements before conducting flights.

Important

- According to the regulations outlined in the "Civil Unmanned Aerial Vehicle System Safety Requirements" in Chinese mainland, after the user completes the UOM real-name registration, the aircraft will automatically report the flight dynamic data to the UOM platform through the remote controller after connecting to the Internet each time it is turned on. When the report is successful, the "Broadcasting" column will be displayed in the "">-"">-"">-"Remote ID" column. For details of related functions, please refer to “2.14 Remote Identification” in this Chapter.

2.1.2 The U.S

- Before using a drone, please complete the real-name registration on the FAA website (https://faadronezone-access.faa.gov/#/) (registrants must be 13 years old or above). Failure to do so may result in regulatory and criminal penalties.
- The Federal Aviation Administration (FAA) in the United States may impose civil fines of up to $27,500. Criminal penalties may include fines of up to $250,000 and/or a maximum of three years in prison.

2.1.3 Canada

- Drone pilots must be 14 or older and always carry a valid drone pilot certificate while operating their drone. A valid drone pilot certificate is a printed or electronic document issued by Transport Canada. No other form of certification will be accepted. For details about how to get a drone pilot certificate in Canada, refer to the following link: https://tc.canada.ca/en/aviation/drone-safety/drone-pilot-licensing/getting-drone-pilot-certificate
- Before flight, please register your drone through the following portal: https://tc.canada.ca/en/aviation/drone-safety/drone-management-portal
- EVO Lite Series aircraft belongs to the muti-rotor aircraft type. You can only fly them in following operating environments:
  1. In controlled airspace. For details about the controlled airspace, please refer to relevant Canadian law: https://tc.canada.ca/en/aviation/drone-safety/learn-rules-you-fly-your-drone/choosing-right-drone
  2. Near people. For details about flying a drone near people, please refer to relevant law: https://tc.canada.ca/en/aviation/drone-safety/learn-rules-you-fly-your-drone/choosing-right-drone
- Before using the aircraft for the first time, please click the following link to know relevant laws that you need to know before the aircraft takes off. https://tc.canada.ca/en/aviation/drone-safety/learn-rules-you-fly-your-drone/flying-your-drone-safely-legally
- Violation of relevant laws and regulations may incur penalty of up to 3000 dollars (for person) or 15000 dollars (for company) or jail time.

⚠ Warning
• Please do not fly over people, which may cause physical damage to people around.

2.1.4 The EU

- Drone operators/owners must register with the National Aviation Authority (NAA) in the EU country where they reside (https://www.easa.europa.eu/drones/NAA).
- This product is not a toy, and individuals under the age of 16 are prohibited from operating it.

- In the EU region, The EVO Lite Enterprise Series multi-rotor drone bears a C1 class identification label, and thus you must comply with subcategory A1 operational restrictions while using it, which are as follows:
  1. No flight expected over uninvolved people (if it happens, overflight should be minimized).
  2. No flight over assemblies of people.
  3. Maintain flight altitude below 120m above ground level.
- The EVO Lite Enterprise Series multi-rotor drone can also fly in subcategory A3.
- Remote pilot should obtain a 'Proof of completion for online training' for A1/A3 'open' subcategory by:
  1. Completing the online training.
  2. Passing the online theoretical exam.
- Before using this product, click the following link to learn the detailed information on safety operation limitations about EASA Class 1 drones: (https://www.easa.europa.eu/document-library/general-publications/drones-information-notices)

Important

- According to EU regulations, the EVO Lite Enterprise Series multi-rotor drone is equipped with sensors (gimbal camera) capable of detecting personal data. Users are required to undergo legal registration when using the product.
- After registration, users should input the operator registration number in the flight application and activate the DRI system. For more details, please refer to "2.14 Direct Remote Identification" in this chapter.

2.1.5 Other Countries and Regions

Before flying, please consult local legal professionals or aviation authorities to obtain information on laws, regulations, and policies regarding civilian unmanned aerial vehicles. Follow the relevant guidelines to undergo legal registration.

2.2 Flight Operation Regulations

Before flying, it is crucial to understand and adhere to the following flight operation regulations. Violating these regulations may lead to severe consequences or even legal consequences.

- Operating the aircraft while under the influence of alcohol, drugs, medication-induced impairment, dizziness, fatigue, nausea, or any other compromised physical or mental condition is strictly prohibited.
- Avoid flying near manned aircraft and ensure that the aircraft's flight does not impact larger manned aircraft on their flight paths. Remain vigilant, steer clear of other aircraft, and land immediately if necessary.
- Do not fly in areas prohibited by local regulations without obtaining authorized permits. Prohibited areas may include airports, borderlines, major cities and densely populated areas, large event venues, emergency situations (such as forest fires), and sensitive building facilities zones (such as nuclear power plants, power stations, hydroelectric plants, prisons, traffic arteries, government buildings, and military facilities).

- Prohibit the use of the aircraft at large event venues, including but not limited to sports stadiums and concerts.
- Avoid flying in airspace exceeding the regulated altitude.
- Do not use the aircraft to carry any illegal hazardous materials.
- Ensure a clear understanding of the type of flight activity (e.g., recreational, official, or business). Obtain permits from relevant authorities before flying. If necessary, consult with local legal professionals for detailed definitions and explanations of flight activity types.
- When using the aircraft for filming, respect the privacy of others. It is strictly forbidden to use this product for any unauthorized surveillance activities, including but not limited to monitoring of individuals, groups, events, performances, exhibitions, or buildings.
- Please note that recording or photographing others, groups, events, performances, exhibitions, etc., without legal authorization may violate copyright, privacy rights, or other lawful rights of others. Therefore, it is essential to thoroughly understand and comply with local laws and regulations before use.

2.3 Flight Environment Requirements

- Avoid flying in adverse weather conditions such as strong winds, snow, rain, heavy fog, sandstorms, extreme cold, or high temperatures. The maximum wind speed resistance is 10.7 m/s.
- Ensure the aircraft takes off from and lands on open, unobstructed, and flat ground. Keep a safe distance from crowds, surrounding buildings, trees, etc., and control the aircraft within visible range to ensure flight safety.
- Due to poor lighting conditions, GNSS signal loss, narrow spaces, etc., some functions of the aircraft may be restricted. Always be aware of the surrounding environment and maintain safe control of the aircraft.
- For night flights, please be sure to choose open and uninhabited areas and ensure the Aux Light is on during landing for safety.
- Avoid taking off or landing on moving platforms such as moving vehicles, boats, etc.
- Avoid taking off or landing on sandy surfaces to prevent raised dust affecting the lifespan of the power motors.
- The performance of the smart battery is influenced by environmental temperature and air density. Use the aircraft in environments ranging from -10°C to +40°C and at altitudes below 3000m.
- When using the aircraft in disaster-stricken areas after events such as fires, explosions, lightning, storms, tornadoes, heavy rain, floods, earthquakes, sandstorms, etc., pay special attention to the safety of takeoff and landing points and changes in the surrounding environment. Prioritize personal safety.
- Stay away from steel structures, iron mines, etc., to avoid interference with the aircraft's compass.

2.4 Wireless Communication Requirements

- Stay away from areas with strong electromagnetic interference, such as radar stations, microwave stations, mobile communication base stations, drone interference devices, etc., and maintain a distance of at least 200 meters.

- When flying near sources of electromagnetic interference, exercise caution and continuously observe and assess the stability of image transmission signals and videos of the RC. Common sources of electromagnetic interference include, but are not limited to, high-voltage transmission lines, high-voltage substations, mobile communication base stations, and TV broadcast signal towers. If significant interference occurs in these places during flight operations, the aircraft may not be able to fly normally, so return and landing should be done promptly.
- Choose open and spacious areas or high grounds for flying. Tall mountains, rocks, urban structures, and forests may obstruct the GNSS signal and the aircraft's video transmission signal.
- It is recommended to turn off unnecessary Wi-Fi and Bluetooth devices in the vicinity to avoid interference with the RC signal.

2.5 Declaration of Maximum Take-off Mass

During flight operations, the actual takeoff weight of the aircraft should not exceed the Maximum Takeoff Weight (MTOW) declared for the aircraft. Exceeding this limit may result in aircraft safety incidents. For detailed data, please refer to Appendix A "A.1 Aircraft".

⚠ Warning
• The aircraft does not support flight with mount. In flight, please do not mount any items on the aircraft.

2.6 Obstacle Avoidance System

2.6.1 Introduction to the visual perception system

The aircraft adopts a three-directional visual perception system design to achieve avoidance performance of front, rear, and bottom, ensuring precise positioning and safe flight of the aircraft.
The visual perception system is a vision-based positioning system that perceives obstacles and obtains aircraft position information through visual image ranging. The aircraft's visual perception system is located at the front, rear, and bottom of the fuselage, utilizing the "dual pinhole lens" structure, the combination of which enables omnidirectional visual obstacle avoidance.

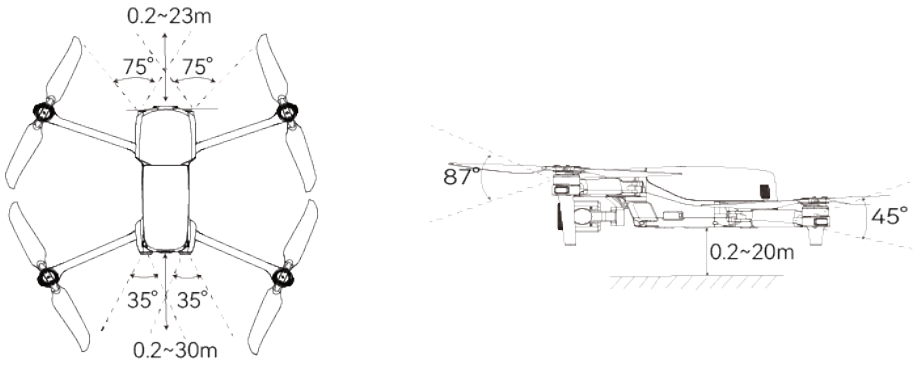


Fig 2-1 Aircraft Visual Perception Range

⚠ Warning

- When using the aircraft for flight, avoid obstructing the lenses of the visual perception system. Doing so may impact the performance of the aircraft's visual obstacle avoidance and could lead to flight accidents.
- There are some blind spots in the diagonal area of the visual obstacle avoidance system. Obstacles in the left, right, and upper directions of the aircraft will not be recognized.
- The performance of visual obstacle avoidance is influenced by environmental light and surface texture of objects. The visual obstacle avoidance system is not 100% reliable. When flying with the visual obstacle avoidance system activated, always pay attention to the live video feed and alarm information on the flight application.

Important

- The visual perception systems in the front, rear, and bottom of the aircraft can also use ultrasonic sensors to calculate the aircraft's height and obtain position information through image analysis.

2.6.2 Visual positioning function

The aircraft supports visual positioning function in the absence of GNSS signals, providing flight positioning capabilities when GNSS signals are poor or lost, ensuring the safe flight of the aircraft.

⚠ Warning

- If you lack extensive flight experience, do not fly the aircraft beyond visual range.
- If the aircraft is in visual positioning mode, in the process of flight, please ensure the aircraft is flying in well-lit environments with clear object surface textures, and avoid flying near surfaces such as water or snowy areas with mirror-like reflections.
- Before flight, if the visual positioning of the aircraft is turned off, please do not turn on the visual positioning after takeoff, which might lead to the failure of visual positioning. If you

need to turn on the function again, it is recommended to land the aircraft first before conducting relevant operations.

Tips

- In the presence of great GNSS signal, the aircraft will enter the GNSS mode, and at this time the visual positioning function provides auxiliary positioning information to enhance the accuracy of the aircraft's positioning.
- In situations where there is simultaneous failure of both GNSS signal and visual positioning, the aircraft will initiate ATTI mode automatically.
- When the aircraft is already in flight and the GNSS signal disappears or weakens, the RC will provide the following warning prompts：
  - If the takeoff point is inaccurate: The flight application will display a warning "GNSS signal is weak. The landing point may deviate." with a corresponding verbal warning.
  - If GNSS signal is weak: The flight application will show a warning " GNSS signal is weak. Move the aircraft to an open area." with a corresponding verbal warning.
  - If GNSS is being spoofed: The flight application will display a warning "GNSS Spoofing" with a corresponding verbal warning.

2.6.3 Visual obstacle avoidance function

The aircraft supports obstacle avoidance function. When there is sufficient light, the aircraft will detect obstacles within the flight range, brake within the set safety distance and hover in place.

Note

- After the obstacle avoidance behavior is enabled, the obstacle avoidance function of the aircraft still may fail if there are obstacles that are too spare in the flight route, such as sparse fine wire meshes or small branches at the outer edges of trees. To ensure flight safety, please choose an open and spacious airspace for flight.
- Due to inertial, to ensure the aircraft brakes and stops within the set safety distance, the flight control system will limit the flight power performance of the aircraft, its attitude angle will be no more than 30° and its maximum flight speed will be less than 10 meter per second.

Warning

- The obstacle avoidance function of the aircraft cannot be enabled when Ludicrous mode is set for the aircraft.

2.6.4 Precautions for obstacle avoidance system usage

The measurement accuracy of the visual perception system is easily affected by factors such as light intensity and object surface texture. Exercise caution when using the system in the following scenarios:

- Solid-color surfaces (such as pure white, pure black, pure red, pure green) and low-texture scenes.
- Surfaces with strong reflections or reflections.
- Surfaces of moving objects (such as crowds of people, swaying reeds in the wind, bushes, grass, etc.).
- Water surfaces or surfaces of transparent objects.
- Scenes with rapid and intense changes in lighting or scenes directly illuminated by strong light sources.
- Extremely dark surfaces (light intensity less than 15 lux) or extremely bright surfaces.
- Small obstacles (such as wires, power lines, branches, etc.).
- Dirty lenses (such as water droplets, fingerprints, etc.).
- Scenes with low visibility (such as heavy fog, heavy snow, etc.).
- Low-altitude flights below 2 meters with excessive flight speed.

Remarks

- Please be aware that the visual perception system of the aircraft is highly likely to fail in low-light conditions, such as nighttime, resulting in the loss of visual obstacle avoidance capability.
- To avoid interference with the ultrasonic positioning system, do not use ultrasonic devices operating at 40kHz, such as ultrasonic rangefinders, fault detectors, cleaners, or welders.
- Please note that the aircraft does not support OA function in auto landing process. When you are setting home point, please make sure the home point and the airspace above are spacious with no obstacles; in some cases (such as critically low battery landing), when the aircraft is triggering auto landing, please take over the control of the aircraft in time to ensure the aircraft lands safely.

2.7 Auto Return Home

The aircraft is equipped with an automatic return home function. If the GNSS signal is good, when the auto return home conditions are triggered, the aircraft will automatically return to the home point and land to prevent accidents.
The aircraft provides users with three ways to activate the auto return home: manual activation, low battery activation, and behavior activation.

Remarks

- Home Point: The landing point when the aircraft executes an automatic return home. In the flight application, you can set the home point of the aircraft as “Me” and "Aircraft". For more details, please refer to “6.5.1 Flight Control Parameter Setting ” in Chapter 6.

- If the return home point is not set in the application, the aircraft will default to the takeoff point as the return home point.
- During an auto-return, the control function of the remote controller for the aircraft is disabled. In this case, users can quickly press the pause button "⏸" on the remote controller or press and hold it for 2 seconds to pause or exit the auto-return function, or pull the pitch stick down to exit the auto-return. After exiting the auto-return, the RC will regain control of the aircraft. For more details, please refer to "4.11.2 Takeoff/Return-to-Home button and pause button" in Chapter 4.
- For details about pitch stick, please refer to "4.10 Selecting Stick Mode".

⚠ Warning

- If the GNSS signal is poor, the auto return home function cannot be activated.
- If the obstacle avoidance system is not enabled during auto return home, the aircraft will not be able to automatically avoid obstacles.
- If the landing point for auto return home is not suitable for the aircraft to land (such as uneven ground or presence of a crowd), please exit the auto return home first and then manually control the aircraft to land.

2.7.1 Manual activation of auto return home

During flight, users can manually activate the auto return home by long-pressing the return-to-home button "⌂" on the RC for 2 seconds until the RC emits a "beep" sound.

2.7.2 Low battery activation of auto return home

During flight, to prevent unnecessary risks due to insufficient battery power, the aircraft will intelligently assess whether the current battery level is sufficient based on the aircraft's current position.
If the current battery level is only sufficient for the return home process, the flight application will display a pop-up alert saying "The remaining battery is only enough for return to Home. The aircraft will Return to Home after 10s." to remind the user whether to execute the low battery auto return home. If the user chooses to execute or does not perform any operation within 10s, the aircraft will enter low battery auto return home after 10s.
If you cancel the execution and continue flying with a low battery level, when the battery level decreases to critically low battery warning threshold, the aircraft will activate a critically low battery landing.

Tips

- Please note that besides the above intelligent low battery auto return, when the aircraft battery level decreases to the low battery warning threshold set in the flight application, the aircraft will also be triggered to return. The aircraft flight control system executes auto return no matter which one of those two scenarios occur first.

- When critically low battery landing is triggered, in the process of landing, users can push and pull the remote controller sticks to adjust the landing location of the aircraft. After users stop using the sticks, the aircraft will continue to land.
- The threshold of low battery warning and critically low battery warning can be set in flight application. For more details, please refer to "6.5 "Settings" Interface" in Chapter 6.

⚠ Warning

- When the aircraft triggers low battery auto return home, the auto return home process should not be canceled. Otherwise, the aircraft may not have enough power to return to the home point.
- It is not recommended to let the aircraft enter the critically low battery landing process. When the aircraft is executing critically low battery landing, if the landing point does not meet safe landing standard, it might do not have enough power to land at safe landing site, causing damage to the aircraft.
- When the flight application displays relevant warning prompts, follow the corresponding instructions immediately.

2.7.3 Behavior activation of auto return home

During a flight mission, if "Finish Action" is set to "Auto Return", the aircraft will activate return after completing the mission; if signal lost action is set to "Auto Return", when the flight application displays a warning saying "Aircraft disconnected.", the aircraft will activate auto-return. For details, please refer to "6.9 Flight Missions" in chapter 6.
During a manual flight, if signal lost action is set to "Return to Home", when the flight application displays a warning saying "Aircraft disconnected.", the aircraft will activate auto-return. For details, please refer to "6.5.1 Flight Control Parameter Setting".

Tips

- In the flight application, Lost connection action can be set to "Return to Home" by default.
- During a flight mission, after the aircraft is disconnected from the remote controller, the aircraft will continue to fly in the original state. It will not perform the "Signal Loss Action" until the flight application displays a warning saying "Aircraft disconnected.". During a manual flight, after the aircraft is disconnected from the remote controller, the aircraft will slow down and hover. It will not perform "Signal Loss Action" until the flight application displays a warning saying "Aircraft disconnected.".
- During the loss of connection auto return home process, if the aircraft re-establishes a connection with the RC, the aircraft will continue to execute the auto return home.

2.7.4 Auto return home mechanism

Table 2-1 Auto Return Home Mechanism

Aircraft Distance Triggering Return Home	Return Home Mechanism
Distance to Home Point ≤ 10 meters	The aircraft returns to the home point at the current altitude.
10 meters < Distance to Home Point ≤ 25 meters	If the current flight altitude is below 20 meters, it will climb to 20 meters and return. If the current flight altitude is above 20 meters, it returns at the current altitude.
25 meters < Distance to Home Point ≤ 50 meters	If the current flight altitude is below 30 meters, it will climb to 30 meters and return. If the current flight altitude is above 30 meters, it returns at the current altitude.
Distance to Home Point > 50 meters	If below the set return home altitude, it will climb to the return home altitude and return. If above the set return home altitude, it returns at the current altitude.

Remarks

- Home Point: The return point set for the aircraft in the auto return home settings.
- Aircraft distance refers to the horizontal distance from the aircraft to the Home Point.

2.7.5 Auto return home obstacle avoidance process

When the obstacle avoidance system is enabled and the lighting conditions allow the visual perception system to function, the aircraft will implement obstacle avoidance during the auto return home process as follows:

- During manual flight, if obstacle avoidance is enabled in “OA Settings”., in case of a lost action auto-return, low battery auto-return, or manual activation of auto-return, when an obstacle is detected in front of the aircraft, the aircraft will automatically brake within the set brake distance and hover in place, and wait for manually taking over.
- During flight missions, the obstacle avoidance mode is set to "Hovering". In the case of lost action auto-return, low battery auto-return, or mission completion auto-return, when an obstacle is detected in front of the aircraft, the aircraft will automatically brake within the set brake distance and hover in place, and wait for manually taking over.

Important

- During the obstacle avoidance process, the aircraft will hover in place until a critically low battery landing is triggered. In this case, please manually take control of the aircraft in advance.
- Do not fly the aircraft out of visual sight range in places with serious electromagnetic environment interference, avoiding failure to manually taking over the aircraft when the aircraft encounters obstacle and brakes after the loss of connection and return is triggered.
- The aircraft does not support visual obstacle sensing in the direction of left, right and up. Before the flight, please plan reasonable flight altitude and choose suitable airspace for flight.
- During flight missions, if the obstacle avoidance mode is set to "Off", the aircraft will not have obstacle avoidance capabilities.

2.7.6 Landing protection function

When the landing protection function is enabled, the aircraft will check whether the ground conditions are suitable for landing before descending. For more details, please refer to "6.5.2 OA Settings" in Chapter 6.
During the auto return home process, when the aircraft reaches above the home point, if the landing protection function is enabled, the aircraft will execute the following strategies:

1. If the landing protection function detects that the ground is suitable for landing, the aircraft will descend directly.
2. If the landing protection function detects that the ground is not suitable for landing (such as uneven terrain or water below), the aircraft will hover, prompt in the flight application for user action, and only start descending when triggering severe low battery landing, which cannot be canceled by the user.
3. If the landing protection function cannot detect the ground conditions, the aircraft will descend to 1.2 meters above the ground and directly enter the assisted landing process.

Remarks

- Assisted Landing: During the landing process, when the aircraft reaches a height of 1.2 meters above the ground, it will automatically descend slowly without the need for the user to pull down the throttle stick.
- Before entering assisted landing, users should ensure that the landing point is suitable for the aircraft to land.

2.8 Landing Protection Function

When the landing protection function is enabled, the aircraft will assess whether the ground conditions are suitable for landing before landing. For more information, see "6.5.2 OA Settings" in Chapter 6.
During the auto-return process, when the aircraft reaches above the home point and the landing protection function is enabled, the aircraft will execute the following strategies:

1. If the landing protection function detects that the ground is suitable for landing, the aircraft will land directly.
2. If the landing protection function detects that the ground is not suitable for landing (e.g., uneven ground or water below), the aircraft will keep hovering, send a prompt in the flight application, and wait for the user to take action. In this case, the aircraft will start descending only when a critically low battery landing is triggered, and the user cannot cancel this process.
3. If the drone cannot detect the ground situation, the landing protection function will not be available and the drone will be forced to land directly.

Note

- When the landing protection function is not available, user should manually take over the drone in advance and choose an appropriate landing point for landing.

2.9 Rebuilding of the C2 Link

To ensure the safety and controllability of flight behavior, the EVO Lite Enterprise Series multi-rotor drone will continuously attempt to reestablish the C2 link with the RC after losing the C2 link. In practice, this process is divided into the following stages:

- When the aircraft is disconnected from the remote controller, if the connection can be restored within 5 seconds, the remote controller will automatically regain control of the aircraft.
- If the link is not restored within 5 seconds, the flight application will display a warning saying “Aircraft disconnected.”, and the aircraft will automatically execute relevant flight control actions according to the set lost action.
- During the execution of a lost action, the aircraft will continue its attempts to restore the C2 link. When the aircraft successfully restores the C2 link with the remote controller, the remote controller still cannot control the flight of the aircraft. To make the remote controller regain control of the aircraft, you must press and hold the pause button “⏸” on the remote controller for 2 seconds or pull the pitch stick to exit the lost action.

Tips

- During the flight, as long as the aircraft and RC can communicate normally, the C2 link will be maintained continuously.
- If decoding errors persist for a certain duration, leading to communication failure, the C2 link will be disconnected, and the aircraft will enter a reconnecting state.
- Signal lost action of the aircraft includes RTH, Hover and Landing.
- After losing the C2 link, the RC will display "Remote controller and the aircraft disconnected" warning message (in red) in the status notification bar of the flight application with a corresponding verbal warning.

2.10 Flight Restrictions and Unlocking

Important

- Before flying, please strictly adhere to local laws and regulations and carefully plan the airspace for flight.

2.10.1 Geofence system

Autel Robotics has developed a geofence system for its drones to ensure safe and legal flights. This system can dynamically update airspace restriction information worldwide. In different restricted zones, the drone's flight functions will be restricted to varying degrees. The geofence system also supports unlocking restricted zones. If users need to execute a flight mission in a specific restricted zone, they can obtain legal authorization for unlocking. The aircraft will then lift the relevant flight restrictions within the authorized period.
The geofence system does not necessarily align with local laws and regulations. Before each flight, users must independently inquire about and understand local laws, regulations, and regulatory requirements, taking responsibility for their flight safety.
The EVO Lite Enterprise Series multi-rotor drone is equipped with a built-in geofence system in the flight control system. Before each flight, ensure that the RC can connect to the internet to automatically update airspace restriction information, which will be synchronized to the aircraft. During flight, relevant airspace restriction information will be displayed in real-time on the flight application to ensure the aircraft's safe and legal flight.

Tips

- Due to the inherent delay in information retrieval, the airspace restriction information of the geofence system may not completely align with the latest local laws and regulations. All information should be based on local laws and regulations.
- For temporary airspace control, Autel Robotics will promptly obtain the corresponding regulatory notices and upload the relevant airspace restriction information to the geofencing system. Users are required to synchronize and update the flight airspace restriction information when conducting flights in the relevant areas.

Important

- Please note that when GNSS signal is lost or becomes weak, the flight application will synchronously display a warning "GNSS signal is weak, and geo-awareness may be disabled.", and the aircraft will enter visual positioning mode or attitude mode. At this time, the geofence system will not work and relevant flight restriction functions will not take effect.

2.10.2 Restricted zones

In the geofence system, flight-restricted zones are categorized into four types: No-Fly Zone, Altitude-Limited Zone, Warning Zone, and Unlocked Zone. The flight application provides different prompts based on the zone type.

Table 2-2 Flight Restrictions in Restricted Zones

Restricted Zone	Flight Restriction Explanation
No-Fly Zone (Displayed in red on the map)	Separated into Permanent No-Fly Zones and Temporary No-Fly Zones. ● Permanent No-Fly Zones: Factory-installed in the geofence system, regularly updated. ● Temporary No-Fly Zones: Added by Autel Robotics in the geofence system backend. Update Method: The RC automatically fetches the no-fly zone update information and pushes it to the aircraft. Flight Restriction: The aircraft cannot take off or fly in the current area. If the user obtains authorization from the relevant authorities in the area, they can contact Autel Robotics to request unlocking.
Altitude-Limited Zone (Displayed in gray on the map)	Autel Robotics only provides a method for altitude limitation, and users must set the altitude limit themselves. Update Method: Users need to manually enable altitude restrictions and set the limit value in the flight application based on the legal requirements of the current country or region. For more details, please refer to "2.11 Altitude and Distance Limits" in this chapter and "6.5.1 Flight Control Parameter Setting" in Chapter 6.
Warning Zone (Displayed in yellow on the map)	Factory-installed in the geofence system, regularly updated. Factory-installed in the geofence system, regularly updated. Update Method: The RC automatically fetches the warning zone update information and pushes it to the aircraft. Flight Restriction: When flying in a warning zone, the aircraft's flight functions are not restricted (but must comply with local regulations).
Unlocked Zone (Displayed in blue on the map)	Users, with valid approval, can unlock a No-Fly Zone, allowing legal flight in the unlocked area for the specified validity period.

Tips

- In the flight application, tapping on each no-fly zone on the map will prompt the geofence information of each no-fly zone:

1. No-fly zone: area name, area level (no-fly zone), affiliated area (prefecture-level city), no-fly time (only temporary no-fly zone display).
2. Height restriction zone: area name, area level (height restriction zone), height restriction (AGL height restriction from the ground), affiliated area (prefecture-level city).
3. Warning zone: area name, area level (warning zone), height restriction (AGL height restriction from the ground), affiliated area (prefecture-level city).
4. Unlocked zone: area name, area level (unlocked zone), height restriction (AGL height restriction from the ground), affiliated area (prefecture-level city), validity period.

Remarks

- Before conducting a flight, users must understand the aircraft height restrictions in their area and set them correctly in the flight application.
- Please note that it is not recommended to fly across adjacent areas with different legal height restrictions. The height limit set by the user is only valid for the area where the take-off point is located and cannot guarantee compliance with the relevant regulations of the cross-area. Users should adjust the corresponding height limit in time when flying across areas.

The aircraft has a certain initial speed when flying in the air. To prevent the aircraft from mistakenly entering the no-fly zone (when not lifted) and the warning zone, the geofence system sets a buffer zone with a horizontal distance of 200 m and a vertical distance of 50 m outside the boundaries of the no-fly zone and warning zone.

Table 2-3 Buffer Zone Description

Buffer Zone Type	Buffer Zone Description
Buffer zone of the no-fly zone	When an aircraft flies from the outside toward a no-fly zone: When the aircraft approaches the buffer zone boundary, the flight application will display a warning alert “The aircraft is close to the no-fly zone.” and the aircraft will automatically start to decelerate and eventually brake and hover within the buffer zone.
Buffer zone of the warning zone	When an aircraft flies from the outside toward a warning zone: The aircraft can directly fly into the restricted altitude zone without limitation. When the aircraft approaches the warning zone boundary, the flight application will display a warning alert “The aircraft is close to the warning zone.” and after entering the warning zone, the App will display “Aircraft enters warning zone” to remind users to be cautious.

Remarks

- If the aircraft not lifted mistakenly enters the no-fly zone in the absence of GNSS signal, the aircraft will automatically land after regaining the GNSS signal, and during the landing process, the throttle joystick does not work, but users can control the aircraft to move horizontally so as to land in a safer place.
- When the aircraft hovers in place in the buffer zone, users can control the aircraft to exit the buffer zone along the normal direction of the buffer zone boundary.

When conducting a flight in the unlocked zone, if within the airspace and valid time of the lifting authorization, the aircraft can fly normally; once it exceeds the airspace and valid time of the lifting authorization, the aircraft will execute the airspace restriction operation of the current area.

2.10.3 Import UGZ

The aircraft supports the UAS Geographical Zones (UGZ) import function, allowing users to obtain the restricted flight zone data file of their country or region and upload it to the flight control system of the aircraft. When the aircraft approaches the relevant airspace during flight, it will execute corresponding status responses (including alerts and deceleration) to ensure flight safety.

Tips

- The UGZ import function supports importing JSON-type no-fly zone data files. Users can import no-fly zone data files published by the aviation management department.
- Operation method: Copy the JSON file to the root directory of the RC, on the map interface of the flight application, tap "" > "Import Geo-fence" on the right side. Follow the interface instructions for relevant operations.

2.10.4 Unlocking no-fly zones

To apply for unlocking a specific airspace within a no-fly zone, prepare the following information in advance according to your flight plan:

- Identity and contact information of the applicant.
- Unlock permit: a scanned copy or image of the valid permit for the flight application issued by local authorities (local public security bureau, aviation management department, or any other relevant organization/agency).
- Unlocked zone: a cylindrical area. It includes the following information:
  1. Name of the unlocked zone.
  2. Coordinates of the center point of the flight airspace plane (latitude and longitude, with 6 decimal places).
  3. Radius of the flight airspace plane (in meters, with 2 decimal places).
  4. Flight altitude (in meters, with 2 decimal places).
- Unlock date: Enter the unlock date according to the valid permit. The date is recommended

to be accurate to day/hour/second.

- Aircraft S/N (Serial number): Multiple serial numbers can be applied at once.
- Autel account of UAS operator: Multiple accounts can be applied at once.

Log in to the official website of Autel Robotics at www.autelrobotics.com/service/noflight/, enter the relevant information, and complete the waiver application.

After the unlocking application is approved, you will obtain an unlock permit. The permit contains the aircraft serial number, UAS operator account, and unlocked zone (including the validity period).

Tips
• After submitting the lifting application, the approval will be completed within 24 hours, and the lifting will be completed within 48 hours.

2.11 Altitude and Distance Limits

The altitude limit is the maximum flight altitude (relative to takeoff point) of the aircraft, while the distance limit is the maximum radius (with home point as the center) that the aircraft can fly.

Users can set the altitude and distance limits in the flight application to ensure the safe flight of the aircraft. For more details, please refer to "6.5.1 Flight Control Parameter Setting" in Chapter 6.

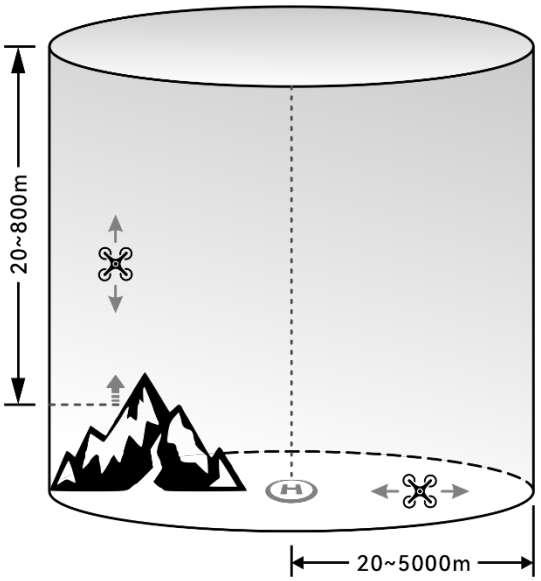


Fig 2-2 Altitude and Distance Limitation Diagram

Tips
• In the flight application, the allowable range for altitude restriction is 20 ~ 800m, and the allowable range for distance restriction is 20 ~ 5000m. During actual flight, the set maximum altitude limit should not exceed the altitude restricted by local laws and regulations, such as the maximum flight altitude of aircraft in China's Mainland, the United

States, the European Union and other countries and regions should not exceed 120 meters or 400 feet.
- When setting the maximum altitude limit, the rationality of the return altitude should be fully considered, and the return altitude should not exceed the maximum altitude limit.
- The return altitude should be set to be higher than the highest obstacle in the flight area.

2.12 Aircraft Calibration

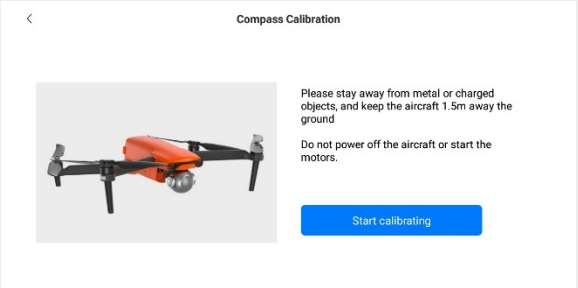
2.12.1 Compass calibration

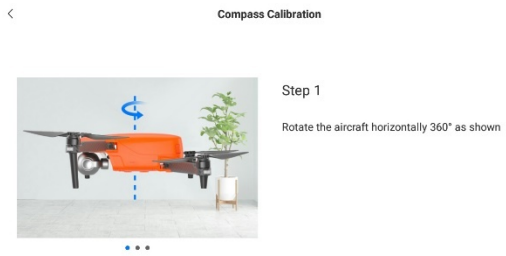
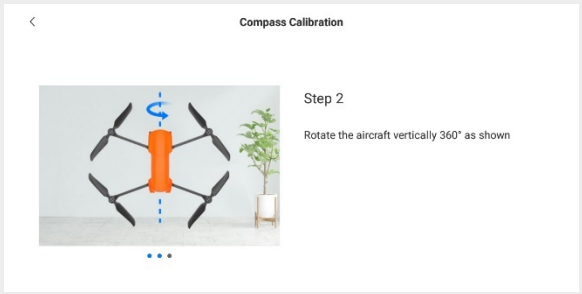
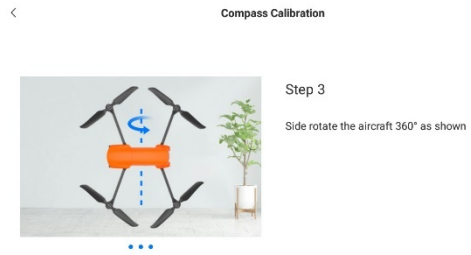
The compass (magnetometer) has been calibrated when the aircraft leaves the factory, and users usually do not need to calibrate it.
If the flight application displays a warning alert “Compass needs calibration, please calibrate before flight.”, please follow the steps below to calibrate it.

Important

- The compass is very sensitive to electromagnetic interference, which can cause compass errors and a decrease in flight quality.
- Please choose an open outdoor area for calibration.
- Please stay away from strong magnetic field areas or large pieces of metal during calibration, such as magnetic ore, parking lots, construction areas with underground steel bars, near underground or overhead power transmission lines, etc.
- Please do not carry ferromagnetic materials or metal objects with you during calibration, such as mobile phones, watches, etc.
- During the calibration process, please stay away from charged objects and keep the aircraft 1.5 meters above the ground.
- During the calibration process, please do not turn off the power of the aircraft or start the motor.

Table 2-4 Compass Calibration

Step	Operation	Diagram
1	After turning on the aircraft and RC, tap “”>” " > “" > "Compass Calibration" > "Start calibrating" on the main interface of flight application. Follow interface instruction for calibration.	

2	Hold onto the aircraft to keep it in a horizontal position. Rotate horizontally 360° until the interface prompts next step.	
3	Hold onto the aircraft to keep it in a vertical position with the nose pointing upward. Rotate horizontally 360° until the interface prompts next step.	
4	Hold onto the aircraft, positioning the nose to the left and the side facing downward. Rotate horizontally 360° until the interface prompts calibration successful.	

Tips

- Please follow the calibration steps as instructed on the Compass Calibration page of the flight application.
- If the calibration fails, the rear arm light of the aircraft will turn solid red. In this case, repeat the above steps.
- If the compass still cannot function properly after calibration, move the aircraft to a different location and calibrate again.

2.12.2 IMU calibration

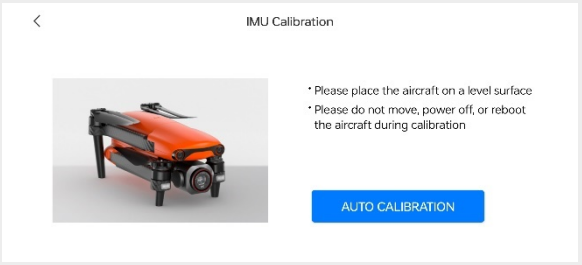
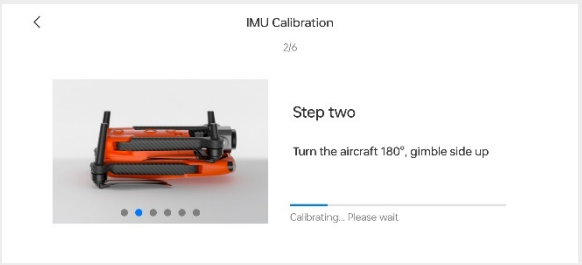
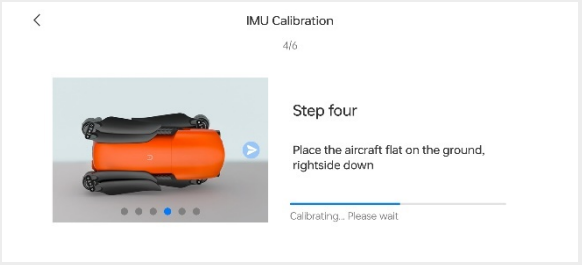
The IMU (Inertial Measurement Unit) of the aircraft has been calibrated at the factory, and no user calibration is required under normal conditions.
If the flight application displays warning alerts such as "Cannot take off due to IMU error. Calibrate IMU first." or "Please calibrate IMU", please follow the steps below to calibrate it.

Important

- Follow the prompts on the IMU calibration page in the flight application to position the aircraft and ensure it remains in a stationary state.

- Place the aircraft on a flat surface and refrain from moving, turning off, or restarting the aircraft during the calibration process.
- The gimbal will be inactive during the IMU calibration process.

Table 2-5 IMU Calibration

Step	Operation	Diagram
1	After turning on the aircraft and RC, tap “ ”>” " > “ " > “IMU Calibration" > "Auto Calibration" on the flight interface of flight application. Follow the instructions in the interface to calibrate the IMU.	
2	Fold the arms of the aircraft and place it horizontally on the ground until the interface prompts next step.	
3	Flip the aircraft 180° , placing it with the belly facing up on a flat surface, until the interface prompts next step. Please be careful to protect the lens on the back of the aircraft during this process.	
4	Place the left side of the aircraft flat on the ground until the interface prompts next step.	
5	Place the right side of the aircraft flat on the ground until the interface prompts the next step.	

6	Fold the arms of the aircraft and place it with the nose facing upward on the ground until the App prompts that the calibration is successful. Please be careful to protect the lens on the rear of the aircraft during this process.	

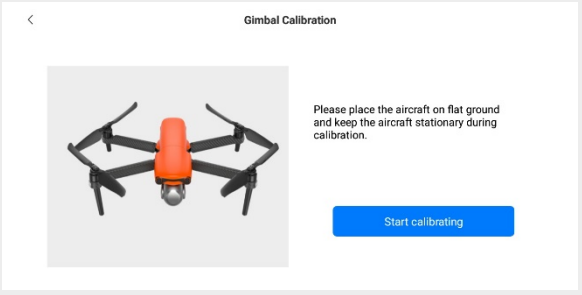
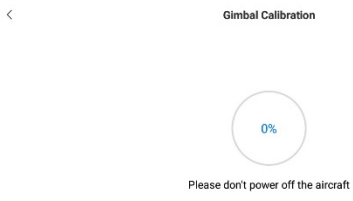
Tips

- Please perform the calibration steps according to the tips shown in the IMU calibration interface of the flight application.
- If the calibration fails, repeat the above steps.
- After the IMU calibration is completed, please re-boot the aircraft.

2.12.3 Gimbal auto calibration

The gimbal is calibrated during the manufacturing of the aircraft and typically does not require user-initiated auto-calibration.
If the flight application prompts “Please calibrate the gimbal motor”, please follow the steps below to calibrate the gimbal.

Table 2-6 Gimbal Calibration

Step	Operation	Giagram
1	Place the aircraft on a flat surface, and after turning on both the aircraft and the RC, keep the aircraft in a stationary state. On the flight interface of the flight application, tap “ ”>-“ ”>-“ ”> "Start calibrating" in sequence.	
2	Wait, the screen prompts "Calibration successful" and then the gimbal automatically calibrates successfully.	

2.13 Emergency Stop Propellers During Flight

During flight, if the aircraft's motors experience power damage or failure (such as damaged or missing propeller blades, motor failure) resulting in the inability to control the aircraft normally, the emergency propeller stop function can be activated. Simultaneously, push the dual joysticks on the RC inward or outward to force the propeller blades to stop rotating, allowing the aircraft to free-fall for a forced landing. This helps reduce potential damage to property and injuries to ground personnel caused by aircraft malfunctions.
In the event of a failure, users should attempt to maneuver the joystick to move the aircraft away from crowds or buildings, decrease the aircraft's altitude and horizontal speed, and then execute the emergency propeller stop function. For details about how to enable this function, please refer to "6.5.7 More" in chapter 6.

Important

- If the propellers are stopped when the aircraft has a certain initial velocity, the aircraft will follow a parabolic trajectory during free fall. Do not stop the propellers in this unpredictable scenario.
- After completing the forced landing, please contact Autel Robotics promptly for inspection of the power system.

2.14 Direct Remote Identification

The Direct Remote Identification (DRI) system allows the registration number of the unmanned aircraft system operator (Remote ID) to be uploaded to the system. During flight, the system broadcasts part of non-sensitive data such as the operator's registration number, unique serial number of the unmanned aircraft, timestamp, geographic location of the unmanned aircraft, altitude above ground or takeoff point, route measured clockwise from true north, ground speed of the unmanned aircraft, and the operator's geographic location (if available, otherwise, the geographic location of the takeoff point) in real-time to mobile devices within its broadcast range. This system effectively controls potential risks to public safety posed by unmanned aircraft during flight and provides effective information and data tools for the supervision of unmanned aircraft flights.
The EVO Lite Enterprise Series multi-rotor drone supports the DRI system and uses Wi-Fi (Wi-Fi Beacon, 802.11n) for broadcasting. Enable the DRI system by configuring it in the flight application.

Tips

- At present, in some countries and regions, it is mandatory to enable the remote identification function. When users are operating aircrafts in relevant airspace, please follow local laws and regulations.
- Operation path: On the flight interface of the flight application, tap" ">-"">-"">- >" Safety" >" Remote ID", and follow the on-screen instructions for relevant operations. For more details, please refer to "6.5.7 More" in Chapter 6.

- In Chinese Mainland, the aircrafts registered legally will enable Remote ID broadcast by default after completing power-on self-check.
- When the aircraft is in automatic check process after being turned on or in flight, if the remote identification function is detected as being abnormal, the flight application will prompt an alert “Remote ID anomaly, please comply with air traffic regulations during flight”, the RC will emit sound alert at the same time.

2.15 Standard Flight Operation Process

2.15.1 Pre-flight inspection checklist

Before every flight operation, perform a comprehensive pre-flight check by following these steps to ensure safe flight:

- Ensure the RC and the aircraft have sufficient battery power, and the aircraft battery is securely installed with the battery unlock button in the locked position.
- Ensure the aircraft propellers are securely installed without damage or deformation, the motor and propeller surfaces are clean and free of foreign objects, and the propellers and arms are in fully extended positions.
- Ensure there are no foreign objects, dirt, or fingerprints on the lenses of the aircraft's visual cameras, gimbal camera, or supplementary lights, and they are not obstructed by mounts or other accessories on the aircraft.
- Confirm that the gimbal protective cover has been removed, and the gimbal's three-axis movements are normal.
- Ensure the microSD card is inserted into the aircraft, the microSD card slot and USB-C interface are covered with the rubber protective cover to maintain product protection.
- Ensure that the RC antenna is tightened securely and expanded to the optimal angle.
- Place the aircraft in an open and level outdoor area, ensuring there are no obstacles, buildings, trees, etc. Stand at least 5 meters away from the rear of the aircraft.
- Ensure the aircraft powers on and is connected to the RC, and the aircraft motors and gimbal camera are functioning properly.
- Confirm that the aircraft and RC have been upgraded to the latest versions as prompted.
- Address all warnings and errors displayed on the flight application.
- Enter the flight application settings page to configure flight control parameters, obstacle avoidance systems, joystick modes, and other relevant flight safety parameters. Familiarize yourself with flight operations to ensure parameter settings meet your needs and guarantee flight safety.
- If multiple aircraft are flying simultaneously, maintain an appropriate aerial distance to prevent safety accidents.

2.15.2 Basic flight procedure

This aircraft provides three joystick modes: Mode 2 (USA), Mode 1 (China), and Mode 3 (Japan). Each mode has different control logic for the aircraft. The default mode is Mode 2, and users can switch modes in the flight application based on their control preferences (refer to “6.5.3 RC Settings” in Chapter 6 to swap joystick modes). The following are the basic flight operations:

1. Please refer to "2.15.1 Pre-flight inspection checklist" in this chapter for pre-flight preparations.
   - Place the aircraft in an open and level outdoor area, ensuring no obstacles are present.
   - Long-press the RC power button for 2 seconds to turn on the RC.
   - Long-press the smart battery power button for 3 seconds to power on the aircraft, wait for the image transmission screen to appear on the remote controller (indicating normal status).
   - Stand at least 5 meters away from the rear of the aircraft.
2. Please refer to "4.10.3 Starting/Stopping the Aircraft Power Motor" in Chapter 4 to use the RC to start the aircraft and take off.
3. Please refer to "4.10.1 Stick Modes" in Chapter 4 to carefully control the aircraft.
4. Please refer to "4.10.3 Starting/Stopping the Aircraft Power Motor" in Chapter 4 to land the aircraft and then turn off the power motors.

When the aircraft performs power-on self-test and any of the following situations occurs, the following strategies will be implemented to ensure flight safety.

Table 2-7 Power-on self-Test flight strategy

Flight strategy	Takeoff Denied	Takeoff Accepted
Abnormal Items	● IMU Abnormal ● Battery Verification Abnormal ● Aircraft ESC Abnormal ● RTK not Fixed in Mission Flight ● Internal Communication Abnormal ● Barometer Abnormal ● Remote Identification Abnormal（only in US）	● Compass Abnormal ● RTK not Fixed but not in Mission Flight ● Aircraft in attitude mode ● Remote Identification Abnormal (in countries or regions except US)

2.15.3 List of Safeguard

Before flight, please learn the following safeguard information, which helps you handle abnormal situations in a correct and safe way.

Table 2-8 List of Safeguard

No.	Safety Function	Refer To
1	Auto Return Home	"2.7 Auto Return Home" in this chapter
2	Emergency Stop Propellers During Flight	"2.13 Emergency Stop Propellers During Flight" in this chapter

2.15.4 Post-flight inspection checklist

After each flight, please follow the steps below to perform a comprehensive post-flight check to ensure the safety of the UAS.

- After the flight, the aircraft should be landed on an open, flat, solid ground, and avoid landing on sand, wetlands, sloping ground or moving platforms.
- The landing point must be away from people or animal activity areas. When landing, you should maintain a horizontal distance of at least 5 meters from the landing point.
- After the aircraft lands, the aircraft power motor should be turned off immediately before approaching the aircraft. Before performing a visual inspection, the aircraft power should be turned off.
- During the visual inspection, please check the aircraft's visual obstacle avoidance lens, gimbal camera lens, and auxiliary bottom light lens to ensure that there are no foreign objects or dirt on the surface. If there is, please wipe it clean with a dry soft cloth.
- During the visual inspection, please check the appearance of the aircraft fuselage and the power motor to ensure that the fuselage is not damaged, cracked, or loose, and the power motor is not blocked. If there is, please stop using it and contact after-sales.
- Please check the propeller surface to ensure that there is no damage, looseness, deformation, etc. If there is, please replace it with a new propeller in time.
- Remove the smart battery from the aircraft and check whether the battery interface and appearance are abnormal. If the battery structure or interface is damaged, or there is bulging, leakage, etc., the battery should be stopped immediately and properly handled as required.
- After the above inspections are completed, install the gimbal protective cover for the aircraft, fold the aircraft arm as required, and store the aircraft and smart battery in the rugged case.
- Wipe the surface of the remote controller used clean, fold the antenna as required, and store the remote controller in the rugged case.

Chapter 3 Aircraft

3.1 Aircraft Registration and Activation

When unboxing the product for the first time, you need to register and activate the EVO Lite Enterprise Series multi-rotor drone before using it. By default, the aircraft is pre-paired with the RC at the factory. After the aircraft and the RC are turned on, the RC will automatically prompt registration and activation. Please follow the steps in the flight application to activate the aircraft.

Important

- Make sure that the RC is connected to the Internet after being turned on for the first time. Otherwise, the activation will fail and the aircraft inactivated cannot be used.
- In registration, please select country or region accordingly and carefully as the aircraft can only fly in selected country (region) and other countries (regions) will automatically be set as no-fly zones.
- If registration and activation fail, please contact Autel Robotics After-Sales Support for assistance.
- For how to pair the aircraft with the RC, please refer to "4.9 Frequency Matching With the Remote Controller" in Chapter 4.

3.2 Aircraft Components

The EVO Lite Enterprise Series multi-rotor drone includes two models: the EVO Lite 6k Enterprise Aircraft and the EVO Lite 640T Enterprise Aircraft. Apart from differences in the gimbal camera, the other features of the two models are consistent. The picture of the EVO Lite 6K Enterprise aircraft is as follows:

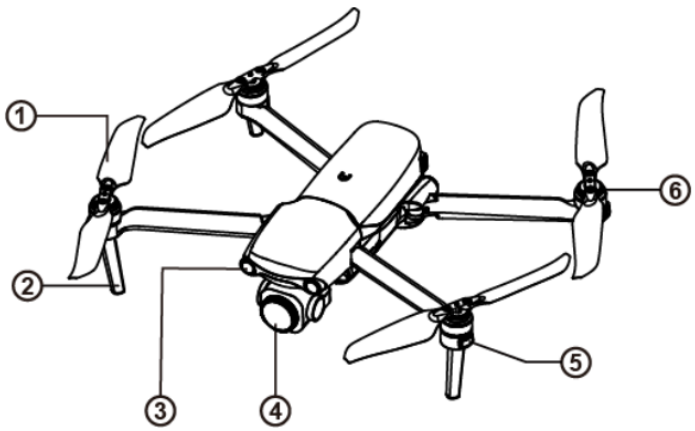


Fig 3-1 Aircraft Overhead View

Table 3-1 Aircraft Overhead View Details

No.	Name	Description
1	Propeller	Rotates in the air to generate thrust to propel the aircraft forward.
2	Landing Gear (built-in antenna)	Used to support the aircraft to avoid damage to the bottom of the fuselage. Built-in antenna to communicate with RC
3	Forward Visual Perception System	Used to sense the obstacles ahead and avoid the aircraft from colliding with them.
4	Gimbal Camera	Integrates multiple sensors for stable shooting or measurements during flight.
5	Front Arm Light	Navigation light: used to identify the nose direction of the aircraft.
6	Power Motor	Used to drive the propeller to rotate.

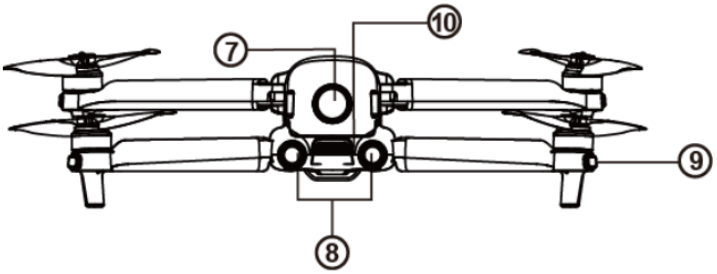


Fig 3-2 Aircraft Rear View

Table 3-2 Aircraft Rear View Details

No.	Name	Description
7	Power button	Press and hold the power button for 3s to start the aircraft.
8	Rear Visual Perception System	Used to sense the obstacles in the rear and avoid the aircraft from colliding with them.
9	Rear Arm Light	Status Light: used to display the current flight status of the aircraft.
10	Exhaust vent	Used to expel the heat generated by the aircraft

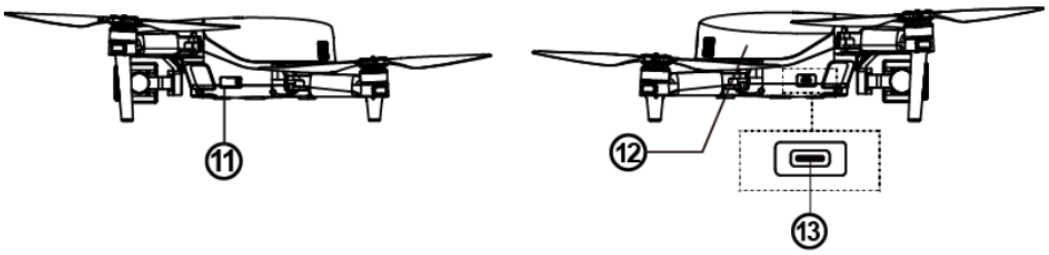


Fig 3-3 Aircraft Side View

Table 3-3 Aircraft Side View Details

No.	Name	Description
11	microSD Card Slot	For inserting a microSD card.
12	Smart Battery	Used to provide energy for aircraft operation.
13	USB-C Interface	Used to connect to a computer for firmware updating, debugging and data transferring.

⚠ Warning

- The USB-C interface of the aircraft is not available for charging. Please do not connect a charger to it. For aircraft charging, refer to "5.3.4 Charging the smart battery" in Chapter 5.

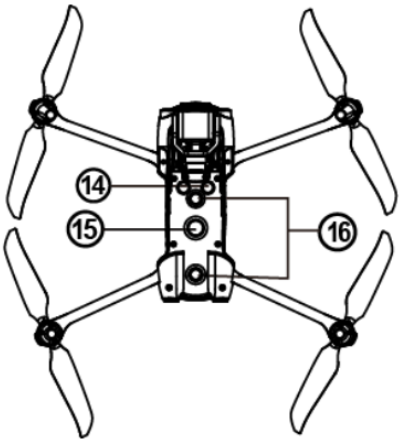


Fig 3-4 Aircraft Down View

Table 3-4 Aircraft Down View Details

No.	Name	Description
14	Ultrasonic Sensor	Used to sense obstacles beneath the aircraft, avoiding collisions with them.
15	Auxiliary Light	An LED auxiliary light. It is used to enhance the ambient brightness of the landing area during the landing process,

		improve downward visual sensing performance, and ensure the safe landing of the aircraft.
16	Downward Visual Perception System	Used to sense obstacles below, and to the left and right of the aircraft and avoid collisions.

⚠ Warning

- The interfaces on both sides of the aircraft body are equipped with rubber protective covers, designed to protect the microSD card slot and USB-C interface. Please ensure that the rubber protective covers are securely closed during the flight process.
- Do not disassemble components that were installed at the factory (except for components explicitly allowed in this manual), otherwise, the product will lose its warranty eligibility.

3.3 Propeller

Propellers are consumable parts that require regular maintenance and replacement to ensure the safe flight of the aircraft. The aircraft uses a quick-release propeller design, making it easy for you to replace them.



- Keep body parts away from rotating propellers.

3.3.1 Replacing propellers

The propellers are installed in the aircraft by default at the factory, and reinstallation is not required. If the propellers are damaged (such as broken or damaged propeller blades), please replace them with new ones before a flight.

Tips

- Aircraft propellers are consumable parts. If needed, please purchase them from Autel Robotics.
- The propeller model is marked on the blade. You can check the model of a propeller at the edge of the blade near the propeller center shaft.
- Propellers cannot be installed on the wrong propeller mounts. Please carefully distinguish between propellers and mounts.

■ Detaching the Propellers

1. Press and hold the smart battery power button for 3 seconds to power off the aircraft.
2. First hold the motor on the arm below the propeller to prevent it from rotating, press down on the propeller center shaft firmly, and then turn it in the unlocking direction to detach the propeller.

■ Installing the Propellers

When installing the propellers, strictly follow the following instructions:

1. Make sure that the aircraft is powered off before installing the propellers.
2. The aircraft needs to be installed with two models of propellers, that is, CW and CCW, with two of each model. The CCW propellers have a white circle mark at the center shaft, while the CW propellers do not have this mark at the center shaft.
3. There are two types of propeller mounts on the front and rear arms of the aircraft. The mounts with a white circle mark at the center shaft are for CCW propellers, while the mounts without this mark are for CW propellers.
4. Place a propeller on the corresponding propeller mount. Make sure that the buckle at the center shaft of the propeller aligns with the slot on the mount. Hold the motor on the arm below the propeller to prevent it from rotating, press down on the propeller center shaft firmly, and then turn it in the locking direction marked on the center shaft to secure the propeller in place.

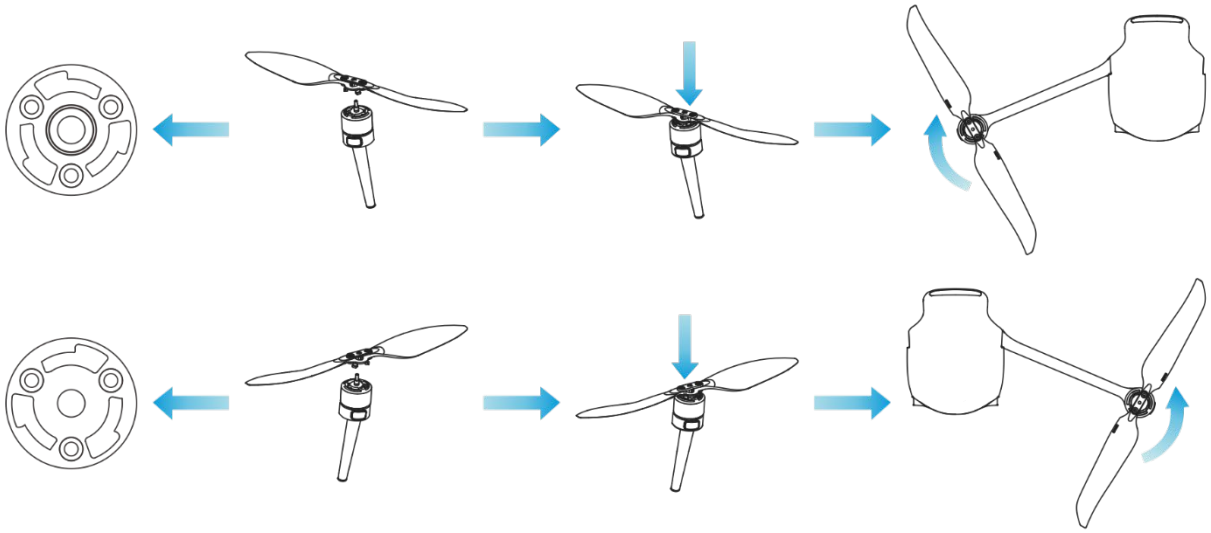


Fig 3-5 Install the Propellers

Table 3-5 Propeller Installation Details

Propeller Model	CCW (White circle on the center shaft)	CW (No white circle on the center shaft)
Installation Area	Mounts with a white circle mark	Mounts without white circle mark
Lock/Unlock	Lock orientation: Turn the propeller this way: to tighten it. Unlock orientation: Turn the propeller this way: to remove it.	

⚠ Warning

- The propellers can rotate at a maximum speed of 8000 RPM. Please operate with caution.
- Before each flight, make sure that all propellers are in good condition. If there are aged, damaged, or deformed propellers, please replace them before the flight.
- Before each flight, make sure that all propellers are mounted correctly and securely.

- Please use the propellers provided by Autel Robotics. Do not mix propellers of different models.
- Before replacing propellers, make sure that the aircraft is powered off.
- Propeller edges are sharp. When replacing propellers, it is recommended to wear protective gloves.
- Stay away from rotating propellers or power motors to avoid injuries.
- Before testing the aircraft on the ground, make sure that the propellers are removed.

3.3.2 Storing propellers

After using the aircraft, fold the arms as shown below and store the propellers in the rugged case.

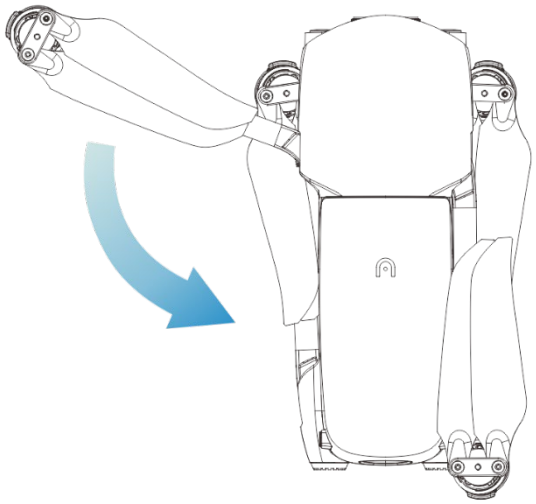


Fig 3-6 Store the Propellers

Important

- Before folding the arms, you should turn off the power of the aircraft. Store the propeller, fold the rear arms first, and then fold the front arms.

3.4 Arm Light

There is an LED indicator at the end of each arm of the aircraft. The front arm light is the heading light, and the rear arm light is the status light. After the aircraft takes off, the front arm lights will blink periodically, which can help you identify the direction of the aircraft nose; the rear arm lights will display the current flight status of the aircraft.
The front arm light is green when it lights up, and the rear arm light can display green, yellow, and red depending on the scene.

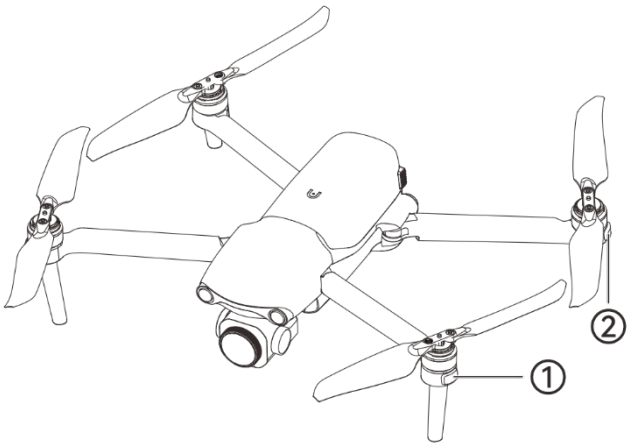


Fig 3-7 Arm Light

Table 3-6 Arm Light Status Details

Scence	①: Front Arm Light (Periodic state)	②: Rear Arm Light (Periodic state)
Remote Controller Not Connected to Aircraft	Green: 1s on/1s off	Yellow: 0.25s on/0.25s off
Start Compass Calibration	Green: 1s on/1s off	Yellow: 0.25s on/0.25s off
Current Step Calibration Successful	Green: 1s on/1s off	Green: 0.25s on/0.25s off
Compass Calibration Successful	Green: 1s on/1s off	Green: always on
Compass Calibration Failed	Green: 1s on/1s off	Red: always on
IMU Calibration	Green: always on	Red: 0.5s on/0.5s off
Low Battery Warning	Green: 1s on/1s off	Red: 0.5s on/1.5s off
Critical Low Battery Warning	Green: 1s on/1s off	Red: 0.25s on/0.25s off
IMU Abnormal	Green: 1s on/1s off	Red: always on
Illegal Battery	Green: 1s on/1s off	Red: 0.5s on/1.5s off
Magnetometer Abnormal	Green: 1s on/1s off	Red: 0.5s on/1.5s off → Yellow: 0.5s on/1.5s off
GNSS Mode	Green: 1s on/1s off	Green: 1s on → Red: 1s on* * When the front arm light turn off, the rear arm light turns red.

Attitude Mode	Green: 1s on/1s off	Green: 1s on → Red: 1s on* * When the front arm light turn off, the rear arm light turns red.
Take Off	Green: always on	Green: 0.5s on/1.5s off
Take off with Caution	Green: 1s on/1s off	Yellow: 0.25s on/0.25s off
Matching	Green: 0.05s on/0.05s off	Green: 0.05s on/0.05s off
Matching Successful	Green: 0.05s on/0.05s off	Green: always on
Matching Failed	Green: 0.05s on/0.05s off	Red: always on
Firmware Updating	Green: 0.1s on/0.1s off	Green: 0.1s on/0.1s off
Firmware Update Successful	Green: always on	Green: always on
Firmware Update Failed	Green: always on	Red: 0.5s on/0.5s off
Getting Logs	Green: always on	Green: 0.25s on/0.25s off→ Yellow: 0.25s on/0.25s off
Aircraft Search	Green: 1s on/1s off	Red: 0.5s on/1.5s off
Initializing Flight Mission	Green: always on	Red: 0.2s on → Yellow: 0.2s on → Green: 0.2s on → All: 0.4s off

3.5 Auxiliary Bottom Light

The aircraft is equipped with an auxiliary bottom light (LED auxiliary light) at the bottom of the fuselage. The lights are used to assist the downward Visual Perception System when the aircraft is landing in weak light environments, so as to ensure better visual positioning performance and enhance the landing safety of the aircraft.

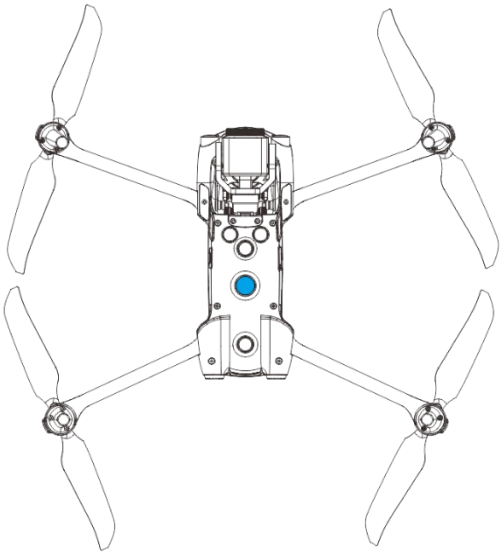


Fig 3-8 Auxiliary Light

Tips
● For details about how to turn on or off the auxiliary light, please refer to "6.4 Toolbar" and "6.5.7 More" in chapter 6.

⚠ Warning
● When the auxiliary light is set to auto mode, if the aircraft is landing and the environment light is poor, the auxiliary light automatically turns on at around 5 meters above the ground and it turns off when the aircraft lands successfully.

3.6 Camera

- The gimbal camera of the EVO Lite 6K Enterprise Aircraft is equipped with a 1-inch CMOS image sensor, capable of capturing stable 6K high-definition videos and 20 million pixels photos.
- The gimbal camera of the EVO Lite 640T Enterprise Aircraft is equipped with a 1/2-inch CMOS image sensor, capable of capturing stable 48 million pixels photos and infrared photos of 640 x 512 resolution.

3.6.1 Camera differences

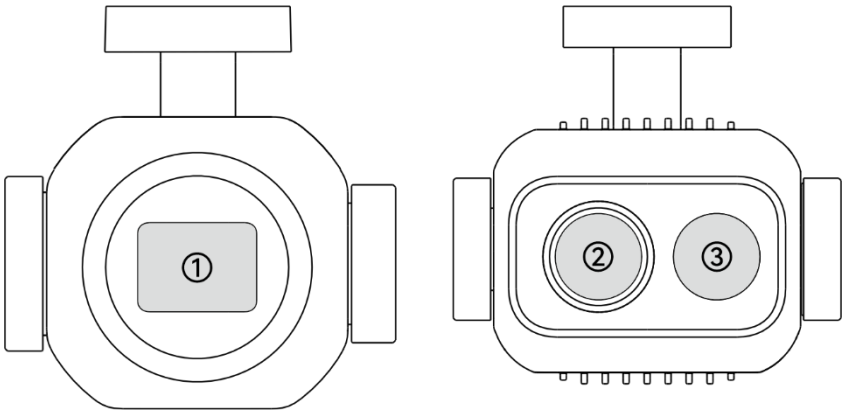


Fig 3-9 Aircraft Gimbal Camera

Table 3-7 Aircraft Gimbal Camera Details

No.	Name	Description
1	Wide Angle Camera	Used to capture images with a larger field of view within a relatively short shooting distance. 1 inch CMOS sensor, Effective pixel count: 20 million. Field of view: 82 degrees.
2	Infrared Thermal Imaging Camera	Used for radiometric measurement and night vision, which can monitor the temperature distribution of the measured target in real time, so as to judge the state of the target. Radiometric temperature range: -20°C~+150°C (high gain mode) and 0°C + 550°C (low gain mode).
3	Wide Angle Camera	Used to capture images with a larger field of view within a relatively short shooting distance. 1/2” inch CMOS sensor, Effective pixel count: 48 million. Used to shoot 8K pictures

⚠ Warning

- Do not point the infrared thermal imaging camera at intensive energy sources such as the sun, lava, laser beams, and molten iron, to avoid damage to the infrared detector.
- The temperature of the observation target should be less than 600 °C. Observing objects with temperatures above this limit may result in damage to the infrared detector.

3.6.2 Camera operations

■ RC Control

■ Right dial wheel: Used to adjust the zoom factor of the selected camera. Turn left to reduce the zoom factor, and turn right to increase the zoom factor.

- Video recording/Shooting button: Short press the button to shoot a picture; press and hold this button to start/end recording video. When recording video, you may press the button to shooting a picture.

Tips
● For the control operations of the RC, please refer to "4.1.1 Remote Controller Components" in Chapter 4.

■ Flight Application Control

For details about control methods, please refer to "6.8 Camera Interfaces" in Chapter 6.

3.7 Gimbal

The aircraft is equipped with a three-axis stabilized gimbal with a high-precision power motor structure, which can ensure stable camera shooting when the aircraft is flying.

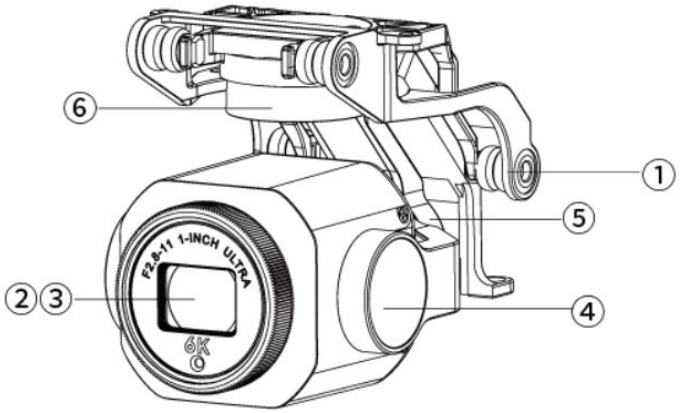


Fig 3-10 Gimbal Structure of EVO Lite 6k Enterprise Aircraft

Tips
● Please note that the gimbals of those two aircrafts are similar in structure while only differing in camera layout. In the following parts, the gimbal structure of the EVO Lite 640T Enterprise aircraft will not be described.

Table 3-8 Gimbal Structure Details of EVO Lite 6K Enterprise Aircraft

No.	Name	Description
1	Dampener Mount	Used to support dampeners and gimbal cameras, etc.
2	Camera	Used to capture pictures or videos.
3	UV Lens	Used to filter ultraviolet rays, protect the lens.

4	Pitch Axis Power Motor	Used to control the moving range of the gimbal to rotate up or down (mechanical range: -135°~45°, controllable movement range: -90°~30°).
5	Roll Axis Power Motor	Used to control the moving range of the gimbal to roll left or right (mechanical range: -45°~45°).
6	Yaw Axis Power Motor	Used to control the moving range of the gimbal to rotate left or right with its own axis (mechanical range: -90°~90°).

3.7.1 Gimbal mechanical rotation range

The mechanical rotation ranges of the pitch, yaw, and roll axes of the gimbal are shown below.

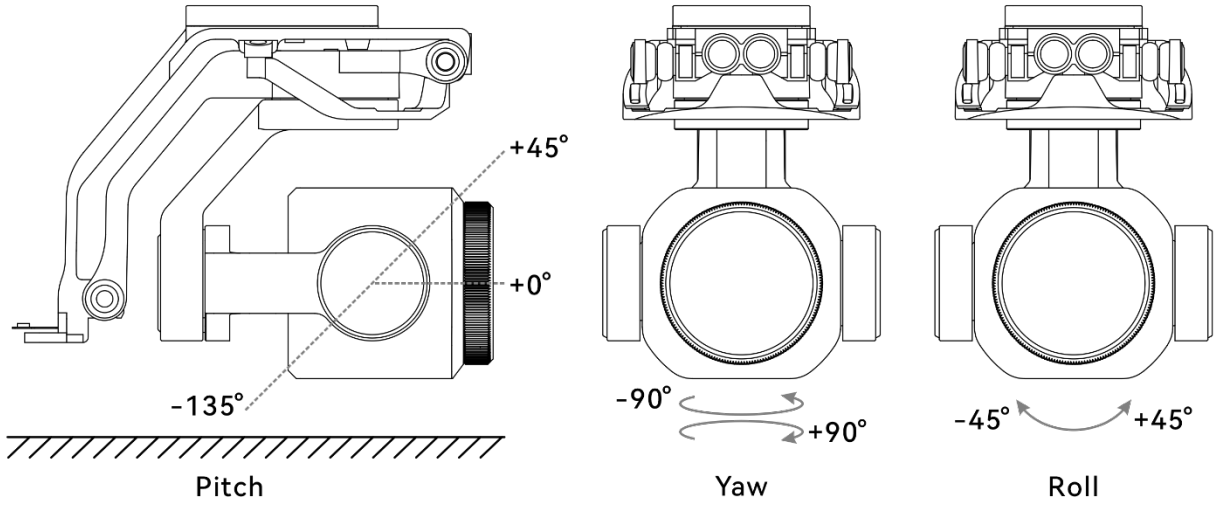


Fig 3-11 Mechanical Rotation Range of the Gimbal

Remarks

- Users can control the pitch rotation range of the gimbal: -90° to 30°. For details on setting, please refer to “6.5.6 Gimbal Settings” in chapter 6.
- For details about the gimbal of the EVO Lite 640T Enterprise aircraft, please refer to “A2 Gimbal camera” in appendix A.

3.7.2 Gimbal operations

■ RC Control

- Left Dial Wheel: Used to adjust the gimbal pitch. Turn left to rotate the gimbal down and turn right to rotate the gimbal up.
- RC Customizable Button C: After setting the C button to "Re-center/45°/Down”, you can switch the gimbal angle by single-clicking the C Button.

Tips

- For the control operations of the RC, please refer to "4.1.1 Remote Controller Components" and "4.11.1 Custom Button C" in Chapter 4.

■ Flight application control

For details about gimbal control operations in the application, refer to "6.8 Camera Interfaces" in Chapter 6.

Warning

- When the aircraft is not in use, especially when the aircraft is being transferred or stored, be sure to use the protective cover of the gimbal to fix the gimbal, so as to avoid damage to the gimbal camera due to accidental rotation or bumping.
- Please remove the protective cover of the gimbal before turning on the aircraft, otherwise, it may cause damage to the gimbal motor and circuit.
- When turning on the power switch of the aircraft, the gimbal will automatically rotate to perform self-check and calibration, please make sure there is no object near the gimbal to hinder its movement.
- Do not disassemble the gimbal at will. Otherwise, warranty eligibility will be lost.

3.8 Flight Control System

EVO Lite Enterprise Series multi-rotor drone achieves stable and convenient flight control through its built-in intelligent flight control system. The system supports a number of advanced functions, including auto-return, failsafe, and visual positioning system.

Table 3-9 Flight Control System

Module	Description
IMU	A three-axis gyroscope and a three-axis accelerometer measure acceleration and angular velocity.
Compass	Measures the geomagnetic field and provides reference information on the aircraft heading.
GNSS receiver	Receives global satellite navigation signals to measure longitude, latitude, and altitude.
Barometer	Measures atmospheric pressure and is used to determine the altitude of the aircraft.
Visual Perception System	Provides the aircraft with front, rear, and down obstacle awareness around the fuselage.
Ultrasonic sensor	Measures the distance between the aircraft and the ground.

3.8.1 Flight status

Depending on the availability of GNSS signals and flight conditions, the aircraft can automatically switch between three flight modes. For details, please refer to "6.3 Status Notification Bar" in chapter 6.

Table 3-10 Flight Status

Mode	Description
GNSS Mode	GNSS mode is activated when the aircraft detects an appropriate GNSS signal. In GNSS mode, if the obstacle avoidance system is turned on, the system will provide auxiliary information to more accurately locate and avoid obstacles, provide stable and smooth flight control, and support auto-return, loss of connection protection, and other safety functions.
Visual Positioning Mode	When the aircraft is in the visual positioning mode, and the GNSS signal detected is not strong enough to activate GNSS mode, and it meets certain environmental and altitude requirements (The ambient light intensity is greater than 15Lux, the ground texture is clear, the diffuse reflectance is greater than 20%, and the flight application flight altitude is within the observation range of the visual obstacle avoidance perception system), the aircraft will automatically enter the visual positioning mode.
ATTI Mode (Attitude Mode)	When there is no GNSS signal and the environment and altitude cannot meet the minimum requirements of the visual obstacle avoidance sensing system, that is, when there is no GNSS signal and visual positioning failure at the same time, the attitude mode will be activated. In this mode, the obstacle avoidance system is disabled, and the aircraft only controls the altitude through the barometer, and users are supposed to make their own decisions to ensure flight safety.

⚠ Warning

- If you have not fully mastered the flight control of the aircraft and the aircraft is in ATTI mode, please do not take off rashly.
- If the aircraft is in visual positioning mode or attitude mode, the no-fly zone function of the geofencing system will be unavailable and please be cautious that do not enter restricted airspace.

Remarks

- When the aircraft is in the visual positioning mode, the maximum speed limit is 3 m/s in standard mode and 10 m/s in ludicrous mode.
- In ATTI mode, the maximum speed of the aircraft in corresponding speed mode is not affected.

3.8.2 Flight modes

The aircraft has varying flight performance in different flight modes. You can set the flight mode of the aircraft in the flight application. For more information, please refer to " 6.3 Status Notification Bar" and "6.5.1 Flight Control Parameter Setting" in Chapter 6.

Table 3-11 Flight Modes

Flight Modes	Description
Slow	Forward, backward, left, and right: 3.0 m/s; Ascend: 3.0 m/s; Descend: 3.0 m/s.
Smooth	Forward, backward, left, and right: 5.0 m/s; Ascend: 3.0 m/s; Descend: 2.0 m/s.
Standard	Forward, backward, left, and right: 10.0 m/s; Ascend: 5.0 m/s; Descend: 3.0 m/s.
Ludicrous	Forward, backward, left, and right: 18.0 m/s; Ascend: 6.0 m/s; Descend: 4.0 m/s.

Tips

- The slow mode can also be regarded as novice mode. In this mode, the maximum flight altitude is 30 meters.

Warning

- If you have not fully mastered the flight control of the aircraft, it is not recommended for you to switch to Ludicrous mode.
- When flying close to the ground, it is recommended to switch to smooth mode for safety.
- When switching to Ludicrous mode, the obstacle avoidance function of the aircraft will become unavailable, and the aircraft will not automatically avoid surrounding obstacles during flight. Please pay attention to the surrounding environment when using it, and manually control the aircraft to avoid obstacles.
- When switching to Ludicrous mode, its flight speed is greatly improved compared with Standard mode, so the braking distance in this mode will be correspondingly extended. You should maintain a braking distance of at least 40 meters when operating the aircraft in this mode to ensure personal and flight safety.

3.8.3 Intelligent flight function

■ Accurate Landing

The accurate landing function uses the downward binocular Visual Perception System of the aircraft to record the information at its take-off point. When the aircraft is returning to the home point or landing, vision algorithms are used to calculate the distance between the aircraft and

the take-off point in real time so as to make sure that the aircraft successfully lands at the take-off point.

■ Landing Protection

The landing protection function uses the downward Visual Perception System of the aircraft to create a depth image, and then calculates the flatness and angle of the depth image to detect whether the surface is flat enough for a safe landing.

■ Intelligent Obstacle Avoidance

The intelligent obstacle avoidance function uses the combined observation results from the aircraft's visual sensing system to calculate the optimal flight path, achieving obstacle avoidance in multiple directions.

3.9 Installing the microSD Card

The aircraft is equipped with a 32GB microSD card slot for storage expansion (the card has been installed into the slot before the aircraft leaves the factory). If users need to replace it with a larger capacity microSD card, please follow the steps below.

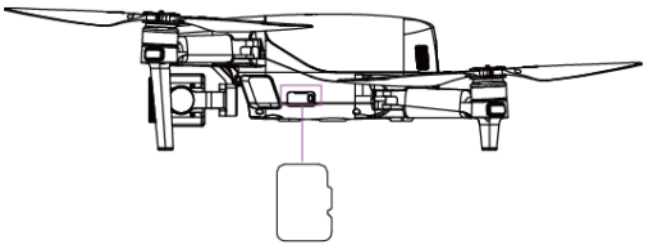


Fig 3-12 install a microSD Card

Tips

- The aircraft has internal storage of 4 GB, when the microSD card is not inserted, you can still take a single photo or record a video, and the images will be directly stored in the on-board flash memory.
- It is recommended that you prioritize using an external microSD card for storing the image data collected during flight to avoid running out of internal storage space, which will affect the flight safety of the aircraft.
- If you plan to shoot high-definition videos, we recommend using a Class 10, UHS-3, or higher microSD card, and the aircraft supports a microSD card with storage of up to 256GB.

Warning

- To prevent data loss, please turn off the aircraft before removing the microSD card.
- After installing the microSD card, close the rubber protective cover over the interface area promptly to avoid affecting the protective performance of the product.
- To ensure the stability of the gimbal camera system, please limit the duration of a single recording to within 30 minutes.

3.10 Noise Description

When the EVO Lite Enterprise Series multi-rotor drone hovers, it generates noise with an intensity of 69dB (at a distance of 0.5 meters from the aircraft). Users should familiarize themselves with local noise pollution prevention and control regulations and set a reasonable flight altitude or safety distance to ensure no interference with other individuals, groups, or organizations.

■ A-weighted sound power level

The EVO Lite Enterprise Series multi-rotor drone has undergone sound power testing by relevant qualified third-party testing agencies, and the results comply with the regulations of the European Union regarding unmanned aerial vehicles.

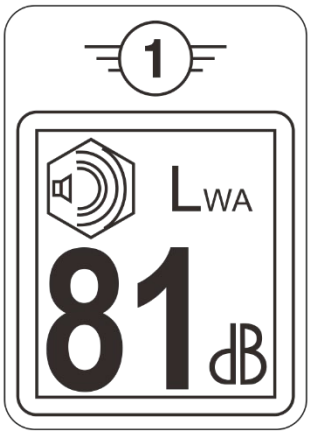


Fig 3-13 A-Weighted Sound Power Level of EVO Lite Enterprise Series multi-rotor drone

■ A-weighted sound pressure level

Measurement results for the EVO Lite Enterprise Series multi-rotor drone, in accordance with the requirements of GB 42590-2023 in China's Mainland, are provided below:

Table 3-12 Noise Measurements Results (Normalized to 1 m from the Aircraft)

Observation Points	Hover	Fly (1 m/s)
Ground Measure Point (Below)	68dB	72.1dB
Side Measure Point (Horizontal Plane)	67.3dB	66.1dB
Note: The measurement environment is an outdoor cement ground.		

Tips

- Before conducting a flight, please make sure to verify the noise restrictions in the flight area in advance to avoid violations of local regulations regarding aircraft noise.

3.11 Aircraft Communication Frequency Bands

The EVO Lite Enterprise Series multi-rotor drone is equipped with Autel SkyLink transmission technology, equipped with triple-frequency dual-transmit dual-receive capability, so that the communication distance between the aircraft and the RC can reach up to 12km.

- The system supports adaptive frequency hopping transmission across multiple frequency bands, selecting the optimal channel based on electromagnetic interference conditions and providing robust anti-interference capabilities.
- Real-time transmission quality reaches 1080p@30FPS, with a high transmission bitrate of 64Mbps and low-latency transmission characteristics.
- Data link transmission adopts AES-128 encryption method and data storage AES-256 encryption method, ensuring end-to-end data security.

Remarks

- The transmission data is based on the RC and comes from test data, and the test environment and conditions are different, and the data may be different.
- The transmission range is provided for reference only, and during actual use, it is important to monitor the quality of the video transmission signal continuously. In the case of poor video transmission signals, it is recommended to promptly reduce the flight radius. For more information, please refer to "6.3 Status Notification Bar" in Chapter 6.

Tip

- In actual use, after the aircraft and the remote controller is turned on and matched in frequency, the flight application in the remote controller will automatically determine and select the radio communication frequency band that complies with local regulations for the specific country or region based on the GNSS information received by the aircraft.
- Before flight, please ensure that the aircraft receives a strong GNSS signal after being powered on. This allows the flight application to receive the proper communication frequency band.
- When the aircraft does not obtain GNSS positioning information after being turned on (for example, the aircraft enters visual positioning mode or attitude mode right after being turned on), the radio communication frequency band between the RC and the aircraft adopts 2.4G frequency band by default; when the aircraft enters the visual positioning mode or attitude mode from GNSS mode, its communication frequency band remains the same.

■ Information of Communication Frequency Bands for Aircraft

The communication frequency bands of the aircraft comply with regulatory requirements worldwide. Please feel assured in using it. The relevant used frequency bands are listed in the table below.

Tips

- Users can choose legal image transmission frequency bands in the flight application on their own. For details, please refer to "6.5.4 Image Transmission Settings" in chapter 6.

Table 3-13 Global Frequency Bands Used (Image Transmission)

Operating Frequency	Details	Countries & Regions
2.4G	2400 – 2476MHz	■ Chinese Mainland (SRRC)
2.4G	2400 – 2483.5MHz	■ USA (FCC) ■ Canada (ISED) ■ EU (CE) ■ UK (UKCA) ■ Australia (RCM)
5.2G	5150 - 5250MHz	■ USA (FCC) ■ EU (Except Germany, CE) ■ UK (UKCA) ■ Australia (RCM)
5.2G	5170-5250MHz	■ Germany (CE)
5.8G	5725-5829MHz	■ Chinese Mainland (SRRC)
5.8G	5725 - 5850MHz	■ USA (FCC) ■ Canada (ISED) ■ EU (CE) ■ UK (UKCA) ■ Australia (RCM)

Remarks

- Some countries and regions have strict restrictions on the use of radio communication frequency bands. It is crucial to use them legally, and any modification of communication modules is strictly prohibited.
- If flying in any countries not listed in the above table, please consult the local communication management authorities to ensure that the aircraft communication frequency bands comply with local regulatory requirements.
- UAS will automatically match the legal frequency band based on GNSS positioning, so users can use it with confidence.

■ RC Devices

The aircraft supports frequency matching with the RC, enabling remote communication control of the aircraft.

Table 3-14 Supported List of Aircraft Ground Control Equipment

Control Device Information	RC
Manufacturer	Autel Robotics
Control Software	Autel Enterprise
Software Version Requirement	V1.4.220 or later
Supplementary Information	Standard configuration

Tips

- The Autel Smart Controller SE V2 is included as a standard item in the aircraft package, and Users do not have to buy it separately.
- Ensure that the control software version meets the above requirements when remotely controlling the aircraft with the mentioned devices.

Chapter 4 Remote Controller

4.1 Introduction

Autel Smart Controller SE V2 is installed with the flight application Autel Enterprise by default, allowing you to operate and set the aircraft and the gimbal camera and transmit high-definition videos from the gimbal camera in real time. It offers a maximum communication distance of 12 kilometers.

Remarks

- The maximum communication distance of the Autel Smart Controller SE V2 is measured under unblocked and interference-free conditions and is for references only.
- It supports adaptive frequency hopping transmission, selects the optimal channel according to the electromagnetic interference situation, and has strong anti-interference ability.
- The whole link data transmission between the aircraft and the remote controller adopts the AES-128 encryption method and the data storage adopts the AES-256 encryption method to ensure end-to-end data communication security.
- Before first use, please activate the RC's battery by charging.

4.1.1 Remote Controller Components

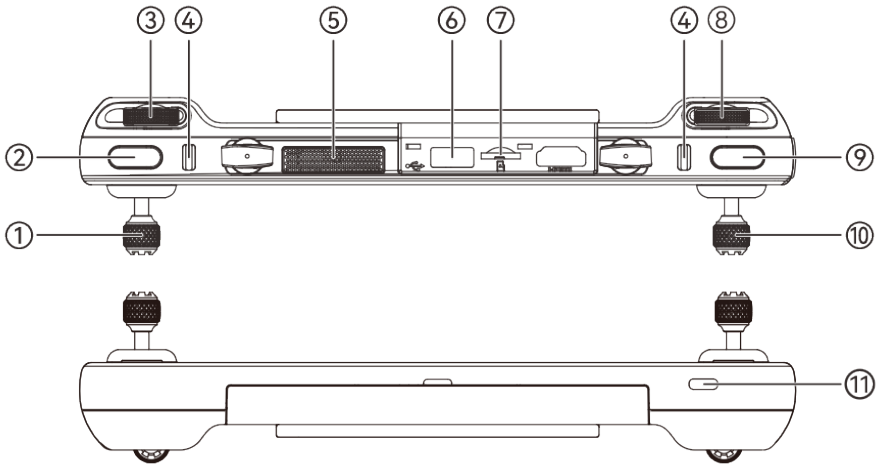


Fig 4-1 Remote Controller Top-Down View

Table 4-1 Remote Controller Top-Down View Details

No.	Name	Description
1	Left Command Stick	Controls the state of motion of the aircraft. The default stick mode is Mode 2. In this mode, you can use the stick to control the ascent, descent, and heading of the aircraft. You can set

		the stick mode in the flight application. For more information, please refer to “6.5.3 RC Settings” in Chapter 6.
2	C Button	Use the flight application to customize the key function. For more information, please refer to “6.5.3 RC Settings” in Chapter 6.
3	Left Dial Wheel	Turn the dial wheel to adjust the gimbal pitch.
4	Hook	Used to connect and fix the remote controller lanyard.
5	Air Outlet	For heat dissipation of the remote controller. When using it, please pay attention to whether there are foreign objects blocking the air outlet.
6	USB-A Interface	Connects to an expandable 4G/5G module or external USB device for data transmission.
7	Micro SD card slot	Used for storage expansion.
8	Right Dial Wheel	Turn the dial wheel to adjust the zoom factor of the camera.
9	Shotting/Video Recording Button	Press it to take photos; press and hold it to start recording/end recording; when recording, you may short press the button to take photo.
10	Right Stick	Controls the state of motion of the aircraft. The default stick mode is Mode 2. In this mode, you can use the stick to control the translation of the aircraft in four directions: front/back/left/right. You can set the stick mode in the flight application. For more information, please refer to “6.5.3 RC Settings” in Chapter 6.
11	USB-C Interface	Used for remote controller charging or device debugging.

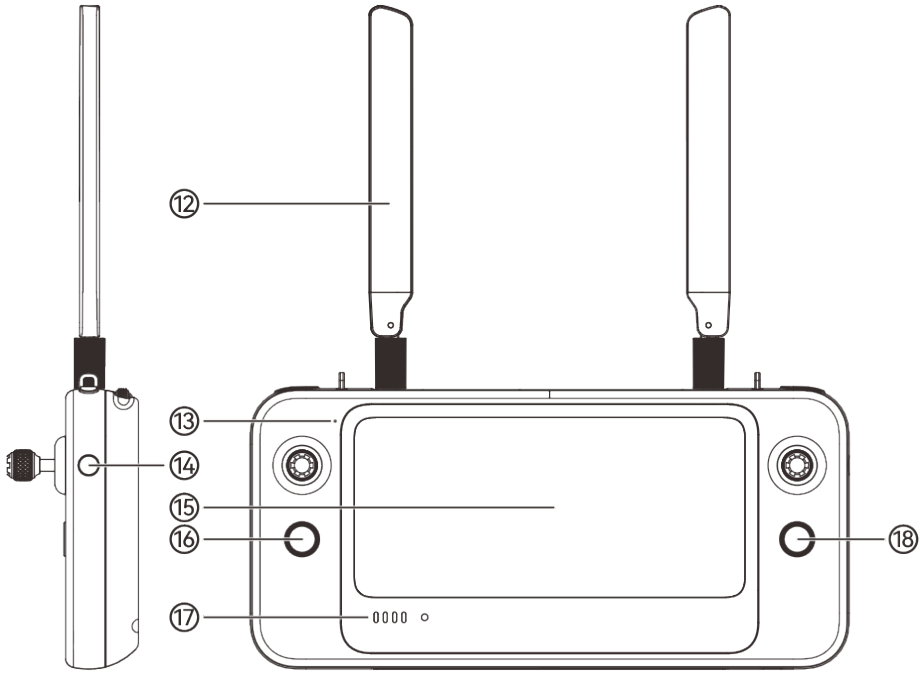


Fig 4-2 Remote Controller Front View

Table 4-2 Remote Controller Front View Details

No.	Name	Description
12	Antenna	Transmits the control signals of the remote controller and receives the image transmission information of the aircraft.
13	Audio Input	Receives information from an external audio source near the remote controller.
14	Power button	Long press for 2s to turn on/off the remote controller. When the remote controller is on, quickly press the power button to switch between Screen On and Screen Off.
15	Display	Displays real-time image transmission views. with 1440 x 720 resolution. Touch operation is supported.
16	Take-off/Return-to-Home Button	When the aircraft is turned on but not taking off, press and hold the button for 2 seconds, and the aircraft will take off and hover at an altitude of 1.2 meters above the ground. When the aircraft is flying, press and hold the button for 2 seconds, and the aircraft will automatically begin the return-to-home process. For details about operation, please refer to "4.11.2 Take-off/Return-to-Home Button and Pause Button" in this chapter.
17	Battery Level Indicator	Displays the remaining battery level of the remote controller.

18	Pause Button	When the aircraft is in autonomous flight mode, short press this button to control the aircraft to suspend autonomous flight and hover in place or resume autonomous flight; press and hold this button for 2 seconds to exit the autonomous flight.

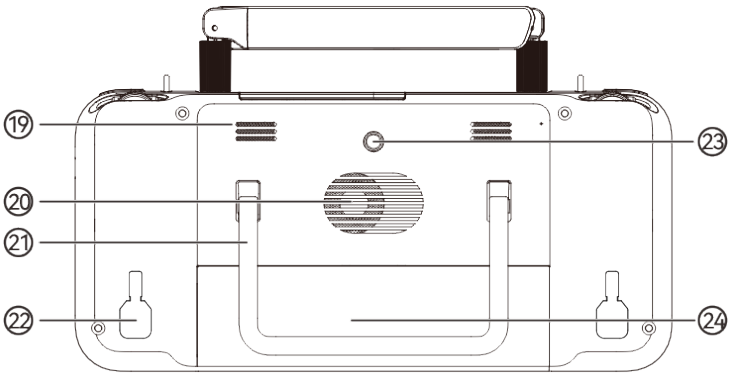


Fig 4-3 Remote Controller Rear View

Table 4-3 Remote Controller Rear View Details

No.	Name	Description
19	Speaker	Plays sound to indicate the status of the aircraft.
20	Air Inlet	Used for heat dissipation of the remote controller. Please pay attention to whether there are foreign objects blocking the air inlet when using it.
21	Foldable Handle	When unfold the handle, the remote controller can stand on the table with the support of the handle.
22	Command Stick Storage Slot	Used to store left and right sticks in the slots for transportation.
23	Standard 1/4 interface	Used for attaching tripods.
24	Removable Battery	Autel Smart Controller SE V2 adopts removable battery design, when the controller is powered off, push the battery outward to take it off.

4.1.2 Communication Frequency Bands

The image transmission frequency bands of Autel Smart Controller SE V2 comply with regulatory requirements worldwide. Please refer to the table below for the relevant used frequency bands.

Tips

- After the aircraft is paired with the remote controller, the frequency bands between them will be automatically controlled by the flight application based on the geographical information of the aircraft. This is to ensure compliance with local regulations regarding frequency bands.
- Users can also choose legal image transmission frequency bands on their own. For details, please refer to "6.5.4 Image Transmission Settings" in chapter 6.
- Before flight, please ensure that the aircraft receives a strong GNSS signal after powering on. This allows the flight application to receive the proper communication frequency band.
- When users adopt visual positioning mode (such as in scenarios without GNSS signals), the wireless communication frequency band between the aircraft and remote controller will default to the band used in the previous flight. In this case, it is advisable to power on the aircraft in an area with a strong GNSS signal, then start flight in the actual operational area.

Table 4-4 Global Frequency Bands Used (Image Transmission)

Operating Frequency	Details	Countries & Regions
900M	902 - 928MHz	■ USA (FCC) ■ Canada (ISED)
2.4G	2400 – 2476MHz	■ Chinese Mainland (SRRC)
2.4G	2400 – 2483.5MHz	■ USA (FCC) ■ Canada (ISED) ■ EU (CE) ■ UK (UKCA) ■ Australia (RCM)
5.2G	5150 - 5250MHz	■ USA (FCC) ■ EU (Except Germany, CE) ■ UK (UKCA) ■ Australia (RCM)
5.2G	5170 - 5250MHz	■ Germany (CE)
5.8G	5725 - 5829MHz	■ Chinese Mainland (SRRC)
5.8G	5725 - 5850MHz	■ USA (FCC) ■ Canada (ISED) ■ EU (CE) ■ UK (UKCA) ■ Australia (RCM)

Table 4-5 Global Frequency Bands Used (Wi-Fi)

Operating Frequency	Countries & Regions
2.4G (2400 – 2476 MHz)	■ Chinese Mainland (SRRC)
2.4G (2400 – 2483.5 MHz)	■ U.S (FCC) ■ Canada (ISED) ■ EU (CE) ■ UK (UKCA) ■ Australia (RCM)
5.8G （5725 – 5829MHz）	■ Chinese Mainland (SRRC)
5.8G (5725 – 5850 MHz)	■ U.S (FCC) ■ Canada (ISED) ■ EU (CE) ■ UK (UKCA) ■ Australia (RCM)

4.2 Installing the Remote Controller Lanyard

Tips

- The remote controller lanyard is not included in the aircraft combo. Users may need to purchase on their own. If you need one, please contact Autel Robotics.
- The remote controller lanyard is an optional accessory. You can choose whether to install it as required.
- When holding the remote controller for a long time during flight operations, we recommend that you install the remote controller lanyard to effectively reduce the pressure on your hands.

■ Steps

1. Clip the two metal clips on the lanyard to the hook at the controller.
2. Wear the lanyard around your neck, and adjust it to a suitable length.

4.3 Installing/Storing Command Sticks

The RC features removable command sticks, which effectively reduce storage space and enable easy carrying and transportation.

■ Installing command sticks

Take out the command sticks from the command stick storage slots. Then rotate them clockwise to install them separately on the remote controller.

■ Storing Command sticks

Rotate counterclockwise to remove the two command sticks and then store them in the command stick storage slots as shown below.

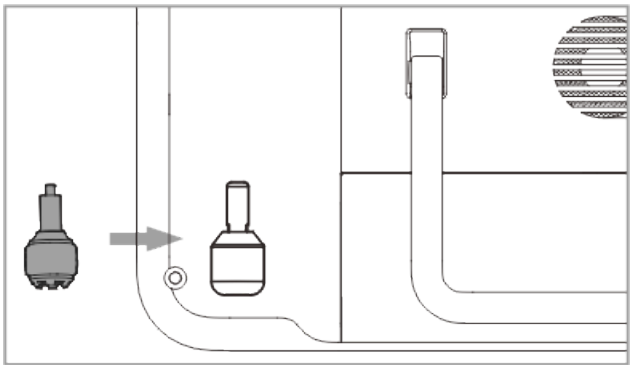


Fig 4-4 Storing command sticks

Tips
● When the command sticks are not in use (such as during transportation and temporary aircraft standby), we recommend that you remove and store them in the storage slots. This can prevent you from accidentally touching the command sticks, causing damage to the sticks or unintended startup of the aircraft. ● When storing the sticks, please make sure that they are fully stored in the slots.

4.4 Turning the Remote Controller On/Off

■ Turning the Remote Controller On

Press and hold the power button at the right side of the remote controller for 2 seconds until the controller emits a "beep" sound to turn it on.

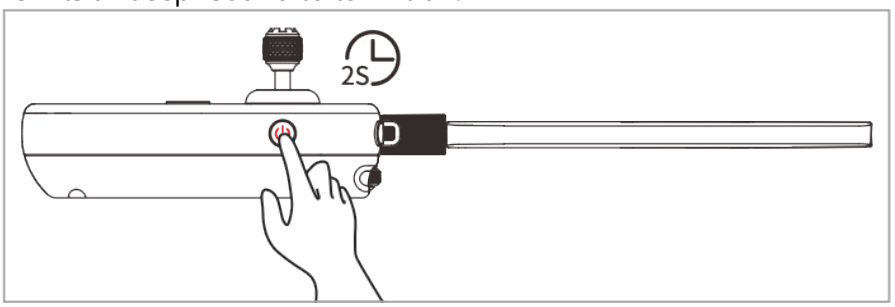


Fig 4-5 Turning the Remote Controller On

Tips
● When using a brand-new remote controller for the first time, please follow the on-screen instructions to complete the relevant setup.

■ Turning the Remote Controller Off

When the remote controller is on, press and hold the power button at the right side of the remote controller until the "Power off", ”Airplane mode”, and "Restart" icons appear at the top

of the controller's screen. Tapping the "Power off" icon will turn off the remote controller. Tapping the "Restart" icon will restart the remote controller.

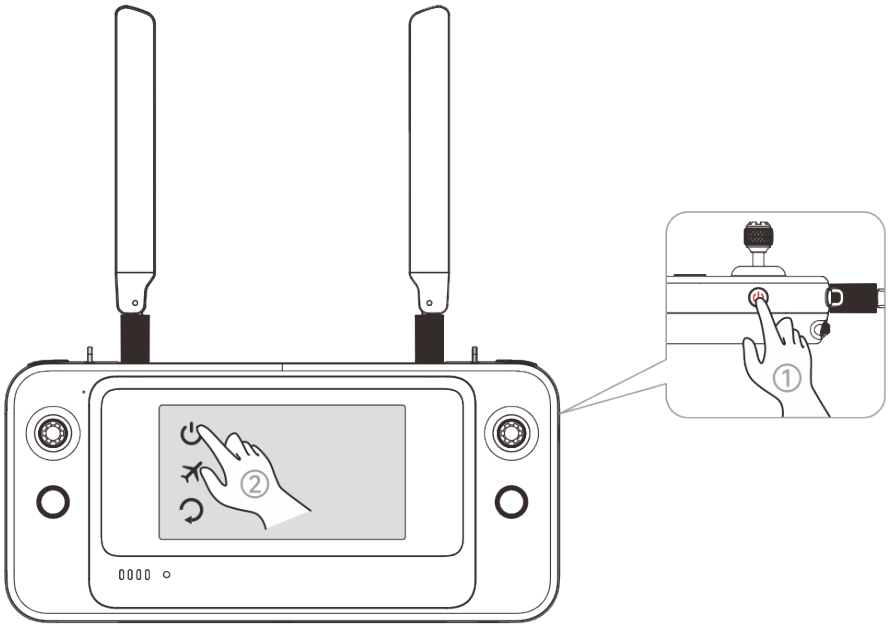


Fig 4-6 Turning the Remote Controller Off

Tips
● When the remote controller is on, you can press and hold the power button at the right of the remote controller for 6 seconds to forcibly turn it off.

4.5 Checking the Battery Level of the Remote Controller

When the remote controller is off, short press the power button of the remote controller for 1 second, and the battery level indicator will display the battery level of the remote controller.

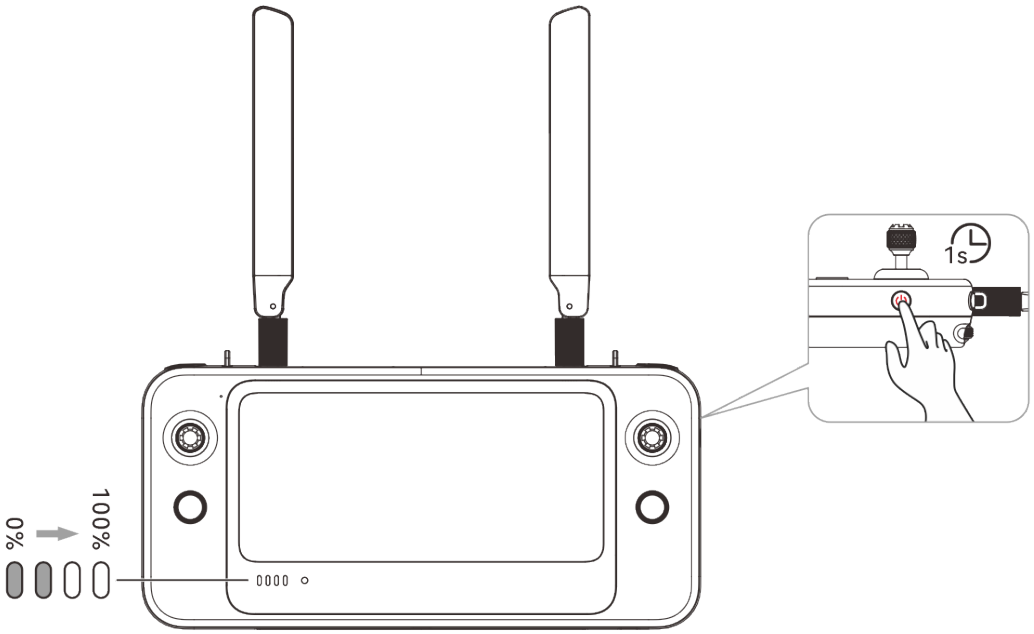


Fig 4-7 Checking the Battery Level of the Remote Controller

Table 4-6 Battery Remaining

Power Display	Definition	Power Display	Definition
	1 light always on: 0%-25% power		2 lights always on: 26%-50% power
	3 lights always on: 51%-75% power		4 lights always on: 76%-100% power

Tips

- When the remote controller is on, you can check the current battery level of the RC in the following ways:
  - Check it on the top status bar of the flight application.
  - Check it on the toolbar on the RC.
  - Go to the system settings of the RC and check the current battery level of the controller in “Battery”.

4.6 Charging the Remote Controller

Connect the USB-A output end of the official RC charger to the USB-C interface of the remote controller by using a USB-A to USB-C cable and connect the plug of the charger to an AC power supply (100-240 V~ 50/60 Hz).

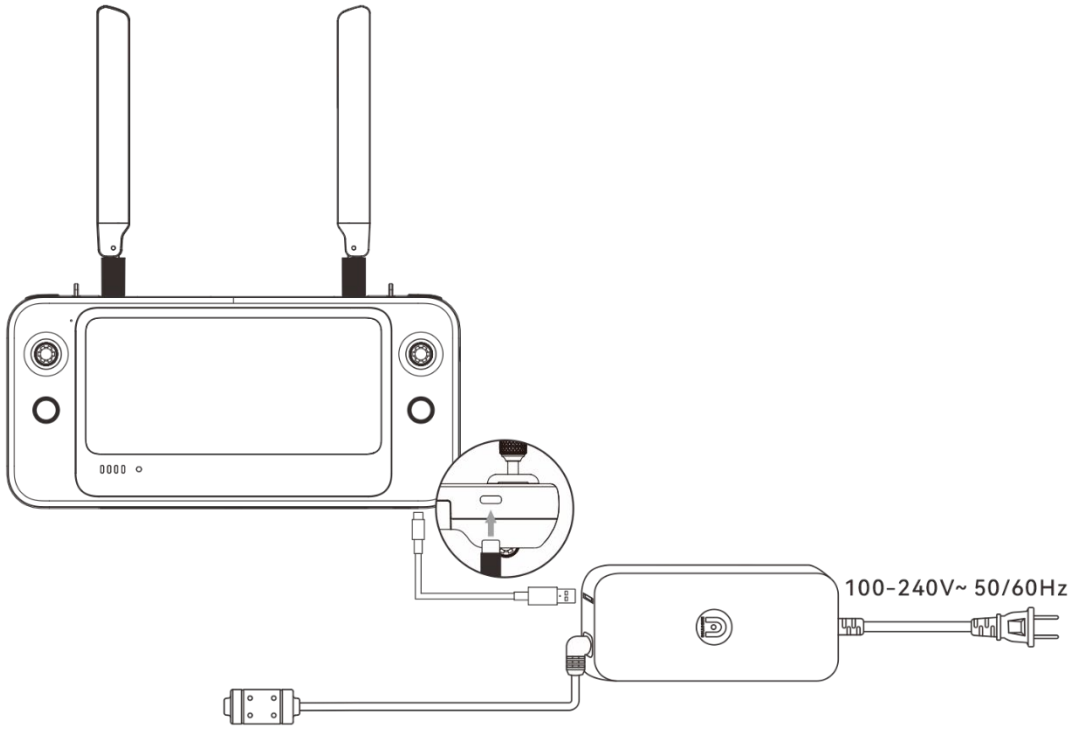


Fig 4-8 Use the RC charger to charge the remote controller

⚠ Warning

- Please use the official charger provided by Autel Robotics to charge the remote controller. Using third-party chargers may damage the battery of the remote controller.
- After charging is complete, please disconnect the remote controller from the charging device promptly.

Remarks

- It is recommended to fully charge the remote controller battery before the aircraft takes off.
- Generally, it takes about 90 minutes to fully charge the aircraft battery, but the charging time is related to the remaining battery level.

Tips

- If the remote controller is not used for a long time, please charge it every 3 months to prevent long-term low power from affecting battery life or damaging the battery.

4.7 Adjusting the Antenna Position of the Remote Controller

During flight, please extend the antenna of the remote controller and adjust it to an appropriate position. The strength of the signal received by the antenna varies depending on its position.

When the angle between the antenna and the back of the remote controller is 180° or 270°, and the plane of the antenna faces the aircraft, the signal quality between the remote controller and the aircraft can reach its best state.

Important

- When you operate the aircraft, make sure that the aircraft is in the place for the best communications.
- Do not use other communication devices of the same frequency band at the same time to prevent interference with the signals of the remote controller.
- During flight, if there is a poor image transmission signal between the aircraft and the remote controller, the remote controller will provide a prompt. Please adjust the antenna orientation according to the prompt to ensure that the aircraft is in the optimal data transmission range.
- Please ensure the RC antenna is securely tightened. If the antenna is not securely tightened, please rotate the antenna connector clockwise until it is secured.

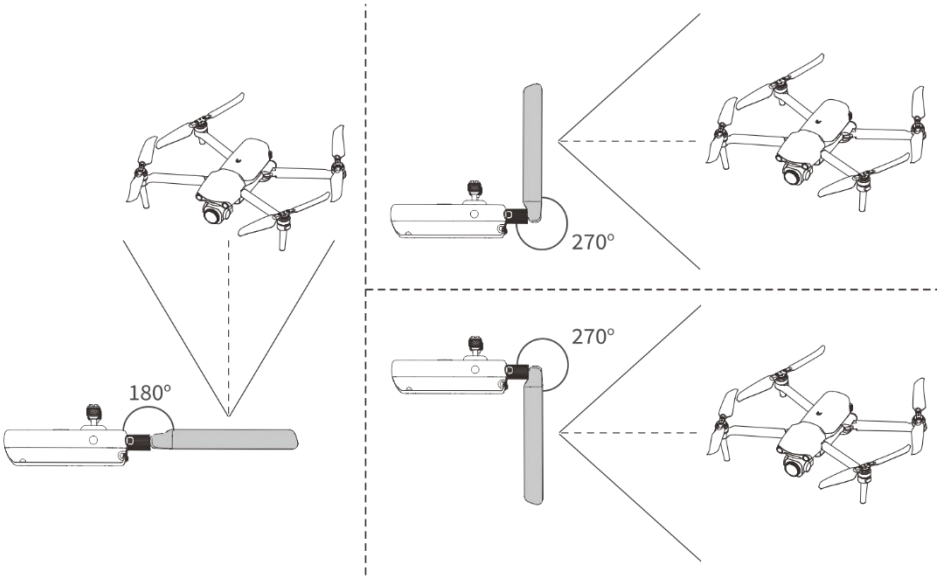


Fig 4-9 Extend the antenna

4.8 Remote Controller System Interfaces

4.8.1 Remote Controller Main Interface

After the remote controller is turned on, it enters the main interface of the flight application by default.

In the main interface of the flight application, slide down from the top of the touch screen or slide up from the bottom of the touch screen to display the system status notification bar and navigation keys, and tap the "Home" button to enter the "Remote Controller Main Interface". Swipe left and right on the "Remote Controller Main Interface" to switch between different screens, and enter other applications as needed.

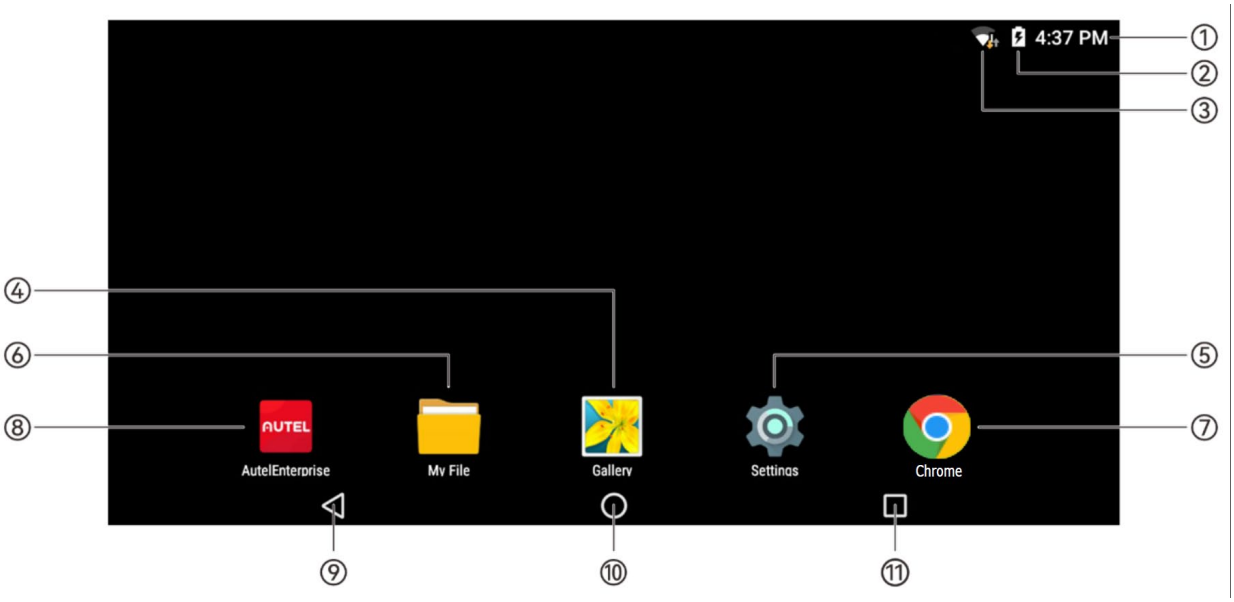


Fig 4-10 Remote Controller Main Interface

Table 4-7 Remote Controller Main Interface Details

No.	Name	Description
1	Time	Indicates the current system time.
2	Battery Status	Indicates the current battery status of the remote controller.
3	Wi-Fi Status	Indicates that Wi-Fi is currently connected. If not connected, the icon is not displayed. You can quickly turn on or off the connection to Wi-Fi by sliding down from anywhere on the "Remote Controller Interface" to enter the "Shortcut Menu".
4	Gallery	The app is installed in the system by default. Tap it to view the images saved by the current system.
5	Settings	The system settings app of the remote controller. Tap it to enter the settings function, and you can set system functions of the remote controller.
6	My File	The app is installed in the system by default. Tap it to manage the files saved in the current system.
7	Chrome Browser	The app is installed in the system by default. When the remote controller is connected to the Internet, you can use it to browse web pages and access Internet resources.
8	Autel Enterprise	Flight software. The flight application starts by default when the remote controller is turned on. For details, please refer to “Chapter 6 Flight Application”.
9	“Back” Button	Tap the button to return to the previous page.

10	“Home” Button	Tap the button to jump to the "Remote Controller Main Interface".
11	“Recent apps” Button	Tap the button to view all background programs currently running. Press and hold the application to be closed and slide it left or right to close the application.

Table 4-8 List of Pre-installed Apps on the Remote Controller

No.	Pre-installed App	Device Compatibility	Software Version	Operating System Version
1	My File	√	0.1.5	Android 6.0.1
2	Gallery	√	1.1.40030	Android 6.0.1
3	Autel Enterprise	√	V1.4.220	Android 6.0.1
4	Chrome	√	80.0.3987.162	Android 6.0.1
5	Settings	√	6.0.1	Android 6.0.1

Tips

- Please be aware that the factory version of the flight application may vary depending on subsequent function upgrades.

4.8.2 Shortcut Menu

Slide down from anywhere on the "Remote Controller Interface", or slide down from the top of the screen in any app to display the “Shortcut Menu”.
In the "Shortcut Menu", you can quickly set WLAN, Bluetooth, airplane mode, cast and screen brightness.

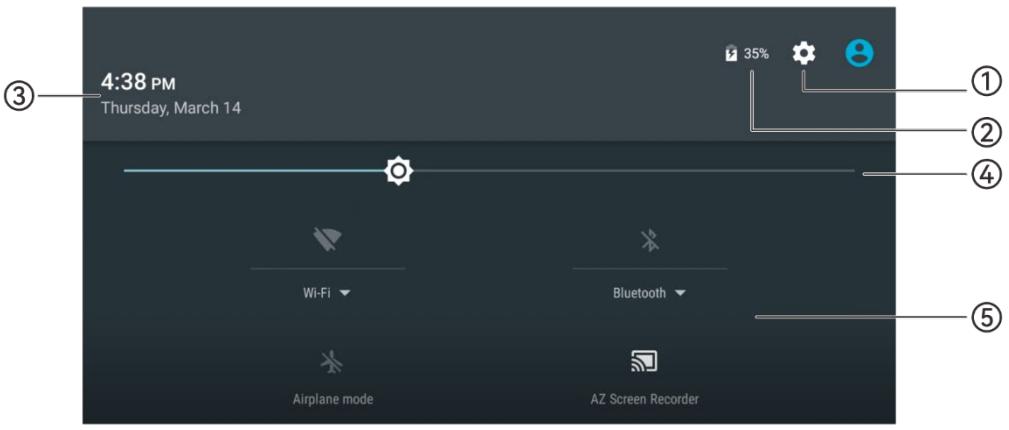


Fig 4-11 Shortcut Menu

Table 4-9 Shortcut Menu Details

No.	Name	Description
1	Setting	Tap to enter the system setting.
2	Battery Status	View the battery status of the current aircraft.
3	Time and Date	View the current system time and date.
4	Screen Brightness Adjustment	Drag the slider to adjust the screen brightness.
5	Wi-Fi	Tap the icon to enable or disable the Wi-Fi function. Tap the pull-down button to enter the Wi-Fi setting interface and select the wireless network to be connected.
	Bluetooth	Tap the icon to enable or disable the Bluetooth function. Tap the pull-down button to enter the Bluetooth setting interface and select the Bluetooth to be connected.
	Airplane Mode	Tap the icon to turn on or off the airplane mode, that is, to turn on or turn off the Wi-Fi and Bluetooth functions at the same time.
	Cast	When connecting Wi-Fi, tap the icon to enter the cast interface where you can project the image of the remote controller to other display devices which are using the same network.

4.9 Frequency Matching With the Remote Controller

4.9.1 Using the Flight Application

Only after the remote controller and the aircraft are paired can you operate the aircraft using the remote controller. The procedures are as follows:

1. Turn on the remote controller and the aircraft.
2. After entering the main interface of the flight application, tap "⊞" at the upper-right corner, tap "⚙", select "🤖" and then tap "Connect to aircraft".
3. After a prompt is displayed, double-click the aircraft power button to complete the matching with the remote controller.
4. After the frequency matching is successful, the image transmission interface of the aircraft's gimbal will be displayed in the flight application.

Remarks

- The aircraft included in the aircraft combo is paired with the remote controller provided in the combo at the factory. No matching is required after the aircraft is powered on.

Normally, after completing the aircraft registration and activation process, you can directly use the remote controller to operate the aircraft.
- When the remote controller is in matching state, the power indicator will also flash quickly at the same time.
- If the aircraft and the remote controller become unmatched due to other reasons, please follow the above steps to pair the aircraft with the remote controller again.

Important

- When matching, please keep the remote controller and the aircraft close together, at most 50 cm apart.

4.9.2 Using Combination Buttons (For Forced Frequency Matching)

If the remote controller is turned off, you can perform forced frequency matching. The process is as follows:
1. Press and hold the power button and the take-off/return-to-home button of the remote controller at the same time until the battery level indicator of the remote controller flashes quickly, which indicates that the remote controller has entered the forced frequency matching state.
2. Make sure that the aircraft is turned on. Double click the power button of the aircraft and the front and rear arm green lights of the aircraft will flash quickly.
3. When the rear arm lights of the aircraft and the battery level indicator of the remote controller stop flashing, it indicates that the frequency matching is successfully done.

4.10 Selecting Stick Mode

4.10.1 Stick Modes

When using the remote controller to operate the aircraft, you need to know the current stick mode of the remote controller and fly with caution.
Three stick modes are available, that is, Mode 1, Mode 2 (default), and Mode 3.

■ **Mode 1**

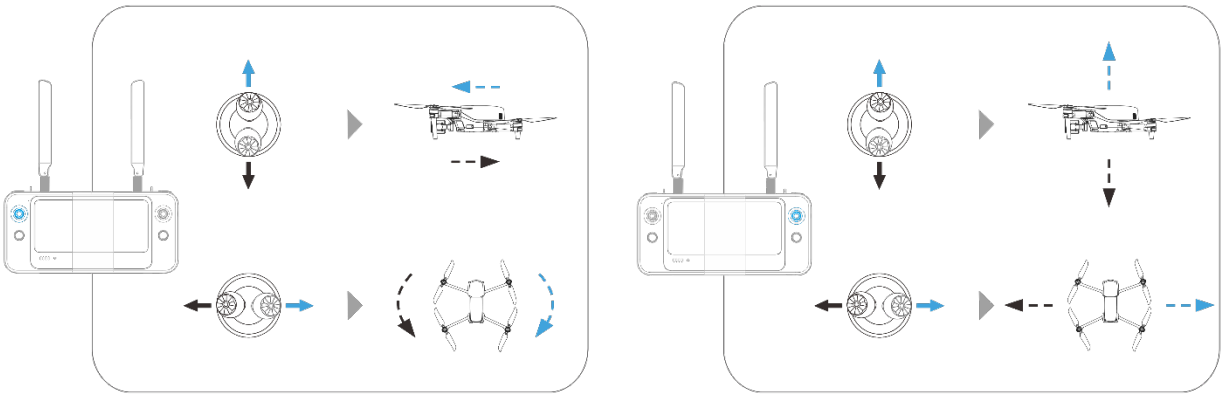


Fig 4-12 Mode 1

Table 4-10 Mode 1 Details

Stick	Move Up/Down	Move Left/Right
Left Command Stick	Controls the forward and backward movement of the aircraft	Controls the heading of the aircraft
Right Command Stick	Controls the ascent and descent of the aircraft	Controls the left or right movement of the aircraft

■ Mode 2

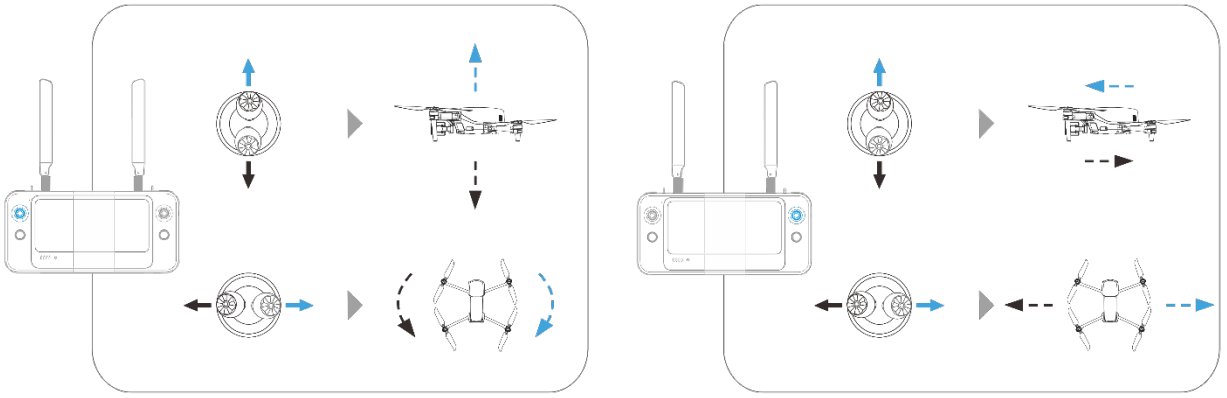


Fig 4-13 Mode 2

Table 4-11 Mode 2 Details

Stick	Move Up/Down	Move Left/Right
Left Command Stick	Controls the ascent and descent of the aircraft	Controls the heading of the aircraft
Right Command Stick	Controls the forward and backward movement of the aircraft	Controls the left or right movement of the aircraft

■ **Mode 3**

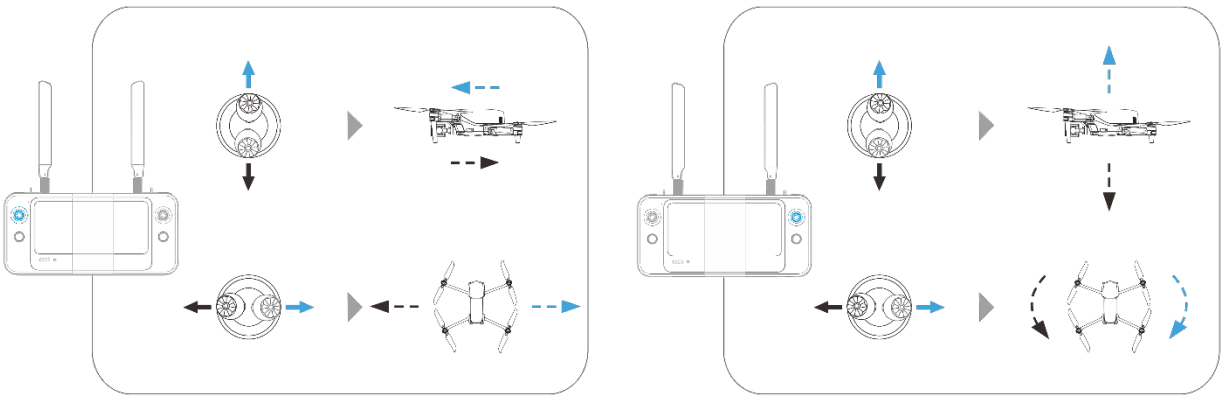


Fig 4-14 Mode 3

Table 4-12 Mode 3 Details

Stick	Move Up/Down	Move Left/Right
Left Command Stick	Controls the forward and backward movement of the aircraft	Controls the left or right movement of the aircraft
Right Command Stick	Controls the ascent and descent of the aircraft	Controls the heading of the aircraft

⚠ Warning

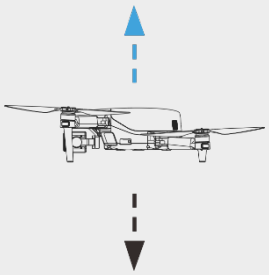
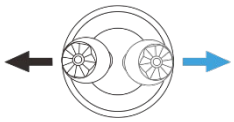
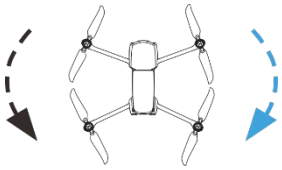
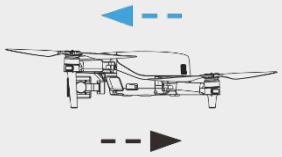
- Do not hand over the remote controller to persons who have not learned how to use the remote controller.
- If you are operating the aircraft for the first time, please keep the force gentle when moving the command sticks until you are familiar with the operation.
- The flight speed of the aircraft is proportional to the degree of the command stick movement. When there are people or obstacles near the aircraft, please do not move the stick excessively.

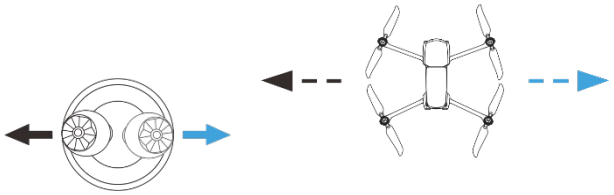
4.10.2 Setting Stick Mode

The default stick mode of the remote controller is "Mode 2". Its detailed responses are as follows. For operation responses of other stick mode, you can also refer to the following description.

Table 4-13 Default Control Mode (Mode 2)

Mode 2	Aircraft Flight Status	Control Method

Left Command Stick Move Up or Down 		1. The up-and-down direction of the left stick is the throttle stick, which is used to control the vertical lift of the aircraft. 2. Push the stick up, and the aircraft will rise vertically; pull the stick down, and the aircraft will descend vertically. 3. When the stick is returned to the center, the altitude of the aircraft remains unchanged. 4. When the aircraft takes off, please push the stick up to above the center, and the aircraft can lift off the ground.
Left Command Stick Move Left or Right 		1. The left-and-right direction of the left stick is the yaw stick, which is used to control the heading of the aircraft. 2. Push the stick to the left, and the aircraft will rotate counterclockwise; push the stick to the right, and the aircraft will rotate clockwise. 3. When the stick is returned to the center, the rotational angular velocity of the aircraft is zero, and the aircraft does not rotate at this time. 4. The larger the degree of the stick movement, the greater the rotational angular velocity of the aircraft.
Right Command Stick Move Up or Down 		1. The up-and-down direction of the right stick is the pitch stick, which is used to control the flight of the aircraft in the forward and backward directions. 2. Push the stick up, and the aircraft will tilt forward and fly towards the front of the nose; pull the stick down, and the aircraft will tilt backward and fly towards the tail of the aircraft. 3. When the stick is returned to the center, the aircraft remains horizontal in the forward and backward directions. 4. The larger the degree of the stick movement, the faster the flight speed of the aircraft, and the larger the tilt angle of the aircraft.
Right Command Stick		1. The left-and-right direction of the right stick is the roll stick, which is used to

Move Left or Right	

control the flight of the aircraft in the left and right directions.

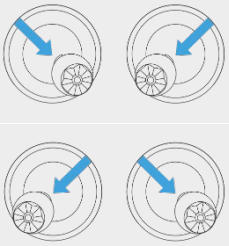
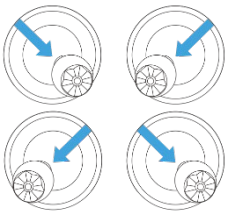
2. Push the stick to the left, and the aircraft will tilt to the left and fly to the left of the nose; pull the stick to the right, and the aircraft will tilt to the right and fly to the right of the nose.
3. When the stick is returned to the center, the aircraft remains horizontal in the left and -right directions.
4. The larger the degree of the stick movement, the faster the flight speed of the aircraft, and the larger the tilt angle of the aircraft.

Remarks

- When controlling the aircraft for landing, pull the throttle stick down to its lowest position. In this case, the aircraft will descend to an altitude of 1.2 meter above the ground, and then it will perform an assisted landing and automatically descend slowly.

4.10.3 Starting/Stopping the Aircraft Power Motor

Table 4-14 Start/Stop the Aircraft Power Motor

Process	Stick Operation	Description
Start the aircraft motor when the aircraft is powered on		After the aircraft is powered on and completes self-check, then simultaneously move the left and right sticks inward or outward for 2 seconds, as shown in the figure, to start the aircraft motor.
Stop the aircraft motor		When the aircraft does not take off but its motor starts, simultaneously move down the left and right sticks inward or outward for 2 seconds, as shown in the figure, to turn off the aircraft motor.
		After the aircraft lands, pull the throttle stick down to its lowest position, as shown in the figure, until the motor stops.

⚠ Warning

- When taking off and landing the aircraft, stay away from people, vehicles, and other moving objects.
- The aircraft will initiate a forced landing in case of sensor anomalies or critically low battery levels.

4.11 Remote Controller Buttons

4.11.1 Custom Button C

You can customize the functions of the C custom button according to your preferences. For detailed setting instructions, please refer to "6.5.3 RC Settings" in Chapter 6.

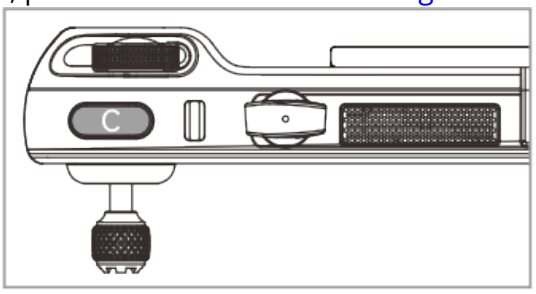


Fig 4-15 Custom Button C

Table 4-15 C Customizable Settings

No.	Function	Description
1	Visual Obstacle Avoidance On/Off	Press to trigger: turn on/off the visual sensing system. When this function is enabled, the aircraft will automatically hover when it detects obstacles in the visual sensing system.
2	Gimbal Pitch Recenter/45°/Down	Press to trigger: Switch the gimbal angle. ➢ Gimbal Pitch Recenter: The gimbal pitch angle returns to a 0° direction from the current angle. ➢ Gimbal Pitch 45°: The gimbal pitch angle rotates to a 45° direction from the current angle. ➢ Gimbal Pitch Down: The gimbal pitch angle rotates to a 90° direction from the current angle.
3	Map/Image Transmission	Press to trigger: Switch between map/image transmission interface.
4	Speed Mode	Press to trigger: Switch speed mode of the aircraft. For details, please refer to "3.8.2 Flight modes" in chapter 3.

⚠ Warning

- When the speed mode of the aircraft is switched to “Ludicrous”, the visual obstacle avoidance system will be turned off.

4.11.2 Take-off/Return-to-Home Button and Pause Button

⚠ Warning

- The auto-return function will only be enabled when the GNSS signal is good. If the obstacle avoidance system is disabled during a return flight, the aircraft will not be able to automatically avoid obstacles.
- Before using the auto-return function, you need to set the home point in advance in the flight application. For details, please refer to “6.5.1 Flight Control Parameter Setting” in chapter 6. If the home point is not set, the aircraft will take the take-off point as the home point by default.

To manually activate the auto-return function, press and hold the take-off/return-to-home button “” on the remote controller for 2 seconds until the remote controller emits a "beep" sound. Upon receiving the command, the aircraft will automatically return and land at the preset home point.
When the aircraft is in the auto-return state, the remote controller will be disabled. You can short press the pause button “” until the remote controller emits a "beep" sound to pause the auto-return, or long press the pause button “” for 2 seconds until the remote controller emits a "beep" sound to exit the auto-return. After pausing or exiting the auto-return, you can reactivate the remote controller for controlling the aircraft.

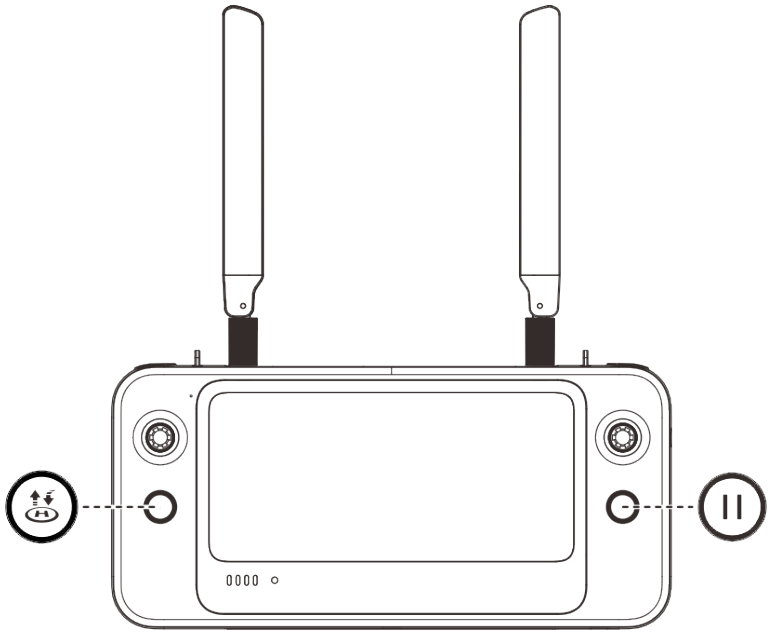


Fig 4-16 Take-off/Return-to-Home Button and Pause Button

Tips

- When the aircraft pauses an auto-return, it will hover in place. To resume the auto-return, press the pause button “⏸” again until the remote controller emits a "beep" sound.

⚠ Warning

- If the auto-return home point is not suitable for the aircraft to land (such as uneven ground and crowds), please exit the auto-return before the aircraft reaches the home point, and then manually resume control to land.

4.12 Turning On/Off the Remote Controller Prompt Sound

In some scenarios, the remote controller will send a prompt sound, such as button-triggering sound and voice broadcast.

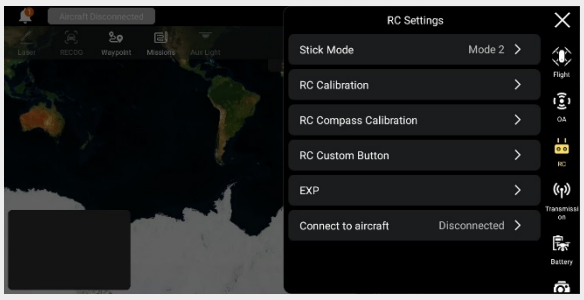
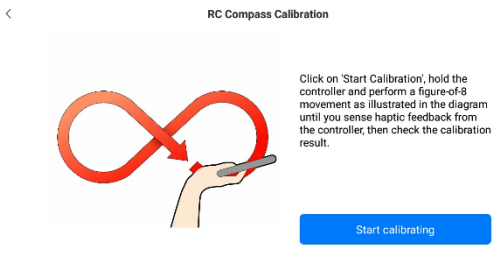
Tips

- You can access the system settings app from the main interface of the remote controller, and then drag the volume slider in “Sound & Notification” to adjust the media volume and right volume separately.

4.13 Calibrating the Remote Controller Compass

If the flight application prompts an alert “The RC compass need to be calibrated”, please calibrate it, as shown below.

Table 4-16 Calibrating the RC Compass

Step	Operation	Diagram
1	Turn on the remote controller. After entering the main interface of the flight application, tap “⊞” at the upper-right corner, tap “⚙“ and select "🤖", and then tap "RC Compass Calibration". Then enter the RC compass calibration interface.	
2	Tap “Start calibration” button, hold the controller, perform a figure-of-8 movement as illustrated in the diagram until you sense haptic feedback from the controller, then check the calibration result.	

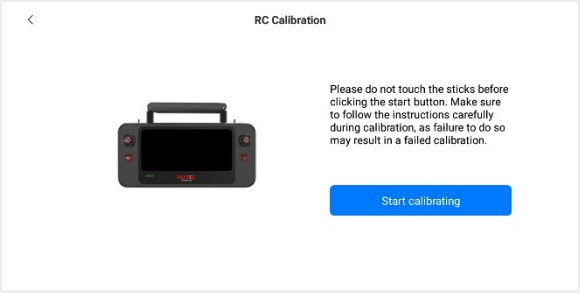
Important

- Please calibrate the RC compass in the wide out-door area.
- During calibration, stay away from areas with strong magnetic fields or large pieces of metal, such as magnetite mines, parking lots, buildings with underground reinforcement bars, underground or overhead power transmission lines, etc.
- Do not carry ferromagnetic or metallic objects with you during calibration, such as mobile phones, watches, etc.
- During the calibration process, stay away from electrified objects.

4.14 Calibrating the Remoter Controller

If there is abnormal situation in using the RC, it is recommended to calibrate it as shown below.

Table 4-17 Calibrating the RC

Step	Operation	Diagram
1	Turn on the remote controller. After entering the main interface of the flight application, tap "" at the upper-right corner, tap "" and select "", and then tap "RC Calibration". Then follow the on-screen instruction to calibrate the RC.	
2	Dial wheel and stick calibration: follow the RC calibration instruction and turn the wheels and pull the sticks in directions as shown in the diagram and hold them for 1 second, then you will hear a beep, and at the same time the calibration direction icon will turn dark blue from grey, which means the calibration at this direction is successful.	

Calibration directions have no order. Until calibration of all directions is completed, the RC calibration is completed.

Chapter 5 Smart Battery

5.1 Battery Introduction

The aircraft comes standard with the MDXM_6175_1113 smart battery (hereafter referred to as smart battery) as the power battery. This battery is a rechargeable lithium-ion polymer (LiPo) battery and features high energy density and capacity. The smart battery can be charged with an MaxAd_3SA battery charger (model: AQ661-12755000D).

Remarks
● The battery charger is included as part of the aircraft combo. You do not need to purchase it separately.

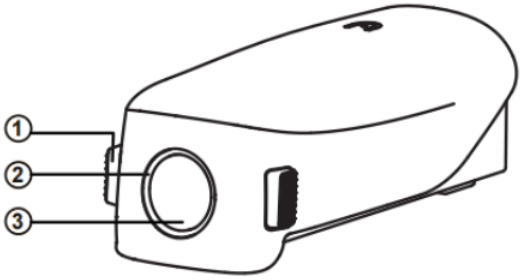


Fig 5-1 Battery Appearance

Table 5-1 Battery Appearance Details

No.	Name	Description
1	Unlock Button	To remove the battery from the aircraft. Press and hold the unlock buttons on both sides and pull out the battery.
2	Battery Level Indicator	Used to display the current battery level of the smart battery in normal situations.
3	Power Button	Long press the power button for 3s to turn on or turn off the battery.

5.2 Smart Battery Functions

The smart battery has the following functions:

■ Battery Level Display

The smart battery has a built-in battery level indicator, which shows the current battery level of the smart battery.

■ Communication

The aircraft can obtain real-time battery information, such as voltage, current, battery level, and battery temperature, through the communication interface on the smart battery.

■ Power Saving Mode

The smart battery will automatically shut down after 30 minutes of inactivity to reduce power consumption.

■ Dust and water resistance

After correctly installing the smart battery to the aircraft, the battery complies with IP43 protection level.

■ Ultra-low Power Mode

When the smart battery power is below 8%, the battery will enter the ultra-low power mode to reduce self-consumption. When entering ultra-low power mode, it needs to be activated by a charger before it can continue to use normally.

■ Self-discharge Protection

If the smart battery is stored in a high-temperature environment or not used for 6 days with a high battery level, the self-discharge protection will be activated. The smart battery will automatically discharge to a safe battery level and the discharge process takes 2-3 days.

Tips

- Although the battery has no indication of a self-discharge cycle, you may notice that the battery is slightly warm, which is normal.

■ Sleep Mode Protection

If the smart battery has a low battery level, it will automatically enter sleep mode to prevent over-discharge. In this mode, the smart battery does not respond when the power button is pressed. To wake up the battery, you can connect it to a battery charger.

■ Charge Temperature Protection

The smart battery will stop charging when its temperature is lower than 5°C (41°F) or higher than 45°C (113°F) during charging, as charging the battery under such temperatures will damage the battery.

■ Overcurrent Protection

The smart battery will stop charging when the charging current is too large, as charging the battery with a high current can severely damage the battery.

■ Overcharge Protection

Charging will stop automatically when the smart battery is fully charged, as overcharging can severely damage the battery.

■ Balance Protection

The voltage of each battery cell in the smart battery is automatically kept balanced to protect the battery and maximize the performance of the battery.

■ Short Circuit Protection

Once a short circuit is detected, the power supply of the smart battery will be cut off to protect the battery.

⚠ Warning

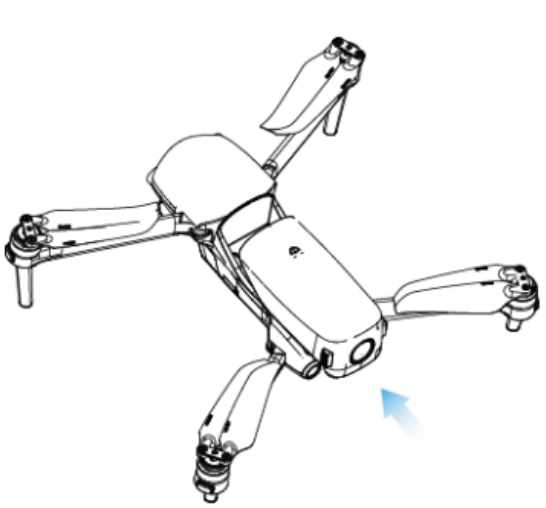
- Before using the smart battery, please carefully read and strictly follow the requirements in this Manual, “Battery Safety Operation Guidelines”, and “Disclaimer and Safety Guidelines”, and those on the battery's surface sticker. The user shall undertake all consequences if he/she fails to follow the usage requirements.

5.3 Smart Battery Usage

- Please use a smart battery within the appropriate temperature range (-10℃ ~ +40℃). Using it in too high or low temperatures will affect the battery’s safety and lifespan and may cause spontaneous battery combustion or permanent damage to the battery.
- Do not use the aircraft in a strong electrostatic (such as thunderstorms) or electromagnetic environment. Otherwise, some functions of the smart battery may fail (e.g., abnormal battery output and power failure), resulting in serious aircraft malfunctions.
- Do not use a smart battery that has ever been dropped from the aircraft or subjected to external impacts.
- Do not use a water-soaked smart battery or immerse a smart battery in water or other liquids. Water contact inside the battery may cause corrosion, resulting in spontaneous battery combustion and even an explosion.
- Do not use a smart battery that emits smoke, is bulged, leaks liquids, or has a damaged appearance.
- The liquid inside the smart battery is corrosive. If it leaks, please keep away from it. If it accidentally contacts your skin or eyes, rinse immediately with clean water for at least 15 minutes and seek medical attention.
- Do not disassemble, puncture, strike, crush, or burn a smart battery in any way. Otherwise, it may lead to battery combustion or even explosion.
- Do not short-circuit the positive and negative terminals of a smart battery.
- If the battery connector of a smart battery is dirty, use a dry cloth to clean it. Otherwise, it may cause poor contact, leading to energy loss or charging failure.
- Before replacing the smart battery of the aircraft, make sure that the battery connector, battery compartment interface, battery surface, and battery compartment surface are dry and free of water, and then insert the battery into the aircraft.
- When the smart battery is in a low temperature range below 10°C, the battery can be inserted into the aircraft to preheat it. When the battery is fully preheated before taking off, it is best to preheat it to above 20°C.
- In low-temperature environments, due to the limitation of smart battery output power, the aircraft's wind resistance will be reduced and its flight performance will be weakened. Please proceed with caution.
- When using the battery in a low-temperature environment, be sure to ensure that the smart battery is fully charged. The battery's discharge capacity will be reduced when operating in low temperature environments. Please insert the battery in the aircraft for pre-heating and when the battery is fully pre-heated before the aircraft takes off, it is recommended and great to pre-heat the battery to more than 20℃.

5.3.1 Installing/Removing the smart battery

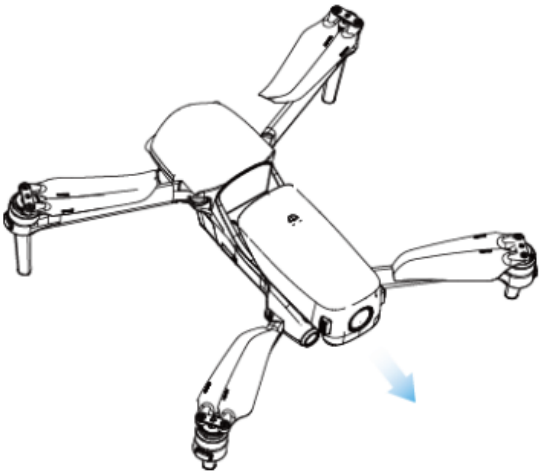
Table 5-2 Install the Smart Battery

Step	Operation	Diagram
1	Turn off the smart battery before installing the battery.	
2	Slowly insert the smart battery into the battery compartment on the aircraft fuselage, and you will hear a clicking sound when the battery is in place.	

⚠ Warning

- If the smart battery is not installed properly, it may cause the battery to fall off during the flight, damage the aircraft, or even cause personal injury.
- Before installing the smart battery on the aircraft, make sure that the battery is turned off.

Table 5-3 Remove the Smart Battery

Step	Operation	Diagram
1	Turn off the smart battery before removing the battery.	
2	Press and hold the unlock buttons on both sides of the smart battery and slowly pull out the battery.	

Important

- The unlock button of the smart batteries are consumable parts. Please do not press them hard to avoid any possible damage to the internal structure of the battery.

5.3.2 Turning on/off the smart battery

■ Turning on the smart battery

When the smart battery is turned off, press and hold the power button for 3 seconds to turn on the battery.

■ Turning off the smart battery

When the smart battery is turned on, press and hold the power button for 3 seconds to turn off the battery.

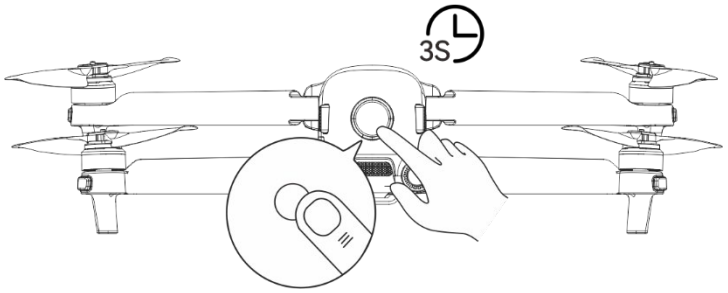


Fig 5-2 Turn On or Off the Smart Battery

Important

- If the smart battery is not installed in the aircraft, it is not recommended to turn on/off the battery, and attention should be paid to insulation protection at the battery connector.
- Before removing the smart battery from the aircraft, turn off the battery. The LED1 and LED4 battery level indicators on the smart battery will blink 5 times to indicate that the aircraft is shutting down. Remove the smart battery from the aircraft after all battery level indicators are off.

5.3.3 Checking the battery level

When the smart battery is off, short press the battery power button for 1 second to check the current battery level through the battery level indicator status.

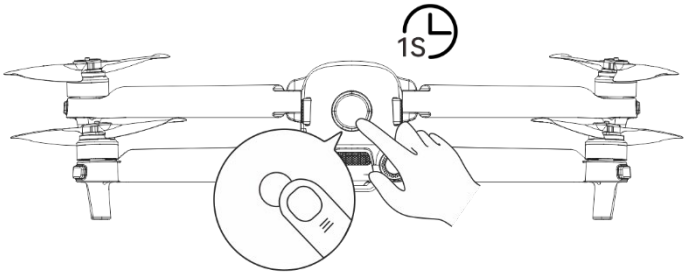


Fig 5-3 Checking Battery Level

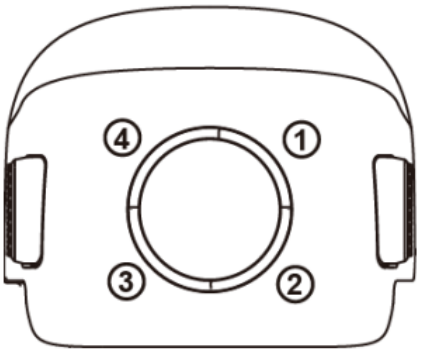
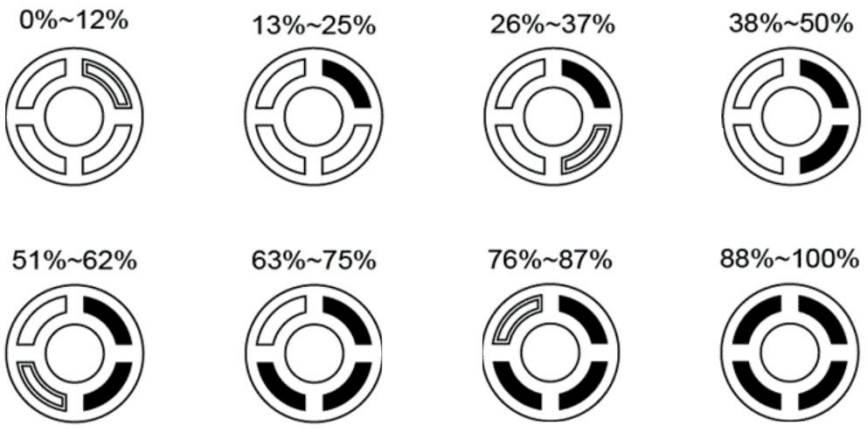


Fig 5-4 Distribution of Battery Level Indicator

Table 5-4 Battery Level Indicator Status (While Not Charging)



■: Green light is always on ◎: Green light blinking □: Off

Tips

- After the aircraft is connected to the RC, you can check the current smart battery level of the aircraft in the top status bar and "Aircraft Battery" interface of the flight application. For more information, please refer to "6.3 Status Notification Bar" and "6.5.5 Aircraft Battery" in Chapter 6.

5.3.4 Charging the smart battery

Connect the charging interface of the official battery charger to the notch of the metal electrode of the smart battery, and connect the plug to the AC power supply (100-240 V~ 50/60 Hz).

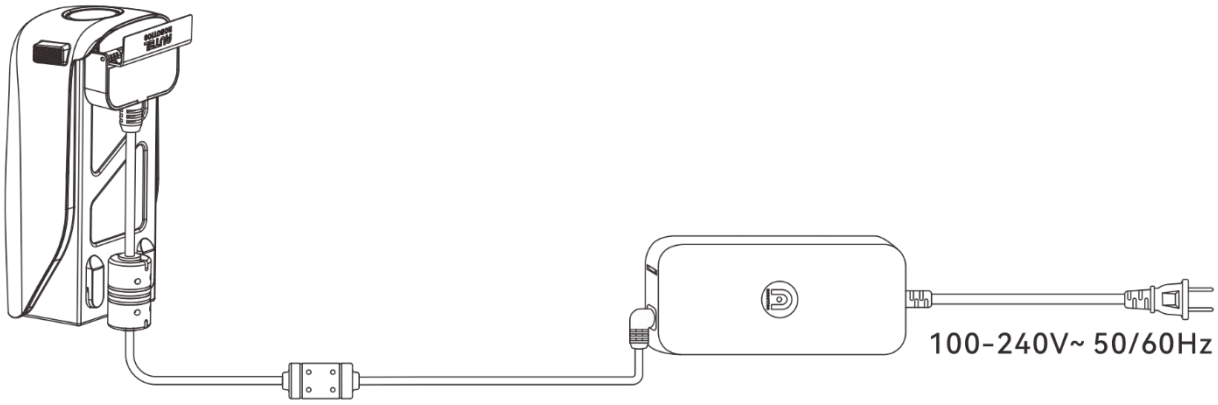


Fig 5-5 Use the Battery Charger to Charge the Smart Battery

Table 5-5 Battery Level Indicator Status (While Charging)

0%~25%	26%~50%	51%~75%	76%~100%
			

: Green light is always on : Green light blinking

⚠ Warning

- Do not charge a battery that emits smoke, is bulged, leaks liquids, or has a damaged appearance.
- Do not use damaged charging devices to charge the smart battery.
- Modifying the official smart battery or charging device provided by Autel Robotics is prohibited.
- Only use the battery and charging device provided by Autel Robotics. Autel Robotics is not responsible for any consequences, such as battery accidents and flight failure, caused by the use of third-party batteries or charging devices.
- Keep the smart battery away from flammable and explosive items during charging.
- After the smart battery is fully charged, disconnect the connection between the charger and the smart battery and power supply promptly.
- After flight, it is recommended to wait until the smart battery naturally cools down to an appropriate temperature before charging the battery. If the temperature of the smart battery is higher than 45°C, when the battery is connected to the charging device, the battery temperature protection function will be activated, and the battery cannot be charged until its temperature drops below 40°C.

Remarks

- It is recommended to fully charge the smart battery of the aircraft before the aircraft takes off. When the battery is fully charged, the battery level Indicator will turn off.
- Generally, it takes about 90 minutes to fully charge the smart battery of the aircraft, but the charging time is related to the remaining battery level.

Table 5-6 Other Battery Indicator Warning Instructions

LED1	LED2	LED3	LED4	Warning Description
○	◎	○	○	The temperature is too high or too low for charging.
○	○	◎	○	The charging current is too high, which causes a short circuit.
○	○	○	◎	A circuit overcurrent, a circuit overload, or a short circuit occurs during battery discharge.

◎: Indicator light blinking ○: Off

5.4 Storing and Transporting the Smart Battery

When storing the smart battery, keep the battery away from water or heat sources and store it in a dry, well-ventilated environment at room temperature.
Ideal storage conditions: The battery level is at around 60%, the ambient temperature is between 22°C to 28°C, and the ambient humidity is 65%±20% RH.
The energy of the MDXM_6175_1113 smart battery is 68.7 Wh (capacity is 6175 mAh). Please refer to local lithium battery transportation policies for battery shipping or carrying.

⚠ Warning

- Before storing or transporting the smart battery, please turn off the battery.
- Store the smart battery out of the reach of children and pets.
- Store the smart battery away from direct sunlight, water, or reactive chemicals.
- Do not expose the smart battery to open flame, explosives, or other hazards.
- Do not store the smart battery in extreme temperatures. Otherwise, the lifespan of the battery may be shortened and the battery may even become damaged or ineffective. If the battery is not used for more than 1 day, it should be stored in environment at-20℃ to 35°C.
- Do not place the smart battery in a microwave or pressure cooker.
- Do not place the smart battery directly on conductive surfaces (such as metal shells or panels).
- Do not place heavy objects on the smart battery. When subject to an external force, the battery may be damaged or even catch fire or explode.
- Do not store or transport the smart battery with sharp objects, watches, metal necklaces, earrings, or other metal items.

- Do not transport batteries that have a damaged appearance or a battery level of more than 30%.
- If the smart battery is left idle for a long time, please charge it every 3 months to avoid a shortened battery lifespan resulting from long-term low battery levels.

5.5 Maintaining and Handling the Smart Battery

5.5.1 Maintaining the smart battery

In order to maintain the activity of the smart battery of the aircraft, it is recommended to perform battery maintenance if any of the following conditions are met:

- It is recommended to perform battery maintenance for the smart battery every 50 times of battery cycle.
- The idle time of the smart battery reaches 3 months.
- Occasionally, there are situations that affect the lifespan of the smart battery. In this case, you can try maintenance and repair.
- The flight application reminds you when the smart battery needs maintenance.

The following battery maintenance check items are available for the smart battery:

1. Perform a standard charge and discharge operation on the smart battery.
2. Insert the smart battery into the aircraft and turn on the power. Check the battery information through the flight application, whether the voltage difference between the battery cells is less than 0.1 V, and whether the battery firmware is up to date.
3. Check whether the smart battery is bulged, leaked, or damaged.
4. Check the battery connector for dirt, damage, or rust.

5.5.2 Standard charging and discharging process

Use the maintenance charging mode of the original charger, and proceed as follows:

1. Use the battery charger included in the standard aircraft combo to charge the smart battery to 100% and let the battery sit for 1 hour.
2. Insert the smart battery into the aircraft to fly, control the aircraft to land when the remaining battery level is less than 20%, and then take out the battery.
3. Let the smart battery sit for 8 hours.
4. After the above operations are completed, a standard battery charging and discharging operation is completed.

5.5.3 Smart battery replacement standards

- There are obvious bulges, leakage, and damage on the smart battery surface.
- Damage to or irreparable rust on the metal contacts at the power supply interface of the smart battery.
- After the number of cycles of the smart battery reaches 200, it is recommended to replace the battery with a new one.

- After 2 consecutive standard charge and discharge operations, if the abnormal battery still cannot be repaired, it is recommended to replace it with a new one.

5.5.4 Recycling the smart battery

If the smart battery is discarded due to damage, leakage, or other issues that compromise the integrity of the battery shell, it is recommended to completely immerse the battery in an insulated bucket filled with 5% salt water for more than 48 hours until the battery is completely discharged.
If the smart battery is normally retired, confirm that it is completely discharged, and then properly recycle it according to local lithium battery waste disposal policies to avoid environmental pollution.

Important
• When the smart battery catches fire, please use solid fire extinguishers such as sand or dry powder extinguishers.

Chapter 6 Flight Application

6.1 Software Introduction

Autel Enterprise is a flight application developed by Autel Robotics for enterprise applications. The application supports waypoint mission, rectangle mission, polygon mission and oblique mission, integrates a variety of professional functions to quickly get started and improve efficiency; through a variety of built-in intelligent flight functions, it can realize highly intelligent aircraft operations and empower industry applications.

Note
• This chapter is based on Autel Enterprise V1.4.220, and some UI interfaces may differ due to version updates.

6.2 Main Interface

After turning on the remote controller, you will automatically enter the main interface.



Fig 6-1 Main Interface of the Flight Application (EVO Lite 640T Enterprise Aircraft)

Table 6-1 Details of the Main Interface of the Flight Application

No.	Name	Description
1	Status Notification Bar	Displays the flight mode, warning information, flight status, battery level of the remote controller and aircraft, remote controller signal, GNSS signal, operating status of the obstacle

		avoidance system, and other information. For details, please refer to “6.3 Status Notification Bar”.
2	Toolbar	Offers quick access to certain frequently used functions. Users can add icons of frequently used functions from “Shortcuts” on the toolbar.
3	"Map" Full-Screen Interface	You can freely scroll on the interface to view the map.
4	“Camera” Mini Window	Provides access to the wide-lens camera interface or IR camera interface.
5	Map function zone	Provides access to map management and device location.
6	Altitude Ball	Displays relevant flight data and information of the aircraft in real time, used for assisted flight.
7	Toolbar hide button	Tap to hide the toolbar.

Tip

- The flight application can automatically identify the gimbal camera model mounted on the aircraft and adjust the display content of the main interface accordingly. When an aircraft with a different gimbal camera model is connected to the remote controller, the display content on the main interface of the flight application may vary. This chapter is based on EVO Lite 640T Enterprise Aircraft for description.

Table 6-2 Multi-Screen Switching Operations on the Main Interface

No.	Icon	Meaning	Description
1		Dual-Screen Mode	When using EVO Lite 640T Enterprise aircraft, tap this icon to enter the dual-screen mode. In the dual-screen mode, the left and right sides of the remote controller screen can display any two of the 3 interfaces, which are "Map", "Wide Angle", and "IR".
2		Maximize Window	Tap this icon to adjust a preview interface to the corresponding full-screen interface.

Tip

- In wide angle or infrared camera interface, you can swipe up anywhere to hide all function icons and swipe down to restore the display of function icons.

6.3 Status Notification Bar



Fig 6-2 Status Notification Bar

Table 6-3 Details of the Status Notification Bar

No.	Icon	Meaning	Description
1		Status and Fault Warning	Displays the current warning information of the aircraft: ➢ Gray indicates that the remote controller is not connected to the aircraft. ➢ Orange indicates a medium-level warning. In this case, the aircraft will not be prohibited from taking off but should pay attention to flight safety. ➢ Red indicates a high-level warning. In this case, the aircraft will be prohibited from taking off and can take off only after you solve the fault.
2		Flight Status	Displays the current flight status. There are 3 modes: GNSS mode, visual positioning mode, and ATTI mode. For more information, see "3.8.1 Flight status" in Chapter 3.
3		Mission Status	Displays the current mission type and mission status of the aircraft.
4		No SD Card	Indicates that there is no microSD card installed in the aircraft currently.
5		Remote Controller Battery	Displays the current battery level of the remote controller.
6		Remote Controller Signal Status	1. Displays the current communication signal status between the remote controller and the aircraft. 2. Tap this icon to display the specific signal status: When there are 4 to 5 green signal bars, the signal strength is shown as "Strong"; When there are 2 to 3 yellow signal bars, the signal strength is shown as "Middle"; And when there is 1 signal bar, the signal strength is shown as "Weak". 3. When the remote controller is not connected to the aircraft, the remote controller signal is displayed in gray color.

7		GNSS Signal Status	1. Displays the current GNSS positioning signal status of the aircraft. 2. Tap this icon to display the specific signal status and satellite connection status. 3. If the aircraft receives no GNSS signal, the GNSS signal is displayed in gray color.
8		Aircraft Battery	1. Displays the current battery information of the aircraft. 2. Tap this icon to display the battery level, voltage, and temperature of the aircraft battery.
9		Obstacle Avoidance System	Displays the current activation status of the aircraft obstacle avoidance system. ➢ Green indicates that the obstacle avoidance system is activated. ➢ Red indicates that the obstacle avoidance system is deactivated.
10		Speed Mode Display	Displays the current speed mode of the aircraft. Four modes are available, that is, Slow mode, Smooth mode, Standard mode, and Ludicrous mode. For more information about the speed modes, see “3.8.2 Flight modes” in Chapter 3.

6.4 Toolbar

The toolbar is displayed at the bottom of the system status notification bar of the flight application, which allows you to quickly activate certain functions.

In the toolbar, you can long press and drag the function icons to customize the sorting. At the same time, you can also tap on the “” icon to enter "Menu" and then tap on the “” icon on the right side of "Menu" to add a function icon into or delete a function icon from the toolbar, as well as add function icons from shorts to toolbar.

Tip
● You can add a maximum of 12 function icons to the toolbar. Some functions may need support from aircraft hardware and unavailable functions will be displayed in grey.

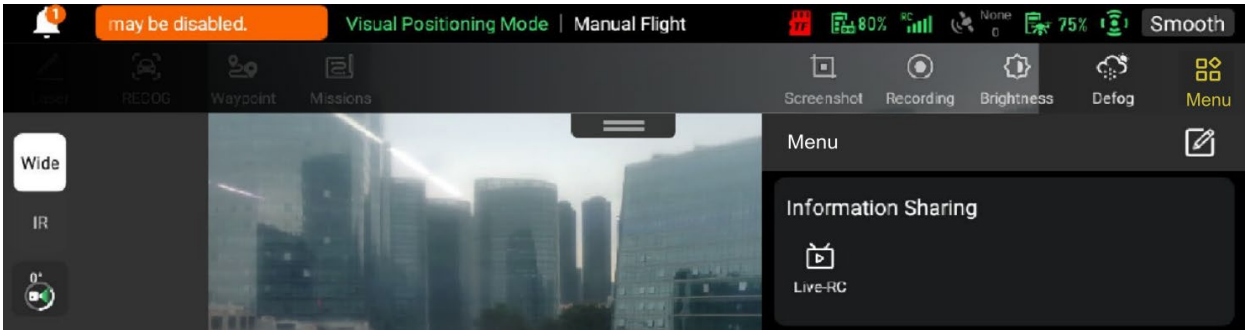


Fig 6-3 Toolbar

Table 6-4 Toolbar Details

No.	Icon	Name	Description
1		Menu	Tap this icon to enter the “Menu”, where you can view all shortcut function icons.
2		Edit	Tap this icon to add function icons from "More" to the "Toolbar" or move the function icons in the "Toolbar" to "More".
3		Live-RC	Tap this icon to set live streaming of real-time aerial videos from the aircraft. Two streaming methods, that is, RTMP and GB28181, are supported.
4		Tripod	Tap this icon, and the aircraft camera will automatically lock onto the selected target.
5		Stealth	Tap this icon, and the aircraft will turn off the arm lights, strobes, and auxiliary bottom lights after users sign the disclaimer.
6		Recording	Tap this icon to start recording the current screen.
7		Aux Light	Tap this icon to turn on the bottom auxiliary light, which is used to improve the environment lightness when the aircraft is landing in a dark light environment.
8		Pinpoint	Tap this icon to place pinpoint on the map.
9		RECOG	Tap this icon to intelligently identify the target object type.
10		Flight Log	Tap this icon to view the flight logs of the aircraft or synchronize them to a third-party platform. To use this function, you need to log in to your Autel Robotics cloud service account.

11		Encrypt	Tap this icon to set a security password for encrypting captured media materials.
12		Settings	Tap this icon to enter the “Settings” interface.
13		Support	Tap this icon to enter the "Personal Center" interface.
14		Log	Tap this icon to query the flight logs of the aircraft. To use this function, you need to log in to your Autel Robotics cloud service account.
15		Rectangle	Tap this icon to enter the "Rectangle" mission editing interface.
16		Polygon	Tap this icon to enter the "Polygon" mission editing interface.
17		Record	Tap this icon to record real-time attitude, motion, and other parameters of the aircraft and gimbal camera during a flight mission, which allows for repeating the operation process for the next mission.
18		Import	Tap this icon to import missions saved in local (supports KML format) to the mission library.
19		Missions	Tap this icon to enter the “Missions” interface, where you can query, edit, favorite, and delete previously saved historical flight missions.
20		Waypoint	Tap this icon to enter the "Waypoint" mission editing interface.
21		Oblique	Tap this icon to enter the “Oblique” editing interface.
22		Album	Tap this icon to view materials from the aircraft's album and the local album and download or delete them.
23		Pro Setting	Tap this icon to make professional settings for the gimbal camera parameters.
24		Brightness	Tap this icon to move the slider left and right to adjust the brightness of the camera.
25		Defog	Tap this icon to make the shooting or recording scene more transparent and enhance color contrast, which is used to eliminate the "fogging

			phenomenon" in the picture or the lack of picture clarity caused by smog.
26		Night Mode	Tap this icon, and the wide-angle camera and Night Vision cameras will enter night shooting mode. Even when shooting in a low-light environment, the picture will remain clear.

6.5 “Settings” Interface

On the main interface of the flight application, tap the “” icon on the right side of the toolbar, and then tap the “” icon to enter the "Settings" interface.
In the "Settings" interface, you can set parameters such as flight control, obstacle avoidance, remote controller, image transmission, battery, and gimbal.

6.5.1 Flight Control Parameter Setting

In the sidebar of the “Settings” interface, tap the "" icon to enter the "Flight Control Parameter Setting" interface, where you can perform following operations, as shown below.

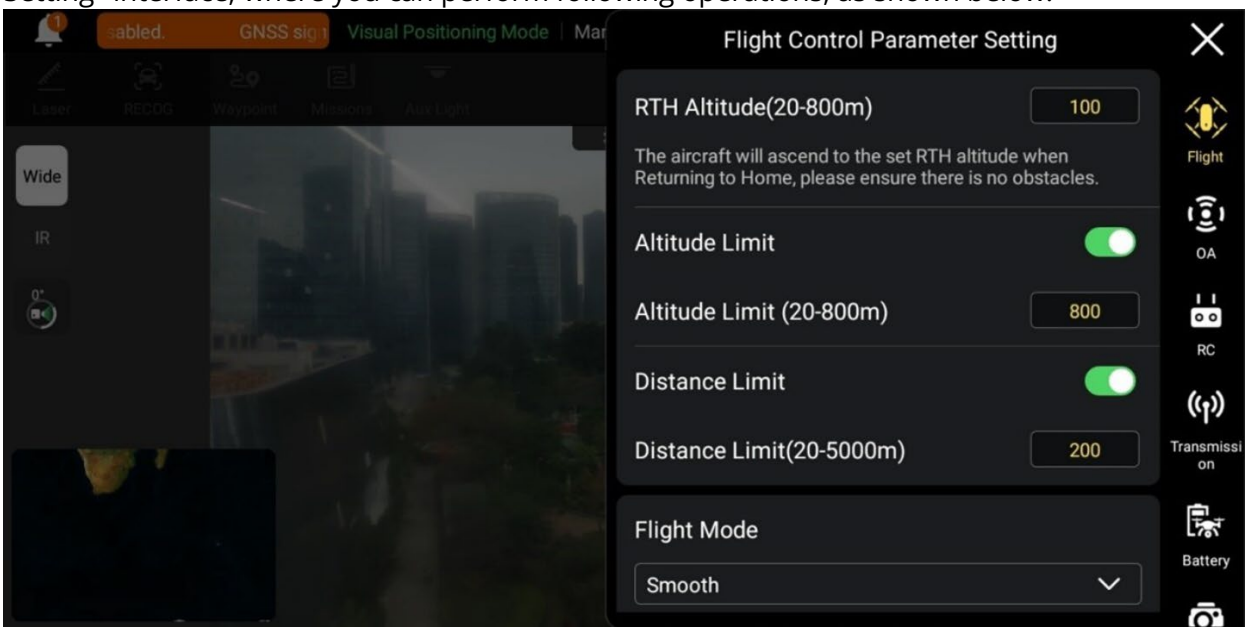


Fig 6-4 "Flight Control Parameter Setting" interface

■ Set RTH Altitude

When executing an auto-return, the aircraft will rise to the RTH altitude set before starting the return process.

⚠ Warning

- Although the flight application allows you to set a flight altitude within the range of 20-800 meters, this does not mean that the set altitude complies with local laws and regulations.
- The RTH altitude should be set higher than the altitude of obstacles within the flight operation area.
- The RTH altitude setting should comply with local (within the flight operation area) laws and regulations.
- For information about adjusting the RTH altitude of the aircraft, see "2.7.4 Auto return home mechanism" in Chapter 2.

■ Set Altitude Limit

➢ After taking off, the aircraft can ascend to the maximum altitude set.

■ Turn On/Off Distance Limit

➢ If this function is turned on, the aircraft will fly within a circle with the home point as the center and the distance limit value set as the radius.

➢ If this function is turned off, the aircraft can keep moving according to your operation until the battery is exhausted or the signal lost action is triggered.

Tip

- Appropriate altitude limit and distance limit settings can improve flight safety.
- The altitude limit setting should comply with local (within the flight operation area) laws and regulations. Flying the aircraft in an unsuitable flight altitude may have legal risks. Please comply with the fight safety requirements of relevant areas during flight operations.

■ Set Flight Mode

The aircraft supports four flight modes: Slow, Smooth, Standard, and Ludicrous. For the difference between those modes, see "3.8.2 Flight Modes" in Chapter 3.

■ Set Home Point

➢ If "Aircraft" is selected, the home point is the position where the aircraft currently is.

➢ If "RC" is selected, the home point is the current position of the remote controller.

Note

- If the home point is not set, the aircraft will record the take-off point as the default home point.

■ Calibrate Compass/ IMU

Perform the calibration operation as instructed in the flight application. For more information, see "2.12 Aircraft Calibration" in Chapter 2.

■ Set Lost Action

- Lost action refers to the action that the aircraft will take when the aircraft is disconnected from the remote controller during flight. By default, the lost action is set to “Return to Home”.
- ➢ If “Return to Home” is selected, when the aircraft disconnects, the aircraft will automatically return to the home point.
- ➢ If "Hovering" is selected, when the aircraft disconnects, the aircraft will hover at the current position.
- ➢ If "Land" is selected, when the aircraft disconnects, the aircraft will land at the current position.

Tip
● When the aircraft initiates a return to home due to a disconnection, even if the aircraft re-connects to the remote controller, it will continue the return process. In this case, you can press the pause button “⏸” on the remote controller for 2 seconds until the RC emits “beep” sound to pause or exit auto return and you can pull the pitch stick to pause the return process. After exiting the auto return, the RC will regain the control of the aircraft.

6.5.2 OA Settings

In the sidebar of the “Settings” interface, tap the "((•))" icon to enter the "OA Settings" interface, where you can perform following operations, as shown below.

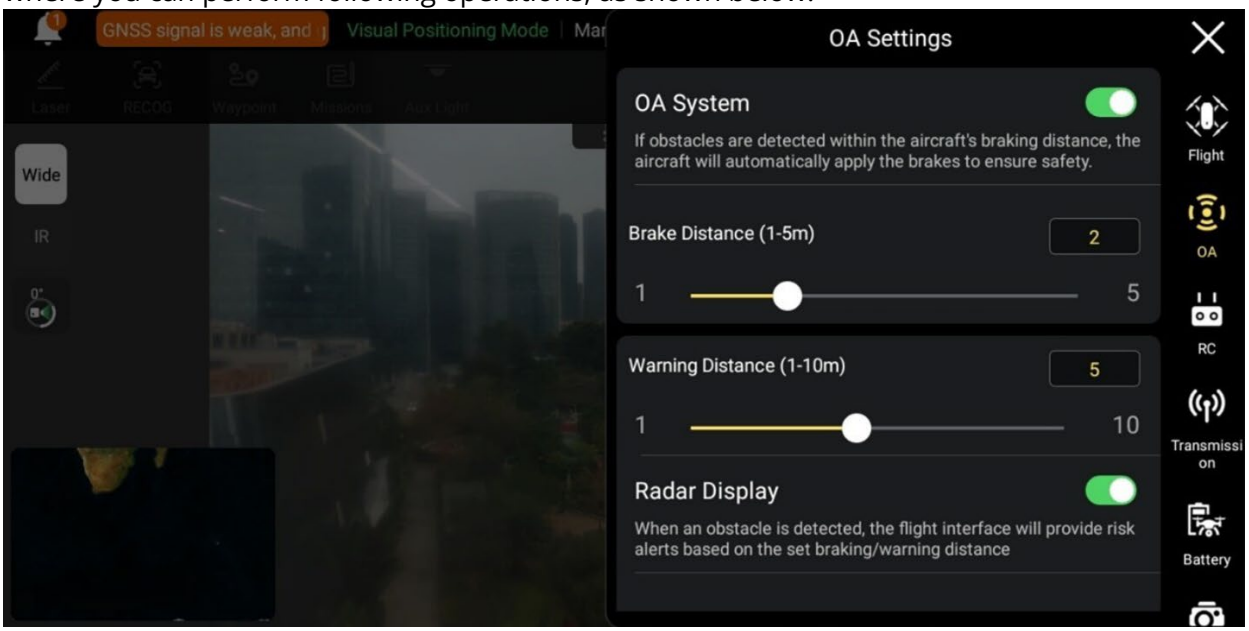


Fig 6-5 "OA Settings" Interface

■ Turn On/Off OA System

- ➢ If this function is turned on, you can set the brake distance. When the aircraft detects an obstacle, it will brake and stop at the brake distance as set.
- ➢ If this function is turned off, when the aircraft detects an obstacle, it will not stop and brake.

⚠ Warning

- To ensure flight safety, it is recommended to always turn the OA system on.
- When the flight mode of the aircraft is set to “Ludicrous”, the OA system function is unavailable.

■ Set Warning Distance

If the aircraft detects an obstacle, it will send a warning at the “Warning Distance” as set.

■ Turn On/Off Radar Display

- If this function is turned on, when the aircraft detects an obstacle, it will provide risk warnings on the camera interface based on the set brake/warning distance.
- If this function is turned off, when the aircraft detects an obstacle, it will not provide risk warnings on the camera interface.

■ Turn On/Off Obstacle Detection Notification Sound

- If this function is turned on, when the aircraft detects an obstacle, it will emit an audible alert.

■ Turn On/Off Landing Protection

- If this function is turned on, the aircraft will detect whether the ground surfaces are suitable for landing before it lands.

Tip

- After the landing protection function is turned on, if the aircraft detects that the ground surface is not suitable for landing, it will keep hovering over the landing point. In this case, you need to use the command sticks to manually control the aircraft to land at an appropriate location.

6.5.3 RC Settings

In the sidebar of the “Settings” interface, tap the "" icon to enter the "RC Settings" interface, where you can perform following operations, as shown below.

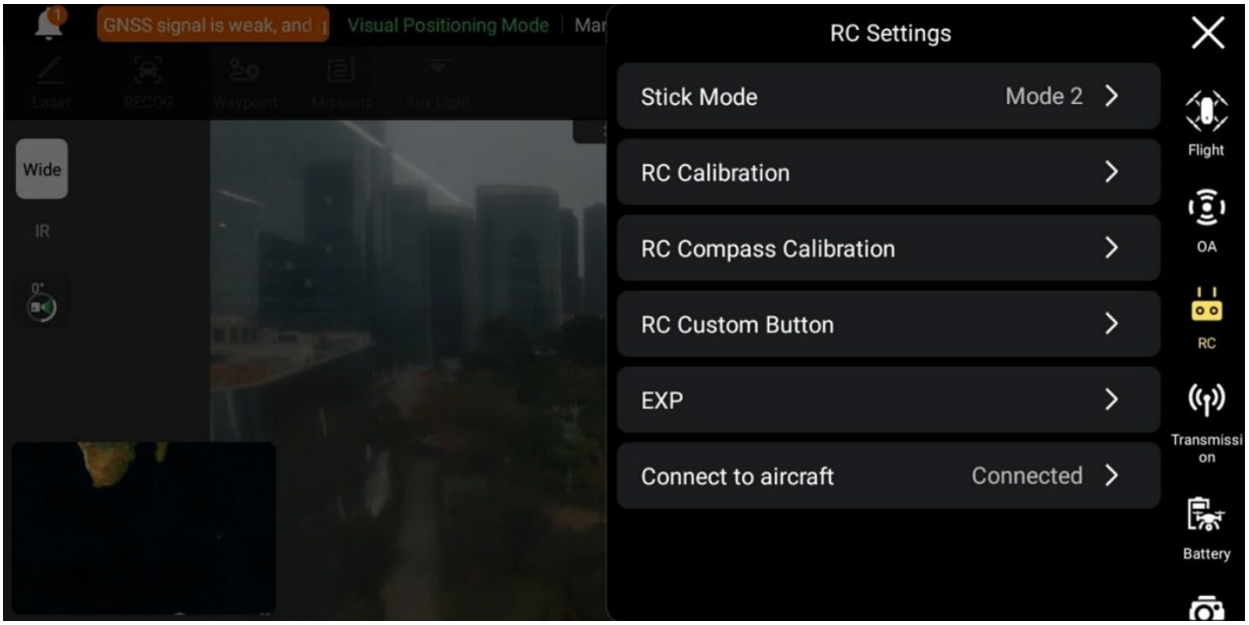


Fig 6-6 "RC Settings" Interface

■ Set Stick Mode

The aircraft supports three stick modes setting: Mode 1, Mode 2, and Mode 3. For the differences between the three stick modes, see "4.10.1 Stick Modes" in Chapter 4. The default stick mode is Mode 2.

■ Calibrate the Remote Controller

For details about calibration process, see "4.14 Calibrating the Remote Controller" in Chapter 4.

■ Calibrate the RC Compass

For details about calibration process, see "4.13 Calibrating the Remote Controller Compass" in Chapter 4.

■ Set RC Custom Button

For details about functions of RC custom button C, see "4.11.1 Custom Button C" in Chapter 4.

■ Set EXP

The X-axis is the physical output of the command stick, and the Y-axis is the logical output of the command stick. That is, the X-axis represents the movement generated by the current command stick move, and the Y-axis represents the actual response strength of the current aircraft.

■ Connect to Aircraft

- Connect to aircraft: If the remote controller is currently not connected to the aircraft, tap "Connect to aircraft", and then double-click the power button of the aircraft according to the pop-up notification to complete the frequency matching between the remote controller and the aircraft. For more information, see "4.9 Frequency Matching With the Remote Controller" in Chapter 4.
- Cancel: If the remote controller is currently connected to the aircraft, tap "Connect to aircraft", and then tap "Cancel" in the pop-up window to disconnect the remote controller from the aircraft.

6.5.4 Image Transmission Settings

In the sidebar of the “Settings” interface, tap the "(( ))" icon to enter the "Image Transmission Settings" interface, where you can set the image transmission mode, and transmission frequency band as shown below.

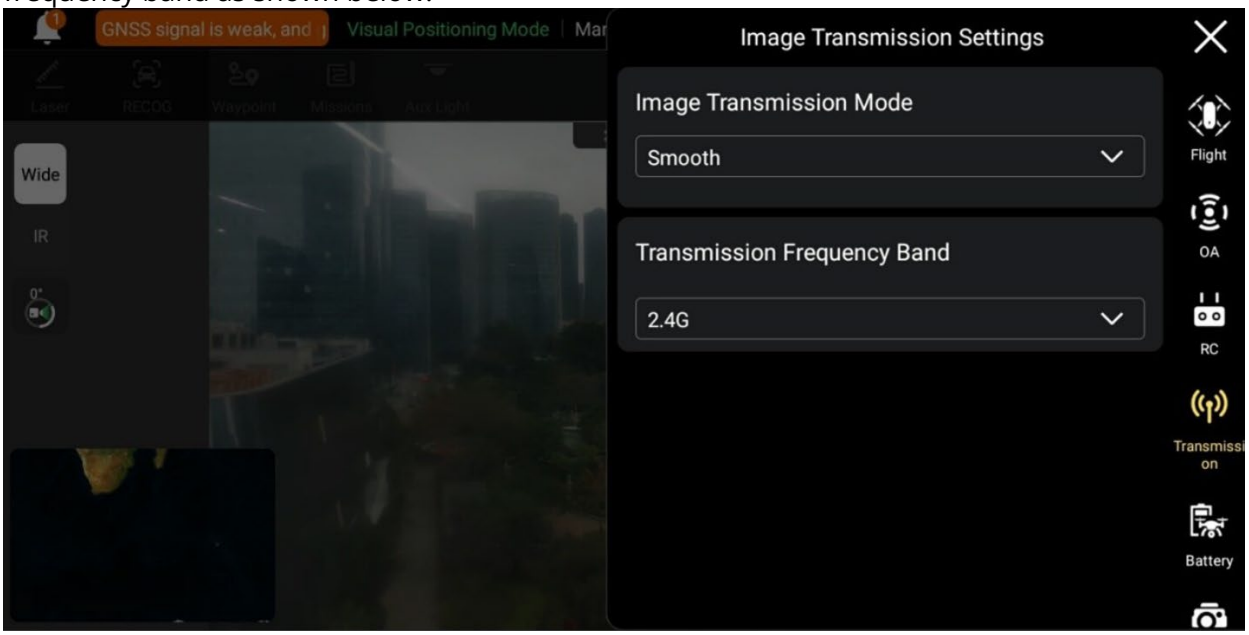


Fig 6-7 "Image Transmission Settings" Interface

■ Set Image Transmission Mode

The remote controller will receive and display the image transmission screen at the selected resolution.

■ Set Transmission Frequency Band

Tap the drop-down list of "Transmission Frequency Band" and select a transmission frequency band according to your needs.

- 2.4G: The 2.4 GHz frequency band is used for image transmission between the aircraft and the remote controller.
- 5.8G: The 5.8 GHz frequency band is used for image transmission between the aircraft and the remote controller.

Tip

- Image Transmission Mode: “Smooth” means 720P and "HD" means 1080P.
- The flight application will, based on the aircraft’s GNSS positioning information, automatically provide frequency band selection that comply with local laws and regulations.
- If the aircraft does not obtain GNSS positioning after being turned on, the image transmission frequency band between the aircraft and the RC will be set as “2.4G”.

6.5.5 Aircraft Battery

In the sidebar of the “Settings” interface, tap the "" icon to enter the "Battery Information" interface, where you can perform following operations as shown below.

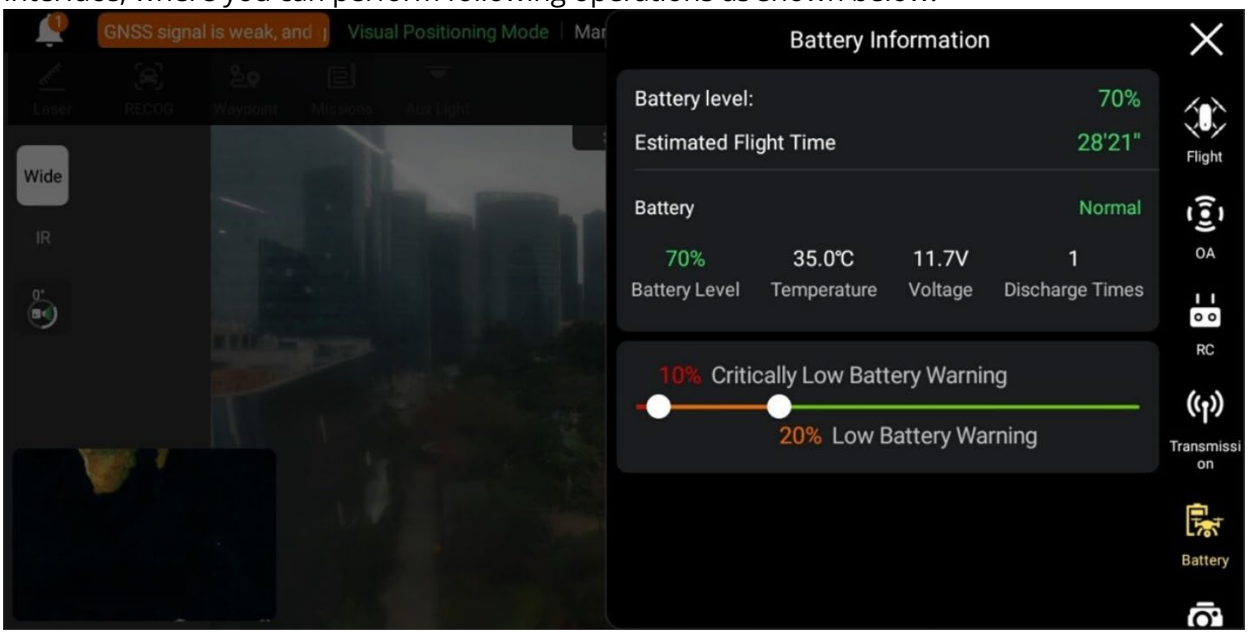


Fig 6-8 “Battery Information” Interface

■ View Basic Information of the Smart Battery

You can view the real-time status of the battery and the estimated flight time of the aircraft with the current battery level. Please refer to the parameters in the following table to view the basic information of the battery, so as to deal with it in time when the battery condition is not good.

■ Set Battery Warning Threshold

Move the slider left or right to set warning thresholds for low battery and critically low battery.

- Critically Low Battery Warning: Red status. The adjustable range is from 8% to 25%. When the battery decreases to this threshold, landing is triggered forcibly.
- Low Battery Warning: Orange status. The adjustable range is from 8% to 50%. The low battery warning threshold should be at least 5% higher than the critically low battery warning threshold. When the battery decreases to this threshold, auto return is triggered automatically.

6.5.6 Gimbal Settings

In the sidebar of the “Settings” interface, tap the "" icon to enter the "Gimbal Settings" interface, where you can perform following operations as shown below.

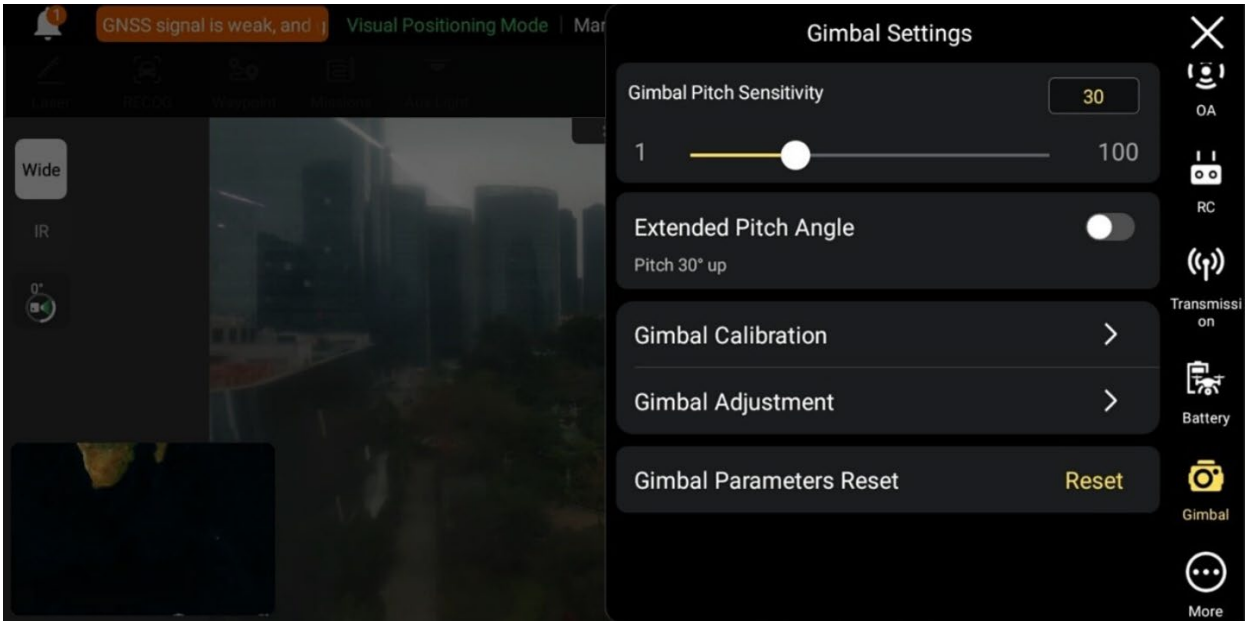


Fig 6-9 "Gimbal Settings" Interface

■ Set Gimbal Pitch Sensitivity

Set the number of degrees the gimbal rotates on the pitch axis per second (unit: °/second).

■ Turn On/Off Extended Pitch Angle

Tap the button to the right of "Extended Pitch Angle" to turn on the upward gimbal rotation function.

- If this function is turned on, the gimbal can rotate up to 30 degrees above the level baseline.
- If this function is turned off, the gimbal can only maintain a level or downward rotation and cannot rotate upwards to switch to a pitch view.

■ Gimbal Calibration

For more information about gimbal calibration, see "2.12.3 Gimbal auto calibration" in Chapter 2.

■ Gimbal Adjustment

When the position of the gimbal tilts, tap "Gimbal Adjustment" and tap the buttons under the functions of "Roll", "Yaw", and "Pitch" to adjust the gimbal, so that the horizontal and vertical axes on the screen remain aligned to the reference objects on the three-screen image transmission screen.

■ Gimbal Parameters Reset

Reset the gimbal parameters.

6.5.7 More

In the sidebar of the "Settings" interface, tap the "⋯" icon to enter the "More" interface, where you can perform following operations as shown below.

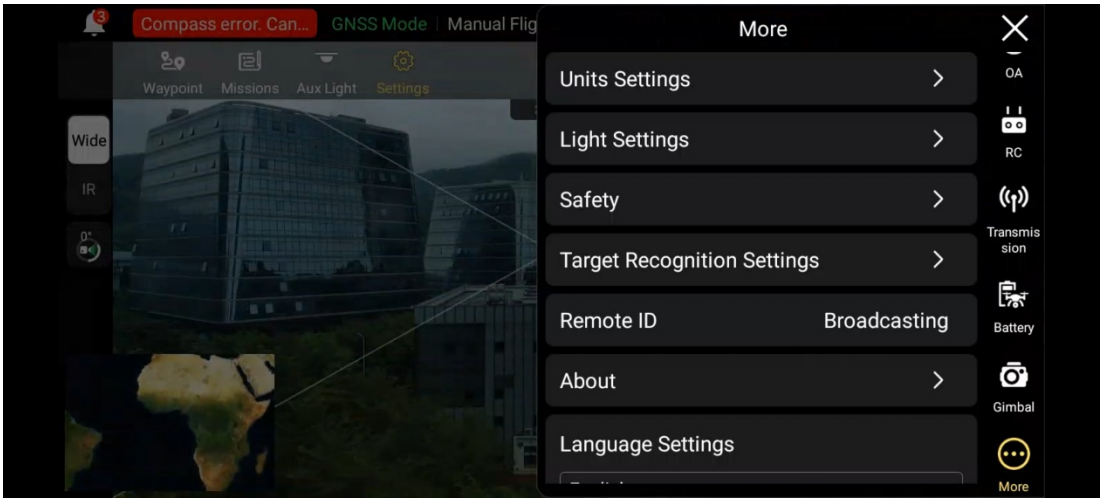


Fig 6-10 "More" interface

■ Unit Settings

Set the unit of "Speed/Distance Units", "Area Units", "Temperature Units", and "Coordinate Format" displayed in the flight application.

■ Light Settings

- Turn on/off Stealth mode
  - ➢ If the stealth mode is turned on, the aux light is off by default.
  - ➢ If the stealth mode is not turned on, you may set the aux light.
- Set Aux Light
  - ➢ If “Auto” is selected, the auxiliary bottom light is automatically turned on or off according to ambient brightness.
  - ➢ If “On” is selected, the auxiliary bottom light is always on by default.
  - ➢ If "Off" is selected, the auxiliary bottom light is off by default.

Tip
● The auxiliary bottom light is mainly used to enhance the ambient brightness of the landing point during the landing of the aircraft, improve the sensing performance of the downward visual sensing system, and ensure landing safety. It is recommended to set it as “Auto” mode when using the light.

■ Turn On/Off Visual Positioning

- ➢ If the visual positioning function is turned on, the aircraft will hover in a place with a poor GNSS signal.

Tip
● Turning on visual positioning is a must to enter visual positioning mode. For more information, see “3.8.1 Flight Status” in Chapter 3.

⚠ Warning

- Before an aircraft takes off, if the visual positioning of the aircraft is turned off, do not turn on the visual positioning function after the aircraft takes off as it might lead to visual positioning failure. If you need to turn on the visual positioning function again, it is recommended to land the aircraft before conducting relevant operations.
- When GNSS positioning fails, if the environment lighting condition and surface texture meet the requirements, the aircraft will enter the visual positioning mode.
- When GNSS is unavailable, if the environment lighting condition and surface texture do not meet the requirements, the aircraft will enter the attitude mode. In this mode, operating the aircraft has high risk potential, easily leading to flight accident.

■ Emergency Stop Propellers During Flight

➢ If "Off" is selected, the "Emergency Stop Propellers During Flight" function will be disabled.
➢ If "On" is selected, you can stop the propellers of the aircraft from spinning at any time during flight by simultaneously pushing the two command sticks inward or outward.

Important

- Please use the "Emergency Stop Propellers During Flight" function with caution. Once the propellers stop, the aircraft will fall freely without control. This function is only used to reduce additional harm or damage caused by aircraft malfunctions. Please stay away from crowds or buildings when using this function.
- After the "Emergency Stop Propellers During Flight" function is enabled, please stop using the aircraft and contact Autel Robotics to inspect the power system of the aircraft.

■ Target Recognition Settings

The aircraft supports three types of target for recognition: “Human”, “Vehicle”, “Boat” and Smoke/Fire. Users can set a type or types of recognition on their own. Turn on the sound prompt function, the aircraft will give a sound prompt when it recognizes a target.

■ Remote ID

According to local laws and regulations (not Chinese Mainland), enter the pilot registration number. For more information, see “2.1 Legal Use Notice” in Chapter 2. After successful entering, broadcast status of Remote ID will be prompted.

■ About

You can view the firmware version and the serial number of the aircraft, the remote controller, the gimbal, and the battery, and check for versions and perform updates for flight application and firmware.

■ Language Settings

After you confirm the selection of a language, the flight application will automatically restart and display in the chosen language.

6.6 Attitude Ball

The attitude ball is mainly used to dynamically display the relative positions of the aircraft, the remote controller, and the home point, and display relevant attitude, flight speed, battery level, operating time, and other flight safety data of the aircraft. Any changes in the aircraft's status will be reflected in the attitude ball.

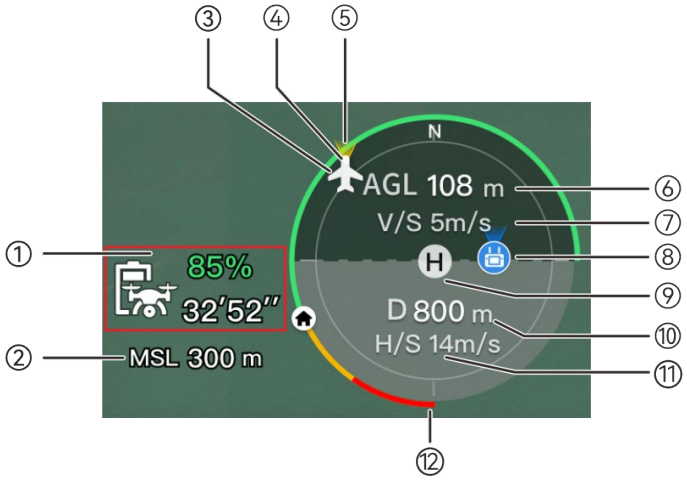


Fig 6-11 Attitude Ball

Table 6-5 Attitude Ball Details

No.	Description	Description
1	Estimated Remaining Flight Time of the Aircraft	Displays the current remaining battery level and estimated remaining flight time of the aircraft.
2	MSL Altitude	Refers to the current altitude of the aircraft relative to the mean sea level (MSL).
3	Aircraft Position	Displays the current position of the aircraft, which can help you observe the approximate position between the aircraft and the remote controller.
4	Aircraft Heading	Displays the current nose orientation of the aircraft. If the aircraft is no longer visible in the line of sight, the aircraft can be controlled to return to the home point based on the position and heading of the aircraft.
5	Gimbal Direction	Displays the current gimbal orientation of the aircraft.
6	Vertical Altitude	Refers to the current vertical altitude of the aircraft relative to the take-off point.
7	Vertical Speed	Refers to the current vertical flight speed of the aircraft.

8	Remote Controller Location	Displays the current position of the remote controller, which can help you observe the approximate position between the aircraft and the remote controller.
9	Home Point	Refers to the set home point of the aircraft.
10	Horizontal Distance	Refers to the current horizontal distance from the aircraft to the home point.
11	Horizontal Speed	Refers to the current horizontal flight speed of the aircraft.
12	Aircraft Battery	Displays the real-time remaining battery level of the aircraft in the dynamic circular battery bar.

6.7 "Map" Interface

In dual screen mode, tap the "" icon at the corner of the "Map" dual screen; or after entering the "Wide Angle" camera interface or "IR" camera interface, tap the "Map" mini window at the lower left corner to enter the "Map" full-screen interface.

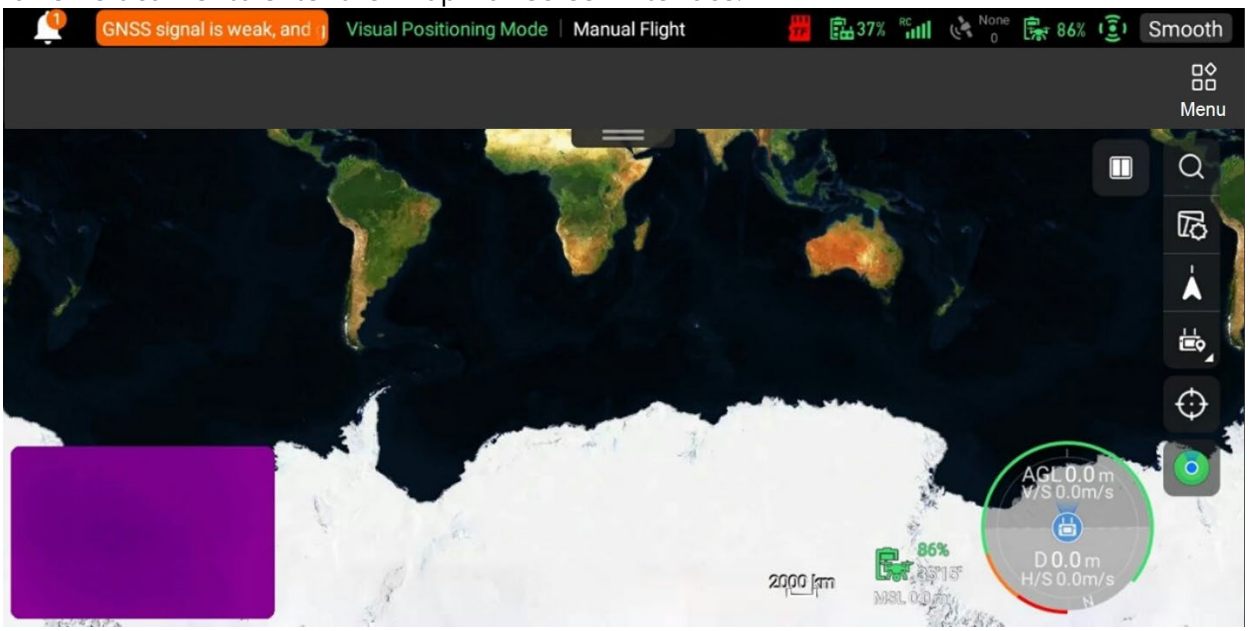


Fig 6-12 "Map" Interface

Table 6-6 Interface Button Details

No.	Icon	Name	Description
1		Search Map	When the remote controller is connected to the Internet, tap this icon and enter the desired location name in the "Search Map" edit box. Based on the selected location, the map interface will switch to display the map of the corresponding location.

2		Map Management	Tap this icon to adjust the map display style to a standard map or a hybrid map, as well as to set “Display/Clear Flight Path” and import GEO-fence. It also supports offline map download and management. ➢ Standard: 2D map. ➢ Hybrid: 2D map and satellite map combined.
3		Orientation Lock	This icon indicates that the display direction of the map is locked. When the remote controller is rotated, the display direction of the map will not change accordingly. Tap this icon to unlock the display direction of the map of the current remote controller.
4		Orientation Unlock	This icon indicates that the display direction of the map is unlocked. When the remote controller is rotated, the display direction of the map will change accordingly. Tap this icon to lock the display direction of the map of the current remote controller.
5		Overview	Tap this icon to simultaneously locate the positions of the remote controller, the home point, and the aircraft on the map.
6		Remote Controller Location	Tap this icon to locate the position of the remote controller on the map.
7		Home Point Location	Tap this icon to locate the position of the home point on the map.
8		Aircraft Position	Tap this icon to locate the position of the aircraft on the map.
9		Re-center	If the map is moved from the current positioning point to another location, this icon will appear on the right side of the screen. Tap this icon, and the map will quickly return to the current positioning point.
10		Aircraft Search	When the aircraft is lost, you can tap this icon to query the location information of the lost aircraft.

6.8 Camera Interfaces

6.8.1 Camera Function Access

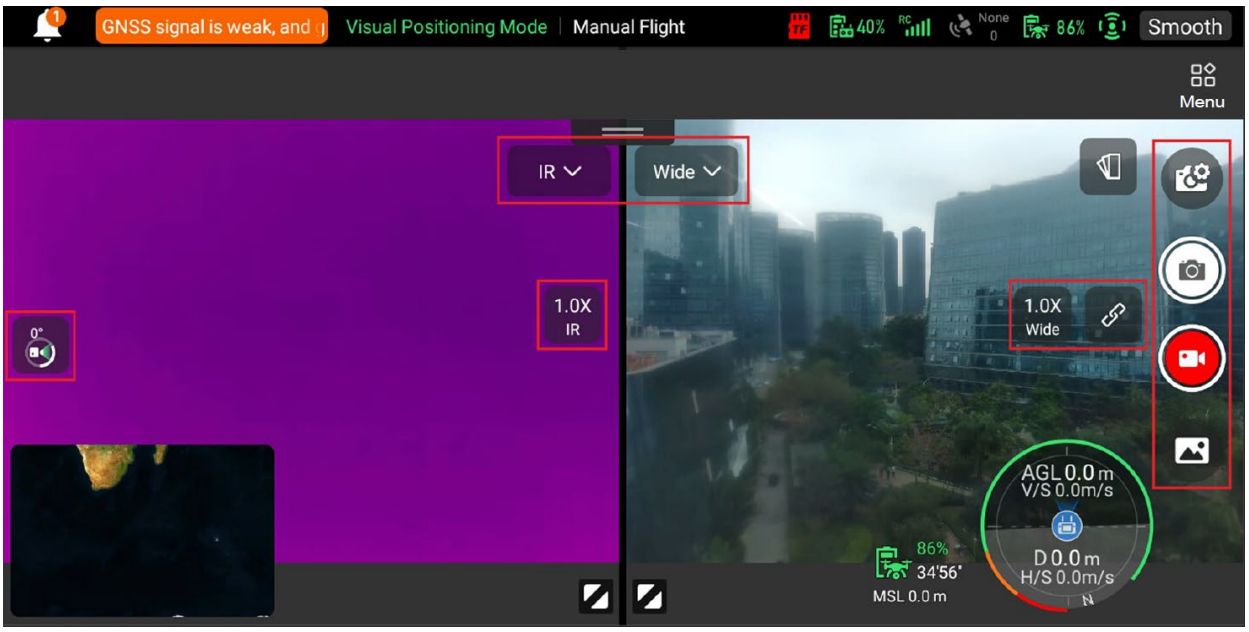


Fig 6-13 Camera Function Area (EVO Lite 640T Enterprise)

Table 6-7 Camera Menu Details

No.	Icon	Meaning	Description
1	IR	Switch to Infrared Camera	On wide-angle camera interface or map screen split interface, tap this icon to enter the infrared camera interface.
2	Wide	Switch to Wide Angle Camera	On infrared camera interface or map screen split interface, tap this icon to enter the wide-angle camera interface.
3		Camera Settings	Tap this icon to view and set parameters related to the gimbal camera.
4		Photo	Tap this icon to take a photo.
5		Video	Tap this icon to start recording.
6		Album	Tap this icon to view materials from the aircraft's album and the local album and download or delete them.

7	IR 1.0X	Infrared Camera Zoom	On the "IR" camera interface, tap this dynamic icon to adjust the zoom factor of the infrared thermal imaging camera.
8	Wide 1.0X	Wide Angle Camera Zoom	On the "Wide Angle" camera interface, tap this dynamic icon to adjust the zoom factor of the wide-angle camera.
9		Linked Zoom	When using EVO Lite 640T Enterprise aircraft, tap this icon to adjust the zoom factor of any camera, and other cameras will also adjust their zoom factors simultaneously, resulting in the synchronous enlargement or reduction of camera images. The wide-angle camera needs to be adjusted to 1.5x before the infrared camera starts to zoom synchronously; The wide-angle camera can be adjusted to a maximum of 16x, the infrared camera can be zoomed synchronously up to 10.5x.
10		Gimbal 0°	Tap this icon, and the gimbal returns to the horizontal centering state.
11		Gimbal 45°	Tap this icon, and the gimbal rotates obliquely downward, forming an angle of 45° with the horizontal direction.
12		Gimbal 90°	Tap this icon, and the gimbal rotates directly downward, forming an angle of 90° with the horizontal direction.
13		Thermal Color	Tap this icon, and the drop-down list of “Thermal Color” pops up. You can scroll up and down in the list to select a color palette.
14	-20-150 Mode	Radiometric Measurement Mode	High gain mode (-20°C to 150°C), which enables more accurate radiometric measurement. In “IR” camera interface, tap this icon to switch to low gain mode.
15	0-550 Mode	Radiometric Measurement Mode	Low gain mode (0°C to 550°C), which has a larger radiometric measurement range. In “IR” camera interface, tap this icon to switch to high gain mode.
16	FFC	FFC Calibration	Flat-Field Calibration. In “IR” camera interface, tap this icon to perform calibration. After calibration, the image quality of thermal imaging will be

optimized, and temperature changes will be easier to observe.

On any camera interface, tap the "⚙" icon to enter the "Camera Settings" interface. On the “Camera Settings” interface, you can perform the following operations:

■ View Photo Properties

On the “Camera Settings” interface, tap the "📷" icon to view the size and format of wide-angle camera photos.

■ Set Video Properties

On the “Camera Settings” interface, tap the "🎥" icon to view the resolution, frame rate of the wide-angle camera videos, and to set the video encoding and format.

- Video encoding options are H.264 and H.265.
- Video format options are MOV and MP4.

■ Set Infrared Shooting

On the “Camera Settings” interface, tap the "IR" icon to view the size and format of infrared photos or videos and set the image mode and radiometric measurement function.

- Set Image Mode

Two image modes are available, that is, “Manual” and “Auto”.

- If the “Manual” mode is set, you can adjust the "Contrast" and "Brightness".

- Turn On/Off Radiometric Measurement

Tap the button to the right of "Radiometric Measurement" to turn on or off the radiometric measurement function.

- If this function is turned on, you can set the image enhancement, isotherm, emissivity, and temperature alarm.
- If this function is turned off, both "Radiometric Measurement Mode" and "FFC " cannot be set.

■ Advanced Settings

On the “Camera Settings” interface, tap the "•••" icon to perform advanced settings for the camera:

- Select Camera

You can select one or more camera lens. After a shooting lens is selected, when you tap the "📷" or "🎥" icon, the selected lens will simultaneously take photos or record videos. For unselected lenses, the shooting function will be unavailable.

- Set Grid

Grid can assist with picture composition during shooting. You can select one or more grid styles.

- When multiple grid styles are selected, the grid styles will be superimposed and displayed on all camera interfaces.

- Set Defog

Defogging can make the shooting or recording scene more transparent and enhance color contrast and is used to eliminate the "fogging phenomenon" in the picture or the lack of picture clarity caused by smog.

- The stronger the defog intensity, the darker the image.

- Turn On/Off Stamps/Subtitles

- Once this function is enabled, the shot images will include the set stamp.

- Turn Off Arm Lights when Shooting

- If this function is turned on, the aircraft’s arm lights will be turned off when the gimbal is shooting.

- Turn On/Off Pre-recording

➢ If this function is turned on, the aircraft will start recording 15 seconds in advance (tap the " " icon).

Tip

- The pre-recording function can prevent missing important shots when the aircraft is flying rapidly. The pre-recorded videos will be saved in the "PreRecorder" folder in the remote controller's root directory.

- Set Storage Location

You can choose "SD Card" or "Internal Storage" as the storage location. Also, you can format the corresponding storage location.

- Reset Camera Parameters

Restore the camera parameters to default settings.

- View Camera Model

View the gimbal camera model.

6.8.2 Camera Switch and Operation

■ Camera Switch

- In the flight application, tap the " " icon in the corner of the "IR" Camera interface, or tap the " IR " icon after entering the "Wide Angle" camera interface, to enter the "IR" full-screen interface.
- In the flight application, tap the " " icon in the corner of the "Wide Angle" Camera interface, or tap the " Wide " icon after entering the "IR" camera interface, to enter the "Wide Angle" Camera full-screen interface.

Tip

- For EVO Lite 6K Enterprise aircraft, the "Wide Angle" Camera interface can be displayed after the aircraft is connected to remote controller.
- For EVO Lite 640T Enterprise aircraft, the "Wide Angle" Camera interface and "IR" camera interface can be displayed after the aircraft is connected to remote controller.

■ "Wide Angle Camera" Operations

1. Adjust the Wide Angle Zoom Factor

While shooting, tap the " Wide 1.0X " dynamic icon, and the wide angle zoom factor setting window will pop up. A maximum of 16x digital zoom is supported. You can drag up or down to zoom in or out on the picture captured by the wide angle camera, so as to flexibly shoot objects at different distances.

2. Camera Settings

Tap the " " icon to enter the "Camera Settings" interface and perform relevant settings. For more information, see "6.8.1 Camera Function Access" in this chapter.

■ “Infrared Camera” Operations

1. Set Thermal Color

After tapping the "" icon, you can scroll up and down in the pop-up drop-down list to select a color palette.

- After selection, the images from the infrared camera will be displayed in the color style of the selected color palette.

2. Set Infrared Shooting

Tap the "" icon to enter the "Camera Settings" interface and perform relevant settings. For more information, see “6.8.1 Camera Function Access” in this chapter.

3. Set Radiometric Measurement Mode

Tap the "-20-150 Mode" icon or the "0-550 Mode" icon to switch between radiometric measurement modes.

- High gain mode (-20°C to 150°C): This mode has higher radiometric measurement accuracy but a smaller radiometric measurement range compared with the low gain mode.
- Low gain mode (0°C to 550°C): This mode has a larger radiometric measurement range but lower radiometric measurement accuracy compared with the high gain mode.

4. FFC Calibration

Tap the "FFC" icon to enable the FFC calibration function.

5. Adjust the Infrared Zoom Factor

While shooting, tap the "IR 1.0X" dynamic icon, and the infrared zoom factor setting window will pop up. You can drag up or down to zoom in or out on the picture captured by the infrared camera, so as to flexibly shoot objects at different distances.

Tip

- The radiometric measurement mode and FFC calibration functions can be used only after the infrared radiometric measurement function is enabled in the camera settings.
- The IR camera of EVO Lite 640T Enterprise gimbal supports up to 16x digital zoom.

Warning

- While shooting, do not aim the infrared thermal imaging camera at strong energy sources such as the sun, lava, laser beams, and molten metal, to avoid damaging the infrared detector.
- The temperature of the measured target should be within 600°C. Over-temperature measurements can cause burns and damage to the infrared detector.

6.9 Flight Missions

Flight missions are divided into waypoint missions, rectangle missions, and polygon missions in terms of type. You can tap the corresponding icon in the toolbar or toolbox to enter the relevant mission editing interfaces.

Important

- If any of the following conditions are detected, the flight mission will end automatically, and the aircraft will perform other operations according to the following conditions:
  1. Low battery power: A notification will pop up on the flight application to inform you that the aircraft will return to the home point automatically.
  2. Critically low battery power: The aircraft will end its mission and automatically land at its current position.
  3. During a flight mission, if the remote controller is powered off, the aircraft will execute the lost action that you set.

Tip

- When the aircraft is in visual positioning mode or attitude mode, it cannot execute waypoint missions, rectangle missions, or polygon missions.

6.9.1 Waypoint Mission

In the toolbar (or Menu), tap the "" icon to enter the "Waypoint" mission interface.
You can add multiple waypoints on the map. Every two neighboring waypoints connect to form a flight segment and one or more flight segments form a route. By setting the flight altitude, flight speed, camera action, and waypoint actions of each waypoint for each route and each waypoint, the aircraft will automatically fly according to the route and perform corresponding actions at each waypoint.

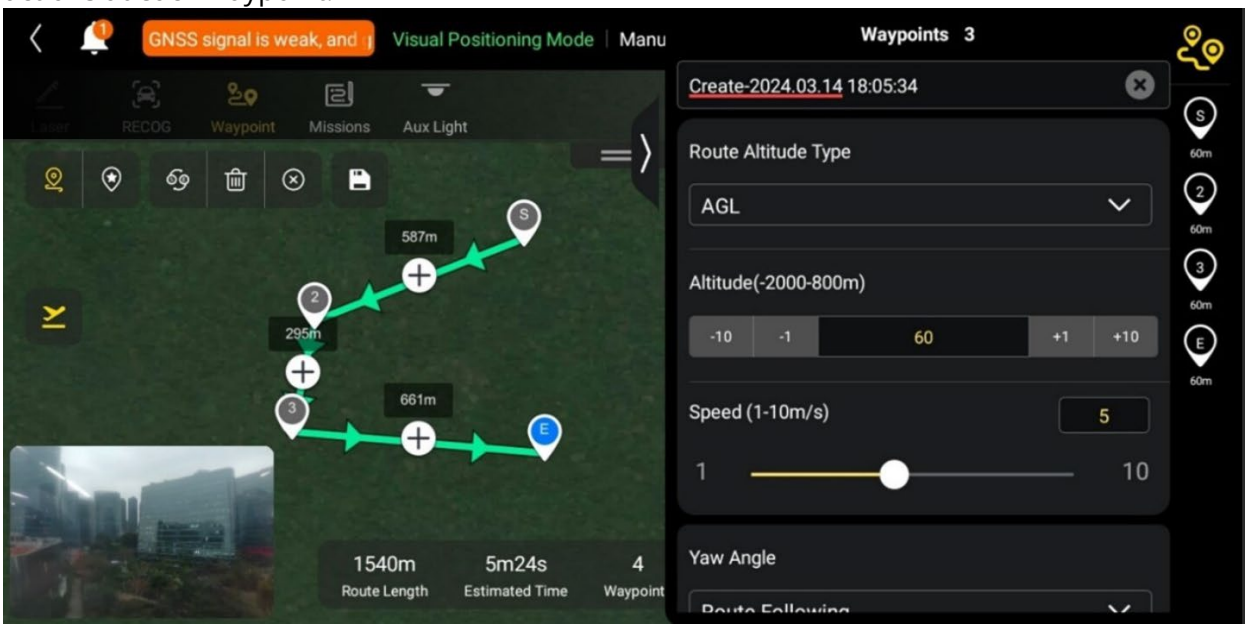


Fig 6-14 Waypoint Mission (before takeoff)

Table 6-8 "Waypoint Mission" Terms and Details

Term	Definition
AGL	Refers to the vertical height of the aircraft relative to the take-off point.

Altitude	Refers to the vertical height of the aircraft relative to sea level.
Yaw Angle	Refers to the angle at which the drone's nose deviates from the north. The default is to follow the route. When the point of interest has been added, it is often set in conjunction with the point of interest, that is, the yaw angle of the aircraft is set to turn to the point of interest.
Gimbal pitch	The observable range of the gimbal camera, that is, the angle from the top to the bottom (0° ~ 90°).
Gimbal Yaw Angle	Refers to the angle between the gimbal on the yaw axis and the north.
Finish Action	Refers to the actions that the aircraft will perform after finishing the waypoint mission.
Lost Action	Refers to the actions that the aircraft will perform when the flight application displays a warning saying “Aircraft disconnected.” during flight.
Segment Action	Refers to the actions performed by the camera, the gimbal, and the aircraft during the flight segment formed between the current waypoint and the next waypoint.
Waypoint Action	Refers to the actions performed by the camera, gimbal, and aircraft at a specific waypoint.

Table 6-9 "Waypoint Mission" Icons and Details

No.	Icon	Meaning	Description
1		Waypoint Settings	Tap this icon to add a waypoint on the map as needed. Every two neighboring waypoints connect to form a flight segment and one or more flight segments form a route.
2		POI Settings	Tap this icon to add a point of interest on the map as needed.
3		Heading Switch	Tap this icon, and the starting point and ending point of the whole route will change direction.
4		Delete	When the aircraft is in waypoint setting status, tapping this icon once will delete the waypoint selected but cannot delete points of interest. When the aircraft is in POI setting status, tapping this icon once will delete the latest point of interest selected but cannot delete waypoints.

5		Clear	Tap this icon and then tap the "Confirm" button to clear all waypoints and POIs.
6		Save Route	Tap this icon, and the currently edited waypoint mission will be saved to “Mission”.
7		Edit Route	Tap this icon to edit the saved route missions.
8		Execute Mission	Tap this button, and the aircraft will enter the "Pre-flight Check" interface. After the check is completed, the aircraft will take off to perform the waypoint mission.
9		Pause Mission	When executing a waypoint mission, tap this icon, and the aircraft will pause the waypoint mission and hover at the current position.
10		Exit Mission	Tap this icon, and the aircraft will abort the current waypoint mission and automatically return.

■ Add Waypoints

Tap the “” icon, find the starting point for the mission on the map and tap it to create the first waypoint, and then repeat the previous operation to create multiple waypoints as required.

➢ When adding waypoints, the waypoint mission settings interface will pop up on the right side of the waypoint mission interface.

Tip

- A route must include at least two waypoints: a starting point () and an ending point ().
- To make a waypoint position more precisely, you can enter the waypoint coordinates under "Waypoint Coordinates" on the waypoint settings interface.

After adding the waypoint, tap the "" icon in the upper-right corner of the waypoint settings interface to enter the route settings interface.

Tap the waypoint icon on the right side of the waypoint settings interface to enter the corresponding waypoint settings interface.

■ Set Route Name and Route Altitude Type

On the route settings interface, tap the "Route Name" edit box and enter the name as required to set the name of a route; tap the drop-down list of "Route Altitude Type" to select “AGL” or “MSL” as the altitude type of the entire route.

■ Set Flight Altitude

➢ On the route settings interface, tap the "Flight Altitude" edit box to set the flight altitude of the whole route.

- On the waypoint settings interface, the flight altitude is set to “Align Route” by default. After deselecting “Align Route”, tap the "Flight Altitude" edit box to set the flight altitude for the whole route.

■ Set Flight Speed

- On the route settings interface, tap the “Speed” edit box to set the flight speed value of the whole route
- On the waypoint settings interface, the flight speed is set to “Align Route” by default. After deselecting “Align Route”, tap the "Speed" edit box to set the flight altitude for the whole route.

Tip

- The maximum value for the flight altitude setting will be dynamically adjusted according to the altitude limit set in the "Flight Control Parameter Setting".
- After take-off, the aircraft will gradually adjust its "flight altitude" and "flight speed" to the set values while flying to this waypoint.

■ Set Yaw Angle

- On the route settings interface, tap the drop-down list of "Yaw Angle" to set the yaw angle of the aircraft in the entire route to “Route Following”, “Manual”, or “Custom”.
- On the waypoint settings interface, the yaw angle of the aircraft is set to “Align Route” by default. After deselecting “Align Route”, tap the drop-down list of "Yaw Angle" to set the yaw angle of the aircraft at the current waypoint to “Route Following”, “Manual”, “Custom”, or “Turn to Point of Interest” (the waypoint should be associated with the point of interest).

Note

- Route Following: the nose of the aircraft will follow the direction of the waypoint change.
- Manual: Users use the remote controller to control the nose direction of the aircraft during the flight.
- Custom: the aircraft nose will be adjusted according to the set yaw angle value.
- Turn to Point of Interest: If it is set to “Turn to Point of Interest”, the nose of the aircraft will always face the set POI.

■ Set Obstacle Avoidance Mode

On the route settings interface, the obstacle avoidance mode can be set to "Bypass" or "Off".

- If "Bypass" is selected, the aircraft will automatically bypass obstacles.

Warning

- If the obstacle avoidance mode is turned off, the obstacle avoidance system of the aircraft will not be enabled. In this case, please try to choose an open area to control the aircraft.

■ Set Camera Action

- On the route settings interface, tap the drop-down list of "Camera Action" to set the camera action of the entire route to “Start Recording”, “Stop Recording”, “Shoot”, “Stop Shooting”, “Timelapse”, “Distance Lapse”, and “No Action”.

- On the waypoint settings interface, the segment action is set to “Align Route” by default. After deselecting “Align Route”, tap the drop-down list of "Camera Action" to set the camera action of the current flight segment to “Start Recording”, “Stop Recording”, “Shoot”, “Stop Shooting”, “Timelapse”, “Distance Lapse”, and “No Action”.

Note

- Timelapse: Take pictures continuously and periodically based on the set "photo interval" time.
- Distance shooting: Take pictures continuously and periodically based on the set "photo distance".

■ Set Gimbal Pitch Angle

- On the route settings interface, enter the value in the edit box to the right of "Gimbal Pitch Angle (0°-90°)" to set the gimbal pitch angle of the entire route.
- On the waypoint settings interface, the gimbal pitch angle (segment action) is set to “Align Route” by default. After deselecting “Align Route”, enter the value in the edit box to the right of "Gimbal Pitch Angle (0°-90°)"to set the gimbal pitch angle of the current segment.

Note

- If the camera action “Gimbal pitch angle” is added when setting the waypoint action, the aircraft will execute the initial pitch angle first when flying to the Waypoint, and then execute the "Gimbal pitch angle" in the camera action

■ Add a Waypoint Action

On the waypoint settings interface, tap the "Add Action" button under “Waypoint Action” to set the camera action, gimbal pitch angle, and yaw angle for the current waypoint. You can add a maximum of 10 waypoint actions for one waypoint.

■ Set Finish Action

On the route settings interface, tap the drop-down list of "Finish Action" to set the flight action of the aircraft after completing the waypoint mission.

- If “Auto RTH” is selected, the aircraft will automatically return to the home point after completing the mission.
- If “Hovering” is selected, the aircraft will hover at the end point after completing the mission.

■ Set Signal Loss Action

On the route settings interface, tap the drop-down list of "Signal Loss Action" to set the flight action of the aircraft after losing connection with the remote controller.

- If "Continue" is selected, the aircraft will continue to execute the mission and perform the "Finish Action" after completing the mission.
- If “Auto RTH” is selected, the aircraft will automatically return to the home point.

■ Set Waypoint Coordinates

After adding a waypoint, you can automatically obtain the longitude and latitude parameters of the waypoint. You can also manually enter and modify the longitude and latitude of the waypoint.

- Under “Waypoint Coordinates” on the waypoint settings interface, the waypoint coordinates can be set in seven formats: WGS84/DD, WGS84/DMS, WGS84/MGRS, CGCS2000/DD,

CGCS2000/DMS, CGCS2000/3-degree and CGCS2000/6-degree. Tap the "Longitude" and "Latitude" edit boxes below and enter the longitude and latitude of the waypoint to complete the modification of the waypoint coordinates.

- When using the WGS84/DD (Decimal Degrees), CGCS2000/DD, CGCS2000/3-degree and CGCS2000/6-degree format, you can use the arrow keys located on the right side of the editing field to make fine adjustments to the longitude and latitude.

■ Add Point of Interest

On the waypoint mission interface, tap the "" icon, find the specific location on the map where the POI needs to be set and tap it to create the first POI, and then repeat the previous operation to create multiple POIs as required.

When adding POIs, the POI setting interface will pop up on the right side of the waypoint mission interface.

■ Set POI Altitude

In the "Altitude" edit box, set the altitude of the point of interest.

Important

- POI Altitude is the altitude of the point of interest relative to takeoff point.
- When the point of interest is higher than the waypoint, the gimbal camera cannot look at the point of interest above.

■ Set Associated Waypoints

On the POI settings interface, tap the waypoints to be associated to associate the current point of interest with the selected waypoints.

Tip

- After a waypoint is associated with a point of interest, the yaw angle of the aircraft at the waypoint will not be set to “Align Route” by default. If the “Yaw Angle” of the aircraft at the waypoint is set to “Turn to Point of Interest”, the nose of the aircraft will always face the associated point of interest during the flight segment from this waypoint to the next waypoint when the waypoint mission is executed.

■ Start Pre-flight Check

After the completion of all settings for a route, relevant flight mission data will be synchronously displayed at the bottom center of the waypoint mission interface, including the route length, estimated time, waypoints, and photos to be taken. Tap the “” icon on the left side to enter the "Pre-flight Check" interface.

■ Upload a Route and Start a Mission

After completing the pre-flight check, press the “Slide to takeoff” icon at the bottom of the "Pre-flight Check" interface, and the aircraft will automatically take off to execute the mission. The estimated completion time, current photo count, current altitude, current wind speed, and other basic information will be synchronously displayed at the bottom center of the waypoint mission interface. The lower-left mini screen displays the current view observed by the gimbal camera. Tap to enlarge it to full screen for viewing.

When the aircraft completes the waypoint mission, the relevant flight mission data of this route will be displayed at the bottom center of the map, including the route length, estimated time, waypoint, the number of photos taken, and the number of flights.

6.9.2 Rectangle/Polygon Mission

In the toolbar (or Menu), tap the "" icon to enter the "Rectangle" mission interface. You can add a rectangular area on the map and perform operations such as dragging, scaling, and rotating to adjust the position and size of the area. After adjustments, the flight application will automatically generate a continuous series of equidistant flight routes within the rectangular area based on the side overlap and course angle settings. The aircraft will then automatically fly to execute the shooting mission according to these flight routes and relevant settings.

In the toolbar (or Menu), tap the "" icon to enter the "Polygon" mission interface. You can add a square area on the map and perform operations such as dragging, adding side boundaries, and dragging corner points to adjust the position and size of the area. After adjustments, the flight application will automatically generate a continuous series of equidistant flight routes within the polygonal area based on the side overlap and course angle settings. The aircraft will then automatically fly to execute the shooting mission according to these flight routes and relevant settings.

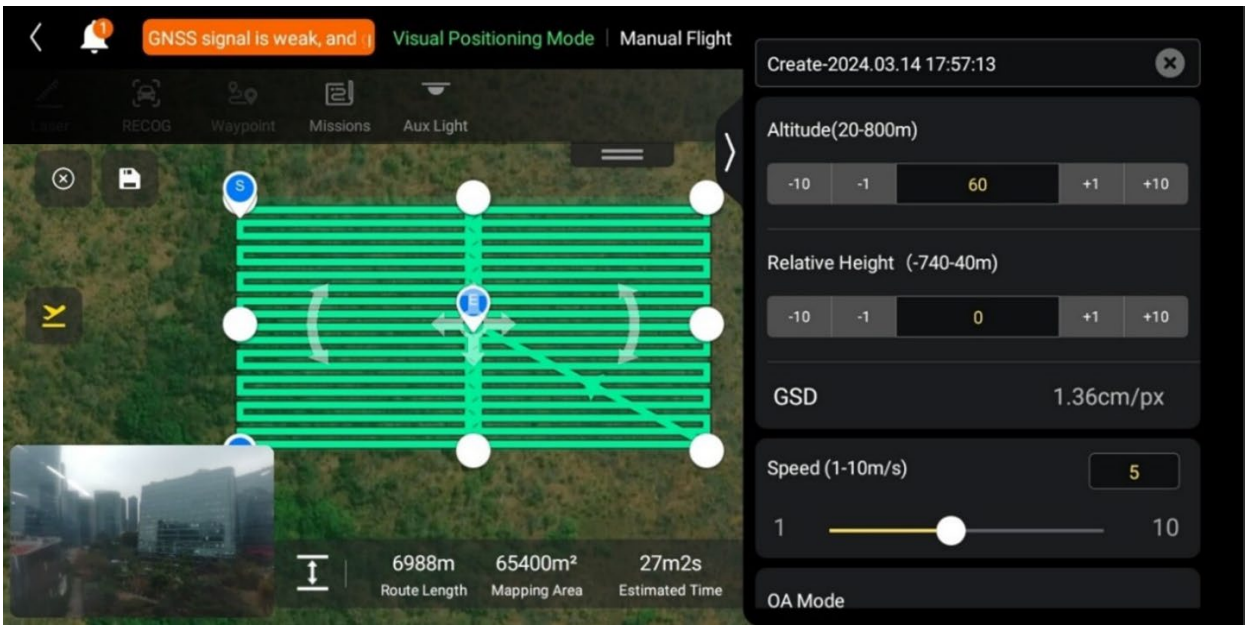


Fig 6-15 Rectangle Mission Interface (before takeoff)

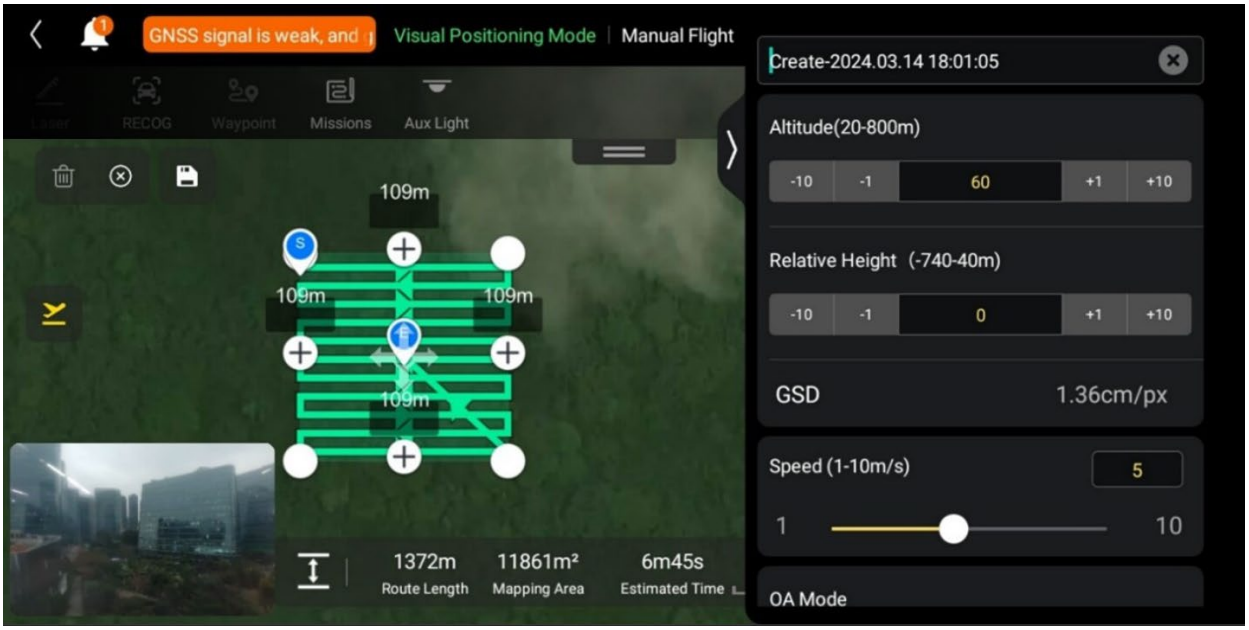


Fig 6-16 Polygon Mission Interface (before takeoff)

Table 6-10 "Rectangle Polygon Mission" Terms and Details

Term	Definition
Mission Altitude	Refers to the vertical height of the drone relative to the ground of the target measurement area during a mission.
Relative Height	Refers to the vertical height of the drone take-off point relative to the ground of the target measurement area.
GSD	Ground Sampling Distance.
Finish Action	Refers to the action that the aircraft will perform after completing a rectangle/polygon mission.
Lost Action	Refers to the actions that the aircraft will perform when the flight application displays a warning saying "Aircraft disconnected." during flight.
Front Overlap	Refers to the image overlap rate between two consecutive photos taken when capturing images along the flight heading.
Side Overlap	Refers to the image overlap rate between two consecutive photos taken when capturing images along two adjacent flight routes.
Main Course Angle	Refers to the course angle between the main route and the latitude line (horizontal line) when the flight routes are automatically generated.
Gimbal pitch	The observable range of the gimbal camera, that is, the angle from the top to the bottom (-30° ~ 90°).

Table 6-11 "Rectangle/Polygon Mission" Icons and Details

No.	Icon	Meaning	Description
1		Delete	Tap this icon to delete polygon point selected.
2		Clear	Tap this button, and then tap the "Confirm" button in the pop-up window to reset the mission.
3		Route Centering	Tap this icon and then the route will be displayed in the center of the “Map” interface.
4		Exit	Tap this icon to exit the mission editing.
5		Save Route	Tap this icon, and the currently edited mission will be saved to “Mission”.
6		Edit Route	In mission library, tap this icon to edit the saved mission.
7		Execute Mission	Tap this button, and the aircraft will enter the "Pre-flight Check" interface. After the check is completed, the aircraft will take off to perform the mission.
8		Pause Mission	When executing a mission, tap this icon, and the aircraft will pause the mission and hover at the current position.
9		Exit Mission	Tap this icon, and the aircraft will abort the current mission and automatically return.

■ Add a Rectangular/Polygonal Area

On the map of the rectangle mission interface, find the center point of the mission to be executed and tap it to automatically generate a rectangular area. You can adjust the area of the rectangle by dragging the eight white points at the edges of the rectangle. You can drag the "cross arrow" in the center of the rectangle to move the rectangle or drag the "curved arrow" on both sides of the rectangle to rotate the rectangle around the center point.

On the map of the polygon mission interface, find the center point of the mission to be executed and tap it to automatically generate a square area. You can tap the "+" icon between two white points to add side lines for the area. You can drag the white points to adjust the positions of the corner points of the polygon, which allows you to modify the area of the polygon. You can also drag the "cross arrow" in the center of the polygonal area to move the polygon.

- When adding a rectangular/polygonal area, the mission settings interface will pop up on the right side of the mission interface.

Tip

- A rectangular/polygonal area includes two waypoints, that is, the starting point ( ) and the end point ( ).

■ Set Mission Name

On the rectangle/polygon mission settings interface:

➢ Tap the "Mission Name" edit box and enter the name as required to set the name of a rectangle/polygon mission.

■ Set Flight Altitude and Relative Height

➢ Tap the "Flight Altitude (20-800m)" edit box on the mission settings interface to set the flight altitude value of the rectangle/polygon mission.

➢ The setting range of "Relative Height" will automatically be dynamically adjusted according to the flight altitude setting. In the edit box, directly enter the mission altitude value or tap the shortcut buttons on the left and right sides to adjust the value. This way, you set the relative altitude of the rectangle/polygon mission.

Tip

- The maximum value for the flight altitude setting will be dynamically adjusted according to the altitude limit set in the "Flight Control Parameter Setting".
- GSD varies with different flight altitude values.

■ Set Flight Speed

Tap the "Flight Speed" edit box to set the flight speed of rectangle/polygon mission.

■ Set Obstacle Avoidance Mode

On the rectangle mission settings interface, the obstacle avoidance mode can be set to "Bypass" or "Off".

➢ If "Bypass" is selected, the aircraft will automatically bypass obstacles.

⚠ Warning

- If the obstacle avoidance mode is turned off, the obstacle avoidance system of the aircraft will not be enabled. In this case, please try to choose an open area to control the aircraft.

Tip

- When flying at a high altitude, if there are no obstacles, it is recommended to disable the obstacle avoidance mode.

■ Set Finish Action

On the rectangle/polygon mission settings interface, tap the drop-down list of "Finish Action" to set the flight action of the aircraft after completing the rectangle/polygon mission.

- If “Auto RTH” is selected, the aircraft will automatically return to the home point after completing the mission.
- If “Hovering” is selected, the aircraft will hover at the end point after completing the mission.

■ Set Signal Loss Action

On the rectangle/polygon mission settings interface, tap the drop-down list of "Signal Loss Action" to set the flight action of the aircraft after losing connection with the remote controller.

- If "Continue" is selected, the aircraft will continue to execute the mission and perform the "Finish Action" after completing the mission.
- If “Auto RTH” is selected, the aircraft will automatically return to the home point.

■ Advanced Settings

On the rectangle/polygon mission settings interface, tap “Advanced Settings” to enter the advanced settings interface and set the front overlap, side overlap, main course angle, and gimbal pitch angle for the rectangle mission.

- If “Custom” is selected, you can directly adjust the angle between the main route of the rectangle/polygon mission and the latitude line.

Tip
● The setting range of the front overlap and side overlap is 10%-90%, and the default value is 70%.

■ Turn On/Off Elevation Optimization

- If this function is turned on, the aircraft will create a route along the center point of the rectangle for re-shooting after completing the shooting of the main route. This helps optimize the overall shooting accuracy of the mission.

■ Turn On/Off Double Grid

- If this function is turned on, the aircraft will change its heading by 90° and shoot the rectangle/polygon mission area again after completing the shooting of the main route. The two routes have a 90° overlap.

■ Turn On/Off Route Extension

Due to the limited gimbal pitch angle and flight altitude, some areas on the outer edges of the rectangle/polygon mission area might not be captured by the camera. In such cases, you need to turn on route extension to extend the rectangle mission area so as to ensure complete coverage of the target area.

■ Photo Compatibility Settings

Tap “EXIF Compatibility” drop-down list to set the storage compatibility standard of the aircraft shooting picture. Available format options are ‘Pix4d” and “Standard”.

■ Start Pre-flight Check

After the completion of all settings for a rectangle/polygon mission, relevant flight mission data will be synchronously displayed at the bottom center of the rectangle mission interface, including the route length, mapping area, estimated time, and photos to be taken. Tap the “” icon on the left side to enter the "Pre-flight Check" interface.

■ Upload a Route and Start a Mission

After completing the pre-flight check, press the “Slide to takeoff” icon at the bottom of the "Pre-flight Check" interface, and the aircraft will automatically take off to execute the mission. The estimated completion time, current photo count, current altitude, current wind speed, and other

basic information will be synchronously displayed at the bottom center of the rectangle mission interface. The lower-left mini screen displays the current view observed by the gimbal camera. Tap to enlarge it to full screen for viewing.
When the aircraft completes the rectangle/polygon mission, the relevant flight mission data of this route will be displayed at the bottom center of the map, including the route length, mapping area, estimated time, the number of photos taken, and the number of flights.

6.9.3 Oblique

In the toolbar (or More), tap the "⏢" icon to enter the "Oblique" mission interface. You can add a square area on the map and perform operations such as dragging, scaling, and rotating to adjust the position and size of the area. After adjustments, the flight application will automatically generate a continuous series of equidistant flight routes within the area based on the side overlap and course angle settings. The aircraft will then automatically fly to execute the mission according to these flight routes and relevant settings.

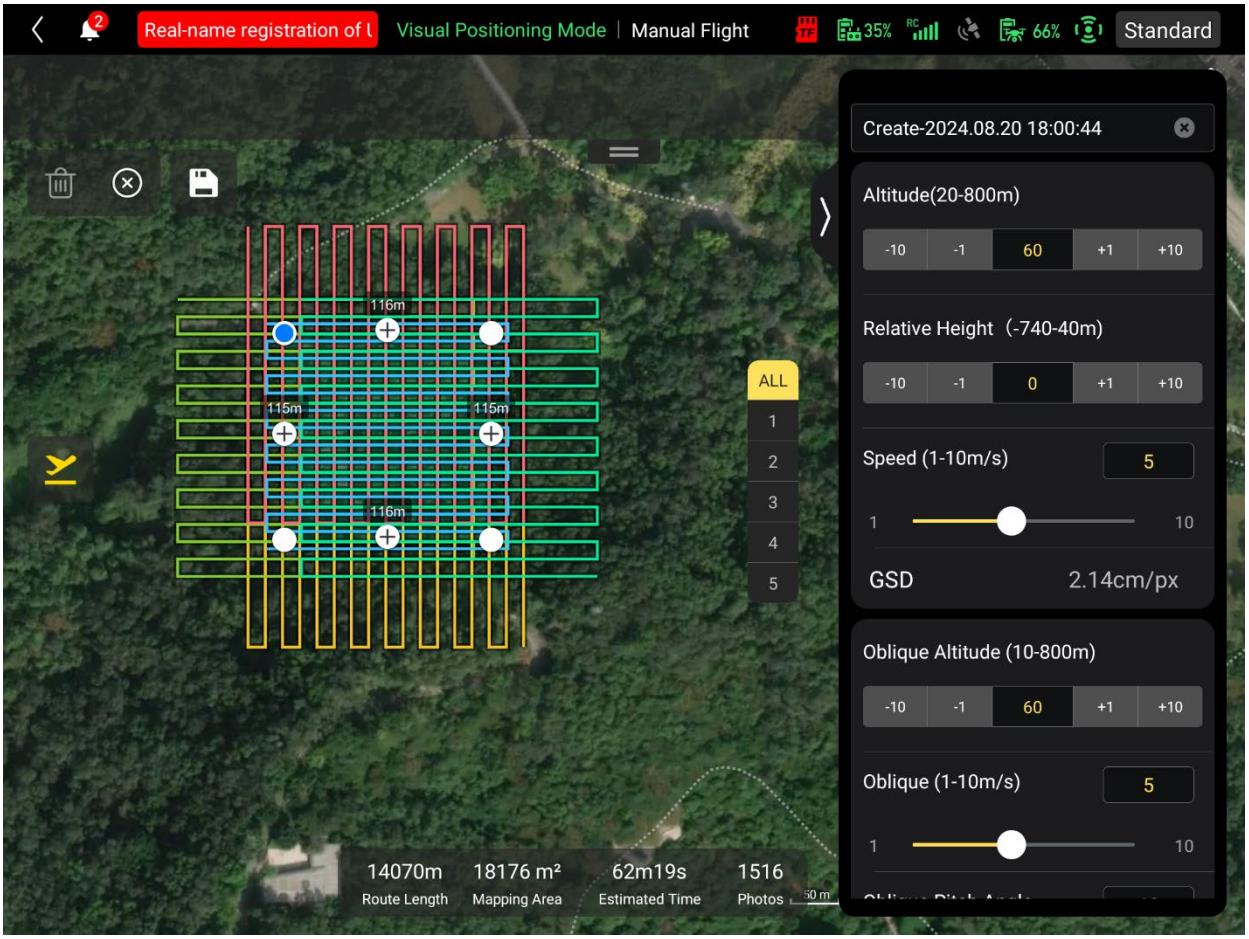


Fig 6-17 Oblique Mission Interface (before takeoff)

Table 6-12 "Oblique Mission" Terms and Details

Term	Definition
Relative Height	Refers to the vertical altitude of the work surface of the shot object relative to the take-off point of the aircraft.
GSD	Ground sample distance when executing orthophoto route.
Oblique GSD	Ground sample distance when executing oblique route.
Finish Action	Refers to the action that the aircraft will perform after completing an oblique mission.
Signal Lost Action	Refers to the actions that the aircraft will perform when the flight application displays a warning saying "Aircraft disconnected." during flight.
Front Overlap	Refers to the image overlap rate between two consecutive photos taken when capturing images along the flight heading in orthophoto route.
Oblique Front Overlap	Refers to the image overlap rate between two consecutive photos taken when capturing images along the flight heading in oblique route.
Side Overlap	Refers to the image overlap rate between two consecutive photos taken when capturing images along two adjacent flight routes in orthophoto route.
Oblique Side Overlap	Refers to the image overlap rate between two consecutive photos taken when capturing images along two adjacent flight routes in oblique route.
Main Course Angle	Refers to the course angle between the main route and the latitude line (horizontal line) when the flight routes are automatically generated.

Table 6-13 "Oblique Mission" Icons and Details

No.	Icon	Meaning	Description
1		Delete	Tap this icon to delete point selected.
2		Clear	Tap this button, and then tap the "Confirm" button in the pop-up window to reset the oblique mission.
3		Route Centering	Tap this icon and then the route will be displayed in the center of the "Map" interface.
4		Exit	Tap this icon to exit the mission editing.
5		Save Route	Tap this icon, and the currently edited oblique mission will be saved to "Mission".

6		Edit Route	In mission library, tap this icon to edit the saved oblique mission.
7		Execute Mission	Tap this button, and the aircraft will enter the "Pre-flight Check" interface. After the check is completed, the aircraft will take off to perform the oblique mission.
8		Pause Mission	When executing an oblique mission, tap this icon, and the aircraft will pause the oblique mission and hover at the current position.
9		Exit Mission	Tap this icon, and the aircraft will abort the current oblique mission and automatically return.

■ Add Mission Area

When editing the oblique mission interface, find the center point of the mission to be executed and tap it to automatically generate a square area. You can adjust the area of the square by dragging the eight white points at the edges of the square. You can drag the "cross arrow" in the center of the square to move it or drag the "curved arrow" on both sides of the square to rotate it around the center point.

- When adding a mission area, the mission settings interface will pop up on the right side of the mission interface.
- After adding a mission area, the flight application will automatically generate one set of orthophoto image routes and four sets of oblique photography routes according to the mission area. The layer number of the orthophoto image route is 1, and the layer numbers of the oblique photography routes are 2/3/4/5. When editing the mission area, selecting "ALL" can view all routes, and selecting any layer number can view the corresponding route.

Tip

- A set of route includes two waypoints, that is, the starting point (S) and the end point (E).

■ Set Mission Name

Tap the "Mission Name" edit box and enter the name as required to set the name of an oblique mission.

■ Set Flight Altitude and Relative Height

- Tap the "Flight Altitude (20-800m)" edit box on the mission settings interface to set the flight altitude value of the orthophoto image routes in oblique mission.
- The setting range of "Relative Height" will automatically be dynamically adjusted according to the flight altitude setting. In the edit box, directly enter the mission altitude value or tap the shortcut buttons on the left and right sides to adjust the value. This way, you set the relative altitude of the orthophoto image routes in oblique mission.

■ Set Flight Speed

Tap the "Flight Speed" edit box to set the flight speed of oblique mission.

Tip
● The maximum value for the flight altitude setting will be dynamically adjusted according to the altitude limit set in the "Flight Control Parameter Setting". ● GSD varies with different flight altitude values.

■ Set Oblique Altitude

Tap the "Oblique Altitude" edit box to set the flight altitude of oblique photography routes in oblique mission.

■ Set Oblique Flight Speed

Tap the "Oblique Flight Speed" edit box to set the flight speed of oblique photography routes in oblique mission.

■ Set Oblique Pitch Angle

Tap the "Oblique Pitch Angle" edit box to set the gimbal pitch angle of oblique photography routes in oblique mission.

Tip
● Oblique GSD varies with different flight altitude values.

■ Set Weather

Tap the "Weather" drop-down list to set the weather status when the aircraft is executing the oblique mission. You can choose “Sunny” or “Cloudy”.

Tip
● Please choose the weather status according to actual weather status so as to ensure oblique photography quality.

■ Set Finish Action

On the oblique mission settings interface, tap the drop-down list of "Finish Action" to set the flight action of the aircraft after completing the oblique mission.

- If “Auto RTH” is selected, the aircraft will automatically return to the home point after completing the mission.
- If “Hovering” is selected, the aircraft will hover at the end point after completing the mission.

■ Set Signal Loss Action

On the oblique mission settings interface, tap the drop-down list of "Signal Loss Action" to set the flight action of the aircraft after losing connection with the remote controller.

- If "Continue" is selected, the aircraft will continue to execute the mission and perform the "Finish Action" after completing the mission.
- If “Auto RTH” is selected, the aircraft will automatically return to the home point.

■ Advanced Settings

On the oblique mission settings interface, tap “Advanced Settings” to enter the advanced settings interface and set the front overlap, side overlap, main course angle, and gimbal pitch angle for the oblique mission.

➢ If “Custom” is selected, you can directly adjust the angle between the main route of the oblique mission and the latitude line.

Tip
● The setting range of the front overlap and side overlap is 10%-90%, and the default value is 70%.

■ Set Obstacle Avoidance Mode

On the oblique mission settings interface, the obstacle avoidance mode can be set to "Bypass" or "Off".

➢ If "Bypass" is selected, the aircraft will automatically bypass obstacles.

⚠ Warning
● If the obstacle avoidance mode is turned off, the obstacle avoidance system of the aircraft will not be enabled. In this case, please try to choose an open area to control the aircraft.

Tip
● When flying at a high altitude, if there are no obstacles, it is recommended to disable the obstacle avoidance mode.

■ Start Pre-flight Check

After the completion of all settings for an oblique mission, relevant flight mission data will be synchronously displayed at the bottom center of the oblique mission interface, including the route length, mapping area, estimated time, and photos to be taken. Tap the “” icon on the left side to enter the "Pre-flight Check" interface.

■ Upload a Route and Start a Mission

After completing the pre-flight check, press the “Slide to takeoff” icon at the bottom of the "Pre-flight Check" interface, and the aircraft will automatically take off to execute the mission. The estimated completion time, current photo count, current altitude, current wind speed, and other basic information will be synchronously displayed at the bottom center of the rectangle mission interface. The lower-left mini screen displays the current view observed by the gimbal camera. Tap to enlarge it to full screen for viewing.

When the aircraft completes the oblique mission, the relevant flight mission data of this route will be displayed at the bottom center of the map, including the route length, mapping area, estimated time, the number of photos taken, and the number of flights.

6.10 Pre-flight Check

Before the aircraft starts to execute a mission, a pre-flight check is required. On the "Pre-flight Check" interface, you can preview the current status (such as battery level, battery temperature,

and SD card memory) and route data of the aircraft and perform some settings such as flight parameters and obstacle avoidance settings.

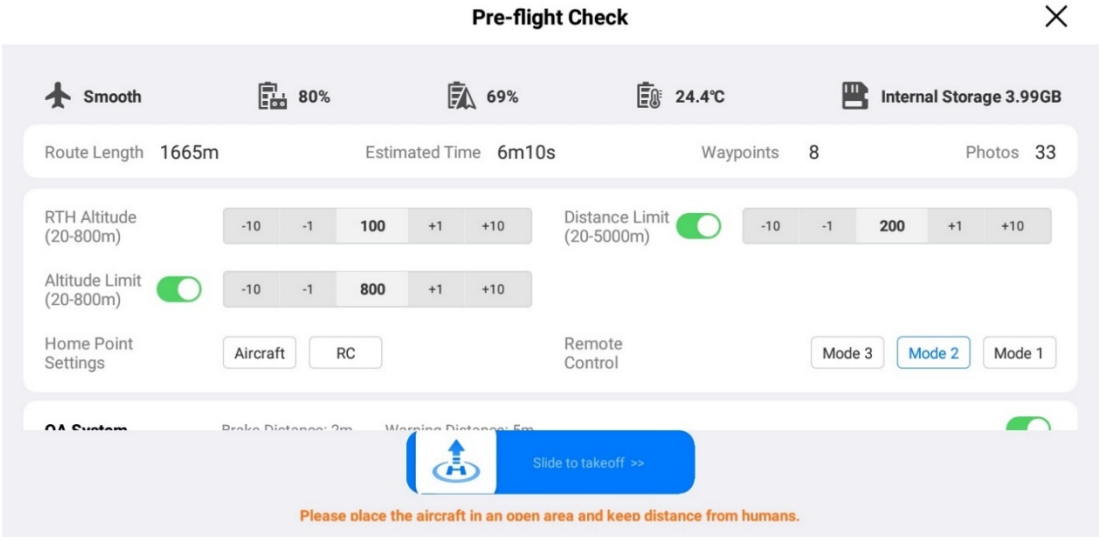


Fig 6-18 Pre-flight Check for a Flight Mission

1. On the ongoing flight mission interface, tap the "" icon on the left, and the "Pre-flight Check" interface will pop up. Please make sure that there is no fault or abnormal alarm, otherwise, you need to follow the tips to solve it.
2. Confirm aircraft status and route preview data.
3. According to different types of flight missions, set the corresponding flight parameters. If not set, the "RTH Altitude", "Distance Limit", "Altitude Limit", "Home Point Settings", and "Remote Controller" settings are based on general settings.
4. Select to enable or disable obstacle avoidance.
5. After completing the above operations, press the “Slide to takeoff” icon at the bottom of the interface.

6.11 Resume Mission

When an abnormal situation such as an abnormal exit occurs during a flight mission, tap the " " icon to enter the "Mission" interface. This will trigger the “Resume Mission” function, and a prompt window “Detect a paused mission. Would you like to resume it?” will pop up.

■ Resume Mission Options

- Tap the "Continue" button. The position where the aircraft stopped will be displayed, and the aircraft will fly to this position to continue the last mission.
- Tap the "Cancel" button. After closing the pop-up window, the mission will no longer be executed from the last point.

6.12 Mission and Favorites

On the "Mission/Favorites" interface, you can query, edit, favorite, and delete previously saved flight missions.

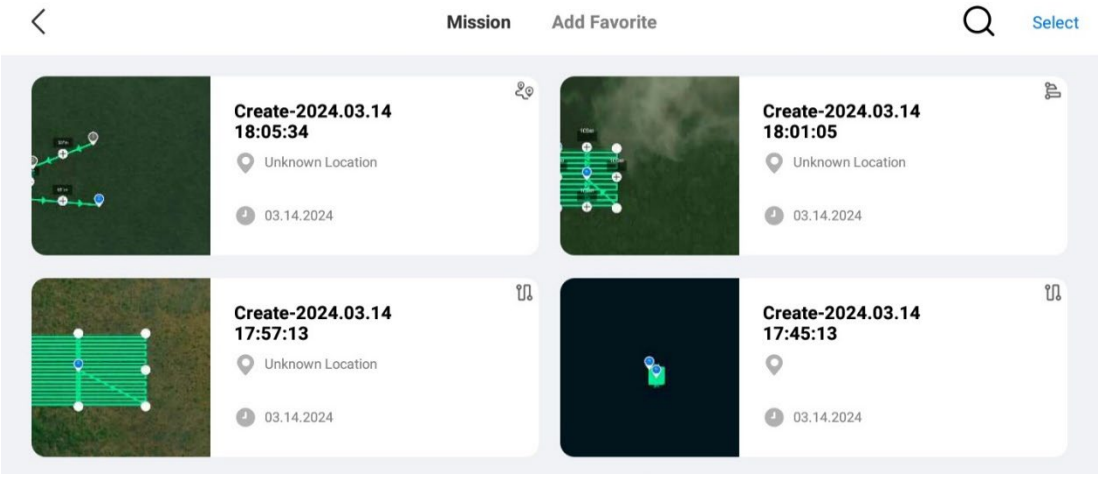


Fig 6-19 Mission/Favorites Interface

■ Query

Tap the "🔍" icon in the upper-right corner of the "Mission" interface and enter the desired content to quickly locate the corresponding historical flight mission.

■ Edit

Tap a historical flight mission on the "Mission" interface to enter the waypoint mission editing interface. Tap the "✎" icon to edit the flight mission.

■ Favorite

Tap the "Select" button in the upper-right corner of the "Mission" interface, then single-select, multi-select, or select all the missions to be favorited, and then tap the "☆" icon to complete the favoriting action. Favorited missions will be displayed on the "Favorites" interface for easy access.

■ Delete

Tap the "Select" button in the upper-right corner of the "Mission" interface, then single-select, multi-select, or select all the missions to be deleted, and then tap the "🗑" icon. After a dialog box pops up, tap the "Confirm" button. This way, the selected flight missions are deleted.

■ Export

Tap the "Select" button in the upper-right corner of the "Mission" interface, then single-select, multi-select, or select all the missions to be deleted, and then tap the "📁" icon. After a dialog box pops up, tap the "Confirm" button. This way, the selected flight missions are deleted.

Tip
● The current version only supports exporting waypoint missions.

6.13 Personal Center

Tap the "👤" icon (in the toolbar or Menu) to enter the " Personal Center " interface.
When using the product for the first time, you need to register and log into Autel Robotics cloud service account.
On the "Personal Center" interface, you can perform the following operations:

1. Query the flight time, flight distance, and the number of flights.
2. Purchase the value-added service for your aircraft (within 48 hours after activation).

Tip

- If you do not register and log into the cloud service account, you cannot use cloud-related functions.
- You have the right to use a registered account, but the account ownership belongs to Autel Robotics. Please read the "User Agreement" carefully when registering.

Chapter 7 Update and Maintenance

In order to ensure the overall reliability and the safety of the UAS system, so as to provide the best flight experience for users, the UAS components need to be upgraded to the latest firmware version and maintained as required on regular basis.
Users can use the flight application to perform firmware updates for the aircraft, the remote controller, the smart battery, the gimbal, the flight application and other parts.

Important

- Online upgrade requires ensuring that the RC can normally access the Internet.

7.1 UAS Components Updates

Warning

- Before updating the RC, please confirm the RC battery is inserted with sufficient power.
- During the updating the RC, do not remove the RC battery, otherwise the battery cannot be detected, leading to update failure,
- As the RC battery adopts magnetic suction design, do not shake the RC violently during update. Otherwise the battery will fall off, leading to update failure and even the failure to turn on the RC.

1. Power on the remote controller and aircraft. Make sure that the aircraft and remote controller are already matched, both have a battery level of more than 25%, and the network connection of the remote controller is normal.
2. Open the flight application. If there is a version update available, you will receive a pop-up notification on the main interface of the App or you can manually select the update in the settings of the App.
3. Tap "Update All", and the flight application will automatically download and update the firmware for the remote controller and aircraft.
4. After the update is complete, follow the pop-up instructions to restart the remote controller and aircraft.

Important

- During the update process, do not power off the aircraft and keep it connected to the remote controller.
- The update process is expected to take about 15 minutes (depending on the network that the remote controller is connected to).
- Do not move the command sticks before and after the update to ensure that the propellers remain stationary.

- Make sure that the aircraft has a micro SD card inserted and that the aircraft and remote controller have sufficient storage space for the firmware update packages.
- After the update is completed, the RC might disconnect with the RC. If you need to re-matching them, please refer to "4.9 Frequency Matching with the Remote Controller" in chapter 4.

7.2 Aircraft Parts Maintenance

To ensure that the aircraft maintains optimal performance, all parts of the aircraft need to be maintained regularly. For details, please refer to the Maintenance Manual. If you have any questions, please contact Autel Robotics.

Table 7-1 Aircraft Consumable Parts list

No.	Part	Quantity	Note
1	Propeller CW	2	Each power motor is equipped with 1 x 8530CW propeller or 1 x 8530CCW propeller (each propeller includes two blades)
2	Propeller CCW	2	
3	Power motor	4	
4	Front arm tripod	2	
5	Rear arm tripod	2	
6	Gimbal shock absorbing ball	4	
7	Smart battery unlock button	2	
8	Air outlet dust screen	1	

Table 7-2 User-Replaceable Parts List

NO.	Part	Quantity	Part Number	Manufacturer information
1	Propeller CW 8530	2	EAN: 6924991102533 UPC: 889520012270	Autel Robotics
2	Propeller CCW 8530	2		
3	Smart battery	1	EAN: 6924991102939 UPC: 889520012676	Autel Robotics
4	6K Optical Gimbal	1		Autel Robotics
5	640T Gimbal	1		Autel Robotics

Tips

- Users can contact Autel Robotics to purchase the above parts and replace them by themselves according to the operating instructions.
- If you need to replace parts that are not in the list, please contact Autel Robotics. Damage caused by unauthorized disassembly and assembly will not be covered by the warranty.
- Please refer to the "Maintenance Manual" for the service life cycle of each component.

7.3 Troubleshooting Guide

Tip

- The following troubleshooting measures are only limited to failures resulting from normal usage.
- For failures resulting from abnormal usage, please contact Autel Robotics for handling.

1. The remote controller cannot power on:
   - Check whether the remote controller has sufficient power. If the battery level is too low, it may result in a power-on failure after shutdown. In this case, fully charge the remote controller and then power it on.
   - Check whether the ambient temperature is suitable, as low temperatures can affect battery output performance, resulting in a power-on failure.
   - If the remote controller was accidentally powered off during an update, it may not power on normally. In this case, contact Autel Robotics.
   - If the remote controller has not been subjected to external impacts, liquid submersion, or other destructive behaviors and does not have any conditions mentioned above, it may have a hardware failure. In such cases, contact Autel Robotics.

2. The aircraft cannot power on:
   - Check whether the smart battery has sufficient power. If the battery level is too low, it may result in a power-on failure after shutdown. In this case, fully charge the smart battery and then power the aircraft on.
   - If the smart battery has sufficient power, check whether the battery makes proper contact with the aircraft's fuselage. Dirt or rust at the battery connector can lead to poor contact and must be cleaned before being re-inserted into the battery for power-on.
   - Check whether there are any missing or damaged metal contacts at the aircraft battery connector and the smart battery connector. If yes, please contact Autel Robotics.
   - Check whether the ambient temperature is suitable, as low temperatures can affect battery output performance, resulting in a power-on failure.
   - If the aircraft or the smart battery is unexpectedly powered off during a firmware update, it may result in a power-on failure. In this case, contact Autel Robotics.
   - When none of the above conditions apply, if the aircraft can power on after the smart battery is replaced, it may be a hardware failure of the smart battery; if the aircraft still cannot power on after the smart battery is replaced, it may be a hardware failure of the aircraft itself. In this case, contact Autel Robotics.
3. The aircraft reports a fault during startup self-check:

- Check the gimbal camera. If the gimbal camera has no response, re-start the aircraft, if there is still no response, please contact Autel Robotics.
- If the gimbal camera successfully passes the self-check, but the aircraft still reports a fault, it may be a hardware failure of the aircraft. In this case, contact Autel Robotics.

4. There is no response from the remote controller when matching it with the aircraft:
   - Confirm that the distance between the aircraft and the remote controller is within 50 centimeters.
   - Check whether there is a metal object, mobile device, signal interference device, or another remote controller nearby.

5. After the aircraft powers on, the motors do not start:
   - Check whether the remote controller is paired with the aircraft.
   - Check whether the command sticks of the remote controller are functioning correctly and whether the remote controller has been correctly calibrated.
   - Check whether the aircraft's battery has sufficient power.
   - Check whether the aircraft's compass has been correctly calibrated.
   - If none of the above conditions apply, it may be a hardware failure of the aircraft itself. In this case, contact Autel Robotics.

6. After the motors start, the aircraft does not take off:
   - Check whether the aircraft is in a No-Fly Zone.
   - Check whether the aircraft is placed on a flat surface.
   - Check whether there are obstacles near the aircraft and whether the obstacle avoidance system of the aircraft is enabled.

7. The aircraft has shortened flight time:
   - During flight, factors such as low ambient temperatures, flying against the wind, air turbulence, and carrying a mount all may lead to a shortened operating time of the aircraft.
   - Make sure that the smart battery has fewer than 200 cycles. During the normal use of the smart battery, the battery capacity naturally decreases over time.

8. The remote controller has unstable image transmission (e.g., image lag, image loss, or frequent disconnection):
   - Check whether the remote controller's antennas are securely connected and whether they are adjusted to an appropriate direction.
   - Check whether there is any strong magnetic field or signal interference source near the aircraft and remote controller.
   - Confirm that the distance between the aircraft and the remote controller falls within the effective communication range and promptly reduce the flight radius if needed.

9. The gimbal camera automatically turns off during recording:
   - Do not immediately remove the microSD card from the aircraft. Instead, restart the camera and wait for the video file to be stored as much as possible.
   - Check whether the memory of the microSD card is full; if it is, replace it with a new microSD card or transfer the media files.
   - Check whether the gimbal camera is securely connected to the aircraft. If the gimbal

camera is not securely locked during installation, the gimbal camera connector may become loose due to flight vibrations, leading to poor contact and thus malfunctions.

10. When the aircraft is flying beyond the visual line of sight, image transmission fails:
    - Enable auto-return to let the aircraft return to the home point.

11. What precautions should I follow when using the omnidirectional visual sensing system?
    - Before flying, make sure that the visual sensing camera lens is clean and not blocked ("Omnidirectional" means that the system can sense objects in six directions, including front, rear, left, right, up, and down).
    - When flying, pay attention to the surrounding environment and safety prompt messages of the flight application.
    - Obstacles can be detected by checking the texture of their surfaces. The detection function cannot work properly for objects with no texture, repeated texture, a surface of pure color, moving objects, or tiny objects. It also cannot work properly in a strong light or weak light environment.

12. The accurate landing/landing protection function cannot work properly:
    - The accurate landing function can be implemented by the visual sensing lens on the rear of the aircraft. The camera detects the ground texture when the aircraft takes off or lands.
    - However, if the ground does not have any texture or the visual sensing lens on the rear of the aircraft is damaged, this function cannot work properly.

13. The omnidirectional visual sensing system cannot work properly:
    - Restart the aircraft and check whether the system can work properly this time.
    - Check whether the ambient light illuminance is suitable for the operation of the visual sensing system.

14. When recording video during flight, the image tilts:
    - Place the aircraft horizontally and keep it stationary. Use the "Gimbal Calibration" function in the flight application to calibrate the gimbal.
    - If the problem persists, adjust the gimbal according to the instructions described in the "Gimbal Adjustment" section.

15. The camera lens of the aircraft is dirty:
    - Please use dry soft cloth to clean the lens gently.

16. The aircraft or remote controller experiences unexpected shutdown during firmware updates:
    - Restart the device. If it can power on normally, make sure that the device is sufficiently charged before proceeding with the update.
    - If the device cannot power on, contact Autel Robotics.

17. Restore the factory setting of the remote controller:
    - Tap the "Settings" app on the main interface of the remote controller, tap Backup & reset, and tap "Factory data reset" to restore the factory settings. Please backup important data before the resetting operation.

18. Forcefully restart the remote controller after lag:
    - Press and hold the power button on the right side of the remote controller for more than 6 seconds to forcefully power off the remote controller.
    - Restarting the remote controller during flight will trigger the lost action of the aircraft.

19. For safety concerns, please do not insert unknown USB device of other external device to the aircraft

Appendix A Product Specifications

A.1 Aircraft

Aircraft	
Weight of EVO Lite Enterprise Series multi-rotor drone	866 g
Maximum takeoff weight of EVO Lite Enterprise Series multi-rotor drone	866 g
Dimensions	210×123×95mm (folded, propellers included) 433×516×95mm (unfolded, propellers included)
Max. Rotation Speed	8000 rpm
Wheelbase	368 mm
Maximum ascent speed	Slow: 3 m/s Smooth: 3 m/s Standard: 5 m/s Ludicrous: 6 m/s
Maximum descent speed	Slow: 3 m/s Smooth: 2 m/s Standard: 3 m/s Ludicrous: 4 m/s
Maximum horizontal flight speed (no wind near sea level)	Slow :3 m/s Smooth:5 m/s Standard: 10 m/s Ludicrous: 18 m/s
Maximum Service Ceiling Above Sea Level	3000 meters
Maximum flight altitude	Chinese Mainland or EU: no more than 120 meters US: no more than 400 feet Note: In the flight application, it can be set from 0 to 800 meters. To set beyond height required by law, you need to obtain authorization from authority.
Maximum flight time (no wind)	40 minutes

	Note: Tested in lab with nearly no wind when aircraft flies at speed of 10 m/s and only for reference.
Maximum flight mileage	24 km
Maximum hover time (no wind)	37 minutes Note: Tested in lab with nearly no wind when aircraft hovers and only for reference.
Maximum wind speed resistance	10.7 m/s
Maximum tilt angle	Slow: 15° Smooth: 30° Standard: 30° Ludicrous: 33°
Maximum rotation angular speed	Smooth: 60°/s Standard: 120°/s Ludicrous: 200°/s
Working temperature	-10℃~40℃
Battery hot replacement	Not support
Internal storage	Onboard storage: 4GB (support microSD card of up to 256GB)
GNSS	GPS/BDS/GLONASS
Hover accuracy	Vertically: ±0.1 meters (when visual positioning is working normally) ±0.5 meters (when GNSS is working normally) Horizontally: ±0.3 meters (when visual positioning is working normally) ±0.5 meters (when High-Precision Positioning System is working normally)
Image Transmission	
Operating Frequency	2.4G: 2.400 – 2.476 GHz*, 2.400 – 2.4835 GHz 5.2G: 5.15 - 5.25 GHz**, 5.17-5.25GHz*** 5.8G: 5.725 - 5.829 GHz*, 5.725 - 5.850GHz *Only applicable to SRRC regions **Only applicable to FCC, CE and UKCA regions *** Only applicable to Germany

	Note: Some frequencies are only available in some regions and some frequencies are only allowed for indoor use. Check local laws and regulations for details.
Maximum signal effective distance (No interference, no obstruction)	FCC: 12 km CE/SRRC: 6 km
Effective transmitter power (EIRP)	2.4G: ≤30dBm (FCC/ISED/RCM)；≤20dBm （CE/SRRC/UKCA） 5.2G: ≤30dBm (FCC); ≤23dBm (CE/UKCA) 5.8G: ≤30dBm（FCC/SRRC/ISED/RCM); ≤14dBm（CE/UKCA）
Visual Perception System	
Sensing range	Forward: 0.2~23 meters Effective obstacle avoidance speed: ＜10m/s Backward: 0.2~30 meters Effective obstacle avoidance speed: ＜10m/s Downward: 0.2~20 meters
FOV	Forward: 75° horizontally, 87° vertically Backward: 35° horizontally, 45° vertically Downward: 99° horizontally, 83° vertically
Effective use of the environment	Front, rear: The surface has rich texture and sufficient lighting conditions (>15 lux, normal indoor fluorescent lighting environment) Below: The ground is richly textured and the lighting conditions are sufficient (>15 lux, normal indoor fluorescent lighting environment) The surface is made of diffuse reflective material and the reflectivity is >20% (such as walls, trees, people, etc.)

A.2 Gimbal Camera

A.2.1 EVO Lite 6K Enterprise Aircraft Gimbal Camera

Wide Angle Camera

Image sensor	1 CMOS, 20 million pixels
Lens	DFOV: 82° 35mm Equivalent Focal Length: 28.7 mm Aperture: F2.8-F11 Focus: 0.5 meter ~ ∞
ISO range	Auto/Manual: ISO100 ~ ISO6400
Shutter speed	1/10000 ~ 1/60 seconds
Defog mode	Support
Zoom	1 - 16x digital zoom
Maximum photo size	5472 x 3076, 3840 x 2160
Photo format	JPG
Video resolution	3840 x 2160 P30
Video format	MP4/MOV
Video encoding	H.265/H.264
File system supported	exFAT/FAT32
Gimbal	
Mechanical scope	Pitch: -135°~45° Roll: -45°~45° Yaw: -90°~90°
Controllable rotation range	Pitch: -90°~30°
Stable system	Three-axis stabilization
Maximum control speed (pitch)	100°/s
Angular vibration range	±0.003°

A.2.2 EVO Lite 640T Enterprise Gimbal Camera

Wide Angle Camera	
Image sensor	1/2 inch CMOS, 48 million pixels
Lens	DFOV: 84° 35mm Equivalent Focal Length of: 24 mm Aperture: F2.8

	Focus: 1.5 meter ~ ∞ Focus Mode: FF (Fixed Focus)
ISO range	Auto/Manual: ISO100 ~ ISO6400
Shutter speed	1/10000 ~1/60 seconds
Defog mode	Support
Zoom	**4K:** 1 - 16x digital zoom **8K:** 1 - 8x digital zoom
Maximum photo size	4000×3000, 8000×6000
Photo format	JPG
Video resolution	4000×3000 P30
Video format	MP4/MOV
Video encoding	H.265/H.264
File system supported	FAT32/exFAT
IR Camera	
Image Sensor	Uncooled VOx Microbolometer
Lens	FOV: 61° Focal length: 9.1 mm Aperture: F1.0 Focus distance: 2.2 m ~ ∞
Sensitivity	≤50mK@f/1.0, 25°C
Pixel Pitch	12um
Wavelength	8-14um
Radiometric Measurement Method	Center temperature measurement/Pot temperature measurement/Rectangular measurement
Radiometric Temperature Range	High gain mode: -20°C to 150°C Low gain mode: 0 to 550°C
Radiometric Measurement Accuracy	±2°C or reading ±2% (using the larger value) @ ambient temperature ranges from -20°C to 60°C
Accurate Temperature Measurement Distance	5 m
Digital Zoom	1-16x digital zoom

Temperature Alert	In area temperature measurement, support high and low temperature alarm thresholds, reporting coordinates and temperature values
Palette	White Hot/Black Hot/Ironbow/Rainbow 1/Rainbow 2/Lava/Arctic/Ironbow/Medical/Tint
Photo Size	640×512
Photo Format	JPG (the images contain temperature information and are parsed by dedicated SDK and PC tools)
Video Encoding	H.264/H.265
Video Resolution	640×512@30FPS
Video Format	MP4/MOV
Gimbal	
Mechanical scope	Pitch: -135°~45° Roll: -50°~50° Yaw: -90°~90°
Controllable rotation range	Pitch: -90°~30°
Stable system	Three-axis stabilization
Maximum control speed (pitch)	100°/s
Angular vibration range	±0.003°

A.3 Remote Controller

Autel Smart Controller SE V2	
Dimensions	226.3×137.7×31.5 mm (antennas folded) 226.3×215.4×31.5 mm (antennas unfolded)
Weight	607 g
Operating Temperature	-10°C to 40°C
Storage Temperature	+15°C ~ +25°C (within a year) 0°C ~ +30°C (within three months) -20°C ~ +45°C (within a month)
Protection Rating	IP43

Internal Storage	Built-in storage of 32GB Available storage: 24GB
microSD Extension	Supported
Operating System	Based on Android 6.0.1
USB-C	Supports PD 30W and QC 18W fast charging
USB-A	USB2.0
GNSS	GPS+Galileo+BDS
Wi-Fi Protocol	802.11a/b/g/n/ac
Wi-Fi Operating Frequency	2.4G: 2.400 – 2.476GHz*, 2.400 – 2.4835GHz 5.8G: 5.725 - 5.829GHz*, 5.725 - 5.850GHz *Only applicable to SRRC regions Note: Some frequencies are only available in some regions or only used in door. For details, please refer to local law and regulations.
Wi-Fi Effective Isotropic Radiated Power (EIRP)	2.4G: ≤30dBm (FCC/ISED); ≤20dBm (CE/UKCA/SRRC); ≤12.14dBm (MIC) 5.8G: ≤30dBm (FCC/SRRC/ISED); ≤14dBm (CE/UKCA)
Bluetooth	Bluetooth 4.2
Bluetooth Operating Frequency	2.400-2.4835GHz Note: Some regions specify frequency ranges. For details, please refer to local laws and regulations.
Bluetooth Effective Isotropic Radiated Power (EIRP)	≤20dBm
Image Transmission	
Antenna	Dual antennas, 1T2R
Operating Frequency	900M: 902 - 928MHz* 2.4G: 2.400 – 2.476GHz**，2.400 – 2.4835GHz 5.2G: 5150-5250MHz***, 5170-5250MHz****

	5.8G: 5.725 - 5.829GHz**，5.725 - 5.850GHz *Only applicable to FCC and ISED regions **Only applicable to SRRC regions ***Only applicable to FCC, RCM, CE and UKCA regions **** Only applicable to Germany Note: Some frequencies are only available in some regions or only used in door. For details, please refer to local law and regulations.
Effective Isotropic Radiated Power (EIRP)	900M: ≤30dBm（FCC/ISED） 2.4G: ≤30dBm（FCC/ISED/RCM); ≤20dBm（CE/UKCA/SRRC） 5.2G: ≤30dBm (FCC/RCM); ≤23dBm (CE/UKCA) 5.8G: ≤30dBm（FCC/SRRC/ISED/RCM); ≤14dBm（CE/UKCA）
Maximum Transmission Distance (Without Interference and Blocking)	FCC: 12 km CE/SRRC: 8 km
Display	
Resolution	1440×720
Refresh Rate	60Hz
Touch Control	Supports 10-point touch
Battery	
Battery Type	Li-Po
Rated Capacity	1900 mAh
Voltage	7.7V
Battery Energy	14.63 Wh
Charging Time	About 90 minutes (charging time is related to actual remaining power)
Battery Endurance	1.5 hours (Max brightness) 2.5 hours (50% brightness)
Battery Replacement	Supported

A.4 Smart battery

Smart Battery MDXM_6175_1113	
Operating Temperature	-10℃ ~ +40℃
Battery Type	Li-Po 3S
Rated Capacity	6175 mAh
Battery energy	68.7 Wh
Voltage	11.13 V
Charging Voltage Limit	12.75V
Rated Charging Power	63.75W
Maximum charging power	78W
Weight	309g
Battery charging temperature	+5℃ ~ +45℃ (When the battery temperature is below 5℃, the battery stops charging. When the battery temperature is above +45℃, the battery stops charging.)
Battery Storage	
Ideal storage environment	+ 22℃ ~ +28℃
Storage temperature and humidity	- 20℃ ~ +35℃, 65 ± 20%RH
Battery Charger AQ661-12755000D	
Power input	100-240V ~ 50/60 Hz, 1.5 A
Output port	Battery charging interface/USB-A
Battery charging interface	12.75V⎓5A
USB-A	5V⎓3A, 9V⎓2A, 12V⎓1.5A
Rated power	63.75W Max

Appendix B Declaration of Conformity

Product:	EVO Lite, EVO Lite+, EVO Lite 6K Enterprise, EVO Lite 640T Enterprise
Model Number:	MDXM, MDXM2
Class:	C1
Batch:	XXXXXXXX (8-digit number)
Sound power level:	81 dB(A)
Manufacturer's Name:	*Autel Robotics Co., Ltd.*
Manufacturer's Address:	*601,701,801,901, Block B1, Nanshan iPark, No. 1001 Xueyuan Avenue, Nanshan District, Shenzhen, Guangdong, China*

We, *Autel Robotics Co., Ltd.*, declare under our sole responsibility that the above referenced product is in conformity with the applicable requirements of the following directives:

RED Directive:	2014/53/EU
RoHS Recast Directive:	2011/65/EU
UAS Delegated Regulation:	2019/945/EU 2020/1058/EU
Machinery Directive:	Annex I 2006/42/CE

Conformity with these directives has been assessed for this product by demonstrating compliance to the following harmonized standards and/or regulations:

Safety	EN IEC 62368-1:2020+A11:2020 IEC 62368-1:2018
EMC	ETSI EN 301 489-1 V2.2.3 (2019-11) ETSI EN 301 489-3 V2.3.2 (2023-01) ETSI EN 301 489-17 V3.2.4 (2020-09) ETSI EN 301 489-19 V2.2.1 (2022-09) EN 55032:2015+A1:2020 EN 55035:2017+A11:2020 EN IEC 61000-3-2:2019+A1:2021 EN 61000-3-3:2013+A2:2021
Radio	ETSI EN 300 328 V2.2.2 (2019-07) ETSI EN 300 440 V2.2.1 (2018-07) ETSI EN 303 413 V1.2.1 (2021-04)

Health	EN IEC 62311:2020
RoHS	2011/65/EU
UAS Delegated Regulation	ASD-STAN prEN 4709-001:2024 Edition P 1 prEN 4709-002: 2023 prEN 4709-003: 2023 prEN 4709-004: 2023
Machinery Directive	EN ISO 12100

The notified body, *LGAI Technological Center S.A./Applus*, notified body number: 3070, performed the EU-type examination in according with Annex III, Module B of Council Directive 2014/53/EU, and issued the EU-type examination certificate: 0370-RED-7581.

The notified body, *LGAI Technological Center S.A./Applus*, notified body number: 0370, performed the EU-type examination in according with Annex Part 8, Module B of Regulation (EU) 2019/945, and issued the EU-type examination certificate: 0370-UAS-0019.

Signed for and on behalf of: *Autel Robotics Co., Ltd.*
Place: Shenzhen, China Date: 2024-11-26
Name: Cheng Zhuanpeng Position: Legal Representative

Signature: 

Annex I

Product Mix. Description	**Model**	**SW version**	**Description**	**Serial Number**
EVO Lite	MDXM	V2.0.14	Quadcopter equipped with 1/1.28 inch CMOS, 50 million pixels camera	1748XXXXXXXXXXXXXXXX /1748XXXXXXXXXXXX
EVO Lite+	MDXM2	V2.0.14	Quadcopter equipped with a 6K camera	1748XXXXXXXXXXXXXXXX /1748XXXXXXXXXXXX
EVO Lite 6K Enterprise	MDXM	V1.0.0.173 or V1.0.1.53	Quadcopter equipped with a 6K camera Drone+EF6-2: V1.0.0.173	1748XXXXXXXXXXXXXXXX /1748XXXXXXXXXXXX

			Drone+EF9-3：V1.0.1.53	
EVO Lite 640T Enterprise	MDXM	V1.0.0.173 or V1.0.1.53	Quadcopter equipped with a 640T camera Drone+EF6-2: V1.0.0.173 Drone+EF9-3：V1.0.1.53	1748XXXXXXXXXXXXXXX /1748XXXXXXXXXXXX
Remote Controller	EFA	V2.0.0.11	Drone Remote Controller for Lite & Lite+	/
Remote Controller	EF6-2	V1.0.1.83	Drone Remote Controller for Lite Enterprise	/
Remote Controller	EF9-3	V1.6.0.205	Drone Remote Controller for Lite Enterprise	/
Battery	MDXM_6175_1113	/	Drone Battery	1748CBXXXXXXXXXXX
Adapter	AQ66-12755000D	/	Drone Adapter	/

*Note: Updated software will be released by the manufacturer to fix bugs and improve performance after the product is placed on the market. All updated versions released by the manufacturer have been verified to comply with the applicable regulations. All RF parameters (e.g., RF power, frequency) are not accessible to end users and cannot be changed by any third parties. Conformity of the product with EU requirements is ensured by evaluating the GNSS signals. The radio parameters are automatically set according to the detected region; the user does not have the capability to change these settings.

CE

Appendix C Drone Pilot Information Notices

When flying this aircraft product in the territory of EU Member States, please comply with the following EASA regulations.





You can visit the EASA official website to get other language versions: https://www.easa.europa.eu/en/document-library/general-publications/drones-information-notices.